
PERIODIC REVIEW REPORT

Site No. C314109

Former City of Poughkeepsie Sewage Plant

Rinaldi Blvd. and Hurlihe St.

NYSDEC, Division of Environmental Remediation

April 19, 2011

PREPARED FOR:

Joseph Bonura
Poughkeepsie Landing
176 Rinaldi Boulevard
Poughkeepsie, NY 12601



PREPARED BY:

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INTRODUCTION

The site consists of approximately 5.7 acres and is located at 176 Rinaldi Boulevard within the City of Poughkeepsie(City). The site was historically used for industrial purposes as the City's Sewage Treatment Plant. The property is owned by the City of Poughkeepsie Industrial Development Agency and developed by Poughkeepsie Waterfront Development, LLC (PWD) under a 99 year lease. PWD took full responsibility for the clean-up and the site was remediated as a part of the New York State Department of Environmental Conservations (NYSDEC) Brownfield Cleanup Agreement (BCA) for site #C314109. Based on the Investigation Reports, three(3) areas of concern where generated. These areas contained metals and petroleum contaminated soils. The following is a history of Investigations and Reports that have been prepared:

- Phase I Environmental Assessment (ESA) (1999)
- Phase II Subsurface Investigation(2001); Supplemental Phase II (SI) (2003)
- Site Characterization and Remedial Investigation Report (RIR) (2004)
- Alternative Analysis and Remedial Action Plan (RAP) (2004)
- Remedial Action Work plan; RAWP Amendment No. 1 (RAWP) (2005)
- Final Engineers Report (FER) (2006)
- Site Management Plan (SMP) (2006)
- Periodic Review Report (PRR) (2008)

The remedial program appears to be working effectively and in full compliance with Site Management Plan. No recommendations for changes are made at this time. The owner may elect for termination of Sub-Slab Depressurization System pending air-monitoring per NYSDEC requirements at the end of the next three year reporting period.

SITE OVERVIEW

The site existed as a Wastewater Treatment Plant until 1977 when the plant terminated operations. The site sat vacant until 1999. During the investigation phases beginning in 1999, three(3) areas of heavy contamination where identified and delineated (See RIR/RAWP). Two of these areas where found to contain metals and petroleum related VOC's, the third area was the location of an Underground Storage Tank (UST) and contained petroleum related VOC's only. The RIR and RAWP were approved by the NYSDEC and authorization to conduct remedial activities was granted in 2005. The RAWP was amended shortly following approval in 2005 and re-submitted to NYSDEC. The purpose for this document was for the placement of soil mixed with leaves and the modification of the sub-slab depressurization system. The RAWP as amended was approved and all work, according to the FER, was

conducted as per the approved RAWP and completed in early 2006. The FER was then prepared certifying remedial activities, submitted to and approved by, the NYSDEC in 2006.

EVALUATION

Pursuant to Section 6.5 of the Draft DER-10, Technical Guidance for Site Investigation and Remediation dated December 2002, Bell Engineering PLLC has conducted site investigation and prepared this Periodic Review Report (PRR). The report is submitted as the annual project evaluation and serves to certify current and existing Institutional and Engineering Controls.

The site was visited on April 15th, 2011. An inspection was conducted addressing both the Institutional Controls and the Engineers controls as set forth within the Soil Management Plan, prepared by Fuss & O'Neal, July, 2006. The following items were addressed within each category:

Institutional Control Restrictions

- Restrictions to Site Use
- Soil Distribution inside the Soil Consolidation Zone
- Soil Distribution outside the Soil Conservation Zone
- Groundwater Usage

Engineered Controls

- Primary Soil Consolidation Zone Inspection
- Sub-Slab Depressurization Inspection
- Sub-Slab Depressurization air monitoring option.

It is our opinion the controls set forth above currently remain in place, are operational and have not been altered, modified or intruded upon in any way nor have the controls naturally degraded or eroded to the point of impeding functionality.

Based on the latest inspection, it appears as if the remedy has been effective and is stable. There is no evidence of dying plantings on the site, no indication of odorous vapors emitting around the perimeter of or within the footprint of the building structure and no sink holes in the areas of concern.

