LITTLE TOR SUBSTATION

Town of Clarkstown, Rockland County, New York

APPENDICES

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Volume II

Applicant:

Orange & Rockland
a conEdison, Inc. company

390 West Route 59
Spring Valley, NY 10977
Contact: Joanne Lanza
(845) 577-3727

Preparer:

BSG Engineering, Surveying
& Landscape Architecture, LLC
(Formerly CMX)
1311 Mamaroneck Avenue, Suite 50
White Plains, NY 10605
(914) 686-1000

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Volume II

Lead Agency:
Town of Clarkstown Planning Board
10 Maple Avenue
New City, NY 10956
Contact: Dennis Letson, P.E.
Deputy Director, Dept. of Environmental Control
(845) 639-2000

Applicant:
Orange and Rockland Utilities, Inc.
1 Blue Hill Plaza
Pearl River, NY 10965
Contact: Joanne Lanza
(845) 577-3727

Preparer:
BSG Engineering, Surveying
& Landscape Architecture, LLC
1311 Mamaroneck Avenue, Suite 50
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Date of Preliminary DEIS Submittal: May 26, 2010
Date Resubmitted: April 22, 2011
Date Resubmitted: February 7, 2012
Date Accepted:
Date of Public Hearing:
Closing of DEIS Public Comment Period:

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617.20
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State Environmental Quality Review
FULL ENVIRONMENTAL ASSESSMENT FORM

Purpose: The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasurable. It is also understood that those who determine significance may have little or no formal knowledge of the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part 1: Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

Part 2: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

Part 3: If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impact is actually important.

THIS AREA FOR LEAD AGENCY USE ONLY

DETERMINATION OF SIGNIFICANCE -- Type 1 and Unlisted Actions

Identify the Portions of EAF completed for this project: ☐ Part 1 ☐ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☐ A. The project will not result in any large and important impact(s) and, therefore, is one which **will not** have a significant impact on the environment, therefore **a negative declaration will be prepared.**

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore **a CONDITIONED negative declaration will be prepared.***

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore **a positive declaration will be prepared.**

*A Conditioned Negative Declaration is only valid for Unlisted Actions

_____
Name of Action

_____
Name of Lead Agency

_____ _____
Print or Type Name of Responsible Officer in Lead Agency | Title of Responsible Officer

_____ _____
Signature of Responsible Officer in Lead Agency | Signature of Preparer (if different from responsible officer)

website

_____
Date

PART 1--PROJECT INFORMATION
Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form, Parts A through E. Answers to these questions will be considered as part of the application for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts 2 and 3.

It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, research or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

Name of Action Little Tor Substation and District Gas Regulator Station

Location of Action (include Street Address, Municipality and County)

South Mountain Road and N. Little Tor Road, Clarkstown, Rockland County, New York

Name of Applicant/Sponsor Orange and Rockland Utilities, Inc.

Address 390 West Route 59

City / PO Spring Valley State New York Zip Code 10977

Business Telephone (845) 577-3700 Peter McGoldrick, Chief Transmission & Substation Engineer

Name of Owner (if different)

Address

City / PO State Zip Code

Business Telephone

Description of Action:

This project entails the construction of a new electrical substation and the upgrade of an existing district gas regulator station.

Little Tor Electric Substation

An existing transmission tower will be replaced with two steel poles of similar height to supply the new yard. The substation design consists of two 50 MVA transformers to step down the 138,000 volt transmission voltage to 13,200 volt distribution and a 25 MVA transformer to supply 34,500 volts to Tilcon. A metalclad switchgear enclosure will house the eight 13,200 volt distribution circuits which will supply the surrounding area. A 32 MVAR capacitor bank is necessary for voltage support.

Little Tor District Gas Regulator Station

Local demand is outpacing the capacity of the existing station that was installed in 1962. The new facility will utilize the latest technology in control equipment, designed for low noise and zero emissions. In addition, it will be sited further from South Mountain Road than the current installation for better protection from vehicular traffic.

New gas piping will be enclosed within two 10 foot by 15 foot chain link fence enclosures.

The majority of existing gravel driveways across the project site will be removed and seeded, and a new asphalt driveway will be installed, with two gravel extensions.

A detention pond will be installed near the center of the site, directly east of the proposed substation. The detention pond will contr discharge of the runoff and address the water quality of the runoff.

Please Complete Each Question--Indicate N.A. if not applicable

A. SITE DESCRIPTION

Physical setting of overall project, both developed and undeveloped areas.

1. Present Land Use: ☐ Urban ☐ Industrial ☐ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
   ☐ Forest ☐ Agriculture ☑ Other Site was previously a residential area. Site is currently vacant with the exception of a gas regulator station, a cell tower and cell tower support building. In addition, a 138KV double circuit transmission line and a 35KV single circuit transmission line exist in the ROW. Dilapidated structures were removed in February and March, 2007.

2. Total acreage of project area: 10.2 acres.

APPROXIMATE ACREAGE	PRESENTLY	AFTER COMPLETION
Meadow or Brushland (Non-agricultural)	4.32 acres	3.85 acres
Forested	3.31 acres	3.10 acres
Agricultural (Includes orchards, cropland, pasture, etc.)	0 acres	0 acres
Wetland (Freshwater or tidal as per Articles 24,25 of ECL)	1.49 acres	1.49 acres
Water Surface Area	0.20 acres	0.20 acres
Unvegetated (Rock, earth or fill)	0.16 acres	0.14 acres
Roads, buildings and other paved surfaces (Driveways)	0.70 acres	0.50 acres
Other (Indicate type) Substation/Gas Regulator	0.02 acres	0.92 acres

3. What is predominant soil type(s) on project site? Gravelly fine sandy loam (WeB Wethersfield)
   a. Soil drainage: ☑ Well drained 80 % of site ☐ Moderately well drained ____% of site.
   ☑ Poorly drained 20 % of site
   b. If any agricultural land is involved, how many acres of soil are classified within soil group 1 through 4 of the NYS Land Classification System? N/A acres (see 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? ■ Yes ☐ No
   a. What is depth to bedrock 0 - 15 (in feet)

5. Approximate percentage of proposed project site with slopes:
   ☑ 0-10% 99 % ☐ 10- 15% ____ % ☑ 15% or greater 1 % (A vertical rock face exists in the northeast corner of project site.)

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or National Registers of Historic Places? ☐ Yes ■ No

7. Is project substantially contiguous to a site listed on the Register of National Natural Landmarks? ☐ Yes ■ No

8. What is the depth of the water table? 7 feet (in feet)

9. Is site located over a primary, principal, or sole source aquifer? ☐ Yes ■ No

10. Do hunting, fishing or shell fishing opportunities presently exist in the project area? ☐ Yes ■ No

11. Does project site contain any species of plant or animal life that is identified as threatened or endangered? ☐ Yes ☒ No

According to:

In a letter dated November 5, 2007, NYSDEC stated that no records of known occurrences of rare or state-listed animals or plan significant habitats were present on or in the immediate vicinity of the project site.

Identify each species:

N/A

12. Are there any unique or unusual land forms on the project site? (i.e., cliffs, dunes, other geological formations?

☐ Yes ☒ No

Describe:

13. Is the project site presently used by the community or neighborhood as an open space or recreation area?

☐ Yes ☒ No

If yes, explain:

14. Does the present site include scenic views known to be important to the community? ☐ Yes ☒ No

The Long Path, a scenic overlook, and Davenport Preserve are located within the community, but the project site is not visible from these locations.

15. Streams within or contiguous to project area:

West Branch of Hackensack River at southern property boundary.

a. Name of Stream and name of River to which it is tributary

West Branch of Hackensack River is tributary to Hackensack River, which drains to Newark Bay in New Jersey.

16. Lakes, ponds, wetland areas within or contiguous to project area:

A wetland is adjacent to West Branch of Hackensack River at southeastern property boundary.

b. Size (in acres):

1.49 acres of wetland are located on project site.

17. Is the site served by existing public utilities? ☐ Yes ☒ No

a. If YES, does sufficient capacity exist to allow connection? ☐ Yes ☐ No

b. If YES, will improvements be necessary to allow connection? ☐ Yes ☐ No

18. Is the site located in an agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☒ No

19. Is the site located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617? ☐ Yes ☒ No

20. Has the site ever been used for the disposal of solid or hazardous wastes? ☐ Yes ☒ No

(No; however, at the time of property purchase, the buildings were in disrepair and various materials and refuse had been left behind. These items were removed from the property and disposed in 2006 and 2007.)

B. Project Description

1. Physical dimensions and scale of project (fill in dimensions as appropriate).

a. Total contiguous acreage owned or controlled by project sponsor: 10.2 acres.

b. Project acreage to be developed: 1.4 acres initially; 1.4 acres ultimately.

c. Project acreage to remain undeveloped: 8.8 acres.

d. Length of project, in miles: N/A (if appropriate)

e. If the project is an expansion, indicate percent of expansion proposed. N/A %

f. Number of off-street parking spaces existing 0; proposed 0

g. Maximum vehicular trips generated per hour: 0 (upon completion of project)?

h. If residential: Number and type of housing units:

	One Family	Two Family	Multiple Family	Condominium
Initially				
Ultimately				

i. Dimensions (in feet) of largest proposed structure: 81 height; 6 width; 6 length. (Tower)

j. Linear feet of frontage along a public thoroughfare project will occupy is? 1350 ft.

2. How much natural material (i.e. rock, earth, etc.) will be removed from the site? ±200 tons/cubic yards.

3. Will disturbed areas be reclaimed ☒ Yes ☐ No ☐ N/A

a. If yes, for what intended purpose is the site being reclaimed?

Excavation of soil will take place to accommodate the substation, foundations and driveway, as well as the detention basin. Excavated soil may be redistributed elsewhere on the project site, or removed completely (such as soil leftover from excavation of foundations).

b. Will topsoil be stockpiled for reclamation? ☒ Yes ☐ No

c. Will upper subsoil be stockpiled for reclamation? ☒ Yes ☐ No

4. How many acres of vegetation (trees, shrubs, ground covers) will be removed from site? 0.8 acres.

5. Will any mature forest (over 100 years old) or other locally-important vegetation be removed by this project?

☐ Yes ☒ No

6. If single phase project: Anticipated period of construction: 9 months, (including demolition)

7. If multi-phased:

   a. Total number of phases anticipated _____ (number)

   b. Anticipated date of commencement phase 1: _____ month _____ year, (including demolition)

   c. Approximate completion date of final phase: _____ month _____ year.

   d. Is phase 1 functionally dependent on subsequent phases? ☐ Yes ☐ No

8. Will blasting occur during construction? ☐ Yes ☒ No

9. Number of jobs generated: during construction 30 ; after project is complete 0

10. Number of jobs eliminated by this project 0 .

11. Will project require relocation of any projects or facilities? ☒ Yes ☐ No

    If yes, explain:

    Gas regulator facilities - two portions will be removed, and two portions will be added elsewhere (refer to drawing).

12. Is surface liquid waste disposal involved? ☐ Yes ☒ No

    a. If yes, indicate type of waste (sewage, industrial, etc) and amount _____

    b. Name of water body into which effluent will be discharged _____

13. Is subsurface liquid waste disposal involved? ☐ Yes ☒ No Type _____

14. Will surface area of an existing water body increase or decrease by proposal? ☐ Yes ☒ No

    If yes, explain:

15. Is project or any portion of project located in a 100 year flood plain? ☒ Yes ☐ No

16. Will the project generate solid waste? ☒ Yes ☐ No

    a. If yes, what is the amount per month? N/A tons (Construction only)

    b. If yes, will an existing solid waste facility be used? ☐ Yes ☒ No

    c. If yes, give name N/A ; location N/A

    d. Will any wastes not go into a sewage disposal system or into a sanitary landfill? ☒ Yes ☐ No

e. If yes, explain:

The only wastes that will be generated are associated with construction activities. Excess soil and debris will be disposed as Construction and Demolition (C&D) waste.

17. Will the project involve the disposal of solid waste? ☒ Yes ☐ No (Construction debris only)

a. If yes, what is the anticipated rate of disposal? N/A tons/month.

b. If yes, what is the anticipated site life? N/A years.

18. Will project use herbicides or pesticides? ☒ Yes ☐ No (During construction, herbicides will not be used. However, annual maintenance is necessary to maintain bare ground conditions inside the substation. Products formulated for wetlands will likely be required.)

19. Will project routinely produce odors (more than one hour per day)? ☐ Yes ☒ No

20. Will project produce operating noise exceeding the local ambient noise levels? ☐ Yes ☒ No

21. Will project result in an increase in energy use? ☐ Yes ☒ No

If yes, indicate type(s)

22. If water supply is from wells, indicate pumping capacity N/A gallons/minute.

23. Total anticipated water usage per day 0 gallons/day.

24. Does project involve Local, State or Federal funding? ☐ Yes ☒ No

If yes, explain:

25. Approvals Required:

			Type	Submittal Date
City, Town, Village Board	☐ Yes	☒ No		
City, Town, Village Planning Board	☒ Yes	☐ No	Site Plan Approval (Town of Clarkstown)	
City, Town Zoning Board	☒ Yes	☐ No	Special Use Permit	
City, County Health Department	☐ Yes	☒ No		
Other Local Agencies	☒ Yes	☐ No	Town of Clarkstown DEC Town of Clarkstown Hwy. Dept. Rockland Co. Drainage Agency	
Other Regional Agencies	☐ Yes	☒ No		
State Agencies	☐ Yes	☒ No		
Federal Agencies	☐ Yes	☒ No		

C. Zoning and Planning Information

1. Does proposed action involve a planning or zoning decision? ☒ Yes ☐ No

If Yes, indicate decision required:

☐ Zoning amendment	☐ Zoning variance	☐ New/revision of master plan	☐ Subdivision
☒ Site plan	☒ Special use permit	☐ Resource management plan	☐ Other

2. What is the zoning classification(s) of the site?

R-40 (Residential, one-acre minimum)

3. What is the maximum potential development of the site if developed as permitted by the present zoning?

Three (3) one-acre residential lots.

4. What is the proposed zoning of the site?

N/A - Special Use Permit

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?

N/A

6. Is the proposed action consistent with the recommended uses in adopted local land use plans? ☒ Yes ☐ No

7. What are the predominant land use(s) and zoning classifications within a ¼ mile radius of proposed action?

Residential Properties

Three Roads (N. Little Tor Road, South Mountain Road, Denver Drive)

Utilities
- Gas Regulator Station and Lines
- Transmission Towers and Lines (Right-of-Way)
- Cellular Site

8. Is the proposed action compatible with adjoining/surrounding land uses with a ¼ mile? ☒ Yes ☐ No

9. If the proposed action is the subdivision of land, how many lots are proposed? N/A

   a. What is the minimum lot size proposed? _____

10. Will proposed action require any authorization(s) for the formation of sewer or water districts? ☐ Yes ☒ No

11. Will the proposed action create a demand for any community provided services (recreation, education, police, fire protection?

☒ Yes ☐ No

a. If yes, is existing capacity sufficient to handle projected demand? ☒ Yes ☐ No

Police and fire protection may be utilized.

12. Will the proposed action result in the generation of traffic significantly above present levels? ☐ Yes ☒ No

a. If yes, is the existing road network adequate to handle the additional traffic. ☐ Yes ☐ No

D. Informational Details

Attach any additional information as may be needed to clarify your project. If there are or may be any adverse impacts associated with your proposal, please discuss such impacts and the measures which you propose to mitigate or avoid them.

E. Verification

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

Applicant/Sponsor Name Peter T. McGoldrick Date 3/28/08

Signature Peter T McGoldrick

Title Chief Transmission and Substation Engineer

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

PART 2 - PROJECT IMPACTS AND THEIR MAGNITUDE

Responsibility of Lead Agency

General Information (Read Carefully)

1 In completing the form the reviewer should be guided by the question: Have my responses and determinations been **reasonable?** The reviewer is not expected to be an expert environmental analyst.

1 The **Examples** provided are to assist the reviewer by showing types of impacts and wherever possible the threshold of magnitude that would trigger a response in column 2. The examples are generally applicable throughout the State and for most situations. But, for any specific project or site other examples and/or lower thresholds may be appropriate for a Potential Large Impact response, thus requiring evaluation in Part 3.

1 The impacts of each project, on each site, in each locality, will vary. Therefore, the examples are illustrative and have been offered as guidance. They do not constitute an exhaustive list of impacts and thresholds to answer each question.

1 The number of examples per question does not indicate the importance of each question.

1 In identifying impacts, consider long term, short term and cumulative effects.

Instructions (Read carefully)

a. Answer each of the 20 questions in PART 2. Answer **Yes** if there will be **any** impact.

b. **Maybe** answers should be considered as **Yes** answers.

c. If answering **Yes** to a question then check the appropriate box(column 1 or 2)to indicate the potential size of the impact. If impact threshold equals or exceeds any example provided, check column 2. If impact will occur but threshold is lower than example, check column 1.

d. Identifying that an impact will be potentially large (column 2) does not mean that it is also necessarily **significant**. Any large impact must be evaluated in PART 3 to determine significance. Identifying an impact in column 2 simply asks that it be looked at further.

e. If reviewer has doubt about size of the impact then consider the impact as potentially large and proceed to PART 3.

f. If a potentially large impact checked in column 2 can be mitigated by change(s) in the project to a small to moderate impact, also check the **Yes** box in column 3. A **No** response indicates that such a reduction is not possible. This must be explained in Part 3.

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
Impact on Land			
1. Will the Proposed Action result in a physical change to the project site? NO ☐ YES ☒			
Examples that would apply to column 2			
• Any construction on slopes of 15% or greater, (15 foot rise per 100 foot of length), or where the general slopes in the project area exceed 10%.	☒	☐	☐ Yes ☐ No
• Construction on land where the depth to the water table is less than 3 feet.	☐	☐	☐ Yes ☐ No
• Construction of paved parking area for 1,000 or more vehicles.	☐	☐	☐ Yes ☐ No
• Construction on land where bedrock is exposed or generally within 3 feet of existing ground surface.	☒	☐	☐ Yes ☐ No
• Construction that will continue for more than 1 year or involve more than one phase or stage.	☐	☐	☐ Yes ☐ No
• Excavation for mining purposes that would remove more than 1,000 tons of natural material (i.e., rock or soil) per year.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Construction or expansion of a santary landfill.	☐	☐	☐ Yes ☐ No
• Construction in a designated floodway.	☒	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

2. Will there be an effect to any unique or unusual land forms found on the site? (i.e., cliffs, dunes, geological formations, etc.)
☒ NO ☐ YES

• Specific land forms:	☐	☐	☐ Yes ☐ No

Impact on Water

3. Will Proposed Action affect any water body designated as protected? (Under Articles 15, 24, 25 of the Environmental Conservation Law, ECL)
☒ NO ☐ YES

Examples that would apply to column 2			
• Developable area of site contains a protected water body.	☐	☐	☐ Yes ☐ No
• Dredging more than 100 cubic yards of material from channel of a protected stream.	☐	☐	☐ Yes ☐ No
• Extension of utility distribution facilities through a protected water body.	☐	☐	☐ Yes ☐ No
• Construction in a designated freshwater or tidal wetland.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

4. Will Proposed Action affect any non-protected existing or new body of water?
☒ NO ☐ YES

Examples that would apply to column 2			
• A 10% increase or decrease in the surface area of any body of water or more than a 10 acre increase or decrease.	☐	☐	☐ Yes ☐ No
• Construction of a body of water that exceeds 10 acres of surface area.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
5. Will Proposed Action affect surface or groundwater quality or quantity? ☐ NO ☒ YES			
Examples that would apply to column 2			
• Proposed Action will require a discharge permit.	☐	☐	☐ Yes ☐ No
• Proposed Action requires use of a source of water that does not have approval to serve proposed (project) action.	☐	☐	☐ Yes ☐ No
• Proposed Action requires water supply from wells with greater than 45 gallons per minute pumping capacity.	☐	☐	☐ Yes ☐ No
• Construction or operation causing any contamination of a water supply system.	☐	☐	☐ Yes ☐ No
• Proposed Action will adversely affect groundwater.	☐	☐	☐ Yes ☐ No
• Liquid effluent will be conveyed off the site to facilities which presently do not exist or have inadequate capacity.	☐	☐	☐ Yes ☐ No
• Proposed Action would use water in excess of 20,000 gallons per day.	☐	☐	☐ Yes ☐ No
• Proposed Action will likely cause siltation or other discharge into an existing body of water to the extent that there will be an obvious visual contrast to natural conditions.	☐	☐	☐ Yes ☐ No
• Proposed Action will require the storage of petroleum or chemical products greater than 1,100 gallons.	☒	☐	☐ Yes ☐ No
• Proposed Action will allow residential uses in areas without water and/or sewer services.	☐	☐	☐ Yes ☐ No
• Proposed Action locates commercial and/or industrial uses which may require new or expansion of existing waste treatment and/or storage facilities.	☐	☐	☐ Yes ☐ No
• Other Impacts:	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change

6. Will Proposed Action alter drainage flow or patterns, or surface water runoff?
☐ NO ☒ YES

Examples that would apply to column 2

• Proposed Action would change flood water flows (Refer to Attachment for additional details.)	☒	☐	☐ Yes ☐ No
• Proposed Action may cause substantial erosion.	☐	☐	☐ Yes ☐ No
• Proposed Action is incompatible with existing drainage patterns.	☐	☐	☐ Yes ☐ No
• Proposed Action will allow development in a designated floodway. (Refer to Attachment for additional details.)	☒	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON AIR

7. Will Proposed Action affect air quality?
☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action will induce 1,000 or more vehicle trips in any given hour.	☐	☐	☐ Yes ☐ No
• Proposed Action will result in the incineration of more than 1 ton of refuse per hour.	☐	☐	☐ Yes ☐ No
• Emission rate of total contaminants will exceed 5 lbs. per hour or a heat source producing more than 10 million BTU's per hour.	☐	☐	☐ Yes ☐ No
• Proposed Action will allow an increase in the amount of land committed to industrial use.	☐	☐	☐ Yes ☐ No
• Proposed Action will allow an increase in the density of industrial development within existing industrial areas.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON PLANTS AND ANIMALS

8. Will Proposed Action affect any threatened or endangered species?
☒ NO ☐ YES

Examples that would apply to column 2

• Reduction of one or more species listed on the New York or Federal list, using the site, over or near the site, or found on the site.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Removal of any portion of a critical or significant wildlife habitat.	☐	☐	☐ Yes ☐ No
• Application of pesticide or herbicide more than twice a year, other than for agricultural purposes.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

9. Will Proposed Action substantially affect non-threatened or non-endangered species?
☒ NO ☐ YES

Examples that would apply to column 2			
• Proposed Action would substantially interfere with any resident or migratory fish, shellfish or wildlife species.	☐	☐	☐ Yes ☐ No
• Proposed Action requires the removal of more than 10 acres of mature forest (over 100 years of age) or other locally important vegetation.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON AGRICULTURAL LAND RESOURCES

10. Will Proposed Action affect agricultural land resources?
☒ NO ☐ YES

Examples that would apply to column 2			
• The Proposed Action would sever, cross or limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc.)	☐	☐	☐ Yes ☐ No
• Construction activity would excavate or compact the soil profile of agricultural land.	☐	☐	☐ Yes ☐ No
• The Proposed Action would irreversibly convert more than 10 acres of agricultural land or, if located in an Agricultural District, more than 2.5 acres of agricultural land.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• The Proposed Action would disrupt or prevent installation of agricultural land management systems (e.g., subsurface drain lines, outlet ditches, strip cropping); or create a need for such measures (e.g. cause a farm field to drain poorly due to increased runoff).	☐	☐	☐ Yes ☐ No
• Other Impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON AESTHETIC RESOURCES

11. Will Proposed Action affect aesthetic resources? (If necessary, use the Visual EAF Addendum in Section 617.20, Appendix B.)
☒ NO ☐ YES

Examples that would apply to column 2			
• Proposed land uses, or project components obviously different from or in sharp contrast to current surrounding land use patterns, whether man-made or natural.	☐	☐	☐ Yes ☐ No
• Proposed land uses, or project components visible to users of aesthetic resources which will eliminate or significantly reduce their enjoyment of the aesthetic qualities of that resource.	☐	☐	☐ Yes ☐ No
• Project components that will result in the elimination or significant screening of scenic views known to be important to the area.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON HISTORIC AND ARCHAEOLOGICAL RESOURCES

12. Will Proposed Action impact any site or structure of historic, prehistoric or paleontological importance?
☒ NO ☐ YES

Examples that would apply to column 2			
• Proposed Action occurring wholly or partially within or substantially contiguous to any facility or site listed on the State or National Register of historic places.	☐	☐	☐ Yes ☐ No
• Any impact to an archaeological site or fossil bed located within the project site.	☐	☐	☐ Yes ☐ No
• Proposed Action will occur in an area designated as sensitive for archaeological sites on the NYS Site Inventory.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON OPEN SPACE AND RECREATION

13. Will proposed Action affect the quantity or quality of existing or future open spaces or recreational opportunities?
☒ NO ☐ YES

Examples that would apply to column 2

• The permanent foreclosure of a future recreational opportunity.	☐	☐	☐ Yes ☐ No
• A major reduction of an open space important to the community.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON CRITICAL ENVIRONMENTAL AREAS

14. Will Proposed Action impact the exceptional or unique characteristics of a critical environmental area (CEA) established pursuant to subdivision 6NYCRR 617.14(g)?
☒ NO ☐ YES

List the environmental characteristics that caused the designation of the CEA.

Examples that would apply to column 2

• Proposed Action to locate within the CEA?	☐	☐	☐ Yes ☐ No
• Proposed Action will result in a reduction in the quantity of the resource?	☐	☐	☐ Yes ☐ No
• Proposed Action will result in a reduction in the quality of the resource?	☐	☐	☐ Yes ☐ No
• Proposed Action will impact the use, function or enjoyment of the resource?	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change

IMPACT ON TRANSPORTATION

15. Will there be an effect to existing transportation systems?
☒ NO ☐ YES

Examples that would apply to column 2

- Alteration of present patterns of movement of people and/or goods. ☐ ☐ ☐ Yes ☐ No
- Proposed Action will result in major traffic problems. ☐ ☐ ☐ Yes ☐ No
- Other impacts: ☐ ☐ ☐ Yes ☐ No

IMPACT ON ENERGY

16. Will Proposed Action affect the community's sources of fuel or energy supply?

☒ NO ☐ YES

Examples that would apply to column 2

- Proposed Action will cause a greater than 5% increase in the use of any form of energy in the municipality. ☐ ☐ ☐ Yes ☐ No
- 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 major commercial or industrial use. ☐ ☐ ☐ Yes ☐ No
- Other impacts: ☐ ☐ ☐ Yes ☐ No

NOISE AND ODOR IMPACT

17. Will there be objectionable odors, noise, or vibration as a result of the Proposed Action?

☒ NO ☐ YES

Examples that would apply to column 2

- Blasting within 1,500 feet of a hospital, school or other sensitive facility. ☐ ☐ ☐ Yes ☐ No
- Odors will occur routinely (more than one hour per day). ☐ ☐ ☐ Yes ☐ No
- Proposed Action will produce operating noise exceeding the local ambient noise levels for noise outside of structures. ☐ ☐ ☐ Yes ☐ No
- Proposed Action will remove natural barriers that would act as a noise screen. ☐ ☐ ☐ Yes ☐ No
- Other impacts: ☐ ☐ ☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change

IMPACT ON PUBLIC HEALTH

18. Will Proposed Action affect public health and safety?
☒ NO ☐ YES

• Proposed Action may cause a risk of explosion or release of hazardous substances (i.e. oil, pesticides, chemicals, radiation, etc.) in the event of accident or upset conditions, or there may be a chronic low level discharge or emission.	☐	☐	☐ Yes ☐ No
• Proposed Action may result in the burial of "hazardous wastes" in any form (i.e. toxic, poisonous, highly reactive, radioactive, irritating, infectious, etc.)	☐	☐	☐ Yes ☐ No
• Storage facilities for one million or more gallons of liquefied natural gas or other flammable liquids.	☐	☐	☐ Yes ☐ No
• Proposed Action may result in the excavation or other disturbance within 2,000 feet of a site used for the disposal of solid or hazardous waste.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON GROWTH AND CHARACTER OF COMMUNITY OR NEIGHBORHOOD

19. Will Proposed Action affect the character of the existing community?
☒ NO ☐ YES

Examples that would apply to column 2

• The permanent population of the city, town or village in which the project is located is likely to grow by more than 5%.	☐	☐	☐ Yes ☐ No
• The municipal budget for capital expenditures or operating services will increase by more than 5% per year as a result of this project.	☐	☐	☐ Yes ☐ No
• Proposed Action will conflict with officially adopted plans or goals.	☐	☐	☐ Yes ☐ No
• Proposed Action will cause a change in the density of land use.	☐	☐	☐ Yes ☐ No
• Proposed Action will replace or eliminate existing facilities, structures or areas of historic importance to the community.	☐	☐	☐ Yes ☐ No
• Development will create a demand for additional community services (e.g. schools, police and fire, etc.)	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Proposed Action will set an important precedent for future projects.	☐	☐	☐ Yes ☐ No
• Proposed Action will create or eliminate employment.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

20. Is there, or is there likely to be, public controversy related to potential adverse environment impacts?
☒ NO ☐ YES

If Any Action in Part 2 is Identified as a Potential Large Impact or If you Cannot Determine the Magnitude of Impact, Proceed to Part 3

Part 3 - EVALUATION OF THE IMPORTANCE OF IMPACTS

Responsibility of Lead Agency

Part 3 must be prepared if one or more impact(s) is considered to be potentially large, even if the impact(s) may be mitigated.

Instructions (If you need more space, attach additional sheets)

Discuss the following for each impact identified in Column 2 of Part 2:

1. Briefly describe the impact.

2. Describe (if applicable) how the impact could be mitigated or reduced to a small to moderate impact by project change(s).

3. Based on the information available, decide if it is reasonable to conclude that this impact is **important**.

   To answer the question of importance, consider:

   - The probability of the impact occurring
   - The duration of the impact
   - Its irreversibility, including permanently lost resources of value
   - Whether the impact can or will be controlled
   - The regional consequence of the impact
   - Its potential divergence from local needs and goals
   - Whether known objections to the project relate to this impact.

Reset

Orange and Rockland Utilities, Inc.
State Environmental Quality Review - Full Environmental Assessment Form
Little Tor Site, Clarkstown, Rockland County, New York

Part 2 – Project Impacts and Their Magnitude

Impact on Water

6. Will Proposed Action alter drainage flow or patterns, or surface water runoff?

- Proposed Action would change flood water flows.
- Proposed Action will allow development in a designated floodway.

  Description: A gravel driveway currently exists within the flood plain. Paving in the substation and driveway may alter surface water runoff flow direction. A detention basin will be utilized outside of the flood plain for water quality and a zero net change in runoff volume.

ATTACHMENT

2.1.G. NYSDEC SCOPING LIST

617.21
Appendix D
State Environmental Quality Review

Scoping Checklist (

The following checklist of topics is intended as a starting point for developing a detailed scope for a project-specific Draft Environmental Impact Statement. Typically, no one project will require a discussion of all the topic areas contained in this document. Through the scoping process, the list of topics should be refined to reflect issues unique to the proposed project. Topic areas may be deleted, added or elaborated upon, to arrive at the final scoping document.

The purpose of the checklist format is to identify the basic topic areas of the Draft EIS. This is accomplished by reviewing the list and placing a check in the box located to the left of these topics which should be discussed. The model scoping checklist can also be used as a worksheet, including comments, suggestions and identification of the particular example(s) that are relevant to a detailed discussion of the topic or issue that has been checked. Conversely, those topics which are not checked, are issues not associated with the project and may be eliminated from discussion in the Draft EIS.

The next step is to expand the list to include or elaborate on those topics unique to the proposed project. A blank sheet is included at the end of the checklist for such additional information.

The scoping process involves several steps in addition to compiling a list of topics. Scoping also includes discussions on the quantity and quality of informaton required and the methods of obtaining that data.

→NOTE: This check list was designed to be used in conjunction with the section on scoping contained in SEQR Guideline-Draft and Final EIS's. It is also important to emphasize that this checklist should serve only as a model to assist in the scoping of a Draft EIS. It should not be used as a substitute for actively scoping Draft EIS for a specific project.

I. Cover Sheet

All EIS's (Draft or Final) shall begin with a cover sheet that includes:

A. Whether it is a draft or final statement
B. Name or other descriptive title of the project
C. Location (county and town, village or city) of the project
D. Name and address of the lead agency which required preparation of the statement and the name and telephone number of a person at the agency to be contacted for further information
E. Name and address of the preparers of any portion of the statement and a contact name and telephone number
F. Date of acceptance of the Draft EIS
G. In the case of a Draft EIS, the deadline date by which comments are due should be indicated

II. Table of Contents and Summary

A table of contents and a brief summary are required for Draft and Final EIS's.

The summary should include:

A. Brief description of the action
B. Significant, beneficial and adverse impacts, (issues of controversy must be specified)
C. Mitigation measures proposed
D. Alternatives considered
E. Matters to be decided (permits, approvals, funding)

III. Description of the Proposed Action

Place a check in the box to the left of those topics to be included in the draft EIS.

☒ A. PROJECT PURPOSE, NEED AND BENEFITS
1. Background and history
2. Public need for the project, and municipality objectives based on adopted community developments plans
3. Objectives of the project sponsor
4. Benefits of the proposed action
a.) social
b.) economic

☑ B. LOCATION
1. Establish geographic boundaries of the project (use of regional and local scale maps is recommended)
2. Description of access to site
3. Description of existing zoning of proposed site
4. Other:

☑ C. DESIGN AND LAYOUT
1. Total site area
a.) proposed impervious surface area (roofs, parking lots, roads)
b.) amount of land to be cleared
c.) open space
2. Structures
a.) gross leaseable area (GLA), if applicable
b.) layout of buidings (attached, enclosed, separate)
c.) site plans and profile view
d.) material storage
e.) drainage plans
f.) above/underground pipelines
g.) staging area for material handling
3. Parking
a.) pavement area
b.) number of spaces and layout
4. Other:

☑ D. CONSTRUCTION AND OPERATION
1. Construction
a.) total construction period anticipated
b.) schedule of construction
c.) future potential development, on site or on adjoining properties
d.) other:
2. Operation
a.) type of operation
b.) schedule of operation
c.) other:

☒ E. CLOSURE AND POST CLOSURE PLANS (for projects of planned limited life such as landfills)

☑ F. APPROVALS
1. Required changes or variances to the zoning regulations
2. Other permit approval or funding requirements

IV. Environmental Setting

Place a check in the box to the left of those topics to be included in the Draft EIS.

Natural Resource

☑ A. GEOLOGY
☑ 1. Subsurface
a.) composition and thickness of subsurface material
examples:
—depth to, and nature of, bedrock formations and impermeable layers
—occurrence of an extractive mineral resource
—usefulness as construction material
b.) earthquake potential

☑ 2. Surface
a.) List of soil types
b.) discussion of soil characteristics
examples:
—physical properties (indication of soils hydrological (infiltration) capabilities)
—engineering properties (soil bearing capacity)
—agricultural properties (soil profile characteristics) when agricultural land resources are involved
c.) distribution of soil types at project site
d.) suitability for use
examples:
—agriculture
—recreation
—construction
—mining
e.) other:

☑ 3. Topography
a.) description of topography at project site
examples:
—slopes
—prominent or unique features
b.) description of topography of surrounding area

☑ B. WATER RESOURCES
1. Groundwater
a.) location and description of aquifers and recharge areas
examples:
—depth of water table
—seasonal variation
—quality
—quantity
—flow
b.) identification of present uses and level of use of groundwater
examples:
—location of existing wells
—public/private water supply
—industrial uses
—agricultural uses

☑ 2. Surface water
- a.) location and decription of surface waters located on project site or those that may be influenced by the project
  examples:
  —seasonal variation
  —quantity
  —classification according to New York State Department of Health
- b.) identification of uses and level of use of all surface waters
  examples:
  —public/private water supply
  —industrial uses
  —agricultural uses
  —recreational
- c.) description of existing drainage areas, patterns and channels
- d. discussion of potential for flooding, siltation, erosion and eutrophication of water supply

☐ C. AIR RESOURCES

☐ 1. Climate
- a.) discussion of seasonal variations and extremes
  examples:
  —temperature
  —humidity
  —precipitation
  —wind

☐ 2. Air quality
- a.) description of existing air quality levels
  examples:
  —list the National and State Air Quality Standards for the project area and the compliance status for each standard
- b.) identification of existing sources or pollutants-fixed or mobile
- c.) identification of any sensitive recepters in project area
  examples:
  —hospitals, schools, nursing homes, parks
- d.) description of existing monitoring program (if applicable)

☑ D. TERRESTRAL AND AQUATIC ECOLOGY

1. Vegetation
- a.) list vegetation types on the project site and within the surrounding area
- b.) discussion of site vegetation characteristics
  examples:
  —species presence and abundance
  —age
  —size
  —distribution
  —dominance
  —community types
  —unique, rare and endangered species
  —value as habitat for wildlife
  —productivity

☑ 2. Fish, Shellfish and Wildlife
- a.) list of fish, shellfish and wildlife species on the project site and within surrounding area, including migatory and resident species
- b.) discussion of fish, shellfish and wildlife population characteristics
  examples:
  —species presence and abundance
  —distribution
  —dominance
  —unique, rare and endangered species
  —productivity

☑ 3. Wetlands
- a.) list wetland areas within or contiguous to the project site
- b.) discuss wetland characteristics
  examples:
  —acreage
  —vegetative cover
  —classification
  —benefits of wetland such as flood and erosion control, recreation

☒ E. AGRICULTURAL RESOURCES

1. Soils
- a.) list soils by name, slope and soil group ranking within NYS Land Classification System (1 NYCRR 370)
- b.) number of acres within each group
- c.) location of site on soil survey map

☒ 2. Agricultural land management system(s)
- a.) inventory of existing erosion control and drainage systems
  examples:
  —subsurface drain lines
  —outlet/diversion ditches
  —strip cropping
  —diversion terraces
- b.) relationship of proposed action to existing soil and water conservation plans (if applicable)

- [x] 3. Associated operations
  - a.) number and types of farm operations on and adjacent to site
    examples:
    —dairy
    —grain
    —orchard
  - b.) type and proximity of farm related facilities
    examples:
    —storage units/barns
    —sorting/packing houses
    —refrigeration units
    —roadside markets
  - c.) access to cropland (including detached fields)
  - d.) access for farm equipment to public roads

Human Resources

- [x] A. TRANSPORTATION
  - [ ] 1. Transportation services
    - a.) description of the size, capacity and condition of services
      examples:
      —roads, canals, railroads, bridges
      —parking facilities
      —traffic control
      —access/egress from site
    - b.) description of current level of use of services
      examples:
      —a.m. and p.m. peak hour traffic flow
      —vehicle mix
      —source of existing traffic
  - [x] 2. Public transportation
    - a.) description of the current availability of service
    - b.) description of present level of use
  - [x] 3. Pedestrian environment
  - [x] 4. Other:
- [x] B. LAND USE AND ZONING
  - [x] 1. Existing land use and zoning
    - a.) description of the existing land use of the project site and the surrounding area
      examples:
      —commercial
      —residential
      —agricultural
      —business
      —retail
      —industrial
      —vacant
    - b.) description of existing zoning of site and surrounding area
    - c.) description of any affected agricultural district or other farmland retention program boundary in and surrounding the site
  - [x] 2. Land use plans
    - a.) description of any land use plans or master plans which include project site and surrounding area
    - b.) discussion of future development trends or pressures
  - [x] 3. Other: SPECIAL USE PERMIT
- [x] C. COMMUNITY SERVICE (for this section include a list of existing facilities and a discussion of existing levels of usage and projected future needs)
  - [x] 1. Educational facilities
  - [ ] 2. Police protection
  - [ ] 3. Fire protection
  - [x] 4. Health care facilities
  - [x] 5. Social services
  - [x] 6. Recreational facilities
  - [ ] 7. Utilities
  - [x] 8. Public water supply
  - [x] 9. Solid waste disposal
  - [x] 10. Sewage treatment facilities
  - [ ] 11. Other: CELLULAR TOWERS
- [x] D. DEMOGRAPHY
  - [ ] 1. Population characteristics
    - a.) discussion of existing population parameters
      examples:
      —distribution
      —density
      —household size and composition
    - b.) discussion of projections for population growth
  - [ ] 2. Other:
- [x] E. CULTURAL RESOURCES
  - [x] 1. Visual resources
    - a.) description of the physical character of the community
      examples:
      —urban vs. rural
    - b.) description of natural areas of significant scenic value
    - c.) identification of structures of significant architectural design
  - [x] 2. Historic and archaeological resources
    - a.) location and description of historic areas or structures listed on State or National Register or designated by the community, or included on Statewide Inventory

b.) identification of sites having potential significant archaeological value include results of cultural resource survey, if conducted

☑ 3. Noise
- a.) identification of existing level of noise in the community
- b.) identification of major sources of noise
  examples
  —airports
  —major highways
  —industrial/commercial facilities

NAME

☑ 4. Other: EMF (NAME)

V. Significant Environmental Impacts

Identify those aspects of the environmental setting in Section IV that may be adversely or beneficially affected by the proposed action and require discussion.

VI. Mitigation Measures to Minimize Environmental Impact.

Describe measures to reduce or avoid potential adverse impacts identified in Section V. The following is a brief listing of typical measures used for some of the major areas of impact.

Natural Resource

☐ A. GEOLOGY
- 1. Subsurface
  - a.) use excavated material for land reclamation
  - b.) use facility wastes (ash, sludge) for land reclamation
  - c.) other:
- 2. Surface
  - a.) use topsoil stockpiled during construction for restoration and landscaping
  - b.) minimize disturbance of non-construction sites
  - c.) design and implement soil erosion control plan
  - d.) other:
- 3. Topography
  - a.) avoid construction on areas of steep slope
  - b.) design adequate soil erosion devices to protect areas of steep slope
  - c.) other:

☐ B. WATER RESOURCES
- 1. Groundwater
  - a.) design/modify system of treatment for stormwater runoff of wastewater prior to recharge of groundwater
  - b.) maintain permeable areas on the site
  - c.) institute a program for monitoring water quality in adjacent wells
  - d.) require secondary or tertiary containment of products/wastes
  - e.) contingency plans for accidental spills
  - f.) other:
- 2. Surface water
  - a.) ensure use of soil erosion control techniques during construction and operation to avoid siltation
    examples:
    —hay bales
    —temporary restoration of vegetation to disturbed areas
    —landscaping
  - b.) design adequate stormwater control system
  - c.) construct/modify sewage treatment facilities
  - d.) restrict use of salt or sand for road and parking area snow removal
  - e,) avoid direct discharges to surface water resources
  - f.) require secondary or tertiary containment of products/wastes
  - g.) contingency plans for accidental spills
  - h.) other:

☐ C. AIR RESOURCES
- 1. Air quality
  - a.) assure proper construction practices
    examples:
    —fugitive dust control
    —proper operation and maintenance of construction equipment
  - b.) design traffic improvements to reduce congestion and vehicle delay
  - c.) install and ensure the proper operation of emission odor control devices
  - d.) initiate a program for monitoring of air quality
  - e.) other:

☐ D. TERRESTRAL AND AQUATIC ECOLOGY
- 1. Vegetation
  - a.) restrict clearing to only those areas necessary
  - b.) preserve part of site as a natural area
  - c.) after construction, landscape site with naturally occurring vegetation
  - d.) purchase open space at another location and dedicate to local government or conservation organization

2. Fish, Shellfish and Wildlife
   a.) provide adequate habitat (shelter and food) for remaining wildlife species
   b.) schedule construction to avoid sensitive periods of fish, shellfish and wildlife cycles
   c.) other:

☐ E. AGRICULTURAL RESOURCES

1. Soils
   a.) select/design project to avoid viable agricultural land
   b.) reclaim disturbed agricultural soil profiles for agricultural purposes
   c.) schedule activity when crops are off fields and soil is firm
   d.) other:
2. Agricultural land management systems
   a.) re-establish access drives, fence—lines and any disturbed land management systems
   b.) re-establish any disturbed erosion control and drainage systems
   c.) install soil and water management practices to restore or enhance soil drainage and stability
   d.) preserve open space for agricultural use
   e.) develop lease back arrangements to allow continued agricultural use on all or portion of site
   f.) other:

Human Resources

☐ A. TRANSPORTATION

1. Transportation
   a.) design adequate and safe access to project site to handle projected traffic flow
   b.) install adequate traffic control devices
   c.) optimize use of parking areas
   d.) encourage car pooling and operation of facility during non-peak traffic times
   e.) design special routing and restricted hours for delivery truck traffic
   f.) other:
2. Public transportation
   a.) adjust public transportation routes and schedules to service the facility
   b.) encourage use of public transportation by using incentive programs for employees or by selling tickets in facility
   c.) other:

☐ B. LAND USE AND ZONING

1. Existing land use and zoning
   a.) design project to comply with existing land use plans
   b.) design functional and visually appealing facility to set standard and precedent for future surrounding land use
   c.) other:

☐ C. COMMUNITY SERVICES

1. Police protection
   a.) minimize local police protection responsibilities by providing private security force
   b.) provide security systems, alarms for facility
   c.) provide equipment, funds or services directly to the community
   d.) other:
2. Fire protection
   a.) use construction materials that minimize fire hazards
   b.) incorporate sprinkler and alarm systems into building design
   c.) provide equipment, funds or services directly to the community
   d.) other:
3. Utilities
   a.) install utility services underground
   b.) incorporate water saving fixtures into facility design
   c.) incorporate energy-saving measures into facility design
   d.) other:

☐ D. CULTURAL RESOURCES

1. Visual resources
   a.) design exterior of structure to physically blend with existing surroundings
   b.) minimize visual impact through thoughtful and innovative design of lighting and signs (consider: height, size, intensity, glare and hours of lighting operation)
   c.) design landscaping to be visually pleasing and to serve as a buffer between surrounding land uses, parking areas, operational equipment and facilities
   d.) other:
2. Historic and archaeological resources
   a.) Prepare a plan, including measures to mitigate impacts to historic/archaeological resources through data recovery, avoidance and/or restriction of project activities

b.) develop measures to convey cultural information to the community (e.g. through scientific/popular reports, displays)
c.) preserve architecturally significant structures and make an adequate permanent photographic and statistical record of those that must be destroyed
d.) other:

3. Noise
a.) schedule construction/operation to occur during "normal business" hours minimizing noise impact during sensitive times (early morning, night)
b.) assure adherence to construction noise standards
c.) design berms and landscaping to block and absorb noise
d.) other:

VII. Adverse Environmental Effects that Cannot be Avoided if the Project is Implemented

Identify those adverse environmental effects in Section V that can be expected to occur regardless of the mitigation measures considered in Section VI.

VIII. Alternatives

This section contains categories of alternatives with examples. Discussion of each alternative should be at a level sufficient to permit a comparative assessment of costs, benefits and environmental risks for each alternative. It is not acceptable to make simple assertions that a particular alternative is or is not feasible. Identify those categories of alternatives which should be included in the EIS by placing a check in the box located to the left of the topic.

☐ A. ALTERNATIVE DESIGN AND TECHNOLOGIES
1. Site layout
a.) density and location of structures
b.) location of access routes, parking and utility routes
2. Orientation
a.) compatibility with slope and drainage patterns
b.) site size and set back requirements
2. Technology
a.) pollution control equipment
b.) innovative vs. proven technologies
4. Mix of activities
a) addition of businesses which would affect the operational nature of the facility

☑ B. ALTERNATIVE SITES
1. Limiting factors
a.) availability of land
b.) suitability of alternative site to accomodate design requirements
c.) availability of utilities
d.) suitable market area
e.) compatibility with local zoning and master plan
f.) compatibility with certified agricultural districts
g.) compatibility with regional objectives
h.) accessibility of site to transportation routes and service population

☑ C. ALTERNATIVE SIZE
1. Increase or decrease project size to minimize possible impacts
2. Increase or decrease project size to correspond to market and community needs

☒ D. ALTERNATIVE CONSTRUCTION/ OPERATION SCHEDULING
1. Commence construction at a different time
2. Phase construction/operation
3. Restrict construction/operation work schedule

☑ E. ALTERNATIVE LAND USE
1. Suitability of site for other uses
a.) other types of commercial uses
b.) other types of industry
c.) different types of housing
d.) agricultural use
e.) other:

☑ F. NO ACTION
1. Impacts of no action
a.) effect on public need
b.) effect on private developers' need
c.) beneficial or adverse environmental impacts

☒ G. OTHER:

IX. Irreversible and Irretrievable Commitment of Resources

Identify those natural and human resources listed in Section IV that will be consumed, converted or made unavailable for future use.

X. Growth Inducing Aspects (If applicable)

Describe in this section the potential growth aspects the proposed project may have. Listed on the next page are examples of topics that are typically affected by the growth induced by a project.

* UPDATING EXISTING SUBSTATION

☐ A. POPULATION
1. Increases in business and resident population due to the creation or relocation of business
2. Increases in resident population due to the construction of housing

☐ B. SUPPORT FACILITIES
1. business created to serve the increased population
2. Service industries created to supply new facility

☑ C. DEVELOPMENT POTENTIAL
1. Introduction or improvement of infrastructure (roads, waste disposal, sewers, water) to service proposed project
2. Creation of further growth potential by construction of improved infrastructure

FOR TAKING THE BURDEN OFF OF OTHER SUBSTATIONS ?

☐ D. OTHER:

XI. Effects on the Use and Conservation of Energy Resources (If applicable)

Identify the energy sources to be used, anticipated levels of consumption and ways to reduce energy consumption. The examples listed below are typical issues to be considered when addressing this topic.

☒ A. PROPOSED ENERGY SOURCES AND ALTERNATIVES

☒ B. ANTICIPATED SHORT-TERM/LONG-TERM LEVELS OF ENERGY CONSUMPTION

☒ C. INDIRECT EFFECTS ON ENERGY CONSUMPTION
1. Increased dependence on automobile use
2. Increased levels of traffic due to proposed project

☒ D. ENERGY CONSERVATION MEASURES
1. Design methods to reduce fuel use for heating, cooling and lighting
   a.) conventional technology
   examples:
   —insulation
   —thermopane windows
   —use of low wattage lights
   b.) innovative technology
   examples:
   —heat pumps
   —solar panels
   —wind energy
   —use of waste heat from an industrial plant
   —use of recycled materials
   c.) efficient layout
   examples:
   —orientation of structures in relation to summer and winter sunlight
   —clustering of structures to maximize common walls
   —shortening of utility runs
   —shared insulation and heating
2. Indirect energy benefits
   a.) location and design of facility to accomodate mass transit
   b.) use of shuttle buses
   c.) location of facility to minimize travel distance

☒ E. OTHER:

XII. Assessment of Unavailable Information

In certain situations involving major developments (such as an oil supertanker port, a liquid propane/natural gas storage facility, a resource recovery facility or a hazarduous waste treatment, storage or disposal facility), information regarding reasonably foreseeable catastrophic impacts to the environment may not be available. Such information may be unavailable because the means to obtain it are unknown or the cost of obtaining it is exhorbitant, or because there is uncertainty about its validity. If such information is essential to an agency's SEQR finding, the EIS must:

A. Identify the nature and relevance of such unavailable or uncertain information; and
B. Provide a summary of existing credible scientific evidence , if available; and
C. Assess the likelihood of occurrence and consequences of the potential impact, even if the probability is low, using theoretical approaches or research methods generally accepted in the scientific community.

This assessment should be applied only where reasonably foreseeable catastrophic impacts to the environment are possible and it is not intended to be applied in the review of such actions as shopping malls, residential subdivisions and commercial facilities even though the size and scale of some such projects may be extensive.

XIII. Appendices

Following is a list of materials typically used in support of the EIS.

A. List of underlying studies, reports and information considered and relied on in preparing statement

B. List all federal, state, regional, or local agencies, organizations, consultants and private

SIMPLE TO START !

persons consulted in preparing the statement

C. Technical exhibits (if any) at a legible scale

D. Relevent correspondence regarding the projects may be included (required in the Final EIS)

Additional Draft EIS Scoping Topics

Indicate any additional topics for discussion in the Draft EIS. Attach additional sheets if necessary.

- LIGHTING
- CONSTRUCTION

TOWN OF CLARKSTOWN
OFFICE OF THE ASSESSOR
INTER-OFFICE MEMORANDUM

DATE : **JANUARY 28, 2011**

TO : **JOANNE LANZA, SENIOR ENGINEER**

FROM : Cathy L. Conklin, IAO, Assessor

RE : Updated Est. Taxes for Proposed Substation
CORNER S. MTN. RD. & N. LITTLE TOR RD.

Based upon the information you have provided on estimated costs to construct the above-referenced substation, the current equalization rate of 30.50% and the 2011 County/Town/special district rates and 2010 Clarkstown CSD rates, I estimate the additional real property tax generated to be as follows:

School Tax	$177,988
County/Town Tax	$ 91,313
Combined Total	$269,301

If you require any further information, please do not hesitate to contact me.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

Joe Martens
Acting Commissioner

February 14, 2011

Douglas J. Chabrak
C M X Engineering
1311 Mamaroneck Avenue, Suite 50
White Plains, NY 10604

Dear Mr. Chabrak:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Construction of New Electric Substation, Project 090 13 7501, Little Tor Rd and S. Mountain Rd, site as indicated on the map you provided, located in the Town of Clarkstown, Rockland County.

We have no records of rare or state-listed animals or plants, significant natural communities or other significant habitats, on or in the immediate vicinity of your site. PLEASE NOTE: This Project is NEAR High Tor NY State Park.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities and other significant habitats maintained in the Natural Heritage Data bases. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Sincerely,

Tara Salerno, Information Services
New York Natural Heritage Program

Enc.

cc: Region 3
Tom Lyons, NYS OPRHP, Empire State Plaza, Bldg. #1, 17th flr, Albany

124

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1620
Phone: (845) 256-3054 **FAX:** (845) 255-4659
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

September 25, 2009

RECEIVED
SEP 30 2009
PARSIPPANY

Douglas J. Chabrak
CMX
20 Waterview Boulevard
PO Box 5245
Parsippany, NJ 07054-6245

Re: Orange & Rockland Utilities – Little Tor Substation
Town of Clarkstown, Rockland County
DEC Pre-Application ID No. 3-3920-00626/00001
Notice of Permit Requirements

Dear Mr. Chabrak:

The New York State Department of Environmental Conservation (DEC or Department) has reviewed the information provided in your August 4, 2009 submission requesting written determination of "no impact" relative to Article 11. According to the information provided, the proposed project involves the construction of an electrical substation, access driveway and stormwater management facilities. The site is located at the intersection of Little Tor Road and South Mountain Road in the town of Clarkstown, Rockland County. The site currently contains an electrical utility line easement, A Verizon Building previously disturbed uplands, and wetlands under jurisdiction of the Army Corps of Engineers (ACOE). Based upon review of the plans provided, Department staff has determined that the proposed project will not result in a "take" of species protected under Article 11 of the Environmental Conservation Law (ECL). This is based upon the following plans: Little Tor Substation (Grading Site Plan), dated 5/19/08 and last revised 1/20/09, Little Tor Substation (Tree Removal Plan) dated 5/19/08 with no revisions and the mitigation measures proposed in your August 4, 2009 correspondence. Should plans be modified significantly, revisions should be re-submitted for further review and determination

As your August 4, 2009 correspondence indicates, a Nationwide Permit (NWP) is required from the Army Corps of Engineers (ACOE) for the proposed improvements to an existing gravel driveway. Pursuant to Section 401 of U.S. Public Law 95-217 and 33 USC 1341 of 1977, 1984, a DEC Water Quality Certification (WQC) is required for all projects requiring a federal permit. Based upon review of the proposed plans, the improvements may fall under NWP # 3 (Maintenance) as this NWP allows for repair, rehabilitation or replacement of currently serviceable structures and also allows for minor deviations in the structures configuration or filled area. However, this determination must be made by the ACOE. This particular NWP is covered under a DEC blanket program which does not require an individual WQC permit from the Department. Should the ACOE determine that the project does not fall under this NWP; an individual WQC may be required.

Re: **Orange & Rockland Utilities – Little Tor Substation**
Town of Clarkstown, Rockland County
DEC Pre-Application ID No. 3-3920-00626/00001
Notice of Permit Requirements

Please also be aware that compliance with the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-0-08-001) is required for the proposed disturbances of over 1 acre of land. When other UPA permits are required (including individual WQC permits), the project sponsor must submit a preliminary Stormwater Pollution Prevention Plan (SWPPP) to the appropriate Regional DEC office at the time all other necessary UPA permit applications are submitted. The Preliminary SWPPP must include sufficient information to demonstrate that the construction activity qualifies for authorization under the General Permit. Authorization for coverage under the SPDES General Permit is not granted until approval of the SWPPP and issuance of any necessary DEC permits.

Permit application forms can be located at the following Department web address: http://www.dec.ny.gov/permits/6222.html. If you have any comments or questions or would like to discuss this further, please feel free to contact me at (845) 256-3050.

Sincerely,

John W. Petronella
Environmental Analyst
Division of Environmental Permits

United Water

July 24, 2006

Orange & Rockland Utilities
390 W. Rte 59
Spring Valley, New York 10977

Attn: Mr. Michael Homenick

Re: S. Mountain Rd. & Little Tor Rd.

Dear Mr. Homenick:

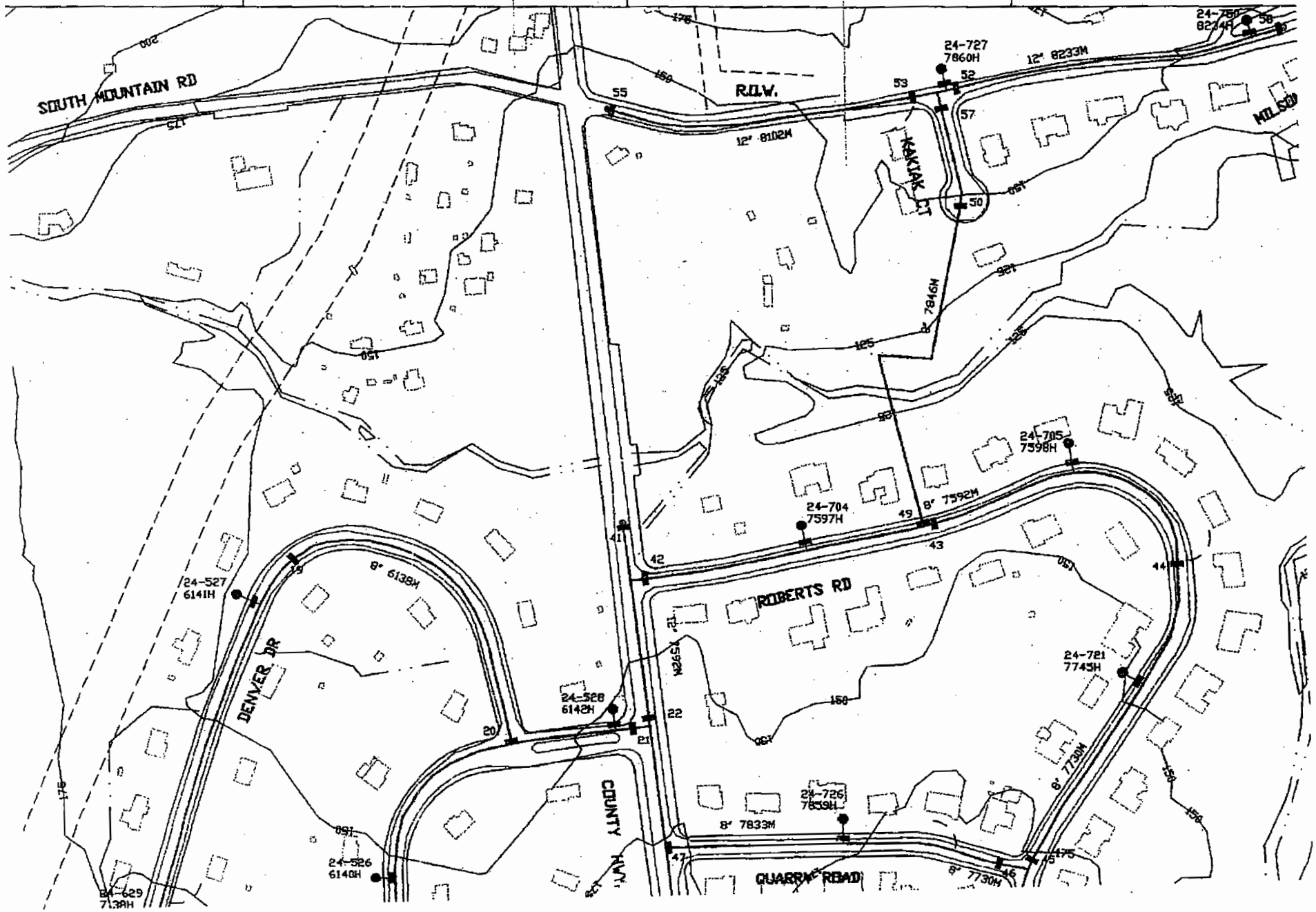
Concerning your inquiry regarding water service in the vicinity of the referenced roads, please be aware that there are no services of record in that area. Also attached, for your information, is the relevant section of our Distribution Map showing the proximity of United Water's mains to the site in question.

Feel free to contact me if you have any questions or require additional information.

Best regards,

Tanyo Parashkevov

Tanyo Parashkevov
Project Manager


7
8
9
10
SOUTH MOUNTAIN RD
R.O.W.
12" 8102M
12" 8233M
24-727
7860H
KAKIAK CT
8" 7846M
24-705
7598H
24-704
7597H
8" 7592M
ROBERTS RD
24-721
7745H
8" 7730M
24-527
6141H
8" 6138M
DENVER DR
24-528
6142H
COUNTY HWY
24-726
7659H
8" 7833M
24-526
6140H
QUARRY ROAD
8" 7730M

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, Albany, New York 12233-4757
Phone: (518) 402-8935 • **FAX:** (518) 402-8925
www.dec.state.ny.us

Alexander B. Grannis
Commissioner

November 5, 2007

RECEIVED
NOV 07 2007
O.R.U., INC.
ENVIRONMENTAL SERVICES
DEPARTMENT

Lindsay Charniga
Orange & Rockland Utilities, Inc
390 West Rte 59
Spring Valley, NY 10977-5300

Dear Ms. Charniga:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed New Substation and Upgrade of an existing Gas Regulator Station, sites as indicated on the map you provided, located at South Mountain Rd and N. Little Tor Rd, in the Town of Clarkstown, Rockland County.

We have no records of known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the immediate vicinity of your site.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain any information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. For these reasons, we cannot provide a definitive statement on the presence or absence of rare or state-listed species, or of significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities and other significant habitats maintained in the Natural Heritage Data bases. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

Sincerely,
Jean Pietrusiak
Jean Pietrusiak, Information Services
NY Natural Heritage Program

Encs.
cc:

August 4, 2009

SENT VIA OVERNIGHT MAIL
Robyn Niver
Endangered Species Biologist
US Fish and Wildlife Service
New York Field Office
3817 Luker Road
Coutland, NY 13045

RE: **Request for Endangered and Threatened Species Technical Assistance**
Proposed Orange & Rockland Utilities Little Tor Substation
Section 34.05 – Block 1 – Lots 5 & 6
Town of Clarkstown, Rockland County, New York
Our Project Number 090137501

Dear Ms. Niver:

Please accept this letter as a request for Technical Assistance pursuant to the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C.1531 *et seq*) for the above-referenced site. The project is not federally funded but a federal wetlands permit is anticipated (Nationwide Permit) for improvements to an existing gravel driveway. Additionally, the project is subject to the requirements of the State Environmental Quality Review Act (SEQR). Included herewith are the following materials to assist your review:

- 7-½ minute U.S.G.S. topographical quad map (Thiells, NY Quadrangle) showing the approximate project location;
- Site photographs keyed to their location on the submitted drawings;
- Plans entitled *Grading Plan* and *Tree Removal Plan*, Little Tor Substation, Orange & Rockland Utilities, Inc. prepared by CMX;
- New York Natural Heritage Program Response Letter;
- Phase I Habitat Survey for Bog Turtle;
- USFWS List of Federally-listed and candidate species potentially found within Rockland County; and
- Tree Identification List and Graphs, prepared by CMX.

Site Description

The subject site is located at the intersection of Little Tor Road and South Mountain Road in the Town of Clarkstown, Rockland County, New York. The site currently contains an electrical utility line easement, a Verizon Building, disturbed uplands, freshwater wetlands and the Hackensack River. The uplands are disturbed because Orange and Rockland has demolished and removed several old, dilapidated dwellings from the site.

20 WATERVIEW BOULEVARD | PO BOX 5245 | PARSIPPANY, NJ 07054-6245
TEL 973.299.7970 | FAX 973.334.5588 | WWW.CMXENGINEERING.COM

ARIZONA FLORIDA MARYLAND NEVADA NEW JERSEY NEW YORK PENNSYLVANIA MEXICO

Freshwater wetlands exist within the site and have been delineated by CMX, and are currently under review by the U.S. Army Corps of Engineers. The tree canopy within the limit of disturbance is moderate to somewhat spares due to past disturbances and is dominated by White Ash (*Fraxinus americana*) and Sugar Maple (*Acer saccharum*). Please refer to the enclosed Figures, Plans and Tree Identification List and Graphs.

Project Description

The proposed project involves the construction of an electrical substation, access driveway and stormwater management facilities. Access to the facility will be achieved by utilizing and improving an existing gravel driveway connecting to Little Tor Road. There are no water or sewer facilities proposed, and the facility will most likely be unlit. The site will be unmanned except for occasional maintenance by technicians.

Minor tree removal in the amount of 112 trees will be necessary for construction of the facility.

Habitat Assessments

According to the list of Federally-listed and candidate species potentially found within Rockland County (8-4-09), the only listed species may be found in the project vicinity are the Indiana Bat (*Myotis sodalist*), its summer habitat, and Bog Turtle (*Glyptemys muhlenbergii*).

Based on site visits and desktop research, it is determined that the project has the potential to affect Indiana bat and bog turtle while the other listed species are of no consequence to the proposed project.

a. Indiana Bat (*Myotis sodalis*)

Ideal Indiana Bat habitat includes limestone caves for winter hibernation and riparian or floodplain areas for female and juvenile summer foraging. Males forage over floodplain ridges and usually roost in caves. These documented hibernation and foraging habitats are not found onsite. However, between April and August, Indiana Bats are known to roost in trees that provide access to protected or hollow spaces, such as a hollow dead tree or flakey Shagbark Hickory. The site is generally covered in mid-successional woodlands. Based on a tree inventory completed by CMX, approximately 112 trees 6-inches at DBH or larger will be removed for the project to construct the facility. Refer to the Tree ID List and Graphs, as well as the color photographs enclosed.

CMX concludes that based on the technical information submitted, the project proponent proposes a timing restriction on removal of trees located within the limit of disturbance between April 1 and October 31 of each year. We believe that this timing restriction is sufficient to protect Indiana Bat and as a result we conclude that the project may affect, but is not likely to adversely affect, Indiana Bat.

b. Bog Turtle (*Glyptemys muhlenbergii*)

CMX engaged the services of a qualified bog turtle surveyor (Scott Angus) to complete a Phase I Habitat Survey. A copy of the survey is enclosed and the results indicate that no potential bog turtle habitats were identified.

This office respectfully requests written concurrence relative to the proposed project so that the project proponent can implement the Nationwide Permit and include the Service's findings in the municipal environmental documentation under the State Environmental Quality Act. Thank you for your assistance in this matter and please do not hesitate to contact me at the number listed below or at Dchabrak@cmxengineering.com if you have any questions regarding this request.

Very truly yours,

CMX

Douglas J. Chabrak
Project Manager

Enclosures

c: Michael Homenick, O&R w/ encl.
Chuck Utschig, CMX w/o encl.

N:\project\2009\0901375\01\Letters\niver usfws request 8-4-09.doc

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Field Office
3817 Luker Road
Cortland, NY 13045
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo

To: Douglas Chabrak Date: Aug 19, 2009

USFWS File No: 60512

Regarding your: ☒ Letter ☐ FAX ☐ Email Dated: August 4, 2009

For project: Phase 1 habitat survey for bog turtle for the Little Tor Substation

Located: South Mountain and Little Tor Roads

In Town/County: Town of Clarkstown / Rockland County

Pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the U.S. Fish and Wildlife Service:

☐ Acknowledges receipt of your "no effect" and/or no impact determination. No further ESA coordination or consultation is required.

☒ Acknowledges receipt of your determination. Please provide a copy of your determination and supporting materials to any involved Federal agency for their final ESA determination.

☐ Is taking no action pursuant to ESA or any other legislation at this time but would like to be kept informed of project developments.

As a reminder, until the proposed project is complete, we recommend that you check our website (http://www.fws.gov/northeast/nyfo/es/section7.htm) every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project area is current. Should project plans change or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

USFWS Contact(s): Robyn A[illegible]

Supervisor: [illegible] Date: 8/19/09

B

PHASE I HABITAT SURVEY

for

BOG TURTLE (*Glyptemys {Clemmys} muhlenbergii*)

for the

LITTLE TOR SUBSTATION

Town of Clarkstown
Rockland County
New York

July 21, 2009

Prepared For:

CMX, Inc.
20 Waterview Boulevard
P.O. Box 5245
Parsippany, NJ 07054-6245
Attn: Douglas J. Chabrak

Prepared By:

AMY S. GREENE ENVIRONMENTAL CONSULTANTS, INC.
4 Walter E. Foran Boulevard, Suite 209
Flemington, New Jersey 08822
ASGECI Project #3128

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APPENDIX A FIGURES

APPENDIX B PHOTOGRAPHS

APPENDIX C USFWS/PAFBC BOG TURTLE HABITAT FIELD FORMS

Introduction

Amy S. Greene Environmental Consultants, Inc. (ASGECI) performed a Phase I bog turtle *(Glyptemys {Clemmys} muhlenbergii)* habitat survey that is located within the Little Tor Substation site owned by The Orange and Rockland Utilities, Inc.

The proposed project is located adjacent to the intersection of Little Tor Road and South Mountain Road in the town of Clarkstown, Rockland County, New York (Appendix A- Figures). Photographs of the project area are included in Appendix C.

On June 8, 2009, Scott Angus (ASGECI staff USFWS Recognized Qualified Bog Turtle Surveyor for New York) performed the Phase I survey on the wetlands associated with the project in accordance with methodologies outlined in the US Fish and Wildlife Service's (USFWS) "Bog Turtle *(Glyptemys {Clemmys} muhlenbergii)* Northern Population Recovery Plan (May 2001, rev. March 2006)". This report highlights the findings of the study.

Purpose of Study

The bog turtle's northern population has been listed as threatened by the USFWS pursuant to Section 7 of the Endangered Species Act of 1973. USFWS guidelines require that surveys for bog turtle habitat (Phase I Bog Turtle Habitat Survey) be performed to determine if potential bog turtle habitat occurs in the vicinity of or within a proposed project limit, in a region where bog turtle habitat is known to be present. If potential bog turtle habitat is present then the USFWS may require a visual bog turtle survey (Phase II Bog Turtle Survey).

Survey Methodology

Analysis of aerial photography, County soil survey and USFWS National Wetlands Inventory mapping were used to survey for potential bog turtle habitat. As mentioned above, an onsite field survey was also conducted. The entire project area was traversed on foot. Searches upstream and downstream at least 300 feet or to the greatest extent possible of the tributaries were conducted on foot to determine if there are any wetlands that could be classified as potential bog turtle habitats. Copies of the USFWS Bog Turtle Habitat Evaluation Field Forms are included in Appendix D.

Bog Turtle Range and Habitat

The bog turtle occurs discontinuously in western, central, and southern New York; western Connecticut and Massachusetts; New Jersey; northern Delaware and Maryland; southeastern and northwestern Pennsylvania; southwestern Virginia; and western North Carolina (Conant 1975). In New York, bog turtle populations may occur in Albany, Columbia, Dutchess, Genesee, Orange, Oswego, Putnam, Seneca, Sullivan, Ulster, and Westchester Counties. Historic records come from Albany, Monroe, Onondoga, Rensselaer, Rockland, Sullivan, Warren and Wayne Counties. Populations in Otsego and Tompkins Counties are thought to be extirpated.

Habitat for bog turtle includes sunlit marshy meadows, spring seeps, bogs, and fens, usually with shallow slow-moving water (Conant 1975; Behler and King 1997). Vegetation can include

cattails (*Typha latifolia, T. angustifolia*), tussock sedge (*Carex stricta)*, other sedge species *(Carex spp., Cyperus spp., Dulichium sp.*), rushes (*Juncus spp.*), bulrushes (*Scirpus spp.*), spikerushes (*Eleocharis spp.*), jewelweed (*Impatiens spp.*), alders (*Alnus spp.*), skunk cabbage (*Symplocarpus foetidus*), arrow-leaved tearthumb (*Polygonum sagittatum*), rice cut-grass (*Leersia oryzoides*), and other open canopy wetland species (Cromartie, et al. 1982). Other elements listed in habitat descriptions include soft mucky substrates for basking and hibernation; an interspersal of wet and dry areas within sites, often with the presence of muskrat and meadow vole runways; a mosaic of habitats present such as uplands, shallow water and muck, and deeper water; and a largely open canopy, with scattered areas of shrubs and small trees (USFWS, 1997).

Site Description

Orange and Rockland Utilities, Inc. have proposed to build an additional electric substation on the site. Proposed activities include the construction of the substation and subsequent infrastructure, as well as the reconstruction or restoration of an existing access to the site from Little Tor Road, west to the proposed facility.

The proposed project area is located adjacent to the intersection of Little Tor Road and South Mountain Road in the Town of Clarkstown, Rockland County, New York. The site is bordered by Little Tor Road to the east, South Mountain Road to the north, private properties to the east, and the Hackensack River to the south. The site is bisected along the western border by an electric transmission line. A separate power easment runs from east to west through the center of the site. The site is approximately 10 acres in size, consisting of 2.1 acres of wetland. Much of the upland areas within the site have been previously disturbed by an existing substation and former rural residences. The site is currently overgrown with vegetation consistent with early and late successional fields. Remnants of previous buildings and dwellings remain throughout the interior of the site.

Onsite wetlands have been investigated and delineated by CMX on April 9, 2008, August 4, 2008 and May 11, 2009 (Appendix A – Figure 4). Three (3) wetlands were identified onsite, totaling 2.13 acres. Onsite wetlands drain to the Hackensack River. Wetland A/B is the largest contiguous wetland, which extends from the site access road along the eastern border, south along the Hackensack River to the southwest corner of the site. Wetland E is located on the northern side of the access road adjacent to Wetland A/B and appears to be hydrologically connected to Wetland A/B. Wetland C/D is located at the northwest corner of the site. See also natural Communities Map (Appendix a – Figure 5).

Discussion and Results

Wetland A/B is a matrix of palustrine emergent and forested wetlands and is approximately 1.7 acres onsite, then continues offsite. This wetland is comprised of wetlands A and B from the CMX wetland delineation plan. Habitat types and other physical characteristics of the offsite portion of Wetland A/B are similar to the onsite portions. Generally, the wetland contains tight solid substrates except within a meandering tributary which in part has been ditched. This tributary contains mucky substrates and originates at a groundwater seepage. The entire tributary flows through the forested portions of the site, thus none of the mucky areas are located where

there is an open canopy. The forested portion of Wetland A/B exhibited a canopy that was nearly 100% closed.

Generally, the hydrology of Wetland A/B is supplied by overflow of the Hackensack River. A large stand of common reed (*Phragmites australis*) dominates the eastern most portion of the wetland, along Little Tor Road. Substrate within the common reed stand is saturated but firm, with no mucky substrates. Dominant vegetation found in Wetland A/B includes red maple (*Acer rubrum*), multiflora rose (*Rosa multiflora*), silky dogwood (*Cornus ammomum*), common reed, spotted jewelweed (*Impatiens capensis*), skunk cabbage (*Symplocarpus foetidus*), and various sedges (*Carex* spp.). Wetland A/B meets the technical definition of bog turtle habitat, although the structure of the entire wetland is substandard. It is the opinion of this surveyor that Wetland A/B could not support a population of bog turtles.

Wetland C/D is a palustrine emergent wetland approximately 0.1 acres in size. It appears that Wetland C/D is hydrologically connected to Wetland A/B; however, it is bisected by a gravel access road off of Little Tor Road. This wetland is comprised of wetlands C and D from the CMX wetland delineation plan. Wetland C/D appears to receive hydrology from a groundwater fed seep. The substrates are not mucky in Wetland C/D although the vegetation mat creates a spongy feel as you walk through it. The vegetation that dominates this wetland is fowl manna grass (*Glyceria striata*) and sedges. Although the spongy nature of the wetland gives the appearance of muckiness, the sponginess is a result of the root mat system of the fowl manna grass "floating" on top of the ground water. When probed with a stick the substrate under the floating mat is solid and tight. Although Wetland C meets the criteria of being open, emergent and groundwater fed, it lacks the soft mucky substrates which are an integral part of bog turtle habitat ecology. Thus, Wetland C/D is not considered potential bog turtle habitat.

Wetland E is a palustrine scrub-shrub wetland approximately .25 acres in size. A small portion of the wetland extends offsite. The wetland serves as a riparian corridor along a small tributary of the Hackensack River, whuich was dry at the time of this survey. Shrubby vegetation within the wetland is dominated by multiflora rose and silky dogwood. Herbaceous vegetation is dominated by reed canary grass (*Phalaris arundinacae*) but also includes halbered-leaved tearthumb (*Polygonum arifolium*), rice cutgrass, and sensitive fern (*Onoclea sensibilis*). Although soils were saturated, no muck was present throughout Wetland E. The criteria to be classified as potential bog turtle habitat was not met in Wetland E.

Conclusion

Wetland A/B contains enough characteristics to technically be considered potential bog turtle habitat, although it is the opinion of the surveyor that Wetland A/B could not support a bog turtle population. No potential bog turtle habitats were identified within Wetlands C/D or Wetland E. The entire area was thoroughly searched and it is anticipated that the proposed activities will have no direct or indirect impacts on bog turtles or bog turtle habitats.

The following herptile species were observed on or in the vicinity of the site; green frog (*Rana clamatens*), pickerel frog (*Rana palustris*), Northern gray treefrog (*Hyla versicolor*), and garter snake (*Thamnophis sirtalis*).

References

Behler, John L. and Wayne King. 1979. The Audubon Society Field Guide to North American Reptiles and Amphibians. Alfred A. Knopf, New York. 791 pp.

Conant, R. 1975. A Field Guide of Reptiles and Amphibians of Eastern and Central North America, second edition. Houghton Mifflin Company, Boston.

New York Department of Environmental Conservation. 1998. Bog Turtle Fact Sheet. Department of Environmental Conservation, Endangered Species Unit, Delmar, New York.

U.S. Fish and Wildlife Service. May 2001. Bog Turtle (*Clemmys muhlenbergii*) Northern Population Recovery Plan.

U.S. Fish and Wildlife Service April, 2006. Guidelines for Bog Turtle Surveys (Revised).

APPENDIX A

FIGURES

Figure 1 - USGS Topographic Map
Figure 2 – USFWS / NWI Wetlands Map
Figure 3 – SSURGO Soils Map
Figure 4 – Wetland Identification Map
Figure 5 – Natural Communities Map

Legend

Site Location

Latitude and Longitude Coordinates
for the approximate center of site -

N: 41° 11' 2.0" / W: 74° 00' 21.2"

Source:
NYS Department of Transportation Raster Quadrangle, Haverstraw and Thiell USGS quadrangles updated by NYSDOT, NYSDOT edition 1990.

Figure 1
USGS Topographic Map

Little Tor Substation
Town of Clarkstown
Rockland County, New York

ASGECI Project # 3128

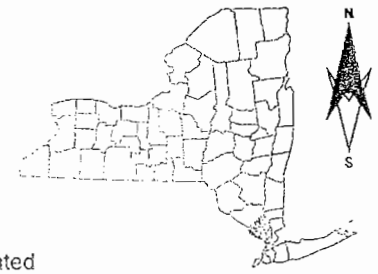
2,000
Feet

AMY S. GREENE ENVIRONMENTAL CONSULTANTS

Legend

Site Location

NWI Freshwater Wetlands



WETLAND CLASSIFICATIONS:
PFO1C - Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded
R3UBH - Riverine, Upper Perennial, Unconsolidated Bottom, Permanently Flooded

...rces:
...nal Wetlands Inventory Map, U.S. Fish and Wildlife Service,
...nal Wetlands Inventory, St. Petersburg, Florida, 1981-2006.
...ckland County 6 inch Natural Color Ortho-imagery, NYS Digital Orthoimagery Program (NYSDOP), NYS Cyber Security & Critical Infrastructure Coordination, Spring 2007.

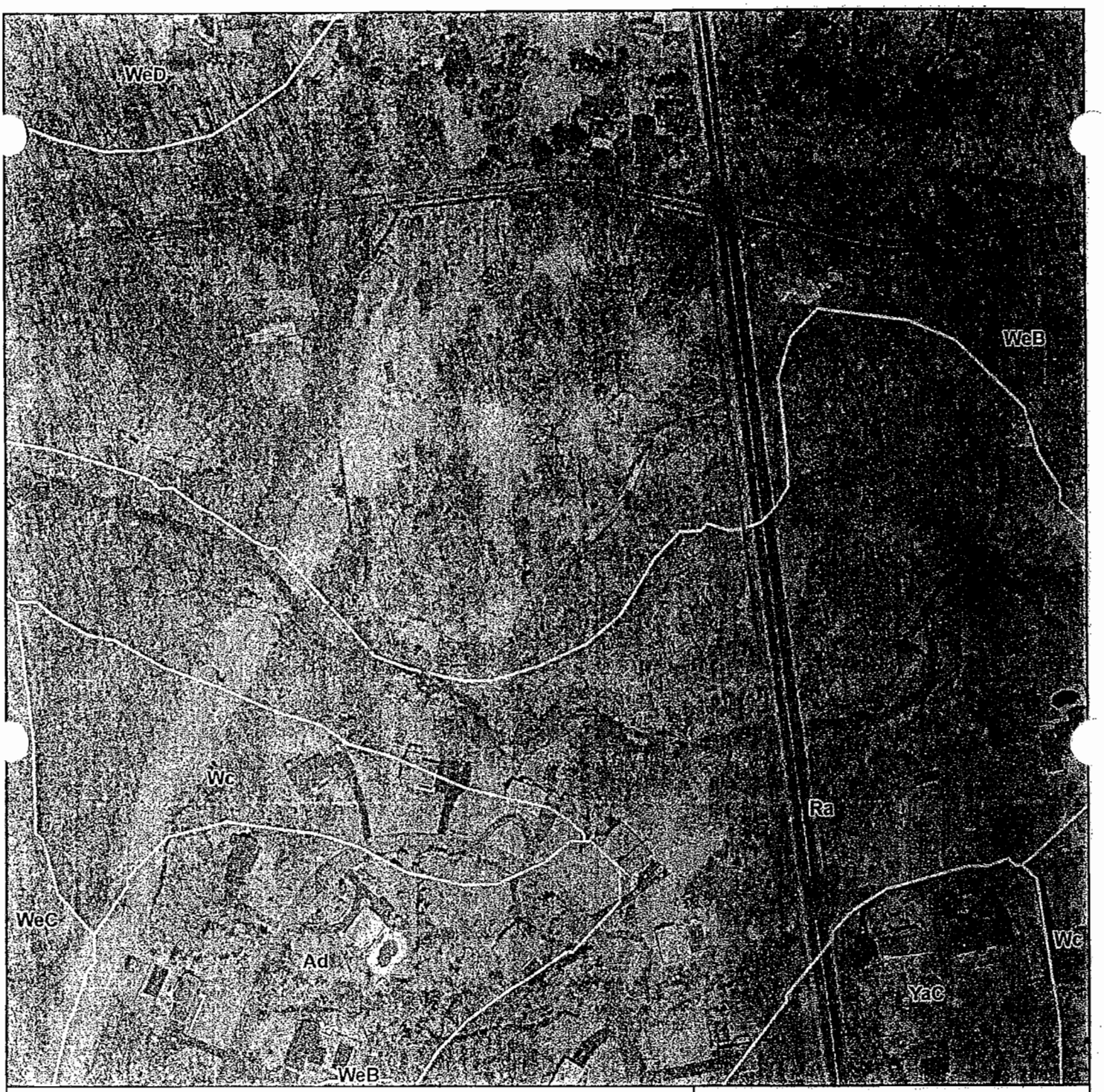
Figure 2
NWI Wetlands Map

Little Tor Substation
Town of Clarkstown
Rockland County, New York

ASGECI Project # 3128

250
Feet

AMY S. GREENE ENVIRONMENTAL CONSULTANTS



Legend

Site Location

SOILS LIST:
Ra - Rippowam sandy loam
WeB - Wethersfield gravelly silt loam, 3 to 8 percent slopes

Figure 3
SSURGO Soils Map

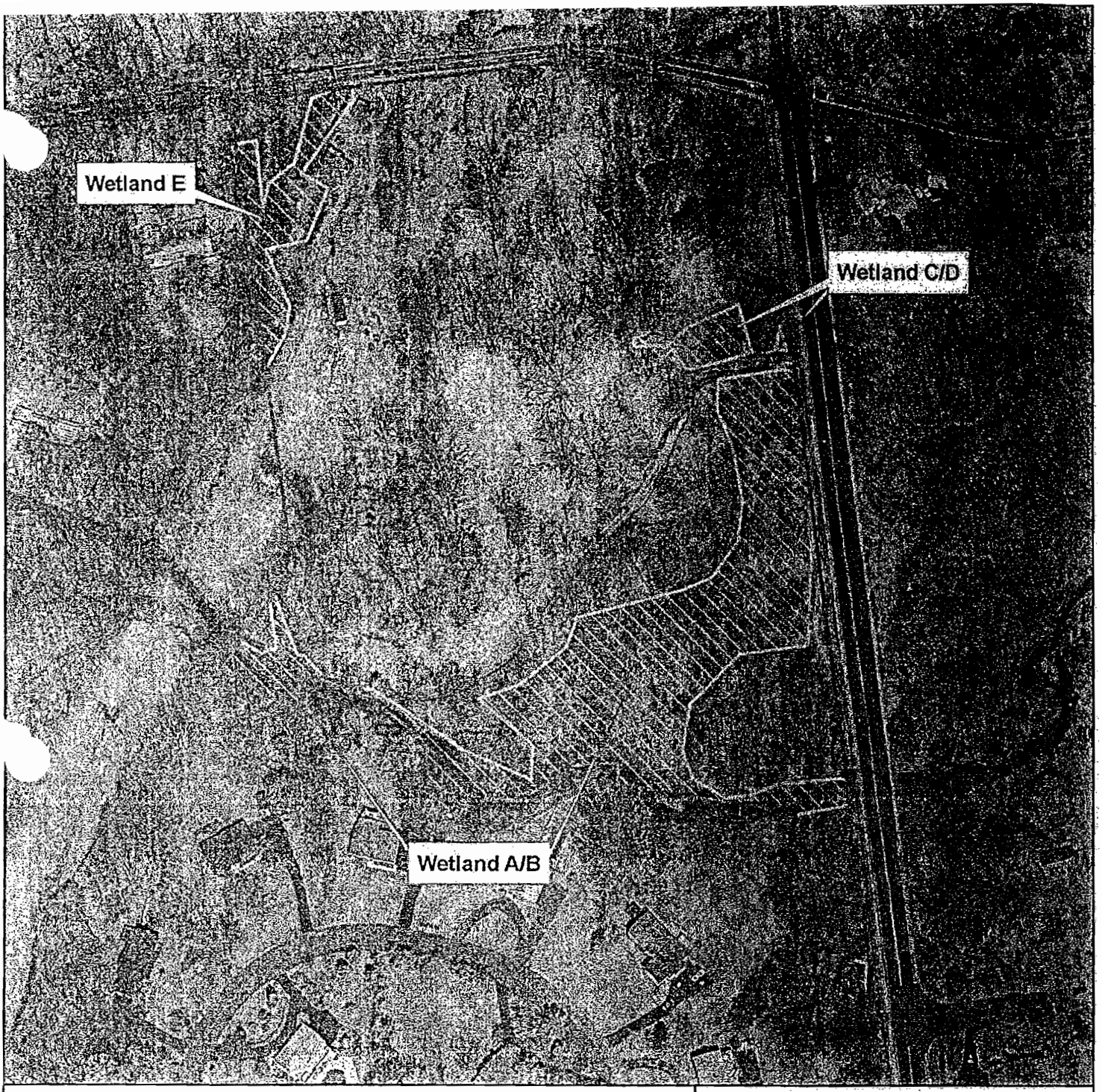
Little Tor Substation
Town of Clarkstown
Rockland County, New York

ASGECI Project # 3128

200
Feet

AMY S. GREENE ENVIRONMENTAL CONSULTANTS

urces:
il Survey Geographic (SSURGO) database for Rockland County, New York,
U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, Texas, 2004.
Rockland County 8 inch Natural Color Ortho-Imagery, NYS Digital Orthoimagery
Program (NYSDOP), NYS Cyber Security & Critical Infrastructure Coordination, Spring 2007.



Legend

Site Location

Wetland Area

Figure 4
Wetland Identification Map

Little Tor Substation
Town of Clarkstown
Rockland County, New York

ASGECI Project # 3128

150

Feet

AMY S. GREENE ENVIRONMENTAL CONSULTANTS

ources:
nd Identification taken from Wetland Delineation - Little Tor Substation, CMX Engineering,
any, NJ based on fieldwork conducted by CMX in April 2008, August 2008, and May 2009.
and County 6 inch Natural Color Ortho-imagery, NYS Digital Orthoimagery
Program (NYSDOP), NYS Cyber Security & Critical Infrastructure Coordination, Spring 2007.

Legend

Site Location

Natural Communities

- Early Successional Field
- Late Successional Field
- Forested / Scrub-Shrub Riparian Corridor, No Muck
- Successional Forest
- Red Maple / Skunk Cabbage Dominated PFO1, No Muck
- Manna Grass Dominated PEM
- Phragmites Monoculture, No Muck
- Mucky Forested Ditch
- Existing Access Road

N

S

Sources:
Natural Communities provided by Amy S. Greene Environmental, Inc based on fieldwork conducted July 2009
Rockland County 6 inch Natural Color Ortho-imagery, NYS Digital Orthoimagery Program (NYSDOP), NYS Cyber Security & Critical Infrastructure Coordination, Spring 2007

Figure 5
Natural Communities Map

Little Tor Substation
Town of Clarkstown
Rockland County, New York

ASGECI Project # 3128

150
Feet

AMY S. GREENE ENVIRONMENTAL CONSULTANTS

APPENDIX B

PHOTOGRAPHS

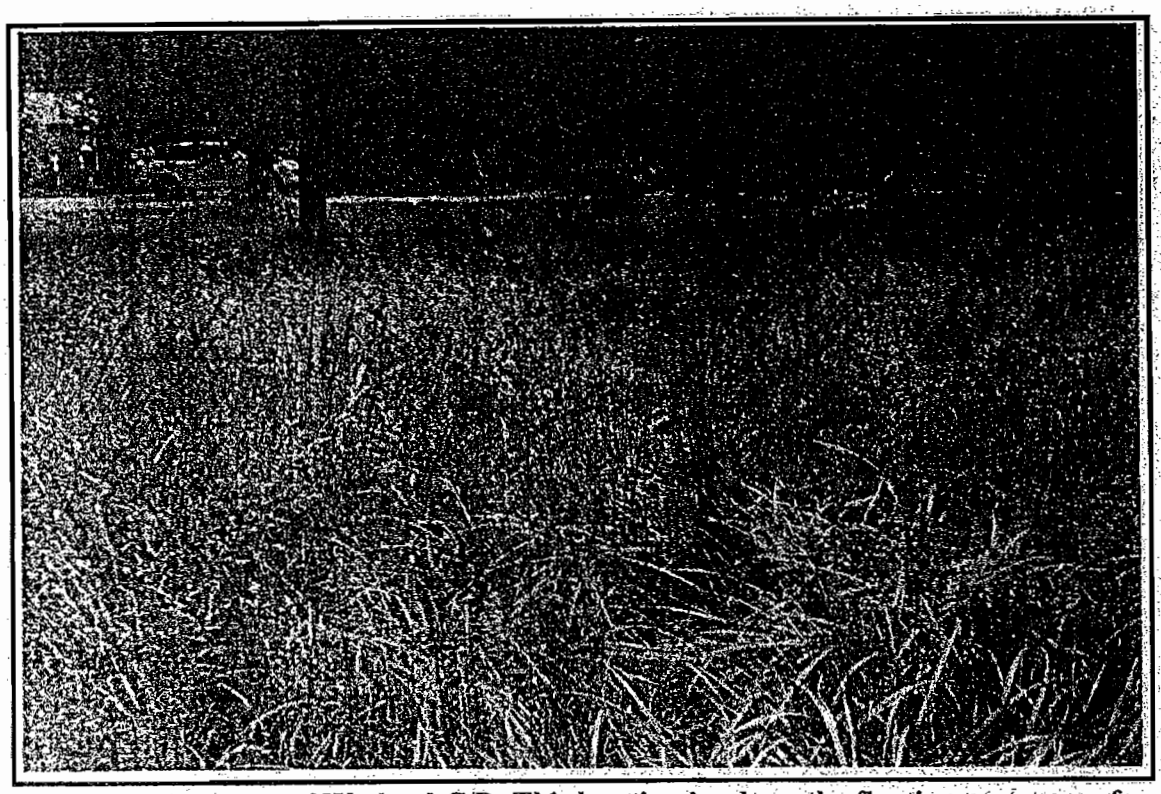


Photo A - View east of Wetland C/D. This location is where the floating root mass of grass is found. There were no mucky substrates here.

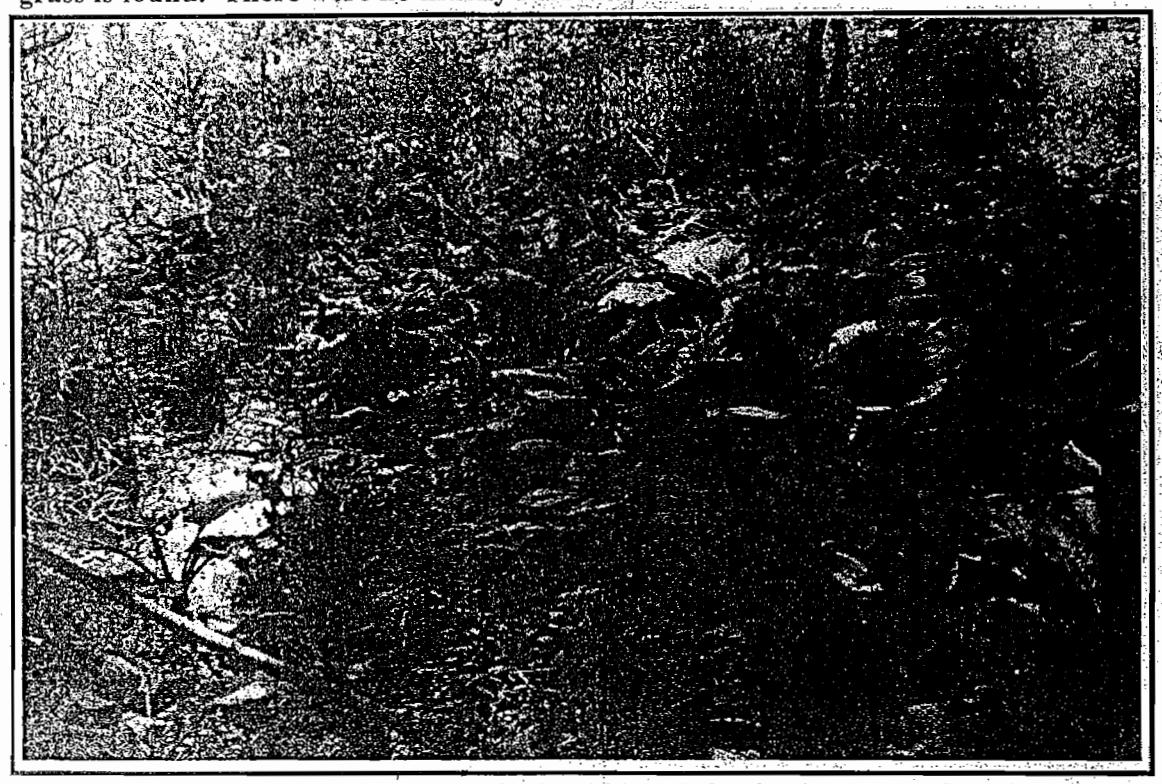


Photo B - View south, of the mucky ditch within Wetland A/B, depicted on the left side of the photograph. The muck ended abruptly as you move east. Note the common reed starting to invade from the east.

Photo C - View west, Wetland A/B where red maple and skunk cabbage dominated. The substrates here were solid and tight. Typically, this wetland was near 100% canopy cover.

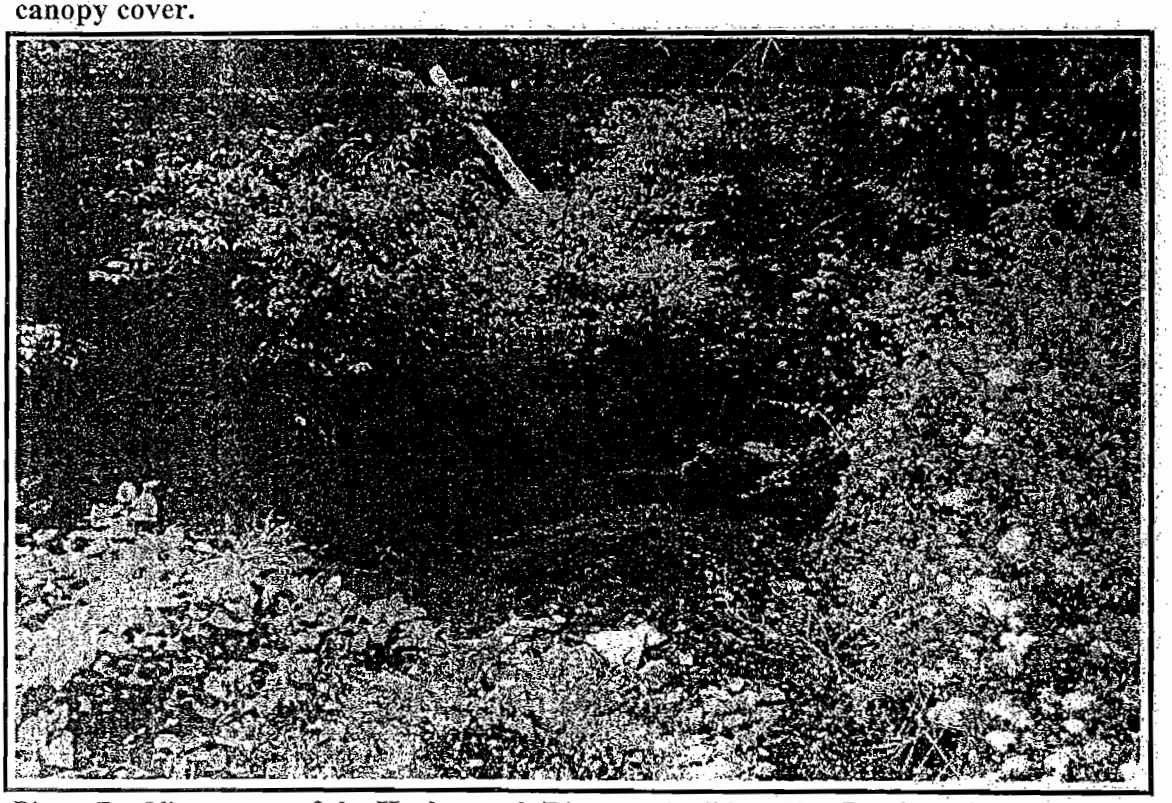


Photo D - View west, of the Hackensack River at the Little Tor Road Bridge. Not the rocky solid substrates which were found throughout most of the wetlands in Wetland A/B and Wetland E.

Photo E - View north, of Wetland E, which was dry at the time of the photo.

Photo F - View, east of the typical natural community type located in the upland portion of the site.

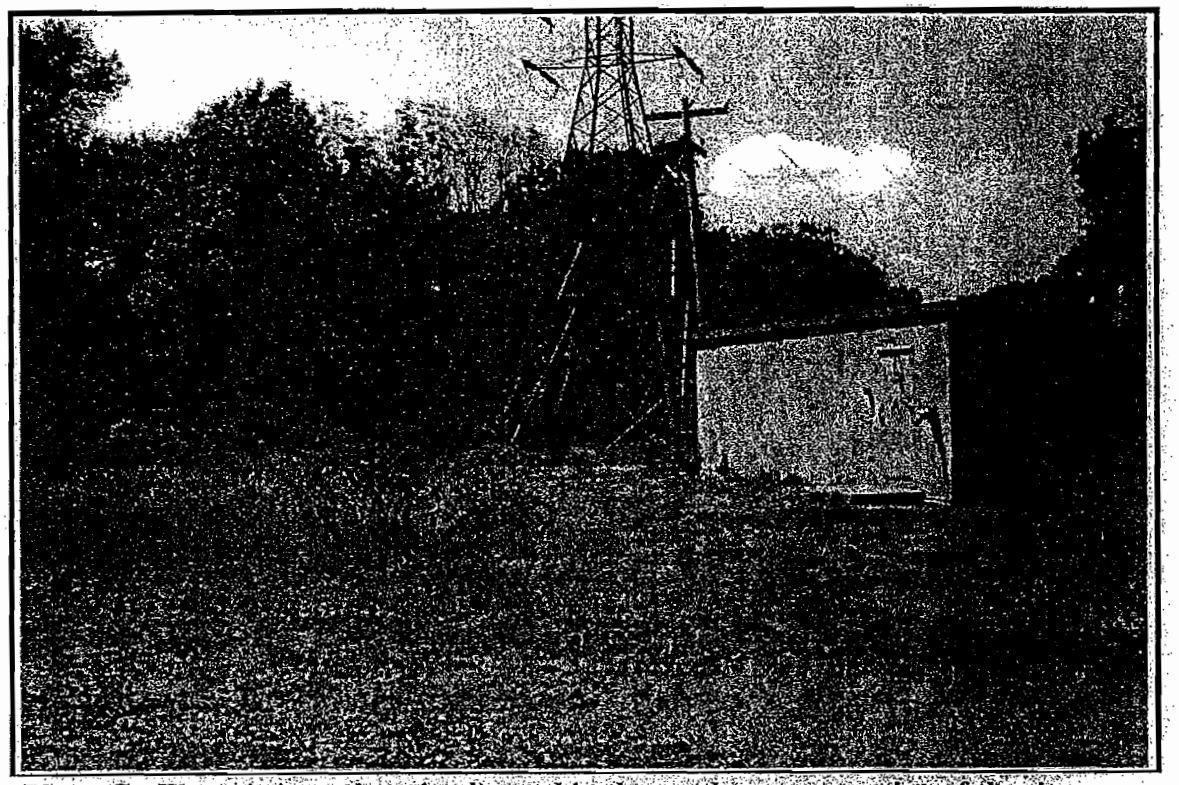


Photo G - The existing substation located in the northwestern portion of the site.

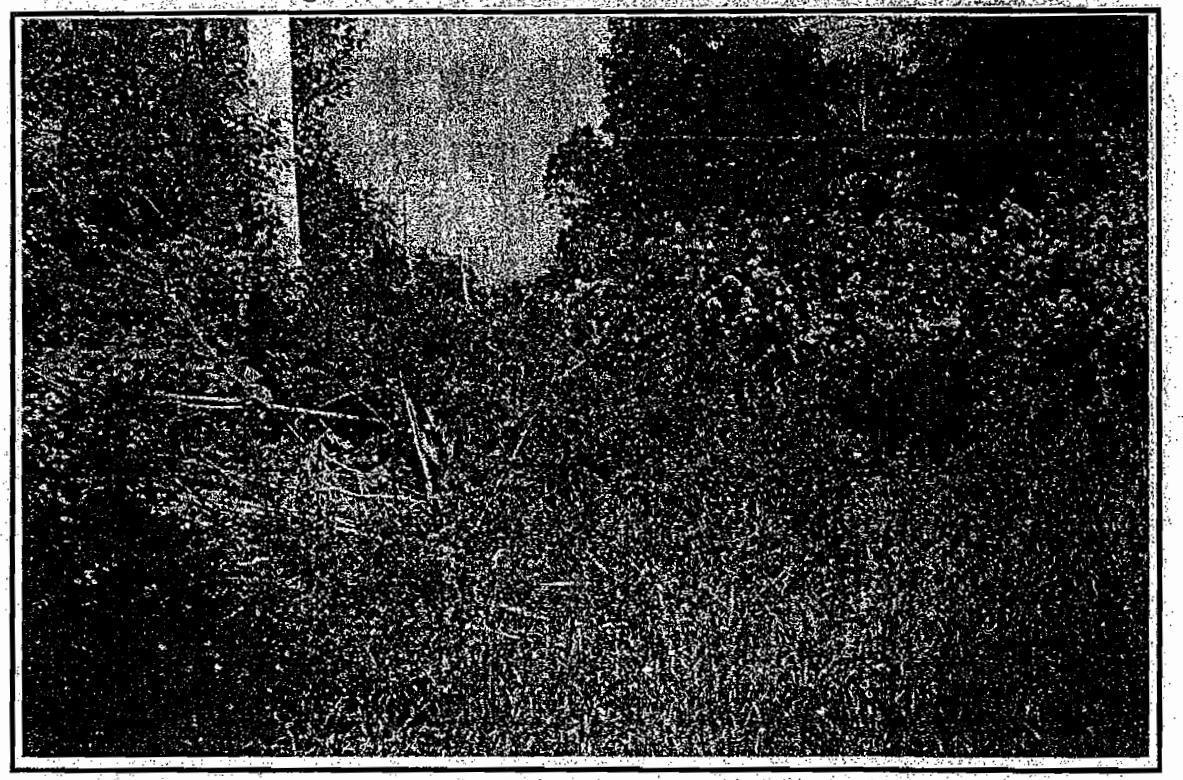


Photo H - View north, of typical late successional field habitat found on site. Generally the entire site displayed evidence of human disturbance.

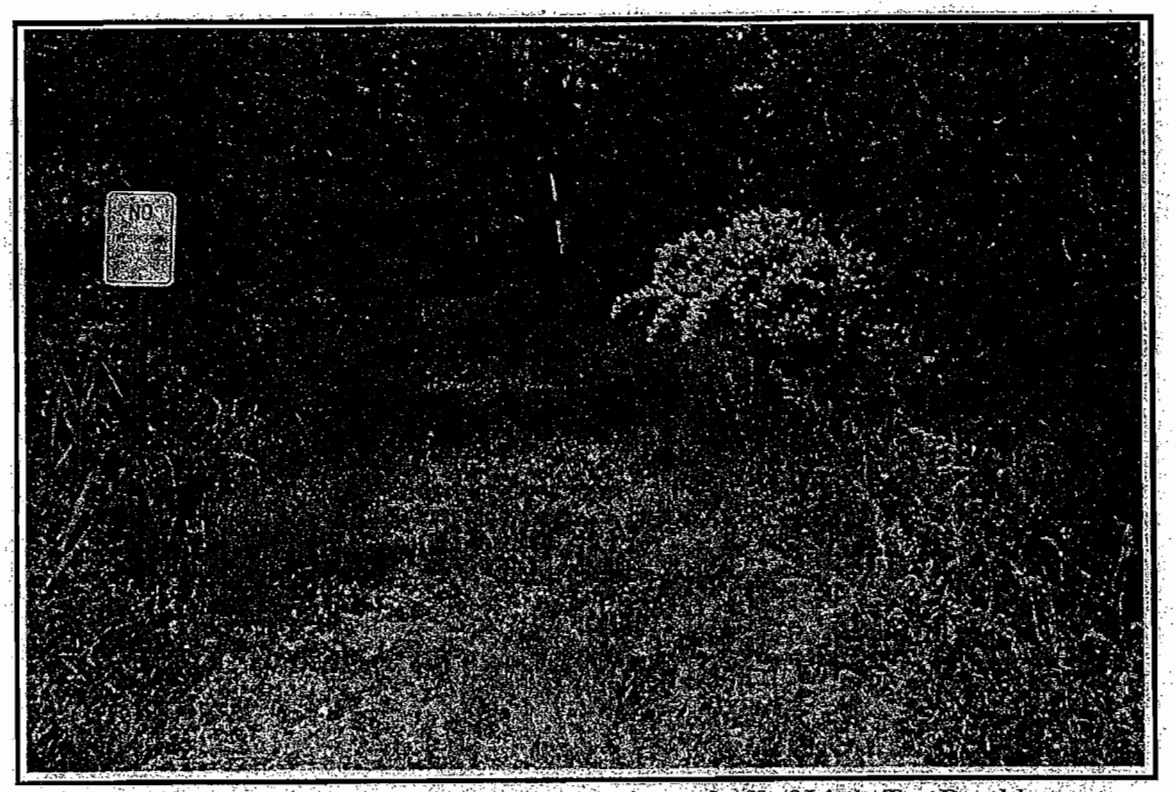


Photo I - View west of the existing cinder access road off of Little Tor Road between Wetland A/B and Wetland C/D.

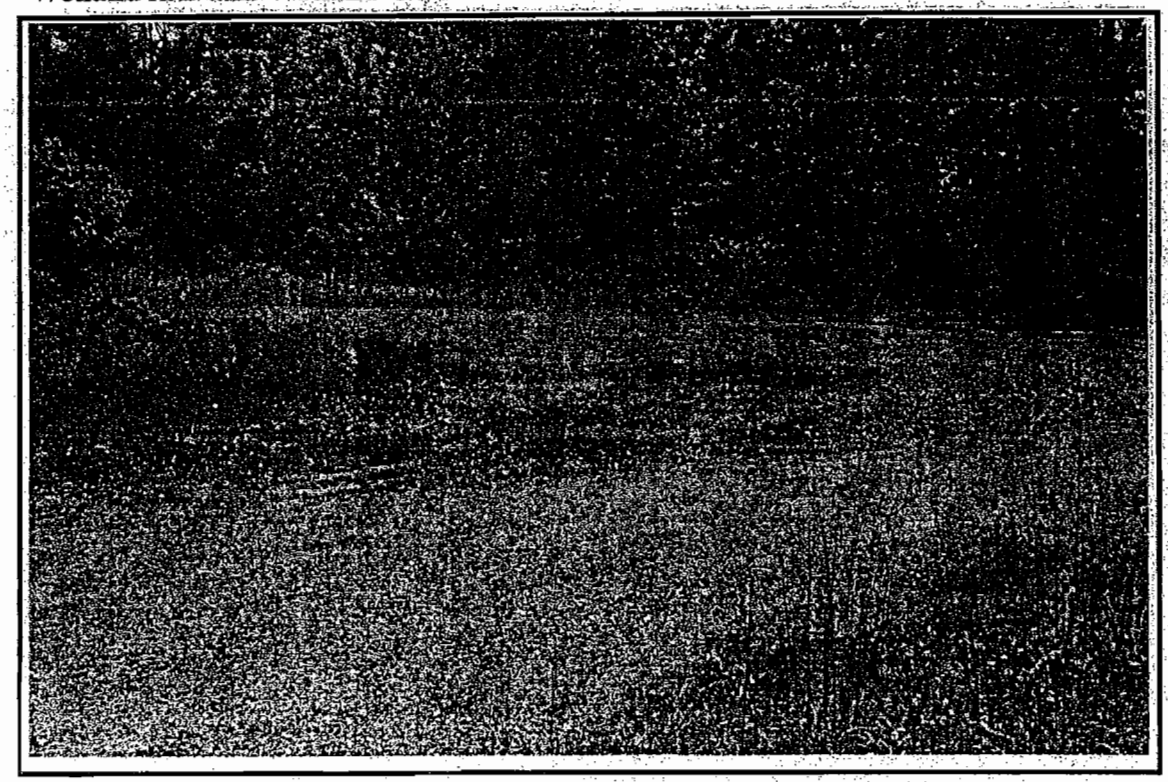


Photo J - View south of the existing service road which is located in the north and western portions of the site. This service road comes off of South Mountain Road.

APPENDIX C

USFWS/PAFBC BOG TURTLE HABITAT FIELD FORMS

USFWS/PFBC Bog Turtle Habitat Evaluation – Field Form *(revised 6/9/2004)*

Project/Property Name: Little Tor Substation

County: Rockland Quad: Haverstraw

Township/Municipality: Little Tor

Investigator: Scott Angus Affiliation: Amy S. Greene Environmental Consultants, Inc.

WETLAND ID: A/B PHOTOS TAKEN: ☒ **Yes** ☐ **No WETLAND SIZE:** _____ **acres**

Wetland size estimation - If actual acreage is not known at the time of investigation, check one:
☐ < 0.1 acre ☐ 0.1-0.5 acre ☐ >0.5 to < 1 acre ☒ 1-2 acres ☐ 2-4 acres ☐ 5 + acres ☐ 10+ acres

WETLAND LOCATION*: Lat 41° 11' 0.89" N Long -74° 0' 17.77" W
(approximate center of wetland) GPS Datum (check one): ☐ NAD 27 ☒ NAD 83 ☐ WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 6/8/09 Time In: 9:30 AM Time Out: 12:00 PM
Air temp. 40 °F Last precipitation: ☐ < 24 hours ☒ 1-7 days ☐ > 1 week ☐ unknown
Drought conditions? ☐ YES ☒ NO ☐ Unknown

How much of the wetland is located *off-site* (i.e., outside the property boundaries or right-of-way)?
☐ none of it – the entire wetland is within the property boundaries (skip next 2 questions)
☒ some of it - _____ acres or 40% of the wetland appears to be located off-site

If part of the wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?
☐ none of it ☒ all of it ☐ part of it (_____% or _____ acres of the off-site portion)

How much of the *off-site portion* of this wetland is visible (e.g., from the subject property or from a public road)?
☐ all of it ☒ part of it (at least 20% or ___ acres) ☐ none of it

Are there any *adjacent* wetlands located off-site?	☒ YES	☐ NO	☐ Unknown
If yes, *could* they be potential bog turtle habitat?	☐ YES	☒ NO	☐ Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):
Forest, residential, subdivision, forested floodplain of the Hackensack River, old building foundations.

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒ PEM 15% ☒ PSS 15% ☒ PFO 70% ☐ POW ____

☒ Y ☐ N Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, etc.)? If yes, describe A bermed cinder access road comes off of Little Tor Road and separates the wetland from Wetland C. In addition, Little Tor Road appears to affect the hydrology as well.

☒ Y ☐ N Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, etc.)? If yes, describe A Common Reed stand is located along the road frontage of Little tor Road.

Hydrology

☒ Y ☐ N Spring or seeps ☒ visible or ☐ likely? Watercress present? ☐ Yes ☒ No
☐ Y ☒ N Spring houses in or adjacent to wetland?
☒ Y ☐ N Saturated soils present? If yes, year round? ☒ Likely ☐ Unlikely ☐ Unknown
☒ Y ☐ N Water visible on surface? Check all that apply: ☐ small puddles/depressions (____" deep)
☒ rivulets (one rivulet 3-14" deep) ☐ larger pools (_" deep) ☒ stream (6-30 "deep)
☒ Y ☐ N Evidence of flooding? If yes, indicators: drift lines

Project Name: Little Tor Substation **Wetland:** A/B (con't)

Soils Mapping Unit: Rippowam sandy loam and Wethersfield gravelly silt loam, 3 to 8% slopes.

Field observations confirm mapped type? ☐ YES ☐ NO ☒ Unknown

Soils – PEM Portion of Wetland			
Mucky/ Muddy [1]? ☐ YES ☒ NO	How much of it (PEM) is **mucky**? ☐ <10% ☐ 10-29% ☐ 30-49% ☐ 50-70% ☐ >70%	**Mucky** soils range in depth from:	**Most** of the **mucky part(s)** of the wetland can be probed to: ☐ 3-5" ☐ 6-8" ☐ 9-11" ☐ ≥12"
Firm/Hard [3]? ☒ YES ☐ NO	How much of it (PEM) **firm/hard**? ☐ <10% ☐ 10-29% ☐ 30-49% ☐ 50-70% ☒ >70%		

Soils – PSS and/or PFO Portions of Wetland (if wetland is 100% PFO and/or PSS, omit this section)			
Mucky Muddy [1]? ☒YES ☐ NO	How much of it is **mucky**? ☒ <10% ☐ 10-29% ☐ 30-49% ☐ 50-70% ☐ >70%	**Mucky** soils range in depth from: 3 to 5"	**Most** of the **mucky part(s)** of the wetland can be probed[2]: ☒ 3-5" ☐ 6-8" ☐ 9-11" ☐ ≥12"

Wetland Vegetation (characterize the wetland as a whole)

Check (X) if present (≥5% areal coverage), and also bold if dominant (≥20% coverage).

☐ sedges ☐ rushes ☒ **skunk cabbage** ☐ cattail ☐ sweet flag ☐ jewelweed ☐ sphagnum moss
☒ sensitive fern ☐ rice cutgrass ☐ tearthumb ☐ reed canary grass ☒ ***Phragmites*** ☐ purple loosestrife
☐ alder ☒ dogwood ☒ **red maple** ☐ willow ☐ poison sumac ☐ multiflora rose ☐ other
Additional dominant species: spicebush, poison ivy

Herptiles

Were any bog turtles observed? ☐ YES[4] ☒ NO If yes, how many? _____
Other herptiles ☒ observed ☐ previously observed: green frog .

Additional Comments/Observations (use additional sheets if necessary):

*In a very small portion of the wetland. ** A small portion of a forested tributary. *** Very poor vegetative structure. ****Although the wetland meets the technical definition of bog turtle habitat, although the structure of the entire wetland is substandard. It is the opinion of this surveyor that Wetland A could not support a population of bog turtles.

INVESTIGATOR'S OPINION

☒ YES ☐ NO ☐ UNSURE The hydrology criterion for bog turtle habitat is met.*
☒ YES ☐ NO ☐ UNSURE The soils criterion for bog turtle habitat is met. **
☒ YES ☐ NO ☐ UNSURE The vegetation criterion for bog turtle habitat is met. ***
☐ YES ☒ **NO** **** ☐ UNSURE This wetland is potential bog turtle habitat.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

_____ _____
Investigator's Signature Date

1 Soils are considered "mucky/muddy" if one can probe them to a depth of ≥ 3".
2 Probing is done with an approximately 1" diameter, blunt-ended pole (e.g., a wooden broom handle).
3 Soils are considered "firm/hard" if one can probe them to a depth of < 3".
4 Report observations of bog turtles to the USFWS and PFBC within 48 hours.

USFWS/PFBC Bog Turtle Habitat Evaluation – Field Form *(revised 6/9/2004)*

Project/Property Name: Little Tor Substation

County: Rockland Quad: Haverstraw

Township/Municipality: Little Tor

Investigator: Scott Angus Affiliation: Amy S. Greene Environmental Consultants, Inc.

WETLAND ID: E PHOTOS TAKEN: ☒ **Yes** ☐ **No WETLAND SIZE:** _____ **acres**

Wetland size estimation - If actual acreage is not known at the time of investigation, check one:

☐ < 0.1 acre ☒ 0.1-0.5 acre ☐ >0.5 to < 1 acre ☐ 1-2 acres ☐ 2-4 acres ☐ 5 + acres ☐ 10+ acres

WETLAND LOCATION: Lat 41° 11' 2.99" N Long 74° 0' 25.13" W

(approximate center of wetland) GPS Datum (check one): ☐ NAD 27 ☒ NAD 83 ☐ WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 6/8/09 Time In: 9:30 AM Time Out: 12:00 PM

Air temp. 40 °F Last precipitation: ☐ < 24 hours ☒ 1-7 days ☐ > 1 week ☐ unknown

Drought conditions? ☐ YES ☒ NO ☐ Unknown

How much of the wetland is located *off-site* (i.e., outside the property boundaries or right-of-way)?

☐ none of it – the entire wetland is within the property boundaries (skip next 2 questions)

☒ some of it - _____ acres or 80% of the wetland appears to be located off-site

If part of the wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?

☐ none of it ☒ all of it ☐ part of it (_____% or _____ acres of the off-site portion)

How much of the *off-site portion* of this wetland is visible (e.g., from the subject property or from a public road)?

☐ all of it ☒ part of it (at least 20% or ___acres) ☐ none of it

Are there any *adjacent* wetlands located off-site?	☒ YES	☐ NO	☐ Unknown
If yes, *could* they be potential bog turtle habitat?	☐ YES	☒ NO	☐ Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):

Forest, residential, substation, early and late successional fields

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒ PEM 5% ☒ PSS 75% ☒ PFO 20% ☐ POW ____

☒ Y ☐ N Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, etc.)? If yes, describe This wetland is surrounded by human disturbance..

☐ Y ☒ N Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, etc.)? If yes, describe _____.

Hydrology

☐ Y ☒ N Spring or seeps ☐ visible or ☐ likely? Watercress present? ☐ Yes ☒ No

☐ Y ☒ N Spring houses in or adjacent to wetland?

☒ Y ☐ N Saturated soils present? If yes, year round? ☒ Likely ☐ Unlikely ☐ Unknown

☐ Y ☒ N Water visible on surface? Check all that apply: ☐ small puddles/depressions (____" deep)

☐ rivulets (_____) ☐ larger pools (_" deep) ☐ stream (__"deep)

☒ Y ☐ N Evidence of flooding? If yes, indicators: drift lines.

Project Name: Little Tor Substation **Wetland:** E (con't)

Soils Mapping Unit: Wethersfield gravelly silt loam, 3 to 8% slopes

Field observations confirm mapped type? ☐ YES ☐ NO ☒ Unknown

Soils – PEM Portion of Wetland			
Mucky/ Muddy [1]? ☐ YES ☒ NO	How much of it (PEM) is **mucky**? ☐ <10% ☐ 10-29% ☐ 30-49% ☐ 50-70% ☐ >70%	**Mucky** soils range in depth from: "	**Most** of the **mucky part(s)** of the wetland can be probed to: ☐ 3-5" ☐ 6-8" ☐ 9-11" ☐ ≥12"
Firm/Hard [3]? ☒ YES ☐ NO	How much of it (PEM) **firm/hard**? ☐ <10% ☐ 10-29% ☐ 30-49% ☐ 50-70% ☒ >70%		

Soils – PSS and/or PFO Portions of Wetland (if wetland is 100% PFO and/or PSS, omit this section)			
Mucky ***Muddy*** [1]? ☐ YES ☐ NO	How much of it is **mucky**? ☐ <10% ☐ 10-29% ☐ 30-49% ☐ 50-70% ☐ >70%	**Mucky** soils range in depth from: "	**Most** of the **mucky part(s)** of the wetland can be probed [2]: ☐ 3-5" ☐ 6-8" ☐ 9-11" ☐ ≥12"

Wetland Vegetation (characterize the wetland as a whole)

Check (X) if present (≥5% areal coverage), and also bold if dominant (≥20% coverage).

☐ sedges ☐ rushes ☐ skunk cabbage ☐ cattail ☐ sweet flag ☐ jewelweed ☐ sphagnum moss
☐ sensitive fern ☐ rice cutgrass ☐ tearthumb ☐ reed canary grass ☐ *Phragmites* ☐ purple loosestrife
☐ alder ☒ dogwood ☒ **red maple** ☐ willow ☐ poison sumac ☒ **multiflora rose** ☒ other

Additional dominant species: foul manna grass

Herptiles

Were any bog turtles observed? ☐ YES[4] ☒ NO If yes, how many? _____

Other herptiles ☐ observed ☐ previously observed: _____.

Additional Comments/Observations (use additional sheets if necessary):

INVESTIGATOR'S OPINION

☐ YES	☒ NO	☐ UNSURE	The hydrology criterion for bog turtle habitat is met.
☐ YES	☒ NO	☐ UNSURE	The soils criterion for bog turtle habitat is met.
☐ YES	☒ NO	☐ UNSURE	The vegetation criterion for bog turtle habitat is met.
☐ YES	☒ NO	☐ UNSURE	This wetland is potential bog turtle habitat.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

_____ _____

Investigator's Signature Date

1 Soils are considered "mucky/muddy" if one can probe them to a depth of ≥ 3".
2 Probing is done with an approximately 1" diameter, blunt-ended pole (e.g., a wooden broom handle).
3 Soils are considered "firm/hard" if one can probe them to a depth of < 3".
4 Report observations of bog turtles to the USFWS and PFBC within 48 hours.

USFWS/PFBC Bog Turtle Habitat Evaluation – Field Form *(revised 6/9/2004)*

Project/Property Name: Little Tor Substation

County: Rockland Quad: Haverstraw

Township/Municipality: Little Tor

Investigator: Scott Angus Affiliation: Amy S. Greene Environmental Consultants, Inc.

WETLAND ID: C/D PHOTOS TAKEN: ☒ **Yes** ☐ **No WETLAND SIZE:** _____ **acres**
Wetland size estimation - If actual acreage is not known at the time of investigation, check one:
☐ < 0.1 acre ☒ 0.1-0.5 acre ☐ >0.5 to < 1 acre ☐ 1-2 acres ☐ 2-4 acres ☐ 5 + acres ☐ 10+ acres

WETLAND LOCATION: Lat 41°11'3.07" N Long -74° 0' 18.69" W
(approximate center of wetland) GPS Datum (check one): ☐ NAD 27 ☒ NAD 83 ☐ WGS 84

SURVEY CONDITIONS & LIMITATIONS

Date of survey: 6/8/09 Time In: 9:30 AM Time Out: 12:00 PM
Air temp. 40 °F Last precipitation: ☐ < 24 hours ☒ 1-7 days ☐ > 1 week ☐ unknown
Drought conditions? ☐ YES ☒ NO ☐ Unknown

How much of the wetland is located *off-site* (i.e., outside the property boundaries or right-of-way)?
☒ none of it – the entire wetland is within the property boundaries (skip next 2 questions)
☐ some of it - _____ acres or____ of the wetland appears to be located off-site

If part of the wetland continues off-site, how much of the *off-site portion* was surveyed (on foot)?
☐ none of it ☐ all of it ☐ part of it (_____% or _____ acres of the off-site portion)

How much of the *off-site portion* of this wetland is visible (e.g., from the subject property or from a public road)?
☐ all of it ☐ part of it (at least ____% or___acres) ☐ none of it

Are there any *adjacent* wetlands located off-site? ☐ YES ☒ NO ☐ Unknown
If yes, *could* they be potential bog turtle habitat? ☐ YES ☐ NO ☐ Unknown

Describe surrounding landscape (wetlands, forest, subdivision, agricultural field, fallow field, etc.):
Forest, residential, earlyand late successional fields

WETLAND CHARACTERISTICS

Wetland type(s) present and % cover: ☒ PEM 100% ☒ PSS 0% ☒ PFO 0% ☐ POW _____

☒ Y ☐ N Are there any signs of disturbance to *hydrology* (ditching, filling, ponds, roads, etc.)? If yes, describe A bermed cinder access road comes off of Little Tor Road and separates the wetland from Wetland A/B. In addition, Little Tor Road appears to affect the hydrology as well.

☒ Y ☐ N Are there any signs of disturbance to *vegetation* (mowing, pasturing, burning, etc.)? If yes, describe This wetland area appears to be regularly mowed.

Hydrology

☒ Y ☐ N Spring or seeps ☒ visible or ☐ likely? Watercress present? ☐ Yes ☒ No
☐ Y ☒ N Spring houses in or adjacent to wetland?
☒ Y ☐ N Saturated soils present? If yes, year round? ☒ Likely ☐ Unlikely ☐ Unknown
☐ Y ☒ N Water visible on surface? Check all that apply: ☐ small puddles/depressions (____" deep)
☐ rivulets (_____) ☐ larger pools (_" deep) ☐ stream (_____"deep)
☐ Y ☒ N Evidence of flooding? If yes, indicators: drift lines

Project Name: Little Tor Substation **Wetland:** C/D (con't)

Soils Mapping Unit: Wethersfield gravelly silt loam, 3 to 8% slopes

Field observations confirm mapped type? ☐ YES ☐ NO ☒ Unknown

Soils – PEM Portion of Wetland			
	How much of it (PEM) is **mucky**? ☒ <10% ☐ 10-29% ☐ 30-49% ☐ 50-70% ☐ >70%	**Mucky** soils range in depth from: "	**Most** of the **mucky part(s)** of the wetland can be probed to: ☐ 3-5" ☐ 6-8" ☐ 9-11" ☐ ≥12"
Firm/Hard [3]? ☐ YES ☒ NO	How much of it (PEM) **firm/hard**? ☐ <10% ☒ 10-29% ☐ 30-49% ☐ 50-70% ☐ >70%	* not mucky but spongy. See the report text.	

Soils – PSS and/or PFO Portions of Wetland (if wetland is 100% PFO and/or PSS, omit this section)			
Mucky ***Muddy***[1]? ☐ YES ☒ NO	How much of it is **mucky**? ☐ <10% ☐ 10-29% ☐ 30-49% ☐ 50-70% ☐ >70%	**Mucky** soils range in depth from: "	**Most** of the **mucky part(s)** of the wetland can be probed[2]: ☐ 3-5" ☐ 6-8" ☐ 9-11" ☐ ≥12"

Wetland Vegetation (characterize the wetland as a whole)

Check (X) if present (≥5% areal coverage), and also bold if dominant (≥20% coverage).

☐ sedges ☒ rushes ☐ skunk cabbage ☐ cattail ☐ sweet flag ☐ jewelweed ☐ sphagnum moss
☐ sensitive fern ☐ rice cutgrass ☐ tearthumb ☐ reed canary grass ☐ *Phragmites* ☐ purple loosestrife
☐ alder ☒ dogwood ☒ red maple ☐ willow ☐ poison sumac ☐ multiflora rose ☒ other

Additional dominant species: manna grass (sp.)

Herptiles

Were any bog turtles observed? ☐ YES[4] ☒ NO If yes, how many? _____

Other herptiles ☐ observed ☐ previously observed: _____.

Additional Comments/Observations (use additional sheets if necessary):

INVESTIGATOR'S OPINION

☒ YES	☐ NO	☐ UNSURE	The hydrology criterion for bog turtle habitat is met.
☐ YES	☒ NO	☐ UNSURE	The soils criterion for bog turtle habitat is met.
☒ YES	☐ NO	☐ UNSURE	The vegetation criterion for bog turtle habitat is met.
☐ YES	☒ NO	☐ UNSURE	This wetland is potential bog turtle habitat.

I certify that to the best of my knowledge, all of the information provided herein is accurate and complete.

_____ _____

Investigator's Signature Date

1 Soils are considered "mucky/muddy" if one can probe them to a depth of ≥ 3".
2 Probing is done with an approximately 1" diameter, blunt-ended pole (e.g., a wooden broom handle).
3 Soils are considered "firm/hard" if one can probe them to a depth of < 3".
4 Report observations of bog turtles to the USFWS and PFBC within 48 hours.

C

OSTERGAARD ACOUSTICAL ASSOCIATES

ANALYSIS OF ACOUSTICAL IMPACT

ORANGE AND ROCKLAND UTILITIES
PROPOSED LITTLE TOR SUBSTATION
South Mountain Road and N. Little Tor Road
New City, New York

Prepared For: **Orange and Rockland Utilities**
Prepared by: **Benjamin C. Mueller, P.E.**
Reviewed by: **John Erdreich, Ph.D.**
OAA File: **3559A**
Date: **1 February 2010**

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Orange and Rockland Utilities
Analysis of Acoustical Impact
Proposed Little Tor Substation
1 February 2010

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I. INTRODUCTION

Ostergaard Acoustical Associates has analyzed the proposed Orange and Rockland Utilities Substation (Little Tor) in New City, New York to determine the acoustical impact, if any, on the surrounding community. The substation will contain three new transformers and two new gas regulator stations. These transformers are cooled by natural convection at times, supplemented with fans.

To determine the acoustical impact of the proposed substation on surrounding areas it is necessary to compare the existing ambient sound with the projected sound contributed by the substation. A survey of the ambient sound was conducted that included both long-term 48-hour A-weighted sound level monitoring at four locations, as well as short-term octave band sound pressure level measurements during both the daytime and nighttime. The site sound emissions were calculated using a computer model of the installation and compared with the ambient survey data.

II. SITE DESCRIPTION

The proposed substation is on the southwest corner of the intersection of South Mountain Road and North Little Tor Road, CR-33. The site is shown in Figure 1, which is based on aerial images provided by Google Earth®. The four ambient survey locations are also shown. Residences border the site to the west and the Hackensack River borders the south. Other residences are located further from the site buffered by roads or the river. Currently on site are a gas regulator station to the northwest and a Verizon communication shelter to the west. There is a major elevation change in the northeast portion of the site due to a large rock formation.

The substation will include a switchgear house and three transformers: two Enerco 50 MVA units and one Magnatek 25 MVA unit. Two new gas regulator stations are proposed north of the substation.

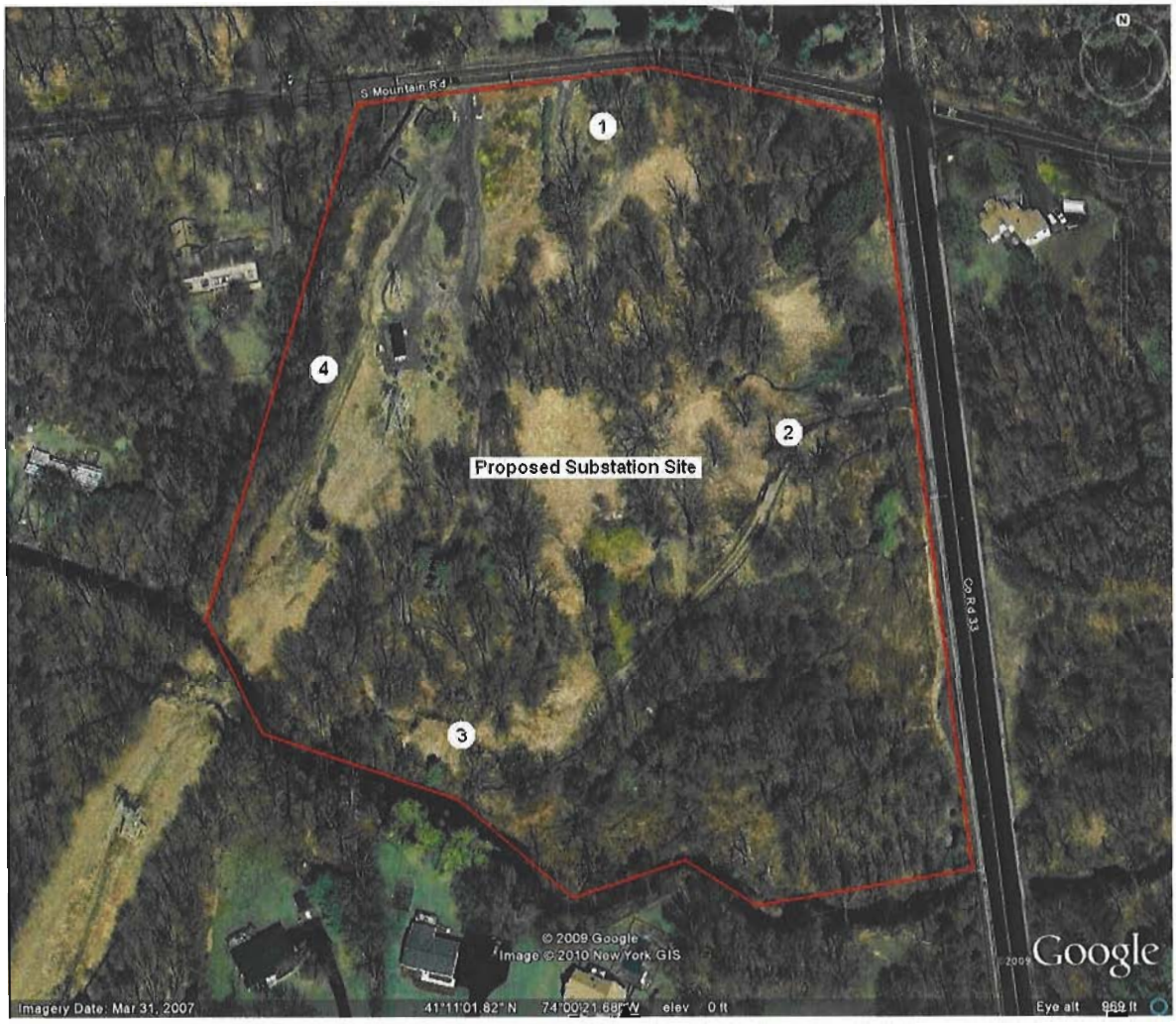

Figure 1 — Proposed site for Little Tor Substation and vicinity. Survey Locations 1 through 4 are also shown.

III. CRITERIA

The local noise code of Clarkstown, New York is discussed under Chapter 205 Noise and Chapter 290-13 Performance Standards. Chapter 205 is a nuisance noise ordinance and does not contain quantitative noise limits. For a residential district, Chapter 290-13 specifies a maximum nighttime noise limit of 46 dB(A) from 2200 hours to 0700 hours measured 25 feet from the principal building. Because there is no principal building on site, this criterion was applied at the substation property line. This limit is reduced to 41 dB(A) for noises of periodic character such as a hum. There are also limits in octave bands.

Article IX of the Rockland County Sanitary Code also discusses maximum noise limits in section 9.8.2 which limits noise produced at a residential property line to a maximum sound pressure level of 65 dB(A), or L_{10} of 60 dB(A), during the day from 0700 hours to 2200 hours. This limit is reduced to a maximum sound pressure level of 55 dB(A), or L_{10} of 50 dB(A), at night from 2200 hours to 0700 hours.

The State of New York has not implemented a state-wide noise code.

IV. AMBIENT SOUND LEVELS

To analyze environmental acoustical data it is convenient to treat the sound levels statistically. This is because sound levels can vary over a considerable range because many sources contribute to outdoor sound measured at a location. Transient ambient sources often raise sound levels 20 decibels or more above background sound levels. The following descriptors are most often used to assess data of this type:

> L_{90} - The sound level exceeded 90 percent of the time during a given measurement period. L_{90} is usually referred to as the background sound level.
>
> L_{50} - This is the median level exceeded 50 percent of the time during a measurement period.

L_{10} - This is the sound level exceeded 10 percent of the time during a measurement period. L_{10} is a measure of the contribution of intrusive sound sources.

L_{eq} - The equivalent continuous noise level that would exist if all the noise in the measurement period were averaged over that time period.

L_{min} (L_{max}) - The minimum (maximum) (slow or fast averaged) noise level during the measuring period.

V. SURVEY MONITORS

On 8 January 2010, Mr. Benjamin Mueller visited the site to place the four automated sound level monitors. Data recorded included 24-hours on the weekend, Sunday 10 January, and 24-hours on a weekday, Monday 11 January. Daytime weather conditions in the area for 10 January were clear skies, a temperature of 26°F, with winds of 11mph. On 11 January the weather conditions were similar with clear skies, a temperature of 24°F, and steady winds of 8 mph.

Monitor locations are shown in Figure 1 and were selected to typify the following locations:

1: Near north side of site, 50 feet south of South Mountain Road.

2: East side of site, 140 feet west of CR-33.

3: South portion of site, set back from the Hackensack River.

4: West side of site, 50 feet east of nearest residential property line.

The monitors, Larson Davis type 720 and 820 units, were programmed to measure sound eight times per second and to store the average result each minute. Time history graphs of the Sunday and Monday results are shown in Figures 2 through 9. The monitors were also

programmed to store statistical sound levels for each hour based on the sampling of eight times per second. The statistical distribution for each location is shown in Figures 10 through 17. Additional information about the survey monitors can be found in the Appendix A.

VI. GENERAL SURVEY RESULTS

Time histories in Figures 2 through 9 show the one-minute average noise levels measured at each location. Location 1 averages approximately 50 dB(A) during the day and the mid 40's at night. Location 1 is most influenced by the existing gas regulator station on site. Traffic from South Mountain Road affects the ambient sound level throughout the day at this location. Influences from the higher speed traffic on CR-33 affect measured levels at Location 2 where measured daytime levels were in the upper 50's while nighttime levels dropped to the mid 30's at times in between infrequent traffic passbys. Location 3 measured steady noise levels due to the proximity to the steady water flowing in the Hackensack River and the greater distance from local traffic. Average levels remained in the mid 40's during the day and night. Location 4 was also more remote from local traffic and measured daytime levels in the mid 40's while at nighttime, levels decreased to the low 40's.

Figures 10 through 17 provide data in a statistical format, and give the maximum and minimum sound levels over each hour in addition to the average sound levels. In general, there was little difference in the ambient between a weekend day and weekday.

Project: Little Tor Substation
Project Number: 3599A

Measured Sound Levels at Location 1
Sunday, 10 January 2010

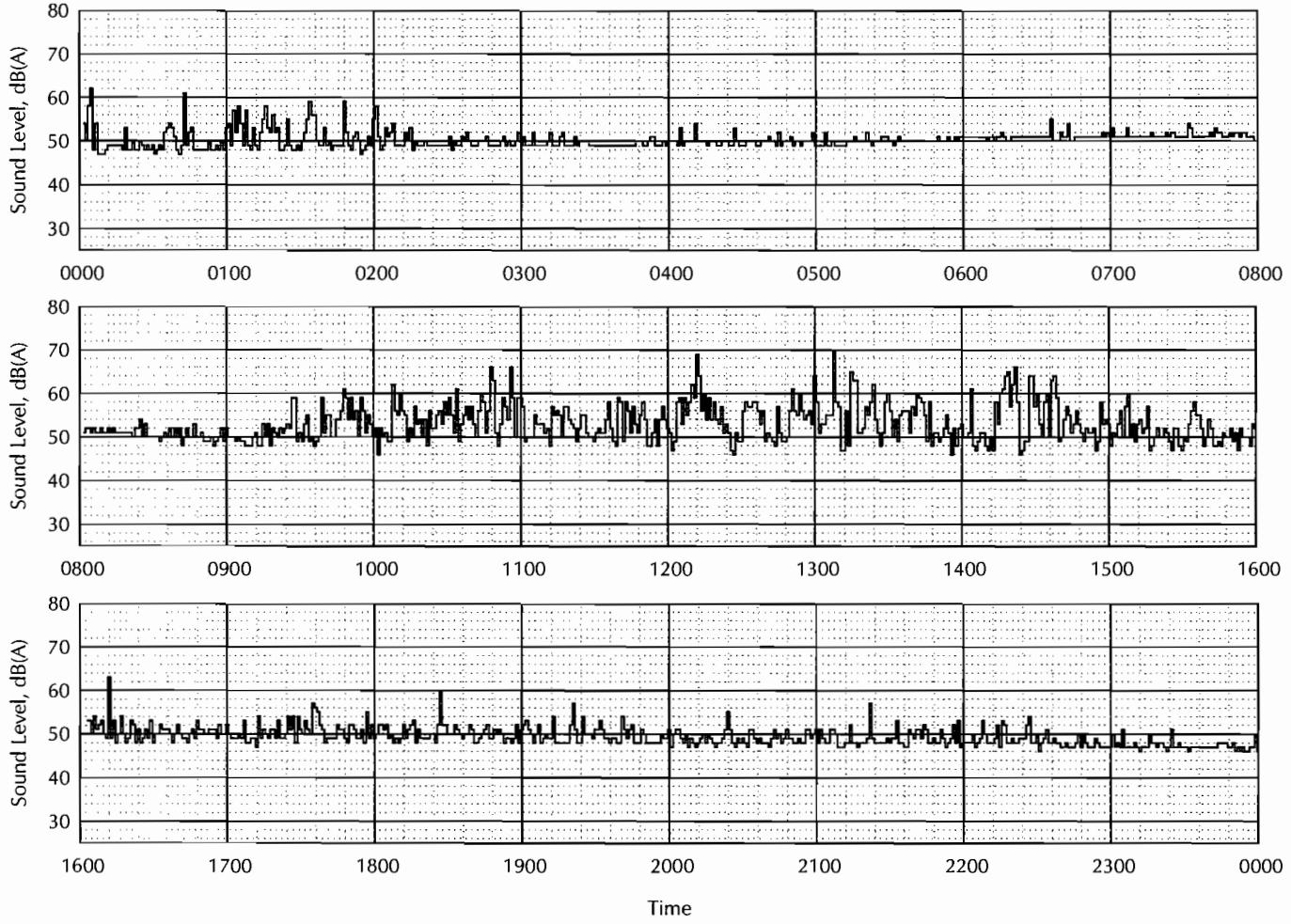

Figure 2

Project: Little Tor Substation
Project Number: 3599A

Measured Sound Levels at Location 1
Monday, 11 January 2010

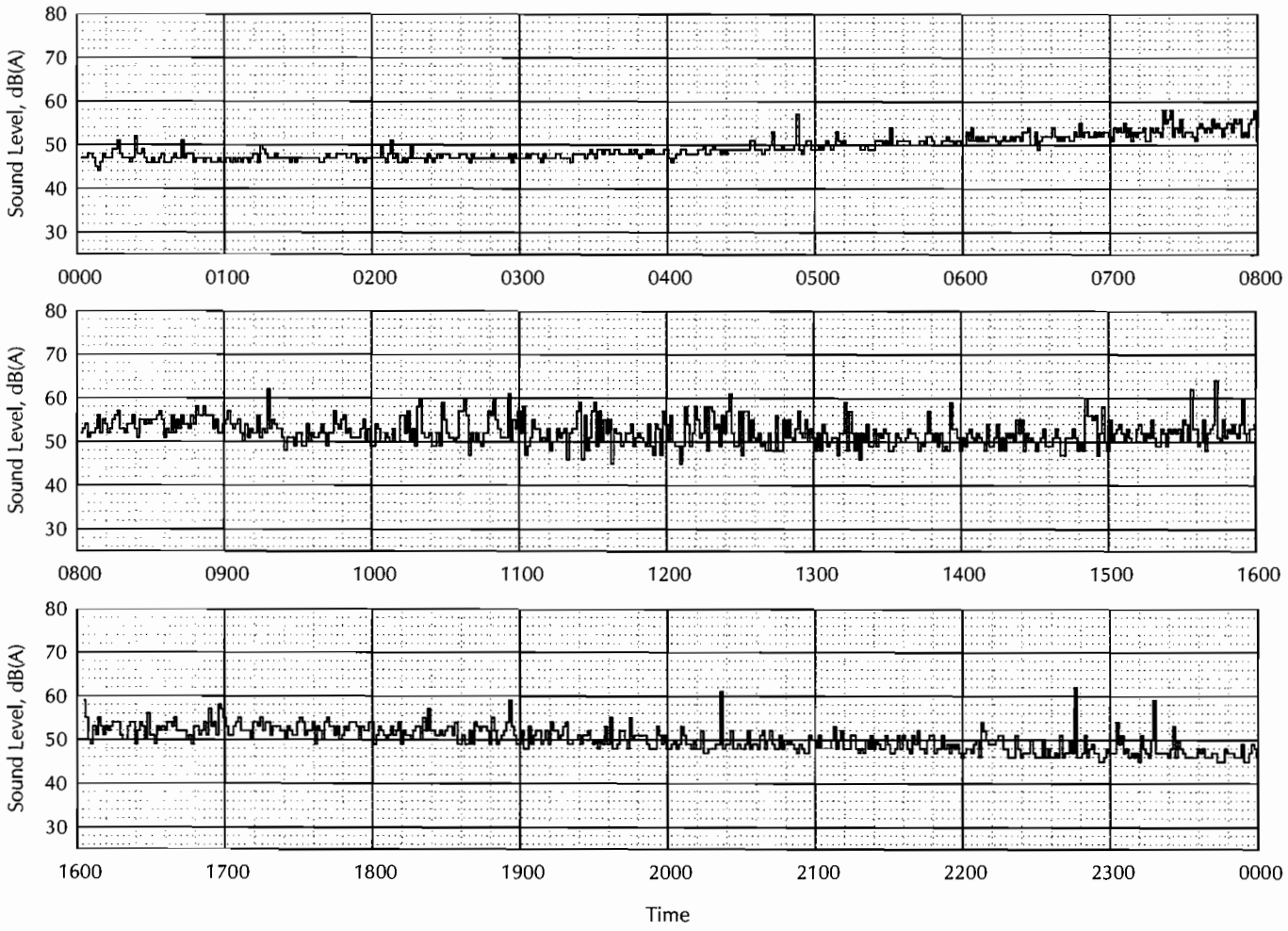

Figure 3

Project: Little Tor Substation
Project Number: 3599A

Measured Sound Levels at Location 2

Sunday, 10 January 2010

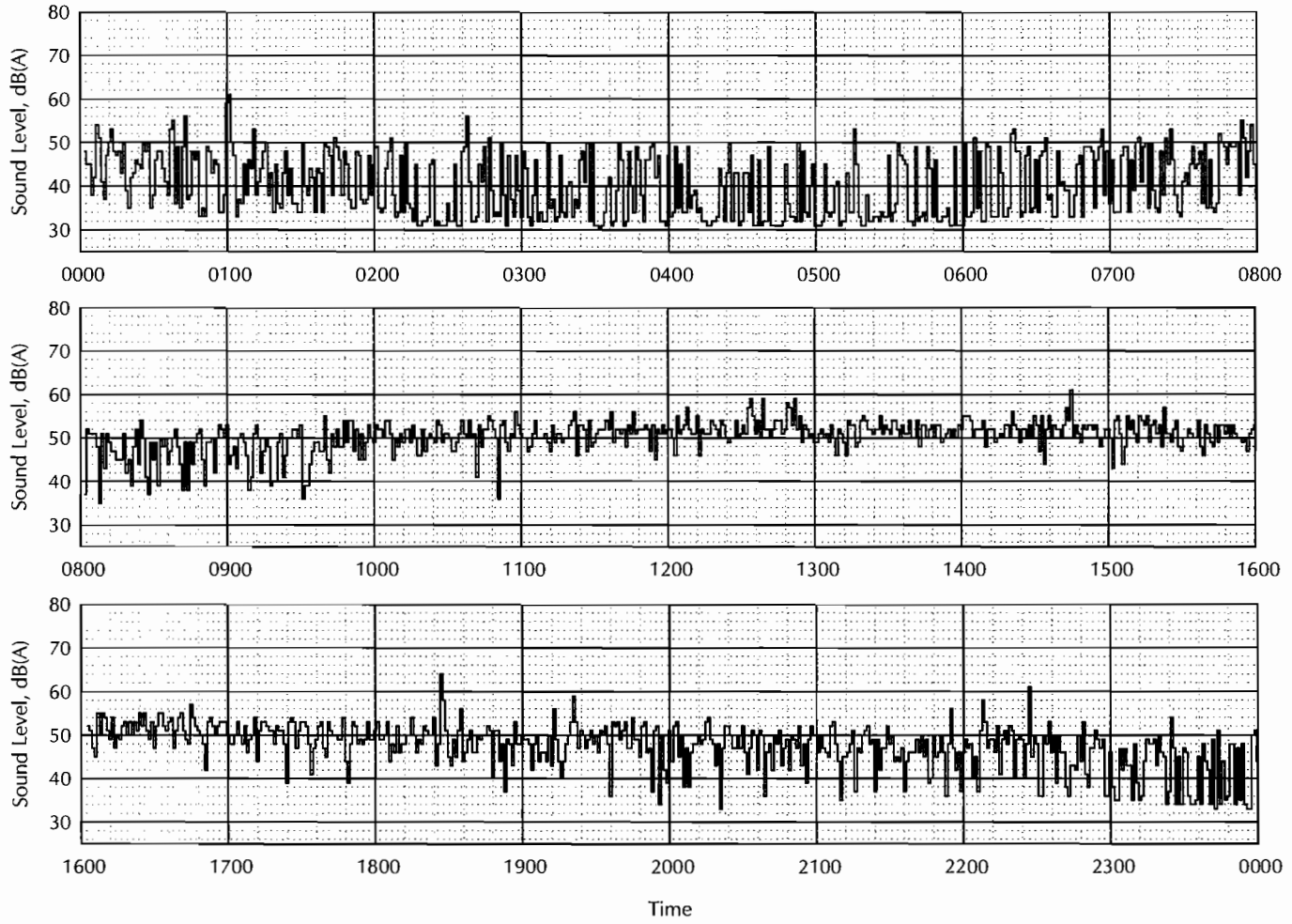

Figure 4

Project: Little Tor Substation
Project Number: 3599A

Measured Sound Levels at Location 2
Monday, 11 January 2010

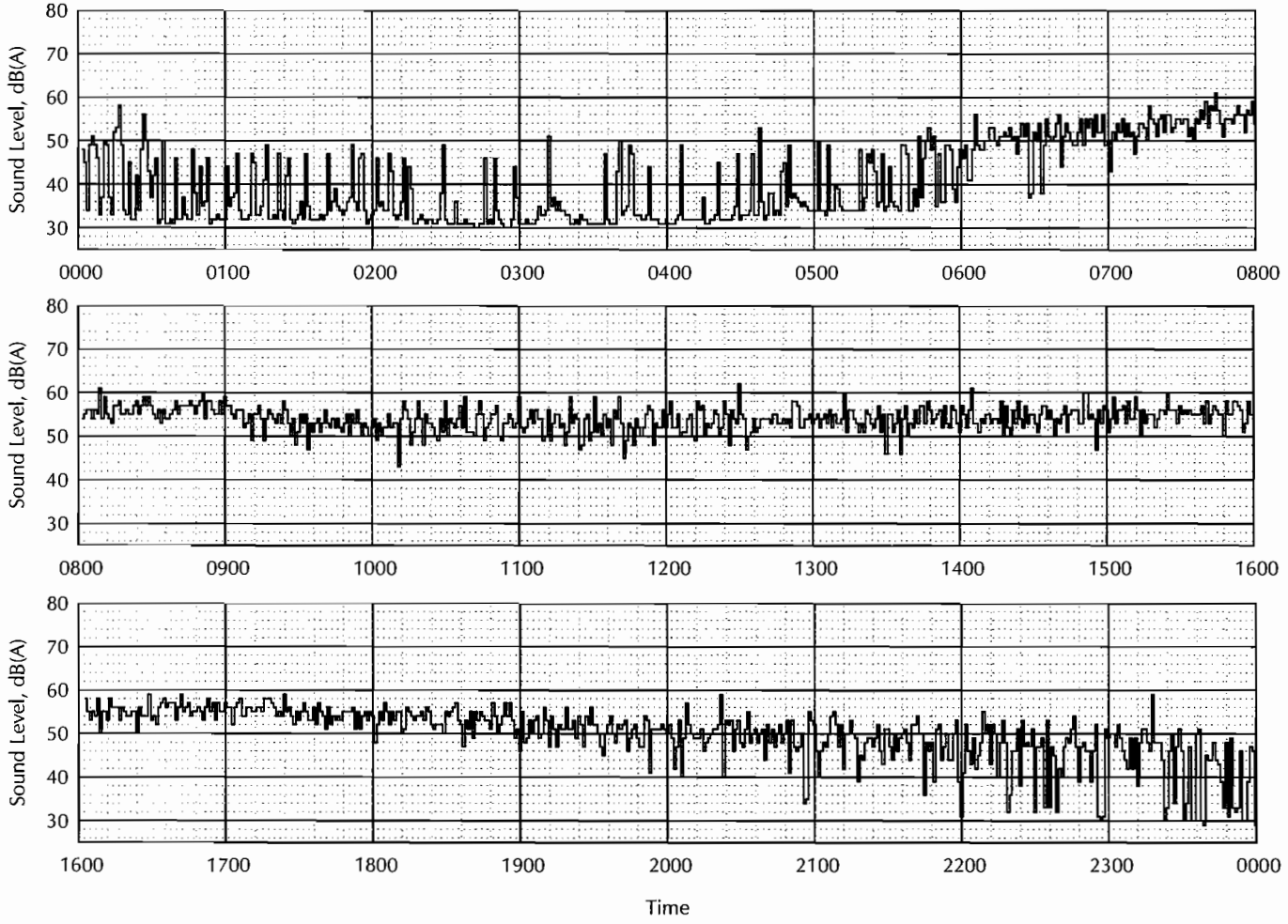

Figure 5

Project: Little Tor Substation
Project Number: 3599A

Measured Sound Levels at Location 3
Sunday, 10 January 2010

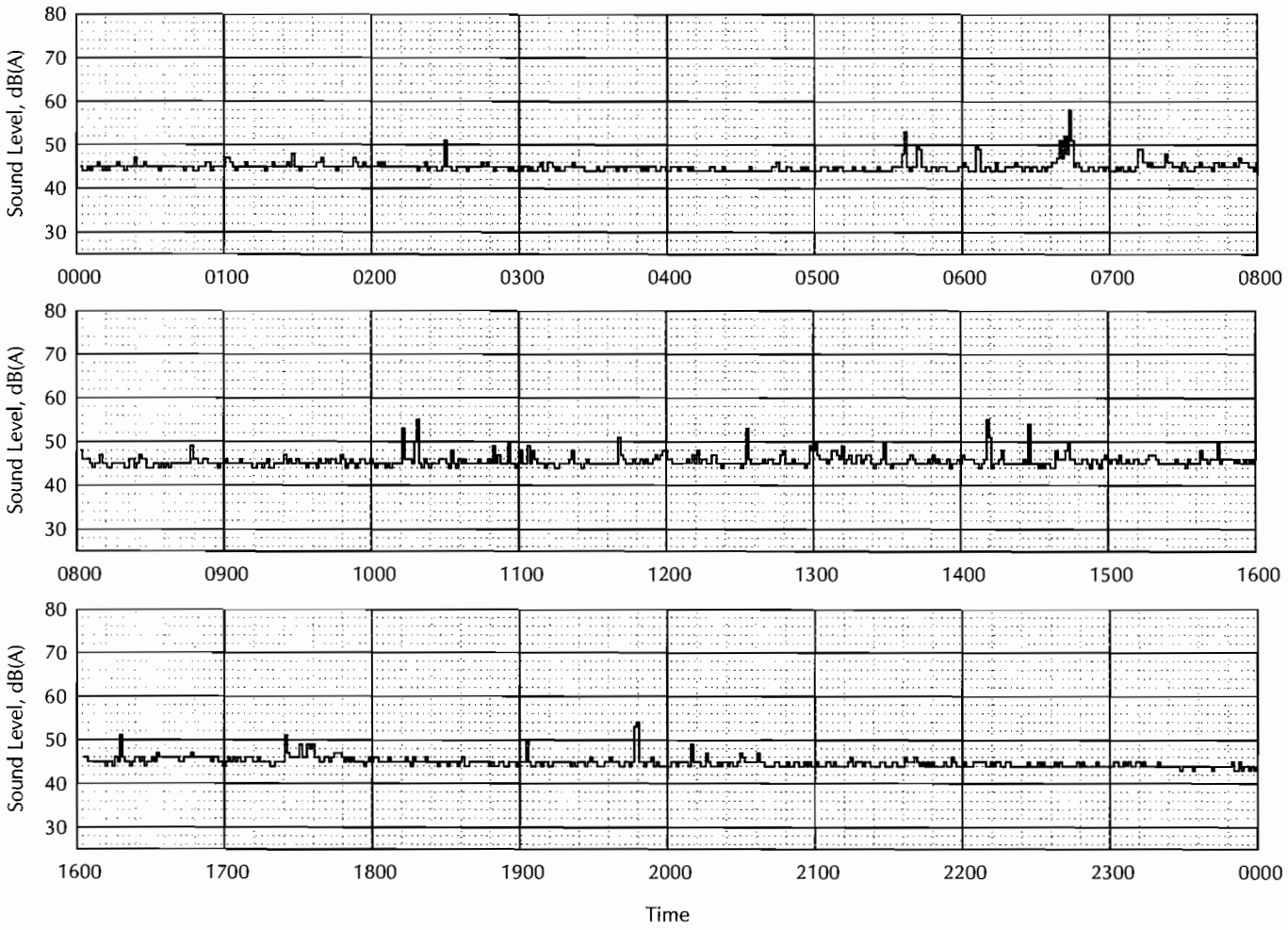

Figure 6

Project: Little Tor Substation
Project Number: 3599A

Measured Sound Levels at Location 3
Monday, 11 January 2010

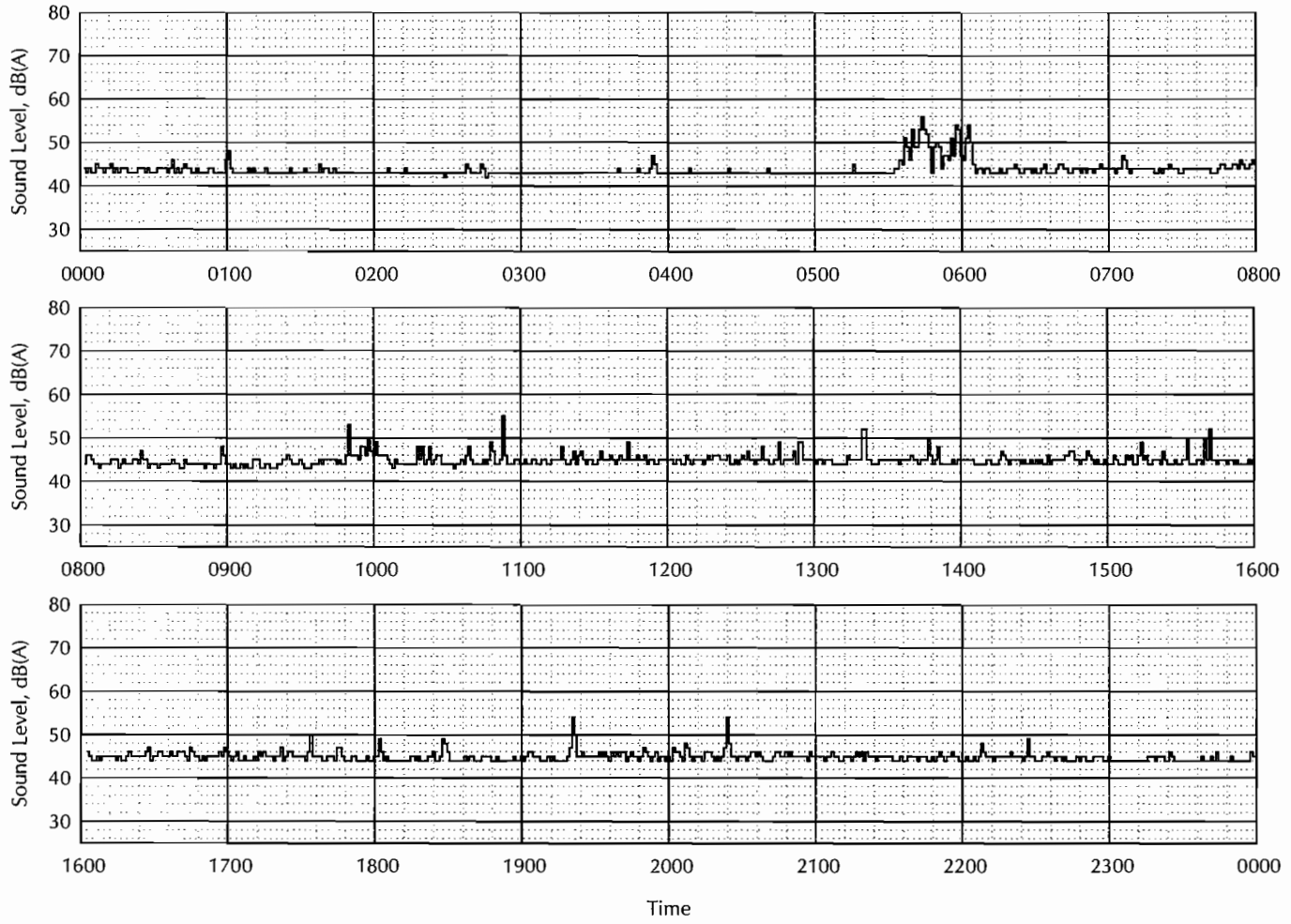

Figure 7

Project: Little Tor Substation
Project Number: 3599A

Measured Sound Levels at Location 4
Sunday, 10 January 2010

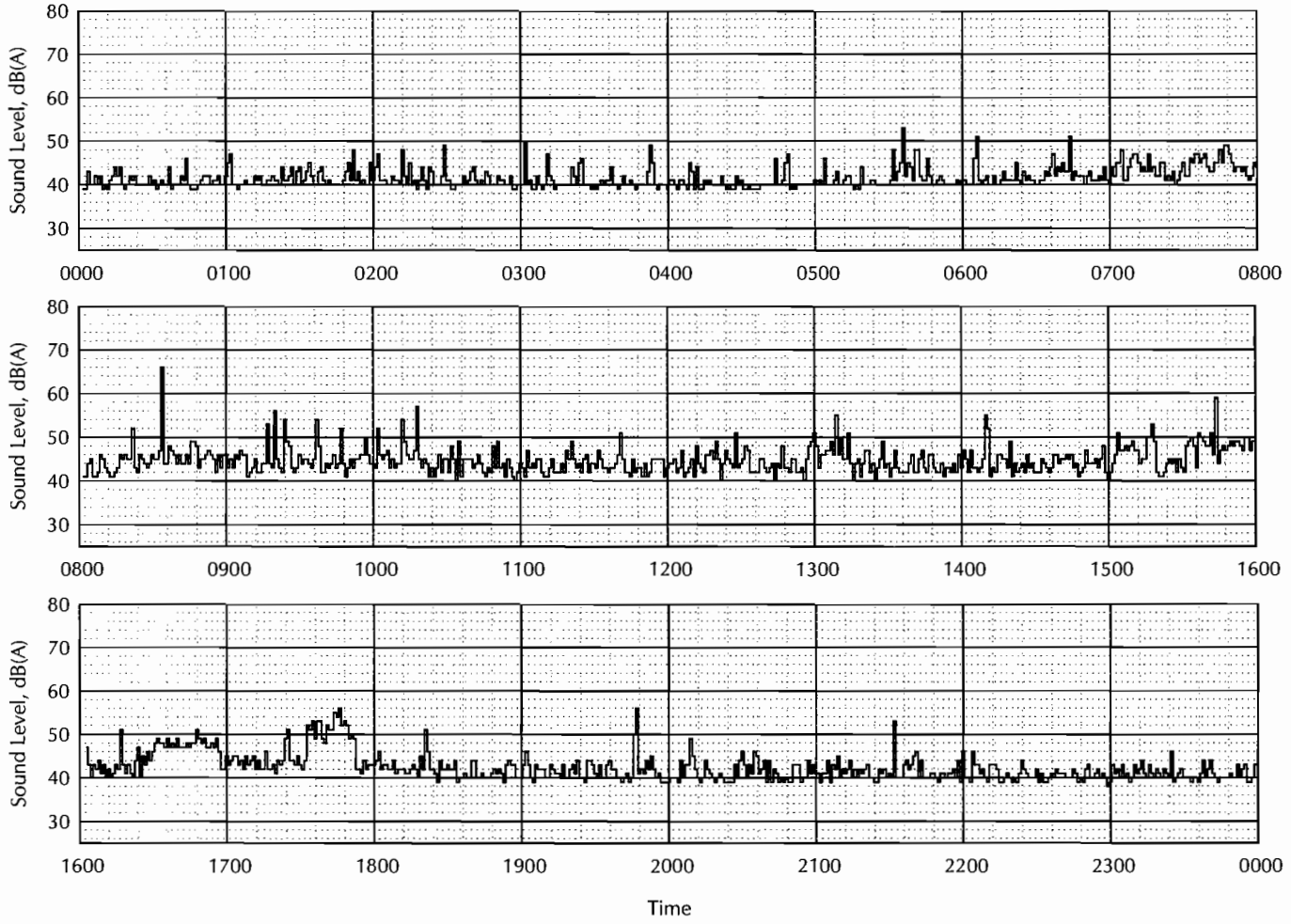

Figure 8

Project: Little Tor Substation
Project Number: 3599A

Measured Sound Levels at Location 4

Monday, 11 January 2010

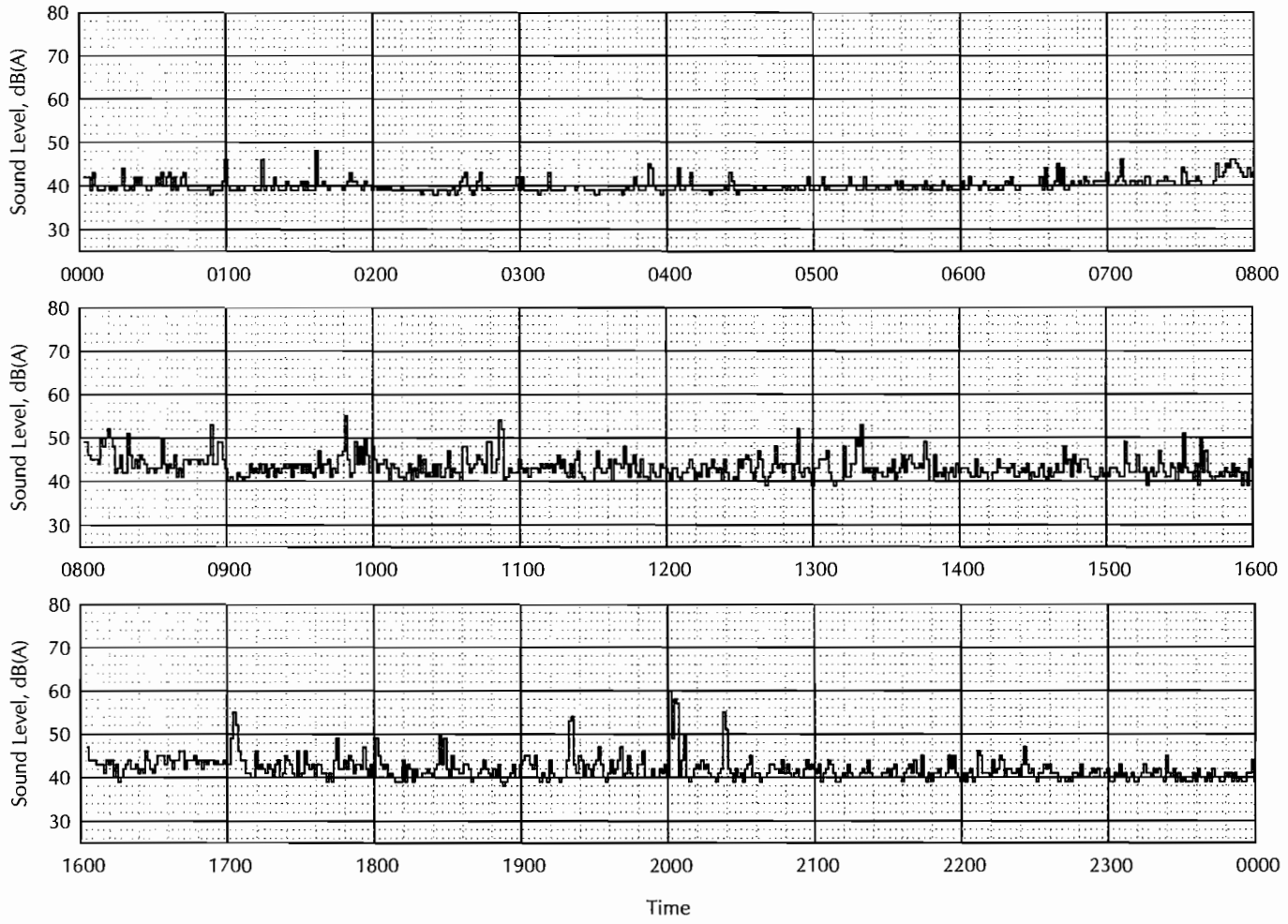

Figure 9

Project: Little Tor Substation
Project Number: 3559A

Statistical Distribution of Sound Levels at Location 1
Sunday, 10 January 2010

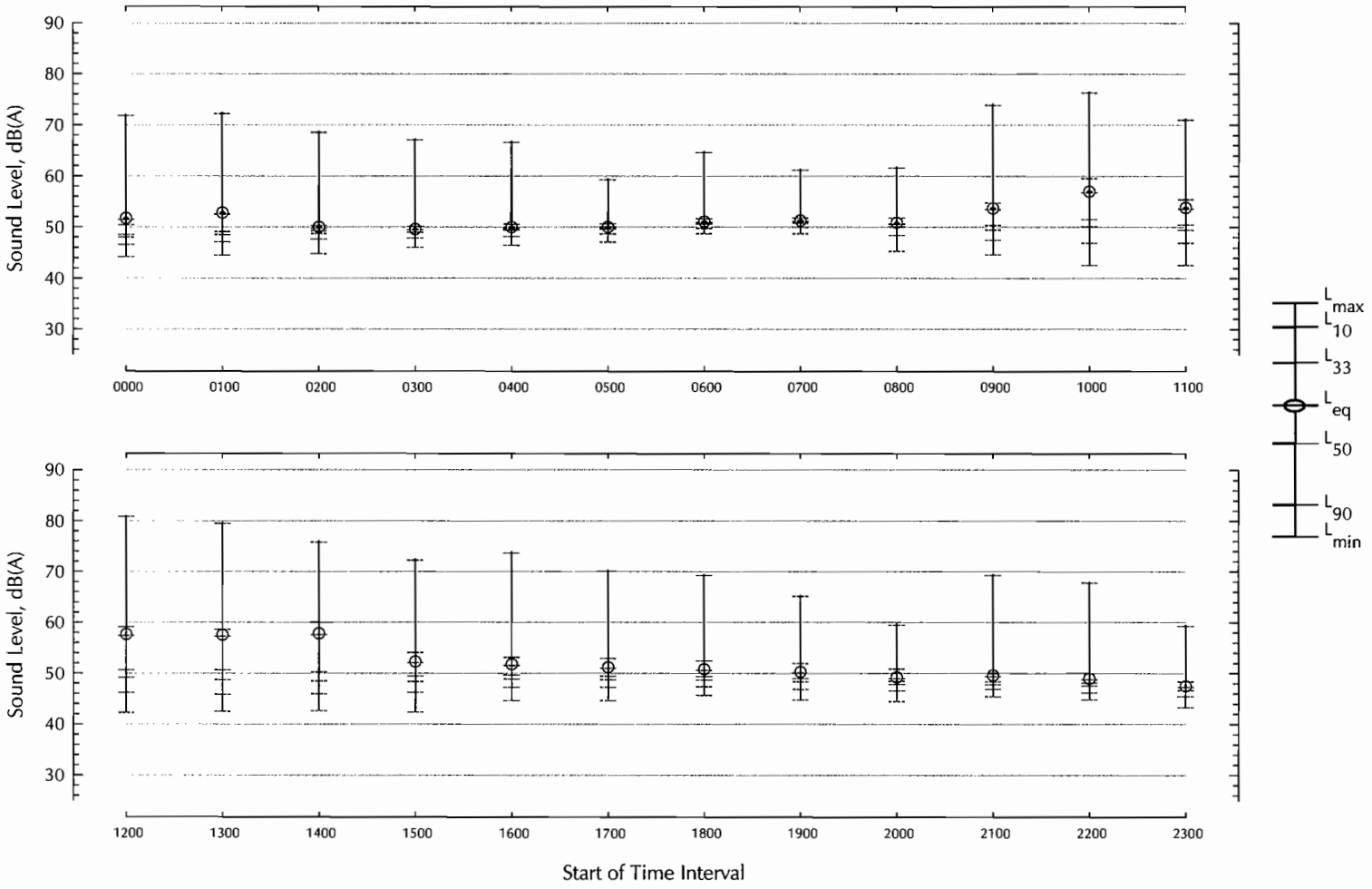

Figure 10

Project: Little Tor Substation
Project Number: 3559A

Statistical Distribution of Sound Levels at Location 1
Monday, 11 January 2010

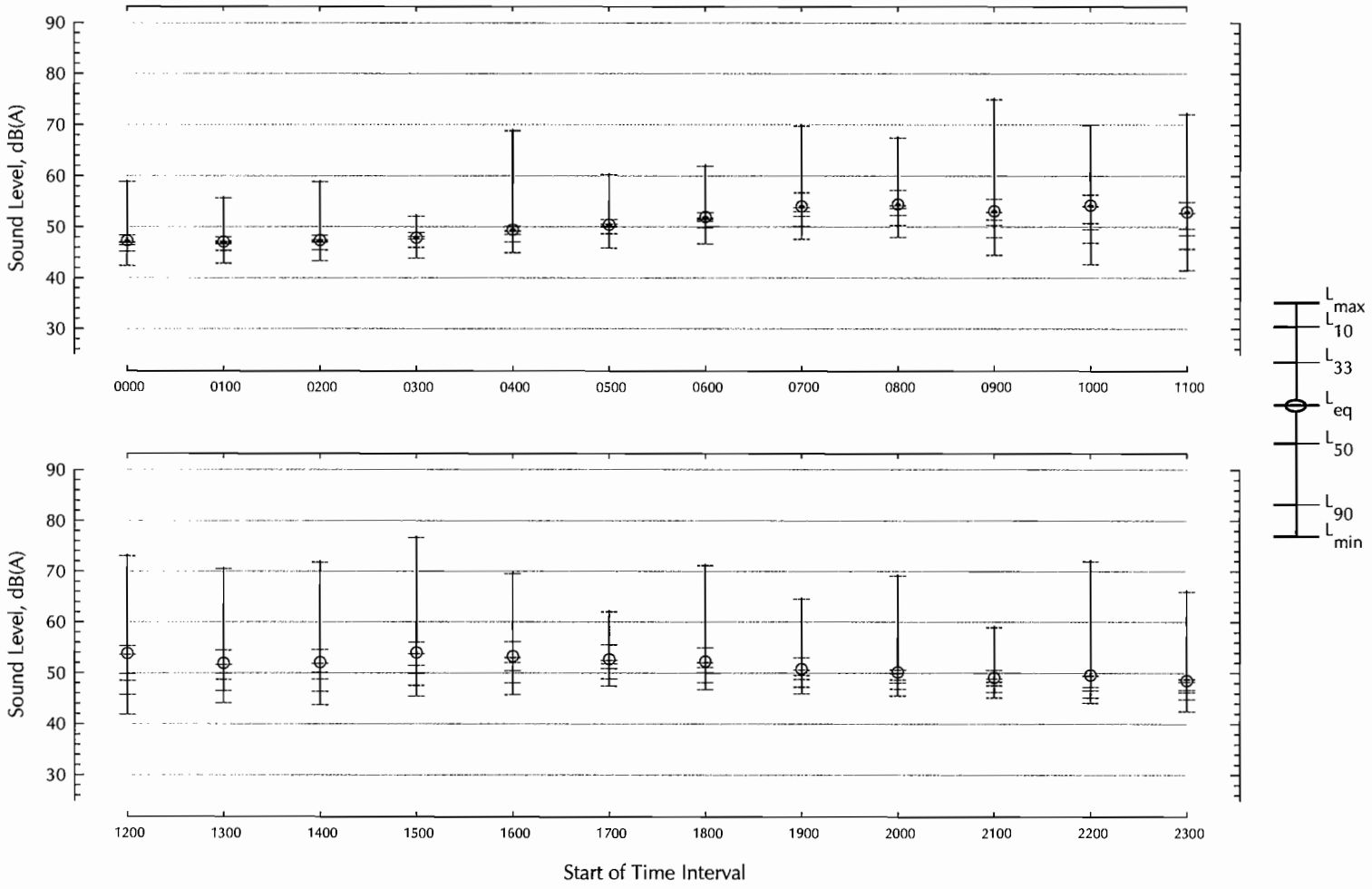

Figure 11

Project: Little Tor Substation
Project Number: 3559A

Statistical Distribution of Sound Levels at Location 2
Sunday, 10 January 2010

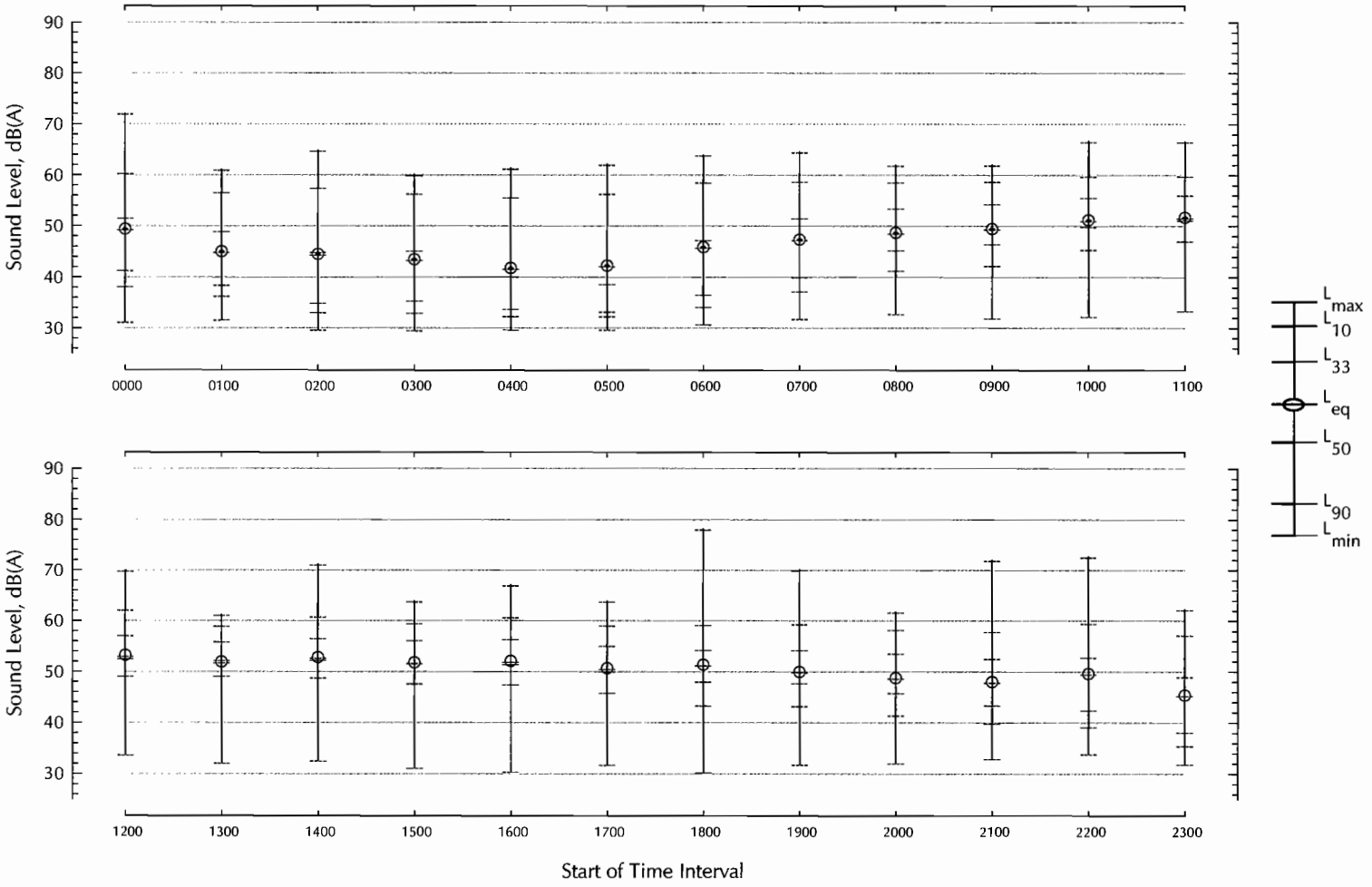

Figure 12

Project: Little Tor Substation
Project Number: 3559A

Statistical Distribution of Sound Levels at Location 2
Monday, 11 January 2010

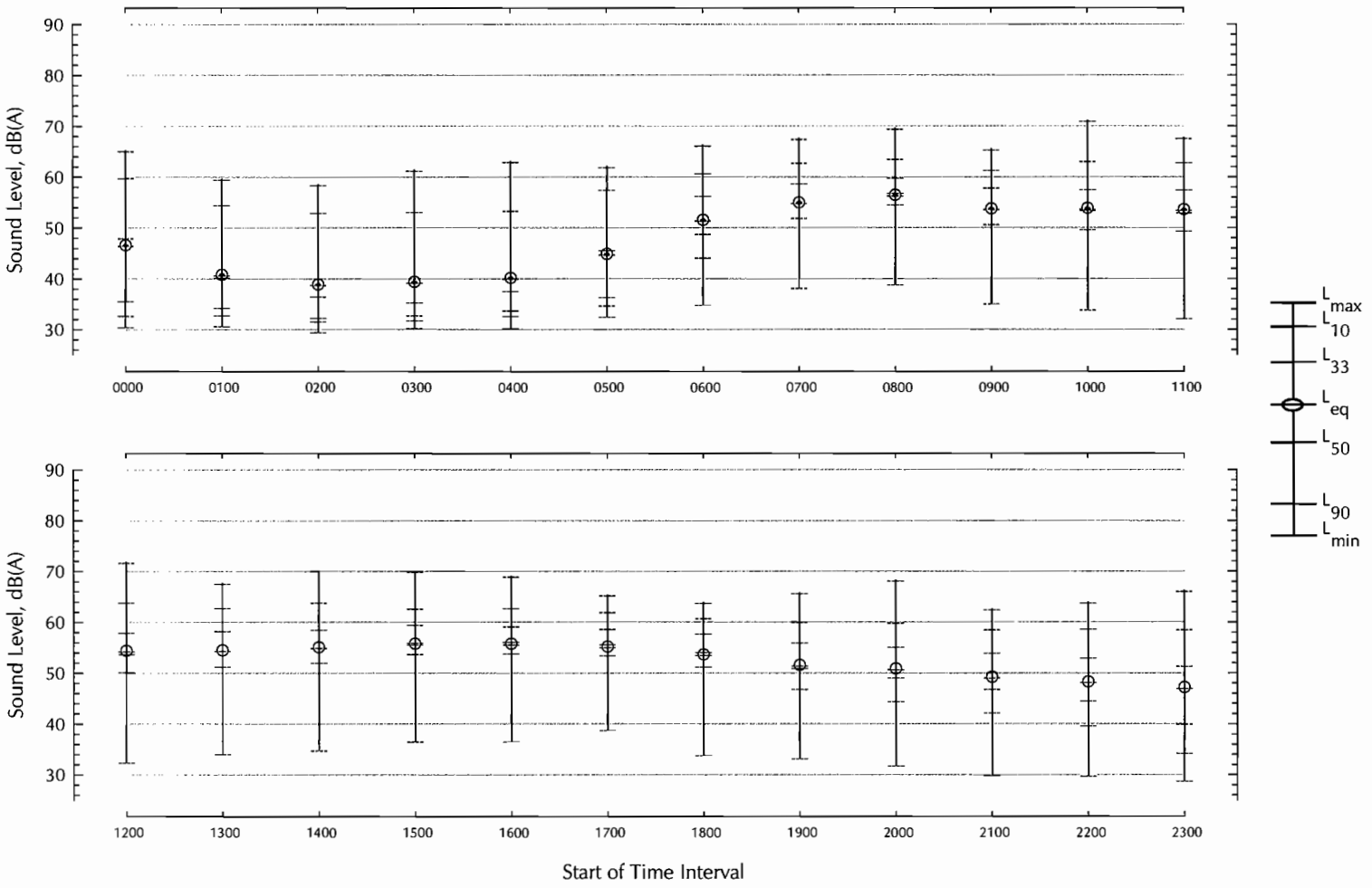

Figure 13

Project: Little Tor Substation
Project Number: 3559A

Statistical Distribution of Sound Levels at Location 3
Sunday, 10 January 2010

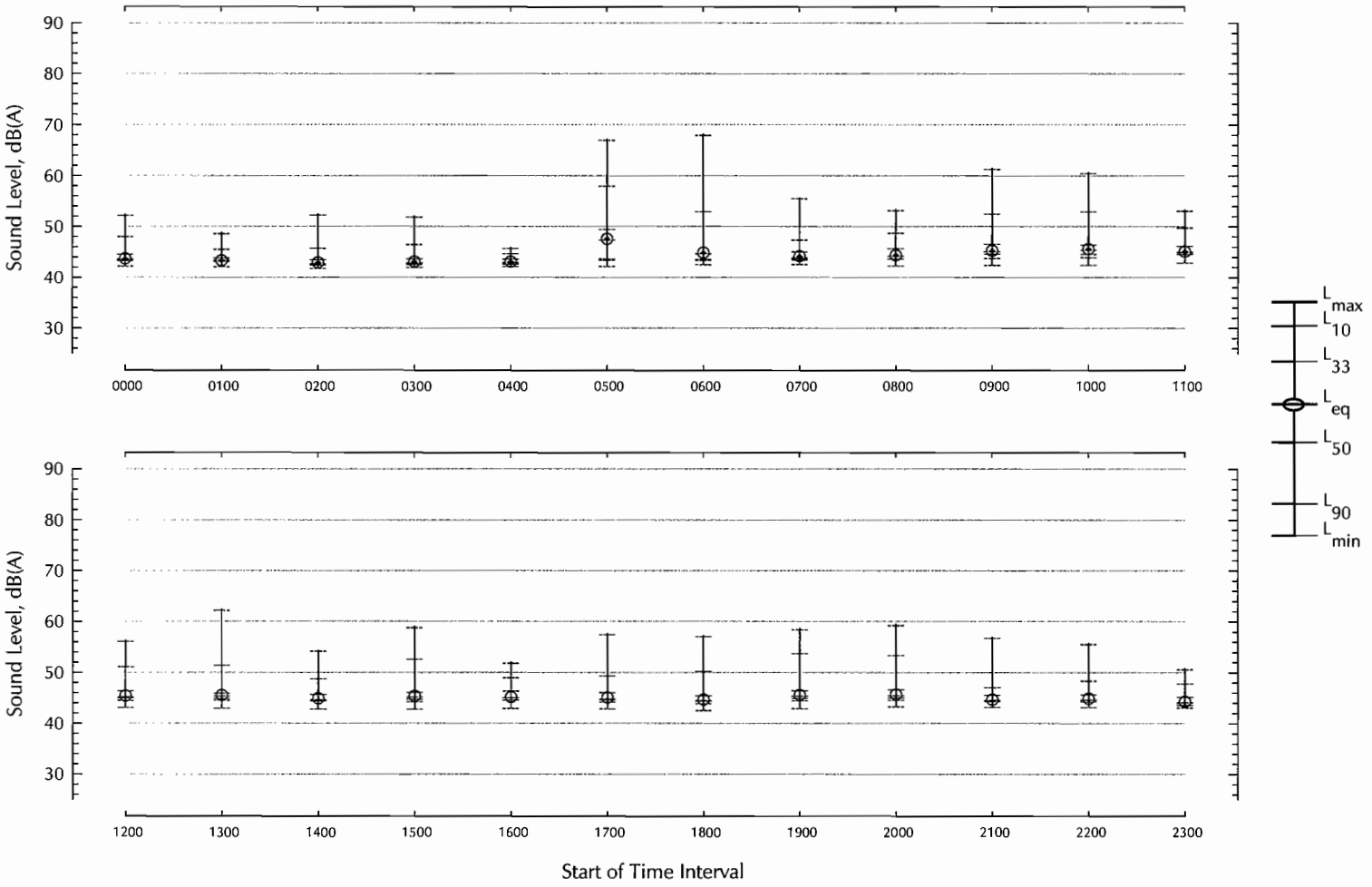

Figure 14

Project: Little Tor Substation
Project Number: 3559A

Statistical Distribution of Sound Levels at Location 3
Monday, 11 January 2010

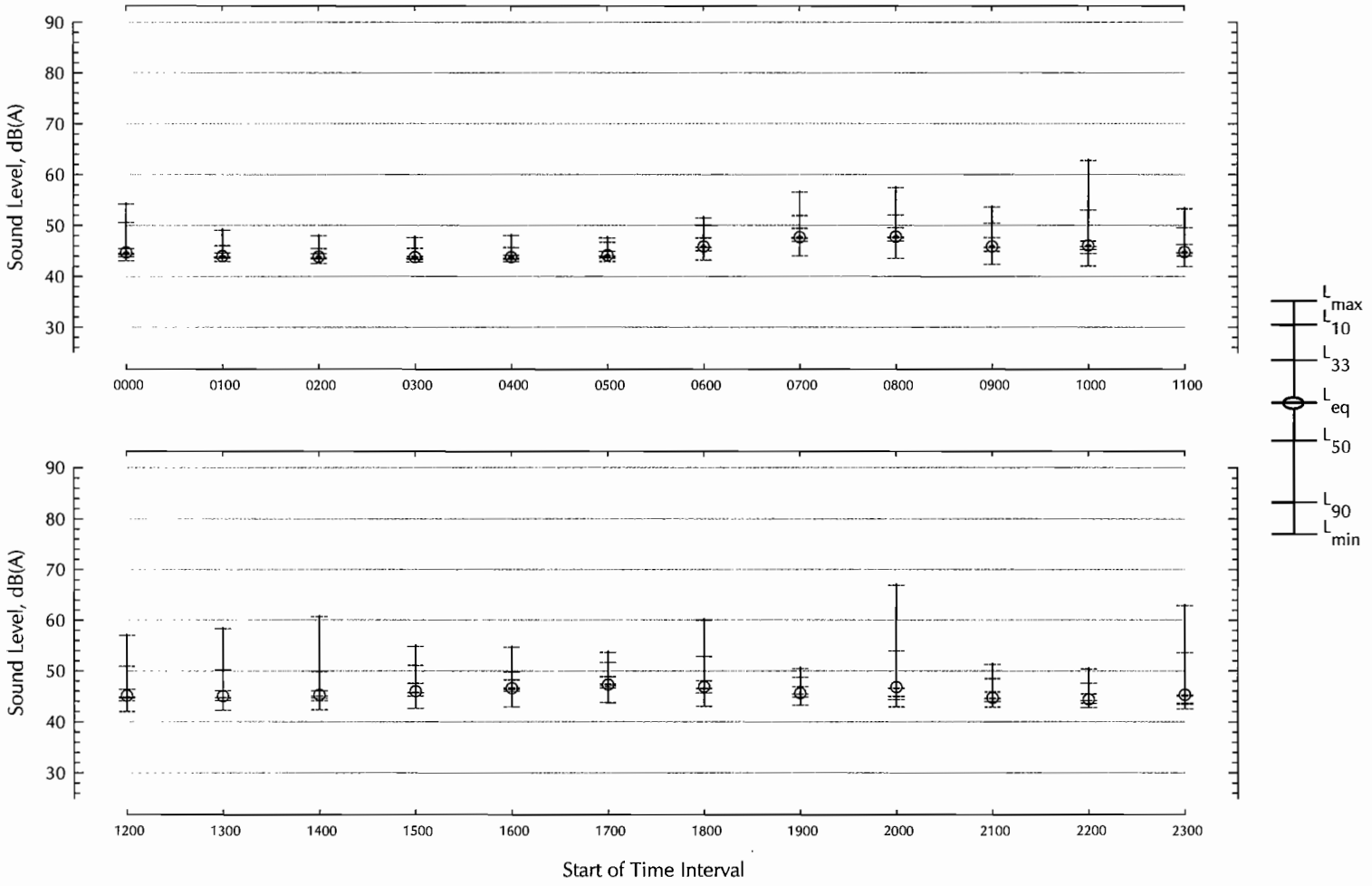

Figure 15

Project: Little Tor Substation
Project Number: 3559A

Statistical Distribution of Sound Levels at Location 4
Sunday, 10 January 2010

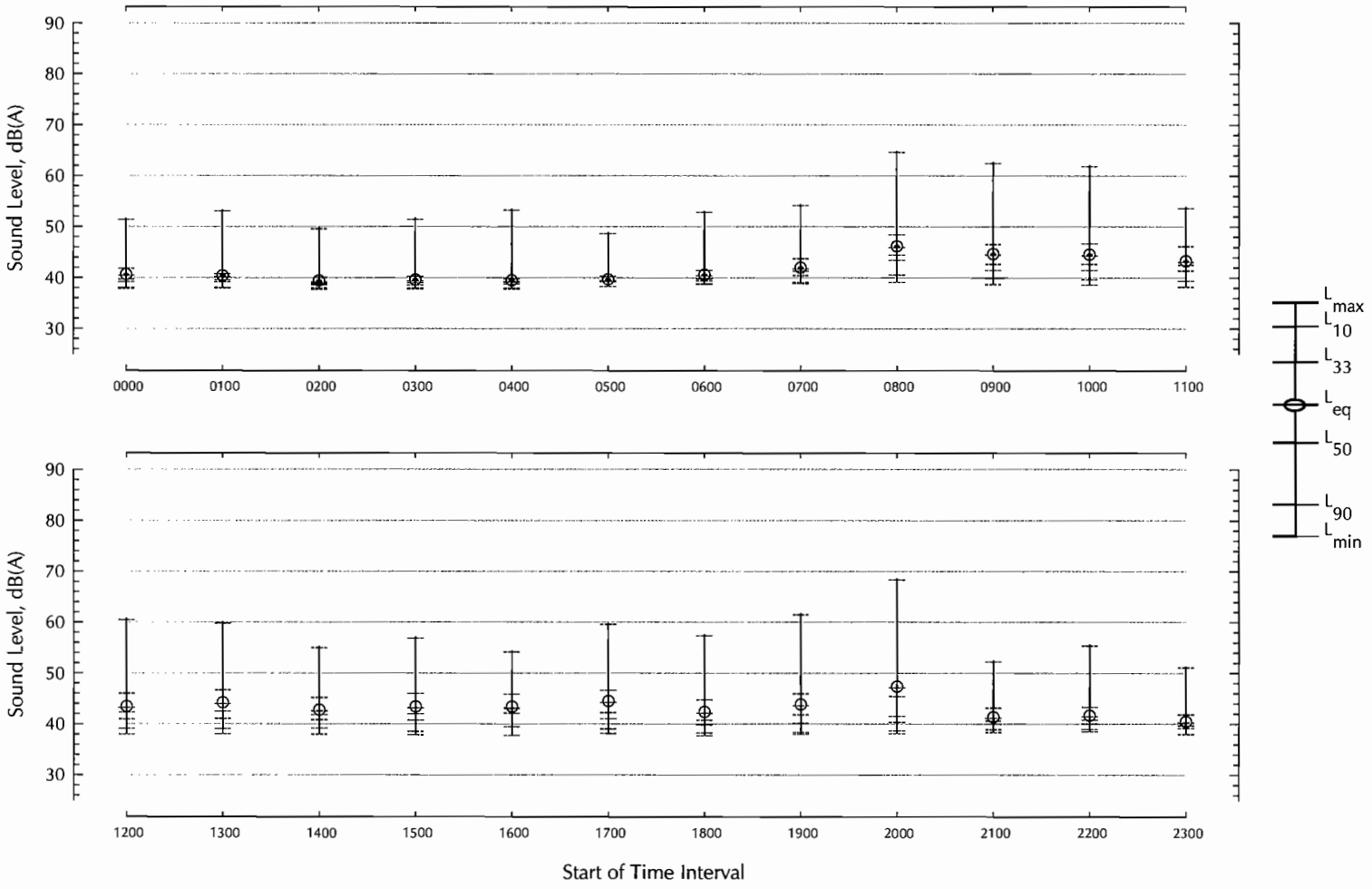

Figure 16

Project: Little Tor Substation
Project Number: 3559A

Statistical Distribution of Sound Levels at Location 4
Monday, 11 January 2010

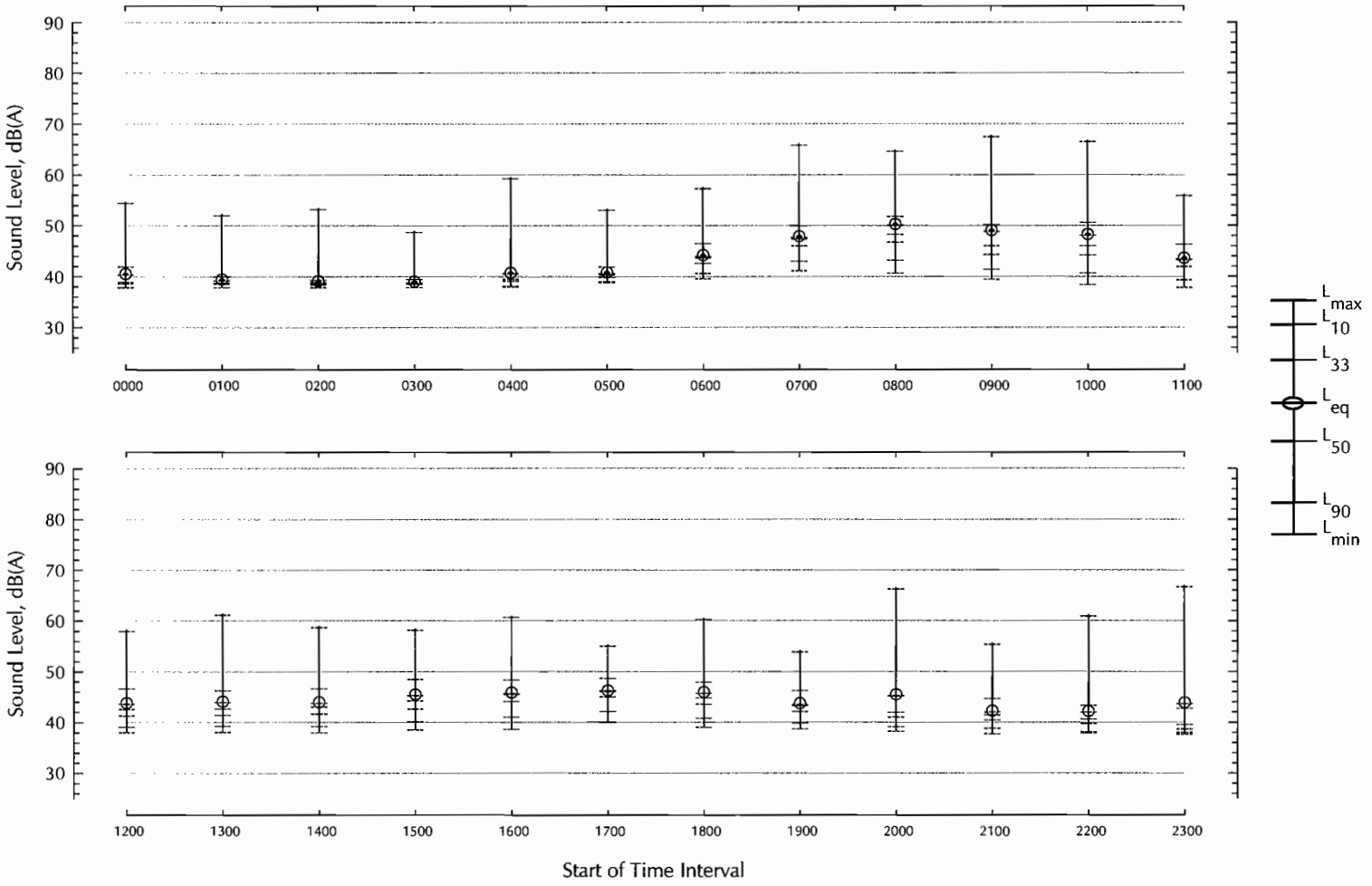

Figure 17

VII. OCTAVE BAND SOUND PRESSURE LEVEL MEASUREMENTS

Octave band sound pressure levels were measured during the daytime and nighttime on site. Daytime data were obtained on 13 January from 1130 to 1230 hours and nighttime data were obtained on 14 January from 2215 to 2315 hours. The data were obtained using a Bruel & Kjaer Model 2250 real-time sound analyzer. Information on the measurement equipment can be found in the Appendix A. Data were stored for later analysis in the laboratory. Ten-minute duration samples taken at each of the four locations are shown in Table I.

Table I — Measured day and night background (L_{90}) and intrusive (L_{10}) sound pressure levels at Locations 1 through 4, in dB re 20 μPa.

	Octave Band Center Frequency (Hz)							
	63	**125**	**250**	**500**	**1000**	**2000**	**4000**	**A***
Location 1								
Daytime L_{10}	59	54	50	49	48	45	37	53
Daytime L_{90}	51	44	36	37	37	37	32	44
Nighttime L_{10}	53	50	39	41	42	38	32	46
Nighttime L_{90}	47	43	36	37	35	34	29	41
Location 2								
Daytime L_{10}	62	63	52	50	55	51	45	58
Daytime L_{90}	50	45	35	37	38	33	25	43
Nighttime L_{10}	55	51	43	45	51	46	36	53
Nighttime L_{90}	48	43	34	36	32	24	18	37

Table I (continued)

Location 3								
Daytime L_{10}	56	54	50	42	42	38	33	47
Daytime L_{90}	48	41	34	35	36	33	28	40
Nighttime L_{10}	55	50	41	41	41	37	32	46
Nighttime L_{90}	48	43	37	38	38	35	30	42
Location 4								
Daytime L10	61	55	44	44	44	40	42	49
Daytime L90	49	42	34	35	34	35	33	42
Nighttime L10	52	48	40	41	41	38	32	45
Nighttime L90	48	44	36	37	35	34	29	41

* A denotes the A-weighted sound level

Daytime L_{10} sound pressure levels ranged from 47-to-58 dB(A) while L_{90} sound levels ranged from 40-to-44 dB(A). Similarly, nighttime L_{10} data ranged from 43-to-46 dB(A) and L_{90} data ranged from 37-to-42 dB(A). The daytime and nighttime L90 levels for Locations 3 and 4 were very similar because they are more remote from local traffic.

VIII. SITE MODELING

A computer model of the site and surrounding terrain was constructed based on CAD site plans provided by Orange and Rockland Utilities, equipment dimensions, manufacturer's sound data, and site measurements. Terrain contours were imported from the CAD files provided.

The acoustical model provides A-weighted sound pressure level contours for site noise sources. The contours are at 5 feet above grade. The model takes into account shielding and reflections provided by the transformers themselves, as well as other onsite structures such as the Verizon communication shelter and switchgear structure. Sound emissions were then calculated at various receiver locations on and off site. Locations 1 through 4 are the locations used for the ambient survey. Locations 5 through 10 are site property line locations and Locations 11 through 14 are at the nearest residences. These locations are abbreviated L1 through L14 in the modeling figures.

Transformers

The transformers were modeled using sound power level data for all fans operating to simulate worst-case sound emissions. Manufacturer's sound data sheets show all three units will have a maximum NEMA* rating of 60 dB(A). Figure 18 shows the resulting modeled sound emissions for the three proposed transformers. A color legend is provided as well as the A-weighted sound level result at receptor locations.

* NEMA = National Electrical Manufacturers Association

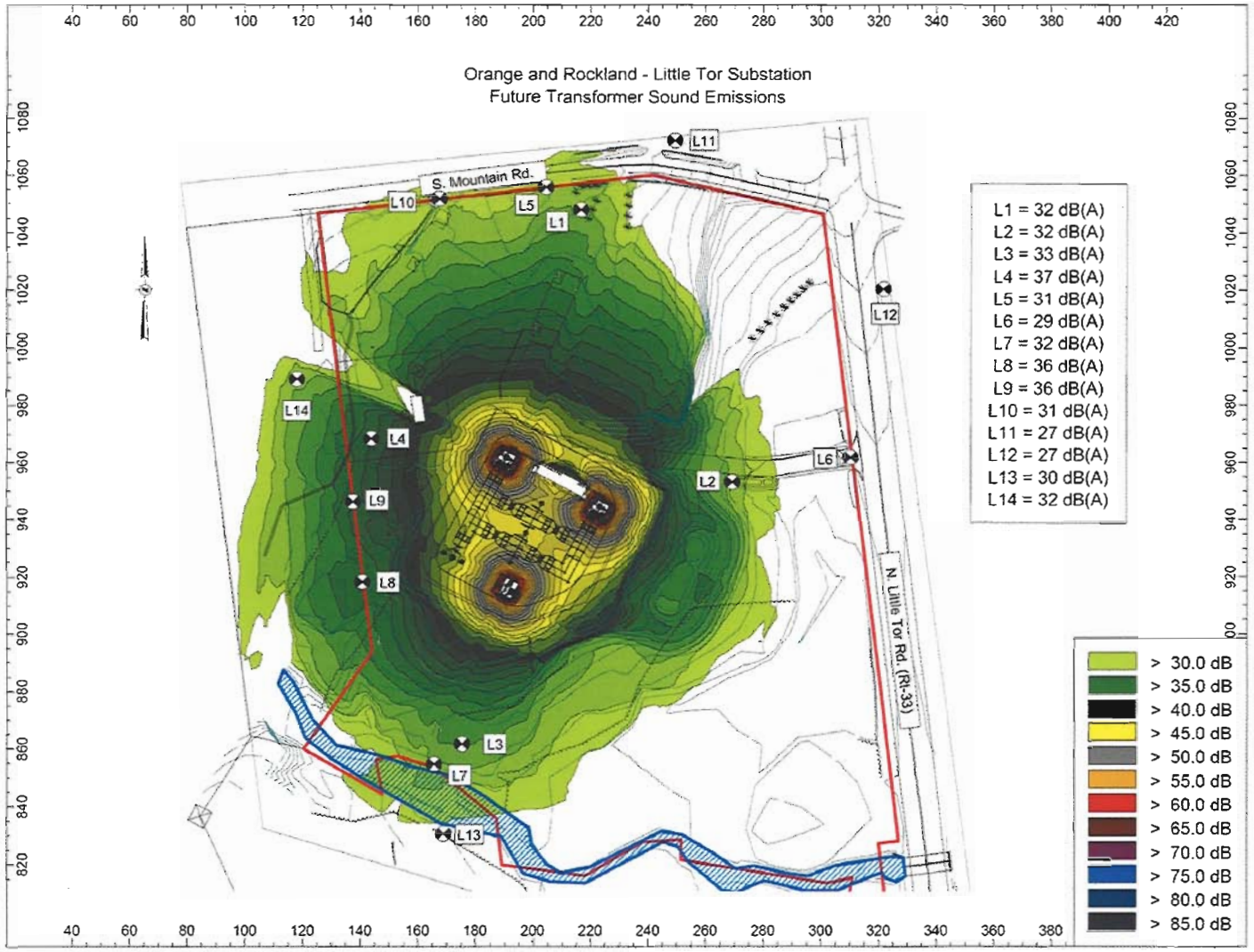

Figure 18 — A-weighted sound emission contours 5 feet above grade with all transformer cooling fans ON, Little Tor Substation.

Transformer noise is typically characterized by a "hum" at two times and four times the 60 Hz line frequency, or 120 and 240 Hz, as well as broadband fan noise which typically affects the mid-frequency ranges typified by the 500 and 1000 Hz octave bands. Transformers produce noise steady in nature and operate 24-hours a day. Because transformers have a tonal component, the more stringent criteria of 41 dB(A) per the Clarkstown noise code is appropriate. As shown in Figure 18, Locations 5 through 14 are all below 41 dB(A) and comply with the local code in both octave bands and A-weighted levels. Transformer noise is steady and therefore does not vary much over time. Therefore, the maximum emissions calculated are equal to the L_{10} level. When comparing transformer emissions to the county noise code limits, all property line locations are below the daytime and nighttime code.

Gas Regulator Stations

A gas regulator station, which includes both monitor and worker regulators, is located in the northwest corner of the site. The gas regulators operate 24-hours a day and produce noise relative to the inlet pressure of the natural gas at the regulator. Sound pressure level measurements were obtained during the day on 8 January to model existing emissions of the station. Gas regulator noise is predominantly high frequency noise, affecting 1000 Hz and above. The resulting sound emission contours are shown in Figure 19. The sound pressure level at the north property line, Location 10, is 61 dB(A) and exceeds both the local and county noise code.

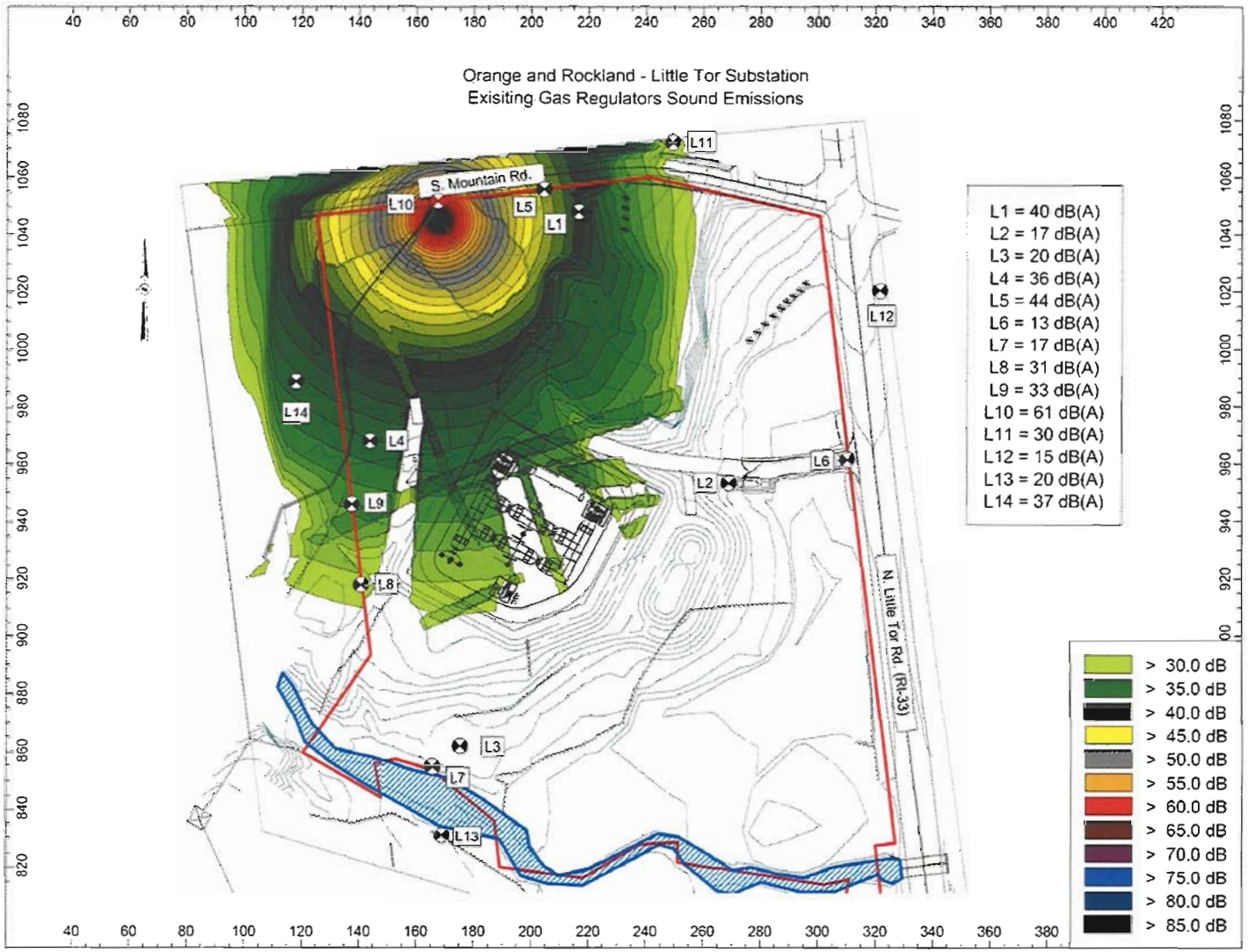

Figure 19 — A-weighted sound emission contours 5 feet above grade for existing gas regulator station, Little Tor Substation.

As part of the proposed work, the existing gas regulator station will be removed and replaced with separate monitor and worker gas regulator stations located more central on site. The monitor and worker regulators are in series and located 50 feet apart. The monitor station is closer to South Mountain Road. There are two regulators per station but only one per station operates at a time, as the other is redundant in case of emergency or repairs.

The regulators produce noise in proportion to the inlet gas pressure at the regulator. Monitor regulators are inversely proportional to the inlet pressure, that is when the pressure is low they produce more noise. The worker regulators are proportional to the inlet pressure and produce more noise with greater inlet pressure. Manufacturer's sound data for the regulators in these conditions were used in the model. Figures 20 and 21 provide the sound emission contours for the two gas pressure conditions: high inlet pressure and low inlet pressure. In addition, the noise produced from the three transformers is also included since it is the whole site that must comply with noise code regulations.

Although the transformer emissions alone comply with the local and county noise regulations, the addition of the gas regulators results in site emissions that exceed the local code limits (Figures 20 through 21). Comparing site sound emissions with the local criterion of 41 dB(A), Location 5 exceeds by 7 dB(A) and by 19 dB at 4000 Hz. At several other property line locations sound levels will exceed the octave band criteria as well. The gas regulator stations will require remediation to bring the site into compliance with the local code. The emissions in Figures 20 and 21 comply with the county noise code by a wide margin and all property line locations are below the most stringent county noise code requirement of 50 dB(A).

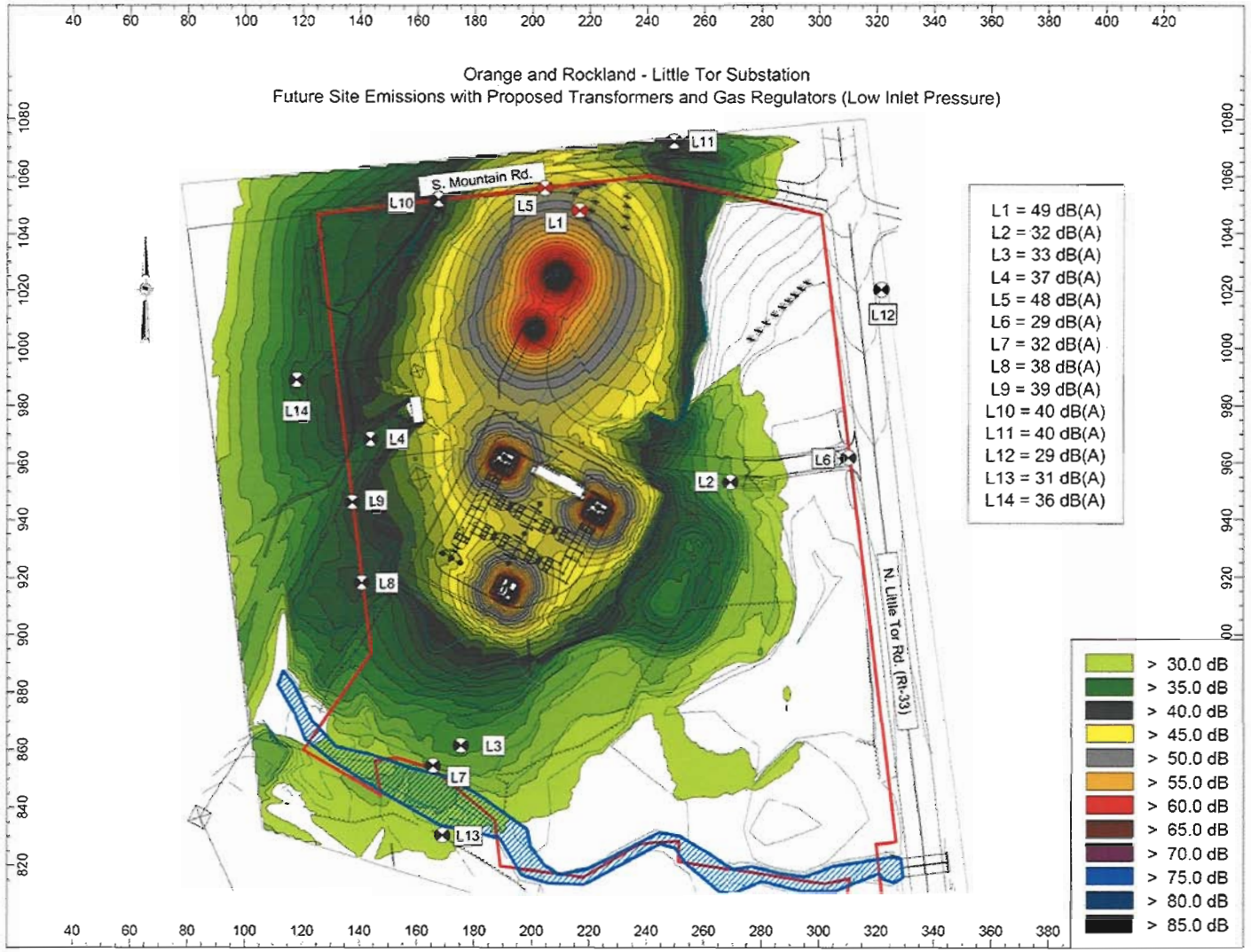

Figure 20 — A-weighted sound level contours 5 feet above grade for proposed transformers and gas regulator stations operating under low inlet pressure condition, Little Tor Substation.

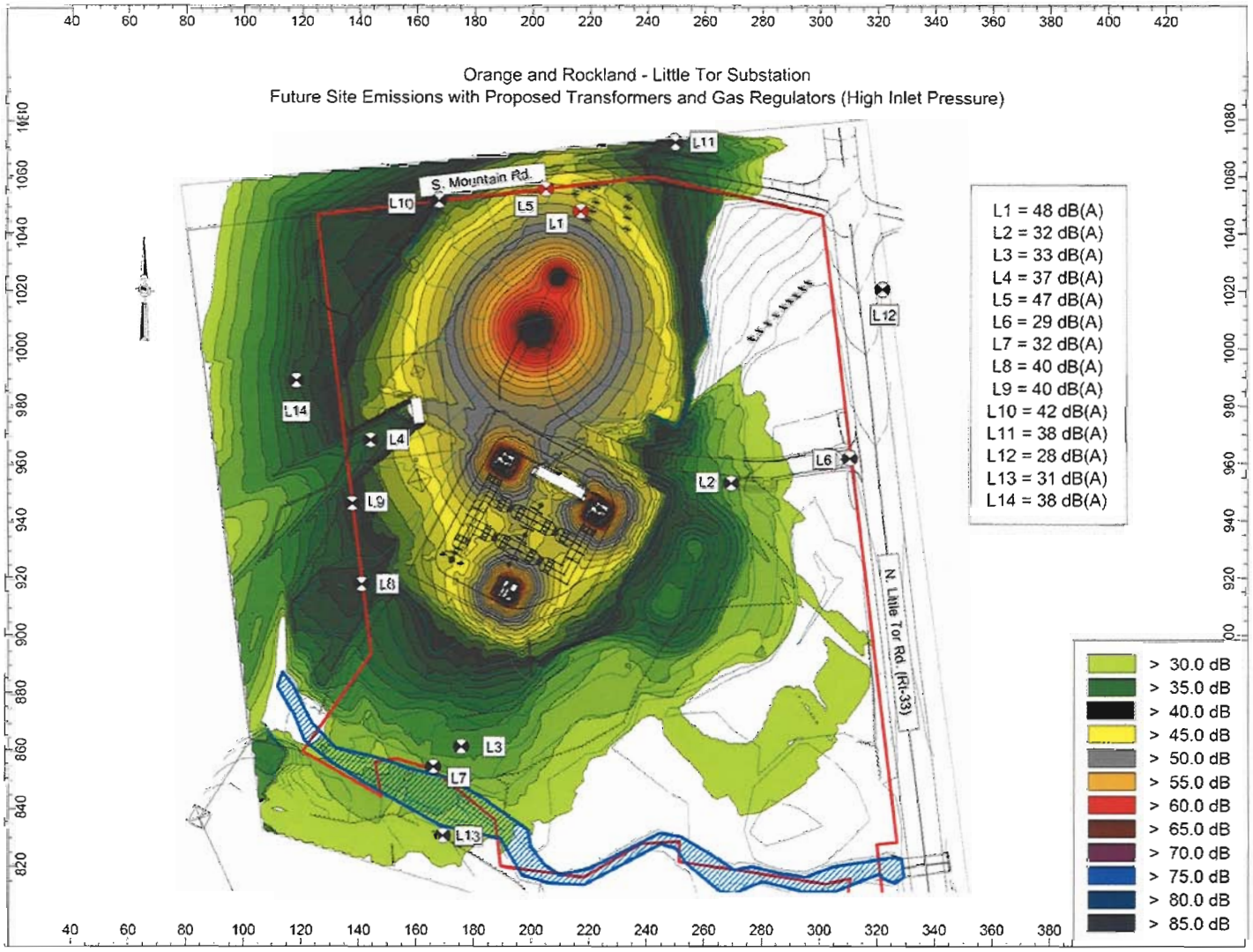

Figure 21 — A-weighted sound level contours 5 feet above grade for proposed transformers and gas regulator stations operating under high inlet pressure condition, Little Tor Substation.

IX. ACOUSTICAL IMPACT

Comparison of the projected future emissions at nearby residences to the measured nighttime ambient is indicative of the acoustical impact of the proposed site. The highest emissions at Locations 11 through 14 (From Figures 20 and 21) were compared with the measured nighttime background sound data (Table 1). Results are shown in Figures 22 through 25. At all locations, the future site emissions are well below the ambient at 1000 Hz and below. Figures 22 and 25 to the north and west respectively, show emissions exceeding the ambient by 5 to 6 dB at 4000 Hz and above and will be noticeable. This high frequency noise is due to the gas regulators. Figure 23 shows high frequency emissions equaling the nighttime ambient, which means site noise will be just noticeable. There will be no acoustical impact at residences to the south as shown in Figure 24 where all emissions are well below the nighttime ambient.

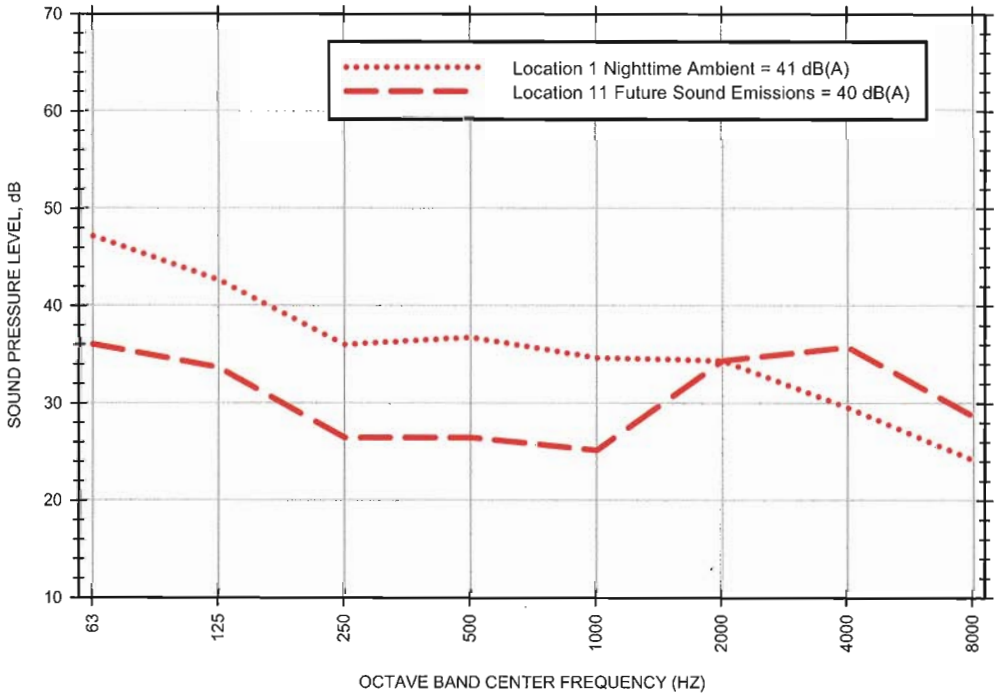

Figure 22 — Comparison of future site emissions to nighttime ambient at Location 11, the nearest residence to the north.

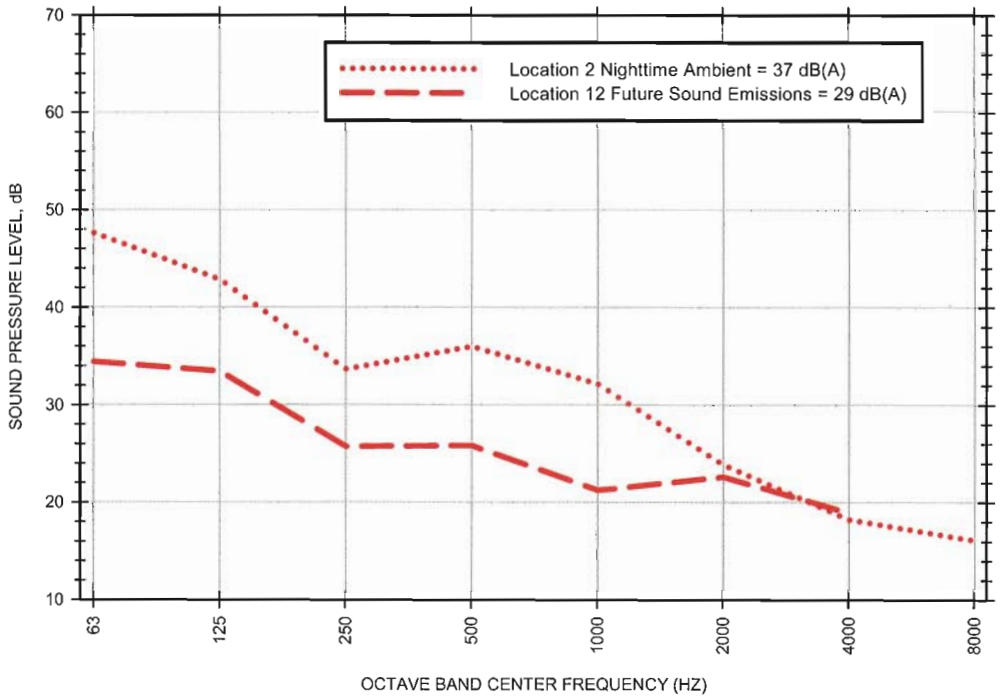

Figure 23 — Comparison of future site emissions to nighttime ambient at Location 12, the nearest residence to the east.

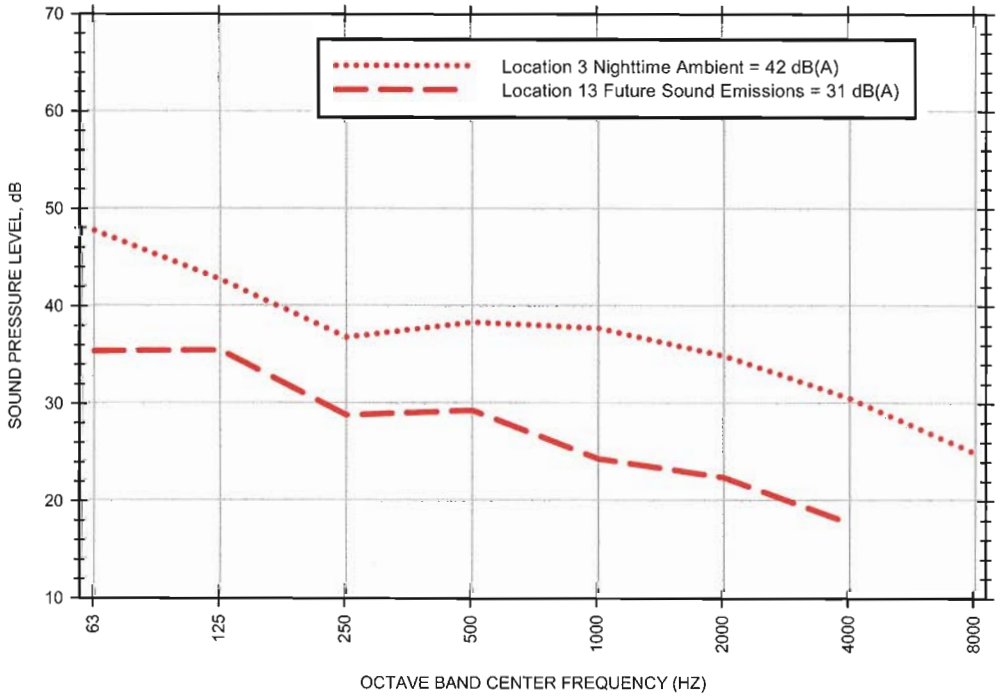

Figure 24 — Comparison of future site emissions to nighttime ambient at Location 13, the nearest residence to the south.

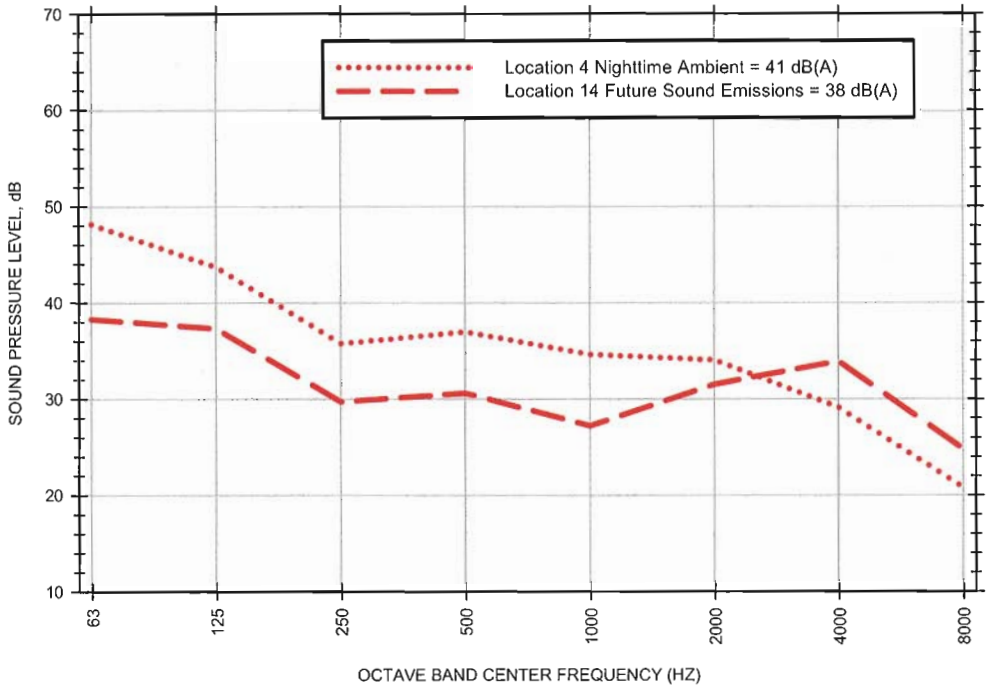

Figure 25 — Comparison of future site emissions to nighttime ambient at Location 14, the nearest residence to the west.

X. CONCLUSION

Based on the above analysis, the sound contributed by the proposed Little Tor substation will exceed the local Clarkstown noise regulation at property line locations to the north and west. This is due to the two gas regulator stations on the north portion of the site. Noise control is recommended for these noise sources. Mitigation can be provided in the form of an acoustical barrier to shield regulator noise from the property line and residential receptors.

As the site is currently proposed with all transformers and gas regulator stations, there will be no acoustical impact to residences to the south and a minor impact to the east. The greatest acoustical impact will occur to the north and west and predominately affect the high frequency octave bands, from 2000 Hz to 8000 Hz. The site emissions are expected to raise the ambient by 4 to 6 dB in these octave bands and will be noticeable.

APPENDIX A

INSTRUMENTATION

The measurements were carried out using Larson-Davis Model 720 and 820 automated noise monitors. The monitors were programmed to sample the noise 8 times every second and record the average noise level derived from those measurements every minute. The monitors also store hourly statistics including the maximum, minimum, and average noise levels that occur during each hour.

The monitors were calibrated before and after the survey by means of a sound pressure level calibrator. The calibrator used was a Bruel & Kjaer Model 4230, Serial Number 909520, last calibrated by an outside calibration service in October 2009. This calibration is traceable to the National Institute of Standards and Technology, NIST.

Two graphical displays are presented in this report. The time history graphs show the minute-by-minute average sound readings at each location for a period of 24 hours. From this type of display, we can identify unusual noise occurrences. The statistical graphs show the hourly statistics obtained at each location over 24 hours. This is useful to identify how noise varied over the course of an individual hour.

Octave band sound levels were measured with a Bruel & Kjaer 2250 real-time sound analyzer. The analyzer was programmed to measure and store sound levels every second for 10 minutes. The statistical distribution of sound was calculated from these six hundred samples. The analyzer was calibrated before and after each survey using a Bruel & Kjaer Model 4231, Serial Number 2445631 last calibrated by an outside calibration service in August 2009.

Overall the data reported here can be considered accurate to the nearest decibel.

OSTERGAARD ACOUSTICAL ASSOCIATES
200 Executive Drive
W Orange NJ 07052
Voice 973-731-7002
Fax 973-731-6680
acousticalconsultant.com

VIA MAIL & EMAIL lanzaj@oru.com

12 April 2010

Ms. Joanne Lanza, Electrical Engineer
Transmission & Substation Engineering
Orange and Rockland Utilities, Inc.
390 West Route 59
Spring Valley, NY 10977

Re: Gas Regulator Noise Mitigation
Little Tor Substation, Clarkstown, New York
OAA File 3599B

Dear Ms. Lanza:

As requested, we have evaluated noise control options to bring the gas regulator stations into compliance with the local and county noise code. The site currently contains a gas regulator station in the northeast corner of the site. Plans call for a new electric substation and relocating and reconfiguring the regulators to two separate stations, a worker station and a monitor station. The worker station will be moved to the northernmost station nearer to South Mountain Road. The monitor station will be 50 feet south of the worker station. The site and equipment locations are shown in Figure 1, based on aerials obtained from Google Earth.

Figure 1 — Site and vicinity with existing and future equipment locations shown.

The details and results of our acoustical impact analysis of the existing and proposed site plans were given in our 1 February 2010 report. Our findings showed that the existing gas regulator station exceeds both county and local noise codes at the nearest property line. Calculations show that the proposed regulators in the new locations, while farther from the property line, will still exceed the local noise code of 46 dB(A). Mitigation is needed to bring the gas regulator stations into compliance.

Two gas pressure conditions are accommodated, high inlet and low inlet, which affect the noise produced by the regulators. The low inlet condition results in higher sound contributions at the north property line and is the focus of our noise control efforts. Figure 2 is taken from our 1 February report and shows the future sound emissions with gas regulators under low inlet pressure, without noise control.

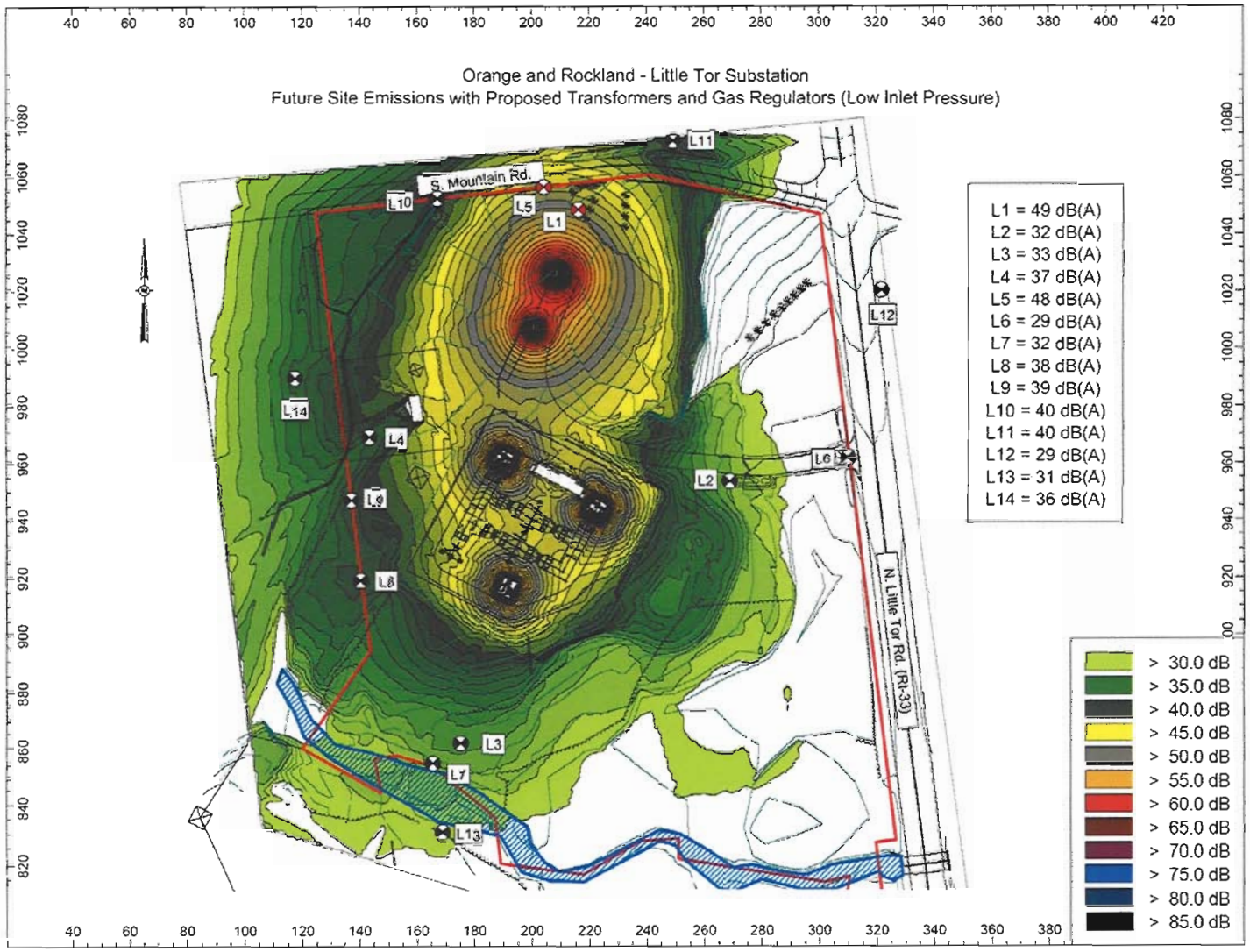

Figure 2 — A-weighted sound emission contours 5 feet above grade at Orange and Rockland Little Tor site. Proposed transformers and gas regulator stations operating under low inlet pressure condition.

APPLICABLE REGULATIONS

The local noise code of Clarkstown, New York is given in Chapter 205 Noise, and Chapter 290-13, Performance Standards. Chapter 205 is a nuisance noise ordinance and does not include quantitative noise limits. For a residential district, Chapter 290-13 specifies a nighttime noise limit of 46 dB(A) from 2200 hours to 0700 hours measured 25 feet from the principal on-site building. Because there is no principal building on site, we used the 46 dB(A) limit at the substation property line. This limit is reduced to 41 dB(A) for noises of periodic character such as a hum. There are also limits in octave frequency bands.

Article IX of the Rockland County Sanitary Code also provides noise limits in section 9.8.2. This section limits noise produced at a residential property line to a maximum sound pressure level of 65 dB(A), or L_{10} of 60 dB(A), during the day, from 0700 hours to 2200 hours. This limit is reduced to a maximum sound level of 55 dB(A), or L_{10} of 50 dB(A), at night, from 2200 hours to 0700 hours.

The State of New York has not implemented a state-wide noise code.

MITIGATION

Where there is insufficient distance for equipment sound emissions to meet codes, mitigation needs to be investigated and implemented. Sometimes it is possible to procure quieter equipment. For this application, I understand that equipment has already been purchased, so that the only option for mitigation is to interpose screening between the noise sources and receptor locations where code limits need to be met. The screening is customarily in the form of acoustical barriers.

To be effective, acoustical barriers need to have the following characteristics:

- Sufficient sound transmission loss so that sound reaching the other side is forced to travel over, not through, the barrier panel.

- A sound absorptive surface facing the noise source. This is important in suppressing reflections to other areas and reducing the build-up of sound between the noise source and barrier.

- Tall and long enough so that sufficient shadowing of sound is achieved at receptor vantage points.

Note that all three of the above barrier characteristics are a function of frequency. Higher frequencies, like those produced by the regulators, are easier to block and absorb, whereas lower frequencies are more difficult to control. The gas regulators produce the highest levels in the 2000 Hz and 4000 Hz octave bands.

In addition to acoustical considerations, barrier placement needs to be sensitive to clearance requirements established by Orange and Rockland for access and maintenance of equipment. To accommodate this, the barrier should be located in place of, or outside of, the proposed fence surrounding the regulators.

Manufacturer's sound data were used in the acoustical model to simulate the worst-case low inlet pressure flow condition, which results in the highest noise level. Normal operating flow conditions will produce lower sound levels.

There are many possible configurations for barriers that can successfully mitigate conditions. The objective is to minimize the extent of barrier to minimize costs. Figure 3 shows a barrier configuration that introduces an 8-foot U-shaped length of barrier around each regulator station with the regulators operating at the worst-case low inlet pressure. The concept is to shield the property line from the noise source. The results show that in addition to being below the nighttime noise code limit of 46 dB(A), there is compliance in all octave band frequencies including at 2000 and 4000 Hz.

Each barrier should be carried 8 feet above grade and follow the outline of the proposed security fences, nominally 15′ x 20′ in plan. For both stations, the south segment is 15 feet and the west segment is 20 feet in length. The barrier for the north Worker Regulator station has a longer north segment, which is 20 feet in plan. The north segment of the Monitor Regulator station is 15 feet.

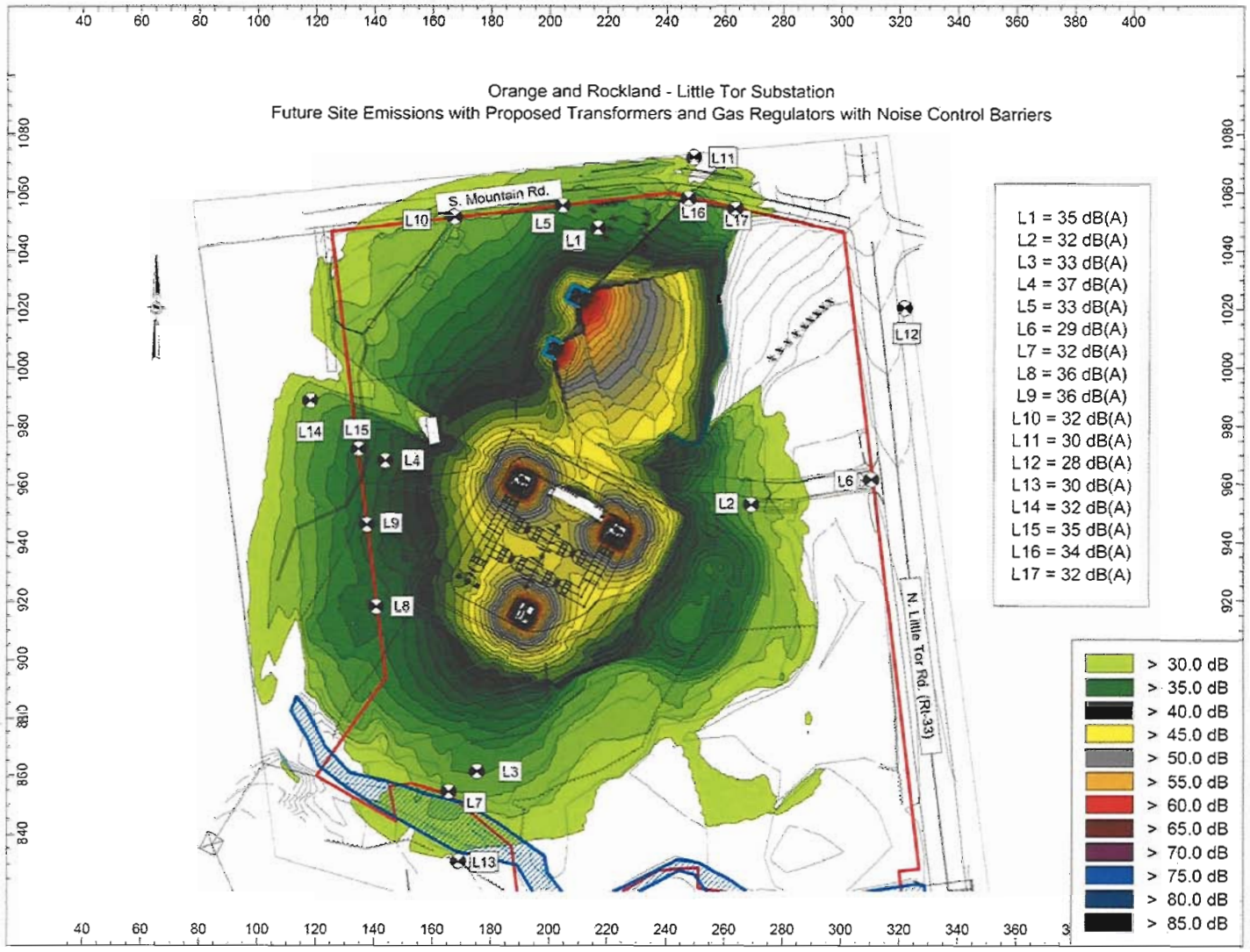

Figure 3 — A-weighted sound emission contours 5 feet above grade at Orange and Rockland Little Tor site. Future conditions with substation and gas regulators under worst-case low inlet pressure with U-shaped barriers shown in light blue.

BARRIER IMPLEMENTATION

The important acoustical characteristics for acceptable noise control barriers, in addition to the minimum height of 8 feet and the 3-sided layout shown in Figure 3, are as follows:

- The barrier needs to force sound to go over the panel, not leak through it. Therefore acceptable barrier materials need to be solid and have a minimum surface weight of 4 lbs/ft^2 for this application.

- The barrier needs to seal well to the ground so that sound does not leak under the barrier.

- A sound absorptive inner face, facing the regulators, is necessary for this application.

Hence, acceptable barriers can be constructed using precast or cast-in-place concrete lined with sound absorptive material such as 3-inch thick M-90 panels by Empire Acoustical Systems. Also acceptable are acoustical metal panels from manufacturers such as Aeroacoustic or Industrial Acoustics (IAC), or special systems such as the Sound Fighter LSE System from Noise Abatement Technologies. Because the noise reduction demands are not stringent, a good fit for this project are non-metallic (PVC) acoustical barriers. The ArtUSA Silent Protector Barrier has the aesthetics of a PVC fence on the exterior but has acoustical fill and a perforated interior.

The attached acoustical specification summarizes the required important characteristics for manufactured barrier products. A convenient means to seal to the ground is to bring the barrier panels in contact with existing or new gravel and infill any gaps from both sides of the panel with pea gravel.

The barrier needs to accommodate access to the equipment for both occasional inspection or more complex maintenance operations. Orange and Rockland needs to clarify access requirement and oversee placement of acoustical compatible man-doors or larger access panels. Ostergaard Acoustical Associates is prepared to work with Orange and Rockland and the chosen supplier to insure that access meets both acoustical and operational needs.

Regardless of which manufactured barrier product is under consideration by Orange and Rockland, Ostergaard Acoustical Associates should be asked to review product submittals before the project is released for construction.

Ostergaard Acoustical Associates should also be asked to review bid documents and Orange and Rockland's drawings, prior to release for pricing, to insure correct interpretation of our recommendations and to allow updating of our acoustical model. Structural and other non-acoustical aspects of the installation need to be overseen by qualified professionals at Orange and Rockland.

❑ ❑ ❑ ❑

I trust the above is useful to you and look forward to answering any questions you might have.

Sincerely yours,

OSTERGAARD ACOUSTICAL ASSOCIATES

Benjamin C. Mueller, P.E.
Senior Engineer

BCM:amc

Enclosure

ACOUSTICAL SPECIFICATION
ACOUSTICAL BARRIER FOR SCREENING GAS REGULATORS
ORANGE AND ROCKLAND LITTLE TOR SUBSTATION, CLARKSTOWN, NEW YORK

An acoustical barrier is needed to reduce the noise radiated to the community from two gas regulator stations associated with the site. The acoustical panels shall be 2¾-to-6-inch thick standard panels with one solid panel face and one sound-absorptive face comprising perforated panel over glass fiber insulation.

Sound Transmission Loss
The panel shall, at a minimum, have the following sound transmission loss when tested in accordance with ASTM Test Method E 90:

1/3 Octave Band Center Frequency (Hz)	***125***	***250***	***500***	***1000***	***2000***	***4000***
Minimum Transmission Loss (dB)	*16*	*20*	*26*	*35*	*35*	*29*

Sound Absorption
The perforated face of the panel shall, at a minimum, have the following sound absorption coefficients when tested in accordance with ASTM Test Method C 423:

1/3 Octave Band Center Frequency (Hz)	***125***	***250***	***500***	***1000***	***2000***	***4000***
Minimum Absorption Coefficient	*.40*	*.80*	*.85*	*.85*	*.80*	*.70*

Construction
The barrier shall be fabricated to withstand exterior conditions. The acoustical insulation shall be water resistant glass fiber. A thin (3 mil maximum) plastic or mylar layer may be used to protect the insulation provided that absorption requirements are met.

Installation
The sound absorptive face shall be oriented toward the noise source.

Products Expected to Meet These Requirements

Model LSE noise barrier wall system by Noise Abatement Technologies
Model 4P Silentbarrier panels by Aeroacoustic.
3-inch thick Silent Screen panels from Empire Acoustical Systems
Model FSt/S panels by Industrial Acoustics Co.
STC-31 Silent Protector Absorbent Wall by ArtUSA

Manufacturers

Noise Abatement Technologies, Edison, New Jersey, (732) 287-2755.
The Aeroacoustic Corporation, Roselle, New Jersey, (800) 842-2376.
Empire Acoustical Systems, Gatesville, Texas, (254) 404-9000
Industrial Acoustics Co., Bronx, New York, (718) 931-8000
ArtUSA, Atlanta, Georgia, (770) 246-7827

SIZING CALCULATION

Control Associates, Inc.

Contact:
RFQ:
Project:

Contact: **BILL MULVIHILL**
Quote: **6075O&R** Rev: **00** Date: **17 MAR 06**

Item: 001 - VALVE/REGULATOR SIZING CALCULATION: Fisher Ideal Gas
Item Desc: **4 Inch EZR**
Tags: **4" EZR MONITOR**

SERVICE & SIZING	**Minimum**	**Normal**	**Maximum**
Gas Name	**nat gas**	**nat gas**	**nat gas**
Inlet Pressure (psig)	**150.000**	**210.000**	**250.000**
Pressure Drop (psid)	**18.702**	**13.106**	**10.975**
dP/P1 Ratio	**0.113**	**0.0584**	**0.0415**
Atm. Pressure (psia)	**14.400**	**14.400**	**14.400**
Specific Gravity (SG)	**0.600**	**0.600**	**0.600**
Specific Heat Ratio, k	**1.320**	**1.320**	**1.320**
Temperature (deg F)	**60.000**	**60.000**	**60.000**
Gas Flow Rate (scfh)	**600000.000**	**600000.000**	**600000.000**
Recovery Factor, C1	**38.700**	**38.700**	**38.700**
Gas Sizing Coefficient, Cg	**5690.000**	**5690.000**	**5690.000**
dP Critical (psid)	**100.942**	**137.782**	**162.342**
NOISE CALCULATION			
Fisher Valve/Reg Trim Type	**EZR**	**EZR**	**EZR**
Downstream Pipe Size (in)	**4.000**	**4.000**	**4.000**
Downstream Pipe Schedule	**80**	**80**	**80**
Valve/Reg LpA (SPL) (dB(A))	**81.9**	**77.5**	**75.3**
WARNING:	**ACCEPTABLE**	**ACCEPTABLE**	**ACCEPTABLE**

Notes: **SZNG: The above sizing indicates the calculated pressure drop of a 4" EZR (standard trim, green main valve main spring, 17E97 diaphragm, min diff=34, max diff press=500 psid, available Cg=5,690 at 100% travel, C1=38.7) when utilized as a first stage wide-open monitor at inlet pressures of 150 psig (min), 210 psig (norm), and 250 psig (max), with a flowrate of 600,000 scfh. The calculated pressure drop and the pressure downstream of the monitor (which is the pressure upstream of the worker, or intermediate pressure) are as follows:**
P1=150# (min P1), delta P = 19 psid, Pint=131#
P1=210# (norm P1), delta P = 14 psid, Pint=196#
P1=250# (max P1), delta P = 11 psid, Pint=239#
Note noise calcs for the monitor with sched 80 piping.

SIZING CALCULATION

Control Associates, Inc.

Contact:
RFQ:
Project:

Contact: **BILL MULVIHILL**
Quote: **6075O&R** Rev: **00** Date: **17 MAR 06**

Item: 002 - VALVE/REGULATOR SIZING CALCULATION: Fisher Ideal Gas
Item Desc: **4 Inch 1098H-EGR**
Tags: **4" 1098 WORKER**

SERVICE & SIZING	Minimum	Normal	Maximum
Gas Name	nat gas	nat gas	nat gas
Inlet Pressure (psig)	131.000	196.000	239.000
Pressure Drop (psid)	61.000	126.000	169.000
dP/P1 Ratio	0.419	0.598	0.666
Atm. Pressure (psia)	14.400	14.400	14.400
Specific Gravity (SG)	0.600	0.600	0.600
Specific Heat Ratio, k	1.320	1.320	1.320
Temperature (deg F)	60.000	60.000	60.000
Gas Flow Rate (scfh)	600000.000	600000.000	600000.000
Recovery Factor, C1	34.800	34.800	34.800
Gas Sizing Coefficient, Cg	3567.476	2275.974	1860.728
dP Critical (psid)	80.770	116.877	140.764
NOISE CALCULATION			
Fisher Valve/Reg Trim Type	1098-EGR WHI	1098-EGR WHI	1098-EGR WHI
Downstream Pipe Size (in)	4.000	4.000	4.000
Downstream Pipe Schedule	80	80	80
Valve/Reg LpA (SPL) (dB(A))	78.3	81.7	83.8
WARNING:	ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
Recommended Velocity Limit (Mach)	0.500	0.500	0.500
Minimum Outlet Area (in2)	5.722	5.722	5.722
Minimum Outlet Inside Diam. (in)	2.699	2.699	2.699

Notes: **SZNG: The above sizing indicates the calculated required Cg (the required capacity) of the worker regulator when Item 1 is utilized as the first stage wide-open monitor. The required Cg's are calculated with intermediate pressures (inlet pressure to second stage worker) of 131 psig (min), 196 psig (norm), and 239 psig (max), flowrate of 600,000 scfh, and a 70 psig set. The calculated required Cg is as follows:**
Pint=131# (when min P1=150#), required Cg=3,567
Pint=196# (when min P1=210#), required Cg=2,275
Pint=239# (when min P1=250#), required Cg=1,860
A 4" 1098 (WHISPER trim, red main spring, 30H actuator, min dp=22 psid, max dp=400 psid, available Cg=6280, C1=34.8) has adequate capacity. Note the reduced noise calcs with WHISPER trim sched 80 pipe.

POTENTA Environmental Consultants, LLC.

Engineers, Environmental Specialists

xRG
xPB, xJC, xDEC,
xBI, xDTA, xMontalbano
file

September 15, 2011

RECEIVED
SEP 14 2011
TOWN PLANNING DEPT

Ms. Shirley Thormann
Chairwoman-Planning Board
Town of Clarkstown
10 Maple Avenue
New City, New York 10956

RE: Comments on DEIS/Acoustical Impact Study
- Orange and Rockland Utilities, Inc.
Proposed Little Tor Substation Project
Town of Clarkstown, Rockland County, N.Y.
PEC Project No. 11570

Dear Ms. Thormann:

This letter report provides review comments on the noise sections of the SEQRA DEIS prepared by CMX dated April 2011 for the subject project including the technical noise report prepared by Ostergaard Acoustical Associates dated February 2010 regarding the potential noise impacts of the proposed substation to be located in the Town of Clarkstown, New York.

DEIS Report

The DEIS document text pp.I-5 and III.J87-92, summarizes the conclusions of the project noise report. Therefore any revisions to the technical noise report (in Appendix C) based on the applicant's response to comments below should be reflected in the above noted DEIS sections.

1) Page III.J-91-There is no detailed documentation provided in the DEIS/Appendix C for the noise mitigation analysis summarized in the DEIS text which recommends an 8-foot high noise barrier around the two gas regulators. Model input and output summary sheets supporting the recommended mitigation measure and sound reduction should be submitted for technical review.

Ostergaard Noise Report

1) Page 3-The DEIS was prepared under SEQRA regulations requiring the Lead Agency to consider the potential for adverse environmental impacts. The NYSDEC has an established Program Policy entitled *Assessing and Mitigating Noise Impacts* (DEP-00-1, Feb. 2, 2001) applicable for projects under SEQRA review. The relevant noise impact criteria in the NYSDEC guidance document should be given consideration and addressed appropriately when considering potential project impacts and the need for mitigation, in addition to review of compliance with the local ordinance and the Rockland County noise regulations.

2) Page 5-The report should clarify what sources dominating the ambient measurements were included in the noise levels presented, whether they reflect the time period least affected by these

166 Main Street, Flemington, New Jersey 08822 TEL. (908) 782-9716 FAX. (908) 782-2502

identified extraneous sources or the average over the entire daytime and nighttime monitoring periods. The latter appears to be the case which might underestimate the project impact on the ambient nighttime conditions during the more sensitive 2-5AM period on weekends when fewer extraneous sounds affect ambient noise levels. The NYSDEC impact criteria should be addressed for ambient noise levels considering the existing character of the surrounding land use.

3) Page 22-The octave band standards in the local noise code are not provided in the report and should be presented in Table form for ease of comparison with Table 1 ambient level results and later reference for the project impact noise levels and assessment.

4) Page 24-The site modeling methodology describes the use of manufacturer's noise data for the transformer fans and actual measurements of the existing gas regulator units as input data for the proposed sources. This backup information should be included for the equipment sources in the technical report along with a discussion justifying use of the existing unit data for the proposed gas regulator model unit. It should also be clarified whether the noise measurements of the existing gas regulator were taken under maximum operating load conditions.

5) Page 24-The report states that noise modeling was performed but does not identify the noise model that was used. Both model input and output summary sheets should be provided for all receptor sites analyzed.

6) Page 26-The report states that manufacturer's noise data was used for modeling the impact of the proposed gas regulators which appears to be in conflict with the methodology described on Page 24 (see Comment 4) regarding the use of measurement data of the existing regulator onsite.

7) Page 28-The report should define emergency use of the second gas regulator and confirm that it would not involve use under heavy load conditions to reduce the strain on the other operating unit and result in both regulators operating simultaneously.

8) Page 28-No data was provided to review the projected octave band noise levels in comparison with the local standards to conclude project compliance. This information should be provided in graphics for all receptors analyzed showing comparison with the local octave band standards. No summary data for the projected L_{10} noise levels is provided for comparison with the ambient levels and the conclusion of receptor compliance with the Rockland County L_{10} noise standards.

9) Page 31-The assessment criteria for addressing acoustical impact is described as property line standards (Page 3) yet Figures 22-25 only provide the octave band analysis results and maximum SPL for the nearest residences (Sites L11-L14). Explain why the property line noise levels are not addressed in the impact assessment. Similar figures should be provided for both the property line receptors (L5-L10) for comparison with the local maximum and octave band noise standards

and for the measurement sites (L1-L4) for comparison with the ambient data and determination of receptor noise impacts. The graphics should present the local octave band standard as well.

10) Page 33-The supporting data for the mitigation analysis and the recommended noise barrier discussion included in the DEIS is not provided in the technical noise report in Appendix C (see DEIS Comment 1). The documentation should include both analysis input and output results indicating expected noise attenuation levels and a figure showing the recommended noise barrier locations and described orientation.

If you have any questions regarding the above review comments, please do not hesitate to contact me.

Very truly yours,
POTENTA Environmental Consultants, L.L.C.

Edward J. Potenta, Principal
Institute of Noise Control Engineering-Member

4

OSTERGAARD
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VIA MAIL & EMAIL lanzaj@oru.com

7 October 2011

Ms. Joanne Lanza
Transmission & Substation Engineering
Orange & Rockland Utilities, Inc.
390 West Route 59
Spring Valley, NY 10977

Re: Response to 15 September 2011 Review Letter – Potenta Environmental Consultants
Proposed Little Tor Substation, Clarkstown, New York
OAA File 3599A

Dear Ms. Lanza:

At your request, we have reviewed the 15 September 2011 letter from Edward J. Potenta prepared for the Town of Clarkstown and have developed this response. The review letter has numerous comments, but it seems that the issues can be distilled down to these concerns:

- The reviewer asks that our findings take into account the New York State Department of Environmental Conservation (NYSDEC) Program Policy "Assessing and Mitigating Noise Impacts" (2 Feb 2001). The policy is a guideline to determine when project sound emissions may result in environmental impact.

- The reviewer asks that full results be provided in octave bands.

- The reviewer suggests that impact be assessed at the property lines of noise sensitive receptors rather than at dwellings.

- Detailed documentation of our noise mitigation analysis was provided and is found in the DEIS/Appendix C in our 12 April 2010 letter report describing recommended noise mitigation for the gas regulators.

The following supplemental information and discussion is provided in response to the review comments.

1. The reviewer indicates the need for global statistical results, specifically the minimum values, for the 48-hour A-weighted ambient sound level survey. The following table is provided in response. All entries are A-weighted sound levels in dB re 20μPa.

	Average of 48 Hourly Values							48-Hour	
Location	L_{eq}	L_{max}	L_{10}	L_{33}	L_{50}	L_{90}	L_{min}	L_{max}	L_{min}
1	52	87	53	50	49	47	45	93	42
2	49	85	59	52	46	43	33	92	29
3	45	81	50	46	45	44	43	83	42
4	43	79	45	42	41	39	39	86	38

2. Figure 3 of our 12 April 2010 letter report, provided for reference in Attachment A, provides the modeled worst-case future site sound emissions with mitigation of sound from the gas regulators. The mitigation is in the form of U-shaped acoustical barriers placed around each regulator and is fully discussed in the 12 April 2010 letter. To clarify the acoustical model, the model was created using CadnaA. Transformers were modeled using manufacturers' worst-case NEMA sound ratings, that is with all cooling fans ON. The NEMA ratings were converted to octave band sound power levels using the EEI Method given in Reference 1. Existing gas regulators were modeled using acoustical data measured by Ostergaard Acoustical Associates in the field. Future regulators were modeled using worst-case A-weighted sound levels ratings from the manufacturer, with the spectrum shaped to mimic the sound produced by the existing regulators surveyed in the field.

3. Using the 48-hour minimum A-weighted sound level ambient values given in ¶2 above, and results from Figure 3 in Attachment A, it is possible to consider the potential acoustical impact of the site development in each direction:

   - To the north, the lowest ambient A-weighted sound level documented is 42 dB(A) at L1. The expected site emissions to the north, as typified by modeling locations

L5, L10, L11, L16, and L17, are in the range of 30-to-34 dB(A). As such, the future minimum levels will be in the 42-to-43 dB(A) range, a change of 0-to-1 dB. This puts the situation in the lowest category of impact, "under 5" dB, given in Table B of the NYSDEC Program Policy. Essentially, there is no impact. As the policy points out, increasing the ambient by 0-to-3 dB should have no appreciable effect on receptors.

- To the east, the lowest ambient A-weighted sound level documented is 29 dB(A) at L2. Site emissions to the east at L6 and L12 are in the 28-to-29 dB(A) range. Minimum levels at these locations may increase by 3 dB to 32 dB(A). Once again, the impact is in the lowest range given in the NYSDEC Program Policy.

- Southern emissions at L7 and L13 are projected to be in the range of 30-to-32 dB(A). Comparing these levels to the lowest ambient level obtained near the stream at L3, 42 dB(A), minimum levels will remain at 42 dB(A). Essentially there is no change in level and no impact.

- To the west, the minimum level observed is 38 dB(A). Future noise contributed by the site at L8, L9, L14, and L15 is in the 32-to-36 dB(A) range, such that the minimum level may increase by 1-to-2 dB(A).

In summary, the maximum increase in the minimum level in any direction is 3 decibels which indicates an "unnoticed" situation per the NYSDEC Program Policy guidelines.

4. Note that the county code calls for the L_{10} emissions at night to not exceed 55 dB(A). The site noise is nominally steady in nature, that is the site emissions have $L_{90}=L_{50}=L_{10}$ and are projected (with mitigation) to be in the 28-to-35 dB(A) range at the property lines and homes. Hence, there is a wide margin of compliance with the requirement that L_{10} not exceed 55 dB(A).

5. The reviewer asked for detailed results in octave bands. Four charts are provided in Attachment B that allow drawing conclusions about the impact in octave bands in each of the four compass directions. Each chart shows the site modeled sound emissions

compared with the Clarkstown Night Code octave band limits and the prevailing octave band ambient. The results show that projected emissions are generally below both the Code and prevailing ambient and will have little to no impact on the surroundings.

CONCLUSION

Our analysis finds that the projected site sound emissions with mitigation, shown in Figure 3 of Attachment A, will result in minimal acoustical impact and full compliance with all applicable regulations.

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I trust that this supplemental information will be found responsive to the reviewer's concerns and look forward to answering any questions.

Sincerely yours,

OSTERGAARD ACOUSTICAL ASSOCIATES

Benjamin C. Mueller, P.E.
Principal

EMC:amc

Enclosures: Attachment A: 12 April 2010 Letter
Attachment B: Four octave band graphs

Reference 1: "Electric Power Plant Environmental Noise Guide", 2nd Editiion, Edison Electric Institute, 1984.

ATTACHMENT A

OSTERGAARD
ACOUSTICAL
ASSOCIATES

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W Orange NJ 07052
Voice 973-731-7002
Fax 973-731-6680
acousticalconsultant.com

VIA MAIL & EMAIL lanzaj@oru.com

12 April 2010

Ms. Joanne Lanza, Electrical Engineer
Transmission & Substation Engineering
Orange and Rockland Utilities, Inc.
390 West Route 59
Spring Valley, NY 10977

Re: Gas Regulator Noise Mitigation
Little Tor Substation, Clarkstown, New York
OAA File 3599B

Dear Ms. Lanza:

As requested, we have evaluated noise control options to bring the gas regulator stations into compliance with the local and county noise code. The site currently contains a gas regulator station in the northeast corner of the site. Plans call for a new electric substation and relocating and reconfiguring the regulators to two separate stations, a worker station and a monitor station. The worker station will be moved to the northernmost station nearer to South Mountain Road. The monitor station will be 50 feet south of the worker station. The site and equipment locations are shown in Figure 1, based on aerials obtained from Google Earth.

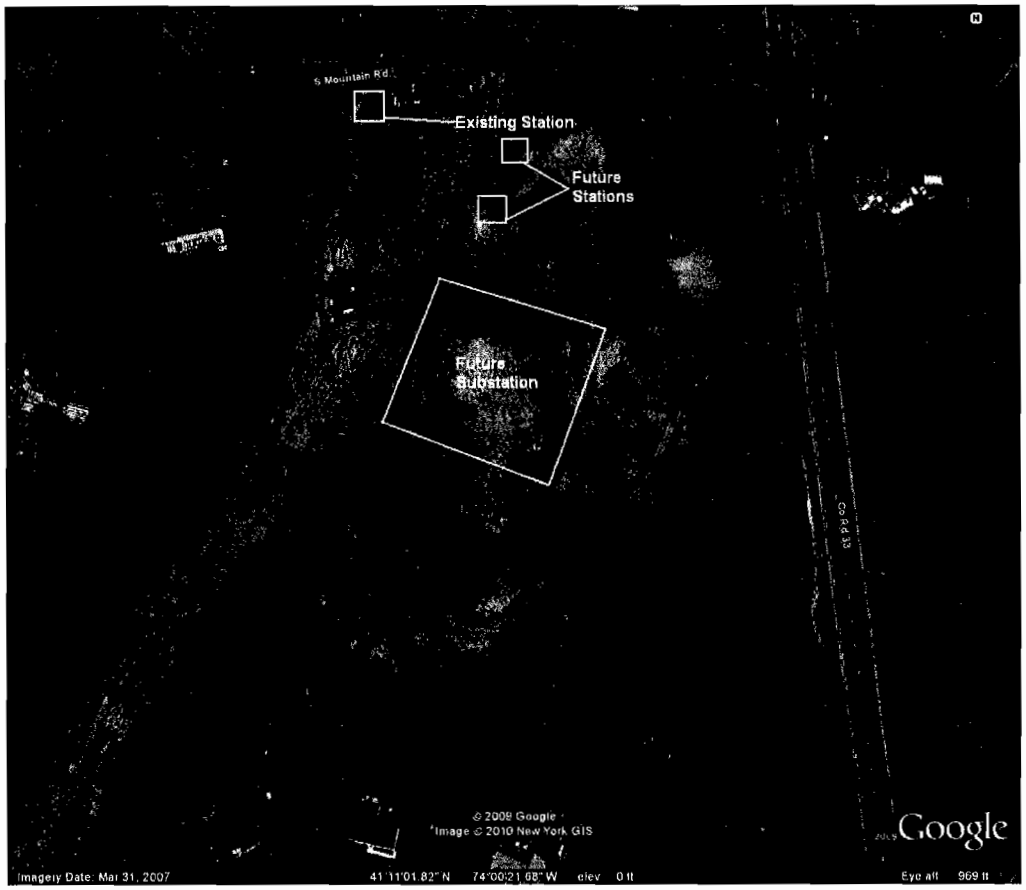


Figure 1 — Site and vicinity with existing and future equipment locations shown.

The details and results of our acoustical impact analysis of the existing and proposed site plans were given in our 1 February 2010 report. Our findings showed that the existing gas regulator station exceeds both county and local noise codes at the nearest property line. Calculations show that the proposed regulators in the new locations, while farther from the property line, will still exceed the local noise code of 46 dB(A). Mitigation is needed to bring the gas regulator stations into compliance.

Two gas pressure conditions are accommodated, high inlet and low inlet, which affect the noise produced by the regulators. The low inlet condition results in higher sound contributions at the north property line and is the focus of our noise control efforts. Figure 2 is taken from our 1 February report and shows the future sound emissions with gas regulators under low inlet pressure, without noise control.

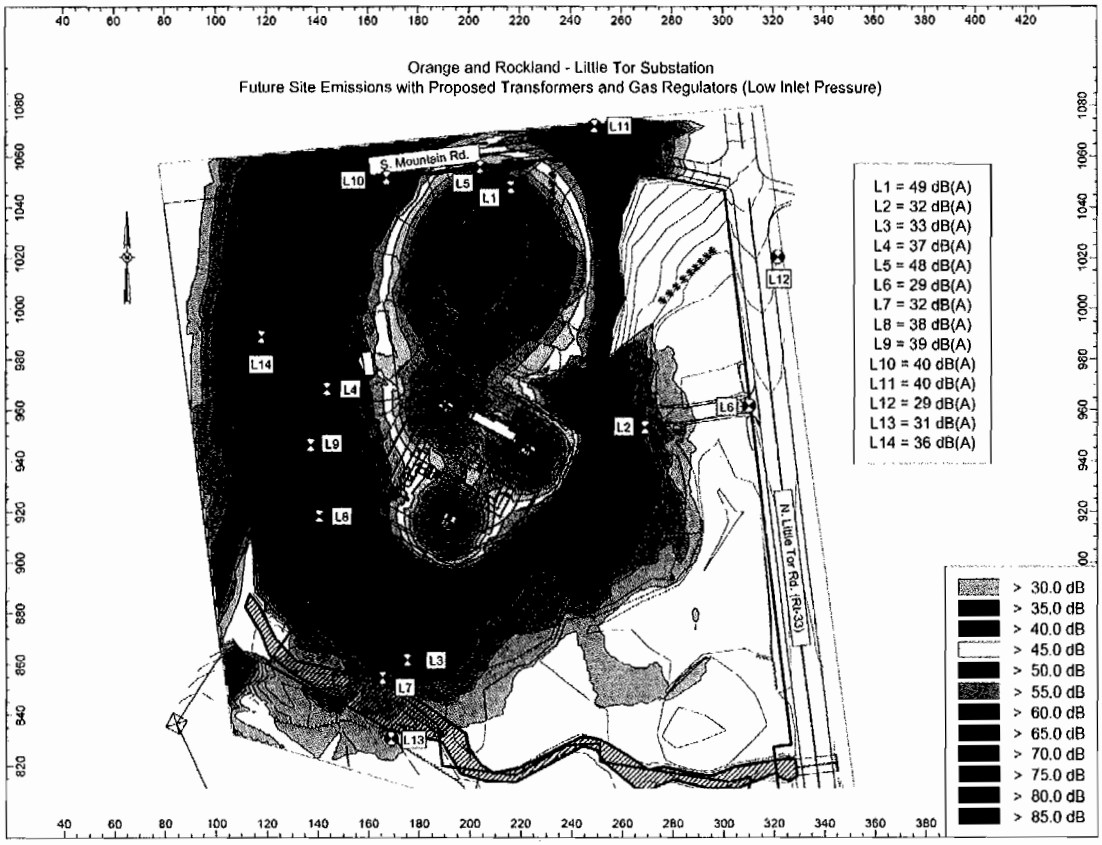


Figure 2 — A-weighted sound emission contours 5 feet above grade at Orange and Rockland Little Tor site. Proposed transformers and gas regulator stations operating under low inlet pressure condition.

APPLICABLE REGULATIONS

The local noise code of Clarkstown, New York is given in Chapter 205 Noise, and Chapter 290-13, Performance Standards. Chapter 205 is a nuisance noise ordinance and does not include quantitative noise limits. For a residential district, Chapter 290-13 specifies a nighttime noise limit of 46 dB(A) from 2200 hours to 0700 hours measured 25 feet from the principal on-site building. Because there is no principal building on site, we used the 46 dB(A) limit at the substation property line. This limit is reduced to 41 dB(A) for noises of periodic character such as a hum. There are also limits in octave frequency bands.

Article IX of the Rockland County Sanitary Code also provides noise limits in section 9.8.2. This section limits noise produced at a residential property line to a maximum sound pressure level of 65 dB(A), or L_{10} of 60 dB(A), during the day, from 0700 hours to 2200 hours. This limit is reduced to a maximum sound level of 55 dB(A), or L_{10} of 50 dB(A), at night, from 2200 hours to 0700 hours.

The State of New York has not implemented a state-wide noise code.

MITIGATION

Where there is insufficient distance for equipment sound emissions to meet codes, mitigation needs to be investigated and implemented. Sometimes it is possible to procure quieter equipment. For this application, I understand that equipment has already been purchased, so that the only option for mitigation is to interpose screening between the noise sources and receptor locations where code limits need to be met. The screening is customarily in the form of acoustical barriers.

To be effective, acoustical barriers need to have the following characteristics:

- Sufficient sound transmission loss so that sound reaching the other side is forced to travel over, not through, the barrier panel.

- A sound absorptive surface facing the noise source. This is important in suppressing reflections to other areas and reducing the build-up of sound between the noise source and barrier.

- Tall and long enough so that sufficient shadowing of sound is achieved at receptor vantage points.

Note that all three of the above barrier characteristics are a function of frequency. Higher frequencies, like those produced by the regulators, are easier to block and absorb, whereas lower frequencies are more difficult to control. The gas regulators produce the highest levels in the 2000 Hz and 4000 Hz octave bands.

In addition to acoustical considerations, barrier placement needs to be sensitive to clearance requirements established by Orange and Rockland for access and maintenance of equipment. To accommodate this, the barrier should be located in place of, or outside of, the proposed fence surrounding the regulators.

Manufacturer's sound data were used in the acoustical model to simulate the worst-case low inlet pressure flow condition, which results in the highest noise level. Normal operating flow conditions will produce lower sound levels.

There are many possible configurations for barriers that can successfully mitigate conditions. The objective is to minimize the extent of barrier to minimize costs. Figure 3 shows a barrier configuration that introduces an 8-foot U-shaped length of barrier around each regulator station with the regulators operating at the worst-case low inlet pressure. The concept is to shield the property line from the noise source. The results show that in addition to being below the nighttime noise code limit of 46 dB(A), there is compliance in all octave band frequencies including at 2000 and 4000 Hz.

Each barrier should be carried 8 feet above grade and follow the outline of the proposed security fences, nominally 15′ x 20′ in plan. For both stations, the south segment is 15 feet and the west segment is 20 feet in length. The barrier for the north Worker Regulator station has a longer north segment, which is 20 feet in plan. The north segment of the Monitor Regulator station is 15 feet.

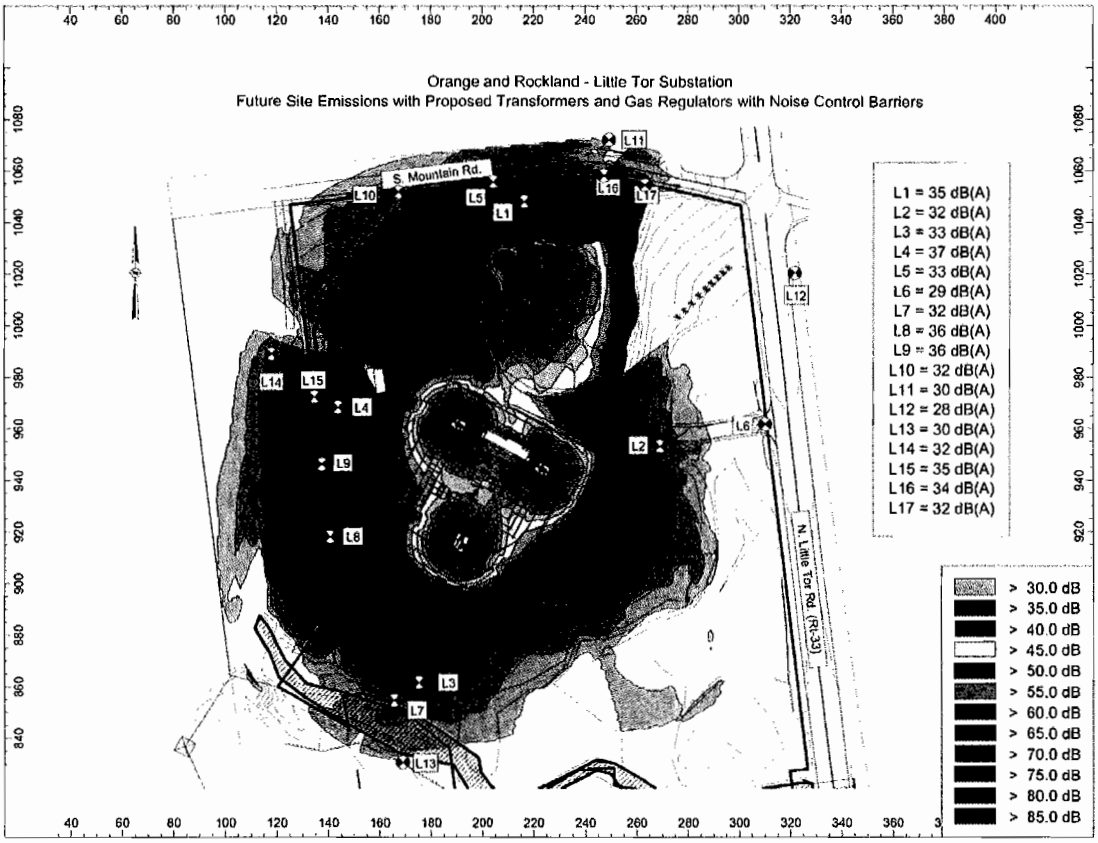


Figure 3 — A-weighted sound emission contours 5 feet above grade at Orange and Rockland Little Tor site. Future conditions with substation and gas regulators under worst-case low inlet pressure with U-shaped barriers shown in light blue.

BARRIER IMPLEMENTATION

The important acoustical characteristics for acceptable noise control barriers, in addition to the minimum height of 8 feet and the 3-sided layout shown in Figure 3, are as follows:

- The barrier needs to force sound to go over the panel, not leak through it. Therefore acceptable barrier materials need to be solid and have a minimum surface weight of 4 lbs/ft^2 for this application.

- The barrier needs to seal well to the ground so that sound does not leak under the barrier.

- A sound absorptive inner face, facing the regulators, is necessary for this application.

Hence, acceptable barriers can be constructed using precast or cast-in-place concrete lined with sound absorptive material such as 3-inch thick M-90 panels by Empire Acoustical Systems. Also acceptable are acoustical metal panels from manufacturers such as Aeroacoustic or Industrial Acoustics (IAC), or special systems such as the Sound Fighter LSE System from Noise Abatement Technologies. Because the noise reduction demands are not stringent, a good fit for this project are non-metallic (PVC) acoustical barriers. The ArtUSA Silent Protector Barrier has the aesthetics of a PVC fence on the exterior but has acoustical fill and a perforated interior.

The attached acoustical specification summarizes the required important characteristics for manufactured barrier products. A convenient means to seal to the ground is to bring the barrier panels in contact with existing or new gravel and infill any gaps from both sides of the panel with pea gravel.

The barrier needs to accommodate access to the equipment for both occasional inspection or more complex maintenance operations. Orange and Rockland needs to clarify access requirement and oversee placement of acoustical compatible man-doors or larger access panels. Ostergaard Acoustical Associates is prepared to work with Orange and Rockland and the chosen supplier to insure that access meets both acoustical and operational needs.

Regardless of which manufactured barrier product is under consideration by Orange and Rockland, Ostergaard Acoustical Associates should be asked to review product submittals before the project is released for construction.

Ostergaard Acoustical Associates should also be asked to review bid documents and Orange and Rockland's drawings, prior to release for pricing, to insure correct interpretation of our recommendations and to allow updating of our acoustical model. Structural and other non-acoustical aspects of the installation need to be overseen by qualified professionals at Orange and Rockland.

❑ ❑ ❑ ❑

I trust the above is useful to you and look forward to answering any questions you might have.

Sincerely yours,

OSTERGAARD ACOUSTICAL ASSOCIATES

Benjamin C. Mueller, P.E.
Senior Engineer

BCM:amc

Enclosure

ACOUSTICAL SPECIFICATION
ACOUSTICAL BARRIER FOR SCREENING GAS REGULATORS
ORANGE AND ROCKLAND LITTLE TOR SUBSTATION, CLARKSTOWN, NEW YORK

An acoustical barrier is needed to reduce the noise radiated to the community from two gas regulator stations associated with the site. The acoustical panels shall be 2¾-to-6-inch thick standard panels with one solid panel face and one sound-absorptive face comprising perforated panel over glass fiber insulation.

Sound Transmission Loss
The panel shall, at a minimum, have the following sound transmission loss when tested in accordance with ASTM Test Method E 90:

1/3 Octave Band Center Frequency (Hz)	***125***	***250***	***500***	***1000***	***2000***	***4000***
Minimum Transmission Loss (dB)	*16*	*20*	*26*	*35*	*35*	*29*

Sound Absorption
The perforated face of the panel shall, at a minimum, have the following sound absorption coefficients when tested in accordance with ASTM Test Method C 423:

1/3 Octave Band Center Frequency (Hz)	***125***	***250***	***500***	***1000***	***2000***	***4000***
Minimum Absorption Coefficient	*.40*	*.80*	*.85*	*.85*	*.80*	*.70*

Construction
The barrier shall be fabricated to withstand exterior conditions. The acoustical insulation shall be water resistant glass fiber. A thin (3 mil maximum) plastic or mylar layer may be used to protect the insulation provided that absorption requirements are met.

Installation
The sound absorptive face shall be oriented toward the noise source.

Products Expected to Meet These Requirements

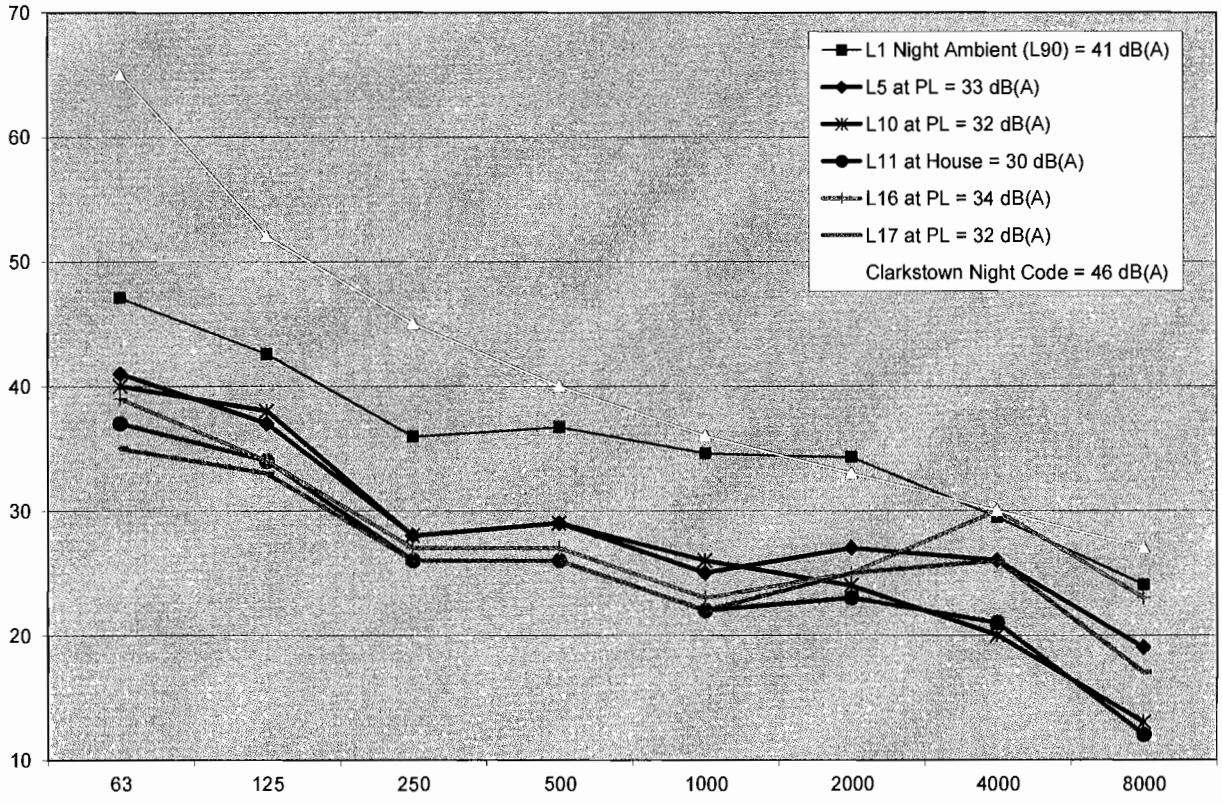
Model LSE noise barrier wall system by Noise Abatement Technologies
Model 4P Silentbarrier panels by Aeroacoustic.
3-inch thick Silent Screen panels from Empire Acoustical Systems
Model FSt/S panels by Industrial Acoustics Co.
STC-31 Silent Protector Absorbent Wall by ArtUSA

Manufacturers

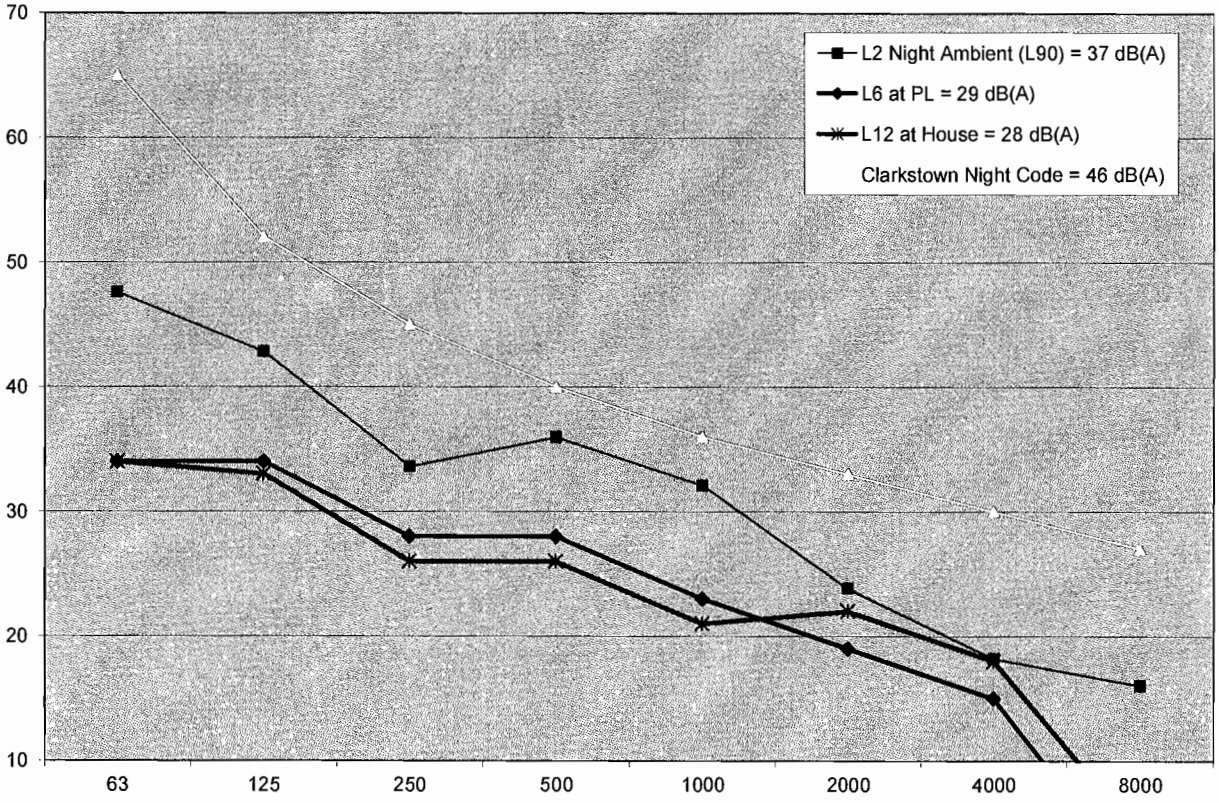
Noise Abatement Technologies, Edison, New Jersey, (732) 287-2755.
The Aeroacoustic Corporation, Roselle, New Jersey, (800) 842-2376.
Empire Acoustical Systems, Gatesville, Texas, (254) 404-9000
Industrial Acoustics Co., Bronx, New York, (718) 931-8000
ArtUSA, Atlanta, Georgia, (770) 246-7827

ATTACHMENT B

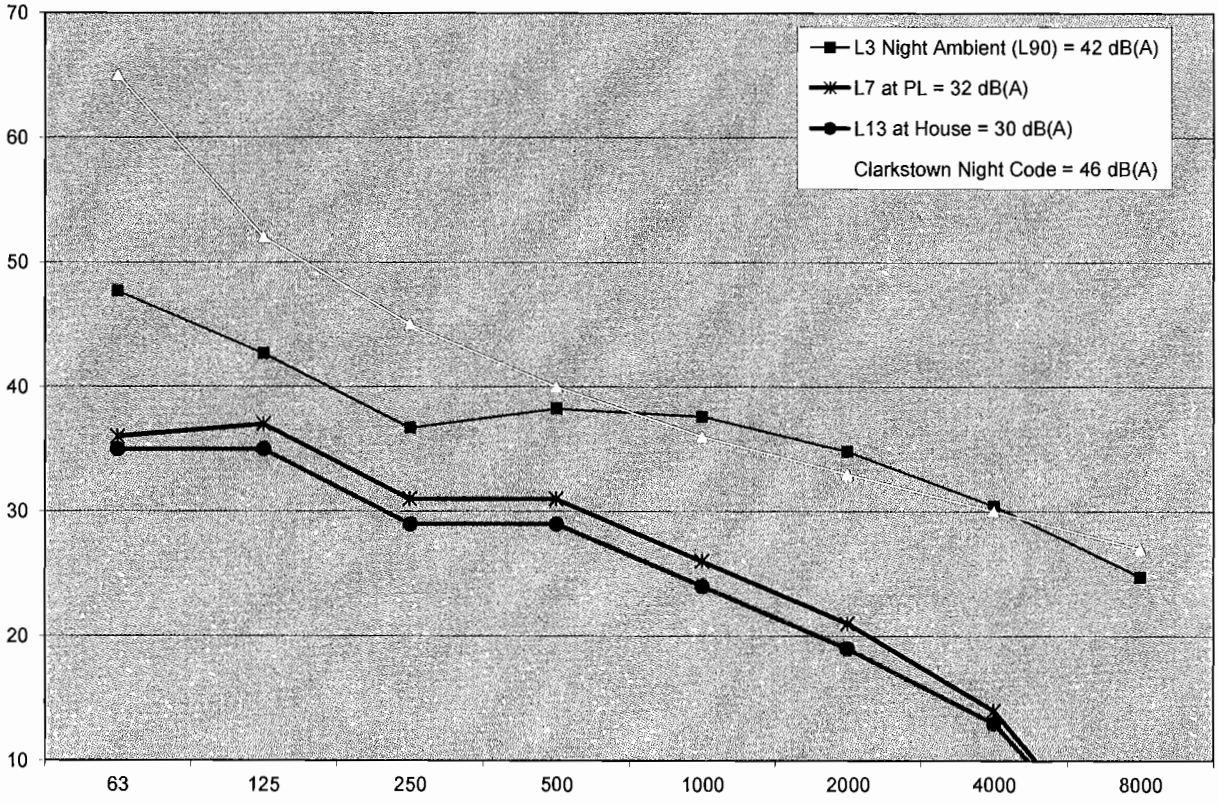
Little Tor Substation
Acoustical Impact to the North



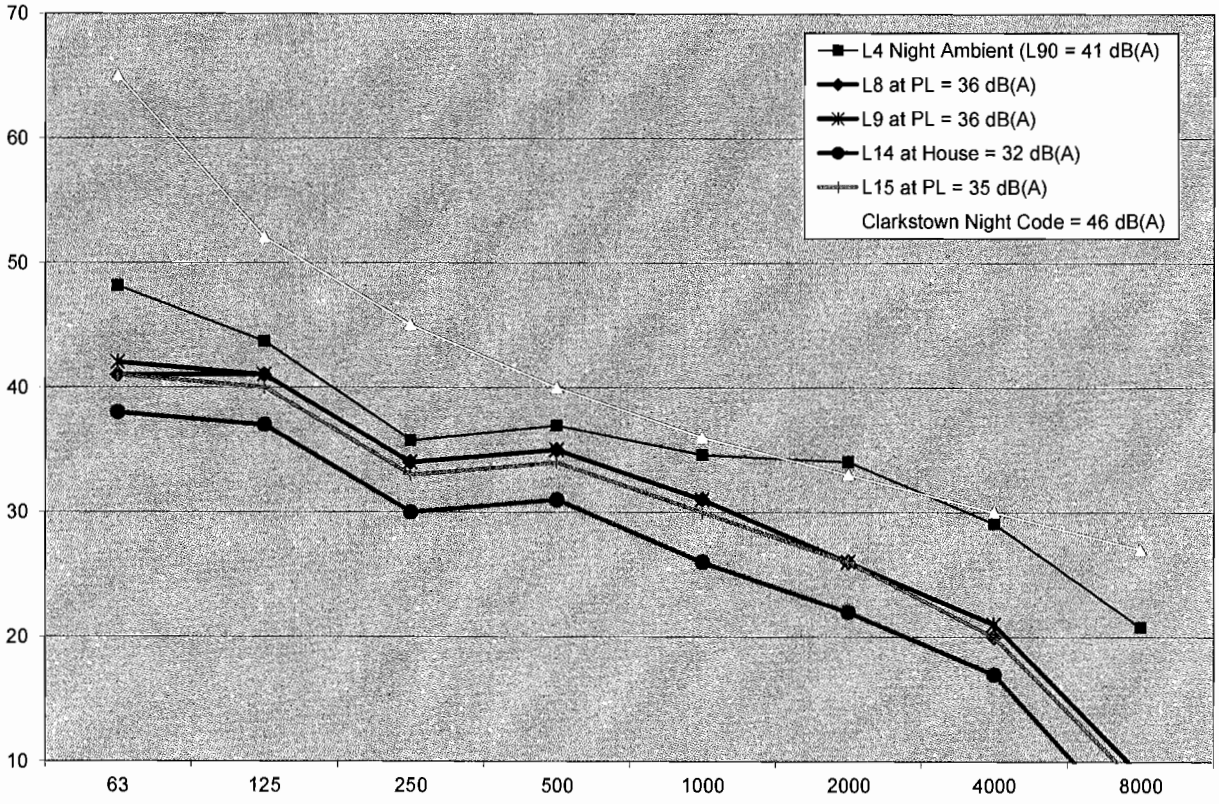
Little Tor Substation
Acoustical Impact to the East



Little Tor Substation
Acoustical Impact to the South



Little Tor Substation
Acoustical Impact to the West



POTENTA Environmental Consultants, LLC.
Engineers, Environmental Specialists

December 20, 2011

Ms. Shirley Thormann
Chairwoman-Planning Board
Town of Clarkstown
10 Maple Avenue
New City, New York 10956

RE: Comments on DEIS/Acoustical Impact Study
- Orange and Rockland Utilities, Inc.
Proposed Little Tor Substation Project
Town of Clarkstown, Rockland County, N.Y.
PEC Project No. 11570

Dear Ms. Thormann:

This letter report provides our summary review of the supplemental noise data provided by Ostergaard Acoustical Associates in their letter dated October 7, 2011, in response to our September 15, 2011 comment letter regarding the SEQRA DEIS and the potential noise impacts of the proposed substation project to be located in the Town of Clarkstown, New York.

The additional information provided included data concerning the technical mitigation analysis for the screening of the proposed gas regulators onsite from the near property lines and adjacent residential receptors, comparison of the projected impact on noise levels versus the local standards including the octave band noise levels, and an evaluation of the potential noise impacts versus ambient noise levels in accordance with the NYSDEC Program Policy for Assessing and Mitigating Noise Impacts (DEP-00-1, Feb. 2, 2001) under SEQRA regulations.

Mitigation Analysis Report

The mitigation study shows that the recommended U-shaped sound barriers surrounding the proposed gas regulators included with the project provides for adequate mitigation of the equipment noise levels to result in compliance of the site generated noise with the local octave band noise standards and the Rockland County noise standards at the site property lines and adjacent residences. The octave band noise level data provided in Attachment B Figures in the October 7, 2011 response letter clearly shows project compliance with the local noise ordinance with the proposed sound barrier mitigation in place. The data also shows compliance with the 41dBA sound level lowered 5dBA from the 46dBA local standard for the noted tonal character of the noise produced by the proposed equipment sources onsite.

Project Noise Impact versus Ambient Levels

In accordance with the NYSDEC program policy, the Figures in Attachment B of the October 7, 2011 response letter also provide a comparison of the projected noise levels versus the measured ambient noise. However, ambient noise levels for comparison with site generated noise impact levels should be free of influence from existing site equipment sources. Despite the

fact stated in the DEIS documents that the minimum ambient nighttime noise levels at the near receptors along the North property line included effects of the existing gas regulator equipment onsite, the projected site generated noise levels with mitigation are shown to comply with the local noise code and are lower than both the nighttime ambient octave band and 41dBA noise levels recorded at the near receptor at Site L1. Based on the supplemental information submitted for review, it can be assumed that the nearby East property line receptor L2 (remote to the gas regulators) with a nighttime ambient noise level of 37dBA is free of influence from the existing site equipment noise (as shown in Figure 19, Appendix C-DEIS) and is more representative of the true ambient noise level near the North property line receptors. For that scenario, comparing the worst-case noise impact of the projected equipment noise level of 34dBA (with mitigation) at Site L16 on the North property line with the assumed 37dBA nighttime ambient noise level would result in less than a 3dBA increase in ambient noise at Site L16 described as "unnoticed or tolerable" noise impact, under 5dBA, referenced in Table B of the NYSDEC Program Policy.

Due to several factors including the complex site terrain, the equipment noise modelling procedures, and the need for sound barrier attenuation of the proposed equipment noise, it is recommended that the Town consider requiring the monitoring of project-generated site noise at the critical receptors to the North and West of the site as a condition of approval and issuance of a certificate of occupancy for the project site. The independent sound test should be performed after installation of the proposed equipment and recommended acoustical barriers is completed to ensure that the attenuated site noise levels will result in compliance with the local noise code and to verify the ambient noise assessment conclusions regarding the NYSDEC Program Policy.

DEIS Report

The DEIS text summarizes the conclusions of the project noise assessment and technical noise report included in Appendix C. The Town may wish to include revisions to the DEIS text and the technical noise report, as necessary, clarifying the results and conclusions of the project impact on ambient noise levels set forth in the NYSDEC Program Policy and compliance with the local noise code based on the responses reflected in the supplemental information submitted.

If you have any questions regarding the above review comments, please do not hesitate to contact me.

Very truly yours,
POTENTA Environmental Consultants, L.L.C.

Edward J. Potenta, Principal
Institute of Noise Control Engineering-Member

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VIA MAIL & EMAIL lanzaj@oru.com

10 January 2012

Ms. Joanne Lanza
Transmission & Substation Engineering
Orange & Rockland Utilities, Inc.
390 W Route 59
Spring Valley, NY 10977

Re: Little Tor Substation Project, Clarkstown, New York
Review of 20 December Letter from Potenta Consultants
OAA File 3599A

Dear Ms. Lanza:

As requested, we have reviewed the 20 December comment letter by Potenta Environmental Consultants, LLC concerning our sound emission analyses of the Little Tor Substation Project. Our reading of the letter indicates that the reviewer finds our analyses to provide sufficient evidence that sound emissions will be acceptable, both in terms of impact upon prevailing ambient noise levels and meeting of absolute limits given in applicable codes. Hence there appears to be no outstanding acoustical issues to resolve.

The reviewer suggests testing of sound emissions at receptors to the north and west of the site prior to issuance of a C.O. If the board chooses to implement such a requirement, Ostergaard Acoustical Associates has been authorized by Orange and Rockland to conduct additional testing once the substation is put in service to confirm acoustical emissions meet County and Town standards.

❑ ❑ ❑ ❑

I trust that the above is helpful and I look forward to answering any questions you may have.

Sincerely yours,

OSTERGAARD ACOUSTICAL ASSOCIATES

Benjamin C. Mueller, P.E.
Principal

EMC:amc

D

Pinnacle Telecom Group

Consulting and Engineering Services

Antenna Site FCC RF Compliance Assessment and Report

prepared for

New York SMSA Limited Partnership d/b/a Verizon Wireless

"South Mountain Road" Site
196 South Mountain Road
New City, NY

May 5, 2009

14 Ridgedale Avenue - Suite 209 • Cedar Knolls, NJ 07927 • 973-451-1630

Contents

Introduction and Summary 3

Antenna and Transmission Data 5

Mathematical Analysis of Compliance 7

Compliance Conclusion 14

Certification 15

Appendix A. Background on the FCC MPE Limit

Appendix B. FCC Public Notice on Cellular and PCS Transmitters

Appendix C: Summary of Expert Qualifications

Introduction and Summary

At the request of New York SMSA Limited Partnership d/b/a Verizon Wireless ("Verizon Wireless"), Pinnacle Telecom Group has performed an independent assessment of radiofrequency (RF) levels and related FCC compliance for proposed wireless communication antenna operation on an electric transmission tower at 196 South Mountain Road in New City, NY. Verizon Wireless refers to the site as "South Mountain Road", and it's initial plan is to employ omnidirectional (whip) antennas, and in the future replace the whips with panel antennas. This compliance report will address both configurations.

The FCC requires all wireless system operators to perform an assessment of potential human exposure to radiofrequency (RF) fields emanating from all the transmitting antennas at a site whenever antenna operations are added or modified, and to ensure compliance with the Maximum Permissible Exposure (MPE) limit in the FCC's regulations. In this case, there are no other antenna operations to include in the compliance assessment. Note that FCC regulations require any future antenna collocators to specifically assess and assure continuing compliance based on an updated assessment of the RF effects of all proposed and then-existing antennas.

The results of a compliance assessment can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. If the reference for that limit is 100 percent, then calculated RF levels higher than 100 percent indicate the MPE limit is exceeded and there is a need to mitigate the potential exposure, while calculated RF levels lower than 100 percent indicate compliance with the limit. (We can also describe the overall worst-case result via the "plain-English" equivalent "times-below-the-limit" factor.) Note that according to the FCC, the MPE limit has been constructed in such a manner that continuous exposure to RF levels up to and including 100 percent of the limit is acceptable and completely safe for humans of either sex, all ages, all sizes, and under all conditions.

The results of the FCC RF compliance assessment in this case are as follows:

- For the initially proposed whip antenna configuration, the maximum calculated RF level is 0.4325 percent (that is, less than one-half of one percent) of the FCC MPE limit. In other words, even with the conservative calculation methodology and operational assumptions incorporated in the compliance analysis, the worst-case calculated result is still more than 230 times below the FCC MPE limit.
- For the future panel antenna configuration, the maximum calculated RF level from the proposed and existing antenna operations at the site is only 0.7948 percent (that is, less than 8/10^{ths} of one percent) of the FCC MPE limit – equivalent to more than 125 times below the FCC MPE limit.
- The results of the calculations clearly demonstrate that the RF levels from the Verizon Wireless antenna operations at the site – in both the initial and future configurations – will satisfy the strictest criteria for controlling potential human exposure to RF fields, and will be in clear compliance with the FCC regulations. Moreover, because of the conservative methodology and operational assumptions incorporated in the calculations, RF levels actually caused by the antennas will be even less significant than these calculations indicate.

The remainder of this report provides the following:

- relevant technical data on the proposed initial and future Verizon Wireless antenna operations at the site;
- a description of the applicable FCC mathematical model for assessing MPE compliance, and application of the relevant data to that model; and
- an analysis of the results, and a compliance conclusion for the site.

In addition, three Appendices are included. Appendix A provides background on the FCC MPE limit, along with a list of key references. Appendix B provides a copy of the FCC's public notice on the potential exposure from cellular and PCS transmitters, to wit, that it is insignificantly low and has no effect on the human health environment. Finally, Appendix C provides a summary of the

qualifications of the expert certifying RF compliance for the subject antenna operation.

Antenna and Transmission Data

As described at the outset, the initial Verizon Wireless proposal involves the use of omnidirectional (whip) antennas, to be mounted at the top of an electric transmission tower, with the height of the antennas at approximately 80 feet AGL. At some future time, Verizon Wireless plans to replace the whips with panel antennas.

The table below provides the antenna and transmission data for the initial antenna configuration.

850 MHz Data	
Antenna Model (Max. Gain)	Andrew DB586-XC (8.1 dBi)
RF Channels (Total)	8 (max.)
Transmitter Power / RF Channel	20 watts (max.)
1900 MHz Data	
Antenna Model (Max. Gain)	Andrew ASPP2936E (8.1 dBi)
RF Channels (Total)	4 (max.)
Transmitter Power / RF Channel	16 watts (max.)

The table on the next page provides the antenna and transmission data for the future antenna configuration. Note that one of the proposed antenna models is capable of dual-band transmission, and that the panel antenna configuration involves sectorized, rather than omnidirectional, service coverage.

850 MHz Data	
Antenna Model (Max. Gain)	Antel ADA63406380CF (14.5 dBi), and Antel BXA-70063/4CF (15 dBi)
RF Channels per Sector	8 (max.)
Transmitter Power / RF Channel	20 watts (max.)
1900 MHz Data	
Antenna Model (Max. Gain)	Antel ADA63406380CF (14.5 dBi)
RF Channels per Sector	4 (max.)
Transmitter Power / RF Channel	16 watts (max.)

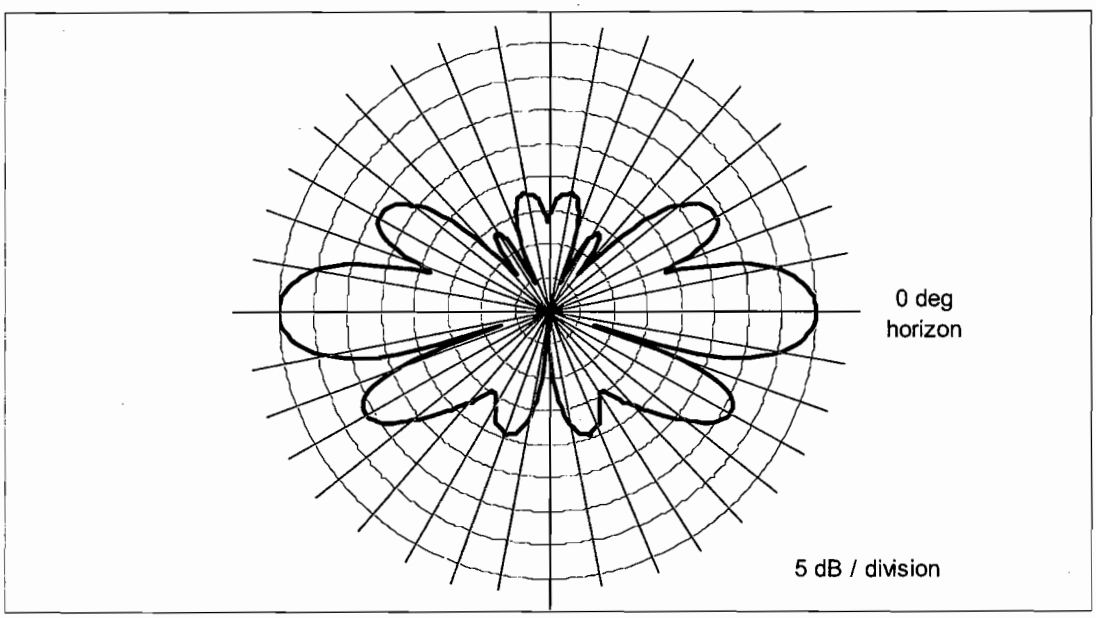
The area below the antennas, at ground level, is of interest in terms of potential "uncontrolled" exposure of the general public, so the antenna's vertical-plane emission characteristic is used in the calculations, as it is a key determinant in the relative level of RF emissions in the "downward" direction.

By way of illustration, diagrams on the next page show the vertical-plane patterns of one of the proposed whip antennas, and one of the panels.

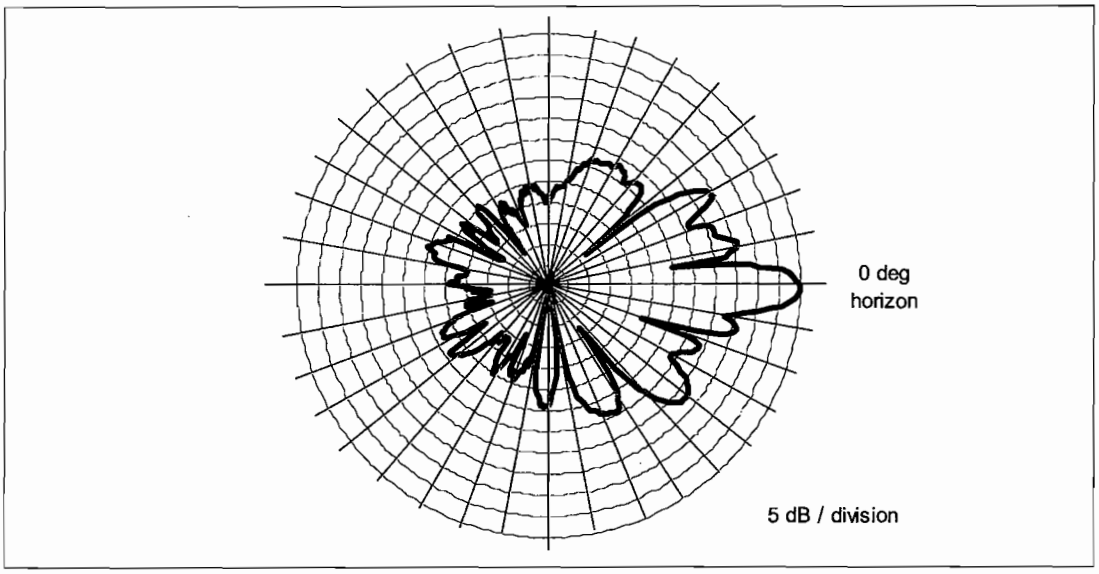
Note that in this type of antenna pattern diagram, the antenna is effectively pointed at the three o'clock position (the horizon) and the pattern at different angles is described using decibel units. Where the antenna pattern reads 20 dB the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is 1/1000th of the maximum.

Note, too, that the automatic scaling incorporated in our pattern-drawing software may skew side-by-side visual comparisons of different antenna patterns.

Andrew DB586-XC (850 MHz) – Vertical-plane Emission Pattern



Antel ADA-63406380CF (1900 MHz) – Vertical-plane Emission Pattern



Mathematical Analysis of Compliance

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65"; see list of references in Appendix A) provides guidelines for computational models and their application to calculating potential exposure levels at various points around

a wireless transmitting antenna. The computational models are intentionally very conservative, and significantly overestimate the potential exposure levels, and additional assumptions can be incorporated to make the calculations even more conservative. Thus, if the calculations demonstrate the MPE limit is still not exceeded even under extreme worst-case assumptions, there can be great confidence that the compliance requirement is satisfied.

The area of compliance interest, at street level around the site, is sufficiently distant from the antennas to be considered in the "far field" of the antennas, and FCC Bulletin OET65 provides appropriate mathematical models for far-field calculations. RF levels in the far field at ground level around an antenna site have a direct relationship to input power to the antenna (which we will assume is constant and at its maximum), effective antenna gain in the direction of interest, and an assumed ground reflection factor (assumed to be a conservative 100 percent). The levels are inversely proportional to the square of the distance from the antenna.

Calculations will be performed assuming a human standing height of 6 feet, 6 inches (roughly two-meters, which is the FCC-recommended height) – conservatively minimizing the distance to the RF source. Note that the FCC recognizes that with sectorized antenna coverage, the radiated power of interest is the maximum per antenna sector. The FCC also recognizes that relatively moderate differences in terrain elevation around a site are not significant in terms of assessing MPE compliance.

The FCC's formula for ground-level MPE compliance calculations for any given antenna operation is as follows:

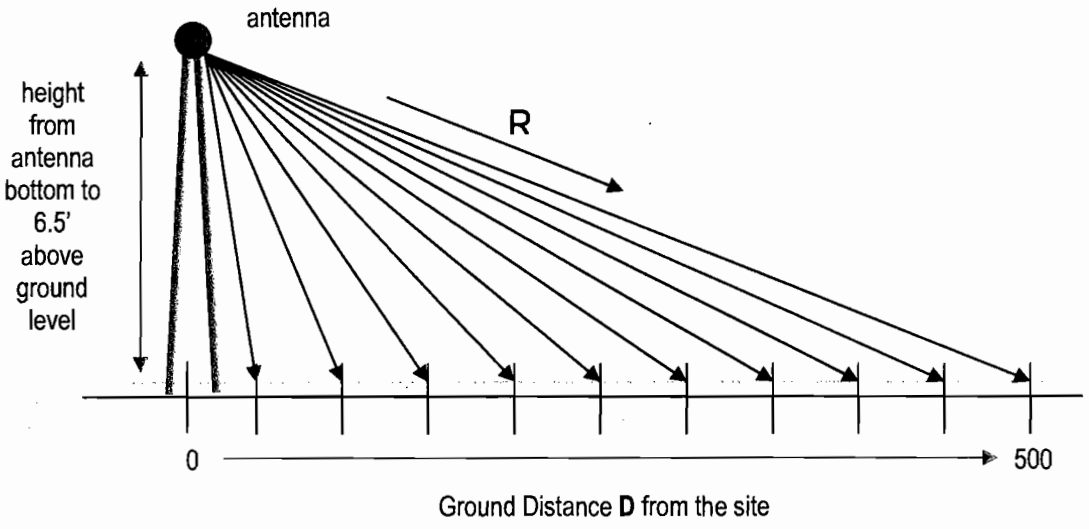
$$MPE\% = (100 * TxPower * 10^{(Gmax-Vdisc)/10} * 4) / (MPE * 4\pi * R^2)$$

where:

MPE% = RF level, expressed as a percentage of the FCC general population MPE limit

100	=	factor to convert the raw result (mW/cm^2) to a percentage of the FCC limit
TxPower	=	maximum power into antenna, in milliwatts, a function of the number of RF channels per sector, the transmitter power per channel, and antenna line loss
$10^{(Gmax-Vdisc)/10}$	=	numeric equivalent of the relative antenna gain in the downward direction of interest
4	=	the factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source, centimeters

The street-level calculations of RF power density are performed out to a distance of 500 feet from the site, as illustrated in the diagram below. Note that moderate terrain elevation differences around the site have no significant effect on the compliance result.



MPE% Compliance Calculation Geometry

It is popularly understood that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antennas. Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled, and as a result the RF levels generally decrease with increasing distance, and are well understood to be comfortably in compliance.

FCC compliance for a multi-band antenna site is assessed in the following manner. At each distance point along the ground, an MPE% calculation is made for the RF effects in each frequency band, and the sum of the individual MPE% contributions is compared to 100 percent, the normalized reference for compliance with the MPE limit. We refer to the sum of the individual MPE% contributions as "total MPE%", and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the FCC limit and represent non-compliance and a need to mitigate the potential exposure. If all results are consistently below 100 percent, on the other hand, that serves as a demonstration of compliance with the limit.

Note that the following conservative methodology and assumptions are also generally incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum power, and the power-attenuation effects of antenna line loss will be ignored.
2. The effects of any "shadowing" or other obstruction to a line-of-sight path from the antennas to all points of interest at ground level around the site are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6'6" human and performing the calculations from the bottom (rather than the centerline) of the antenna.

4. The potential RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the ground itself.

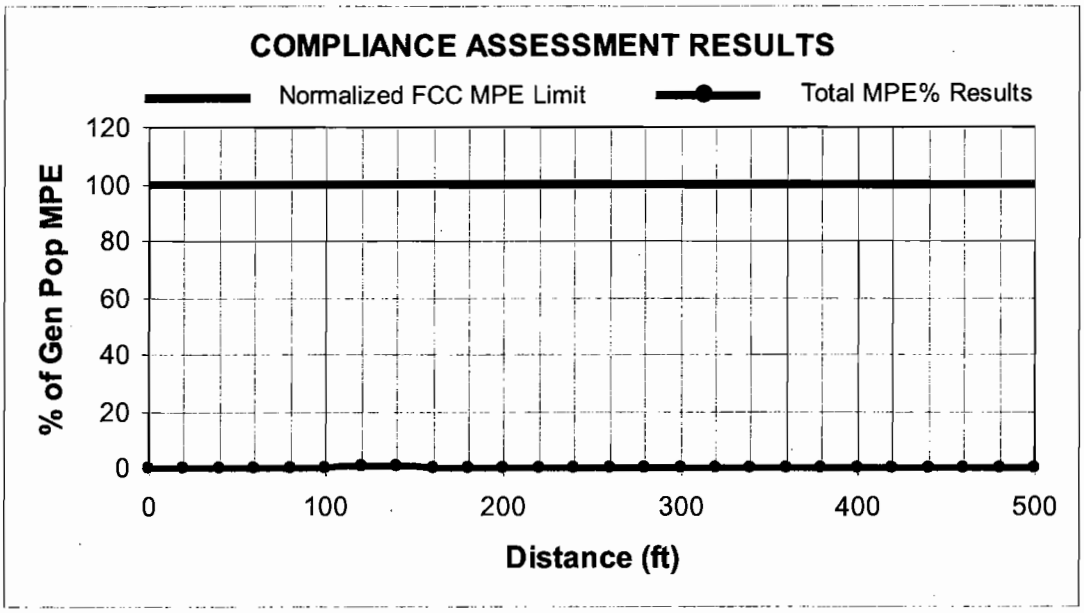
The net result of these conservative assumptions is to intentionally and significantly overstate the potential exposure levels (versus that which will actually occur), and the purpose of this conservatism is to allow very "safe-side" conclusions about compliance.

The table below provides the results of the MPE% calculations for the initial whip antenna configuration, with the worst-case overall result highlighted in bold in the last column.

Ground Distance (ft)	**Verizon Wireless 850 MHz MPE%**	**Verizon Wireless 1900 MHz MPE%**	**Total MPE%**
0	0.0018	0.0065	0.0083
20	0.0865	0.1630	0.2496
40	0.0376	0.0043	0.0419
60	0.0414	0.0958	0.1372
80	0.1119	0.0820	0.1939
100	0.2775	0.0455	0.3230
120	0.3928	0.0397	**0.4325**
140	0.3111	0.0337	0.3448
160	0.1696	0.0375	0.2072
180	0.0730	0.0338	0.1068
200	0.0188	0.0250	0.0438
220	0.0006	0.0116	0.0122
240	0.0056	0.0056	0.0112
260	0.0396	0.0015	0.0411
280	0.0613	0.0019	0.0632
300	0.0834	0.0040	0.0875
320	0.1092	0.0080	0.1172
340	0.0973	0.0071	0.1044
360	0.1204	0.0116	0.1320
380	0.1430	0.0170	0.1600
400	0.1295	0.0154	0.1449
420	0.1483	0.0202	0.1686
440	0.1355	0.0185	0.1540
460	0.1243	0.0170	0.1412
480	0.1375	0.0220	0.1595
500	0.1269	0.0204	0.1473

As indicated, the maximum calculated result is 0.4325 percent of the limit.

A graph of these results, shown below, perhaps provides a clearer *visual* illustration of the insignificance of the results. The results line barely rises above the zero baseline, and shows a comfortable, consistent margin to the MPE limit.

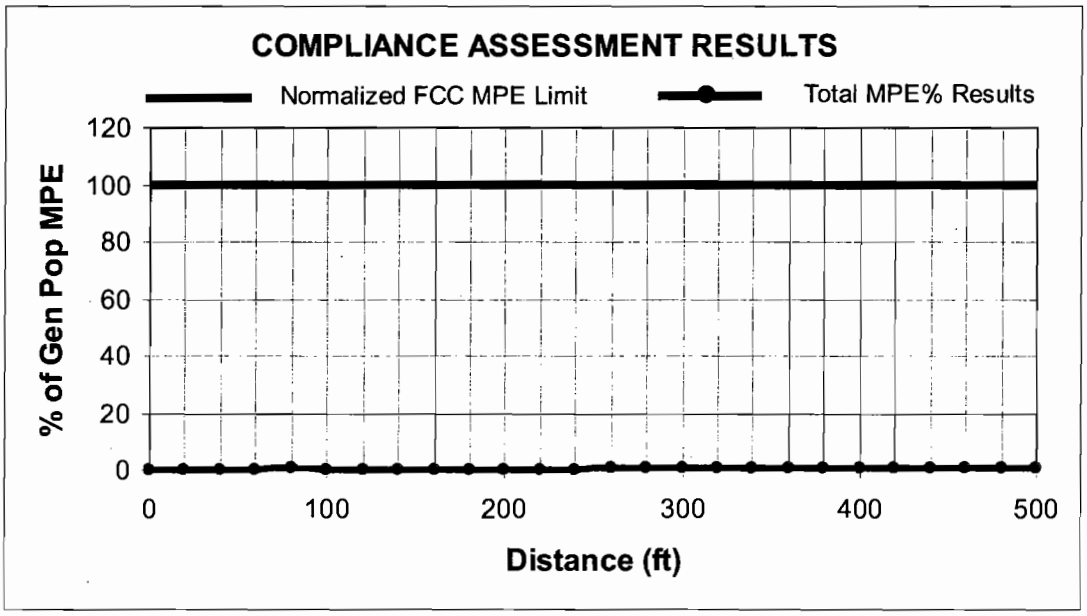


As described, we are also examining compliance for the future panel antenna configuration, and the results table for the panel antennas is presented on the next page.

As indicated in bold in the last column of the table, the worst-case calculated result is only 0.7948 percent (i.e., less than 8/10^{ths} of one percent) of the FCC MPE limit.

A graph of the results, shown on the next page below the table, provides a clearer *visual* illustration of the insignificance of the results. The results line barely rises above the zero baseline, and shows a comfortable, consistent margin to the MPE limit.

Ground Distance (ft)	Verizon Wireless 850 MHz MPE%	Verizon Wireless 1900 MHz MPE%	Total MPE%
0	0.1144	0.0269	0.1412
20	0.1938	0.0218	0.2156
40	0.0786	0.0671	0.1457
60	0.1434	0.0169	0.1603
80	0.3154	0.2291	0.5445
100	0.1298	0.1564	0.2862
120	0.0683	0.0260	0.0943
140	0.1210	0.0253	0.1464
160	0.0850	0.0427	0.1277
180	0.0374	0.0367	0.0741
200	0.0130	0.0130	0.0260
220	0.0603	0.0023	0.0626
240	0.1003	0.0139	0.1142
260	0.3073	0.0674	0.3747
280	0.3529	0.0829	0.4358
300	0.5027	0.0836	0.5863
320	0.5473	0.0675	0.6148
340	0.4876	0.0601	0.5477
360	0.6317	0.0400	0.6717
380	0.7334	0.0232	0.7566
400	0.6642	0.0211	0.6853
420	0.7608	0.0341	**0.7948**
440	0.6950	0.0311	0.7261
460	0.6374	0.0285	0.6659
480	0.6891	0.0398	0.7289
500	0.6363	0.0367	0.6730



Compliance Conclusion

The analyses of the Verizon Wireless antenna operations – under both the initial whip antenna configuration and the future panel antenna configuration – show that the conservatively calculated RF levels in both cases are less than one percent of the FCC MPE limit.

With the whip antennas, the maximum calculated RF level is 0.4325 percent (i.e., less than one-half of one percent) of the FCC limit – equivalent to more than 230 times below the limit.

With the panel antennas, the maximum RF level is 0.7948 percent (i.e., less than 8/10^{ths} of one percent) of the FCC limit – equivalent to more than 125 times below the limit.

The results of the calculations provide a clear demonstration of FCC compliance.

Moreover, because of the conservative calculation methodology and operational assumptions applied in the analysis, the RF levels actually caused by the antennas at the site will be even less significant than the calculations indicate.

Certification

It is the policy of Pinnacle Telecom Group that all FCC RF compliance assessments are reviewed, approved, and signed by the firm's Chief Technical Officer, who certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the antenna operations at the subject site are in compliance with the FCC regulations concerning RF exposure.