IC/EC PLAN COMPLIANCE REPORT

A site investigation was conducted on April 15th, 2011. The items as set forth in the operations portion of the Site Management Plan and outline on the Engineered Control Inspection Form were analyzed.

Below are the following results:

Primary SCZ / Sub-slab Depressurization System(SSDS):

The sub-slab was inspected in all places practical. The walk through included the kitchen area, garage area and exposed patios for cracks and significant deterioration that would cause limits to the sub slab ventilation systems operation.

There were no cracks found in the garage area and no tile found to be cracking, heaving or popping within the kitchen. The slab appeared to be very stable and free from defects.

The foundation walls were inspected by walking as close to the wall as practical and looking for cracks and significant failure. No significant defects were noted along the exposed foundation walls. There was no evidence of digging or boring around the immediate vicinity of the building and no penetrations existed within the landscape areas surrounding the building.

The vent pipe at the top of the building was inspected to evaluate the venting system operation. Air was moving out of the vent pipe at a rate that clearly indicated the fan was operational and maintaining a measurable CFM rate. The air speed was not measured at that time and a CFM rate was not calculated. There were no requirements within the Site Management Plan to establish a CFM rate.

No air quality monitoring was conducted at this time at the vent pipe exit. Discussion of air monitoring and subsequent closure ensued with owner. Owner may consider closure at end of next 3 year reporting period.

Secondary Soil Consolidation Zone:

The secondary soil consolidation zone was inspected for evidence of digging, boring and natural erosion and failure. The landscaped areas are covered by a thick bed of mulch which protects the steep slopes against erosion along the southern and western portions of the site. The north and eastern portion of the sites are relatively level and the landscape islands are untouched. The site is generally well maintained and in a finished, manicured state.

CONCLUSIONS AND RECOMMENDATIONS

It is the opinion of the Engineer that the site is within full compliance of the SMP. The institutional restrictions are being followed and the Engineering Controls are working effectively.

Based on the current inspection and to the extent practical from such inspection, the remedy as prescribed does appear to be functioning effectively.

No recommendations are made for changing the review period of three(3) years. The owner may elect to conduct air monitoring as an option at the end of the next three(3) year review period and evaluate the need to keep the SSDS in operation per approval and authorization of the NYSDEC.

APPENDIX A

Institutional and Engineering Controls Certification Forms



Enclosure 1
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



	Site Details	Box 1	
Site No.	C314109		
Site Name Former City of Poughkeepsie Sewage Plant			
Site Address: Rinaldi Boulevard and Hurlihe Street		Zip Code: 12601-	
City/Town: Poughkeepsie			
County: Dutchess			
Site Acreage: 7.1			
Reporting Period: August 30, 2007 to April 15, 2011			
		YES	NO
1.	Is the information above correct?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If NO, include handwritten above or on a separate sheet.			
2.	Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.			
5.	Is the site currently undergoing development?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		Box 2	
		YES	NO
6.	Is the current site use consistent with the use(s) listed below? Commercial and Industrial	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7.	Are all ICs/ECs in place and functioning as designed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM.			
A Corrective Measures Work Plan must be submitted along with this form to address these issues.			
Signature of Owner, Remedial Party or Designated Representative		Date	

Box 2A

8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?

YES NO

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

9. Are the assumptions in the Qualitative Exposure Assessment still valid? (The Qualitative Exposure Assessment must be certified every five years)

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C314109

Box 3

Description of Institutional Controls

Parcel

Owner

Institutional Control

131300-6061-26-744884

City of Poughkeepsie IDA

Ground Water Use Restriction
Landuse Restriction
Site Management Plan

Box 4

Description of Engineering Controls

Parcel

Engineering Control

131300-6061-26-744884

Cover System
Vapor Mitigation

Control Description for Site No. C314109

Control Description for Site No. C314109

Parcel: 131300-6061-26-744884

NOW THEREFORE, in consideration of the covenants and mutual promises contained herein and the terms and conditions of Brownfield Cleanup Agreement Index No.: W3-1008-04-06, Grantor grants, conveys and releases to Grantee a permanent Environmental Easement pursuant to Article 7 1, Title 36 of the ECL in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the potential restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering: Controls. The following controls apply to the use of the Controlled Property, run with the land are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees, and any person using the Controlled Property:

A. The Controlled Property may be used for commercial use as long as the following long-term engineering controls are employed:

a) the use of the groundwater underlying the Controlled Property is prohibited without treatment rendering it safe for intended purpose;

b) any soil disturbance on the Controlled Property must be in a manner specified in the NYSDEC-approved Site Management Plan;

c) any soil contain within the primary soil consolidation zone and the secondary soil consolidation zone (collectively the "Soil Consolidation Zone") comprised of

approximately 0.45 acres lying within the Controlled Property, and hereinafter more fully described in Schedule B attached hereto and made part hereof, must remain covered as specified in the NYSDEC-approved Site Management Plan by the barrier system consisting of a demarcation fabric (e.g. geotextile) and covered with one foot of soil or the concrete slab of the commercial building, as designed and constructed as part of the

approved remedial action under the Brownfield Cleanup Agreement.

B. The Controlled Property may not be used for a higher level of use such as restricted residential use and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an environmental easement held

by the New York State Department of Environmental Conservation pursuant of Title 36 to Article 71 of the Environmental Conservation Law.

D. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

E. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C314109

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Joseph A Bonura Jr at 176 Rinaldi Blvd
print name print business address

am certifying as Remedial Party (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

Joseph A Bonura Jr
Signature of Owner or Remedial Party Rendering Certification

4-19-11
Date

IC/EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I PHILIP BELL at 334 N. FOSTERTOWN DR, NEWBURGH, NY
print name print business address 12550

am certifying as a Qualified Environmental Professional for the REMEDIAL PARTY
(Owner or Remedial Party)

Philip Bell
Signature of Qualified Environmental Professional, for
the Owner or Remedial Party, Rendering Certification



4-19-11
Date

APPENDIX B

Engineered Control Inspection Form



ENGINEERED CONTROL INSPECTION FORM
Former City of Poughkeepsie
Sewage Treatment Plant

Inspector: PHIL BELL, P.E.

Inspection Date: 4-15-11

ENGINEERED CONTROL OBSERVATIONS

1) Damaged Foundation Walls (Primary SCZ)? Yes No

If yes, describe: _____

2) Damaged Concrete Floor Slab (Primary SCZ)? Yes No

If yes, describe: _____

3) Damaged Landscaping (Secondary SCZ)? Yes No

If yes, describe: _____

4) Fan Operational (Sub-Slab Venting System)? Yes No

If yes, describe: _____

INSPECTION LIMITATIONS

Describe any conditions that limited the completeness of the inspection (e.g., parts of the soil consolidation zone were covered by snow): CARPET ON SOME FLOORS

CORRECTIVE MEASURES

If any of the answers to items 1 through 4 were "Yes", please complete the CORRECTIVE MEASURES section below and append additional pages or documentation, as necessary.

N/A

Date repairs were completed: _____ (Should be less than 30 days from inspection date)

Description of corrective measures:

Post-Repair Inspection: Date: _____ Inspector: _____

APPENDIX C

Site Management Plan



1.0 INTRODUCTION

This Site Management Plan describes the operation, maintenance and monitoring (OM&M) measures that are required at the Former City of Poughkeepsie Sewage Treatment Plant (STP) site located at the intersection of Rinaldi Boulevard and Hurlihe Street in Poughkeepsie, New York (Figure 1). These requirements are a part of the remedial activities conducted by Poughkeepsie Waterfront Development, LLC during 2005 and 2006. Additional information regarding the specific remedial activities that were performed is presented in the *Final Engineering Report* prepared by Fuss & O'Neill.

2.0 REMEDIATION SUMMARY

Three primary areas of concern (AOCs) were identified during the investigation phase of this project. They were 1) the Southern Landfill Area, 2) the Northeast soil mound and 3) the former UST area. Remediation at the site involved excavating impacted soil from these three areas and either disposing excavated soil off-site or consolidating it on-site within one of two soil consolidation zones (SCZ). In addition, a sub-slab venting system was installed under the floor slab of the newly constructed building. The remedial activities conducted were intended to achieve a Track 4 cleanup under the Brownfields Cleanup Program (BCP). The specific remedial actions performed included the following:

- **Soil Excavation and Off-Site Disposal** - Impacted soil containing the highest level of the constituents of concern (e.g., sludge layers from the Southern Landfill and Northeast Soil Mound Areas) was excavated and transported to a permitted off-site disposal facility.
- **Soil Relocation to the Primary SCZ** - The Primary SCZ is an approximately 0.7 acre area located within the footprint of the newly constructed building. Low-level impacted soil was relocated to this area so that it could be capped by the future building and to help achieve final site grades.