Daniel J. Collins
Chief Technical Officer

5/5/09
Date

Appendix A: Background on the FCC MPE Limit

FCC Rules and Regulations

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

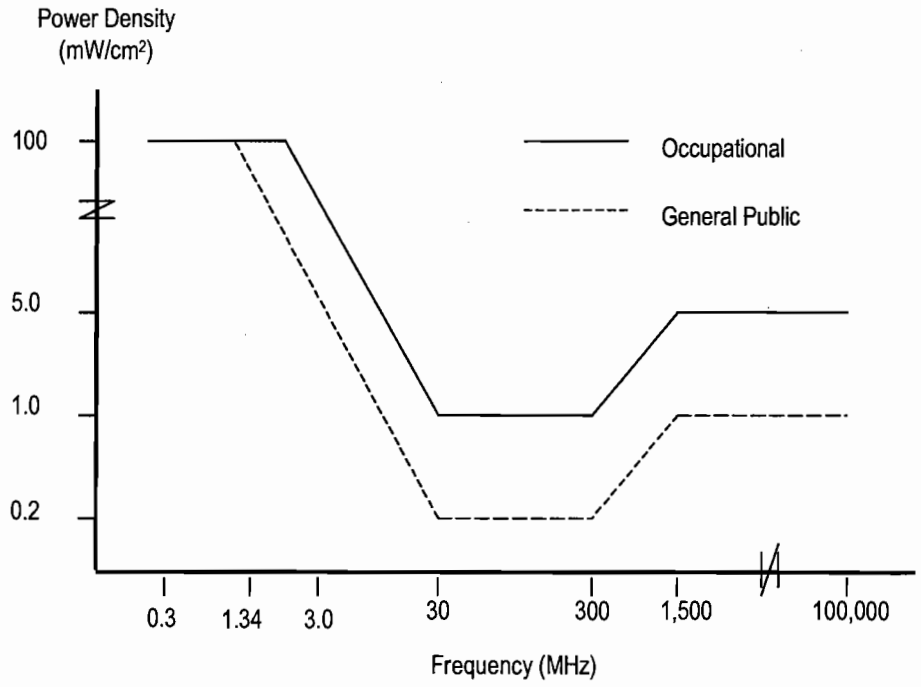
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm^2). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm^2 reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm^2)	General Public Exposure (mW/cm^2)
0.3 - 1.34	100	100
1.34 - 3.0	100	$180 / F^2$
3.0 - 30	$900 / F^2$	$180 / F^2$
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

FCC References

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

47 CFR, FCC Rules and Regulations, Part 22 (Public Mobile Services).

47 CFR, FCC Rules and Regulations, Part 24 (Personal Communications Services).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.

Appendix B: FCC Public Notice on Cellular and PCS Transmitters

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF ENGINEERING & TECHNOLOGY
WASHINGTON, D.C. 20554

January 1998

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INFORMATION ON HUMAN EXPOSURE TO RADIOFREQUENCY FIELDS FROM CELLULAR AND PCS RADIO TRANSMITTERS

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(1) Cellular and PCS base stations

Radio frequencies constitute part of the overall electromagnetic spectrum. Cellular communications systems use frequencies in the 800-900 megahertz (MHz) portion of the radiofrequency (RF) spectrum (frequencies formerly used for UHF-TV broadcasting), and transmitters in the Personal Communications Service (PCS) use frequencies in the range of 1850-1990 MHz. Primary antennas for cellular and PCS transmissions are usually located on towers, water tanks and other elevated structures including rooftops and the sides of buildings. The combination of antennas and associated electronic equipment is referred to as a cellular or PCS base station" or "cell site." Typical heights for base station towers or structures are 50-200 feet. A typical cellular base station may utilize several "omni-directional" antennas that look like poles or whips, 10 to 15 feet in length. PCS (and also many cellular) base stations use a number of "sector" antennas that look like rectangular panels. The dimensions of a sector antenna are typically 1 foot by 4 feet. Antennas are usually arranged in three groups of three with one antenna in each group used to transmit signals to mobile units (car phones or hand-held phones). The other two antennas in each group are used to receive signals from mobile units.

The Federal Communications Commission (FCC) authorizes cellular and PCS carriers in various service areas around the country. At a cell site, the total RF power that could be transmitted from each transmitting antenna at a cell site depends on the number of radio channels (transmitters) that have been authorized and the power of each transmitter. Typically, for a cellular base station, a maximum of 21 channels per sector (depending on the system) could be used. Thus, for a typical cell site utilizing sector antennas, each of the three transmitting antennas could be connected to up to 21 transmitters for a total of 63 transmitters per site. When omni-directional antennas are used, up to 96 transmitters could be implemented at a cell site, but this would be very unusual. While a typical base station could have as many as 63 transmitters, not all of the transmitters would be expected to operate simultaneously thus reducing overall emission levels. For the case of PCS base stations, fewer transmitters are normally required due to the relatively greater number of base stations.

Although the FCC permits an **effective radiated power** (ERP) of up to 500 watts per channel (depending on the tower height), the majority of cellular base stations in urban and suburban areas operate at an ERP of 100 watts per channel or less. An ERP of 100 watts corresponds to an **actual** radiated power of 5-10 watts, depending on the type of antenna used (ERP is not equivalent to the power that is radiated but is a measure of the directional

characteristics of the antenna). As the capacity of a system is expanded by dividing cells, i.e., adding additional base stations, lower ERPs are normally used. In urban areas, an ERP of 10 watts per channel (corresponding to a radiated power of 0.5 - 1 watt) or less is commonly used. For PCS base stations, even lower radiated power levels are normally used. The signal from a cellular or PCS base station antenna is essentially directed toward the horizon in a relatively narrow beam in the vertical plane. For example, the radiation pattern for an omni-directional antenna might be compared to a thin doughnut or pancake centered around the antenna while the pattern for a sector antenna is fan-shaped, like a wedge cut from a pie. As with all forms of electromagnetic energy, the power density from a cellular or PCS transmitter decreases rapidly (according to an inverse square law) as one moves away from the antenna. Consequently, normal ground-level exposure is much less than exposures that might be encountered if one were very close to the antenna and in its main transmitted beam. Measurements made near typical cellular and PCS installations have shown that ground-level power densities are well below limits recommended by RF/microwave safety standards.

In 1996, the FCC adopted updated guidelines for evaluating human exposure to radiofrequency (RF) fields from fixed transmitting antennas such as those used for cellular radio and PCS base stations.1 The new guidelines for cellular and PCS base stations are identical to those recommended by the National Council on Radiation Protection and Measurements (NCRP).2 These guidelines are also similar to the 1992 guidelines recommended by the American National Standards Institute and the Institute of Electrical and Electronics Engineers (ANSI/IEEE C95.1-1992).3 The FCC adopted guidelines for hand-held RF devices, such as cellular and PCS phones, that are the same as those recommended by the ANSI/IEEE and NCRP guidelines (see later discussion).

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1 FCC *Report and Order* in ET Docket 93-62, 61 Federal Register 41006 (August 7, 1996); 11 FCC Record 15123 (1997). See also, FCC *Second Memorandum Opinion and Order*, ET Docket 93-62, 62 Federal Register 47960 (September 12, 1997), 12 FCC Record 13494 (1997). For more information on these documents contact the FCC's toll-free number: 1-888-CALL FCC (1-888-225-5322). They may also be viewed and downloaded at the FCC's Office of Engineering and Technology World Wide Web Site under the "RF Safety" heading at the following address: www.fcc.gov/oet/rfsafety. The FCC's RF exposure guidelines are based on recommendations made to the FCC by U.S. federal safety and health agencies such as the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA).

2 The NCRP is a non-profit corporation chartered by congress to develop information and recommendations concerning radiation protection.

3 The American National Standards Institute is a non-profit, privately-funded, membership organization that coordinates development of voluntary national standards in the United States. The IEEE is a non-profit technical and professional engineering society.

In the case of cellular base station transmitters, at a frequency of 869 MHz (the lowest frequency used), the FCC's RF exposure guidelines recommend a maximum permissible exposure level of the general public (or exposure in "uncontrolled" environments) of about 580 microwatts per square centimeter (μW/cm 2), as averaged over any thirty-minute period. This limit is many times greater than RF levels typical found near the base of typical cellular towers or in the vicinity of other, lower-powered cellular base station transmitters. For example, measurement data obtained from various sources have consistently indicated that "worst-case" ground-level power densities near typical cellular towers are on the order of 1 μW/cm 2 or less (usually significantly less). Calculations corresponding to a "worst-case" situation (all transmitters operating simultaneously and continuously at the maximum licensed power) show that in order to be exposed to levels near the FCC's limits for cellular frequencies, an individual would essentially have to remain in the main transmitting beam (at the height of the antenna) and within a few feet from the antenna. This makes it extremely unlikely that a member of the general public could be exposed to RF levels in excess of these guidelines from cellular base station transmitters.

For PCS base station transmitters, the same type of analysis holds, except that at the PCS transmitting frequencies (1850-1990 MHz) the FCC's exposure limits for the public are 1000 μW/cm 2 . Therefore, there would typically be an even greater margin of safety between actual public exposure levels and the recognized safety limit.

When cellular and PCS antennas are mounted at rooftop locations it is possible that RF levels greater than 1 μW/cm 2 could be present on the rooftop itself. This might become an issue if the rooftop were accessible to maintenance personnel or others. However, exposures approaching or exceeding the safety guidelines are only likely to be encountered very close to and directly in front of the antennas. Even if RF levels were to be higher than desirable on a rooftop, appropriate restrictions could be placed on access. Factoring in the time-averaging aspects of safety standards could also be used to reduce potential exposure. The fact that rooftop cellular and PCS antennas usually operate at lower power levels than antennas on freestanding towers makes excessive exposure conditions on rooftops even less likely. This reason and the significant signal attenuation of a building's roof also minimizes any chance for harmful exposure of persons living or working within the building itself.

(2) <u>Mobile (vehicle-mounted) antennas</u>

Vehicle-mounted antennas used for cellular communications normally operate at a power level of 3 watts or less. These cellular antennas are typically mounted on the roof, on the trunk, or on the rear window of a car or truck. Studies have shown that in order to be exposed to RF levels that approach the safety guidelines it would be necessary to remain very close to a vehicle-mounted cellular antenna. For example, a study done for AT&T Bell Laboratories by the University of Washington documented typical and "worst-case" exposure levels and specific absorption rates (SAR) for vehicle occupants and persons standing close to vehicle-mounted cellular antennas. Worst-case exposure conditions were considered when an individual was at the closest possible distance from the antenna. Several configurations were tested using adult and child "phantom" models.

The results of this study showed that the highest exposure (1900 μW/cm 2) occurred with a female model at a distance of 9.7 cm (3.8 inches) from one of the antennas operating at a power level of 3 watts. Although this level is nominally in excess of the FCC's exposure limits for power density at this frequency, analysis of the data indicated that the antenna

would have to be driven to 7 W of power before the limit for *specific absorption rate* (SAR) allowed by the FCC guidelines would be exceeded. The intermittent nature of transmission and the improbability that a person would remain so close to the antenna for any length of time further reduces the potential for excessive exposure.

The University of Washington study also indicated that vehicle occupants are effectively shielded by the metal body. Motorola, Inc., in comments filed with the FCC, has expressed the opinion that proper installation of a vehicle-mounted antenna to maximize the shielding effect is an effective way of limiting exposure. Motorola and other companies have recommended antenna installation either in the center of the roof or the center of the trunk. In response to concerns expressed over the commonly-used rear-window mounted cellular antennas, Motorola has recommended a minimum separation distance of 30-60 cm (1 -2 feet) to minimize exposure to vehicle occupants resulting from antenna mismatch for this type of antenna installation.

In summary, from data gathered to date, it appears that properly installed, vehicle-mounted, personal wireless transceivers using up to 3 watts of power would result in maximum exposure levels in or near the vehicle that are well below the FCC's safety limits. This assumes that the transmitting antenna is at least 15 cm (about 6 inches) or more from vehicle occupants. Time-averaging of exposure (either a 6 or 30minute period is specified) will usually result in still lower values when compared with safety guidelines.

(3) <u>Hand-held cellular telephones and PCS devices</u>

A question that often arises is whether there may be potential health risks due to the RF emissions from hand-held cellular telephones and PCS devices. The FCC's exposure guidelines, and the ANSI/IEEE and NCRP guidelines upon which they are based, specify limits for human exposure to RF emissions from hand-held RF devices in terms of *specific absorption rate (SAR).* For exposure of the general public, e.g., exposure of the user of a cellular or PCS phone, the SAR limit is an absorption threshold of 1.6 watts/kg (W/kg), as measured over any one gram of tissue.

Measurements and computational analysis of SAR in models of the human head and other studies of SAR distribution using hand-held cellular and PCS phones have shown that, in general, the 1.6 W/kg limit is unlikely to be exceeded under normal conditions of use. Before FCC approval can be granted for marketing of a cellular or PCS phone, compliance 4.with the 1.6 W/kg limit must be demonstrated. Also, testing of hand-held phones is normally done under conditions of maximum power usage. In reality, normal power usage is less and is dependent on distance of the user from the base station transmitter.

In recent years publicity, speculation and concern over claims of possible health effects due to RF fields from hand-held wireless telephones prompted industry-sponsored groups, such as Wireless Technology Research, L.L.C. (WTR) and Motorola, Inc., to initiate research programs aimed at investigating whether there is any risk to users of these devices. Past studies carried out at frequencies both higher and lower than those used for cellular and PCS phones have led expert organizations to conclude that typical RF exposures from these devices are safe. However, the Federal Government is monitoring the results of the ongoing industry-sponsored research through an inter-agency working group led by the EPA and the FDA's Center for Devices and Radiological Health.

In a 1993 "Talk Paper," the FDA stated that it did not have enough information at that time to rule out the possibility of risk, but if such a risk exists "it is probably small." The FDA concluded that there is no proof that cellular telephones can be harmful, but if individuals remain concerned several precautionary actions could be taken. These included limiting conversations on hand-held cellular telephones to those that are essential and making greater use of telephones with vehicle-mounted antennas where there is a greater separation distance between the user and the radiating structure.

***NOTE*: For more information on these and other RF-related topics, you may call the FCC's toll-free number: 1-888-CALL FCC (1-888-225-5322) or contact the FCC's RF Safety Program, in the Office of Engineering and Technology, at (202) 418-2464. Information is also available at the FCC's Office of Engineering and Technology World Wide Web Site under the "RF Safety" heading at the following address: www.fcc.gov/oet/rfsafety.

Appendix C: Summary of Expert Qualifications

Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	• 37 years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 12,000 antenna sites since the new FCC rules went into effect in 1997 • Has provided testimony as an RF compliance expert more than 1,200 times since 1997 • Have been accepted as an expert in New York, New Jersey, Connecticut, Pennsylvania and more than 40 other states, as well as by the FCC
Education:	• B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982 • Bronx High School of Science, 1966
Current Responsibilities:	• Leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	• Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore (a Bell Labs offshoot after AT&T's 1984 divestiture), Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Division Manager – RF Engineering, and Director – Radio Spectrum Management, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	• Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models later adopted by the FCC for predicting RF exposure • Have been relied on for compliance by all major wireless carriers, the federal government as well as several state and local governments, system integrators, and other consulting and engineering firms
Other Background:	• Author, *Microwave System Engineering* (AT&T, 1974) • Co-author and executive editor, *A Guide to New Technologies and Services* (Bellcore, 1993) • National Spectrum Managers Association (NSMA) – former three-term President and Chairman of the Board of Directors; was founding member, twice-elected Vice President, long-time member of the Board, and was named an NSMA Fellow in 1991 • Listed in *Who's Who in the Media and Communication* and *International Who's Who in Information Technology* • Published more than 35 articles in industry magazines

MORTON LEIFER PE.

ELECTRONIC COMMUNICATIONS SPECIALIST

TOWN OF CLARKSTOWN

XPB, XST, XJS, XJC, XDCC, XBI, XDTA, X Montalbano J/C

To: Honorable Shirley J. Thormann Chairperson
Honorable Members of the Clarkstown Planning Board
From: Morton Leifer
Date: September 13, 2011
Re: Little Tor Substation

Dear Ms. Thormann,

I have carefully reviewed the Antenna Site FCC RF Compliance Assessment and Report, submitted by the Pinnacle Telecom Group on behalf of Verizon Wireless, regarding the 'South Mountain Road' Site located at 196 South Mountain Road in New City, NY.

The report indicates that initially, two (2) omnidirectional whip antennas will be utilized. Panel antennae are proposed to replace the whip antennas at some time in the unspecified future.

A graphical and mathematical analysis of the proposed initial and future antenna installations is presented with the conclusion that the calculated exposure levels produced by either antenna configuration will be well below the Maximum Permissible Exposure (MPE) levels specified by the Federal Communications Commission (FCC).

The report concludes that the maximum calculated RF level for the whip antennas is only 0.4325 percent of the FCC limit and the maximum calculated RF level for the panel antennas is only 0.7848 percent of the FCC limit.

While the majority of the twenty four page report is devoted to the following sections: FCC Rules and Regulations, FCC References, Background on the FCC MPE Limit, and issues relating to hand-held Cellular Telephones and PCS Devices, the calculations and conclusion relevant to the Little Tor Substation clearly indicate that the exposure levels are well below the FCC requirements.

The calculated results indicated in this report are in line with the calculated values found in many similar installations that have been approved in Clarkstown.

While I in no way wish to impugn or denigrate the impressive 'Summary of Expert Qualifications' of the Chief Technical Officer who signed the report, I do note that he is not a Professional Engineer licensed in the State of New York.

Respectfully submitted,

Morton Leifer

Morton Leifer PE.

Post-it® Fax Note 7671	Date 9/14/11	# of pages ▶ 1
To A. Montalbano	From Rosalie	
Co./Dept.	Co. TOC / Planning	
Phone #	Phone #	
Fax # 634-8993	Fax # RE: O & R	

20 Maple Avenue New City New York 10956 845-406-0729 m_leifer@town.clarkstown.ny.us

January 19, 2012

James P. Heady, P.E.
Principal Transmission Engineer
Orange & Rockland Utilities, INC
390 West Route 59
Spring Valley, NY 10977

Mr. Heady,

I have carefully reviewed the FCC RF compliance assessment report completed by Pinnacle Telecom Group for Verizon Wireless' South Mountain Road site and agree with the conclusion. Using the figures and assumptions provided in the compliance report, along with the equations provided in FCC Bulletin OET 65, I have performed an independent study. The results of the independent study confirm that the South Mountain Road Site, as is and as proposed, is in compliance with applicable federal standards for maximum permissible exposure levels for RF power density.

FCC Bulletin OET 65 is the standard for evaluating compliance with FCC guidelines. GIANT Solutions has adopted these methods and procedures and others based on sound engineering practice to ensure that the theoretical calculations performed to complete this analysis will over-predict field strength levels at ground distances close to the transmitting elements. A more realistic approach to calculating power densities at areas near the base of the tower was utilized by taking advantage of the relative gain patterns of the directional antennas being proposed by Verizon Wireless. Directional antennas focus energy toward the horizon. This results in a pattern of losses and gains relative to the direction of propagation due to elevation angle changes. Equation 6 from OET 65 was utilized in conjunction with the antenna vertical gain patterns to predict the field strength levels at various points away from the base of the tower. This equation takes into consideration a four-fold increase in power density by assuming a 100% reflection of incoming radiation at the ground level.

Furthermore, a conservative approach was taken in both the Pinnacle Telecom Group assessment and my independent assessment when calculating the power density levels. Both studies assumed that all transmitters will be operating at maximum power at all times, and that no loss of power will occur due to coaxial cable between the transmitter and the antennas. The actual levels experienced at the site will likely be lower.

125 GUY PARK AVENUE • SUITE 202 • AMSTERDAM NY • 12010
PHONE: 518-843-7467 • FAX: 518-770-6251

In conclusion, I have carefully read and agree to the conclusions reached in the FCC RF compliance assessment completed by Pinnacle Telecom Group concerning Verizon Wireless' South Mountain Road site.

John S Stevens, PE

1/25/12
Date

125 GUY PARK AVENUE • SUITE 202 • AMSTERDAM NY • 12010
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MAGNETIC FIELD MODELING ASSESSMENT

FOR THE

LITTLE TOR SUBSTATION

Prepared for
Orange & Rockland Utilities, Inc.
390 Route 59
Spring Valley, NY 10977

Prepared by

Enertech Consultants
494 Salmar Avenue Suite #200
Campbell, California 95008

July 15, 2009

NOTICE

This report was prepared by the organization(s) named below as an account of work sponsored by Orange & Rockland Utilities, Inc. Neither Orange & Rockland Utilities, Inc., Enertech Consultants, nor any person acting on behalf of either of them: (a) makes any warranty, express or implied, with respect to the use of any information, apparatus, method, or process disclosed in this report or that such use may not infringe privately owned rights; or (b) assumes any liabilities with respect to the use of or for damages resulting from the use of any information, apparatus, method, or process disclosed in this report.

Prepared by
Enertech Consultants of Santa Clara, Inc.
Campbell, California

EXECUTIVE SUMMARY

Orange & Rockland Utilities, Inc. is proposing to construct a new 120 MVA electric power substation, the "Little Tor Substation", which will be located in New City, New York. Presently, two existing 138 kV transmission lines traverse the site, as well as a 34.5 kV sub-transmission line. For the proposed substation, one of the existing 138 kV transmission lines would be tapped to provide electrical power to the substation. The existing 34.5 kV sub-transmission line from Haverstraw to the new Little Tor substation would be de-energized and the existing 34.5 kV line to Tilcon would originate from Little Tor substation. In addition, several 13.2 kV underground distribution feeders would be installed as part of the substation project.

Orange & Rockland retained Enertech to perform a magnetic field assessment of the project site. Computer models were developed for the existing site and the proposed substation based upon engineering and design drawings supplied by Orange & Rockland. Once the computer models were developed, magnetic field calculations were performed for the area immediately surrounding the substation using historical maximum peak loading information provided by Orange & Rockland. The New York Public Service Commission standard requires magnetic field levels at the edge of the right-of-way to be under 200 mG at maximum load.

For the existing site configuration, calculated magnetic fields along the proposed substation perimeter range from about 2.1 mG to 31.3 mG. Calculated magnetic field levels along the substation property line range from about 0.2 mG to 74.5 mG. Field levels are primarily due to the existing 138 kV and 34.5 kV overhead power lines. Calculated magnetic field levels reach about 68 mG directly underneath the 138 kV transmission lines at midspan, but attenuate with distance away from the power lines.

For the proposed substation configuration, calculated magnetic field levels along the substation perimeter (about 2.0 to 32.7 mG) remain comparable to existing magnetic field levels. Calculated magnetic field levels are increased along the southern and southeastern sides of the substation due to the substation buswork and new 13.2 kV underground distribution lines. The presence of new 13.2 kV underground distribution circuits provide increased magnetic field levels locally wherever these circuits are located (about 32 mG directly above the underground circuits). Calculated magnetic field levels remain relatively constant along the northwestern side of the 138 kV transmission lines. The de-energization of the 34.5 kV sub-transmission line on the northwestern side of the existing 138 kV transmission lines and the increased ground clearance of the 138 kV transmission lines (due to the removal of the existing tower and replacing it with two taller proposed towers) offsets the increased loading on Line #541 which provides power to the Little Tor Substation, resulting in a small increase directly underneath of the 138 kV circuits (about 74.5 mG from 68.2 mG) but relatively no increase farther away from the power lines.

For the proposed substation configuration, calculated magnetic field levels along the property line (about 0.2 to 73.6 mG) remain comparable to existing magnetic field levels. Calculated magnetic field levels are increased along the eastern side of the property line along North Little Tor Road due to the new underground distribution lines. The presence of new 13.2 kV underground distribution circuits provide increased magnetic field levels locally wherever these

circuits are located (about 32 mG directly above the underground circuits). Existing distribution lines were not modeled due to the constantly changing loading information available for these circuits and the possibility of potential net currents on these distribution circuits. Calculated magnetic field levels directly under the 138 kV transmission lines on the northern side of the property line (along South Mountain Road) increase from 62.5 mG to 73.6 mG due to the additional current utilized by the Little Tor Substation. The calculated magnetic field levels directly under the 138 kV transmission lines on the southern side of the property line are the same as the existing lines (about 69 mG) due to similar line loading and configuration.

The New York Public Service Commission standard requires magnetic field levels at the edge of a transmission line right-of-way to be under 200 mG at maximum load. Calculated magnetic field levels for all of the transmission line and distribution line circuits associated with this project are below this 200 mG standard.

Calculated magnetic field levels are based on computer modeling of the existing site designs and proposed substation designs as provided by Orange & Rockland. If the existing/proposed site designs or loading conditions differ significantly from modeled conditions, then calculated magnetic field levels could differ significantly from those presented in this report.

1.0 INTRODUCTION

Orange & Rockland Utilities, Inc. is proposing a new electric power substation, the "Little Tor Substation", which will be located in New City, New York (near the intersection of South Mountain Road and North Little Tor Road). This substation project has been developed to address increased load demands from customers within the immediate area. Orange & Rockland retained Enertech to perform a magnetic field assessment for the project, which included computer modeling of the power-frequency magnetic fields resulting from the existing transmission lines present at the project site, as well as calculations for the proposed substation configuration with additional 13.2 kV underground distribution circuits, related substation equipment, and associated power line modifications.

This report describes the magnetic field evaluation which Enertech performed. Section 2 of this report provides a general description of magnetic fields. Section 3 describes the computer modeling software used for the magnetic field calculations. Section 4 provides a description of the existing transmission lines, the computer model for the existing transmission line configurations with historical peak load conditions (from 2006), and the calculation results. Section 5 presents the proposed substation configuration with historical peak and forecasted loading conditions, and the calculation results. Section 6 presents an overall discussion of the computer modeling results, while Section 7 presents the report conclusions.

2.0 MAGNETIC FIELDS – GENERAL DESCRIPTION AND UNITS OF MEASURE

2.1 GENERAL DESCRIPTION OF MAGNETIC FIELDS

Any object with an electric charge on it has a voltage (potential) at its surface and can create an electric field [(1)]. When electrical charges move together (an electric current), they create a magnetic field which can exert forces on other electric currents. All currents create magnetic fields[(1, 2, 3, 4)]. Magnetic fields occur throughout nature and are one of the basic forces of nature. The strength of the magnetic field depends on the magnitude of the current, the configuration/size of the source, spacing between conductors, and distance from the source[1].

Magnetic fields can be unchanging in direction (also called static), as in the case of direct current (DC), or alternating in direction, as in the case of alternating current (AC). Static magnetic fields occur in nature. The earth has a natural static magnetic field of about 550 mG (0.550 Gauss) in the New City, New York area[(5)]. Some electrical devices operate on a DC system, while others operate on an AC system. The magnetic field from AC sources (such as most electrical power lines, electrical equipment, residential wiring and appliances) changes direction at a rate of 60 cycles per second or 60 Hertz[(1)].

Magnetic fields are vector fields that have both direction and magnitude as a function of position relative to the field source[(4)]. Magnetic fields produced by electric currents are also time-varying

[1] Electric fields are a function of voltage, while magnetic fields are a function of current. Magnetic field levels can increase due to changes in current (loading) and phasing arrangement/configuration. Lower voltage lines may have higher loads, which may produce higher magnetic fields. Higher voltage lines may have lower loads, but due to increased phase separation, may also have higher magnetic fields.

phasors at the same frequency as the current (60 Hertz power-frequency)[4, 6]. Since magnetic fields can vary due to location from a source and at different points in time, magnetic field measurements represent a snapshot in time of existing magnetic field levels[4]. Since the vector components and phase angles of the magnetic field are not always known, the root-mean-square (rms) value of the magnetic field is often used to characterize the intensity of the field, despite its complicated variations in space and time (B_{rms}=SQRT[$B_x^2 + B_y^2 + B_z^2$])[7].

Magnetic fields can be present due to a variety of different field sources. Contributions from multiple field sources are not simply cumulative in determining the resulting magnetic field level, since magnetic fields are vectors and phasors, and thus, add vectorially[4]. When the vectors are in opposite directions the fields cancel, and when the vectors are in the same direction they add. The magnetic field at any point in space is the vector sum of the field contributions from all sources (at each instant in time)[4]. Magnetic fields from multiple sources are influenced by the distance relative to each source, the amount of current on each source, and the configuration of the source (i.e., the arrangement of the current-carrying conductors associated with the source). Since the spatial and time components of magnetic fields from various sources are not always known, a good estimation of their additive effect assumes that they will add in quadrature as an rms value. For example, if an appliance produces a magnetic field of 10 mG and the magnetic field near a wall is 1 mG, then the resulting magnetic field would be:

$$\sqrt{10^2 + 1^2} = 10.05 \text{ mG}.$$

Power frequency magnetic fields are encountered frequently in everyday life. For example, typical AC household appliances produce magnetic fields. The magnetic field for a large number of appliances was measured by the Illinois Institute of Technology Research (IITRI) for the U.S. Navy[8] and by Enertech[9] for the Electric Power Research Institute (EPRI). Typical values for appliances are presented in Table 1.

2.2 UNITS OF MEASURE

Magnetic flux densities (B) are reported in units of gauss (G), or more typically in units of milliGauss (mG), which are equal to one-thousandth of a gauss (i.e., 1 mG = 0.001 G). Some technical reports also use the unit Tesla (T) or microTesla (μT; 1 μT = 0.000001 T) for magnetic flux densities. The conversion between these units is 1 mG = 0.1 μT and 1 μT = 10 mG.

Table 1
Magnetic Fields From Household Appliances [8]

Appliance	AC Magnetic Field (mG)	
	12" Away	Maximum
Electric Range	3 to 30	100 to 1,200
Electric Oven	2 to 5	10 to 50
Garbage Disposal	10 to 20	850 to 1,250
Refrigerator	0.3 to 3	4 to 15
Clothes Washer	2 to 30	10 to 400
Clothes Dryer	1 to 3	3 to 80
Coffee Maker	0.8 to 1	15 to 250
Toaster	0.6 to 8	70 to 150
Crock Pot	0.8 to 1	15 to 80
Iron	1 to 3	90 to 300
Can Opener	35 to 250	10,000 to 20,000
Mixer	6 to 100	500 to 7,000
Blender, Popper, Processor	6 to 20	250 to 1,050
Vacuum Cleaner	20 to 200	2,000 to 8,000
Portable Heater	1 to 40	100 to 1,100
Fans/blowers	0.4 to 40	20 to 300
Hair Dryer	1 to 70	60 to 20,000
Electric Shaver	1 to 100	150 to 15,000
Color TV	9 to 20	150 to 500
Fluorescent Fixture	2 to 40	140 to 2,000
Fluorescent Desk Lamp	6 to 20	400 to 3,500
Circular Saws	10 to 250	2,000 to 10,000
Electric Drill	25 to 35	4,000 to 8,000

3.0 DESCRIPTION OF THE COMPUTER MODELING SOFTWARE

A computer model was developed of the proposed Little Tor Substation to calculate magnetic field levels associated with its operation. The software program "EMF Workstation 2008", which is the latest EPRI magnetic field computer modeling program, was used to perform these magnetic field calculations. The EMF Workstation 2008 software can model the magnetic fields in and around transmission and distribution substations. EMF Workstation 2008 can also model substation equipment such as underground cables, power transformers, buswork, circuit breakers, and capacitor banks. The software produces two-dimensional magnetic field contour maps of the calculation results.

4.0 MODELING OF EXISTING POWER LINES AT THE PROJECT SITE

4.1 DESCRIPTION OF THE EXISTING POWER LINES

The proposed Little Tor Substation site is located in New City, New York, near the intersection of South Mountain Road and North Little Tor Road. Presently the site is vacant land with trees and brush. Figure 1 presents an aerial photograph of the project site with the location of the existing overhead power lines. There are two 138 kV transmission lines present which traverse the site. These 138 kV lines, identified as Lines #530 and #541, are oriented from north to south and carry electrical power between West Haverstraw and Spring Valley. In addition, there is a single 34.5 kV sub-transmission line that crosses the proposed site. The 34.5 kV circuit is located parallel to the 138 kV transmission lines to the north, but at the project site turns east towards Tilcon.

Figure 1. Aerial View of the Proposed Little Tor Substation Project Site with Existing Power Lines

4.2 COMPUTER MODEL FOR EXISTING SITE

A computer model was developed of the existing overhead power lines as shown in Figure 2. The computer model was developed using various engineering drawings, one-line diagrams, and verbal and emailed information provided by Orange & Rockland. Historical maximum peak loading (from 2006) for each of the two 138 kV transmission circuits was used for the magnetic field calculations as provided by Orange & Rockland and shown in Table 2. Loading for the 34.5 kV sub-transmission line is a calculated value based on the 138 kV transmission line historical peak loading data in conjunction with forecasted loading data for operation of the proposed Little Tor Substation.

Table 2
Summary of Computer Modeling Loading Conditions for Existing Power Lines

Power Line	Modeled Load
138 kV Circuit #530	739 Amps (historical peak)
138 kV Circuit #541	630 Amps (historical peak)
34.5 kV Circuit	46.9 Amps (forecasted)

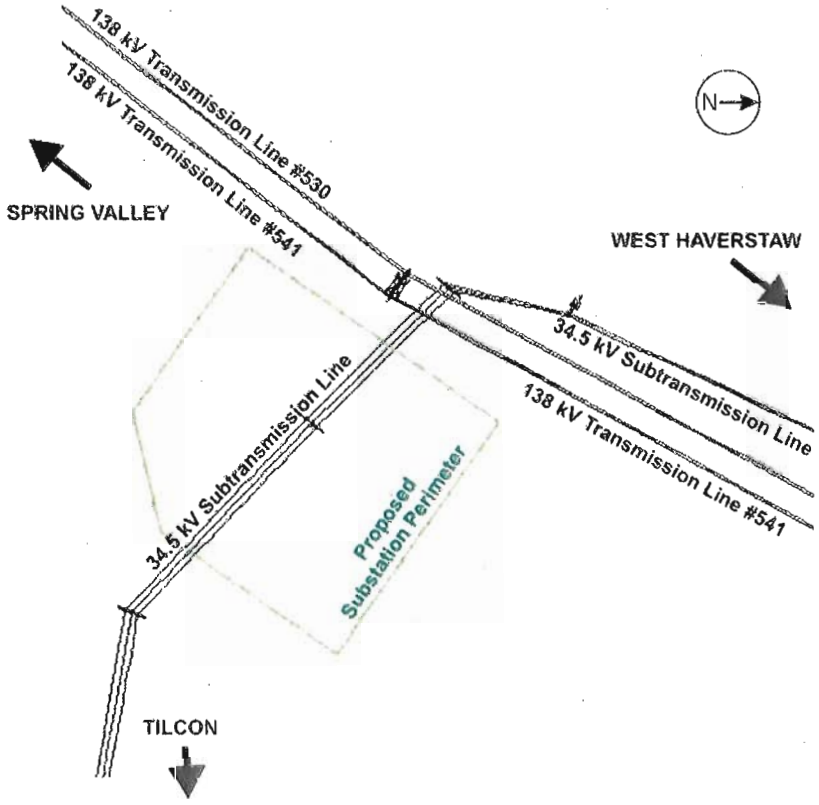

Figure 2. Computer Model of the Existing Overhead Power Lines at the Project Site

4.3 COMPUTER MODELING RESULTS FOR EXISTING SITE CONFIGURATION

Based on the overhead transmission line design and modeling assumptions, the computer model calculated magnetic field levels projected around the proposed substation site at a height of 1 meter above ground in accordance with IEEE Standards[10, 11]. Figures 3 and 4 present magnetic field contour maps of these calculation results.

As shown in Figures 3 and 4, several different magnetic field contour levels are presented. Contour levels are shown for levels of 1 mG, 2 mG, 5 mG, 10 mG, 25 mG, and 50 mG. Calculated magnetic field levels reach about 68 mG underneath the overhead power lines but attenuate with distance away from the power lines.

Along the proposed substation perimeter, calculated magnetic field levels range from about 2.1 mG to 31.3 mG, depending upon location. Figure 5 presents a diagram of the locations where the substation perimeter calculations were performed. The perimeter calculations start at the northern corner of the proposed substation fence and proceed counterclockwise around the perimeter of the substation. Figure 6 presents a graph of the magnetic field calculation results. Field levels are higher in closer proximity to the overhead 138 kV transmission lines.

Along the property line, calculated magnetic field levels range from about 0.2 mG to 74.5 mG, depending upon location. Figure 7 presents a diagram of the locations where the property line calculations were performed. The property line calculations start at the northwest corner near South Mountain road and proceed clockwise around the property line. Figure 8 presents a graph of the magnetic field calculation results. Field levels are highest underneath the overhead 138 kV transmission lines.

Calculated magnetic field levels are based on computer modeling of the existing design for the 138 kV and 34.5 kV power lines and loading information provided by Orange & Rockland. If the existing design or loading conditions differ significantly from modeled conditions, then calculated magnetic field levels could differ significantly from those presented in this report.

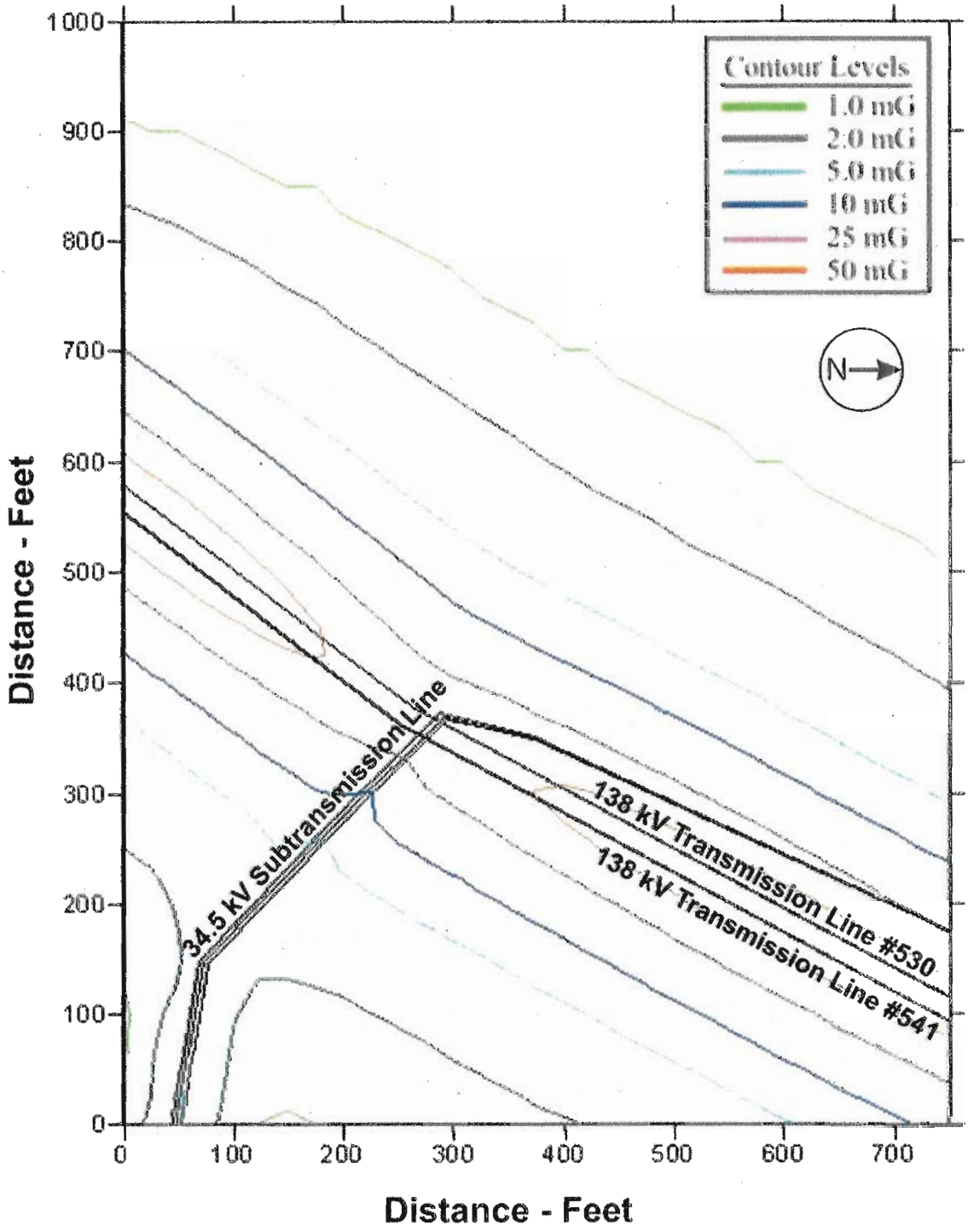

Figure 3. Calculated Magnetic Field Contour Map (in mG)
for the Existing Project Site Power Lines Using Historical Peak Loading

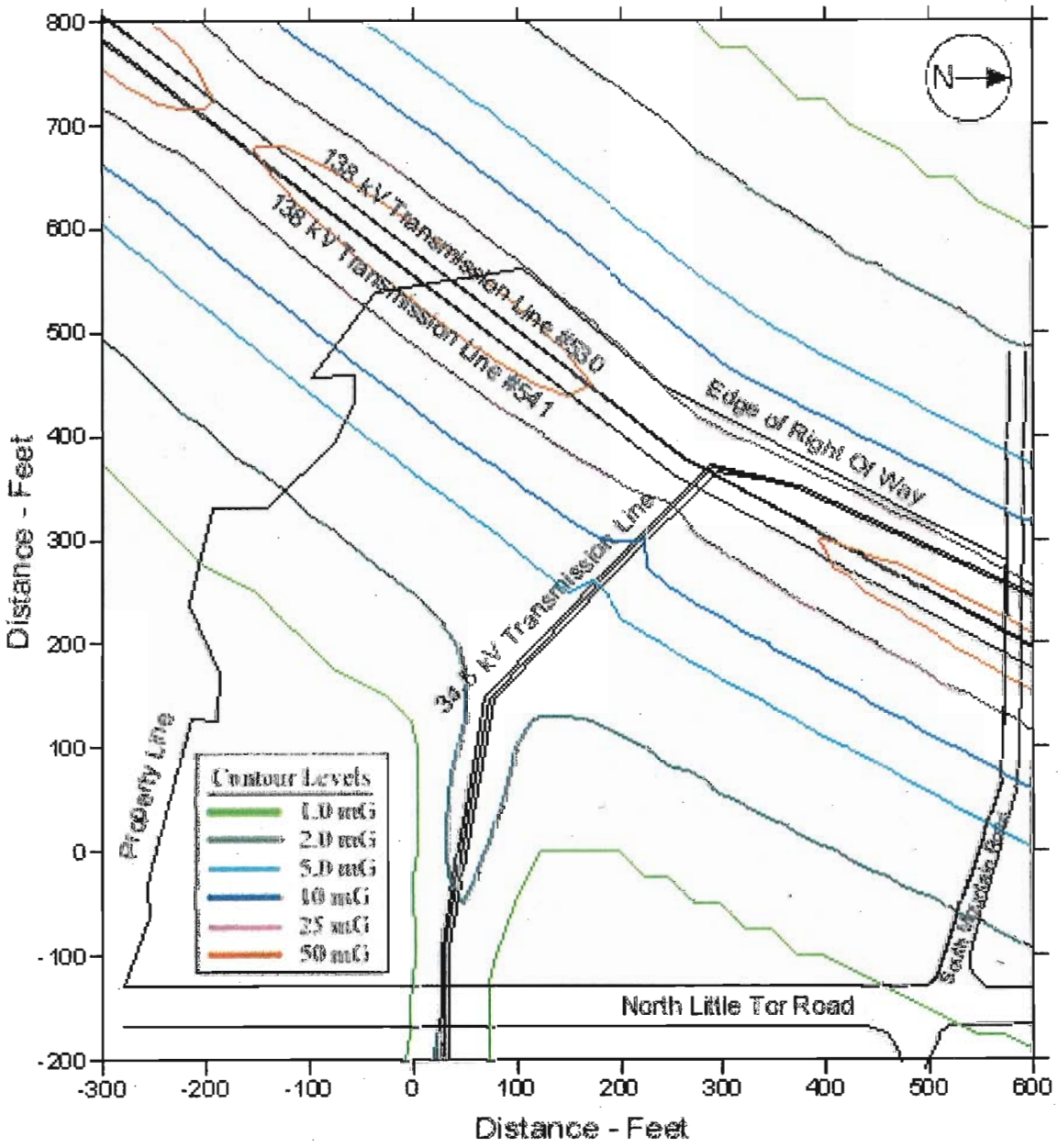

Figure 4. Calculated Magnetic Field Contour Map (in mG)
Showing the Entire Property Line for the Existing Project Site
Power Lines Using Historical Peak Loading

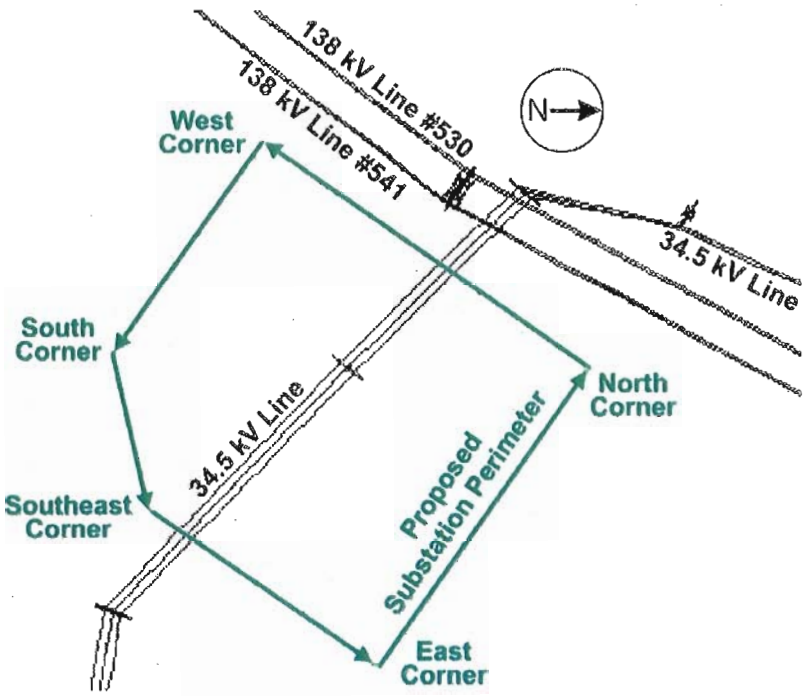

Figure 5. Diagram of Perimeter Path for Magnetic Field Calculations (Existing Site)

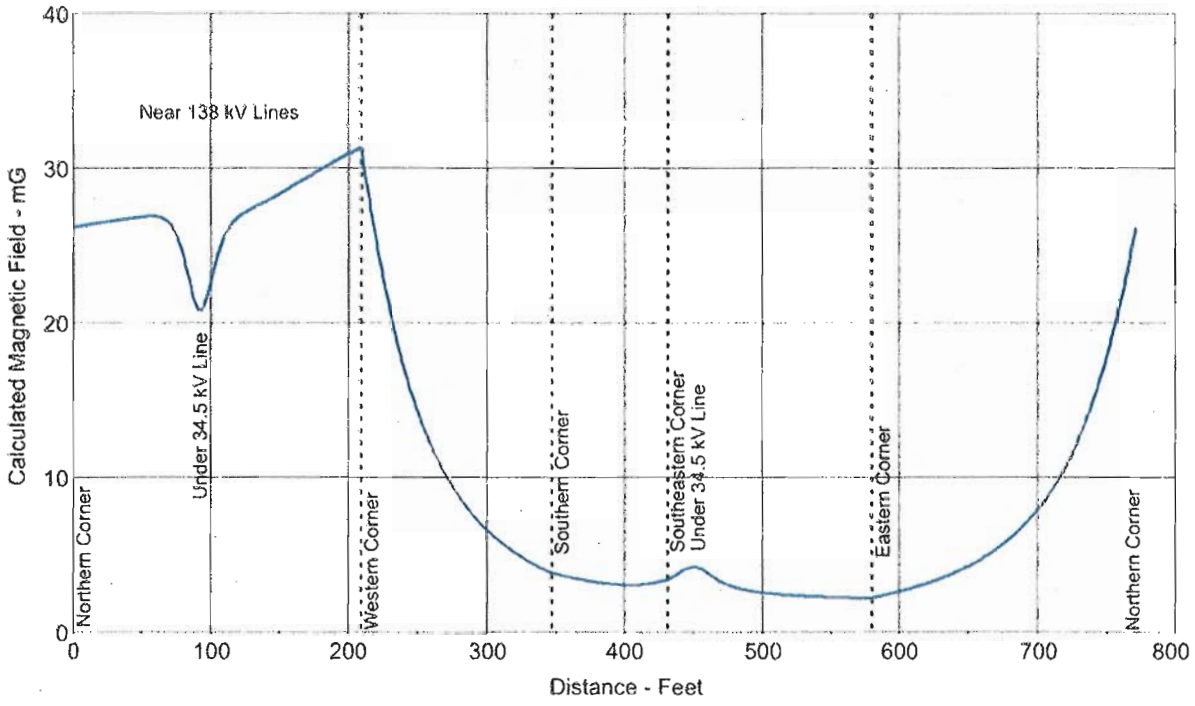

Figure 6. Calculated Magnetic Field Along Proposed Substation Perimeter
For Existing Project Site Power Lines Using Historical Peak Loading

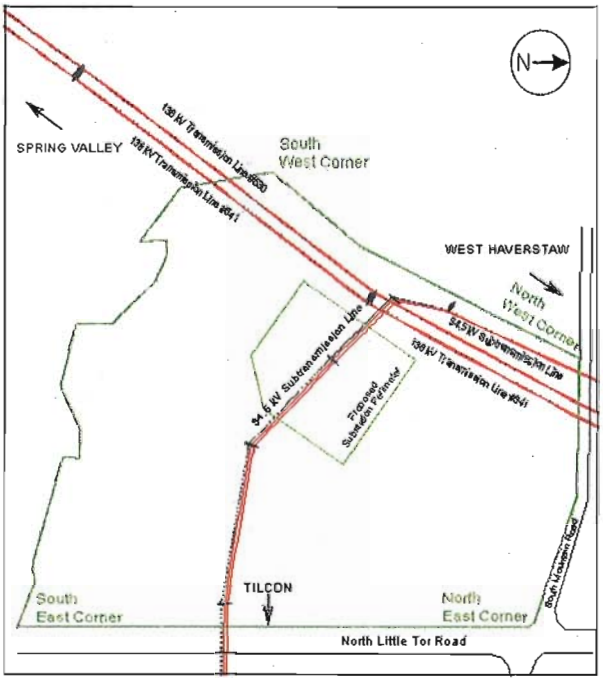

Figure 7. Diagram of Property Line Path for Magnetic Field Calculations (Existing Site)

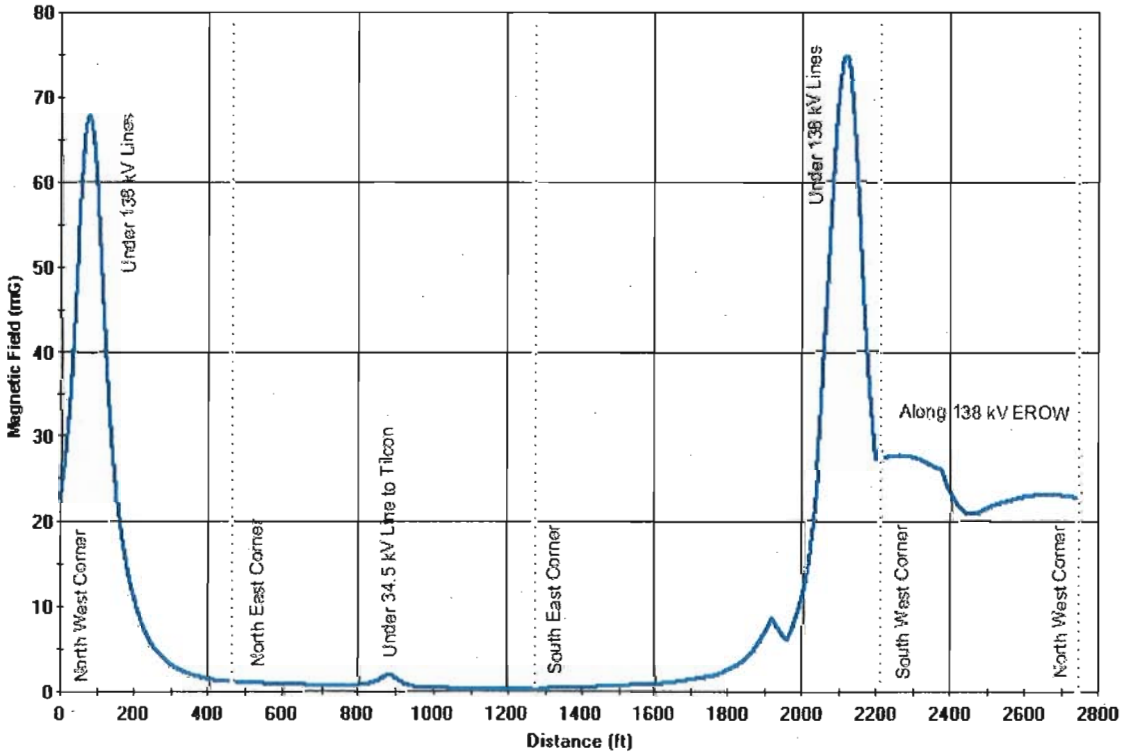

Figure 8. Calculated Magnetic Field Along Substation Property Line
For Existing Project Site Power Lines Using Historical Peak Loading

5.0 MODELING OF THE PROPOSED LITTLE TOR SUBSTATION

5.1 DESCRIPTION OF THE PROPOSED LITTLE TOR SUBSTATION

The proposed Little Tor Substation would convert 138 kV electrical power to 13.2 kV electrical power for distribution to neighboring consumers. The substation would be an outdoor substation, with two 50 MVA 138/13.2 kV transformers, one 20 MVA 13.2/34.5 kV transformer, new circuit breakers, new buswork, and new switchgear. Figure 9 presents an engineering diagram of the proposed Little Tor Substation.

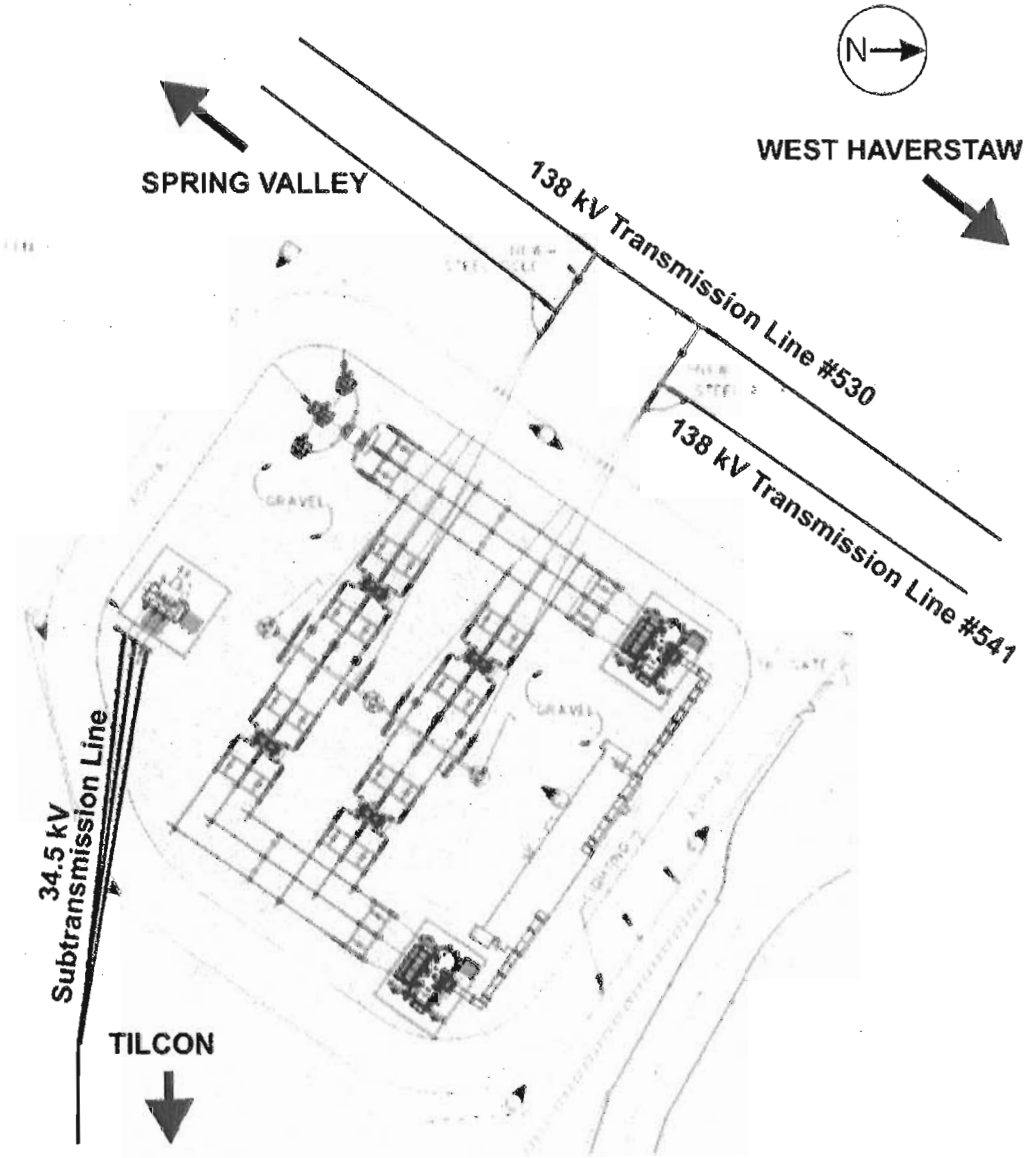

Figure 9. Diagram of the Proposed Little Tor Substation

One of the existing overhead 138 kV transmission lines (Line #541) would be tapped to provide electrical power into the proposed substation. The 138 kV circuit would connect through buswork into individual power transformers, where 138 kV electrical power would be converted to 13.2 kV electrical power. The 13.2 kV electrical power would then be routed through buswork into the switchgear and distributed to four 13.2 kV underground distribution circuits. These four underground distribution circuits would provide power to the neighboring area. In addition, one circuit would provide power to a 13.2/34.5 kV transformer which would provide power to the 34.5 kV sub-transmission line routed east towards Tilcon. The overhead section of the 34.5 kV line northwest of the proposed substation would be de-energized and become a future 13.2 distribution line. Figure 10 presents an aerial photograph of the project site with the proposed substation and power line modifications.

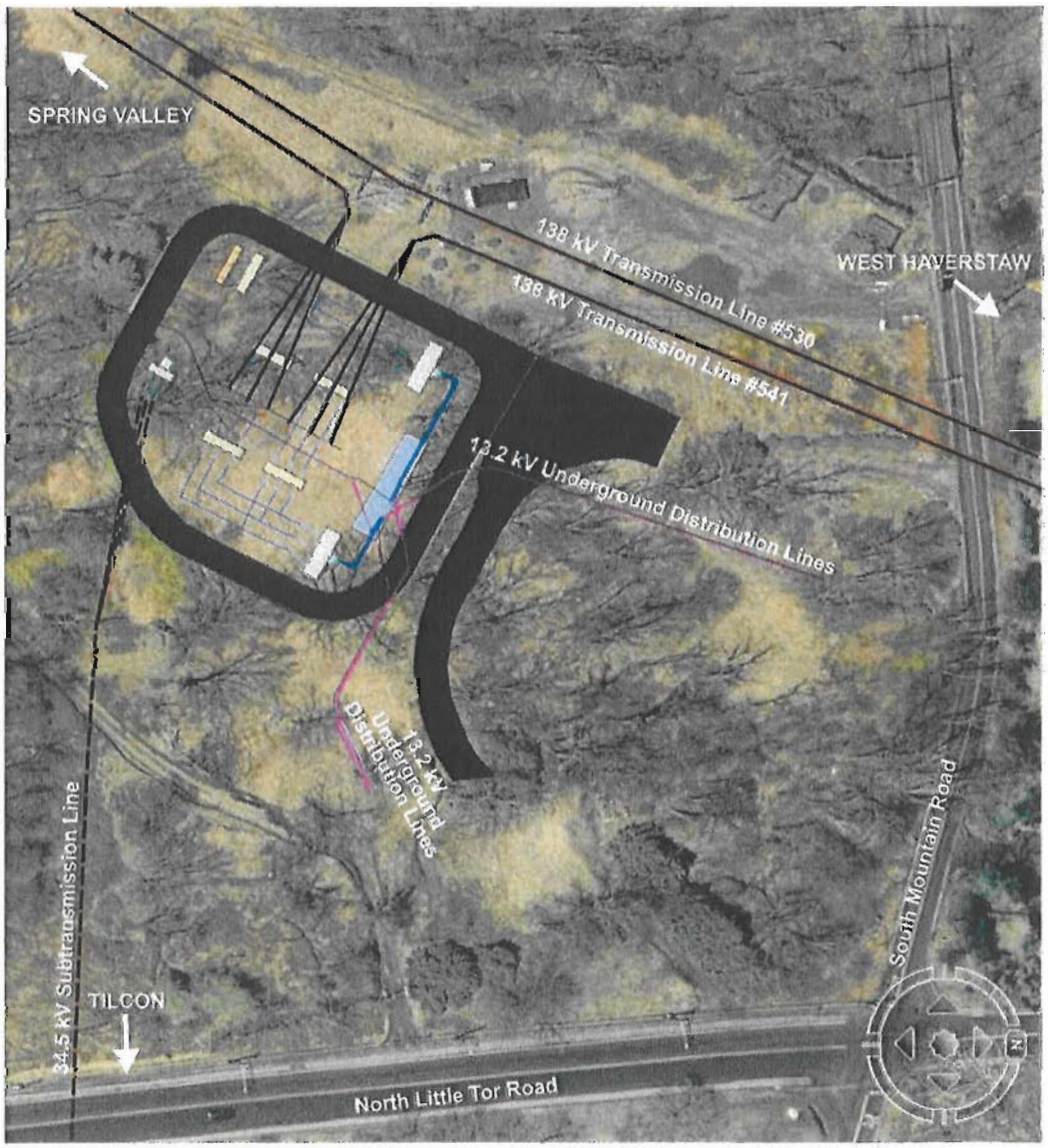

Figure 10. Aerial View of the Proposed Little Tor Substation with Power Line Modifications

5.2 COMPUTER MODEL FOR PROPOSED SUBSTATION

The existing computer model was modified to incorporate the proposed substation design and equipment, as well as the modifications to the existing 138 kV and 34.5 kV power lines. Figure 11 presents a diagram of the computer model for the proposed Little Tor Substation. The computer model was developed using various engineering drawings, one-line diagrams, and verbal and emailed information provided by Orange & Rockland.

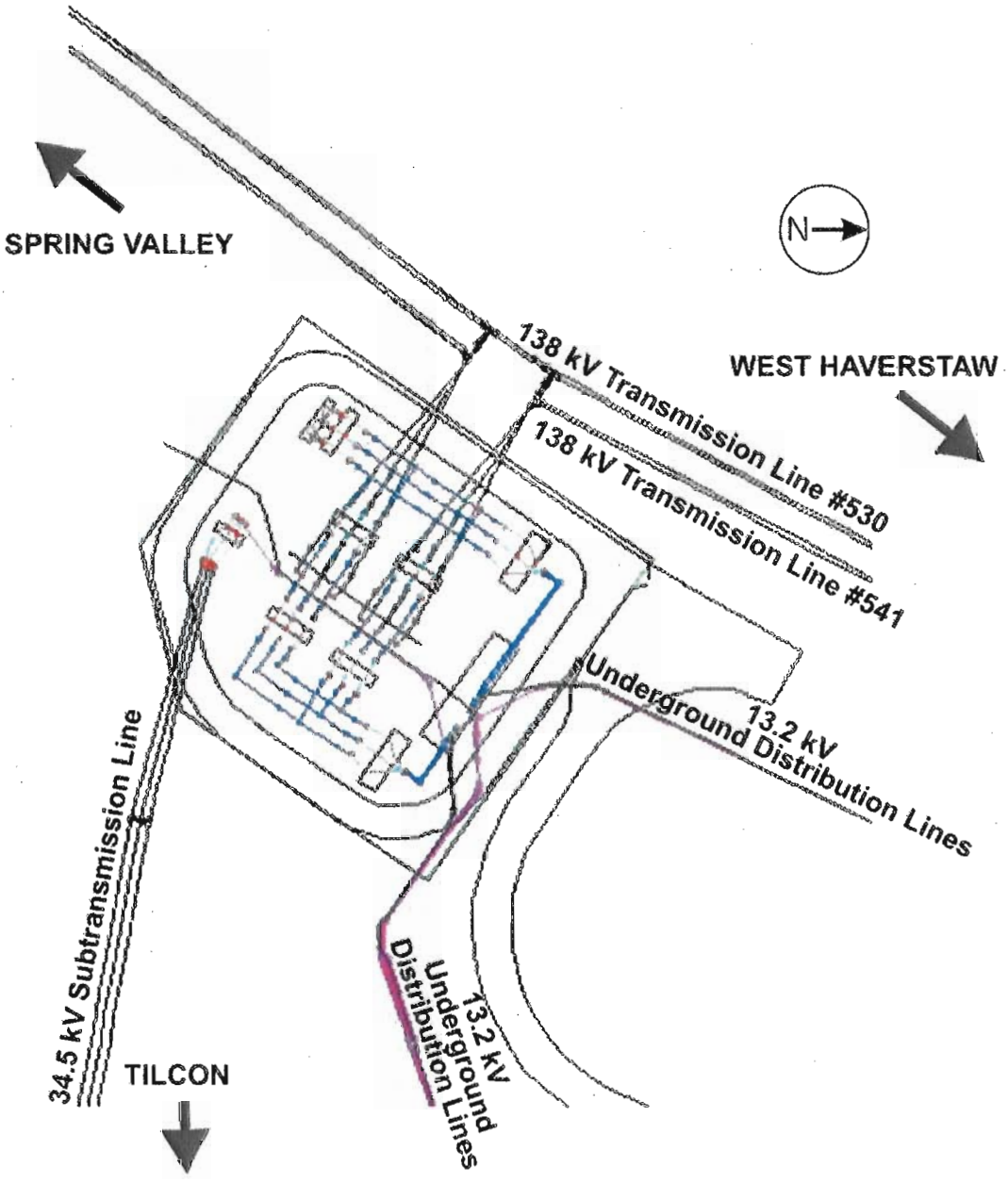

Figure 11. Computer Model of the Proposed Little Tor Substation

The proposed loading for each of the transmission and distribution circuits is presented in Table 3 as provided by Orange & Rockland. For the 138 kV transmission lines, historical maximum peak loading (from 2006) was again used. Loading on the 138 kV transmission line #541 was increased from it's historical peak load value to include the loading for the proposed Little Tor Substation for the section of the power line prior to reaching the substation. Loading for the 34.5 kV sub-transmission line is a calculated value based on the 138 kV transmission line historical peak loading data in conjunction with forecasted loading data for operation of the proposed Little Tor Substation. Loading for the four proposed 13.2 kV distribution circuits are based on forecasted loading data.

Table 3
Summary of Computer Modeling Loading Conditions for the Proposed Little Tor Substation

Power Line	Modeled Load
138 kV Circuit #530	739 Amps (historical peak)
138 kV Circuit #541 (before substation)	760 Amps (forecasted)
138 kV Circuit #541 (after substation)	630 Amps (historical peak)
34.5 kV Circuit	46.9 Amps (forecasted)
13.2 kV Distribution Circuit #2	167 Amps (forecasted)
13.2 kV Distribution Circuit #3	440 Amps (forecasted)
13.2 kV Distribution Circuit #5	258 Amps (forecasted)
13.2 kV Distribution Circuit #7	370 Amps (forecasted)
13.2 kV Circuit #8 (feed to 34.5 kV XFMR)	122.5 Amps (forecasted)

Some components of the substation have inherent magnetic field shielding characteristics; therefore, load reduction factors were applied to these components to simulate these magnetic field shielding characteristics. For loading within the switchgear, a 90% reduction factor was assumed. This reduction was modeled to represent the shielding factor caused from the metal-clad switchgear cabinets which house the energized conductors. No loading reduction factors were assumed to be applied to the 13.2 kV underground distribution circuits. If the underground cables were located within steel pipes or multi-point grounding of the underground cable sheaths were implemented, then the calculated magnetic fields would be reduced near locations where these underground circuits are located due to these inherent field mitigation techniques.

5.3 COMPUTER MODELING RESULTS FOR PROPOSED SUBSTATION

Based on the substation design and modeling assumptions, the computer model calculated magnetic field levels projected around the substation at a height of 1 meter above ground in accordance with IEEE Standards[10, 11]. Figures 12 and 13 present magnetic field contour maps of the calculation results.

As shown in Figures 12 and 13, calculated magnetic field levels remain relatively constant along the northwestern side of the 138kV transmission lines. The de-energization of the 34.5 kV sub-transmission line on the northwestern side of the existing 138 kV transmission lines and increased ground clearance of the 138 kV transmission lines (due to the removal of the existing tower and replacing it with two taller towers) offsets the increased loading on Line #541 providing power to the substation. Underneath the overhead 138 kV circuits, calculated magnetic field levels reach about 74.5 mG. Near the underground distribution circuits, calculated magnetic field levels reach about 32.1 mG directly above the distribution circuits. Magnetic field levels diminish quickly with distance from the underground distribution circuits. Internal magnetic field sources, such as the high voltage buswork, also influence calculated magnetic field levels along the substation perimeter.

Calculated magnetic field levels along the substation perimeter range from about 2.0 mG to 32.7 mG, depending upon location. Figure 14 presents a diagram of the locations where the substation perimeter calculations were performed. The perimeter calculations start at the northern corner of the proposed substation fence and proceed counterclockwise around the perimeter of the substation. Figure 15 presents a graph of the calculated magnetic along the proposed substation perimeter. Field levels are higher in close proximity to the overhead power lines.

Calculated magnetic field levels along the substation property line range from about 0.2 mG to 73.6 mG, depending upon location. Figure 16 presents a diagram of the locations where the substation property line calculations were performed. The property line calculations start at the northwestern corner of the property near South Mountain Road and proceeds clockwise around the property line. Figure 17 presents a graph of the calculated magnetic along the property line. Field levels are highest underneath the overhead 138 kV transmission lines.

Calculated magnetic field levels are based on computer modeling of the proposed design of the substation's electrical equipment and loading information as provided by Orange & Rockland. If the proposed substation design or loading conditions differ significantly from modeled conditions, then calculated magnetic field levels could differ significantly from those presented in this report.

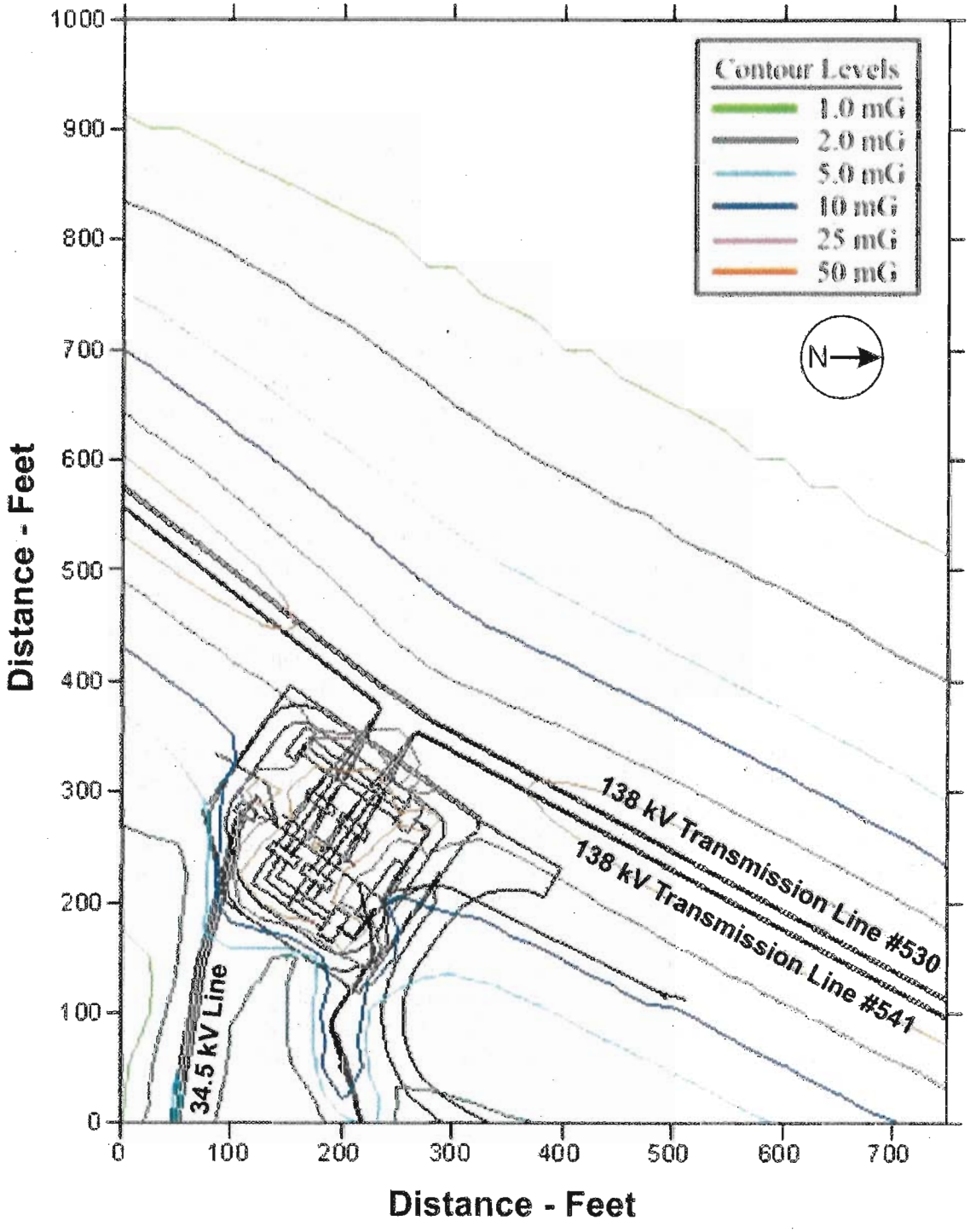

Figure 12. Calculated Magnetic Field Contour Map (in mG)
for the Proposed Little Tor Substation Using Historical and Forecasted Loading

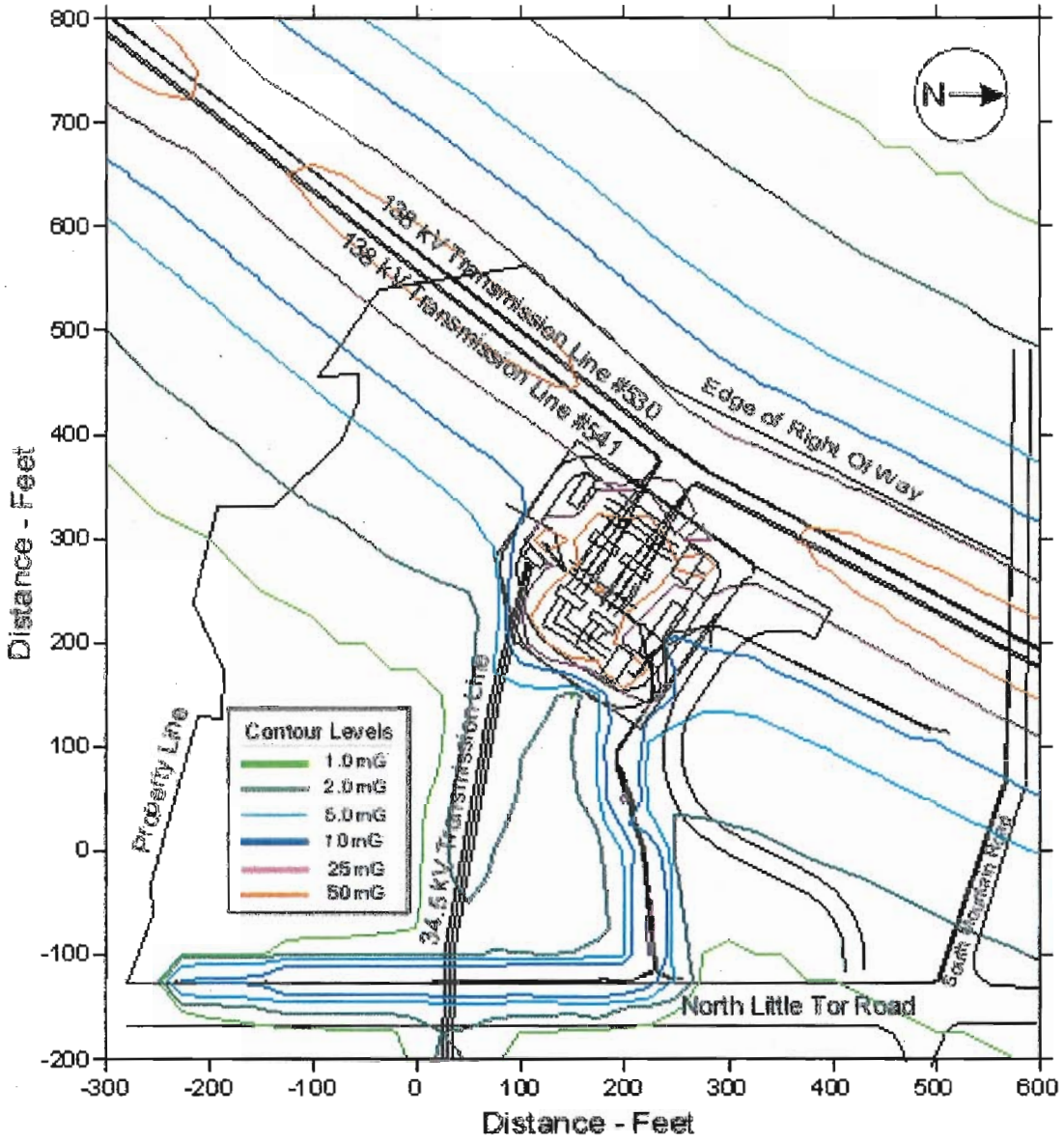

Figure 13. Calculated Magnetic Field Contour Map (in mG)
Showing the Entire Property Line for the Proposed
Little Tor Substation Using Historical and Forecasted Loading

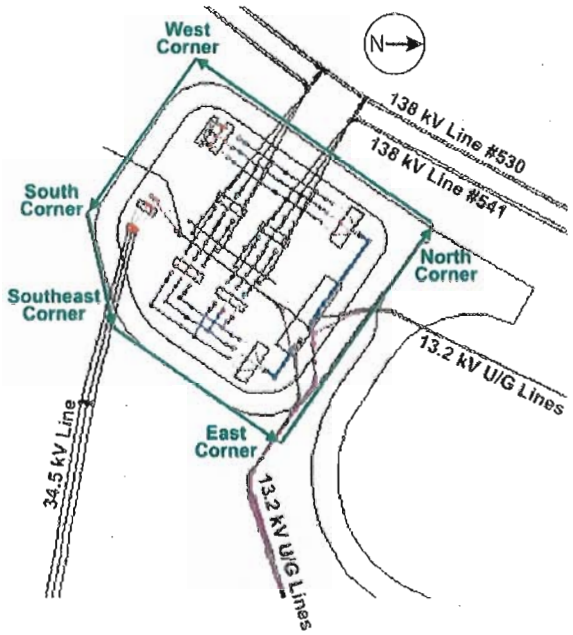

Figure 14. Diagram of Perimeter Path for Magnetic Field Calculations (Proposed Substation)

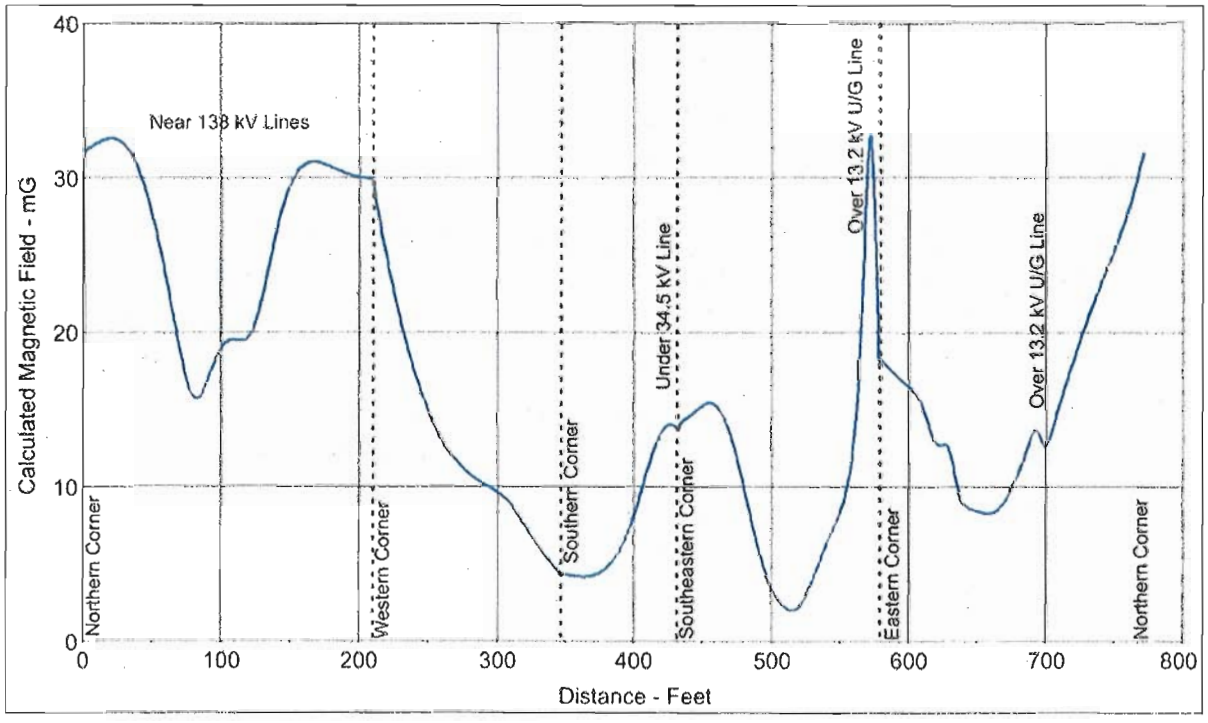

Figure 15. Calculated Magnetic Field Along Proposed Substation Perimeter
For Proposed Substation Project and Power Lines Using Historical and Forecasted Loading

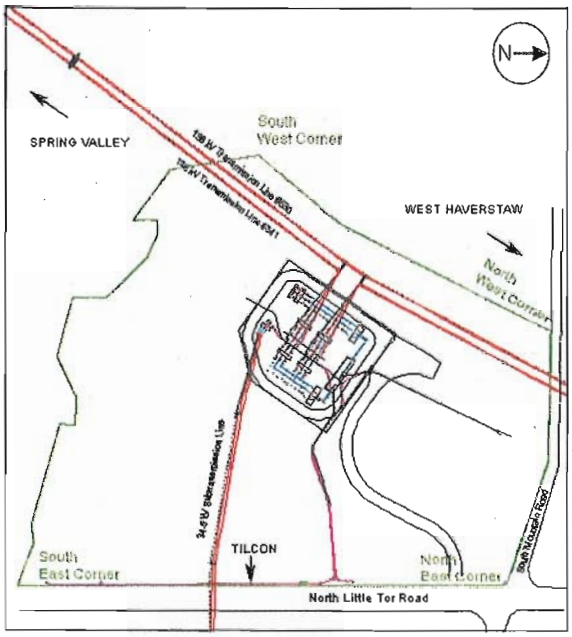

Figure 16. Diagram of Property Line Path for Magnetic Field Calculations (Proposed Substation)

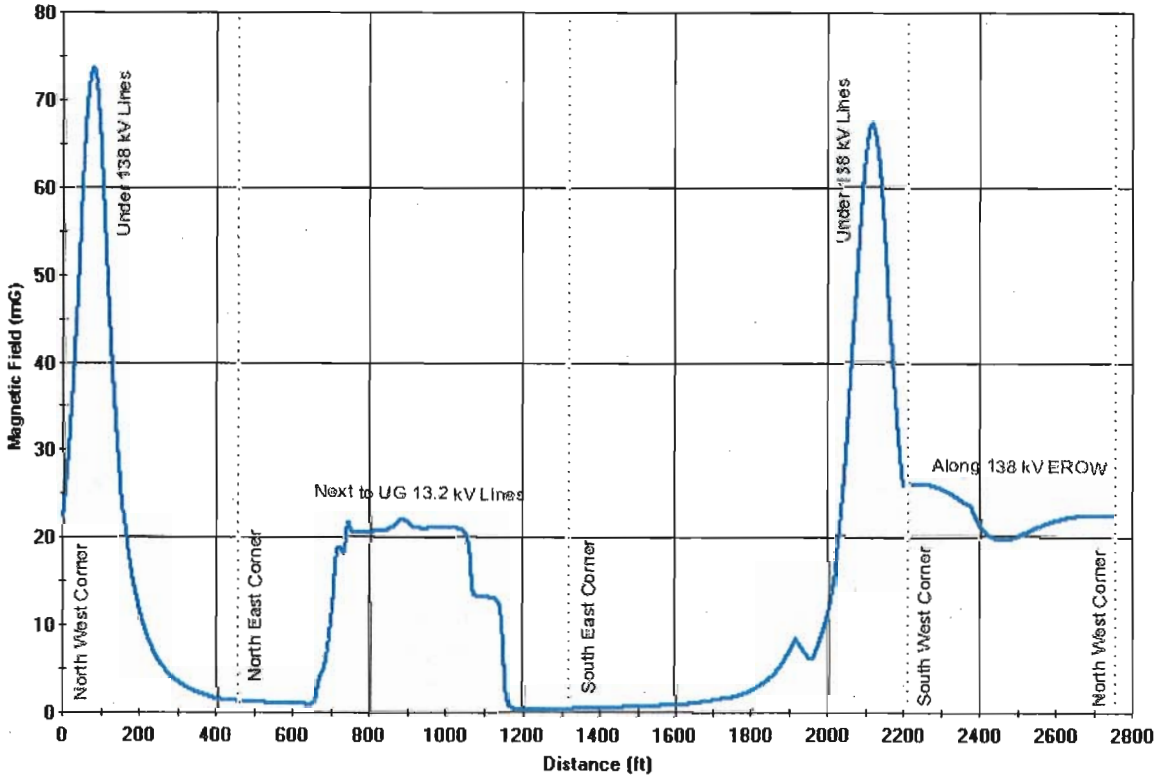

Figure 17. Calculated Magnetic Field Along Proposed Substation Perimeter For Proposed Substation Project and Power Lines Using Historical and Forecasted Loading

6.0 DISCUSSION

6.1 SUBSTATION PERIMETER

Calculated magnetic field levels along the proposed substation perimeter remain relatively constant between the existing magnetic field levels and the proposed substation condition. The existing magnetic field level along the substation perimeter ranges from about 2.1 to 31.3 mG, while calculations for the proposed substation configuration range from about 2.0 to 32.7 mG. Calculated magnetic field levels increase along the southern and southeastern sides of the substation due to the substation buswork and new 13.2 kV underground distribution lines, but remain within the overall range of magnetic field levels along the substation perimeter. The presence of new 13.2 kV underground distribution circuits provide increased magnetic field levels locally wherever these circuits are located (about 32 mG directly above the underground circuit). Table 4 presents a summary of the calculated magnetic field levels along each side of the substation perimeter for both the existing and proposed configurations.

Table 4
Summary of Magnetic Field Calculations Along Substation Perimeter

Substation Perimeter Location	Calculated Magnetic Field – mG	
	Existing Configuration	Proposed Configuration
Northwestern Side	20.8 – 31.3	15.6 – 32.5
Southwestern Side	3.8 – 31.3	4.4 – 29.9
Southern Side	3.0 – 3.8	4.1 – 14.0
Southeastern Side	2.1 – 4.2	2.0 – 32.7
Northeastern Side	2.1 – 26.1	8.3 – 31.7

6.2 SUBSTATION PROPERTY LINE

Calculated magnetic field levels along the substation property line remain relatively constant between the existing magnetic field levels and the proposed substation condition, with the exception of the eastern side near the three new 13.2 kV underground distribution lines. Values increase from 0.2 mG to over 20 mG at this location. Both existing and proposed magnetic field calculations do not include magnetic field contributions from any existing overhead distribution lines located along North Little Tor Road and South Mountain Road. These existing overhead distribution lines were not modeled due the constantly changing loading information available for these distribution lines and the possibility of potential net current effects which may also be present (since it is often common to have unbalanced loads on distribution lines for homes and businesses). The existing magnetic field levels along the property line ranges from about 0.2 mG to 74.5 mG, while calculations for the proposed substation configuration range from about 0.2 mG to 73.6 mG. Calculated magnetic field levels increase along the eastern side of the property

line due to the new 13.2 kV underground distribution lines. The presence of new 13.2 kV underground distribution circuits provide increased magnetic field levels locally wherever these circuits are located (about 32 mG directly above the underground circuit). Table 5 presents a summary of the calculated magnetic field levels along each side of the substation property line for both the existing and proposed configurations.

Table 5
Summary of Magnetic Field Calculations Along Substation Property Line

Substation Perimeter Location	Calculated Magnetic Field – mG	
	Existing Configuration	Proposed Configuration
Northern Side	1.5 – 68.0	1.5 – 73.6
Eastern Side	0.2 – 2.5	0.2 – 22.0
Southern Side	0.5 – 74.5	0.5 – 68.6
Western Side	21.0 – 27.0	19.5 – 26.0

6.3 138 kV TRANSMISSION LINES

Calculated magnetic field levels remain relatively constant along the northwestern side of the 138 kV transmission lines. Under the 138 kV transmission lines at midspan, the calculated magnetic field has a slight increase (from about 68.2 mG for the existing configuration to about 74.5 for the proposed configuration). The de-energization of the 34.5 kV sub-transmission line on the northwestern side of the existing 138 kV transmission lines and the increased ground clearance of the 138 kV transmission lines (due to the removal of the existing tower and replacing it with two taller proposed towers) offsets the increased loading on Line #541 which provides power to the Little Tor Substation, resulting in a small increase directly underneath of the 138 kV circuits but relatively no increase farther away from the power lines.

6.4 MODELING ASSUMPTIONS

Calculated magnetic field levels are based on computer modeling of the existing and proposed substation designs as provided by Orange & Rockland. If the existing/proposed substation designs or loading conditions differ significantly from modeled conditions, then calculated magnetic field levels could differ significantly from those presented in this report.

6.5 NEW YORK TRANSMISSION LINE MAGNETIC FIELD STANDARDS

The New York State Public Service Commission has established a standard requiring magnetic field levels at the edge of a transmission line right-of-way to be under 200 mG at maximum load. Calculated magnetic field levels for all of the transmission line and distribution line circuits associated with this project are below this 200 mG standard.

7.0 CONCLUSIONS

Orange & Rockland Utilities, Inc. is proposing to construct a new 120 MVA electric power substation, the "Little Tor Substation", which will be located in New City, New York. Presently, two existing 138 kV transmission lines traverse the site, as well as a 34.5 kV sub-transmission line. For the proposed substation, one of the existing 138 kV transmission lines would be tapped to provide electrical power to the substation. The existing 34.5 kV sub-transmission line from Haverstraw to the new Little Tor substation would be de-energized and the existing 34.5 kV line to Tilcon would originate from Little Tor substation. In addition, several 13.2 kV underground distribution feeders would be installed as part of the substation project.

Orange & Rockland retained Enertech to perform a magnetic field assessment of the project site. Computer models were developed for the existing site and the proposed substation based upon engineering and design drawings supplied by Orange & Rockland. Once the computer models were developed, magnetic field calculations were performed for the area immediately surrounding the substation using historical maximum peak loading information provided by Orange & Rockland. The New York Public Service Commission standard requires magnetic field levels at the edge of the right-of-way to be under 200 mG at maximum load.

For the existing site configuration, calculated magnetic fields along the proposed substation perimeter range from about 2.1 mG to 31.3 mG. Calculated magnetic field levels along the substation property line range from about 0.2 mG to 74.5 mG. Field levels are primarily due to the existing 138 kV and 34.5 kV overhead power lines. Calculated magnetic field levels reach about 68 mG directly underneath the 138 kV transmission lines at midspan, but attenuate with distance away from the power lines.

For the proposed substation configuration, calculated magnetic field levels along the substation perimeter (about 2.0 to 32.7 mG) remain comparable to existing magnetic field levels. Calculated magnetic field levels are increased along the southern and southeastern sides of the substation due to the substation buswork and new 13.2 kV underground distribution lines. The presence of new 13.2 kV underground distribution circuits provide increased magnetic field levels locally wherever these circuits are located (about 32 mG directly above the underground circuits). Calculated magnetic field levels remain relatively constant along the northwestern side of the 138 kV transmission lines. The de-energization of the 34.5 kV sub-transmission line on the northwestern side of the existing 138 kV transmission lines and the increased ground clearance of the 138 kV transmission lines (due to the removal of the existing tower and replacing it with two taller proposed towers) offsets the increased loading on Line #541 which provides power to the Little Tor Substation, resulting in a small increase directly underneath of the 138 kV circuits (about 74.5 mG from 68.2 mG) but relatively no increase farther away from the power lines.

For the proposed substation configuration, calculated magnetic field levels along the property line (about 0.2 to 73.6 mG) remain comparable to existing magnetic field levels. Calculated magnetic field levels are increased along the eastern side of the property line along North Little Tor Road due to the new underground distribution lines. The presence of new 13.2 kV underground distribution circuits provide increased magnetic field levels locally wherever these

circuits are located (about 32 mG directly above the underground circuits). Existing distribution lines were not modeled due to constantly changing loading information available for these circuits and the possibility of potential net currents on these distribution circuits. Calculated magnetic field levels directly under the 138 kV transmission lines on the northern side of the property line (along South Mountain Road) increase from 62.5 mG to 73.6 mG due to the additional current utilized by the Little Tor Substation. The calculated magnetic field levels directly under the 138 kV transmission lines on the southern side of the property line are the same as the existing lines (about 69 mG) due to similar line loading and configuration.

The New York Public Service Commission standard requires magnetic field levels at the edge of a transmission line right-of-way to be under 200 mG at maximum load. Calculated magnetic field levels for all of the transmission line and distribution line circuits associated with this project are below this 200 mG standard.

Calculated magnetic field levels are based on computer modeling of the existing site designs and proposed substation designs as provided by Orange & Rockland. If the existing/proposed site designs or loading conditions differ significantly from modeled conditions, then calculated magnetic field levels could differ significantly from those presented in this report.

8.0 REFERENCES

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4. "Magnetic Field Shielding Design Guide", Final Report TR-109271, Prepared by Electric Research and Management for the Electric Power Research Institute, December, 1997.

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9. Silva, J.M., Hummon, N.P., Rutter, D.A., Hooper, H.C., "Power Frequency Magnetic Fields in the Home", IEEE Transactions on Power Delivery, Vol. PWRD-4, No. 1, pp. 465-478, January, 1989.

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11. "IEEE Guide for the Measurement of Quasi-Static Magnetic and Electric Fields", IEEE Std 1460-1996, Institute of Electrical and Electronics Engineers, December 1996.

MORTON LEIFER PE.

ELECTRONIC COMMUNICATIONS SPECIALIST

TOWN OF CLARKSTOWN

RECEIVED
OCT 17 2011
TOWN PLANNING DEPT.

To: Honorable Shirley J. Thormann Chairperson
Honorable Members of the Clarkstown Planning Board
From: Morton Leifer
Date: October 17, 2011
Re: Magnetic Field Modeling Assessment for the Little Tor Substation.

Dear Ms. Thormann,

I have carefully reviewed the Draft Environmental Impact Statement submitted on behalf of Orange & Rockland Utilities Inc. that was prepared by Enertech Consultants of Santa Clara Inc. of Campbell, California.

The report posits that "The New York Public Service Commission standard requires magnetic field levels at the edge of a transmission line right-of-way to be under 200 mG at maximum load. Calculated magnetic field levels for all of the transmission line and distribution line circuits associated with this project are below this 200 mG standard".

Computer modeling of the magnetic fields around the perimeter of the proposed substation convincingly demonstrate that the magnetic fields due to the proposed construction of the substation's electrical equipment will produce significantly less than 200mG at the perimeter of the proposed substation.

The electrical transformers and associated switchgear will not be located near the perimeter of the substation. The distance of the electrical equipment to the perimeter of the substation will reasonably attenuate the magnetic fields to the calculated levels of 2 to 3 mG. The additional distance from the substation perimeter to the property lines will further reduce the magnetic fields to the calculated values of 0.2 – 0.3 mG.

In summary, there would likely be no increase of magnetic field levels at the perimeter of the property due to the installation of the proposed transformers and switchgear within the substation.

I must point out, however, that on my visit to the property I measured the levels of magnetic field along the property line to be anywhere from 3 to 75 mG, the higher value due to the existing 138 KV transmission lines. These levels would persist along the right-of-way of the transmission lines far distant from the proposed substation. I also measured magnetic field values in the 75 mG range all along the 13.2 KV distribution lines that are ubiquitous on N. Little Tor Road and South Mountain Road. The magnetic field from these 13.2 KV distribution lines is strong because they are much closer to ground level than the 138KV transmission lines.

20 Maple Avenue New City New York 10956 845-406-0729 m_leifer@town.clarkstown.ny.us

While I believe there is no issue with the 34.5kV sub-transmission line to Tilcon, because there is a well-defined and existing right-of-way that can be easily seen and avoided by pedestrians, I am troubled by the four proposed 13.2KV underground distribution lines.

The report forecasts significant current loads for these underground distribution lines. They are not buried deeply and are therefore much closer to the ground level than the elevated 13.2 KV distribution lines mounted on the telephone poles. The magnetic field from the underground 13.2 KV lines can be significant, and coupled with the overhead lines can represent an environmental issue for the area that must be more carefully considered.

The report provides no specificity as to where these underground lines will be located, their paths and extent into the surrounding area.

I understand that the primary purpose of building the substation is to provide additional electrical capacity to the area. The proposed four 13.2 KV underground distribution lines are necessary to accomplish that.

With regard to magnetic fields, the focus of the report has been almost entirely on the electrical equipment proposed to be built within the substation. The report reasonably concludes that there would be negligible magnetic flux density outside of the property lines due to the electrical transformers and associated switchgear.

The primary environmental effect on the community with regards to increased magnetic field exposure is, in fact, the proposed four underground 13.2 KV distribution lines and their associated electrical equipment. The report should include details of where the lines would be located, what magnetic field mitigation would be implemented and what signage would be used to keep people from unknowingly congregating in areas of high magnetic flux density.

Underground 13.2 KV distribution lines are used in many neighborhoods in Clarkstown. They are, however, rarely used where there is such a high density of overhead electrical distribution lines already in existence.

I believe a more in-depth study of the proposed underground distribution lines and their associated equipment, such as electrical transformers should be undertaken and specific details provided as part of the Environmental Impact Statement.

Respectfully submitted,

Morton Leifer

Morton Leifer PE.

ENERTECH Consultants
494 Salmar Avenue, Suite #200
Campbell, California 95008
(408) 866-7266 FAX : (408) 866-7279
WWW.ENERTECH.NET

To: Honorable Shirley J. Thormann, Chairperson

From: Enertech Consultants

Date: November 16, 2011

Re: Comments from Morton Leifer Regarding Magnetic Field Modeling Assessment for the Little Tor Substation

Dear Ms. Thormann,

Enertech has reviewed the letter submitted on October 17, 2011 by Mr. Morton Leifer concerning the Modeling Assessment for the Little Tor Substation which we prepared for Orange & Rockland. This letter was prepared to address the comments which Mr. Leifer raised concerning this report.

Mr. Leifer states that he conducted magnetic field measurements under the existing 138 kV transmission lines, where he measured values from 3 to 75 mG. Our computer modeling of the existing electrical facilities shows a calculated peak magnetic field under the 138 kV transmission line of 74.5 mG (Section 4.3, page 6, paragraph 4 and Figure 8, page 10). So his measurements and our modeling compare closely to one another.

Mr. Leifer also conducted magnetic field measurements under the existing 13.2 kV distribution lines along North Little Tor Road and South Mountain Road, where he measured values in the 75 mG range. Our computer modeling of the existing electrical facilities did not include these existing 13.2 kV distribution lines. Therefore, there are no calculated values with which to compare with his measured values.

Mr. Leifer states that the magnetic field from the four proposed 13.2 kV underground lines can be significant, and coupled with the overhead lines, can represent an environmental issue for the area that must be more carefully considered. Our computer modeling of the proposed electrical facilities does include the four 13.2 kV underground distribution circuits as routed out of the proposed substation and onto North Little Tor Road. Calculated magnetic field values at 1–meter height directly above the four 13.2 kV underground distribution circuits is 32.7 mG (Section 5.3, page 15, paragraph 3 and Figure 15, page 18).

Mr. Leifer states that the report provides no specificity as to where these underground 13.2 kV lines will be located, their paths, and extent into the surrounding area. However, the underground distribution line route to North Little Tor Road is shown in Figure 13 (page 17) and Figure 16 (page 19). Due to the complexity of Figure 13 and the size of Figure 16, it may be difficult to determine the location of the underground distribution line route; therefore, an enlarged version of Figure 16 is shown below (Figure 16A).

To clarify this discussion regarding the existing overhead distribution lines and the proposed underground distribution lines, it is reported by Orange & Rockland that the existing distribution line configurations will not change with the addition of the Little Tor Substation (i.e. the existing distribution lines along North Little Tor Road and South Mountain Road will remain the same regardless of whether the proposed substation is constructed or not). Since electrical power is presently being provided by other nearby substations, the proposed Little Tor Substation would only act as a new source for the same level of electrical power that presently exists. The four proposed 13.2 kV underground distribution circuits as routed out of the Little Tor Substation simply connect the substation to the existing (unchanged) overhead distribution line system. These interconnecting circuits are proposed to be located underground (rather than overhead) for aesthetic and exposure reasons. One 13.2 kV underground distribution line would connect to the existing overhead distribution line system (at South Mountain Road) via a riser pole within the substation property, a second underground line connects via a riser pole at the substation property line (at North Little Tor Road), and the remaining two underground lines are routed adjacent to North Little Tor Road to connect into the existing overhead distribution system at the southeast corner of the substation property (to avoid conflicts with an existing 34.5 kV overhead circuit). Although the load flow pattern of the overhead distribution system may change (due to the change in the source location of the electrical power), no additional electrical load will be added to the overhead distribution system as a result of constructing the Little Tor Substation.

Finally, Mr. Leifer requests that a more in-depth study of the proposed underground distribution lines and their associated equipment, such as electrical transformers, should be undertaken and specific details provided as part of the Environmental Impact Statement. Associated equipment, such as electrical transformers, are already modeled as part of the internal substation equipment which Mr. Leifer agrees with and reasonably concludes that there would be negligible magnetic field outside of the substation property line. The four 13.2 kV distribution lines themselves are modeled with their proposed routes and their associated magnetic field levels been calculated and reported.

Respectfully Yours,

Enertech Consultants of Santa Clara County, Inc.

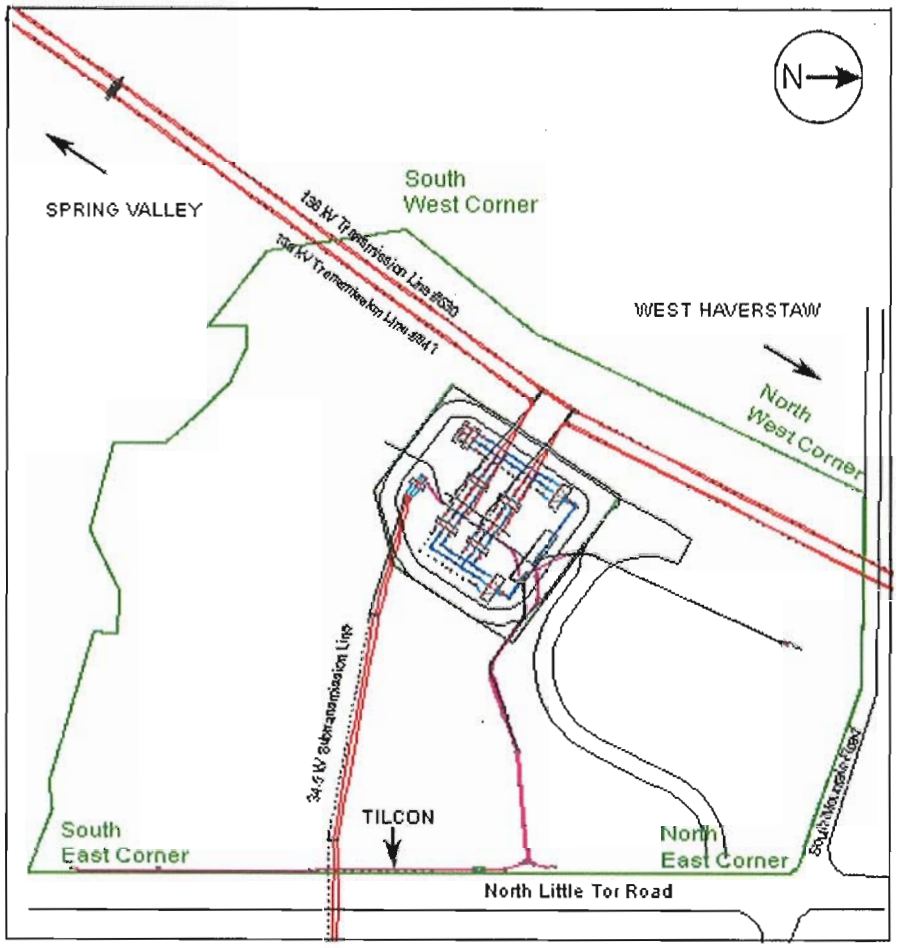

Figure 16A. Diagram of Property Line Path for Magnetic Field Calculations
(Proposed Substation)

F

CMX

STORMWATER POLLUTION PREVENTION PLAN

FOR

LITTLE TOR SUBSTATION
CLARKSTOWN, NY

PREPARED FOR

ORANGE AND ROCKLAND UTILITIES, INC
390 West Route 59
Spring Valley, NY 10977

080642001
April, 2010

CMX ENGINEERING, SURVEYING & LANDSCAPE ARCHITECT, PC
A SUBSIDIARY OF BIRDSALL SERVICES GROUP, INC.

1311 Mamaroneck Avenue | Suite 50 | White Plains, NY 10605 | Tel 914.686.1000 | Fax 914.686.1222 | www.birdsall.com

LITTLE TOR SUBSTATION

CLARKSTOWN

Rockland County, New York

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Project Site Information

oject/Site Name
LITTLE TOR SUBSTATION

Street Address (NOT P.O. BOX)
LITTLE TOR ROAD

Side of Street
○ North ○ South ○ East ● West

City/Town/Village (THAT ISSUES BUILDING PERMIT)
CLARKSTOWN

State: NY | Zip: 10956- | County: ROCKLAND | DEC Region: 3

Name of Nearest Cross Street
SOUTH MONTAIN ROAD

Distance to Nearest Cross Street (Feet): 0

Project In Relation to Cross Street
○ North ● South ○ East ○ West

Tax Map Numbers
Section-Block-Parcel: 34.05-1-5&6

Tax Map Numbers:

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site go to the dropdown menu on the left and choose "Get Coordinates". Click on the center of your site and a small window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting): 583150

Y Coordinates (Northing): 4560278

2. What is the nature of this construction project?

○ **New Construction**

● **Redevelopment with increase in imperviousness**

○ **Redevelopment with no increase in imperviousness**

3358554733

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-08-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
ORANGE AND ROCKLAND UTILITIES, INC.

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
OFFEY

Owner/Operator Contact Person First Name
JOHN

Owner/Operator Mailing Address
390 WEST ROUTE 59

City
SPRING VALLEY

State
NY

Zip
10977-____

Phone (Owner/Operator)
845-577-3700

Fax (Owner/Operator)
845-577-3720

Email (Owner/Operator)
COFFEYJO@ORU.COM

FED TAX ID
__-_____ (not required for individuals)

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use	**Post-Development Future Land Use**
○ FOREST	○ SINGLE FAMILY HOME — Number of Lots:
○ PASTURE/OPEN LAND	○ SINGLE FAMILY SUBDIVISION:
○ CULTIVATED LAND	○ TOWN HOME RESIDENTIAL
● SINGLE FAMILY HOME	○ MULTIFAMILY RESIDENTIAL
○ SINGLE FAMILY SUBDIVISION	○ INSTITUTIONAL/SCHOOL
○ TOWN HOME RESIDENTIAL	○ INDUSTRIAL
○ MULTIFAMILY RESIDENTIAL	○ COMMERCIAL
○ INSTITUTIONAL/SCHOOL	○ MUNICIPAL
○ INDUSTRIAL	○ ROAD/HIGHWAY
○ COMMERCIAL	○ RECREATIONAL/SPORTS FIELD
○ ROAD/HIGHWAY	○ BIKE PATH/TRAIL
○ RECREATIONAL/SPORTS FIELD	○ LINEAR UTILITY (water, sewer, gas, etc.)
○ BIKE PATH/TRAIL	○ PARKING LOT
○ LINEAR UTILITY	○ CLEARING/GRADING ONLY
○ PARKING LOT	○ DEMOLITION, NO REDEVELOPMENT
○ OTHER	● OTHER: ELEC SUBSTATION

4. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ Yes ● No

5. Is this a project which does not require coverage under the General Permit (e.g. Project done under an Individual SPDES Permit, or department approved remediation)? ○ Yes ● No

6. Is this property owned by a state authority, state agency or local government? ○ Yes ● No

7. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage) within the disturbed area. Round to the nearest tenth of an acre.

Total Site Acreage	**Acreage To Be Disturbed**	**Existing Impervious Area Within Disturbed**	**Future Impervious Area Within Disturbed**
10.2	3.3	0.8	1.7

8. Do you plan to disturb more than 5 acres of soil at any one time? ○ Yes ● No

9. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	**B**	**C**	**D**
0 %	0 %	100 %	0 %

0498554735

10. Is this a phased project? ○ Yes ● No

11. Enter the planned start and end dates of the disturbance activities. **Start Date** 10/01/2010 – **End Date** 06/01/2011

12. Identify the nearest, natural, surface waterbody (ies) to which construction site runoff will discharge.

Name: HACKENSACK RIVER

12a. Type of waterbody identified in Question 12?

- ○ Wetland / State Jurisdiction On Site (Answer 12b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 12b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ○ Stream / Creek Off Site
- ● River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

12b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ● Other (identify)

13. Has the surface waterbody(ies) in question 12 been identified as a 303(d) segment in Appendix E of GP-0-08-001? ○ Yes ● No

14. Is this project located in one of the Watersheds identified in Appendix C of GP-0-08-001? ○ Yes ● No

15. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? **If no, skip question 16.** ○ Yes ● No

16. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ Yes ● No
If Yes, what is the acreage to be disturbed?

17. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ● Yes ○ No

18. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ○ Yes ● No ○ Unknown
(If No, skip question 19)

19. What is the name of the municipality/entity that owns the separate storm sewer system?

20. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ Yes ● No ○ Unknown

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book) ? ● Yes ○ No

22. Does this construction activity require the development of a SWPPP that includes Water Quality and Quantity Control components (Post-Construction Stormwater Management Practices)
(If No, skip questions 23 and 27-35) ● Yes ○ No

23. Have the Water Quality and Quantity Control components of the SWPPP been developed in comformance with the current NYS Stormwater Management Design Manual ? ● Yes ○ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ● **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer

CMX

Contact Name (Last, Space, First)

UTSCHIG, W. CHARLES

Mailing Address

1311 MAMARONECK AVENUE SUITE 50

City

WHITE PLAINS

State NY Zip 10605-

Phone 914-686-1000 Fax 914-686-1222

Email

CUTSCHIG@CMXENGINEERING.COM

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-08-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name W. CHARLES **MI**

Last Name UTSCHIG

Signature

Date / /

25. Has a construction sequence schedule for the planned management practices been prepared? ○ Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ● Check Dams
- ○ Construction Road Stabilization
- ○ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ● Sediment Basin
- ○ Sediment Traps
- ● Silt Fence
- ● Stabilized Construction Entrance
- ● Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ● Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ● Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ● Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ● Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ● Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ● Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ● Rock Outlet Protection
- ○ Streambank Protection

Other

Water Quality and Quantity Control

Important: Completion of Questions 27-35 is not required if response to Question 22 is No.

Post-Construction Stormwater Management Practices

27. Indicate **all** Stormwater Management Practice(s) that will be installed/constructed on this site:

Ponds
- ○ Micropool Extended Detention (P-1)
- ○ Wet Pond (P-2)
- ○ Wet Extended Detention (P-3)
- ○ Multiple Pond System (P-4)
- ○ Pocket Pond (P-5)

Filtering
- ● Surface Sand Filter (F-1)
- ○ Underground Sand Filter (F-2)
- ○ Perimeter Sand Filter (F-3)
- ○ Organic Filter (F-4)
- ○ Bioretention (F-5)
- ○ Other

Alternative Practice
- ● Rain Garden
- ○ Cistern
- ○ Green Roof
- ○ Stormwater Planters
- ○ Permeable Paving (Modular Block)

Wetlands
- ○ Shallow Wetland (W-1)
- ○ Extended Detention Wetland (W-2)
- ○ Pond/Wetland System (W-3)
- ○ Pocket Wetland (W-4)

Infiltration
- ○ Infiltration Trench (I-1)
- ○ Infiltration Basin (I-2)
- ○ Dry Well (I-3)
- ○ Underground Infiltration System

Open Channels
- ● Dry Swale (O-1)
- ○ Wet Swale (O-2)

Verified Proprietary Practice
- ○ Hydrodynamic
- ○ Wet Vault
- ○ Media Filter

28. Describe other stormwater management practices not listed above or explain any deviations from the technical standards.

Channel Protection Volume release orifice was calculated to be less than 3" in diameter; thus, CPv is not required.

29. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ● Yes ○ No

If Yes, Identify the entity responsible for the long term Operation and Maintenance

ORANGE AND ROCKLAND UTILITIES, INC.

30. Provide the total water quality volume required and the total provided for the site.

WQv Required 0.159 **acre-feet**

WQv Provided 0.163 **acre-feet**

31. Provide the following Unified Stormwater Sizing Criteria for the site.

Total Channel Protection Storage Volume (CPv) - Extended detention of post-developed 1 year, 24 hour storm event

CPv Required 0.00 **acre-feet**

CPv Provided 0.00 **acre-feet**

31a. The need to provide for channel protection has been waived because:

○ **Site discharges directly to fourth order stream or larger**

Total Overbank Flood Control Criteria (Qp) - Peak discharge rate for the 10 year storm

Pre-Development 26.9 **CFS**

Post-development 25.1 **CFS**

Total Extreme Flood Control Criteria (Qf) - Peak discharge rate for the 100 year storm

Pre-Development 49.2 **CFS**

Post-development 45.2 **CFS**

31b. The need to provide for flood control has been waived because:

○ **Site discharges directly to fourth order stream or larger**

○ **Downstream analysis reveals that flood control is not required**

IMPORTANT: For questions 31 and 32, impervious area should be calculated considering the project site and all offsite areas that drain to the post-construction stormwater management practice(s). (Total Drainage Area = Project Site + Offsite areas)

32. Pre-Construction Impervious Area - As a percent of the Total Drainage Area enter the percentage of the existing impervious areas before construction begins. 12 %

33. Post-Construction Impervious Area - As a percent of the Total Drainage Area, enter the percentage of the future impervious areas that will be created/remain on the site after completion of construction. 20 %

34. Indicate the total number of post-construction stormwater management practices to be installed/constructed. 3

35. Provide the total number of stormwater discharge points from the site. (include discharges to either surface waters or to separate storm sewer systems) 3

36. Identify other DEC permits that are required for this project.

DEC Permits

O Air Pollution Control	O Navigable Waters Protection / Article 15
O Coastal Erosion	O Water Quality Certificate
O Hazardous Waste	O Dam Safety
O Long Island Wells	O Water Supply
O Mined Land Reclamation	O Freshwater Wetlands/Article 24
O Other SPDES	O Tidal Wetlands
O Solid Waste	O Wild, Scenic and Recreational Rivers
O None	O Stream Bed or Bank Protection / Article 15

O Other

37. Does this project require a US Army Corps of Engineers Wetland Permit? O Yes ● No
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

38. Is this project subject to the requirements of a regulated, traditional land use control MS4? O Yes ● No
(If No, skip question 39)

39. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ● Yes O No

40. If this NOI is being submitted for the purpose of continuing coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. NYR[ ][ ][ ][ ][ ][ ]

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name JOHN **MI**

Print Last Name COFFEY

Owner/Operator Signature

Date [ ][ ] / [ ][ ] / 2010

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit GP-0-08-001

(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Orange & Rockland Utilities
2. Contact Person:	John Coffey
3. Street Address:	390 West Route 59
4. City/State/Zip:	Spring Valley, NY 10977
II. Project Site Information	
5. Project/Site Name:	Little Tor Substation
6. Street Address:	Little Tor Road
7. City/State/Zip:	Clarkstown, NY 10956
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	New York-Newark
12. MS4 SPDES Permit Identification Number: NYR20A _____	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

(NYS DEC - MS4 SWPPP Acceptance Form - 4/10/08, Revised 9/19/08)

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).
Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

LITTLE TOR SUBSTATION
ROCKLAND COUNTY
Clarkstown, New York

Contents:

A. *INTRODUCTION*

B. *SITE DESCRIPTION*

C. *STORMWATER MANAGEMENT METHODOLOGY*

D. *STORMWATER RATE OF RUNOFF ANALYSIS*

E. *MOSQUITO BREEDING SUPPRESSION PLAN*

F. *CONSTRUCTION PHASING PLAN AND STORMWATER MANAGEMENT FACILITIES MAINTENANCE PROGRAM*

G. *MATERIAL HANDLING AND WASTE MANAGEMENT*

H. *NARRATIVE REPORT*

I. *FINAL STABILIZATION*

J. *CONCLUSION*

A. Introduction

This report has been prepared as part of the permit application for a Stormwater Pollution Prevention Plan for the construction of an electrical substation located at the intersection of South Mountain Road and Little Tor Road located in Clarkstown, Rockland County state of New York. The site is approximately 10.2 acres. This Plan is required by the New York State Department of Environmental Conservation (NYSDEC) pursuant to the Phase II regulations under General Permit GP-0-08-001 for more than one acre of disturbance (3.3 ac.).

B. Site Description

The site consists primarily of Ra and WeB soils (C soils) with the exception of some outcrop rock (4,047 S.F.); hydrologic groups based on NRCS. The site is currently fully developed and contains several single-family dwellings, accessory buildings and a Verizon Wireless building and tower. The property is divided by an existing ridge running southerly causing the site to slope toward existing wetlands and the Hackensack River; similarly, this ridge causes the site to slope easterly towards existing wetlands and a culvert pipe running across Little Tor Road.

The grading and drainage plans have been designed to capture and treat all of the stormwater runoff from all impervious surfaces on site (proposed and existing). Stormwater will be collected through a series of catch basins, dry and perimeter swales.

Water quality for the proposed impervious surfaces has been provided by means of the surface sand filter with storage above (F-1), dry swale (O-1) and, two (2) rain gardens; stormwater runoff rates for the 1, 10 (Overbank Protection), 25 and 100-year (Extreme Flood) storm events have been analyzed and routed in the pre-development and post-development conditions utilizing computer software by Haestad, the design assumptions and results are attached herewith and made part of this report. In the pre-development conditions, the site is divided in three (3) drainage areas (Subarea 1, 2 & 3) generally formed by a ridge line running through the site near the northern property line. Subarea 1 drains towards the southeastern property corner to the Hackensack River; Subarea 2 discharges easterly towards Little Tor Road to an existing culvert; Subarea 3 discharges westerly to and existing drainage ditch. Subarea 3 is to remain completely undisturbed.

In the post-development conditions, the site is divided into four (4) subareas (Subarea 1A, 2A, 2B & 3); these subareas have similar drainage patterns and design points as the pre-development ones; subarea 2A and 2B discharge at the same design point (DP-2) as in the pre-development conditions.

Stormwater quality for Subarea 2B is provided by the proposed sand filter (F-1); and for Subarea 2A an open channel system (Dry Swale "O-1") and two (2) rain gardens. This dry swale shall have the following characteristics: 1.5 feet in depth, four feet wide at bottom, 2:1 side slopes, 2' (min) separation distance from groundwater and a channel slope of 0.5%.

It is expected that construction will last 12 months from the time of ground breaking to final completion, with work commencing within 10 days following the receipt of all necessary approvals. Throughout the construction process strict adherence to the Erosion Control Plan and Specifications will be maintained to ensure all sediments are contained within the site.

C. Stormwater Management Methodology

Stormwater management computations provided in this report are based upon the Soil Conservation Service (SCS) TR-20 and TR-55 methodologies and recommendations included in Westchester County's Best Management Practices. The stormwater management design is based on the NYSDEC "New York State Stormwater Management Design Manual", latest edition and "Controlling Urban Runoff: A practical Manual for Planning and Designing Urban BMP's", by the Metropolitan Washington Council of Governments. Stormwater quality has been analyzed in accordance with the guidelines set forth in the New York State General Permit for Stormwater Discharge, GP-0-08-001. Water quality volume computations are herewith attached and made part of this report.

Stormwater Quantity:

A detailed analysis of the pre and post-development peak rates of runoff for the 1, 10, 25 and 100 year 24-hour storm events have been included in this report.

Stormwater Quality:

The project will reduce the total increase in pollutants carried by stormwater runoff. This has been accomplished through the use of infiltration practices (F-1, O-1 and rain gardens) that infiltrate the water quality volume into the ground.

Maintenance of temporary and permanent structures and practices:

Temporary and permanent erosion control measures will be maintained and inspected in accordance with the NYSDEC general permit.

The proposed soil erosion and sediment control devices include: protective earthmoving procedures and grading practices, vegetated cover, hay bale dikes, and silt fencing. The approach of the plan is to control sedimentation, and re-establish vegetation as soon as practicable.

Standards and Erosion and Sediment Control Plan:

Peak flow rates have been controlled to ensure that the post-development rate of runoff from the site will not exceed pre-development rates for 1, 10, 25 and100 year 24-hour storm events.

All proposed soil erosion and sediment control practices are designed in accordance with the following publications:

- New York State Guidelines for Urban Erosion and Sediment Control, latest edition,
- New York State General Permit for Stormwater Discharges, GP-0-08-001 (General Permit),

- "Reducing the Impacts of Stormwater Runoff from New Development", as published by the New York State Department of Environment Conservation (NYSDEC), second edition, April 1993.

The proposed soil erosion and sediment control devices include protective earthmoving procedures and grading practices, silt fencing, and inlet protection. The approach of the plan is to control sedimentation, and re-establish vegetation as soon as practicable. The plan will be implemented prior to commencement of earthmoving activities.

D. Stormwater Rate of Runoff Analysis

Design Point 1 (DP-1)

Design Storm	Pre-Development (cfs)	Post-Development (cfs)
1	3.29	2.78
10	9.48	7.98
25	12.35	10.38
100	16.70	14.02

Design Point 2 (DP-2)

Design Storm	Pre-Development (cfs)	Post-Development (cfs)
1	4.49	4.28
10	15.37	15.07
25	20.66	20.07
100	28.83	27.48

Design Point 3 (DP-3)

Design Storm	Pre-Development (cfs)	Post-Development (cfs)
1	0.67	0.67
10	2.05	2.05
25	2.70	2.71
100	3.70	3.70

Pre and post-development drainage maps are included in this report including: time of concentration, coverage types, and hydrograph/stormwater calculations for the pre and post development conditions are provided in the PondPack routings attached herewith and made part of this report.

The following publications have been used in developing the Stormwater Runoff Calculations: Computer software by Haestad, PondPack Ver. 9.00.077.00. This program is based on USDE Soil Conservation Service (SCS) Technical Release 55 (TR 55).

E. Mosquito Breeding Suppression Plan

In order to prevent mosquito breeding in any of the detention structures due to potential standing stormwater, the Owner shall be responsible to follow and implement the following plan:

1. Within the month of May of every year briquettes of larvicide Altosid (methoprene) must be applied to all oil sump structures and catch basins within the development.
2. Prevent stagnant water to remain on any part of the property for more than four consecutive days, including puddles which may eventually become a breeding environment for mosquitoes.

Proposed detent basin (Surface Sand Filter F-1) has been designed to release all stormwater through infiltration in less than 40 hours and during high rainfall events detention basin will be set with an overflow spillway system.

F. Construction Phasing Plan and Stormwater Management Facilities Maintenance Program

Because of the size of the proposed disturbance (3.3 ac.), only one (1) phase of construction shall be implemented in the following order:

- Erosion and sediment control (ESC) measures implementation,
  - Install silt fences
  - Construct stabilized construction entrance for the site
  - Construct diversion temporary swales and install straw bale dikes
- Clearing and grubbing within LOD,
- Tree removal,
- Excavation and rough grading of proposed driveway and areas within LOD
  - Establish topsoil stockpiles as shown on ESC plans
  - Install silt fences around the stockpiles and temporarily stabilize the stockpiles with tarp or mulch or temporary seeding
  - Disturbed areas where construction will cease for more than 14 days will be stabilized with erosion controls, such as hydro-seeding, hydro-mulch, or hay.
- Utility installation
  - Construct combined staging and materials storage area as shown on ESC plans
  - Install temporary sanitary facilities (portasans, etc.)
  - Install utilities
- Rough access driveway construction and paving
  - Prepare pavement subgrade and install curbs, storm drain inlets, swales
  - Install inlet protection as indicated on ESC plans and details

Contractor shall be responsible for the proper implementation of the ESC practices. The following maintenance program is proposed in order to maintain the proper function of all drainage and erosion and sediment control facilities:

- All disturbed areas will be stabilized after the construction is completed, any areas disturbed shall be stabilized immediately after the required work is completed.

- During construction, erosion and sediment controls must be inspected by a qualified professional every seven days and within 24 hours of any half-inch (1/2") rain event. The owner shall inspect the facilities once a month. A report by the professional engineer shall be submitted to the owner and town officials in the event deficiencies are found. In addition, the owner shall inspect the systems after each major storm event to ensure the inlets remain open. Specific attention should be paid to the following:
  - Evidence of clogging in inlets and end sections
  - Erosion of the flow path through the temporary swales
  - Accumulation of sediments
- All sediment removal and/or repairs will be followed immediately by re-vegetation.
- Maintenance and inspection checklists (as per NYSDEC) are attached herewith in section 10 of this plan. (Completed forms shall be kept on site at all times and made available to authorities upon request).
- Clean catch basins and other drainage structures from silt regularly, but not less than twice a year. Remove sediment build up in the pond as required, but a minimum of every five (5) years.
- Minimize the use of road salt for maintenance of parking areas.
- Restore and re-seed any eroded areas and gullies as soon as possible; a seeding schedule is provided in the plans provided by CMX and attached herewith.
- The Stormwater Management Facilities Maintenance Program will be managed by the owner.

G. Material Handling and Waste Management

Operator shall be responsible for all waste materials being collected and disposed of into one (1) metal trash dumpster located in the combined staging area as shown on the site plans. Dumpster shall have a secure watertight lid, be placed away from stormwater conveyances and drains, and meet all local and state solid-waste management regulations. Only trash and construction debris for the site will be deposited in the dumpster.

Operator shall not store erodible or hazardous materials on any roadway. Oil and machinery fuels shall be kept to a necessary minimum and stored in structurally sound and sealed shipping containers. All hazardous-material storage is to be segregated from other non-waste materials. All hazardous materials will be disposed of in accordance with federal, state, and municipal regulations.

Operator shall provide adequate designated concrete washout areas throughout the construction project and will be responsible for proper disposal of the concrete, mortar or grout collected there.

One (1) temporary sanitary facility (portable toilet) shall be provided at the site in the combined staging area. The toilet shall be away from a concentrated flow path and traffic flow and shall have collection pans underneath as secondary containment.

Wood pallets, cardboard boxes, and other recyclable construction scraps will be disposed of in a designated dumpster for recycling.

Construction equipment and maintenance materials shall be stored at the combined staging area.

All spills shall be cleaned up immediately upon discovery. Spent absorbent materials and rags will be hauled off-site immediately after the spill is cleaned up for disposal. Spills large enough to discharge to surface water shall be reported to the National Response Center at 1-800-424-8802. Material safety data sheets, a material inventory, and emergency contact information will be maintained on site.

H. Narrative Report

The primary goal of the soil erosion and sediment control measures is to reduce soil erosion from areas stripped of vegetation during and after construction, and to prevent discharge of silt offsite. Erosion control barriers shall be placed around exposed areas during construction. The barriers shall consist of silt fence.

Any areas stripped of vegetation during construction will be left bare for the shortest time possible. Any topsoil removed during construction will be temporarily stockpiled for future use in grading and landscaping. Stockpile locations have been provided on the **Grading and Erosion Control plan** and shall be contained within a silt fence/ hay bale barrier.

Temporary vegetation will be established to protect exposed soil areas during construction. If growing conditions are not suitable for the temporary vegetation, mulch will be used. Materials that may be used for mulching include; straw, hay, wood fiber, synthetic soils stabilizers, mulch netting, and sod. A permanent vegetative cover will be established upon completion of construction of those areas that have been brought to finish grade and to remain undisturbed.

A temporary stabilized construction entrance comprised of three inches clean stone will be constructed at the entrances to the site. The purpose of a stabilized entrance is to remove as much soil from the construction vehicle tires prior to exiting the site and traveling on the existing roadways. During construction, inlet protection will be installed at each storm sewer inlet to minimize the conveyance of silt and sediment through the storm sewer system.

If the contractor encounters ground water during the excavation of the detention area, he shall notify the design engineer immediately, the contractor shall store all excavated material at the designated location shown on the **Grading and Erosion Control** plan with the appropriate erosion control measures corresponding to the stockpile detail.

I. Final Stabilization

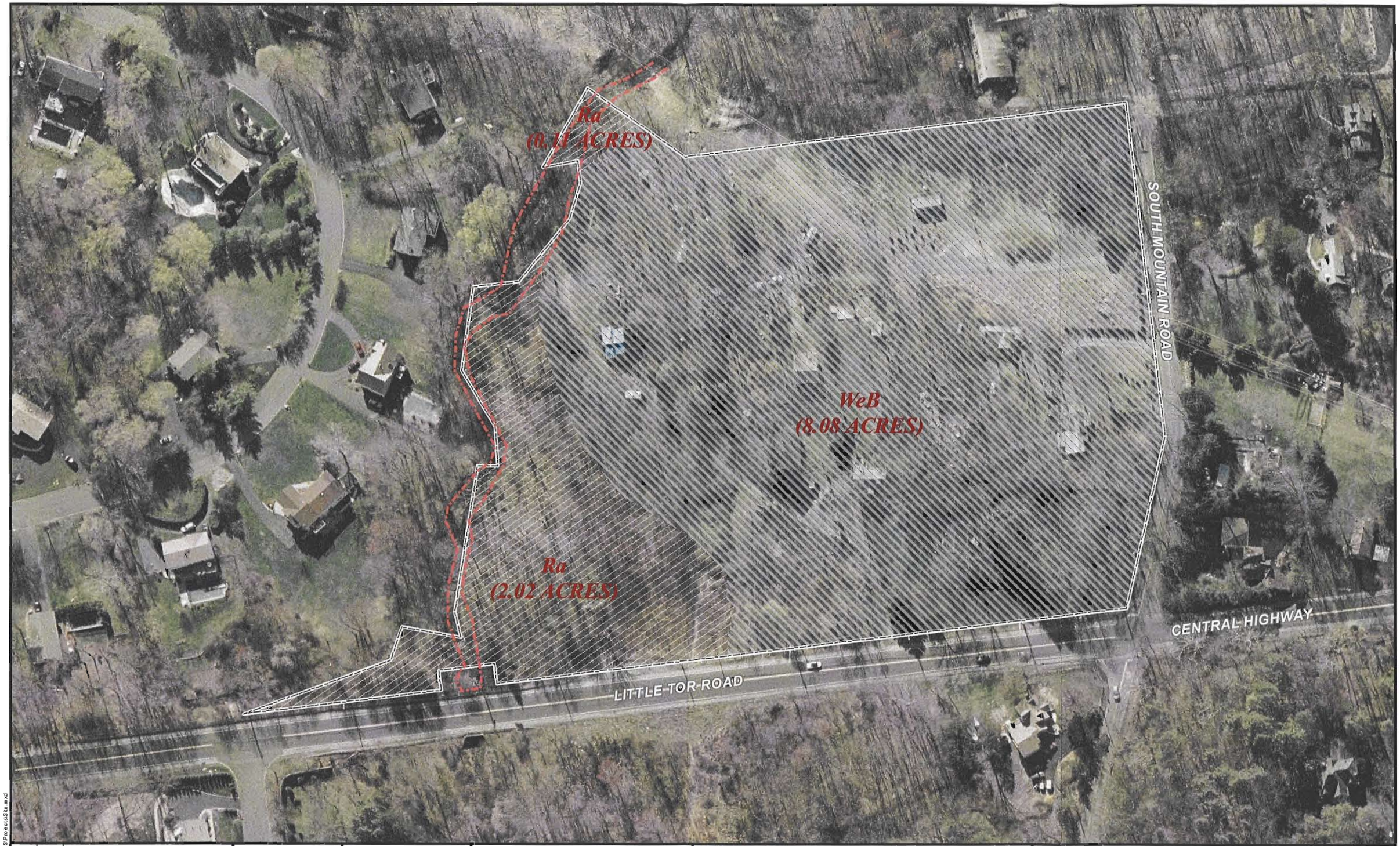
Permanent seeding shall be applied immediately after the final design grades are achieved as applicable throughout the site but no later than fourteen (14) days after construction activities have ceased. After stabilization, accumulated sediment shall be removed from site for disposal along with construction debris, trash and temporary BMP's e.g. silt fences, straw bales, material storage areas, sanitary toilets, etc.

Seeding preparation/grass application:
A minimum depth of 2 to 6 inches shall be applied on areas where disturbance results in subsoil being the final grade surface. The seedbed shall be free of large clods, rocks, woody debris and other intrusive materials; fertilized shall be applied accordingly. Seeding schedule and application procedure notes are shown on the **Grading and Erosion Control Plan** attached herewith.

J. Conclusion
The use of the BMP's as designed will significantly reduce the pollutant loadings in the post development conditions. By capturing and treating the runoff from the new impervious surfaces and developed areas to the greatest extent possible, this plan meets the requirements of the NYSDEC for Water Quality and Flood Control, providing minimal impact to downstream waters.

Respectfully Submitted,

W. Charles Utschig, Jr., P.E.
N.Y.LIC. No. 62303
CMX



REVISION NO.	DATE	DESCRIPTION

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NORTH AMERICAN DATUM 1983
NEW YORK STATE PLANE - EAST
US FOOT

W. CHARLES UTSCHIG, JR
PROFESSIONAL ENGINEER, N.Y. LIC. No. 62303

CMX
ARIZONA - FLORIDA - MARYLAND - NEVADA - NEW JERSEY
NEW YORK - PENNSYLVANIA - MEXICO

1311 MAMARONECK AVENUE
SUITE 50
WHITE PLAINS, NY 10605
TEL (914) 686-1000
FAX (914) 682-1222

PROJECT AERIAL VIEW AND SOIL MAP

ORANGE AND ROCKLAND UTILITIES
LITTLE TOR ROAD SUBSTATION

TOWN OF CLARKSTOWN ROCKLAND COUNTY NEW YORK

PROJECT NO. 0708621	DATE 04/28/08
DRAWN BY JYP	DESIGNED BY -
SCALE 1"=100'	CHECKED BY -
CMX	
SHEET NO. 1 of 1	

S10svr01\mp\0708621\GIS\Projects\Site.mxd

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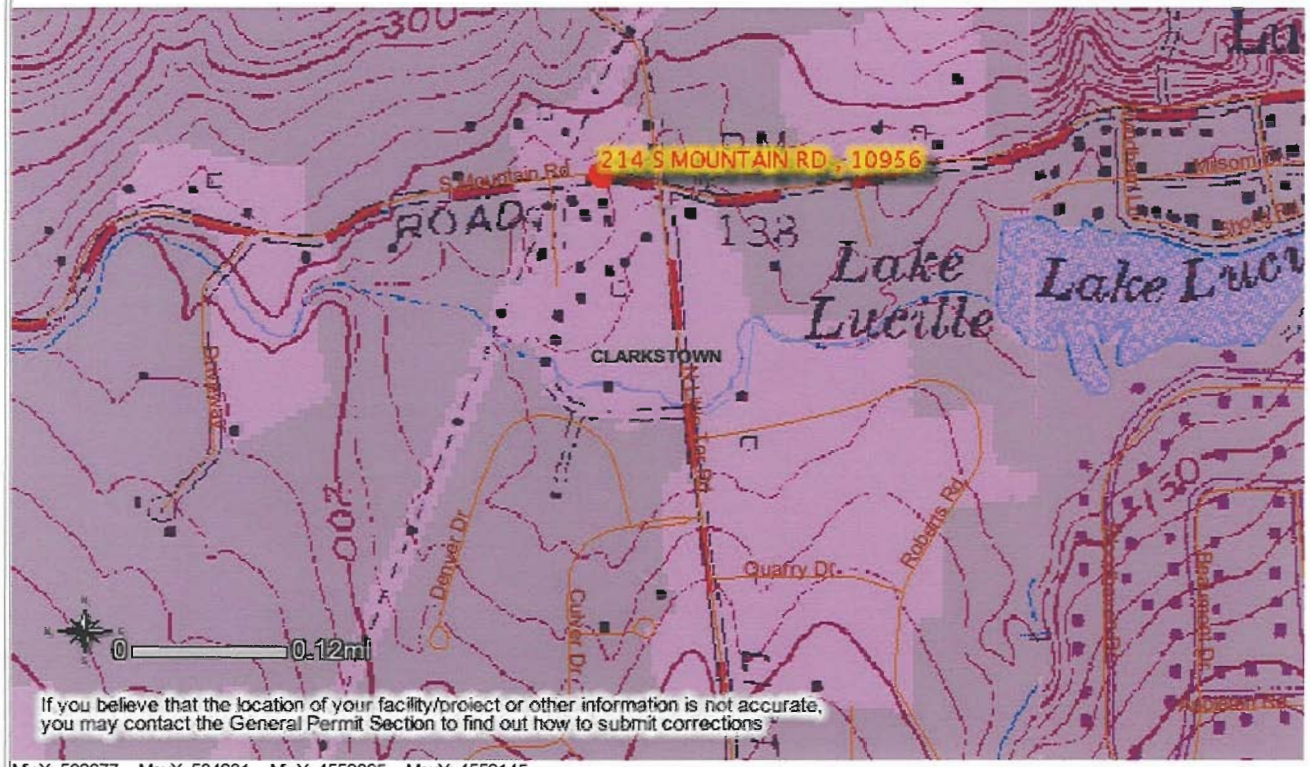
Please set your printer orientation to "Landscape".

Little Tor Substation



MinX: 582677, MaxX: 584231, MinY: 4559895, MaxY: 4559145

Visible Layers

- Major Roads
- Regulated MS4s
  - Automatic
  - Desig_2008
  - Designation
- Quad Maps
- Towns

insurance agent or call the National Flood Insurance Program at (800)

APPROXIMATE SCALE

400 0 400 FE

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
CLARKSTOWN,
NEW YORK
ROCKLAND COUNTY

PANEL 3 OF 18

(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY - PANEL NUMBER
360679 0003 E

MAP REVISED:
MAY 18, 2000

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

SITE
ZONE X
ZONE AE
CENTRAL HIGHWAY
ACCESS ROAD
SOUTH MOUNTAIN ROAD
KAKIAK CT
MILSON
WYNDOM
LANE
DRIVE
LENNOX
SHORE ROAD
WAY
West Branch Hackensack River
LAKE LUCILLE
LAKE DR
ROCKLA AVE
RM 3-2
RM 3-3
PRIVATE DRIVE
ROBERTS RD
WOODHAVEN DRIVE
Dam
Crumm Creek
DENVER DRIVE
CULVERT DRIVE
EVAN DRIVE
QUARRY RD
HILLMAN ROAD
ARDSLEY DRIVE
EAGLE
BEAUMONT DRIVE
WINDGATE
YORK COURT
223
205
186
178
170
162
156
151
146
132
136
130
137
140
143
148
152
154
156
162
124
126

CMX

Date:

RE: Little Tor Substation
Clarkstown, New York
CMX Project Number: 090137501

Dear Sir or Madam:

Please consider this letter, written confirmation of the following acknowledgement being made this day of , 2010.

ENGINEER CERTIFICATION:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law.

_____

W. Charles Utschig, Jr. P.E.
CMX
1311 Mamaroneck Avenue, Suite 50
White Plains, NY 10605
Phone: 914-686-1000
Fax: 914-686-1222

SPDES General Permit for Stormwater Runoff from Construction Activity, GP-0-08-001.

CMX

Date:

RE: **Little Tor Substation**
Clarkstown, New York
CMX Project Number: 090137501

Dear Sir or Madam:

Please consider this letter, written confirmation of the following acknowledgement being made this _____ day of _____, 2010.

CONTRACTOR STATEMENT:

I certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP for the construction site identified in such SWPPP as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.

_____

SPDES General Permit for Stormwater Runoff from Construction Activity, GP-0-08-001.

CMX ENGINEERING, SURVEYING & LANDSCAPE ARCHITECT, PC
A SUBSIDIARY OF BIRDSALL SERVICES GROUP, INC.

1311 Mamaroneck Avenue | Suite 50 | White Plains, NY 10605 | Tel 914.686.1000 | Fax 914.686.1222 | www.birdsall.com

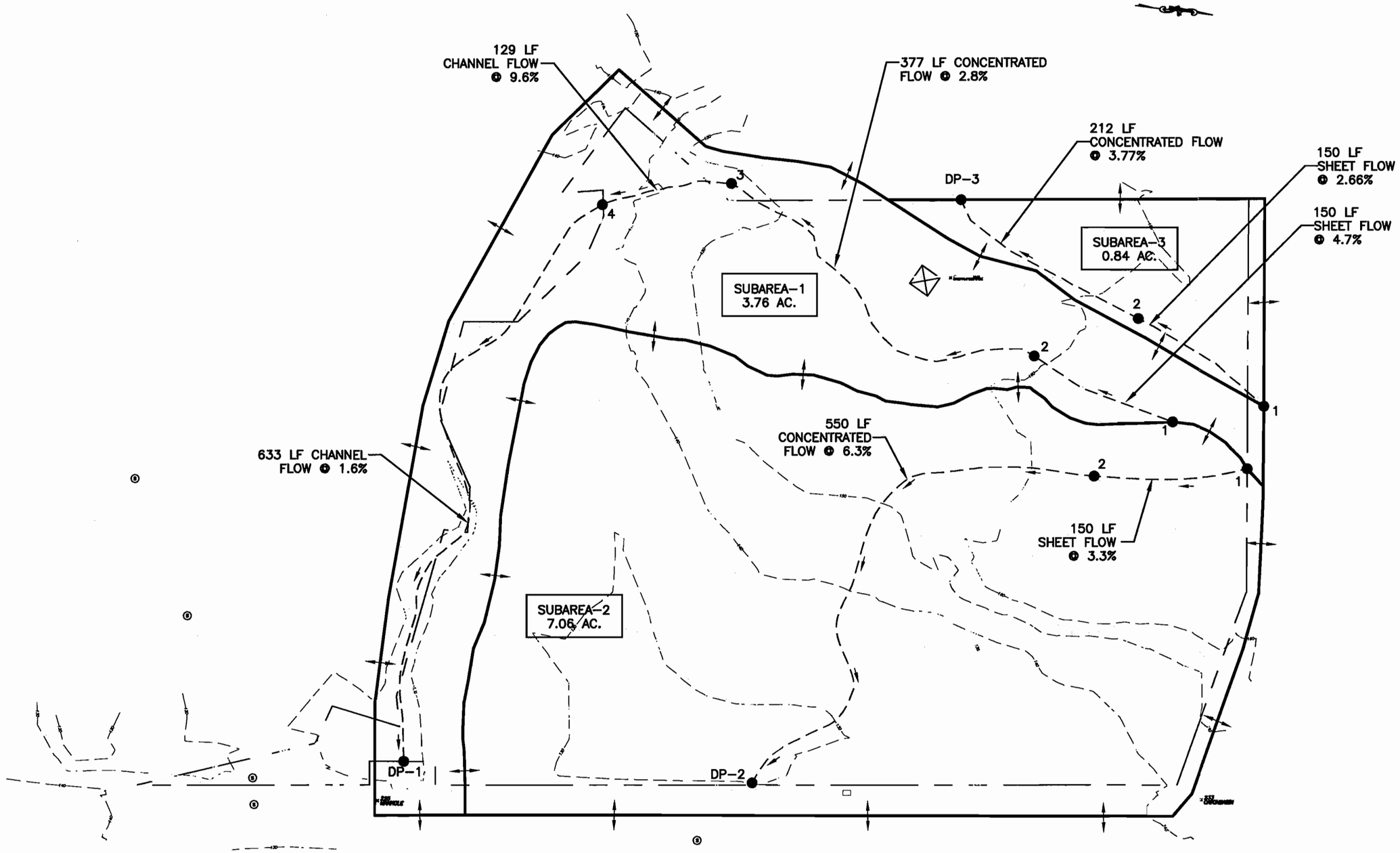


FIGURE III.E-2: ENGINEERING PRE-DEVELOPMENT DRAINAGE MAP

0 100

GRAPHIC SCALE IN FEET

Little Tor Substation
Orange and Rockland Utilities, Inc.
Town of Clarkstown, Rockland County, New York

Source: CMX

CMX 1311 Mamaroneck Avenue Suite 50 White Plains New York

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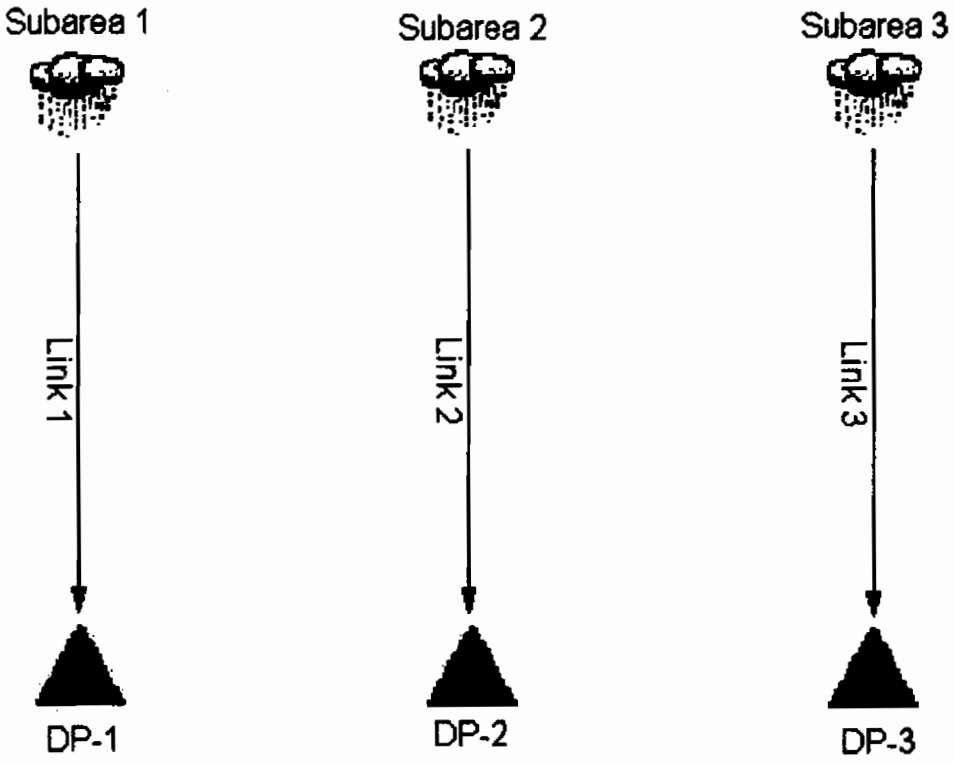
Subarea 1
Subarea 2
Subarea 3
Link 1
Link 2
Link 3
DP-1
DP-2
DP-3

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SUBAREA 2..... Tc Calcs 3.05

SUBAREA 3..... Tc Calcs 3.07

********** CN CALCULATIONS **********

SUBAREA 1..... Runoff CN-Area 4.01

SUBAREA 2..... Runoff CN-Area 4.02

SUBAREA 3..... Runoff CN-Area 4.03

MASTER DESIGN STORM SUMMARY

Network Storm Collection: Rockland County

Return Event	Total Depth in	Rainfall Type	RNF ID
1	2.7000	Synthetic Curve	TypeIII 24hr
10	5.0000	Synthetic Curve	TypeIII 24hr
25	6.0000	Synthetic Curve	TypeIII 24hr
100	7.5000	Synthetic Curve	TypeIII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
*DP-1	JCT	1	.323		12.1900	3.29		
*DP-1	JCT	10	.906		12.1700	9.48		
*DP-1	JCT	25	1.185		12.1700	12.35		
*DP-1	JCT	100	1.616		12.1700	16.70		
*DP-2	JCT	1	.453		12.1800	4.49		
*DP-2	JCT	10	1.440		12.1600	15.37		
*DP-2	JCT	25	1.930		12.1600	20.66		
*DP-2	JCT	100	2.701		12.1600	28.83		
*DP-3	JCT	1	.065		12.1800	.67		
*DP-3	JCT	10	.191		12.1600	2.05		
*DP-3	JCT	25	.252		12.1500	2.70		
*DP-3	JCT	100	.347		12.1500	3.70		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
SUBAREA 1	AREA	1	.323		12.1900	3.29		
SUBAREA 1	AREA	10	.906		12.1700	9.48		
SUBAREA 1	AREA	25	1.185		12.1700	12.35		
SUBAREA 1	AREA	100	1.616		12.1700	16.70		
SUBAREA 2	AREA	1	.453		12.1800	4.49		
SUBAREA 2	AREA	10	1.440		12.1600	15.37		
SUBAREA 2	AREA	25	1.930		12.1600	20.66		
SUBAREA 2	AREA	100	2.701		12.1600	28.83		
SUBAREA 3	AREA	1	.065		12.1800	.67		
SUBAREA 3	AREA	10	.191		12.1600	2.05		
SUBAREA 3	AREA	25	.252		12.1500	2.70		
SUBAREA 3	AREA	100	.347		12.1500	3.70		

Title... Project Date: 4/28/2008
Project Engineer: CMX
Project Title: Little Tor Substation
Project Comments:

DESIGN STORMS SUMMARY

Design Storm File,ID = Rockland County

Storm Tag Name = 1

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 25

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 6.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.1500	
Hydraulic Length	150.00	ft
2yr, 24hr P	3.5000	in
Slope	.047000	ft/ft
Avg.Velocity	.27	ft/sec

Segment #1 Time: .1535 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	377.00	ft
Slope	.028000	ft/ft
Unpaved		
Avg.Velocity	2.70	ft/sec

Segment #2 Time: .0388 hrs

Segment #3: Tc: TR-55 Channel

Flow Area	20.0000	sq.ft
Wetted Perimeter	40.40	ft
Hydraulic Radius	.50	ft
Slope	.096000	ft/ft
Mannings n	.0320	
Hydraulic Length	129.00	ft
Avg.Velocity	9.03	ft/sec

Segment #3 Time: .0040 hrs

Segment #4: Tc: TR-55 Channel

Flow Area	30.0000	sq.ft
Wetted Perimeter	42.60	ft
Hydraulic Radius	.70	ft
Slope	.016000	ft/ft
Mannings n	.0300	
Hydraulic Length	633.00	ft
Avg.Velocity	4.97	ft/sec

Segment #4 Time: .0354 hrs

Total Tc: .2316 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

==== SCS Channel Flow ==

R = Aq / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

Tc = (Lf / V) / (3600sec/hr)

Where: R = Hydraulic radius
Aq = Flow area, sq.ft.
Wp = Wetted perimeter, ft
V = Velocity, ft/sec
Sf = Slope, ft/ft
n = Mannings n
Tc = Time of concentration, hrs
Lf = Flow length, ft

TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Sheet

Mannings n	.1500	
Hydraulic Length	150.00	ft
2yr, 24hr P	3.5000	in
Slope	.033000	ft/ft
Avg.Velocity	.24	ft/sec

Segment #1 Time: .1768 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	550.00	ft
Slope	.063000	ft/ft
Unpaved		
Avg.Velocity	4.05	ft/sec

Segment #2 Time: .0377 hrs

Total Tc: .2145 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.1500	
Hydraulic Length	150.00	ft
2yr, 24hr P	3.5000	in
Slope	.026600	ft/ft

Avg.Velocity .22 ft/sec

Segment #1 Time: .1927 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	212.00	ft
Slope	.037700	ft/ft
Unpaved		

Avg.Velocity 3.13 ft/sec

Segment #2 Time: .0188 hrs

==========
Total Tc: .2115 hrs
==========

Tc Equations used...

==== SCS TR-55 Sheet Flow ====

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ====

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Hackensack River	98	.426			98.00
Impervious Areas - Paved parking lo	98	.054			98.00
Impervious Areas - Gravel (w/ right	89	.220			89.00
Woods - grass combination - fair	76	3.060			76.00
COMPOSITE AREA & WEIGHTED CN --->		3.760			79.57 (80)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	Impervious Adjustment %UC	Adjusted CN
Impervious Areas - Paved parking lo	98	.223			98.00
Impervious Areas - Gravel (w/ right	89	.305			89.00
Rock outcrop	98	.093			98.00
Woods - fair	73	6.436			73.00
COMPOSITE AREA & WEIGHTED CN --->		7.057			74.81 (75)

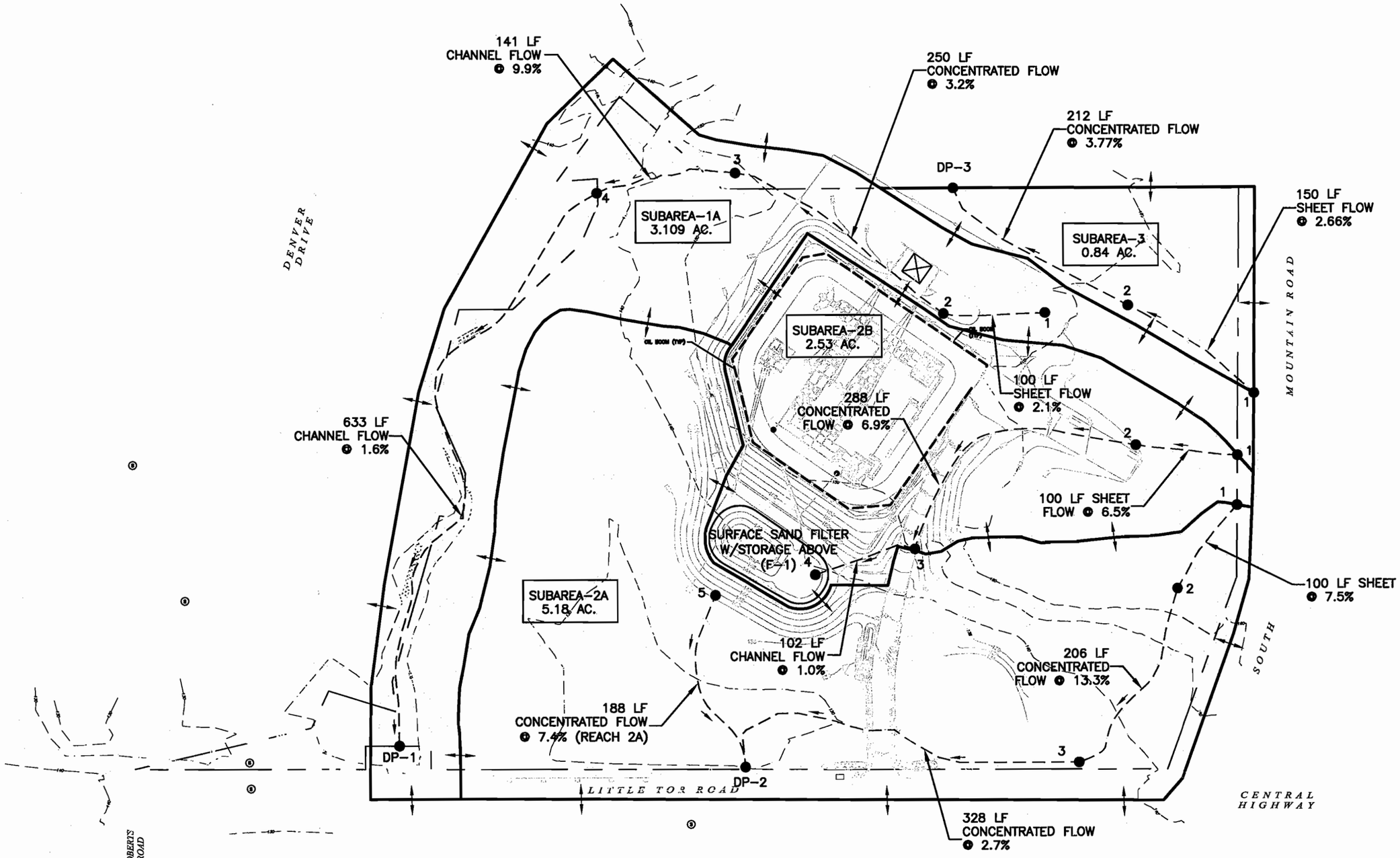

FIGURE III.E-3: ENGINEERING POST DEVELOPMENT DRAINAGE MAP

0 100

GRAPHIC SCALE IN FEET

Source: CMX

Little Tor Substation

Orange and Rockland Utilities, Inc.

Town of Clarkstown, Rockland County, New York

CMX 1311 Mamaroneck Avenue Suite 50 White Plains New York

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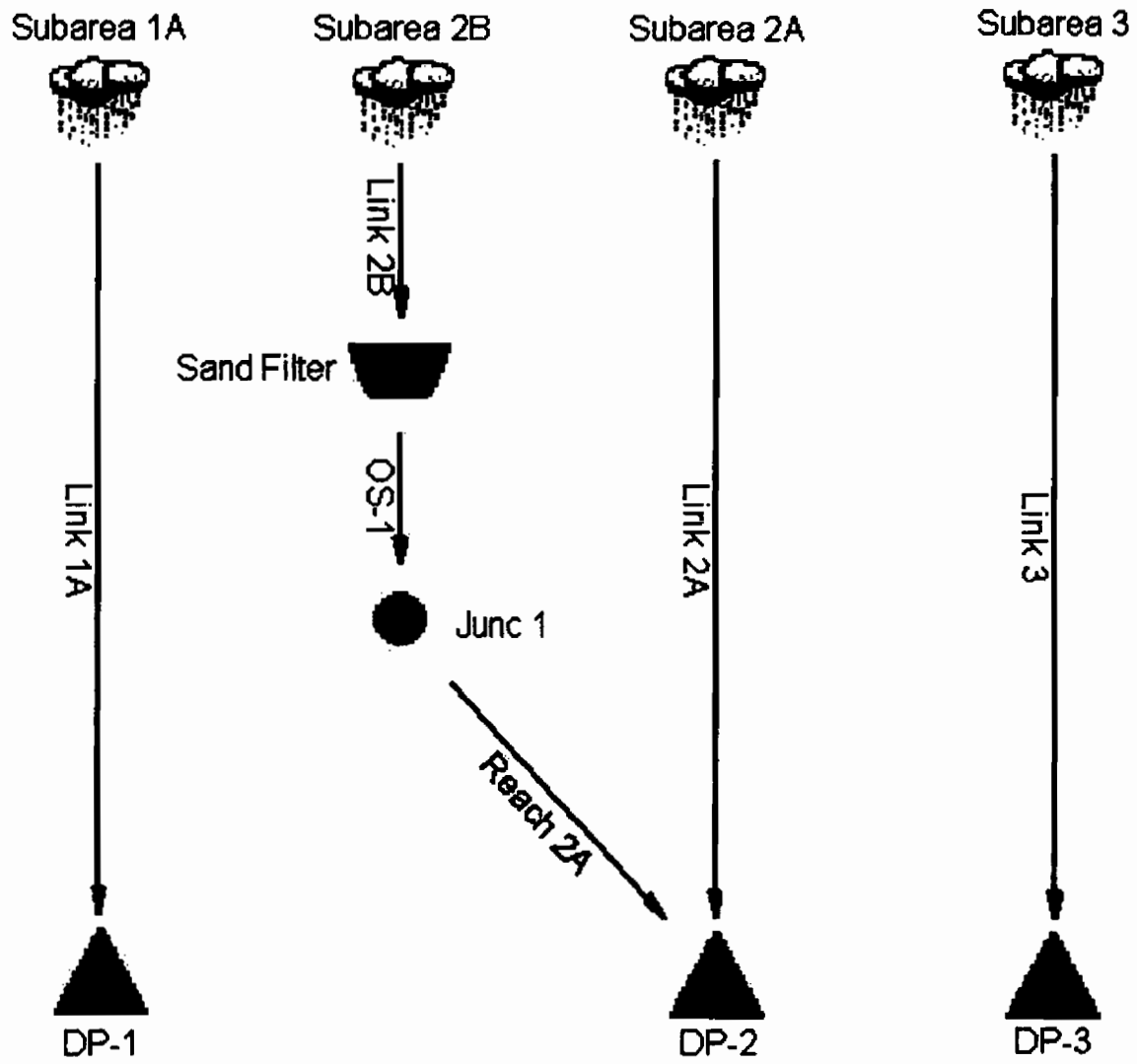
Subarea 1A
Subarea 2B
Subarea 2A
Subarea 3
Link 2B
Sand Filter
OS-1
Junc 1
Link 1A
Link 2A
Link 3
Reach 2A
DP-1
DP-2
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SUBAREA 2A..... Tc Calcs 3.05

SUBAREA 2B..... Tc Calcs 3.07

SUBAREA 3..... Tc Calcs 3.10

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SUBAREA 1A..... Runoff CN-Area 4.01

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SUBAREA 2B..... Runoff CN-Area 4.03

SUBAREA 3..... Runoff CN-Area 4.04

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MASTER DESIGN STORM SUMMARY

Network Storm Collection: Rockland County

Return Event	Total Depth in	Rainfall Type	RNF ID
1	2.7000	Synthetic Curve	TypeIII 24hr
10	5.0000	Synthetic Curve	TypeIII 24hr
25	6.0000	Synthetic Curve	TypeIII 24hr
100	7.5000	Synthetic Curve	TypeIII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
*DP-1	JCT	1	.267		12.1700	2.78		
*DP-1	JCT	10	.749		12.1700	7.98		
*DP-1	JCT	25	.980		12.1700	10.38		
*DP-1	JCT	100	1.336		12.1700	14.02		
*DP-2	JCT	1	.554		12.1400	4.28		
*DP-2	JCT	10	1.751		12.1250	15.07		
*DP-2	JCT	25	2.320		12.1250	20.07		
*DP-2	JCT	100	3.202		12.1250	27.48		
*DP-3	JCT	1	.065		12.1700	.67		
*DP-3	JCT	10	.191		12.1550	2.05		
*DP-3	JCT	25	.252		12.1550	2.71		
*DP-3	JCT	100	.347		12.1550	3.70		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage ac-ft
JUNC 1	JCT	1	.179		12.8600	.47		
JUNC 1	JCT	10	.619		12.4600	2.49		
JUNC 1	JCT	25	.819		12.4400	3.20		
JUNC 1	JCT	100	1.123		12.2350	8.62		
SAND FILTER IN	POND	1	.312		12.1150	3.77		
SAND FILTER IN	POND	10	.751		12.1150	8.82		
SAND FILTER IN	POND	25	.951		12.1150	11.03		
SAND FILTER IN	POND	100	1.256		12.1150	14.32		
SAND FILTER OUT	POND	1	.179		12.8600	.47	143.37	.238
SAND FILTER OUT	POND	10	.619		12.4600	2.49	144.96	.421
SAND FILTER OUT	POND	25	.819		12.4400	3.20	145.56	.503
SAND FILTER OUT	POND	100	1.123		12.2350	8.62	145.91	.555
SUBAREA 1A	AREA	1	.267		12.1700	2.78		
SUBAREA 1A	AREA	10	.749		12.1700	7.98		
SUBAREA 1A	AREA	25	.980		12.1700	10.38		
SUBAREA 1A	AREA	100	1.336		12.1700	14.02		
SUBAREA 2A	AREA	1	.375		12.1400	4.28		
SUBAREA 2A	AREA	10	1.132		12.1250	13.39		
SUBAREA 2A	AREA	25	1.502		12.1250	17.70		
SUBAREA 2A	AREA	100	2.079		12.1200	24.30		
SUBAREA 2B	AREA	1	.312		12.1150	3.77		
SUBAREA 2B	AREA	10	.751		12.1150	8.82		
SUBAREA 2B	AREA	25	.951		12.1150	11.03		
SUBAREA 2B	AREA	100	1.256		12.1150	14.32		
SUBAREA 3	AREA	1	.065		12.1700	.67		
SUBAREA 3	AREA	10	.191		12.1550	2.05		
SUBAREA 3	AREA	25	.252		12.1550	2.71		
SUBAREA 3	AREA	100	.347		12.1550	3.70		

Title... Project Date: 4/28/2008
Project Engineer: CMX
Project Title: Little Tor Substation
Project Comments:

DESIGN STORMS SUMMARY

Design Storm File,ID = Rockland County

Storm Tag Name = 1

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 1 yr
Total Rainfall Depth= 2.7000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 10

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 25

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 25 yr
Total Rainfall Depth= 6.0000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100

Data Type, File, ID = Synthetic Storm TypeIII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.1500	
Hydraulic Length	100.00	ft
2yr, 24hr P	3.5000	in
Slope	.021000	ft/ft
Avg.Velocity	.18	ft/sec

Segment #1 Time: .1531 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	250.00	ft
Slope	.032000	ft/ft
Unpaved		
Avg.Velocity	2.89	ft/sec

Segment #2 Time: .0241 hrs

Segment #3: Tc: TR-55 Channel

Flow Area	20.0000	sq.ft
Wetted Perimeter	40.40	ft
Hydraulic Radius	.50	ft
Slope	.099000	ft/ft
Mannings n	.0320	
Hydraulic Length	141.00	ft
Avg.Velocity	9.17	ft/sec

Segment #3 Time: .0043 hrs

Segment #4: Tc: TR-55 Channel

Flow Area	30.0000	sq.ft
Wetted Perimeter	42.60	ft
Hydraulic Radius	.70	ft
Slope	.016000	ft/ft
Mannings n	.0300	
Hydraulic Length	633.00	ft
Avg.Velocity	4.97	ft/sec

Segment #4 Time: .0354 hrs

Total Tc: .2168 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

==== SCS Channel Flow ==

R = Aq / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

Tc = (Lf / V) / (3600sec/hr)

Where: R = Hydraulic radius
Aq = Flow area, sq.ft.
Wp = Wetted perimeter, ft
V = Velocity, ft/sec
Sf = Slope, ft/ft
n = Mannings n
Tc = Time of concentration, hrs
Lf = Flow length, ft

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.1500
Hydraulic Length	100.00 ft
2yr, 24hr P	3.5000 in
Slope	.075000 ft/ft
Avg.Velocity	.30 ft/sec

Segment #1 Time: .0920 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	206.00 ft
Slope	.133000 ft/ft
Unpaved	
Avg.Velocity	5.88 ft/sec

Segment #2 Time: .0097 hrs

Segment #3: Tc: TR-55 Shallow

Hydraulic Length	328.00 ft
Slope	.027000 ft/ft
Unpaved	
Avg.Velocity	2.65 ft/sec

Segment #3 Time: .0344 hrs

==========
Total Tc: .1361 hrs
==========

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.1500	
Hydraulic Length	100.00	ft
2yr, 24hr P	3.5000	in
Slope	.065000	ft/ft
Avg.Velocity	.29	ft/sec

Segment #1 Time: .0974 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	288.00	ft
Slope	.069000	ft/ft
Paved		
Avg.Velocity	5.34	ft/sec

Segment #2 Time: .0150 hrs

Segment #3: Tc: TR-55 Channel

Flow Area	1.2200	sq.ft
Wetted Perimeter	3.92	ft
Hydraulic Radius	.31	ft
Slope	.010000	ft/ft
Mannings n	.0120	
Hydraulic Length	102.00	ft
Avg.Velocity	5.70	ft/sec

Segment #3 Time: .0050 hrs

Total Tc: .1174 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ====

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ====

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

==== SCS Channel Flow ==========

R = Aq / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

Tc = (Lf / V) / (3600sec/hr)

Where: R = Hydraulic radius
Aq = Flow area, sq.ft.
Wp = Wetted perimeter, ft
V = Velocity, ft/sec
Sf = Slope, ft/ft
n = Mannings n
Tc = Time of concentration, hrs
Lf = Flow length, ft

TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Sheet

Mannings n	.1500
Hydraulic Length	150.00 ft
2yr, 24hr P	3.5000 in
Slope	.026600 ft/ft
Avg.Velocity	.22 ft/sec

Segment #1 Time: .1927 hrs

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	212.00 ft
Slope	.037700 ft/ft
Unpaved	
Avg.Velocity	3.13 ft/sec

Segment #2 Time: .0188 hrs

Total Tc: .2115 hrs

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Hackensack River	98	.426			98.00
Impervious Areas - Paved parking lo	98	.022			98.00
Impervious Areas - Gravel (w/ right	89	.118			89.00
Woods - fair	76	2.117			76.00
Open space (Lawns,parks etc.) - Fai	79	.426			79.00
COMPOSITE AREA & WEIGHTED CN --->		3.109			80.07 (80)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Impervious Areas - Paved parking lo	98	.125			98.00
Rock outcrop	98	.072			98.00
Woods - grass combination - fair	76	4.544			76.00
Open space (Lawns,parks etc.) - Fai	79	.438			79.00
COMPOSITE AREA & WEIGHTED CN --->		5.179			77.09 (77)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Impervious Areas - Gravel (w/ right	89	.911			89.00
Impervious Areas - Paved parking lo	98	.511			98.00
Open space (Lawns,parks etc.) - Fai	79	1.084			79.00
Rock Outcrops	98	.021			98.00
COMPOSITE AREA & WEIGHTED CN --->		2.527			86.61 (87)

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Woods - grass combination - fair	76	.738			76.00
Impervious Areas - Gravel (w/ right	89	.106			89.00
COMPOSITE AREA & WEIGHTED CN --->		.844			77.63 (78)

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
140.00	-----	.0440	.0000	.000	.000
142.00	-----	.0754	.1770	.118	.118
144.00	-----	.1120	.2793	.186	.304
146.00	-----	.1538	.3970	.265	.569

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 140.00 ft
Increment = .10 ft
Max. Elev.= 146.00 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Inlet Box	R0	--->	C0	145.700	146.000
Orifice-Area	O1	--->	C0	143.000	146.000
Culvert-Circular	C0	--->	TW	140.000	146.000

TW SETUP, DS Channel

OUTLET STRUCTURE INPUT DATA

Structure ID	= R0	
Structure Type	= Inlet Box	
# of Openings	= 1	
Invert Elev.	= 145.70	ft
Orifice Area	= 16.0000	sq.ft
Orifice Coeff.	= .600	
Weir Length	= 16.00	ft
Weir Coeff.	= 3.330	
K, Reverse	= 1.000	
Mannings n	= .0000	
Kev,Charged Riser	= .000	
Weir Submergence	= No	

Structure ID	= O1	
Structure Type	= Orifice-Area	
# of Openings	= 1	
Invert Elev.	= 143.00	ft
Area	= .4166	sq.ft
Top of Orifice	= 145.50	ft
Datum Elev.	= 143.00	ft
Orifice Coeff.	= .600	

OUTLET STRUCTURE INPUT DATA

```
Structure ID      = C0
Structure Type    = Culvert-Circular
-----------------------------------
No. Barrels       =         1
Barrel Diameter   =    1.5000 ft
Upstream Invert   =    140.00 ft
Dnstream Invert   =    139.00 ft
Horiz. Length     =     35.00 ft
Barrel Length     =     35.01 ft
Barrel Slope      =    .02857 ft/ft

OUTLET CONTROL DATA...
Mannings n        =     .0120
Ke                =     .5000  (forward entrance loss)
Kb                =   .015519  (per ft of full flow)
Kr                =     .5000  (reverse entrance loss)
HW Convergence    =      .001  +/- ft

INLET CONTROL DATA...
Equation form     =         2
Inlet Control K   =     .5340
Inlet Control M   =     .5550
Inlet Control c   =    .01960
Inlet Control Y   =     .9000
T1 ratio (HW/D)   =     1.070
T2 ratio (HW/D)   =     1.199
Slope Factor      =     -.500

Use unsubmerged inlet control Form 2 equ. below T1 elev.
Use   submerged inlet control Form 2 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...
At T1 Elev =    141.61 ft  --->  Flow =      7.58 cfs
At T2 Elev =    141.80 ft  --->  Flow =      8.66 cfs


Structure ID      = TW
Structure Type    = TW SETUP, DS Channel
-----------------------------------
FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations=    40
Min. TW tolerance =    .01 ft
Max. TW tolerance =    .01 ft
Min. HW tolerance =    .01 ft
Max. HW tolerance =    .01 ft
Min.  Q tolerance =    .00 cfs
Max.  Q tolerance =    .00 cfs
```

LEVEL POOL ROUTING DATA

HYG Dir = \\S10svr01\n\project\2008\0806420\SWPPP\
Inflow HYG file = NONE STORED - SAND FILTER IN 1
Outflow HYG file = NONE STORED - SAND FILTER OUT 1

Pond Node Data = SAND FILTER
Pond Volume Data = SAND FILTER
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	141.30 ft
Starting Volume	=	.069 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0050 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
140.00	.00	.000	.0440	.00	.00	.00
140.10	.00	.004	.0454	.00	.00	21.63
140.20	.00	.009	.0468	.00	.00	43.92
140.30	.00	.014	.0482	.00	.00	66.90
140.40	.00	.019	.0496	.00	.00	90.56
140.50	.00	.024	.0511	.00	.00	114.92
140.60	.00	.029	.0525	.00	.00	139.99
140.70	.00	.034	.0540	.00	.00	165.78
140.80	.00	.040	.0556	.00	.00	192.30
140.90	.00	.045	.0571	.00	.00	219.55
141.00	.00	.051	.0586	.00	.00	247.56
141.10	.00	.057	.0602	.00	.00	276.33
141.20	.00	.063	.0618	.00	.00	305.87
141.30	.00	.069	.0635	.00	.00	336.19
141.40	.00	.076	.0651	.00	.00	367.29
141.50	.00	.082	.0668	.00	.00	399.21
141.60	.00	.089	.0684	.00	.00	431.93
141.70	.00	.096	.0702	.00	.00	465.47
141.80	.00	.103	.0719	.00	.00	499.84
141.90	.00	.111	.0736	.00	.00	535.05

LEVEL POOL ROUTING DATA

HYG Dir = \\S10svr01\n\project\2008\0806420\SWPPP\
Inflow HYG file = NONE STORED - SAND FILTER IN 1
Outflow HYG file = NONE STORED - SAND FILTER OUT 1

Pond Node Data = SAND FILTER
Pond Volume Data = SAND FILTER
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 141.30 ft
Starting Volume = .069 ac-ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0050 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
142.00	.00	.118	.0754	.00	.00	571.12
142.10	.00	.126	.0771	.00	.00	608.01
142.20	.00	.133	.0787	.00	.00	645.71
142.30	.00	.141	.0804	.00	.00	684.23
142.40	.00	.149	.0821	.00	.00	723.57
142.50	.00	.158	.0839	.00	.00	763.75
142.60	.00	.166	.0856	.00	.00	804.77
142.70	.00	.175	.0874	.00	.00	846.63
142.80	.00	.184	.0892	.00	.00	889.36
142.90	.00	.193	.0910	.00	.00	932.95
143.00	.00	.202	.0928	.00	.00	977.43
143.10	.13	.211	.0946	.00	.13	1022.92
143.20	.25	.221	.0965	.00	.25	1069.29
143.30	.38	.231	.0984	.00	.38	1116.58
143.40	.51	.241	.1003	.00	.51	1164.77
143.50	.63	.251	.1022	.00	.63	1213.88
143.60	.76	.261	.1041	.00	.76	1263.93
143.70	.89	.271	.1060	.00	.89	1314.91
143.80	1.02	.282	.1080	.00	1.02	1366.85
143.90	1.14	.293	.1100	.00	1.14	1419.73

LEVEL POOL ROUTING DATA

HYG Dir = \\S10svr01\n\project\2008\0806420\SWPPP\
Inflow HYG file = NONE STORED - SAND FILTER IN 1
Outflow HYG file = NONE STORED - SAND FILTER OUT 1

Pond Node Data = SAND FILTER
Pond Volume Data = SAND FILTER
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 141.30 ft
Starting Volume = .069 ac-ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = .0050 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
144.00	1.27	.304	.1120	.00	1.27	1473.58
144.10	1.39	.315	.1139	.00	1.39	1528.38
144.20	1.52	.327	.1159	.00	1.52	1584.12
144.30	1.65	.339	.1178	.00	1.65	1640.81
144.40	1.77	.351	.1198	.00	1.77	1698.45
144.50	1.90	.363	.1218	.00	1.90	1757.06
144.60	2.03	.375	.1238	.00	2.03	1816.65
144.70	2.16	.387	.1259	.00	2.16	1877.20
144.80	2.28	.400	.1279	.00	2.28	1938.75
144.90	2.41	.413	.1300	.00	2.41	2001.29
145.00	2.53	.426	.1321	.00	2.53	2064.83
145.10	2.66	.439	.1342	.00	2.66	2129.40
145.20	2.79	.453	.1363	.00	2.79	2194.97
145.30	2.92	.467	.1384	.00	2.92	2261.58
145.40	3.05	.481	.1406	.00	3.05	2329.21
145.50	3.17	.495	.1427	.00	3.17	2397.90
145.60	3.23	.509	.1449	.00	3.23	2467.57
145.70	3.29	.524	.1471	.00	3.29	2538.29
145.80	5.04	.539	.1493	.00	5.04	2611.78
145.90	8.18	.554	.1516	.00	8.18	2687.73

LEVEL POOL ROUTING DATA

HYG Dir = \\S10svr01\n\project\2008\0806420\SWPPP\
Inflow HYG file = NONE STORED - SAND FILTER IN 1
Outflow HYG file = NONE STORED - SAND FILTER OUT 1

Pond Node Data = SAND FILTER
Pond Volume Data = SAND FILTER
Pond Outlet Data = Outlet 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	141.30 ft
Starting Volume	=	.069 ac-ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	.0050 hrs

Elevation ft	Outflow cfs	Storage ac-ft	Area acres	Infilt. cfs	Q Total cfs	2S/t + O cfs
146.00	12.23	.569	.1538	.00	12.23	2765.67

Index of Starting Page Numbers for ID Names

----- O -----
Outlet 1... 6.01

----- R -----
Rockland County... 2.01

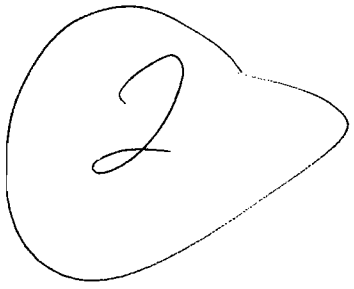
----- S -----
SAND FILTER... 5.01, 7.01
SUBAREA 1A... 3.01, 4.01
SUBAREA 2A... 3.05, 4.02
SUBAREA 2B... 3.07, 4.03
SUBAREA 3... 3.10, 4.04

----- W -----
Watershed... 1.01

Insert

2 Pocket

Draw



Insert

2-Pocket

2-Draw

CMX

Re: Little Tor Substation/ SWPPP AREAS Date: 4/10/2010

Total Area	507,867.88 S.F.	11.659 AC.

PRE-DEVELOPMENT							
	Impervious Area			Pervious Area			
		S.F.	AC.		S.F.	AC.	
Subarea 1	Buildings/concrete	2,337.40	0.054	Woods/forest	133,300.68	3.060	
	Gravel Road	9,579.54	0.220		0.00	0.000	
	Hackensack River	18,556.56	0.426		0.00	0.000	
163,774.18 sf		0.00	0.000		0.00	0.000	
3.760 AC.		0.00	0.000		0.00	0.000	
Totals:		**30,473.50**	**0.700**		**133,300.68**	**3.060**	
	Impervious Area			Pervious Area			
		S.F.	AC.		S.F.	AC.	
Subarea 2	Buildings/concrete	9,697.52	0.223	Woods/forest	280,341.93	6.436	
	Gravel Road	13,265.26	0.305		0.00	0.000	
	Rock outcrop	4,047.08	0.093		0.00	0.000	
307,351.79 sf		0.00	0.000		0.00	0.000	
7.056 AC.		0.00	0.000		0.00	0.000	
Totals:		**27,009.86**	**0.620**		**280,341.93**	**6.436**	
	Impervious Area			Pervious Area			
		S.F.	AC.		S.F.	AC.	
Subarea 3	Buildings/concrete	0.00	0.000	Woods/forest	32,131.91	0.738	
	Gravel Road	4,610.00	0.106		0.00	0.000	
	Rock outcrop	0.00	0.000		0.00	0.000	
36,741.91 sf		0.00	0.000		0.00	0.000	
0.843 AC.		0.00	0.000		0.00	0.000	11.659
Totals:		**4,610.00**	**0.106**		**32,131.91**	**0.738**	OK

POST-DEVELOPMENT							
	Impervious Area				Pervious Area		
		S.F.	AC.		S.F.	AC.	
Subarea 1A	Buildings/concrete	954.13	0.022	Woods/forest	92,225.54	2.117	
	Gravel Road	5,154.62	0.118	Lawn	18,556.56	0.426	
	Hackensack River	18,556.56	0.426		0.00	0.000	
135,447.41 sf		0.00	0.000		0.00	0.000	
3.109 AC.		0.00	0.000		0.00	0.000	
Totals:		**24,665.31**	**0.566**		**110,782.10**	**2.543**	
	Impervious Area				Pervious Area		
		S.F.	AC.		S.F.	AC.	
Subarea 2A	Gravel Road/areas	0.00	0.000	Woods/forest	197,934.25	4.544	
	Paved driveway	5,425.53	0.125	Lawn	19,079.28	0.438	
	Rock outcrop	3,136.91	0.072		0.00	0.000	
225,575.97 sf	Wall/sidewalk	0.00	0.000		0.00	0.000	
5.179 AC.					0.00	0.000	
Totals:		**8,562.44**	**0.197**		**217,013.53**	**4.982**	
	Impervious Area				Pervious Area		
		S.F.	AC.		S.F.	AC.	
Subarea 2B	Gravel Road/areas	39,682.74	0.911	Lawn	47,238.44	1.084	
	Paved driveway	18,706.42	0.429		0.00	0.000	
	Rock outcrop	910.17	0.021		0.00	0.000	
110,102.59 sf	Buildings/concrete	3,564.82	0.082		0.00	0.000	
2.528 AC.		0.00	0.000		0.00	0.000	
Totals:		**62,864.15**	**1.443**		**47,238.44**	**1.084**	
	Impervious Area				Pervious Area		
		S.F.	AC.		S.F.	AC.	
Subarea 3	Buildings/concrete	0.00	0.000	Woods/forest	32,131.91	0.738	
	Gravel Road	4,610.00	0.106		0.00	0.000	
	Rock outcrop	0.00	0.000		0.00	0.000	
36,741.91 sf		0.00	0.000		0.00	0.000	
0.843 AC.		0.00	0.000		0.00	0.000	1.1659
Totals:		**4,610.00**	**0.106**		**32,131.91**	**0.738**	OK

WATER QUALITY COMPUTATIONS

Data: **Little Tor Substation (Subarea 2B)**

Site Area											2.528 ac		
Offsite Drainage Area											0.000 ac		
A = Total Site Area										=	2.528 ac	=	110,355 s.f.
Ai = Impervious Area at Post Development Condition										=	1.443 ac	=	62,864 s.f.
I = percent Impervious Area =				[(	Ai	)(	100	)]/(	A	)=			
I = percent Impervious Area =				[(	1.443 ac	)(	100	)]/(	2.528 ac	)=	57.10 %		
Rv = Volumetric Runoff Coeff. =				(	0.05	)+[(	0.009	)(	57.10	)]=			
Rv = Volumetric Runoff Coeff. =				(	0.05	)+[(	0.009	)(	57.10	)]=	0.564		
P = Precipitation Depth =											1.3 in.		
WQv = Water Quality Volume =			[(	P	)(	Rv	)(	A	)]/ 12				
WQv (required)			[(	1.3 in.	)(	0.564	)(	2.528 ac	)]/ 12	=	0.154 ac.ft	=	6,726 cf
WQv (provided)	@	**142.50**								=	**0.158 ac.ft**	=	**6,882 cf**

CMX

Re: Rain Garden Design
Date: 4/10/2010

POST-DEVELOPMENT						
Area Name	Impervious Area			Pervious Area		
		S.F.	AC.		S.F.	AC.
	Buildings	0.00	0.000	Grassland (B Soils)	0.00	0.000
	Pavement	2,156.00	0.049	Grassland (C Soils)	0.00	0.000
	Gravel	0.00	0.000	Woods (B Soils)	0.00	0.000
2,156.00 sf				Woods (C Soils)	0.00	0.000
0.049 AC.						
Totals:		**2,156.00**	**0.049**		**0.00**	**0.000**

WATER QUALITY COMPUTATIONS

Data:

Site Area									0.049 ac		
Offsite Drainage Area											
A = Total Site Area								=	0.049 ac	=	2,161 s.f.
Ai = Impervious Area at Post Development Condition								=	0.049 ac	=	2,161 s.f.
I = percent Impervious Area =		[(	Ai	)(	100	)]/(	A	)=			
I = percent Impervious Area =		[(	0.049 ac	)(	100	)]/(	0.049 ac	)=	100.00 %		
Rv = Volumetric Runoff Coeff. =		(	0.05	)+[(	0.009	)(	100.00	)]=			
Rv = Volumetric Runoff Coeff. =		(	0.05	)+[(	0.009	)(	100.00	)]=	0.950		
P = Precipitation Depth =									1.3 in.		
WQv = Water Quality Volume =	[(	P	)(	Rv	)(	A	)]/ 12				
WQv (required)	[(	1.3 in.	)(	0.950	)(	0.049 ac	)]/ 12	=	0.005 ac.ft	=	222 cf

RAIN GARDEN COMPUTATIONS

Data:

A_{RG} = Proposed Rain Garden Surface Area (s.f.)	510 s.f.		2 Areas of 255
D_P = Ponding Depth (in.)	0.5	=	0.04 ft.
D_{SM} = Depth of Soil Media (in.)	12.0	=	1.00 ft.
D_{DL} = Depth of Drainage Layer (in.)	6.0	=	0.50 ft.
P_{SM} = Porosity of Soil Media	0.20		
P_{DL} = Porosity of Drainage Layer	0.40		

V_{SM} = Soil Media Storage Volume = $[(A_{RG})(D_{SM})(P_{SM})]$ =

V_{SM} = Soil Media Storage Volume = $[(510 \text{ s.f.})(1.00 \text{ ft})(0.20)]$ = 102.00 c.f.

V_{DL} = Drainage Layer Storage Volume = $[(A_{RG})(D_{DL})(P_{DL})]$ =

V_{DL} = Drainage Layer Storage Volume = $[(510 \text{ s.f.})(0.50 \text{ ft})(0.40)]$ = 102.00 c.f.

WQv (required) = Water Quality Volume = **222** c.f.

PDv = Proposed Design Volume = $[(A_{RG})(D_P) + V_{SM} + V_{DL}]$ =

PDv = Proposed Design Volume = $[(510 \text{ s.f.})(0.04 \text{ ft}) + 102.00 + 102.00]$ = **225.3** c.f.

WQv = **221.9** cf ≤ **225.3** cf **OK**

CHANNEL PROTECTION STORAGE VOLUME COMPUTATIONS (Cp_v).

Little Tor Substation

P(1yr): Rockland County 2.7 in.

Total Area (Subarea 2B) 2.528 ac

RUNOFF SUMMARY			
Post development Area	CN	T_c	Runoff(Q_a)* 1 yr storm
		Hours	in.
Subarea 2	85.77	0.117	1.39

*NOTE: Computed utilizing Tr-55 Analysis where $Q_a = (P-I_a)^2/[(P-I_a)+(1000/CN-10)]$

Dev. $I_a = (200/CN) - 2 =$ 0.332

Channel Protection(Cp_v):

Determine Watershed Classification:

The extended detention time is 24 hrs.

T: 24 hr

Dev. I_a/P (1yr.): 0.123

T_c: 0.117 hr

Using Figure D.11.1 SCS Graphical Method of determining peak discharge (q_u) in csm/in for 24-Hour Type III Storm Distribution with the above I_a/p and T_c, a q_u is determined.

$q_u = 625$ csm/in

Using Figure D.11.2 Detention Time versus Discharge Ratios with the above q_u and T, a (q_o/q_i) is determined.

$q_o/q_i = 0.030$

Compute V_s/V_r for type III rainfall distribution with q_o/q_i.

$V_s/V_r = 0.682 - 1.43(q_o/q_i) + 1.64(q_o/q_i)^2 - 0.804(q_o/q_i)^3 =$ 0.641

Cpv (required) V_s = Cpv = $(V_s/V_r)(Q_a$ dev.)(A)/12 = **0.188 ac-ft**

Cpv (proposed) **0.202 ac-ft @** **143.00**

COMPUTE ED ORIFICE **POND 1**

Cpv		=	0.202 ac.ft		
Average Release rate of Cpv (24 hrs)		=	0.102 cfs		
Average Q_{WQv-ED}		=	0.000 cfs		
Cpv_ED		=	0.102 cfs		
Cpv. EL. @ **(0.202 ac ft)**		=	143.00 ft		
Invert for orifice "EL. at WQv" @	**(0.16 ac.ft)**	=	142.50 ft		
Average head (h) "ft"		=	0.25 ft		
Orifice Coefficient		=	0.6		
Orifice Area "sf" A=Q/[C(2gh)^0.5)]		=	0.042 sf		
Orifice diameter "in"		=	2.79"	USE	NONE

NOTE: No CPv is needed if orifice is less than 3"

CMX

Surface Sand Filter Design (NYSDEC F-1)
Data: Litte Tor Substation (Subarea 2B)

Size Infiltration Trench:

From Darcy's Law: Af=WQv(df)/[k(hf+df)(tf)]

WQv		=	6,725.64 cf
k (coefficient of permiability)	Sand *	=	3.50 ft/day
hf (Aver. Height of water above filter bed)	**	=	1.05 ft
tf (design filter drain time)		=	1.67 days
Filter depth (df)		=	2.00 ft
Af (Surface area of filter bed)		=	**754.54 sf**
Af provided		=	**800.00 sf**

** NYS Design Manual Page 6-52*

*** Half of water quality elevation (WQv EL)*

Size Sedimentation Basin (As) for pretreatment:

Based on percent Imperviousness (I)		=	57.10 %
As (for I ≤ 75% >) =	0.066* WQv	=	**443.89 sf**
As (for I > 75%) =	0.0081 WQv	=	NA
Pretreatment chamber provided		=	**950.00 sf**

Underdrain Capacity:

Pipe Diameter		=	4.00"
Area (sf)		=	0.087 sf
Hyd. R		=	0.083
Slope		=	0.05
n (PVC)		=	0.011
Underdrain design flow			0.05 cfs
WQv (release in 1.67 days)		=	0.05 cfs
Pipe Capacity:		=	OK

CMX

RE: Rip-rap pilot channel/ Parabolic Waterway Design

Date: April 6, 2010

	Pond 1
Q=	5.31 cfs*
S=	10.00 %
Vmax=	3.0 ft/s
Q/T $^{+}$=	0.65 sf/s
Depth (D) $^{+}$=	0.50'
T= Q/(Q/T)=	8.17'
2/3 T=	5.45'

* 2-year rainfall event (Q_{in})

+ Using *Figure 5B.9* from "New York Standards and Specification for Erosion and Sediment Control" (August 2005)

RE: Rock Outlet Protection/ End Sections (Minimum Tailwater Condition)

Date: April 6, 2010

	Pond (IN)	Pond (ES)
Q*=	5.31 cfs	3.59 cfs
Pipe dia.=	15.0 in	15.0 in
d_{50}**=	0.20 ft	0.20 ft
	2.4"	2.4"
Apron length (L_a)**=	5.0 ft	5.0 ft
Apron width (W)= diam. + La=	6.3 ft	6.3 ft
Use:		
d_{50}=	4 in	4 in
dmax=	6.0 in	6.0 in
Min.blanket thickness=	9.0 in	9.0 in

* 2-year storm event

**(Figure 5B.12, NY Standards and Specifications For Erosion and Sediment Control, August 2005)

TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET

Computed by: JP Date: April 5, 2010

Pond: Sand Filter (F-1) Drainage area: 2.528 ac.

BASIN SIZE DESIGN

1. Minimum sediment storage volume = 134 cu.yds. x 2.528 ac. acres drainage area = 338.75 cu.yds.

   Sediment storage volume **provided** (Final pond to be used for sediment basin)= 917.99 cu.yds.

2. a. Cleanout at 50 percent of minimum required volume= 458.99 cu.yds.

   b. Elevation corresponding to scheduled time to clean out (@ 0.28 ac.ft) = 143.80'

   c. Distance below top of riser ('b.' - bottom of pond ' 140.00') = 3.80'

3. Min. surface area is larger of $0.01Q_{(10)}$ (8.82cfs)= 0.088 or, 0.015 DA= 0.038 ac. use: 0.088 ac.

   Surface area provided (Final pond grading to be used for sediment basin)= 0.154 ac.

DESIGN OF SPILLWAYS & ELEVATIONS

Runoff

4. $Q_{p(10)}$= 13.32 cfs *

   * Computations shown on section 6 of SWPPP

Pipe Spillway (Q_{ps})

5. Min. pipe spillway cap., Q_{ps} = 0.2 x 2.528 ac.ft = Drainage= 0.51 cfs

   Note: if there is no emergency spillway, then req'd Qps=$Qp_{(10)}$= ——— **(Emerg. Spillway to be used)**

6. H= 5.62' Barrel length= 52.00'

7. Barrel: Diam.= 15.0" ;Qps = (Q) 12.20 cfs x (cor. fac.) 1.08 = **13.18 cfs**

8. Riser: Diam.= 24.0" ; Length 4.50' ; h= 1.00' Crest Elev. 143.62'

9. Trash Rack: Diam. = 36.0" ; H= 13.0"

   From **Figure 5A.29(2)** *New York Standards and Specifications For Erosion and Sediment Control*

Emergency Spillway Design **NA Q_{10} used**

10. Emergency Spillway Flow, $Q_{es} = Q_p - Q_{ps}$ = 13.32 cfs - 13.18 cfs = 0.14 cfs

11. | Width: | | ; Hp 0.50' Crest elevation=
    | Provided width: | | Design High Water Elevation=

    Entrance channel slope % ; Top of Dam Elev.=

    Exit channel slope %

** From **Figure 5A.33(2)** *New York Standards and Specifications For Erosion and Sediment Control*

ANTI-SEEP COLLAR/ SEEPAGE DIAPHRAGM DESIGN

Collars:

12. y= 4.50' ; z = 3 ; pipe slope = 1.0% L_s= **32.8 '**

*** Use 2 collars, 3.50 sq.ft.

*** From **Figure 5A.31(2)** *New York Standards and Specifications For Erosion and Sediment Control*

Diaphragms: (None used)

NA # width , height

DEWATERING ORIFICE SIZING

13. $Ao = \frac{A_s \times (2h)^{0.5}}{122{,}568}$ = 0.15 sq.ft ~ 5.26" dia. ;h= 3.80' therefore use, 4"

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM
FOR CONSTRUCTION ACTIVITIES

CONSTRUCTION SITE LOG BOOK

Table of Contents

I. Pre-Construction Meeting Documents.

a. Preamble to Site Assessment and Inspections

b. Operator's Certification

c. Qualified Professional's Credentials & Certification

d. Pre-Construction Site Assessment Checklist

a.

II. Construction Duration Inspections

a. Directions

b. Modification to the SWPPP

III. Monthly Summary Reports

IV. Monitoring, Reporting, and Three-Month Status Reports

a. Operator's Compliance Response Form

a

Properly completing forms such as those contained in this document meet the inspection requirement of NYSDEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

b. Operators Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law. "

Name (please print):_____

Title _____ **Date:**_____

Address: _____

Phone: _____ **Email:**_____

Signature:_____

c. Qualified Professional's Credentials & Certification

" I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (please print):_____

Title _____ **Date:**_____

Address: _____

Phone: _____ **Email:**_____

Signature:_____

d. Pre-construction Site Assessment Checklist (NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

Pre-construction Site Assessment Checklist (continued)

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?

[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.

[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.

[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.

[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.

[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.

[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.

[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Perimeter Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.

[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals

[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.

[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.

[ ] [ ] [ ] The plan is contained in the SWPPP on page _____

[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

II. CONSTRUCTION DURATION INSPECTIONS

a. Directions:
Inspection Forms will be filled out during the entire construction phase of the project.
Required Elements:

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

SITE PLAN/SKETCH

Inspector (print name)	**Date of Inspection**
Qualified Professional (print name)	**Qualified Professional Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes No NA

[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?

[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?

[ ] [ ] [ ] All disturbance is within the limits of the approved plans.

[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping

1. General Site Conditions

Yes No NA

[ ] [ ] [ ] Is construction site litter and debris appropriately managed?

[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?

[ ] [ ] [ ] Is construction impacting the adjacent property?

[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing

Yes No NA

[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.

[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.

[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?

[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Runoff Control Practices

1. Excavation Dewatering

Yes No NA

[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.

[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.

[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.

[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader

Yes No NA

[ ] [ ] [ ] Installed per plan.

[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.

[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

Yes No NA

[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.

[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.

[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

Runoff Control Practices (continued)

4. Stone Check Dam

Yes No NA

[ ] [ ] [ ] Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ] [ ] [ ] Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ] [ ] [ ] Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

[ ] [ ] [ ] Stockpiles are stabilized with vegetation and/or mulch.
[ ] [ ] [ ] Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

[ ] [ ] [ ] Temporary seedings and mulch have been applied to idle areas.
[ ] [ ] [ ] 4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control

1. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

Yes No NA

[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is ___% of design capacity.

Sediment Control (continued)

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation ___% of design capacity.

4. Temporary Sediment Trap

Yes No NA

[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

CONSTRUCTION DURATION INSPECTIONS

b. Modifications to the SWPPP (To be completed as described below)

The Operator shall amend the SWPPP whenever:
1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or
2. The SWPPP proves to be ineffective in:
a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or
b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and
3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

III. Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	Today's Date:	Reporting Month:
Location:	Permit Identification #:	
Name and Telephone Number of Site Inspector:		

Date of Inspection	Regular / Rainfall based Inspection	Name of Inspector	Items of Concern

Owner/Operator Certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

Signature of Permittee or Duly Authorized Representative

Name of Permittee or Duly Authorized Representative date

authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

G

SEE FULL SIZE

ENGINEERING PLANS

ATTACHED

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT
ORANGE and ROCKLAND UTILITIES, INC.

South Mountain and Little Tor Roads
Clarkstown, New York

March, 2006

Prepared for
Orange and Rockland Utilities, Inc.
Spring Valley, New York

Prepared by:
HDR|LMS
Environmental Science and Engineering Consultants
One Blue Hill Plaza
Pearl River, New York 10965
HDR|LMS File No.: 36875

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EXECUTIVE SUMMARY

A Phase I Environmental Site Assessment (ESA) was conducted by HDR|LMS at the request of Orange and Rockland Utilities, Inc, Spring Valley, New York. The ESA was performed in conformance with the scope and limitations of ASTM Practice E 1527-00. Any exceptions to this practice are described in Sections 1.3 and 1.4.

The 8.7-acre Site, which is located in a residential area in the Town of Clarkstown, includes several abandoned dilapidated structures (houses and sheds), a stream and towers for high-voltage transmission lines. The presence of a transmission line on the Site suggests that pesticides may have been used to control vegetation. Such limited applications are permitted by the NYSDEC and are not considered disposal of hazardous substances, and therefore do not constitute an environmental condition on the Site.

This assessment revealed the following recognized environmental conditions on the Site.

Debris piles were observed throughout the site including areas along the stream bank. The debris includes household hazardous waste [paints, stains, lacquer thinners, tar, engine oil, machine oil, floor polish remover, degreasers, Freon, a corrosive (possibly chlorine), herbicides, insecticides, gasoline cans, propane, refined asphalt, petroleum spirits, lead-acid batteries (some cracked), and other wastes].

Three one-gal rusted cans of creosote were observed on the northeast section of the Site. Two cans were open and partially full. One can was closed and appeared to be empty. Product was observed on the top, bottom and the sides of all the cans. Product was also observed on the bare soil beneath the cans. Therefore the soil in the vicinity of the spill may have been adversely impacted.

The Site includes a closed unlabeled, rusted, 55-gal. drum (full or partially full); a closed, unlabeled, rusted, empty 30-gal. drum and three unlabeled tanks that may contain, or may have contained, hazardous substances.

Other Concerns

Although not observed during the Site visits or discovered during the database and records review, the Site may include underground petroleum fuel storage tanks.

According to information from the RCDOH, residents were vacated from the Site because high levels of total coliform and e-coli bacteria were detected in the five on-site wells. According to a sign, posted on an exterior wall of a one-story abandoned house, on 10/26/2004 the RCDOH issued a violation for the discharge of raw sewage to the ground surface at the Site.

Files from the Clarkstown Building Department indicate that violations exist for this Site (electrical, structures in disrepair, debris, etc).

Because of obvious poor housekeeping practices at the Site, it is possible that household hazardous materials may have been discharged to on-site septic systems.

Asbestos and/or lead-based paint may be present in older structures.

Mold was observed on ceilings and walls in several structures.

1.4 Limiting Conditions and Methodology Used

Conditions, which limited the investigation during performance of the Phase I ESA, include the following:

- The mandatory Federal and State records search was conducted by Environmental Data Resources, Inc. (EDR), a commercial environmental data retrieval service. Limitations of their services are discussed in Appendix A.

- In accordance with ASTM E 1527-00, no sampling and analysis of materials (i.e., on-site soils, groundwater, and air) was conducted as part of this assessment.

- In accordance with ASTM E 1527-00, this investigation did not address radon, lead in drinking water and/or soil, or wetland issues in relation to the Site.

- On February 20 and 27, and March 13, 2006, HDR|LMS conducted a reconnaissance of the Site. Information about Site characteristics was collected on these dates; any changes that have occurred to the Site after these dates were not incorporated into this report. Areas considered unsafe or inaccessible were viewed from an accessible vantage point where available.

- Historic Sanborn Maps were not available for review.

- There are gaps in the documented history of the Site; however, it appears that Site usage has not changed.

- The user of this report did not provide a title report for review; therefore HDR/LMS was unable to determine the existence of any environmental liens on the property.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The 8.7-acre Site is located in a residential area in the Town of Clarkstown, Rockland County, New York. The property is identified in the records of the Town of Clarkstown Tax Assessor's Office as listed in Section 1.

2.2 Site and Vicinity Characteristics

The 1955 United States Geological Survey (USGS) Thiells, New York Quadrangle map indicates the Site is located from approximately 130 to 145 feet above mean sea level (amsl) on average. The general gradient in the vicinity of the Site is south. The topography and geographic location suggest that shallow groundwater flows south toward an unnamed stream (Figure 1).

According to the United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey of Rockland County, New York, the majority of the soil in the vicinity of the Site is composed of Cheshire gravelly fine sandy loam. This very deep well-drained soil formed in glacial till derived from reddish sandstone on till plains. Permeability is moderate to moderately rapid throughout the profile.

The soil overlies unconsolidated deposits of glacial till that were deposited directly from the bottom of glacial ice that blanketed this area approximately 12,000 years ago.

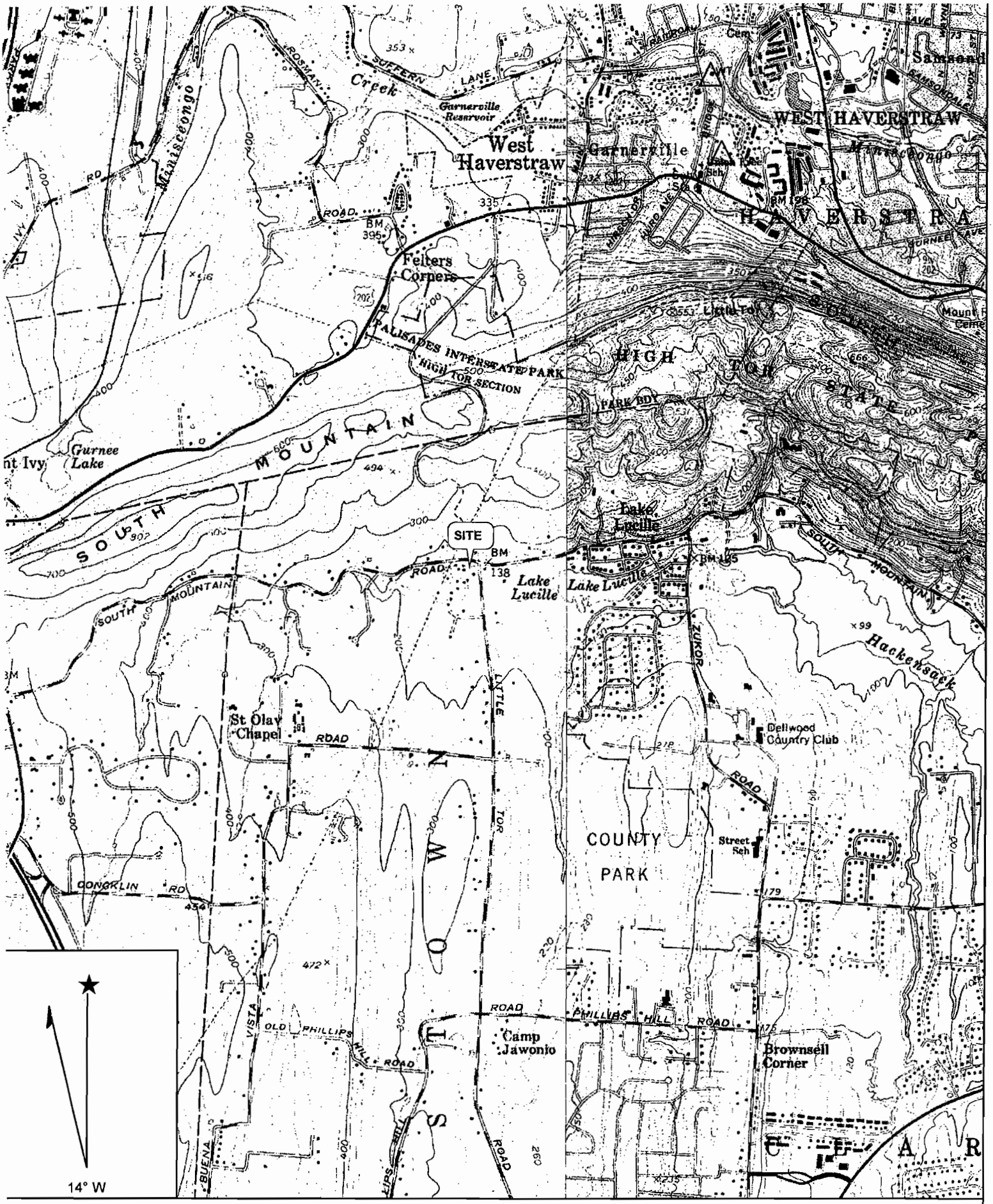
The glacial till lies unconformably over the arkose, mudstone siltstone, sandstone, conglomerate and Palisades Diabase of the Brunswick formation of the Newark Group which formed during the Triassic period of the Mesozoic Era (from 245 to 208 million years ago).

2.3 Description of Structures, Roads, and Other Site Improvements

The 8.7-acre Site (Figure 2) includes several abandoned dilapidated structures (houses and sheds), a stream and towers for high-voltage transmission lines. According to information from the Town of Clarkstown Zoning Department, the Site is zoned R-40 (residential, one acre minimum). According to information from the Rockland County Department of Health (RCDOH) there are five wells on the Site and the residences are connected to septic systems. Public water and sewer mains are not available in the area near the Site.

2.4 Current Uses of the Site

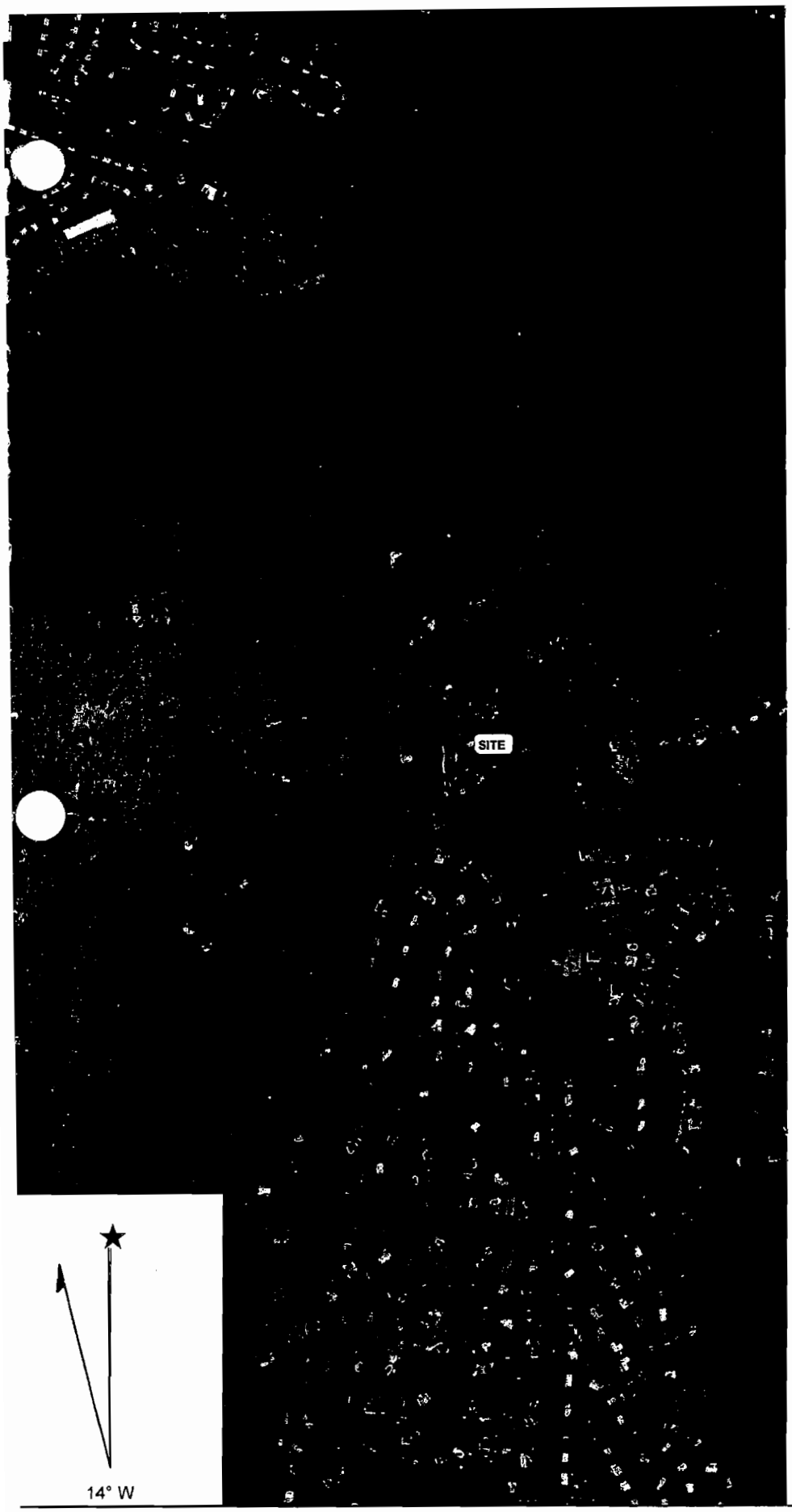
The Site includes several abandoned dilapidated structures (houses and sheds), a stream and towers for high voltage transmission lines.



Name: THIELLS
Date: 1/4/2006
Scale: 1 inch equals 2000 feet

Location: 041° 10' 59.54" N 074° 00' 16.07" W
Caption: Figure 1 - So. Mtn./Little Tor Rds.
Phase I ESA - O & R Utilities

Copyright (C) 2001, Maptech, Inc.



Name: THIELLS SE
Date: 2/13/2006
Scale: 1 inch equals 998 feet

Location: 041° 11' 4.51" N 074° 00' 9.57" W
Caption: Figure 2 - So. Mtn./Little Tor Rds.
Phase I ESA - O&R Utilities

Copyright (C) 2002, Maptech, Inc.

2.5 Past Uses of the Site

The following documents were reviewed for historic information on the Site.

Year	Document
1840	Clarkstown Building Department Files
1900	Clarkstown Building Department Files
1920	Clarkstown Building Department Files
1931	Topographic Map – Ramapo, N.Y. Quadrangle
1938	Topographic Map – Ramapo, N.Y. Quadrangle
1941	Clarkstown Building Department Files
1950	Clarkstown Building Department Files
1955	Topographic Map – Thiells, N.Y. Quadrangle
1957	Aerial Photograph
1960	Clarkstown Building Department Files
1964	Aerial Photograph
1976	Aerial Photograph
1984	Aerial Photograph
1994	Aerial Photograph
1999	Clarkstown Building Department Files
2002	Clarkstown Building Department Files
2005	Clarkstown Building Department Files
2005	Rockland County Department of Health Files

According to information from the Clarkstown Building Department files, a wood structure was built on the Site in 1840. The structure was built on a slab and did not include a kitchen, bathroom or central heating. A second structure was built on the Site in 1900. This structure included a kitchen and one bedroom (four rooms total) and a full basement. The structure was heated by hot water/steam and the fuel source is listed as gas. Information for a structure built in 1920 indicates that it was built on a slab and was heated by gas. The 1931 topographic map indicates there are several small structures and a stream on the Site. Several small structures and the stream are also evident on the 1938 topographic map. Building department files indicate that a certificate of occupancy (CO) was issued for a one family dwelling in 1941. A plan of the Site indicates there were four structures on the property in 1941. In 1950, the then owner of the property received a CO allowing him to move a one-story cabin onto the Site. The owner also received permission to demolish an on-site structure. A 1950 plan of the Site indicates there were twelve structures (labeled cabins) and transmission lines on the property. An undated document indicates there were nine structures on the Site (three houses, one barn, four cabins and one cottage). The 1955 topographic map indicates additional structures, a stream and utility transmission lines on the Site. The 1957 aerial photograph indicates several structures and utility transmission lines on the Site. 1960 building department files indicate that the then owner of the Site applied for a building permit for a summer cottage and a permit for sewage disposal on the property. The 1964, 1976, 1984 and 1994

aerial photographs indicate several structures and utility transmission lines on the Site. 1999 Building Department files indicate that a fire totally destroyed an on-site structure (residence). According to the fire report, the fire started when a wood-burning stove overheated igniting nearby combustibles (in the living room). On July 10, 2002, a CO was issued to the then property owner allowing her to move a building for dwelling purposes. On the same day an additional CO was issued for a single family dwelling. On September 3, 2002 a CO was denied due to electrical violations. On September 11, 2002 a CO was issued for a pre-existing single family dwelling (549 Little Tor Road). A 2005 building inspection report indicated that eight one-family dwellings were built on the Site prior to the adoption of the local building code and zoning ordinance and that violations existed. A building inspection report states that numerous buildings and accessory buildings were in various states of disrepair and that there were property maintenance issues with the storage of unregistered vehicles and debris on the Site. Information from the RCDOH indicates that the residents were vacated from the Site in 2005 because of the presence of high levels of total coliform and e-coli bacteria in the five on-site wells.

2.6 Current Uses of Adjoining Properties

The Site is bordered by a two-lane road (South Mountain Road) and residences to the north; a stream and residences to the south; a two-lane road (Little Tor Road) and residences to east and, residences to the west.

3.0 USER PROVIDED INFORMATION

The user of the report provided tax maps, the name of the current property owner and the property identification number.

4.0 RECORDS REVIEW

Site history research, which included a database review by Environmental Data Resources, Inc. (EDR), was conducted as part of this assessment. The EDR report included a review of the following databases for sites within the ASTM-recommended radii of the subject property. The EDR database report is included in Appendix A.

4.1 Standard Environmental Record Sources

4.1.1 Federal ASTM Records

As required by an ASTM Phase I ESA, the following databases were searched:

- CERCLIS and CERCLIS – NFRAP Sites
- Emergency Responses Notification System (ERNS)
- National Priority List (NPL) and Proposed NPL Sites
- Resources Conservation and Recovery Information System Transfer, Storage, Disposal Facilities (RCRIS-TSD) Database

- Resource Conservation and Recovery Information System Large Quantity Generator (RCRIS-LQG) Database
- Resource Conservation and Recovery Information System Small Quantity Generator (RCRIS-SQG) Database
- Corrective Action Report (CORRACTS)

4.1.2 Federal ASTM Supplemental Records

Although not required by an ASTM Phase I ESA, the following databases were searched:

- Superfund CERCLA Consent Decrees (CONSENT)
- Records of Decision (ROD)
- Delisted NPL
- Facility Index System (FINDS)
- Hazardous Materials Information Reporting System (HMIRS)
- Material Licensing Tracking System (MLTS)
- Federal Superfund Liens (NPL Liens)
- PCB Activity Database System (PADS)
- RCRA Administrative Action Tracking System (RAATS)
- Toxic Chemical Release Inventory System (TRIS)
- Toxic Substances Control Act (TSCA)
- Mines Master Index File (Mines)
- Federal Insecticide, Fungicide and Rodenticide Act Tracking System (FTTS)
- Section Seven Tracking System (SSTS)
- Department of Defense Sites (DOD)
- Indian Reservations (INDIAN RESERV)
- Formerly Used Defense Sites (FUDS)
- Uranium Mill Tailings Sites (UMTRA)
- Open Dump Inventory (ODI)
- US Engineering Controls (US ENG CONTROLS)

4.1.3 State ASTM Records

As required by an ASTM Phase I ESA, the following state databases were searched:

- State Hazardous Waste Facilities (SHWS)
- State Facility Register (SWF/LF)
- Underground Storage Tanks (UST) Database
- Leaking Storage Tank Incident Reports (LTanks)
- Chemical Bulk Storage Underground Storage Tank (CBS/USTs) Database
- Major Oil Storage Facilities (MOSF/UST) Database
- Voluntary Cleanup Agreement (VCP) Database
- State Registered Recycling Facility List (SWRCY) Database
- State Registered Tire Storage and Facility List (SWTIRE) Database

4.1.4 State ASTM Supplemental Records

Although not required by an ASTM Phase I ESA, the following databases were searched:

- Hazardous Substance Waste Disposal Site (HSWDS) Inventory
- Petroleum Bulk Storage Above Ground Storage Tanks (PBS/AST) Database
- Chemical Bulk Storage Above Ground Storage Tanks (CBS/AST) Database
- Major Oil Storage Facilities Above Ground Storage Tanks (MOSF/AST) Database
- New York Spills (NY Spills) Database
- State Pollutant Discharge Elimination System (SPDES)
- Delisted Registry Site (DEL SHWS)
- Registered Drycleaners (Drycleaners)
- Air Emission Data (AIRS)
- Engineering Controls (ENG CONTROLS)
- NY Hist Spills
- Hist LTanks

4.1.5 Additional Sources

In addition, the EDR proprietary database, Manufactured Gas Plants (Coal Gas) and the Brownfields databases, US Brownfields, US Institutional Controls, Brownfields, VCP and Institutional Controls were included in the record and file search.

The findings from each of these databases are discussed in the following sections. All information presented was taken from the Environmental Data Resources, Inc. report.

4.2 Review of the EDR-Radius Map with Geocheck

Review of the following Federal databases is required by ASTM Standard E1527-00. The EDR database review listed mapped sites and unmapped sites. The following information pertains to those sites that were located on a map provided by EDR. The report also included the direction and relative distance of the sites from the subject property. Unmapped sites, where identified and considered relevant to this investigation, are included.

4.2.1 Federal ASTM Records

4.2.1.1 CERCLIS/CERCLIS NFRAP. Review of the Environmental Protection Agency's (USEPA) Comprehensive Environmental Response, Compensation and Liability System (CERCLIS/CERCLIS NFRAP) listing of abandoned, inactive or uncontrolled hazardous waste sites, which may require cleanup, and those facilities for which no further remedial action is planned, indicated that there were no mapped facilities, located within one-half mile of the Site, listed on the CERCLIS database. However, EDR lists two unmapped facilities on the CERCLIS NFRAP database. It was determined that these facilities were either located beyond the proscribed radius for the ASTM database search criteria and/or

were not located upgradient of the Site. Therefore these facilities are not expected to have an adverse impact on the environmental integrity of the subject property.

4.2.1.2 Emergency Response Notification. The Emergency Response Notification System (ERNS) is a national computer database used to store information on reported releases of hazardous substances and petroleum. The subject property is not listed on the ERNS database.

4.2.1.3 National Priority List (NPL)/Proposed NPL. The National Priority List (NPL)/Proposed NPL is a listing of over 1,200 sites proposed and/or identified for priority cleanup under the Superfund Program. No NPL sites were identified on the NPL/Proposed NPL database within one mile of the subject property.

4.2.1.4 Resource Conservation and Recovery Information System. This database contains selective information on sites that generate, transport, store, treat and/or dispose of hazardous waste as defined by RCRA. Transfer/storage/disposal facilities, small quantity (SQG) and large quantity generators (LQG) are included in this section. RCRIS SQGs are defined as those facilities that generate between 100 and 1,000 kilograms of hazardous waste per month. There are no mapped facilities, located within one-quarter mile of the Site, listed on the RCRIS databases. However, EDR lists eleven unmapped facilities on the RCRIS-SQG database. It was determined that these facilities were either located beyond the proscribed radius for the ASTM database search criteria and/or were not located upgradient of the Site. Therefore these facilities are not expected to have an adverse impact on the environmental integrity of the subject property.

4.2.1.5 Corrective Action Report. The Corrective Action Report (CORRACTS) database identifies hazardous waste handlers with RCRA corrective action activity. There are no facilities, located within one mile of the Site, listed on the CORRACTS database.

4.2.2 Federal Non-ASTM Records

Review of the following databases is not required by the ASTM Standard but is performed by HDR/LMS as standard practice to assist in evaluation of the subject property and the surrounding area.

4.2.2.1 Consent Decrees. The Consent Decrees (CONSENT) database identifies major legal settlements that establish responsibility and standards for cleanup at NPL sites. There are no facilities, located within one mile of the Site, listed on the CONSENT database.

4.2.2.2 Records of Decision. The Records of Decision (ROD) database documents mandate a permanent remedy at an NPL site. There are no facilities, located within one mile of the Site, listed on the ROD database.

4.2.2.3 Facility Index System. The Facility Index System (FINDS) database is an USEPA resource that contains environmental facility information and directs the user to databases that have specific information on the target property. The subject property is not listed on the FINDS database.

4.2.2.4 Hazardous Materials Information Reporting System. The Hazardous Materials Information Reporting System (HMIRS) database contains hazardous material spill information reported to the Department of Transportation. The subject property is not listed on the HMIRS database.

4.2.2.5 Material Licensing Tracking System. The Material Licensing Tracking System (MLTS) is maintained by the Nuclear Regulatory Commission and contains a list of sites that possess or use radioactive materials and are subject NRC licensing. The subject property is not listed on the MLTS database.

4.2.2.6 Federal Superfund Liens. The Federal Superfund Liens (NPL-Liens) database is a listing of filed notices of Superfund liens. The subject property is not listed on the NPL-Liens database.

4.2.2.7 PCB Activity Database. The PCB Activity Database (PADS) identifies generators, transporters, commercial storers and/or brokers and disposers of PCBs who are required to notify the USEPA of such activity. The subject property is not listed on the PADS database.

4.2.2.8 RCRA Administrative Action Tracking System. The RCRA Administrative Action Tracking System (RAATS) contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the USEPA. The subject property is not listed on the RAATS database.

4.2.2.9 Toxic Chemical Release Inventory System. The Toxic Chemical Release Inventory System (TRIS) identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III Section 313. The subject property is not listed on the TRIS database.

4.2.2.10 Toxic Substances Control Act. The Toxic Substances Control Act (TSCA) database contains information on manufacturers and importers of chemical substances included on the TSCA Chemical Substances Inventory list. It includes data on the production volume of these substances by plant site. The subject property is not listed on the TSCA database.

4.2.2.11 Mines Master Index File. The Mines Master Index File (Mines) database is maintained by the Mine Safety and Health Administration. There are no facilities, located within one-quarter mile of the Site, listed on the Mines database.

4.2.2.12 Federal Insecticide, Fungicide and Rodenticide Act Tracking System. The Federal Insecticide, Fungicide and Rodenticide Act Tracking System (FTTS) database tracks administrative cases, pesticide enforcement actions and compliance activities. The subject property is not listed on the FTTS database.

4.2.2.13 Section Seven Tracking Systems. The Section Seven Tracking Systems (SSTS) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency that includes the type and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed during the year. The subject property is not listed on the SSTS database.

4.2.2.14 Department of Defense. The Department of Defense (DOD) database consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico or the Virgin Islands. There are no facilities, located within one mile of the Site, listed on the DOD database.

4.2.2.15 Indian Reservations. This database (INDIAN RESERV) is composed of maps of the United States Geologic Survey of Indian administered lands of the United States having an area equal to or greater than 640 acres. There are no facilities, located within one mile of the subject property, listed on the INDIAN RESERV database.

4.2.2.16 Formerly Used Defense Sites. This database (FUDS) includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions. There are no facilities, located within one mile of the subject property, listed on the FUDS database.

4.2.2.17 Uranium Mill Tailings Sites. This database (UMTRA) includes information on 24 inactive uranium mill tailings sites in the United States and Tribal Lands that are targeted for cleanup by the Department of Energy. There are no facilities, located within one-half mile of the Site, listed on the UMTRA database.

4.2.2.18 Delisted NPL. This database (Delisted NPL) includes those facilities deleted from the NPL where no further response is appropriate. There are no facilities, located within one mile of subject property, listed on the Delisted NPL database.

4.2.2.19 Open Dump Inventory. This database (ODI) includes information on disposal facilities that do not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria. There are no mapped facilities, located within one-half mile of the subject property, listed on the ODI database. However, EDR lists one unmapped facility on the ODI database. It was determined that this facility was located beyond the proscribed radius for the ASTM database search criteria. Therefore this facility is not expected to have an adverse impact on the environmental integrity of the subject property.

4.2.2.20 US Engineering Controls Sites List. The US Engineering Controls Sites List database (US ENG CONTROLS) includes a listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. There are no facilities, located within one-half mile of the subject property, listed on US ENG CONTROLS database.

4.2.3 New York State ASTM Records

Review of the following state databases is recommended by ASTM E1527-00.

4.2.3.1 Inactive Hazardous Waste Disposal Sites. The Inactive Hazardous Waste Disposal Sites (SHWS) database is the state equivalent to CERCLIS. These sites may or may not already be listed on the CERCLA database. There are no mapped facilities, located within one mile of the Site, listed on the SHWS database. However, EDR lists one unmapped facility on the SHWS database. It was determined that this facility was located beyond the proscribed radius for the ASTM database search criteria. Therefore this facility is not expected to have an adverse impact on the environmental integrity of the subject property.

4.2.3.2 State Facility Register/Landfill Sites. The State Facility Register/Landfill Sites (SWF/LF) database contains inventories on solid waste disposal facilities. These may be active or inactive sites. There are no facilities, located within one-half mile of the Site, listed on the SWF/LF database.

4.2.3.3 Petroleum Bulk Storage-Underground Storage Tank. The Petroleum Bulk Storage-Underground Storage Tank (PBS/UST) database contains information on facilities that have petroleum storage capacities in excess of 1,100 gallons and less than 400,000 gallons. The PBS/UST database provides a listing of all facilities that are required to register their storage tanks for tracking purposes and not necessarily those with reported contamination incidents. There are no mapped facilities, located within one-quarter mile of the Site, listed on the PBS/UST database. However, EDR lists four unmapped facilities on the PBS/UST database. It was determined that these facilities were either located beyond the ASTM-proscribed radius for the PBS/UST database search criteria and/or were not located upgradient of the Site. Therefore these facilities are not expected to have an adverse impact on the environmental integrity of the Site.

4.2.3.4 Leaking Storage Tank Incident Reports. The New York State Department of Environmental Conservation Leaking Storage Tank Incident Reports (LTanks) database contains an inventory of reported leaking above ground or underground storage tank incidents from 1986 though the most recent update (11/8/05). There are no mapped facilities, located within one-half mile of the Site, listed on the LTanks database. However, EDR lists three unmapped facilities on the LTanks database. It was determined that these facilities were either located beyond the ASTM-proscribed radius for the database search criteria and/or were not located upgradient of the Site. Therefore these

facilities are not expected to have an adverse impact on the environmental integrity of the Site.

4.2.3.5 Chemical Bulk Storage - Underground Storage Tank Database. The Chemical Bulk Storage-Underground Storage Tank (CBS-UST) database contains information on facilities that store regulated hazardous substances in underground tanks of any size. There are no facilities, located within one-quarter mile of the Site, listed on the CBS-UST database.

4.2.3.6 Major Oil Storage Facilities - Underground Storage Tank Database. The Major Oil Storage Facilities - Underground Storage Tank (MOSF-UST) database contains information on facilities that have the capability of storing 400,000 gallons or more of petroleum. There are no facilities, located within one-half mile of the Site, listed on the MOSF-UST database.

4.2.3.7 Voluntary Cleanup Agreements. The Voluntary Cleanup Agreements (VCP) database includes information on the voluntary cleanup of contaminated sites. There are no facilities, located within one-half mile of the Site, listed on the VCP database.

4.2.3.8 State Registered Recycling Facility List. The State Registered Recycling Facility List (SWRCY) is maintained by the NYSDEC. There are no facilities, located within one-half mile of the Site, listed on the SWRCY database.

4.2.3.9 State Registered Waste Tire Storage and Facility List. The State Registered Waste Tire Storage and Facility List (SWTIRE) is maintained by the NYSDEC. There are no facilities, located within one-half mile of the Site, listed on the SWTIRE database.

4.2.4 New York State Non-ASTM Records

Review of the listing of the following databases is not required by the ASTM standard but is performed by HDR/LMS as standard practice to assist in evaluation of the subject property and surrounding area.

4.2.4.1 Hazardous Substance Waste Disposal Site Inventory. The Hazardous Substance Waste Disposal Site Inventory (HSWDS) lists any known or suspected hazardous waste disposal sites. Sites delisted from the Registry of Inactive Hazardous Waste Disposal Sites are also included. There are no facilities, located within one-half mile of the Site, listed on the HSWDS database.

4.2.4.2 Petroleum Bulk Storage-Above Ground Storage Tank. The Petroleum Bulk Storage-Above Ground Storage Tank (PBS-AST) database is a listing of registered above ground storage tanks in New York State. There are no mapped facilities, located within one-eighth of a mile of the Site, listed on the PBS-AST database. However, EDR lists three unmapped facilities on the PBS-AST database. It was determined that these facilities were either located beyond the ASTM-proscribed radius for the database search

criteria and/or were not located upgradient of the Site. Therefore these facilities are not expected to have an adverse impact on the environmental integrity of the Site.

4.2.4.3 Chemical Bulk Storage-Above Ground Storage Tank. The Chemical Bulk Storage-Above Ground Storage Tank (CBS-AST) database is a listing of facilities that store regulated hazardous substances in above ground tanks with capacities of 185 gallons or greater and/or in underground tanks of any size. There are no mapped facilities, located within one-quarter of a mile of the Site, listed on the CBS-AST database. However, EDR lists two unmapped facilities on the CBS-AST database. It was determined that these facilities were either located beyond the ASTM-proscribed radius for the database search criteria and/or were not located upgradient of the Site. Therefore these facilities are not expected to have an adverse impact on the environmental integrity of the Site.

4.2.4.4 Major Oil Storage Facilities - Above Ground Storage Tank. The Major Oil Storage Facilities - Above Ground Storage Tank (MOSF-AST) database lists facilities with petroleum storage capacities of 400,000 gallons or more. There are no facilities, located within one-half mile of the Site, listed on the MOSF-AST database.

4.2.4.5 New York Spills Information. The New York Spills Information (NY Spills) database includes spill information reported to the New York State Department of Environmental Conservation as of April 1, 1986. There is one mapped facility listed on the NY Spills database

- Spill No. 9908572, listed as a pole-mounted transformer, located on Central Highway and South Mountain Road, less than one-eighth of a mile northeast of the Site, is listed as having a spill of eight gallons of non-PCB oil on 10/14/1999. According to the database, a tree fell taking down the pole. The contents of the transformer (non-PCB oil) spilled onto the ground. The spill was cleaned and the spill file was closed the same day. Because the spill was on land, cleaned and the spill file was closed the same day, this spill is not expected to have an adverse impact on the environmental integrity of the subject property.

In addition to the mapped facility, EDR lists eight unmapped facilities on the NY Spills database. HDR|LMS determined that seven facilities were either located beyond the ASTM-proscribed radius for the NY Spills database search criteria and/or were not located upgradient of the Site. Therefore these facilities are not expected to have an adverse impact on the environmental integrity of the Site. It was determined that one facility was located in the vicinity of the Site.

- Spill No. 0400741, listed as the entrance to the County Park, located on Central Highway, is listed as having a spill of an unspecified amount of an unknown material on 4/22/2004. The cause of the spill is listed as abandoned drums. According to the database, the drum was on its side and leaking. The drum was removed and the spill was cleaned up. The spill file was closed on 7/6/2004. Because the spill was cleaned; the spill file was closed and, the drums were

removed from the site, this spill is not expected to have an adverse impact on the environmental integrity of the subject property.

4.2.4.6 Delisted Registry Sites. The Delisted Registry Sites (DEL SHWS) database includes sites that the NYSDEC has delisted from the Registry of Inactive Hazardous Waste Disposal Sites. There are no facilities, located within one mile of the subject property, listed on the DEL SHWS database.

4.2.4.7 Registered Drycleaners. The Registered Drycleaners (Drycleaners) database is a listing of all registered dry-cleaning facilities. There are no facilities, located within one-quarter mile of the subject property, listed on the Drycleaners database.

4.2.4.8 State Pollutant Discharge Elimination System. The State Pollutant Discharge Elimination System (SPDES) database lists those facilities that are permitted to discharge wastewater and storm water into the waters of the United States in accordance with the Clean Water Act. SPDES controls point source discharge to groundwaters as well as surface waters. The Site is not listed on the SPDES database.

4.2.4.9 New York State Air Emission Data. The New York State Air Emission Data database (AIRS) is a listing of facility air emissions that is kept by the New York State Department of Environmental Conservation. The Site is not listed on the AIRS database.

4.2.4.10 Engineering Controls. The Engineering Controls database (ENG CONTROLS) is a NYSDEC listing of environmental remediation sites that have engineering controls in place. There are no facilities, located within one-half mile of the Site, listed on the ENG CONTROLS database.

4.2.4.11 Hist LTanks. The Listing of Leaking Storage Tanks database (Hist LTanks) is a listing of leaking underground and above ground storage tanks in which the cause of the incidents are tank test failures, tank failures or tank overfills. In 2002 the NYSDEC stopped providing updates to its original Spills Information Database. This database includes fields that are no longer available from the NYSDEC as of January 1, 2002. There were no mapped facilities listed on the Hist LTanks database. However, EDR lists three unmapped facilities on the Hist L Tanks database. HDR|LMS determined that these facilities were either located beyond the ASTM-proscribed radius for the Hist LTanks database search criteria and/or were not located upgradient of the Site. Therefore these facilities are not expected to have an adverse impact on the environmental integrity of the Site.

4.2.4.12 NY Hist Spills. The NY Hist Spills database contains records of chemical and petroleum spill incidents. In 2002 the NYSDEC stopped providing updates to its original Spills Information Database. This database includes fields no longer available from the NYSDEC as of January 1, 2002. There was one mapped facilities listed on the NY Hist Spills database. This spill is discussed in Section 4.2.4.5. In addition to the mapped facility, EDR lists four unmapped facilities on the NY Hist Spills database. HDR|LMS

determined that these facilities were either located beyond the ASTM-proscribed radius for the NY Hist Spills database search criteria and/or were not located upgradient of the Site. Therefore these spills are not expected to have an adverse impact on the environmental integrity of the Site.

4.2.5 EDR Proprietary Databases

4.2.5.1 Coal Gas. In addition to the ASTM required and supplemental federal and state records, a search was made of the EDR proprietary database for coal gas sites. The Former Manufactured Gas Site (Coal Gas) database contains information on the existence and location of coal gas manufacturing facilities. There are no facilities, located within one mile of the Site, listed on the Coal Gas database.

4.2.6 Brownfields Database

4.2.6.1 US Brownfields. The US Brownfields database (US Brownfields) includes brownfields properties addressed by Targeted Brownfields Assessments and properties addressed by Cooperative Agreement Recipients. Under this program, the USEPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. There are no facilities, located within one-half mile of the Site, listed on the US Brownfields database.

4.2.6.2 US Institutional Control. The US Institutional Control database (US INST CONTROL) includes a listing of sites with institutional controls in place. Institutional controls include administrative measures such as groundwater use restrictions, construction restrictions, property use restrictions and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional control. There are no facilities, located within one-half mile of the site, listed on the US INST CONTROL database.

4.2.6.3 Brownfields. The Brownfields Site Lists are maintained by the USEPA and the NYSDEC. There are no facilities, located within one-half mile of the Site, listed on the Brownfields database.

4.2.6.4 Voluntary Cleanup Agreements. The Voluntary Cleanup Agreements Brownfields database (VCP) is a database maintained by the NYSDEC that includes information on a remedial program that uses private monies to get contaminated sites remediated to levels allowing for the sites' productive use. The program covers virtually any kind of site and contamination. There are no facilities, located within one-half mile of the Site, listed on the Brownfields VCP database.

4.2.6.5 Institutional Control. The Institutional Control database (INST CONTROL) is maintained by the NYSDEC and is a listing of environmental remediation sites that have institutional controls in place. There are no facilities, located within one-half mile of the Site, listed on the INST CONTROL database.

4.3 Physical Setting Sources

Information on the physical setting of the Site was obtained from a 1955 USGS topographic map for Thiells, New York, 7.5-minute series quadrangle map and the HDR|LMS site reconnaissance. Information on the geology, hydrogeology, and topography of the Site is discussed in Section 2.2 of this report.

4.4 Historical Use Information

The following topographic maps and aerial photographs, supplied by Environmental Data Resources, Inc. (EDR), were reviewed for information regarding historic Site usage. In addition, the EDR City Directory Abstract report was reviewed for information.

Topographic Maps

Year	Scale	Quad
1931	1:62,500	Ramapo, NY
1938	1:50,000	Ramapo, NY
1955	1:24,000	Thiells, NY

Aerial Photographs

Year	Scale
1957	1:750
1964	1:750
1976	1:1000
1984	1:1000
1994	1:750

See Section 2.5 for a review of this material. The EDR-supplied topographic maps, City Directory Abstract report and aerial photographs are included in Appendix A. Additional historic documents, reviewed by HDR|LMS, are listed in Section 2.5.

4.5 Additional Records Sources

Records were requested directly from agency offices through the use of the Freedom of Information Act (FOIA). The following agencies were contacted for information:

Agency	Information Requested	Response
USEPA	Files on the Site	No Files
NYSDEC	Files on the Site	No Files
RCDOH	Files on the Site	No Files
RCDOH	Potable Water Information	Yes, Interview
Town of Clarkstown	Building and Fire Inspector's Files	Yes, Reviewed
Town of Clarkstown Assessor	Property Information	Yes, Reviewed

Documentation records are included in Attachment B. Any pertinent information received after issuance of this report will be sent as an addendum.

5.0 SITE RECONNAISSANCE

5.1 Site Reconnaissance

HDR|LMS conducted a reconnaissance of the subject property on February 20, 27 and March 13, 2006. The Site includes several abandoned dilapidated structures (houses and sheds) (Photograph 1); towers for high voltage transmission lines (Photograph 2) and, a stream (Photograph 3).

Scattered debris and large and small debris piles were observed near and in the abandoned dwellings and sheds on the site. This debris included a 5 gal. metal container of flashing cement, 5-gal. plastic buckets of paint, sheet rock compound and washer fluid, cylinders of Freon, a television, cylinders of propane, an unlabeled, empty rusted tank, several rusted 1-gal. containers of paint (empty, full and partially full), cans of lacquer thinner, cans of engine oil, an unlabeled empty 10-gal. plastic container, piles of shingles, a water heater, an empty 5-gal. container of floor polish remover, stains, sealers, cleaning products, glass, rusted automobile parts, unlabeled rusted cans, tires, wood, plastic, rusted empty cans of degreasers, rusted empty gasoline cans, partially full buckets of tar, a partially full plastic container labeled corrosive (may be chlorine), a small gasoline-powered engine, appliances (stove, refrigerator, washing machine), lawnmowers, a motorcycle, a car, cans of insect repellant, herbicides, lead-acid batteries (some cracked), an empty 5-gal. container of machine oil, empty 5-gal. buckets of driveway filler and blacktop, two rusted 55-gal. drums (used to store unknown trash and charcoal) and other miscellaneous household debris (toys, tools, furniture, black bags of unknown trash, etc.) (Photographs 4 to 18).

Three one-gal rusted cans of creosote were observed on the northeast section of the Site. Two cans were open and partially full. One can was closed and appeared to be empty. Product was observed on the top, bottom and the sides of all the cans. Product was also observed on the bare soil beneath the cans. A strong odor was detected (Photograph 19).

A closed, unlabeled, rusted 55-gal. drum was observed near a shed located on the southern section of the Site just north of the stream. The drum appeared to be full or partially full. The contents of the drum are unknown (Photograph 20).

Large piles of debris were also observed on the Site near the stream. The debris piles included old appliances, an engine, automobile parts, rusted metal, empty, rusted paint cans, tires, glass, batteries, wood, plastic, a 30-gal. rusted, empty, closed, unlabeled drum, a television, empty rusted unlabeled cans, two metal tanks (may or may not be empty), rusted, empty, unlabeled 5-gal. containers, empty, rusted cans of refined asphalt and petroleum spirits and other miscellaneous debris (Photographs 21 to 26).

Observation of the interior of a two-story abandoned house, located west of Little Tor Road, indicted the presence of a 275-gal. above ground petroleum storage tank. The tank is located on a concrete pad in the basement. Some staining was observed on the pad

beneath the tank. The gauge on the tank indicted that it was ¾ full. (Photographs 27 and 28).

A septic clean-out was observed near a one-story abandoned house located south of South Mountain Road. The clean-out and a concrete pad indicate a septic system may be located to the rear (east side) of the house.

According to a sign, posted on an exterior wall of a one-story abandoned house, on 10/26/2004 the RCDOH issued a violation. The violation notice indicated that raw sewage had been discharged to the ground surface at the Site.

Mold was observed on the ceilings and walls of some of the structures (Photographs 29 and 30).

5.2 Hazardous Substances in Connection with Identified Uses

Hazardous substances, associated with the debris, were observed on the Site and include; paints, stains, lacquer thinners, tar, engine oil, machine oil, floor polish remover, degreasers, Freon, a corrosive (possibly chlorine), herbicides, insecticides, gasoline cans, propane, refined asphalt, petroleum spirits, lead-acid batteries (some cracked), etc. In addition, product (creosote) was observed on the soil. The Site also includes a closed unlabeled, rusted, 55-gal. drum (full or partially full); a closed, unlabeled, rusted, empty 30-gal. drum and three unlabeled tanks that may contain, or may have contained, hazardous substances.

The presence of a transmission line on the Site suggests that pesticides may have been used to control vegetation. Such limited applications are permitted by the NYSDEC and are not considered disposal of hazardous substances, and therefore do not constitute an environmental condition on the Site.

5.3 Storage Tanks

One 275-gal. above ground petroleum storage tank (¾ full) was observed in the basement of a two-story abandoned house. Some staining was observed on the concrete pad located beneath the tank.

5.4 Evidence of PCBs

There is no evidence that PCBs were used, handled or stored on the property.

5.5 Evidence of Solid Waste Disposal

The Site includes several areas of solid waste disposal.

6.0 FINDINGS AND CONCLUSIONS

Except as noted in Sections 1.3 and 1.4, HDR|LMS performed this Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-00.

The Site includes towers for high voltage transmission lines, which suggests that pesticides may have been used to control vegetation. Such limited applications are permitted by the NYSDEC and are not considered disposal of hazardous substances, and therefore do not constitute an environmental condition on the Site.

This assessment revealed the following recognized environmental conditions on the Site.

Debris piles were observed throughout the site including areas along the stream bank. The debris includes household hazardous waste [paints, stains, lacquer thinners, tar, engine oil, machine oil, floor polish remover, degreasers, Freon, a corrosive (possibly chlorine), herbicides, insecticides, gasoline cans, propane, refined asphalt, petroleum spirits, lead-acid batteries (some cracked), etc.].

Three one-gal rusted cans of creosote were observed on the northeast section of the Site. Two cans were open and partially full. One can was closed and appeared to be empty. Product was observed on the top, bottom and the sides of all the cans. Product was also observed on the bare soil beneath the cans. Therefore the soil in the vicinity of the spill may have been adversely impacted.

The Site includes a closed unlabeled, rusted, 55-gal. drum (full or partially full); a closed, unlabeled, rusted, empty 30-gal. drum and three unlabeled tanks that may contain, or may have contained; hazardous substances.

Other Concerns

Although not observed during the Site visits or discovered during the database and records review, the Site may include underground petroleum fuel storage tanks.

According to information from the RCDOH, residents were vacated from the Site because high levels of total coliform and e-coli bacteria were detected in the five on-site wells. According to a sign, posted on an exterior wall of a one-story abandoned house, on 10/26/2004 the RCDOH issued a violation for the discharge of raw sewage to the ground surface at the Site.

Files from the Clarkstown Building Department indicate that violations (electrical, structures in disrepair, debris, etc), exist for this Site.

Because of obvious poor housekeeping practices at the Site, it is possible that household hazardous materials may have been discharged to on-site septic systems.

Asbestos and/or lead-based paint may be present in older structures. Mold was observed on ceilings and walls in several structures.

7.0 QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS PARTICIPATING IN PHASE I ENVIRONMENTAL SITE ASSESSMENTS

HDR|LMS' summary of qualifications to perform Phase I Environmental Site Assessments is presented in Appendix C.

8.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Thomas E. Pease, P.E, PhD
Technical Review

Theresa M. Schneider
Senior Project Geologist

REFERENCES CITED

American Society of Testing Materials (ASTM) 2000. Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (E 1527-00).

Environmental Data Resources Inc. Historic Topographic Maps, Aerial Photographs, City Directory Abstract and Radius Map with Geocheck, and database search.

United States Department of Agriculture, Soil Conservation Service, Soil Survey of Rockland County, New York. October 1990.

United States Geological Survey, 7.5-Minute Series Thiells, New York Quadrangle Map. 1955.

University State of New York, NY State Education System, Geologic Map of New York, Lower Hudson Sheet. 1970.

APPENDIX A

ENVIRONMENTAL DATA RESOURCES

EDR® Environmental
Data Resources Inc

The EDR Radius Map
with GeoCheck®

Orange and Rockland Utl. Phase I ESA
So. Mtn./Little Tor Roads
Clarkstown, NY 10956

Inquiry Number: 1586024.2s

January 04, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

FORM-ERK

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

SO. MTN./LITTLE TOR ROADS
CLARKSTOWN, NY 10956

COORDINATES

Elevation: 147 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: 41074-B1 THIELLS, NY
Source: USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
Delisted NPL ..... National Priority List Deletions
NPL Liens ..... Federal Superfund Liens
CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned
CORRACTS ..... Corrective Action Report
RCRA-TSDF ..... Resource Conservation and Recovery Act Information
RCRA-LQG ..... Resource Conservation and Recovery Act Information
RCRA-SQG ..... Resource Conservation and Recovery Act Information
ERNS ..... Emergency Response Notification System
HMIRS ..... Hazardous Materials Information Reporting System
US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

EXECUTIVE SUMMARY

DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
US BROWNFIELDS	A Listing of Brownfields Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS	Section 7 Tracking Systems
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

HSWDS	Hazardous Substance Waste Disposal Site Inventory
SHWS	Inactive Hazardous Waste Disposal Sites in New York State
DEL SHWS	Delisted Registry Sites
SWF/LF	Facility Register
SWRCY	Registered Recycling Facility List
SWTIRE	Registered Waste Tire Storage & Facility List
LTANKS	Spills Information Database
HIST LTANKS	Listing of Leaking Storage Tanks
UST	Petroleum Bulk Storage (PBS) Database
CBS UST	Chemical Bulk Storage Database
MOSF UST	Major Oil Storage Facilities Database
AST	Petroleum Bulk Storage
CBS AST	Chemical Bulk Storage Database
MOSF AST	Major Oil Storage Facilities Database
ENG CONTROLS	Registry of Engineering Controls
INST CONTROL	Registry of Institutional Controls
VCP	Voluntary Cleanup Agreements
DRYCLEANERS	Registered Drycleaners
Brownfields	Brownfields Site List
SPDES	State Pollutant Discharge Elimination System
AIRS	Air Emissions Data

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE AND LOCAL RECORDS

SPILLS: Data collected on spills reported to NYSDEC. is required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from PBS regs), or 6 NYCRR Section 595.2 (from CBS regs). It includes spills active as of April 1, 1986, as well as spills occurring since this date.

A review of the NY Spills list, as provided by EDR, and dated 11/08/2005 has revealed that there is 1 NY Spills site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
POLE MOUNTED TRANSFORMER	***CENTRAL HWY / S MOUNT***	***0 - 1/8 NE***	***1***	***6***
Date Closed: 10/14/99				

HIST SPILLS: This database contains records of chemical and petroleum spill incidents. Under State law, petroleum and hazardous chemical spills that can impact the waters of the state must be reported by the spiller (and, in some cases, by anyone who has knowledge of the spills). In 2002, the Department of Environmental Conservation stopped providing updates to its original Spills Information Database. This database includes fields that are no longer available from the NYDEC as of January 1, 2002. Current information may be found in the NY SPILLS database.

A review of the NY Hist Spills list, as provided by EDR, and dated 01/01/2002 has revealed that there is 1 NY Hist Spills site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Dist / Dir	Map ID	Page
POLE MOUNTED TRANSFORMER	***CENTRAL HWY / S MOUNT***	***0 - 1/8 NE***	***1***	***6***
Spill Closed Dt: 10/14/99				

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
HI-TOR INDUSTRIAL PARK	SHWS
KYTO DIAGNOSTICS	CERC-NFRAP
DEXTER LANDFILL	CERC-NFRAP
JR SUNOCO INC	LTANKS, HIST LTANKS
SHELL STATION	LTANKS, HIST LTANKS
CHINA ECHO REST.	LTANKS, HIST LTANKS
FRED HOLT, PROFESSIONAL PLAZA OF R	UST
SOLID WASTE DEPARTMENT	UST, AST
GEORGE SMITH & SONS	UST, AST
UNION STATE BANK	UST
ROCKLAND COUNTY COURTHOUSE	AST
NYSDOT BIN 1045420	RCRA-SQG, FINDS
NYSDOT BIN 1027680	RCRA-SQG, FINDS
NYSDOT BIN 1027719	RCRA-SQG, FINDS
NYSDOT BIN 106891	RCRA-SQG, FINDS
NYSDOT BIN 1068692	RCRA-SQG, FINDS
PALISADES INTERSTATE PARK COMM	RCRA-SQG
NYSDOT BIN 1027660	RCRA-SQG, FINDS
NYSDOT BIN 1091221 & 1091222	RCRA-SQG, FINDS
NYSDOT BIN 1091231 & 1091232	RCRA-SQG, FINDS
EAST RAMAPO SCH DIST-SUMMIT PARK P	RCRA-SQG, FINDS
SMITH FARM - FORMER	RCRA-SQG
ENTRANCE TO COUNTY PARK	NY Spills
RT 304 / ROCKLAND CAFE	NY Spills, NY Hist Spills
LITTLE TOR EXXON S/S	NY Spills, NY Hist Spills
EXXON	NY Spills, NY Hist Spills
LITTLE TOUR RD	NY Spills
LITTLE TORE RD	NY Spills
SMITH FARMS	NY Spills
S MOUNTAIN RD/RIDGE RD	NY Spills, NY Hist Spills
NEW CITY WELL FIELD	CBS AST
ROCKLAND COUNTY SEWER DISTRICT #1	CBS AST
CLARKSTOWN LANDFILL	ODI

OVERVIEW MAP - 1586024.2s

0 1/4 1/2 1 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- State Wetlands

SITE NAME: Orange and Rockland Utl. Phase I ESA	CLIENT: HDR / LMS
ADDRESS: So. Mtn./Little Tor Roads	CONTACT: Terry Schneider
CITY/STATE: Clarkstown NY	INQUIRY #: 1586024.2s
ZIP: 10956	DATE: January 04, 2006

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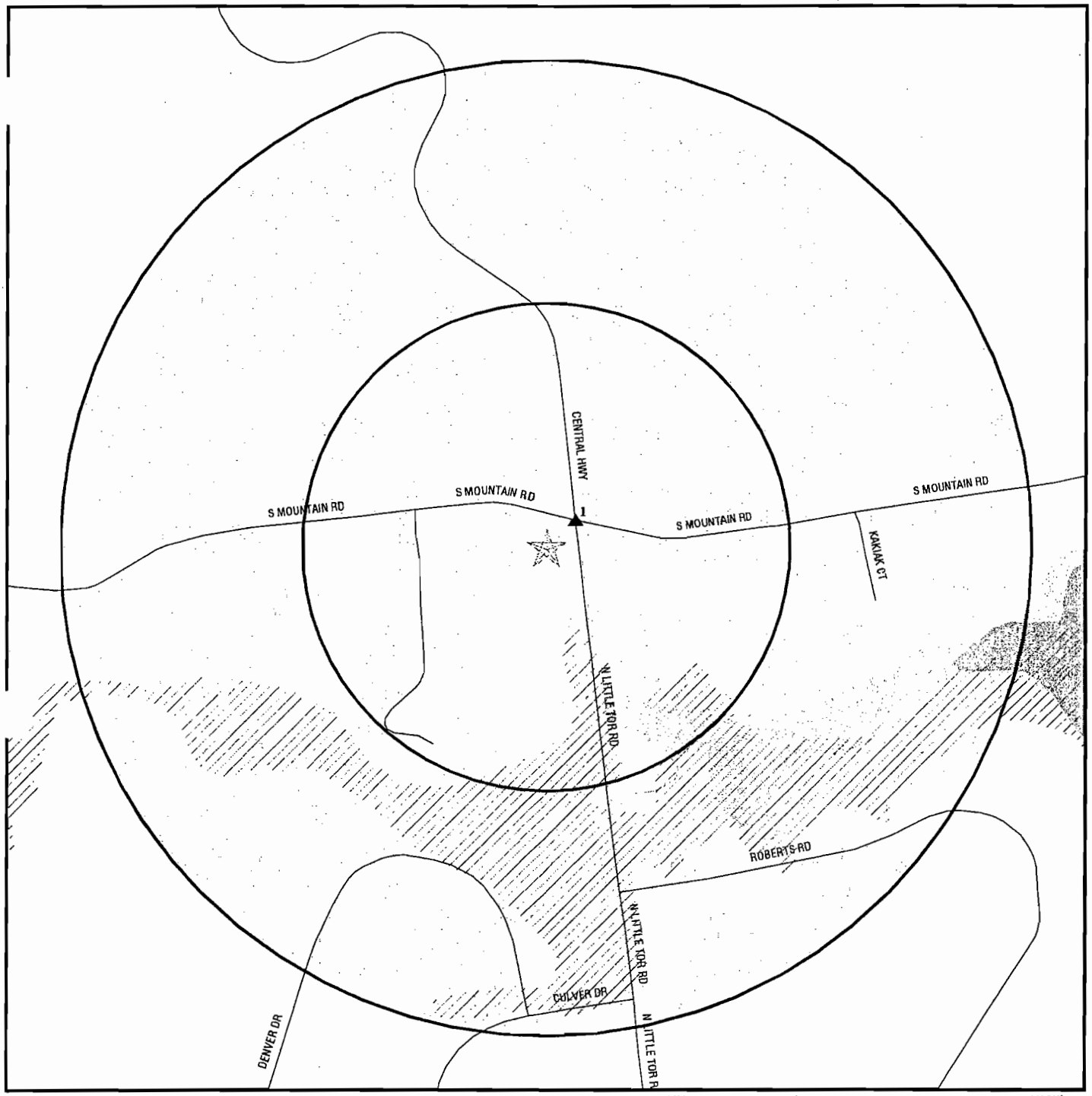
DETAIL MAP - 1586024.2s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Federal Wetlands
- State Wetlands

SITE NAME: Orange and Rockland Utl. Phase I ESA	CLIENT: HDR / LMS
ADDRESS: So. Mtn./Little Tor Roads	CONTACT: Terry Schneider
CITY/STATE: Clarkstown NY	INQUIRY #: 1586024.2s
ZIP: 10956	DATE: January 04, 2006

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL RECORDS								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
FTTS		TP	NR	NR	NR	NR	NR	0
SSTS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
STATE AND LOCAL RECORDS								
HSWDS		0.500	0	0	0	NR	NR	0
State Haz. Waste		1.000	0	0	0	0	NR	0
DEL SHWS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
SWRCY		0.500	0	0	0	NR	NR	0
SWTIRE		0.500	0	0	0	NR	NR	0
LTANKS		0.500	0	0	0	NR	NR	0
HIST LTANKS		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
CBS UST		0.250	0	0	NR	NR	NR	0
MOSF UST		0.500	0	0	0	NR	NR	0
AST		0.250	0	0	NR	NR	NR	0
CBS AST		0.250	0	0	NR	NR	NR	0
MOSF AST		0.500	0	0	0	NR	NR	0
NY Spills		0.125	1	NR	NR	NR	NR	1

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NY Hist Spills		0.125	1	NR	NR	NR	NR	1
ENG CONTROLS		0.500	0	0	0	NR	NR	0
INST CONTROL		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
DRYCLEANERS		0.250	0	0	NR	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0
SPDES		TP	NR	NR	NR	NR	NR	0
AIRS		TP	NR	NR	NR	NR	NR	0
TRIBAL RECORDS								
INDIAN RESERV		1.000	0	0	0	0	NR	0
EDR PROPRIETARY RECORDS								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1 **POLE MOUNTED TRANSFORMER** **NY Spills** **S104283055**
NE **CENTRAL HWY / S MOUNTAIN** **NY Hist Spills** **N/A**
< 1/8 **NEW CITY, NY**
107 ft.

Relative:
Higher

Actual:
150 ft.

SPILLS:

DER Facility ID :	169405		
Site ID :	203715	CID :	390
Spill Number:	9908572	Region of Spill:	3
Investigator:	DXWEITZ	SWIS:	4400
Caller Name:	ELLEN FRISCOE	Caller Agency:	ORANGE & ROCKLAND UTIL
Caller Phone:	(914) 577-2967	Caller Extension:	Not reported
Notifier Name:	ELLEN FRISCOE	Notifier Agency:	ORANGE & ROCKLAND UTIL
Notifier Phone:	(914) 577-2967	Notifier Extension:	Not reported
Spill Date:	10/14/99	Reported to Dept:	10/14/99
Facility Address 2:	Not reported		
Facility Type:	ER		
Referred To :	Not reported	DEC Region :	3
Remediation Phase :	0		
Program Number :	9908572		
Spill Cause:	OTHER		
Water Affected:	Not reported	Spill Source:	COMMERCIAL/INDUSTRIAL
Contact Name:	ELLEN FRISCOE	Facility Tele:	(914) 577-2967
Spill Notifier:	RESPONSIBLE PARTY		
Spiller:	TIM HALLOCK		
Spiller Company :	ORANGE & ROCKLAND UTIL		
Spiller Address:	1 BLUE HILL PLAZA PEARL RIVER, NY 10965		
Spiller County :	001		
Spill Class:	Known release with minimal potential for fire or hazard. DEC Response. Willing Responsible Party. Corrective action taken.		
Spill Closed Dt:	**10/14/99**		
Cleanup Ceased:	/ /		
Last Inspection:	/ /	Cleanup Meets Std:	True
Recommended Penalty:	Penalty Not Recommended		
UST Trust:	False		
Spill Record Last Update:	10/19/99		
Date Spill Entered In Computer Data File:	10/14/99		

Material

Material ID :	297684
Site ID :	203715
Operable Unit :	01
Operable Unit ID :	1087255
Material Code :	0016A
Material Name :	NON PCB OIL
Case No. :	Not reported
Material FA :	Petroleum
Quantity :	8.00
Units :	G
Recovered :	0.00
Resource Affected - Soil :	Yes
Resource Affected - Air :	No
Resource Affected - Indoor Air :	No
Resource Affected - Groundwater :	No
Resource Affected - Surface Water :	No
Resource Affected - Drinking Wtr :	No
Resource Affected - Sewer :	No
Resource Affected - Impervious Surface :	No
Resource Affected - Subway :	No

POLE MOUNTED TRANSFORMER (Continued) **S104283055**

Resource Affected - Utility : No
Resource Affected - Impervious Surface : No
Oxygenate : False
DEC Remarks : Prior to Sept, 2004 data translation this spill Lead DEC Field was "WEITZ"
Remark: tree took down pole and spilled contents of transformer onto ground is all non - pcb transformer oil. clean up crew on scene - speedy dry was put down to absorb the oil for now

HIST SPILLS:

Spill Number:	9908572	Region of Spill:	3
Investigator:	WEITZ	SWIS:	39
Caller Name:	Not reported	Caller Agency:	Not reported
Caller Phone:	Not reported	Caller Extension:	Not reported
Notifier Name:	Not reported	Notifier Agency:	Not reported
Notifier Phone:	Not reported	Notifier Extension:	Not reported
Spill Date:	10/14/1999 12:30	Reported to Dept:	10/14/99 15:35
Spill Cause:	Other	Resource Affected:	On Land
Water Affected:	Not reported	Spill Source:	Other Commercial/Industrial
Facility Contact:	TIM HALLOCK	Facility Tele:	(914) 577-3160
Spill Notifier:	Responsible Party	PBS Number:	Not reported
Spiller Contact:	ELLEN FRISCOE	Spiller Phone:	(914) 577-2967

Spiller: ORANGE & ROCKLAND UTIL
Spiller Address: 1 BLUE HILL PLAZA
PEARL RIVER, NY 10965
DEC Remarks : Not reported
Remark: tree took down pole and spilled contents of transformer onto ground is all non - pcb transformer oil. clean up crew on scene - speedy dry was put down to absorb the oil for now
Spill Class: Known release with minimal potential for fire or hazard. DEC Response. Willing Responsible Party. Corrective action taken.

Material:
Material Class Type: 1
Quantity Spilled: 8
Units: Gallons
Unknown Qty Spilled: 8
Quantity Recovered: 0
Unknown Qty Recovered: False
Material: NON PCB OIL
Class Type: Petroleum
Chem Abstract Service Number: NON PCB OIL
Last Date: 09/28/1994
Num Times Material Entry In File: 2798

Spill Closed Dt: 10/14/99
Cleanup Ceased: / /
Last Inspection: / / Cleanup Meets Std:True
Recommended Penalty: Penalty Not Recommended
Spiller Cleanup Dt/ / Enforcement Date: / /
Invstgn Complete:/ / UST Involvement: False
Spill Record Last Update: 10/19/99
Is Updated: False
Corrective Action Plan Submitted: / /
Date Spill Entered In Computer Data File: 10/14/99
Date Region Sent Summary to Central Office: / /

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CLARKSTOWN	1003864128	KYTO DIAGNOSTICS	47 RT 303	10956	CERC-NFRAP
CLARKSTOWN	1003864148	DEXTER LANDFILL	RT 303 SOUTH OF NEW YORK STATE	10956	CERC-NFRAP
CLARKSTOWN	1007444987	CLARKSTOWN LANDFILL	ROUTE 303		ODI
CLARKSTOWN	1000790179	NYSDOT BIN 1045420	RTE 304 OVER LAKE DEFOREST	10956	RCRA-SQG, FINDS
CLARKSTOWN	1000790090	NYSDOT BIN 1027680	RTE 59 & I 87	10956	RCRA-SQG, FINDS
CLARKSTOWN	1000790094	NYSDOT BIN 1027719	RTE 59 & STRAWTOWN RD	10956	RCRA-SQG, FINDS
CLARKSTOWN	1000790182	NYSDOT BIN 106891	RTE 987C OVER I 87	10956	RCRA-SQG, FINDS
CLARKSTOWN	1000790183	NYSDOT BIN 1068692	RTE 987C OVER I 87	10956	RCRA-SQG, FINDS
CLARKSTOWN	1007112417	PALISADES INTERSTATE PARK COMM	RTE 9W MILE MARKER 8501-1107	10956	RCRA-SQG
CLARKSTOWN	1000191429	NYSDOT BIN 1027660	BRIDGE RTE 59 PASCACK CREEK	10956	RCRA-SQG, FINDS
CLARKSTOWN	S106385166	ENTRANCE TO COUNTY PARK	CENTRAL HIGHWAY	10956	NY Spills
GARNERVILLE	S104279075	JR SUNOCO INC	123 RT 202	10923	LTANKS, HIST LTANKS
GARNERVILLE	S105135252	SHELL STATION	CENTRAL HIGHWAY / RR ROAD	10923	LTANKS, HIST LTANKS
HAVERSTRAW	S106905140	HI-TOR INDUSTRIAL PARK	NORTH SIDE OF ROUTE 202 / LI	10927	SHWS
NEW CITY	1000790989	NYSDOT BIN 1091221 & 1091222	RTE 304 OVER EHRHARDT RD	10956	RCRA-SQG, FINDS
NEW CITY	1000791246	NYSDOT BIN 1091231 & 1091232	RTE 304 OVER RTE 59	10956	RCRA-SQG, FINDS
NEW CITY	U003528474	FRED HOLT, PROFESSIONAL PLAZA OF R	ROUTE 45	10956	UST
NEW CITY	1000393601	EAST RAMAPO SCH DIST-SUMMIT PARK P	RTE 45	10956	RCRA-SQG, FINDS
NEW CITY	S103275489	RT 304 / ROCKLAND CAFE	BEHIND BLDG	10956	NY Spills, NY Hist Spills
NEW CITY	U003711908	SOLID WASTE DEPARTMENT	BOX 10 ROUTE 45	10956	UST, AST
NEW CITY	1007208687	SMITH FARM - FORMER	N LITTLE TOR RD 420 YDS N FROM	10956	RCRA-SQG
NEW CITY	S100153580	CHINA ECHO REST.	LITTLE TAR ROAD	10956	LTANKS, HIST LTANKS
NEW CITY	S102106978	LITTLE TOR EXXON S/S	279 LITTLE TOR RD.	10956	NY Spills, NY Hist Spills
NEW CITY	S104195077	EXXON	LITTLE TOR RD	10956	NY Spills, NY Hist Spills
NEW CITY	S106005706		LITTLE TOUR RD	10956	NY Spills
NEW CITY	S106017856		LITTLE TORE RD	10956	NY Spills
NEW CITY	S106018849	SMITH FARMS	LITTLE TOUR RD	10956	NY Spills
NEW CITY	U003528517	GEORGE SMITH & SONS	323 LITTLE TOR ROAD	10956	UST, AST
NEW CITY	U003711906	UNION STATE BANK	270 LITTLE TOR ROAD	10956	UST
NEW CITY	A100153746	ROCKLAND COUNTY COURTHOUSE	MAIN ST.	10956	AST
NEW CITY	S104649691		S MOUNTAIN RD/RIDGE RD	10956	NY Spills, NY Hist Spills
NEW CITY	S102639122	NEW CITY WELL FIELD	WEST OF OLD RT. 304	10956	CBS AST
NEW CITY	S104191299	ROCKLAND COUNTY SEWER DISTRICT #1	NORTH PUMP STATION	10956	CBS AST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/14/05
Date Data Arrived at EDR: 11/02/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 11/02/05
Next Scheduled EDR Contact: 01/30/06
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 10/14/05
Date Data Arrived at EDR: 11/02/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 11/02/05
Next Scheduled EDR Contact: 01/30/06
Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/14/05
Date Data Arrived at EDR: 11/02/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 35

Source: EPA
Telephone: N/A
Last EDR Contact: 11/02/05
Next Scheduled EDR Contact: 01/30/06
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Date Data Arrived at EDR: 02/02/94
Date Made Active in Reports: 03/30/94
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 09/19/05
Date Data Arrived at EDR: 10/21/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 6

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 10/21/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/20/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 37

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 09/20/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 10/13/05
Date Data Arrived at EDR: 10/27/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 41

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 01/16/06
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 10/14/05
Date Data Arrived at EDR: 10/27/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 41

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/27/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/04
Date Data Arrived at EDR: 01/27/05
Date Made Active in Reports: 03/24/05
Number of Days to Update: 56

Source: National Response Center, United States Coast Guard
Telephone: 202-260-2342
Last EDR Contact: 01/27/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 08/17/05
Date Data Arrived at EDR: 10/18/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 50

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/18/05
Next Scheduled EDR Contact: 01/16/06
Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/02/05
Date Data Arrived at EDR: 08/12/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 55

Source: Environmental Protection Agency
Telephone: 703-603-8867
Last EDR Contact: 07/05/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/10/05
Date Data Arrived at EDR: 02/11/05
Date Made Active in Reports: 04/06/05
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 703-603-8867
Last EDR Contact: 01/03/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 10/01/03
Date Data Arrived at EDR: 11/12/03
Date Made Active in Reports: 11/21/03
Number of Days to Update: 9

Source: USGS
Telephone: 703-692-8801
Last EDR Contact: 08/09/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/04
Date Data Arrived at EDR: 06/29/05
Date Made Active in Reports: 08/08/05
Number of Days to Update: 40

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 06/29/05
Next Scheduled EDR Contact: 10/03/05
Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 08/18/05
Date Data Arrived at EDR: 08/18/05
Date Made Active in Reports: 10/06/05
Number of Days to Update: 49

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 08/11/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/04
Date Data Arrived at EDR: 02/15/05
Date Made Active in Reports: 04/25/05
Number of Days to Update: 69

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/27/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 10/07/05
Date Data Arrived at EDR: 10/20/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 48

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 10/06/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized. In 1978, 24 inactive uranium mill tailings sites in Oregon, Idaho, Wyoming, Utah, Colorado, New Mexico, Texas, North Dakota, South Dakota, Pennsylvania, and on Navajo and Hopi tribal lands, were targeted for cleanup by the Department of Energy.

Date of Government Version: 12/29/04
Date Data Arrived at EDR: 01/07/05
Date Made Active in Reports: 03/14/05
Number of Days to Update: 66

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 12/21/04
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85
Date Data Arrived at EDR: 08/09/04
Date Made Active in Reports: 09/17/04
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 05/23/95
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 07/13/05
Date Made Active in Reports: 08/17/05
Number of Days to Update: 35

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 07/13/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Date Data Arrived at EDR: 04/27/04
Date Made Active in Reports: 05/21/04
Number of Days to Update: 24

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 07/18/05
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/12/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 50

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 10/12/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 50

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 09/19/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 01/03/05
Date Made Active in Reports: 01/25/05
Number of Days to Update: 22

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 11/29/04
Next Scheduled EDR Contact: 10/17/05
Data Release Frequency: Annually

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 08/30/05
Date Data Arrived at EDR: 09/13/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 09/13/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/18/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 50

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/03/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/12/05
Date Data Arrived at EDR: 09/27/05
Date Made Active in Reports: 11/14/05
Number of Days to Update: 48

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 09/27/05
Next Scheduled EDR Contact: 12/26/05
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/29/05
Date Data Arrived at EDR: 10/04/05
Date Made Active in Reports: 11/14/05
Number of Days to Update: 41

Source: EPA
Telephone: N/A
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Date Data Arrived at EDR: 07/03/95
Date Made Active in Reports: 08/07/95
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 09/06/05
Next Scheduled EDR Contact: 12/05/05
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 06/17/05
Date Made Active in Reports: 08/04/05
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/17/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

HSWDS: Hazardous Substance Waste Disposal Site Inventory

The list includes any known or suspected hazardous substance waste disposal sites. Also included are sites delisted from the Registry of Inactive Hazardous Waste Disposal Sites and non-Registry sites that U.S. EPA Preliminary Assessment (PA) reports or Site Investigation (SI) reports were prepared. Hazardous Substance Waste Disposal Sites are eligible to be Superfund sites now that the New York State Superfund has been refinanced and changed. This means that the study inventory has served its purpose and will no longer be maintained as a separate entity. The last version of the study inventory is frozen in time. The sites on the study will not automatically be made Superfund sites, rather each site will be further evaluated for listing on the Registry. So overtime they will be added to the registry or not.

Date of Government Version: 09/01/02
Date Data Arrived at EDR: 10/15/02
Date Made Active in Reports: 10/30/02
Number of Days to Update: 15

Source: Department of Environmental Conservation
Telephone: 518-402-9564
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: No Update Planned

SHWS: Inactive Hazardous Waste Disposal Sites in New York State

Referred to as the State Superfund Program, the Inactive Hazardous Waste Disposal Site Remedial Program is the cleanup program for inactive hazardous waste sites and now includes hazardous substance sites

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/14/05
Date Made Active in Reports: 11/02/05
Number of Days to Update: 49

Source: Department of Environmental Conservation
Telephone: 518-402-9622
Last EDR Contact: 09/14/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Annually

DEL SHWS: Delisted Registry Sites

A database listing of sites delisted from the Registry of Inactive Hazardous Waste Disposal Sites.

Date of Government Version: 05/16/05
Date Data Arrived at EDR: 05/19/05
Date Made Active in Reports: 06/16/05
Number of Days to Update: 28

Source: Department of Environmental Conservation
Telephone: 518-402-9622
Last EDR Contact: 09/14/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWF/LF: Facility Register
Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 07/13/05
Date Data Arrived at EDR: 11/01/05
Date Made Active in Reports: 12/08/05
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-457-2051
Last EDR Contact: 10/31/05
Next Scheduled EDR Contact: 01/30/06
Data Release Frequency: Semi-Annually

SWRCY: Registered Recycling Facility List
A listing of recycling facilities.

Date of Government Version: 08/15/05
Date Data Arrived at EDR: 11/15/05
Date Made Active in Reports: 12/08/05
Number of Days to Update: 23

Source: Department of Environmental Conservation
Telephone: 518-402-8705
Last EDR Contact: 11/14/05
Next Scheduled EDR Contact: 02/13/06
Data Release Frequency: Semi-Annually

SWTIRE: Registered Waste Tire Storage & Facility List

Date of Government Version: 04/01/04
Date Data Arrived at EDR: 05/19/04
Date Made Active in Reports: 06/25/04
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8694
Last EDR Contact: 08/18/05
Next Scheduled EDR Contact: 11/14/05
Data Release Frequency: Annually

LTANKS: Spills Information Database
Leaking Storage Tank Incident Reports. These records contain an inventory of reported leaking storage tank incidents reported from 4/1/86 through the most recent update. They can be either leaking underground storage tanks or leaking aboveground storage tanks. The causes of the incidents are tank test failures, tank failures or tank overfills.

Date of Government Version: 11/08/05
Date Data Arrived at EDR: 11/22/05
Date Made Active in Reports: 01/04/06
Number of Days to Update: 43

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 11/22/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Varies

HIST LTANKS: Listing of Leaking Storage Tanks
A listing of leaking underground and aboveground storage tanks. The causes of the incidents are tank test failures, tank failures or tank overfills. In 2002, the Department of Environmental Conservation stopped providing updates to its original Spills Information Database. This database includes fields that are no longer available from the NYDEC as of January 1, 2002. Current information may be found in the NY LTANKS database. Department of Environmental Conservation.

Date of Government Version: 01/01/02
Date Data Arrived at EDR: 07/08/05
Date Made Active in Reports: 07/14/05
Number of Days to Update: 6

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 07/07/05
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST: Petroleum Bulk Storage (PBS) Database
Facilities that have petroleum storage capacities in excess of 1,100 gallons and less than 400,000 gallons.

Date of Government Version: 01/01/02
Date Data Arrived at EDR: 02/20/02
Date Made Active in Reports: 03/22/02
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: No Update Planned

CBS UST: Chemical Bulk Storage Database
Facilities that store regulated hazardous substances in underground tanks of any size

Date of Government Version: 01/01/02
Date Data Arrived at EDR: 02/20/02
Date Made Active in Reports: 03/22/02
Number of Days to Update: 30

Source: NYSDEC
Telephone: 518-402-9549
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: No Update Planned

MOSF UST: Major Oil Storage Facilities Database
Facilities that may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater.

Date of Government Version: 01/01/02
Date Data Arrived at EDR: 02/20/02
Date Made Active in Reports: 03/22/02
Number of Days to Update: 30

Source: NYSDEC
Telephone: 518-402-9549
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: Varies

AST: Petroleum Bulk Storage
Registered Aboveground Storage Tanks.

Date of Government Version: 01/01/02
Date Data Arrived at EDR: 02/20/02
Date Made Active in Reports: 03/22/02
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: No Update Planned

CBS AST: Chemical Bulk Storage Database
Facilities that store regulated hazardous substances in aboveground tanks with capacities of 185 gallons or greater, and/or in underground tanks of any size.

Date of Government Version: 01/01/02
Date Data Arrived at EDR: 02/20/02
Date Made Active in Reports: 03/22/02
Number of Days to Update: 30

Source: NYSDEC
Telephone: 518-402-9549
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: No Update Planned

MOSF AST: Major Oil Storage Facilities Database
Facilities that may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater.

Date of Government Version: 01/01/02
Date Data Arrived at EDR: 02/20/02
Date Made Active in Reports: 03/22/02
Number of Days to Update: 30

Source: NYSDEC
Telephone: 518-402-9549
Last EDR Contact: 07/25/05
Next Scheduled EDR Contact: 10/24/05
Data Release Frequency: No Update Planned

SPILLS: Spills Information Database
Data collected on spills reported to NYSDEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from PBS regs), or 6 NYCRR Section 595.2 (from CBS regs). It includes spills active as of April 1, 1986, as well as spills occurring since this date.

Date of Government Version: 11/08/05
Date Data Arrived at EDR: 11/22/05
Date Made Active in Reports: 01/04/06
Number of Days to Update: 43

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 11/22/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST SPILLS: SPILLS Database

This database contains records of chemical and petroleum spill incidents. Under State law, petroleum and hazardous chemical spills that can impact the waters of the state must be reported by the spiller (and, in some cases, by anyone who has knowledge of the spills). In 2002, the Department of Environmental Conservation stopped providing updates to its original Spills Information Database. This database includes fields that are no longer available from the NYDEC as of January 1, 2002. Current information may be found in the NY SPILLS database. Department of Environmental Conservation.

Date of Government Version: 01/01/02
Date Data Arrived at EDR: 07/08/05
Date Made Active in Reports: 07/14/05
Number of Days to Update: 6

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 07/07/05
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

ENG CONTROLS: Registry of Engineering Controls

Environmental Remediation sites that have engineering controls in place.

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/14/05
Date Made Active in Reports: 11/02/05
Number of Days to Update: 49

Source: Department of Environmental Conservation
Telephone: 518-402-9553
Last EDR Contact: 09/14/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Quarterly

INST CONTROL: Registry of Institutional Controls

Environmental Remediation sites that have institutional controls in place.

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/14/05
Date Made Active in Reports: 11/02/05
Number of Days to Update: 49

Source: Department of Environmental Conservation
Telephone: 518-402-9553
Last EDR Contact: 09/14/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Quarterly

VCP: Voluntary Cleanup Agreements

New York established its Voluntary Cleanup Program (VCP) to address the environmental, legal and financial barriers that often hinder the redevelopment and reuse of contaminated properties. The Voluntary Cleanup Program was developed to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on "greenfield" sites.

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/14/05
Date Made Active in Reports: 11/02/05
Number of Days to Update: 49

Source: Department of Environmental Conservation
Telephone: 518-402-9711
Last EDR Contact: 09/14/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Semi-Annually

DRYCLEANERS: Registered Drycleaners

A listing of all registered drycleaning facilities.

Date of Government Version: 06/15/04
Date Data Arrived at EDR: 06/15/04
Date Made Active in Reports: 07/29/04
Number of Days to Update: 44

Source: Department of Environmental Conservation
Telephone: 518-402-8403
Last EDR Contact: 05/21/04
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

BROWNFIELDS: Brownfields Site List

A Brownfield is any real property where redevelopment or re-use may be complicated by the presence or potential presence of a hazardous waste, petroleum, pollutant, or contaminant.

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/14/05
Date Made Active in Reports: 11/02/05
Number of Days to Update: 49

Source: Department of Environmental Conservation
Telephone: 518-402-9764
Last EDR Contact: 09/14/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Semi-Annually

SPDES: State Pollutant Discharge Elimination System

New York State has a state program which has been approved by the United States Environmental Protection Agency for the control of wastewater and stormwater discharges in accordance with the Clean Water Act. Under New York State law the program is known as the State Pollutant Discharge Elimination System (SPDES) and is broader in scope than that required by the Clean Water Act in that it controls point source discharges to groundwaters as well as surface waters.

Date of Government Version: 08/30/05
Date Data Arrived at EDR: 09/02/05
Date Made Active in Reports: 10/05/05
Number of Days to Update: 33

Source: Department of Environmental Conservation
Telephone: 518-402-8233
Last EDR Contact: 08/08/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: No Update Planned

AIRS: Air Emissions Data

Date of Government Version: 12/31/02
Date Data Arrived at EDR: 09/13/04
Date Made Active in Reports: 10/18/04
Number of Days to Update: 35

Source: Department of Environmental Conservation
Telephone: 518-402-8452
Last EDR Contact: 08/22/05
Next Scheduled EDR Contact: 11/21/05
Data Release Frequency: Annually

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 10/01/03
Date Data Arrived at EDR: 11/12/03
Date Made Active in Reports: 11/21/03
Number of Days to Update: 9

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 08/09/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Semi-Annually

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

Date of Government Version: 11/15/05
Date Data Arrived at EDR: 12/05/05
Date Made Active in Reports: 12/28/05
Number of Days to Update: 23

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: 12/05/05
Next Scheduled EDR Contact: 03/13/06
Data Release Frequency: No Update Planned

COUNTY RECORDS

CORTLAND COUNTY:

Cortland County Storage Tank Listing

Date of Government Version: 09/28/05
Date Data Arrived at EDR: 10/04/05
Date Made Active in Reports: 11/03/05
Number of Days to Update: 30

Source: Cortland County Health Department
Telephone: 607-753-5035
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Quarterly

Cortland County Storage Tank Listing

Date of Government Version: 09/28/05
Date Data Arrived at EDR: 10/04/05
Date Made Active in Reports: 11/03/05
Number of Days to Update: 30

Source: Cortland County Health Department
Telephone: 607-753-5035
Last EDR Contact: 08/29/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NASSAU COUNTY:

Registered Tank Database

Date of Government Version: 05/21/03
Date Data Arrived at EDR: 05/27/03
Date Made Active in Reports: 06/09/03
Number of Days to Update: 13

Source: Nassau County Health Department
Telephone: 516-571-3314
Last EDR Contact: 08/01/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: No Update Planned

Registered Tank Database

Date of Government Version: 05/21/03
Date Data Arrived at EDR: 05/27/03
Date Made Active in Reports: 06/09/03
Number of Days to Update: 13

Source: Nassau County Health Department
Telephone: 516-571-3314
Last EDR Contact: 08/01/05
Next Scheduled EDR Contact: 10/31/05
Data Release Frequency: No Update Planned

Storage Tank Database

Date of Government Version: 05/25/04
Date Data Arrived at EDR: 06/08/04
Date Made Active in Reports: 07/29/04
Number of Days to Update: 51

Source: Nassau County Office of the Fire Marshal
Telephone: 516-572-1000
Last EDR Contact: 08/08/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Varies

Storage Tank Database

Date of Government Version: 05/25/04
Date Data Arrived at EDR: 06/08/04
Date Made Active in Reports: 07/29/04
Number of Days to Update: 51

Source: Nassau County Office of the Fire Marshal
Telephone: 516-572-1000
Last EDR Contact: 08/08/05
Next Scheduled EDR Contact: 11/07/05
Data Release Frequency: Varies

ROCKLAND COUNTY:

Petroleum Bulk Storage Database

Date of Government Version: 10/19/05
Date Data Arrived at EDR: 10/20/05
Date Made Active in Reports: 11/22/05
Number of Days to Update: 33

Source: Rockland County Health Department
Telephone: 914-364-2605
Last EDR Contact: 10/03/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Quarterly

Petroleum Bulk Storage Database

Date of Government Version: 10/19/05
Date Data Arrived at EDR: 10/20/05
Date Made Active in Reports: 11/18/05
Number of Days to Update: 29

Source: Rockland County Health Department
Telephone: 914-364-2605
Last EDR Contact: 10/03/05
Next Scheduled EDR Contact: 01/02/06
Data Release Frequency: Quarterly

SUFFOLK COUNTY:

Storage Tank Database

Date of Government Version: 06/21/05
Date Data Arrived at EDR: 09/19/05
Date Made Active in Reports: 11/03/05
Number of Days to Update: 45

Source: Suffolk County Department of Health Services
Telephone: 631-854-2521
Last EDR Contact: 09/01/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Annually

Storage Tank Database

Date of Government Version: 06/21/05
Date Data Arrived at EDR: 09/19/05
Date Made Active in Reports: 11/03/05
Number of Days to Update: 45

Source: Suffolk County Department of Health Services
Telephone: 631-854-2521
Last EDR Contact: 09/01/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Annually

WESTCHESTER COUNTY:

Listing of Storage Tanks

Listing of underground storage tanks in Westchester County.

Date of Government Version: 05/05/05
Date Data Arrived at EDR: 05/31/05
Date Made Active in Reports: 06/30/05
Number of Days to Update: 30

Source: Westchester County Department of Health
Telephone: 914-813-5161
Last EDR Contact: 04/26/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Varies

Listing of Storage Tanks

Listing of aboveground storage tanks in Westchester County.

Date of Government Version: 05/05/05
Date Data Arrived at EDR: 05/31/05
Date Made Active in Reports: 06/30/05
Number of Days to Update: 30

Source: Westchester County Department of Health
Telephone: 914-813-5161
Last EDR Contact: 04/26/05
Next Scheduled EDR Contact: 11/28/05
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation
Telephone: (800) 823-6277
This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care Providers
Source: Department of Health
Telephone: 212-676-2444

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

New York State Wetlands
Source: Department of Environmental Conservation
Telephone: 518-402-8961
Coverages are based on official New York State Freshwater Wetlands Maps as described in Article 24-0301 of the Environmental Conservation Law.

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

ORANGE AND ROCKLAND UTL. PHASE I ESA
SO. MTN./LITTLE TOR ROADS
CLARKSTOWN, NY 10956

TARGET PROPERTY COORDINATES

Elevation: 147 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

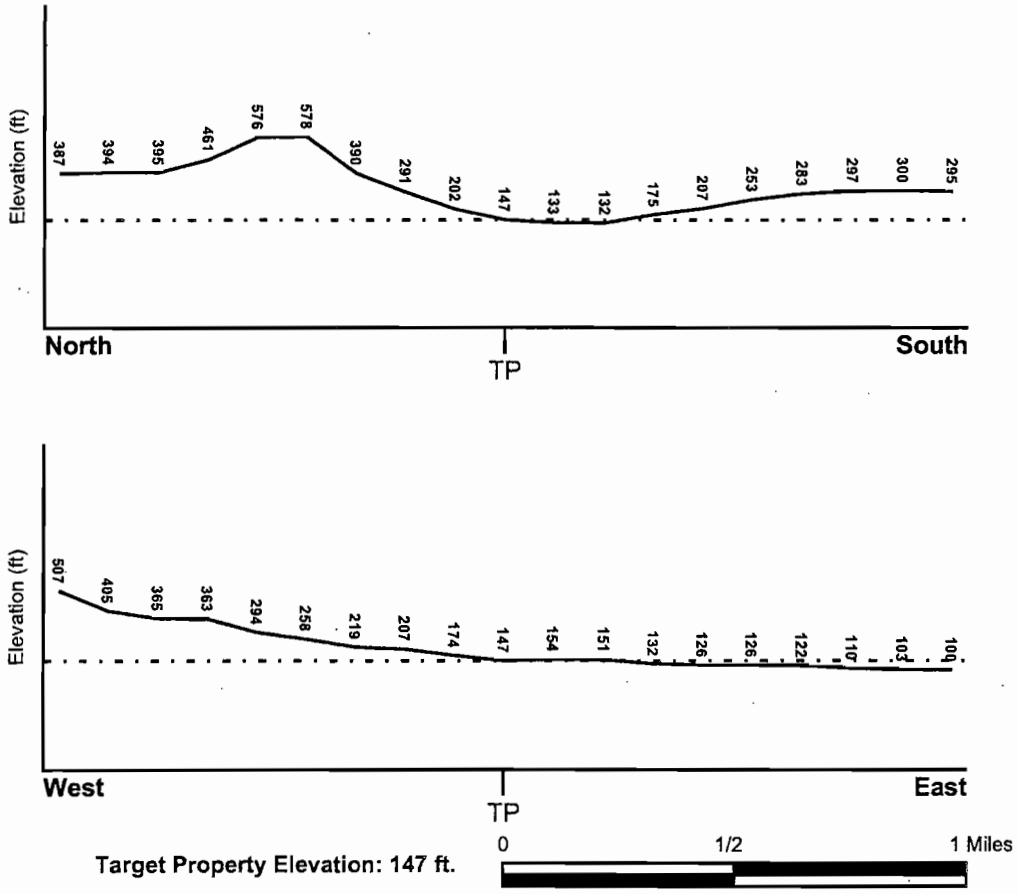
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	41074-B1 THIELLS, NY
General Topographic Gradient:	General SSE
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
ROCKLAND, NY	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	3606790003D
Additional Panels in search area:	3606960001B 3606810010C 3606820001C 3606790002D 3606790001D 3653400005C 3606790004D

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
THIELLS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensiva Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Mesozoic
System:	Triassic
Series:	Triassic mafic intrusives
Code:	Tri *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	WETHERSFIELD
Soil Surface Texture:	gravelly - silt loam
Hydrologic Group:	Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: LOW

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	8 inches	gravelly - silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
2	8 inches	26 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 6.00 Min: 4.50
3	26 inches	65 inches	gravelly - loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 0.20 Min: 0.00	Max: 6.00 Min: 4.50

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures:
fine sandy loam
gravelly - fine sandy loam
gravelly - loamy sand
sandy loam
very stony - silt loam
muck
silt loam
unweathered bedrock

Surficial Soil Types:
fine sandy loam
gravelly - fine sandy loam
gravelly - loamy sand
sandy loam
very stony - silt loam
muck
silt loam
unweathered bedrock

Shallow Soil Types: No Other Soil Types

Deeper Soil Types:
gravelly - sandy loam
stratified
unweathered bedrock
muck
very gravelly - sand

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS2141941	0 - 1/8 Mile WSW
A2	USGS2127400	1/4 - 1/2 Mile East
5	USGS2127481	1/4 - 1/2 Mile South
6	USGS2127508	1/2 - 1 Mile ESE
B7	USGS2142104	1/2 - 1 Mile SW
B8	USGS2142103	1/2 - 1 Mile SW
9	USGS2141969	1/2 - 1 Mile NW
10	USGS2141943	1/2 - 1 Mile West
11	USGS2141982	1/2 - 1 Mile NNW
12	USGS2127075	1/2 - 1 Mile NNE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

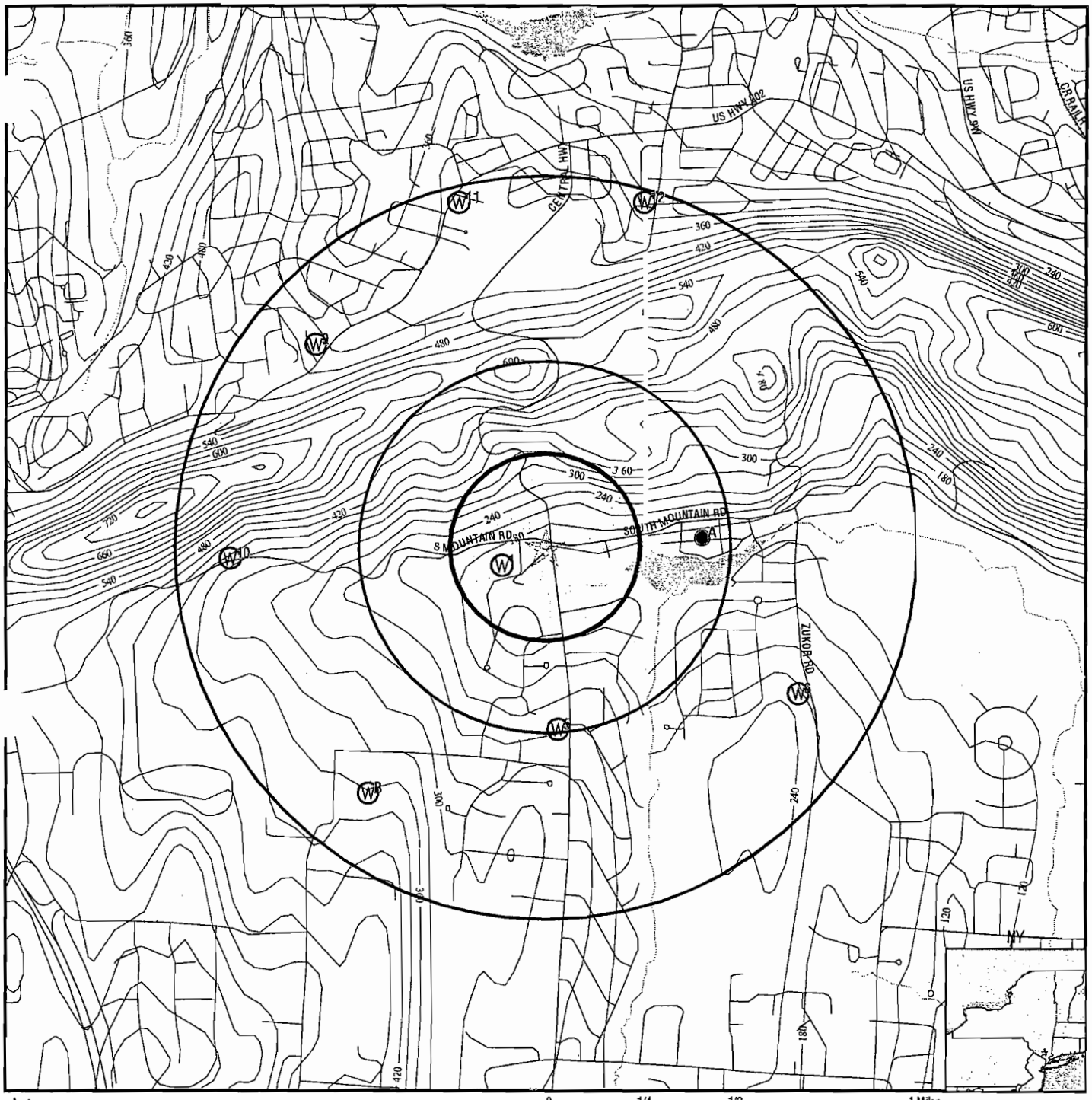
MAP ID	WELL ID	LOCATION FROM TP
A4	NY0003660	1/4 - 1/2 Mile East

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A3	NYWS005502	1/4 - 1/2 Mile East

PHYSICAL SETTING SOURCE MAP - 1586024.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data

SITE NAME: Orange and Rockland Utl. Phase I ESA	CLIENT: HDR / LMS
ADDRESS: So. Mtn./Little Tor Roads	CONTACT: Terry Schneider
CITY/STATE: Clarkstown NY	INQUIRY #: 1586024.2s
ZIP: 10956	DATE: January 04, 2006

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
WSW
0 - 1/8 Mile
Higher | **FED USGS** | **USGS2141941**

Agency cd:	USGS	Site no:	411102074002801
Site name:	RO 178		
Latitude:	411102		
Longitude:	0740028	Dec lat:	41.18398373
Dec lon:	-74.00736264	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	THIELLS Q-24-2	Map scale:	Not Reported
Altitude:	180.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	HackensackPassaic. New Jersey, New York. Area = 1120 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19470101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	110	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1947-01-01	Ground water data end date:	1947-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

A2
East
1/4 - 1/2 Mile
Lower | **FED USGS** | **USGS2127400**

Agency cd:	USGS	Site no:	411106073595201
Site name:	RO 265		
Latitude:	411106		
Longitude:	0735952	Dec lat:	41.18509483
Dec lon:	-73.99736233	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	HAVERSTRAW Q-25-1	Map scale:	Not Reported
Altitude:	125.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	HackensackPassaic. New Jersey, New York. Area = 1120 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19290101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	190	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	1957-07-24
Water quality data end date:	1957-07-24	Water quality data count:	1
Ground water data begin date:	0000-00-00	Ground water data end date:	0000-00-00
Ground water data count:	0		

Ground-water levels, Number of Measurements: 0

A3
East
1/4 - 1/2 Mile
Lower

NY WELLS **NYWS005502**

Well Id:	NY4303660	System name:	LAKE LUCILLE PROP OWNERS ASSOC
System Id:	WL1	Well name:	WELL #1
Type:	WL	Active?:	A
County:	ROCKLAND COUNTY	Latitude:	411106 000
Longitude:	735950 000	Slec_type_:	AC
Agency:	BERGOLD, SANDY		
Address:	3 SHORE ROAD		
City/State/Zip:	NEW CITY NY 10956		
Phone:	Not Reported		

A4
East
1/4 - 1/2 Mile
Lower

FRDS PWS **NY0003660**

PWS ID:	NY0003660	PWS Status:	Active
Date Initiated:	Not Reported	Date Deactivated:	Not Reported
PWS Name:	LAKE LUCILLE PROP OWNERS ASSOC 22 SHORE RD NEW CITY, NY 10956		
Addressee / Facility:	System Owner/Responsible Party BHATTACHARYYA JAYA LAKE LUCILLE PROP OWNERS ASSOC 22 SHORE RD NEW CITY, NY 10956		
Facility Latitude:	41 11 06	Facility Longitude:	073 59 50
City Served:	CLARKSTOWN (T)		
Treatment Class	Not Reported	Population:	Not Reported

PWS currently has or had major violation(s) or enforcement: Yes

VIOLATIONS INFORMATION:

Violation ID:	9302055	Source ID:	Not Reported	PWS Phone:	9146345963
Vio. beginning Date:	10/01/92	Vio. end Date:	10/31/92	Vio. Period:	001 Months
Num required Samples:	Not Reported	Number of Samples Taken:		Not Reported	
Analysis Result:	Not Reported	Maximum Contaminant Level:		Not Reported	
Analysis Method:	Not Reported				
Violation Type:	Operations Report				
Contaminant:	Not Reported				
Vio. Awareness Date:	Not Reported				

5
South
1/4 - 1/2 Mile
Higher

FED USGS **USGS2127481**

Agency cd:	USGS	Site no:	411039074001801
Site name:	RO 160		
Latitude:	411039		
Longitude:	0740018	Dec lat:	41.17759493
Dec lon:	-74.00458471	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	THIELLS Q-24-2	Map scale:	Not Reported
Altitude:	220.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	HackensackPassaic. New Jersey, New York. Area = 1120 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19500101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	114	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1950-01-01	Ground water data end date:	1950-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

6
ESE
1/2 - 1 Mile
Higher

FED USGS **USGS2127508**

Agency cd:	USGS	Site no:	411044073593301
Site name:	RO 409		
Latitude:	411044		
Longitude:	0735933	Dec lat:	41.17898381
Dec lon:	-73.99208433	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	HAVERSTRAW Q-25-1	Map scale:	Not Reported
Altitude:	270.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Hudson. Connecticut, New Jersey, New York. Area = 720 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19460101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	365	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1946-01-01	Ground water data end date:	1946-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

B7
SW
1/2 - 1 Mile
Higher

FED USGS **USGS2142104**

Agency cd:	USGS	Site no:	411030074005302
Site name:	RO 185		
Latitude:	411030		
Longitude:	0740053	Dec lat:	41.17509496
Dec lon:	-74.01430722	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	THIELLS Q-24-2	Map scale:	Not Reported
Altitude:	340.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	HackensackPassaic. New Jersey, New York. Area = 1120 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19000101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1957-01-01	Ground water data end date:	1957-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

B8
SW
1/2 - 1 Mile
Higher

FED USGS **USGS2142103**

Agency cd:	USGS	Site no:	411030074005301
Site name:	RO 184		
Latitude:	411030		
Longitude:	0740053	Dec lat:	41.17509496
Dec lon:	-74.01430722	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	THIELLS Q-24-2	Map scale:	Not Reported
Altitude:	350.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	HackensackPassaic. New Jersey, New York. Area = 1120 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19480101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	200	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1948-01-01	Ground water data end date:	1948-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

9
NW
1/2 - 1 Mile
Higher

FED USGS **USGS2141969**

Agency cd:	USGS	Site no:	411133074010301
Site name:	RO 208		
Latitude:	411133		
Longitude:	0740103	Dec lat:	41.1925947
Dec lon:	-74.01708527	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	THIELLS Q-24-2	Map scale:	Not Reported

Altitude:	420.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Hudson. Connecticut, New Jersey, New York. Area = 720 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19500101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	300	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1950-01-01	Ground water data end date:	1950-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

10
West
1/2 - 1 Mile
Higher

FED USGS **USGS2141943**

Agency cd:	USGS	Site no:	411103074011901
Site name:	RO 180		
Latitude:	411103		
Longitude:	0740119	Dec lat:	41.18426149
Dec lon:	-74.02152977	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	THIELLS Q-24-2	Map scale:	Not Reported
Altitude:	400.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	HackensackPassaic. New Jersey, New York. Area = 1120 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19510101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	TRIASSIC SYSTEM		
Well depth:	52.0	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1951-01-01	Ground water data end date:	1951-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

Map ID
Direction
Distance
Elevation

Database | EDR ID Number

11
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS2141982**

Agency cd:	USGS	Site no:	411153074003601
Site name:	RO 536		
Latitude:	411153		
Longitude:	0740036	Dec lat:	41.19815019
Dec lon:	-74.00958508	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	THIELLS Q-24-2	Map scale:	Not Reported
Altitude:	400.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Hudson. Connecticut, New Jersey, New York. Area = 720 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19000101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST
Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	298	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1957-01-01	Ground water data end date:	1957-01-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

12
NNE
1/2 - 1 Mile
Lower

FED USGS **USGS2127075**

Agency cd:	USGS	Site no:	411153074000201
Site name:	RO 198		
Latitude:	411153		
Longitude:	0740002	Dec lat:	41.1981502
Dec lon:	-74.00014033	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	36
State:	36	County:	087
Country:	US	Land net:	Not Reported
Location map:	THIELLS Q-24-2	Map scale:	Not Reported
Altitude:	305.00	Altitude method:	M
Altitude accuracy:	10	Altitude datum:	NGVD29
Hydrologic:	Lower Hudson. Connecticut, New Jersey, New York. Area = 720 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	19570101
Date inventoried:	Not Reported	Mean greenwich time offset:	EST

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Local standard time flag:	N		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	NEWARK GROUP		
Well depth:	320	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	Not Reported
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1957-09-01	Ground water data end date:	1957-09-01
Ground water data count:	1		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: NY Radon

Radon Test Results

Zip	Num Sites	< 4 Pci/L	>= 4 Pci/L	>= 20 Pci/L	Avg > 4 Pci/L	Max Pci/L
10956	437	400 (91.5%)	34 (7.8%)	3 (0.7%)	2.13	75.4
10956	3	3 (100%)	0 (0%)	0 (0%)	0.97	1.1

Federal EPA Radon Zone for ROCKLAND County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for ROCKLAND COUNTY, NY

Number of sites tested: 195

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area	0.880 pCi/L	94%	3%	3%
Basement	1.340 pCi/L	91%	9%	1%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002. 7.5-Minute DEMs correspond to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

New York State Wetlands
Source: Department of Environmental Conservation
Telephone: 518-402-8961
Coverages are based on official New York State Freshwater Wetlands Maps as described in Article 24-0301 of the Environmental Conservation Law.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

New York Public Water Wells
Source: New York Department of Health
Telephone: 518-458-6731

OTHER STATE DATABASE INFORMATION

RADON

State Database: NY Radon
Source: Department of Health
Telephone: 518-402-7556
Radon Test Results

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

EDR Historical Topographic Map Report

Orange and Rockland Utl. Phase I ESA
So. Mtn./Little Tor Roads
Clarkstown, NY 10956

Inquiry Number: 1586024.4

January 05, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

Form-ERK

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.'s (EDR) Historical Topographic Map Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR Historical Topographic Map Report includes a search of available public and private color historical topographic map collections. For more than a century, the USGS has been creating and revising topographic maps for the entire country at a variety of scales. There are about 60,000 U.S. Geological Survey (USGS) produced topographic maps covering the United States.

References

To meet the prior use requirements of ASTM E 1527-05, Section 8.3.2, the following *standard historical sources* may be used: aerial photographs, fire insurance maps, property tax files, land title records (although these cannot be the sole historical source consulted), topographic maps, city directories, building department records, or zoning/land use records. ASTM E 1527-05, Section 8.3 on Historical Use Information, identifies the prior use requirements for a Phase I environmental site assessment. ASTM E 1527-05 requires *"All obvious uses of the property shall be identified from the present, back to the property's first developed use, or back to 1940, whichever is earlier. This task requires reviewing only as many of the standard historcal sources as are necessary and both reasonably ascertainable and likely to be useful."* (ASTM E 1527-05, Section 8.3.2) *Reasonably ascertainable means information that is publicly available, obtainable from a source within reasonable time and cost constraints,and practically reviewable.*

EPA's Standards and Practices for All Appropriate Inquiries (AAI), Section § 312.24, identifies the historical sourcesof information necessary to achieve the objectives and performance factors of § 312.20. According to AAI,*"historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps,building department records, chain of title documents, and land use records."*

Data Gaps

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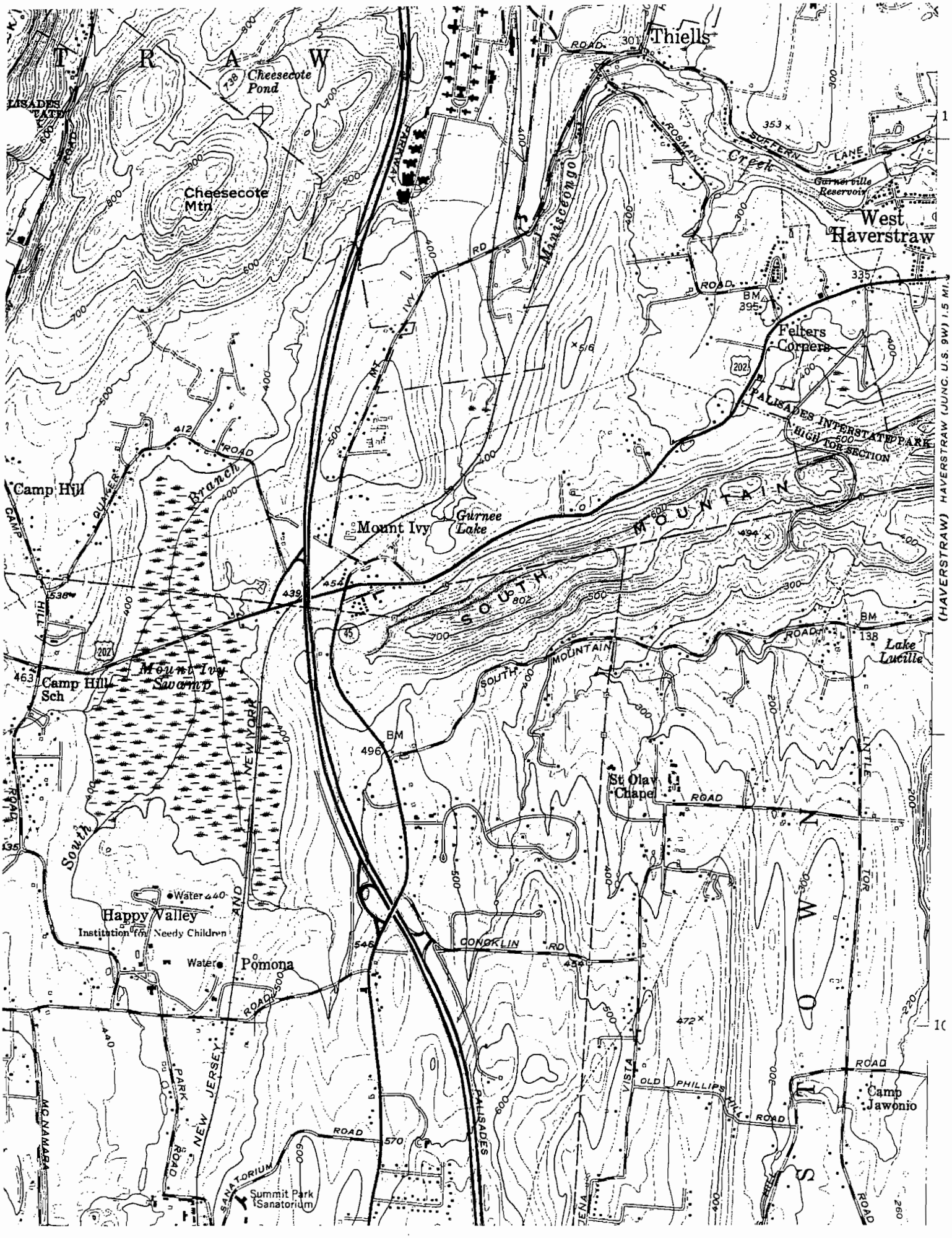
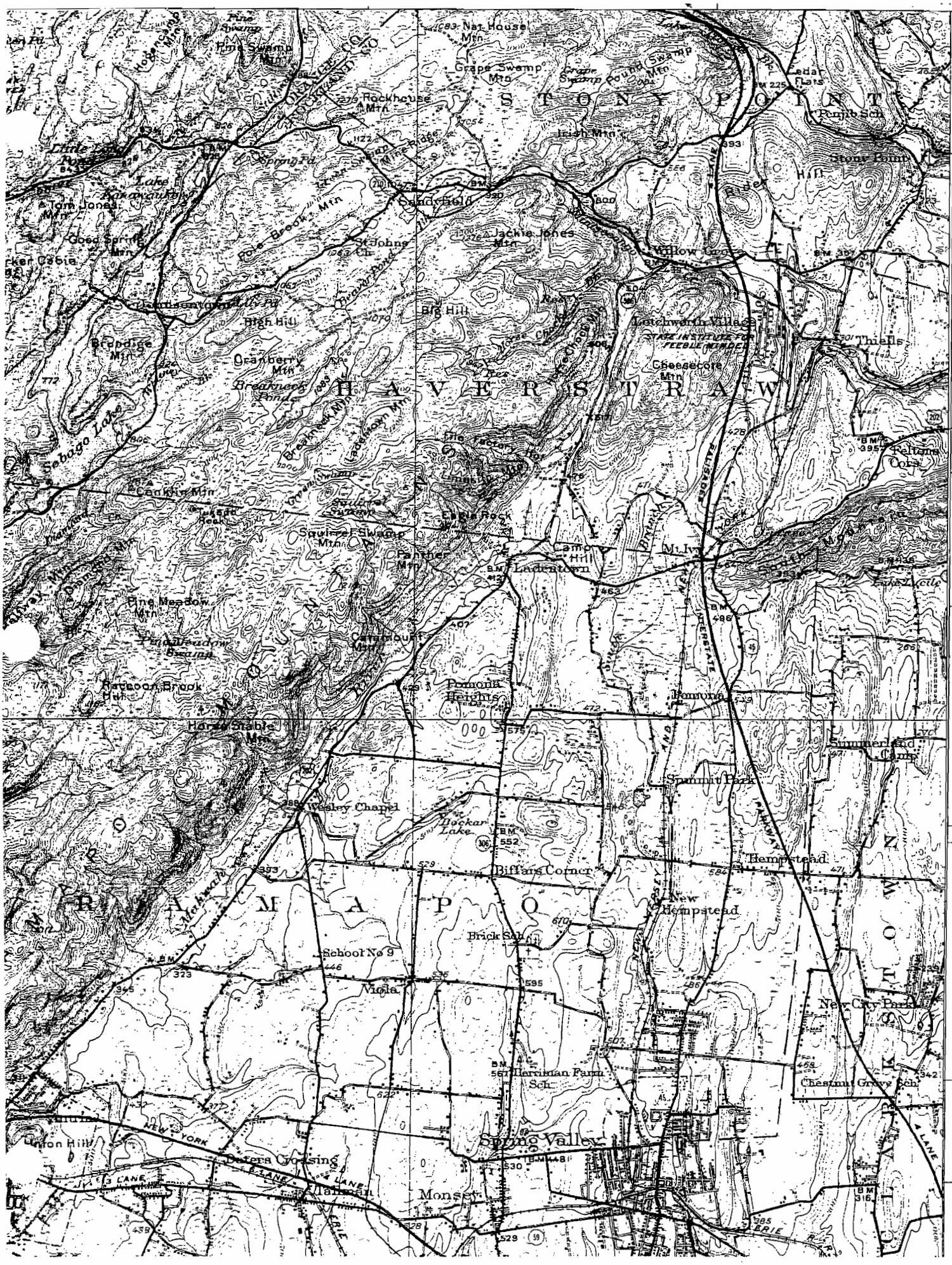


N ^ EDR INQUIRY# 1586024.4 TARGET QUAD: THIELLS YEAR: 1955 Series: 7.5' Scale: 1:24,000

ORANGE
ROCKLAND
Grape Swamp Mtn
Grape Swamp Round Swamp Mtn
Rockhouse Mtn
STONY POINT
Cedar Flats
Penjib Sch
Irish Mtn
Stony Point
Spring Pd
Green Swamp
Mine Ridge
Sandyfield
Pole Brook Mtn
St Johns Ch
Jackie Jones Mtn
Willow Grove
Beaver Pond
Lily Pd
High Hill
Big Hill
Letchworth Village
STATE INSTITUTE FOR FEEBLE MINDED
Thiells
Cranberry Mtn
Breakneck Pond
Cheesecote Mtn
HAVERSTRAW
Breakneck Mtn
Ladentown Mtn
File Factory Hol
Limekiln Mtn
Kelters Cors
Green Swamp
Squirrel Swamp
Eagle Rock
Squirrel Swamp Mtn
Camp Hill
Mt Ivy
Panther Mtn
Ladentown
South Mountain
Lake Lucile
Cattamount Mtn
River
Pomona Heights
Pomona
Horse Stable Mtn
Summerland Camp
Summit Park
Wesley Chapel
Bockar Lake
Hempstead
Biffars Corner
New Hempstead
RAMAPO
Brick Sch
School No 9
Viola
New City Park
NEW JERSEY AND NEW YORK



^ EDR INQUIRY# 1586024.4 TARGET QUAD: RAMAPO YEAR: 1931 Series: 15' Scale: 1:62,500

The EDR Aerial Photo Decade Package

Orange and Rockland Utl. Phase I ESA
So. Mtn./Little Tor Roads
Clarkstown, NY 10956

Inquiry Number: 1586024.6

January 05, 2006

EDR® Environmental Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

THE EDR AERIAL PHOTO DECADE PACKAGE

Environmental Data Resources, Inc.s (EDR) Aerial Photography Print Service is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs at one photo per decade.

References

EPAs Standards and Practices for All Appropriate Inquiries (AAI), section 312.24, identifies the historical sources of information necessary to achieve the objectives and performance factors of section 312.20. According to AAI, *"historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."*

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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Date EDR Searched Historical Sources:

Aerial Photography January 05, 2006

Target Property:

So. Mtn./Little Tor Roads
Clarkstown, NY 10956

Year	*Scale*	*Details*	*Source*
1957	Aerial Photograph. Scale: 1"=750'	Panel #: 2441074-B1/Flight Date: March 24, 1957	EDR
1964	Aerial Photograph. Scale: 1"=750'	Panel #: 2441074-B1/Flight Date: March 23, 1964	EDR
1976	Aerial Photograph. Scale: 1"=1000'	Panel #: 2441074-B1/Flight Date: October 29, 1976	EDR
1984	Aerial Photograph. Scale: 1"=1000'	Panel #: 2441074-B1/Flight Date: March 26, 1984	EDR
1994	Aerial Photograph. Scale: 1"=750'	Panel #: 2441074-B1/Flight Date: April 04, 1994	EDR

INQUIRY #: 1586024.6
YEAR: 1957
= 750'
N

INQUIRY #: 1586024.6
YEAR: 1964
= 750'
N

INQUIRY #: 1586024.6

YEAR: 1976

N

= 1000'

INQUIRY #: 1586024.6
YEAR: 1984
= 1000'
N

INQUIRY #: 1586024.6

YEAR: 1994

= 750'

N

EDR® Environmental
Data Resources Inc

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Terry Schneider
HDR / LMS
One Blue Hill Plaza
Pearl River, NY 10965

Order Date: 1/4/2006 **Completion Date:** 1/4/2006
Inquiry #: 1586024.3
P.O. #: 43126
Site Name: Orange and Rockland Utl. Phase I ESA
Address: So. Mtn./Little Tor Roads
City/State: Clarkstown, NY 10956
Cross Streets:

Customer Project: 469-xxx
1320260ERK 845-294-2789

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

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The EDR-City Directory
Abstract

Orange and Rockland Utl. Phase I ESA
549 Little Tor Road
Clarkstown, NY 10956

Inquiry Number: 1586024.5

Friday, January 06, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax 1-800-231-6802
Internet: www.edrnet.com

City Directory Abstract

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. The city directory is a sophisticated tool for locating individuals and businesses. With each address, the directory lists the name of the corresponding occupant.

References

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Thank you for your business.
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SUMMARY

- ***City Directories:***

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1990 through 2002. (These years are not necessarily inclusive.) A summary of the information obtained is provided in the text of this report.

Date EDR Searched Historical Sources: 1/6/2006

Target Property:
549 Little Tor Road
Clarkstown, NY 10956

Year	Uses	NAICS	Source
1990	Street Not Listed in Research Source	N/A	City's City Directory
1995	Street Not Listed in Research Source	N/A	City's City Directory
1999	Street Not Listed in Research Source	N/A	City's City Directory
2002	Street Not Listed in Research Source	N/A	City's City Directory

Adjoining Properties

SURROUNDING

Little Tor Road
Clarkstown, NY 10956

Year	Uses	NAICS	Source
1990	Street Not Listed in Research Source	N/A	City's City Directory
1995	Street Not Listed in Research Source	N/A	City's City Directory
1999	Street Not Listed in Research Source	N/A	City's City Directory
2002	Street Not Listed in Research Source	N/A	City's City Directory

APPENDIX B

RECORD REVIEW DOCUMENTATION

HDR | LMS

January 4, 2006

Regional Freedom of Information Officer
USEPA – Region 2
290 Broadway, 26th Floor
New York, N.Y. 10007-1866

Attn: FOIA Officer

HDR/LMS is currently conducting an Environmental Site Assessment (ESA) of a site located in the Town of Clarkstown, Rockland County, New York.

As part of this assessment HDR/LMS is required to review the files of various agencies for site-specific information relating to the presence, use, disposal, transportation and storage of hazardous materials and petroleum products as well as underground and above ground chemical/petroleum storage tanks and leaks/spills of hazardous and/or petroleum products. We respectfully request permission, under the Freedom of Information Act (FOIA), to review any files, drawings, plans, etc. you may have on the following:

549-555 Little Tor Road

Files may also be listed as Gilsem LLC.

If you have any questions, please contact me at (845) 294-2789 ext. 23.

Very truly yours,

Theresa M. Schneider

Theresa M. Schneider
Senior Project Geologist

HDR | LMS
Henningson, Durham & Richardson Architecture and Engineering P.C.
In association with HDR Engineering, Inc.

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Eastgate Corporate Park
7 Coates Drive, Suite 2
Goshen, NY 10924

Phone: (845) 294-2789
Fax: (845) 294-5893
www.hdrinc.com

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2, 290 Broadway
New York, NY 10007

FEB - 9 2006

Ms. Theresa M. Schneider
Senior Project Geologist
HDR/LMS
Eastgate Corporate Park
7 Coates Drive
Suite 2
Goshen, NY 10924

Re: Freedom of Information Request No. **02-RIN-00563-06**
Dated: January 4, and 5 2006

Dear Ms. Schneider:

Your request for information has been referred to this branch for response. We have searched the Resource Conservation and Recovery Act (RCRA) files and/or computer database as appropriate to respond to your request. In addition, you may also receive more information from other program areas within this Regional Office.

We were unable to locate any hazardous waste (RCRA) information concerning the properties at 549-555 Little Tor Road in the Town of Clarkstown, Rockland County, New York, and the name Gilsem L.L.C., and at 157 Cheechunk Road in Goshen, Orange County, New York. We also did not find any owner information for the address at 157 Cheechunk Road in Goshen relating to Al Turi Landfill, Inc.

However, we do have a RCRA file for a site called Former Smith Farm, 420 yards north from Little Tor Road in New City, Rockland County, New York, and Al Turi Landfill Inc. on Route 17M, and Hartley Road in Goshen, Orange County, New York. If you need further information regarding either of these two sites, please submit a new request.

For information on Underground Storage Tanks (USTs), please contact the State of New York at the enclosed address as it is responsible for keeping records and tracking incidents related to USTs.

If you consider this response to be a denial, you may submit a written appeal to HQ FOIA OPERATIONS STAFF, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460. The appeal must be made in writing, and must be received within 30 calendar days of the date of this response to receive consideration. The Agency will not consider appeals received after the 30-day limit. The appeal should be marked "Freedom of Information Act Appeal", and should reference the Freedom of Information Request Number of this response.

Also, RCRA information is available on the Internet as described on the enclosed sheet.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2, 290 Broadway, 26th Floor
New York, NY 10007
212-637-3668
212-637-5046 (fax)
Calderon.Wanda@epa.gov

January 11, 2006

Ms. THERESA SCHNEIDER
LAWLER MATUSKY SKELLY
7 COATES DRIVE
SUITE 2
Goshen, NY, 10924
United States

RE: Request No: 02-RIN-00563-06

Dear Ms. SCHNEIDER,

This is to acknowledge receipt of your Freedom of Information Act (FOIA), 5 U.S.C. 552, request dated January 04, 2006 and received in this office on January 09, 2006, for records related to:

549-555 Little Tor Road in Rockland County & 157 Cheechunk Road in Orange County both in NYS

The program(s) office(s) that have been assigned this request will be responding to you directly. The Agency has twenty (20) working days to respond to your request, except when you have agreed to an alternate due date or unusual circumstances exist that would require an extension of time under 5 U.S.C. 552 (a) (6) (B).

Include your FOIA request number in all subsequent communications with respect to this assignment. Additionally, for faster processing you may provide your email address. Thank you.

Respectfully,

Wanda Calderon
FOIA Specialist

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR ACCESS TO RECORDS

(See Instructions on Reverse Side)

NUMBER

APPLICANT

- **TO THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION:**
  I hereby apply to inspect the following records under the provisions of the Freedom of Information Law:

Please see attached.

After inspection, should I desire copies of all or part of the records inspected, I will identify the records to be copied and hereby offer to promptly pay the established fees. (Cost of reproduction or 25¢ per page as applicable). Contact me if cost will exceed $ 25.00

Name (Print or type) HDR|LMS Telephone No. 845-294-2789

Attention of: TERRY SCHNEIDER

Mailing Address 7 COATES DRIVE, Suite 2, GOSHEN NY. 10924

Signature T. Schneider Date 1/4/06

RECORDS CUSTODIAN

- **TO THE APPLICANT:**

–Records Provided

☐ The reproduction costs for the records provided are $ _____

☐ Records have been (partially, fully) provided. (If not fully provided, date when records are expected to be fully provided: _____)

–Records Not Available

☐ Records cannot be found after diligent search

☐ The Department is not the custodian for records indicated

–Records Denied

I hereby certify that access to the records–or part of the records–circled above has been denied to the applicant for the reason(s) checked below:

☐ Specifically exempt by other statute

☐ Unwarranted invasion of personal privacy

☐ Would impair present or imminent contract awards or collective bargaining negotiations

☐ Are examination questions or answers

☐ Are inter-agency or intra-agency materials that are not:
- statistical or factual tabulations or data
- instructions to staff that affect the public
- final agency policy or determinations; or
- external audits, including but not limited to audits performed by the comptroller and the federal government

☐ Are trade secrets

☐ Could endanger the life of any person

☐ Are compiled for law enforcement purposes and which, if disclosed would:
- interfere with law enforcement investigations or judicial proceedings
- deprive a person of the right to a fair trial or or impartial adjudication
- identify a confidential source or disclose confidential information relating to a criminal investigation, or
- reveal criminal investigative techniques or procedures, except routine techniques and procedures

☐ Would jeopardize an agency's capacity to guarantee the security of its information technology assets, such assets encompassing both electronic information systems and infrastructures

Identification of records withheld (attach listing if additional space is required) and/or explanation if appropriate:

Records Custodian Signature _____ Title _____ Date _____

HDR | LMS

January 4, 2006

New York State Department of Environmental Conservation
Region 3
21 South Putt Corners Road
New Paltz, New York 12561

Attn: Records Access Officer

HDR/LMS is currently conducting an Environmental Site Assessment (ESA) of a site located in the Town of Clarkstown, Rockland County, New York.

As part of this assessment HDR/LMS is required to review the files of various agencies for site-specific information relating to the presence, use, disposal, transportation and storage of hazardous materials and petroleum products as well as underground and above ground chemical/petroleum storage tanks and leaks/spills of hazardous and/or petroleum products. We respectfully request permission, under the Freedom of Information Act (FOIA), to review any files, drawings, plans, etc. you may have on the following:

549-555 Little Tor Road
Section 34.05, Block 1, Lot 6

If you have any questions, please contact me at (845) 294-2789.

Very truly yours,

Theresa M. Schneider

Theresa M. Schneider
Senior Project Geologist

HDR | LMS
Hennigson, Durham & Richardson Architecture and Engineering P.C.
in association with HDR Engineering, Inc.

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Eastgate Corporate Park
7 Coates Drive, Suite 2
Goshen, NY 10924

Phone: (845) 294-2789
Fax: (845) 294-5893
www.hdrinc.com

Records Access Office, Region 3
21 South Putt Corners Road, New Paltz, New York 12561-1696
Phone: (845) 256-3052• **FAX:** (845) 255-3414
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

JANUARY 11, 2006

THERESA SCHNEIDER
HDR/LMS
EASTGATE CORPORATION PARK
7 COATES DRIVE SUITE 2
GOSHEN NY 10924

RE: Recent Foil Request 031-3/06
549-555 LITTLE TOR ROAD T) CLARKSTOWN

Dear THERESA SCHNEDIER:

Region 3 has reviewed your request for the above referenced records under New York State's Freedom of Information Law (FOIL). Most of our records are filed by number under the names of individuals or corporations. Our records are not filed in such a manner to search under tax i.d. and block numbers. We have no way of locating or retrieving records if they are filed under names or addresses other than those you have provided. If no records have been located, this does not necessarily mean, and should not be interpreted to mean that there have never been any violations, complaints, claims, investigations or inquiries involving those names or addresses. We cannot make any representations as to whether there are or have been any such violations, complaints, claims, investigations or inquiries.

Please note there were no spills records found for the address you provided. You may wish to contact the Rockland County Health Department for any information or records they may have in their custody.

Region 3 Records Access Office

COUNTY OF ROCKLAND
State of New York
FOIL APPLICATION

APPLICATION FOR PUBLIC ACCESS TO RECORDS

TO: RECORDS ACCESS OFFICER
Rockland County Department of Health
Environmental Health Division
50 Sanatorium Road - Building D
Pomona, New York 10970

FAX: (845) 364-3634

I HEREBY APPLY TO INSPECT THE FOLLOWING RECORDS:
Please see attached

Your Firm HDR/LMS Telephone 845-294-2789 Fax 845-294-5893

Mailing Address 7 COATES DRIVE, Suite 2, GOSHEN, N.Y. 10924

Name T. SCHNEIDER Signature T. Schneider Date 1/4/06

FOR AGENCY USE ONLY

_____ APPROVED

_____ DENIED FOR REASONS CHECKED BELOW

_____ Confidential Disclosure _____ Part of investigative file

_____ Unwarranted invasion of personal privacy

_____ Record of which this agency is legal custodian cannot be found

_____ Record is not maintained by this agency

_____ Exempted by statute other than the Freedom of Information Law

_____ Other (Specify) _____

_____ Additional time required: _____ Number of Days

Reason: _____

Signature: _____ Date: _____
DANIEL M. MILLER, Ph.D.
Records Access Officer

NOTICE: YOU HAVE THE RIGHT TO APPEAL a denial of this application to the Deputy County Executive, Office of the County Executive, County of Rockland, 11 New Hempstead Road New City, NY 10956.

HDR | LMS

January 4, 2006

Rockland County Department of Health
Environmental Health Division
50 Sanatorium Road, Building D
Pomona, New York 10970

Attn: Records Access Officer

HDR/LMS is currently conducting an Environmental Site Assessment (ESA) of a site located in the Town of Clarkstown, Rockland County, New York.

As part of this assessment HDR/LMS is required to review the files of various agencies for site-specific information relating to the presence, use, disposal, transportation and storage of hazardous materials and petroleum products as well as underground and above ground chemical/petroleum storage tanks and leaks/spills of hazardous and/or petroleum products. We respectfully request permission, under the Freedom of Information Act (FOIA), to review any files, drawings, plans, etc. you may have on the following:

549-555 Little Tor Road
Section 34.05, Block 1, Lot 6

If you have any questions, please contact me at (845) 294-2789.

Very truly yours,

Theresa M. Schneider

Theresa M. Schneider
Senior Project Geologist

HDR | LMS
Henningson, Durham & Richardson Architecture and Engineering P.C.
in association with HDR Engineering, Inc.