First, impacted material from the Southern Landfill Area (approximately 300 cubic yards), the Northeast Soil Mound Area (approximately 2,000 cubic yards) and the Former UST Area (approximately 100 cubic yards) was placed in compacted lifts in the bottom of the excavation. Next, stockpiled "construction fill borrow area" soil and crushed demolition debris was installed over the soil from the three AOCs. This crushed demolition debris material was graded to form a level grade at elevation 34, as referenced to the National Geodetic Vertical Datum of 1929 (NGVD 29), and a geotextile demarcation layer was placed on the surface to define the upper boundary of the Primary SCZ. About six feet of clean materials (e.g., crushed concrete, coarse aggregate, concrete building slab) was placed over the demarcation layer. Crushed concrete was obtained from the Crainesville Block Co., Inc. of Amsterdam, New York and used above the demarcation layer with NYSDEC prior approval. The finished floor elevation of the building is at elevation 40 (NGVD 29).



The metes and bounds as well as elevations of both the Primary and Secondary SCZ, as surveyed by Chazen Engineering and Land Survey Company, are shown on Sheet 3 of the *Final Engineering Report*. The concrete building slab and sub-slab venting system within the Primary SCZ as well as the geotextile demarcation barrier with vegetated soil layer over the Secondary SCZ are "Engineered Controls" used for remediation. The NYSDEC also requires "Institutional Controls" (i.e., filing an environmental easement) to be used to limit site usage.

3.0 INSTITUTIONAL CONTROL RESTRICTIONS

This document is referenced in the environmental easement that was executed in cooperation with NYSDEC counsel and filed on the Dutchess County property records. This document will place restrictions on certain site uses. An overview is provided within this section below.

- **Restrictions to Site Use** - All future use of the entire site, as defined by the metes and bounds description referenced in the environmental easement, is restricted to commercial or industrial uses. The owner must notify the NYSDEC and other appropriate agencies if any changes to the facility are proposed within the environmental easement areas.
- **Soil Disturbance Inside of the SCZs** - Any disturbance of the soil beneath the demarcation barriers within the Primary SCZ at elevation 34 (NGVD 29) or the Secondary SCZ at a depth of one foot will require proper handling. Soil removed from this area for any purpose must either be relocated under the demarcation barrier or disposed of at a permitted off-site facility.
- **Soil Disturbance Outside of the SCZs** - Soil outside of the SCZs may be disturbed without prior approval of the NYSDEC. However, extra caution should be taken to be alert of any previously unidentified environmental conditions that may exist, which include stained soil, odors and fill material. If any suspect material is uncovered, work will be stopped and the NYSDEC shall be notified prior to proceeding with any additional work.
- **Groundwater Usage** - Groundwater from the site may not be used for any purpose.

4.0 ENGINEERED CONTROL INSPECTION AND MONITORING

Periodically, the owner must have an engineering professional inspect the Primary SCZ, the Secondary SCZ and the sub-slab venting system and fill out an inspection checklist (see Attachment A). In addition, the owner may use air quality sample results to petition the state to shut off the sub-slab venting system. The specifics of each are as follows:

- **Primary SCZ Inspection** - Visual inspection of the Primary SCZ shall be performed periodically. Specifically, this involves looking for cracking or other deterioration of the foundation walls (exterior inspection) and the concrete floor slab (interior inspection).