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Eastgate Corporate Park
7 Coates Drive, Suite 2
Goshen, NY 10924

Phone: (845) 294-2789
Fax: (845) 294-5893
www.hdrinc.com

FAX TRANSMITTAL SHEET

County of Rockland
ROCKLAND COUNTY DEPARTMENT OF HEALTH
Robert L. Yeager Health Center
Sanatorium Road - Building D
Pomona, New York 10970

Date: 1/23/06

TO: Theresa Schneider
ORGANIZATION: HDR/LMS
FAX #: 294-5893 # of Pages to follow: 2

RESPONSE REQUIRED: ☐ **YES** ☒ **NO**

FROM: Judith M. Hunderfund
DIVISION: Environmental Health
TELEPHONE #: **Direct Line – (845) 364 -** 2616

DOCUMENT DESCRIPTION: FOI-06-011 No records found

SPECIAL INSTRUCTIONS:

IMPORTANT NOTICE: The information contained in this facsimile message is confidential and intended ONLY for use of the individual or entity to whom it is addressed. If you are not the named recipient, you are hereby notified that any dissemination, distribution or copying of this communication is prohibited. If you have received this communication in error, please notify us at above telephone number and return the original message to us by US Mail at the above address.

FAX #:	Administration	PH Social Work	Nursing	Disease Control	Environmental Health
	364-2628	364-2093	364-2659	364-2659	364-2025 or 3634

HDR | LMS

FOI-06-011

January 4, 2006

Rockland County Department of Health
Environmental Health Division
50 Sanatorium Road, Building D
Pomona, New York 10970

~~Attn: Records Access Officer~~

HDR/LMS is currently conducting an Environmental Site Assessment (ESA) of a site located in the Town of Clarkstown, Rockland County, New York.

As part of this assessment HDR/LMS is required to review the files of various agencies for site-specific information relating to the presence, use, disposal, transportation and storage of hazardous materials and petroleum products as well as underground and above ground chemical/petroleum storage tanks and leaks/spills of hazardous and/or petroleum products. We respectfully request permission, under the Freedom of Information Act (FOIA), to review any files, drawings, plans, etc. you may have on the following:

549-555 Little Tor Road
Section 34.05, Block 1, Lot 6

If you have any questions, please contact me at (845) 294-2789.

Very truly yours,

Theresa M. Schneider

Theresa M. Schneider
Senior Project Geologist

HDR | LMS
Hennington, Durham & Richardson Architecture and Engineering P.C.
In association with HDR Engineering, Inc.

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Eastgate Corporate Park
7 Coates Drive, Suite 2
Goshen, NY 10924

Phone: (845) 294-2789
Fax: (845) 294-5893
www.hdrinc.com

FOI-06-011

FOR AGENCY/ DEPARTMENT USE ONLY

_____ Approved
_____number of copies are responsive to the request and a fee of $_____ [$.25 per page] must be remitted in advance
(Please make check payable to: Commissioner of Finance)

or records available for inspection during following office hours: 8:30AM–5PM and days: Mon – Fri
Department of Health /Environmental Division
Address: Bldg D / Sanatorium Rd
Pomona, NY

_____ Record of Which This Agency/Department is Legal Custodian Cannot be found

XX Record is not maintained by this Agency/Department

_____ Receipt of request acknowledged, however, additional time is required
Number of Days ____ Reason _____

_____ Denied: (for reason(s) checked below)

____ Unwarranted Invasion of Personal Privacy

____ Exempted by Statute other than the Freedom of Information Act
Specify: _____

____ Confidential Disclosure of information or procedures in criminal investigation

____ Other (Specify) _____

Judith M Hunderfund 1/23/06
Signature — Records Access Officer — Date
Department of Health

NOTICE

You have the right to appeal a denial, in whole or in part, of this application to the Records Access Appeals Officer, Office of the County Executive, County of Rockland, 11 New Hempstead Road, New City, New York 10956

I hereby appeal:

_____
Signature — Date

A copy of the County's "FOIL" Procedures is available upon request.

REV:9/05

TOTAL P.03

TOWN OF CLARKSTOWN
STATE OF NEW YORK
APPLICATION FOR PUBLIC ACCESS TO RECORDS

TO: TOWN CLERK

I HEREBY APPLY TO INSPECT THE FOLLOWING RECORD:

Building Dept. files for:

SBL: 34.05-1-6

549-555 Little Tor Road

T. Schneider — 1/4/06
Signature — Date

T. SCHNEIDER — 7 COATES Dr Suite 2, Goshen NY 10924
Print Name — Address

HDR/LMS — 845-294-2789
Representing — Phone Number

FOR AGENCY USE ONLY

Approved_____
Denied (for the reason(s) checked below:

( ) Confidential Disclosure
( ) Part of Investigatory Files
( ) Unwarranted Invasion of Personal Privacy
( ) Record of which this Agency if Legal Custodial Cannot be Found
( ) Record if not maintained by this Office
( ) Exempted by Statute other than the Freedom of Information
( ) Inspection Only
( ) Record returned
( ) Other (specify)_____

Signature | Title | Date

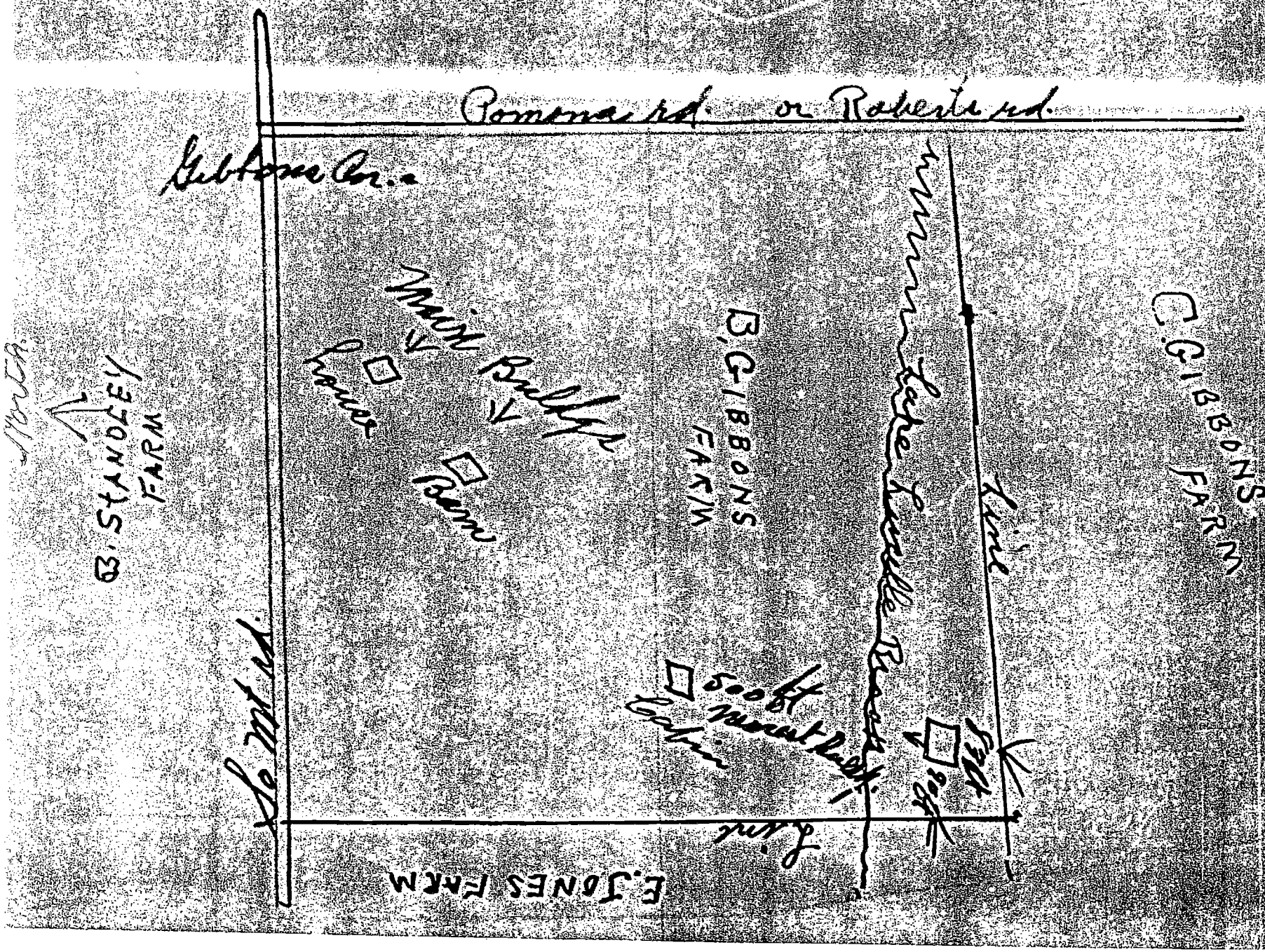
Notice: You have a right to appeal a denial of this application to the head of this agency.

Alexander J. Gromack — 10 MAPLE Ave., New City, NY 10956
Name — Business Address

Supervisor — (845) 639-2050
Title — Business Phone Number

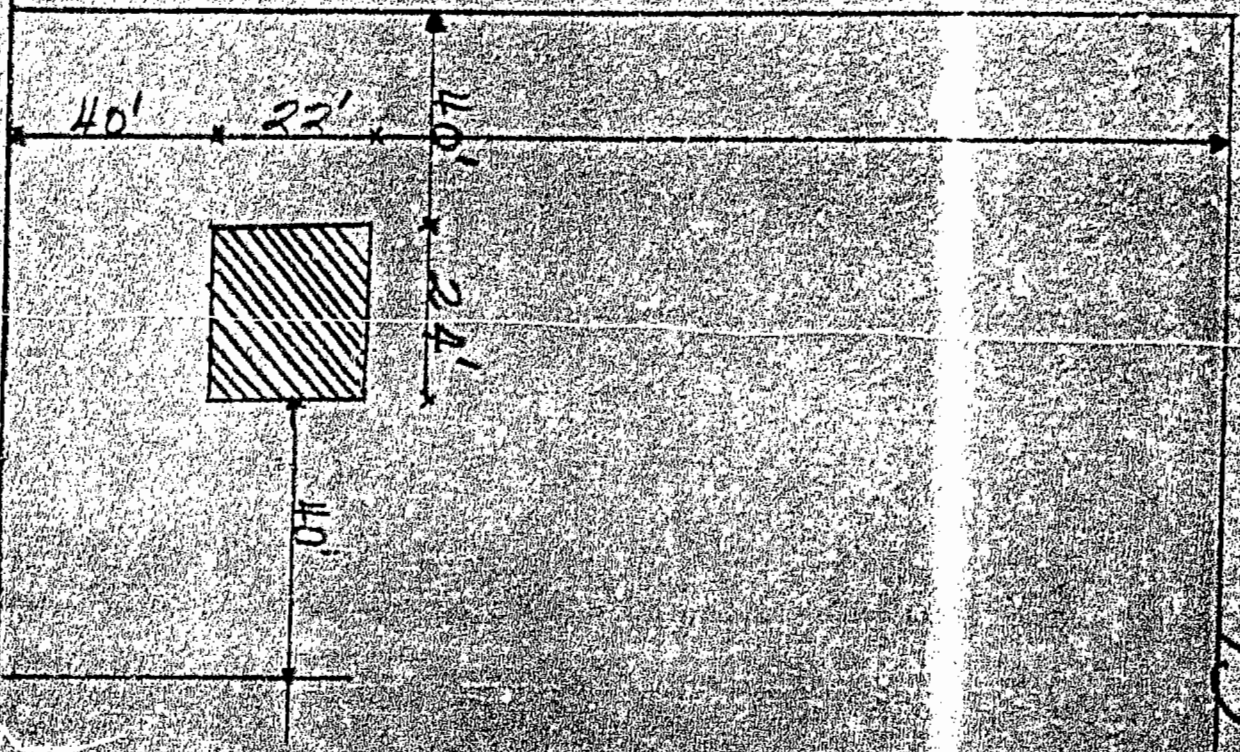
Who must fully explain his reasons for such denial in writing within ten business days of the receipt of the appeal.

FARM



Pomona rd. or Roberts rd.
Gibbons Cor.
Main Bldgs
House
Barn
B. STANDLEY FARM
B. GIBBONS FARM
C. GIBBONS FARM
Lake Lucille Brook
Line
500 ft
Cabin
Line
E. JONES FARM

E. C. Jones Property



Dec. 18, 1946

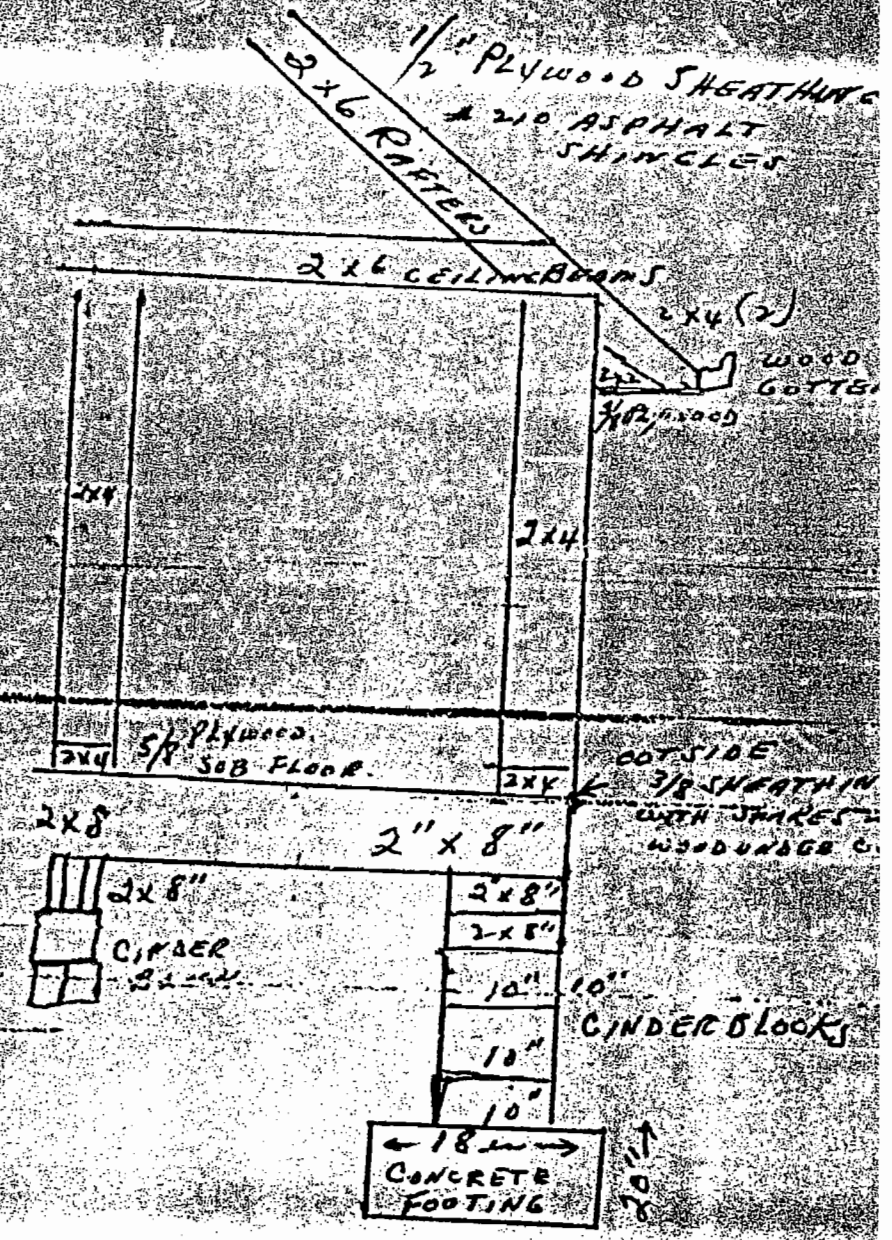
Karl Schumacher
Building & Zoning Inspector
10 Moffett Ave
New City, N.Y.

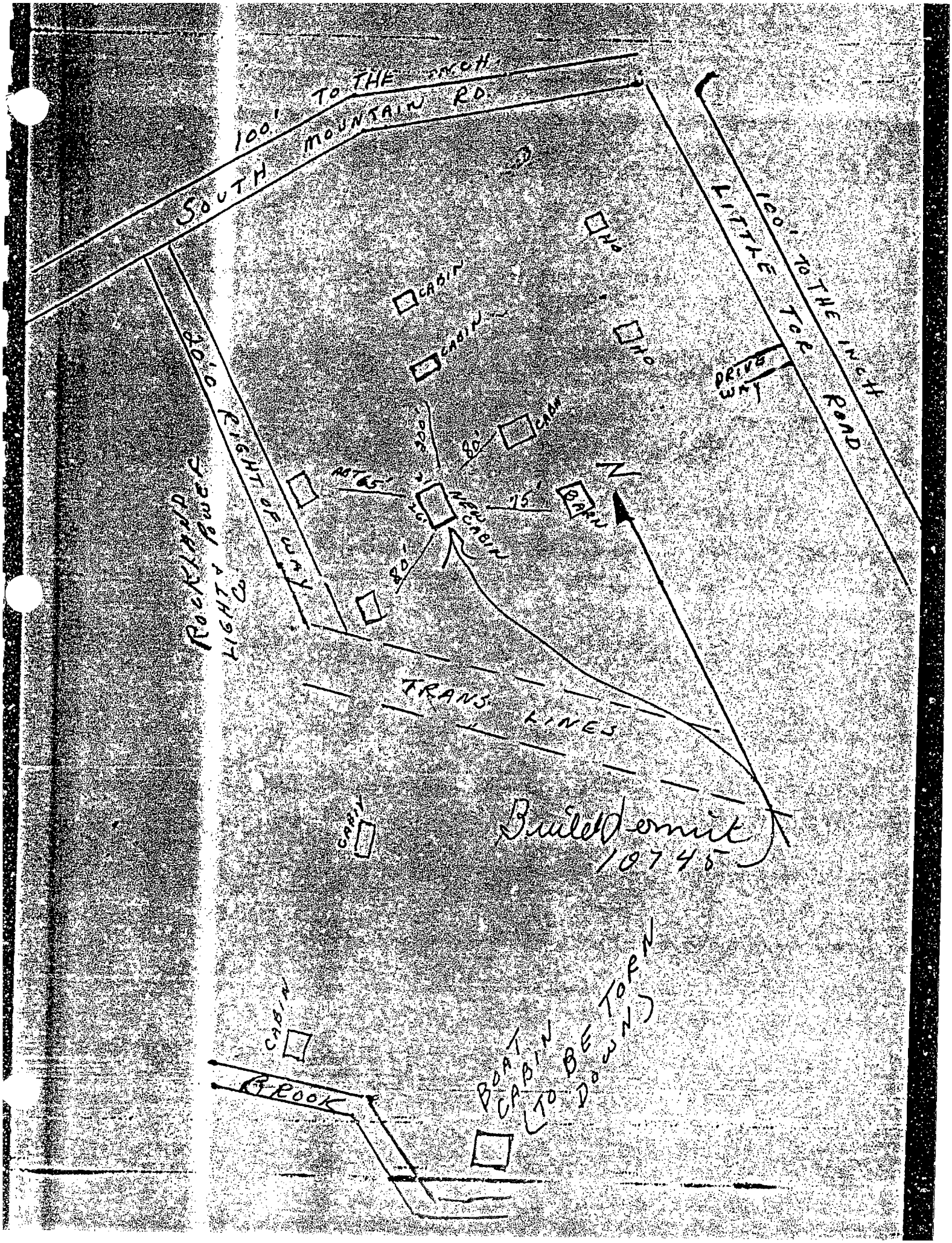
Dear Mr. Schumacher:

I am enclosing applications for a Building Permit and Sewage Disposal Permit, & am also enclosing a drawing of "Hall Section", "Sketch of Rear Building", and "Plot Plan". On the Plot Plan I have shown, in red, the location of the Brat-Cohen that is being torn down.

If there is any additional information that you need or any changes I have to make,

Hall Section




100' TO THE INCH
SOUTH MOUNTAIN RD.
100' TO THE INCH
LITTLE TOR ROAD
20'0 RIGHT OF WAY
ROCKLAND LIGHT & POWER CO.
CABIN
CABIN
CABIN
HO
HO
DRIVE WAY
200'
80'
ABT 65'
NEW CABIN
75'
BARN
N
80'
TRANS. LINES
CABIN
Build Permit 10745
CABIN
BROOK
BOAT CABIN (TO BE TORN DOWN)

INSPECTION SHEET

NAME OF ~~SUBDIVISION~~: Mayley

BLDG. PERMIT NO.	DATES OF INSPECTIONS			
	FOOTING	FRAMING	PLUMBING	TYPE OF REINSPECTION (if required)
# 1	House			
2	House			
3	Barn			
4	House			
5	Cabin			
6	Cabin			
7	Cabin			
8	Cabin			
9	New Cottage			

OFFICE OF THE BUILDING INSPECTOR

SEARCH REPORT

10 MAPLE AVENUE
NEW CITY, NEW YORK 10956/5099
(845) 639-2100

PETER J. BEARY
BUILDING INSPECTOR

MARK PAPENMEYER
CHIEF FIRE SAFETY INSPECTOR

DATE: 11/28/05

OLD TAX MAP #: 25 -B-1 NEW TAX MAP #: 34.5-1-6

IN REPLY TO YOUR REQUEST DATED 11/9/05 THE FOLLOWING IS SUBMITTED AS INDICATED BY A (✓) AND (NA) WHEN NOT APPLICABLE:

✓ THE 8 ONE FAMILY DWELLINGS ~~WAS~~ WERE BUILT PRIOR TO THE ADOPTION OF THE BUILDING CODE AND ZONING ORDINANCE NO CERTIFICATE OF OCCUPANCY WAS REQUIRED AT THE TIME OF THE ADOPTION OF THE ZONING ORDINANCE.

✓ ENCLOSED IS (ARE) CERTIFICATE (S) OF OCCUPANCY FOR THE BUILDING PERMIT # 289, 3210, 10745.

NA NO CERTIFICATE OF OCCUPANCY FOR BUILDING PERMIT # _____.

NA NO PERMIT FOR _____.

✓ NO VIOLATIONS OF RECORD.

✓ ~~NO~~ ONSITE INSPECTION HAS BEEN MADE.

✓ VIOLATION (S) EXIST. ← SEE BELOW *

✓ THE STREET IS A PUBLIC ROAD.

********** AN AFFIDAVIT SHALL BE SUBMITTED BY THE GRANTOR OF SUCH DWELLING OR APARTMENT AT THE TIME OF CONVEYANCE INDICATING THAT SUCH SMOKE DETECTING ALARM DEVICE HAS BEEN INSTALLED AND IS OPERABLE. COMPLIANCE WITH SECTION 1193.2 OF THE STATE UNIFORM BUILDING CODE. ONE OR TWO FAMILY DWELLINGS. AT LEAST ONE SINGLE STATION SMOKE DETECTING DEVICE AS DESCRIBED IN REFERENCE STANDARD RS56-2, SHALL BE INSTALLED ON OR NEAR THE CEILING ADJACENT TO SLEEPING AREAS, IN EVERY EXISTING ONE OR TWO FAMILY DWELLING IN THE STATE USED AS A RESIDENCE IN CONFORMITY WITH SECTION 1060.10 OF THIS CODE, EXCEPT THAT BATTERY-OPERATED DEVICES ARE PERMITTED. EFFECTIVE MARCH 6, 2003 PURSUANT TO PART 1225 OF TITLE 19, ALL DWELLING UNITS OFFERED FOR SALE MUST HAVE A CARBON MONOXIDE ALARM INSTALLED THAT COMPLIES WITH U.L. 2034-2002.

PLEASE NOTE : IF YOU HAVE AN UNDERGROUND PETROLEUM STORAGE TANK THAT IS NO LONGER IN USE, IT MUST BE *REMOVED*.

ADDITIONAL COMMENTS: FEE PAID: $150.00

* NUMEROUS BUILDINGS AND ACCESSORY BUILDINGS IN VARIOUS STATES OF DIS-REPAIR. PROPERTY MAINTANCE ISSUES WITH STORAGE OF UN REGISTERED VEHICLES AND DEBRIS.

R. Meyers
PER BUILDING INSPECTOR

REV/3-02

TOWN OF CLARKSTOWN
STATE OF NEW YORK
APPLICATION FOR PUBLIC ACCESS TO RECORDS

TO: TOWN CLERK

I HEREBY APPLY TO INSPECT THE FOLLOWING RECORD:

Fire Inspector's files for:

SBL: 34.05-1-6

549-555 Little Tor Road

L. Schneider
Signature

1/4/06
Date

T. SCHNEIDER
Print Name

7 COATES Dr. Suite 2, Goshen NY 10924
Address

HDR/LMS
Representing

845-294-2789
Phone Number

FOR AGENCY USE ONLY

Approved_____
Denied (for the reason(s) checked below:

( ) Confidential Disclosure
( ) Part of Investigatory Files
( ) Unwarranted Invasion of Personal Privacy
( ) Record of which this Agency if Legal Custodial Cannot be Found
( ) Record if not maintained by this Office
( ) Exempted by Statute other than the Freedom of Information
( ) Inspection Only
( ) Record returned
( ) Other (specify) _____

Signature	Title	Date

Notice: You have a right to appeal a denial of this application to the head of this agency.

Name	Business Address
Alexander J. Gromack	10 MAPLE Ave., New City, NY 10956
Supervisor	(845) 639-2050
Title	Business Phone Number

Who must fully explain his reasons for such denial in writing within ten business days of the receipt of the appeal.

BUILDING INSPECTOR

ADOLPH A. MILICH, JR.
BUILDING INSPECTOR

**OFFICE OF THE
FIRE INSPECTOR**

**CONFIDENTIAL
FIRE REPORT**

10 MAPLE AVENUE
NEW CITY, NEW YORK 10956/5099
(914) 639-2100

MARK PAPENMEYER
CHIEF FIRE SAFETY INSPECTOR

MAP: 25 **BLOCK:** B **LOT:** 1

TIME IN: 04:21
TIME OUT: 07:06

DATE: 9/19/99

IRE DEPARTMENT: New City Fire Engine Company

IRE DISTRICT: New City

OCATION: 220 S. Mountain Road, New City, NY 10956

ATE & TIME OF EXAMINATION: Same

WNER OF BUILDING: Julie Moxley

DDRESS: 549 Little Tor Road
New City, NY 10956

UILDING USE: Residential

CCUPANCY OWNERS: Tom Grady

YPE OF CONSTRUCTION: Wood frame **HGT:** 1 STORY **SIZE:** ?

EATING: ? **GAS:** **ELECTRIC:** **OTHER:**

IRE ALARM SYSTEM: No **HEAT OR SMOKE DETECTOR:** N/A **SPRINKLERS:** No

ONNECTED TO: N/A **ACTIVATED:** N/A

BUILDING NORMALLY OCCUPIED: Yes **APPROX. NO.** 1

AS BUILDING OCCUPIED AT TIME OF FIRE: Yes **APPROX. NO.** 1

VACUATED: Yes

PPARATUS RESPONDING: New City Fire Dept., Clarkstown Police, Clarkstown Fire Inspector, 44-1, 44-2, New City Ambulance & Medics

MUTUAL AID REQUIRED: Yes, Hillcrest and Congers to the scene, West Nyack for standby at New City

INJURIES TO FIRE PERSONNEL(DESCRIBE): Occupant Theodore Kuykendall treated at scene for smoke.

INJURIES TO OTHER PERSONS(DESCRIBE): None

DAMAGE TO BUILDING (PARTIAL, TOTAL, ETC.): Total

DAMAGE TO CONTENTS (PARTIAL, TOTAL, ETC.): Total

WHERE FIRE ORIGINATED: Living room

EXTENSION: Throughout

FURTHER DESCRIPTION & REMARKS: Occupant of this dwelling was staying with the owner of the property who is his elderly aunt. A guest of Tom Grady named Theodore Kuykendall (Holiday Court Motel, Rt. 9w, Congers) was staying at the house. He had been using the wood burning stove all evening and prior to going to bed at approx. 1:00 am he loaded up the stove. At approx. $4:21 am he awoke to smoke in the bedroom and could see fire was burning outside of his bedroom door. He exited the structure by going out bedroom window. He then met Tom Grady coming from the aunt's house and informed him of the fire. They then went to 218 St. Mt. Road and awoke the neighbor, Bruce Smith, to call 911. They returned to the house and attempted to extinguish fire with a garden hose. On arrival of fire dept. the house was fully engulfed.

Investigation finds the fire origin was in the living room adjacent to the wood burning stove and the probable cause was the stove overheated igniting nearby combustibles. Entire structure heavily destroyed.

DETERMINATION: INCENDIARY: **SUSPICIOUS:** **ACCIDENTAL:XXX** **UNDETERMINED:**

FURTHER INVESTIGATION BY: **Clarkstown Police:** **B.C.I.:**

Chief Fire Safety Inspector

MEMORANDUM OF CONVERSATION

WHO: Assessor

OF: Town of Clarkstown

SPOKE WITH HDR|LMS EMPLOYEE: Terry Schneider

TELEPHONE NUMBER: 845-639-2031 **CALLED:** [ ] **WAS CALLED:** [X]

JOB: O&R So. Mtn. Rd./Little Tor Rd. Phase I ESA **DATE:** January 4, 2006

JOB NUMBER: 169-xxx **TIME:** 10:15 AM

CONCERNING: Request for Information

AND DECIDED:

The assessor had the following information on the site:

SBL:	34.05-1-6
Size:	8.70 Acres
Address:	549-555 Little Tor Road
Owner:	Gilsem LLC

The site includes multiple residences.

CC: _____ **REPLY:** **YES:** [ ] **NO:** [ ]

CC: _____ **REPLY:** **YES:** [ ] **NO:** [ ]

MEMORANDUM OF CONVERSATION

WHO: Zoning and Sewer Departments

OF: Town of Clarkstown

SPOKE WITH HDR|LMS EMPLOYEE: Terry Schneider

TELEPHONE NUMBER: 845-639-2100 **CALLED:** [ ] **WAS CALLED:** [X]

JOB: O&R So. Mtn. Rd./Little Tor Rd. Phase I ESA **DATE:** January 4, 2006

JOB NUMBER: 169-xxx **TIME:** 10:30 AM

CONCERNING: Request for Information

AND DECIDED:

The site is zoned R-40 (residential, one-acre minimum). According to information from the sewer dept. they have no record of the site being connected to municipal sewer lines. Water is provided by a private company (United Water NY).

CC: _____ **REPLY:** **YES:** [ ] **NO:** [ ]

CC: _____ **REPLY:** **YES:** [ ] **NO:** [ ]

MEMORANDUM OF CONVERSATION

WHO: Judith Hunderfund

OF: Rockland County Department of Health

SPOKE WITH HDR|LMS EMPLOYEE: Terry Schneider

TELEPHONE NUMBER: 845-364-2616 **CALLED:** [ ] **WAS CALLED:** [X]

JOB: O&R So. Mtn. Rd./Little Tor Rd. Phase I ESA **DATE:** February 28, 2006

JOB NUMBER: 36875 **TIME:** 1:30 PM

CONCERNING: Request for Information

AND DECIDED:

I called Ms. Hunderfund for information on the water supply and septic systems at the site. According to Ms. Hunderfund, the RCDOH had the residents vacate the site last year because the water from the on-site wells (five wells) contained high levels of total coliform and e-coli bacteria. There were problems with the septic systems at the site. Public water and sewers are not available in this area.

CC: _____ **REPLY:** **YES:** [ ] **NO:** [ ]

CC: _____ **REPLY:** **YES:** [ ] **NO:** [ ]

HDR/LMS
Property Transfer/Pre-Financing Assessments

HDR/LMS offers a variety of services to help our clients minimize their risks in real estate transactions. To meet the needs of buyers, sellers, lenders, insurers and consultants, HDR/LMS offers the following services:

- Site characterization/liability assessments
- Pre-acquisition/due diligence audits
- ISRA (formerly ECRA) or ISRA-type audits
- Underground storage tank assessments
- Groundwater contamination surveys
- Environmental constraints analysis
- Environmental permit compliance assessments
- Wetland identification and delineation
- Natural resource damages

Our property transfer assessments have included SARA "Innocent Landowner" investigations, ISRA audits, pre-financing audits required by banks, pre-lease environmental baseline condition characterization, as well as those required prior to development of specific plans for site use. These audits include site history, record review, site reconnaissance, and field investigations with site-specific circumstances and audit objectives dictating the extent and scope of the audit.

Several major banks including Chase Manhattan, Marine Midland, and Provident Savings refer their clients to us for real estate transfer site investigations. The attached list indicates the wide variety of clients HDR/LMS has served in the area of site assessments for property transfers and financing.

HDR/LMS
Summary of Qualifications

List of Representative Clients for Property Transfer/Pre-Financing Assessments

Ace Canvas and Tent Corp.
Alexander Summer Co.
B.N.E. Associates
Baker Companies
Bangor Area School District
Barr Laboratories
BDG, Monticello
Bergstol Enterprises
Big V Supermarkets
Birbower, Montalbano, Condon & Frank
Bradley Corporate Park
Braun Kendricks, Finkbeiner
Brookside Commercial Construction, Inc.
Carteret Group, The
Castle Oil Co.
Charter Homes, Inc.
City of Peekskill
Colonial Parking, Inc.
Community Action Development Corp.
Consolidated Edison of NY
Consular Inc.
Corporate Real Estate, Inc.
Correa, William
DAL Associates
Davis and Geck
Forest City Residential Devel.
Format Printing Company
Fox, Joseph & Connell, Murray
Freeman, James
Frei & Company
Galto, Edward J.
General Electric
GFWW Management
H.O. Penn Machinery
Halmar Construction Company
Helmer, William
Hurley 209 Company
ILY Properties, Inc.
International Salt
JFS Associates
Kay Fries Chemicals
Lower Salcon School District (Pennsylvania)
Majestic Athletic Wear Limited
Materials Research Group
McMillan, Rather, Bennet & Rigano
Monarch Industries
Nepera Chemical
New England Hydro
New Jersey DEP
New Monsey, Inc.
New York State Department of Transportation
NYC Economic Development Corp.
NYC School Construction Authority
Orange and Rockland Utilities
Orbital Engineering, Inc
Palisades Land Development
Provident Savings and Loan
Pyramid Corporation
Ramapo Land Company
Reynolds Metal Development Corp.
Ronald Mount Group
Rustic Exteriors, Inc.
Suez Energy Generation
Tallman, Hudders & Sorrentino PC
Town of Clarkstown
Town of Orangetown
Troast Group
Turzo, Spry, Sbrocchi, Faul, & LaBarre
Union State Bank
Urstadt-Biddle
Wallabout Cogan Partners
Washington Essex Association
WD Associates
Wilson Area School District

APPENDIX D

PHOTOGRAPHS

Photograph 1

Site Structures

Photograph 2

High Voltage Transmission Lines and Towers

Photograph 3

Stream

Photograph 4

Flashing Cement

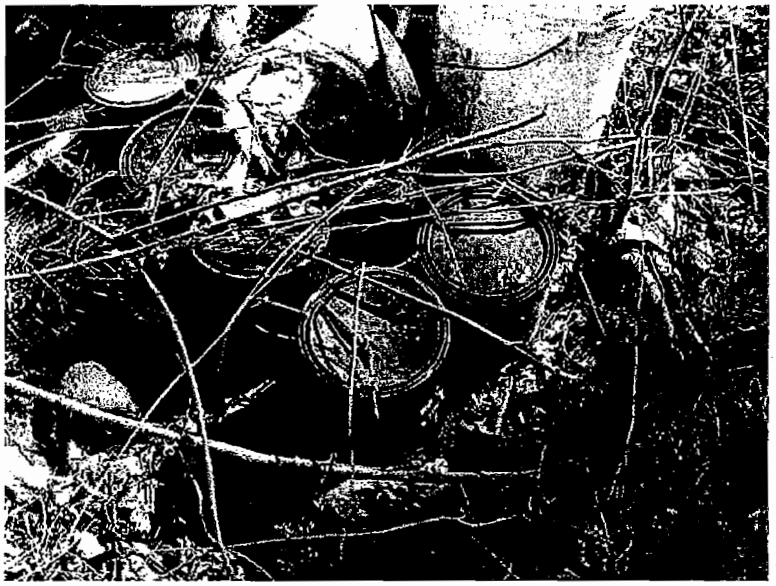
Photograph 5

Paint Buckets

Photograph 6

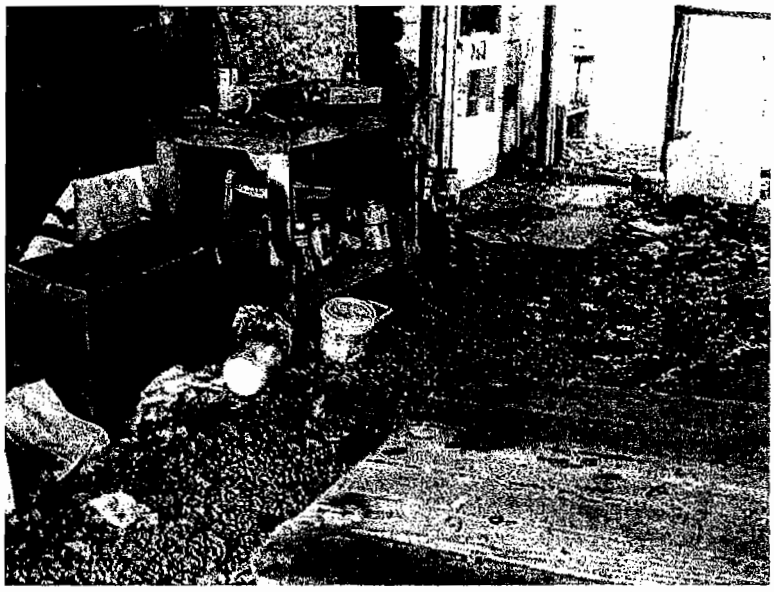
Rusted, Unlabeled Tank

Photograph 7



Rusted Paint Cans

Photograph 8



Miscellaneous Materials (paints, thinners, etc.)

Photograph 9

Miscellaneous Debris (shingles, etc.)

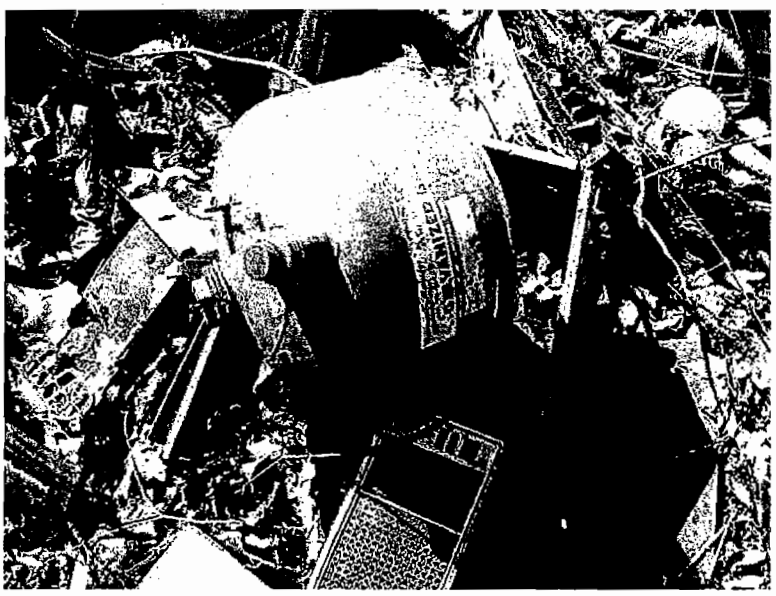
Photograph 10

Miscellaneous Debris (automobile parts, etc.)

Photograph 11

Miscellaneous Debris (batteries, paint cans, etc.)

Photograph 12



Gasoline Can

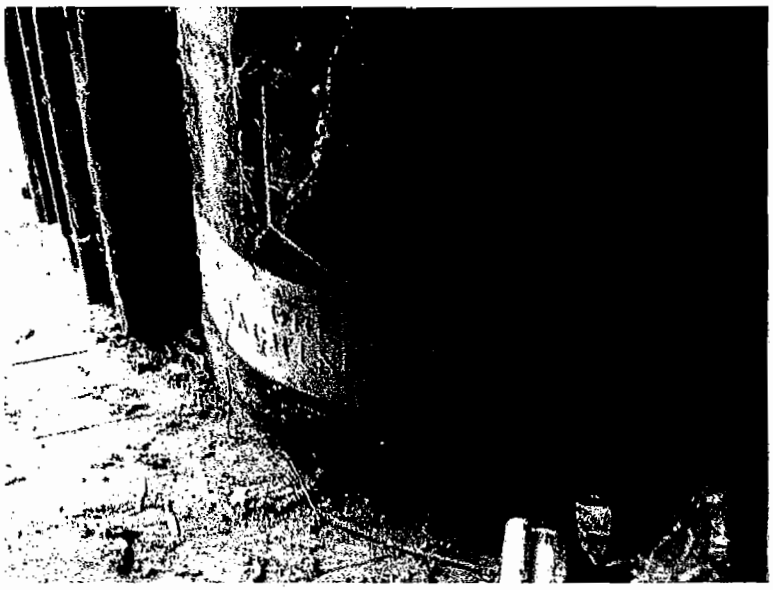
Photograph 13

Corrosive Material

Photograph 14

Gasoline-Powered Engine

Photograph 15



Machine Oil

Photograph 16

Drums of Trash

Photograph 17

Interior of Structure (paints, etc.)

Photograph 18

Miscellaneous Debris near Structures

Photograph 19

Creosote and Stained Soil

Photograph 20

55-Gallon Drum

Photograph 21

Appliances near Stream

Photograph 22

Rusted Paint Cans near Stream

Photograph 23

Miscellaneous Debris near Stream (refined asphalt, petroleum spirits, rusted cans of paint, etc.)

Photograph 24

Rusted, Empty, Unlabeled Drum near Stream

Photograph 25

Tank (rusted) near Stream

Photograph 26

Tank near Stream

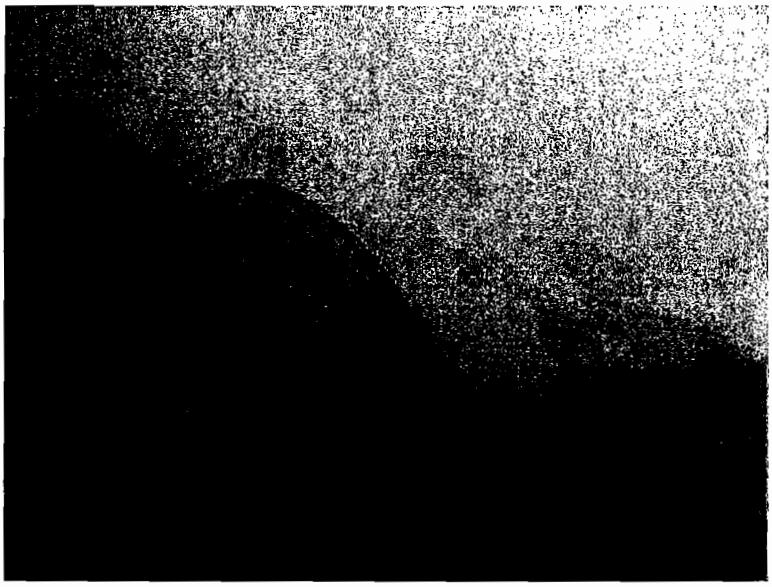
Photograph 27

Above Ground Fuel Storage Tank

Photograph 28

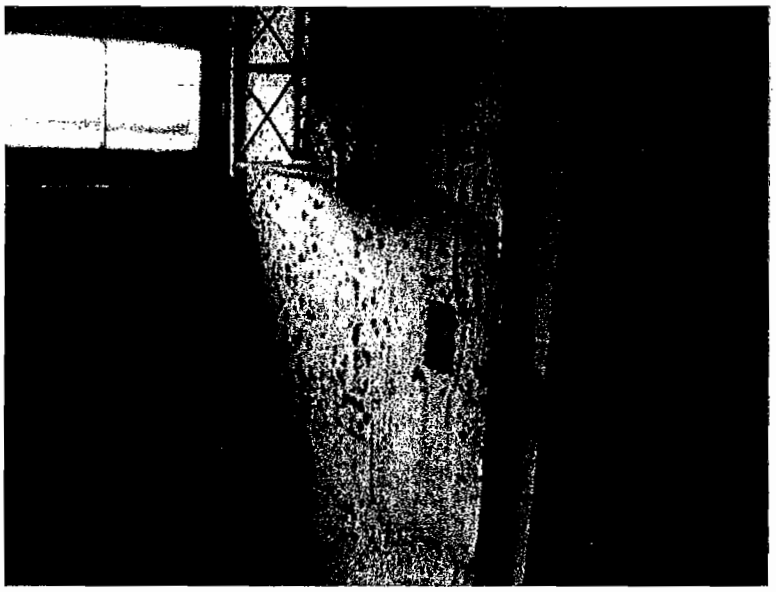
Stains on Concrete Pad beneath the Tank

Photograph 29



Mold on Ceiling inside Structure

Photograph 30



Mold on Walls inside Structure

I

[redacted]

Original
Ticket [redacted]231

Customer Name [redacted]
Ticket Date [redacted]
Payment Type [redacted]
Manual Ticket# [redacted]
Hauling Ticket# [redacted]
Route [redacted]
State Waste Code [redacted]
Manifest [redacted]
Destination [redacted]
PO [redacted]
Profile [redacted]
Generator [redacted]

[redacted], INC.
Volume

	Time			
In	[redacted]	[redacted]	[redacted]	lb
Out	[redacted]	[redacted]	[redacted]	lb
		[redacted]	[redacted]	lb
		Yards		1.18

Comments

	Product	Qty	Unit	Fee	Amount	Origin
1	Asb Friable [redacted]					ROC
2	Bll-Liner [redacted]					ROC
3	SPT-[redacted]					ROC
4	TXL-Trans [redacted]					ROC

Total Fees

Total Ticket

Driver's Signature

404WM

S13

Profile Addendum: State of New York
WASTE SHIPMENT RECORD

F. Additional Waste Stream Information

GENERATOR

1. Work site name: ORANGE & ROCKLAND
   Work Site Address: LITTLE TOR RD&S. MOUNTAIN RD City/State: NEW CITY, NY Zip:
   Owner's Name: Owner's Telephone: (845) 577-3535

2. Operator's name: BSB CONSTRUCTION Operator's Telephone: (845) 462-5236
   Operator's Address: 86 WASHINGTON STREET City/State: POUGHKEEPSIE, NY Zip: 12601

3. Waste Disposal Site (WDS): HIGH ACRES WDS Telephone: ( )
   Address: 425 PERINTON PARKWAY City/State: FAIRPORT, NY Zip: 14450
   Physical Site Location: Additional Info:

4. Agency Responsible: [redacted] US EPA III Region 10278
   Agency Address: [redacted] 26 Federal Plaza City/State: New York [redacted], NY Zip: [redacted]
   Owner's Name: [redacted] Owner's Telephone: ([redacted]

5. Description of Materials: FRIABLE ASBESTOS
6. Number & Type of Containers: 1 CLOSED TOP CONTAINER
7. Total Quantity (m³ or yd³): 20 yds Double 100 BAGS 2 - 6 mil

9. Special handling instructions and additional information:
   RQ ASBESTOS, CLASS 9, NA2212, PGIII Profile # VG4082

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by prope shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

Signature: [signature] Print Name: Anthony Brown Date: 1/30/06

TRANSPORTER (Acknowledgment of receipt of materials) 100 -

10. Transporter 1 Name: Silvarole Trucking Operator's Telephone: (585) 272-0741
    Operator's Address: 85 Silvarole Drive City/State: Rochester Zip: 14616
    Signature: [signature] Date: 1/30/07 Title: Driver

11. Transporter #2 Name: Silvarole Trucking Operator's Telephone: (585) 272-0741
    Operator's Address: 85 Silvarole Dr City/State: Rochester NY Zip: 14616
    Signature: [signature] Date: 2/2/07 Title: Driver

DISPOSAL SITE

12. Discrepancy indication space: WP15 N 43°05.040 W 077°22.858 E 595

Certification of receipt of asbestos materials covered by this manifest except as noted in the discrepancy indication space above.

Grid Coordinates: East _____ North _____ El _____

Name/Title: Donna Eingels Scale Opr Signature: [signature] Date: 2/2/07

©2006 Waste Management, Inc. ORIGINAL RETURN TO GENERATOR January 2006

845-721-7126

ST-124 (6/89)
New York State Department of Taxation and Finance

New York State and Local Sales and Use Tax

Certificate of Capital Improvement

After this certificate is completed and signed by both the customer and the contractor performing the capital improvement, it must be kept by the contractor.

Read this form completely before making any entries.

This certificate is not valid unless all entries are completed.

Name of customer *(print or type)*			Name of contractor *(print or type)*		
Orange & Rockland Utilities, Inc			Helmer-Cronin Construction, Inc		
Street address			Street address		
One Blue Hill Plaza			27 Route 210		
City	State	Zip code	City	State	ZIP code
Pearl River	NY	10965	Stony Point	NY	10980
Certificate of Authority number (if any)			Certificate of Authority number (if any)		

To be completed by customer:
The nature of the work is as follows (give description of capital improvement to be performed):

The project includes the demolition of 10 deteriorated residential structures and 21 sheds, garages, well houses and spring houses. The demolition includes the abatement of asbestos, the removal of septic tanks, the decommissioning of five Drinking water wells, the removal of nine utility poles and the general clean up of the site.

Project name			
Demolition and Clean-up of Little Tor Property			
Street address (where the work is to be performed)	City	State	ZIP code
SW corner of Little Tor Rd. and So. Mountain Rd.	New City	NY	10956-2334

I certify that:

- I am the [X] owner, [ ] tenant of the real property identified on this form, and
- The work described above will result in a capital improvement to the real property within the guidelines set forth above, and
- This contract [ ] includes, [X] does not include the sale of tangible personal property which, when installed, retains its identity as tangible personal property and does not become a permanent part of the real property.

I understand that:

- I will be responsible for any sales tax, interest and penalty due on the contractor's total charge for tangible personal property and for labor if it is determined that this work does not qualify as a capital improvement, and
- I am required to pay the contractor the appropriate sales tax on tangible personal property (and any associated services) transferred to me pursuant to this contract, when the property is not installed by the contractor as a permanent part of the real property, and
- I will be subject to civil or criminal penalties or both under the Tax law for issuing a false or fraudulent certificate.

Signature of customer	Title	Date
[signature]	other engineer	1/5/07

To be completed by the contractor:

I, the contractor, certify that I have entered into a contract to perform the work described by the customer named above. (A copy of the written contract, if any is attached.)

I understand that my failure to collect tax as a result of accepting an improperly completed certificate will make me personally liable for the tax otherwise due, plus penalties and interest

Signature of contractor or officer	Title	Date

(Over for Guidelines)

MILLER ENVIRONMENTAL GROUP, INC.

Daily Job Report

DATE: 1/8/07 O&R

PAGE 1 OF 1

CUSTOMER: ~~Helmer Cronin~~ O&R

JOB#: N07-0036

CONTACT AND PHONE: Ellen Friscoe

CLIENT CODE:

BILLING ADDRESS:

PO#:

LOCATION OF WORK: S. Mountain & Little Tor ; O&R project New City NY

PHONE:

JOB DESCRIPTION: Pick up Two 30 yd container from Taylor Recycling and drop off to abatement site as requested by Helmer Cronin for O&R

SERVICE CODE:

MATERIALS

4 Roll off Liners

PURCHASED ITEMS:

EQUIPMENT

792 roll off

2 30 yd container (from taylor)

SUBCONTRACTORS:

PERSONNEL	HRS	PPE		HRS	PPE
M. Adduce	0730 / 1600	0			

MEALS:

SUBSISTENCE:

START TIME: 0730 SECURED TIME: 1600

DISPOSAL/NOTES:

I ACKNOWLEDGE AND AUTHORIZE PAYMENT FOR THE ABOVE ITEMIZED LABOR, EQUIPMENT, AND MATERIALS, IN THE QUANTITIES SPECIFIED.

132775

APPROVED [signature] 1/8/2007

CUSTOMER REPRESENTATIVE DATED

MILLER ENVIRONMENTAL GROUP, INC.	Site Address:	Purchase Order:	Check One	Todays Date:
Orange & Rockland Utilities Inc. P.O. Box 736, Cooper Station New York, NY 10276 (845)-344-8853	Orange & Rockland Utilities, Inc. Street: City: State: N. Y. O&R On Site Contact:	Emergency Response LS-01678-5-22 Maint & Disposal LS-01677-5-22	☐ ☒	DAY / MO / YR Start Time / End Time
Job Description	OR CHOOSE ONE	PCB PIPE Consolidation and Soaking ☐ PCB Field Screening of Transformers ☐	JOB NUMBER	

LABOR: (NAME)	HOURS	HT-1005	EQ-1009	FM-1004	PRE-3203

MATERIAL	CODE	QTY
17 H Steel Drums (55g)	6206	
Pads 100's	8004	
Speedi Dri Bag	8015	
Citri-Kleen Gallon	3413	
Cubic Yard Box	6211	

LAB SAMPLES
FROM LOCATION
TEST FOR | QUANTITY
MEQ SAMPLE No.

EQUIPMENT	CODE	HOURS
L Response Truck	2022	
Utility Truck	2027	
Straight Vac Truck	2001	
Vac Tractor Trailer >5000g	2002	
Box/Rack/Flatbed/Drum Truck	2023	
Hotsy Truck	2039	
Roll-Off Truck	2017	
Generator	3117	
Portable Lights	3112	
Skid Steer	2050	
Street Sweeper	2051	
Sod Cutter	8104	

EQUIPMENT (other)	CODE	HOURS
L Six Wheel Dump Truck	2032	
Guzzler >3500g	2012	
Tow Behind Light Tower	3111	
Roll-Off Liner	2021	
Roll-Off Container	2018	

RESTORATION
☐ DOES NOT NEED
☐ NEEDS TO BE DONE

TAILGATE SAFETY MEETING
TIME
BY

DISPOSAL
(___) Drums Non-Haz Solid to Shop for CPC on BOL #
(___) Gallons Non-Haz Liquid to Shop for United on Manifest #
Other Waste (Detail)

TRANSPORTATION TO WASTE FACILITY ONLY

TO	QTY.	UNITS	DOCUMENT NUMBER(S)
~~SPOTTSWOOD~~ Taylor	1	Box	BOL #1
UNITED			
AERC			
PPM			

ORANGE & ROCKLAND REPRESENTATIVE SIGNATURE-PINK COPY TO O&R

Taylor Recycling Facility
350 Neelytown Rd.
Montgomery, NY 12549
Telephone: (845)457-4021

Customer #001917
MILLER ENVIRONMENTAL GROUP INC
538 EDWARDS AVE.
CALVERTON, NY 11923

Contract: GATE RATE IN

SITE	TICKET	GRID	WEIGHMASTER
01	138673		Jayme Lake - NY 01/22/07

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
01/22/07	01/22/07	11:44 am	11:57 am	IN-RO	

REFERENCE: RHN70041
ORIGIN: NEW YORK CITY

N07-0036

00 Gross Weight 51,760.00 lb
Tare Weight 35,760.00 lb
Net Weight 16,000.00 lb 7.99 TN

Invoice
Inbound - Ticket

QTY	UNIT			RATE	AMOUNT		
7.99	TN	M1	Non Friable	$100.00	$799.00	$0.00	$799.00

All INBOUND tractor trailers must be scaled in no later than 3 pm.
All INBOUND rolloff trucks must be scaled in no later than 4 pm.
Visit us on the web at www.taylor-recycling.com

Effective September 1, 2006 there will be a 7% price increase for all materials inbound & outbound!!!

Thank you & have a great day!!!!

WO #
000000

SIGNATURE

NET AMOUNT
$799.00
TENDERED
$0.00
CHANGE
CHECK NO.

Re-order from BFI Print & Promotion Solutions 1-888-254-8784

ALTERNATE STRAIGHT BILL OF LADING—SHORT FORM—MEMORANDUM COPY

Name of Carrier: Miller Environmental Group, Inc.

Carrier's No. IA-041

Date

Shipper No. BOL#1

TO Consignee: Taylor Recycling

Street: Neelytown Rd

Destination: Montgomery, NY

Zip Code

FROM Shipper: Orange & Rockland
Little Tor Rd
New City, NY
845-577-3535

Emergency Response Phone No: 845-569-1200

Route:

Non-odble

Vehicle No.

No. Shipping Units	+ HM	Kind of Package, Description of Articles, Special Marks and Exceptions	* Weight (Sub. to Corr.)	RATE	✓	CHARGES
1 CM		Non Friable Asbestos Construction Debris	12000 T			
	1					

REMIT C.O.D. TO: ADDRESS

C.O.D. AMT:

C.O.D. FEE: PREPAID ☐ $ COLLECT ☐

TOTAL CHARGES: $

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other charges.

(Signature of Consignor)

FREIGHT CHARGES
Check Appropriate Box:
☐ Freight prepaid ☐ Collect

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of receipt by the carrier of the property described in the Original Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.
Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.
This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

OIR Shipper, Per [signature] Asset Agent

MEG Agent, Per [signature]

+ Mark with "X" to designate Hazardous Material as defined in Title 49 of Federal Regulations:
For further details on TRANSPORTING HAZARDOUS MATERIALS see Federal Regulations 49 CFR, Part 172.

TOPS. FORM No. 3841
Printed in the U.S.A.

3

MILLER ENVIRONMENTAL GROUP, INC.	Site Address	Purchase Order	Check One	Today's Date
Orange & Rockland Utilities Inc. P.O. Box 736, Cooper Station New York, NY 10276 (845)-344-8853	Orange & Rockland Utilities, Inc. Street: 18TH AND 4 LINCOLN City: Monroe State: NY O&R On Site Contact:	Emergency Response LS-01678-5-22	☐	1/25/11 DAY
		Maint & Disposal LS-01677-5-22	☒	Start Time: 1230 End Time: 1730
Job Description: TRANSPORTATION & DISPOSAL TO TAYLOR RECYCLING		OR CHOOSE ONE: PCB PIPE Consolidation and Soaking ☐ / PCB Field Screening of Transformers ☐		JOB NUMBER: NJ7-8078

LABOR: (NAME)	HOURS	HT-1005	EO-1009	FM-1004	PPE-3203
C. MEYER	13 to 17 30		X 4		☒
	1				
	1				
	1				
	1				
	1				

MATERIAL	CODE	QTY
17 H Steel Drums (55g)	8206	
Pads 100's	8004	
Speedi Dri-Bag	8015	
Citri-Kleen Gallon	3413	
Cubic Yard Box	8211	

LAB SAMPLES
FROM LOCATION:
TEST FOR: | QUANTITY:
MEG SAMPLE NO.:

EQUIPMENT	CODE	HOURS
L Response Truck	2022	
Utility Truck	2027	
Straight Vac Truck	2001	
Vac Tractor Trailer >5000g	2002	
Box/Rack/Flatbed/Drum Truck	2023	
Hotsy Truck	2039	
Roll-Off Truck	2017	4
Generator	3117	
Portable Lights	3112	
Skid Steer	2050	
Street Sweeper	2051	
Sod Cutter	3104	

EQUIPMENT (other)	CODE	HOURS
L Six Wheel Dump Truck	2032	
Guzzler >3500g	2012	
Tow Behind Light Tower	3111	
Roll Off Liner	2021	
Roll-Off Container	2018	

RESTORATION:
☐ DOES NOT NEED
☐ NEEDS TO BE DONE

TAILGATE SAFETY MEETING:
TIME
BY

DISPOSAL
(____) Drums Non-Haz Solid to Shop for CPC on BOL #
(____) Gallons Non-Haz Liquid to Shop for United on Manifest #
Other Waste (Detail)

ORANGE & ROCKLAND REPRESENTATIVE SIGNATURE-PINK COPY TO O&R

TRANSPORTATION TO WASTE FACILITY ONLY

TO	QTY	UNITS	DOCUMENT NUMBER(S)
CPC			
UNITED			
AERC			
PPM			

IOPS. Office FORM 3841 CARBON REQUIRED TRIPLICATE

ALTERNATE STRAIGHT BILL OF LADING—SHORT FORM—ORIGINAL—NOT NEGOTIABLE

Name of Carrier: Miller Environmental Group, Inc.	Carrier's No: 14-041	Date	Shipper No. BOL #2
TO Consignee: Taylor Recycling	FROM Shipper: Orange & Rockland Little Tor & S. Mountain Rd New City, NY 845-577-3535		
Street: Neelytown Rd			Emergency Response Phone No. 845-569-1200
Destination: Montgomery, NY Zip Code	MEG Job # 107-		
Route:		Vehicle No.	

	† HM				
1 TT		NON Friable Asbestos Construction Debris	20 YDS		

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".

NOTE: Where this rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$_____ per _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other charges.
_____ (Signature of Consignor)

FREIGHT CHARGES
Check Appropriate Box:
☐ Freight prepaid ☐ Collect

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of receipt by the carrier of the property described in the Original Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.
Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.
This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

O/R Shipper, Per Ken Keller Asbestos Agent MEG Agent, Per

Permanent post office address of shipper + Mark with "X" to designate Hazardous Material as defined in Title 49 of Federal Regulations.

IOPS. FORM No. 3841 Printed in the U.S.A.

For further details on TRANSPORTING HAZARDOUS MATERIALS see Federal Regulations 49 CFR, Part 172.

1

MILLER ENVIRONMENTAL GROUP, INC.	Site Address	Purchase Order	Check One	Todays Date
Orange & Rockland Utilities Inc. P.O. Box 736, Cooper Station New York, NY 10276 (845)-344-8853	Orange & Rockland Utilities, Inc. Street City State NY O&R On Site Contact	Emergency Response LS-0167-5-22 Maint & Disposal LS-0167-5-22	☐ ☒	Start Time End Time
Job Description		OR CHOOSE ONE: PCB-PIPE Consolidation and Soaking ☐ / PCB Field Screening of Transformers ☐		JOB NUMBER

LABOR: (NAME)	HOURS	HT-1005	EQ-1009	FM-1004	PPE-3203
			X		X

MATERIAL	CODE	QTY
17 H Steel Drums (55g)	6206	
Pads 100's	8004	
Speed Dri Bag	8015	
Citri-Kleen Gallon	3413	
Cubic Yard Box	6211	

LAB SAMPLES
FROM LOCATION
TEST FOR: | COUNT
MEG SAMPLE No.

EQUIPMENT	CODE	HOURS
L Response Truck	2022	
Utility Truck	2027	
Straight Vac Truck	2001	
Vac Tractor Trailer >5000g	2002	
Box/Rack/Flatbed/Drum Truck	2023	
Hotsy Truck	2039	
Roll-Off Truck	2017	3
Generator	3117	
Portable Lights	3112	
Skid Steer	2050	
Street Sweeper	2051	
Sod Cutter	3104	

EQUIPMENT (other)	CODE	HOURS
L Six Wheel Dump Truck	2032	
Guzzler >3500g	2012	
Tow Behind Light Tower	3111	
Roll-Off Liner	2021	
Roll-Off Container	2018	

RESTORATION
☐ DOES NOT NEED
☐ NEEDS TO BE DONE

TAILGATE SAFETY MEETING
TIME
BY

DISPOSAL
( ) Drums Non-Haz Solid to Shop for CPC on BOL #
( ) Gallons Non-Haz Liquid to Shop for United on Manifest #
Other Waste (Detail)

ORANGE & ROCKLAND REPRESENTATIVE SIGNATURE-PINK COPY TO O&R

TRANSPORTATION TO WASTE FACILITY ONLY

TO	QTY	UNITS	DOCUMENT NUMBER(S)
UNITED			
AERC			
PPM			

TOPS. Snap off® CARBONLESS FORM 3841

NO CARBON REQUIRED

BILL OF LADING

TRIPLICATE

ALTERNATE STRAIGHT BILL OF LADING—SHORT FORM—ORIGINAL—NOT NEGOTIABLE

Name of Carrier: Miller Environmental Group, Inc.	Carrier's No. 1A-041	Date 1/26/07	Shipper No. BOL#2
TO Consignee: Taylor Recycling	FROM Shipper: Orange & Rockland Little Tor & S. Mountain Rd New City, NY 845-577-3535		
Street: Neelytown Rd			
Destination: Montgomery, NY — Zip Code	MEG Job# N07-0036		Emergency Response Phone No. 845-569-1200
Route:			Vehicle No.

	HM					
1 TT		Non Friable Asbestos, Construction Debris	20 YDS			

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is: "carrier's or shipper's weight".

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$_____ per _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other charges.
_____ (Signature of Consignor)

FREIGHT CHARGES
Check Appropriate Box:
☐ Freight prepaid ☐ Collect

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of receipt by the carrier of the property described in the Original Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.
Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.
This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

O/R _____ Shipper, Per [signature] As Per Agent _____ MEG _____ Agent, Per [signature]

Permanent post office address of shipper + Mark with "X" to designate Hazardous Material as defined in Title 49 of Federal Regulations.

For further details on TRANSPORTING HAZARDOUS MATERIALS see Federal Regulations 49 CFR, Part 172.

TOPS. FORM No. 3841
Printed in the U.S.A.

1

Taylor Recycling Facility
350 Neelytown Rd.
Montgomery, NY 12549
Telephone: (845)457-4021

Customer #:001917
MILLER ENVIRONMENTAL GROUP INC
538 EDWARDS AVE.
CALVERTON, NY 11923

Contract: GATE RATE IN

SITE	TICKET	GRID	WEIGHMASTER
01	139037		Jamie Lake - NY 330122

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
01/26/07	01/26/07	12:14 pm	12:29 pm	IN-RO	

REFERENCE

ORIGIN
NEW CITY

00 Gross Weight 52,740.00 lb
Tare Weight 37,140.00 lb
Net Weight 15,600.00 lb 7.80 TN

Invoice
Inbound - Ticket

7.80	TN	M1	Non Friable	$100.00	$780.00	$0.00	$780.00

NET AMOUNT
$780.00
TENDERED
$0.00
CHANGE
CHECK NO.

WO #
000000

All INBOUND tractor trailers must be scaled in no later than 3 pm.
All INBOUND rolloff trucks must be scaled in no later than 4 pm.
Visit us on the web at www.taylor-recycling.com

Effective September 1, 2006 there will be a 7% price increase for all materials inbound & outbound!!!

Thank you & have a great day!!!

SIGNATURE

Re-order from BFI Print & Promotion Solutions 1-888-264-8764

WASTE MANAGEMENT

HIGH ACRES LANDFILL
425 Perinton Parkway
Fairport, NY 14450
(585) 223-6132
(585) 223-6848 Fax

DATE: 2/3/07

The National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision(40CFR Part 61), requires that the disposal site forward the generator of each load of asbestos a copy of the waste shipment record within 30 days of disposal. In accordance with this NESHAPS requirement, enclosed please find a copy of a waste shipment record for the load of asbestos that was generated by you and/or your company, and disposed of at High Acres Landfill in Fairport, New York on the date indicated on the document.

Please feel free to contact me should you have any questions.

Sincerely,

Donna Engels

Donna Engels
Scale Operator

S13

Profile Addendum: State of New York
WASTE SHIPMENT RECORD

F. Additional Waste Stream Information

GENERATOR

1. Work site name: ORANGE & ROCKLAND

Work Site Address: LITTLE TOR RD&SOUMOUNTAIN RD City/State: NEW CITY, NY Zip: 10956

Owner's Name: _____ Owner's Telephone: (845) 577-3535

2. Operator's name: BSB CONSTRUCTION Operator's Telephone: (845) 462-5236

Operator's Address: 86 WASHINGTON STREET City/State: POUGHKEEPSIE, NY Zip: 12601

3. Waste Disposal Site (WDS): HIGH ACRES WDS Telephone: ( )

Address: 425 PERINTON PARKWAY City/State: FAIRPORT, NY Zip: 14450

Physical Site Location: _____ Additional Info: _____

4. Agency Responsible: [redacted] US EPA III Region 10278

Agency Address: [redacted] 26 Federal Plaza City/State: [redacted] NY Zip: [redacted]

Owner's Name: [redacted] Owner's Telephone: [redacted]

5. Description of Materials:	6. Number & Type of Containers:	7. Total Quantity (m^3 or yd^3):
FRIABLE ASBESTOS	1 CLOSED TOP CONTAINER	20 yds Poly
		100 BAGS 2 - 6 mil

9. Special handling instructions and additional information:

RQ ASBESTOS, CLASS 9, NA2212, PGIII Profile # VG4082

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

Signature: _____ Print Name: Anthony Bevo Date: 1/30/06

TRANSPORTER (Acknowledgment of receipt of materials) 100 -

10. Transporter 1 Name: Silvaside Trucking Operator's Telephone: (585) 272-0741

Operator's Address: 85 Silvaside Drive City/State: Rochester Zip: 14616

Signature: _____ Date: 1/30/07 Title: Driver

11. Transporter #2 Name: Silvaside Trucking Operator's Telephone: (585) 272-0741

Operator's Address: 85 Silvaside dr City/State: Rochester NY Zip: 14616

Signature: _____ Date: 2/2/07 Title: Driver

DISPOSAL SITE

12. Discrepancy indication space: WP15 W079°22.858 N43°05.040 E595

Certification of receipt of asbestos materials covered by this manifest except as noted in the discrepancy indication space above.

Grid Coordinates: East _____ North _____ El _____

Name/Title: Donna Engels Scale Op Signature: D Engels Date: 2/2/07

©2006 Waste Management, Inc.

ORIGINAL RETURN TO GENERATOR

845-721-7726

ORANGE & ROCKLAND UTILITIES
ATT: MIKE HOMENICK
390 WEST ROUTE 59
SPRING VALLEY, N.Y. 10977

HIGH ACRES LAN
425 Perinton Parkway
Fairport, NY 14450
(585) 223-6132
(585) 223-6898 Fax

10977+5320

irdous Air Pollutants; Asbestos
s that the disposal site forward the
of the waste shipment record within
s NESHAPS requirement, enclosed
ord for the load of asbestos that was
d disposed of at High Acres Landfill in
the document.

ave any questions.

ALTERNATE FREIGHT BILL OF LADING—SHORT FORM—MEMORANDUM COPY

Name of Carrier: ~~Miller~~ Environmental Group, Inc.	Carrier's No. 1A-041	Date 1/22/07	Shipper No. BOL#1
TO Consignee: Taylor Recycling	FROM Shipper: Orange & Rockland Little Tor Rd New City, NY		845-577-3535
Street: Neelytown Rd			
Destination: Montgomery, NY — Zip Code			Emergency Response Phone No: 845-569-1200
Route: Non-oobe			Vehicle No.

No. Shipping Units	HM	Kind of Package, Description of Articles, Special Marks and Exceptions	* Weight (Sub. to Corr.)	RATE	✓	CHARGES
1 CM		Non Friable Asbestos, Construction Debris	12,000			

REMIT C.O.D. TO: ADDRESS	C.O.D. AMT:	C.O.D. FEE: PREPAID ☐ COLLECT ☐ $	TOTAL CHARGES: $

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight".

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

$_____ per _____

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other charges.

_____ (Signature of Consignor)

FREIGHT CHARGES. Check Appropriate Box:

☐ Freight prepaid ☐ Collect

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of receipt by the carrier of the property described in the Original Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents)

...ing Facility
...eelytown Rd.
Montgomery, NY 12549
Telephone: (845)457-4021

Customer #001917
MILLER ENVIRONMENTAL GROUP INC
538 EDWARDS AVE.
CALVERTON, NY 11923

Contract: GATE RATE IN

SITE	TICKET	D	WEIGHMASTER
01	138673		Jayme Lake - NY 330122

DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
01/22/07	01/22/07	11:44 am	11:57 am	IN-RO	

REFERENCE	ORIGIN
RHN70041	NEW YORK CITY

N07-0036

00 Gross Weight 51,760.00 lb
Tare Weight 35,780.00 lb
Net Weight 15,980.00 lb 7.99 TN

Invoice
Inbound - Ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
7.99	TN	M1 Non Friable	$100.00	$799.00	$0.00	$799.00

NET AMOUNT $799.00
TENDERED $0.00
CHANGE
CHECK NO.

WO # 000000

All INBOUND tractor trailers must be scaled in no later than 3 pm.
All INBOUND rolloff trucks must be scaled in no later than 4 pm.
Visit us on the web at www.taylor-recycling.com

Effective September 1, 2006 there will be a 7% price increase for all materials inbound & outbound!!!

Thank you & have a great day!!!!

SIGNATURE _____

ALTERNATE STRAIGHT BILL OF LADING—SHORT FORM—ORIGINAL—NOT NEGOTIABLE

Name of Carrier: Miller Environmental Group, Inc.

Carrier's No. 1A-041

Date 1/26/07

Shipper No. BOL #2

TO Consignee: Taylor Recycling

Street Neelytown Rd

Destination Montgomery, NY

Zip Code

FROM Shipper: Orange & Rockland
Little Tor & S. Mountain Rd
New City, NY
845-577-3535

MEG Job# N07-0036

Emergency Response Phone No. 845-569-1200

Route:

Vehicle No.

No. Shipping Units*	HM	Kind of Package, Description of Articles, Special Marks	Weight (Subject to Correction)	Class or Rate	Check Column	Charges
1 T		Non Friable Asbestos Construction Debris	20 YDS			

REMIT C.O.D. TO: ADDRESS

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_____ (Signature of Consignor)

FREIGHT CHARGES
Check Appropriate Box:

☐ Freight prepaid ☐ Collect

RECEIVED, subject to classifications and lawfully filed tariffs in effect on the date of the issue of receipt by the carrier of the property described in the Original Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above, which

01/26/07	01/26/07	12:14 pm	12:29 pm	IN-RO
REFERENCE		ORIGIN		
		NEW CITY		

Contract: GATE RATE IN

00 Gross Weight 52,740.00 lb

Tare Weight 37,140.00 lb

Net Weight 15,600.00 lb 7.80 TN

Invoice

Inbound - Ticket

QTY	UNIT	DESCRIPTION		RATE	EXTENSION	TAX	TOTAL
7.80	TN	M1	Non Friable	$100.00	$780.00	$0.00	$780.00

NET AMOUNT
$780.00
TENDERED
$0.00
CHANGE
CHECK NO.

All INBOUND tractor trailers must be scaled in no later than 3 pm.
All INBOUND rolloff trucks must be scaled in no later than 4 pm.
Visit us on the web at www.taylor-recycling.com

Effective September 1, 2006 there will be a 7% price increase for all materials inbound & outbound!!!

Thank you & have a great day!!!!

WO #

000000

SIGNATURE

Re-order from BFI Print & Promotion Solutions 1-888-254-8784

STATE OF NEW YORK - DEPARTMENT OF LABOR

DIVISION OF SAFETY AND HEALTH

License and Certificate Unit
BUILDING 12, STATE CAMPUS
ALBANY, NY 12240

ASBESTOS HANDLING LICENSE

Contractor: **B.S.B. CONSTRUCTION, INC.**
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601

LICENSE NUMBER: **99-0838**
DATE OF ISSUE: **8 /11/2006**
EXPIRATION DATE: **9/30/2007**

Duly Authorized Representative: **FRANK A. BOVA JR.**

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

SH 432 (6-03)

Anthony Germano, Director
FOR THE COMMISSIONER OF LABOR

Asbestos Project Notification
O&R UTILITIES
BUILDING 1
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on Bldg.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 1000 sq. ft. of roofing.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 2
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on Bldg.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 60 sq. ft. of floor tile and mastic.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 3
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on Bldg.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 1040 sq. ft. of joint compound and 775 sq. ft. of roof shingles.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 5
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on Bldg.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 300 sq. ft. of linoleum / mastic and 950 sq. ft. of roofing material.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 5B
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on Bldg.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 100 sq. ft. of roofing shingle.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL, ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 6
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on Bldg.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 24 sq. ft. of floor tile and mastic, 200 sq. ft. of floor tile, 60 lin. ft. of roof flashing, and 580 sq. ft. of joint compound.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 7
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on this building.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 475 sq. ft. of floor tile and mastic.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 7B
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on this building.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 100 sq. ft. of roofing material.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 8
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on this building.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 725 sq. ft. of linoleum, and 50 lin. ft. of flashing.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 9C
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on this building.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 20 sq. ft. of shingles.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc., 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center; 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Asbestos Project Notification
O&R UTILITIES
BUILDING 10
SUB STATION PROJECT
LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD
CLARKSTOWN, NEW YORK 10956

POSTING DATE: 12-21-06

PROJECT DESCRIPTION: An asbestos abatement project will be done on this building.

PROJECT DATES: This project will start January 8, 2007 and be completed on March 8, 2007.

SCOPE OF WORK: The removal and disposal of 100 sq. ft. of tile and mastic and 1200 sq. ft. of roofing material.

ABATEMENT CONTRACTOR: The asbestos abatement contractor is BSB Construction Inc.; 86 Washington St., Poughkeepsie, N.Y. 12601. Asbestos Contractors License number is 99-0838.

AIR MONITORING LAB: EMSL ELAP #11506
307 West 38th St.
New York, NY 10018

AIR MONITORING FIRM: Clayton Group Services Asbestos # 99-1188
Raritan Center, 160 Fieldcrest Ave
Edison, NJ 08837

EMERGENCY CONTACTS:

	FRANK BOVA	BRENT FULLUM
OFFICE	845-462-5236	
CELL	914-475-3455	845-453-7007

If you have any questions regarding this notification, please contact one of the following people above.

Department of Labor Code Rule 56, latest edition. All asbestos containing materials (ACM) should be properly removed, wrapped in two 6-mil poly bags and placed in Company supplied dumpsters. Disposal of ACM will be by others. A report certifying that the site is clear of ACM will be obtained by the Company through a third party testing Contractor. This report will be submitted to the Town of Clarkstown with the demolition permit application. Demolition cannot begin until this permit is obtained.

Asbestos containing materials along with approximate quantities are listed on the following table. Contractor shall verify all quantities in the field. No financial compensation will be awarded for differences between estimated quantities and actual quantities.

Building No.	ACM Description	Location of ACM	Estimated Amount of ACM
1	Black multi-layered roofing materials	Roof	1,000 SF
2	Floor tiles: 12-inch, white and black and mastic	Rear Room near Kitchen	60 SF
3	Joint compound and stucco	Front fireplace room	400 SF
	Roof shingle, black with white flecks	North side of roof	775 SF
	Brown paper wallboard, brown paper backing insulation, joint compound	Bedroom	20' x 12' room
5	Multi-layered built-up roofing materials (black tar)	Roof	950 SF
	Brown linoleum flooring with light brown/red vermiculite pattern and mastic	Bedroom	200 SF
	Linoleum flooring with red square pattern and multi-layered paper backing and mastic	Kitchen	100 SF
5B	Black multi-layered roof shingle	Roof	100 SF
6	Floor tile, red brick pattern and mastic	Kitchen	24 SF
	Floor tiles, 9-inch, white with red, green & beige	Kitchen	200 SF

	(mastic is not ACM)		
	Black roof flashing at window ledge	Lower Roof	60 LF
	Sheetrock, joint compound and tape	Kitchen	15' x 14' room
7	Floor tiles, 9-inch, white and mastic	Foyer	150 SF
	Floor tiles, 9-inch, beige with blue streaks & mastic	Living Room	275 SF
7B	Black multi-layered roofing material – Green Shingles	Roof	100 SF
8	White linoleum flooring with 4-inch squares pattern (no mastic)	Living Room	500 SF
	White linoleum flooring with octagon pattern (no mastic)	Kitchen	125 SF
	Black tar flashing	Roof and Chimney	50 LF
	Blue and gray linoleum flooring	Bedroom	100 SF
9C	Black and white asphalt shingle	Roof	20 SF
10	12-inch self adhesive floor tiles and mastic	Kitchen	100 SF
	Roofing materials	House and car port	1200 SF

X. FIRE DEPARTMENT INVOLVEMENT

The Company is responsible for obtaining the Town of Clarkstown Demolition Permit. The Company cannot apply for the Town of Clarkstown Demolition Permit until the structures are clear of asbestos Containing Material (ACM). As part of the permit application the Company will submit a third party testing report stating that the site has been abated.

On or about the date that the Town of Clarkstown issues the Demolition Permit, structures 2, 5, and 6 will be turned over to the Fire Department for the purpose of training the Department Members. The Fire Department will be given use of these structures for approximately four (4) weeks. Fire Department activities on the site will include controlled burns of selected structures along with the cutting

BSB CONSTRUCTION, INC.
86 WASHINGTON ST.
POUGHKEEPSIE, NY 12601

RHINEBECK SAVINGS BANK
POUGHKEEPSIE, NEW YORK 12601
50-7101-2219

12/22/2006

PAY TO THE ORDER OF COMMISSIONER OF LABOR $ **700.00

Seven Hundred and 00/100********** DOLLARS

COMMISSIONER OF LABOR
NYS DEPT. OF LABOR
DIV. OF SAFETY & HEALTH
ASBESTOS CONTROL BUREAU
STATE OFFICE CAMPUS

MEMO 2 VARIANCE FEES (O&R UTILITIES)

Patricia Bova

⑈001939⑈ ⑆221971015⑆ 770000687 2⑈

ACORD CERTIFICATE OF LIABILITY INSURANCE

CSR DG BSBCO-1 | DATE (MM/DD/YYYY) 12/19/06

PRODUCER

Marshall & Sterling, Inc.
10 Main Street
Poughkeepsie NY 12601
Phone: 845-454-0800

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED

BSB Construction Inc
86 Washington Street
Poughkeepsie NY 12601

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: Everest Indemnity Ins Co	
INSURER B: National Grange Mutual Ins	226
INSURER C:	
INSURER D:	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	X	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY PRO-JECT LOC	4000003885061	03/22/06	03/22/07	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1000000 $ 50000 $ 5000 $ 1000000 $ 1000000 $ 1000000
B		AUTOMOBILE LIABILITY ANY AUTO ALL OWNED AUTOS X SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS	B1Z64501	10/01/06	10/01/07	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1000000 $ $ $
		GARAGE LIABILITY ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EA ACC AGG	$ $ $
A		EXCESS/UMBRELLA LIABILITY X OCCUR CLAIMS MADE DEDUCTIBLE X RETENTION $ 10000	40UM000273061	03/22/06	03/22/07	EACH OCCURRENCE AGGREGATE	$ 4000000 $ 4000000 $ $ $
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below				WC STATU-TORY LIMITS OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $
		OTHER					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Project: Orange & Rockland Utilities , 290 Route 59, Spring Valley, NY.
Certificate holder is additional insured with respects to referenced project to the extent they have a written contract or agreement.

CERTIFICATE HOLDER

HELM003

Helmar-Cronin Construction Inc
27 Route 210
Stony Point NY 10980

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

© ACORD CORPORATION 1988

ACORD CERTIFICATE OF LIABILITY INSURANCE

CSR DG BSBCO-1 | DATE (MM/DD/YYYY) 12/19/06

PRODUCER

Marshall & Sterling, Inc.
110 Main Street
Poughkeepsie NY 12601
Phone: 845-454-0800

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BSB Construction Inc
86 Washington Street
Poughkeepsie NY 12601

INSURERS AFFORDING COVERAGE		NAIC #
INSURER A:	Everest Indemnity Ins Co	
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INSURER C:		
INSURER D:		
INSURER E:		

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INSR LTR	ADDL INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	X	GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY PRO-JECT LOC	4000003885061	03/22/06	03/22/07	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1000000 $ 50000 $ 5000 $ 1000000 $ 1000000 $ 1000000
B		AUTOMOBILE LIABILITY ANY AUTO ALL OWNED AUTOS X SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS	B1X64501	10/01/06	10/01/07	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1000000 $ $ $
		GARAGE LIABILITY ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EA ACC AGG	$ $ $
A		EXCESS/UMBRELLA LIABILITY X OCCUR CLAIMS MADE DEDUCTIBLE X RETENTION $ 10000	40UM000273061	03/22/06	03/22/07	EACH OCCURRENCE AGGREGATE	$ 4000000 $ 4000000 $ $ $
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below				WC STATU-TORY LIMITS / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $
		OTHER					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

Project: Orange & Rockland Utilities , 290 Route 59, Spring Valley, NY.
Certificate holder is additional insured with respects to referenced project
to the extent they have a written contract or agreement.

CERTIFICATE HOLDER

HELM003

Helmar-Cronin Construction Inc
27 Route 210
Stony Point NY 10980

CANCELLATION

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AUTHORIZED REPRESENTATIVE

© ACORD CORPORATION 1988

NYSIF New York State Insurance Fund
Workers' Compensation & Disability Benefits Specialists Since 1914
1 WATERVLIET AVENUE ALBANY, NEW YORK 12206-1649
Phone: (518) 437-8976

CERTIFICATE OF WORKERS' COMPENSATION INSURANCE

^^^^^^

B S B CONSTRUCTION INC
86 WASHINGTON ST
POUGHKEEPSIE NY 12601

POLICYHOLDER	CERTIFICATE HOLDER
B S B CONSTRUCTION INC 86 WASHINGTON ST POUGHKEEPSIE NY 12601	HELMER-CRONIN CONSTRUCTION 27 RTE 210 STONEY POINT NY 10980

POLICY NUMBER	CERTIFICATE NUMBER	PERIOD COVERED BY THIS CERTIFICATE	DATE
A 1297 516-5	670930	05/30/2006 TO 05/30/2007	12/20/2006

THIS IS TO CERTIFY THAT THE POLICYHOLDER NAMED ABOVE IS INSURED WITH THE NEW YORK STATE INSURANCE FUND UNDER POLICY NO. 1297 516-5 UNTIL 05/30/2007, COVERING THE ENTIRE OBLIGATION OF THIS POLICYHOLDER FOR WORKERS' COMPENSATION UNDER THE NEW YORK WORKERS' COMPENSATION LAW WITH RESPECT TO ALL OPERATIONS IN THE STATE OF NEW YORK, EXCEPT AS INDICATED BELOW.

IF SAID POLICY IS CANCELLED, OR CHANGED PRIOR TO 05/30/2007 IN SUCH MANNER AS TO AFFECT THIS CERTIFICATE, 5 DAYS WRITTEN NOTICE OF SUCH CANCELLATION WILL BE GIVEN TO THE CERTIFICATE HOLDER ABOVE. NOTICE BY REGULAR MAIL SO ADDRESSED SHALL BE SUFFICIENT COMPLIANCE WITH THIS PROVISION. THE NEW YORK STATE INSURANCE FUND DOES NOT ASSUME ANY LIABILITY IN THE EVENT OF FAILURE TO GIVE SUCH NOTICE.

THIS CERTIFICATE DOES NOT APPLY TO BUILDING DEMOLITION.

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS NOR INSURANCE COVERAGE UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICY.

NEW YORK STATE INSURANCE FUND

Vincent M. Iacovello

DIRECTOR,INSURANCE FUND UNDERWRITING

This certificate can be validated on our web site at https://www.nysif.com/cert/certval.asp or by calling (888) 875-5790

U-26.3 VALIDATION NUMBER: 747834921

NYSIF New York State Insurance Fund
Workers' Compensation & Disability Benefits Specialists Since 1914
1 WATERVLIET AVENUE ALBANY, NEW YORK 12206-1649
Phone: (518) 437-8978

CERTIFICATE OF WORKERS' COMPENSATION INSURANCE

^^^^^^

B S B CONSTRUCTION INC
86 WASHINGTON ST
POUGHKEEPSIE . NY 12601

POLICYHOLDER	CERTIFICATE HOLDER
B S B CONSTRUCTION INC 86 WASHINGTON ST POUGHKEEPSIE NY 12601	HELMER-CRONIN CONSTRUCTION 27 RTE 210 STONEY POINT NY 10980

POLICY NUMBER	CERTIFICATE NUMBER	PERIOD COVERED BY THIS CERTIFICATE	DATE
A 1297 516-5	670930	05/30/2006 TO 05/30/2007	12/20/2006

THIS IS TO CERTIFY THAT THE POLICYHOLDER NAMED ABOVE IS INSURED WITH THE NEW YORK STATE INSURANCE FUND UNDER POLICY NO. 1297 516-5 UNTIL 05/30/2007, COVERING THE ENTIRE OBLIGATION OF THIS POLICYHOLDER FOR WORKERS' COMPENSATION UNDER THE NEW YORK WORKERS' COMPENSATION LAW WITH RESPECT TO ALL OPERATIONS IN THE STATE OF NEW YORK, EXCEPT AS INDICATED BELOW.

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NEW YORK STATE INSURANCE FUND

Vincent M. Iacovello

DIRECTOR,INSURANCE FUND UNDERWRITING

This certificate can be validated on our web site at https://www.nysif.com/cert/certval.asp or by calling (888) 875-5790

U-26.3 VALIDATION NUMBER: 747834921

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

Project Reference Number: 26454
Type: Regular Notification
Status: Complete
Notification Date: 12/19/2006

Contractor Information

FEIN: 22-3377539
Asbestos License Number: 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 3
Room/Location: Interior and Exterior
Address: Little Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 50
Prior Use: Residential
Building Size (sq ft): 2000

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59
City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007

Do you anticipate doing any of the following? Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depending on weather

Is work being done under a variance? Yes

Variance Numbers: Individual Variance Petition will amend

Equipment & Ventilation Systems

Negative Air Machines, HEPA Vacuums, Half FAce Esp.

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing

Other (specify)

- Joint Compound

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0
Non-friable Linear Feet: 0
Total linear feet: 0
Friable Square Feet: 1040
Non-friable Square Feet: 775
Total square feet: 1815

Fee Schedule

Linear Feet Fee:	Square Feet Fee:
$.00	$1,000.00

Remarks

In-plant opertions to be utilized on roofing. Site Specific to be used on joint compound. Will amend when recieve.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

(2)

Project Reference Number: 26454 **Notification Date:** 01/16/2007
Type: Amended
Status: Complete

Contractor Information

FEIN: 22-3377539

Asbestos License Number: 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 3
Room/Location: Interior and Exterior
Address: Little Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 51
Prior Use: Residential
Building Size (sq ft): 2000

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59

City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007
Do you anticipate doing any of the following? Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depending on weather
Is work being done under a variance? Yes
Variance Numbers: Individual Variance Petition 06-0999

Equipment & Ventilation Systems

Negative Air Machines, HEPA Vacuums, Half FAce Esp.

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing

Other (specify)

- Joint Compound

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0	**Friable Square Feet:** 1040
Non-friable Linear Feet: 0	**Non-friable Square Feet:** 2249
Total linear feet: 0	**Total square feet:** 3289

Fee Schedule

Linear Feet Fee:	*Square Feet Fee:*
$.00	$1,000.00

Remarks

In-plant opertions to be utilized on roofing. Site Specific to be used on joint compound. Will amend when recieve.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

NOTIFICATION OF DEMOLITION AND RENOVATION

I. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)					
OWNER:	ORANGE AND ROCKLAND UTILITES				
Address:	390 WEST ROUTE 59			Tel:	845-577-3707
City:	SPRING VALLEY	State:	NY	Zip:	10977
Contact:	JOHN HAGGARTY				
Removal Contractor:	BSB CONSTRUCTION INC.				
Address:	86 WASHINGTON ST.				
City:	POUGHKEEPSIE	State:	N.Y.	Zip:	12601
Contact:	FRANK A. BOVA JR.				
II. TYPE OF NOTIFICATION (O - Original / R - Revised)	O				
III. TYPE OF OPERATION (D - Demolition / R - Renovation)	D				
IV. IS ASBESTOS PRESENT? (YES/NO)	Y				
V. FACILITY DESCRIPTION *(Include building name, number and floor or room number).*					
Bldg Name:	O&R LITTLE TOR ROAD SITE (BUILDING 3)				
Address:	CORNER OF LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD				
Address:					
City:	CLARKSTOWN	State:	NY	County:	ROCKLAND
Location:	SAME AS ABOVE				
BUILDING SIZE	Sq. Meter: N/A	Sq. Feet:	2,000	# of Floors	1
Age in years	50				
Present Use	VACANT	Prior Use	RESIDENTIAL		

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL. BULK SAMPLES TAKEN BY OWNER

VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED AND NONFRIABLE ASBESTOS MATERIAL THAT WILL NOT BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW.

	RACM To Be Removed	Nonfriable Asbestos Material Not to Be removed Category I	Category II
Pipes - Linear Foot	N/A		
Pipes - Linear Meters	N/A		
Surface Area - Square Foot	1,815		
Surface Area - Square Meters	N/A		
Volume RACM Off Facility Component - Cubic Foot	N/A		
Volume RACM Off Facility Component - Cubic Meter	N/A		
VIII. SCHEDULED DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start: 1/8/2007	Completion: 3/8/2007	
SCHEDULED DATES OF DEMO/RENOVATION (MM/DD/YY)	N/A	Completion: N/A	

NOTIFICATION OF DEMOLITION AND RENOVATION (Continued)

DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED: N/A		
DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE: *WET METHODS / AIR MONITORING / SUITS AND RESP.*		
WASTE TRANSPORTER #1		
NAME: MILLER ENVIROMENTAL		
Address: 538 EDWARDS AVE.		
City: CALVERTON	State: N.Y.	Zip: 11933
Contact Person: N/A		Tel: N/A
WASTE TRANSPORTER #2		
NAME: N/A		
Address: N/A		
City: N/A	State: N/A	Zip: N/A
Contact Person: N/A		Tel: N/A
XIII. WASTE DISPOSAL SITE		
NAME: CHEMICAL POLUTION CONTROL		
Address: 120 SOUTH 4TH STREET		Tel:
City: BAYSHORE	State: NY	Zip: 11706
XIV: IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:		
ME: N/A	TITLE: N/A	
AUTHORITY: N/A		
DATE of ORDER (MM/DD/YY)	DATE Ordered to Begin (MM/DD/YY)	N/A
XV. FOR EMERGENCY RENOVATIONS.		
DATE AND HOUR OF EMERGENCY (MM/DD/YY) N/A		
DESCRIPTION OF THE SUDDEN, UNEXPECTED EVENT: N/A		
EXPLANATION OF HOW THE EVENT CAUSED UNSAFE CONDITIONS OR WOULD CAUSE EQUIPMENT DAMAGE OR AN UNREASONABLE FINANCIAL BURDEN: N/A		
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER: FOLLOW ALL EPA, DOL, AND OSHA REGULATIONS		
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUPPART H) WILL BE ONSITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS (Required 1 year after promulgation)		
(Signature of Owner/Operator		Date
XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT		
(Signature of Owner/Operator		Date

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

Project Reference Number: 26455
Type: Regular Notification
Status: Complete

Notification Date: 12/19/2006

Contractor Information

FEIN: 22-3377539

Asbestos License Number: 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601-0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 5
Room/Location: Interior and Exterior
Address: Ittle Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 50
Prior Use: Residential
Building Size (sq ft): 2000

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59
City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007
Do you anticipate doing any of the following?
Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depending on Weather
Is work being done under a variance? No

Equipment & Ventilation Systems

Amended Water, Half Face Resp., Tyvex Suits

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing

Other (specify)

- Linoleum, Mastic

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0
Non-friable Linear Feet: 0
Total linear feet: 0
Friable Square Feet: 0
Non-friable Square Feet: 1250
Total square feet: 1250

Fee Schedule

Linear Feet Fee:	Square Feet Fee:
$.00	$1,000.00

Remarks

Inplant operations to be utilized.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

2

Project Reference Number: 26455 **Notification Date:** 01/16/2007
Type: Amended
Status: Complete

Contractor Information

FEIN: 22-3377539 **Asbestos License Number:** 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 5
Room/Location: Interior and Exterior
Address: little Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 51
Prior Use: Residential
Building Size (sq ft): 2000

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59
City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007
Do you anticipate doing any of the following? Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depending on Weather
Is work being done under a variance? No

Equipment & Ventilation Systems

Amended Water, Half Face Resp., Tyvex Suits

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing

Other (specify)

- Linoleum, Mastic

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0
Non-friable Linear Feet: 0
Total linear feet: 0
Friable Square Feet: 0
Non-friable Square Feet: 2250
Total square feet: 2250

Fee Schedule

Linear Feet Fee:	Square Feet Fee:
$.00	$1,000.00

Remarks

Inplant operations to be utilized.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

NOTIFICATION OF DEMOLITION AND RENOVATION

I. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)					
OWNER:	ORANGE AND ROCKLAND UTILITES				
Address:	390 WEST ROUTE 59			Tel:	845-577-3707
City:	SPRING VALLEY	State:	NY	Zip:	10977
Contact:	JOHN HAGGARTY				
Removal Contractor:	BSB CONSTRUCTION INC.				
Address:	86 WASHINGTON ST.				
City:	POUGHKEEPSIE	State:	N.Y.	Zip:	12601
Contact:	FRANK A. BOVA. JR.				
II. TYPE OF NOTIFICATION (O - Original / R - Revised)	O				
III. TYPE OF OPERATION (D - Demolition / R - Renovation)	D				
IV. IS ASBESTOS PRESENT? (YES/NO)	Y				
V. FACILITY DESCRIPTION (Include building name, number and floor or room number).					
Bldg Name:	O&R LITTLE TOR ROAD SITE (BUILDING 5)				
Address:	CORNER OF LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD				
Address:					
y:	CLARKSTOWN	State:	NY	County:	ROCKLAND
Site Location:	SAME AS ABOVE				
BUILDING SIZE	Sq. Meter: N/A	Sq. Feet:	2,000	# of Floors	2
Age in years	50				
Present Use	VACANT	Prior Use	RESIDENTIAL		

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL. BULK SAMPLES TAKEN BY OWNER

VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED AND NONFRIABLE ASBESTOS MATERIAL THAT WILL NOT BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW.

	RACM To Be Removed	Nonfriable Asbestos Material Not to Be removed: Category 1	Category II
ipes - Linear Foot	N/A		
ipes - Linear Meters	N/A		
urface Area - Square Foot	1,250		
urface Area - Square Meters	N/A		
olume RACM Off Facility Component - Cubic Foot	N/A		
olume RACM Off Facility Component - Cubic Meter	N/A		
II. SCHEDULED DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start: 1/8/2007	Completion: 3/8/2007	
)HEDULED DATES OF DEMO/RENOVATION (MM/DD/YY)	N/A	Completion: N/A	

NOTIFICATION OF DEMOLITION AND RENOVATION (Continued)

DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED: N/A			
DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE: WET METHODS / AIR MONITORING / SUITS AND RESP.			
WASTE TRANSPORTER #1			
NAME: MILLER ENVIROMENTAL			
Address: 538 EDWARDS AVE.			
City: CALVERTON	State: N.Y.	Zip: 11933	
Contact Person: N/A		Tel: N/A	
WASTE TRANSPORTER #2			
NAME: N/A			
Address: N/A			
City: N/A	State: N/A	Zip: N/A	
Contact Person: N/A		Tel: N/A	
XIII. WASTE DISPOSAL SITE			
NAME: CHEMICAL POLUTION CONTROL			
Address: 120 SOUTH 4TH STREET		Tel:	
City: BAYSHORE	State: NY	Zip: 11706	
V: IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:			
)E: N/A	TITLE: N/A		
AUTHORITY: N/A			
DATE of ORDER (MM/DD/YY)	DATE Ordered to Begin (MM/DD/YY)	N/A	
XV. FOR EMERGENCY RENOVATIONS.			
DATE AND HOUR OF EMERGENCY (MM/DD/YY) N/A			
DESCRIPTION OF THE SUDDEN, UNEXPECTED EVENT: N/A			
EXPLANATION OF HOW THE EVENT CAUSED UNSAFE CONDITIONS OR WOULD CAUSE EQUIPMENT DAMAGE OR AN UNREASONABLE FINANCIAL BURDEN: N/A			
(VI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER: FOLLOW ALL EPA, DOL, AND OSHA REGULATIONS			
VII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUPPART H) WILL BE ONSITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS Required 1 year after promulgation)			
(Signature of Owner/Operator		Date	
VIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT			
(Signature of Owner/Operator		Date	

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

Project Reference Number: 26466
Type: Regular Notification
Status: Complete

Notification Date: 12/20/2006

Contractor Information

FEIN: 22-3377539

Asbestos License Number: 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 6
Room/Location: Interior and Exterior
Address: Little Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 48
Prior Use: Residential
Building Size (sq ft): 2000

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59
City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007

Do you anticipate doing any of the following? Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depending on weather.

Is work being done under a variance? Yes

Variance Numbers: Individual Variance Petition Will Amend

Equipment & Ventilation Systems

Negative air machines, Airless sprayer, Half Face north Resp.

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing
- Caulking/mastic
- VAT

Other (specify)

- Joint Compound

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0
Non-friable Linear Feet: 60
Total linear feet: 60
Friable Square Feet: 580
Non-friable Square Feet: 224
Total square feet: 804

Fee Schedule

Linear Feet Fee:	Square Feet Fee:
$.00	$500.00

Remarks

In-plant operations to be used on floor tile, mastic and roofing. Joint Compound will be a site specific variance.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

(2)

Project Reference Number: 26466 **Notification Date:** 01/16/2007
Type: Amended
Status: Complete

Contractor Information

FEIN: 22-3377539 **Asbestos License Number:** 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 6
Room/Location: Interior and Exterior
Address: Little Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 49
Prior Use: Residential
Building Size (sq ft): 2000

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59

City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007

Do you anticipate doing any of the following? Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depending on weather.

Is work being done under a variance? Yes

Variance Numbers: Individual Variance Petition 06-01000

Equipment & Ventilation Systems

Negative air machines, Airless sprayer, Half Face north Resp.

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing
- Caulking/mastic
- VAT

Other (specify)

- Joint Compound

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0
Non-friable Linear Feet: 60
Total linear feet: 60
Friable Square Feet: 580
Non-friable Square Feet: 224
Total square feet: 804

Fee Schedule

Linear Feet Fee:	Square Feet Fee:
$.00	$500.00

Remarks

In-plant operations to be used on floor tile, mastic and roofing. Joint Compound will be a site specific variance.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

NOTIFICATION OF DEMOLITION AND RENOVATION

I. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)					
OWNER:	ORANGE AND ROCKLAND UTILITES				
Address:	390 WEST ROUTE 59			Tel:	845-577-3707
City:	SPRING VALLEY	State:	NY	Zip:	10977
Contact:	JOHN HAGGARTY				
Removal Contractor:	BSB CONSTRUCTION INC.				
Address:	86 WASHINGTON ST.				
City:	POUGHKEEPSIE	State:	N.Y.	Zip:	12601
Contact:	FRANK A. BOVA, JR.				
II. TYPE OF NOTIFICATION (O - Original / R - Revised)	O				
III. TYPE OF OPERATION (D - Demolition / R - Renovation)	D				
IV. IS ASBESTOS PRESENT? (YES/NO)	Y				
V. FACILITY DESCRIPTION (Include building name, number and floor or room number).					
Bldg Name:	O&R LITTLE TOR ROAD SITE (BUILDING 6)				
Address:	CORNER OF LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD				
Address:					
City:	CLARKSTOWN	State:	NY	County:	ROCKLAND
Site Location:	SAME AS ABOVE				
BUILDING SIZE	Sq. Meter: N/A	Sq. Feet:	2,000	# of Floors	2
Age in years	50				
Present Use	VACANT	Prior Use	RESIDENTIAL		

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL. BULK SAMPLES TAKEN BY OWNER

VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED AND NONFRIABLE ASBESTOS MATERIAL THAT WILL NOT BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW.

	RACM To Be Removed	Nonfriable Asbestos Material Not to Be removed: Category 1	Category II
Pipes - Linear Foot	N/A		
Pipes - Linear Meters	N/A		
Surface Area - Square Foot	804		
Surface Area - Square Meters	N/A		
Volume RACM Off Facility Component - Cubic Foot	N/A		
Volume RACM Off Facility Component - Cubic Meter	N/A		
VIII. SCHEDULED DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start: 1/8/2007	Completion: 3/8/2007	
SCHEDULED DATES OF DEMO/RENOVATION (MM/DD/YY)	N/A	Completion: N/A	

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Profile Addendum: State of New York
WASTE SHIPMENT RECORD

E. Additional Waste Stream Information

GENERATOR

1. Work site name: ORANGE & ROCKLAND

Work Site Address: LITTLE TOR RD&SOUMENTAENARD City/State: NEW CITY, NY Zip: 10956

Owner's Name: _____ Owner's Telephone: (845) 577-3535

2. Operator's name: BSB CONSTRUCTION Operator's Telephone: (845) 462-5236

Operator's Address: 86 WASHINGTON STREET City/State: POUGHKEEPSIE, NY Zip: 12601

3. Waste Disposal Site (WDS): HIGH ACRES WDS Telephone: ( )

Address: 425 PERINTON PARKWAY City/State: FAIRPORT, NY Zip: 14450

Physical Site Location: _____ Additional Info: _____

4. Agency Responsible: [redacted] US EPA III Region 10278

Agency Address: [redacted] 26 Federal Plaza City/State: [redacted] NY Zip: [redacted]

Owner's Name: [redacted] Owner's Telephone: ([redacted]

5. Description of Materials:	6. Number & Type of Containers:	7. Total Quantity (m^3 or yd^3):
FRIABLE ASBESTOS	1 CLOSED TOP CONTAINER	20 yds Double
		100 BAGS 2 - 6 mil

9. Special handling instructions and additional information:

RQ ASBESTOS, CLASS 9, NA2212, PGIII Profile # VG4082

OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by prope shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

Signature: _____ Print Name: Andy Bass Date: 1/30/06

TRANSPORTER (Acknowledgment of receipt of materials) 100 -

10. Transporter 1 Name: Silvarole Trucking Operator's Telephone: (585) 272-0741

Operator's Address: 85 Silvarole Drive City/State: Rochester Zip: 14616

Signature: _____ Date: 1/30/07 Title: Driver

11. Transporter #2 Name: Silvarole Trucking Operator's Telephone: (585) 272-0741

Operator's Address: 85 Silvarole Dr City/State: Rochester NY Zip: 14616

Signature: _____ Date: 2/2/07 Title: Driver

DISPOSAL SITE

WP15 N43°05.040
W077°22.858 E595

12. Discrepancy indication space: _____

Certification of receipt of asbestos materials covered by this manifest except as noted in the discrepancy indication space above.

Grid Coordinates: East _____ North _____ El _____

Name/Title: Donna Engels Scale Op Signature: _____ Date: 2/2/07

©2006 Waste Management, Inc.

ORIGINAL RETURN TO GENERATOR

January 2006

845-721-7126

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

Project Reference Number: 26451 **Notification Date:** 12/19/2006
Type: Regular Notification
Status: Complete

Contractor Information

FEIN: 22-3377539 **Asbestos License Number:** 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 1
Room/Location: Roofing
Address: Little Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 50
Prior Use: Residential
Building Size (sq ft): 1500

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: Orange and Rockland Utilities
Address: 390 West Route 59
City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007

Do you anticipate doing any of the following? Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Work schedule will depend on weather.

Is work being done under a variance? No

Equipment & Ventilation Systems

Amended water, half face north resp.

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0	**Friable Square Feet:** 0
Non-friable Linear Feet: 0	**Non-friable Square Feet:** 1000
Total linear feet: 0	**Total square feet:** 1000

Fee Schedule

Linear Feet Fee:	**Square Feet Fee:**
$.00	$1,000.00

Remarks

In-plant operations to be utilized.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

NOTIFICATION OF DEMOLITION AND RENOVATION

I. FACILITY INFORMATION (identify owner, removal contractor, and other operator)					
OWNER:	ORANGE AND ROCKLAND UTILITES				
Address:	390 WEST ROUTE 59			Tel:	845-577-3707
City:	SPRING VALLEY	State:	NY	Zip:	10977
Contact:	JOHN HAGGARTY				
Removal Contractor:	BSB CONSTRUCTION INC.				
Address:	86 WASHINGTON ST.				
City:	POUGHKEEPSIE	State:	N.Y.	Zip:	12601
Contact:	FRANK A. BOVA. JR.				
II. TYPE OF NOTIFICATION (O - Original / R - Revised)	O				
III. TYPE OF OPERATION (D - Demolition / R - Renovation)	D				
IV. IS ASBESTOS PRESENT? (YES/NO)	Y				
V. FACILITY DESCRIPTION (Include building name, number and floor or room number).					
Bldg Name:	O&R LITTLE TOR ROAD SITE (BUILDING 1)				
Address:	CORNER OF LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD				
Address:					
):	CLARKSTOWN	State:	NY	County:	ROCKLAND
Site Location:	SAME AS ABOVE				
BUILDING SIZE	Sq. Meter: N/A	Sq. Feet:	1,500	# of Floors	1
Age in years	50				
Present Use	VACANT	Prior Use	RESIDENTIAL		

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL. BULK SAMPLES TAKEN BY OWNER

VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED AND NONFRIABLE ASBESTOS MATERIAL THAT WILL NOT BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW.

	RACM To Be Removed	Nonfriable Asbestos Material Not to Be removed: Category 1	Category II
ipes - Linear Foot	N/A		
pes - Linear Meters	N/A		
rface Area - Square Foot	1,000		
rface Area - Square Meters	N/A		
lume RACM Off Facility Component - Cubic Foot	N/A		
lume RACM Off Facility Component - Cubic Meter	N/A		
I. SCHEDULED DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start: 1/8/2007	Completion: 3/6/2007	
HEDULED DATES OF DEMO/RENOVATION (MM/DD/YY)	N/A	Completion: N/A	

NOTIFICATION OF DEMOLITION AND RENOVATION (Continued)

DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:
N/A

DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:
WET METHODS / AIR MONITORING / SUITS AND RESP.

WASTE TRANSPORTER #1

NAME:	MILLER ENVIROMENTAL		
Address:	538 EDWARDS AVE.		
City: CALVERTON	State: N.Y.	Zip:	11933
Contact Person: N/A		Tel:	N/A

WASTE TRANSPORTER #2

NAME:	N/A		
Address:	N/A		
City: N/A	State: N/A	Zip:	N/A
Contact Person: N/A		Tel:	N/A

XIII. WASTE DISPOSAL SITE

NAME:	CHEMICAL POLUTION CONTROL		
Address:	120 SOUTH 4TH STREET	Tel:	
City: BAYSHORE	State: NY	Zip:	11706

Y: IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:

E: N/A | TITLE: N/A

AUTHORITY: N/A

DATE of ORDER (MM/DD/YY) | DATE Ordered to Begin (MM/DD/YY) N/A

XV. FOR EMERGENCY RENOVATIONS.

DATE AND HOUR OF EMERGENCY (MM/DD/YY) N/A

DESCRIPTION OF THE SUDDEN, UNEXPECTED EVENT: N/A

EXPLANATION OF HOW THE EVENT CAUSED UNSAFE CONDITIONS OR WOULD CAUSE EQUIPMENT DAMAGE OR AN UNREASONABLE FINANCIAL BURDEN: N/A

(VI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER:
FOLLOW ALL EPA, DOL, AND OSHA REGULATIONS

VII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUPPART H) WILL BE ONSITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS
(required 1 year after promulgation)

(Signature of Owner/Operator) Date

VIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT

(Signature of Owner/Operator) Date

 NOTIFICATION OF DEMOLITION AND RENOVATION (Continued)

DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED: N/A			
DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE: WET METHODS / AIR MONITORING / SUITS AND RESP.			
WASTE TRANSPORTER #1			
NAME: MILLER ENVIROMENTAL			
Address: 538 EDWARDS AVE.			
City: CALVERTON	State: N.Y.	Zip: 11933	
Contact Person: N/A		Tel: N/A	
WASTE TRANSPORTER #2			
NAME: N/A			
Address: N/A			
City: N/A	State: N/A	Zip: N/A	
Contact Person: N/A		Tel: N/A	
XIII. WASTE DISPOSAL SITE			
NAME: CHEMICAL POLUTION CONTROL			
Address: 120 SOUTH 4TH STREET		Tel:	
City: BAYSHORE	State: NY	Zip: 11706	
XIV: IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:			
NAME: N/A	TITLE: N/A		
AUTHORITY: N/A			
DATE of ORDER (MM/DD/YY)	DATE Ordered to Begin (MM/DD/YY) N/A		
XV. FOR EMERGENCY RENOVATIONS.			
DATE AND HOUR OF EMERGENCY (MM/DD/YY) N/A			
DESCRIPTION OF THE SUDDEN, UNEXPECTED EVENT: N/A			
EXPLANATION OF HOW THE EVENT CAUSED UNSAFE CONDITIONS OR WOULD CAUSE EQUIPMENT DAMAGE OR AN UNREASONABLE FINANCIAL BURDEN: N/A			
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER: FOLLOW ALL EPA, DOL, AND OSHA REGULATIONS			
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUPPART H) WILL BE ONSITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS (Required 1 year after promulgation)			
(Signature of Owner/Operator		Date	
XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT			
(Signature of Owner/Operator		Date	

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

Project Reference Number: 26468
Type: Regular Notification
Status: Complete

Notification Date: 12/20/2006

Contractor Information

FEIN: 22-3377539

Asbestos License Number: 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 7
Room/Location: Foyer and Living Room
Address: Little Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 48
Prior Use: Residential
Building Size (sq ft): 1000

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59
City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007

Do you anticipate doing any of the following?
Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depending on Weather

Is work being done under a variance? No

Equipment & Ventilation Systems

Half Face North Resp., Tyvex Suits, Amended Water

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Caulking/mastic
- VAT

Type and Amount of Material Containing Asbestos

Friable Linear Feet:	0	**Friable Square Feet:**	0
Non-friable Linear Feet:	0	**Non-friable Square Feet:**	425
Total linear feet:	0	**Total square feet:**	425

Fee Schedule

Linear Feet Fee:	Square Feet Fee:
$.00	$200.00

Remarks

In-plant operations to be used.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

9.1

NOTIFICATION OF DEMOLITION AND RENOVATION

I. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)					
OWNER:	ORANGE AND ROCKLAND UTILITES				
Address:	390 WEST ROUTE 59			Tel:	845-577-3707
City:	SPRING VALLEY	State:	NY	Zip:	10977
Contact:	JOHN HAGGARTY				
Removal Contractor:	BSB CONSTRUCTION INC.				
Address:	86 WASHINGTON ST.				
City:	POUGHKEEPSIE	State:	N.Y.	Zip:	12601
Contact:	FRANK A. BOVA, JR.				
II. TYPE OF NOTIFICATION (O - Original / R - Revised)	O				
III. TYPE OF OPERATION (D - Demolition / R - Renovation)	D				
IV. IS ASBESTOS PRESENT? (YES/NO)	Y				
V. FACILITY DESCRIPTION (Include building name, number and floor or room number).					
Bldg Name:	O&R LITTLE TOR ROAD SITE (BUILDING 7)				
Address:	CORNER OF LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD				
Address:					
y:	CLARKSTOWN	State:	NY	County:	ROCKLAND
e Location:	SAME AS ABOVE				
BUILDING SIZE	Sq. Meter: N/A	Sq. Feet:	1,000	# of Floors	1
Present Use	VACANT	Prior Use	RESIDENTIAL		

Age in years: 50

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL. BULK SAMPLES TAKEN BY OWNER

VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED AND NONFRIABLE ASBESTOS MATERIAL THAT WILL NOT BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW.

	RACM To Be Removed	Nonfriable Asbestos Material Not to Be removed: Category 1	Category II
Pipes - Linear Foot	N/A		
Pipes - Linear Meters	N/A		
Surface Area - Square Foot	425		
Surface Area - Square Meters	N/A		
Volume RACM Off Facility Component - Cubic Foot	N/A		
Volume RACM Off Facility Component - Cubic Meter	N/A		

VIII. SCHEDULED DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start: 1/8/2007	Completion: 3/8/2007	
CHEDULED DATES OF DEMO/RENOVATION (MM/DD/YY)	N/A	Completion: N/A	

 NOTIFICATION OF DEMOLITION AND RENOVATION (Continued)

DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED: N/A			
DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE: WET METHODS / AIR MONITORING / SUITS AND RESP.			
WASTE TRANSPORTER #1			
NAME: MILLER ENVIROMENTAL			
Address: 538 EDWARDS AVE.			
City: CALVERTON	State: N.Y.	Zip:	11933
Contact Person: N/A		Tel:	N/A
WASTE TRANSPORTER #2			
NAME: N/A			
Address: N/A			
City: N/A	State: N/A	Zip:	N/A
Contact Person: N/A		Tel:	N/A
XIII. WASTE DISPOSAL SITE			
NAME: CHEMICAL POLUTION CONTROL			
Address: 120 SOUTH 4TH STREET		Tel:	
City: BAYSHORE	State: NY	Zip:	11706
XIV: IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:			
NAME: N/A	TITLE: N/A		
AUTHORITY: N/A			
DATE of ORDER (MM/DD/YY)	DATE Ordered to Begin (MM/DD/YY)		N/A
XV. FOR EMERGENCY RENOVATIONS.			
DATE AND HOUR OF EMERGENCY (MM/DD/YY) N/A			
DESCRIPTION OF THE SUDDEN, UNEXPECTED EVENT: N/A			
EXPLANATION OF HOW THE EVENT CAUSED UNSAFE CONDITIONS OR WOULD CAUSE EQUIPMENT DAMAGE OR AN UNREASONABLE FINANCIAL BURDEN: N/A			
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER: FOLLOW ALL EPA, DOL, AND OSHA REGULATIONS			
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUPPART H) WILL BE ONSITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS (Required 1 year after promulgation)			
(Signature of Owner/Operator		Date	
XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT			
(Signature of Owner/Operator		Date	

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

Project Reference Number: 26470 **Notification Date:** 12/20/2006
Type: Regular Notification
Status: Complete

Contractor Information

FEIN: 22-3377539 **Asbestos License Number:** 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 8
Room/Location: Interior and Exterior
Address: Little Tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 48
Prior Use: Residential
Building Size (sq ft): 1500

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59
City: Spring Valley
State / Province: New York
Postal Code: 12601 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007
Do you anticipate doing any of the following? Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depending on weather
Is work being done under a variance? No

Equipment & Ventilation Systems

Amended Water, Half Face Resp., Tyvex Suits

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1186
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing

Other (specify)

- Linoleum

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0
Friable Square Feet: 0
Non-friable Linear Feet: 50
Non-friable Square Feet: 725
Total linear feet: 50
Total square feet: 725

Fee Schedule

Linear Feet Fee:	Square Feet Fee:
$.00	$500.00

Remarks

In-plant operations to be utilized.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

9.1

NOTIFICATION OF DEMOLITION AND RENOVATION

I. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)					
OWNER:	ORANGE AND ROCKLAND UTILITES				
Address:	390 WEST ROUTE 59			Tel:	845-577-3707
City:	SPRING VALLEY	State:	NY	Zip:	10977
Contact:	JOHN HAGGARTY				
Removal Contractor:	BSB CONSTRUCTION INC.				
Address:	86 WASHINGTON ST.				
City:	POUGHKEEPSIE	State:	N.Y.	Zip:	12601
Contact:	FRANK A. BOVA. JR.				
II. TYPE OF NOTIFICATION (O - Original / R - Revised)	O				
III. TYPE OF OPERATION (D - Demolition / R - Renovation)	D				
IV. IS ASBESTOS PRESENT? (YES/NO)	Y				
V. FACILITY DESCRIPTION (Include building name, number and floor or room number).					
Bldg Name:	O&R LITTLE TOR ROAD SITE (BUILDING 8)				
Address:	CORNER OF LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD				
Address:					
City:	CLARKSTOWN	State:	NY	County:	ROCKLAND
Location:	SAME AS ABOVE				
BUILDING SIZE	Sq. Meter: N/A	Sq. Feet:	1,500	# of Floors	1 Age in years 50
Present Use	VACANT	Prior Use	RESIDENTIAL		
VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL.	BULK SAMPLES TAKEN BY OWNER				

VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED AND NONFRIABLE ASBESTOS MATERIAL THAT WILL NOT BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW.

	RACM To Be Removed	Nonfriable Asbestos Material Not to Be removed Category 1	Category II
Pipes - Linear Foot	N/A		
Pipes - Linear Meters	N/A		
Surface Area - Square Foot	775		
Surface Area - Square Meters	N/A		
Volume RACM Off Facility Component - Cubic Foot	N/A		
Volume RACM Off Facility Component - Cubic Meter	N/A		
VIII. SCHEDULED DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start: 1/8/2007	Completion: 3/8/2007	
SCHEDULED DATES OF DEMO/RENOVATION (MM/DD/YY)	N/A	Completion: N/A	

NOTIFICATION OF DEMOLITION AND RENOVATION (Continued)

DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED: N/A			
DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE: WET METHODS / AIR MONITORING / SUITS AND RESP.			
WASTE TRANSPORTER #1			
NAME: MILLER ENVIROMENTAL			
Address: 538 EDWARDS AVE.			
City: CALVERTON	State: N.Y.	Zip:	11933
Contact Person: N/A		Tel:	N/A
WASTE TRANSPORTER #2			
NAME: N/A			
Address: N/A			
City: N/A	State: N/A	Zip:	N/A
Contact Person: N/A		Tel:	N/A
XIII. WASTE DISPOSAL SITE			
NAME: CHEMICAL POLUTION CONTROL			
Address: 120 SOUTH 4TH STREET		Tel:	
City: BAYSHORE	State: NY	Zip:	11706
XIV: IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:			
NAME: N/A	TITLE: N/A		
AUTHORITY: N/A			
DATE of ORDER (MM/DD/YY)	DATE Ordered to Begin (MM/DD/YY)		N/A
XV. FOR EMERGENCY RENOVATIONS.			
DATE AND HOUR OF EMERGENCY (MM/DD/YY) N/A			
DESCRIPTION OF THE SUDDEN, UNEXPECTED EVENT: N/A			
EXPLANATION OF HOW THE EVENT CAUSED UNSAFE CONDITIONS OR WOULD CAUSE EQUIPMENT DAMAGE OR AN UNREASONABLE FINANCIAL BURDEN: N/A			
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER: FOLLOW ALL EPA, DOL, AND OSHA REGULATIONS			
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUPPART H) WILL BE ONSITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS (Required 1 year after promulgation)			
(Signature of Owner/Operator		Date	
XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT			
(Signature of Owner/Operator		Date	

NYS Department of Labor
Workforce New York
Put us to work for you

Asbestos Project Notification

Project Reference Number: 26472
Type: Regular Notification
Status: Complete

Notification Date: 12/20/2006

Contractor Information

FEIN: 22-3377539

Asbestos License Number: 99-0838

B.S.B. CONSTRUCTION, INC.
86 WASHINGTON STREET
POUGHKEEPSIE, NY 12601 -0000

Mailing Address

Duly Authorized Representative
FRANK A. BOVA JR., VICE PRESIDENT
Phone Number: (845) 462-5236
Email: bsbconst@aol.com

Project Location

County: Rockland
Building Name: Building 10
Room/Location: Kitchen and Roofing
Address: Little tor and South Mountain
City: Clarkstown
State: New York
Zip: 10956 -

Building Information

Current Use: Vacant
Building Age (yrs): 48
Prior Use: Residential
Building Size (sq ft): 1500

Site Contact

Name: John Haggarty
Phone Number: (845) 577 - 3707

Work to be Performed for

Name: O&R Utilities
Address: 390 West Route 59
City: Spring Valley
State / Province: New York
Postal Code: 10977 -
Contract Amount: $ 1,000.00

Project Details

Start Date: 01/08/2007
Completion Date: 03/08/2007

Do you anticipate doing any of the following?
Yes

- ✓ Night Work
- ✓ Shift Work
- ✓ Weekend Work

Details: Depends on weather

Is work being done under a variance? No

Equipment & Ventilation Systems

Amended Water, Half Face North Resp., tyvex Suits

Monitoring & Testing

Air monitoring firm: Clayton Group
Asbestos License Number: 99-1188
Lab performing the analysis: EMSL
ELAP Registration Number: 11506

Type of Asbestos Work

- Roofing/flashing
- Caulking/mastic
- VAT

Type and Amount of Material Containing Asbestos

Friable Linear Feet: 0
Non-friable Linear Feet: 0
Total linear feet: 0
Friable Square Feet: 0
Non-friable Square Feet: 1300
Total square feet: 1300

Fee Schedule

Linear Feet Fee:	Square Feet Fee:
$.00	$1,000.00

Remarks

in-plant operations to be utilized.

Phases

This project does not have phases.

Subcontractors

This project is not using subcontractors

g.1

NOTIFICATION OF DEMOLITION AND RENOVATION

I. FACILITY INFORMATION (Identify owner, removal contractor, and other operator)					
OWNER:	ORANGE AND ROCKLAND UTILITES				
Address:	390 WEST ROUTE 59			Tel:	845-577-3707
City:	SPRING VALLEY	State:	NY	Zip:	10977
Contact:	JOHN HAGGARTY				
Removal Contractor:	BSB CONSTRUCTION INC.				
Address:	86 WASHINGTON ST.				
City:	POUGHKEEPSIE	State:	N.Y.	Zip:	12601
Contact:	FRANK A. BOVA. JR.				
II. TYPE OF NOTIFICATION (O - Original / R - Revised)	O				
III. TYPE OF OPERATION (D - Demolition / R - Renovation)	D				
IV. IS ASBESTOS PRESENT? (YES/NO)	Y				
V. FACILITY DESCRIPTION (Include building name, number and floor or room number).					
Bldg Name:	O&R LITTLE TOR ROAD SITE (BUILDING 10)				
Address:	CORNER OF LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD				
Address:					
y:	CLARKSTOWN	State:	NY	County:	ROCKLAND
e Location:	SAME AS ABOVE				
BUILDING SIZE	Sq. Meter: N/A	Sq. Feet:	1,500	# of Floors	1
Present Use	VACANT	Prior Use	RESIDENTIAL	Age in years	50

VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL. BULK SAMPLES TAKEN BY OWNER

VII. APPROXIMATE AMOUNT OF RACM TO BE REMOVED AND NONFRIABLE ASBESTOS MATERIAL THAT WILL NOT BE REMOVED. SPECIFY THE AMOUNT OF ASBESTOS BELOW.

	RACM To Be Removed	Nonfriable Asbestos Material Not to Be removed: Category 1	Category II
Pipes - Linear Foot	N/A		
Pipes - Linear Meters	N/A		
Surface Area - Square Foot	1,300		
Surface Area - Square Meters	N/A		
Volume RACM Off Facility Component - Cubic Foot	N/A		
Volume RACM Off Facility Component - Cubic Meter	N/A		
VIII. SCHEDULED DATES OF ASBESTOS REMOVAL (MM/DD/YY)	Start: 1/8/2007	Completion: 3/8/2007	
SCHEDULED DATES OF DEMO/RENOVATION (MM/DD/YY)	N/A	Completion: N/A	

NOTIFICATION OF DEMOLITION AND RENOVATION (Continued)

DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED: N/A			
DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE: WET METHODS / AIR MONITORING / SUITS AND RESP.			
WASTE TRANSPORTER #1			
NAME: MILLER ENVIROMENTAL			
Address: 538 EDWARDS AVE.			
City: CALVERTON	State: N.Y.	Zip:	11933
Contact Person: N/A		Tel:	N/A
WASTE TRANSPORTER #2			
NAME: N/A			
Address: N/A			
City: N/A	State: N/A	Zip:	N/A
Contact Person: N/A		Tel:	N/A
XIII. WASTE DISPOSAL SITE			
NAME: CHEMICAL POLUTION CONTROL			
Address: 120 SOUTH 4TH STREET		Tel:	
City: BAYSHORE	State: NY	Zip:	11706
XIV: IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:			
NAME: N/A	TITLE: N/A		
AUTHORITY: N/A			
DATE of ORDER (MM/DD/YY)	DATE Ordered to Begin (MM/DD/YY)		N/A
XV. FOR EMERGENCY RENOVATIONS.			
DATE AND HOUR OF EMERGENCY (MM/DD/YY) N/A			
DESCRIPTION OF THE SUDDEN, UNEXPECTED EVENT: N/A			
EXPLANATION OF HOW THE EVENT CAUSED UNSAFE CONDITIONS OR WOULD CAUSE EQUIPMENT DAMAGE OR AN UNREASONABLE FINANCIAL BURDEN: N/A			
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER: FOLLOW ALL EPA, DOL, AND OSHA REGULATIONS			
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUPPART H) WILL BE ONSITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS (Required 1 year after promulgation)			
(Signature of Owner/Operator		Date	
XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT			
(Signature of Owner/Operator		Date	

Eliot Spitzer, Governor

NYS Department of Labor
Workforce New York
Put us to work for you

January 10, 2007

BSB Construction Inc
86 Washington St
Poughkeepsie, NY 12601

RE: File No. 06-01000
O & R Utilities, Bldg 6
Clarkstown, NY

Dear Sir/Madam:

STATE OF NEW YORK
DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

The attached is a copy of Decision, 1/10/07 dated , which I have compared with the original filed in this office and which I DO HEREBY CERTIFY to be a correct transcript of the text of the said original.

If you are aggrieved by this decision you may appeal within 60 days from its issuance to the Industrial Board of Appeals as provided by Section 101 of the Labor Law. Your appeal should be addressed to the Industrial Board of Appeals, Empire State Plaza, Agency Building 2, 20th Floor, Albany, New York, 12223 as prescribed by its Rules and Procedure, a copy of which may be obtained upon request.

WITNESS my hand and the seal of the
NYS Department of Labor, at the City of
Albany, this 10th day of January,
Two thousand seven

Blaise Thomas, P.E.
Associate Safety and Health Engineer
Engineering Services Unit

Phone: (518) 457-1536 Fax: (518) 457-1301
W. Averell Harriman State Office Campus, Bldg. 12, Room 154, Albany, NY 12240

STATE OF NEW YORK
DEPARTMENT OF LABOR
STATE OFFICE BUILDING CAMPUS
ALBANY, NEW YORK 12240-0100

Variance Petition

Of

BSB Construction, Inc
Petitioner's Agent

On Behalf of

Orange & Rockland Utilities
Petitioner

In re

Premises: O & R Utilities, Building 6
Little Tor Road & South Mountain Road
Clarkstown, NY 10956

Interior ACM Sheetrock with Joint Compound Removal

File No. 06-1000

DECISION

Case 1-4

ICR 56

The Petitioner, pursuant to Section 30 of the Labor Law, having filed Petition No. 06-1000 December 26, 2006 with the Commissioner of Labor for a variance from the provisions of Industrial Code Rule 56 as hereinafter cited on the grounds that there are practical difficulties or unnecessary hardship in carrying out the provisions of said Rule; and the Commissioner of Labor having reviewed the submission of the petitioner dated December 21, 2006; and

Upon considering the merits of the alleged practical difficulties or unnecessary hardship and upon the record herein, the Commissioner of Labor does hereby take the following actions:

Case No. 1	ICR 56-7.8 (a)
Case No. 2	ICR 56-7.11(e)
Case No. 3	ICR 56-8.2 (b)
Case No. 4	ICR 56-9.1(f)

VARIANCE GRANTED. The Petitioner's proposal for removal of 580 sq. ft. of asbestos containing joint compound on sheetrock, at the subject premises in accordance with the attached 4-page stamped copy of the Petitioner's submittal, is accepted; subject to the Conditions noted below:

THE CONDITIONS

Establishment of Restricted Areas

1. The regulated abatement work areas, decontamination units, airlocks, and dumpster areas shall be cordoned off at a distance of twenty-five feet (25') and shall remain vacated except for certified workers until satisfactory clearance air monitoring results have been achieved or the abatement project is complete.

Friable Sheetrock Removal

2. Once the regulated abatement work area is occupied by the abatement contractor, the asbestos project begins and PPE shall be worn at all times even during Preparation.

3. A personal decontamination enclosure system that complies with Subpart 56-7.5 shall be utilized. A waste decontamination enclosure system that fully complies with Subpart 56-7.5 shall be utilized. These enclosure systems **must be attached (contiguous)** to the regulated abatement work area and shall be removed only after satisfactory clearance air monitoring results have been achieved for the regulated abatement work area. Where physical space restrictions limit the decontamination enclosure system allowable size, small asbestos project combined decontamination enclosure systems in compliance with ICR 56-7.5 (c) & 56-7.5(e9) may be utilized.

4. (Pre-cleaning) The floors, walls, ceilings, fixtures, and movable and fixed objects contaminated with asbestos debris and shall be cleaned as part of this abatement project. **Prior to removal of Debris (ACM materials) necessary for preparation work, installation of critical barriers as per ICR 56-7.11 (a) and establishment of negative air as per ICR 56-7.8 shall be completed. All visible Debris (accumulations of ACM) shall then be misted and bagged for disposal and then any remaining polyethylene shall be installed.**

5. Two-layer six-mil fire retardant plastic sheeting may be used as critical barriers/isolation barriers in lieu of temporary hardwall barriers normally required as per ICR 56-7.11(b). These plastic sheeting isolation barriers shall be adequately supported for the duration of the asbestos project. All critical barriers and isolation barriers shall remain in place until receipt of satisfactory clearance air results for the regulated abatement work area.

6. A minimum of 8 air changes per hour must be observed once the negative air has been established.

7. If negative air machines must be shut down at the end of each work day, the negative air machines must continue to run for a minimum of thirty minutes following completion of all abatement/cleaning activity for the day. Once the thirty minute time period has elapsed, all accesses to the regulated abatement work area shall be sealed airtight, after all workers have exited the work area.

8. When re-establishing the work area in the morning, wait 30 min or until manometer reads a minimum of .02" of water pressure differential before entering the work area.

9. Removals and cleanup shall include, all visible asbestos or suspect asbestos debris.

10. Installation of ceiling plastic sheeting is not required where existing non-porous cleanable ceiling surfaces are located within the work area.

11. Encapsulation of any asbestos removal surfaces **shall not** be performed, until satisfactory clearance air sample results have been obtained.

12. When relief is granted to not plasticize, one thorough cleaning as described in ICR 56-9.1(e) and one settling, waiting period shall suffice, except when an air test fails.

13. After a minimum waiting/drying period has elapsed, the Project Monitor shall determine if the area is dry and free of visible asbestos debris as per 56-9.1(d) (1). If the area is determined to be acceptable, the Project Monitor may authorize clearance air sampling to be performed.

14. After abatement of the asbestos and asbestos debris, all plastic sheeting and tape will be treated as contaminated material and properly disposed of asbestos waste at the end of the project.

15. Usage of this variance is limited to those asbestos removals identified in this variance or as outlined in the Petitioner's proposal.

In addition to the conditions required by the above specific variances, the Petitioner shall also comply with the following general conditions:

GENERAL CONDITIONS

1. A copy of this DECISION and the Petitioner's proposals shall be conspicuously displayed at the entrance to the personal decontamination enclosure.

2. This DECISION shall apply only to the removal of asbestos-containing materials from the aforementioned areas of the subject premises.

3. The Petitioner shall comply with all other applicable provisions of Industrial Code Rule 56-1 through 56-12.

4. The final say as to interpretation of this variance rest solely with the NYS Dept of Labor Engineering Services Unit. Any deviation from variance conditions shall render this variance Null and Void pursuant to 56-12.2.

5. This DECISION shall terminate on January 31, 2008.

Date: January 9, 2007

M. PATRICIA SMITH
ACTING COMMISSIONER OF LABOR

By for
Blaise Thomas, P.E.
Associate Safety and Health Engineer

PREPARED BY: Ravi Pilar, P.E.
Senior Safety and Health Engineer

REVIEWED BY: Edward Smith, P.E. EAS
Senior Safety and Health Engineer

BSB Construction Inc.

Specializing In Asbestos And Lead Abatement

86 Washington St.
Poughkeepsie, N.Y. 12601

845-462-5236
BSBConst@aol.com

06 1000

December 21, 2006

State of New York – Department of Labor
Division of Safety and Health
Engineering Services Unit
State Office Building Campus
Albany, New York 12240

Building 6
Revised

Dear Commissioner:

2 story

BSB Construction Inc. is requesting a variance from the requirements of the labor law. I have enclosed in this packet: an application (NYS DOSH-7510), a check payable to the commissioner of labor for $350.00, and a detailed explanation of the grounds for this variance and means for securing the public safety and health with regard to this variance. Commencement of work is dependent upon approval of this variance request.

The project involves removal of approximately 580 sq. ft. of asbestos containing joint compound on sheetrock, located in Building 6 at the Orange and Rockland Utilities site, Little Tor Road and South Mountain Road, Clarkstown, NY 10956. This site incorporates 11 residential buildings, 21 sheds all to be demolished. All buildings have been vacated for 3 to 4 years and never to be occupied again. The site is approx. 3 to 4 acres to be used only for asbestos abatement, until it is completed. The purpose of this variance petition is to expedite the abatement project and ensure the safety and health of the general public.

In the event that the amount to be removed is expected to exceed that specified herein, the Department of Labor will be notified immediately.

In order to protect the safety and health of building occupants, BSB Construction Inc., is requesting relief from the following provisions of Industrial Code Rule 56:

06 1000

~~56 – 7.5 (A,B,C,E)~~	~~Remote Decon and Waste Out will be needed for this project.~~
56 – 7.8 (A) (1)	Negative Air Machines will need to be shut down when off site.
56 – 7.11 (E,F)	Plasticizing of walls and ceiling.
~~56 – 8.2 (G) (3) (iii)~~	Cleanings 8-2 (b) PRP 1/9/07
~~56 – 9.1 (A,C,D)~~	~~Cleanings~~
56 – 9.1 (F) ~~(1) (i)~~	Settling / Drying periods

The following is a summary of the proposed alternative methods to ensure the safety and health of the public and those associated with the project.

The abatement contractor will arrive on site and demarcate area with Asbestos signs, Danger tape and Caution tape.

PRP 1/9/07

A large project ~~remote~~ decontamination unit will be set up on this site. This site has no power or water. BSB will supply water to the remote decontamination unit. All water will be hauled into the site or will be removed from one of the wells. The decon will be within close proximity of the building with designated pathways.

See variance conditions.

All abatement workers will be asbestos certified as per NYSDOL. (Supervisor or Handler Certificates.)

Abatement workers will enter the area and will install critical barriers over all openings to the exterior. All floors will be plasticized with two layers of 6 mil. poly. If rolling scaffolding is to be used then one layer will be reinforced.

After all critical barriers are installed, men will set up negative pressure at 8 air changes per hour. Since the area has no power, all electricity will be brought in through generators. Negative air machines will only be operating while the abatement contractor is on site. When the abatement contractor is finished for the day, the enclosure will be

See variance conditions.
PRP 1/9/07

06 1000

cleaned of all gross removal, sealed with tape and glue and the door locked. This will contain all asbestos debris and dust inside the work area until the contractor returns.

Since negative air machines will not be running continuously, all waiting / settling periods will not be necessary for this project.

See original additions RR 1/9/07

Men will begin removal of sheetrock and associated asbestos containing joint compound using ample amounts of amended water and wearing proper PPE.

~~Since the area the men are working on a 3 or 4 acre site. All bags of debris will be single bagged out of the attached airlock and placed into an open bed pickup truck, box truck or trailer and brought to the decon to be double bagged rinsed and tagged. Then placed into a lined dumpster.~~

RR 1/9/07

After all abatement has been completed using ample amounts of amended water, men will complete a final clean by HEPA vacuuming and wet wiping. One clean will be sufficient since these buildings will not be reoccupied.

Project monitor will visually inspect area for cleanliness and for pools of water.

8 hr.

A ~~24hr~~. waiting/settling period will begin with negative air machines running.

RR 1/9/07

Final air testing will be taken at this time.

06 1000

After clearance air sampling has been completed and all samples pass, contractor will encapsulate all walls, ceiling, and floor.

Men will remove all criticals, tear down and demobololize.

Any questions or problems with this variance, please contact me at my office, 845-462-5236.

Sincerely,

Brent T. Fullum

Eliot Spitzer, Governor

NYS Department of Labor
Workforce New York
Put us to work for you

January 10, 2007

BSB Construction Inc
86 Washington St
Poughkeepsie, NY 12601

RE: File No. 06-0999
O & R Utilities, Bldg 3
Clarkstown, NY

Dear Sir/Madam:

STATE OF NEW YORK
DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH

The attached is a copy of Decision, 1/10/07 dated , which I have compared with the original filed in this office and which I DO HEREBY CERTIFY to be a correct transcript of the text of the said original.

If you are aggrieved by this decision you may appeal within 60 days from its issuance to the Industrial Board of Appeals as provided by Section 101 of the Labor Law. Your appeal should be addressed to the Industrial Board of Appeals, Empire State Plaza, Agency Building 2, 20th Floor, Albany, New York, 12223 as prescribed by its Rules and Procedure, a copy of which may be obtained upon request.

WITNESS my hand and the seal of the
NYS Department of Labor, at the City of
Albany, this 10th day of January
Two thousand seven

Blaise Thomas, P.E.
Associate Safety and Health Engineer
Engineering Services Unit

Phone: (518) 457-1536 Fax: (518) 457-1301
W. Averell Harriman State Office Campus, Bldg. 12, Room 154, Albany, NY 12240

www.labor.state.ny.us

STATE OF NEW YORK
DEPARTMENT OF LABOR
STATE OFFICE BUILDING CAMPUS
ALBANY, NEW YORK 12240-0100

Variance Petition

Of

BSB Construction, Inc
Petitioner's Agent

On Behalf of

Orange & Rockland Utilities
Petitioner

in re

Premises: O & R Utilities, Building 3
Little Tor Road & South Mountain Road
Clarkstown, NY 10956

Interior ACM Sheetrock with Joint Compound Removal

File No. 06-0999

DECISION

Case 1-4

ICR 56

The Petitioner, pursuant to Section 30 of the Labor Law, having filed Petition No. 06-0999 December 26, 2006 with the Commissioner of Labor for a variance from the provisions of Industrial Code Rule 56 as hereinafter cited on the grounds that there are practical difficulties or unnecessary hardship in carrying out the provisions of said Rule; and the Commissioner of Labor having reviewed the submission of the petitioner dated December 21, 2006; and

Upon considering the merits of the alleged practical difficulties or unnecessary hardship and upon the record herein, the Commissioner of Labor does hereby take the following actions:

Case No. 1	ICR 56-7.8 (a)
Case No. 2	ICR 56-7.11(e)
Case No. 3	ICR 56-8.2(b)
Case No. 4	ICR 56-9.1(f)

VARIANCE GRANTED. The Petitioner's proposal for removal of 1040 sq. ft. of asbestos containing joint compound on sheetrock, at the subject premises in accordance with the attached 4-page stamped copy of the Petitioner's submittal, is accepted; subject to the Conditions noted below:

THE CONDITIONS

Establishment of Restricted Areas

1. The regulated abatement work areas, decontamination units, airlocks, and dumpster areas shall be cordoned off at a distance of twenty-five feet (25') and shall remain vacated except for certified workers until satisfactory clearance air monitoring results have been achieved or the abatement project is complete.

Friable Sheetrock Removal

2. Once the regulated abatement work area is occupied by the abatement contractor, the asbestos project begins and PPE shall be worn at all times even during Preparation.

3. A personal decontamination enclosure system that complies with Subpart 56-7.5 shall be utilized. A waste decontamination enclosure system that fully complies with Subpart 56-7.5 shall be utilized. These enclosure systems **must be attached (contiguous)** to the regulated abatement work area and shall be removed only after satisfactory clearance air monitoring results have been achieved for the regulated abatement work area. Where physical space restrictions limit the decontamination enclosure system allowable size, small asbestos project combined decontamination enclosure systems in compliance with ICR 56-7.5 (c) & 56-7.5(e9) may be utilized.

4. (Pre-cleaning) The floors, walls, ceilings, fixtures, and movable and fixed objects contaminated with asbestos debris and shall be cleaned as part of this abatement project. **Prior to removal of Debris (ACM materials) necessary for preparation work, installation of critical barriers as per ICR 56-7.11 (a) and establishment of negative air as per ICR 56-7.8 shall be completed. All visible Debris (accumulations of ACM) shall then be misted and bagged for disposal and then any remaining polyethylene shall be installed.**

5. Two-layer six-mil fire retardant plastic sheeting may be used as critical barriers/isolation barriers in lieu of temporary hardwall barriers normally required as per ICR 56-7.11(b). These plastic sheeting isolation barriers shall be adequately supported for the duration of the asbestos project. All critical barriers and isolation barriers shall remain in place until receipt of satisfactory clearance air results for the regulated abatement work area.

6. A minimum of 8 air changes per hour must be observed once the negative air has been established.

7. If negative air machines must be shut down at the end of each work day, the negative air machines must continue to run for a minimum of thirty minutes following completion of all abatement/cleaning activity for the day. Once the thirty minute time period has elapsed, all accesses to the regulated abatement work area shall be sealed airtight, after all workers have exited the work area.

8. When re-establishing the work area in the morning, wait 30 min or until manometer reads a minimum of .02" of water pressure differential before entering the work area.

9. Removals and cleanup shall include, all visible asbestos or suspect asbestos debris.

10. Installation of ceiling plastic sheeting is not required where existing non-porous cleanable ceiling surfaces are located within the work area.

11. Encapsulation of any asbestos removal surfaces **shall not** be performed, until satisfactory clearance air sample results have been obtained.

12. When relief is granted to not plasticize, one thorough cleaning as described in ICR 56-9.1(e) and one settling, waiting period shall suffice, except when an air test fails.

13. After a minimum waiting/drying period has elapsed, the Project Monitor shall determine if the area is dry and free of visible asbestos debris as per 56-9.1(d) (1). If the area is determined to be acceptable, the Project Monitor may authorize clearance air sampling to be performed.

14. After abatement of the asbestos and asbestos debris, all plastic sheeting and tape will be treated as contaminated material and properly disposed of asbestos waste at the end of the project.

15. Usage of this variance is limited to those asbestos removals identified in this variance or as outlined in the Petitioner's proposal.

In addition to the conditions required by the above specific variances, the Petitioner shall also comply with the following general conditions:

GENERAL CONDITIONS

1. A copy of this DECISION and the Petitioner's proposals shall be conspicuously displayed at the entrance to the personal decontamination enclosure.

2. This DECISION shall apply only to the removal of asbestos-containing materials from the aforementioned areas of the subject premises.

3. The Petitioner shall comply with all other applicable provisions of Industrial Code Rule 56-1 through 56-12.

4. The final say as to interpretation of this variance rest solely with the NYS Dept of Labor Engineering Services Unit. Any deviation from variance conditions shall render this variance Null and Void pursuant to 56-12.2.

5. This DECISION shall terminate on January 31, 2008.

Date: January 8, 2007

M. PATRICIA SMITH
ACTING COMMISSIONER OF LABOR

By

Blaise Thomas, P.E.
Associate Safety and Health Engineer

PREPARED BY: Ravi Pilar, P.E.
Senior Safety and Health Engineer

REVIEWED BY: Edward Smith, P.E.
Senior Safety and Health Engineer

BSB Construction Inc.

Specializing In Asbestos And Lead Abatement

86 Washington St.
Poughkeepsie, N.Y. 12601

845-462-5236
BSBConst@aol.com

06 0999

December 21, 2006

Building 3
Revised

State of New York – Department of Labor
Division of Safety and Health
Engineering Services Unit
State Office Building Campus
Albany, New York 12240

Dear Commissioner:

BSB Construction Inc. is requesting a variance from the requirements of the labor law. I have enclosed in this packet: an application (NYS DOSH-7510), a check payable to the commissioner of labor for $350.00, and a detailed explanation of the grounds for this variance and means for securing the public safety and health with regard to this variance. Commencement of work is dependent upon approval of this variance request.

The project involves removal of approximately 1040 sq. ft. of asbestos containing joint compound on sheetrock, located in Building 3 at the Orange and Rockland Utilities site, Little Tor Road and South Mountain Road, Clarkstown, NY 10956. This site incorporates 11 residential buildings, 21 sheds all to be demolished. All buildings have been vacated for 3 to 4 years and never to be occupied again. The site is approx. 3 to 4 acres to be used only for asbestos abatement, until it is completed. The purpose of this variance petition is to expedite the abatement project and ensure the safety and health of the general public.

In the event that the amount to be removed is expected to exceed that specified herein, the Department of Labor will be notified immediately.

In order to protect the safety and health of building occupants, BSB Construction Inc., is requesting relief from the following provisions of Industrial Code Rule 56:

56 – ~~7.5 (A,B,C,E)~~	~~Remote Decon and Waste Out will be needed for this project.~~
56 – 7.8 (A) (1)	Negative Air Machines will need to be shut down when off site.
56 – 7.11 (E,K)	Plasticizing of walls and ceiling.
56 – ~~8.2 (G) (3) (iii)~~	~~Cleanings~~ 8.2(b) PRP 1/9/07
56 – ~~9.1 (A,C,D)~~	~~Cleanings~~
56 – 9.1 (F) ~~(1) (i)~~	Settling / Drying periods

06 0999

The following is a summary of the proposed alternative methods to ensure the safety and health of the public and those associated with the project.

The abatement contractor will arrive on site and demarcate area with Asbestos signs, Danger tape and Caution tape.

See Variance conditions PRP 1/9/07

A large project ~~remote~~ decontamination unit will be set up on this site. This site has no power or water. BSB will supply water to the remote decontamination unit. All water will be hauled into the site or will be removed from one of the wells. The decon will be within close proximity of the building with designated pathways.

All abatement workers will be asbestos certified as per NYSDOL. (Supervisor or Handler Certificates.)

Abatement workers will enter the area and will install critical barriers over all openings to the exterior. All floors will be plasticized with two layers of 6 mil. poly. If rolling scaffolding is to be used then one layer will be reinforced.

After all critical barriers are installed, men will set up negative pressure at 8 air changes per hour. Since the area has no power, all electricity will be brought in through generators. Negative air machines will only be operating while the abatement contractor is on site. When the abatement contractor is finished for the day, the enclosure will be

See variance conditions PRP 1/9/07

06 0999

cleaned of all gross removal, sealed with tape and glue and the door locked. This will contain all asbestos debris and dust inside the work area until the contractor returns.

Since negative air machines will not be running continuously, all waiting / settling periods will not be necessary for this project.

See variance condition. RRP 1/9/07

Men will begin removal of sheetrock and associated asbestos containing joint compound using ample amounts of amended water and wearing proper PPE.

~~Since the area the men are working on a 3 or 4 acre site. All bags of debris will be single bagged out of the attached airlock and placed into an open bed pickup truck, box truck or trailer and brought to the decon to be double bagged rinsed and tagged. Then placed into a lined dumpster.~~ RRP 1/9/07

After all abatement has been completed using ample amounts of amended water, men will complete a final clean by HEPA vacuuming and wet wiping. One clean will be sufficient since these buildings will not be reoccupied.

Project monitor will visually inspect area for cleanliness and for pools of water.

A ~~4hr.~~ 8 hr. waiting/settling period will begin with negative air machines running. RRP 1/9/07

Final air testing will be taken at this time.

06 0999

After clearance air sampling has been completed and all samples pass, contractor will encapsulate all walls, ceiling, and floor.

Men will remove all criticals, tear down and demobololize.

Any questions or problems with this variance, please contact me at my office, 845-462-5236.

Sincerely,

Brent T. Fullum

Orange and Rockland Utilities, Inc.

TRANSMITTAL

390 W. Route 59, Spring Valley, New York 10977 (845) 577-3 FAX 845-577-3720

TO: Town of Clarkstown, Building Inspector DATE: 01/16/07

ADDRESS: 10 Maple Avenue PROJECT NO.: 10-1075

New City, NY 10956 PROJECT NAME: Little Tor Road Demo

ENCLOSED	COPY OF LETTER	**FOR REVIEW**	FOR YOUR USE	EMF STUDY
FIRST CLASS MAIL	**PRINTS**	SCECIFICATIONS	AS REQUESTED	
OVERNIGHT	DOCUMENT	**FOR COMMENTS**	PRINTS	
MESSENGER	PHOTOSTATS	CONTRACTS	AS REQUESTED	

Orange and Rockland's Comments

No. of Copies	Date	Drawing No.	Description
1	01/16/07		Demolition Permit Application with Site Plan

REMARKS:

Please find attached O&R's Demolition Permit application for the property at the SW corner of Little Tor Road and South Mountain Road. Attached are O&R's gas and electric disconnect letters and United Water's Letter stating no service to the area. There is no TDEC sewer at this location and was verified with Sal Fagliuca. The asbestos abatement is currently underway at the site in accordance with NYS Code Rule 56. Letters from the third party testing agency will be submitted to the building department as soon as the abatement is complete. Demolition debris will be taken to Seneca Meadows Landfill, 1756 Saloman Road, Waterloo, NY 13165. A copy of the landfill's DEC permit is attached. A copy of the asbestos survey (before the abatement) is also attached. Buildings 4 and 9 are the only two without asbestos.

COPY TO: _____

_____

FROM: Michael Homenick
Civil Engineer
845.577.3708

TOWN OF CLARKSTOWN

BUILDING ZONE ORDINANCE

This PERMIT Notice

To be fastened on [redacted] ch it is issued where
i[redacted] ons

DEMO

Permit No. _____ has been Issued [redacted] building

This notice shall not be removed from building to which it is attached and the building shall not be used until a Certificate of occupancy has been issued by the "Building Inspector"

Date 1-31-07

Charles Powers
Building Inspector

TOWN OF CLARKSTOWN

OFFICE OF THE BUILDING INSPECTOR
10 MAPLE AVE. * NEW CITY, NY 10956 * (845) 639-2100

APPLICATION FOR BUILDING * OCCUPANCY * DEMOLITION PERMIT

(Applicant to complete numbered items)

1. NEW TAX MAP 34.05
BLOCK 1
LOT 6

OLD MAP # 85-B-1
34.05-1-6

VERIFIED BY ASSESSORS OFFICE:
DATE 1/17/07 BY CG

ZONING DISTRICT R-40

PERMIT NO. Demo 07-65
FEE (C.O. FEE INCL.) $100.
RENEWED

RECEIVED
JAN 16 2007
BUILDING DEPARTMENT

RECEIVED BY:

JOB COPY
BUILDING INSPECTOR
TOWN OF CLARKSTOWN

- HEALTH Dept. 1/19/07

2. DATE:

3. LOCATION: NO.: STREET: LITTLE TOR ROAD/So. Mountain Rd. HAMLET: New City
PROJECT NAME: MOXLEY ACRES

4. NAME AND **ADDRESS** OF:
PROPERTY OWNER: TEL. NO.:
LESSEE: TEL. NO.:
AGENT OF OWNER/LESSEE: TEL. NO.:
IF A CORPORATION - RESPONSIBLE OFFICER FOR:
PROPERTY OWNER: ORANGE & ROCKLAND UTILITIES, INC. TEL. NO.:
LESSEE: TEL. NO.:
AGENT OF OWNER/LESSEE: MICHAEL HOMENICK TEL. NO.: 845 577 3708

5. ESTIMATED CONSTRUCTION VALUE: $ 362,000

6. EXISTING AND/OR PROPOSED USE OF STRUCTURE OR LAND: No Proposed use at this time
(IF COMMERCIAL PROPERTY, LIST NAME OF PRIOR USER):

7. DESCRIBE BRIEFLY THE NATURE OF THE PROPOSED WORK OR USE:
Demolition of 10 Residential Structures

(complete reverse side)

OFFICIAL USE ONLY

PERMIT GRANTED FOR:
Demolition of Existing Structures

E: 1-31-07 BUILDING INSPECTOR: Charles Manera

THIS PERMIT EXPIRES 18 MONTHS AFTER DATE OF ISSUANCE

CERTIFICATE OF OCCUPANCY REQUIRED PRIOR TO USE OR OCCUPANCY

8. BULK

Col. 1 ZONE | 2 GROUP | 3 USE

	REQUIRED	EXISTING	PROPOSED
4 Floor area ratio			
5 Lot area			
6 Lot Width			
7 Front yard depth			
8 Side yard width			
9 Total width both side yards			
10 Rear yard depth			
11 Maximum building height in feet and inches per foot of distance from designated street line			

9. SIZE OF BUILDING

	EXISTING	PROPOSED	COMPLETED
Square feet floor area			
Front in feet			
Rear in feet			
Maximum depth in feet			
Number of stories			

10. Name and address of person(s) responsible for the supervision of the work performed pursuant to the State Uniform Code and the Clarkstown Zoning Ordinance.

	NAME	ADDRESS	TELEPHONE
General Contractor	Helmer-Cronin Const. Inc.	27 Route 10, Stony Point, NY 10980	845-942-1330
Registered Architect			
Professional Engineer	John Haggarty - O&R	390 41 Route 59, Spring Valley NY 10977	845-577-37**
Builder			

Rockland County Home Improvement License #
Workman's Compensation Carrier New York State Insurance Fund
Rockland County Plumbing, Heating, A/C License #

11. AFFIDAVIT

TOWN OF CLARKSTOWN
COUNTY OF ROCKLAND ss:
STATE OF NEW YORK

Michael Homenick .being duly sworn, deposes and says:
(PRINT NAME) Please Circle One: (owner, lessee, or agent of the owner/lessee)

that Orange & Rockland Utilities, Inc is the owner in fee of the premises to which this application applies; that he (the applicant) is duly authorized to make this application; and that the statements contained here are true to the best of his knowledge and belief, and that the work Code and all other applicable laws, ordinances and regulations of the Town of Clarkstown. I also declare that the structure or area described in this application will not be occupied or used until I have obtained a Certificate of Occupancy.

Michael Homenick
Signature of applicant

Sworn to before me this
16 day of Jan 07

Marianne Antolino
Notary Public, State of New York

MARIANNE ANTOLINO
Notary Public, State of New York
Residing in Rockland County
No. 01AN5024055
Commission Expires Feb. 22, 2010

OFFICE USE ONLY

___ Dept. of Environmental Control Approval ___ Special Flood Hazard Area - Zone ___

*****SEPARATE APPLICATION FOR CERTIFICATE OF OCCUPANCY IS REQUIRED PRIOR TO ANY USE OR OCCUPANCY***

Orange & Rockland
a conEdison, inc company

Orange and Rockland Utilities, Inc.
390 West Route 59
Spring Valley NY 10977-5300
www.oru.com

July 21, 2006

Mr. Peter Beary
Building Inspector
Town of Clarkstown
10 Maple Avenue
New City, NY 10956

Dear Mr. Beary:

This letter is to confirm that gas service to the buildings located at 1, 2, 3 and 5 Moxley Road, New City, New York, have been retired at the curb valve on June 20, 2006.

Sincerely,

Steve Nostro
Gas Distribution Supervisor

SN/pmc

Orange & Rockland
a conEdison, Inc company

Orange and Rockland Utilities, Inc.
390 West Route 59
Spring Valley NY 10977-5300
www.oru.com

December 22, 2006

Mr. Peter Beary
Building Inspector
Town of Clarkstown
10 Maple Avenue
New City, NY 10956

Dear Mr. Beary:

This letter is to confirm that gas service to the buildings at 6, 7, 8, & 9 Moxley Court, New City, New York, has been retired at the main valve on June 20, 2006.

Sincerely,

Steve Nostro
Gas Distribution Supervisor

SN/pmc

Orange & Rockland
a conEdison, inc. company

Orange and Rockland Utilities, Inc.
390 West Route 59
Spring Valley NY 10977-5300
www.oru.com

July 19, 2006

Town of Clarkstown
Office of the Building Inspector
Peter J. Beary
10 Maple Avenue
New City, New York 10956-5099

Re: Demolition Letter – Electric Meters # - 044178169, 044003821, 605023202, and 070991778

Orange and Rockland Utilities
549 and 555 Little Tor Road
New City, NY 10965

Sent by Fax: (845) 639-2099

Dear Mr. Beary:

As per your request, I can verify that Orange and Rockland has no electric service at the above referenced address as of 06/30/06.

The gas service letter will be forwarded by the Gas Construction Department directly to the Town of Clarkstown. If further information is necessary, the Gas Construction Department may be reached at (845) 577-3005.

If you have any questions, please contact me at (845) 577-3090.

Sincerely,

Amy Wertheim

Amy Wertheim
Special Accounts Analyst
New Construction Services

Orange & Rockland
a conEdison, Inc. company

Orange and Rockland Utilities, Inc.
390 West Route 59
Spring Valley NY 10977-5300
www.oru.com

July 19, 2006

Town of Clarkstown
Office of the Building Inspector
Peter J. Beary
10 Maple Avenue
New City, New York 10956-5099

Re: Demolition Letter – Electric Meters # - 0440073922, 605011565, 085365317, 601006484 and 043865320

Orange and Rockland Utilities
216, 218, 220, 222 and 224 S. Mountain Road
New City, NY 10965

Sent by Fax: (845) 639-2099

Dear Mr. Beary:

As per your request, I can verify that Orange and Rockland has no electric service at the above referenced address as of 06/30/06.

The gas service letter will be forwarded by the Gas Construction Department directly to the Town of Clarkstown. If further information is necessary, the Gas Construction Department may be reached at (845) 577-3005.

If you have any questions, please contact me at (845) 577-3090.

Sincerely,

Amy Wertheim

Amy Wertheim
Special Accounts Analyst
New Construction Services

United Water

July 24, 2006

Orange & Rockland Utilities
390 W. Rte 59
Spring Valley, New York 10977

Attn: Mr. Michael Homenick

Re: S. Mountain Rd. & Little Tor Rd.

Dear Mr. Homenick:

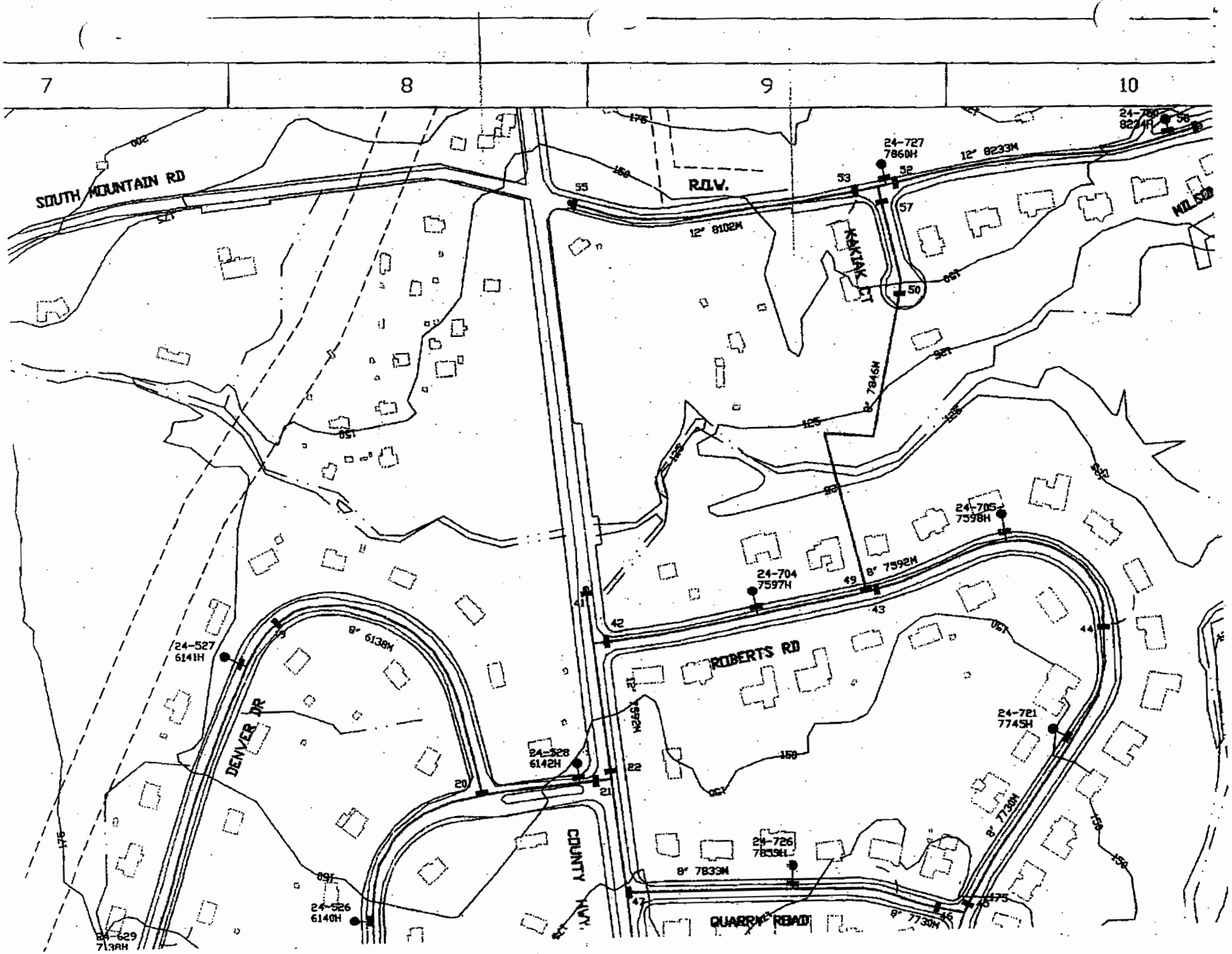
Concerning your inquiry regarding water service in the vicinity of the referenced roads, please be aware that there are no services of record in that area. Also attached, for your information, is the relevant section of our Distribution Map showing the proximity of United Water's mains to the site in question.

Feel free to contact me if you have any questions or require additional information.

Best regards,

Tanyo Parashkevov

Tanyo Parashkevov
Project Manager


7
8
9
10
SOUTH MOUNTAIN RD
R.O.W.
KAKIAK CT
ROBERTS RD
DENVER DR
COUNTY HWY.
QUARRY ROAD
24-727
7860H
12" 8233M
12" 8102M
8" 7846M
24-705
7598H
24-704
7597H
8" 7592M
24-527
6141H
8" 6138M
24-528
6142H
24-721
7745H
24-726
7859H
8" 7833M
8" 7730M
24-526
6140H
24-629
7138H

Orange & Rockland
a conEdison, inc. company

Orange and Rockland Utilities, Inc.
390 West Route 59
Spring Valley NY 10977-5300
www.oru.com

July 21, 2006

Mr. Peter Beary
Building Inspector
Town of Clarkstown
10 Maple Avenue
New City, NY 10956

Dear Mr. Beary:

This letter is to confirm that gas service to the buildings located at 1, 2, 3 and 5 Moxley Road, New City, New York, have been retired at the curb valve on June 20, 2006.

Sincerely,

Steve Nostro
Gas Distribution Supervisor

SN/pmc

COPY

January 29, 2007

Mr. John Haggarty
Principal Civil Engineer
390 West Route 59
Spring Valley, New York 10977

Clayton Project No. 12007-000024.00

Subject: Post Asbestos Abatement Clearance Notification
Little Tor Project, Clarkstown, New York.

Dear Mr. Haggarty:

Orange and Rockland Utilities retained Clayton Group Services, Inc., *a Bureau Veritas Company*, to perform air monitoring and project oversite during asbestos abatement activities at the Orange and Rockland, Little Tor project site located in Clarkstown, New York. Clayton identified asbestos-containing materials (ACMs) in several of the buildings at the site during its August 2006 site inspection. Clayton prepared a report of its inspection, dated October, 6, 2006.

BSB Construction, performed the asbestos abatement operation at the site. The abatement operation began on January 8, 2007 and was completed on January 27, 2007. Materials that were abated at the site include ACM that was identified during Clayton's August 2006 site inspection.

Clayton performed air sampling during the abatement operations in accordance with the New York State Industrial Code Rule 56, *Asbestos*. Clayton submitted the air samples to a laboratory that is accredited by the New York State Environmental Laboratory Accreditation Program (ELAP) for analysis. Analytical results of post abatement clearance air sampling performed at each of the buildings where abatement operations were performed were less than the New York State post abatement clearance criteria.

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

It has been a pleasure providing our services to you. If you have any questions or require additional information, please call.

Sincerely,

Patrick A. Hand, CIH
Senior Consultant
Health, and Safety & Environmental

Reviewed by:

Stephen M. Vogl, CIH, CSP
Senior Project Manager
Health, and Safety & Environmental

PAH

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: Orange & Rocklaud

FROM Marvin MACHADO
Clayton Group Services, Inc.

DATE: JANUARY 13, 2007

RE: Project Name: Little Tor, New City, NY
Project No.: 12007 - 000024.00

Air sampling has been conducted in the following areas:

1. Bldg 1 and perimeter
2. _____
3. _____
4. _____

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol, ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin J. Machado
Clayton Group Services, Inc.

1.13.07
Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: Orange and Rockland

FROM: MARVIN MACHADO
Clayton Group Services, Inc.

DATE: JANUARY 11, 2007

RE: Project Name: Little Tor, New City
Project No.:

Air sampling has been conducted in the following areas:

1. Bldg 2 and perimeter
2. _____
3. _____
4. _____

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol, ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin J. Machado
Clayton Group Services, Inc.

1.11.07
Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: Orange and Rockland

FROM: MARVIN MACHADO
Clayton Group Services, Inc.

DATE: JANUARY 19 & 24, 2007

RE: Project Name: Little Tor, New City
Project No.: 12007-000024.00

Air sampling has been conducted in the following areas:

1. Bldg 3 And perimeter
2.
3.
4. * Two clearances conducted / friable - non-friable

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol, ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin J. Machado
Clayton Group Services, Inc.

JANUARY 25, 2007
Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: Orange and Rockland

FROM MARVIN MACHADO
Clayton Group Services, Inc.

DATE: JANUARY 20, 2007

RE: Project Name: Little Tor, New City
Project No.: 12007-000024.00

Air sampling has been conducted in the following areas:

1. Bldg 5 and perimeter
2. _____
3. _____
4. _____

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol, ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin J. Machado
Clayton Group Services, Inc.

1.20.07
Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: ORANGE and Rockland

FROM MARVIN MACHADO
Clayton Group Services, Inc.

DATE: January 13, 2007

RE: Project Name: Little TOR, New City, NY.
Project No.: 12007 - 000024.00

Air sampling has been conducted in the following areas:

1. Bldg 5B (Shed)
2. _____
3. _____
4. _____

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol, ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin F. Machado — 1.13.07

Clayton Group Services, Inc. — Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837
Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: ORANGE And Rockland

FROM: MARVIN MACHADO
Clayton Group Services, Inc.

DATE: 1.27.07

RE: Project Name: Little Tor, New City, NY.
Project No.: 12007-000024.00

Air sampling has been conducted in the following areas:

1. Bldg 6 And perimeter
2.
3.
4. * friable and non friable clearance

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol, ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin F. Machado
Clayton Group Services, Inc.

1.27.07
Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: ORANGE And Rockland

FROM MARVIN MACHADO
Clayton Group Services, Inc.

DATE: January 13, 2007

RE: Project Name: Suffle Tor, New City, NY
Project No.: 12007-000024.00

Air sampling has been conducted in the following areas:

1. Bldg 4 And perimeter
2. Bldg 7B (Shed)
3.
4.

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol, ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin C. Machado — 1.13.07

Clayton Group Services, Inc. — Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: ORANGE AND Rockland

FROM MARVIN MACHADO
Clayton Group Services, Inc.

DATE: JAnuary 12, 2007

RE: Project Name: Settle Tor, New City, N.Y.
Project No.: 12007-000024.00

Air sampling has been conducted in the following areas:

1. Bldg 8 And perimeter
2. _____
3. _____
4. _____

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol; ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin J. Machado — 1.12.07

Clayton Group Services, Inc. — Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837
Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

BUREAU VERITAS

AIR SAMPLING NOTIFICATION

TO: ORANGE And Rockland

FROM MARVIN MACHADO
Clayton Group Services, Inc.

DATE: JANUARY 16, 2007

RE: Project Name: Little Tor, New City, New York
Project No.: 12007 - 000024.00

Air sampling has been conducted in the following areas:

1. Bldg 10 And Perimeter
2. _____
3. _____
4. _____

(X) Air sampling and analysis was performed by phase contrast microscopy (PCM) in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

( ) Air sampling and analysis was performed by transmission electron microscopy (TEM) following ( ) Asbestos Hazard Emergency Response Act (AHERA) protocol, ( ) NIOSH Method 7402.

Air sampling results have indicated airborne fiber concentrations at or below either:

X The postabatement clearance criterion of 0.01 fibers per cubic centimeter of air (f/cc).

Marvin J. Machado
Clayton Group Services, Inc.

1.16.07
Date

Clayton Group Services, Inc.
A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax: (732) 225-4577
www.us.bureauveritas.com

October 6, 2006

Mr. John Haggarty
Principal Engineer
ORANGE & ROCKLAND UTILITIES
390 West Route 59
Spring Valley, New York 10977

Clayton Project No. 12006-006658.00

Subject: Assessment of Buildings for Asbestos Containing Materials, Little Tor Property, New City, New York

Dear Mr. Haggarty:

Orange and Rockland Utilities retained Clayton Group Services, *A Bureau Veritas Company*, to inspect buildings at the property referred to by Orange and Rockland as the Little Tor Property, for asbestos-containing materials. The Little Tor property is located at the intersection on Little Tor Road and South Mountain Road in New City, New York.

Orange and Rockland requested that Clayton inspect the buildings at the site to identify suspect asbestos-containing materials and collect representative samples of the materials to determine if the materials meet the definition of asbestos-containing materials (ACM) as defined by the United States Environmental Protection Agency (EPA) and the State of New York. The EPA and the State of New York define ACM as a material that contains greater than one percent asbestos.

Clayton was at the site inspecting the buildings on August 9, 10, 11, 14, and September 29, 2006. Mr. Marvin Machado, Consultant, and Mr. Patrick A. Hand, CIH, of Clayton, performed the inspections of the buildings at the site. Mr. John Haggarty, of Orange and Rockland, provided access and information during the inspections.

Attachment 1 presents the analytical results of bulk samples collected at the site. Attachement 2 presents a diagram of the site that identifies building numbers.

Clayton collected representative samples of suspect ACM identified in or on the buildings at the site. Clayton submitted most of the samples to its American Industrial Hygiene (AIHA)-accredited and New York State Environmental Laboratory Approval Program (ELAP)-accredited laboratory located in Kennesaw, Georgia, for asbestos analysis. Clayton also submitted bulk samples to EMSL Analytical in Piscataway, New Jersey. EMSL's Piscataway, New Jersy Laboratory is also accredited by the AIHA and New York ELAP.

Clayton Group Services, Inc.

A Bureau Veritas Company
Raritan Center, 160 Fieldcrest Avenue
Edison, NJ 08837

Main: (732) 225-6040
Fax (732) 225-4577
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Clayton analyzed the bulk samples of friable materials following ELAP Method 198.1. Method 198.1 uses polarized light microscopy (PLM). Clayton analyzed the samples of nonfriable organically bound (NOB) materials following ELAP Method 198.6. Method 198.6 is an enhanced method that uses PLM with gravimetric reduction of the sample. For each type of NOB material that provided inconclusive results by Method 198.6, Clayton analyzed one representative sample by ELAP Method 198.4. Method 198.4 uses transmission electron microscopy (TEM) and is required by New York State to confirm an inconclusive result for NOB materials

OBSERVATIONS & ANALYTICAL RESULTS

Analytical results indicate that many of the building materials at the site are ACM. The following discussion presents the building numbers and material that have been identified by laboratory analysis as ACM within or on each building.

Building No. 1:

ACM Description	Location of ACM	Amount of ACM
Roofing materials	Roof	1,000 sf

Building No. 2:

ACM Description	Location of ACM	Amount of ACM
Floor tiles: 12-inch, white and Mastic	Rear room near kitchen	60 sf

Building No. 3:

ACM Description	Location of ACM	Amount of ACM
Joint compound and stucco	Front fireplace room	400 sf

Building No. 5:

ACM Description	Location of ACM	Amount of ACM
Roofing materials	Roof	Entire roof
Linoleum flooring and mastic	Bedroom,	200 sf
Linoleum flooring, and mastic	kitchen	100 sf

Building No. 6:

ACM Description	Location of ACM	Amount of ACM
Floor tile, red brick pattern. Mastic is not ACM	kitchen	24 sf
Floor tiles, 9-inch, white color with red green & beige. Mastic is not ACM	kitchen	200 sf
Roof flashing	Roof	Entire roof

Building No. 7

ACM Description	Location of ACM	Amount of ACM
Floor tiles, 9-inch, white, and mastic	Foyer	150 sf
Floor tiles, 9-inch, beige. & mastic	Living Room	275 sf

Building No. 7B

ACM Description	Location of ACM	Amount of ACM
Roofing material	roof	Entire roof

Building No. 8

ACM Description	Location of ACM	Amount of ACM
Linoleum flooring, white, no mastic	Living room	500 sf
Linoleum, white, no mastic	Kitchen	125 sf
Black flashing	Roof and chimney	Entire roof

Building No. 10

ACM Description	Location of ACM	Amount of ACM
Floor tiles, 12-inch, self adhesive, Mastic is not ACM	Kitchen	100 sf
Tar paper on roof	House & car port	Entire roof

CONCLUSIONS AND RECOMMENDATIONS

Many of the buildings at the Little Tor property contain ACM. Clayton recommends that these materials be removed and disposed of prior to demolition of the buildings. If Orange and Rockland does not intend on demolishing the buildings the ACM should be included in Orange and Rockland's asbestos management plan. The analytical results of sampling is presented in Attachement 1.

It has been a pleasure to provide our services to Orange and Rockland. If you have any questions or require further information, please call.

Sincerely,

Patrick A. Hand, CIH
Senior Industrial Hygienist
Environmental, Health, and Safety

Reviewed by:

Lee Schumann, CIH
Director
Environmental, Health, and Safety

PAH:rts
Attachments

BUREAU VERITAS

ATTACHMENT 1

ANALYTICAL RESULTS OF BULK SAMPLES COLLECTED AT THE LITTLE TOR SITE

Analytical Results of Bulk Material Sampling for Asbestos
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 1			
OR-080906-1-1A	Siding shingle, black with black, red, and white flecks, front of building (north)	----	Shingle: Inconclusive Black Tar: Inconclusive	Shingle: NAD Black Tar: NAD
OR-080906-1-1B	Siding shingle, black with black, red, and white flecks, rear of building (south)	----	Shingle: Inconclusive Black Tar: Inconclusive	----
OR-080906-1-1C	Roof shingle, black with black, red, and white flecks, right side of building (west), top of lower roof	----	Roofing Material: Inconclusive	----
OR-080906-1-2A	Black multi-layered roofing material, west side of building	----	8.9 Chrysotile	----
OR-080906-1-2B	Black multi-layered roofing material, north side of building	----	12 Chrysotile	----
OR-080906-1-2C	Black multi-layered roofing material, east side of building	----	Black/Green Roofing Material: Inconclusive Black Tar: 12 Chrysotile	----

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 1			
OR-080906-1-3A	Beige plaster/cement chimney exterior, east side of chimney	NAD	----	----
OR-080906-1-3B	Beige plaster/cement chimney exterior, north side (center) of chimney	NAD	----	----
OR-080906-1-3C	Beige plaster/cement chimney exterior, west side of chimney	NAD	----	----
OR-080906-1-4A	White sheetrock with brown paper backing, interior of building, west wall	NAD	----	----
OR-080906-1-4B	White sheetrock with brown paper backing, interior of building, east wall	NAD	----	----
OR-080906-1-4C	White sheetrock with brown paper backing, interior of building, north wall	NAD	----	----

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 2			
OR-080906-2-1C	White sheetrock with green/brown paper backing, interior of building, living room	NAD	----	----
OR-080906-2-2A	12- by 12-inch white and floor tile with black backing, applied to slab, rear room, near kitchen	----	White Floor Tile: Inconclusive Black Floor Tile: 16 Chrysotile White Mastic: Inconclusive	----
OR-080906-2-2B	12- by 12-inch white and floor tile with black backing, applied to slab, rear room, near kitchen	----	White Floor Tile: Inconclusive Black Floor Tile: 13 Chrysotile White Mastic: Inconclusive	White Mastic: 1.2% Chrysotile
OR-080906-2-2C	12- by 12-inch white and floor tile with black backing, applied to slab, rear room, near kitchen	----	White Floor Tile: Inconclusive Black Floor Tile: 14 Chrysotile White Mastic: Inconclusive	----

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 2A			
OR-080906-2A-1A	Roofing material, black, shed roof	----	Inconclusive	NAD
OR-080906-2A-1B	Roofing material, black, shed roof	----	Inconclusive	----
OR-080906-2A-1C	Roofing material, black, shed roof	----	Inconclusive	----
	BUILDING 2B			
OR-080906-2B-1A	Roofing material, black with tar backing, shed roof	----	Black/White Shingle: Inconclusive Black Felt: Inconclusive	Black/White Shingle: NAD Black Felt: NAD
OR-080906-2B-1B	Roofing material, black with tar backing, shed roof	----	Black/White Shingle: Inconclusive Black Felt: Inconclusive	----
OR-080906-2B-1C	Roofing material, black with tar backing, shed roof	----	Black/White Shingle: Inconclusive Black Felt: Inconclusive	----

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 2C			
OR-081406-2C-1A	Asphalt siding	---	Multi-Colored Shingle: Inconclusive Brown Insulation: Inconclusive	Multi-Colored Shingle: NAD Brown Insulation: NAD
	BUILDING 2D			
OR-081406-2D-1A	Roof shingle	---	Inconclusive	NAD
	BUILDING 3			
OR-080906-3-1A	Roof shingle, black with white flecks, east side of roof	---	Shingle: Inconclusive Black Felt: Inconclusive	Shingle: NAD Black Felt: NAD
OR-080906-3-1B	Roof shingle, black with white flecks, west side of roof	---	Shingle: Inconclusive Black Felt: Inconclusive	Shingle: NAD Black Felt: NAD
OR-080906-3-1C	Roof shingle, black with white flecks, north side of roof	---	Shingle: Inconclusive Black Felt: Inconclusive	Shingle: 0.42 Chrysotile Black Felt: 0.46 Chrysotile

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 3			
OR-080906-3-2A	Plaster/cement, exterior window ledge, north side of building	White/Gray Paint: NAD Gray Plaster: NAD	---	---
OR-080906-3-2B	Plaster/cement, exterior window ledge, south side of building	White/Gray Paint: NAD Plaster: NAD	---	---
OR-080906-3-2C	Plaster/cement, exterior window ledge, west side of building	White/Gray Paint: NAD Plaster: NAD	---	---
OR-081006-3-3A	White joint compound, interior of building, storage area	Joint Compound: NAD Sheetrock: NAD	---	---
OR-081606-3-3B	White joint compound, interior of building, wash room, wall	White Paint/Joint Compound: NAD Sheetrock: NAD	---	---

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 3			
OR-081606-3-3C	White joint compound, interior of building, kitchen, wall	White Paint/Joint Compound: NAD Sheetrock: NAD	---	---
OR-081606-3-3D	White joint compound, interior of building, rear bedroom, wall	White Paint/Joint Compound: NAD Sheetrock: NAD	---	---
OR-081606-3-3E	White joint compound, interior of building, fireplace room, closet	White Paint/Joint Compound: NAD Tape: NAD	---	---
OR-092606-3-3F	White joint compound (Stucco), interior of building, fireplace room, left of fireplace	Joint Compound: NAD Wallboard: NAD	---	---
OR-092606-3-3G	White joint compound (Stucco), interior of building, fireplace room, right of fireplace	Joint Compound: NAD Wallboard: NAD	---	---
OR-081006-3-4A	White sheetrock with paper backing, interior of building, living room	White Paint: NAD Sheetrock: NAD	---	---

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 3			
OR-081006-3-5A	Brown paper wallboard, interior of building, bedroom	White Paint/Joint Compound: 1.50 Chrysotile Brown Paper: NAD	----	----
OR-092906-3-5B	Brown paper backing insulation	Joint Compound: 0.50 Chrysotile Brown Paper: NAD	----	----
OR-081006-3-6A	White linoleum flooring with blue flecks, interior of building, kitchen	----	Inconclusive	NAD
OR-081006-3-7A	Cementitious coating applied to exterior of chimney, painted white	NAD	----	----
OR-081006-3-7B	Gray caulking applied to/between chimney/exterior of building, painted white	White Paint: NAD Clear Caulking: NAD	----	----
OR-081006-3-7C	Plaster, applied to interior of chimney	NAD	----	----

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 3			
OR-081603-3-8A	Wall covering, inside wall cavity, interior of building, front bedroom	---	Inconclusive	NAD
	BUILDING 3A			
OR-0892606-3A-1A	Black asphalt roofing shingle on well house		Inconclusive	NAD
OR-080906-3A-2A	Tar paper, roof, beneath black asphalt roofing shingles on top of the well house.		Inconclusive	NAD
	BUILDING 3B			
OR-081406-3B-1A	Black asphalt roofing shingle	---	Inconclusive	NAD

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 3B			
OR-081406-3B-1B	Tar paper, roof, beneath black asphalt roofing shingles	----	Inconclusive	NAD
	BUILDING 4			
OR-081006-4-1A	Black multi-layered roof shingle with white flecks and tar paper	----	Black/White Shingle: Inconclusive Black Shingle: Inconclusive Black Felt: Inconclusive	Black/White Shingle: NAD Black Shingle: NAD Felt: NAD
OR-081006-4-2A	12- by 12-inch white floor tile with gold marble pattern, interior of building, bedroom	----	Inconclusive	NAD
OR-081006-4-3A	Ceiling tile	NAD	----	----

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 4A			
OR-092606-4-1A	Black roof shingle	----	NAD	NAD
OR-092606-4-1B	Black, red, white roof shingle and tar paper	----	Layer 1: NAD Layer 2: NAD	Layer 1: NAD Layer 2: NAD
	BUILDING 5			
OR-081006-5-1A	Black roof shingle with white gravel	----	Inconclusive	NAD
OR-081006-5-1B	Multi-layered built-up roofing material	----	Green & Red Shingle: Inconclusive Green Shingle: Inconclusive Red Shingle: Inconclusive Black Tar: 12 Chrysotile Black Tar: 1.7 Chrysotile	----
OR-081006-5-2A	White linoleum flooring with red square pattern, interior of building, living room	----	Inconclusive	NAD

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 5			
OR-081006-5-2B	Brown linoleum flooring with light brown/red vermiculite pattern, interior of building, bedroom	---	Linoleum: 4.2 Chrysotile Mastic: 4.1 Chrysotile	---
OR-081006-5-2C	White linoleum flooring with red square pattern and multi-layered paper backing, interior of building, kitchen	---	White Linoleum: Inconclusive Yellow Linoleum: 45 Chrysotile Brown Felt: Inconclusive	---
	BUILDING 5A			
OR-081006-5A-1A	Black multi-layered roof shingle	---	Green Shingle: Inconclusive Black Shingle: Inconclusive Black Felt: Inconclusive	Green Shingle: NAD Black Shingle: NAD Black Felt: NAD

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 5B			
OR-081006-5B-1A	Black multi-layered roof shingle	---	Red Shingle: Inconclusive Black Felt: Inconclusive	Red Shingle: NAD Black Felt: 0.15 Chrysotile
	BUILDING 5C			
OR-081406-5C-1A	Asphalt roof shingle	---	Inconclusive	NAD
	BUILDING 6			
OR-081006-6-1A	White stucco paint on walls and ceilings, interior of building, in corridor, at stairwell	NAD	---	---
OR-081006-6-1B	White stucco paint on walls and ceilings, interior of building, in corridor, at stairwell	NAD	---	---
OR-081006-6-1C	White stucco paint on walls and ceilings, interior of building, in corridor, at stairwell	NAD	---	---

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 6			
OR-081006-6-2A	Red brick-patterned floor tile, and associated mastic, interior of building, kitchen	----	Floor Tile: 3.7 Chrysotile Mastic: Inconclusive	Mastic: 0.32 Chrysotile
OR-081006-6-3A	9- by 9-inch white floor tile with red, green, and beige markings, and associated mastic, interior of building, kitchen	----	Floor Tile: 4.1 Chrysotile Mastic: Inconclusive	Mastic: NAD
OR-081006-6-4A	Sheetrock, joint compound, and tape, interior of building, kitchen	Blue Paint: NAD Joint Compound: 0.75 Chrysotile Sheetrock: NAD	----	----
OR-081006-6-5A	Black multi-layered roof shingle, lower roof, outside hallway window	----	Gray Shingle: Inconclusive Gray/Black Speckled Shingle: Inconclusive	Gray Shingle: NAD Gray/Black Speckled Shingle: NAD

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 6			
OR-081006-6-6A	White/gray caulking, window near stairwell landing	Mineral Mixture: NAD White Paint: NAD	---	---
OR-081006-6-7A	Black roof flashing, at window ledge, lower roof	White Paint: NAD Black Mastic: 10.25 Chrysotile	---	---
	BUILDING 7			
OR-081106-7-1A	9- by 9-inch white floor tile, and associated mastic, interior of building, at entrance foyer	---	Floor Tile: 23 Chrysotile Mastic: Inconclusive	Mastic: 3.5% Chrysotile
OR-081106-7-1B	9- by 9-inch beige floor tile with blue streaks, interior of building, living room	---	Floor Tile: 24 Chrysotile Mastic: Inconclusive	Mastic: 0.23% Chrysotile
OR-081106-7-1C	12- by 12-inch green marbleized floor tile, interior of building, kitchen	---	Floor Tile: Inconclusive Mastic: Inconclusive	Floor Tile: NAD Mastic: NAD

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 7			
OR-081106-7-1D	Green linoleum flooring with gray square pattern, interior of building, bathroom	----	Inconclusive	NAD
OR-081106-7-2A	Red roof shingles with black paper, east side of building	----	Red/Black Shingle: Inconclusive Black Felt: Inconclusive	Red/Black Shingle: NAD Black Felt: NAD
OR-081106-7-2B	Roof shingles with paper, north roof	----	Brown Shingle: Inconclusive Brown/Black Shingle: Inconclusive Black Felt: Inconclusive	----
OR-081106-7-3A	White textured wall coating, interior of building, kitchen	NAD	----	----
OR-081106-7-4A	Black tar paper backing associated with fibrous glass insulation, interior of building, interior of kitchen wall	----	Inconclusive	NAD

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 7			
OR-081106-7-5A	White/gray caulking, interior of building, window in sun room	----	Inconclusive	NAD
	BUILDING 7A			
OR-081106-7A-1A	Red shingle with paper, side of building, east side	----	Shingle: Inconclusive Black Felt: Inconclusive	Shingle: NAD Black Felt: NAD
OR-081106-7A-1B	Black shingle with paper, roof of building	----	Shingle: Inconclusive Black Felt: Inconclusive	Shingle: NAD Black Felt: NAD
OR-081106-7A-2A	White sheetrock with brown paper backing, and associated joint compound, interior of building, wall	Joint Compound: NAD Sheetrock: NAD	---	---

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 7B			
OR-081106-7B-1A	Black multi-layered roofing material	----	Black Shingle: Inconclusive Green Shingle: 2.9 Chrysotile	---
	BUILDING 8			
OR-081406-8-1A	Black/gray shingles, shed roof	----	Inconclusive	NAD
OR-081406-8-2A	Red shingles, main roof, above front door	----	Inconclusive	NAD
OR-081406-8-3A	Tar paper, main roof, above front door	----	Inconclusive	NAD
OR-081406-8-4A	Tar paper beneath black/gray shingles, shed roof	----	Inconclusive	NAD

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 8			
OR-081406-8-5A	White linoleum flooring with 4-inch squares pattern, interior of building, living room	---	25 Chrysotile	---
OR-081406-8-6A	White linoleum flooring with octagon pattern, interior of building, kitchen	---	26 Chrysotile	---
OR-081406-8-7A	Blue and gray linoleum flooring, interior of building, bedroom	---	Inconclusive	0.15 Chrysotile
OR-081406-8-8A	Sheetrock, interior of building, living room	NAD	---	---
OR-081406-8-8B	Sheetrock, interior of building, bedroom	NAD	---	---
OR-081406-8-9A	Linoleum flooring, interior of building, bathroom	---	Inconclusive	NAD

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 8			
OR-081406-8-10A	Joint compound and tape, interior of building, bedroom	Joint Compound: NAD Tape: NAD	----	----
OR-081406-8-10B	Joint compound and tape, interior of building, living room	Joint Compound: NAD	----	----
OR-081406-8-11A	Black tar flashing, exterior of building, chimney	----	9.7 Chrysotile	----
	BUILDING 8B			
OR-081406-8B-1A	Red asphalt siding, exterior of building	----	Inconclusive	NAD
OR-081406-8B-1B	White asphalt siding, exterior of building	----	Inconclusive	NAD

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 8C			
OR-081406-8C-1A	Asphalt shingle, roof	---	Inconclusive	NAD
	BUILDING 9			
OR-081406-9-1A	Black asphalt shingle, roof, near front door	---	Inconclusive	NAD
OR-081406-9-1B	Tar paper, roof, near front door	---	Inconclusive	NAD
OR-081406-9-2A	Mortar, between logs, exterior of building, north wall	NAD	---	---
OR-081406-9-2B	Mortar, between logs, exterior of building, east wall	NAD	---	---
OR-081406-9-2C	Mortar, between logs, exterior of building, west wall	NAD	---	---

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 9A			
OR-081406-9A-1A	Black and blue asphalt shingle, roof	----	Inconclusive	NAD
	BUILDING 9B			
OR-081406-9B-1A	Black and blue asphalt shingle, roof	----	Inconclusive	NAD
	BUILDING 9C			
OR-081406-9C-1A	Black and white asphalt shingle, roof	----	Inconclusive	0.24 Chrysotile
	BUILDING 10			
OR-081406-10-1A	12- by 12-inch self-adhesive floor tile, interior of building, kitchen	----	Floor Tile: 7% Chrysotile Mastic: Inconclusive	Mastic: 0.58% Chrysotile
OR-081406-10-2A	Asphalt shingle, roof, near car port	----	Inconclusive	NAD

BUREAU VERITAS

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 10			
OR-081406-10-2B	Asphalt shingle, roof, on car port	----	Inconclusive	NAD
OR-081406-10-2C	Tar paper, roof, on car port	----	4.1 Chrysotile	----
OR-081406-10-3A	Plaster cement on exterior	NAD	----	----
OR-081406-10-3B	Plaster cement on exterior	NAD	----	----
OR-081406-10-3C	Plaster cement on exterior	NAD	----	----
OR-081406-10-4A	Gypsum wallboard, interior of building, kitchen	NAD	----	----

Analytical Results of Bulk Material Sampling for Asbestos (continued)
at
Little Tor Road Site
New City, New York
for
Orange & Rockland Utilities, Inc.

Clayton Project No. 12006-006658.00

Sample Number	Sample Description/Location	Asbestos Content – Percent and Type		
		PLM – Point Count	PLM NOB	TEM NOB
	BUILDING 10			
OR-081406-10-4B	Gypsum wallboard, interior of building, living room	NAD	---	---
OR-081406-10-4C	Joint compound, interior of building, kitchen	Joint Compound: NAD Tape: NAD	---	---
OR-081406-10-4D	Joint compound, interior of building, living room	Joint Compound: NAD Tape: NAD	---	---

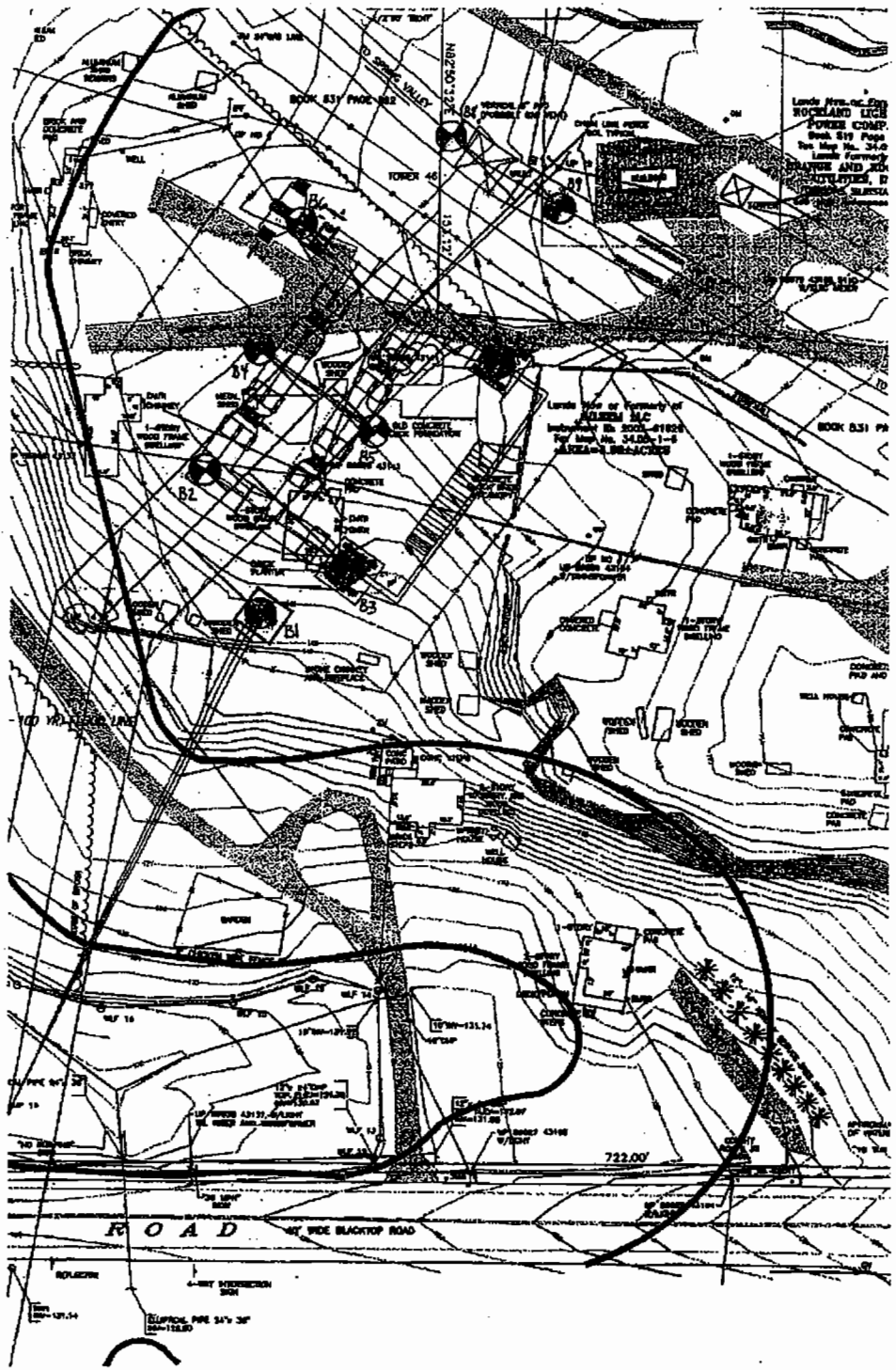
NAD: no asbestos detected
PLM: polarized light microscopy
TEM: transmission electron microscopy
NOB: non-friable organically bound material

Analytical Methods:		
	PLM – Point Count:	ELAP 198.1
	PLM NOB:	ELAP 198.6
	TEM NOB:	ELAP 198.4

BUREAU VERITAS

ATTACHMENT 2

DIAGRAM OF BUILDING LOCATIONS



B1
B2
B3
B4
B5
B6
B9
TOWER 46
722.00'
R O A D

Kendrick Enterprises, Ltd. 63 Black Meadow Road Chester, New York 10918	845-469-2266 845-469-2443 FAX **JOB # 3060-07**
Project: Little Tor Substation Clarkstown, NY	**Borings # 2** **Location of Boring: staked**
Client:: Orange & Rockland: John Haggarty	**Date Started: 3/13/07**
Remarks:	**Date Finished: 3/13/07**

Casing Hammer		Sample Hammer		Ground Water Observations			
Wt.	300	Wt.	140	Date	Time	Depth	Casing at
Fall	24	Fall	30				
Ground Elev.		O.D. Spoon	2"				
		I.D. Casing	4"	Driller: TJ Kendrick			

Depth below gnd. Surf	Casing blows per ft.	Sample no.	Blows on Sample Spoon Per 6"		FIELD IDENTIFICATION OF SOIL & REMARKS
		1	4 - 16	0-1'6"	Topsoil, trace fill.
			11 - 6	1'6"-4'	Brown coarse to fine sand, trace coarse to fine gravel.
		2	6 - 6		
			59 - 81	4'-6'	Hard drilling, possible boulder.
5		3	91 –100/1"		
				6'-8'9"	Red brown sandstone.
				8'9"-11'	Highly weathered sandstone.
10		4	41 - 110		
				11'-15'	Rollerbit, hard drilling sandstone.
15					End of boring 15'
					Note: Installed 10' 2" PVC screen
					7' 2" PVC riser
					Sand packed and sealed.
20					
25					

Kendrick Enterprises, Ltd. 63 Black Meadow Road Chester, New York 10918	845-469-2266 845-469-2443 FAX **JOB # 3060-07**
Project: Little Tor Substation Clarkstown, NY	**Borings # 3** **Location of Boring: staked**
Client:: Orange & Rockland: John Haggarty	**Date Started: 3/13/07**
Remarks: * means used 300lb. hammer for sampling	**Date Finished: 3/13/07**

Casing Hammer		Sample Hammer		Ground Water Observations			
Wt.	300	Wt.	140	Date	Time	Depth	Casing at
Fall	24	Fall	30				
Ground Elev.		O.D. Spoon	2"				
		I.D. Casing	4"	Driller: TJ Kendrick			

Depth below gnd. Surf.	Casing blows per ft.	Sample no.	Blows on Sample Spoon Per 6"	FIELD IDENTIFICATION OF SOIL & REMARKS	
		1	1 - 2	0-1'6"	Topsoil and fill.
			3 - 69		
				1'6"-4'9"	Brown coarse to fine sand, little silt, trace coarse to fine
					gravel occasional cobbles.
5		2	50-100/3	4'9"-6'	Cobbles or broken rock.
				6'-10'	Rollerbit, hard drilling, probably bedrock, sandstone
					conglomerate.
10				10'-11'6"	Weathered rock.
		3	30 - 100		
				11'6"-15'	Rollerbit, medium hard rock.
15					End of boring 15'
20					
25					

Kendrick Enterprises, Ltd. 63 Black Meadow Road Chester, New York 10918	845-469-2266 845-469-2443 FAX **JOB # 3060-07**
Project: Little Tor Substation Clarkstown, NY	**Borings # 4** **Location of Boring: moved 6' northwest**
Client:: Orange & Rockland: John Haggarty	**Date Started: 3/13/07**
Remarks:	**Date Finished: 3/14/07**

Casing Hammer		Sample Hammer		Ground Water Observations			
Wt.	300	Wt.	140	Date	Time	Depth	Casing at
Fall	24	Fall	30				
Ground Elev.		O.D. Spoon	2"				
		I.D. Casing	4"	Driller: TJ Kendrick			

Depth below gnd. Surf	Casing blows per ft.	Sample no.	Blows on Sample Spoon Per 6"	FIELD IDENTIFICATION OF SOIL & REMARKS	
		1	9 - 3	0-6"	Blacktop.
			4 - 5	6"-3'3"	Light brown silt with wood.
		2	40 - 40	3'3"-4'	Brown coarse to fine sand, trace coarse to fine gravel.
5			26 - 28	4'-5'6"	Weathered boulders.
		3	20 - 38	5'6"-8'	Brown coarse to fine sand, little silt, trace coarse to fine
			26 - 17		gravel.
				8'-9'	Hard boulder.
				9'-14'6"	Hard & soft highly weathered rock.
10					
		4	100/2		
			No recovery		
				14'6"-20'	Roller bit, sandstone conglomerate
15					
		5	34 –100/1"		
20					End of boring 20'
25					

Kendrick Enterprises, Ltd. 63 Black Meadow Road Chester, New York 10918	845-469-2266 845-469-2443 FAX **JOB # 3060-07**
Project: Little Tor Substation Clarkstown, NY	**Borings # 5**
	Location of Boring: staked
Client:: Orange & Rockland: John Haggarty	**Date Started: 3/14/07**
Remarks:	**Date Finished: 3/14/07**

Casing Hammer		Sample Hammer		Ground Water Observations			
Wt.	300	Wt.	140	Date	Time	Depth	Casing at
Fall	24	Fall	30				
Ground Elev.		O.D. Spoon	2"				
		I.D. Casing	4"	Driller: TJ Kendrick			

Depth below gnd. Surf	Casing blows per ft.	Sample no.	Blows on Sample Spoon Per 6"	FIELD IDENTIFICATION OF SOIL & REMARKS	
		1	1 - 1	0-1'	Topsoil.
			3 - 7	1'-2'9"	Brown medium to fine sand, little silt.
				2'9"-4'6"	Brown coarse to fine sand, little coarse to fine gravel,
		2	45-100/3"		possible fill.
5				4'6"-7'6"	Cobbles with brown coarse to fine sand.
		3	100/2		
			No recovery		
				7'6"-13'	Hard drilling, red sandstone conglomerate.
10					
					End of boring 13'
15					
20					
25					

Kendrick Enterprises, Ltd. 63 Black Meadow Road 'hester, New York 10918	845-469-2266 845-469-2443 FAX **JOB # 3060-07**
Project: Little Tor Substation Clarkstown, NY	**Borings # 6**
	Location of Boring:
Client:: Orange & Rockland: John Haggarty	**Date Started: 3/15/07**
Remarks:	**Date Finished: 3/15/07**

Casing Hammer		Sample Hammer		Ground Water Observations			
Wt.	300	Wt.	140	Date	Time	Depth	Casing at
Fall	24	Fall	30				
Ground Elev.		O.D. Spoon	2"				
		I.D. Casing	4"	Driller: TJ Kendrick			

Depth below gnd. Surf	Casing blows per ft.	Sample no.	Blows on Sample Spoon Per 6"	FIELD IDENTIFICATION OF SOIL & REMARKS
				6 Attempts with spoon
				Depths 1'-1'3" refusal
				Backhoe-test pit exposed bedrock (very hard)
				Test pit and boring was 23' north of stake
5				
10				
15				
20				
25				

Kendrick Enterprises, Ltd. 63 Black Meadow Road Chester, New York 10918	845-469-2266 845-469-2443 FAX **JOB # 3060-07**
Project: Little Tor Substation Clarkstown, NY	**Borings # 7** **Location of Boring: staked**
Client:: Orange & Rockland: John Haggarty	**Date Started: 3/15/07**
Remarks:	**Date Finished: 3/15/07**

Casing Hammer		Sample Hammer		Ground Water Observations			
Wt.	300	Wt.	140	Date	Time	Depth	Casing at
Fall	24	Fall	30				
Ground Elev.		O.D. Spoon	2"				
		I.D. Casing	4"	Driller: TJ Kendrick			

Depth below gnd. Surf	Casing blows per ft.	Sample no.	Blows on Sample Spoon Per 6"	FIELD IDENTIFICATION OF SOIL & REMARKS
				Backhoe test pit 12' east of stake.
				Bedrock very hard
				Depth from ground surface to 2'6"
5				
10				
15				
20				
25				

Kendrick Enterprises, Ltd. 63 Black Meadow Road Chester, New York 10918	845-469-2266 845-469-2443 FAX **JOB # 3060-07**
Project: Little Tor Substation Clarkstown, NY	**Borings # 8** **Location of Boring: staked**
Client:: Orange & Rockland: John Haggarty	**Date Started: 3/14/07**
Remarks:	**Date Finished: 3/14/07**

Casing Hammer		Sample Hammer		Ground Water Observations			
Wt.	300	Wt.	140	Date	Time	Depth	Casing at
Fall	24	Fall	30				
Ground Elev.		O.D. Spoon	2"				
		I.D. Casing	4"	Driller: TJ Kendrick			

Depth below gnd. Surf	Casing blows per ft.	Sample no.	Blows on Sample Spoon Per 6"	FIELD IDENTIFICATION OF SOIL & REMARKS	
		1	16 - 8	0-2'	Topsoil.
			4 - 8	2'-5'4"	Light brown silt, medium to fine sand, little coarse to fine
					gravel.
		2	12 - 20		
5			22 - 20	5'4"-9'6"	Very hard drilling, (not sandstone, probably bedrock:)
		3	100/4		
				9'6"-10'3"	Brown silty coarse to fine sand, little coarse to fine gravel,
10					Probably seam.
		4	100/3"	10'3"-13'6"	Rollerbit, very hard (probably bedrock)
					End of boring 13'6"
15					Installed 2" screen
					12'-2', sand packed and sealed.
20					
25					

Kendrick Enterprises, Ltd. 63 Black Meadow Road Chester, New York 10918	845-469-2266 845-469-2443 FAX **JOB # 3060-07**
Project: Little Tor Substation Clarkstown, NY	**Borings # 9**
	Location of Boring: moved 6' north because of wires
Client:: Orange & Rockland: John Haggarty	**Date Started: 3/15/07**
Remarks: * means used 300lb. hammer for sampling	**Date Finished: 3/15/07**

Casing Hammer	Sample Hammer	Ground Water Observations			
Wt. 300	Wt. 140	Date	Time	Depth	Casing at
Fall 24	Fall 30				
Ground Elev.	O.D. Spoon 2"				
	I.D. Casing 4"	Driller: TJ Kendrick			

Depth below gnd. Surf	Casing blows per ft.	Sample no.	Blows on Sample Spoon Per 6"		FIELD IDENTIFICATION OF SOIL & REMARKS
		1	3 - 5	0-1'6"	Brown silty coarse to fine sand, trace gravel.
			4 - 6	1'6"-2'	Brown silt, trace sand, trace clay.
		2	5 - 6	2'-3'6"	Light brown silty clay.
			7 - 23	3'6"-4'	Reddish brown silty fine sand.
5		3	50 - 65	4'-5'	Brown silty medium to fine sand, trace gravel.
			100/4	5'-15'6"	Brown coarse to fine sand, trace silt, trace gravel with
					occasional boulder and pockets of brown fine sand.
10		4	100/6		
15		5	25*-20*	15'6"-16'6"	Rollerbit rock
			35*	16'6"-21'6"	Run #1, Recovery 3'3"
					Left 1 piece 15" in hole.
20					
					End of boring 21'6"
25					

RESIDENTIAL PROPERTY VALUE AND IMPACT STUDY OF PROPOSED O&R ELECTRIC TRANSMISSION AND GAS REGULATOR SUBSTATIONS AT THE INTERSECTION OF LITTLE TOR ROAD AND SOUTH MOUNTAIN ROAD

Prepared For

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New City, New York 10956

November 16, 2009

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EXECUTIVE SUMMARY

Orange and Rockland Property, Little Tor Road, New City, NY

We have been requested to offer our opinion as to the potential impact on the value of nearby properties to the proposed Little Tor Road / South Mountain Road electric utility substation and a gas regulator substation. We are a general appraisal firm specializing in valuations in the lower Hudson Valley with its location in Rockland County and with a very significant expertise in the valuation of Rockland County properties. Our practice relies on not only typical appraisal techniques and experience but also the use of computer aided technology. In reviewing the assignment we realized that we would be employing a significantly large set of data, single family residential sales each of which was delineated by the significant attributes of the property sold. Accordingly, we have utilized a geographic information system (GIS) as well as multiple regression analysis, a statistical tool using computer aided software that enables an appraiser to employ a larger amount of data and variables than typical.

The proposed substation (the subject property) is situate at the south westerly intersection of Little Tor and South Mountain Roads. South Mountain Road is typically

developed with older homes on densely wooded lots. As the name implies it traverses hilly terrain. The Little Tor Road neighborhood is also a residential neighborhood with generally level topography. The subject property proposed substation is to be situate on a lot of 10.18± acres and is proposed to be suitably screened from neighborhood properties. Substantial side yards are proposed, all greater than required in the "R-40" zoning district.

The subject property is currently improved with high tension wires, lines 53 and 54, that generally run diagonally away from Little Tor Road generally in a north-east, south-westerly direction. Power lines 53 and 54 also cross South Mountain. There is an additional existing electric power line that runs from the subject property across Little Tor Road in a generally easterly direction. There is a gas regulator onsite that is proposed to be moved to the interior of the property. Prior on-site improvements include a switching station (1926), two transformers that were installed between 1952 and 1956. The transformers were removed from the property in 1982 and the switching station removed in 1983.

We determined, therefore, to assist in estimating potential property value impacts on residential property values in sub-markets that are in close proximity to existing substations and are also impacted by proximity to power lines, and analyze the sales of single-family homes both proximate and removed from the area of the substations and high tension wires to determine if there was a discernable impact on those residences in close proximity. If not, we would expect no adverse impact from the proposed improvements as the nearby properties would be exposed to similar conditions.

We located two substations that were in reasonably similar sub-markets, although not identical in locational attributes to the subject property proposed substation, the New Hempstead Road/ New City substation and the Congers substation. The New City substation and its attendant high tension wires is located at the southbound exit/entry to the Palisades Parkway Exit 11. New Hempstead Road is a busy two-lane road that is the primary east-west link to and from New City. The New Hempstead substation sub-market is highly residential, although it is somewhat intermixed with a variety of religious uses. It is within the East Ramapo Central School District. There is a small strip center, also, in this area which we do not consider a significant influence on neighborhood values. We deemed this site substantially and reasonably similar in many market/locational attributes. The other substation that is also within a similar residential sub-market area is the Congers substation located off Gilchrest Avenue along the railway line west of Congers Lake and Route 303. With respect to both locations of our chosen substations we annex area maps wherein single-family residential parcels are indicated in yellow.

With the technological advances in computer hardware and software, and the increased availability of large quantities of real estate sales and property description data, it is possible to incorporate statistical methods of valuation for use in appraisal assignments.

For purposes of this report we are using a well-recognized statistical method, a Multiple Regression Analysis (MRA) technique, which involves the (linear) correlation of value-influencing attributes to changes in sales prices. We also developed a

geographic related database or geographic information system which we employed to identify residential sales.

After applying our analyses we found no likely loss of value by reason of the proximity of a residence to the Congers substation. With respect to the New Hempstead - New City substation we also found no evidence that proximity to a sub-station is likely to reduce property values.

We have also reviewed the literature in the field that discusses the influence of the presence of power lines on adjacent and nearby properties.[1,2] There are no such articles with respect to substations; however, there are many aspects of high tension wires that are similar to electrical or gas substations, although with greater visibility. These studies consistently find that to the extent that there is any value diminishing influence of the presence of power lines that the greater the distance from the line the less the value influences. Further, they find that over time this negative influence on value diminishes. The literature, therefore, is consistent with our studies as both the New Hempstead Road – New City substation and the Congers substation have been present for a very long time. Simply put, people got used to them and did not find over time that they reduced the value of their houses upon sale.

We consider that the subject property proposed substation site is an already existing impacted site, as described above. It is similar to the sub-markets we studied. Further, the existing gas regulator is proposed to be moved from its current site to one further removed from adjacent properties. We also apply our experience as appraisers

[1] "Power Lines and Property Values Revisited", by Pitts and Jackson that appeared in the Appraisal Journal, Fall 2007
[2] "High-Voltage Transmission lines: Proximity, Visibility, and Encumbrance Effects" by Charlmers and Voorvaart, Appraisal Journal, Summer 2009.

from which we know that with respect to an already impacted site the addition of a potential negative externality has a limited probability of decreasing nearby property values. We also know that if a site is large, is well protected by visual barriers such as trees and other vegetation so that there is limited visibility to adjacent or nearby property owners, that the potential to produce lower property values is diminished. Accordingly, we conclude that the subject proposed substation is unlikely to reduce nearby property values.

Our detailed report and statistical analyses and regressions are contained in the following sections of our report.

RESIDENTIAL PROPERTY VALUE AND IMPACT STUDY OF PROPOSED O&R ELECTRIC TRANSMISSION AND GAS REGULATOR SUBSTATIONS

PROPOSED ELECTRIC TRANSMISSION AND GAS REGULATOR SUBSTATIONS

Orange and Rockland Property, Little Tor Road, New City, NY

INTRODUCTION

Beckmann Appraisals has been asked to opine as to the potential impact on the value of nearby properties to the proposed Little Tor Road / South Mountain Road electric utility substation and a gas regulator substation. Beckmann Appraisals is a general appraisal firm specializing in valuations in the lower Hudson Valley with its location in Rockland County and with a very significant expertise in the valuation of Rockland County properties. Our practice relies not only on typical appraisal techniques and experience but also the use of computer aided technology. The analysis in this report is based on the specification and estimation of regression models. These models allow the appraiser to utilize a larger sample of transactions, and most importantly, to control for a large number of value-impacting variables. The regression models are used to determine whether proximity to substations has an impact on values, and if so, the magnitude of that impact. We analyzed residential property values in two locations comparable to the Little Tor/South Mountain sub-market, and that already have existing substations and power lines.

The conclusion from our analysis is that there is no statistically significant evidence of negative impacts on the values of residential properties proximate to the substations in the comparable areas, and that it is reasonable to suggest that the proposed Little Tor/Mountain Road substations will have a similar lack of impact.

Our report is divided into four parts, as follows: 1) an introduction to regression modeling, 2) the study areas and data set, 3) model specification, 4) model estimates (results) and conclusions.

1. Introduction to regression modeling

The use of regression modeling to assess the potential impact of various externalities is a widely accepted approach. The strength of regression models is that they are able to utilize large samples, and most importantly, they are able to control for the large number of variables that affect property values.

The modeling process begins with a clear statement and description of the research question to be answered. That question is the basis for both "specifying" and "estimating" the model. Specification includes the selection of variables to be used in the model. For the purpose of measuring the impact on property values with respect to proximity to substations, the variables selected should be those thought to be most important in explaining differences in the selling prices of properties. Estimation of the regression model includes the selection and description of the data set and the regression estimates that result. The production of credible estimates is a function of how well the model is specified, and how appropriate the data are with respect to answering the research question. Regression estimates include a number of diagnostic statistics that can help in arriving at judgments about model performance.

In the analysis of real estate markets, the most common applications of regression models are to explain and predict the selling prices (or values) of single family properties based on an array of property characteristics (variables) that experience and prior

research suggest are important in explaining differences in prices. These include familiar characteristics such as house and lot size, location, design elements, the presence (or absence) of property characteristics such as a garage, or air conditioning, etc. When used specifically to address the question of proximity impacts, the variable list will include such things as distance to the potentially offending structure. The strength of regression modeling is the ability to "unbundle" the various factors affecting the price by including each of them as variables in the model. This reduces the potential problem of improperly attributing the actual impact of one characteristic to a different characteristic. To arrive at credible regression estimates, it is essential that the list of variables used in a regression model be as complete as possible. Put differently, the model must be properly specified to answer the research question.

2. The study areas and data set

The proposed substation (the subject property) is at the south westerly intersection of Little Tor and South Mountain Roads. South Mountain Road is developed largely with older homes on densely wooded lots. It traverses hilly terrain. The Little Tor Road neighborhood is also a residential neighborhood though with generally level topography. The proposed substation will be sited on a lot approximately 10.18± acres, and is proposed to be suitably screened from neighborhood properties. Substantial side yards are proposed, all greater than required in the "R-40" zoning district. The substation improvements will be enclosed within a fenced in area covering only approximately 7% of the total lot.

The subject property is currently traversed by high tension wires, lines 53 and 54, that generally run diagonally away from Little Tor Road generally in a north-east, south-westerly direction. Power lines 53 and 54 also cross South Mountain. There is an additional existing electric power line that runs from the subject property across Little Tor Road in a generally easterly direction. Both South Mountain and Little Tor Roads in the area of the subject property, and to the east and west, have above ground utilities on typical utility poles with multiple lines at several levels of elevation from the street.

To gauge any potential impacts on the value of residential properties proximate to the proposed Little Tor/South Mountain substation, we measured the impact on property values in two comparable sub-markets with existing substations and which are also in close proximity to existing power lines. These two substation markets were selected after reviewing the properties surrounding all of the Orange and Rockland substations in Rockland County. These two substation markets were selected after reviewing the location attributes surrounding all Orange and Rockland (Con Edison) substations in Rockland County. Most of the substations are not in or adjacent to residential areas. However, two substations were identified that were in locations reasonably similar, although not identical, to the Little Tor/South Mountain location. These are New Hempstead Road/ New City substation and the Congers substation. The New Hempstead Road/ New City substation is at the southbound exit/entry to the Palisades Parkway Exit 11 and situated within the East Ramapo Central School District. The existing substation is on a lot of approximately 7.37 acres on which the substation improvements occupy some 1.8 acres or almost 25% of the land area.

The Congers substation adjoins a residential area. It is located off Gilchrest Avenue along the railway line west of Congers Lake and Route 303. It is within the Clarkstown Central School District. Maps of the New Hempstead Road/New City and Congers sub-markets are appended, with single-family properties indicated in yellow. The substation is on approximately 2.1 acres of land. The substation improvements are contained on approximately 0.8 acres of the site, and occupy about 38% of the land area.

The data set used to estimate proximity impacts in the New Hempstead/New City sub-markets included all residential sales within 2500 feet of that substation, and which occurred between January 2005- September 2009 within the New City – East Ramapo CSD area. Arc View software was used to develop a Geographic Information System (GIS) that identified the residential sales in the study area during the study period. The data from the sales were then obtained from either the Greater Hudson Valley Multiple Listing Service (MLS) or the Real Property Services data collected by the town assessor. There were 136 sales during the study time period. Of these, a relatively large number had missing information, or clearly incorrect information with respect to one or more of the variables necessary to estimate the regression models. Many, for example, did not contain information about important characteristics such as improvement size, room count, or date of construction/renovation of the improvements. In addition, initial model estimates identified some sales that were of properties that were outliers in terms of characteristics and/or resulting value estimates. One example was the elimination of sales along New Hempstead road, as their location attributes differed substantially from the sales in the rest of the data set as they abutted a busy road and were subject to traffic

and noise conditions. After eliminating sales of outliers and those with missing or incorrect information, the final data set for New Hempstead/New City included 56 sales.

For the Congers analysis, the same procedure was used to collect and clean the sales data from the Congers – Clarkstown CSD area. The number of sales during 2005 – 2009 within 2500 feet of the substation totaled 106, of which 62 remained after eliminating outliers and those with missing or incorrect information, a substantial number of sales. Similar to the case of New Hempstead/New City, an example of eliminated sales were those that ran along Route 303, as again, the characteristics of those properties differed substantially from the characteristics of the properties in the rest of the data set by reason of heavy traffic and related noise.

3. Model specification

Model specification includes the selection of independent variables (in this case housing, location, and market characteristics) that the appraiser has reason to believe will explain differences in the selling prices of properties in the data sets. As noted in Part 1, it is important that the specification be as complete as possible, so that the value impacts of other variables are not improperly attributed to the proximity of the property to the substation. Put differently, it is important to control for the value impacts of as many of the variables that may logically have significant impacts on the selling prices of the properties in the data set.

In the case of modeling housing markets, the main characteristics that must be included as independent variables are well-known. The initial specification of our models included the following independent variables: Date of sale (measured as number

of months since the sale), square feet of living area, lot size (in acres), total number of baths (including lavatories.), whether or not there is a garage, whether or not there is central air conditioning the number of bedrooms, whether or not the house has a basement, a set of variables indicating the architectural style of the house, whether or not the property is adjacent to an existing power line, and finally, whether or not the property is within 500 feet of the substation property line. The distance variable is the one of most interest in this study, as it is designed to capture any impacts of proximity to the substation(s). Because the distance variable is a yes/no (or qualitative) variable, this specification will produce an estimate of any difference in selling prices between properties inside and outside of 500 feet from the substation(s), while controlling for the price impact of the other variables in the model. Inspection of the list of variables in the model suggests it mirrors those variables typically considered in determining the value of residential properties, and which are typical of adjustments that are considered when doing a traditional sales comparison approach.

The expected impacts on the value of the model's other variables are all positive, with the exception of the variable that measures the relationship between selling prices and proximity to power lines and the variable that measures the relationship between selling prices and distance from the substation site. The direction, statistical strength, and magnitude of any proximity impacts are the empirical questions this research seeks answers to, and the answers are therefore not known prior to making the regression estimates.

The regression model described above was estimated independently for the New Hempstead/New City and the Congers areas. The model was then estimated a third time

using the combined data sets of the two study areas. For this estimation, an additional independent variable was added to the model to control the overall location differences between the two areas. Because selling prices in the Congers area tend to be about 15% higher than in the New Hempstead/New City area, the coefficient on the location variable (which is specified to reflect the difference between Congers and New Hempstead), is expected to be positive. Some portion of the location variable is attributable to the different school districts within which the two properties lie. The Congers area is within the highly regarded Clarkstown Central School District while the New Hempstead substation is within the less highly regarded East Ramapo Central School District.

4. Model estimates (results)

As described in Part 1, an integral part of producing credible regression model results is to use the diagnostic statistics produced by the estimates to make judgments about how well the model performed. In response, often the model specification is changed, and/or outliers in the dataset identified and discarded. Our initial regression estimates included the full set of variables described in Part 3. The overall performance of the models in these initial specifications was very strong, but some of the individual independent variables were found to have no statistically significant association with selling prices; that is, they were not contributing to the model's ability to explain differences in the selling prices. Specifically, the presence of a basement and all of the architectural design variables except colonial were found insignificant, and they were therefore omitted from the final model specification.

The final regression results are appended to the report, along with descriptive statistics of the samples. Inspection of the results and the accompanying diagnostic statistics leads to the conclusion that the model did extremely well, in determining the differences in selling prices.

The average residual —the difference between the actual selling prices and the prices predicted by the model—is about 6.9% across the three estimations. This is well within common guidelines for acceptable valuation accuracy.

The R^2 statistics, which are among the most widely cited diagnostic statistics, are very high. The R^2 is a measure of the overall performance of the model, and will range from -0- (a model that explains nothing) to 1.0 (a perfect model). When modeling real estate markets, R^2's of 1.0 are never achieved, as those markets are simply too complex and imperfect to be modeled perfectly. While there is no discrete number that must be achieved for an R^2 to be considered acceptable, a review of the real estate literature suggests that when attempting to explain residential prices as in this case, it is not unusual to attain R^2's of .70 -.80. R^2's above .80 are seen less frequently. The three estimations in our study produced R^2's of .91 (New Hempstead/New City), .88 (Congers), and .88 (combined). These numbers suggest a model very well specified to answer the research question.

A second commonly cited diagnostic statistic is the F statistic and its accompanying significance level. The F is also a measure of how the model as a whole has performed. Unlike the R^2 however, the construction of the F statistic allows a calculation of its significance level. The level of significance is a measure that reveals the probability that there is, in fact, no relationship between the independent variables in

the model and the dependent variable. In this case, the significance level tells us that the independent variables really don't explain the differences in selling prices (i.e., proximity to a substation did not affect value). For example a significance level of .05 means there is a 5% chance the model does not explain selling prices, while .01 means there is a 1% chance the model does not explain selling prices. Thus a lower significance level is better than a higher significance level. Those who work regularly with this kind of modeling, or who use the results of this kind of modeling, often refer to significance levels above .10 as insignificant, those between .05 and .10 as weakly significant, and those below .05 as strongly significant.

The significance levels of the F statistic from our three results are 4.5 E -21 (New Hempstead/New City), 7.8 E -21 (Congers), and 8.4 E -45 (combined). The algebraic notation E followed by a negative number means the decimal is a certain number of places to the left. For example, the 7.8 E -21 for Congers means the decimal is 21 places to the left. The resulting number is effectively zero, meaning there is virtually no probability the model results are the result of chance. Put differently, there is virtually a 100% probability the results can be trusted. This applies to the significance of the F statistic in all three estimations.

As described, the R^2 and F statistics measure the overall performance of the model. Of equal or even greater importance is the performance of the individual independent variables. This is because while a model as a whole may be doing a good job of explaining the dependent variable, that does not mean all of the independent variables are contributing to the same extent, and it may be that some have no statistically significant association with the dependent variable.

The performance of an individual independent variable is measured and judged the same way the overall model is judged, which is by statistical significance. The level of significance for each independent variable is shown as its 'P' value. Inspection of the 'P' values for the independent variables in the three estimates shows that with a few isolated exceptions, all of the independent variables are at significance levels of .10 or lower (most are significant at well below .01 except the two proximity variables: adjacent to power lines or RR, and the variable of primary interest in this study, a location within 500 feet of the substation site. **The conclusions from this are, 1) the variables in the model were well chosen; and 2) most important, that there is no statistically significant association between proximity to a substation and residential property values.** *Note that this result is consistent across all three estimations and importantly, the lack of association between proximity to a substation and property value was found consistently across all of the many model specifications tested prior to arriving at the final specifications.*

Our results are also consistent with the results that have been obtained in studies of similar circumstances. While there are no articles specifically regarding prior research on proximity impacts of substations, there are results with reference to high tension wires.[3,4] These studies consistently find 1) if there is a negative impact it tends to be quite small, 2) that if there is a negative impact it tends to be restricted to a very narrow distance zone adjacent to the power lines, and 3) if there is a small negative impact immediately after a power line is built, over time that impact diminishes. These studies

[3] "Power Lines and Property Values Revisited", by Pitts and Jackson that appeared in the Appraisal Journal, Fall 2007
[4] "High-Voltage Transmission lines: Proximity, Visibility, and Encumbrance Effects" by Charlmers and Voorvaart, Appraisal Journal, Summer 2009.

are consistent with our results, which found no statistically significant association between property values and proximity to either power lines or substations.

The finding from the power line literature, that if there is a small, temporary negative impact of new power lines it is restricted to properties that are effectively adjacent to the line is also interesting with respect to our expectations about the impact of a new substation. Because the proposed substation will be sited on ten acres of landscaped and visibility screened land, with the substation itself covering less than one acre, there will be a substantial distance from the fenced substation facilities to the edge of the substation site in addition to the distance from the edge of the substation site to the property lines of surrounding residences. Both of the comparable substations were situate on significantly smaller lots with a greater percentage of the lot area developed with the substation facilities than proposed for the subject property. This, combined with the existing high tension wires and services that already traverse the neighborhood reinforces our conclusion that the results of the analysis demonstrate a less significant probability of impact at the subject property in comparison to the two comparable substation areas. In conclusion, when we combine what we can learn from the power line literature with the extremely strong evidence produced by our studies of New Hempstead/New City and Congers substation areas, as well as the comparative physical sizes of the existing substations and the proposed substation and the vegetation screening to be provided, there is a persuasive evidence that the proposed substation will have little or no impact on residential property values.

CERTIFICATE OF THE APPRAISER

November 16, 2009

I, William R. Beckmann, certify that to the best of my knowledge and belief:

That the statements of fact contained in this report are true and correct.

That the reported analyses, opinions and conclusions are limited only to the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

That I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest with respect to the parties involved.

That my engagement in this assignment was not contingent upon developing or reporting predetermined results.

That compensation for completing this assignment is not contingent upon the developing or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

That my analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice of the Appraisal Foundation and the Code of Professional Ethics and the Standards of Professional Appraisal Practice of the Appraisal Institute.

I have made a personal inspection of the property that is the subject of this report.

My analysis, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Code of Professional Ethics of the Appraisal Institute and Standards of Professional Appraisal Practice of The Appraisal Foundation.

I have made a personal inspection of the property that is the subject of this report.

Ann Marie Mulholland and Kenneth M. Lusht, Ph.D, MAI, SRA have provided significant professional assistance to the person signing this report.

That the use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

As of the date of this report, I have completed the requirements under the continuing education program of the Appraisal Institute.

BECKMANN APPRAISALS, INC.

By: William Beckmann

William R. Beckmann, MAI, CRE
Certificate Number 8417
New York State General Certified Appraiser

GLOSSARY

Multiple Regression – Regression analysis using two or more

Dependent variable – The variable on the left side of a regression equation. Variations in the dependent variable are generally assumed to be caused by the independent variables.

Independent variable – One of the variables on the right side of a regression equation that are assumed to explain differences in the dependent variable.

R-Squared (R^2) – The basic measure of goodness of fit used in regression analysis. It is the ratio of explained variation (RSS) in the dependent variable to total variation (TSS) in the dependent variable.

Adjusted R^2 – The coefficient of determination adjusted for the number of independent variables. Adjusted R^2 tests whether the independent variable is useful. If R^2 and adjusted R^2 are far apart there are probably redundant variables in the model.

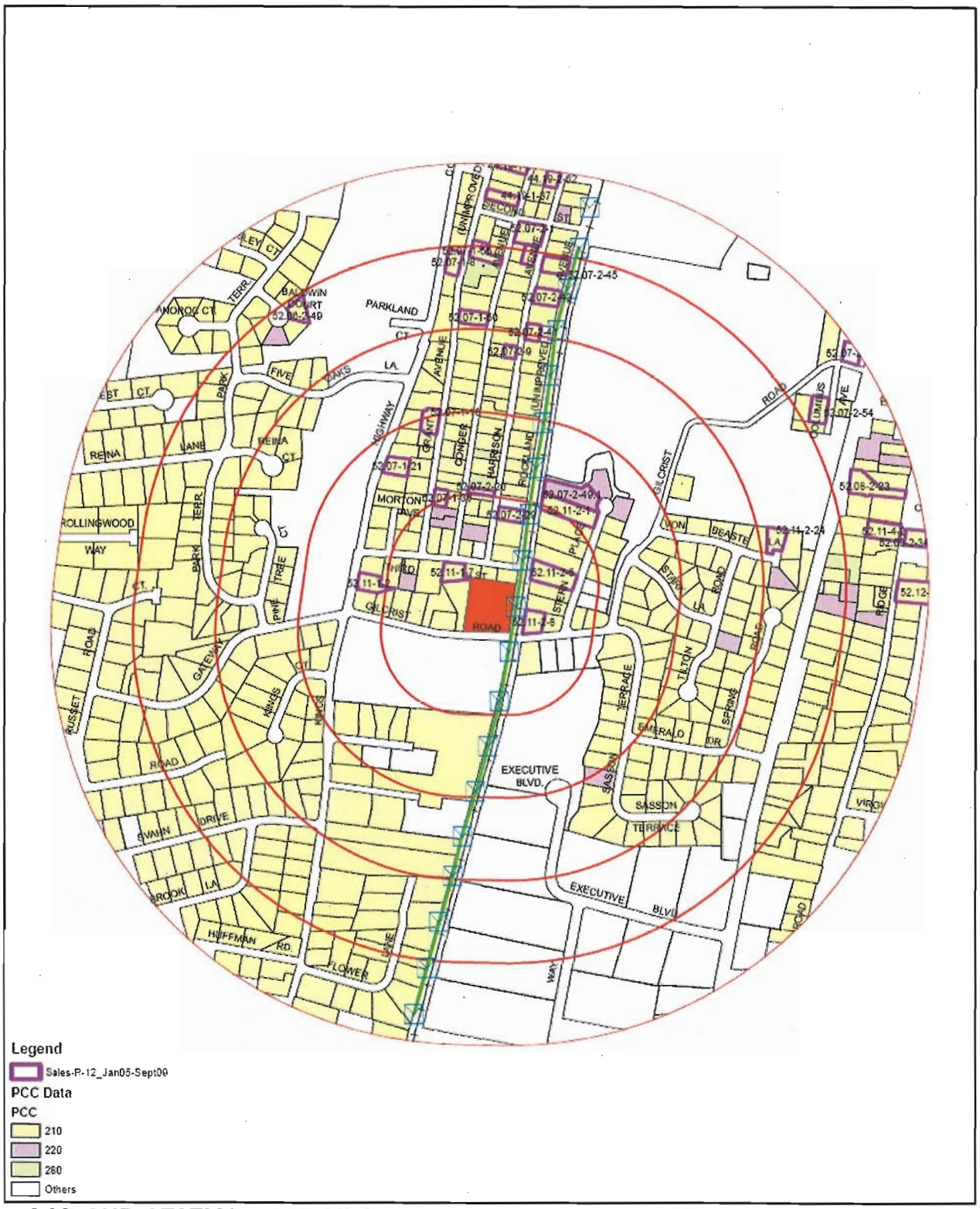
F-statistic – A statistic that measures the overall significance of the regression equation.

T-statistic – (coefficient / standard error) measures the relationship between the mean (coefficient) and its standard error)

P-Value – The statistical probability of the occurrence of a given finding by chance alone in comparison with the known distribution of possible findings. The reciprocal of the significance of the t-statistic and provides the chance or probability that the independent variable is not significantly related to the dependent variable. Generally the lower the P value, the less likely the finding would occur by chance alone.

Intercept – The Y-intercept of the regression equation (b_0). It is sometimes interpreted as the average effect of all omitted variables.

CONGERS SUBSTATION
(Clarkstown Central School District)



O&R SUB-STATION - 14A Gilchrest Road, Congers, NY 10920 (52.11-1-11)

OBS#	MI Number	Area/Location	School Disctrict	Address	Style	Sale Price	# Mos from Sale	Colonial	Sq.Ft Approx	Acres	Bath.Lav Total	Gar Y/N	AC	Adj to PwrLine/RR	Zone 1 (0 - 500')
1	390951	R-CONGERS	CLARKSTOWN	138 S CONGERS AV	RANCH	$372,500	39	0	1360	0.21	1.1	1	0	0	0
2	390571	R-CONGERS	CLARKSTOWN	146 S CONGER AV	RANCH	$375,000	40	0	952	0.27	1.0	1	1	0	0
3	461270	R-CONGERS	CLARKSTOWN	144 S HARRISON AV	RANCH	$200,000	4	0	1030	0.18	1.1	1	0	0	0
4	462678	R-CONGERS	CLARKSTOWN	12 COLUMBUS AV	SRMK	$407,500	4	0	1404	0.37	1.1	1	1	0	0
5	436939	R-CONGERS	CLARKSTOWN	41 RIDGE RD	RANCH	$360,000	19	0	1368	0.31	1.0	0	0	0	0
6	370808	R-CONGERS	CLARKSTOWN	36 RIDGE RD	COLONIAL	$565,000	46	1	2184	0.46	1.1	0	1	0	0
7	399824	R-CONGERS	CLARKSTOWN	171 S HARRISON AV	RANCH	$350,000	35	0	1000	0.37	1.0	1	0	1	0
8	422847	R-CONGERS	CLARKSTOWN	163 S HARRISON AV	RANCH	$375,000	26	0	860	0.37	1.0	1	1	1	0
9	391996	R-CONGERS	CLARKSTOWN	6 BALDWIN CT	BLVLHRNCH	$527,400	33	0	2120	0.30	2.1	1	0	0	0
10	402203	R-CONGERS	CLARKSTOWN	159 KINGS HY	CONTEMP	$492,000	34	1	1907	0.27	2.1	1	1	0	0
11	397811	R-CONGERS	CLARKSTOWN	176 S CONGER AVE	SPLITLEVEL	$550,000	33	0	2200	0.32	2.1	1	1	0	0
12	426687	R-CONGERS	CLARKSTOWN	176 S CONGER AVE	SPLITLEVEL	$450,000	16	0	2200	0.32	2.1	1	1	0	0
13	375944	R-CONGERS	CLARKSTOWN	160 S CONGER AV	COLONIAL	$740,000	47	1	2996	0.40	2.2	1	1	0	0
14	380193	R-CONGERS	CLARKSTOWN	162 S HARRISON AV	SPLITLEVEL	$530,000	46	0	1664	0.24	2.1	1	1	0	0
15	432747	R-CONGERS	CLARKSTOWN	177 S HARRISON AV	RANCH	$410,000	16	0	960	0.00	2.0	0	1	0	0
16	379684	R-CONGERS	CLARKSTOWN	23 VON BEASTE LN	RANCH	$456,000	30	0	1104	0.35	1.1	1	0	0	0
17	421584	R-CONGERS	CLARKSTOWN	180 S HARRISON AV	RANCH	$330,000	27	0	992	0.14	1.0	0	0	0	0
18	461758	R-CONGERS	CLARKSTOWN	17 STERN PL	BLVLHRNCH	$600,000	1	0	2600	0.79	3.0	1	1	1	0
19	443893	R-CONGERS	CLARKSTOWN	15 STERN PL	BLVLHRNCH	$660,000	13	0	2500	0.79	3.0	1	1	1	0
20	387913	R-CONGERS	CLARKSTOWN	223 KINGS HIGHWAY	RANCH	$454,000	39	0	1268	0.35	2.1	1	0	0	0
21	364687	R-CONGERS	CLARKSTOWN	223 S GRANT AV	BLVLHRNCH	$490,000	51	0	1717	0.18	2.0	1	1	0	0
22	350375	R-CONGERS	CLARKSTOWN	219 S CONGER AV	RANCH	$345,000	55	0	789	0.12	1.0	0	0	0	0
23	438048	R-CONGERS	CLARKSTOWN	245 KINGS HY	RANCH	$385,000	16	0	1120	0.35	1.0	1	1	0	0
24	368237	R-CONGERS	CLARKSTOWN	229 S Harrison AV	CAPECOD	$449,999	47	0	1707	0.27	2.0	0	0	1	1
25	400610	R-CONGERS	CLARKSTOWN	2 VON BEASTE LN	BLVLHRNCH	$440,000	28	0	1828	0.35	2.0	1	1	1	1
26	452411	R-CONGERS	CLARKSTOWN	14 GILCHREST RD	BLVLHRNCH	$495,000	7	0	2500	0.36	3.0	1	1	1	1
27	415361	R-CONGERS	CLARKSTOWN	15 THIRD ST	BLVLHRNCH	$470,000	25	0	2070	0.37	2.1	1	1	0	1
28	364824	R-CONGERS	CLARKSTOWN	29 N ROCKLAND AV	BLVLHRNCH	$495,000	52	0	2534	0.24	3.0	1	1	1	0
29	363019	R-CONGERS	CLARKSTOWN	LOT 21 WATERSEDGE	COLONIAL	$919,900	43	1	3400	1.25	3.0	1	1	0	0
30	377310	R-CONGERS	CLARKSTOWN	LOT #1 STERN PL	BLVLHRNCH	$649,900	35	0	2400	0.27	3.0	1	1	0	0
31	377313	R-CONGERS	CLARKSTOWN	LOT #2 STERN PL	BLVLHRNCH	$609,900	41	0	2400	0.25	3.0	1	1	0	0
32	377314	R-CONGERS	CLARKSTOWN	LOT #5 STERN PL	COLONIAL	$639,900	35	1	2400	0.46	2.1	1	1	0	0
33	377316	R-CONGERS	CLARKSTOWN	LOT #7 STERN PL	BLVLHRNCH	$649,900	34	0	2400	0.70	3.0	1	1	0	0
34	377317	R-CONGERS	CLARKSTOWN	LOT #8 STERN PL	BLVLHRNCH	$629,900	37	0	2400	0.37	3.0	1	1	0	0
35	377322	R-CONGERS	CLARKSTOWN	LOT 11 STERN PL	BLVLHRNCH	$629,900	36	0	2400	0.00	3.0	1	1	0	0
36	377334	R-CONGERS	CLARKSTOWN	LOT 12 GILCHREST RD	COLONIAL	$639,900	34	1	2400	0.33	2.1	1	1	0	0
37	377328	R-CONGERS	CLARKSTOWN	LOT 13 STERN PL	BLVLHRNCH	$639,900	38	0	2400	0.75	3.0	1	1	0	0
38	377323	R-CONGERS	CLARKSTOWN	LOT 12 STERN PL	BLVLHRNCH	$629,900	40	0	2400	0.37	3.0	1	1	0	0
39	365464	R-CONGERS	CLARKSTOWN	1 NELSON LN	COLONIAL	$660,000	51	1	2502	0.52	2.1	1	1	0	0
40	370056	R-CONGERS	CLARKSTOWN	267 OLD HAVERSTRAW RD	RANCH	$410,000	49	0	1603	0.33	2.0	0	1	0	0
41	365864	R-CONGERS	CLARKSTOWN	225 OLD HAVERSTRAW RD	BLVLHRNCH	$590,000	49	0	1900	0.31	3.0	1	1	0	0
42	387019	R-CONGERS	CLARKSTOWN	130 SLEEPY HOLLOW LN	BLVLHRNCH	$550,000	38	0	1852	0.36	2.1	1	1	0	0
43	365243	R-CONGERS	CLARKSTOWN	48 LAKELAND AV	BLVLHRNCH	$550,000	51	0	2652	0.34	3.0	0	0	0	0
44	378439	R-CONGERS	CLARKSTOWN	11 AMANDA LN	BLVLHRNCH	$605,000	41	0	2534	0.43	3.0	1	1	0	0
45	392048	R-CONGERS	CLARKSTOWN	132 CONGERS RD	RANCH	$523,600	39	0	2900	0.59	2.0	0	1	0	0
46	379289	R-CONGERS	CLARKSTOWN	15 PARK AV	COLONIAL	$690,000	43	1	2584	0.35	3.0	1	1	0	0
47	394172	R-CONGERS	CLARKSTOWN	7 PARK AV	BLVLHRNCH	$500,000	37	0	1608	0.34	2.0	1	1	0	0
48	384864	R-CONGERS	CLARKSTOWN	10 HUGHES ST	RAISRANCH	$420,000	40	0	2112	0.49	2.0	0	0	0	0
49	391298	R-CONGERS	CLARKSTOWN	WELLS	BLVLHRNCH	$480,000	38	0	1666	0.26	2.0	1	0	0	0
50	372320	R-CONGERS	CLARKSTOWN	27 HILLTOP RD	RANCH	$620,000	48	0	2397	0.49	2.1	1	1	0	0
51	393352	R-CONGERS	CLARKSTOWN	3 BEECHWOOD DR	BLVLHRNCH	$582,000	39	0	2300	0.22	2.0	1	1	0	0
52	380935	R-CONGERS	CLARKSTOWN	9 Sherman AV	BLVLHRNCH	$615,000	41	0	3060	0.29	3.0	0	0	0	0
53	402464	R-CONGERS	CLARKSTOWN	119 WATERS EDGE	RANCH	$587,500	36	0	2248	0.38	2.0	1	1	0	0
54	368689	R-CONGERS	CLARKSTOWN	27 BLUEBIRD DR	BLVLHRNCH	$575,000	47	0	2479	0.43	2.1	1	0	0	0
55	380396	R-CONGERS	CLARKSTOWN	136 S HARRISON AV	CAPECOD	$432,500	38	0	1260	0.14	3.0	1	0	0	0
56	364906	R-CONGERS	CLARKSTOWN	105 S CONGER AV	COLONIAL	$590,000	45	1	2045	0.25	2.1	1	1	0	0
57	398957	R-CONGERS	CLARKSTOWN	76 HIGHWAY AV	BLVLHRNCH	$490,000	35	0	1890	0.23	2.0	1	1	0	0
58	361972	R-CONGERS	CLARKSTOWN	53 VERMONT AV	BLVLHRNCH	$515,000	50	0	2093	0.23	3.0	1	1	0	0
59	387546	R-CONGERS	CLARKSTOWN	76 New York AV	COLONIAL	$515,000	41	1	1368	0.34	1.1	0	1	0	0
60	361992	R-CONGERS	CLARKSTOWN	19 BEAUREGARD TE	CONTEMP	$670,000	53	0	2218	0.56	3.0	1	1	0	0
61	372207	R-CONGERS	CLARKSTOWN	11 CAESAR CT	COLONIAL	$625,000	45	1	2650	0.40	2.1	1	1	0	0
62	367304	R-CONGERS	CLARKSTOWN	200 MASSACHUSETTS AV	COLONIAL	$573,000	49	1	2192	0.46	1.1	0	0	0	0

SUMMARY OUTPUT CONGERS SUBSTATION

Regression Statistics	
Multiple R	0.938039587
R Square	0.879918266
Adjusted R Square	0.859134889
Standard Error	45109.63652
Observations	62

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	9	7.75367E+11	86151902724	42.33759833	7.79263E-21
Residual	52	1.05814E+11	2034879307		
Total	61	8.81181E+11			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	128160.946	27240.50515	4.704793296	1.91671E-05	73498.87461	182823.0175	73498.87461	182823.0175
# Mos from Sale	1455.90477	518.0011359	2.810620806	0.006954777	416.459469	2495.350072	416.459469	2495.350072
Colonial	67100.60721	18202.72035	3.686295561	0.000543814	30574.17739	103627.037	30574.17739	103627.037
Sq.Ft Approx	71.40869151	17.80711563	4.010121179	0.000194795	35.67610062	107.1412824	35.67610062	107.1412824
Acres	148465.8095	37835.81567	3.923948959	0.000256967	72542.69257	224388.9265	72542.69257	224388.9265
Bath.Lav Total	46545.30409	13721.49195	3.392146003	0.001332431	19011.11671	74079.49147	19011.11671	74079.49147
Gar Y/N	30182.60138	16189.37286	1.864346547	0.067922163	-2303.751222	62668.95398	-2303.751222	62668.95398
AC	27916.10915	15196.56507	1.837001257	0.071927641	-2578.028934	58410.24723	-2578.028934	58410.24723
Adj to PwrLine/RR	-29927.70288	21058.73101	-1.421154146	0.161241454	-72185.13725	12329.73148	-72185.13725	12329.73148
Zone 1 (0 - 500')	-25040.40864	27395.88205	-0.914020895	0.364924681	-80014.26662	29933.44934	-80014.26662	29933.44934

DESCRIPTIVE STATISTICS

Sale Price	
Mean	528741.9194
Standard Error	15264.11968
Median	528700
Mode	550000
Standard Deviation	120189.7986
Sample Variance	14445587680
Kurtosis	1.012674393
Skewness	0.114940009
Range	719900
Minimum	200000
Maximum	919900
Sum	32781999
Count	62

# Mos from Sale	
Mean	36.20597908
Standard Error	1.633039031
Median	38.45265589
Mode	39.92081821
Standard Deviation	12.85856219
Sample Variance	165.3426216
Kurtosis	0.816388765
Skewness	-1.097571277
Range	54.23952491
Minimum	1.055757176
Maximum	55.29528209
Sum	2244.770703
Count	62

Acres	
Mean	0.363548387
Standard Error	0.024633857
Median	0.345
Mode	0.37
Standard Deviation	0.193967183
Sample Variance	0.037623268
Kurtosis	6.723276588
Skewness	1.877895114
Range	1.25
Minimum	0
Maximum	1.25
Sum	22.54
Count	62

Sq.Ft Approx	
Mean	2000.758065
Standard Error	77.79188458
Median	2152
Mode	2400
Standard Deviation	612.5339117
Sample Variance	375197.793
Kurtosis	-0.621180629
Skewness	-0.281693688
Range	2611
Minimum	789
Maximum	3400
Sum	124047
Count	62

Bath.Lav Total	
Mean	2.135483871
Standard Error	0.091583888
Median	2.1
Mode	3
Standard Deviation	0.721132255
Sample Variance	0.520031729
Kurtosis	-1.089264705
Skewness	-0.231623051
Range	2
Minimum	1
Maximum	3
Sum	132.4
Count	62

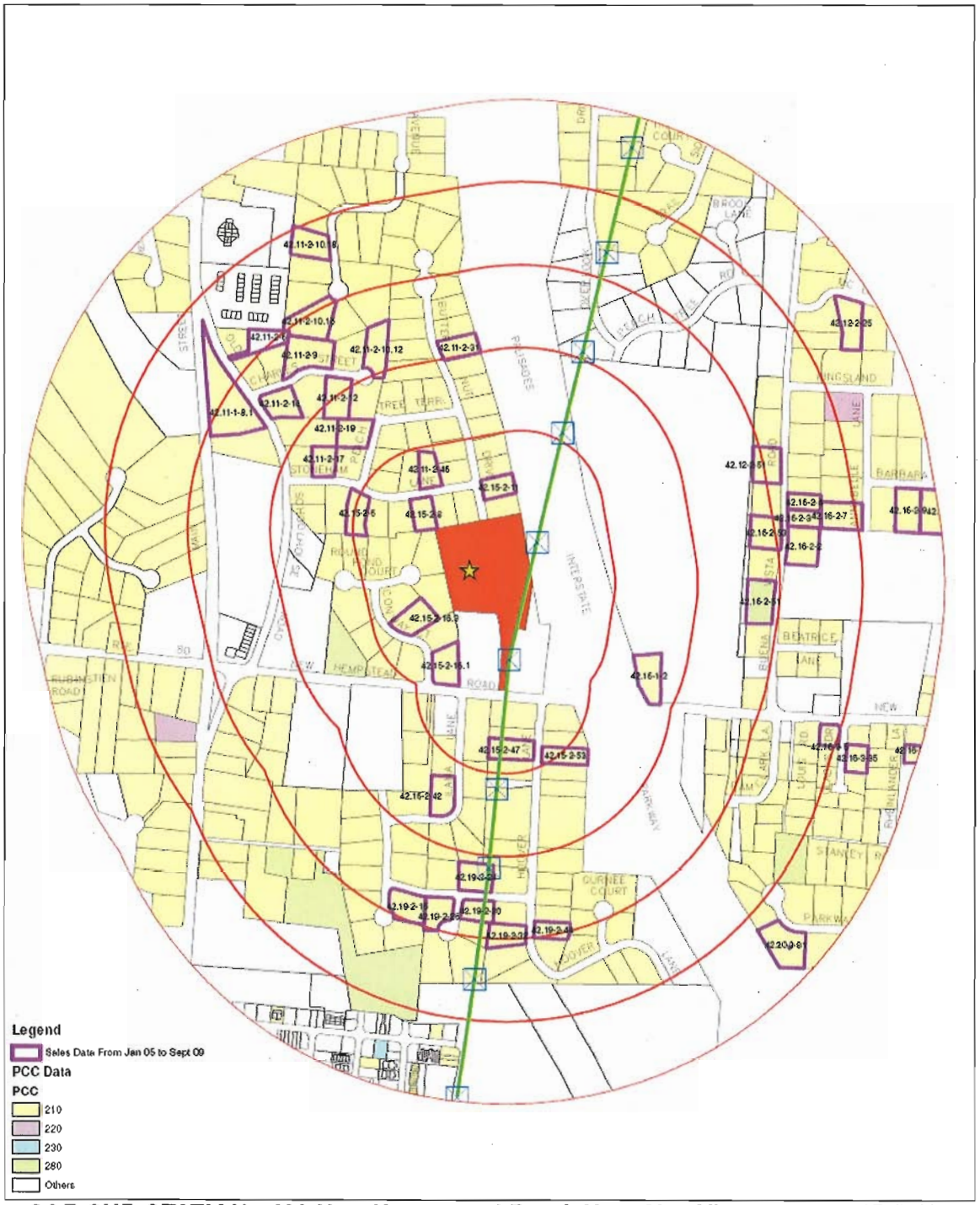
Gar Y/N	
Mean	0.790322581
Standard Error	0.052121044
Median	1
Mode	1
Standard Deviation	0.410401514
Sample Variance	0.168429402
Kurtosis	0.140882846
Skewness	-1.461982912
Range	1
Minimum	0
Maximum	1
Sum	49
Count	62

AC	
Mean	0.725806452
Standard Error	0.057118147
Median	1
Mode	1
Standard Deviation	0.44974874
Sample Variance	0.202273929
Kurtosis	-0.955240944
Skewness	-1.037616396
Range	1
Minimum	0
Maximum	1
Sum	45
Count	62

Adj to PwrLine/RR	
Mean	0.129032258
Standard Error	0.042922525
Median	0
Mode	0
Standard Deviation	0.337972303
Sample Variance	0.114225278
Kurtosis	3.249599812
Skewness	2.268430459
Range	1
Minimum	0
Maximum	1
Sum	8
Count	62

Zone 1 (0 - 500')	
Mean	0.064516129
Standard Error	0.031454833
Median	0
Mode	0
Standard Deviation	0.247675604
Sample Variance	0.061343205
Kurtosis	11.57698714
Skewness	3.63378543
Range	1
Minimum	0
Maximum	1
Sum	4
Count	62

NEW HEMPSTEAD ROAD – NEW CITY SUBSTATION
(East Ramapo Central School District)



O&R SUB-STATION - 430 New Hempstead Road, New City, NY 10956 (42.15-2-13)

OBS#	MI Number	Area/Location	School Disctrict	Address	Style	Sale Price	# Mos from Sale	Colonial	Sq.Ft Approx	Acres	Bath.Lav Total	Gar Y/N	AC	Adj to PwrLine/RR	Zone 1 (0 - 500')
1	448699	R-NEW.CITY	E.RAMAPO	19 WAGON WHEEL DR	COLONIAL	$525,000	6	1	3039	0.8800	2.1	1	1	1	0
2	405737	R-NEW.CITY	E.RAMAPO	7 TRAILSIDE PL	CONTEMP	$570,000	31	0	2777	0.8000	3.1	1	1	0	0
3	403685	R-NEW.CITY	E.RAMAPO	14 DOOLIN RD	COLONIAL	$640,000	32	1	2620	1.3400	2.1	1	1	0	0
4	425894	R-NEW.CITY	E.RAMAPO	6 PARK AV	RANCH	$360,000	19	0	1715	0.5800	2.0	1	1	0	0
5	400327	R-NEW.CITY	E.RAMAPO	42 S MOUNTAIN RD	COLONIAL	$1,125,000	25	1	4863	7.2900	3.1	1	1	0	0
6	455722	R-NEW.CITY	E.RAMAPO	54 S MOUNTAIN RD	RANCH	$606,000	5	0	2900	1.9300	2.2	1	0	0	0
7	426151	R-NEW.CITY	E.RAMAPO	22 ZABELLA DR	BLVLHRNCH	$435,000	21	0	1865	0.3500	1.2	1	1	0	0
8	443761	R-NEW.CITY	E.RAMAPO	14 ZABELLA DR	BLVLHRNCH	$427,000	14	0	2386	0.3800	2.1	1	1	0	0
9	395608	R-NEW.CITY	E.RAMAPO	6 ELLEN ST	COLONIAL	$460,000	31	1	1813	0.3500	2.1	1	1	0	0
10	402787	R-NEW.CITY	E.RAMAPO	6 FORBES RD	COLONIAL	$470,000	29	1	2128	0.3500	2.1	1	1	0	0
11	464751	R-NEW.CITY	E.RAMAPO	305 W CLARKSTOWN RD	RAISRANCH	$315,000	3	0	1865	0.3600	2.1	1	1	0	0
12	442865	R-NEW.CITY	E.RAMAPO	18 GREAT OAKS DR	COLONIAL	$378,000	14	1	2246	0.3500	2.1	1	0	0	0
13	433045	R-NEW.CITY	E.RAMAPO	5 Inland RD	BLVLHRNCH	$400,000	12	0	1894	0.3500	2.1	1	1	0	0
14	454464	R-NEW.CITY	E.RAMAPO	3 PAULA LN	COLONIAL	$427,700	10	1	2192	0.3500	2.1	1	1	0	0
15	414844	R-NEW.CITY	E.RAMAPO	30 GREAT OAKS DR	BLVLHRNCH	$390,000	15	0	2124	0.3400	2.0	1	1	0	0
16	459840	R-NEW.CITY	E.RAMAPO	57 W BURDA PL	COLONIAL	$275,000	1	1	1504	0.5100	2.0	0	0	0	0
17	395542	R-NEW.CITY	E.RAMAPO	63 W BURDA PL	BLVLHRNCH	$410,000	31	0	2004	0.3500	2.1	1	1	0	0
18	433190	R-NEW.CITY	E.RAMAPO	11 CORINTHIAN RD	BLVLHRNCH	$418,500	20	0	2052	0.3500	2.1	1	0	0	0
19	463762	R-NEW.CITY	E.RAMAPO	16 GLADE CT	BLVLHRNCH	$383,000	2	0	2136	0.4600	2.1	1	1	0	0
20	462931	R-NEW.CITY	E.RAMAPO	31 MURDOCK LN	BLVLHRNCH	$370,000	3	0	2244	0.5200	3.0	1	0	0	0
21	400679	R-NEW.CITY	E.RAMAPO	3 CARNABY CT	BLVLHRNCH	$430,000	31	0	2058	0.4600	2.1	1	0	0	0
22	414155	R-NEW.CITY	E.RAMAPO	168 W CLARKSTOWN RD	CAPECOD	$380,000	23	0	1882	0.3700	3.0	1	0	0	0
23	416597	R-NEW.CITY	E.RAMAPO	6 HALLMARK DR	COLONIAL	$570,000	28	1	2870	0.3500	2.1	1	1	0	0
24	412675	R-NEW.CITY	E.RAMAPO	1 FEATHERLY CT	BLVLHRNCH	$510,000	29	0	1866	0.9200	3.0	1	1	0	0
25	431537	R-NEW.CITY	E.RAMAPO	5 GRAND ST	CAPECOD	$315,000	22	0	1728	0.5700	2.0	0	0	0	0
26	416083	R-NEW.CITY	E.RAMAPO	7 GRAND ST	CAPECOD	$418,000	27	0	1512	0.5400	2.0	0	0	0	0
27	430741	R-NEW.CITY	E.RAMAPO	7 SYCAMORE DR	CAPECOD	$340,000	19	0	1296	0.3800	1.1	1	0	0	0
28	462520	R-NEW.CITY	E.RAMAPO	8 BARBARA RD	BLVLHRNCH	$357,500	4	0	2028	0.9200	2.1	1	1	0	0
29	464857	R-NEW.CITY	E.RAMAPO	199 BUENA VISTA RD	CAPECOD	$300,000	2	0	1700	1.0000	1.1	1	0	0	0
30	427652	R-NEW.CITY	E.RAMAPO	12 CANDLELIGHT CR	COLONIAL	$725,000	23	1	3917	1.5200	4.1	1	1	0	0
31	417481	R-NEW.CITY	E.RAMAPO	3 CANDLELIGHT CR	CONTEMP	$475,000	16	0	2668	0.6100	2.2	1	1	0	0
32	405379	R-NEW.CITY	E.RAMAPO	2 SUMMIT DR	CONTEMP	$680,000	33	0	3081	1.4000	3.0	1	1	0	0
33	462533	R-NEW.CITY	E.RAMAPO	303 BUENA VISTA RD	CAPECOD	$315,000	1	0	1293	2.5000	1.0	0	0	1	0
34	458430	R-NEW.CITY	E.RAMAPO	371 BUENA VISTA RD	RANCH	$350,000	6	0	1216	1.9000	1.0	0	0	0	0
35	423211	R-NEW.CITY	E.RAMAPO	371 BUENA VISTA RD	RANCH	$380,000	25	0	1216	1.9000	1.0	0	0	0	0
36	456601	R-NEW.CITY	E.RAMAPO	6 RED ROCK RD	SPLITLEVEL	$350,000	9	0	1924	1.2000	1.2	0	1	0	0
37	395012	R-NEW.CITY	E.RAMAPO	6 RED ROCK RD	SPLITLEVEL	$401,700	33	0	1925	1.2000	1.1	0	1	0	0
38	418869	R-NEW.CITY	E.RAMAPO	54 BUENA VISTA RD	RANCH	$405,000	27	0	884	0.4600	1.1	1	0	0	0
39	457499	R-NEW.CITY	E.RAMAPO	50 BUENA VISTA RD	RANCH	$350,000	3	0	1190	0.4600	1.0	1	0	0	0
40	400279	R-NEW.CITY	E.RAMAPO	18 BUTTERNUT DR	SPLITLEVEL	$442,500	35	0	1610	0.6400	2.0	1	0	1	0
41	370479	R-NEW.CITY	E.RAMAPO	28 HOOVER LN	COLONIAL	$565,000	46	1	2646	0.6300	3.1	1	1	1	0
42	403995	R-NEW.CITY	E.RAMAPO	1 BURROWS CT	BLVLHRNCH	$455,000	34	0	2267	0.5300	2.1	1	1	1	0
43	380872	R-NEW.CITY	E.RAMAPO	4 HOWELL RD	COLONIAL	$730,000	40	1	2562	0.7900	3.1	1	1	1	0
44	419165	R-NEW.CITY	E.RAMAPO	2 BURROWS CT	CONTEMP	$455,000	19	0	2229	0.5900	2.1	1	1	1	0
45	414604	R-NEW.CITY	E.RAMAPO	45 BUENA VISTA RD	RANCH	$400,000	16	0	1450	0.9300	2.1	1	1	0	0
46	399162	R-NEW.CITY	E.RAMAPO	29 BUENA VISTA RD	RANCH	$510,000	32	0	1854	1.2000	3.1	1	1	0	0
47	394453	R-NEW.CITY	E.RAMAPO	398 NEW HEMPSTEAD RD	COLONIAL	$498,200	39	1	1884	0.7800	2.0	1	0	1	0
48	366686	R-NEW.CITY	E.RAMAPO	5 HOOVER LN	RANCH	$545,000	49	0	2622	0.6200	3.0	1	1	1	0
49	412276	R-NEW.CITY	E.RAMAPO	3 PEACH TREE TE	SPLITLEVEL	$379,000	31	0	1610	0.7800	1.1	1	1	1	0
50	446787	R-NEW.CITY	E.RAMAPO	6 CHARLES ST	SPLITLEVEL	$572,500	13	0	2691	0.8600	4.0	1	1	1	0
51	429925	R-NEW.CITY	E.RAMAPO	4 BUTTERNUT DR	SPLITLEVEL	$410,000	10	0	1710	0.5700	1.1	1	1	1	1
52	429925	R-NEW.CITY	E.RAMAPO	4 BUTTERNUT DR	SPLITLEVEL	$410,000	10	0	1710	0.5700	1.1	1	1	1	1
53	395854	R-NEW.CITY	E.RAMAPO	4 HOOVER LN	RAISRANCH	$450,000	29	0	2400	0.8000	2.0	1	1	1	1
54	395854	R-NEW.CITY	E.RAMAPO	4 HOOVER LN	RAISRANCH	$450,000	29	0	2400	0.8000	2.0	1	1	1	1
55	427679	R-NEW.CITY	E.RAMAPO	12 STONEHAM LN	SPLITLEVEL	$425,000	24	0	2635	0.5800	1.2	0	1	0	1
56	444739	R-NEW.CITY	E.RAMAPO	13 STONEHAM LN	SPLITLEVEL	$450,000	13	0	2300	0.5900	2.1	1	0	0	1

SUMMARY OUTPUT NEW CITY SUBSTATION

Regression Statistics	
Multiple R	0.953930199
R Square	0.909982826
Adjusted R Square	0.89237077
Standard Error	44727.35067
Observations	56

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	9	9.30276E+11	1.03364E+11	51.66817728	4.50333E-21
Residual	46	92024651300	2000535898		
Total	55	1.0223E+12			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	71893.0473	23490.18819	3.060556463	0.003680626	24609.75161	119176.343	24609.75161	119176.343
# Mos from Sale	3002.818425	547.2879915	5.486724488	1.68938E-06	1901.184853	4104.451997	1901.184853	4104.451997
Colonial	35984.39655	16385.40828	2.196124499	0.033162873	3002.280857	68966.51224	3002.280857	68966.51224
Sq.Ft Approx	74.41761137	17.84831418	4.169447635	0.000133529	38.49081886	110.3444039	38.49081886	110.3444039
Acres	63937.90911	8212.829128	7.785125943	6.14402E-10	47406.34176	80469.47645	47406.34176	80469.47645
Bath.Lav Total	21430.34744	12561.65883	1.706012535	0.094749961	-3854.95995	46715.65482	-3854.95995	46715.65482
Gar Y/N	62024.07278	19107.16138	3.24611655	0.002185165	23563.35234	100484.7932	23563.35234	100484.7932
AC	6336.333346	15081.5439	0.420138242	0.676340549	-24021.23952	36693.90621	-24021.23952	36693.90621
Adj to PwrLine/RR	-5547.063815	15246.72578	-0.363820003	0.717659325	-36237.13055	25143.00292	-36237.13055	25143.00292
Zone 1 (0 - 500')	11416.27165	23182.69907	0.492447908	0.624745038	-35248.08054	58080.62384	-35248.08054	58080.62384

DESCRIPTIVE STATISTICS

Sale Price	
Mean	456867.8571
Standard Error	18218.55984
Median	426000
Mode	315000
Standard Deviation	136335.218
Sample Variance	18587291675
Kurtosis	9.673856153
Skewness	2.496517819
Range	850000
Minimum	275000
Maximum	1125000
Sum	25584600
Count	56

# Mos from Sale	
Mean	20.54661356
Standard Error	1.641466518
Median	21.18112834
Mode	30.81491257
Standard Deviation	12.28361064
Sample Variance	150.8870904
Kurtosis	-0.78249712
Skewness	0.083642964
Range	48.00395909
Minimum	1.286704058
Maximum	49.29066315
Sum	1150.61036
Count	56

Acres	
Mean	0.876964286
Standard Error	0.132556511
Median	0.59
Mode	0.35
Standard Deviation	0.991962095
Sample Variance	0.983988799
Kurtosis	32.50455508
Skewness	5.200987934
Range	6.95
Minimum	0.34
Maximum	7.29
Sum	49.11
Count	56

Sq.Ft Approx	
Mean	2128.589286
Standard Error	89.88421042
Median	2040
Mode	1865
Standard Deviation	672.6318398
Sample Variance	452433.5919
Kurtosis	4.293567201
Skewness	1.417614395
Range	3979
Minimum	884
Maximum	4863
Sum	119201
Count	56

Bath.Lav Total	
Mean	2.075
Standard Error	0.10033224
Median	2.1
Mode	2.1
Standard Deviation	0.750817736
Sample Variance	0.563727273
Kurtosis	0.220883833
Skewness	0.503937878
Range	3.1
Minimum	1
Maximum	4.1
Sum	116.2
Count	56

Gar Y/N	
Mean	0.839285714
Standard Error	0.049522301
Median	1
Mode	1
Standard Deviation	0.370590964
Sample Variance	0.137337662
Kurtosis	1.663866462
Skewness	-1.89886903
Range	1
Minimum	0
Maximum	1
Sum	47
Count	56

AC	
Mean	0.660714286
Standard Error	0.063842266
Median	1
Mode	1
Standard Deviation	0.477751769
Sample Variance	0.228246753
Kurtosis	-1.570627231
Skewness	-0.697712399
Range	1
Minimum	0
Maximum	1
Sum	37
Count	56

Adj to PwrLine/RR	
Mean	0.267857143
Standard Error	0.059712903
Median	0
Mode	0
Standard Deviation	0.44685045
Sample Variance	0.199675325
Kurtosis	-0.871435633
Skewness	1.077500272
Range	1
Minimum	0
Maximum	1
Sum	15
Count	56

Zone 1 (0 - 500')	
Mean	0.107142857
Standard Error	0.041705301
Median	0
Mode	0
Standard Deviation	0.312093892
Sample Variance	0.097402597
Kurtosis	4.993431167
Skewness	2.610800262
Range	1
Minimum	0
Maximum	1
Sum	6
Count	56

REGRESSION ANALYSIS OF COMBINED DATA SETS

(Congers – Clarkstown CSD & New City – East Ramapo CSD)

OBS#	MI Number	Area/Location	School Disctrict	Address	Style	Ranch/Split	Cape	Bilevel/Raised	Sale Price	# Mos from Sale	Location	Colonial	Sq.Ft Approx	Acres	Bath.Lav Total	Gar Y/N	AC	Adj to PwrLine/RR	Zone 1 (0 - 500')
1	448699	R-NEW.CITY	E.RAMAPO	19 WAGON WHEEL DR	COLONIAL	0	0	0	$525,000	6	1	1	3039	0.8800	2.1	1	1	1	0
2	405737	R-NEW.CITY	E.RAMAPO	7 TRAILSIDE PL	CONTEMP	1	0	0	$570,000	31	1	0	2777	0.8000	3.1	1	1	0	0
3	403685	R-NEW.CITY	E.RAMAPO	14 DOOLIN RD	COLONIAL	0	0	0	$640,000	32	1	1	2620	1.3400	2.1	1	1	0	0
4	425894	R-NEW.CITY	E.RAMAPO	6 PARK AV	RANCH	1	0	0	$360,000	19	1	0	1715	0.5800	2.0	1	1	0	0
5	400327	R-NEW.CITY	E.RAMAPO	42 S MOUNTAIN RD	COLONIAL	0	0	0	$1,125,000	25	1	1	4863	7.2900	3.1	1	1	0	0
6	455722	R-NEW.CITY	E.RAMAPO	54 S MOUNTAIN RD	RANCH	1	0	0	$606,000	5	1	0	2900	1.9300	2.2	1	0	0	0
7	426151	R-NEW.CITY	E.RAMAPO	22 ZABELLA DR	BLVLHRNCH	0	0	1	$435,000	21	1	0	1865	0.3500	1.2	1	1	0	0
8	443761	R-NEW.CITY	E.RAMAPO	14 ZABELLA DR	BLVLHRNCH	4	0	1	$427,000	14	1	0	2386	0.3800	2.1	1	1	0	0
9	395608	R-NEW.CITY	E.RAMAPO	6 ELLEN ST	COLONIAL	0	0	0	$460,000	31	1	1	1813	0.3500	2.1	1	1	0	0
10	402787	R-NEW.CITY	E.RAMAPO	6 FORBES RD	COLONIAL	0	0	0	$470,000	29	1	1	2128	0.3500	2.1	1	1	0	0
11	464751	R-NEW.CITY	E.RAMAPO	305 W CLARKSTOWN RD	RAISRANCH	0	0	1	$315,000	3	1	0	1865	0.3600	2.1	1	1	0	0
12	442865	R-NEW.CITY	E.RAMAPO	18 GREAT OAKS DR	COLONIAL	0	0	0	$378,000	14	1	1	2246	0.3500	2.1	1	0	0	0
13	433045	R-NEW.CITY	E.RAMAPO	5 Inland RD	BLVLHRNCH	0	0	1	$400,000	12	1	0	1894	0.3500	2.1	1	1	0	0
14	454464	R-NEW.CITY	E.RAMAPO	3 PAULA LN	COLONIAL	0	0	0	$427,700	10	1	1	2192	0.3500	2.1	1	1	0	0
15	414844	R-NEW.CITY	E.RAMAPO	30 GREAT OAKS DR	BLVLHRNCH	0	0	1	$390,000	15	1	0	2124	0.3400	2.0	1	1	0	0
16	459840	R-NEW.CITY	E.RAMAPO	57 W BURDA PL	COLONIAL	0	0	0	$275,000	1	1	1	1504	0.5100	2.0	0	0	0	0
17	395542	R-NEW.CITY	E.RAMAPO	63 W BURDA PL	BLVLHRNCH	0	0	1	$410,000	31	1	0	2004	0.3500	2.1	1	1	0	0
18	433190	R-NEW.CITY	E.RAMAPO	11 CORINTHIAN RD	BLVLHRNCH	0	0	1	$418,500	20	1	0	2052	0.3500	2.1	1	0	0	0
19	463762	R-NEW.CITY	E.RAMAPO	16 GLADE CT	BLVLHRNCH	0	0	1	$383,000	2	1	0	2136	0.4600	2.1	1	1	0	0
20	462931	R-NEW.CITY	E.RAMAPO	31 MURDOCK LN	BLVLHRNCH	0	0	1	$370,000	3	1	0	2244	0.5200	3.0	1	0	0	0
21	400679	R-NEW.CITY	E.RAMAPO	3 CARNABY CT	BLVLHRNCH	0	0	1	$430,000	31	1	0	2058	0.4600	2.1	1	0	0	0
22	414155	R-NEW.CITY	E.RAMAPO	168 W CLARKSTOWN RD	CAPECOD	0	1	0	$380,000	23	1	0	1882	0.3700	3.0	1	0	0	0
23	416597	R-NEW.CITY	E.RAMAPO	6 HALLMARK DR	COLONIAL	0	0	0	$570,000	28	1	1	2870	0.3500	2.1	1	1	0	0
24	412675	R-NEW.CITY	E.RAMAPO	1 FEATHERLY CT	BLVLHRNCH	0	0	1	$510,000	29	1	0	1866	0.9200	3.0	1	1	0	0
25	431537	R-NEW.CITY	E.RAMAPO	5 GRAND ST	CAPECOD	0	1	0	$315,000	22	1	0	1728	0.5700	2.0	0	0	0	0
26	416083	R-NEW.CITY	E.RAMAPO	7 GRAND ST	CAPECOD	0	1	0	$418,000	27	1	0	1512	0.5400	2.0	0	0	0	0
27	430741	R-NEW.CITY	E.RAMAPO	7 SYCAMORE DR	CAPECOD	0	1	0	$340,000	19	1	0	1296	0.3800	1.1	1	0	0	0
28	462520	R-NEW.CITY	E.RAMAPO	8 BARBARA RD	BLVLHRNCH	0	0	1	$357,500	4	1	0	2028	0.9200	2.1	1	1	0	0
29	464857	R-NEW.CITY	E.RAMAPO	199 BUENA VISTA RD	CAPECOD	0	1	0	$300,000	2	1	0	1700	1.0000	1.1	1	0	0	0
30	427652	R-NEW.CITY	E.RAMAPO	12 CANDLELIGHT CR	COLONIAL	0	0	0	$725,000	23	1	1	3917	1.5200	4.1	1	1	0	0
31	417481	R-NEW.CITY	E.RAMAPO	3 CANDLELIGHT CR	CONTEMP	1	0	0	$475,000	16	1	0	2668	0.6100	2.2	1	1	0	0
32	405379	R-NEW.CITY	E.RAMAPO	2 SUMMIT DR	CONTEMP	1	0	0	$680,000	33	1	0	3081	1.4000	3.0	1	1	0	0
33	462533	R-NEW.CITY	E.RAMAPO	303 BUENA VISTA RD	CAPECOD	0	1	0	$315,000	1	1	0	1293	2.5000	1.0	0	0	1	0
34	458430	R-NEW.CITY	E.RAMAPO	371 BUENA VISTA RD	RANCH	1	0	0	$350,000	6	1	0	1216	1.9000	1.0	0	0	0	0
35	423211	R-NEW.CITY	E.RAMAPO	371 BUENA VISTA RD	RANCH	1	0	0	$380,000	25	1	0	1216	1.9000	1.0	0	0	0	0
36	456601	R-NEW.CITY	E.RAMAPO	6 RED ROCK RD	SPLITLEVEL	1	0	0	$350,000	9	1	0	1924	1.2000	1.2	0	1	0	0
37	395012	R-NEW.CITY	E.RAMAPO	6 RED ROCK RD	SPLITLEVEL	1	0	0	$401,700	33	1	0	1925	1.2000	1.1	0	1	0	0
38	418869	R-NEW.CITY	E.RAMAPO	54 BUENA VISTA RD	RANCH	1	0	0	$405,000	27	1	0	884	0.4600	1.1	1	0	0	0
39	457499	R-NEW.CITY	E.RAMAPO	50 BUENA VISTA RD	RANCH	1	0	0	$350,000	3	1	0	1190	0.4600	1.0	1	0	0	0
40	400279	R-NEW.CITY	E.RAMAPO	18 BUTTERNUT DR	SPLITLEVEL	1	0	0	$442,500	35	1	0	1610	0.6400	2.0	1	0	1	0
41	370479	R-NEW.CITY	E.RAMAPO	28 HOOVER LN	COLONIAL	0	0	0	$565,000	46	1	1	2646	0.6300	3.1	1	1	1	0
42	403995	R-NEW.CITY	E.RAMAPO	1 BURROWS CT	BLVLHRNCH	0	0	1	$455,000	34	1	0	2267	0.5300	2.1	1	1	1	0
43	380872	R-NEW.CITY	E.RAMAPO	4 HOWELL RD	COLONIAL	0	0	0	$730,000	40	1	1	2562	0.7900	3.1	1	1	1	0
44	419165	R-NEW.CITY	E.RAMAPO	2 BURROWS CT	CONTEMP	0	0	1	$455,000	19	1	0	2229	0.5900	2.1	1	1	1	0
45	414604	R-NEW.CITY	E.RAMAPO	45 BUENA VISTA RD	RANCH	1	0	0	$400,000	16	1	0	1450	0.9300	2.1	1	1	0	0
46	399162	R-NEW.CITY	E.RAMAPO	29 BUENA VISTA RD	RANCH	1	0	0	$510,000	32	1	0	1854	1.2000	3.1	1	1	0	0
47	394453	R-NEW.CITY	E.RAMAPO	398 NEW HEMPSTEAD RD	COLONIAL	0	0	0	$498,200	39	1	1	1884	0.7800	2.0	1	0	1	0
48	366686	R-NEW.CITY	E.RAMAPO	5 HOOVER LN	RANCH	1	0	0	$545,000	49	1	0	2622	0.6200	3.0	1	1	1	0
49	412276	R-NEW.CITY	E.RAMAPO	3 PEACH TREE TE	SPLITLEVEL	1	0	0	$379,000	31	1	0	1610	0.7800	1.1	1	1	1	0
50	446787	R-NEW.CITY	E.RAMAPO	6 CHARLES ST	SPLITLEVEL	1	0	0	$572,500	13	1	0	2691	0.8600	4.0	1	1	1	0
51	429925	R-NEW.CITY	E.RAMAPO	4 BUTTERNUT DR	SPLITLEVEL	1	0	0	$410,000	10	1	0	1710	0.5700	1.1	1	1	1	1
52	429925	R-NEW.CITY	E.RAMAPO	4 BUTTERNUT DR	SPLITLEVEL	1	0	0	$410,000	10	1	0	1710	0.5700	1.1	1	1	1	1
53	395854	R-NEW.CITY	E.RAMAPO	4 HOOVER LN	RAISRANCH	0	0	1	$450,000	29	1	0	2400	0.8000	2.0	1	1	1	1
54	395854	R-NEW.CITY	E.RAMAPO	4 HOOVER LN	RAISRANCH	0	0	1	$450,000	29	1	0	2400	0.8000	2.0	1	1	1	1
55	427679	R-NEW.CITY	E.RAMAPO	12 STONEHAM LN	SPLITLEVEL	1	0	0	$425,000	24	1	0	2635	0.5800	1.2	0	1	0	1
56	444739	R-NEW.CITY	E.RAMAPO	13 STONEHAM LN	SPLITLEVEL	1	0	0	$450,000	13	1	0	2300	0.5900	2.1	1	0	0	1
57	390951	R-CONGERS	CLARKSTOWN	138 S CONGERS AV	RANCH	1	0	0	$372,500	39	0	0	1360	0.21	1.1	1	0	0	0
58	390571	R-CONGERS	CLARKSTOWN	146 S CONGER AV	RANCH	1	0	0	$375,000	40	0	0	952	0.27	1.0	1	1	0	0

OBS#	MI Number	Area/Location	School Disctrict	Address	Style	Ranch/Split	Cape	Bilevel/Raised	Sale Price	# Mos from Sale	Location	Colonial	Sq.Ft Approx	Acres	Bath.Lav Total	Gar Y/N	AC	Adj to PwrLine/RR	Zone 1 (0 - 500')
59	461270	R-CONGERS	CLARKSTOWN	144 S HARRISON AV	RANCH	1	0	0	$200,000	4	0	0	1030	0.18	1.1	1	0	0	0
60	462678	R-CONGERS	CLARKSTOWN	12 COLUMBUS AV	SRMK	0	0	0	$407,500	4	0	0	1404	0.37	1.1	1	1	0	0
61	436939	R-CONGERS	CLARKSTOWN	41 RIDGE RD	RANCH	1	0	0	$360,000	19	0	0	1368	0.31	1.0	0	0	0	0
62	370808	R-CONGERS	CLARKSTOWN	36 RIDGE RD	COLONIAL	0	0	0	$565,000	46	0	1	2184	0.46	1.1	0	1	0	0
63	399824	R-CONGERS	CLARKSTOWN	171 S HARRISON AV	RANCH	1	0	0	$350,000	35	0	0	1000	0.37	1.0	1	0	1	0
64	422847	R-CONGERS	CLARKSTOWN	163 S HARRISON AV	RANCH	1	0	0	$375,000	26	0	0	860	0.37	1.0	1	1	1	0
65	391996	R-CONGERS	CLARKSTOWN	6 BALDWIN CT	BLVLHRNCH	0	0	1	$527,400	33	0	0	2120	0.30	2.1	1	0	0	0
66	402203	R-CONGERS	CLARKSTOWN	159 KINGS HY	CONTEMP	0	0	0	$492,000	34	0	1	1907	0.27	2.1	1	1	0	0
67	397811	R-CONGERS	CLARKSTOWN	176 S CONGER AVE	SPLITLEVEL	1	0	0	$550,000	33	0	0	2200	0.32	2.1	1	1	0	0
68	426687	R-CONGERS	CLARKSTOWN	176 S CONGER AVE	SPLITLEVEL	1	0	0	$450,000	16	0	0	2200	0.32	2.1	1	1	0	0
69	375944	R-CONGERS	CLARKSTOWN	160 S CONGER AV	COLONIAL	0	0	0	$740,000	47	0	1	2996	0.40	2.2	1	1	0	0
70	380193	R-CONGERS	CLARKSTOWN	162 S HARRISON AV	SPLITLEVEL	1	0	0	$530,000	46	0	0	1664	0.24	2.1	1	1	0	0
71	432747	R-CONGERS	CLARKSTOWN	177 S HARRISON AV	RANCH	1	0	0	$410,000	16	0	0	960	0.00	2.0	0	1	0	0
72	379684	R-CONGERS	CLARKSTOWN	23 VON BEASTE LN	RANCH	1	0	0	$456,000	30	0	0	1104	0.35	1.1	1	0	0	0
73	421584	R-CONGERS	CLARKSTOWN	180 S HARRISON AV	RANCH	1	0	0	$330,000	27	0	0	992	0.14	1.0	0	0	0	0
74	461758	R-CONGERS	CLARKSTOWN	17 STERN PL	BLVLHRNCH	0	0	1	$600,000	1	0	0	2600	0.79	3.0	1	1	1	0
75	443893	R-CONGERS	CLARKSTOWN	15 STERN PL	BLVLHRNCH	0	0	1	$660,000	13	0	0	2500	0.79	3.0	1	1	1	0
76	387913	R-CONGERS	CLARKSTOWN	223 KINGS HIGHWAY	RANCH	1	0	0	$454,000	39	0	0	1268	0.35	2.1	1	0	0	0
77	364687	R-CONGERS	CLARKSTOWN	223 S GRANT AV	BLVLHRNCH	0	0	1	$490,000	51	0	0	1717	0.18	2.0	1	1	0	0
78	350375	R-CONGERS	CLARKSTOWN	219 S CONGER AV	RANCH	1	0	0	$345,000	55	0	0	789	0.12	1.0	0	0	0	0
79	438048	R-CONGERS	CLARKSTOWN	245 KINGS HY	RANCH	1	0	0	$385,000	16	0	0	1120	0.35	1.0	1	1	0	0
80	368237	R-CONGERS	CLARKSTOWN	229 S Harrison AV	CAPECOD	0	1	0	$449,999	47	0	0	1707	0.27	2.0	0	0	1	1
81	400610	R-CONGERS	CLARKSTOWN	2 VON BEASTE LN	BLVLHRNCH	0	0	1	$440,000	28	0	0	1828	0.35	2.0	1	1	1	1
82	452411	R-CONGERS	CLARKSTOWN	14 GILCHREST RD	BLVLHRNCH	0	0	1	$495,000	7	0	0	2500	0.36	3.0	1	1	1	1
83	415361	R-CONGERS	CLARKSTOWN	15 THIRD ST	BLVLHRNCH	0	0	1	$470,000	25	0	0	2070	0.37	2.1	1	1	0	1
84	364824	R-CONGERS	CLARKSTOWN	29 N ROCKLAND AV	BLVLHRNCH	0	0	1	$495,000	52	0	0	2534	0.24	3.0	1	1	1	0
85	363019	R-CONGERS	CLARKSTOWN	LOT 21 WATERSEDGE	COLONIAL	0	0	0	$919,900	43	0	1	3400	1.25	3.0	1	1	0	0
86	377310	R-CONGERS	CLARKSTOWN	LOT #1 STERN PL	BLVLHRNCH	0	0	1	$649,900	35	0	0	2400	0.27	3.0	1	1	0	0
87	377313	R-CONGERS	CLARKSTOWN	LOT #2 STERN PL	BLVLHRNCH	0	0	1	$609,900	41	0	0	2400	0.25	3.0	1	1	0	0
88	377314	R-CONGERS	CLARKSTOWN	LOT #5 STERN PL	COLONIAL	0	0	0	$639,900	35	0	1	2400	0.46	2.1	1	1	0	0
89	377316	R-CONGERS	CLARKSTOWN	LOT #7 STERN PL	BLVLHRNCH	0	0	1	$649,900	34	0	0	2400	0.70	3.0	1	1	0	0
90	377317	R-CONGERS	CLARKSTOWN	LOT #8 STERN PL	BLVLHRNCH	0	0	1	$629,900	37	0	0	2400	0.37	3.0	1	1	0	0
91	377322	R-CONGERS	CLARKSTOWN	LOT 11 STERN PL	BLVLHRNCH	0	0	1	$629,900	36	0	0	2400	0.00	3.0	1	1	0	0
92	377334	R-CONGERS	CLARKSTOWN	LOT 12 GILCHREST RD	COLONIAL	0	0	0	$639,900	34	0	1	2400	0.33	2.1	1	1	0	0
93	377328	R-CONGERS	CLARKSTOWN	LOT 13 STERN PL	BLVLHRNCH	0	0	1	$639,900	38	0	0	2400	0.75	3.0	1	1	0	0
94	377323	R-CONGERS	CLARKSTOWN	LOT 12 STERN PL	BLVLHRNCH	0	0	1	$629,900	40	0	0	2400	0.37	3.0	1	1	0	0
95	365464	R-CONGERS	CLARKSTOWN	1 NELSON LN	COLONIAL	0	0	0	$660,000	51	0	1	2502	0.52	2.1	1	1	0	0
96	370056	R-CONGERS	CLARKSTOWN	267 OLD HAVERSTRAW RD	RANCH	1	0	0	$410,000	49	0	0	1603	0.33	2.0	0	1	0	0
97	365864	R-CONGERS	CLARKSTOWN	225 OLD HAVERSTRAW RD	BLVLHRNCH	0	0	1	$590,000	49	0	0	1900	0.31	3.0	1	1	0	0
98	387019	R-CONGERS	CLARKSTOWN	130 SLEEPY HOLLOW LN	BLVLHRNCH	0	0	1	$550,000	38	0	0	1852	0.36	2.1	1	1	0	0
99	365243	R-CONGERS	CLARKSTOWN	48 LAKELAND AV	BLVLHRNCH	0	0	1	$550,000	51	0	0	2652	0.34	3.0	0	0	0	0
100	378439	R-CONGERS	CLARKSTOWN	11 AMANDA LN	BLVLHRNCH	0	0	1	$605,000	41	0	0	2534	0.43	3.0	1	1	0	0
101	392048	R-CONGERS	CLARKSTOWN	132 CONGERS RD	RANCH	1	0	0	$523,600	39	0	0	2900	0.59	2.0	0	1	0	0
102	379289	R-CONGERS	CLARKSTOWN	15 PARK AV	COLONIAL	0	0	0	$690,000	43	0	1	2584	0.35	3.0	1	1	0	0
103	394172	R-CONGERS	CLARKSTOWN	7 PARK AV	BLVLHRNCH	0	0	1	$500,000	37	0	0	1608	0.34	2.0	1	1	0	0
104	384864	R-CONGERS	CLARKSTOWN	10 HUGHES ST	RAISRANCH	0	0	1	$420,000	40	0	0	2112	0.49	2.0	0	0	0	0
105	391298	R-CONGERS	CLARKSTOWN	WELLS	BLVLHRNCH	0	0	1	$480,000	38	0	0	1666	0.26	2.0	1	0	0	0
106	372320	R-CONGERS	CLARKSTOWN	27 HILLTOP RD	RANCH	1	0	0	$620,000	48	0	0	2397	0.49	2.1	1	1	0	0
107	393352	R-CONGERS	CLARKSTOWN	3 BEECHWOOD DR	BLVLHRNCH	0	0	1	$582,000	39	0	0	2300	0.22	2.0	1	1	0	0
108	380935	R-CONGERS	CLARKSTOWN	9 Sherman AV	BLVLHRNCH	0	0	1	$615,000	41	0	0	3060	0.29	3.0	0	0	0	0
109	402464	R-CONGERS	CLARKSTOWN	119 WATERS EDGE	RANCH	1	0	0	$587,500	36	0	0	2248	0.38	2.0	1	1	0	0
110	368689	R-CONGERS	CLARKSTOWN	27 BLUEBIRD DR	BLVLHRNCH	0	0	1	$575,000	47	0	0	2479	0.43	2.1	1	0	0	0
111	380396	R-CONGERS	CLARKSTOWN	136 S HARRISON AV	CAPECOD	0	1	0	$432,500	38	0	0	1260	0.14	3.0	1	0	0	0
112	364906	R-CONGERS	CLARKSTOWN	105 S CONGER AV	COLONIAL	0	0	0	$590,000	45	0	1	2045	0.25	2.1	1	1	0	0
113	398957	R-CONGERS	CLARKSTOWN	76 HIGHWAY AV	BLVLHRNCH	0	0	1	$490,000	35	0	0	1890	0.23	2.0	1	1	0	0
114	361972	R-CONGERS	CLARKSTOWN	53 VERMONT AV	BLVLHRNCH	0	0	1	$515,000	50	0	0	2093	0.23	3.0	1	1	0	0
115	387546	R-CONGERS	CLARKSTOWN	76 New York AV	COLONIAL	0	0	0	$515,000	41	0	1	1368	0.34	1.1	0	1	0	0
116	361992	R-CONGERS	CLARKSTOWN	19 BEAUREGARD TE	CONTEMP	1	0	0	$670,000	53	0	0	2218	0.56	3.0	1	1	0	0
117	372207	R-CONGERS	CLARKSTOWN	11 CAESAR CT	COLONIAL	0	0	0	$625,000	45	0	1	2650	0.40	2.1	1	1	0	0
118	367304	R-CONGERS	CLARKSTOWN	200 MASSACHUSETTS AV	COLONIAL	0	0	0	$573,000	49	0	1	2192	0.46	1.1	0	0	0	0

SUMMARY OUTPUT COMBINED SUBSTATION ANALYSIS

Regression Statistics	
Multiple R	0.938649972
R Square	0.88106377
Adjusted R Square	0.869948235
Standard Error	47799.34734
Observations	118

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	10	1.81101E+12	1.81101E+11	79.26417687	8.43033E-45
Residual	107	2.44471E+11	2284777606		
Total	117	2.05548E+12			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	136150.7825	19988.12262	6.811584314	5.85958E-10	96526.66177	175774.9032	96526.66177	175774.9032
# Mos from Sale	2207.014472	377.2761829	5.849864295	5.42985E-08	1459.108463	2954.920481	1459.108463	2954.920481
Location	-79144.17713	11130.929	-7.110293953	1.36213E-10	-101209.945	-57078.40924	-101209.945	-57078.40924
Colonial	48125.96225	12404.84631	3.879609713	0.0001811	23534.80193	72717.12257	23534.80193	72717.12257
Sq.Ft Approx	85.86685587	12.36974072	6.941685989	3.11188E-10	61.34528829	110.3884235	61.34528829	110.3884235
Acres	60654.23948	7520.997331	8.08465377	1.1407E-12	45744.73988	75563.73907	45744.73988	75563.73907
Bath.Lav Total	27490.2715	9299.357991	2.956147244	0.003832835	9055.379405	45925.16359	9055.379405	45925.16359
Gar Y/N	46237.29289	12853.6135	3.597221349	0.000488512	20756.50399	71718.08178	20756.50399	71718.08178
AC	21619.47042	11038.94839	1.958471917	0.052777558	-263.9566541	43502.89749	-263.9566541	43502.89749
Adj to PwrLine/RR	-7474.352241	12461.15131	-0.599812333	0.549899425	-32177.13064	17228.42615	-32177.13064	17228.42615
Zone 1 (0 - 500')	-7048.891199	18254.13804	-0.386153057	0.70015008	-43235.58982	29137.80742	-43235.58982	29137.80742

DESCRIPTIVE STATISTICS

Sale Price	
Mean	494632.1949
Standard Error	12201.77009
Median	470000
Mode	410000
Standard Deviation	132545.1501
Sample Variance	17568216811
Kurtosis	3.711076285
Skewness	1.198921335
Range	925000
Minimum	200000
Maximum	1125000
Sum	58366599
Count	118

# Mos from Sale	
Mean	28.77441578
Standard Error	1.361710493
Median	31.12834048
Mode	30.81491257
Standard Deviation	14.79196218
Sample Variance	218.8021451
Kurtosis	-0.922138198
Skewness	-0.309616337
Range	54.23952491
Minimum	1.055757176
Maximum	55.29528209
Sum	3395.381062
Count	118

Location	
Mean	0.474576271
Standard Error	0.046165221
Median	0
Mode	0
Standard Deviation	0.501482663
Sample Variance	0.251484862
Kurtosis	-2.023960802
Skewness	0.103142425
Range	1
Minimum	0
Maximum	1
Sum	56
Count	118

Acres	
Mean	0.60720339
Standard Error	0.06817629
Median	0.39
Mode	0.35
Standard Deviation	0.740584068
Sample Variance	0.548464762
Kurtosis	57.30242544
Skewness	6.686314087
Range	7.29
Minimum	0
Maximum	7.29
Sum	71.65
Count	118

Sq.Ft Approx	
Mean	2061.423729
Standard Error	59.11837236
Median	2102.5
Mode	2400
Standard Deviation	642.189902
Sample Variance	412407.8702
Kurtosis	2.386386451
Skewness	0.65361717
Range	4074
Minimum	789
Maximum	4863
Sum	243248
Count	118

Bath.Lav Total	
Mean	2.106779661
Standard Error	0.067462963
Median	2.1
Mode	2.1
Standard Deviation	0.732835357
Sample Variance	0.53704766
Kurtosis	-0.510294545
Skewness	0.13166281
Range	3.1
Minimum	1
Maximum	4.1
Sum	248.6
Count	118

Gar Y/N	
Mean	0.813559322
Standard Error	0.036005763
Median	1
Mode	1
Standard Deviation	0.3911227
Sample Variance	0.152976967
Kurtosis	0.671334077
Skewness	-1.631025339
Range	1
Minimum	0
Maximum	1
Sum	96
Count	118

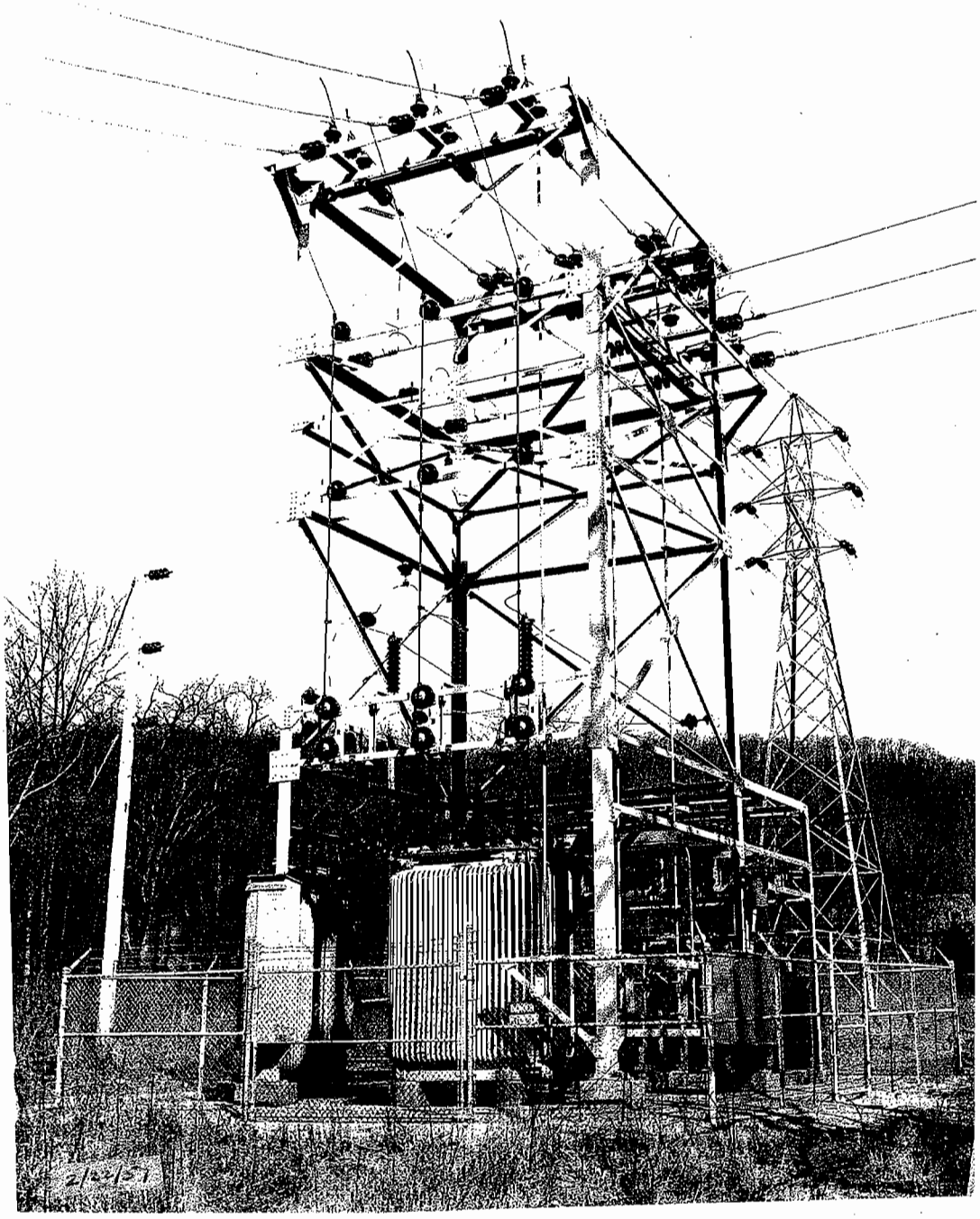
AC	
Mean	0.694915254
Standard Error	0.042567999
Median	1
Mode	1
Standard Deviation	0.462406832
Sample Variance	0.213820078
Kurtosis	-1.286653929
Skewness	-0.857581888
Range	1
Minimum	0
Maximum	1
Sum	82
Count	118

Adj to PwrLine/RR	
Mean	0.194915254
Standard Error	0.036622736
Median	0
Mode	0
Standard Deviation	0.397824739
Sample Variance	0.158264523
Kurtosis	0.441444907
Skewness	1.560208793
Range	1
Minimum	0
Maximum	1
Sum	23
Count	118

Zone 1 (0 - 500')	
Mean	0.084745763
Standard Error	0.025747611
Median	0
Mode	0
Standard Deviation	0.279690647
Sample Variance	0.078226858
Kurtosis	7.246444278
Skewness	3.020578614
Range	1
Minimum	0
Maximum	1
Sum	10
Count	118

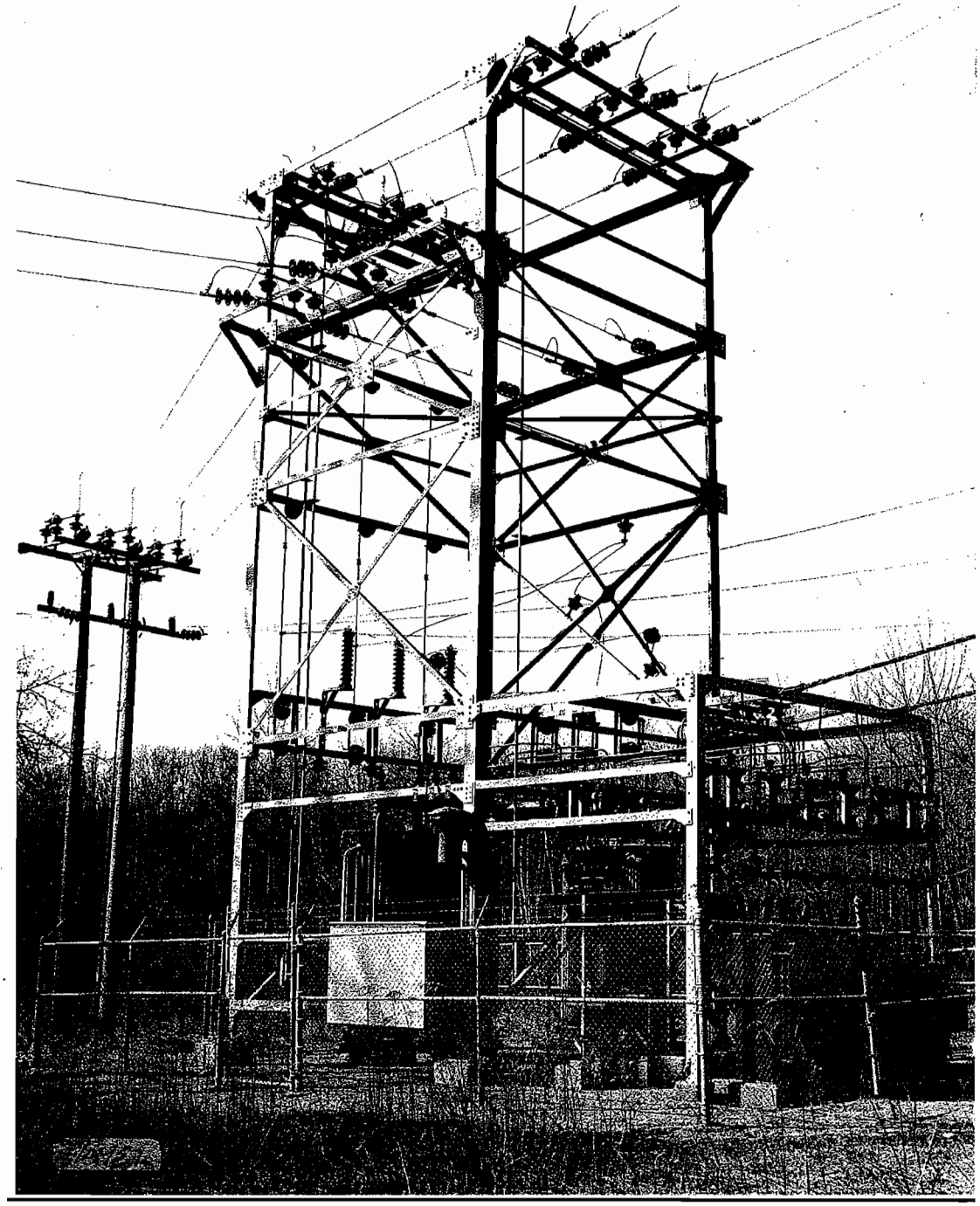
FORMER GIBBONS SUBSTATION

Photo Date: 2/22/1957



FORMER GIBBONS SUBSTATION

Photo Date: 2/22/1957



WILLIAM R. BECKMANN, MAI, CRE

Resident and native of Rockland County, New York
bill@beckmannappraisals.com

PROFESSIONAL DESIGNATIONS

IAO 1989 Member, Institute of Assessing Officers
MAI 1990 Member, Appraisal Institute
CRE 2000 Member, Counselors of Real Estate
FRICS 2006 Member, Royal Institute of Chartered Surveyors

LICENSED

Certified General Real Estate Appraiser, New York State
Certified General Real Estate Appraiser, New Jersey
Approved Real Estate Appraiser Instructor, New York State
Approved Real Estate Instructor, New York State
Real Estate Broker, New York State
Real Estate Broker, New Jersey
Notary Public, New York State

NEW YORK STATE ASSESSOR (Office of Real Property Tax Services)

State Certified Assessor (7-17-89)
State Certified Assessor (Advanced) (9-15-89)
State Certified Assessor (Professional) (9-15-89)
State Certified Assessor (National) (3-28-90)

EMPLOYMENT

1996 to Present Beckmann Appraisals, Inc., Tappan, New York
1982 to 2001 Assessor - Village of Spring Valley, New York
1979 to 1995 Beckmann Realty, Inc., Tappan, New York
1976 to 1979 Real Estate Salesman, Pearl River, New York

AREAS OF EXPERTISE

- Real Property Assessments and Taxation
- Approved Fee Appraiser, New York State Department of Transportation
- All aspects of General Appraising including:

Right-of-way	Condemnation	Estate
Commercial and Industrial	Residential	Mortgage
Hotels and Motels	Certiorari Feasibility	Feasibility

- Geographic Information Systems
  Developed GIS system for:
  Suffolk County: Half Hollows Central School District
  Middle Country Central School District

Rockland County: Town of Clarkstown
South Orangetown Central School District
Town of Orangetown
Town of Orangetown Highway Department
Rockland County Solid Waste Management Authority
Rockland County Sewer District No. 1

EDUCATION

- Pace University, BBA Finance, 1980
- Appraisal Institute (American Institute of Real Estate Appraisers):
  - Standards of Professional Practice
  - Real Estate Appraisal Principle
  - Basic Valuation
  - Residential Valuation
  - Capitalization, Theory & Techniques
  - Case Studies in Real Estate Valuation
  - Valuation Analysis & Report Writing
  - Rates, Ratios & Relationships
  - Hotels/Motels Appraisals
  - Regression Analysis in Appraisal Practice
  - Appraisal Issues…in the Millennium
  - What's it Worth? Valuation of Real Property in Litigation
  - Case Studies in Commercial Highest & Best Use
  - Advanced Applications
  - Attacking & Defending an Appraisal Litigation
  - HUD Rent Comparability Studies
  - Case Studies in Ltd. Partnership & Common Tenancy Valuation
  - Appraisal Consulting: A solutions Approach for Professionals
  - Subdivision Valuation: A Comprehensive Guide to Valuing Improved Subdivisions
  - Analyzing Commercial Lease Clauses – Implications for Property Value and Marketability
- New York State Department of Equalization and Assessment:
  - Assessor's Basic Phase I
  - Assessor's Basic Phase II
  - Forestry Appraisal
  - Fundamentals of Equalization
  - Income Approach I
  - Income Approach II
  - Industrial Valuation
  - Mass Appraisal(Education cont.)

- Other: Business, Faith & Ethics, CRE
  Electric Asset Valuation, CBI
  Taxation in the Deregulated Electric Industry, CBI
  Annual Legal Seminar, IAAO
  Advanced Income Approach, NYS Assessor's Association
  FIRREA Overview and Practical Application
  Passport I & II, Orange County Association of Realtors
  Northeast Arc Users Group Conference, NEARC
  NYS Geographic Information Systems Conference SUNY College of ESF

TEACHING

Taxes and Assessments
Ethics and Standards (E & S)
Appraisal Methods (G1)
Appraisal Applications (G3)
Taxes and Assessments
Real Property Taxes and Assessments
Real Estate Appraisal, Cornell University, Dominican College
Rockland County Board of Realtors, Rockland Community College
Real Estate Fundamentals, Principals and Practices of Real Estate
Income Approach to Valuation, New York State Association of Towns
Elementary Income and Capitalization Methods & Techniques (R4)
Valuation of Cell Towers & Sites
Construction Home Inspection
Appraisal Report Writing (R3)
Income Capitalization (G2)
Appraisal Basics (R1)
Single Family Appraisal (R2)

EXPERT TESTIMONY

Supreme Court State of New York:
Counties of Orange, Rockland, Westchester, Dutchess, Putnam, Schoharie, Columbia, Putnam, Sullivan, and Ulster

County Legislature:
County of Rockland

Authorities:
Metropolitan Transit Authority
Metro North Transit
Rockland County Solid Waste Management Authority

United States Bankruptcy Court:
Eastern District of New York
Southern District of New York

Zoning Board of Appeals:
Towns of Clarkstown, Orangetown, Ramapo Villages of Nyack, Piermont, South Nyack, Spring Valley, Upper Nyack

Planning Boards:

Towns of Clarkstown, Orangetown, Ramapo
Villages of Piermont, South Nyack, Spring Valley, Upper Nyack
Airmont, Montebello

Town Boards:

Towns of Clarkstown, Orangetown, Ramapo, Stony Point

Village Boards:

Villages of Nyack, Piermont, South Nyack, Spring Valley
Airmont, Montebello

BROKERAGE AND APPRAISAL

State of New York:

Albany County
Columbia County
Dutchess County
Delaware County
Erie County
Herkimer County
Madison County
Orange County
Putnam County
Rockland County
Saratoga County
Schoharie County
Schenectady County
Suffolk County
Sullivan County
Ulster County
Westchester County
Nassau County
New York City, all 5 Boroughs
Greene County

State of New Jersey:

Bergen County
Ocean County
Passaic County
Hudson County

State of Connecticut:

Fairfield County

MEMBERSHIPS

International Association of Assessing Officers
The Appraisal Institute
The Counselors of Real Estate
National Association of Realtors
New York State Association of Realtors
New York State Assessors Association
Rockland County Multiple Listing System
United Real Estate Brokers of Rockland
Rockland County Society of Real Estate Appraisers, Inc.
Rockland County Assessors Association - past President
Rockland County Board of Realtors - past President
Greater Hudson Valley MLS
Royal Institute of Chartered Surveyors

SAMPLE REFERENCE SUBSCRIPTIONS

Valuation Insights and Perspectives
Assessment Journal Westchester County Business Journal
Fairfield County Business Journal Hudson Valley Business Source
National Economic Trends
Monetary Trends
The Appraiser News
Bureau of Labor Statistics
The Federal Reserve Bank of New York
The Federal Reserve Bank of St. Louis
Marshall Valuation Service
Real Property Tax Administration Reporter
Korpacz Real Estate Investor Survey PKF Consulting Trends in the Hotel Industry
BOMA Experience Exchange Report
The ULI Dollars & Cents of Shopping Centers
US Census
Uniform Standards of Professional Appraisal Practice

BECKMANN APPRAISALS, Inc.

67 MAIN STREET
TAPPAN, NEW YORK 10983
REAL PROPERTY APPRAISERS, ANALYSTS AND CONSULTANTS

William R. Beckmann, MAI, IAO, CRE, Certified General Real Estate Appraiser
Mona Parker, Certified General Real Estate Appraiser
Ann Marie Mulholland, Certified General Real Estate Appraiser
Poh Sim Lim Png, Certified General Real Estate Appraiser
Marie Capasso-Spruck, Real Estate Assistant Appraiser

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April 6, 2011

Anthony Montalbano, Esq.
Montalbano, Condon & Frank, P.C.
67 N Main Street
New City, New York 10956

Re: Orange and Rockland Property, Little Tor Road, New City, NY
Little Tor Road Transfer Substations

Dear Mr. Montalbano:

We have prepared a report with respect to residential property value and impact with respect to the subject substations as of November 16, 2009. At that time, we considered sales of residential properties through September 2009.

You have requested us to consider whether an updated analysis, including residential sales through the 1st Quarter of 2011 would change our opinion or analysis.

As you know, by reason of the recession and its aftermath there have been relatively few sales of real estate compared to the volume of sales that was analyzed that included the period Jan 2005 through Sept. 2009, particularly within the area of our previous studies that encompassed some 117 sales out of the several hundred that we originally analyzed. Further, by virtue of the statistical analyses we undertook, the relatively few sales within the area of the study would not significantly affect our analysis. Accordingly, the opinion set forth in our report dated November 16, 2009 continues to be our opinion as of March 31, 2011.

You may append this letter to our report and consider it a "supplement" to our prior report and study.

Very truly yours,

William R. Beckmann, MAI, CRE
/am

Coyle & Coyle, Inc.

REAL ESTATE APPRAISER
& CONSULTANTS

40 South Main Street, New City, NY 10956

Via E-Mail: J.Simoes@clarkstown.org

September 19, 2011

Mr. Joe Simoes
Town Planner
Town of Clarkstown
10 Maple Avenue
New City, NY 10956

Re: Review of Residential Property Value and Impact Study of Proposed O & R Electric Transmission and Gas Regulator Substations at the Intersection of Little Tor Road and South Mountain Road

Dear Mr. Simoes:

At your request, we have reviewed the captioned report which was prepared on November 16, 2009 by Beckmann Appraisals Inc. To begin, we will briefly summarize the purpose of the Beckmann Appraisals report.

As depicted on page 1 of the Beckmann report, in its Executive Summary, it states the following:

> *"We have been requested to offer our opinion as to the potential impact on the value of nearby properties to the proposed Little Tor Road/South Mountain Road electric utility substation and a gas regulator substation. ... In reviewing the assignment we realized that we would be employing a significantly large set of data, single family residential sales each of which was delineated by the significant attributes of the property sold. Accordingly, we have utilized a*

geographic information system (GIS) as well as multiple regression analysis, a statistical tool using computer aided software that enables an appraiser to employ a larger amount of data and variables than typical.

We located two substations that were in reasonably sub-markets, although not identical in locational attributes to the subject property proposed substation, the New Hempstead Road/New City substation and the Congers substation. The New City substation and its attendant high tension wires are located at the southbound exit/entry to the Palisades Parkway Exit 11. New Hempstead Road is a busy two lane road that is the primary east-west link to and from New City. The New Hempstead substation sub-market is highly residential, although it is somewhat intermixed with a variety of religious uses. It is within the East Ramapo Central School District. There is a small strip center, also, in this area which we do not consider a significant influence on neighborhood values. We deemed this site substantially and reasonably similar in many market/locational attributes. The other substation that is also within a similar residential sub-market area is the Congers substation located off Gilchrest Avenue along the railway line west of Congers Lake and Route 303...

For purposes of this report we are using a well-recognized statistical method, a Multiple Regression Analysis (MRA) technique, which involves the (linear) correlation of value-influencing attributes to changes in sales prices...

We have also reviewed the literature in the field that discusses the influence of the presence of power lines on adjacent and nearby properties. There are no such articles with respect to substations; however, there are many aspects of high tension wires that are similar to electrical or gas substations, although with greater visibility. The studies consistently find that to the extent that there is any value diminishing influence of the presence of power lines that the greater the distance from the line the less the value influences. Further, they find that over time this negative influence on value diminishes. The literature, therefore, is consistent with our studies as both the New Hempstead Road – New City substation and the Congers substation have been present for a very long time. Simply put, people got used to them and did not find over time that they reduced the value of their houses upon sale.

We consider that the subject proposed substation site is an already existing impacted site, as described above. It is similar to the sub-markets we studied. Further, the existing gas regulator is proposed to be moved from its current site to one further removed from adjacent properties. We also apply our experience as appraisers from which we know that with respect to an already impacted site the addition of a potential negative externality has a limited probability of decreasing nearby property values. We also know that if a site is large, is well protected by visual barriers such as trees and other vegetation

so that there is limited visibility to adjacent or nearby property owners, that the potential to reduce lower property values is diminished. Accordingly, we conclude that the subject proposed substation is unlikely to reduce nearby property values."

To summarize the Beckmann report, the subject property is already impacted by high tension wires which are adjacent to the subject property. In addition, there is a gas regulator on site. To determine if there is any impact by the proposed improvements to the subject site, the Beckmann report provided a multiple regression analysis. Two other substation locations in Clarkstown were found and identified. One was located in the New Hempstead Road / New City area and the second one was located on Gilchrest Road in Congers.

For each of these substation locations, the Beckmann report identified residential sales which occurred within 2500 linear feet of the substation. The sales were studied from January 2005 through September 2009. For the New Hempstead Road / New City substation, 56 sales were identified within 2500 feet. For the Congers Substation, the same time period of residential sales and distances was used and 62 residential sales were identified. Some sales in each data set were removed if they lacked certain information or located along a busy road such as New Hempstead Road or Route 303. The key comparison factors for the multiple regression analysis are as follows:

1. Date of sale
2. Square feet of living area
3. Lot size
4. Number of baths
5. Whether or not there is a garage
6. Whether or not there is central air conditioning
7. Number of bedrooms
8. Whether or not the house has a basement
9. Architectural style of house
10. Whether or not the property is adjacent to existing powerlines
11. **Whether or not the property is within 500 feet of the substation property line**

As noted on page 13 of the Beckman report, the following is stated:

"The distance variable is the one of most interest in this study, as it is designed to capture any impacts of proximity to the substation (S). Because the distant variable is a yes/no (or qualitative) variable, this specification will produce an estimate of any difference in selling prices between properties inside and outside of 500 feet from the substation (S), while controlling for the price impact of the other variables in the model."

By having this study of 56 and 62 residential sales within 2500 feet of an existing substation, the Beckman report specifically concentrates on sales that are within 500 feet of the substation and how this particular factor affects values through the multiple regression analysis. After performing this analysis, the Beckman report finds that the sampling of sales does not show any discernable impact on value for those properties near a substation.

The following are our comments and concerns for each of the Beckmann study areas, beginning with the New Hempstead Road / New City data.

1. As depicted on page 30 of the Beckmann report, 56 residential sales were utilized that were within 2500 feet of the substation. Of these 56 sales, 6 sales (Sales 51 through 56) are within 500 feet of the substation. However, Sales 52 and 54 are repeats of the same sale. Therefore, only 4 sales are within 500 feet of the substation. In our opinion, 4 sales within 500 feet of a substation does not appear to be a large enough set of data to provide any substantial results.

2. In the Beckmann report, the qualifying distance is that the property is within 500 feet of a substation. As noted in the Appraisal Journal article for the Summer of 2009, it states the following:

   "where effects are found, they decay rapidly as distance to the lines increases and usually disappear at about 200 feet to 300 feet. (61 meters to 91 meters)."

   The 2nd study cited by the Beckmann report is the Appraisal Journal, Fall of 2007, which states a similar distance impact factor which is as follows:

   "these impacts (referring to high tension power lines) *diminish as distance from the line increases and disappear at a distance of 200 feet from the lines."*

   In the case of the subject, the substations can only be seen from a very limited distance. Since the Beckmann report uses 500 feet as the qualifying distance, the results might be skewed by the greater distance. It may be better to revisit substation sales and confine the distance of the sales to within 300.

3. The Beckmann report cites residential sales from January 2005 through September 2009. This was a highly volatile timeframe in regards to changing property values. We're not sure how changing values over time are handled by the Beckmann report.

4. 4 Hoover, which is within 500 feet of a substation, is somewhat mischaracterized by the long access driveway of the substation. The New Hempstead Road / New City substation has a long and narrow access road from New Hempstead Road. This access road is over 400 feet in length. This sale is over 500 feet from the substation improvement, but within 500 feet of its road access. (Refer to the distance map attached.) We are not sure that this measurement including the access road properly accounts for the real location of this substation.

The following are our comments regarding the Congers substation analysis:

1. Like the New Hempstead Road / New City analysis, there were a total of 62 sales with 4 within 500 feet of the substation. Again, having 4 sales within 500 feet of the substation may not be a large enough sampling to properly identify value changes during the 2005 to 2009 timeframe.

2. The Congers substation is directly adjacent to an active railroad line. All of the sales within 2500 feet of the substation are also affected by the presence of the railroad tracks. Two of the 4 sales within 500 feet of the substation (229 South Harrison Avenue and 14 Gilchrest Road) are directly adjacent to the railroad tracks. Our concern is that any value effects due to the substation may be overshadowed by the effects on value for this entire area by the active railroad tracks.

3. As noted on page 23 of the Beckmann of the report, Sales 24 through 27 are within 500 feet of the substation. However, upon visiting each of these 4 sales, we note that Sale 25 at 2 Von Beaste Lane is more than 500 feet from the substation. (As the crow flies, it's over 800 feet from the substation. Refer to the distance map attached.) Further, the sales price for 2 Von Beaste Lane is depicted as $440,000 in the Beckmann report. However, the actual recorded Deed price is $452,410. The difference between the two numbers should be clarified.

Final Conclusion

In conclusion, there are very few sales (7 sales) within 500 feet of a substation. Further, 4 of the 7 sales may be overshadowed by the presence of the active railroad line near the Congress substation. As previously mentioned, the Congers substation set of data may be misinterpreted due to the presence of an active railroad track. For the New Hempstead Road / New City set of data, only 4 sales (at best) are within 500 feet. The small number of sales may limit the reliability of performing a multiple regression analysis with only 4 (at best) controlled sales.

On the other hand, a multiple regression analysis is the most objective approach and is the only approach to give explicit measures of reliability.

Based on the review of the Beckmann report as well as other published literature within the appraisal field, it appears that the proposed substation for the subject property would likely have little impact on value for many of the surrounding properties. However, the appraisal literature does cite that properties may be impacted if they are within 200 to 300 feet. Further than 300 feet from the negative influence, the literature as well as the multiple regression analysis performed by Beckman indicates little to no lasting diminution in value.

Respectfully submitted,

Gregg Manzione, MAI

James Coyle, Pres.

GM/ac
Attachments

ADDENDA

1. **Map – showing the distance of 2 Bon Beaste to the substation**

Distance from 2 Von Beaste to Substation
Base Map

Map Source: Rockland County Department of Planning.

2. Deed for 2 Von Beaste Lane

Paul Piperato, County Clerk
1 South Main St Ste 100
New City, NY 10956
(845) 638-5221

Rockland County Clerk Recording Cover Sheet

Received From :
DIVERSIFIED LAND SERVICES LTD
369 SOUTH MAIN ST
NEW CITY, NY 10956

Return To :
MARK B I ICKER ESQ
369 S MAIN ST
NEW CITY, NY 10956

First GRANTOR
CALABRESE, PETER A JR

First GRANTEE
TABACCO, CINDY

Index Type : Land Records

Instr Number : 2007-00033637

Book : Page :

Type of Instrument : Deed
Type of Transaction : Deed

Recording Fee :	$123.00
Recording Pages :	6

The Property affected by this instrument is situated in Clarkstown, in the County of Rockland, New York

Real Estate Transfer Tax	
RETT # :	5791
Deed Amount :	$452,410.00
RETT Amount :	$1,810.00
Total Fees :	$1,933.00

State of New York
County of Rockland

I hereby certify that the within and foregoing was recorded in the Clerk's office for Rockland County, New York

On (Recorded Date) : 07/03/2007
At (Recorded Time) : 5:05:10 PM

Doc ID - 017508860006

Paul Piperato, County Clerk

UNOFFICIAL COPY

This sheet constitutes the Clerks endorsement required by Section 319 of Real Property Law of the State of New York

Entered By: NAM Printed On : 07/09/2007 At : 9:04:23AM

BARGAIN AND SALE DEED WITH COVENANTS AGAINST GRANTOR'S ACTS

THIS INDENTURE, made the 22ND day of JUNE, two thousand and seven

BETWEEN, PETER A. CALABRESE, JR. and JODY CALABRESE, F/K/A JODY ANN BOZDECH, husband and wife, residing at 6 Friend Court, Congers, NY 10920

party of the first part, and CINDY TABACCO and KERRY ENEA, residing at 6 Ridge Road, Congers, NY 10920 as Joint Tenants With Rights of Survivorship

party of the second part,

WITNESSETH, that the party of the first part, in consideration of TEN ($10.00) AND 00/100---------- ----------DOLLARS,

lawful money of the United States, and other good and valuable consideration paid

by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land with the buildings and improvements thereon erected, situate, lying and being in the Town of Clarkstown, County of Rockland and State of New York as more particularly described on Schedule "A" attached hereto and made a part hereof.

Being and intended to be the same premises as conveyed to the grantors herein by deed dated August 14, 2001 and recorded in the Rockland County Clerk's Office on August 23, 2001 as Instrument No. 2001-41419.

Premises is shown and designated on the Town of Clarkstown Tax Map as
Section 52.11
Block 2
Lot 50.

Premises also known as 2 Von Beaste Lane, Congers, NY 10920.

UNOFFICIAL COPY

Title No. ULS3452-07
Policy No.

SCHEDULE A

ALL that certain plot, piece or parcel of land situate, lying and being in the Town of Clarkstown, County of Rockland and State of New York known and designated as Lot No. 1 in Block 3 on a certain map entitled "Survey of Property for Congers Lake Homes, Inc. Town of Clarkstown, Rockland County, New York", dated June 3, 1963, and filed in the Office of the Clerk of the County of Rockland on July 29, 1964 in Book 68 at Page 57 as Map No. 3257; more particularly bounded and described as follows:

BEGINNING at a point on the southeasterly side of Gilchrist Road distant 49.66 feet easterly from the extreme northeasterly part of a curve formed by the intersection of the easterly side of Stark Lane and the southerly side of Gilchrist Road; running thence

North 55 degrees 59' 40" East along the southerly side of Gilchrist Road 70.70 feet to a point; thence

North 33 degrees 37' 50" East 5.97 feet to a point; thence

Northeasterly along a curve bearing to the right, having a radius of 25 feet, a distance of 36 feet to a point thence

South 63 degrees 52' 10" East along the southerly side of Von Beaste Lane 82.75 feet to a point; thence

Continuing along the southerly side of Von Beaste Lane South 70 degrees 56' 40" East 30.90 feet to a point; thence

South 19 degrees 03' 20" West 207.72 feet to a point; thence

North 59 degrees 34' 40" West 187.97 feet to the point or place of BEGINNING.

UNOFFICIAL COPY

TOGETHER with all right, title and interest, if any of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof,

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

UNOFFICIAL COPY

AND the party of the first part covenants that the party of the first part have not done or suffered anything whereby the said premises have been incumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written:

IN PRESENCE OF:

Peter A. Calabrese, Jr.

Jody Calabrese f/k/a Jody Ann Bozdech

STATE OF NEW YORK, COUNTY OF ROCKLAND }ss.:

On the 22nd day of June in the year 2007, before me, the undersigned, personally appeared Peter A. Calabrese, Jr. and Jody Calabrese f/k/a Jody Ann Bozdech personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies) and that by his/her/their signature(s) on the instrument, the individual(s) or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public

JAMES S. KOBB
Notary Public, State of New York
No. 02KO4842322
Qualified in New York County
Commission Expires November 30, 2009

STATE OF NEW YORK, COUNTY OF }ss.:

On the day of in the year 2007, before me, the undersigned, personally appeared

personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public

UNOFFICIAL COPY

DLS345207

RECORD AND RETURN TO:
Mark B. Lieker, Esq.
369 South Main Street
New City, NY 10956

SECTION: 52.11
BLOCK 2
LOT: 50
COUNTY OR TOWN:
Rockland/Clarkstown

PLEASE TYPE OR PRESS FIRMLY WHEN WRITING ON FORM
INSTRUCTIONS: http// www.orps.state.ny.us or PHONE (518) 473-7222

FOR COUNTY USE ONLY
C1. SWIS Code 392089
C2. Date Deed Recorded 7 / 3 / 07
C3. Book 20071 C4. Page 33637

REAL PROPERTY TRANSFER REPORT
STATE OF NEW YORK
STATE BOARD OF REAL PROPERTY SERVICES
RP - 5217

PROPERTY INFORMATION

1. Property Location: 2 Von Beaste Lane
Clarkstown 10920
2. Buyer Name: Tabacco Cindy
Enco Kerry
3. Tax Billing Address: Indicate where future Tax Bills are to be sent if other than buyer address (at bottom of form)
4. Indicate the number of Assessment Roll parcels transferred on the deed: 1 # of Parcels OR ☐ Part of a Parcel
5. Deed Property Size: ____ X ____ OR Less than an acre 0.35
6. Seller Name: Calabrese Peter A., Jr.
Calabrese Jody, f/k/a Jody Ann Bozdach
7. Check the box below which most accurately describes the use of the property at the time of sale:
A [X] One Family Residential
B [ ] 2 or 3 Family Residential
C [ ] Residential Vacant Land
D [ ] Non-Residential Vacant Land
E [ ] Agricultural
F [ ] Commercial
G [ ] Apartment
H [ ] Entertainment / Amusement
I [ ] Community Service
J [ ] Industrial
K [ ] Public Service
L [ ] Vacant Land
Check the boxes below as they apply:
8. [ ] Ownership Type is Condominium
9. [ ] New Construction on Vacant Land
10A. [ ] Property Located within an Agricultural District
10B. [ ] Buyer received a disclosure notice indicating that the property is in an Agricultural District

SALE INFORMATION

11. Sale Contract Date: 5 / 8 / 2007
12. Date of Sale / Transfer: 6 / 22 / 2007
13. Full Sale Price: $ 465,000.00
Full Sale Price is the total amount paid for the property including personal property. This payment may be in the form of cash, other property or goods, or the assumption of mortgages or other obligations. Please round to the nearest whole dollar amount.
14. Indicate the value of any property included in the Full Sale Price: -0- .00
15. Check one or more of these conditions as applicable to Transfer:
A [ ] Sale Between Relatives or Former Relatives
B [ ] Sale Between Related Companies or Partners in Business
C [ ] One of the Buyers is also a Seller
D [ ] Buyer or Seller is Government Agency or Lending Institution
E [ ] Deed Type Not Warranty or Bargain and Sale (Specify Below)
F [ ] Sale of Fractional or Less than Fee Interest (Specify Below)
G [ ] Significant Change in Property Between Taxable Status and Sale Date
H [ ] Sale of Business is Included in Sale Price
I [ ] Other Unusual Factor Affecting Sale Price (Specify Below)
J [X] None

ASSESSMENT INFORMATION - Data should reflect the latest Final Assessment Roll and Tax Bill

16. Year of Assessment Roll from which information may apply: 06
17. Total Assessed Value (of all parcels in transfer): 106600
18. Property Class: 220
19. School District Name: Clarkstown
20. Tax Map Identifier(s) / Roll Identifier(s) (If more than four, attach sheet with additional identifiers):
Section 52.11, Block 2, Lot 50

CERTIFICATION

I certify that all of the items of information entered on this form are true and correct to the best of my knowledge and belief and I understand that the making of any willful false statement of material fact herein will subject me to the penalties of law relative to the making and filing of false instruments.