6.0 REPORTING AND AMENDMENT PROCESS

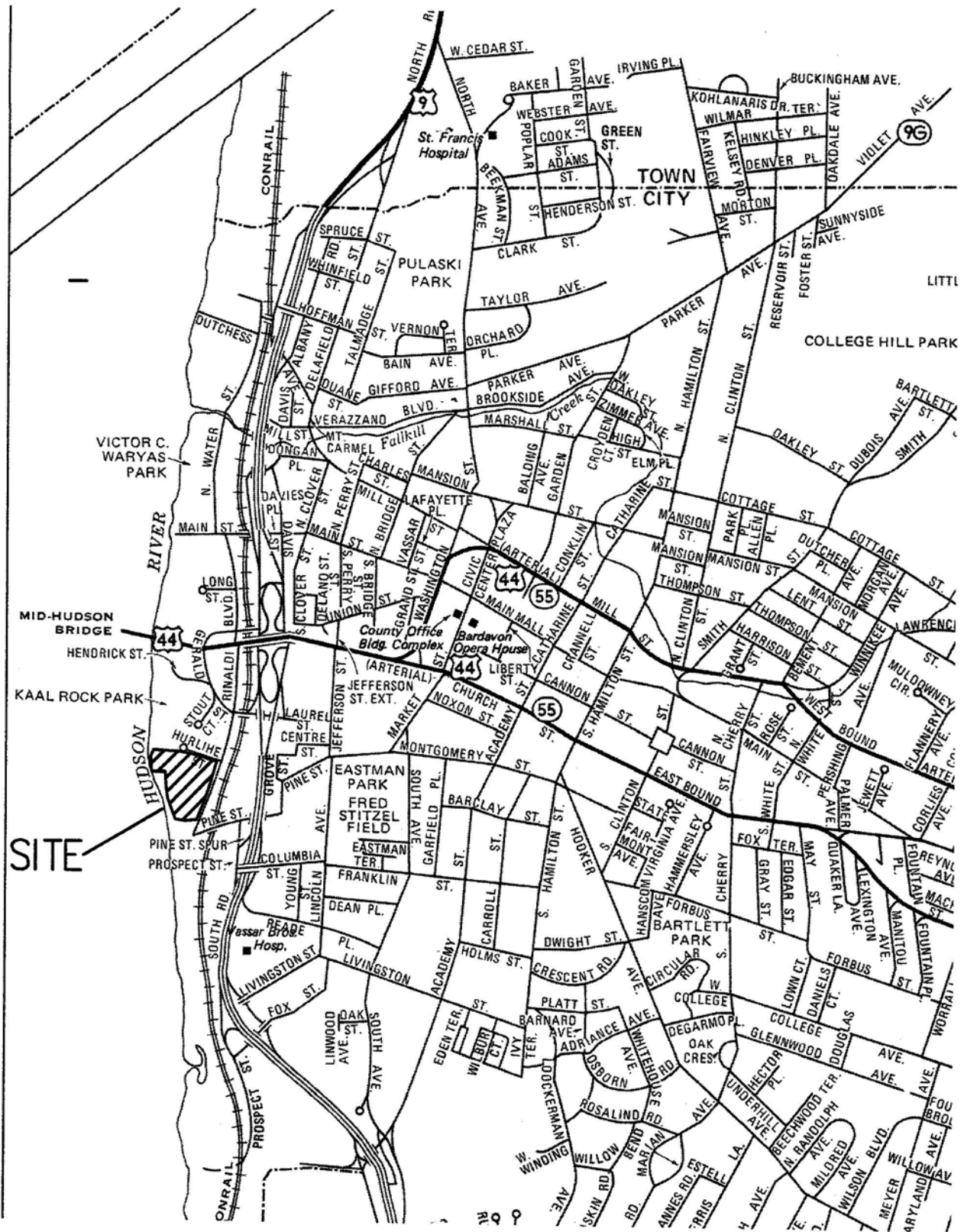
One year after the Certificate of Completion is issued and every three years thereafter, a certification will be prepared and submitted to the NYSDEC. This certification will summarize the inspection and monitoring activities that occurred during the past monitoring period. Completed certification reports shall be sent to:

Mr. Bradley Brown
New York State Department of Environmental Conservation
Remedial Bureau C
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7014
Phone: (518) 402-9564
Fax: (518) 402-9679
Email: bxbrown@gw.dec.state.ny.us

This Site Management Plan and the requirements contained within can only be amended with consent from the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH).

APPENDIX D

Vicinity Map



VICINITY MAP

POUGHKEEPSIE, N.Y.

Bell Engineering, PLLC
 334 NORTH FOSTERTOWN DR.
 NEWBURGH, NEW YORK 12550
 (845) 542-1139

VICINITY MAP

DATE: 3/18/08
 SHEET 1 OF 1