BUYER
Cindy Tabacco
Cindy Tabacco
Kerry Enco 6/22/07
Kerry Enco
2 Von Beaste Lane
Congers NY 10920

BUYER'S ATTORNEY
Linker Mark B.
845 638-0800

SELLER
Peter A. Calabrese, Jr. 6/22/07
Peter A. Calabrese, Jr.

NEW YORK STATE COPY

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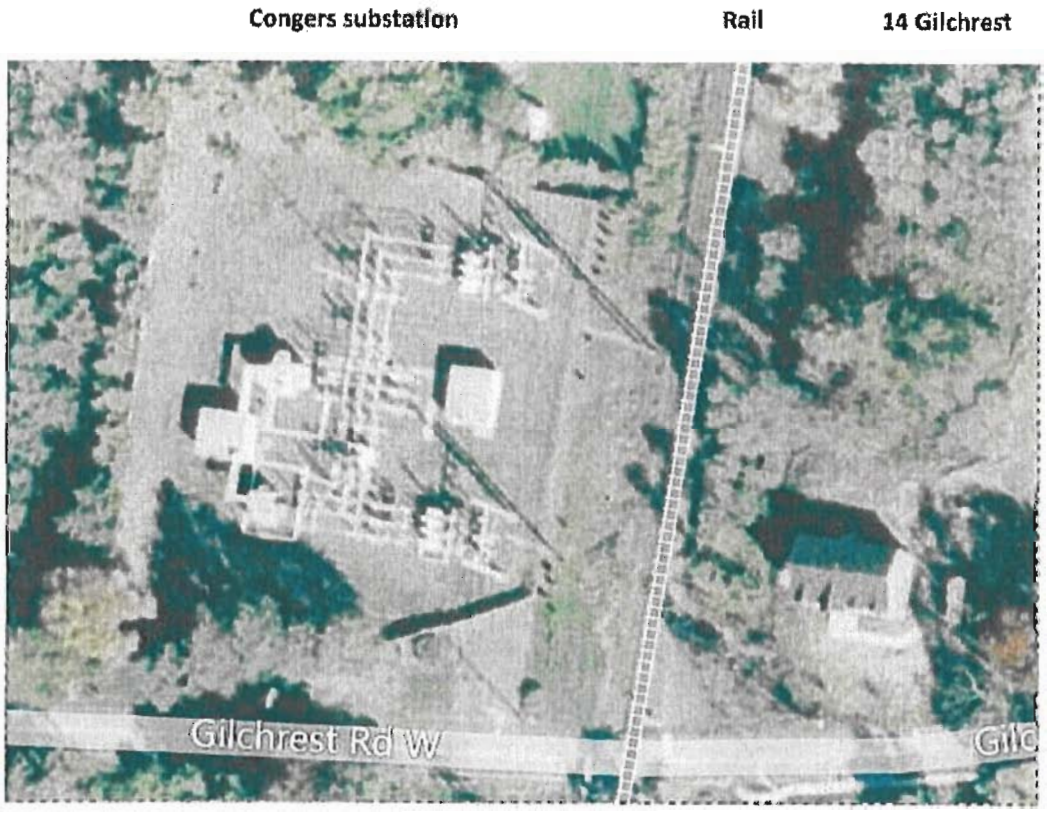
3. Photograph of 14 Gilchrest showing the proximity of the house to the railroad tracks and the substation



4. **Map – Showing the distance of 4 Hoover to substation improvements**

Distance from 4 Hoover to Substation
Base Map

Map Source: Rockland County Department of Planning.

5. Appraisal Journal Fall 2007 Article

Power Lines and Property Values Revisited

by Jennifer M. Pitts and Thomas O. Jackson, PhD, MAI

This edition of "Environment and the Appraiser" revisits an issue that has been extensively studied but has recently received little attention. While issues concerning the health effects of electromagnetic fields are beyond the scope of this column, the effects of power lines and perceptions of health risks that can influence residential property values in some situations are summarized here.

There are a number of intervening factors that make generalizations about such influences difficult. Below is a summary of research findings from past studies as well as some recent research, consisting of market interviews focused on residential developments in the central California area. As will be discussed, impacts are varied as are market perceptions. The referenced literature is available from the Appraisal Institute's Y. T. and Louise Lee Lum Library.

Research

Over the years, the impact of high-voltage transmission lines (HVTL) on the value of residential property has been studied extensively. These impacts are not easily measurable. Research shows that the effects of HVTL on residential properties are varied and are determined by five interplaying factors: proximity to towers and lines; the view of towers and lines; the type and size of HVTL structures; the appearance of easement landscaping; and surrounding topography. Many studies indicate that the HVTL have no significant effect on residential property values.[1] More recently, however, an increasing number of studies do show a small diminution in value attributable to the close proximity of these lines.

When negative impacts are evident, studies report an average discount of between 1% and 10% of property value.[2] This diminution in value is attributable to the visual unattractiveness of the lines, potential health hazards, disturbing sounds, and safety concerns.[3] These impacts diminish as distance from the line increases and disappear at a distance of 200 feet from the lines. Where views of the lines and towers are completely unobstructed, negative impacts can extend up to a quarter of a mile. If the HVTL structures are at least partially screened from view by trees, landscaping, or topography, any negative effects are reduced considerably. Value diminution attributable to tower line proximity is temporary and usually decreases over time, disappearing entirely in 4 to 10 years.[4]

Research also has found that the negative impacts on lots adjacent to or with a direct view of a tower or pylon may be slightly greater than impacts on lots further from the tower. This is most likely

1. J. R. Cowger, Steven C. Bottemiller, and James M. Cahill, "Transmission Line Impact on Residential Property Values, A Study of Three Pacific Northwest Metropolitan Areas," *Right of Way* (Sept/Oct 1996): 13–17; William N. Kinnard, "Tower Lines and Residential Property Values," *The Appraisal Journal* (April 1967): 269–284; Hsiang-te Kung and Charles F. Goegle, "Impact of Power Transmission Lines on Property Values: A Case Study," *The Appraisal Journal* (July 1992): 413–418; and Marvin L. Wolverton and Steven C. Bottemiller, "Further Analysis of Transmission Line Impact on Residential Property Values," *The Appraisal Journal* (July 2003): 244–252.
2. Peter F. Colwell and Kenneth W. Foley, "Electric Transmission Lines and the Selling Price of Residential Property," *The Appraisal Journal* (October 1979): 490–499; Charles J. Delaney and Douglas Timmons, "High Voltage Power Lines: Do They Affect Residential Property Value?" *Journal of Real Estate Research* 7, no. 3 (1992): 315–329; William N. Kinnard and Sue Ann Dickey, "A Primer on Proximity Impact Research: Residential Property Values Near High Voltage Transmission Lines," *Real Estate Issues* (April 1995): 23–29; and William N. Kinnard and Sue Ann Dickey, *High Voltage Transmission Lines and Residential Property Values: New Findings About Unobstructed Views and Tower Construction* (Real Estate Counseling Group of Connecticut, Inc., 2000).
3. Delaney and Timmons
4. Kinnard and Dickey, "A Primer on Proximity Impact Research."

because the visual obstruction from a tower is more substantial than that from the lines themselves. The value diminution on lots adjacent to or with direct views on a tower may not decrease with time.[5]

A slower absorption rate and extended marketing period for residential properties adjacent to a tower line right-of-way are observed in some studies. However, when the nearby lots are attractively developed, the lots abutting a right-of-way will sell more quickly.[6] It has also been found that higher-end custom homes are generally more sensitive to the negative impacts of HVTL than lower-end homes.[7]

While most research indicates that HVTL have no significant impact or a slight negative impact on residential properties, some studies have shown that lots adjacent to or with views of an HVTL right-of-way actually sell for a premium over more distant lots. This premium is most likely due to improved visual clearance, increased privacy, and larger lot sizes.[8]

Recent Market Interviews

While academic and professional literature provide a broad background of findings on the price effects of HVTL, brokers and appraisers can provide additional perspective into current market conditions. In early 2007, interviews were conducted of local realtors and appraisers in several central California communities: Discovery Bay near Brentwood, Summer Lake near Oakley, and Sierra View in Roseville. HVTL right-of-ways run through or near these residential developments. Each realtor or appraiser was asked a series of questions about their background, market knowledge, and opinions on the effects of these high-voltage power lines.[9]

Approximately half of the realtors and appraisers interviewed said they had not observed negative impacts on either residential sale prices or days on market due to the presence of the power lines. According to these realtors and appraisers, major factors affecting sale price and marketability of residential properties include: location, the general economy, interest rates, inventory, and neighborhood amenities. A local appraiser in Discovery Bay commented that the presence of power lines "has not deterred residential development in Discovery Bay and surrounding areas." A realtor in Oakley agreed, stating that "buyers are building and selling homes near power lines in many areas of California, and the power lines don't seem to deter buyers."

The remaining realtors and appraisers interviewed had observed negative impacts on homes directly adjacent to a power line right-of-way. They said that on average, the indicated price discounts ranged between 2% and 7% for adjacent homes. For homes not directly adjacent but with a view of the power lines, average price impacts were estimated between 0% and 5%, depending on the view and proximity to the lines. On average, homes adjacent to or with a view of the lines could anticipate an increase of 0 to 60 days on the market. None of the realtors or appraisers interviewed had observed any negative impacts on residential properties in close proximity to the lines, but without a direct view.

Many realtors and appraisers indicated that price and marketability effects of HVTL depend on the market conditions at the time of sale. The presence of power lines can be viewed as a negative externality. *Externalities*, as defined in the Appraisal Institute's *The Appraisal of Real Estate*, 12th edition, are "the use or physical attributes of properties located near the subject property, or the economic conditions that affect the market in which the subject property competes."[10]

According to a broker active in Discovery Bay, "the negative effects from the power line (and from other negative externalities) are evident in a slow market. When demand is strong, these effects diminish. The price effects depend on property characteristics and market conditions." Another realtor in Roseville agreed, stating, "In a slow market, homes adjacent to a power line are harder to sell. These homes are great investment opportunities in a slow market, because any price effects diminish and may disappear when the market picks up."

5. Peter F. Colwell, "Power Lines and Land Value," *Journal of Real Estate Research* 5, no. 1 (1990): 117–127.
6. Louis Reese, "The Puzzle of the Power Line," *The Appraisal Journal* (October 1967): 565–580.
7. Francois Des Rosiers, "Power Lines, Visual Encumbrance and Home Values: A Microspatial Approach to Impact Measurement," *Journal of Real Estate Research* vol. 23, no. 3 (2002).
8. Delaney and Timmons; and Des Rosiers.
9. Interviews conducted by Real Property Analytics, Inc., January 2007. For methodology, see Thomas O. Jackson, "Surveys, Market Interviews, and Environmental Stigma," *The Appraisal Journal* (Fall 2004): 300–310.
10. Appraisal Institute, *The Appraisal of Real Estate*, 12th ed. (Chicago: Appraisal Institute, 2001), 42.

The impact of the power lines on residential property values may also be influenced by a buyer's personal preference. Several realtors and appraisers indicated that there might not be a market consensus on the impacts of power lines because some buyers may consider these power lines a nuisance and an eyesore, while other buyers do not. A broker in Discovery Bay stated, "personal preference may cause some buyers to locate further from the power lines, but the lines have caused no observable negative impacts for the market in general." Another Discovery Bay realtor stated, "external factors such as power lines have less of an effect on lower-end homes than on luxury properties."

Conclusion

Both the market interviews and academic literature show that the impacts of power lines on residential properties are varied and difficult to measure. The impacts from the power lines, as well as other negative externalities, depend on many factors, including market condition, location, and personal preference.

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6. Appraisal Journal 2009 Article

High-Voltage Transmission Lines: Proximity, Visibility, and Encumbrance Effects

by James A. Chalmers, PhD, and Frank A. Voorvaart, PhD

In this study, over 1,200 home sales in 1998–2007 are aggregated into four study areas with a 345-kV transmission line. Field data are collected on the sale properties relative to proximity to and visibility of transmission line towers, and the extent of encumbrance by a transmission line easement. A multiple regression model is used to test whether the sale prices are affected by line proximity, tower visibility, or property encumbrance. In both continuous distance and distance zone models, the proximity and visibility variables typically fail to be statistically significant. The only variable that appears to have any systematic effect is the encumbrance variable; however, its magnitude is generally small.

There will be a significant expansion of the 345-kV transmission grid in New England over the next decade; this has raised issues on the potential effects of transmission lines on the value of nearby properties.[1] As will be reviewed briefly, the professional literature on the impact of high-voltage transmission lines (HVTLs) on residential real estate values is extensive. While the literature creates a relevant foundation for addressing the potential effects of new 345-kV transmission lines on property values, the current research is designed to investigate three outstanding issues.

First, most of the literature is somewhat dated. Of the most important studies (those that examined large numbers of sales using statistical procedures), only one study analyzes data from a period subsequent to 2000.[2] Since attitudes, behaviors, and their reflection in the market can change over time, it is important to have contemporary evidence on the question of possible property value effects.

Second, the construction that motivates this study is specific to 345-kV lines (which are mostly on 150-foot steel poles), while the historical research has no such focus and only occasionally has dealt with this corridor configuration.

Third, a careful analysis has to look at the interaction of three interrelated variables—proximity, visibility, and the extent to which an adjoining property is actually encumbered by the transmission line right-of-way easement. Since proximity and encumbrance are highly correlated, the effects of one could be

1. This research was carried out under contract to Northeast Utilities over the period April 2008–October 2008. High-voltage transmission lines carry currents of 138 kilovolts (kV) up to 765 kV; see Energy Information Administration, "The U.S. Electric Power Industry Infrastructure: Functions and Components," in *The Changing Structure of the Electric Power Industry 2000: An Update* (Washington, DC: U.S. Department of Energy, 2000), available at http://www.eia.doe.gov/cneaf/electricity/chg_str_update/chapter3.html.
2. These studies will be referenced and summarized in the next section.

attributed to the other if both are not adequately accounted for. Similarly, the effects of visibility and proximity must be considered in tandem if the effect of each is to be properly measured.

In the course of this research, three additional questions were investigated: (1) are higher-valued properties more vulnerable to HVTL effects than lower-valued properties? (2) are properties in general more vulnerable to HVTL effects in a down housing market? and (3) since much of the proposed expansion of the grid will take place in existing utility corridors, how can the incremental effect of these expansions be measured?

Summary of the Literature

Methodology

Reliable evidence of the effect of HVTLs on the value of adjacent or nearby residential property must rely on actual, arm's-length sales of property that lie in close proximity to an existing line. These sales are then compared to other selected transactions involving properties located outside of the potential area of influence.[3] The three most common approaches for performing this comparison are paired data analysis, retrospective appraisal, and multiple regression analysis.

Paired Data Analysis. The paired data approach attempts to match the characteristics of a subject property sold within a claimed area of impact (the subject area) with individual sales of similar properties sold outside the claimed area of impact (the control area). The issues here center on the availability of sales and the ability to identify sales that can be considered a match to the subject property.[4]

Retrospective Appraisal Based on Control Properties. The retrospective appraisal approach recognizes that a perfect match is unlikely and relies on standard residential appraisal sales comparison methodology. A subject property is selected that has been sold, and it is then appraised retrospectively, i.e., at the date of its historical sale. The appraised value based on control area comparables can then be compared to the actual sale price to see if the HVTL had any effect on the sale price of the subject property. This is obviously an improvement over the paired data analysis, but still suffers from the fact that, as discussed later, the effects under investigation are likely to be small, and may well be within the error range of standard appraisal methodology.

Multiple Regression Analysis of Large Numbers of Subject and Control Area Sales. The third approach, multiple regression analysis, uses statistical tools to try to isolate the effects of the HVTL from all of the other determinants of value. This is only possible with a relatively large number of subject area and control area sales. If the sales, property, and neighborhood data exist to carry out this approach, it is ideally suited to identifying the independent effect of the transmission line, holding the other value-determining factors constant.[5] In addition, it is the least subjective of the three potential approaches and is the only approach to give explicit measures of reliability, which helps the user determine what weight to give the results.

Conclusions from the Literature

While the literature on the effect of HVTLs on property values is extensive, it is of uneven quality, ranging from anecdotal reports to large, rigorously conducted statistical studies. Several hundred articles were reviewed as part of the current study, and thirty-eight had direct relevance to either the methodological or empirical questions at issue here. These are referenced in footnotes or in the Additional Reading section at the end of this article.

Over the past twenty-five years, the literature has increasingly recognized multiple regression analysis as the most reliable technique to investigate whether HVTLs impact property values and, if so, to quantify the effect. As mentioned, multiple regression has the significant advantage of not relying on the subjective judgment of the appraiser. Rather, it represents an objective reflection of the data together with measures of reliability that attach to the results. A large number of studies have been undertaken since the 1980s using large databases and statistical

3. Analysis of trends, days on market, or turnover rates can be suggestive of the existence of effects, but are not useful in quantifying the magnitude of the effect. Surveys of market participants can also be instructive as to how these effects are perceived, but are no substitute for analysis of how these effects actually manifest themselves in the market.

4. The problem with this approach is evident by a review of residential appraisals: despite best efforts to find comparables, it is very rare to see a comparison sale to which no adjustments are made.

5. For a general discussion of the methodological issues associated with multiple regression, see Thomas O. Jackson, "Evaluating Environmental Stigma with Multiple Regression Analysis," *The Appraisal Journal* (Fall 2005): 363–369.

tools to investigate the effect of transmission lines on property values. Sixteen of these studies form the core of the professional literature and are widely quoted and cross-referenced one to the other.[6] The results of these studies can be generally summarized as follows:

- Over time, there is a consistent pattern with about half of the studies finding negative property value effects and half finding none.
- When effects have been found, they tend to be small; almost always less than 10% and usually in the range of 5%–6%.
- Where effects are found, they decay rapidly as distance to the lines increases and usually disappear at about 200 feet to 300 feet (61 meters to 91 meters).
- Two studies investigating the behavior of the effect over time find that, where there are effects, they tended to dissipate over time.
- There does not appear to have been any change in the reaction of markets to high-voltage transmission line proximity after the results of two widely publicized Swedish health-effects studies were preliminarily released in 1992.[7]

These general conclusions have characterized the appraisal and economic literature throughout the last twenty-five years, and there do not appear to be any new or different trends in the research. It is during this period that most of the medical studies on electromagnetic field (EMF) exposure were published, including the oft-referenced Swedish studies. One of the questions, therefore, is the apparent inconsistency between these statistical results and the intensity of opposition that new transmission line corridors generate. How can it be that if people are so intensely adverse to HVTLs, we do not see more of a market effect? This inconsistency is seen clearly when residents along existing HVTLs are interviewed.

The basic thrust of survey questioning is whether home purchasers were aware of the transmission lines prior to their purchases and, if so, whether their purchase decisions or the prices they paid were affected by the lines.[8] Like the statistical analyses of sales, the results of these survey studies are quite consistent with one another. Their findings can be summarized as follows:

- A high proportion of the residents were aware of the lines at the time of purchase.

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6. The sixteen referenced articles are the following: Judith Callanan and R.V. Hargreaves, "The Effect of Transmission Lines on Property Values: A Statistical Analysis," *New Zealand Valuers Journal* (June 1995): 35–38; Peter F. Colwell, "Power Lines and Land Values," *Journal of Real Estate Research* 5, no. 1 (Spring 1990): 117–127; Peter F. Colwell and Kenneth W. Foley, "Electric Transmission Lines and the Selling Price of Residential Property," *The Appraisal Journal* (October 1979): 490–499; J. R. Cowger, Steven C. Bottemiller, and James M. Cahill, "Transmission Line Impact on Residential Property Values: A Study of Three Pacific Northwest Metropolitan Areas," *Right of Way* (September/October 1996): 13–17; François Des Rosiers, "Power Lines, Visual Encumbrance and House Values: A Microspatial Approach to Impact Measurement," *Journal of Real Estate Research* 23, no. 3 (2002): 275–301; Murtaza Haider, "Influence of Power Lines on Freehold Property Values in the Greater Toronto Area" (Series in Spatial Econometrics, University of Toronto, January 2000); S. W. Hamilton and Cameron Carruthers, "The Effects of Transmission Lines on Property Values in Residential Areas" (University of British Columbia, Vancouver, April 1993); Stanley W. Hamilton and Gregory M. Schwann, "Do High Voltage Electric Transmission Lines Affect Property Value?" *Land Economics* 71, no. 4 (November 1995): 436–444; Patrice C. Ignelzi and Thomas Priestley, *A Statistical Analysis of Transmission Line Impacts on Residential Property Values in Six Neighborhoods* (Southern California Edison Environmental Affairs Division, 1991); William N. Kinnard, Jr., Mary Beth Geckler, and Jake W. DeLottie, *Post-1992 Evidence of EMF Impacts on Nearby Residential Property Values (Nevada)* (Storrs, CT: Real Estate Counseling Group of Connecticut, Inc., April 1997); William N. Kinnard, Jr., Mary Beth Geckler, and Jake W. DeLottie, *Post-1992 Evidence of EMF Impacts on Nearby Residential Property Values (Missouri)* (Storrs, CT: Real Estate Counseling Group of Connecticut, Inc., April 1997); William N. Kinnard, Jr., Phillip S. Mitchell, and James R. Webb, "The Impact of High-Voltage Overhead Transmission Lines on the Value of Real Property" (paper presented at Fifth Annual American Real Estate Society Conference, Arlington, VA, April 1989); William N. Kinnard, Jr., Mary Beth Geckler, and Phillip S. Mitchell, *Effects of Proximity to High-Voltage Electric Transmission Lines on Sales Prices and Market Values of Vacant Land and Single-Family Residential Property: January 1978–June 1988* (Storrs, CT: Real Estate Counseling Group of Connecticut, Inc., 1988); William N. Kinnard, Jr., Mary Beth Geckler, and Phillip S. Mitchell, *An Analysis of the Impact of High Voltage Electric Transmission Lines on Residential Property Values in Orange County, New York* (Storrs, CT: Real Estate Counseling Group of Connecticut, Inc., 1984); Phillip S. Mitchell and William N. Kinnard, Jr., "Statistical Analysis of High-Voltage Overhead Transmission Line Construction on the Value of Vacant Land," *Valuation* (June 1995): 23–29; and Marvin L. Wolverton and Steven C. Bottemiller, "Further Analysis of Transmission Line Impact on Residential Property Values," *The Appraisal Journal* (July 2003): 244–252.

7. The two studies are Maria Feychting and Anders Ahlbom, "Magnetic Fields and Cancer in Children Residing Near Swedish High-Voltage Power Lines," *American Journal of Epidemiology* 138, no. 9 (1993): 467–481; and Birgitta Roderus et al., "Occupational Exposure to Electromagnetic Fields in Relation to Leukemia and Brain Tumors: A Case-Control Study in Sweden," *Cancer Causes Control* 4 (1993): 465–476. The results of these two studies were released preliminarily in 1992 by Susan Kolare, "Power Lines Increase Cancer Risk for Children," *Forskning & Praktik* (Solna, Sweden: National Institute of Occupational Health) (July 1992): 367–368; and Lars Gronkvist, "Cancers Related to Strong Electromagnetic Fields," *Forskning & Praktik* (Solna, Sweden: National Institute of Occupational Health) (July 1992): 383–385.

8. Five studies are prominent in the literature: William N. Kinnard, Jr., "Power Lines and Residential Property Values," *The Appraisal Journal* (April 1967): 259–264; Thomas Priestley and Gary Evans, *Perceptions of a Transmission Line in a Residential Neighborhood: Results of a Case Study in Valejo, California*, Southern California Edison Environmental Affairs Division, December 1990; Helengte Kung and Charles F. Seagle, "Impact of Power Transmission Lines on Property Values: A Case Study," *The Appraisal Journal* (July 1992): 413–418; Sandy G. Bond, "The Impact of Transmission Lines on Property Values" (paper presented at Twelfth Annual American Real Estate Society Conference, South Lake Tahoe, CA, March 1996); and Cheryl Mitteness and Steve Mooney, "Power Line Perceptions: Their Impact on Value and Market Time" (College of Business, St. Cloud State University, 1998).

- Between one-half and three-fourths of the respondents have negative feelings about the lines.
- The negative feelings center on fear of health effects, aesthetics, and property-value effects.
- Of those who have negative feelings about the lines, the vast majority (67%–80%) report that the purchase decision and the price they offered to pay were not affected by the lines.

In summary, the relatively small effects on property value attributed to HVTL proximity in the literature does not mean that the direction of the effect of transmission lines on property values is not negative. The general interpretation is that, even though transmission line issues have been a prominent concern in most of the communities studied, and even though the direction of effect on real estate value is generally negative, the presence of transmission lines is apparently not given sufficient weight by buyers and sellers of real estate to have had any consistent, material effect on property values.

Connecticut and Massachusetts 2008 Case Study

Study Area Selection

Given the anticipated expansion of the 345-kV transmission grid in New England over the next decade, this study focused on Connecticut and Massachusetts. The objective was to find both rural residential and suburban residential developments along existing 345-kV corridors where the effects of the lines could be studied. The study called for at least 10 years of sales data (1998–2007). The criteria for study area selection were (1) the existing transmission corridor had to contain a 345-kV line, preferably on 150-foot steel poles; (2) the line had to have been built by 1997; and (3) the development patterns along the corridor had to produce a sufficient number of sales to make statistical analysis feasible.

Based upon a combination of field inspection, review of aerial photography, and review of maps of the existing electric transmission grid, nine areas were selected for the study.[9] Table 1 describes the location, configuration of transmission lines, and number of records for each area for the 10-year period analyzed in this study; maps of the specific locations are shown in the Appendix 1.

Database Development

Once the study areas had been selected, local appraisers were retained to assist in the data collection process.[10] A download from the Warren Group identified all sales within a set of street addresses that had been developed to describe an area that approximated 2,000 feet on either side of the transmission line corridor. Using this information, appraisers collected the assessors' record and the multiple listing service (MLS) "sold record" for each of the transactions in the data set. A sales database containing the information shown in Table 2 was then populated for each sale transaction.

Next, the sales database record for each property was returned to the appraisers together with a hard copy of the assessors' record and the MLS sheet. The appraisers were then asked to visit each property and record its location coordinates with a GPS device at the street curb opposite the front door. When obtaining the location information, they were also asked to verify the data entry to the sales database and to opine as to whether, in their judgment, the sale appeared to be an arm's-length transaction.

Next, the appraisers recorded the extent to which the transmission line structures were visible from the property.[11] For each property, the appraisers were given an aerial photograph that showed and labeled all structures in the vicinity of the property. Since the field observations were taken in July and August, it was important for the appraisers to know where structures might potentially be seen. Standing at the street curb, they made three observations and took photos of each; one from the right edge of the property, one from the left edge of the property, and one from the point on the street curb opposite the front door. These views were then coded for up to three of the most visible structures (or structure combinations) from each of the three locations.[12] Visibility was rated as follows:

- Highly Visible—At least one arm holding a conductor is fully visible and not obscured by trees or foliage.

9. When this research began, the number of sales that occurred in each area over the 10-year period was unknown. It was anticipated that some of the areas could be aggregated in the final analysis.

10. Race Appraisal Services, LLC, was retained for the four Massachusetts study areas, Giles & Ierram, Inc., for the three western Connecticut areas, and Archambault & Murray Appraisal Group for the two north-central Connecticut areas.

11. Structures would include steel poles, steel lattice towers, and wood H-frame towers.

12. In instances where a 345-kV structure was collocated with a 115 kV line or another 345 kV line, visibility ratings to both structures were recorded.

Table 1 Study Area Locations and Transmission Line Configurations

Area	Location	Transmission Line Configuration	Total Records Considered
Study Area 1			
Subarea 1.1 (South-Central MA)	Located in Ludlow, Hampton County, MA, approx. 5 miles east of I-291 and bordered by I-90 to the north.	345-kV line supported by steel poles and 115-kV line supported by H-frame structures.	71
Subarea 1.2 (South-Central MA)	Located on the CT and MA border in East Longmeadow, Hampton County, MA, approx. 7 miles east of I-91.	345-kV line supported by steel poles and 115-kV line supported by H-frame structures.	35
Subarea 1.3 (North-Central CT)	Located in Bloomfield, Hartford County, CT, approx. 3.5 miles west of I-95 and east of CT 189.	345-kV line supported by steel poles and 115-kV line supported by H-frame structures.	80
Subarea 1.4 (North-Central CT)	Located in Windsor and Bloomfield, Hartford County, CT, immediately west of I-91 and north of CT 218.	345-kV line supported by steel poles and 115-kV line supported by H-frame structures.	445
Study Area 2			
Subarea 2.1 (West CT)	Located in New Milford, Litchfield County, CT, approx. 13 miles north of I-84 along Route 202.	345-kV line supported by H-frame structures and 115-kV line supported by H-frame structures.	77
Subarea 2.2 (West CT)	Located in New Milford, Litchfield County, CT, approx. 10 miles north of I-84 along Route 202.	345-kV line supported by steel poles.	85
Subarea 2.3 (West CT)	Located in Brookfield, Litchfield County, MA, approx. 5 miles north of I-84 along Route 202.	345-kV line supported by steel poles.	237
Study Area 3 (East MA)	Located in Stoughton, Norfolk County approx. 4 miles south of I-93 and east of State Hwy 138.	Two 345-kV lines supported by steel lattice towers.	206
Study Area 4 (East MA)	Located in Randolph, Norfolk County approx. 4 miles south of I-93 and east of State Hwy 24.	Two 345-kV lines supported by steel lattice towers.	418
All Areas			**1,654**

- Somewhat Visible–Some portion of the structure is visible independent of trees or foliage, but not a full arm holding a conductor.
- Barely Visible–The entire structure is mostly obscured by trees or foliage, but can be recognized, especially in winter.

Given that the appraisers knew where to look, the ratings reflect the distinction between Barely Visible and not visible as they would be recorded in the winter. That is not an issue with the first two categories as the structure elements are visible independent of trees or foliage. A larger issue is that visibility is being measured as of the summer of 2008 and not as of the date of the sale transaction. Thus, visibility of the structures is being underestimated, especially for sales early in the study period.[13] Another issue is the visibility of the conductors them-

13. Perhaps a forestry PhD candidate could develop a height and density foliage model that could be used to make visibility adjustments over time.

Table 2 Sale and Property Characteristic Data

Variable	Description
Sale Price	Transaction sale price
Liveable Area	Liveable area in square feet
Lot Size	Lot size in acres
A/C	Value of 1 if property has central A/C; zero otherwise
Age (at the time of sale)	Age of property at time of transaction (sale year minus year built)
Total Bathrooms	Sum of full, half, and three-fourths baths (full = 1; half = 0.5; three-fourths = 0.75)
Basement Area	Basement area in square feet
Deck-Small	Value of 1 if the property's deck size is less than or equal to the median deck size of the area; zero otherwise
Deck-Large	Value of 1 if the property's deck size is greater than the median deck size of the area; zero otherwise
Garage-Small	Value of 1 if the property's garage size is less than or equal to the median garage size of the area; zero otherwise
Garage-Large	Value of 1 if the property's garage size is greater than the median garage size of the area; zero otherwise
Patio-Small	Value of 1 if the property's patio size is less than or equal to the median patio size of the area; zero otherwise
Patio-Large	Value of 1 if the property's patio size is greater than the median patio size of the area; zero otherwise
Porch-Small	Value of 1 if the property's porch size is less than or equal to the median porch size of the area; zero otherwise
Porch-Large	Value of 1 if the property's porch size is greater than the median porch size of the area; zero otherwise
Sale Year 1999	Value of 1 if transaction occurred in 1999; zero otherwise
Sale Year 2000	Value of 1 if transaction occurred in 2000; zero otherwise
Sale Year 2001	Value of 1 if transaction occurred in 2001; zero otherwise
Sale Year 2002	Value of 1 if transaction occurred in 2002; zero otherwise
Sale Year 2003	Value of 1 if transaction occurred in 2003; zero otherwise
Sale Year 2004	Value of 1 if transaction occurred in 2004; zero otherwise
Sale Year 2005	Value of 1 if transaction occurred in 2005; zero otherwise
Sale Year 2006	Value of 1 if transaction occurred in 2006; zero otherwise
Sale Year 2007	Value of 1 if transaction occurred in 2007; zero otherwise
Subarea 1.1	Value of 1 if property is located in Subarea 1.1; zero otherwise
Subarea 1.2	Value of 1 if property is located in Subarea 1.2; zero otherwise
Subarea 1.3	Value of 1 if property is located in Subarea 1.3; zero otherwise
Subarea 2.1	Value of 1 if property is located in Subarea 2.1; zero otherwise
Subarea 2.2	Value of 1 if property is located in Subarea 2.2; zero otherwise

selves. It was observed that conductors were seldom noticeable without a structure or structures being visible and that structure visibility was the defining characteristic of the visibility of the conductor/structure combination.

The final field task carried out by the appraisers was to review assessor maps for all properties adjacent to the transmission line corridor to determine if each property was encumbered with an easement associated with the HVTL. If so, the size of the encumbrance was estimated from assessor maps.

Once the field data had been collected, the final step was to construct the proximity and visibility variables to be used in the analysis. Since the location coordinates of all the structures were known, the distance could be calculated from the street curb opposite the front door of each property to any structure coded as visible by the appraisers. The perpendicular distance was also calculated, from the street curb opposite the front door to the centerline of the transmission line corridor. Using all the collected information, six variables were constructed designed to test for proximity, visibility, and encumbrance effects: Continuous Distance; Zone 0–75 Meters; Zone 75'–150 Meters; Number of Structures Visible; Weighted Number of Structures Visible; and Encumbrance. Table 3 describes these six variables.

Aggregation of the Data

Based on the data on geographic proximity, sale prices, and sale prices per square foot, the nine initial areas were aggregated to four large study areas. Study Area 1 (A1) is an aggregated area consisting of the two South-Central Massachusetts areas (Subareas 1.1 and 1.2) and the two North-Central Connecticut areas (Subareas 1.3 and 1.4). Study Area 2 (A2) is an aggregated area consisting of the three West Connecticut areas (Subareas 2.1, 2.2, and 2.3). The two East Massachusetts areas continue to be treated independently as Study Area 3 (A3) and Study Area 4 (A4), respectively, due to the significant difference in their sale price per square foot and the practical consideration that both have large enough numbers of sales to support independent analysis.

The total number of sale transactions considered for each of the four areas is shown in Table 4. Of the initial 1,654 records, 308 records were discarded because they did not meet the arm's-length criterion in the opinion of the appraisers (or the sale transactions could not be confirmed). The two most common reasons given were (1) an institution was identified as one of the parties to the sale, or (2) only a single party was indentified in the transaction. There were also sales in which the buying and selling parties had the same last names or cases where the reported consideration was zero. For 38 transactions, the appraisers were not able to complete all required data fields for the analysis, the transaction appeared to be a duplicate transaction, or the transaction was otherwise sufficiently unrepresentative of the general study area as to be discarded.[14]

Finally, a relatively small number (22) of additional sales were eliminated to improve the fit of the regression model. A base model was estimated for each area and observations with residuals of more than ± 2.5 standard deviations were excluded from subsequent regression runs. Overall, this filter improved the fit of the regression models by several percentage points, but only eliminated 1.7% of the usable transactions. The residual filter did not impact the sign of the estimated coefficients, but generally improved the significance of the studied variables, i.e., if an estimated coefficient was negative and borderline significant before applying the residual filter, it

Table 3 HVTL Variables

Variable	Description
Continuous Distance	Shortest distance from the street curb opposite the front door of the property to the centerline of the transmission line
Zone 0–75 Meters	Value of 1 if the property is less than or equal to 75 meters away from the centerline of the transmission line; zero otherwise
Zone 75'–150 Meters	Value of 1 if the property is greater than 75 or less than or equal to 150 meters away from the centerline of the transmission line; zero otherwise
Number of Structures Visible	Number of unique structures visible from the property
Weighted Number of Structures Visible	Sum of the numeric value of the rating assigned to each tower visible from the property: Highly Visible = 4, Somewhat Visible = 2, Barely Visible = 1
Encumbrance	Square feet encumbered by the easement

Table 4 Number of Records Considered

	Study Area				
	A1	A2	A3	A4	Total
Total Records Considered	631	399	206	418	1,654
Less Non-Arm's-Length Transactions	142	37	48	81	308
Less Incomplete, Duplicate, or Otherwise Not Usable Transactions	8	12	1	17	38
Less Outliers Filtered by Residual Filter	6	6	4	6	22
Transactions Used in Regression Models	475	344	153	314	1,286

14. Nine transactions were excluded that were not representative of the general study areas. For example, we excluded a transaction with a sale price of $800,000 in a neighborhood with average home values of $192,611, a property (which sold twice during our study time period) that contained a 130 acre lake, and a property that appeared to be a lot sale only.

stayed negative, but typically became more significant after applying the residual filter. Appendix 2 contains descriptive statistics of the four Study Areas.

The Base Model

Before working with the transmission line–related variables, a base model was estimated for each of the four study areas; the results are shown in Table 5. Various functional formats were explored during the model specification stage. Based upon guidance provided in the published literature and an evaluation of alternative specifications, the natural log of the sale price was used as the dependent variable. Three of the independent variables (*Liveable Area*, *Lot Size*, and *Basement Area*) were also entered as natural logs to allow for a nonlinear response of the sale price to increases in size.

Data for the total number of bedrooms was available, but it was not included in the model because it did not add statistical explanatory power after liveable area and number of bathrooms were accounted for. Data on square feet of finished basement was available for most sales, but it also did not add any explanatory power once total basement size was in the model, so it was dropped as well.[15] For deck, garage, and porch square footage, the dummy variables of small and large were used, depending on whether the feature was above or below the median size.[16] A regional home price deflator was not used to adjust sale prices, since there were plenty of observations and the annual dummy variable for year of sale (1998 is the excluded year) seemed more reliable. Finally, dummy variables were included for the subareas that were aggregated to form Study Area 1 (A1) and Study Area 2 (A2).[17]

Overall, the base models have very good explanatory power; the independent variables are generally statistically significant with the anticipated sign and are of reasonable magnitudes.[18] Table 6 provides a sample interpretation of the regression coefficients for A2.[19]

Testing for the Effects of Proximity, Visibility, and Encumbrance

Table 7 shows the frequency distribution and the summary statistics of the key transmission line–related variables in the sales database. As expected, encumbered properties are slightly larger than the unencumbered properties.

Out of the 1,286 sales, over 100 properties are within 75 meters of an existing 345-kV transmission line, 78 properties are encumbered with an easement associated with the transmission line, and 527 are of properties from which one or more transmission line structures can be seen.

Tables 8 and 9 summarize the results when the transmission line variables are added to the base model for each of the four study areas. There are two basic approaches to testing for proximity effects: (1) distance as a categorical variable representing distance zones, and (2) distance measured as a continuous variable. Both approaches are investigated, with distance zones shown in Table 8 and continuous distance shown in Table 9. The tables are structured so that distance is examined first by itself (Model 1), the encumbrance variable is then added (Model 2), and then two visibility variables are considered—the number of structures visible (Model 3) and the number of structures visible weighted by the degree of visibility (Model 4).[20]

Proximity. Tables 8 and 9 are striking in that there is no systematic effect of proximity to the transmission

15. Care must be exercised here not to misinterpret the effect of the variables in the base model. Because many of the variables are highly correlated (e.g., liveable area, number of bathrooms, number of bedrooms), the regression may not be able to sort out the independent effect of each. The coefficients on the included variables must, therefore, be interpreted as the joint effect of the included variables and any excluded, highly correlated variable(s).

16. Since for a significant number of transactions, the properties did not have a garage, deck, and/or porch, those variables exhibit a skewed distribution with most of the transactions centered around the '0' value (i.e., these variables do not follow a normal distribution). Therefore, to address the non-normal distribution of the variables these variables were entered as categorical variables (dummy variables). For a categorical variable, one category must be left out of the regression, and the coefficients on the included categories measure the effect on sale price relative to the excluded category. For the garage, deck, and porch dummy variables, the excluded groups are properties that do not have a garage, deck, and/or porch.

17. The excluded subarea for Study Area 1 was Subarea 1.4; for Study Area 2, it was Subarea 2.3.

18. Given that the dependent variable is in natural logs, the interpretation of the coefficients on the independent variables is as follows: (1) the coefficient of an untransformed continuous variable (e.g., number of bathrooms) approximates the percentage change in sale price due to a one-unit change in the underlying variable; (2) the coefficient of a dummy variable approximates the percentage change in the sale price if the value of the dummy variable is 1; and (3) the coefficient of a log transformed continuous variable approximates the percentage change in sale price given a 1% change in the log transformed variable.

19. Property characteristics were assumed that approximate the median values for Study Area 2.

20. Without additional research, the weights attached to the three categories of visibility are necessarily subjective. The results shown in the tables are based on a 4:2:1 scheme, i.e., highly visible carries twice the weight of somewhat visible, which has twice the weight of barely visible. Other schemes were tried, but the results were largely unaffected.

Table 5 Base Model Estimation Results

	Study Area			
Variable	**A1**	**A2**	**A3**	**A4**
Constant	9.3295**	9.0552**	9.7858**	9.5877**
	(51.3163)	(41.2176)	(33.2529)	(53.7392)
lnLiveable Area (in sq. ft.)	0.3018**	0.3700**	0.3149**	0.3032**
	(11.9133)	(11.9432)	(7.6257)	(11.8995)
lnLot Size (in acres)	0.0569**	0.0174	0.0523**	0.0389**
	(4.1087)	(0.9404)	(2.2025)	(2.0536)
A/C (yes/no)	−0.0012	0.0505**	0.0433*	0.0211
	(−0.0773)	(2.7320)	(1.7767)	(1.6144)
Age	−0.0039**	−0.0009**	−0.0049**	−0.0017**
	(−9.2045)	(−3.0085)	(−5.1140)	(−6.0633)
Total Bathrooms	0.0681**	0.0397**	0.0180	0.0762**
	(5.9799)	(2.5000)	(0.9160)	(6.5439)
lnBasement Area (in sq. ft.)	0.0139**	0.0313**	0.0126**	0.0159**
	(5.2651)	(4.8848)	(4.0452)	(5.1089)
Deck-Small	0.0160	0.0150	−0.0101	0.0145
	(1.1576)	(0.7761)	(−0.4087)	(1.0105)
Deck-Large	0.0127	0.0248	0.0561**	0.0454**
	(1.0065)	(1.2731)	(2.1352)	(3.0625)
Garage-Small	0.0738**	0.1211**	0.0224	0.0528**
	(4.9800)	(4.1899)	(1.0559)	(3.8013)
Garage-Large	0.1154**	0.1445**	0.0832**	0.0460**
	(7.2675)	(4.7379)	(3.3965)	(2.8108)
Porch-Small	0.0332**	0.0389**	0.0120	0.0163
	(2.6389)	(1.9962)	(0.6302)	(1.1652)
Porch-Large	0.0429**	0.0186	0.0222	0.0236
	(3.2400)	(0.9402)	(1.0357)	(1.5621)
Sale Year 1999	0.0647**	0.0884**	0.0898**	0.1312**
	(2.7723)	(2.2858)	(2.9167)	(5.4847)
Sale Year 2000	0.1355**	0.2296**	0.3423**	0.2746**
	(5.5220)	(5.5944)	(9.3656)	(9.3996)
Sale Year 2001	0.2293**	0.3085**	0.5027**	0.4011**
	(8.8978)	(7.8390)	(14.0765)	(14.7889)
Sale Year 2002	0.2924**	0.4285**	0.5883**	0.5603**
	(12.7420)	(11.4544)	(18.0932)	(23.1608)
Sale Year 2003	0.3676**	0.4953**	0.7308**	0.6712**
	(15.7658)	(14.1213)	(22.1995)	(27.7454)
Sale Year 2004	0.5122**	0.6253**	0.7797**	0.7600**
	(21.5832)	(18.4644)	(22.7246)	(32.6114)
Sale Year 2005	0.6244**	0.7255**	0.8802**	0.8589**
	(28.3895)	(20.6101)	(26.6213)	(34.9250)
Sale Year 2006	0.7059**	0.7261**	0.8612**	0.7999**
	(30.4294)	(20.1332)	(26.1725)	(31.2761)
Sale Year 2007	0.6968**	0.7147**	0.7850**	0.7522**
	(29.1600)	(18.0000)	(22.4262)	(26.6658)
Subarea 1.1	0.0910**			
	(4.4589)			
Subarea 1.2	0.2110**			
	(9.3416)			
Subarea 1.3	−0.0062			
	(−0.3908)			
Subarea 2.1		−0.1789**		
		(−8.8005)		
Subarea 2.2		−0.1773**		
		(−6.8976)		
Adjusted *R*-Squared	88.25%	87.85%	93.52%	92.16%
Mean Sale Price	$172,786	$298,740	$227,927	$258,249
Included Observations	475	344	153	314

t-Statistics provided in parentheses.

* Indicates variable is significant at the 90% level.

** Indicates variable is significant at the 95% level

Table 6 Sample Calculation of Estimated Sale Price for Study Area 2 (A2)

Variable	Assumed Value	Natural Log Transformed Values	Estimated Coefficient	Estimated Effect
Constant	1		9.05516	9.05516
lnLiveable Area (in sq. ft.)	2,000	7.6009	0.37005	2.81269
lnLot Size (in acres)	0.75	-0.2877	0.01742	-0.00501
A/C (yes/no)	1		0.05048	0.05048
Age	35		-0.00092	-0.03234
Total Bathrooms	2.5		0.03969	0.09922
lnBasement Area (in sq. ft.)	1,000	6.9078	0.03126	0.21595
Deck-Small	1		0.01504	0.01504
Deck-Large	0		0.02480	0
Garage-Small	1		0.12108	0.12108
Garage-Large	0		0.14448	0
Porch-Small	1		0.03894	0.03894
Porch-Large	0		0.01855	0
Study Area 2.1	0		-0.17888	0
Study Area 2.2	0		-0.17732	0
Sale Year 1999	0		0.08843	0
Sale Year 2000	0		0.22960	0
Sale Year 2001	1		0.30849	0.30849
Sale Year 2002	0		0.42848	0
Sale Year 2003	0		0.49534	0
Sale Year 2004	0		0.62529	0
Sale Year 2005	0		0.72548	0
Sale Year 2006	0		0.72609	0
Sale Year 2007	0		0.71470	0
Estimated Natural Log Transformed Value (Sum of Effects)				12.67969
Estimated Value				$321,159

Table 7 Summary of Transmission Line Variables

	Study Area			
	A1	A2	A3	A4
Distance Zones				
Zone 0–75 Meters				
Number of Properties	43	7	20	41
Median Distance	62	62	53	50
Zone 75'–150 Meters				
Number of Properties	63	65	20	55
Median Distance	97	118	103	104
Greater than 150 Meters				
Number of Properties	369	272	113	218
Median Distance	343	371	294	304
Continuous Distance				
Number of Properties	475	344	153	314
Median Distance	275	266	237	228
Encumbrance				
Number of Properties Encumbered	29	32	7	10
Median Sq. Ft. Encumbered	8,527	11,825	7,601	5,707
Median Lot Size of Encumbered Properties	0.50	0.99	0.35	0.33
Median Lot Size of Unencumbered Properties	0.40	0.93	0.21	0.28
Number of Properties with Transmission Structure(s) Visible				
1 Structure Visible	87	69	10	51
2 Structures Visible	71	24	30	61
3 Structures Visible	23	8	13	29
4 Structures Visible	6	0	14	15
More than 4 Structures Visible	2	0	13	1

Table 8 Zone Distance Model

	Study Area			
	A1	A2	A3	A4
Model 1: Distance Zone Model				
Zone 0-75 Meters	-0.0226	-0.0874	0.0131	-0.0055
	(-1.2734)	(-1.6429)	(0.5278)	(-0.3159)
Zone 75'-150 Meters	0.0041	-0.0388*	0.0069	0.0237
	(0.2768)	(-1.9251)	(0.2443)	(1.5212)
Model 2: Distance Zone Model & Encumbrance				
Zone 0-75 Meters	-0.0179	-0.0539	0.0306	0.0050
	(-0.8636)	(-1.0068)	(1.0550)	(0.2711)
Zone 75'-150 Meters	0.0056	0.0012	0.0064	0.0257
	(0.3666)	(0.0492)	(0.2280)	(1.6495)
Encumbrance	-0.0012	-0.0113**	-0.0061	-0.0073*
	(-0.4387)	(-3.1867)	(-1.1684)	(-1.7323)
Model 3: Distance Zone Model & Encumbrance & Number of Structures Visible				
Zone 0-75 Meters	-0.0283	-0.0697	0.0151	-0.0019
	(-1.1314)	(-1.2515)	(0.4562)	(-0.0832)
Zone 75'-150 Meters	-0.0034	-0.0122	-0.0033	0.0206
	(-0.1776)	(-0.4561)	(-0.1120)	(1.1312)
Encumbrance	-0.0014	-0.0113**	-0.0073	-0.0078*
	(-0.5065)	(-3.1996)	(-1.3663)	(-1.8018)
Number of Structures Visible	0.0055	0.0139	0.0069	0.0038
	(0.7434)	(1.0312)	(0.9784)	(0.5519)
Model 4: Distance Zone Model & Encumbrance & Weighted Number of Structures Visible				
Zone 0-75 Meters	-0.0170	-0.0681	0.0218	0.0011
	(-0.6796)	(-1.2174)	(0.6204)	(0.0479)
Zone 75'-150 Meters	0.0062	-0.0117	0.0023	0.0231
	(0.3355)	(-0.4224)	(0.0792)	(1.3250)
Encumbrance	-0.0012	-0.0114**	-0.0068	-0.0076*
	(-0.4281)	(-3.2124)	(-1.2424)	(-1.7605)
Weighted Number of Structures Visible	-0.0001	0.0034	0.0009	0.0006
	(-0.0621)	(0.8760)	(0.4443)	(0.3291)

†Statistics provided in parentheses; p-values available from authors upon request.

* Indicates variable is significant at the 90% level.

** Indicates variable is significant at the 95% level.

line corridor on sale price. The only exception is A2 in the continuous distance specification. In Models 1, 3, and 4, the distance variable is negative for A2 and statistically significant at either the 95% or 90% level. However, further analysis reveals that the distance variable of Model 1 becomes insignificant once encumbrance is accounted for (in Table 9, see Model 2 for A2). Further, even though both Models 3 and 4 show a significant distance effect, Model 3 also shows an unexpected positive effect of structure visibility. A possible interpretation is that although encumbrance clearly has a negative effect, the combination of greater distance and more structures visible may imply long views and the positive value of the long views may outweigh any negative effects of the HVTLs. The only other remaining distance variable with a statistically significant value–Zone 75'–150 Meters in Model 1 for A2 (Table 8) –also becomes insignificant once encumbrance is added to the model (Zone 75'–150 Meters in Model 2 for A2).

Encumbrance. The only variable that appears to have any kind of systematic effect is the encumbrance variable, which for A2 and A4 is of the expected sign in both the Zone Distance and Continuous Distance models and is statistically significant at either the 90% or 95% level. However its magnitude is generally small. For example, for A2 the reported coefficient on

Table 9 Continuous Distance Model

	Study Area			
	A1	A2	A3	A4
Model 1: Distance Zone Model				
Continuous Distance	0.0008	0.0351**	-0.0116	-0.0034
	(0.1030)	(2.7181)	(-0.9393)	(-0.4711)
Model 2: Distance Zone Model & Encumbrance				
Continuous Distance	-0.0031	0.0157	-0.0214	-0.0091
	(-0.3772)	(1.0921)	(-1.5094)	(-1.1699)
Encumbrance	-0.0027	-0.0099**	-0.0071	-0.0087**
	(-1.0350)	(-2.9613)	(-1.3956)	(-2.0392)
Model 3: Distance Zone Model & Encumbrance & Number of Structures Visible				
Continuous Distance	-0.0016	0.0327*	-0.0153	-0.0057
	(-0.1378)	(1.8681)	(-0.8046)	(-0.5704)
Encumbrance	-0.0028	-0.0101**	-0.0075	-0.0090**
	(-1.0475)	(-3.0395)	(-1.4443)	(-2.0834)
Number of Structures Visible	0.0014	0.0240*	0.0038	0.0036
	(0.1875)	(1.6896)	(0.4749)	(0.5332)
Model 4: Distance Zone Model & Encumbrance & Weighted Number of Structures Visible				
Continuous Distance	-0.0085	0.0293*	-0.0220	-0.0078
	(-0.7440)	(1.7083)	(-1.1501)	(-0.7928)
Encumbrance	-0.0025	-0.0104**	-0.0070	-0.0088**
	(-0.9308)	(-3.1019)	(-1.3383)	(-2.0471)
Weighted Number of Structures Visible	-0.0014	0.0057	-0.0001	0.0004
	(-0.6849)	(1.4415)	(-0.0500)	(0.2160)

t-Statistics provided in parentheses; p-values available from authors upon request.

* Indicates variable is significant at the 90% level.

** Indicates variable is significant at the 95% level.

the encumbrance variable in Continuous Distance Model 2 (Table 9) implies an effect of approximately $3,000 for a property with 12,000 square feet encumbered and a sale price of $300,000.[21]

Visibility. With respect to the impact of visibility of the transmission tower, the results did not indicate any systematic impact with respect to sign or magnitude.[22] As previously discussed, the only time when the visibility variable was statistically significant, the sign of the coefficient was positive.

Other Hypotheses Tested

Two other hypotheses were offered that can be examined with the data collected in this study. First, it was suggested that property values would be particularly vulnerable to HVTL effects in a down market. Second, it was suggested that higher-valued properties would be more vulnerable to HVTL effects than lower-valued properties.

Effect in Market Downturn. Looking back at the coefficients on the sale year variables for 2006 and 2007 in Table 5, the market downturn appears to have affected the four study areas quite differently. Study Area 1 still experienced a significant increase in real estate values in 2006 and experienced a slight drop in 2007. Study Area 2 properties leveled off in 2005 with only a nominal change between 2005 and 2006 and a small drop in 2007. However, the two areas south of Boston, Study Areas 3 and 4, clearly peaked in 2005 with significant drops in values between 2005 and 2007.

Therefore, the study investigated whether there was any evidence that property values were more sensitive to HVTL effects in 2006 and 2007 for Study

21. The coefficient of –0.0099 can be interpreted as the percentage change (i.e., approximately –0.01%) of a 1% change in encumbrance. Therefore, assuming a sale price of $300,000 and an encumbrance of 12,000 square feet, a 1-square-foot change in encumbrance would correspond to a –$0.25 change in sale price (0.25 = $30.00/120).

22. Theory would suggest that the distance and visibility variables should be entered multiplicatively implying the effect of each depends on the value of the other. This was tried but had no effect on the results.

Areas (A3) and Study Area 4 (A4), i.e., the areas which experienced significant market softening. The hypothesis was that the effect of the encumbrance, proximity, and visibility variables would be more pronounced in these two years of falling market values. This was tested by adding interaction terms for sale years 2006 and 2007 with each of the transmission line variables shown in Table 9.[23]

The encumbrance variable and the encumbrance interaction term were both negative for A3, but not statistically significant. Since there were only two encumbered properties that sold in 2006 and 2007 in A3, no reliability can be attached to these results; the same situation existed for A4. The encumbrance variable stayed significant at the 95% level (similar in magnitude as in Table 9). However, the interaction term testing for the down-market effect was insignificant and since there was only one encumbered property transacted in the 2006–2007 period, no reliability can be attached to this result either. The remaining coefficients on the transmission line variables and the interaction variables were not significant at any conventional level of significance. Thus, there is no evidence here to support the hypothesis of greater vulnerability of values to HVTL effects in a down market, but it has to be recognized that the number of observations on the key transmission line variables is small for just two sale years and more observations over a longer period would yield a more definitive result.

Effects on Higher-Valued Properties. The second hypothesis often suggested is that higher-valued properties would be more vulnerable to transmission line effects than lower-valued properties. To investigate this, all of the models shown in Tables 8 and 9 were reestimated based on observations that fell above the median sale price in their sales year. The results showed the same pattern of lack of statistical significance for the HVTL variables as in Tables 8 and 9; this supports the conclusion that the higher-valued properties show no greater sensitivity to HVTL variables than lower-valued properties.

Finally, since almost all of the anticipated 345-kV line construction that motivated this study will take place in existing transmission corridors, a couple of questions remain. First, is it possible to say anything about the incremental effect of a corridor upgrade? Second, and perhaps related, is it possible that there would be short-term proximity and visibility effects but that these would dissipate over time?[24] The first question does not seem relevant here. Since all of the sales studied here are in the vicinity of the corridor configuration that will exist after the upgrade, and since there are no proximity or visibility effects, it is hard to see how there could be upgrade effects.

This study, however, does not eliminate the possibility that the upgrade might induce short-term effects that would dissipate over time. The data represent situations where the existing HVTL corridor has been in place for some time, so, it can be said with some confidence that there are no permanent property value effects of the corridor due to proximity or visibility. However, this does not rule out a temporary effect. Therefore, a useful complement to this study might look at the history of a corridor over a period that includes a pre-upgrade period, an announcement and construction period, and then a post-upgrade period.

Conclusions

The research reported here investigates the effect of existing 345-kV transmission lines in Connecticut and Massachusetts on the value of properties sold over the period 1998–2007. Extra care has been taken in the research to account for encumbrance, proximity, and visibility effects. There are obvious relationships among the three variables, and if each is not considered, the effects of one could be mistakenly attributed to another. In particular, encumbrance effects could be mistakenly interpreted as proximity effects if both are not considered.

In the four study areas examined here, there is no evidence of systematic effects of either proximity or visibility of 345-kV transmission lines on residential real estate values. Encumbrance of the transmission line easement on adjoining properties does appear to have a consistent negative effect on value, although the statistical significance with which it is measured varies. The hypothesis that property values are more vulnerable to transmission line effects in a down market also is considered; although no evidence

23. The down-market hypothesis could not be tested with the zone distance models as there were not a sufficient number of transactions in each of the two distance zones; therefore, the hypothesis was only tested on the continuous distance model.

24. Colwell (1990) in a study in Illinois based on data from the 1970s finds small proximity effects, but also finds that the effects dissipated over the 10 or so years of sales that he studied. The transmission line in question, however, had been in place for several years prior to the study period. Most on point is the study by Ignatzi (1991), which finds small proximity effects following an upgrade, but that the effects disappeared after 4–5 years.

supports that proposition that there are greater effects in a down market, the number of observations in the relevant period is small. Finally, the hypothesis that higher-valued properties are more vulnerable to transmission line effects is considered; again, the data provides no support for that hypothesis.

The professional literature cited, combined with the results reported here, support the position that a presumption of material negative effects of HVTLs on property values is not warranted. An opinion supporting HVTLs effects would have to be based on market data particular to the situation in question and could not be presumed or based on casual, anecdotal observation. It is fair to presume that the direction of the effect would in most circumstances be negative, but the existence of a measureable effect and the magnitude of such an effect can only be determined by empirical analysis of actual market transactions.

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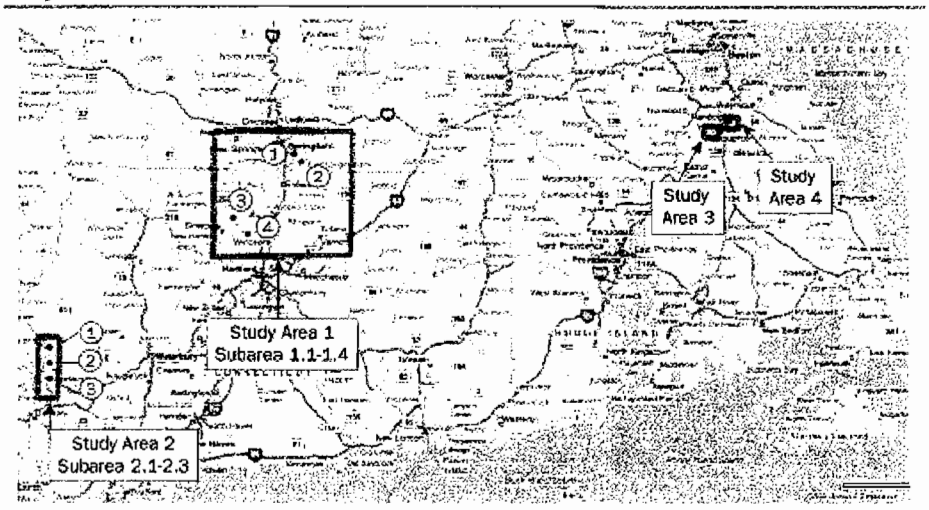
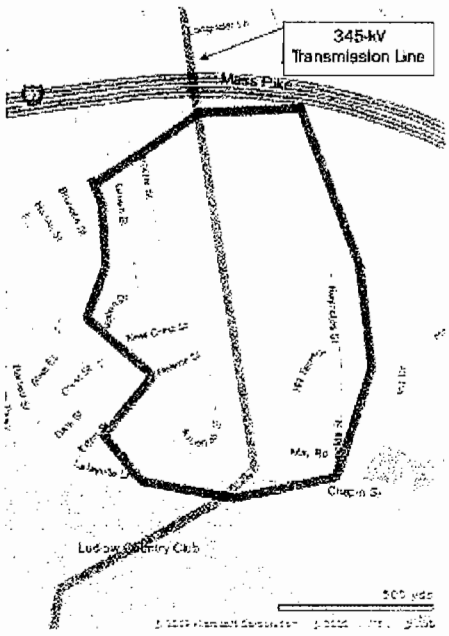
Appendix 1

Study Area and Subarea Locations



Study Area 1: Subarea 1.1



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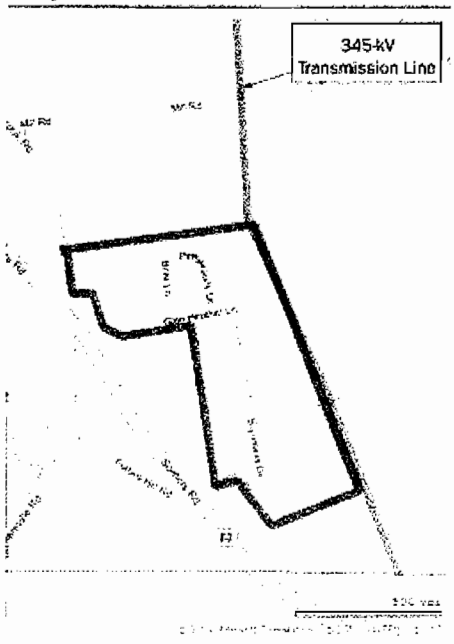

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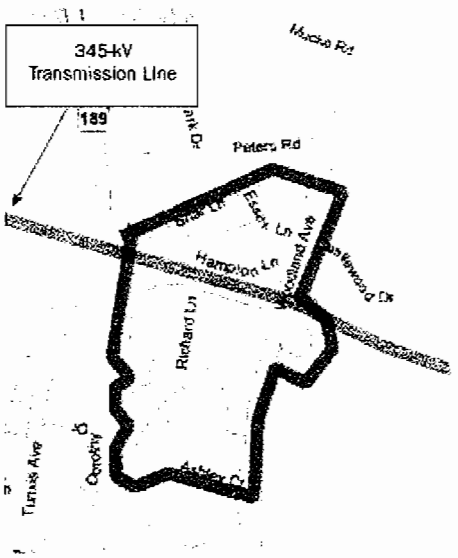
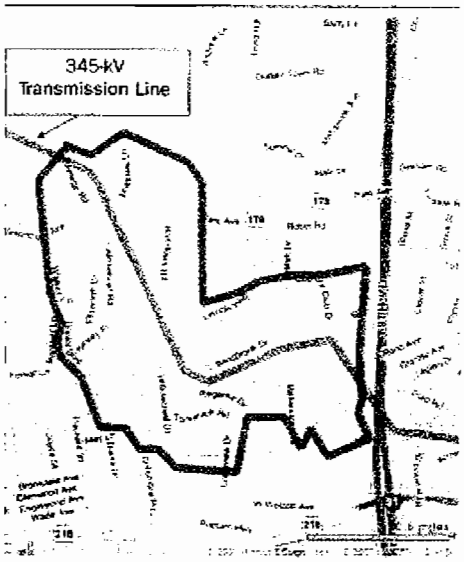
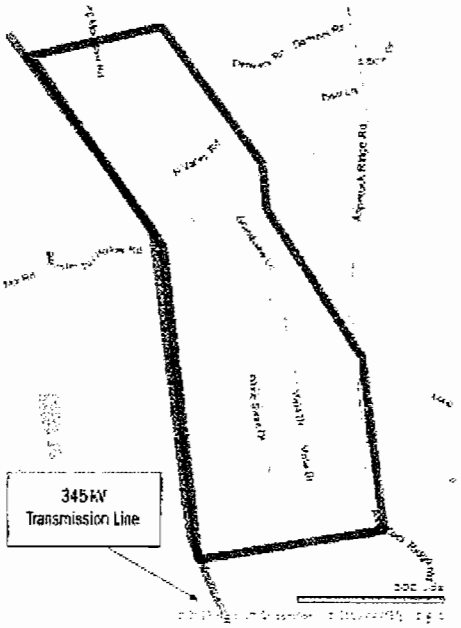


Study Area 1: Subarea 1.4



Study Area 2: Subarea 2.1



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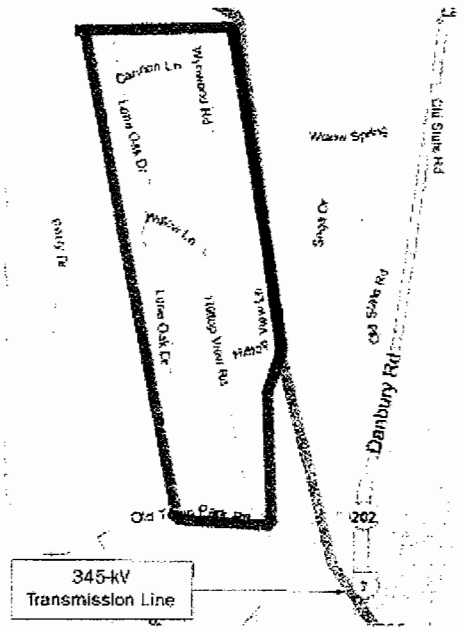

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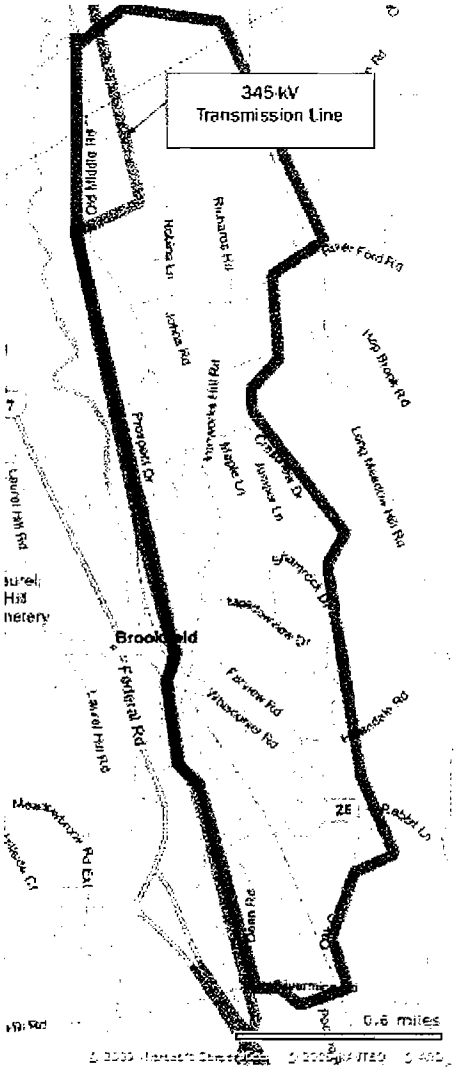
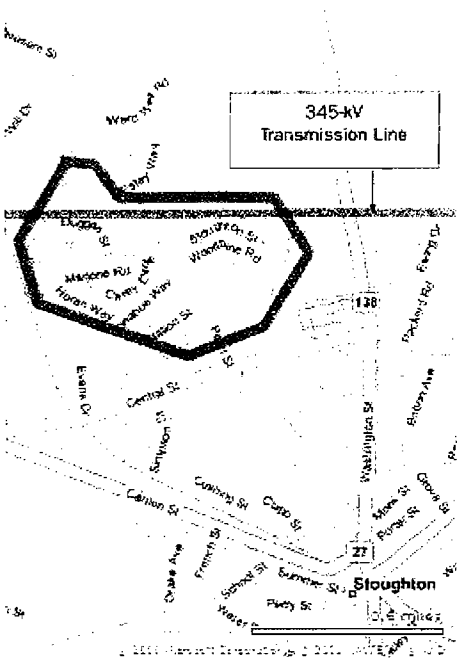
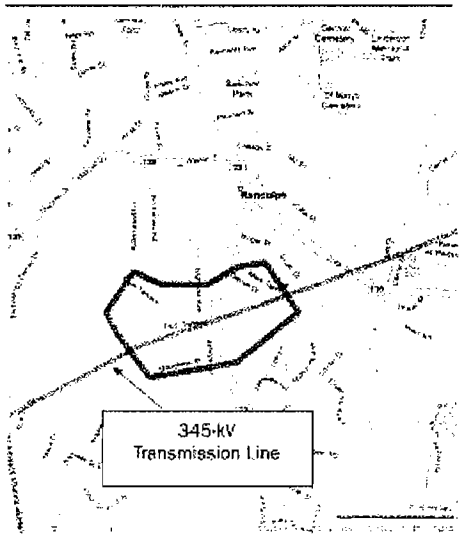


Study Area 3



Study Area 4



Appendix 2

Descriptive Statistics by Study Area

	Study Area			
Property Characteristic	**A1**	**A2**	**A3**	**A4**
Liveable Area (in sq. ft.)				
Mean	1,386.54	1,696.32	1,205.18	1,448.93
Median	1,288.00	1,500.00	1,144.00	1,346.00
Standard Deviation	363.98	678.62	307.85	478.05
Lot Size (in acres)				
Mean	0.4787	1.0542	0.2684	0.2936
Median	0.4140	0.9300	0.2180	0.2778
Standard Deviation	0.3978	0.9518	0.1476	0.1113
A/C				
Percent of Properties with A/C	25.05%	24.42%	23.53%	35.35%
Age				
Mean	34.20	37.24	50.07	46.78
Median	31.00	34.00	52.00	45.00
Standard Deviation	15.29	3.36	12.23	25.39
Total Bathrooms				
Mean	1.83	1.99	1.36	1.61
Median	2.00	2.00	1.00	1.50
Standard Deviation	0.56	0.76	0.55	0.71
Basement (in sq. ft.)				
Mean	793.85	975.87	384.40	867.82
Median	802.00	943.00	0.00	864.00
Standard Deviation	378.18	403.66	466.59	394.58
Deck (in sq. ft.)				
Number of Properties with Deck	295.00	240.00	43.00	178.00
Mean	204.53	312.21	219.33	168.74
Median	168.00	264.00	210.00	144.00
Standard Deviation	123.23	206.93	118.45	116.41
Garage (in sq. ft.)				
Number of Properties with Garage	393.00	316.00	53.00	170.00
Mean	452.67	470.23	335.72	440.16
Median	484.00	506.00	275.00	511.50
Standard Deviation	136.07	174.18	121.24	136.03
Porch (in sq. ft.)				
Number of Properties with Porch	225.00	152.00	87.00	176.00
Mean	138.12	166.41	128.86	128.98
Median	102.00	134.00	144.00	120.00
Standard Deviation	120.68	152.40	78.16	91.49

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October 13, 2011

Anthony Montalbano, Esq.
Montalbano, Condon & Frank, P.C.
67 N Main Street
New City, New York 10956

Dear Mr. Montabano:

Re: Residential Property Value Impact Study of Proposed
O & R Substations At Little Tor & South Mountain Road
New City, NY

We have reviewed and analyzed the comments of Coyle & Coyle, Inc dated September 19, 2011 with respect to our report and analysis dated November 16, 2009. In substance, although the report review takes issue with a few details of our analysis it adopts the basic conclusion of our report that there is not a discernable (negative) effect on value of residential properties that are at a greater distance from utility improvements than approximately 200 feet (or 300 feet). It states:

> **Based on the review of the Beckmann report as well as other published literature within the appraisal field, it appears that the proposed substation for the subject property would likely have little impact on value for many of the surrounding properties.**

We have reviewed the proximity of neighborhood properties to determine, in line with the reviewers' comments, whether there are in fact any properties within the 200 or 300 foot radius of the proposed substation equipment as depicted on a certain drawing and entitled … "Google Earth/Presentation.dwg, 9/29/2011". **There are no such residential property improvements within a 200 foot radius.** We annex our proximity analysis employing both a 200 and a 300 foot radius from the perimeter of the proposed substation improvement. The substation is outlined in green and the two radii are depicted in magenta as they extend there from.

We identified only two residential property improvements (houses) partially within the 300 foot radius, approximately 250 feet distant from the proposed improvements. These properties along South Mountain Road are identified on the Town of Clarkstown tax map as 34.05-1-4 and 34.05-1-3. They are heavily wooded that provides natural screening. These properties are pre-existing "impacted properties" as they are both in closer proximity to the existing transmission line, approximately 140 and 185 feet and in similar proximity to the Verizon Utility Building. They are therefore in closer proximity to these utility improvements than to the location of the proposed substation improvements. Moreover, the proposed plan shows that an existing transmission line tower identifies as #46, that is located just south of the Verizon Building will be removed. The removal of the tower will tend to reduce any existing impact of this structure in closest proximity to the residential lot. Although there are three other lots on the north side of Denver Court, that are barely within the 300 foot radius, none of the residences are within the 300 foot zone and the properties are wooded in the area separating the proposed substation and the lots.

Our analysis of the physical and locational facts and attributes of the nearest properties with respect to the proposed sub-station, supported by the literature and the review by Coyle and Coyle confirm the conclusions reached in our report. The reviewers accept the prior studies reported in the appraisal literature and that we noted in our report.

We agree with the statement that it would have been preferable had we undertaken an analysis with a closer immediate proximity than 500 feet. In establishing the parameters for proximity in our report we first posited radii of 100, 200 and 300 feet from the two existing substations. However, as confirmed by the review by Coyle and Coyle there is only a small sample of sales data employing the 500 foot radius contained in our report. The use of a smaller radius would have resulted in a loss of reliable sales. We were therefore limited by the availability of data. We searched broadly and diligently employing various data sources, primarily Multiple Listing Sales and expanding to the New York State Sales Web database.

We accept that of the 118 sales we employed in our combined analysis of the two sample substation areas there may have been two or three instances where the base data may have varied from the research of the reviewer. However, this would not materially impact our analysis and conclusion as the model we employed had such a large number of "good" sales data.

That the time period under study was "volatile", with which we were aware and agree, is handled within the statistical software employed that extracts its own "time" adjustment. This is accounted for in the "# Mos from Sale" which variable shows a high probability by its infinitely small P-value.

We are confident that we captured those sales transactions that had occurred within the time span analyzed and that the analysis is cogent and reliable. This is confirmed by the summary statistical output represented by the high R^2 that measures the "common measure of goodness of fit" for the regression model and the infinitely low Significance F that further confirms the statistical probability that there was very little likelihood that the results were random. As we employed a large universe of sales we continue to be confident in our statistical results and overall analysis. The multiple regression analysis employed is a highly objective technique.

In conclusion, the review appraisers agree with our conclusions. In the employment of our statistical model and the exercise of our appraisal judgment and inspections of the nearby neighborhoods we generally conclude that it is unlikely that the addition of the subject substations improvements will have a negative impact on those properties in proximity to the substations.

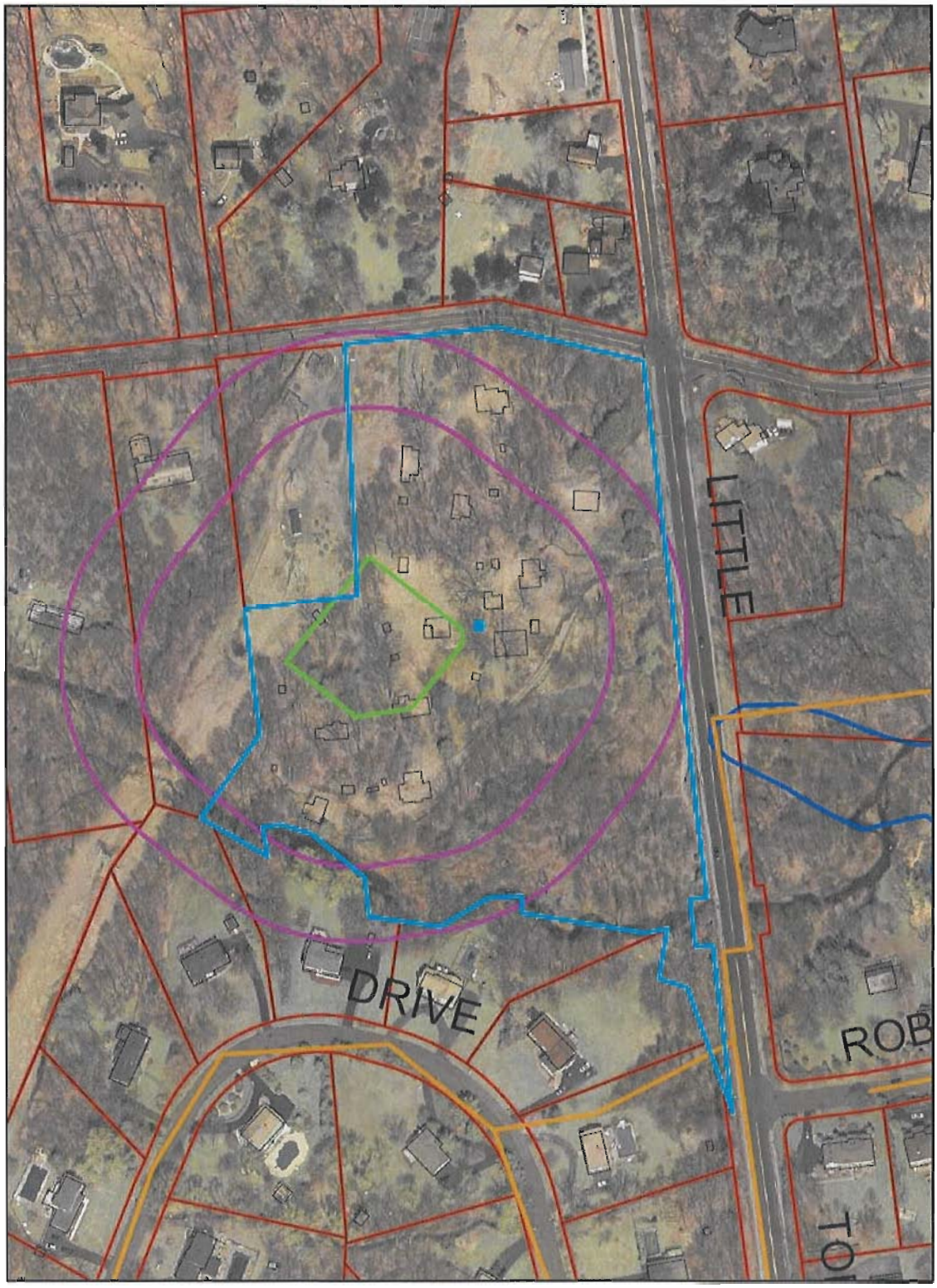
Should you require any additional information or analysis please contact us. We are pleased to be of service to you.

Very truly yours,

Beckmann Appraisals, Inc.

By: William Beckmann
William R. Beckmann, MAI, Pres.
/am

Proximity analysis employing both a 200 and a 300 foot radius from the perimeter of the proposed substation improvement



Ft. Montgomery

Coyle & Coyle, Inc.

REAL ESTATE APPRAISERS
&
CONSULTANTS

40 South Main Street, New City, NY 10956

November 23, 2011

Town of Clarkstown
Attn: Mr Joe Simoes
10 Maple Avenue
New City, NY 10956

RE: **Review of Residential Property Value and Impact Study of Proposed O & R Electric Transmission and Gas Regulator Substations at the Intersection of Little Tor Road and South Mountain Road**

Dear Mr. Simoes,

In regards to your recent request, we have no further review comments on the above mentioned report performed by Beckmann Appraisals Inc.

If you have any further questions or concerns, please do not hesitate to contact us.

Thank you for the opportunity to serve you.

Very truly yours,

Gregg Manzione, MAI

James S. Coyle, Pres.

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TOWN OF CLARKSTOWN : PLANNING BOARD

- x

IN THE MATTER
OF

O & R UTILITIES, INC.

LITTLE TOR ROAD SUBSTATION

- x

Town of Clarkstown Town Hall
10 Maple Avenue
New City, New York
Held on December 3, 2008

B E F O R E:

SHIRLEY J. THORMANN, CHAIRWOMAN

RUDOLPH J. YACYSHYN, VICE CHAIRMAN

GILBERT J. HEIM, MEMBER

RICHARD C. SHOBERG, MEMBER

PETER E. STREITMAN, MEMBER

CHRISTOPHER S. MARTONE, AD HOC MEMBER

APPEARANCES:

MONTALBANO, CONDON & FRANK, P.C.
Attorneys for the Applicant
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New City, New York 10956
BY: ANTHONY MONTALBANO, ESQ.

ROCKLAND & ORANGE REPORTING
20 South Main Street
New City, New York 10956
(845) 634-4200

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CHAIRWOMAN THORMANN: The next item on the agenda, review under the provisions of S.E.Q.R and public hearing at preliminary: O & R Utilities, Inc. Little Tor Road Substation SL 34.05-1-6 New City.

Proposed construction of a new electrical substation and upgrade an existing gas regulator on 10.2 acres R-40 zoned land, corner of North Little Tor Road and South Mountain Road, with a street address of 549-555 North Little Tor Road.

I would ask you to identify yourselves for the record, please.

MR. MONTALBANO: Anthony Montalbano. I'm the attorney for the applicant.

MR. McGOLDRICK: Peter McGoldrick, Chief Engineer, Orange and Rockland Utilities.

MR. HAGGERTY: John Haggerty, Civil Project Engineer, Orange and Rockland.

MS. LANDER: Jo Anne Lander, Senior Engineer, Orange and Rockland.

CHAIRWOMAN THORMANN: Thank you.

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Background information, TAC application received on August 24, 2007.

TAC reviewed on September 12, 2007.

On August 14, 2008 Long EAF submitted.

On August 25,2008 SEQR -- SEQR distributed by Town DEC.

TAC reviewed initial SEQR on September the 17th, 2008.

On November 5, 2008 Planning Board application fees, narrative site plan and seasonal views of the site received for review.

Would you like to make an opening statement, one of you gentlemen or lady?

MR. MONTALBANO: Thank you, Madame Chairperson.

This is an application from Orange and Rockland Utilities to upgrade an existing gas station at the site.

This is a ten-acre site, by the way.

And install an electrical substation on the balance of the property.

The property is in an R-40 Zoning

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District. It's a public utility substation, which is a permitted use under the Zoning Ordinance.

The site plan that you have before you shows a substation. We're going to remove I believe one tower, Pete?

MR. McGOLDRICK: Yes.

MR. MONTALBANO: And replace it with two poles of the same height.

As a result of our meeting with TAC, the Technical Advisory Committee to the Planning Board, and the input of their comments, we have done a couple of things with respect to our site plan.

First, and most importantly, we have left the driveway to this site on Little Tor Road. We intend to close the driveway that exists presently on South Mountain Road.

Secondly, we have also engaged a landscape architect. We intend to heavily landscape this site on its perimeter, so that it will be certainly well shielded from the surrounding community.

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Thirdly, we are going to make improvements to the site, because the Hackensack River Tributary does run through this site.

And we're going to improve the storm water management at the site, to reduce, and not increase, run off.

Additionally, for your information and the public's information, this is a site that will be visited perhaps -- is it once a week, Pete?

MR. McGOLDRICK: Once a month.

MR. MONTALBANO: -- once a month by a service vehicle. For the balance of the time the site is a substation, it operates by itself.

The lighting at the site is internally directed. Lights do not come on in the evening. They only come on when an emergency vehicle or a service vehicle has to do service work in the evening.

It will also be properly secured, with both a gate and fencing, and hopefully attractive fencing.

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Additionally, the -- the Zoning Ordinance itself requires that the property have a 75-foot buffer around before any development is done. We meet or exceed all of those buffers. And O & R has tried to make sure that we shield this substation from the surrounding community.

For those of you who may not be familiar with the site's history, this piece of property had some bungalows on it, it had some wells which were contaminated, it had a septic system that was providing contaminated stuff into the -- into the Hud -- into the Hackensack River.

O & R and the local fire company removed the bungalows. We've capped the wells. We've environmentally cleaned up the site.

The reason that we're here is for the reason that one of the earlier witnesses testified to; namely, that there has been a great deal of development in the surrounding area, and there are

utility needs that have to be met. And, as far as the Company is concerned, this is the proper site for it.

Did you want to speak to that?

MR. McGOLDRICK: Yeah. I have a few displays that we can put up. And I'd like to explain the way service -- the way the Company provides service in the area today and the impact of -- of a station in this -- in this area.

So if we can do that.

CHAIRWOMAN THORMANN: Yes, please.

MR. McGOLDRICK: Can I use the -- the overhead mike here?

All right. Just to give a little more history than what Tony said, the -- the Company has had this site in its possession since about 1926.

We had transmission lines that -- that came across the site. And back in the 1950's additional property was purchased for the -- the installation of a substation, and it was about 50 and 55 transformers were added to the site to

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feed the -- the local area.

And then in about 1982 we removed the transformers from the site, because they were no longer capable of serving the area.

And I'm go going to talk in a few minutes about how the site was served from -- from that point on.

By 1983 we completely dismantled the -- the station. And since '83 the transmission lines that we see on the site continue to cross the site.

And then in -- in 2006 we purchased this additional property for the purpose of -- of reestablishing this site as a -- as an electric substation.

A VOICE: What's the scale? Okay, John, so that everybody can see.

MR. McGOLDRICK: This is the area of the -- and somebody's gonna get my back. I apologize.

But this is the area of the system that we're -- we're talking about. We could see the Hudson River, which forms a

boundary for the Orange and Rockland system between us and the Con Ed system across the other side of the River.

This is the Palisades, coming down here.

And Haverstraw is in this area. That's the location of the Bowline Point Power Plant.

Harriman State Park is over here.

In Rockland County the -- the O & R system is unique because it's got a lot of barriers; Hudson River being one of them, Harriman State Park being the other one.

And if you look at the way the Park comes, it pretty much comes to a triangle up at -- up at the top. So these are natural barriers to distribution sources in the area.

You see three colors here on what I call the ink block diagram. The -- this -- this light blue color is the area that's served by the West Haverstraw Substation. That's located on Route 202 in West Haverstraw.

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This purplish color is the area served by the New Hempstead Substation. This is right alongside the Palisades Interstate Parkway and -- and New Hempstead Road.

And then the green area is an area served by the Congers Substation. And the Congers Substation is -- is located adjacent to the railroad tracks and -- and Gilcrest Road.

Now, when -- when we had a substation in the South Mountain, Little Tor area right here, the system was completely different. The system that you see here, for the most part, grew up in the 1970's. The West Haverstraw Substation was installed then, and there were two distribution transformers installed. The New Hempstead Substation was installed in the Seventies also. Again, two distribution transformers.

And for a long time these two substations fed, for the most part, all of North Rockland. The Congers Substation

was built in the later Seventies, early Eighties, with a single transformer. And then in the Nineties a second transformer was added to the -- to the Congers Substation.

To the north of -- of West Haverstraw is the Stony Point area. For many, many, many years the -- the Stony Point area was fed from the West Haverstraw Substation.

For the south of us here we have a substation in Spring Valley, called the Byrnes Substation. And, again, that substation was built in the 1970's, and then added onto approximately the -- the mid-Eighties, a single transformer, we put a second transformer, excuse me, in that area.

You could see this is a tremendously big portion of the County here. And what we do, as -- as a utility, our plan is look at the load that's in these -- that's on these substations and we look at what happens, you know, in the event of a

contingency. A bank in -- in West Haverstraw now, what would we do? Where would we be able to pick the load up. If we lost the New Hempstead transformer, what would we do? How would we pick the load up? The same thing with Congers. We would do the same thing down at Byrnes. We would do the same thing up in -- up in Stony Point.

And when we look at the loads that we have in these existing transformers on peak -- and I'll get my notes out.

A VOICE: Hold that map up.

CHAIRWOMAN THORMANN: Can we have an easel.

MR. McGOLDRICK: The -- the transformers we have in Stony Point are rated for 35 megawatts. And just remember the number 35. The New Hempstead banks are rated for 35 megawatts. And the -- the Congers banks are rated for 35 megawatts. So that's a total of 70 megawatts that we can feed out of each of these stations.

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The transformers can be overloaded. So you're gonna hear me tell you numbers that are above 35 megawatts, but they can go into an overload. They can't be overloaded forever. Part of the problem we had with the West Haverstraw transformer was the load on it that we were attempting to carry everything up in -- up in North Rockland with that transformer, and we were carrying too much, and we had a problem. It had to come out of service.

The New Hempstead Substation, the two banks are each carrying on peak 40 and 44 megawatts. So we're exceeding the rating of the transcripts on peak.

Again, the load comes up, the load goes down. So we're not carrying that 44 megawatts from June to September. It's the hottest parts of the day. So when it gets real hot, we'll carry it. The load will go down, the next day it will come up, the load will go down.

The West Haverstraw Substation,

there's two transformers. The transformer that feeds down in this direction is carrying 37 megawatts. The transformer that feeds up in this direction is carrying 22 megawatts. So -- so it still has a healthy load on it. And we took load off of West Haverstraw when we built Stony Point, and we put Stony Point in service back in maybe 2003 or 2004.

The Congers Substation, the two transformers, one is carrying 32 megawatts, one is carrying 27 megawatts.

So you could see that the load in all of these -- in all of these stations is coming up, and every year load growth gets -- you know, gets more.

Our load in our individual houses is going up. Of course, with building load is going up. And these are loads that we experienced last summer.

So a summers go on, these loads are expected to -- you know, to grow.

What happens when -- and I'll pause until my secondary easel is ready.

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CHAIRWOMAN THORMANN: Can I ask you something, where is the Congers Substation?

MR. McGOLDRICK: Gilcrest Road, right by the -- by the railroad tracks.

Not to give you a terrible -- a terrible spot, but remember where the school bus accident was? It's right there.

CHAIRWOMAN THORMANN: Oh, okay.

MR. McGOLDRICK: There we go. That's better.

Okay. When -- when a major source comes out of -- comes out of service, you know, the load has to get served. And if we were to -- to have problems in New Hempstead, we would look to see what we could pickup from West Haverstraw down and from Congers up.

And with the load on the stations and the distance from the stations, you begin to have problems picking everybody up. And the same thing if a West Haverstraw bank goes out, we begin to have

problems picking everybody up here. And if Congers goes out, you know, you can -- you can pick -- you can pick people up because you've got other sources down below, but you start to get into this area here, and this is the vulnerable area for the loss of the major facilities in the three stations that feed into this area.

So we look at: What do we need to do in order to -- in order to get a source to take care of the folks in -- in this area and provide backup well into the future.

Now, we built these stations back in the Seventies. So we're talking about we got literally 30 years out of -- out of these stations. And when you look at the load growth that the Company's had in 30 years -- I started with the Company back in '77. The load was about 500 megawatts. Our peak load. The peak loads that we see these days, it's in the 16 to 1700 megawatt range. You know, so we've tripled the -- well, we haven't -- we have

tripled the size of the Company on peak. So we got 30 years out of these facilities, which, you know, many companies don't get that.

So when we looked at the -- the location for a station and how to protect against long-term outages in this area, we looked at the -- the site that we're discussing tonight.

And that area becomes the area that we have in -- in red. And you could see how it fits very well right in amongst the three sources that we -- we have today.

Load would come off of New Hempstead. So those transformers would be off loaded a bit. Little bit of load comes off of West Haverstraw. And a little bit of load comes off of Congers.

And -- and this area is what is -- is to be fed by the -- by the proposed Little Tor Substations.

Next question: Why -- why at the location it's in? The transmission lines that we need to -- to feed the substation

go right across the -- the site that we -- we have.

South Mountain and -- and Little Tor, you know, we talk about the -- the station being on the corner. Well, the -- the property is certainly on the corner. It's a big piece of property. And, you know, we didn't put the station on the corner. The station is in the property.

The transmission lines, and I don't see them coming out, but the transmission lines come down and they bisect the property. So by putting the station where the transmission is, we don't have to build new transmission. By not having to build new transmission and not having to extend transmission system, it's less of an impact on areas.

So one of the things that we do, try to do, when we're building these distribution sources is stay where the transmission is, so that we don't have to extend that transmission and effect -- effect more people in the -- in the area.

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I think I'll leave it there as far as the -- you know, the need and the justification. And I could always come back to it, you know, if there's more -- if there's more questions.

Yes.

A VOICE: The stations that were installed in Congers and Haverstraw and the one in the purple there.

MR. McGOLDRICK: New Hempstead.

A VOICE: They were installed in the 1970's you said?

MR. McGOLDRICK: Yes. Hempstead and -- and Haverstraw were done about the same time; about 1972.

A VOICE: Uh-huh.

MR. McGOLDRICK: Congers was actually a station that was planned in '72, but towards the end of the Seventies loads started to -- to pitter out. And the station itself I know it was put in after I joined the Company in '77. And I thought it was like '79 or '81 that the first station -- the first bank went in

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service in Congers.

A VOICE: Is there -- is there, and can you explain the difference between what would be installed now, as opposed to what was installed in the 1970's? What kind of improvement or what kind of conditions here? What is the, in layman's terms, if you could?

MR. McGOLDRICK: Well, one of the biggest differences between a1970's station and a station today the high voltage circuit breakers that we use in stations to energize and de energize transmission lines, in the Seventies everything came with oil. Today everything comes with gas. So there's -- there's a little bit less environmental concerns because there's no -- there's less oil in the station.

Transformers. The transformers still have oil in them. They're -- back in the Seventies we were getting PCB free transformers. We still are getting PCB transformers. Oils have changed a little

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bit. They're more biodegradable than they were in the Seventies, but the basic transformer is still an oil-filled device.

A VOICE: I'm sorry, did you say PCB free?

MR. McGOLDRICK: Free.

A VOICE: Okay. I thought you said PCB transformer. I'm sorry.

MR. McGOLDRICK: The -- the biggest difference between stations then and stations now are the controls.

The controls that are in the New Hempstead, the Haverstraws and -- and the Congers Substations are older electrical mechanical controls. The controls that we put in stations today are all micro processed based controls. Very efficient. They control the system better. When we have a lightening strike, the protection that detects that lightening strike is a lot faster, so damage to -- you know, to our equipment, you know, from lightening storms and problems is -- is much less. We de energize our equipment a lot faster,

which inherently makes them a lot safer.

The stations themselves, back in the Seventies we would have gone in, we would have paved the entire station. Nowadays we don't pave the entire station. We don't make it, you know, a completely impervious surface. We have crushed stone in the middle. We'll have driveways, so that the guys can drive around to the various pieces of equipment in the station to do their -- to do their maintenance.

Back in the Seventies the lights were on every night in stations. They were on eyes. Nowadays we don't turn the lights on in stations, which does two things, number one, it keeps the load down, and -- and it's -- it's less obtrusive to -- to neighbors. This is a -- this is a really big site. If you look at the West Haverstraw Substation, we do have neighbors that are relatively close to us. And in the beginning we had those lights on every night.

We have security systems in -- in

stations now, and the security systems don't need lights in order to function.

We have a perimeter security that watches the fence. And if we do get an intruder, somebody does come up to the fence, we get an alarm. Our security folks in a security center in Spring Valley, that's manned 24/7, they get the alarm. We've got a great working relationship with the PDs in the County. We'll call the PDs, say, we got an alarm at the station. And the PD will be there within minutes and seconds sometimes, you know, in the event of a -- of an intruder.

Yes.

CHAIRWOMAN THORMANN: We've had questions coming into the planning office about electromagnetic waves emanating from the site.

Could you speak to that, please.

MR. McGOLDRICK: I can. I've -- I've been the EMF guy in the Company for -- you know, for 20 plus years. The -- a substation is not a source of

electromagnetic fields, unless you're inside the substation doing work. Once you get away from the substation proper, fields go down drastically. And with this piece of property being so big, when you're out at the perimeter of the property, the -- there's no fields from the station.

Now, there's transmission lines that do come down from -- you know, through this area that we're gonna connect the station to. Again, the highest field that you get is when you're directly underneath the transmission line. And as you walk away from the transmission line, the field goes down with distance.

These transmission lines, when they were installed, were put in for the purpose of getting Lovett generation from North Rockland down into the system. And, of course, we know the Mirant Plant, you know, is in the process of being demolished. If we had measured fields from these lines 20 years ago and then

measured them after the Lovett Plant came out, the fields are drastically lowered, because the -- the use of the lines is different. These lines have now become just basic distribution lines to feed these substations, as opposed to lines to take the Lovett generation from the plant into the rest of the system.

But substations by themselves, and there's reports out there that -- that -- government reports that have looked at -- looked at electromagnetic fields and have concluded that -- that substations, because of the way they're designed and because you get a lot of cancellation of that field, that they're not a source of -- of electromagnetic fields.

We've done some testing, you know, in the area. We have a program where we can come out and actually do field readings. And we've gotten some field readings from customers who requested up on Denver Drive. And the field readings that we have are extremely low. They're

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in the tenths of a milligaus. A milligaus is how you measure the field.

A typical house could have anywhere from a half a milligaus to five-milligaus, depending on the load in the house, appliances that are running, things like that. We've read fields up on Denver Drive just recently that were -- that were .1 milligaus. You know, that shows that the transmission lines are not carrying the same amount of power that they were when the Lovett Plant was operating.

Now, I say a tenth, I say .5 to five. If -- if we put a meter up to this -- this flat screen, you know, we might get 50 or 100. You put a hair dryer on, you know, as you're holding the hair dryer, the field is a thousand. Mix a drink in a blender. You know, as you're holding the cap on the blender, you're standing in a field of about 1000 or 1500-milligaus. The biggest field that I ever measured was, ironically, in my basement. The charging base for my

cordless drill had a field of about seven or eight thousand milligaus.

Now, when you're right at the charging base you get that seven or 8000-milligaus. When you walk away from it, it does go down quickly. But, you know, there's a lot of appliances that we have in our house that, you know, that while we're there, near the appliance, you get a relatively high field.

There's -- you know, we talk about fields from lines. This -- this standard that New York State Public Service Commission has that says that the field at the edge of a transmission line right of way can't exceed 400 milligaus. Well, none of our lines ever come close to 400 milligaus at the edge of the right-of-way. You know, our lines are in the tens, twenties and thirties, because the load on the lines is not high enough to get to that 400. Four hundred is, think of a big high voltage transmission line, the Marcy South Line or something like that, you

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know, on a hot summer day that has thousands and thousands of megawatts on it, that -- that would produce a higher field than we would ever see on any of the transmission lines in our system.

These two lines, as they come down through this area, are also designed in a way that the field from one line cancels the field from the other lines, so you get less of a field.

These are all experimental things that we did back in the Eighties, you know, when EMF really emerged as an issue.

MR. DEMETO: I was just curious --

CHAIRWOMAN THORMANN: Excuse me, sir.

MR. DEMETO: I'm sorry.

CHAIRWOMAN THORMANN: If you want to speak, come up and identify yourself.

A VOICE: We haven't opened the public hearing.

CHAIRWOMAN THORMANN: I'll let him.

A VOICE: It's up to you. It's your meeting.

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MR. DEMETO: Just a quick question. My name is Lawrence Demeto. I'm at 302 South Mountain Road.

I was just curious where the blinking light is. I just want him to point out where the blinking light is at 302, at South Mountain and Little Tor Road.

MR. MONTALBANO: Central Highway.

MR. McGOLDRICK: It's the intersection of South Mountain and Little Tor.

MR. DEMETO: Okay. That's all I wanted.

CHAIRWOMAN THORMANN: Okay. That's fine. Any other questions, gentlemen?

A VOICE: No.

CHAIRWOMAN THORMANN: Anything along here? Mr. Heim?

MR. HEIM: No, thank you.

CHAIRWOMAN THORMANN: All right. Then Mr. Mineri.

MR. McGOLDRICK: If I could make one more comment. I'm sorry.

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Tony had mentioned the driveway, and the -- both South Mountain and Little Tor had driveways off of them to -- to access this site. Various houses had driveways that -- you know, that were on Little Tor and then South Mountain, and I think most of the driveways might have come in on South Mountain.

And one of the things that we had -- we had committed to in discussing the project with the neighbors was that we would close the driveways on South Mountain, and we would landscape across them, so that you didn't enter the site from -- from South Mountain.

The plans that you have show a driveway that's someplace in -- in this area here. It's about 60 something feet off the -- the intersection. We had looked at the County -- the County constructions for -- for driveways and they had talked about 30 feet from an intersection. We were twice that. And we all know that the County objected to the

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location of the -- of the driveway.

CHAIRWOMAN THORMANN: Yeah, that's what I wanted to say. They do right now.

MR. MONTALBANO: The County wanted the driveway on South Mountain Road.

CHAIRWOMAN THORMANN: Yes, that's what they say. The proposed egress/ingress location through Little Tor Road is too close to South Mountain Road to conform to the required blocking distance.

We called the County today to ask for -- the Highway Department to ask for an explanation of what the blocking distance was, but they didn't get back to us.

MR. MONTALBANO: Well, we've -- we've met with -- with the County Highway Department, because we had received their comment letter, and we understood the concern of the Town and -- and specifically the Planning Board, and that South Mountain Road was a historic road. And we told them that, not with standing

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their position, it was our position that access should be on Little Tor Road.

I think John Haggerty's in the process of redesigning the -- the place where the entrance will be, but it will be on Little Tor Road. It may either be where the existing driveway is now on Little Tor Road or somewhere between our proposed driveway and the existing driveway, but it will be on Little Tor Road.

CHAIRWOMAN THORMANN: Because we're going to have to open it.

A VOICE: Yes, I agree.

MR. McGOLDRICK: We're actually going to resubmit our plans showing the driveway here. And our discussions with the County was, you know, if we did resubmit with the driveway, I think it's about 260 feet from the intersection, that they would approve that. So we will be resubmitting our plans. It's gonna change -- it's gonna change some of the renderings that you see from this site.

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So we're going to have to redo the renderings.

CHAIRWOMAN THORMANN: I haven't opened the public.

Are you with them?

A VOICE: No.

CHAIRWOMAN THORMANN: Can you wait until I get through my consultants?

A VOICE: Sure.

CHAIRWOMAN THORMANN: Okay. Mr. Maneri.

MR. MANERI: Yeah, the proposed use of the substation is by a special permit granted from the Zoning Board of Appeals.

MR. MONTALBANO: We're aware of that. Thank you.

CHAIRWOMAN THORMANN: Mr. Letson.

MR. LETSON: (Inaudible) reviewed several times at TAC with --

VOICES: Can't hear you.

MR. LETSON: I'm sorry.

The project has gone through technical review at TAC a number of times, with focus on the visual impacts, the

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alterations to the site, and the storm water runoff issues.

Many -- most of them have been responded to by the applicants.

The drainage issues have resulted in storm water management, storm water mitigation on the site itself.

The applicant has also provided a number of photo views or photo renderings.

We just had a couple of quick questions on the later views, some of the views four through seven.

With the renderings being prepared do reflect the summer and winter views from the surrounding area. It looks like they were intended to be views from the same location and -- and were based on photographs that were taken of the site.

But what I'd like to get clarified is which one is the rendering and which one was the photograph? Because there are some -- what appear to be some differences between them, particularly if you flip up view seven and summer and winter, where it

looks like in the winter view, where you can actually see all of the tree trunks, they don't necessarily appear to be the same configuration as the summer view from the site.

So I was curious, and if the applicant could clarify for the Board what -- what -- well, what were these based on and when were the photographs taken?

MS. LANDER: The Degenshein architects did visit the site, and they took photographs from which these were based. And Mr. Degenshein is prepared to come in and testify. So we could have him come in at the next meeting --

MR. LETSON: That would be helpful.

MS. LANDER: -- and explain to you. And explain to you exactly the process.

MR. LETSON: How they were done, yes.

MS. LANDER: Yes.

MR. LETSON: Yes.

Beyond that, a reserve comment with

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the visual studies and finalizing the drainage study.

CHAIRWOMAN THORMANN: Okay.

Mr. Geneslaw.

MR. GENESLAW: I have some comments first on the -- on the review process, and then some questions for the applicant.

Because this needs a special permit and because the Planning Board is much more familiar with the environmental process, we're suggesting that the Planning Board complete the environmental process, then send them off to the Board of Appeals for the Special Permit, then have them come back for the site plan review at the Planning Board.

There will be various hurdles along the way, and they'll have to deal with each of them.

We heard a lot about the substation. The adenda also includes a reference to an updating of an existing gas regulating station. And I wonder if the applicant could give us a little background on that.

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MR. McGOLDRICK: I'm going to give you an electrical engineer's interpretation of what we're doing here, and if there's questions, we do have a rep from the Gas Department in.

One of the things that we did notice, as we were going along the site, you know, besides the electric facilities there on the site, there's also gas facilities on the site, and right up literally on South Mountain Road we have a gas regulator station. And as we were looking at the placement of the station on the site, you know, we saw that the gas regulator station was literally on the road. And we approached our Gas Department, because we were looking to -- to landscape the South -- South Mountain Road side of the station, and -- and asked them, you know, what they could do. And they -- the Gas Department, you know, had looked at relocating that -- that gate station off the road. And -- and, you know, they're gonna wind up taking that

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gas station, which is literally on the road, and they're gonna bring it into the -- into the site. There's a distance marked there, but it's -- it's -- it's pretty well into the site compared to where it is today.

And if there's any specific gas questions, I'll ask Alan Barry to come up, you know, and -- and address those.

The new station -- you know, that old station is quite loud. The new station is gonna be much, much, much quieter than the old station was.

A VOICE: Do you have a percentage of how much quieter this will be?

MR. McGOLDRICK: And this is when Alan comes up.

MR. BARRY: It will be roughly 50 decibels at the street.

A VOICE: And what is it now?

MR. BARRY: (Inaudible). Probably 70, 75.

A VOICE: I see.

MR. BARRY: Roughly. Modern

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regulators will be installed (inaudible).

MR. McGOLDRICK: These are regulators that we're installing elsewhere in the service territory.

MR. GENESLAW: The next point is that when the plan is revised to show the relocated driveway, I suggest that the applicant provide new photo views, showing the level of visibility from Little Tor and anywhere else based on the driveway relocation.

And my next note goes back to the comment that was just made about noise, but I'll add fire and risk of explosion.

What is the potential, and how will it be handled, both for the substation and the regulating station?

MR. MONTALBANO: We could either -- Peter, we could either respond to that verbally, or if you'd like something in writing, we can provide that to you too.

CHAIRWOMAN THORMANN: I think --

MR. GENESLAW: How about both.

CHAIRWOMAN THORMANN: Both.

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MR. GENESLAW: A brief explanation now, for the audience, and then something in writing later, with more detail.

MR. McGOLDRICK: Okay. Like I said before, when it comes to the -- to the controls that are in the stations, the -- the controls being much more modern, much more faster -- you know, the -- the way you have a fire in a transformer is -- is to have a problem and not clear the transformer fast enough. Older technology, faults were cleared in what we thought back in the Seventies, you know, was fast. It's -- you know, we're always talking cycles. Seven to ten cycles is the blink of an eye. But the newer controls that we have can clear tran -- they can sense clear -- clear equipment off the line in -- in three cycles, so it's -- it's much, much faster. Equipment today is -- is monitored heavily.

In the old days, in the Seventies, you went out and you --you -- you know, the equipment was there. You got alarms

from the equipment, but -- but, you know, they were dumber alarms than -- than you have today. With the advent of micro processes, you know, you're constantly checking the oil in the -- in the transformer. The oil is -- is just like the -- the, you know, blood in your body. You take samples and you could -- you could find out what's happening.

For distribution transformers, they -- you know, you used to take a yearly oil sample and then compare it to the -- to the other ones. Well, oil sampling and -- and checking out that oil is done on line now. So it's -- it's done all the time. So, you know, you can trend something happening in a -- in a transformer much better than you could in the old days.

Materials in -- in transformers, you know, are much better than they were, you know, even 30 years ago. And 30-year old transformers were better than 50 and 60 year old transformers. You know,

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transformers don't have an end to their life, as long as they're taken care of, and as long as you -- you do your maintenance, as long as you do your -- you know, your checks, but the equipment that we have today is -- is just that much better at -- you know, at detecting incipient problems we call them in transformers.

A VOICE: What about if there's a fire?

A VOICE: We didn't hear their answer.

A VOICE: What about if it goes on fire?

CHAIRWOMAN THORMANN: Excuse me. Excuse me.

A VOICE: Now do I address the gas?

CHAIRWOMAN THORMANN: One at a time. Give him a chance.

A VOICE: The gas regulator station is designed with an extra heavy wall pipe, and all the wells, hundred percent of the wells, were x-rayed and passed x-ray. And

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we did a static pressure test before the piping was shipped, and it was tested to one and-a-half times the maximum operating pressure, the test was at 400 pounds. The station operates at 80 pounds. And that's the way we get around that.

A VOICE: What if it goes on fire?

CHAIRWOMAN THORMANN: Did that answer your question, Mr. Geneslaw?

VOICES: No.

CHAIRWOMAN THORMANN: Excuse me. It was Mr. Geneslaw's question. I haven't opened the public hearing yet.

MR. GENESLAW: Well, what happens on the -- the unlikely event of a fire or explosion.

MR. McGOLDRICK: Well, in the -- in the station if a bank were to catch fire, and although it's a rare thing, you know, anybody could find them on the -- you know, on the Internet. You know, you have to look at -- at the reasons, you know, for the -- for the fire.

But transformer fires, especially in

distribution transformers that we have here, are usually limited to the -- to the transformer itself.

The transformers are -- they have containment around them, so in the event that there is a spill, either caused by a fire or a -- or just a spill in itself, all the oil is contained directly at the transformer itself, it doesn't get out to the -- to the surrounding area.

We would work with the -- with the fire department, as far as what we have in the station. You know, ways of -- of fighting any problems that were in the station. You know, we've had a good history of -- you know, of working with fire companies to -- you know, to help protect our facilities.

CHAIRWOMAN THORMANN: Do you have anymore?

MR. GENESLAW: Last question.

In addition to the permits from the Town, are there any other permits required for either of the facilities?

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CHAIRWOMAN THORMANN: Who's going to answer that?

You, Mr. Montalbano.

MR. MONTALBANO: Aside from the permits for the Town, are we -- yes, there's -- we need a permit from the drainage agency. We need a permit from the County Highway Department.

Is that what you're speaking to?

MR. GENESLAW: Well, I' mm thinking more about any State agencies.

MR. LETSON: Are there any State regulations, Peter?

MR. McGOLDRICK: No. No. Just -- just local and the drainage agencies. There's no Public Service Commission approvals, if that's what you're --

MR. GENESLAW: Yes.

MR. McGOLDRICK: No, there's no -- there's no Public Service Commission approvals.

MR. GENESLAW: Thank you.

That's all for now. I may have more after the public hearing.

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CHAIRWOMAN THORMANN: Thank you. Mr. Simoes.

MR. SIMOES: I have a question, it came about from looking at the Environmental Assessment Form that was submitted, it mentions that there is a cell tower and cell tower support building.

Our records show that there is -- there are antennas I believe on an Orange and Rockland tower, which is different from a stand alone cell tower. I just want to have that clarified. And -- and I want to know if -- whether that tower's being moved, whether the antennas are being moved, that might trigger additional permits on your -- on your behalf.

MR. McGOLDRICK: Yes. The tower that's -- that's being removed. There's a lattice tower that's on the site that takes the line through the site, that tower's gonna be removed, and we propose to put steel poles on either side of it, so that we could turn the line into the --

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into the station. That tower does have, I believe it's just Verizon Wireless on it. And the Verizon Wireless would be transferred to the new pole.

MR. SIMOES: Okay. There's a new Wireless Telecommunications Law that was recently passed by the Town. And any new installation, and I don't know if this would be categorized as a new installation, but it is -- the antennas are moving from -- from the existing facility to a new facility. It may need to go through that, that process. There's an Antenna Advisory Board and a screening process for any antennas for cell towers.

MR. MONTALBANO: We'll look into that.

MR. SIMOES: In addition to that, and we're under the discussion of EMF, there's a radio frequency requirements for that, and the entire site would have to be measured in toto, from the lines in conjunction with the antennas.

MR. McGOLDRICK: Okay. We'll --

the antennas are actually the property of Verizon, but we'll have coordination between the engineers in terms of the measurements.

MR. SIMOES: Sure.

You mentioned that the driveway might be moved. I believe that we had several discussions at the Technical Advisory Committee regarding the placement of that driveway to avoid floodplain and wetlands. So I'm not sure what -- where you're proposing to put the driveway, but there's a consideration there of what the impact might be on -- on wetland and floodplain if you move it further south.

MR. MONTALBANO: We're aware of that.

MR. HAGGERTY: Yeah, we're looking into moving the -- the proposed driveway to an existing -- there's an existing location now, where there is -- there was a driveway into some of the houses in the back. So we're looking into utilizing that driveway or that location.

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But that is through the -- the 100 year floodplain, so we're working with our consultant and with the storm water issues to rectify that.

MR. SIMOES: Okay. The -- now, the visuals considered glare, possible glare, from the -- you're mentioning that there was a shut off for the -- the lighting. So how would that work? Is there's some sort of -- if you sensed that there's somebody on the site, would they turn on, or is it how -- what's the operation of the lighting system?

MR. McGOLDRICK: The only time the lights would be on is if we were physically there at -- at night for -- for some reason. If the -- it's not a motion sensor, where the lights would come on if somebody were -- were to approach the fence. The -- the camera system would -- would trigger an alarm that would go back to -- to the -- to the security center, but the -- but the lights would not come on.

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MR. SIMOES: Okay. Right now I see that there are two -- they're two lights, at least, that are situated on some of the highest profile poles, at least in the substation area, at feet. I don't know what the possible glare would be when they're on.

I guess for the Planning Board's consideration, whether it might make more sense to have lower lights that would minimize glare when they're turned on.

MR. McGOLDRICK: We did a lighting study. I don't know if you've seen that.

MR. SIMOES: The lighting study might go into how much illumination there is, but glare is something different. That's when you're actually looking at the light. It might not be shining onto the roadway or off of the property, but you might be seeing a light in the distance. That's -- that's what I'm referring to.

MR. McGOLDRICK: Okay.

MR. SIMOES: And, lastly, and you may have already addressed it in your

plans, but the latest Tree Preservation Law that's on the books also deals with you replacing trees, and -- and that should be considered; how many trees are being removed on the site and the replacement of those trees.

MR. MONTALBANO: We're aware of the Tree Preservation Law, and I believe we did a count.

MR. SIMOES: Okay.

MR. MONTALBANO: But we'll make sure that it's done.

CHAIRWOMAN THORMANN: Is that it, Mr. Simoes?

All right. Town Highway 11/19/08 no comments.

ALC, the -- from Ron Haelen. Provide a detail of the light fixtures. The fixtures appear to be angled sideways, instead of straight down. To help prevent light glare, the fixtures should be mounted 90 degrees to the pole.

MR. MONTALBANO: We -- we'll take care of that, yes.

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CHAIRWOMAN THORMANN: All right.

Two, the light fixtures on the 60 foot poles should be used only when necessary; during emergencies or night maintenance and repairs.

Consideration should be made to have some of these lights on a motion sensor for security purposes.

Three, additional trees --

MR. McGOLDRICK: Yes.

CHAIRWOMAN THORMANN: -- along the New York State DEC Pocket Pond are shown in two to four feet of fill and will probably not survive.

MR. HAGGERTY: We're going to go back to our landscape architect with that comment and have him address that.

CHAIRWOMAN THORMANN: Okay.

Tree removal plan should include a chart with the number of trees to be removed and to remain.

Some of the Evergreen trees along South Mountain Road should be increased in size from seven to eight feet to eight to

ten feet.

MR. McGOLDRICK: And that will be no problem.

CHAIRWOMAN THORMANN: Indicate type and size of proposed fence.

Identify the rectangular block symbols along the northern edge of the proposed structures.

Verify if there is enough room to pull a large service vehicle off the road and open the gate without interfering with the traffic light on Little Tor Road.

Nine, landscape, lighting and building plans to be submitted to the ALC for review and approval.

MR. MONTALBANO: We -- we have no problem with any of those comments. Yes, we have a copy it. Thank you.

CHAIRWOMAN THORMANN: Okay.

Rockland County Planning -- do they have to be read, Mr. Skofield? They're the ProForma ones.

MR. SKOFIELD: Might as well read them, since they haven't been read before.

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CHAIRWOMAN THORMANN: A review must be completed by the County of Rockland Department of Highways and all required permits obtained from them.

Two, as per the letter dated 9/16/08 from the Rockland County Drainage Agency, a permit application must be submitted to them and all applicable permits obtained prior to any grading, disturbance or construction on-site.

Three, the Rockland County Office of Fire and Emergency Services shall receive a copy of the plans for their information for fire fighting and other emergency use.

Four, piror to the start of construction, a grading and soil and erosion control plan shall be developed and in place for the entire site that meets the New York State guidelines for urban erosion and settlement control.

Five, Page 8 of the Long Environmental Assessment Form does not list either the RC Department of Highways or the RC Department of Planning as

agencies in which approvals are required. This must be corrected.

There shall be no net increase in storm water runoff in the site.

MR. MONTALBANO: We'll comply with all -- all the requests from the County --

CHAIRWOMAN THORMANN: Okay.

MR. MONTALBANO: -- Departments.

CHAIRWOMAN THORMANN: Rockland County Highway, no objection for the Clarkstown Planning Board to be the lead agency to carry out the provisions of the State Environmental Quality Review Act.

Two, erosion and sediment control details shall be developed. Show limit of disturbance line along, with silt fence, stabilize construction and retaining wall details. Any new subsurface seepage pits information at the area shall be shown.

Three, eight inch high chain link fence and barbed wires shall be called out on the drawings.

Four, the proposed egress/ingress location through Little Tor Road is too

close to South Mountain Road to conform to the required blocking systems. The main entrance appears better served to be located on South Mountain Road.

Five, the proposed substation is near the Hackensack River and 100 year floodplain area. It is preferred to use crushed stone surfacing in substation in lieu of gravel shown.

Six, the maintenance responsibility of the proposed storm water basins and easements shall be indicated.

Sight distance at the driveway connection shall be shown. Please submit a copy of the drainage calculation for review and approval by this office.

Nine, any new signs, such as advanced warning or posting signs, shall be shown on the drawings.

Ten, a Rockland County Highway Department work permit will be required for the development of this parcel, and must be secured prior to the start of any excavation or construction on-site.

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Eleven, Rockland County Drainage Agency approval will be required prior to the issuance of work permit for any new construction on-site.

Twelve, a Rockland County Highway Department Road Opening Permit will be required for the utility and sewer work to be performed within the County road.

Fire Inspector. 11/17/08. Is the weight limit sign for the site or for the road?

MR. McGOLDRICK: That was -- that was for the road.

MS. LANDER: No. The weight limit sign was put there at the request of the Town several years ago. The Highway Department said it's not an actual physical limitation, it's to prevent truck traffic down Little Tor Road. So the fire company can use the road. But it exists. It's not something we're adding.

CHAIRWOMAN THORMANN: Ladder truck with approximately 72 tons may have to travel into site in case of emergency.

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MS. LANDER: Right.

CHAIRWOMAN THORMANN: Advise.

MS. LANDER: But the sign's been there for five years. We're not adding --

CHAIRWOMAN THORMANN: Well, I think you're going to have to clear that up with the Fire Inspector.

MS. LANDER: That's fine, but the Highway Department says that it's not a physical limitation. It was just the Town requested that to limit truck traffic.

CHAIRWOMAN THORMANN: Well, you may be caught between the two Departments.

MS. LANDER: That's fine. That's fine. And the Highway Department said that that road is designed to handle the fire equipment, and that they could -- they could certify that.

CHAIRWOMAN THORMANN: Mr. Skofield, do you have any comments?

MR. SKOFIELD: No comment as far as that. Just a comment as far as whether the truck could handle --

CHAIRWOMAN THORMANN: No, any --

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MR. SKOFIELD: -- going onto the site.

CHAIRWOMAN THORMANN: Do you have any comments at all?

MR. SKOFIELD: Oh, any comments.

My only comment is I'm here because Mr. Kraushaar recused himself, other than that I don't have any comments.

CHAIRWOMAN THORMANN: Okay.

MR. MONTALBANO: Okay.

CHAIRWOMAN THORMANN: All right.

This is now open to the public. Now you have your opportunity.

I just ask -- excuse me. I want to just say something just ahead of time. It may be the school Mom in me, all right, but I want this done in an orderly fashion. Everybody will get an opportunity, if we have to stay here until 12:00. So don't be concerned that you will not be heard. All right.

All right. Identify yourself as you come up, please.

MR. TERIBILE: My name is -- Hello.

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My name is Bill Teribile. I live at 290 South Mountain Road. I live on Lake Lucille, actually. And I know where they're putting the substation, it's about half the size of --

VOICES: We can't hear you.

CHAIRWOMAN THORMANN: Speak into the mike.

MR. TERIBILE: It's about half the size of Lake Lucille.

A VOICE: He's got to bring it --

MR. TERIBILE: Hello.

CHAIRWOMAN THORMANN: There it is.

MR. TERIBILE: So I just wanted to show you some of the problems that I see -- foresee. Over here -- by the way, they have nice pictures and everything, but they're leaving out some things. Over here is Crum Creek, and they have lines going right across here from their substation now.

Now, these lines they're having problems with, but they don't want to address.

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Now, one of the lines -- one of the telephone poles -- let's say, for instance, this is a telephone pole. It's inside Lake Lucille, and Crum Creek comes right out in front of it. What's happened because of that telephone pole is there's an island that's built up in front of it. The island is about the size of half this room. And what it's doing now is it's pushing the bottom of this line. And the telephone pole is like this. (Indicating.)

Okay. So what I did was I called them, and I told them about this problem last year. They brought somebody out, a supervisor. And I road him out to the Lake and I showed him. He went up to it and he kicked the bottom of it. And he says, no, it looks a little strong. And I was like, what, are you kidding me? You just can't kick the bottom of it. I said, this whole thing has to be replaced. His first answer was, we'll never shut this line down. And I asked him why. He said,

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this isn't a 220 line. This is a 384 line. And this is to our best customer. This is to Tilcon.

Now, my question to you is: Is this being done for Tilcon, or is this being done for everybody else? And if it's being done for Tilcon, shouldn't that be on Tilcon's property?

Now, you don't want to address the problems that you have now. And I never heard, when you were making your presentation, about anything about the people around there. All I kept hearing was O & R. O & R. Well, you have a problem here and you should address this first. And nothing should be done until they address this problem, because it's only gonna get worse.

MR. MONTALBANO: You want us to comment, or should we -- or should we wait?

CHAIRWOMAN THORMANN: Well, no, I think this is --

MR. MONTALBANO: Okay.

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MR. McGOLDRICK: The line that the gentleman talks about that goes either past the Lake does -- excuse me, does feed the Tilcon Plant down on the -- on the River. That line -- that line -- the line presently comes from the West Haverstraw Substation, comes through this site. And part of the substation that's planned is to have a transformer on this site to continue to feed that line. So that line will not feed up and across the Mountain from West Haverstraw, it will be fed from this -- from this site.

But the line as it's going through, I can have somebody -- somebody go out and look and see what the issue is with this -- with this particular pole.

CHAIRWOMAN THORMANN: Thank you.

MR. TERIBILE: Will we have somebody there so I can show them? Because I'd be more than happy to show them what the problem is. Because what I'm concerned about is this isn't a regular line. This is a powered line that isn't 220. It's

384. And that type of line hitting that water, everything in that Lake dies.

MR. McGOLDRICK: I don't think that would happen, but we can -- we can get that addressed.

When -- you know, with the station constructed and the source of this line being this substation, the protection on that line, again, is better than -- than the protection that's on it today. It's not a 384 line. It's -- we have two levels of distribution. One level is 132, 13 KV. That's the normal circuits that you see running around the streets. This particular line that goes down to -- to Tilcon is a 345 distribution line.

CHAIRWOMAN THORMANN: Thank you.

Could you be so kind as to -- as to let Mr. Letson know whatever your findings are with regard to that particular pole.

MR. McGOLDRICK: Sure. And, Ken, if you can get this gentleman's name, we can coordinate a visit out there.

MR. TERIBILE: And one other

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question. If you find that there is a problem with this line, would you recommend going through with this project at this time until this is fixed?

CHAIRWOMAN THORMANN: Well, I don't think that's an appropriate question right at this moment.

MR. TERIBILE: I just want to know for the safety of all the homeowners around.

CHAIRWOMAN THORMANN: Absolutely that's foremost in the mind of everybody sitting in this room; is the safety of the people of the Town of Clarkstown. So be assured. And he's going to give his findings to our Town Engineer, so...

MR. TERIBILE: Okay.

One other question I have. We're also having a drainage problem on South Mountain Road. I'll bring this along with me. I'm starting to get loud, so I may not need it.

We're having a problem with South Mountain Road right along here. And if

this is in any way disturbed, no matter what, with the trucks coming through or anything like that, you are gonna get more silt coming into the Lake.

Now, it will come through -- through the storm drains, but everything there funnels into our Lake. And we're having problems now, and this is only gonna add to it.

CHAIRWOMAN THORMANN: Sir, did you read that I just read out that he has to have a soil erosion control plan before he can do anything. And this gentleman over here, Mr. Letson, oversees that.

MR. TERIBILE: Okay. So -- and that's -- okay. That's fine.

Thank you very much.

CHAIRWOMAN THORMANN: You're welcome.

All right. Next. All right. Sir, come up.

MR. AHMADI: Good evening. My name is Raymond Ahmadi. I'm at 227 South Mountain Road, New City, New York 10956.

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For those people that do not know me, I have degree in environmental science. Also, I have the professional license State of New York and New Jersey. And I have professional planning license in the State of New Jersey. And I have worked at least 40 years in this County and over 14,000 projects.

Now, having that one done, I have only two thanks all the educators very nicely, very good telling us about power distributions and electrical engineering. But they were very, very nice not to tell us how many megawatts that substation has. And, also, they forgot that we are in Planning Board, not the need of the O & R for distributions of their customers.

And for that being said, I have a outline of what I'm gonna say here. And I'm gonna distribute to the people to the Planning Board to look at it.

The site is located on R-40, and it is, by right, you can only have single residence at that point. And any other

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structure, like utility pole, has to -- utility substation has to have a special permit from the Town.

For the following reason I would like to deny the application from the birth for these reasons.

Number one, South Mountain Road is the most famous and scenic road in the County and is a top of the three, what you call, famous road we have. The first one is South Mountain Road. The second one is Phillips Hill Road. The third one is Buena Vista Road. And if anybody doesn't believe, you can go to the Internet, look at the Clarkstown's histories, and also go to the museum of the Clarkstown, on North Main Street.

Now, having the land being by Mr. Miele that owned the property before, it was 6.3 acres. Three bungalows. Three sisters that lived in front of me. And these people, when they died, the relative they want to sell it. First they wanted to (inaudible) then they wanted

park. They didn't know anything. Some contractor, Tri Star Construction, bought the site plan. These 6.3 acres I could only use two-acre out of it. And now recently, I checked out directly, and I don't know, this wetland streams, it looks like the wetland these days are shrink very fastly were denied.

Now, to prove this one, we can also take this hydraulic station run off and also the air photos from 1980s and 1890s from Sunburn to prove that point that they hide the delineation of the wetland somehow changed. Is that any problem with that? If there is, let me know.

Now, the three houses have been there. They are full of asbestos, contained asbestos. The burn was very bad in asbestos. Now, when they, what you call, demolish this three houses, did they get a permit? Did they hire the certified qualified --

MR. MONTALBANO: Can I answer that? Because I just want to correct the record

or not correct the record, at least let Dr. Ahmadi know that, yes, before O & R closed on this property, the property was remediated. There was a Phase I and a Phase II, and we did get a demolition permit from the Town of Clarkstown.

MR. AHMADI: By doing this one, we have saw and we have already record and testified of the neighbors, the people with the clown clothes, or they call it clown clothes, white suit, they coming in and they throw the asbestos in a truck.

We would like to have the record of the dispositions of the material and the remediations and all those after the fact. And if there is any soil test for asbestos, because asbestos are airbornes, not water born, airbornes, and we would like to have to measure by certified, New York State certified, laboratories, not any laboratories.

Also, we would like to have the records of the landfield that they have the paperwork that they have accepted, and

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they said these are the amount of asbestos loads that they accepted, but they have to have by law and DEC required to have these records.

A VOICE: Talk into the microphone.

MR. AHMADI: Oh, I'm sorry. Okay.

MR. MONTALBANO: I just want to comment, you know, the site was remediated in accordance with all New York State Environmental Laws. There are chain of custody reports that -- that were prepared and filed by appropriate licensed contractors. O & R would not do other than that.

CHAIRWOMAN THORMANN: All right.

May I just ask, and it's not that I doubt or anything --

MR. AHMADI: We would like to have the record of it.

CHAIRWOMAN THORMANN: Not you. The Town, sir. Is it possible for DEC --

MR. MONTALBANO: I think you have it already, but we'll take a look.

CHAIRWOMAN THORMANN: All right.

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That would be --

MR. MONTALBANO: When we have it all ready, you will have.

CHAIRWOMAN THORMANN: All right. Thank you.

MR. AHMADI: Number five, the transformers are insulated by oil/cellulosic insulation. Most transformers contains more than thousand gallons of oil. Although O & R was very, very careful not to tell us how many and what size. How many mega -- how many mega -- kilobytes there are or mega kilobytes they have. The rate that the transformers are got fire due to the overloading is great. The leak for Polychlorinated Biphenyls, known as PCB's, are tremendous.

We already -- everybody knows the transformers in New York City are failing. And September 19th of 1990 when the transformers in Black Fridays that turn out and all those loitering and everything else. We know all about it.

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And there are 40 -- 411000 sites on Google. You can find out about it.

Claims that the PCBs are cause skin cancer, birth defects, anomalies in the birth, etcetera.

I don't want to go through this one, because I'm not gonna be wasting your time, because you know better than I. And some of our neighbors have skin cancer. And we don't want to make it worse than as it is. And I hope that, you know, your son or your daughter is not gonna live with that.

The proposed driveway is only just 60 feet away from the intersections. Visibility. The Town Law requires 250 feet.

And then, also, we have considered about the slope of the South Mountain Road intersection with Central Highway, which is over 16 percent. If not, let's go and measure it. And everybody knows that people are coming down from Haverstraw down, they cannot stop. Many, many

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accident reported that the truck, the people they want to make left turn, and the truck him 'em. And two years ago, in August, that the lady helicopters and her son had to be lifted. Air-lifted to Westchester for the -- for damages.

Now --

A VOICE: Into the mike.

A VOICE: Talk into the microphone.

MR. AHMADI: Sorry. Well, all right.

Now, for the maintenance of the substations, which we do not know, now they are gonna change the driveways, we heard. And how many big trucks are coming out? What kind size of trucks are coming out?

And the fire -- fire department across the street, which I partially designed the site for them, they have 48000 pound truck, 40 -- 54 feet long truck. How they are gonna turn into that 12 feet driveway that they show on their plan? Somebody show it to me. Explain it

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to me. In a plain language.

Now, there is a -- on Page 4 there is a lighting plan, which they don't want us to talk about it. And they didn't even want to talk about it. There is a lighting plan. Sixty-seven and five inches high. Correct? That light is a flood light that light up this substation like this, from the top down. Yes. Around the property is .5 of lumous. That's fine. Very good. But this highlights, when you are on the street farm or by the -- Mr. Aspee's subdivisions, that area, you could see the lights very nicely. Why?

CHAIRWOMAN THORMANN: Doctor Ahmadi, did you hear the Town Planner spoke about those lights?

MR. AHMADI: I'm gonna explain.

CHAIRWOMAN THORMANN: So it's not approved.

MR. AHMADI: Why? Because those lights are shining like a store. And they are even at your eye level, because at

that elevation it's 592 feet. And this elevation at the top is gonna be -- and when you're coming out from the Central Highway, also you can see the same way. We have a store on South Mountain Road. That's not bad at all.

Now, most our residents are one family, one level. And mine is only 32 feet, the roof is 32 feet high. And my bedroom is about 30 feet above the ground. And the substations, which is I can see through my bedroom, will be lighting like a daylight. Would you like to have that same thing? After a day work and come in and you have a substation, maintenance, emergency whatever it is, and see it? I don't think so.

Oh, we are Planning Board. Not the electrical -- electrical engineering distribution power distribution planning board; right?

A VOICE: Talk into the mike.

MR. AHMADI: Right.

CHAIRWOMAN THORMANN: We don't

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get --

MR. AHMADI: This is a Planning Board.

CHAIRWOMAN THORMANN: Excuse me. I don't get the import of your question, sir.

MR. AHMADI: Okay. Okay. No. No. I just wanted to remind myself.

Lake Lucille has been dredged about five years ago. Five or six years ago. I'm not sure exactly. And it was silted to the point that you could see the silt through the water. And the burden on a taxpayer for the community. Now, the silt had at that point no PCB or any contaminations or any bore, as they call it. Now if there is any accident we're gonna have these contaminations to the Lake Lucille, from the Lake Lucille and Hackensack -- West Branch of Hackensack River, to the Lake Forest, and down to the Oradell Reservoir, United Water Reservoir. And United Water serve over a million customers in New York and New

Jersey. Do they have any fault that they should drink that contaminations? I don't think so.

The last time that GE in 19 -- in 1982 had the backyard, with all those transformers and oil leaks and the contaminated Hudson River, still we can catch the fish, but we cannot eat it, because the government told us that it is not good to eat it.

I think we should -- I believe, personally, myself, they should invest their money in substations somewhere else, close to the customer. It's very obvious, we are only resident. We don't have that kind of consumptions as any of those with big malls. I use two, three hundred kilowatts a month. And the mall, look at the malls, how many kilowatts they are using. Shouldn't they use the substation close to the consumer, so they can serve better and there is less loss of energy? Isn't it better?

Now, we were talking about the

electromagnetic field. I'm not a specialized in it like any other people in the room, and I know only, and only, that electromagnetic fields they can find on Google thousands, thousands, of the reports, and it shows electromagnetic field is, yes, dissipate by the distance on the square root, the square of a distance. Not if you are going -- if there is thousand here. If you go ten meter, it's hundred times less? Yes. True. But the electromagnetic field of this substation are great. More than what you can do. And what you can do. All I can do, I can take one of those florescent lights and go by my front door and light it up in the, what you call it, in a -- hold it in air and it gonna light it up. And, fortunately, I don't need to buy anymore from O & R, but by that time I will be dead. So what's all about it.

CHAIRWOMAN THORMANN: Thank you.

Who's next?

MS. SAMBERG: My name is Darrow

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Samberg. I live at 211 South Mountain Road, across the street from the -- the now closed up --

CHAIRWOMAN THORMANN: Use the mike.

MS. SAMBERG: Hi.

A VOICE: Want the easel?

MS. SAMBERG: I would like to use your easel.

First off, hi. It's nice to see you, Pete. I've met with you guys so many times, and I just want to remind you that three years ago you promised to remove the fence, this danger, keep out, with a man with a lightening bolt through it. That was three years ago. That's right in front of my driveway. I see it every day.

I just wanted to remind you also that this is your idea of great fencing. Anybody wants to see any of this fencing, it's just fabulous. You can get as much of it as you want. This is green. We call it the Frank Finochio Fence, because Frank asked for this to please be put in front of where we have -- there's a

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hissing, and it's been addressed --

CHAIRWOMAN THORMANN: We can't hear you.

MS. SAMBERG: I'm sorry.

CHAIRWOMAN THORMANN: You're turning. You have to hold the mike up.

MS. SAMBERG: I'm nervous.

CHAIRWOMAN THORMANN: Well, don't be. We don't bite.

MS. SAMBERG: There's a hissing-- there's a hissing sound. And we've had many, many complaints about the one site that's already there. This is not having to do with the substation. This has to do with the fact that what's already there has not been moved, has not been maintained. And there are so many problems, I just want to address it very quickly, because I don't want to wear anyone out, and there's a lot of people waiting.

There is a wetlands. They are for South Mountain Road and the property that you guys want to take over and put this

substation on is ten feet from a County Park. And I brought for you some wonderful maps. I hired a geophysicist who said that he could not think of any other site that he's ever looked at that had more problems, in terms of drainage, in terms of it being ten feet from the State Park, in terms of the impact, the eyesore, that it has nothing to do with the pro -- with the entire community. This is something that is not in keeping with historic road. As everyone told you, I have a book, South Mountain Road. There aren't any other books that are written about Tilcon or about other areas in Haverstraw.

This -- if we let this one part of New City dissolve and become one big structure, whether it's lit this way or whether you put up another beautiful fence like this particular one, with the little green, it's -- yes, it may be Evergreen, but there is nothing aesthetic about this. This is what I look at everyday.

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I moved to this property, to South Mountain Road, with the high wires in place. That is not -- I had to address this with my -- my own conscience. And I figured out, yes, there isn't a problem with -- it's not emitting too many electromagnetic fields for me and my family. However, I'm not gonna sit back and listen to little things about little pieces of information that are really not true.

Number one, if there are over a -- a thousand gallons of oil in this site, ten feet from my property or both ten feet from your property or any of you, I don't think you'd feel very good about having, in the event of an incident, having trucks come barreling down, and I have so many pictures that I can show you, as of today if an O & R truck, and I have picture of it, if an O & R truck tried to come down, I was just going up South Mountain Road, there isn't room. And I can show you exactly where he came over on my side

twice, making the turn. So on South Mountain Road it takes two and-a-half miles until you straighten out and then go straight down into Little Tor.

My life personally has been impacted by this entire fiasco. One, the school bus stopped stopping in front of my driveway. Right across the street. And I spoke to you about this, Pete, and to Kim Campbell, because there were always utilities, beep, beep trucks starting at 7:00 a.m. When they start and stand right there, with the beeping, right in front, my -- they -- we could not have the school bus stop and slow down and make that turn where they did in that public driveway, in that area. This has been opened up. You opened up the driveway in front and put big note, these were considered rock. Chuck Hanazaro and I both met with you, sub zero day, with Kim Campbell three years in a row and you told us how you were gonna close it up. As soon as the -- you said in the spring we were gonna get

new plantings. We personally paid for 11 trees that you guys cut out and have never replaced. No one has ever replaced any of this. This is all just a whole lot of mess. And it's hideous. This is -- does this have anything to do with South Mountain Road? I think not.

And I don't know what kind of a neighbor could move into a neighborhood, you guys call yourselves neighbors, but you move in, you haven't done anything. You don't remove the garbage. You don't -- if there's anybody that's there, that we police your property. We take care of the garbage. There are things dumped there. Nobody comes in and takes care of that. We have to inform you guys. And if you're going to be coming around once a week and checking on it, that's going to really be a great day, because then the lights go on that day and then we have more traffic and more radios maybe just playing into the air. More vehicles just having their motors running and all

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of this air pollution.

I'm just gonna check and make sure if there's anything else I wanted to tell you.

Yes. There's -- it's obvious, and I would like to show you this. There are four, four, park lands. Not just one. There's South Mountain County Park. And I don't know, I can leave these for you guys, but there's South Mountain County Park. Of course, there's Lake Lucille. There's Little Tor. And you can look, there -- all of the -- the park lands on this have been clearly marked with green, in green. So this is ten feet from one -- one park land.

Then you also, it appears as though the drainage and the wetlands, which is on your property, are right there, the drainage has been changed. It's -- if you come and look right in front, on South Mountain Road, take a look, there is, right to this day, there is water that's all backed up. This was never there, but

important, bucolic trees were already removed. So now we have this drainage problem.

Then we also, when it gets cold, which it happens to get, I know that we're talking about that one day when it was hot, and that's the reason why this all happened. Well, guess what, there are a lot more cold days, where there's ice. And you know what happens when there's ice and there's this incredible run off, we get accidents. And it's a really narrow road. No -- no -- there's no shoulder. So there's no place for people to go, except into trees or right into this one beautiful, big thing that hasn't been moved yet, called the gas pipe. The hissing gas pipe. And that's right where the water is. And we had two near misses. We've had police. We've had all sorts of problems at this one site. So I will let anybody check that, if they want to.

And I guess, lastly, I'm going to open it up to anybody else, but I

personally have a daughter who has been ill, as you guys know. And I've asked you, and especially during the asbestos times, because you guys knew that I was -- my daughter was home schooled and was at home, chemotherapy, and you knew that we were home and that we -- she had certain issues, and nobody has ever called me to tell me any time that there was any kind of removal. So I learned about the asbestos, as Mr. Ahmadi, as many neighbors did, looking outside and seeing men walking around with white suits. I walked over and personally witnessed pieces of asbestos being picked up and thrown into a truck. So I'd like to know what kind of compliance that was.

I had my water tested, at my own insistence. You guys, O & R, wouldn't test my water. I paid for it myself. It took me 12 weeks to get reimbursement. If I'm ever 12 weeks late on my bill, I'd like to know what you guys would do.

But, after that 12 weeks of waiting,

and all I was told was asbestos doesn't go into the water. It's airborne. As its being thrown into this truck. And I don't know exactly what should be done, but that appears to me, and I, with my limited experience, I don't know what kind of a permit or what kind of compliance. Nothing was encapsulated. I can tell you, because I work -- I fix houses for resale. And I can tell you, I have had to go over and not touch -- you don't remove things and not inform people. You don't just take sites and not cover them. Nothing was done, except to protect the men who were removing it. Not the neighbors. Not me, whose -- my water is 11 feet from the site where you guys removed that.

I'd like to know how you guys sleep at night.

Thank you.

CHAIRWOMAN THORMANN: Okay.

MS. SAMBERG: Oh, and we have 320 signatures of people this is all -- they oppose this and I would like to give them

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all to you, as well.

CHAIRWOMAN THORMANN: I just want to ask you a question.

Was your water effected?

MS. SAMBERG: No, my water was not. Asbestos is airborne. It's not in the water. And I do now have a baseline to show where my water was. And I would like to have and offer you guys to pay the $580 upfront, and let me re-test my water and see where it is now.

But that property, that you guys are messing with, was contaminated. I would really urge, everybody, please check that property. Please check the land. This isn't a joke. It's really, really a very tender area. And the water goes right into the wetlands, so I don't know what has already occurred, but this is not the site. There are many places that aren't ten feet from wetlands, that are right on a park land, that aren't on a bucolic, historic land. This is the back bone of our County. This is where our only

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history. I don't understand why there are other places that are commercial. Why would you stick it in the middle of the woods? I -- I don't understand.

Thank you.

A VOICE: Legislator Day wanted to...

CHAIRWOMAN THORMANN: No, the man is there. After this gentleman.

A VOICE: Okay.

CHAIRWOMAN THORMANN: Do you wish to speak, is that it?

DR. LAICO: Yes, I do.

CHAIRWOMAN THORMANN: That's fine. Let her clear her -- and then you're next, Mr. Day.

DR. LAICO: My name is Dr. Joe Laico.

CHAIRWOMAN THORMANN: Sir, we can't hear you.

DR. LAICO: My name is Dr. Joe Laico. My wife and I live at 75 South Mountain Road, and we've lived there for over 30 years.

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During that time I was fortunate enough to be able to purchase land that is in close proximity to the subject land. I bought it because I wanted to keep that area green. And two years ago I was able to sell it with a restrictive covenant so that it remains green. And I did that, not to be an elitist, because I want anyone and everyone to come on that land and see the beauty of it. We have nesting Great Horned Owls. It's a migratory route for the Giant Blue Herrings. There are Wood Feasants, Wood Cocks, Grouts there.

I wanted it so that we could get our kids and my grandkids and your grandkids out of the mall and away from their computers and their cell phones and see what life is really all about.

I didn't hear anything mentioned about any sort of impact that this may have on the flora and fauna, but I'm pretty sure that the answer will be that there will be no impact on it. However, I feel that the development of this area

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will severally impact upon the nature of this area and what it was intended for and which perhaps I foolishly kept and maintained as a perpetual green area.

CHAIRWOMAN THORMANN: Thank you, Dr. Laico.

Mr. Day. Mr. Day.

MR. DAY: Good evening. My name is Ed Day, New City County Legislator. And I want to thank you for the time, first of all.

First of all, I -- I got a lot of calls on this issue and communications from residents in this area, in New City, and I felt it was important to come here and listen to what they had to say.

I'm not gonna beat up O & R, because it's not appropriate, but I think one thing you should listen to is listen to the people who live near O & R facility now. As you know, from my past history, in coming to this Board as a citizen representative, I think one of the best gages you can have as to what the future's

going to bring is what's going on now. So if they're good neighbors now, they'll be good neighbors later. I think enough concerns have been shown here that would give pause.

I've heard a lot of conversation. I took some notes. I'm not going to be here long. There are a lot of issues here, but I think the biggest issue here is we're considering permanently establishing a substation not near railroad tracks, not near the Palisades Parkway, but near homes and on an historical road.

I listened to some of the testimony and, you know, first of all, Tony, you should never say fencing is hopefully attractive. You know, hopefully it will be, but apparently the present fencing is not.

But I heard some of the details about the -- it was eluded to the July '99 event, where there was a major issue with getting power. At that time, if I heard this correctly, Stony Point Plant was

being planned. Since then it's been put into place. This is nine years ago. I remember '99, because I was coaching football, Pop Warner, all the glass was brown. But I didn't hear anything about since '99. Not a word. I've heard since in 1999 there was an issue. And it was just alluded to by Darrow.

I would like to know if, and this is something you can follow-up, in 2003 there was a major blackout on the East Coast. I'd like to know how this area faired in that blackout and how O & R handled the load on that particular day. I was in Baltimore preparing for a blackout to come down my way. So I'm curious -- if nothing happened in '03, and the only instance we're looking at is '99, I think we start looking at the potential that this proposal may be a matter of a bit of convenience or a proposal to minimize an inconvenience. And I think when you start weighing that, I -- I think that's really what you have to start

looking at, in my humble view.

The other thing is we looked at maps of other facilities. Now, my business is security systems, one of things we do when there's a dated system is change out the head ends of the system. That may be a better way to go. I don't know if it's feasible. I don't work for O & R. But instead of implementing a new power substation in a middle of a residential area, maybe they should look at changing out some of the equipment in these existing places, so they can take the load that apparently happens once every nine years.

The other thing I heard, and it reminds me of traffic engineers, something about this being a perfect fit. There are a lot of things that come to Planning Boards that are perfect fits. They're not community fits. And I think that really is a major issue also.

You mentioned the County Highway Department. I will tell you now, if there

is an issue, however you go through this process with the County Highway Department, I stand ready to serve you and the residents to try to make this as -- whatever happens as best as possible. So if there's an issue with the Highway Department at the County level, I would -- you call me home. Shirley, you do as a matter of course anyway.

Also, a mention of a camera system triggering an alarm. As most of you know, I do that for a living. I don't quite understand how a camera system triggers an alarm. I can understand how a photoelectric beam might trigger an alarm. So I think it would be important to gain some better understanding of exactly what the security system there is, because that just got my ear perked up.

And, again, in closing, I just very simply say, we're considering a permanent establishment of a power plant, not near a railroad track, not near a highway, near residents, in an R-40 zone, in a

historical area, and that's really what the issue is.

Thank you very much for your time.

CHAIRWOMAN THORMANN: Excuse me. Excuse me, sir. Excuse me, the lady is next.

MS. THAL: Hi. I'm Terri Thal. I live in Lake Lucille, half a mile west of the area in which the -- the station is proposed to be built. And, personally, I would like to -- very much like to endorse everything that David Teribile said about the problems that are going to come downstream and that are going to effect the Lake.

However, I'm not here tonight specifically as a rep of the Lake Lucille community. I'm here as Treasurer of West Branch Conservation Association. And I want to read a letter from West Branch Conservation Association to you and into the record.

If some of these -- the letter is signed by Martus Granirer, who is the

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Executive Director of West Branch, if some of the specifics in this have partially been addressed tonight or talked about tonight, forgive us. We haven't seen the latest changes. But talking about them and the substance of what West Branch is looking at is quite different.

So, for you.

(Document submitted.)

MS. THAL: And this is -- is addressed to Shirley Thormann, Chairperson, and the members of the Town of Clarkstown Planning Board.

It's headed O & R Utilities, Inc. Proposed Little Tor Road Substation SL 34.05-1-6, New City.

Madame Chairman and members: Since 1941, West Branch Conservation Association has worked to safeguard the streams that comprise the western origins of the Hackensack River in Rockland County and the watershed that drains into those streams.

(Whereupon, the tape was turned off

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and this is a letter submitted by the West Branch Conservation Association.)

MS. THAL: West Branch endeavors to protect, as much as possible, the open, undeveloped and natural character of the area in which the proposed substation would be sited.

We have succeeded in protecting or leading to protect almost 1,000 acres of mostly-forested open space in that neighborhood. We are sensitive to threats to the watercourses and their watershed.

The proposed project has the potential to significantly harm that watershed and one of the streams that flows through it. The harm would be done by the structures proposed for the site, by the lighting proposed for their nighttime security and by some of the equipment to be installed on it.

This proposal has an unusual regulatory aspect. Two conditions that must be met for the Zoning Board of Appeals to grant the necessary special

permit concern virtually the same attributes that you must examine under SEQR. For a public utility substation to obtain a special permit, the substation must, one, be housed in a structure that harmonizes with the character of the neighborhood, and it must, two, have adequate screening and landscaping.

The proposed substation consists of a group of steel frames and concrete pads that would support large electrical distribution transformers and other electrical equipment, all surrounded by a chain link fence. Nothing is to be housed in any structural at all, much less in one that harmonizes with the neighborhood.

Whatever the ZBA may do about that discrepancy, under SEQR and its regulations, you must determine whether the proposed substation may have significant adverse visual effects. If your answer is yes, or even if it is maybe, you must undertake an Environmental Impact Statement.

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We believe that your answer to that question should be yes. The applicant has provided too little information for you to make any other determination.

Although you have been given plans for plantings and screening, there is no visualization from which you can assure yourselves that the proposed screening and planting will conceal the substation, especially from the most likely public viewpoints, which are along South Mountain Road, close to the site, and from homes nearby.

Only a computer simulation, one that has been validly composed from the applicant's construction plans and from a surveyor's information on surface contours, and from plans for existing and proposed plantings at their height and density when they are planted will serve that purpose.

(Whereupon, the tape is turned back on.)

MS. THAL: Plantings will be higher

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than originally planned. That doesn't answer the question of will you really know what they look like. The only way you'll know what they look like is with such a simulation.

Back to the letter.

Impacts of lighting. A computer simulation is the only reliable way to determine the appearance of the site at night. That's important. By design and by neighborhood preference, South Mountain Road at night presents one of the few dark areas remaining in Rockland.

(Whereupon, the tape is turned off and this is a letter presented by the West Branch Conservation Association.)

MS. THAL: Although the applicant has submitted drawings showing calculated foot-candle levels diminishing at increasing distances from its floodlights, it has presented you with nothing that allows you to be sure that none of those floodlights will shine in the eyes of offsite observers. No matter how distant,

directly-seen light source do not lose their intensity.

The lighting plan show luminaries pointed away from the substation, their beams aimed at what may be close to horizontal elevations. Those lights may be visible offsite. No talk about shielding or screening can answer the question of whether these lights will shine where they should not. Only a computer generated simulation can come close to answering the question.

Visual impacts of nighttime lighting of a proposed electrical substation suited along a semi-rural road are just as important to neighborhood character as the appearance of the substation by day.

The substation would be partly sited on the riparian strip alongside the West Branch stream, a sub-tributary of the Hackensack River, just upstream of Lake Lucille.

The equipment to be located on the site includes a bank of distribution

transformers. Typically, these transformers are oil-filled. The oil provides electrical insulation and it serves as a coolant.

Power surges, such as those caused by lightening or by switching in the grid, can burst the transformers and cause the oil to spill. Even if such events are rare, just one such spill can severely harm the watercourse and the plants, fish and animals that live in it.

No provision has been made for containing such a spill. Any such provision must take into account the possibility that the spill may occur during a downpour, when leaking oil maybe flushed into the stream.

(Whereupon, the tape is turned back on.)

MS. THAL: I would remind you, outside of the letter, downstream, into Lake Lucille, which was dredged 12 years ago, and it's going to need dredging again within a couple of years. I mean, we're

looking at -- we're looking at a horror.

Back to the letter.

Conclusion: Because the proposed substation -- because the proposed substation will or may cause potential significant adverse visual impacts to the neighborhood and potential significant hydrocarbon contamination impacts to the watercourse, we believe that a positive declaration is warranted and that an EIS must be prepared.

Signed, your truly, Martus Granirer, Executive Director, West Branch Conservation Association.

And I think that many of the changes that we heard talked about tonight do not deny that there may -- that there is a potential, this is after the letter, that there is a potential for adverse environmental effects. Promising to do mitigation, in fact, is in itself a statement that such dangers exist. So that if such mitigation is going to be planned, it -- it -- the fact that it is

required and is going to be planned itself mandates that the Planning -- that the Planning Board give a positive dec -- declaration and -- and require an EIS.

CHAIRWOMAN THORMANN: Thank you.

A VOICE: Thank you.

CHAIRWOMAN THORMANN: Does anybody have any questions? All right. We'll have one -- the gentleman who was coming up before will speak, and then I'm going to have a five-minute break.

MR. SHOCKMAN: Glad -- glad to have made it just -- just in time. My name's Mark Shockman. I live at 194 South Mountain Road.

And this substation, if it's constructed, is -- will be right next to my house. So I'm probably the closest person there. But I don't want to talk about that necessarily. I've been a resident here for close to 25 years. And what I -- and I'm not really familiar with how this whole hearing goes and what the processes are, but what strikes me is that

you've got a situation, although the room was a lot fuller like four hours ago, virtually everybody here has the same thing to say, which is, if you need it, that's your decision. Can't you put it someplace else. We don't need it where we live. There's got to just be a simpler place or a different place to put it. It -- it strikes me -- I don't know the details of radiation. I don't know the details of how many wattage, etcetera. I don't know any of that stuff. All I know is that it just seems to me insane to create -- I've seen pictures. I went on-line today and I di -- I went, actually, to the United States Government thing on substations, because I'd heard so much alarming things. I've seen pictures of fires and stuff. I just went to see what a bunch of different substitutions. And now I finally find out that this is a particular type of one. It's a distribution substation.

Is that correct?

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MR. McGOLDRICK: Yes, it is.

MR. SHOCKMAN: They're like -- it's like a huge erector set. It doesn't belong on South Mountain Road, where we live there. There are -- I don't care. It's just -- it just doesn't make any sense. And the reason that you see a room full of people like this here is because whether -- no matter where they live, they all feel that way. And if your jobs and, again, I'm ignorant of how this process works, and I -- forgive my ignorance, but if your jobs as members of the Planning Board are to represent the citizens of this community, it's a no brainer, because if you asked anybody who lived there: Do we want this? The answer would be no. And I really can't say anything else, but thanks for the time and enjoy your break.

CHAIRWOMAN THORMANN: At this point I'll say one thing to you. The conundrum is that they can look probably for someplace else. When you said put it someplace else.

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MR. SHOCKMAN: Yeah.

CHAIRWOMAN THORMANN: And the people who live nearby in that someplace else will come and form --

MR. SHOCKMAN: Right. But --

CHAIRWOMAN THORMANN: -- the same kind of audience.

MR. SHOCKMAN: But --

CHAIRWOMAN THORMANN: So our job, in terms of the process, is to weigh the pros and cons, and to the best of our ability --

MR. SHOCKMAN: Okay.

CHAIRWOMAN THORMANN: -- all right, come to some kind of decision.

MR. SHOCKMAN: Good. But then I -- then I'm sure, since you're obviously able and intelligent people, that you'll be able to do that. There are many, many -- I mean, when I look around this community, not just this community, but, for instance, I was just on the other side of the River, where it wasn't your problem, it was Con Ed, and I was driving

home from taking a friend from the airport the other day and over there by Stew Leonard's I happened to look up to the right. I said, oh, that's one of those substations. And sure enough it was a horror, but it was in the middle of nowhere. Find a place in the middle of nowhere. The other substations that these gentlemen have put on this map are not in places like the one that they're proposing to put this one. That's obvious.

MR. LETSON: No. The Congers Substation, sir, is near residences.

MR. SHOCKMAN: Yeah, but not like this. Not -- there are residences and they're -- I'm not -- I'm just -- okay. But thank you very much. I don't mean to argue with you.

CHAIRWOMAN THORMANN: Okay. I just wanted you to know.

All right. Five-minutes, please. Five minutes.

(Whereupon, there was a recess taken.)

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CHAIRWOMAN THORMANN: Let me just explain something to you. This is the first in probably what will be a series of meetings. And we'll have, after Mr. Finochio speaks, we'll having other people if they want to come up, but if somebody has already said what you want to say, then what I'm going to ask is that you forego it.

And what we will do is we will have, rather than having the applicant respond to each concern that's articulated tonight, we have asked the applicant to respond in writing, all right, to what has been heard. So that you will come back to another meeting, and O & R will respond in writing to what your concerns were said here tonight.

Do you all understand what I'm saying to you? Does that fill the bill for you as the citizens?

All right. Mr. Finochio.

MR. FINOCHIO: Frank Finochio, 205 South Mountain Road.

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I have some specific questions off the SEQRA assessment, the environmental assessment, that I -- that I'd like to have answered a little more thoroughly, if possible.

CHAIRWOMAN THORMANN: Well, that will all be answered, and probably by O & R and by our engineer, Mr. Letson.

MR. FINOCHIO: Well, --

CHAIRWOMAN THORMANN: Who's the SEQR man in this Town.

MR. FINOCHIO: Okay. However -- just let me -- let me -- just bear with me here.

Does the present site include scenic views known to be important to the community? They answered no. Well, that's a fairly subjective question. And there are -- and I'd like to go to their -- what they've presented to me as not being impacted by this. In their proposal here that they brought to my home on view two along Long Path Trailway, and also the Davenport Preserve photo, these

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are very large tracks of land, and we have one photo from each track saying that these scenic views will not be impacted. I'd like to know where these were taken from. And are there other areas that may be impacted from these photos.

CHAIRWOMAN THORMANN: I'm sorry. I forgot your name.

MS. LANDER: Jo Anne Lander.

CHAIRWOMAN THORMANN: She said at the very beginning that Mr. Degenshein, who took those photographs, will come and explain where he took them and how he took them, and he be would here to answer any questions, Mr. Finochio.

MR. FINOCHIO: Okay. All right.

CHAIRWOMAN THORMANN: That was at the very beginning of the meeting.

MR. FINOCHIO: Okay. That's -- that's great. Then he'll be able to answer what specific species of trees that are deciduous, have leaves on them in the winter from Little Tor Road?

CHAIRWOMAN THORMANN: I don't know

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whether --

MR. MONTALBANO: He's our architect. I'm not -- I'm not sure he's a landscape architect, but --

MR. FINOCHIO: Well, there are other photos in here with in the winter with trees that don't have leaves on them. I don't know why these trees magically have leaves on them on the photo from Little Tor Road. These here.

CHAIRWOMAN THORMANN: I know what you mean.

A VOICE: We'll adjust that.

MR. FINOCHIO: On question eight: Will the blasting occur during construction? Are we 100 percent certain that there won't be any blasting during construction? Just looking, as a lay person, from -- at the cliffs that are there, and you start digging down, are we certain that blasting won't occur?

Then the follow-up question, if blasting occurs, what is the process? Does the applicant need to come back to

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the Town for further --

CHAIRWOMAN THORMANN: Well, he'll --

MR. FINOCHIO: -- permits?

CHAIRWOMAN THORMANN: He's going to respond to your questions.

MR. MONTALBANO: We need a permit. We need a blasting permit. We just can't blast without getting a permit from the Department, either the Building Inspector or Department of Environmental Control. Fire Inspector's office. Okay.

MR. FINOCHIO: Okay. Will the project use herbicides and pesticides? Yes. On a follow-up note that they put on the assessment. During construction herbicides will not be used. However, annual maintenance is necessary to maintain bare ground conditions inside the substation. Products permitted for wetlands will likely be required.

Well, likely is one of those words like I might likely come and see you tomorrow, Mr. Montalbano, and I might know. You know.

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MR. MONTALBANO: We'll have --

MR. FINOCHIO: Do we need an environmental review on that? I mean, will they use pesticides out of convenience? Likely, will likely, be required. But will they use pest -- no pesticides or products formulated for wetlands?

MR. MONTALBANO: We'll look into that. It's maintenance.

CHAIRWOMAN THORMANN: Wait a minute. I'm sorry.

MR. LETSON: That will have to be explained in the additional information.

MR. FINOCHIO: Okay.

MR. LETSON: And for the purposes of the SEQR review, the assumption would be that they would be used and a listing of everything that might possibly be used on that site to maintain vegetative control of bare ground cover under those areas would have to be put forth.

MR. FINOCHIO: Is an environmental review necessary for this, or further

environmental review?

MR. LETSON: We're only at the first stage of the environmental review, Mr. Finochio. At this point the comment from the public is going to form the basis for the Board's further process of the environmental review at this point. This is an -- an going environmental review at this point.

MR. FINOCHIO: Okay. Thank you.

Do we have anything written from the police or fire personnel that they will be able to cover any --

CHAIRWOMAN THORMANN: I have to respond. The Fire Department has to respond.

MR. FINOCHIO: I know. I've asked them about this before. Okay.

Does proposed action require the storage of petroleum or chemical products greater than eleven -- 1100 gallons? Yes, it will. How many -- well, 1100 gallons is a lot of juice. How many more than 1100 gallons of what is going to be stored

there?

CHAIRWOMAN THORMANN: All right. He'll have to answer that.

MR. FINOCHIO: It says, 1100 gallons. Is it gonna be 11000 gallons stored there? And what is going to be stored there? Is it going to be 20000 gallons?

CHAIRWOMAN THORMANN: It goes back to what Mr. Letson just said. This is ongoing.

MR. FINOCHIO: Okay. This is a question that I'd like to have -- have answered.

I just want to go to: Will the proposed action affect the character the existing community? They say no. I'm just going to close -- okay. That's all right. As -- as you see, our own Town Code discusses the land use by public utilities. Public utility right-of-way, power lines provided they are necessary for the general welfare, neighborhood character and surrounding property values,

which my wife Jo Anne will discuss at length very shortly.

This is a historic neighborhood and road. Within a mile you have the orchards. Within a half a mile you have Pearl House. Just because the next few houses, these -- these eight or nine houses I'm going to read off aren't designated as historic by the Town, the State or our Government, doesn't mean that they are not. These homes were built from 80 to almost 280 years ago, and they're within two tenths of a mile of this site.

My home was built in 1893. Darrow's home was built in 1932. That's a new one. Your home's new. Your home's new. 170 South Mountain was built in 1894.169 South Mountain built in 1760. 167 South Mountain was built in 1804. 115 South Mountain was built in 1850. 265 in 1924. Another new one. 263 in 1839. And Roberts is the winner. 1 Roberts, which is directly across the street, and I know you all know this, 1730.

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Thanks. Thank you very much.

CHAIRWOMAN THORMANN: All right.

MR. HENEIN: Thank you, Madame Chair. My name is Natty Henein(ph), and I live on South Mountain. And I probably could not articulate the concerns that I have; environmental, visual or anything better than all the previous speakers.

However, with over 30 years of experience in real estate and development and finance, there's one thing I know that nobody has ever brought up, and two years ago a member of Orange and Rockland was present to speak at the Chamber of Commerce. And I had asked him that question. Has Orange and Rockland and the Planning Board looked at the impact on the values on the area that would be effected by this substation?

Ladies and gentlemen, I know for a fact the negative impact that a mere, mere destination to a high power plant, a pole, is very devastating. Just the stigma of having a power line would decline the

value of a real estate property. This is probably the most prominent piece of property in all of New City, all of South Mountain, and Mr. Finochio just said, of all the historical landmarks and what have you. People pay a lot of taxes to live on South Mountain Road. And people live on South Mountain to have a serene environment, a clean environment, and a value of their property that they sustain.

We put a power station or a substation, whatever we call it, at 100 feet high, and I will tell you, the values of these properties will plummet.

Thank you very much.

CHAIRWOMAN THORMANN: Thank you.

MS. FINOCHIO: Hi. My name is Jo Anne Finochio. I live on 205 South Mountain Road. I also am an associate broker for Prudential Rand Realty.

I'm here to give you a quick little real estate perspective.

First of all, you keep talking about the ten acres that their proposed

substation's going to be built on. It's really not ten acres. If it's only ten acres, the way things have been going in Clarkstown a builder would have built on it already. Actually, the useable land on that is five, maybe six acres. Okay. So where would that substation be?

The picture here is the substation that was brought up. It's on New Hempstead Road, behind the church, by the Palisades Park.

If you flip to the second page, there's a house there on 4 Butternut Drive. It's right near -- I think it's two -- two houses over from the substation. The house is under contract. And it was listed originally for 479, and at 420 it got an offer. After -- if you look at the history, it was on the market for 411 days. It sold -- the agent was nice enough to tell me what it sold for. It sold for $415,000.

If you go to the comp on Stoneham, which is not close to the substation, its

title transfer, same house, split level, it sold for 450.

You can look at the history. That house sold in 57 days.

If you go to the next substation that I'd like to talk about that was also brought up, this one is actually -- this is on the corner of 340 and 9W. The house I'm going to talk about is two doors down from that substation. That's R-17 Route 340. It's under contract, but the agent was nice enough to share with me what it sold for. It was listed originally for 549. Got an offer when it was 429. It's going for 400. But he was also nice enough to tell me that the deal is falling through. So if anybody here on the Planning Board or at O & R would like to buy a wonderful house for under four, two doors down from a substation, let me know.

The next one that's also in the same school district, split level, sold. It was listed for 549. That went for 540.

That's not near a substation.

The next substation is what we also talk about, it's the newest substation, the one in congers, on Gilcrest. Yeah, that is in residential area, but the substation was there first. The houses were built around it.

There's a house there that's three doors away from the substation. That's right on Stern. It's the new cul-de-sac that was built in 2006. That house was listed for 715, and it went for 660, near the substation. But they don't tell you it was on the market for 192 days.

There's another house in Congers, that's not near the substation, that's new construction also, that sold for 740.

I did also -- I've got a side by side view, if you want to compare them, you can take the time to look for them. I just brought out a few comps. If you want more comps, I'd be more than happy to give the Board and O & R some comparative comps.

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Now, what's the most -- we don't really price the houses, especially in this market. In this market the bank does. It's what the bank's willing to loan on a house. I spoke with two appraisers, bank appraisers, and one is from J and S Appraisal. I've got her name and phone number, if you'd like to contact her. As well as Greater Hudson Valley Real Estate Appraisals. And I asked them about when they go out to appraise a house and there's a substation nearby, what do they do? And this is what they told me, substations in a residential area are a permanent obsolescence and are considered always a negative. The proximity of the home to the substation will decrease the value from anywhere from 5000 to 25000 depending on how close it is to the substation in value on a bank appraisal.

If the substation is built on South Mountain Road, the area around there, the appraisal value will then be considered an inferior location.

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Just a statement that I'd like to say to the Board.

The influx of this substation into our residential community will affect the land negatively and irreversibly. The residents will never be able to coexist again with the land and the nature in the same close association with mutual benefit.

As the bulldozers scrape away the land and all the natural elements that stand in their way, gone will be the residential sounds and sights South Mountain residents have come to identify as home. The invasion of this project, as proposed by Orange & Rockland, will surely mean contamination for the land, water, air, our ears, as well as our eyes. A substation will be a blight upon an otherwise strictly green residential landscape.

The proposed substation's drawbacks include an unspecified amount of background ear pollution, traffic

congestion during the substation's construction and residential value thereafter.

Orange & Rockland can offer no guarantees or promises about the long-term detrimental effects to the land. There is no way to gage what would be the environmental impact on the plants and animals that once used the ten so-called acres proposed site as natural, wooded habitat.

One side note is the substation by Congers, there are four families in that area, on Gilcrest and Stern, that have cancer. One father died of brain tumor. His wife -- his daughter has lyphoma.

All right. I don't care what they say about EMF's. You read the studies. The government will not say yes. They'll just say, we need further studies. And O & R will never tell us the truth.

CHAIRWOMAN THORMANN: Is there anyone else? Yes, sir.

MR. CORVAJA: Thank you, Madame

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Chairwoman and members of the Planning Board. My name is Carlo Corvaja. I live on 58 South Mountain Road.

And when Orange & Rockland initiated presentations, they were mentioning about the growth and demand for electrical consumption in Congers and New Hempstead and other towns, and they did not mention any growth in demand of electrical consumption in our neighborhood; South Mountain Road.

So my -- my question is, you know, we live in a historical. And, I mean, last year they had -- the Historical Society of Rockland County had a house tour that went through our neighborhood. Plus, it's also residential area. And I'm sure our neighbors would like to know what is the compelling reason that Orange & Rockland has to put a substation in a historical residential neighborhood? I mean, in Rockland County, I'm not familiar with the facts, but I'm sure that there probably is, let's say, less than ten

historical neighborhoods that have the houses and the landscape that we have in our neighborhood. So I just would like to know at some point, and our neighbors I'm sure would like to know, what is the compelling reason that they have to put a power station in a historical neighborhood such as ours.

Another comment, also, that I'd like to make is, I mean, these power lines that Orange & Rockland mentioned that they need the proximity of the substation to the power lines, I think -- I'm not really familiar with 'em, but they seem to run almost across Rockland County. And I'm sure that throughout the landscape that these power lines cover, there has to be some industrial zoned areas. There has to be some commercial zoned areas. And I'm sure that we're probably the only historical neighborhood with these historical homes for the plans to put this substation in. So I'd like to know what is the compelling reason that they have to

put it right under the power lines in our neighborhood versus another one with the neighborhoods I'm sure that are underneath these power lines that are not historical neighborhoods.

And, as -- you know, closing, you know, I just don't see a compelling reason that our neighborhood should be blighted this way. And I'm sure that the neighbors also agree with that.

Thank you. Thank you for your time.

CHAIRWOMAN THORMANN: You're welcome.

MR. GIANNACCO: Hi. My name is Pat Giannacco. I'm at 116 South Mountain Road. And I agree with every -- everyone here.

And my question was, the need for this substation, was it -- how long ago did you decide that you needed a substation? Or did the land come up and then you decided to put it there? It just seems -- I think you only purchased it maybe a year and a half now you've owned

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the property. And then all of a sudden there's this great need that the other three substations can't handle.

Now, I've been on -- on the web, and I've looked at these substations, and they do go on fire. And they're quite big. Now, if I came to Town Board and asked for, let's say, I wanted permission to put a little paint shop on South Mountain Road, with maybe 20 gallons of paint thinner, you would say no. Now -- you would say yes?

CHAIRWOMAN THORMANN: I wouldn't say. It wouldn't come to me.

MR. GIANNACCO: Well, I wouldn't do that because it's a residential.

Now, there isn't a fire hydrant between Little Tor and Conklin's Farm. Now, that thing explodes, it is quite a big site. Now, you can look it up on the Internet, there's maybe 100 of 'em exploding. Now, is our Fire Department -- now, is our -- is our Fire Department going to be able to take care of two house

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fires? Three house fires? I don't think so.

CHAIRWOMAN THORMANN: Well, to allay your fear, I don't know where this application is going.

MR. GIANNACCO: Okay.

CHAIRWOMAN THORMANN: You know, I have no idea.

MR. GIANNACCO: Well, I'm just saying, on South Mountain Road there aren't any fire hydrants.

CHAIRWOMAN THORMANN: Well, let me just explain part of the process to you.

The fire inspector has to sign off that everything is safe.

MR. GIANNACCO: So we --

CHAIRWOMAN THORMANN: And that he can get his trucks in there, that the Town has enough hydrants --

MR. GIANNACCO: Water.

CHAIRWOMAN THORMANN: -- in the area.

MR. GIANNACCO: For all those homes on South Mountain Road?

CHAIRWOMAN THORMANN: Yes, he would

have to sign. It's on any application that comes through.

MR. GIANNACCO: So on 100 degree summer night there's an explosion, the fire is ranging, going up South Mountain Road, our Fire Department across the street is going to take care of three fires?

CHAIRWOMAN THORMANN: I don't know. It probably wouldn't be your department, it'd be all the Fire Departments in Clarkstown.

MR. GIANNACCO: Okay. I don't think it's gonna happen.

So, and to go back with this, I just don't understand what the time frame was with buying the property and deciding we need a substation. So it just doesn't seem right.

CHAIRWOMAN THORMANN: Well, I think you can respond to some of these questions in your narrative.

MR. MONTALBANO: And we intend to do so, Ms. Thormann.

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CHAIRWOMAN THORMANN: Okay.

MR. MONTALBANO: We can answer these rhetorical questions.

CHAIRWOMAN THORMANN: Right.

MR. GIANNACCO: Because you must have had a Plan B.

CHAIRWOMAN THORMANN: Pardon?

MR. GIANNACCO: You must have had a Plan B, and Plan B would be, well, we wanted to put it somewhere else, but this is a better spot. I mean, they're not answering any questions.

CHAIRWOMAN THORMANN: I know, but I would have to do the same as you would, all have to be rhetorical, because I don't know how they plan. I'm sure that --

MR. GIANNACCO: Couldn't you just go to the mike here and just answer my question?

CHAIRWOMAN THORMANN: No. He's going to do it -- I've asked him to take all of the questions that have come here tonight, and then he's going to write you

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an answer.

MR. GIANNACCO: Okay.

CHAIRWOMAN THORMANN: I would rather have it in writing.

MR. GIANNACCO: Because I'm pretty sure they had a Plan B or maybe it was Plan A and then this property came for sale and then they bought the property.

MR. MONTALBANO: I'll say this, I don't think we were that devious or that conspiratorial that we had a Plan A, a Plan B and a Plan C here.

(Inaudible).

MR. GIANNACCO: Thing that you had a third substation. Did you just --

CHAIRWOMAN THORMANN: All right.

MR. GIANNACCO: -- think this up a year ago?

CHAIRWOMAN THORMANN: He said he'll respond, sir. Let's not beat it to death. Is there -- all right.

MS. ANDERSON: My name's Penny Anderson. I'm on 20 Shore Road. I'm in Lake Lucille. I have two questions.

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The first is one is how big is this transformer going to be? They were talking about -- you said in the others they were 35 something or others. Is this the same?

MR. McGOLDRICK: I'll answer that question now.

The transformers that we buy nowadays are 50's. They're a little bit bigger than the ones that we -- we bought in the past.

MS. ANDERSON: Okay.

MR. McGOLDRICK: And it's in the narrative that we had supplied with the -- with this. And the Tilcon feed would get its own transformer, because it's a different voltage than the rest of the community. And that transformer is a -- a 20 megawatt transformer, smaller than -- than these ones or ones we bought in the past, but the Tilcon load is much less than that. We're using that transformer because we have it.

MS. ANDERSON: So will there be one

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or two of these 50's?

MR. McGOLDRICK: Two.

MS. ANDERSON: So we're putting 100 whatever we're putting there, plus 20 for Tilcon. So we're putting 120 whatever these things are on that site, when the others are 70? Is that -- am I understanding that correctly?

MR. McGOLDRICK: That's correct. That's the capacity of the transformers. The load on the transformers would be less, and -- and we'll address that, because the load would come off the other stations that I discussed earlier today, and we'll -- we'll tell you what those -- what those numbers are.

MS. ANDERSON: Okay. Then my question would be: Instead of building a brand new one, couldn't you take out one of those 35 and put in a 50 there? Put two 50's there in whatever they are? You've already got the distribution for that.

MR. McGOLDRICK: And that is -- that

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becomes the limiting factor, the distribution, to get that -- that energy from those sites to -- to this area. And, again, we'll address that.

CHAIRWOMAN THORMANN: Excuse me, sir, please don't do that. That's not nice. Be a gentleman.

MS. ANDERSON: Okay. So this -- because of the geography you're saying it wouldn't be feasible or desirable to spread those out where they are now? You need to have a whole new one?

MR. McGOLDRICK: Yes.

MS. ANDERSON: Okay.

Thank you.

CHAIRWOMAN THORMANN: Ma'am, you're next. No. She is.

MS. COWELL: Hi. I'm Tara Cowell. I live at 20 Denver Drive in New City.

And the reason I wanted to come up was to let you know that it's not only South Mountain Road, it's not just one residential community that's going to be effected. Denver Drive, as you can see on

the map, which you can't, because it's really far, but the backyards of at least five houses will be within 40, 50 feet of the property. So you gotta remember that it's not just one neighborhood that's going to be effected. The Denver Drive neighborhood -- and we don't have a preservation committee, although I think I might just start one, but -- if I have Denver Drive people here tonight. So just keep in mind that it isn't just one road that's being effected, there's another whole community on the other side of that property that will be looking directly at it.

And one of the reasons that we bought in this area, as the people stated earlier, was because of that setting. We chose to move onto that road knowing the tension wires were there, but we did not choose then to have this built after. And our house values will go down.

I don't know enough about Planning Boards and how they work. I have a quick

question. I know that you have to get approval from fire departments, from all these other agencies, but don't you, the Planning Board, still have the ability to say, no, this is not right for our Town?

MR. HEIM: We make the final approval.

MS. COLDWELL: You make the final... but at any point --

CHAIRWOMAN THORMANN: Within certain guidelines. There are certain constraints on us.

MS. COLDWELL: Is there a way --

CHAIRWOMAN THORMANN: There are --

MS. COLDWELL: Do you have an on-line on the Town Board web site a listing of your bylaws or what we can look at, so we can learn.

CHAIRWOMAN THORMANN: We don't have bylaws.

MS. COLDWELL: I don't know what -- I don't know -- as I said, I don't know enough about it, but how can I find out what the codes are on-line.

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CHAIRWOMAN THORMANN: We can get you, if you call -- do you have an e-mail? Give it to the Secretary and we can take out the section of the Code.

MS. COLDWELL: Because I don't know enough.

A VOICE: Right on the Town website you have the Town Code.

MS. COLDWELL: Right. And that's what you guys go by; is the Town Code?

CHAIRWOMAN THORMANN: Partly, yes.

MS. COLDWELL: So --

CHAIRWOMAN THORMANN: There's a lot of -- in anything in life, there is a -- some subjectivity. You know that.

MS. COLDWELL: I do. And my husband happens to be a nuclear physicist, so I understand the -- the reason for needing this information. And that's one of the reason why I bought where I am, because we did have our property tested for the frequencies, and this is what he used to do for a living. He's a (inaudible) safety commission for State of Texas. So

I -- you know, I know he knows his stuff.

But, at the same time, when we drive up to our street, we go past those wires, my little car radio can no longer hold a signal, so it can't just be, you know, the big stuff. It's the little stuff that's gonna effect quality of life. It's going to be the little things that are going to effect my neighborhood. When I drive up my neighborhood, I don't want to have to see this big building. I know you're gonna put trees around it, but it's gonna be bigger than -- than what we're expecting.

And I just really rely on the Town Board to really do what's right for my neighborhood. That's why I live in Clarkstown. I moved back to Clarkstown, after Texas, because I -- I believe in this community and I believe that we do what's right for it. I think that maybe we might need this. I don't deny that. I don't know enough about energy, but I do know that the location is not what's

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right for the community, and that there are commercial areas and there are big companies that own a lot of commercial land that should maybe step up if they're the ones getting the majority of the energy coming out of it.

My other question, I don't know if -- I think you just addressed it though with the previous woman, was about piggyback system. Is there any way to piggyback, not just replace old systems, like the Congers or Stony Points or the other areas, making a piggyback system. The property's already being used as a substation, adding some more. But I don't know enough about. I just wanted to throw that option out there and let you know that, like I said, it's not just South Mountain Road, it's another whole community that's effected by it. And it does -- I'm lucky enough to be able to live here now. I can't -- I can't afford to move anywhere else. I don't want to move anywhere else, but I will also not be

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able to sell my hose in the future for a price, and I live paycheck to paycheck. I will not be able to sell my house for the future when my kids go to college, to pay for it. That's what's important to me.

Thank you.

MR. PRINCE: Richard Prince. I live on 177 South Mountain.

Going back to where the value of our real estate. Number one, I have three daughters, and the safety of my daughters are my first concern, but is Orange & Rockland willing, if we do a study on the value of properties, I'm sure there's studies that we can do across the country on how much our value of properties go down, and are they willing to subsidize us for that amount of money? You know, Orange & Rockland directly. And the Town of Rockland, as well, reassessing our tax values.

CHAIRWOMAN THORMANN: All right. I'll entertain a few more. You want to?

MR. AVID: My name is Ferb Avid.

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I'm on 151 South Mountain Road. I'm a professional engineer of State of New York and Maryland. Also, I have obtained a PhD in environmental engineering.

What I was hearing actually, based on what they explained, I couldn't quite understand the justification for this specific plan to be established at that location. Number one, they have to provide additional information. Why they can't increase the capacity of the other existing stations. This is number one. Which I think the Board should definitely actually look into this matter.

Number two, what we do in similar cases, based on what I heard tonight, there are immense number of questions on what they want to do and how they wanted to do it.

So one question I have is, in their statement, in the question that said the proposed action will require a storage of petroleum greater than 1100 gallons.

I understand that transformers don't

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require any petroleum products. What do you need? Why do you need those? And why do you have that? And how much capacity is that?

If you could answer that right away, I would really appreciate that, because I can't understand why transformers would require any kind of petroleum products. So, in any -- is there any answer to this?

MR. McGOLDRICK: Yes, they do.

MR. AVID: What type?

MR. McGOLDRICK: Power transformers, pole top transformers, they all require petroleum inside.

We're not storing any additional petroleum. To answer the question was because we had transformers on the site with petroleum in them, we answered that there would be storage on-site. But there's no additional storage, other than the transformers that are on-site. And they haven't been designed yet so --

MR. AVID: For cooling purposes?

MR. McGOLDRICK: Coolant and

insulation.

MR. AVID: All right. What I understand is basically there are many questions. I understand that you are working on the constraints, but these questions exist. I think it would be -- the best thing would be just assume that they require, they need Environmental Impact Statement.

CHAIRWOMAN THORMANN: We knew that.

MR. AVID: Yeah. They should definitely provide that. Everyone in this room will have to review it and then we would understand what the situation is. Without that, we can't understand it.

Is it clear? It is established that this Environmental Impact Statement will --

CHAIRWOMAN THORMANN: It appears that this is the first stage in a long process, sir.

MR. AVID: No. My question was very specific.

CHAIRWOMAN THORMANN: Right.

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MR. AVID: I said, is it clear that they have to provide and present a specific edition of Environmental Impact Statement?

I -- just for explanation, that's a statement which would consider traffic, would consider environmental issues, would even consider psychology of people living around it. It's a big volume. They have to work on it. This is not something just you can simply come and sell it without such document. I have worked in this (inaudible). I know what that means.

Thank you.

CHAIRWOMAN THORMANN: All right. Thank you.

All right. One more -- one more.

MR. FISHER: Good evening. My name is Eric Fisher. I live at 12 Lake Road, just off of South Mountain.

I -- I really hate speaking in front of people. I can't tell you how much I hate it, but during the break I spoke with someone, and they will remain nameless,

they said they -- they -- they believe that the Orange & Rockland people are going to get their way. And I thought to myself, I have a three-year old daughter that I show the stars at night. I take her in the Lake, in Lake Lucille. I ride down South Mountain Road, it's historic. I point out the fact these houses go back hundreds of years. And I have to realize that one day I may have to tell her, you know, the stars that you're seeing, you used to see the Great Bear in the sky, but now there's this funny light that kind of is given off, and it really effects it. You can't quite make out that one star there.

And, you know, you're going down this historic road and then there's this punch in the eye at the bottom of Little Tor and South Mountain that is this monstrosity in the middle of this -- this green land, and for some reason it got passed.

And, I'm sorry, you talked about

that this is a conundrum. I find that difficult, because the one gentleman brought up the fact that there is a power station at Stew Leonard's. And you I believe brought up there's a community around Stew Leonard's. And there is. But there's not a lake, a pristine lake, around Stew Leonard's. There's not a night sky at Stew Leonard's. There's not a historic road in Stew Leonard's for hundreds of years.

This -- the fact that this is a possibility is to me astonishing. I'm the type of guy that I don't really go to these things. I barely -- I -- I barely got here tonight. I'm not the type of guy that shows up at these things, because I thought, how could they possibly pass that. The fact that this is being entertained is mine boggling. I -- I really think you ought to search your conscience.

CHAIRWOMAN THORMANN: All right. Wait a minute. Before you go on, part of

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the problem is that 90 percent of the land in this County has already been developed. 90 percent.

MR. FISHER: Right.

CHAIRWOMAN THORMANN: That's part of the problem.

MR. FISHER: Right. And the people on this panel put that through, yes.

CHAIRWOMAN THORMANN: And the thing is in which neighborhood is this going to go?

MR. FISHER: Well, I -- I don't know. There hasn't been anything mentioned, what are the options.

CHAIRWOMAN THORMANN: Wait a minute. Wait a minute. And you said you heard out in the hall that it's in the bag, more or less. Nothing is in the bag.

MR. FISHER: Right.

CHAIRWOMAN THORMANN: Nothing is in the bag. You can ask anyone sitting here.

MR. FISHER: I'm not attacking you, ma'am. You don't need to defend yourself. I'm just saying what I heard.

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CHAIRWOMAN THORMANN: Statements that I think need to be clear. We don't know where we're going. This is the first step in a long process.

MR. FISHER: Right. I'm not --

CHAIRWOMAN THORMANN: They have to prove their point. All right. We heard what the neighbors have said. And they have to prove their point.

MR. FISHER: I don't argue with that.

CHAIRWOMAN THORMANN: We're not the ones that have to prove your point.

MR. FISHER: No, I'm just --

CHAIRWOMAN THORMANN: They're the ones that have to show that they logically belong in that spot. And that's where we are. But this is step one in a long process.

MR. FISHER: Okay. So my question is -- is: Will there being other options offered? Are there other options that they're offering?

CHAIRWOMAN THORMANN: I don't know

what they're going to offer, or maybe, no, they may say, this is it. This is what we want. And then we'll have to respond.

And right now I truthfully could not tell you where it will go.

MR. FISHER: All right. I'd like --

MR. MONTALBANO: I want to say -- make one statement though, just to clarify. We, as property owners; Orange & Rockland, have an absolute right to appear before this Board. This Board doesn't have the right to say yes or no with respect to accepting our application.

So the fact that we're here doesn't mean that this Board has said yes or no. It's -- we're exercising a property right that we have under the laws of the Town of Clarkstown and the State of New York.

So don't -- don't believe that we are here, you know, somehow we snuck in here. We're here because we made application to this Board.

MR. FISHER: I realize that, but the -- my issue is sort of like the

sensitivity that you as a group, as property -- as purchasers of this property, the sensitivity of buying such a place and even -- even entertaining the idea and not offering other suggestions as to what other sites might be a more sensible choice.

MR. MONTALBANO: We'll respond to that in due course.

CHAIRWOMAN THORMANN: Okay.

MR. FISHER: Thank you very much.

CHAIRWOMAN THORMANN: All right. You're the last.

MS. STAVA: Hi. My name is Sophia Stava. I live at 251 South Mountain Road. And I've been here many times for other parcels and pieces that were debated and developed in the area.

And I think what I am up here for, I've heard everything, and I agree with everything everyone said. It's so amazing. It's very upsetting, it's a very, very upsetting thing, because I think these people don't live on the

corner of South Mountain Road and Little Tor, nor will they. So they're not going to participate and be part of the neighborhood or community, as people would -- residents; how they're going to take care of it, what they're gonna do with it, you know, in the future. They have -- we don't know what's gonna happen 50 years from now with that piece of property. I think that's everyone's concern.

The reason I'm up here though is because I think everyone needs to know what the process is from this point on. When you -- when we present this, I'm always unclear how, for instance, the property was sold, without being for sale, in a normal manner. How it came to be in this situation, when we are hearing in the hallway that there's a big tower going up, and that, you know, possibly the deal is done, and this tower -- you don't have any say it in. I think that's upsetting for people. As a community we need to hear

you from you what the process is and what rights do we have to protect that, because it hasn't happened in the past, especially with some of the other areas because of the rules and the laws that you seem to abide by. So what happens is we seem to be without a leg here. And I feel that's happened so many times, and I've been in this community for 11 years and I can't believe what goes on. So if you could explain --

CHAIRWOMAN THORMANN: I think --

MS. STAVA: -- what the steps are.

CHAIRWOMAN THORMANN: I've been in this community since 1962. You have the West Branch out there, been organized for years. They're probably the best watchdogs in the Town of Clarkstown.

MS. STAVA: And that's true, they are.

CHAIRWOMAN THORMANN: All right. So you do have a leg up.

MS. STAVA: No, I don't think that --

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CHAIRWOMAN THORMANN: You want the process?

MS. STAVA: The process.

A VOICE: The last time we heard about this property (inaudible).

CHAIRWOMAN THORMANN: Yes, that was the last time.

A VOICE: That was the last time any application in front of us.

CHAIRWOMAN THORMANN: Right.

A VOICE: And we thought that was done.

CHAIRWOMAN THORMANN: Right.

VOICES: So did we.

A VOICE: Then the property last --

CHAIRWOMAN THORMANN: But how it got -- how it was sold, we don't have any idea how it gets sold or anything like that. We have no idea whether it was advertised or not advertised. That -- that doesn't enter, you know, our area whatsoever. The first time I heard about it was when it came into TAC.

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MS. STAVA: Okay. So we're surprised it's still not a residential property, I guess. A lot of us are. We don't understand --

CHAIRWOMAN THORMANN: They have a right to --

MS. STAVA: So anybody -- I could sell my property to O & R as well; is what you're saying?

CHAIRWOMAN THORMANN: Yes. Sure.

MS. STAVA: Okay. And then there's so that's -- that answers my question. I do want to know the process from here on.

CHAIRWOMAN THORMANN: Well, from here on he's going to take the -- the applicant's lawyer is going to take everything that he heard tonight, and he's going to respond to all the queries that were made.

There will be another meeting, which will be step two.

Also, some of the en -- we've asked Mr. Letson to deal with some of the environmental questions that came up

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tonight. And you will be -- they'll get a notice. We'll see that a notice is sent out, because it is a burning issue in the community. We'll see that you're all informed of the next meeting, when the next meeting occurs.

Yes, Terri.

MS. THAL: I will (inaudible) that if you give me your name, phone number and e-mail address.

CHAIRWOMAN THORMANN: She's going to take -- she's going to -- let her do it.

MR. MONTALBANO: There will be public hearings.

CHAIRWOMAN THORMANN: All right.

Are you going to take care of it, Terri; is that what I hear you saying? You're going to take care of notification? Is that it?

VOICES: No.

CHAIRWOMAN THORMANN: That's --

MS. THAL: I'm explaining the process.

CHAIRWOMAN THORMANN: Well, the

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process will be dependent upon what happens at the next meeting.

MS. THAL: I know that.

CHAIRWOMAN THORMANN: All right. So they haven't signed anything. So they will have to sign up, if they want to receive some kind of notice.

Do we have a paper for -- for them to sign up? Could you do that? Ro, could you do that, take...

MR. MONTALBANO: We had notified everyone within 500 feet of our property.

CHAIRWOMAN THORMANN: I know, but for the second meeting. We'll keep it going for them.

A VOICE: We found out about it today.

MR. MONTALBANO: All we can tell you is that --

(Inaudible).

CHAIRWOMAN THORMANN: All right that sometimes I -- I know.

A VOICE: I never received anything, not even one phone call, and I

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live right across the street. I'll let you hear my voice. I've never gotten a notice. Check it out. I never got a notice.

CHAIRWOMAN THORMANN: All right. Let's just stop.

Joe, do you have -- Joe, do you have a legal pad? Joe, do you have a legal pad?

A VOICE: He's got something he wants to pass around.

CHAIRWOMAN THORMANN: All right. We'll pass a legal pad around. You put your name and your address on it, and you will get, from the Planning Board, all right, the notice when the next meeting will be held.

VOICES: Thank you.

CHAIRWOMAN THORMANN: All right. Go in peace.

A VOICE: Want a motion to continue?

CHAIRWOMAN THORMANN: We have a motion to continue.

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MR. MARTONE: Motion to continue the public hearing.

MR. SHOBERG: Second.

CHAIRWOMAN THORMANN: All right. Moved by Mr. Martone. Second by Shoberg.

All in favor?

(Response of aye was given).

MR. MONTALBANO: Thank you. Thank you. Thank you.

*****

THE FOREGOING IS CERTIFIED to be a true and correct transcription of the original stenographic minutes to the best of my ability.

Jacqueline Padilla, CSR

Jacqueline Padilla, CSR

LAWYER'S NOTES/ERRATA SHEET

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PHASE IA/IB ARCHAEOLOGICAL SURVEY
LITTLE TOR SUBSTATION
BLOCK 1, LOTS 5 AND 6
TOWN OF CLARKSTOWN, ROCKLAND COUNTY
NEW YORK

JUNE 2011

RICHARD GRUBB & ASSOCIATES, INC.
Cultural Resource Consultants

Phase IA/IB Archaeological Survey
Little Tor Substation
Block 1, Lots 5 and 6
Town of Clarkstown, Rockland County
New York

By

Scott Wieczorek, MA, RPA

Principal Investigator:

Scott Wieczorek, MA, RPA

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Prepared for:

Birdsall Engineering, Inc.
65 Jackson Drive
Cranford, New Jersey 07016

Date: June 10, 2011

MANAGEMENT SUMMARY

OPRHP Project Review Number: Not Assigned

Involved State or Federal Agencies: SEQRA, USACE

Phase of Survey: IA and IB

Location Information

Location: Section 34.5, Block 1, Lots 5 and 6; Little Tor Road
Minor Civil Division: Town of Clarkstown
County: Rockland

Survey Area (Metric and English)

Length: 122m / 400f
Width: 169m/150f
Depth: 10 cm /0.3f to 76 cm / 2.5f
Number of Acres Surveyed: 2.754

U.S.G.S. 7.5 Minute Quadrangle Map: Thiells, N.Y, Haverstraw, N.Y.

Archaeological Survey Overview

Number and Interval of Shovel Tests: 52 STPs, 7.5-meter and 15-meter

Number and Size of Units: Not Applicable

Width of Plowed Strips: Not Applicable

Surface Survey Transect Interval: Not Applicable

Results of Archaeological Survey

Number and Name of Prehistoric Sites Identified: 1, Moxley Acres
Number and Name of Historic Sites Identified: 1, Moxley Acres

Results of Architectural Survey

Number of Buildings/Structures/Cemeteries Within Project Area: Not Applicable
Number of Buildings/Structures/Cemeteries Adjacent to the Project Area: Not Applicable
Number of Previously Determined National Register-Listed or Eligible Buildings/Structures/ Cemeteries/Districts: Not Applicable
Number of Identified Eligible Buildings/Structures/Cemeteries/Districts: Not Applicable

Report Author(s): Scott Wieczorek, MA, RPA

Date of Report: June 10, 2011

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PHASE IA: LITERATURE SEARCH AND SENSITIVITY ASSESSMENT

Project Description

The following report presents the results of a Phase IA/IB archaeological survey conducted within the Area of Potential Effects (APE) for the proposed Little Tor Substation situated at Section 34.5, Block 1, Lots 5 and 6 near the intersection of Little Tor and South Mountain Roads in the Town of Clarkstown, Rockland County, New York (Figures 1-2). The APE is located on two parcels of land totaling 10.2-acres (41,277.94 square meters) owned by Orange and Rockland Utilities (Figure 3). Lot 5 is presently the site of a gas regulator, a Verizon utility structure, a cellular antenna tower, and an electric transmission line. Lot 6 is presently undeveloped, though it was formerly occupied by as many as 12 single-family cottages each with septic systems and wells (HDR/LMS 2006; CMX n.d.). Construction impacts associated with the proposed project will occur within approximately 2.754 acres (11,145.04 square meters) of the tract and will consist of the construction of an electrical substation, proposed driveway, access road, one detention basin, utilities corridor, and site grading (Figure 3). The goal of the Phase IA/IB archaeological survey was to assess the archaeological sensitivity of the project area and identify prehistoric and historic archaeological resources within the APE.

This Phase IA/IB archaeological survey has been conducted pursuant to the intents and purposes of the State Environmental Quality Review Act (SEQRA) 6NYCRR Part 617 of the New York State Environmental Conservation Law and falls under the review authority of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). The survey meets the standards of the New York Archaeological Council (1994) and the OPRHP (2005). It is also understood that a permit from the United States Army Corps of Engineers is required for the project. As such, this survey was completed in accordance with Section 106 of the National Historic Preservation Act and 36 CFR Part 800. The Phase IA/IB archaeological survey was performed by an archaeologist meeting the standards of 36 CFR 61 (see Appendix A). Letters were sent out to consulting parties and are included in Appendix B. Correspondence received after the date of this report, if any, will be forwarded for consideration in the review process.

The Phase IA/IB archaeological survey was conducted by Richard Grubb & Associates (RGA) of Cranbury, New Jersey for Birdsall Engineering of Cranford, New Jersey. The pedestrian reconnaissance was conducted in February, 2011 by Scott Wieczorek, RPA, Senior Archaeologist. Archaeological fieldwork was conducted on May 16 and 17, 2011 by Adrienne Jarczewski and Erich Rible under the supervision of Mr. Wieczorek. This report was written by Scott Wieczorek. Patricia McEachen performed graphics production. Kim Croshier, of Croshier Archaeological Research, conducted background research. Mary Lynne Rainey, Christina Dunn and Paul McEachen were report editors. All field notes, photographs, and project documents are stored at the offices of RGA in Cranbury, New Jersey.

Area of Potential Effects

The APE is defined in 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects cause[d] by the undertaking." Included within the APE are all locations where the undertaking may result in ground disturbance. Based on the location of proposed construction activities, the APE is centrally located within Block 1, Lots 5 and 6, west of Little Tor Road, and south of South Mountain Road (see Figure 3).

The APE is characterized by areas of open grassland and wooded uplands (see Figure 3; Photographs 1-10). Slopes between 2 and 5 percent comprise the entirety of the APE (see Figure 3; Photographs 1 and 2). The West Branch of the Hackensack River and its associated wetlands extend along the southern margin of the APE (see Figure 3; Photograph 5).

Environmental/Physical Setting

The APE lies within the Newark Basin section of the Triassic Lowlands Physiographic Province, which is underlain by Late Triassic and Early Jurassic-Age shale and sandstone (Bonnell 1990; Isachsen et al. 2000). Specifically, the Newark Basin is predominantly underlain by shale and shaly sandstones, arkoses and mudstones of the Brunswick Formation (Bonnell 1990; Cressey 1977).

The APE is on a moderate, south facing side-slope topographic setting ranging from 230 to 250 feet (70 to 76 meters) above mean sea level (see Figures 1 and 3) that overlooks lowland floodplains along the northern bank of the West Branch of the Hackensack River. The APE lies along the southern slopes of South Mountain, a diabase outcropping that is part of the Palisades ridge (Bonnell 1990). Wetlands are situated within the southern margin of the APE along the edge of the West Branch of the Hackensack River. The West Branch of the Hackensack River flows west and south into the Passaic River, which is a primary drainage system.

Soils within the APE consist of Rippowam sandy loam, occurring at 0-2 percent slopes, and Wethersfield Gravelly Silt Loam, occurring at 3 to 8 percent slopes (Natural Resources Conservation Services 2011; Bonnell 1990) (Figure 4; Table 1). Rippowam Series soils (Ra), associated with alluviated floodplains, are located throughout the southern margin of the APE while the Wethersfield Series soils (WeB), associated with smoothed upland ridges, comprise the remainder of the APE. The APE is located primarily within an overgrown grassy and partially wooded lot. Wooded sections within the APE consist of mature oak and maple forests. A grassy power line corridor owned by the Orange and Rockland Utilities is situated within the western edge of the APE.

Table 1: Soils situated within the APE (based on Natural Resources Conservation Services [NRCS] 2011).

Name	Soil Horizon Depth cm (in)	Color	Texture, Inclusions	Slope	Drainage	Landform
Rippowam (Ra)	0-25.4 (0-10) 25.4-48.26 (10-19) 48.26-71.12 (19-28) 71.12-88.9 (28-35) 88.9-152.4 (35-60)	Very dk gry brn Dk gry brn Gry brn Bry brn & V dk gry brn Dk brn	Sandy loam Fine sandy loam Sandy loam Fine sandy loam Loamy sand	0-2	Poorly Drained	Flood Plains
Wethersfield (WeB)	0-33.02 (0-13) 33.02-55.88 (13-22) 55.8-152.4 (22-60)	Dk brn Rd brn Rd brn	Gravelly silt loam Gravelly loam Gravelly fine sandy loam	3-8	Well Drained	Hills, Till Plains

Background Research

New York State Museum/Office of Parks, Recreation, and Historic Preservation Site Files

No registered archaeological sites are situated within or adjacent to the APE; however, an examination of the New York State Museum (NYSM) and OPRHP site files and published references indicate that seven archaeological sites are located within a one-mile radius of the APE (Table 2). Six of the sites are located between one half-mile and one mile east of the APE while the final site is located almost one mile to the southwest. Site NYSM 6370 is located east of the APE; however, no details about the site are on file. Sites A087-01-0016 and A087-01-0014 are both historic dump sites containing eighteenth through twentieth century debris, while site A087-01-0017 is the suspected location of a late eighteenth century mill site. Information about recovered artifacts or any other site details is not provided on the inventory forms. The three remaining archaeological sites are prehistoric. Sites A087-01-0013 and A087-01-0015 are both described as Late Archaic period sites, however, the inventory forms do not provide specifics about how the sites were dated. The final site, A087-01-000110 is a prehistoric site comprised of two isolated chert flakes.

Table 2: Registered archaeological sites within a one-mile radius of the APE.

NYSOPRHP Site #	Additional Site #	Distance from the APE m (ft)	Time Period	Site Type
	NYSM 6370	1,600 (5,249)East	N/A	N/A
A087-01-0016		1,300 (4,265) East	18th-20th Century	Historic Dump Site
A087-01-0014		1,150 (3,772) East	19th-20th Century	Historic Dump Site
A087-01-0017		1,060 (3,477) East	Ca.1778	Possible Mill Site
A087-01-0013		1,200 (3,937) East	Late Archaic	Prehistoric Midden
A087-01-0015	Biegel Site	1,320 (4,330) East	Late Archaic	Unknown Prehistoric
A087-01-000110	Town Line Precontact	1,300 (4,265) Southwest	Unknown	Unknown Prehistoric

National/State Register of Historic Places Files

No National Register listed or eligible cultural resources are present within or adjacent to the APE. Two National Register listed properties were recorded with a half-mile radius of the APE. The properties are both located to the west of the APE along South Mountain Road. The closest resource, located approximately 725 meters (2,378 feet) west of the APE, is the Henry Varnum Poor House (No. 07NR05760). The Contempora House (No. 08NR05923) is located approximately 800 meters (2,624 feet) west of the APE at 88 South Mountain Road.

In addition, three previously surveyed properties were identified within and adjacent to the APE. All three properties were determined by OPRHP as not eligible for National Register listing. According to the Building Structure Inventory Form, Property 08701.000076 was within the APE and consisted of a small complex of dwellings called "Moxley Acres" built between 1910 and 1960. The primary dwelling and a barn within the complex were initially associated with a late nineteenth to early twentieth century farmstead while more recent dwellings were built for rental income (Nevile 1997). None of these buildings are extant within the property. Two neighboring properties located approximately 100 feet north of the APE were also surveyed. Property 08701.000077 is a post World War II raised ranch constructed about 1949, while property 08701.000078 is a dwelling built around 1900. Both properties were evaluated as typical examples of common building forms and recommended not eligible for National Register listing.

Cultural Resources Surveys

Background research indicates that one prior cultural resources survey was conducted within the APE. In 1997, Gray & Pape conducted a Phase I cultural resources survey in advance of the construction of the Millennium Pipeline System, located within the western portion of the APE (Gray & Pape, Inc. 1998). There was no assessment for archaeological potential or archaeological fieldwork conducted within the current APE associated with the Gray & Pape's Millennium Pipeline Project; however, Gray & Pape did document several historic structures within the current APE that were determined ineligible for listing on the National Register by OPRHP (Gray & Pape, Inc. 1998). In 2001, adjacent to the southern portion of the APE, TRC Environmental Corporation conducted a Phase IB archaeological survey associated with a portion of the Hudson Valley Natural Gas Pipeline. The survey extended from the southern bank of the West Branch of the Hackensack River south to Saw Mill Road. Shovel test pits (STPs) excavated as part of this survey encountered limited historic artifacts associated with past agricultural pursuits within portions of the line. Several stone fence walls observed throughout the project's corridor were interpreted as former agricultural livestock enclosures. No archaeological testing was conducted by TRC Environmental within Lot 5 of the current APE due to observed ground disturbance (TRC Environmental Corporation 2001). One additional cultural resources survey has been conducted within a half-mile radius of the APE and included a Phase IB archaeological survey in advance of improvements to the Rockland County Sewer system. The survey did not encounter any significant archaeological resources (Hartgen Archaeological Associates, Inc. 2003).

Prehistoric Period

The culture history of the pre-Contact period Native inhabitants in New York is divided into three broad time periods: Paleo-Indian 10,000-6000 B.C., Archaic 6000-1000 B.C., and Woodland 1000 B.C.-A.D. 1600 (Ritchie 1958, 1980). Much synthesis of these periods has been undertaken and need not be repeated here. Basic information for each time period is provided in Table 3. Further details on New York prehistory can be accessed in the following sources: Funk (1976), Eisenberg (1978), Ritchie (1980), Kraft (1991), Diamond (1999).

Table 3: New York prehistory.

Time Frame	Period	Characteristics
1000-1350 A.D.	(Late Woodland)	-occupation of unfortified hamlets, camps -long houses and wigwams -foraging with limited agriculture -flexed burials -collarless, cord-decorated ceramic vessels -triangular projectile points
1000 B.C.-1000 A.D.	Early/Middle Woodland	-hunter-gatherers, spring/summer congregation and fall/winter dispersal -large and small camps -band-level society with first evidence of community identity -mortuary ceremonialism -extensive trade networks for exotic raw materials -shellfish exploitation

Table 3; cont.

Time Frame	Period	Characteristics
1000-7000 B.C.	Archaic	-hunter-gatherers -large and small camps -band level society -mortuary ceremonialism -extensive trade networks for exotic raw materials -first use of ceramic vessels
7000-9000 B.C.	Paleo-Indian	-first human occupation of New York -hunters of caribou and now-extinct Pleistocene mammals -fluted projectile points -small camps -band level society

Historical Background/Map Research

After Orange County was formed in 1683 (Ruttenber and Clark 1881:20-21; Headley 1908), the APE and vicinity was located within a tract of land included in the Kakiat Patent, part of which was purchased in 1716 by Daniel De Clarke (Green 1886:414). Originally part of Haverstraw, Clarkstown officially separated as its own municipality in 1791 (Green 1886). The APE is currently situated in the northern section of the Town of Clarkstown.

The first Europeans to settle in the area were Dutch and English settlers, who arrived during the early eighteenth century. These early settlers included the Wood, De Clark, Jersey, Snyder, Vanderbilt, Van Houten, Blauvelt, Van Riper, Storms, Smith, Stevens, Cole and Tallman families, among others, many of whom settled in the area of New City, located about 4,770 meters (14,600 feet) southeast of the APE (Green 1886:414-428). These and other early families were attracted to the area's rich arable soils, which enabled the development of the town's agricultural community. The agricultural industry remained a staple, lucrative element in the town's economic development throughout the eighteenth and nineteenth centuries. Some industrial concerns within Clarkstown Township included smithies, quarrying, stone crushing, breweries, wheelwrights, tanneries, saw and grist mills, a colliery, and a silver spoon factory (Green 1886:414-428). Despite these small industrial concerns, the area was still sparsely settled throughout much of the nineteenth century.

A review of historic maps and atlases shows that settlement near the APE was sparse during the eighteenth and early nineteenth centuries (Burr 1829; O'Connor 1854; French et al. 1859; Beers 1875; USGS 1893; see Figures 5); however, a quarry was depicted adjacent to the west edge of the APE in 1854, as were two roads in the approximate locations of present-day South Mountain Road and Little Tor Road (Figure 6). By 1859, there was a dwelling depicted within the APE associated with the name of B. Doland (Figure 7). According to the 1860 US Census, B. Doland was Barny Doland, a Laborer who had immigrated to the region from Ireland (US Census 1860). By 1875 the dwelling was associated with the name of C. Gibbons, a farmer who also had immigrated to the region from Ireland (Figure 8; US Census 1870). The 1893 USGS map of the area do not depict enough detail with regard to specific development within this region, though noteworthy is that no quarry or mining operation was depicted within proximity of the APE (Figure 9).

The proximity of the Hudson River as well as an existing complex road network enabled farmers to bring their crops to local and regional markets. The road system, including the creation of turnpikes during the early nineteenth century, enabled travelers, traders, merchants, and farmers to easily transverse the countryside and visit larger market areas such as Albany and New York City (Eager 1846-1847:52-57; Ruttenber and Clark 1881:111-116).

Development within the region remained limited throughout the nineteenth and twentieth centuries; however, during the 1920s the nearby recreation community of Lake Lucille was established around the eastern portion of Lake Lucille. The community consisted of lake-front cabins planned by the Lake Lucille Realty Company (Jeffs 2005). Development within the area associated with the recreational community brought limited local growth. Situated to the west of this development, the APE remained occupied by agricultural outbuildings and dwellings. Historic aerial images taken during 1952, 1975, and 2006 by the United States Department of Agriculture (USDA) indicate that as many as nine small dwellings and outbuildings were present within the APE (USDA 1952, 1975, 2006). As previously mentioned, these buildings were known as "Moxley Acres" which was named for Julia Moxley, the property's owner in 1997, and included a late nineteenth to early twentieth century dwelling and barn associated with the property's former agricultural land use (OPRHP 1997). These dwellings were present within the APE until around 2006 to 2007 when they were condemned by Clarkstown Township Health Department and ultimately demolished as part of a site cleanup conducted by Orange and Rockland Utilities (USGS 2007; HDR/LMS 2006).

Sensitivity Assessment

An evaluation of archaeological potential is based upon environmental factors (topography and hydrology), presence of recorded cultural resources in the files at the NYSM and the OPRHP, a review of historic maps, and a site visit.

Prehistoric Resources
The proximity of known prehistoric resources, topographic setting, and distance from water suggests that the APE has a high potential for containing prehistoric archaeological resources.

Historic Resources
Based on the results of the background research, the APE was formerly occupied by several dwellings and outbuildings known as "Moxley Acres." According to the OPRHP Building-Structure Inventory Form, many of these buildings were built between 1910 and 1960; however, the form also suggests that the primary dwelling and an associated barn may have dated to the nineteenth century (Nevile 1997). A review of historic maps suggests that these early buildings may have been associated with the B. Doland farmstead present within the property as early as 1859 (French et al. 1859). These buildings were present within the APE until around 2006 to 2007 when they were condemned by Clarkstown Township Health Department and ultimately demolished as part of a site cleanup conducted by Orange and Rockland Utilities (USGS 2007; HDR/LMS 2006). Given the former presence of map-documented structures within the APE, the sensitivity for historic archaeological resources is considered high.

Disturbance

According to a Phase I Environmental Site Assessment conducted by HDR/LMS in 2006 there have been several distinct building episodes within the property. The report indicates that an outbuilding was first constructed on the property around 1840 followed by a residence in 1900. Subsequent building episodes included the construction of a dwelling in 1920. By 1941, there were four structures recorded on the property. Records from the 1950s indicate that there were a total of 12 structures on the property by 1950 including three houses, a barn, four cabins, one cottage, and several sheds. An additional summer cottage was built around 1960. A fire in 1999 destroyed one of the former residences and a building inspection report from 2005 documented eight single-family dwellings present within the property. That same year the property was condemned and the residents were forced to vacate (HDR/LMS 2006).

Following their acquisition, Orange and Rockland Utilities conducted a cleanup of the property. All of the remaining structures on the property were demolished and all of the septic tanks and wells were excavated and removed. Petroleum storage tanks within the property were also removed at this time and any subsurface utilities were capped as part of the cleanup. Aerial images for the property show that no aboveground structures remained within the property by 2007 (USGS 2004, 2007).

Site Visit

A site visit was conducted on February 9, 2011 and included a visual inspection of the APE. Visibility of the ground surface was limited due to the presence of 8-10 inches of ice-capped snow at the time of the site visit. The APE is bounded by South Mountain Road to the north, Little Tor Road to the east, the West Branch of the Hackensack River to the south, and a transmission line corridor to the west (see Figure 3; Photographs 1-4). Vegetation within the APE is presently characterized by a mixture of forest of mixed hard and softwood trees and an open transmission line corridor (Photographs 5 and 6). Topography in the APE sloped southward toward the West Branch of the Hackensack River and a large rock outcrop was observed (Photographs 7 and 8). Another small stream was noted along the west edge of the property (Photograph 9).

Surface visible evidence of past habitation or use of the property included stone retaining and delineation walls, and trash / debris piles (Photographs 10 and 11). In addition, push piles and boulder piles were visible along the periphery of the transmission line corridor suggesting past landscape modifications (Photographs 12 and 13). Within the wetlands along the edge of the West Branch of the Hackensack River were visible stands of *Phragmites*, an invasive nonnative wetland plant species that could represent evidence of recent subsurface disturbance (Photographs 14 and 15; Wilcox 2006; Gucker 2008). Given the limited surface visibility at the time of the site visit it is possible that areas of past ground disturbance may exist focused around the locations of the former structures, septic systems, and wells. Archaeological deposits found within areas of past ground disturbance often lack integrity and would not be considered significant archaeological resources. Conversely, undisturbed areas which possess intact soils would be considered to be to have a high sensitivity for significant prehistoric and historic archaeological resources.

PHASE IB: ARCHAEOLOGICAL FIELD INVESTIGATION

Methods

Archaeological fieldwork, consisting of a systematic subsurface survey, was conducted within areas of proposed ground disturbance on May 16 and 17, 2011. The subsurface survey included the excavation of approximately 50 cm diameter STPs at a minimum 15-meter (50 foot) testing interval. The interval was modified to a 25-foot interval near the location of a historically map documented structure along North Little Tor Road. All STPs were screened through ¼-inch wire mesh for the recovery of artifacts. The STPs were labeled based upon their location within a pre-established systematic grid. Information for each STP was recorded with regard to the depth, color, texture, and condition of each strata as well as the presence or absence of artifacts on standardized STP forms. In some instances, STPs needed to be offset due to existing surface conditions, but these offsets were excavated at the next available location, often within several feet of the original planned location. Artifacts recovered from each STP were bagged by stratum along with tags indicating the provenience of each bag. All recovered artifacts were transported back to RGA's laboratory for cleaning and analysis. Modern debris, including but not limited to coal ash, modern glass, and modern plastic were discarded in the field, but noted on the STP forms.

The mean date analysis for diagnostic artifacts was derived from South (1978) and consisted of establishing a median date from known production or manufacturing date ranges (i.e. 1950+2005=3955/2=1977.5). For artifacts still presently manufactured an end date of 2005 was assumed since this was the last year the property was occupied. The median dates were then multiplied by the number of artifacts (frequency) associated with each median date (i.e., 1977.5*10=19775) and their sums were recorded. An overall mean date for each artifact group and for the entire site was derived by adding all of the applicable date range sums for the given group and dividing by the total number of diagnostic artifacts for that group (i.e., 5857.5+1977.5+1927.5=9762.5/5=1952.5). This final product represented the mean date for its associated artifact group.

Field Results

A total of 56 STPs were planned for excavation with the approximately 2.754-acre limits of proposed ground disturbance. Four of these STPs were not excavated due to past ground disturbance associated with an existing gas pipeline along the west edge of the APE. The remaining 52 planned STPs were excavated to at least one-foot into sterile subsoil wherever possible (Appendix C; Figure 10); an additional seven radial STPs were also excavated. An impenetrable rocky layer was encountered within the APE ranging from 0.3-feet (10 cm) to approximately 2.5-feet (76.2 cm) below ground surface. In general, the STPs revealed soil profiles similar to those anticipated based upon available NRCS soil data. The general profile for each STP consisted of a dark grayish brown (10YR4/2) to brown (7.5YR 4/3) silty clay loam A-horizon which overlay a brown (7.5YR5/4) to yellowish brown (10YR4/6) sandy loam B-horizon. In several locations, this profile was overlain by layers of fill encountered in varying thicknesses, but generally averaging approximately 1-foot (30 cm) in thickness.

One prehistoric chert core was recovered during the systematic subsurface survey at STP LT28 (Appendix D). Supplemental STPs were excavated around this STP at 3.3-foot (1 m), and 10-foot (3m) intervals within the existing testing grid. The STP proposed for excavation 1 meter east of STP LT28 was not excavated given the presence of past ground disturbance associated with the installation of a PVC monitoring well at its proposed location (see Figure 10; Photograph 16). No additional prehistoric artifacts were recovered from the supplemental testing. As a result, the single prehistoric artifact has been interpreted as an isolated find and is not a significant archaeological site.

A total of 22 STPs contained historic-period artifacts (see Appendix D). Most contained relatively low artifact densities of less than five artifacts recovered from A or fill-horizon soils (Table 4). These items, comprising approximately 33.51 percent of the total assemblage (N=125) represent the long term accumulation and dispersal of domestic and agricultural sheet refuse commonly found in fields surrounding nineteenth century farms.

A single STP excavated in the northern portion of the property at LT22 recovered a total of 21 artifacts, representing approximately 5.63 percent of the total assemblage, from a fill deposit. The artifacts were a mix of historic and modern materials including wire nails, linoleum, automotive mirror glass, and red earthenware flower pot fragments. Discarded items from the same fill provenience in this STP included fragments of PVC pipe and modern plastic. A mean date of approximately 1950 was derived for the nineteen diagnostic artifacts within the assemblage suggesting a mid to late twentieth century period of deposition likely associated with the construction of cottages near this location.

Table 4: Artifacts recovered from STP LT22 during the subsurface survey

Group	Material	Type	Stratum	Count	Percent of Total	Diagnostic Mean Date
Architectural			**Fill**	**18**	**85.71**	
	Ferrous Metal	*Wire Nail*		1		
	Glass	*Window*		4		
	Linoleum			13		
Domestic			**Fill**	**1**	**4.76**	
	Ceramic	*Redware*		1		
Personal			**Fill**	**2**	**9.53**	
	Glass	Mirror		2		
TOTAL			**Fill**	**21**	**100**	**~1950**

Three of the STPs excavated in the eastern portion of the property (LT6, LT10, and LT13) encountered high density artifact deposits. A total of 227 artifacts, representing approximately 60.85 percent of the entire assemblage, were recovered from these STPs. In general, these STPs contained commingled deposits of historic and modern debris within either layers of fill or A-horizon (Am, Ab, Ap; Table 5) soils. Recovered historic and modern debris consisted of both domestic and architectural artifact classes such as asphalt roofing, slate roofing, PVC pipe, whiteware, and yellowware. In addition, modern vessel and bottle glass fragments were recovered. Modern PVC and plastic was noted within the STPs, but not retained. Shovel Test Pits LT6 and LT10 were located near the several former cottages and sheds that were demolished as part of the site cleanup conducted by Orange and Rockland Utilities (HDR/LMS 2006). The artifacts and strata identified in these STPs lack integrity due to continuous twentieth century occupation and expansion on the site followed by the demolition and site cleanup. In addition, STP LT13 was offset due to a large debris pile within the property (Photograph 17). As a result, the test was excavated inside a former dry laid field stone foundation (Photograph 18). A 0.7-foot diameter square structural timber was exposed within the STP, below which were pieces of modern plastic and celluloid film (Photograph 19). According to a personal communication with Orange and Rockland representative Joanne Lanza, the STP was in the location of a barn that burned down between 2006 and 2007 prior to Orange and Rockland Utilities' site cleanup (Joanne Lanza, Personal Communication, May 16, 2011). A mean date of approximately 1992 was derived for the 74 diagnostic artifacts recovered from these STPs suggesting that the artifacts were likely deposited near the end of the twentieth or beginning of the twenty-first century.

A small rectangular depression, labeled Feature 1 and measuring approximately 4-feet wide by 8-feet long, was identified within the eastern portion of the property near STP LT7. The depression was surrounded by fallen safety fencing, and filled with odd pieces of timber and wood cutoffs (Photograph 20). According to the Environmental Site Assessment report by HDR/LMS (2006), underground oil storage tanks were removed from within the property (HDR/LMS). As such, an STP was not excavated within this feature given the likelihood it may have been associated with a former underground oil storage tank.

Artifact Analysis

An analysis for the 164 total recovered diagnostic artifacts from the property derived an overall mean date of 1941.5 for the entire recovered assemblage (Table 6). Several distinct artifact classes – including hardware and synthetics present in the assemblage were much more recent (ca. 1950s). According to the environmental assessment by HDR/LMS, the property underwent a great deal of construction during the 1950s and the artifacts recovered during the subsurface survey are likely associated with that modern phase of development and ground disturbance.

Shovel Test Pits LT52 through LT55 were excavated in proximity to a map documented late nineteenth to early twentieth century dwelling. The southern transect of STPs, consisting of LT52, LT53, and LT55, were excavated at 25-foot (7.5 m) intervals along the southern edge of the dwelling foundation while STP LT54 was excavated 50-feet (15 m) to the north on the periphery of the proposed limits of ground disturbance. These STPs encountered fill soils deposited atop a natural sterile soil profile and included both modern and historic materials that were commingled with discarded plastic, electrical tape, and modern bottle glass. As mentioned above, these artifacts were in disturbed contexts resulting from the demolition and cleanup by Orange and Rockland Utilities in 2007 or the 1950s-era phase of construction.

Table 5: Artifacts recovered from STPs LT3, LT6, and LT10 during the subsurface survey.

Group	Material	Type	Stratum	Count	Percent of Total	Diagnostic Mean Date
Architectural			**Fill / A**	**87**	**38.33**	
	Asphalt	Roofing		5		
	Ceramic			20		
		Brick				
		Tile				
	Ferrous Metal			44		
		Cut Nail				
		Wire Nail				
	Glass			87		
		Lightbulb				
		Plate				
		Window				
	Linoleum			14		
	Wood			1		
Biological			**Fill / A**	**1**	**0.44**	
	Shell	Clam		2		
Domestic			**Fill / A**	**71**	**31.28**	
	Ceramic			18		
		Porcelain				
		Redware				
		Rockingham				
		Stoneware				
		Vitreous China				
		White Granite				
		Whiteware				
		Yellowware				
	Coal/Ash			3		
	Glass			50		
		Lamp				
		Vessel				
Hardware			**Fill / A**	**16**	**7.05**	
	Copper Alloy	Lamp Part				
	Ferrous Metal					
		Fastener				
		Miscellaneous				
		Tool				
		Unidentified				
Miscellaneous			**Fill / A**	**44**	**19.38**	
	Copper Alloy			5		
	Ferrous Metal			40		
		Container/Tube				
		Unidentified				
Synthetic			**Fill / A**	**6**	**2.64**	
	Celluloid			1		
	Plastic / Vinyl			5		
	Wood			1		
Personal			**Fill / A**	**2**	**0.88**	
	Copper Alloy	Buckle		1		
	Glass	Mirror		3		
TOTAL			**Fill / A**	**227**	**100**	**~1992**

Table 6: All artifacts recovered during the subsurface survey by group

Group	Material	Type	Stratum	Count	Percent of Total	Diagnostic Mean Date
Architectural			**Fill / A**	**171**	**45.84**	**1944.8**
	Asphalt	Roofing		5		
	Ceramic			20		
		Brick				
		Tile				
	Ferrous Metal			44		
		Cut Nail				
		Wire Nail				
		Unidentified Nail				
	Glass			87		
		Lightbulb				
		Plate				
		Window				
	Linoleum			14		
	Wood			1		
Biological			**Fill / A**	**2**	**0.54**	
	Shell	Clam/Oyster		2		
Domestic			**Fill / A**	**124**	**33.24**	**1934**
	Ceramic			33		
		Porcelain				
		Redware				
		Rockingham				
		Stoneware				
		Vitreous China				
		White Granite				
		Whiteware				
		Yellowware				
	Coal/Ash			9		
	Glass			81		
		Canning				
		Lamp				
		Vessel				
Hardware			**Fill / A**	**17**	**4.56**	**1952.5**
	Copper Alloy	Lamp Part				
	Ferrous Metal					
		Fastener				
		Miscellaneous				
		Tool				
		Unidentified				
Miscellaneous			**Fill / A**	**45**	**12.06**	
	Copper Alloy			5		
	Ferrous Metal			40		
		Container/Tube				
		Unidentified				
Synthetic			**Fill / A**	**7**	**1.88**	**1956.7**
	Celluloid			1		
	Plastic / Vinyl			5		
	Wood			1		
Personal			**Fill / A**	**7**	**1.88**	**1927.5**
	Copper Alloy	Buckle		1		
	Ferrous Metal	Toy		1		
	Glass	Mirror		3		
	Synthetic	Music Record		2		
TOTAL			**Fill / A**	**373**	**100**	**1941.5**

According to the HDR/LMS (2006) environmental assessment of the site, the property was occupied until 2005 when it was condemned by Clarkstown Township. Photographs of the site cleanup indicate that it was strewn with a wide variety of historic and modern trash and debris (Photographs 21 and 22). As many as 12 twentieth century structures were located throughout the property as were associated septic tanks and wells. All of these elements were demolished and/or removed from the property. Excavation, demolition, and grading associated with the site cleanup and past phases of construction resulted in past ground disturbance within much of the APE. However, areas of intact soils were also identified likely associated with the locations of former agricultural fields. Artifact deposits were identified near the locations of former dwellings within the property and none of the artifact deposits identified as part of this survey retained integrity. No intact nineteenth century features were identified. The survey provided evidence that portions of the APE are extensively disturbed and unlikely to contain remnant nineteenth century domestic features.

CONCLUSIONS

The Phase IA archaeological survey consisted of background research, a site visit and sensitivity assessment. Based upon the available information, the APE has been characterized as sensitive for the presence of prehistoric and historic archaeological resources. Phase IB subsurface survey within the property provided evidence of site disturbance around the former dwellings as detailed through documentary records in the 2006 environmental site assessment as well as evidence of intact former agricultural fields. Mean date analysis for the recovered historic artifacts indicates that about 45.73 percent (N=75) of the 164 total diagnostic historic artifacts are associated with the 1950's or later phases of construction and ground disturbance in the property. Continuous occupation of the site since the 1840's combined with multiple episodes of twentieth century residential, commercial, and utility construction and demolition has compromised the integrity of the property in areas where historic archaeological features of value could be found. The site history and demonstrated disturbance along with a predominantly modern Phase IB artifact assemblage supports these conclusions. Remnant historic fieldstone foundations encountered during the subsurface survey have been recorded on an archaeological site registration form for the property as the Moxley Acres Site (see Appendix E). Given the degree of past disturbance, the historic archaeological resources identified by this survey are not considered potentially eligible for listing on the National Register.

A chert core was recovered from the B horizon during the subsurface survey (see Appendix E; Figure 11). Based on the negative results of close interval testing this artifact is interpreted as an isolated find and does not represent a potentially significant archaeological resource. No further archaeological survey is recommended.

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FIGURE LIST:

Figure 1:

U.S.G.S. Map
(from U.S.G.S. 7.5′ Quadrangles: 1955 Thiells, NY and 1967 Haverstraw, NY [1979 photorevised])

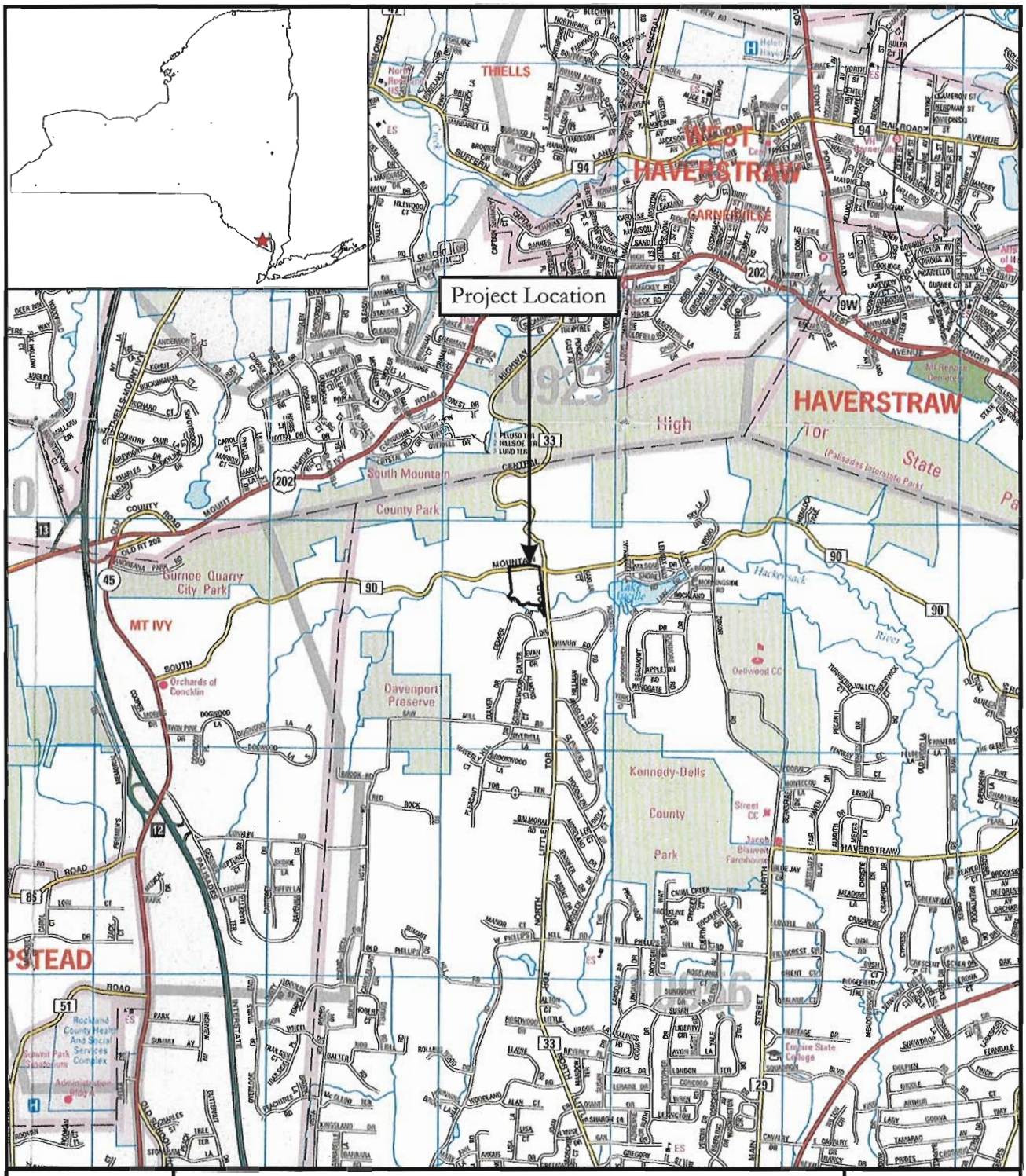

Figure 2:

County Map
(from 2002 *Hagstrom Map Company, Inc., Street Map of Rockland County, New York*).

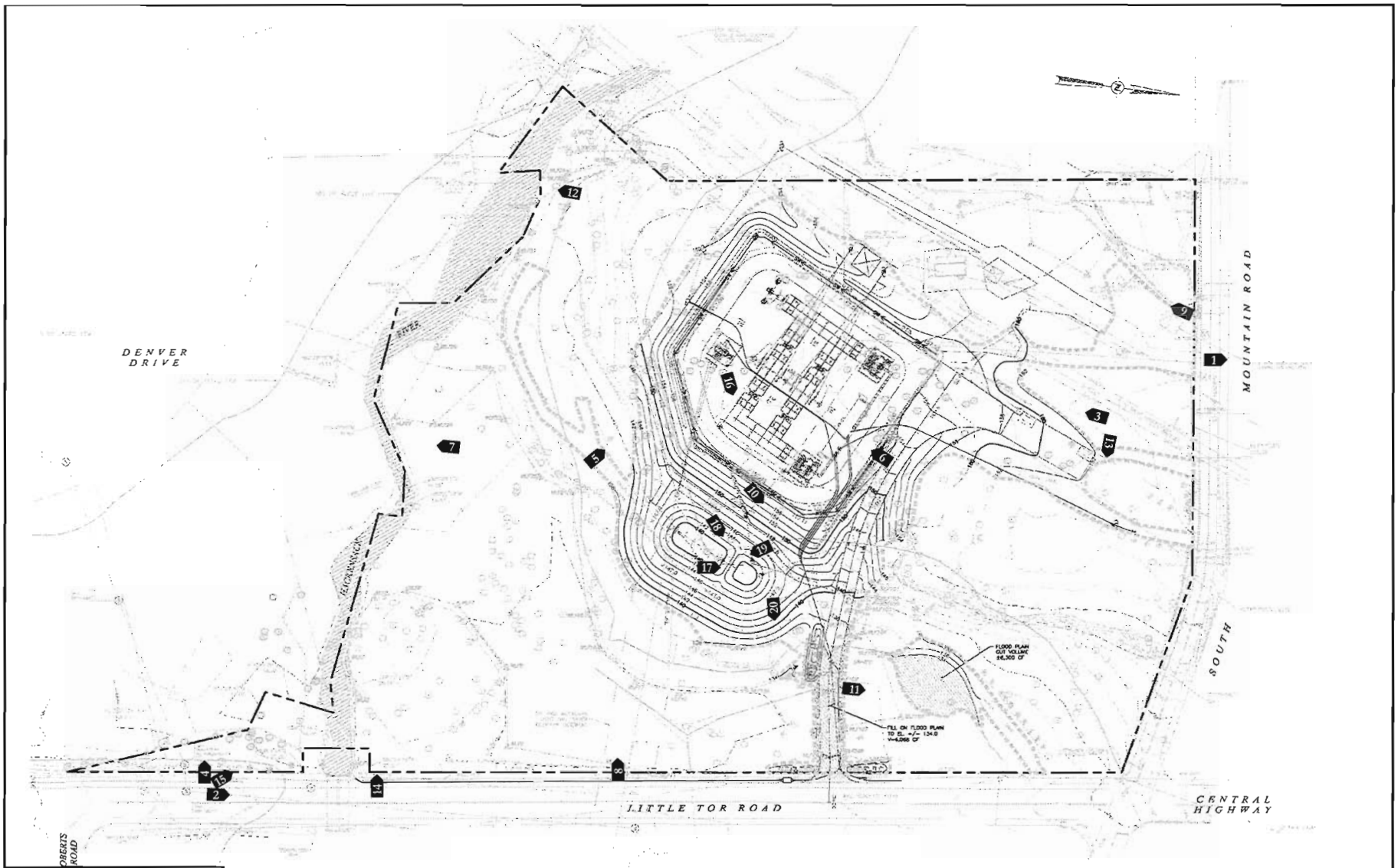

Figure 3:
Construction Plan showing the APE and photograph locations (from 2010, CMX Engineering, Survey and Landscape Architects PC of New York).
Note, photo locations for plates 21-24 not depicted as they were provided by the client.

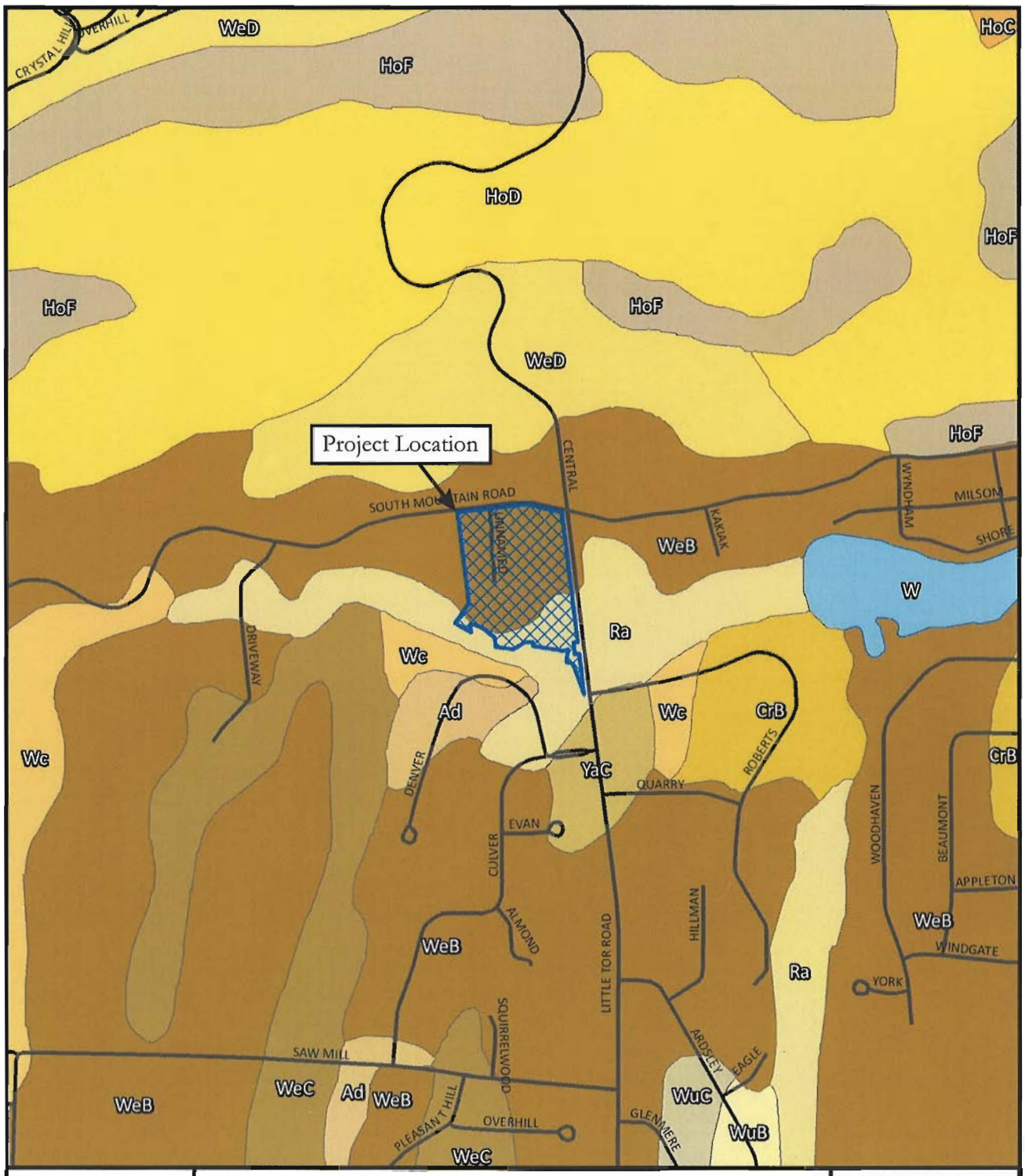

Figure 4:

Soils Map
(2011 Natural Resources Conservation Service).

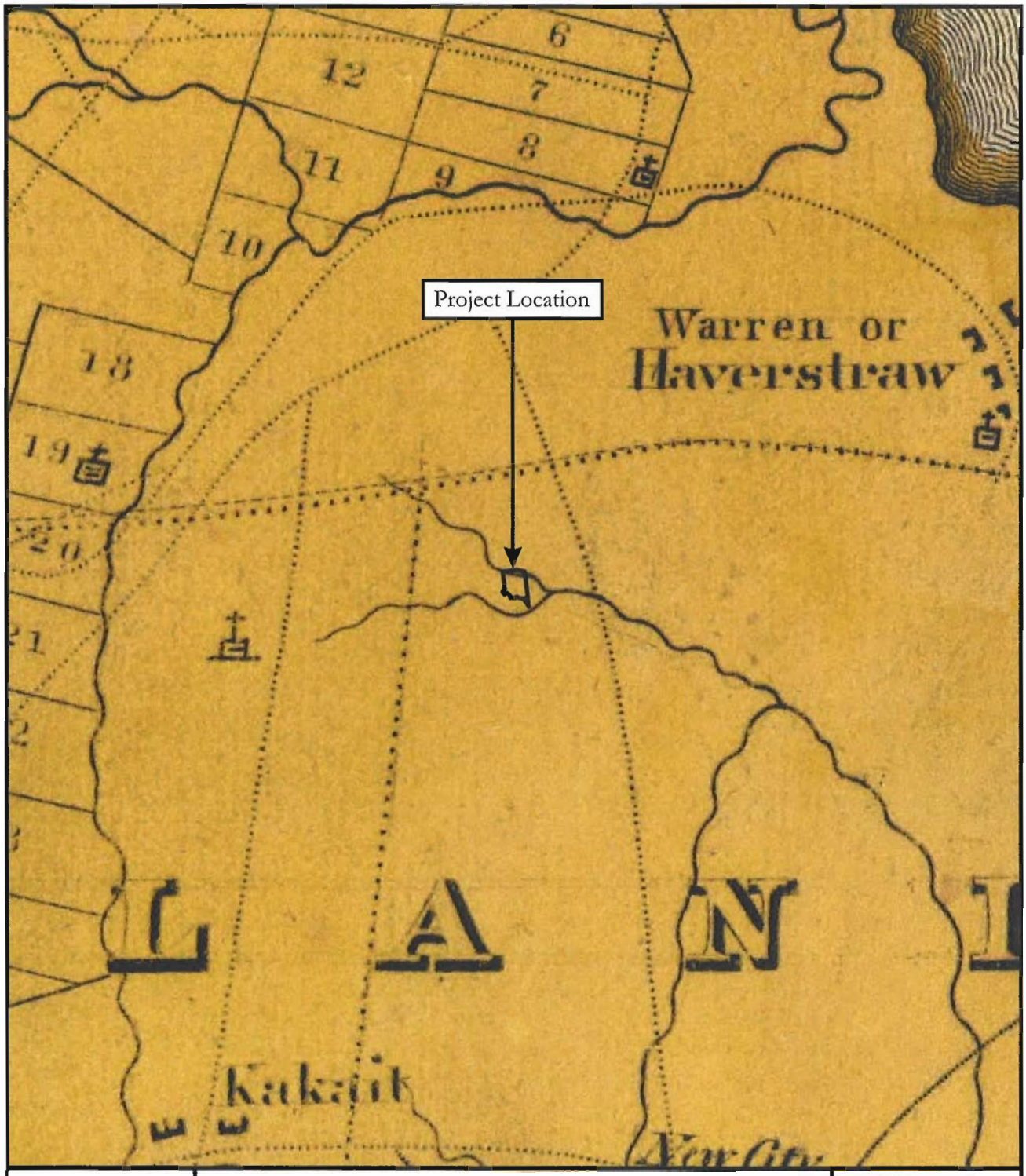

Figure 5:

1829 David H. Burr, *Map of the Counties of Orange and Rockland.*

N
W E
S

Feet
0 4000

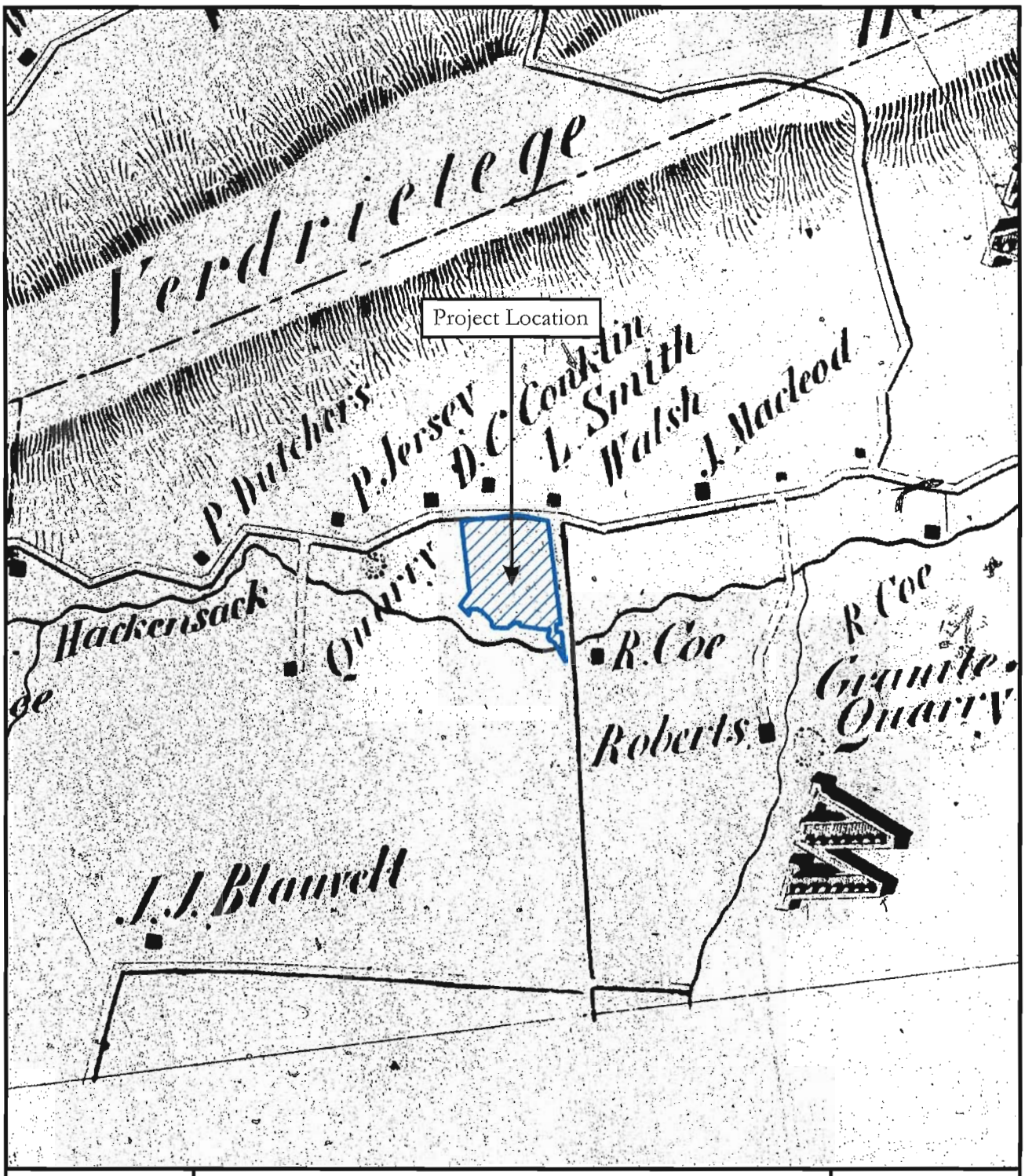

Figure 6:

1854 R.F. O'Connor, *Map of Rockland County, New York.*

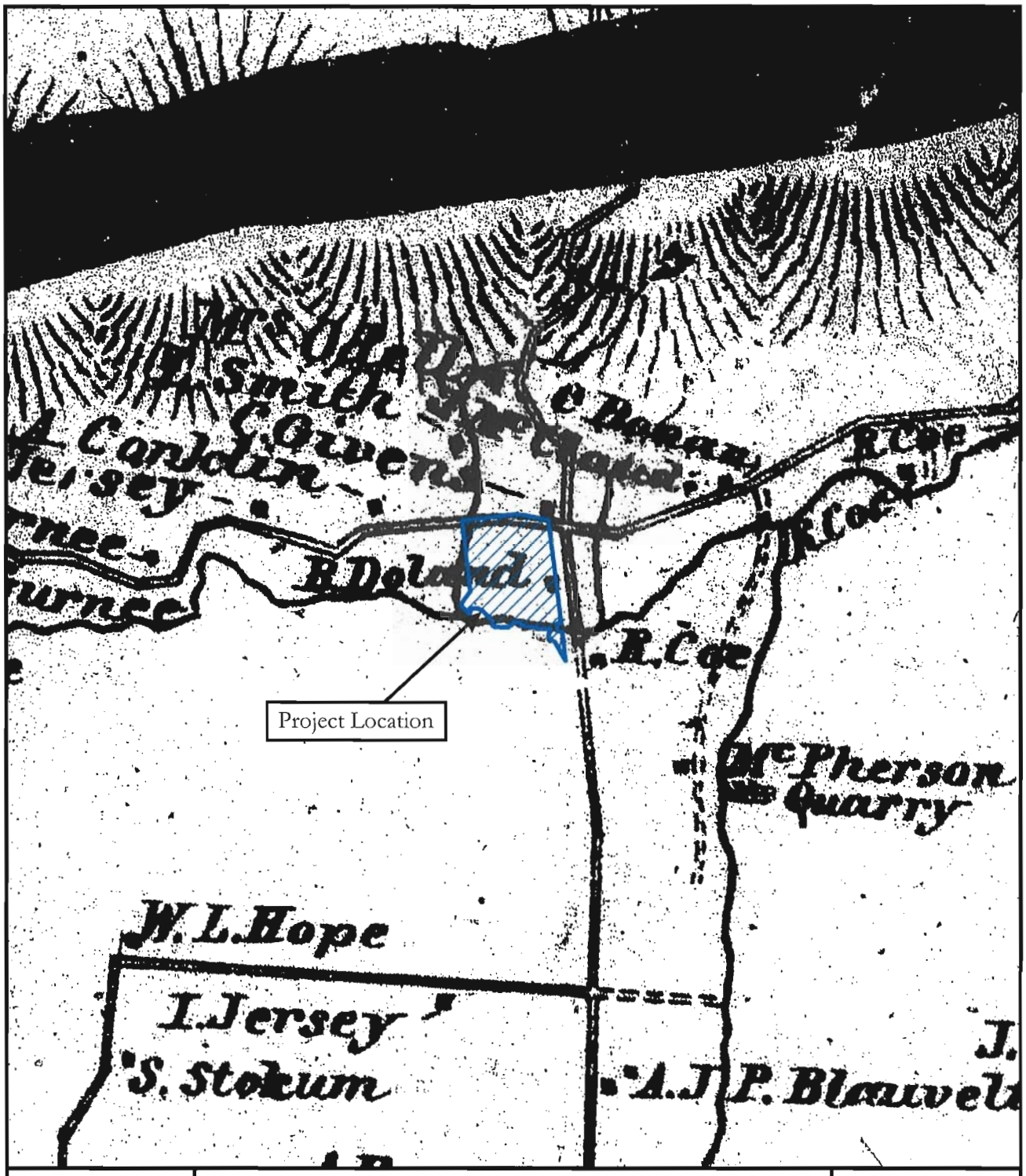

Figure 7:

1859 F.F. French et al., *Map of Orange and Rockland Co., New York.*

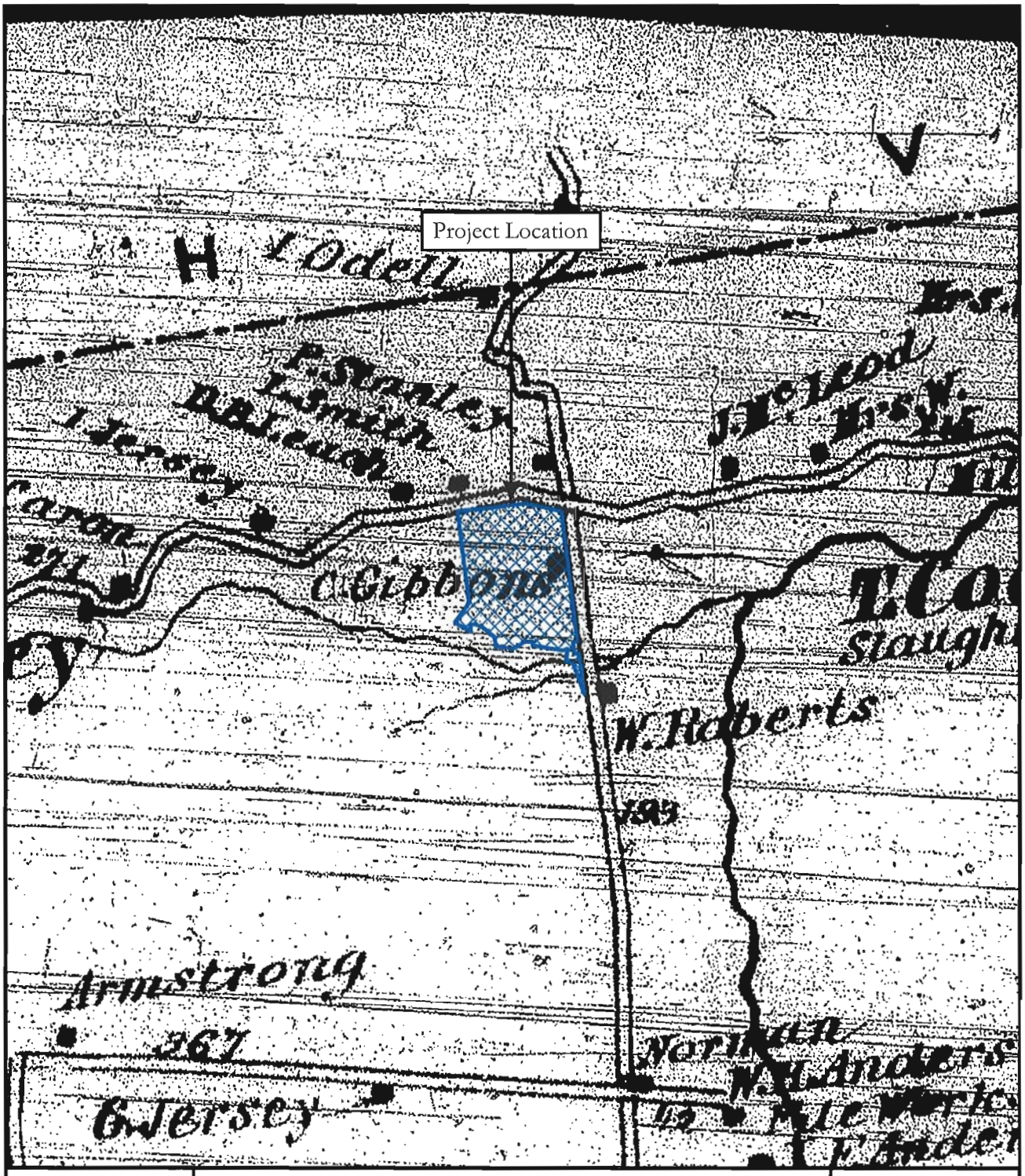

Figure 8:

1875 F.W. Beers, *County Atlas of Orange, New York.*

N
W E
S

Feet
0 800

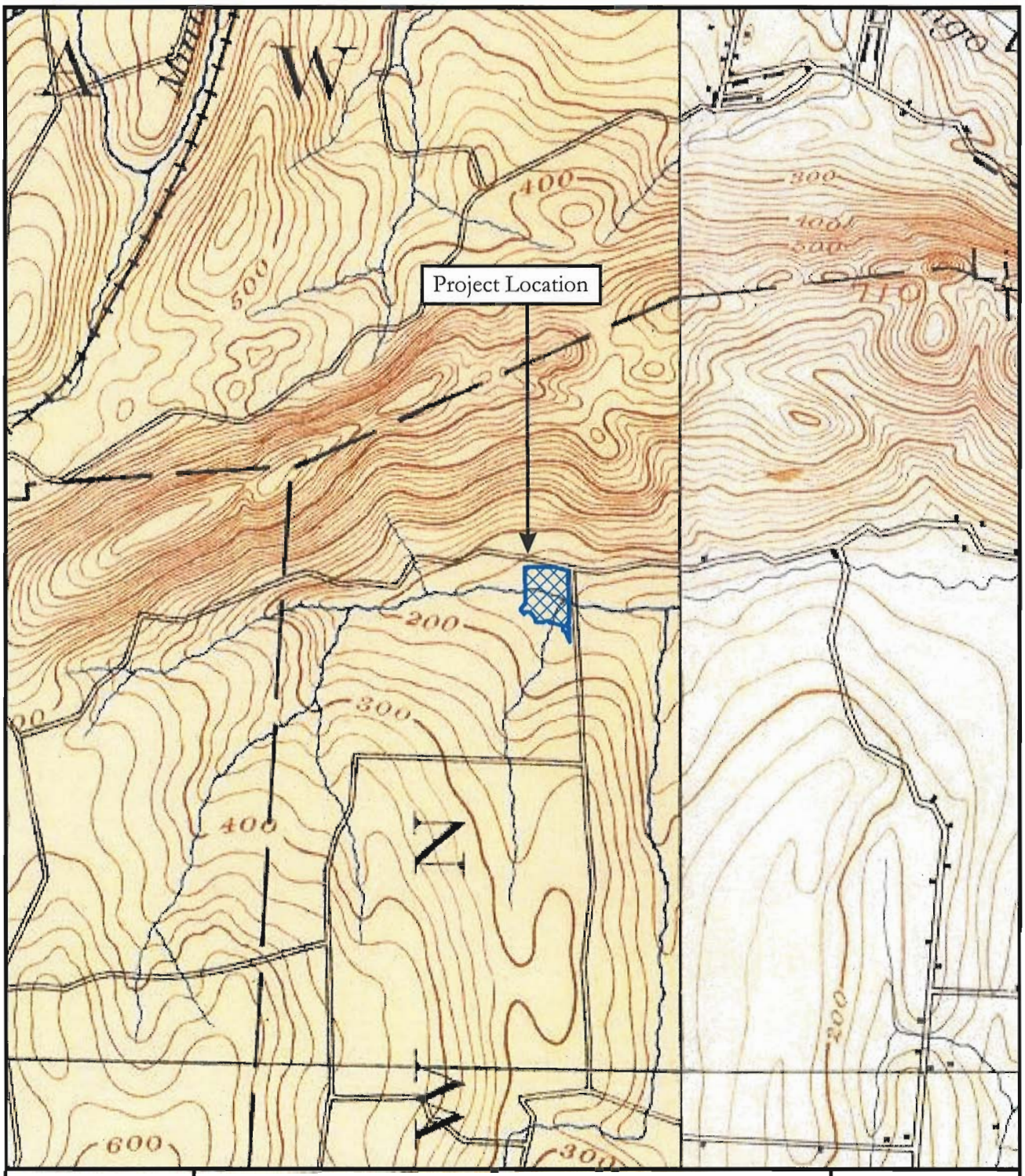

Figure 9:

U.S.G.S 15' Quadrangles: *1893 Ramapo, N.Y. and 1902 Tarrytown, N.Y.*

N
W E
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Feet
0 2000

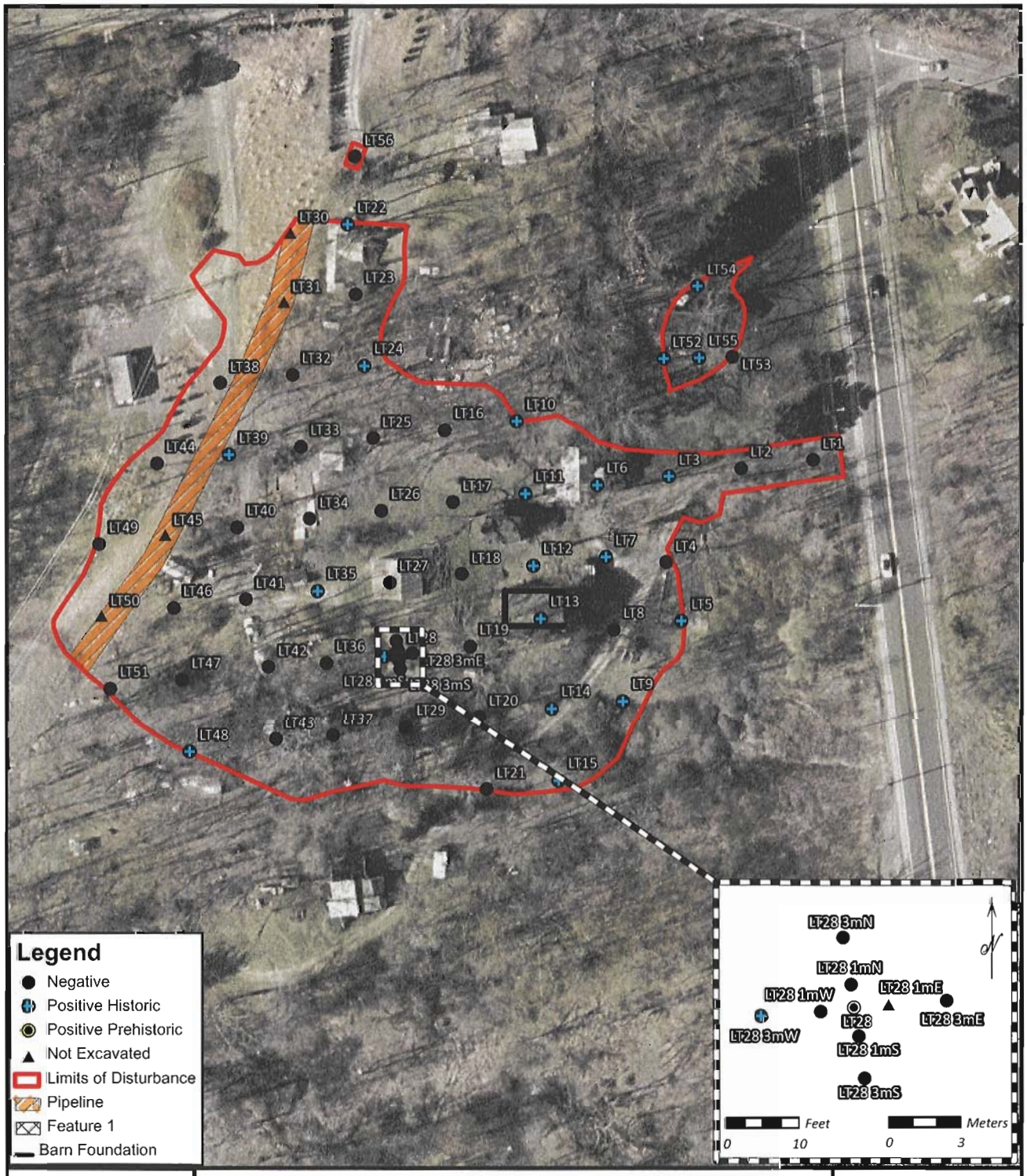

Figure 10:

Phase IB Testing Plan
(from U.S.G.S. EROS Web Map Service, 2004).

N
W
E
S
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0
100

Figure 11:

Chert Core Fragment (Cat. # 15)

PHOTOGRAPH LIST (SEE FIGURE 3 FOR PHOTOGRAPH LOCATIONS):

Photograph 1:

Overview of the north margin of the APE along South Mountain Road.
Photo view: East
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 2:

Overview of the east margin of the APE along Little Tor Road.
Photo view: North
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 3:

Overview of the west margin of the APE along the Transmission Line.
Photo view: South
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 4:

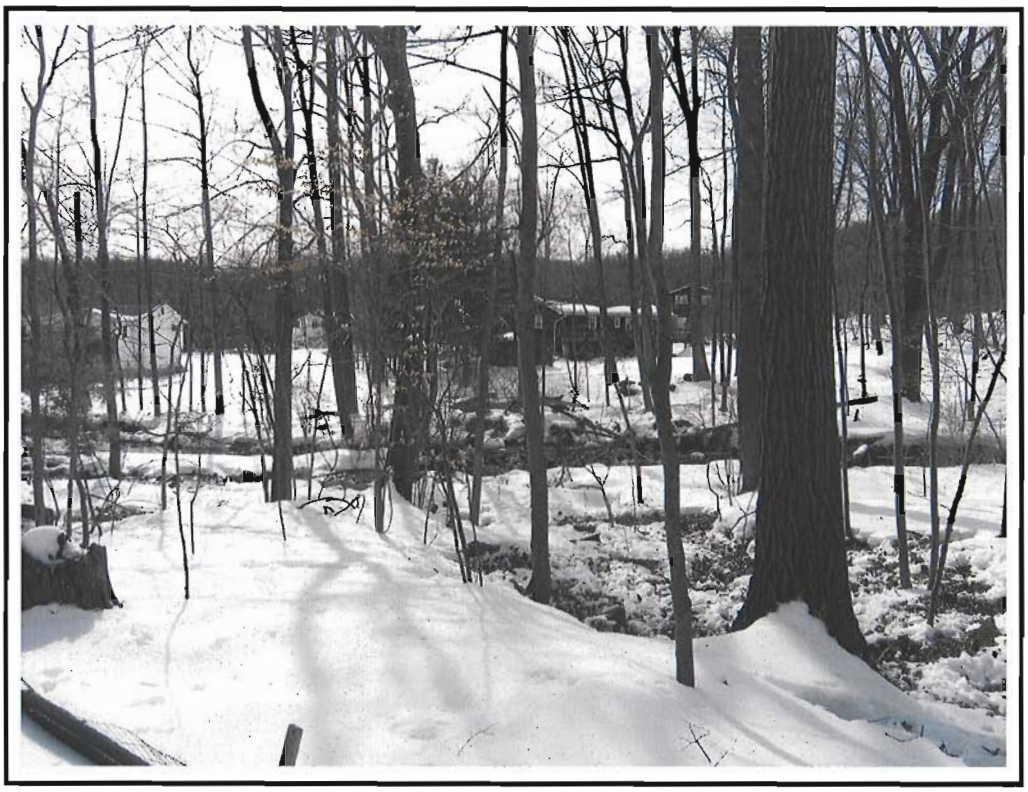
Overview of the south margin of the APE along the West Branch of the Hackensack River.
Photo view: West
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 5:

Example of mixed hardwood/softwood vegetation within the APE.
Photo view: Northwest
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 6:

Overview of the Transmission Line showing weedy, grassy vegetation.
Photo view: Southwest
Photographer: Scott Wieczorek
Date: February 9, 2011



Photograph 7:

Overview of the APE slope towards the West Branch of the Hackensack River.
Photo view: South
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 8:

Example of the rock outcrop within the APE.
Photo view: West
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 9:

View of the small stream along the West Periphery of the APE.
Photo view: Southwest
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 10:

Example of the rock walls present within the APE.
Photo view: Northeast
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 11:

Example of debris/trash situated within the APE.
Photo view: North
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 12:

Example of push piles within the Transmission Line Corridor located in the western portion of the APE.
Photo view: South
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 13:

Example of push piles and boulder piles within the APE.
Photo view: East
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 14:

Example of phragmites situated along the West Branch of the Hackensack River and wetlands.
Photo view: West
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 15:

Example of phragmites situated along the West Branch of the Hackensack River and wetlands.
Photo view: Northwest
Photographer: Scott Wieczorek
Date: February 9, 2011

Photograph 16:

Overview of monitoring well near STP LT28.
Photo view: East
Photographer: Scott Wieczorek
Date: May 17, 2011

Photograph 17:

Overview of debris pile located near STP LT13.
Photo view: Northwest
Photographer: Scott Wieczorek
Date: May 17, 2011

Photograph 18:

Overview of portion of former barn foundation near STP LT13.
Photo view: Southwest
Photographer: Scott Wieczorek
Date: May 17, 2011

Photograph 19:

Plan view of wooden framing timber within STP LT13.
Photo view: N/A
Photographer: Adrienne Jarczewski
Date: May 16, 2011

Photograph 20:

Overview of Feature 1.
Photo view: East
Photographer: Adrienne Jarczewski
Date: May 16, 2011

Photograph 21:

Orange and Rockland Utilities photograph depicting examples of trash and debris within the property.
Photo view: Unknown
Photographer: Orange and Rockland Utilities
Date: Unknown

Photograph 22:

Orange and Rockland Utilities photograph depicting examples of trash and overgrown forest within the property.
Photo view: Unknown
Photographer: Orange and Rockland Utilities
Date: Unknown

APPENDIX A: PRINCIPAL INVESTIGATOR QUALIFICATIONS

Richard Grubb & Associates, Inc.
Cultural Resource Consultants

email: mail@richardgrubb.com • www.richardgrubb.com

Scott Wieczorek, MA, RPA, Senior Archaeologist

Years of Experience
With this firm-0.5
With other firms-14

Education
MA 2003
Monmouth University
History

BA 2000
Monmouth University
Anthropology

Professional Societies
Register of Professional Archaeologists

Archaeological Society of New Jersey

Certifications
OSHA 6-Hour Trenching Competent Person, 2009

Section 106 Essentials of the National Historic Preservation Act, 2007

CPR and AED for the community and workplace, 2008

Basic First Aid for the community and workplace, 2008

Professional Experience Summary:

Scott Wieczorek is a Senior Archaeologist at RGA, and provides technical support on archaeological projects undertaken in New York, New Jersey, and Pennsylvania. Mr. Wieczorek has served as a Principal Investigator on all phases of archaeological investigations, and specializes in the analysis of historic and industrial artifacts and sites. As a Principal Investigator, Mr. Wieczorek has prepared and directed cultural resources surveys in accordance with Section 106 of the National Historic Preservation Act, the National Environmental Policy Act, NJ Executive Order No. 215, NJ Register of Historic Places Act, and NJDEP Freshwater Wetlands Permits.

Representative Project Experience:

Phase IA Archaeological Assessment, Little Tor Substation, Rockland County, NY
Senior archaeologist responsible for conducting a Phase IA archaeological assessment in advance of the construction of an electrical substation in Rockland County, New York. Project was conducted under NY State Environmental Quality Review Act for review by the New York State Office of Parks, Recreation and Historic Preservation. As Principal Investigator tasks performed included pedestrian reconnaissance, GIS, graphics production, and report writing.

Phase IA Archaeological Assessment, River Drive Improvements, Bergen County, NJ
Senior archaeologist responsible for conducting a Phase IA archaeological assessment for proposed road improvements along River Drive, City of Garfield, New Jersey. Project was conducted as part of a New Jersey Freshwater Permit Application reviewed by the New Jersey Historic Preservation Office. As Principal Investigator tasks performed included pedestrian reconnaissance, GIS, graphics production, and report writing.

Phase IA Archaeological and Geomorphological Assessment, Laser Northeast, Susquehanna County, PA
Senior archaeologist responsible for conducting a Phase IA archaeological assessment associated with a 27-mile natural gas collector line in Susquehanna County, PA. Project was conducted for an Army Corps of Engineers Permit Application for review by the Pennsylvania Historic and Museum Commission. As Principal Investigator tasks performed included pedestrian reconnaissance, supervising geomorphological studies, GIS, and report writing.

Phase IA Archaeological Assessment, Essex Riverfront Park, Essex County, NJ
Senior archaeologist responsible for conducting a Phase IA archaeological assessment for the proposed Essex County Riverfront Park, Newark, NJ. Project was conducted for a Waterfront Development Permit Application reviewed by the New Jersey Historic Preservation Office. As Principal Investigator tasks performed included pedestrian reconnaissance, GIS, graphics production, and report writing.

APPENDIX B: RECORD OF PUBLIC CONSULTATION

Agencies and individuals with an identified interest in archaeology, history or historic preservation were contacted as part of this Phase IA/IB archaeological survey. Information was requested regarding the presence of prehistoric and/or historic archaeological resources within the APE. As a result, the following persons and/or organizations were contacted requesting information on possible impacts to historic resources:

Consulting and Interested Parties:

Robert Knight, Chairman
Town of Clarkstown Historical Review Board
Town of Clarkstown
10 Maple Avenue
New City, NY 10956

Contact: letter sent: March 2, 2011, attached
Response: None to date

Jeanne Mikelson, President
NYSAA, Louis A. Brennan/Lower Hudson Chapter
100 Cedar Street, A-46,
Dobbs Ferry, NY 10522

Contact: letter sent: March 2, 2011, attached
Response: None to date

Charles Vezzetti, Acting Chair
Rockland County Historic Preservation Board
Building T, Robert Yeager Health Center
Sanatorium Road
Pomona, NY 10970

Contact: letter sent: March 2, 2011, attached
Response: None to date

Richard Grubb & Associates, Inc.
Cultural Resource Consultants

email: mail@richardgrubb.com • www.richardgrubb.com

February 25, 2011

Robert Knight, Chairman
Town of Clarkstown Historical Review Board
Town of Clarkstown
10 Maple Avenue
New City, NY 10956

Re: Phase IA Archaeological Survey
Little Tor Substation
Block 1, Lots 5 and 6
Town of Clarkstown, Rockland County, New York

Dear Mr. Knight:

Orange and Rockland Utilities proposes to construct a new electrical substation and a new upgraded gas regulator station on Lots 5 and 6 at the intersection of Little Tor and South Mountain Roads in the Town of Clarkstown, Rockland County, New York. The property comprises 10.2-acres and approximately 3.25 acres are proposed for ground disturbance. The limits of disturbance, or Area of Potential Effects (APE), include cleared and forested areas. The property is currently vacant.

In advance of the referenced project, Richard Grubb & Associates, Inc. (RGA) is conducting a Phase IA archaeological survey to comply with Section 106 of the National Historic Preservation Act and 36 CFR Part 800: Protection of Historic Properties, and the New York State Environmental Quality Review Act (SEQRA). The purpose of the Phase IA archaeological survey is to assess the potential for significant prehistoric and historical archaeological resources in the APE. The United States Army Corps of Engineers is the lead federal agency for this project.

If you are aware of any archaeological resources that may be affected by the project, or have any information regarding the APE, please respond within 15 days of the receipt of this letter.

Enclosed for your use is a USGS map showing the location of the APE. If you have any concerns, or information pertinent to this project, RGA would be interested in receiving your comments in writing. Please feel free to contact me at 609-655-0692 ext. 309 or via email at pjmceachen@richardgrubb.com.

Yours very truly,

Paul J. McEachen, M.A. RPA
Principal Senior Archaeologist

w/enclosures
cc: Doug Chabrak, Birdsall Engineering

Richard Grubb & Associates, Inc.
Cultural Resource Consultants

email: mail@richardgrubb.com • www.richardgrubb.com

February 25, 2011

Jeanne Mikelson, President
NYSAA, Louis A. Brennan/Lower Hudson Chapter
100 Cedar Street, A-46,
Dobbs Ferry, NY 10522

Re: Phase IA Archaeological Survey
Little Tor Substation
Block 1, Lots 5 and 6
Town of Clarkstown, Rockland County, New York

Dear Ms. Mikelson:

Orange and Rockland Utilities proposes to construct a new electrical substation and a new upgraded gas regulator station on Lots 5 and 6 at the intersection of Little Tor and South Mountain Roads in the Town of Clarkstown, Rockland County, New York. The property comprises 10.2-acres and approximately 3.25 acres are proposed for ground disturbance. The limits of disturbance, or Area of Potential Effects (APE), include cleared and forested areas. The property is currently vacant.

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Yours very truly,

Paul J. McEachen, M.A. RPA
Principal Senior Archaeologist

w/enclosures

cc: Doug Chabrak, Birdsall Engineering

Richard Grubb & Associates, Inc.
Cultural Resource Consultants

email: mail@richardgrubb.com • www.richardgrubb.com

February 25, 2011

Charles Vezzetti, Acting Chair
Rockland County Historic Preservation Board
Building T, Robert Yeager Health Center
Sanatorium Road
Pomona, NY 10970

Re: Phase IA Archaeological Survey
Little Tor Substation
Block 1, Lots 5 and 6
Town of Clarkstown, Rockland County, New York

Dear Mr. Vezzetti:

Orange and Rockland Utilities proposes to construct a new electrical substation and a new upgraded gas regulator station on Lots 5 and 6 at the intersection of Little Tor and South Mountain Roads in the Town of Clarkstown, Rockland County, New York. The property comprises 10.2-acres and approximately 3.25 acres are proposed for ground disturbance. The limits of disturbance, or Area of Potential Effects (APE), include cleared and forested areas. The property is currently vacant.

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Yours very truly,

Paul J. McEachen, M.A. RPA
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w/enclosures
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APPENDIX C: SHOVEL TEST PIT LOG

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TEST	DEPTH*	STRATUM	MUNSELL	COLOR	SOIL TYPE	ARTIFACTS/ COMMENTS
LT1	00-21cm (0.0-0.7)	Fill 1	10YR 4/2	Dk GBrn	SiLo w/ 90% Road Grl	NCM
	21-40cm (0.7-1.3)	Fill 2	7.5YR 4/4	Dk YBrn	SiLo w/ 85% Grl	NCM
LT2	00-35cm (0.0-1.3)	Fill	7.5YR 4/2	Brn	SaLo w/ Grl	Stopped by built up road
LT3	00-24.5cm (0.0-0.8)	Ao	10YR 4/4	Dk YBrn	SiClLo	NCM
	24.5-30cm (0.8-1.0)	Ash	10YR 2/1	Blk	Ash	Historics
	30-39cm (1.0-1.3)	Ab	10YR 4/2	Dk GBrn	SaLo	NCM
	39-79cm (1.3-2.6)	B	10YR 4/6	Dk YBrn	SaLo	NCM
LT4	00-27cm (0.0-0.9)	Fill	10YR 4/4	Dk YBrn	SiLo w/ Grl Bedrock	NCM
LT5	00-43cm (0.0-1.4)	A	10YR 4/4	Dk YBrn	SiClLo Bedrock	Historics
LT6	00-40cm (0.0-1.3)	Ap	7.5YR 4/3	Brn	SaClLo	Historics
	40-70cm (1.3-2.3)	B	7.5YR 5/4	Brn	SaClLo	NCM
LT7	00-15cm (0.0-0.5)	Ap	7.5YR 4/3	Brn	SaClLo	Historics
	15-37cm (0.5-1.2)	B	7.5YR 5/4	Brn	SaClLo	NCM Stopped by Bedrock
LT8	00-34cm (0.0-1.1)	Ap	7.5YR 4/2	Brn	ClLo	NCM
	34-55cm (1.1-1.8)	B	7.5YR 5/6	StrBrn	ClLo	NCM Stopped by Rock
LT9	00-46cm (0.0-1.5)	Ap	7.5YR 4/2	Brn	SaClLo	Historics
	46-70cm (1.5-2.3)	B	7.5YR 5/4	Brn	SaClLo	NCM
LT10	00-41cm (0.0-1.35)	Fill	7.5YR 3/2	Dk Brn	SiLo	Historics Stopped by Rock Stp located on rocky slope near barn roofing slate on surface
LT11	00-24cm (0.0-0.8)	A/ Fill	7.5YR 3/2	Dk Brn	SiLo w/ Brick	Historics
	24-49cm (0.8-1.6)	B	5YR 5/6	YRd	SiClLo w/ Shale	NCM Stopped by Rock
LT12	00-26cm (0.0-0.85)	A	7.5YR 3/2	Dk Brn	SiLo	Historics Stopped by Rock
LT13	00-26cm (0.0-0.85)	Fill 1	7.5YR 3/2	Dk Brn	SiLo w/ Cbs	Historics
	26-55cm (0.85-1.8)	Fill 2	7.5YR 3/2 m/w 5YR 5/6	Dk Brn/ YRd	SiLo w/ Cbs	Historics Stopped by Rocks and Wood ***Barn floor***
LT14	00-30cm (0.0-1.0)	A	7.5YR 3/2	Dk Brn	Silt Loam w/ Rocks	Historics
	30-37cm (1.0-1.2)	B	7.5YR 5/4 m/w 7.5YR	Brn/ StrBrn	Silt Loam w/ Rocks	NCM Stopped by Rock
LT15	00-30cm (0.0-1.0)	A	7.5YR 3/2	Dk Brn	SiLo	Historics
	30-40cm (1.0-1.3)	B	7.5YR 5/6	StrBrn	SiLo	NCM
LT16	00-18cm (0.0-0.6)	A/O	10YR 4/2	Dk GBrn	SiLo	NCM
	18-46cm (0.6-1.5)	B	10YR 4/6	Dk YBrn	SaLo Bedrock	NCM

TEST	DEPTH*	STRATUM	MUNSELL	COLOR	SOIL TYPE	ARTIFACTS/ COMMENTS
LT17	00-10cm (0.0-0.3)	A	10YR 4/2	Dk GBrn	SiLo Bedrock	NCM
LT18	00-30cm (0.0-1.0)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	30-50cm (1.0-1.6)	B	10YR 4/6	Dk YBrn	SaClLo	NCM
	50-60cm (1.6-2.0)	C	10YR 5/4	Ybrn	SaLo	NCM
LT19	00-30cm (0.0-1.0)	A	10YR 4/2	Dk GBrn	SiClLo Bedrock	NR: plastic, modern beer bottle glass
LT20	00-40cm (0.0-1.3)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	40-61cm (1.4-2.1)	B	10YR 4/6	Dk YBrn	SaClLo Bedrock	NCM NCM
LT21	00-40cm (0.0-1.3)	A	10YR 4/2	Dk GBrn	SiClLo Bedrock	NCM
LT22	00-6cm (0.0-0.6)	Am	10YR 2/1	Blk	SiLo	NCM
	6-64cm (0.6-2.1)	Fill	10YR 4/2 m/w 10YR 4/6	Dk GBrn / Dk YBrn	SiClLo	Historics Stopped by Bedrock
LT23	00-9cm (0.0-0.3)	Am	10YR 2/1	Blk	SiLo	NCM
	9-28cm (0.3-0.8)	Ap	10YR 4/2	Dk GBrn	SiClLo	NCM
	28-58cm (0.8-1.9)	B	10YR 4/6	Dk YBrn	ClLo	NCM
LT24	00-12cm (0.0-0.4)	Am	10YR 2/1	Blk	SiLo	Historics
	12-34cm (0.4-1.1)	Ap	10YR 4/2	Dk GBrn	SiClLo	NCM
	34-68cm (1.1-2.1)	B	10YR 4/6	Dk YBrn	SiClLo	NCM
LT25	00-21cm (0.0-0.7)	Ap	10YR 3/2	VDk GBrn	SaClLo	NCM
	21-49cm (0.7-1.6)	B	10YR 4/6	Dk YBrn	SaClLo w/ Rock	NCM Stopped by Rock
LT26	00-24cm (0.0-0.8)	Ap	10YR 3/2	VDk GBrn	SaClLo w/ Rock	NCM
	24-58cm (0.8-1.9)	B	10YR 4/6	Dk YBrn	SaClLo w/ Rock	NCM
LT27	00-21cm (0.0-0.7)	Ap	10YR 4/2	Dk GBrn	SaClLo	NCM
	21-52cm (0.7-1.7)	B	10YR 4/6	Dk YBrn	SaClLo	NCM
LT28	00-15cm (0.0-0.5)	Ap	10YR 4/2	Dk GBrn	SiClLo	NCM
	15-52cm (0.5-1.7)	B	10YR 6/4	Dk YBrn	ClLo	Prehistoric Stopped by Rock
LT28 (3 meters North)	00-15cm (0.0-0.5)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	15-55cm (0.5-1.8)	B	10YR 4/6	Dk YBrn	SaLo Bedrock	NCM
LT28 (1 meter East)	Test not excavated - due to monitoring well					
LT28 (1 meter North)	00-21cm (0.0-0.7)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	21-58cm (0.7-1.9)	B	10YR 4/6	Dk YBrn	SaLo Bedrock	NCM
LT28 (1 meter South)	00-9cm (0.0-0.3)	Fill	7.5YR 3/1	VDk Gry	SiLo	NCM
	9-30cm (0.3-1.0)	Ab	7.5YR 4/3	Brn	SiLo	NCM

TEST	DEPTH*	STRATUM	MUNSELL	COLOR	SOIL TYPE	ARTIFACTS/ COMMENTS
	30-55 (1.0-1.8)	B	7.5YR 5/6	StrBrn	SiClLo	NCM Stopped by Rock
LT28 (1 meter West)	00-20cm (0.0-0.8)	Ap	10YR 4/2	Dk GBrn	SiClLo	NCM
	20-52 (0.8-1.7)	B	10YR 4/2	Dk GBrn	ClLo	NCM
LT28 (3 meters East)	00-6cm (0.0-0.2)	Ao	7YR 3/2	Dk Brn	SiLo	NCM
	6-27cm (0.2-0.9)	A1	7.5YR 4/3	Brn	SiLo	NCM
	27-55cm (0.9-1.8)	B	7.5YR 5/6	StrBrn	SiLo	NCM
LT28 (3 meters South)	00-12cm (0.0-0.4)	Ao	7.5YR 3/2	Dk Brn	SiLo	NCM
	12-30cm (0.4-1.0)	A	7.5YR 4/3	Brn	SiLo	NCM
	30-61cm (1.0-2.0)	B	7.5YR 5/6	StrBrn	SiLo	NCM
LT28 (3 meters West)	00-28cm (0.0-0.9)	Ap	10YR 4/2	Dk GBrn	SiClLo	NCM
	28-34cm (0.9-1.1)	B	10YR 4/2	Dk GBrn	ClLo	NCM Stopped by Rock
LT29	00-9cm (0.0-0.3)	Ap	10YR 4/2	Dk GBrn	SiClLo	NCM
	9-21cm (0.3-0.7)	B	10YR 6/4	Dk YBrn	ClLo	NCM
LT30	Test not excavated - Millennium Pipeline Corridor					
LT31	Test not excavated - Millennium Pipeline Corridor					
LT32	00-18cm (0.0-0.6)	A	10YR 4/2	Dk GBrn	SaLo	NCM
	18-33cm (0.6-1.1)	E	10YR 4/1	Dk Gry	SaLo	NCM
	33-61cm (1.1-2.0)	B	10YR 4/6	Dk YBrn	SaLo	NCM
LT33	00-21cm (0.0-0.7)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	21-28cm (0.7-0.9)	Ash	10YR 7/1	Lt Gry	Ash	NCM
	28-33cm (0.9-1.1)	Ab	10YR 4/2	Dk GBrn	SiLo	NCM
	33-55 (1.1-1.8)	B	10YR 4/6	Dk YBrn	SaLo	NCM
LT34	00-24cm (0.0-0.8)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	24-30cm (0.8-1.0)	Ash	10YR 2/1	Blk	Ash	NCM
	30-52cm (1.0-1.7)	Ab	10YR 4/4	Dk YBrn	SaClLo	NCM
	52-70cm (1.7-2.3)	B	10YR 4/6	Dk YBrn	SaCl	NCM
LT35	00-15cm (0.0-0.5)	Fill	10YR 2/1	Blk	Grl	NCM
	15-40cm (0.5-1.3)	A	10YR 4/2	Dk GBrn	SiClLo	Historics
	40-60cm (1.3-2.0)	B	10YR 4/6	Dk YBrn	SiLo	NCM
LT36	00-21cm (0.0-0.7)	A	10YR 4/2	Dk GBrn	SaClLo	NCM
	21-35cm (0.7-1.1)	E	10YR 4/1	Dk Gry	SaLo	NCM
	35-45cm (1.1-1.6)	B	10YR 4/6	Dk YBrn	SaLo	NCM
LT37	00-21cm (0.0-0.7)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	21-61cm (0.7-2.0)	B	10YR 4/6	Dk YBrn	SaClLo	NCM
LT38	00-18cm (0.0-0.6)	Fill	7.5YR 4/3 m/w 7.5YR 5/6	Brn / StrBrn	SiLo w/ Rocks	NCM
	18-34cm (0.6-1.1)	B	7.5YR 5/6	StrBrn	SiLo w/ 70% Shale	NCM Stopped by Rock
LT39	00-15cm (0.0-0.5)	Fill 1	7.5YR 4/3 m/w 7.5YR	Brn / StrBrn	SiLo w/ Rocks	NCM
	15-37cm (0.5-1.2)	Ab	7.5YR 3/2	Dk Brn	SiLo	CM
	37-40cm (1.2-1.3)	B	7.5YR 5/6	StrBrn	SiLo w/ Rocks	NCM

TEST	DEPTH*	STRATUM	MUNSELL	COLOR	SOIL TYPE	ARTIFACTS/ COMMENTS
						Stopped by Water
LT40	00-24cm (0.0-0.8)	A	7.5YR 4/3	Brn	SiLo	NCM
	24-55cm (0.8-1.8)	B	7.5YR 5/6	StrBrn	SiLo	NCM
LT41	00-12cm (0.0-0.4)	Fill 1	10YR 3/1	VDk GBrn	SiLo w/ 90% Road Grl	NCM
	12-21cm (0.4-0.7)	Fill 2	10YR 4/2	Dk GBrn	SiLo w/ 50% Road Grl	NCM
	21-30cm (0.7-1.0)	Ab	7.5YR 3/3	Dk Brn	SiLo	NCM
	30-37cm (1.0-1.2)	B	7.5YR 5/6	StrBrn	SiLo w/ Rocks	NCM
						Stopped by Rock
LT42	00-21cm (0.0-0.7)	A	7.5YR 3/2	Dk Brn	SiLo	NCM
	21-46cm (0.7-1.5)	B	7.5YR 5/6	Dk YBrn	SiLo w/ Rocks	NCM
						Stopped by Water; Test moved 10 ft East
LT43	00-28cm (00-0.9)	Fill 1	10YR 3/1		Road Grl	NCM
	28-40cm (0.9-1.3)	Ab	7.5YR 3/2	Dk Brn	SiLo	NCM
	40-70cm (1.3-2.3)	B	7.5YR 5/6	StrBrn	SiLo	NCM
						Test moved 10 ft East
LT44	00-76cm (0.0-2.5)	Fill	10YR 4/4 m/w 10YR 2/1, & 10YR 5/6	Dk YBrn / Blk, & Dk YBrn	ClLo	NCM
LT45	Test not excavated - fell in pipeline.					
LT46	00-12cm (0.0-0.4)	Ap	10YR 4/2	Dk GBrn	SiClLo	NCM
	12-21cm (0.4-0.7)	B	10YR 4/6	Dk YBrn	ClLo	NCM
						Stopped by Rock
LT47	00-12cm (0.0-0.4)	A	7.5YR 3/2	Dk Brn	SiLo	NCM
	12-21cm (0.4-0.7)	B	7.5YR 5/6	StrBrn	SiLo	NCM
	21cm+ (0.7+)	R			Bedrock	
LT48	00-21cm (0.0-0.7)	A	10YR 4/2	Dk GBrn	SiClLo	Historic
	21-51cm (0.7-1.7)	B	10YR 4/6	Dk YBrn	SaLo	NCM
					Bedrock	
LT49	00-30cm (0.0-1.0)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
					Bedrock	
LT50	Test not excavated - due to gas pipeline.					
LT51	00-15cm (0.0-0.5)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	15-55cm (0.5-1.8)	B	10YR 4/6	Dk YBrn	SaLo	NCM
LT52	00-18cm (0.0-0.6)	A	10YR 4/2	Dk GBrn	SiClLo	NCM
	18-50cm (0.6-1.65)	B	10YR 4/6	Dk YBrn	SaLo	NCM
					Bedrock	
LT53	00-19cm (0.0-0.6)	Fill 1	10YR 3/2	VDk GBrn	SaLo w/ Brick Flecking	NCM
	19-40cm (0.6-1.3)	Fill 2	10YR 3/2 m/w 10YR 5/6	VDk GBrn / YBrn	SaLo	NCM
	40-55cm (1.3-1.8)	Ab	10YR 4/2	Dk GBrn	SaLo	NCM
	55-85cm (1.8-2.8)	B	10YR 5/6	YBrn	SaLo	NCM
LT54	00-46 (0.0-1.5)	Fill	10YR 6/1 m/w 7.5YR 5/3	Gry / Brn	SiCl w/ Rocks	Historics

TEST	DEPTH*	STRATUM	MUNSELL	COLOR	SOIL TYPE	ARTIFACTS/ COMMENTS
						Stopped by Rocks and Concrete, inside infilled foundation
LT55	00-15cm (0.0-0.5)	Fill	10YR 4/2	Dk GBrn	SiLo w/ Rocks	Historics
	15-40cm (0.5-1.3)	Ab	10YR 4/3	Brn	SiLo	Historics
	40-70cm (1.3-2.3)	B	10YR 5/6	Dk YBrn	SiClLo	NCM
LT56	00-9cm (0.0-0.3)	Fill	7.5YR 2.5/1	Blk	SiLo w/ Grl	NCM
	9-28cm (0.3-0.8)	Ab	7.5YR 4/2	Brn	SiClLo	NCM
	28-52cm (0.8-1.7)	B	7.5YR 5/6	StrBrn	ClLo	NCM Stopped by Rock

Key:
*In feet and centimeters, below ground surface
NCM= No Cultural Material
m/w= Mottled With

APPENDIX D: ARTIFACT INVENTORY (Prehistoric and Historic Artifact Catalogs)

PREHISTORIC ARTIFACT CATALOG

Cat. #	Test	Level	Depth (in feet)	Stratum	Material	Artifact Type	Description	Count	Debitage Cortex	Weight (g)	Comments
15	28	2	0.5-1.7	B	Chert	Core	Multidirectional	1	1	24.4	L=43.8mm, W=31.8mm, Th=16.5mm

HISTORIC ARTIFACT CATALOG

CAT. NO.	SHOVEL TEST (LT#)	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	COMMENTS/ MEASUREMENTS/ DATES
1	3	3		Ab	1	DOM	Ceramic	Whiteware	Hollow Vessel	Rim with black spattered decoration inside rim	Mid 19th century on
1	3	3		Ab	1	DOM	Glass	Vessel	Container	Colorless curved with vertical ribbed exterior	
2	5	1	0.0-1.4	A	1	ARCH	Ferrous Metal	Cut	Nail	Corroded head fragment	19th century
2	5	1	0.0-1.4	A	2	ARCH	Ferrous Metal	Wire	Nail	Intact, corroded	Late 19th century on
2	5	1	0.0-1.4	A	4	ARCH	Glass	Flat	Window	Colorless to pale green	
3	6	1	0.0-1.3	Ap	5	ARCH	Ceramic	Red Clay	Brick	Misc. fragments	41.7g
3	6	1	0.0-1.3	Ap	2	ARCH	Ceramic	Bathroom	Tile	Pink glazed tile, flecked with gray	20th century on
3	6	1	0.0-1.3	Ap	9	ARCH	Glass	Flat	Window	Colorless to pale green	
3	6	1	0.0-1.3	Ap	1	ARCH	Synthetic	Flooring	Linoleum	Swirled decoration, with black mastic on back	20th century on
3	6	1	0.0-1.3	Ap	1	DOM	Ceramic	Red Earthenware	Flower Pot	Unglazed red body fragment	Late 19th century on
3	6	1	0.0-1.3	Ap	1	DOM	Glass	Vessel	Unidentified	Small colorless fragment with white enamel or paint on one side	20th century on
3	6	1	0.0-1.3	Ap	1	PERS	Glass	Flat	Mirror	Glass fragment with silvering on one side	
4	7	1	0.0-0.5	Ap	1	ARCH	Ceramic	Red Clay	Brick	Gritty red fragment	29.5g
4	7	1	0.0-0.5	Ap	1	ARCH	Glass	Flat	Window	Pale aqua window glass	
4	7	1	0.0-0.5	Ap	1	DOM	Ceramic	Whiteware	Unidentified	Body fragment	1820 on
5	9	1	0.0-1.5	Ap	1	ARCH	Ferrous Metal	Wire	Nail	Corroded head fragment	Late 19th century on
5	9	1	0.0-1.5	Ap	1	DOM	Ceramic	Yellowware	Unidentified	Small fragment	1830-1940 (Miller 2000: 12)
5	9	1	0.0-1.5	Ap	1	DOM	Glass	Vessel	Container	Curved colorless fragment	
5	9	1	0.0-1.5	Ap	1	MISC	Ferrous Metal		Unidentified	Corroded fragment	
6	10	1	0.0-1.35	Fill	1	ARCH	Ceramic	Red Clay	Brick		
6	10	1	0.0-1.35	Fill	7	ARCH	Ferrous Metal	Wire	Nail	Intact and corroded fragments	Late 19th century on
6	10	1	0.0-1.35	Fill	12	ARCH	Glass	Flat	Window	Misc pale aqua	20th century on
6	10	1	0.0-1.35	Fill	1	ARCH	Glass	Flat	Plate Glass	Thick colorless	20th century on
6	10	1	0.0-1.35	Fill	1	ARCH	Asphalt	Roofing	Shingle	Black roofing with fine white gravel adhering	Post 1916 (Paul 2005: 268)

CAT. NO.	SHOVEL TEST (LT#)	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	COMMENTS/ MEASUREMENTS/ DATES
6	10	1	0.0-1.35	Fill	1	DOM	Ceramic	Porcelain	Saucer	Base fragment	Mid 19th century on
6	10	1	0.0-1.35	Fill	1	DOM	Ceramic	Rockingham	Lid	Small coffee or tea pot lid, mottled brown glaze	Est. diam 3.75", 1840-1930
6	10	1	0.0-1.35	Fill	1	DOM	Ceramic	Rockingham	Hollow Vessel	Body fragment, mottled brown glaze	1840-1930
6	10	1	0.0-1.35	Fill	1	DOM	Ceramic	Stoneware	Lid	Large pot lid, yellow and brown glazed, interior brown slip	Est. diam 10", Mid 19th century on
6	10	1	0.0-1.35	Fill	5	DOM	Ceramic	White Granite	Hollow Vessel	Rim and body, possible chamber pot	1842-1940 (Miller 2000: 10)
6	10	1	0.0-1.35	Fill	1	DOM	Ceramic	White Granite	Hollow Vessel	Burned fragment with blue printed design under glaze	1842-1940 (Miller 2000: 10)
6	10	1	0.0-1.35	Fill	1	DOM	Glass	Vessel	Flask	Amber strap flask fragment	Late 19th century on
6	10	1	0.0-1.35	Fill	1	DOM	Glass	Vessel	Bottle	Amber rectangular body fragment	Late 19th century on
6	10	1	0.0-1.35	Fill	1	DOM	Glass	Vessel	Bottle	Bright green curved body fragment	Mid 20th century on
6	10	1	0.0-1.35	Fill	1	DOM	Glass	Vessel	Bottle	Olive green curved body fragment	
6	10	1	0.0-1.35	Fill	1	DOM	Glass	Vessel	Container	Pale aqua blue curved fragments	
6	10	1	0.0-1.35	Fill	2	DOM	Glass	Milk	Bottle	Colorless neck with inset lip	20th century on
6	10	1	0.0-1.35	Fill	1	DOM	Glass	Vessel	Bottle	Colorless base	20th century on
6	10	1	0.0-1.35	Fill	1	DOM	Glass	Vessel	Bottle	Colorless stippled body fragment	20th century on
6	10	1	0.0-1.35	Fill	10	DOM	Glass	Vessel	Unidentified	Colorless body fragments	
6	10	1	0.0-1.35	Fill	2	ELEC	Glass	Lighting	Bulb	Very thin curved with frosted interior	20th century on
6	10	1	0.0-1.35	Fill	3	HRDW	Ferrous Metal	Tool	Shovel	Reinforced shovel blade at handle, triangular and corroded	L-5", W-5", 371.8g
6	10	1	0.0-1.35	Fill	1	HRDW	Ferrous Metal	Cast	Grating	Edge fragment of heating or drainage grate	59.0g
6	10	1	0.0-1.35	Fill	1	HRDW	Ferrous Metal	Stamped	Washer	Corroded washer	Diam.0.9"

CAT. NO.	SHOVEL TEST (LT#)	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	COMMENTS/ MEASUREMENTS/ DATES
6	10	1	0.0-1.35	Fill	3	HRDW	Ferrous Metal		Strip	Reinforcing metal strip with nail, corroded	Diam.0.9"
6	10	1	0.0-1.35	Fill	2	MISC	Copper Alloy	Sheet Metal	Band	Thin band with nail hole	L-1.3", W-0.45", 1.3g
6	10	1	0.0-1.35	Fill	36	MISC	Ferrous Metal	Sheet Metal	Container	Thin corroded rim, seams and fragments	62.3g
6	10	1	0.0-1.35	Fill	1	MISC	Ferrous Metal	Sheet Metal	Tube	Thin corroded tube fragment	L-1.5",5.6g
7	11	1	0.0-0.8	A (Fill?)	1	ARCH	Ceramic	Red Earthenware	Brick	Gritty red brick half	L-3", W-3.9", H-2.3", 725.5g
7	11	1	0.0-0.8	A (Fill?)	1	ARCH	Ferrous Metal		Nail	Corroded shaft fragment	
7	11	1	0.0-0.8	A (Fill?)	2	ARCH	Glass	Flat	Window	Pale aqua	
7	11	1	0.0-0.8	A (Fill?)	1	DOM	Ceramic	Stoneware	Hollow Vessel	Tan stoneware base with eroded brown glaze interior	19th century on
7	11	1	0.0-0.8	A (Fill?)	1	DOM	Glass		Unidentified	Opalescent curved glass-white to lime green swirled	Late 19th century on
7	11	1	0.0-0.8	A (Fill?)	1	DOM	Glass	Vessel	Bottle	Olive green curved body fragment	Late 19th century on
7	11	1	0.0-0.8	A (Fill?)	6	DOM	Glass	Vessel	Unidentified	Curved colorless fragments	
7	11	1	0.0-0.8	A (Fill?)	1	DOM	Glass		Container	Pale blue curved fragment	Mid 19th century on
8	12	1	0.0-0.8	A	2	ARCH	Ferrous Metal	Cut	Nail	Corroded head and shaft fragments	
8	12	1	0.0-0.8	A	4	ARCH	Glass	Flat	Window	Colorless fragments	
8	12	1	0.0-0.8	A	1	BIO	She	Oyster	Shell	Small fragment	0.05g
8	12	1	0.0-0.8	A	2	DOM	Glass	Vessel	Unidentified	Colorless fragments	
8	12	1	0.0-0.8	A	1	DOM	Glass	Vessel	Unidentified	Aqua fragment	
8	12	1	0.0-0.8	A	1	FUEL	Coal		Coal		25.6g
8	12	1	0.0-0.8	A	1	FUEL	Coal	Byproduct	Ash		1.9g
8	12	1	0.0-0.8	A	1	HRDW	Ferrous Metal	Byproduct	Bolt	Corroded bolt with washer	L-2.2"15.2g
9	13	1	0.0-0.85	Fill 1	3	ARCH	Ceramic	Red Clay	Brick	Brown brick fragments	28.1g
9	13	1	0.0-0.85	Fill 1	2	ARCH	Ceramic	Stoneware	Tile	Tan tile base with glaze missing	
9	13	1	0.0-0.85	Fill 1	1	ARCH	Ferrous Metal	Cut	Nail	Corroded head fragment	19th century
9	13	1	0.0-0.85	Fill 1	4	ARCH	Ferrous Metal	Wire	Nail	Intact, corroded	Late 19th century on

CAT. NO.	SHOVEL TEST (LT#)	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	COMMENTS/ MEASUREMENTS/ DATES
9	13	1	0.0-0.85	Fill 1	7	ARCH	Glass	Flat	Window	Misc. pale aqua	Late 19th century on
9	13	1	0.0-0.85	Fill 1	1	ARCH	Asphalt	Roofing	Tar Paper	Decomposing fragment	Post 1916 (Paul 2005: 268)
9	13	1	0.0-0.85	Fill 1	1	ARCH	Wood		Wood	Decomposing board fragment	16.3g
9	13	1	0.0-0.85	Fill 1	1	BIO	Shell	Clam	Shell	Weathered hinge fragment	0.2g
9	13	1	0.0-0.85	Fill 1	1	DOM	Ceramic	Red Earthenware	Flower Pot	Unglazed red body fragments	
9	13	1	0.0-0.85	Fill 1	1	DOM	Ceramic	Stoneware	Bowl	Bristol cream glazed rim, touched with blue	Late 19th century on
9	13	1	0.0-0.85	Fill 1	1	DOM	Ceramic	White Granite	Unidentified	Body fragment	1842-1930 (Miller 2000: 10)
9	13	1	0.0-0.85	Fill 1	1	DOM	Glass	Vessel	Bottle	Amber fragment	
9	13	1	0.0-0.85	Fill 1	2	DOM	Glass	Vessel	Unidentified	Pale aqua green fragments	
9	13	1	0.0-0.85	Fill 1	6	DOM	Glass	Vessel	Unidentified	Misc. colorless fragments	
9	13	1	0.0-0.85	Fill 1	1	DOM	Glass	Vessel	Unidentified	Very thin curved colorless fragment	
9	13	1	0.0-0.85	Fill 1	1	DOM	Glass	Vessel	Unidentified	Very thin curved white fragment	
9	13	1	0.0-0.85	Fill 1	1	FUEL	Coal		Coal		0.3g
9	13	1	0.0-0.85	Fill 1	1	HRDW	Ferrous Metal		Band	Strap band or handle? . Screw hole one end, other broken	L- 6.3", W-0.6",thickness 0.25"
9	13	1	0.0-0.85	Fill 1	1	HRDW	Copper Alloy	Lamp	Collar	Very thin curved collar for flashlight or lamp. Black enameled?	Diam approx 2". H-0.6", 10.2g
9	13	1	0.0-0.85	Fill 1	1	HRDW	Copper Alloy	Flash light	Bulb	Intact small bulb with glass cover, and threaded end	1.5g, 20th century on
9	13	1	0.0-0.85	Fill 1	1	MISC	Copper Alloy		Band	Thin strip	L-1.5", W-0.25", 0.6g
9	13	1	0.0-0.85	Fill 1	3	MISC	Synthetic	Vessel	Unidentified	Very thin yellow fragments	20th century on
9	13	1	0.0-0.85	Fill 1	1	PERS	Copper Alloy	Band	Buckle	Intact, silver coating	L-1", W-0.8",5.3g
10	13	2	0.85-1.8	Fill 2	1	ARCH	Ceramic	Tan Clay	Brick	Gritty tan fragment	8.2g
10	13	2	0.85-1.8	Fill 2	1	ARCH	Ceramic	Red Clay	Brick	Gritty red fragment	21.4g
10	13	2	0.85-1.8	Fill 2	2	ARCH	Ferrous Metal	Wire	Nail	Intact, corroded	Late 19th century on
10	13	2	0.85-1.8	Fill 2	2	ARCH	Ferrous Metal	Wire	Nail	Intact, corroded	Late 19th century on
10	13	2	0.85-1.8	Fill 2	18	ARCH	Glass	Flat	Window	Pale green	
10	13	2	0.85-1.8	Fill 2	1	ARCH	Glass	Flat	Window	Worn colorless fragment	

CAT. NO.	SHOVEL TEST (LT#)	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	COMMENTS/ MEASUREMENTS/ DATES
10	13	2	0.85-1.8	Fill 2	2	ARCH	Asphalt	Roofing	Shingle	Fragments with pale gray green gravel adhering	Post 1916 (Paul 2005: 268)
10	13	2	0.85-1.8	Fill 2	1	DOM	Ceramic	Stoneware	Unidentified	Tan base fragment, glaze missing	
10	13	2	0.85-1.8	Fill 2	1	DOM	Ceramic	Stoneware	Hollow Vessel	Luster brown glaze, banded border	Mid 19th century on
10	13	2	0.85-1.8	Fill 2	1	DOM	Ceramic	Vitreous China	Bowl	Flared rim	Late 19th century on
10	13	2	0.85-1.8	Fill 2	1	DOM	Ceramic	Yellowware	Pan	Base fragment	1830-1940 (Miller 2000: 12)
10	13	2	0.85-1.8	Fill 2	1	DOM	Glass	Vessel	Unidentified	Light brown fragment	Late 19th century on
10	13	2	0.85-1.8	Fill 2	1	DOM	Glass	Vessel	Container	Aqua blue canning jar fragment with embossed script letter	Late 19th century on
10	13	2	0.85-1.8	Fill 2	1	DOM	Glass	Soda	Bottle	Colorless with red enameled name, PEPSI	1935 on (Miller 2000: 8)
10	13	2	0.85-1.8	Fill 2	10	DOM	Glass	Vessel	Unidentified	Curved colorless fragments	
10	13	2	0.85-1.8	Fill 2	4	DOM	Glass	Vessel	Unidentified	Very thin curved colorless fragments	
10	13	2	0.85-1.8	Fill 2	2	DOM	Glass	Lamp	Shade	Thin curved colorless rim fragments, flared and frosted on exterior	
10	13	2	0.85-1.8	Fill 2	2	FUEL	Coal		Coal		6.0g
10	13	2	0.85-1.8	Fill 2	1	HRDW	Ferrous Metal	Cast	Hinge	Triangular butt hinge, intact, corroded with 2 screw holes on each half	L-3.3", WW-1.4"61.6g
10	13	2	0.85-1.8	Fill 2	1	HRDW	Ferrous Metal	Cast	Hinge	Light weight strap hinge (3-part), intact, corroded with 3 screw holes on each half	Extended length 3.25", W-1.4", 33.9g
10	13	2	0.85-1.8	Fill 2	1	HRDW	Ferrous Metal	Tool	Saw Blade	Corroded fragment	L-4.2",49.3g
10	13	2	0.85-1.8	Fill 2	1	HRDW	Ferrous Metal	Tool	Wrench	Pipe wrench, intact, corroded	L-9",399.0g
10	13	2	0.85-1.8	Fill 2	1	HRDW	Ferrous Metal	Cast	Hitch	Farm cart hitch end fragment for small mower. Green painted	L-4.3",314.2g

CAT. NO.	SHOVEL TEST (LT#)	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	COMMENTS/ MEASUREMENTS/ DATES
10	13	2	0.85-1.8	Fill 2	1	MISC	Ferrous Metal	Cast	Unidentified	Cast iron fragment	L-4.3",314.2g
10	13	2	0.85-1.8	Fill 2	1	MISC	Metal	Cast	Unidentified	Light cast iron fragment, green painted	L-4.3",314.2g
10	13	2	0.85-1.8	Fill 2	1	MISC	Copper Alloy	Wire	Wire	Fragment	L-5", 1.0g
10	13	2	0.85-1.8	Fill 2	1	MISC	Copper Alloy	Sheet Metal	Trim	Silvered fragments	
10	13	2	0.85-1.8	Fill 2	1	MISC	Synthetic	Celluloid	Trim	Yellow notched film strip fragments	20th century on
10	13	2	0.85-1.8	Fill 2	1	MISC	Synthetic	Plastic	Unidentified	Thin yellow curved fragments	Flash light cover possibly. 20th century
10	13	2	0.85-1.8	Fill 2	1	MISC	Wood		Unidentified	Small fragment	4.3g
11	14	1	0.0-1.0	A	1	ARCH	Ceramic	Red Clay	Brick	Orange-red edge	236.8g
11	14	1	0.0-1.0	A	6	ARCH	Glass	Flat	Window	Pale aqua	
11	14	1	0.0-1.0	A	1	DOM	Ceramic	White Granite	Unidentified	Body fragment	1842-1930 (Miller 2000: 10)
11	14	1	0.0-1.0	A	1	DOM	Glass	Vessel	Bottle	Amber-red curved fragment	
11	14	1	0.0-1.0	A	1	DOM	Glass	Vessel	Container	Pale blue curved fragment	Mid 19th century on
11	14	1	0.0-1.0	A	2	DOM	Glass	Vessel	Container	Colorless curved	
11	14	1	0.0-1.0	A	3	FUEL	Coal		Coal		3.1g
11	14	1	0.0-1.0	A	1	PERS	Ferrous Metal	Toy	Wheel	Sheet metal wheel	Diam. 1.4", Mid 19th century on
11	14	1	0.0-1.0	A	2	PERS	Synthetic	Music	Record	Black fragments	20th century on
12	15	1	0.0-1.0	A	5	ARCH	Ferrous Metal	Cut	Nail	Corroded fragments	19th century
12	15	1	0.0-1.0	A	12	ARCH	Ferrous Metal	Wire	Nail	Corroded fragments	19th century
12	15	1	0.0-1.0	A	1	ARCH	Glass	Flat	Window	Colorless	19th century
13	22	2	0.2-2.1	Fill	1	ARCH	Ferrous Metal	Wire	Nail	Misc. corroded nails	Late 19th century on
13	22	2	0.2-2.1	Fill	4	ARCH	Glass	Flat	Window	Colorless	Late 19th century on
13	22	2	0.2-2.1	Fill	13	ARCH	Synthetic	Linoleum	Tile	Misc. off-white fragment	19th century
13	22	2	0.2-2.1	Fill	1	DOM	Ceramic	Flower	Pot	Molded ribbed body fragment, baby blue spattered with yellow. Interior unglazed	Mid 1930's on
13	22	2	0.2-2.1	Fill	1	PERS	Glass	Flat	Mirror	Colorless fragment, with silvering on back	
13	22	2	0.2-2.1	Fill	1	PERS	Glass	Flat	Mirror	Thick colorless fragment, with silvering on back	Auto possibly
14	24	1	0.0-0.3	Am	6	ARCH	Glass	Flat	Window	Pale aqua	

CAT. NO.	SHOVEL TEST (LT#)	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	COMMENTS/ MEASUREMENTS/ DATES
14	24	1	0.0-0.3	Am	1	DOM	Ceramic	Whiteware	Tableware	Rim and body ivory tinted	Popular- late 19th century on
14	24	1	0.0-0.3	Am	1	DOM	Ceramic	Whiteware	Tableware	Base fragment, geometric black stenciled with gold detailing	Possibly Buffalo Pottery, 1901 on. (style mid 20th century)
14	24	1	0.0-0.3	Am	1	DOM	Ceramic	White Granite	Tableware	Burned fragment with traces of pink decoration	1842-1930 (Miller 2000: 10)
14	24	1	0.0-0.3	Am	1	DOM	Glass	Vessel	Bottle	Bright green machine made base fragment. Stippled base and sides	20th century on
14	24	1	0.0-0.3	Am	8	DOM	Glass	Vessel	Bottle	Colorless medicine or flask shape, machine made	20th century on
16	28 3MW	1	0.0-0.9	Ap	1	ARCH	Ceramic	Stoneware	Tile	White glazed tile edge	20th century on
17	35	2	1.3-2.0	Ab	1	ARCH	Ferrous Metal	Wire	Nail	Intact, corroded	Late 19th century on
17	35	2	1.3-2.0	Ab	2	ARCH	Glass	Flat	Window	Pale green	
17	35	2	1.3-2.0	Ab	1	DOM	Glass		Unidentified	Opaque white rim, molded vertical ribbed	
18	39	2	0.5-1.2	Ab	1	DOM	Glass	Vessel	Container	Curved colorless	20th century on
18	39	2	0.5-1.2	Ab	1	DOM	Glass	Vessel	Container	Curved colorless, solarized	Late 19th century on
19	48	1	0.0-0.7	A	4	DOM	Ceramic	Whiteware	Cup	Rim, exterior bright yellow	Mid 20th century on
20	52	2	0.0-0.6	A	3	DOM	Ceramic	Whiteware	Bowl	Rim, exterior brown decal highlight with green and rose	20th century on
20	52	2	0.0-0.6	A	1	DOM	Glass	Canning	Jar	Pale blue base fragment	Late 19th century on
21	54	1	0.0-1.5	Fill	1	ARCH	Ceramic	Stoneware	Tile	White glazed tile fragment edge	20th century on
21	54	1	0.0-1.5	Fill	1	ARCH	Ferrous Metal	Cut	Small Nail	Burned small nail, rusted together	L-1.2". 19th century
21	54	1	0.0-1.5	Fill	2	ARCH	Glass	Flat	Window	Pale aqua	L-1.2". 19th century
21	54	1	0.0-1.5	Fill	2	ARCH	Glass	Flat	Window	Colorless with silver metallic decorative coating	Mid 20th century on
21	54	1	0.0-1.5	Fill	1	FUEL	Coal		Coal		0.7g
22	55	1	0.0-0.5	Fill	1	ARCH	Ferrous Metal	Wire	Nail	Intact, corroded	L-3.6'.Late 19th century on
22	55	1	0.0-0.5	Fill	1	ARCH	Glass	Flat	Window	Colorless	20th century on
22	55	1	0.0-0.5	Fill	1	MISC	Synthetic	Vinyl	Unidentified	Colorless scrap	Mid 20th century on

CAT. NO.	SHOVEL TEST (LT#)	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	COMMENTS/ MEASUREMENTS/ DATES
23	55	2	0.5-1.3	Ab	2	ARCH	Glass	Flat	Window	Colorless	20th century on
23	55	2	0.5-1.3	Ab	1	ARCH	Asphalt	Roofing	Shingle	Black tar paper with black gravel bits adhering	Post 1916 (Paul 2005: 268)

Key:
Arch-Architectural
BIO- Biological
DOM- Domestic
ELEC- Electrical
FUEL- Fuel related
HRDW-Hardware
MISC- Miscellaneous
PERS- Personal

APPENDIX E: NYSOPRHP ARCHAEOLOGICAL SITE FORMS

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
(518) 237-8643

Bernadette Castro
Commissioner

For Office Use Only--Site Identifier

Project Identifier ORU Little Tor Site

Your Name. Scott Wieczorek Date 5/19/2011
Address 30 N. Main Street, Cranbury, New Jersey 08512 Phone (609) 655-3050

Organization (if any) Richard Grubb and Associates, Inc
1. SITE IDENTIFIER(S) Moxley Acres
2. COUNTY Rockland One of the following: CITY
TOWNSHIP Clarkstown
INCORPORATED VILLAGE
UNINCORPORATED VILLAGE OR HAMLET

3. PRESENT OWNER Orange and Rockland Utilities, Inc.
Address

4. SITE DESCRIPTION (check all appropriate categories):Structure/site
Superstructure: complete___ partial___ collapsed _x_ not evident
Foundation: above ___ below _x_ (ground level) not evident
___ Structural subdivisions apparent _x_Only surface traces visible
_x_ Buried traces detected
List construction materials (be as specific as possible):

Boulders and Fieldstone Foundations

Grounds
___Under cultivation ___Sustaining erosion ___Woodland ___Upland
___Never cultivated _x_Previously cultivated ___Floodplain ___Pastureland
Soil Drainage: excellent ___ good ___ fair _x_ poor
Distance to nearest water from structure (approx.) 300-feet
Elevation:

5. Site Investigation (append additional sheets, if necessary):
Surface -- date (s) _____ Site map (submit with form*)
Collection
Subsurface -- date(s) March 16 and 17, 2011
Testing: shovel _x_ coring ___ other ___ unit size
no. units _____ (Submit plan of units with form*)

Excavation: unit size _____ no. of units
(Submit plan of units with form*)
* Submission should be 8 ½" by 11", if feasible

Investigator Scott Wieczorek, RPA

Manuscript or published report (s) (reference fully):

Richard Grubb & Associates, Inc.
2011 *Phase IA/IB Archaeological Survey, Little Tor Substation, Block 1, Lots 5 and 6, Town of Clarkstown, Rockland County, New York*

Present repository of materials Richard Grubb and Associates, Inc. Laboratory

6. Site inventory:
   a. Date constructed or occupation period Nineteenth Century Historic to Present
   b. Previous owners, if known
   c. Modifications, if known See attached
   (append additional sheets, if necessary)

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name B. Dolan Date 1859 Source French, Wood & Beers, Map of Orange and Rockland Counties, New York.
      Present location of original, if known
      2) Name C. Gibbons Date 1875 Source F.W. Beers, County Atlas of Rockland County
      Present location of original, if known
   b. Representation in existing photography
      1) Photo date _____ Where located
      2) Photo date _____ Where located

   c. Primary and secondary source of documentation (reference fully)

   d. Persons with memory of site
      1) Name_____ Address
      2) Name _____ Address

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

A scattering of historic artifacts was identified in disturbed soil contexts with modern debris. Deposits appear to be associated with a 1950s-era construction phase within the property. No intact nineteenth century deposits were encountered, but several ruined foundations were observed. Subsurface deposits do not retain integrity. One chert core, interpreted as an isolated find, was recovered during the subsurface survey.

See attached prehistoric and historic artifact catalogs.

If prehistoric materials are evident, check here and fill out prehistoric site form. x

9. Map References: Map or maps showing exact location and extent of site must accompany this form and be identified by source and date. Keep this submission to 8½" x 11", if possible.

USGS 7.5 Minute Series Quad. Name U.S.G.S. 7.5 Minute Quadrangle Map: Thiells, N.Y, Haverstraw, N.Y.

For Office Use Only--UTM Coordinates

10. Photography (optional for environmental impact survey): Please submit a 5"x7" black and white print(s) showing the current state of the site. Provide a label for the print(s) on a separate sheet.

NEW YORK STATE PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
(518) 237-8643

Bernadette Castro
Commissioner

For Office Use Only--Site Identifier

Project Identifier_____ Date 5/23/2011

Your Name Scott Wieczorek Phone (609) 655-0692
Address 30 N. Main Street, Cranbury, New Jersey 08512

Organization (if any) Richard Grubb & Associates, Inc.
1. SITE IDENTIFIER(S) Moxley Acres
2. COUNTY Rockland One of the following: CITY
TOWNSHIP Clarkstown
INCORPORATED VILLAGE
UNINCORPORATED VILLAGE OR HAMLET

3. PRESENT OWNER Orange and Rockland Utilities, Inc.
Address

4. SITE DESCRIPTION (check all appropriate categories):
Site

X Stray Find	___Cave/Rockshelter	___Workshop
___Pictograph	___Quarry	___Mound
___Burial	___ Shell Midden	___Village
___Surface Evidence	___Camp	___Material in plow zone
___Material below plow zone	___Buried evidence	___Intact Occupation floor
___Single component	___Evidence of features	___Stratified
	___Multicomponent	

Location

___Under cultivation	___Never cultivated	X Previously cultivated
___Pastureland	___Woodland	___Floodplain
x Upland		___ Sustaining erosion

Soil Drainage: excellent ___ good ___ fair x poor
Slope: flat X gentle ___ moderate ___ steep
Distance to nearest water from site (approx.) 300-feet
Elevation: 230-250 feet ASML

5. SITE INVESTIGATION (append additional sheets, if necessary):
Surface--date(s)
X Site map (Submit with form)
___Collection

Subsurface--date(s) 5/16/2011-5/17/2011
Testing: shovel X coring ___ other_____ unit size
no. of units _____ (Submit plan of units with form)
Excavation: unit size _____ no. of units

Investigator Scott Wieczorek, RPA

Manuscript or published report(s) (reference fully):

Richard Grubb & Associates, Inc.
2011 *Phase IA/IB Archaeological Survey, Little Tor Substation, Block 1, Lots 5 and 6, Town of Clarkstown, Rockland County, New York*

Present repository of materials
Richard Grubb & Associates, Inc., Cranbury, New Jersey

6. COMPONENT(S) (cultural affiliation/dates):

Unknown

7. LIST OF MATERIAL REMAINS (be specific as possible in identifying object and material):

1 black chert core

If historic materials are evident, check here and fill out historic site form X

8. MAP REFERENCES

USGS 7.5 Minute Series Quad. Name

U.S.G.S. 7.5 Minute Quadrangle Map: Thiells, N.Y, Haverstraw, N.Y.

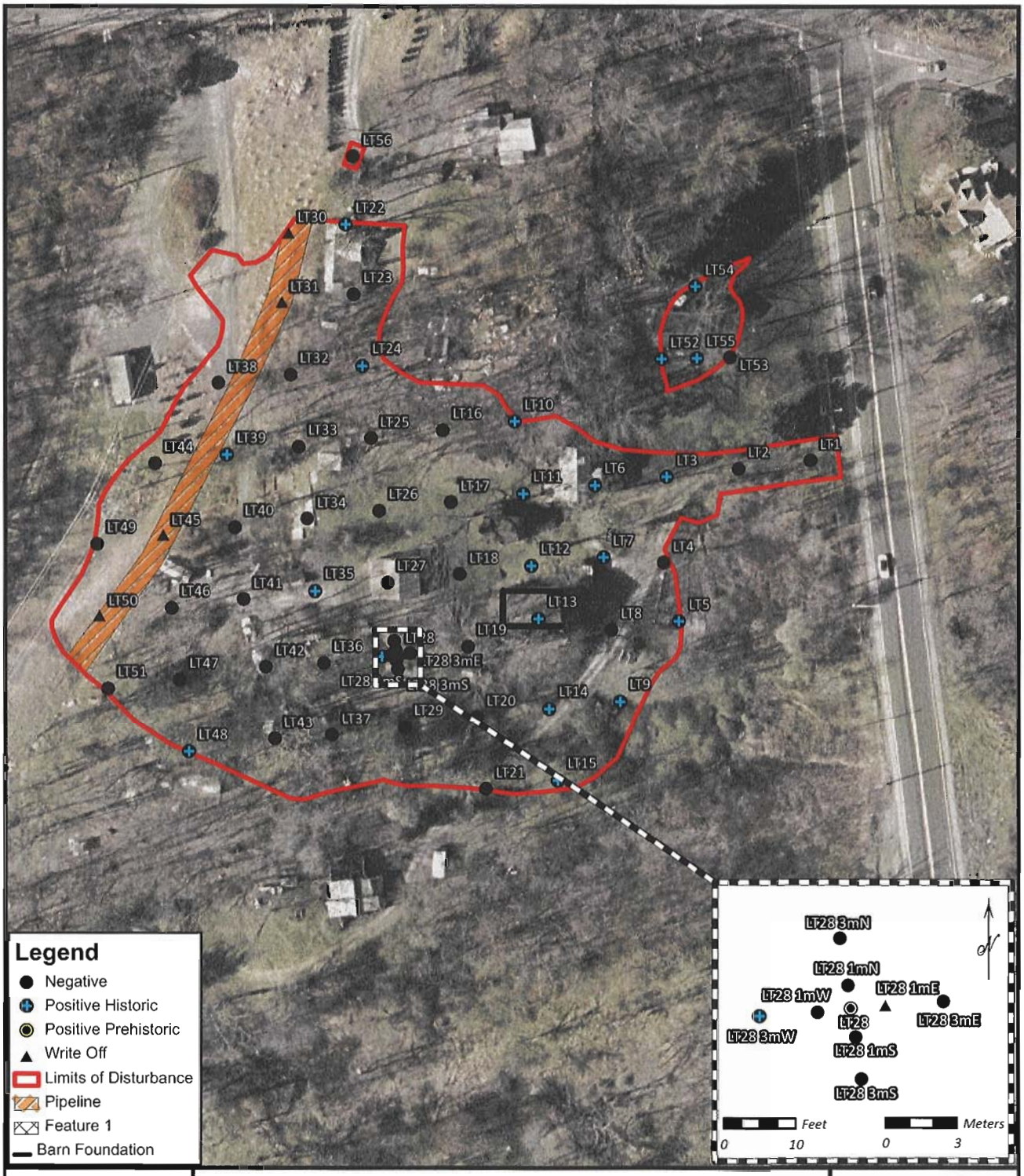
UTM Coordinates

9. Photography

U.S.G.S. Map
(from U.S.G.S. 7.5′ Quadrangles: 1955 Thiells, NY and 1967 Haverstraw, NY [1979 photorevised])

N
W E
S

Feet
0 2000



RGA

Shovel Test Pit Map
(from U.S.G.S. EROS Map Service, 2004)

N
W
E
S

Feet
0 100

APPENDIX F: ANNOTATED BIBLIOGRAPHY

Author:	Scott Wieczorek, MA, RPA
Title:	Phase IA/IB Archaeological Survey, Little Tor Substation, Block 1, Lots 5 and 6, Town of Clarkstown, Rockland County, New York
Date:	June 2011
RGA Database Title:	Little Tor Substation
RGA Project No.:	2011-021NY
State:	New York
County:	Rockland
Municipality:	Town of Clarkstown
U.S.G.S. Quad:	Thiells and Haverstraw, New York
Drainage Basin:	Hackensack River, Passaic River, Atlantic Ocean
Regulation:	SEQRA; Section 106
Project Type:	Substation
Project Sponsor:	Orange and Rockland Utilities, Inc.
Client:	Birdsall Engineering, Inc.
Level of Survey:	Phase IA/IB
Cultural Resources:	Moxley Acres

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE

New York State Office of Parks, Recreation and Historic Preservation

Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

November 29, 2011

Scott Wieczorek
Richard Brugg & Associates, Inc.
30 North Main St
Cranbury, New Jersey 08512

Re: CORPS PERMITS
Little Tor Substation, Block 1, Lots 5 and 6
CLARKSTOWN, Rockland County
11PR07305

Dear Mr. Wieczorek:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont
Deputy Commissioner for Historic Preservation

An Equal Opportunity/Affirmative Action Agency

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