**October 8, 2010**

# SITE MANAGEMENT PLAN FOR BEST EQUITIES PROPERTY OPERABLE UNIT 2 (OU-2)

## 236-286 Richmond Valley Road
**(Former Nassau Metals Corporation Facility)**
**Staten Island, New York**
**Site Number V-00159-2**

***Prepared for***

**NASSAU METALS CORPORATION**
**600 Mountain Avenue**
**New Providence, New Jersey 07974-2008**


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***Environmental Engineers***

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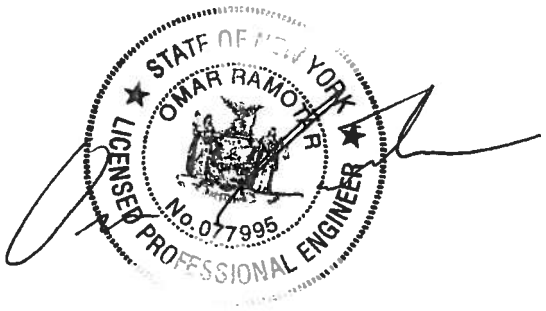
## CERTIFICATION

I, Omar Ramotar, certify that I am currently a NYS registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

| 077-995 | 10/8/10 | |
|---|---|---|
| NYS Professional Engineer # | Date | Signature |

Note: Include PE stamp

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.



## LIST OF ACRONYMS

| Acronym | Definition |
|---|---|
| CAMP | Community Air Monitoring Plan |
| CCP | Construction Contingency Plan |
| DER | Division of Environmental Remediation |
| DGA | Dense Graded Aggregate |
| DUSR | Data Usability Summary Report |
| EC | Engineering Control |
| EWP | Excavation Work Plan |
| FER | Final Engineering Report |
| GCL | Geosynthetic Clay Liner |
| GPS | Global Positioning System |
| HASP | Health and Safety Plan |
| IC | Institutional Control |
| MI&M | Monitoring, Inspection and Maintenance |
| MW | Monitoring Well |
| NYCDEP | New York City Department of Environmental Protection |
| NYS | New York State |
| NYSDEC | New York State Department of Environmental Conservation |
| NYSDOH | New York State Department of Health |
| NYSDOT | New York State Department of Transportation |
| OU | Operable Unit |
| QAPP | Quality Assurance Project Plan |
| QA/QC | Quality Assurance/Quality Control |
| RRAPDR | Revised Remedial Alternatives and Preliminary Design Report |

| Acronym | Definition |
|---|---|
| RAWP | Remedial Action Work Plan |
| RCRA | Resource Conservation and Recovery Act |
| RI | Remedial Investigation |
| SMP | Site Management Plan |
| SPDES | State Pollutant Discharge Elimination System |
| SWPPP | Stormwater Pollution Prevention Plan |
| TSCA | Toxic Substance Control Act |
| TSDFs | Transportation and Disposal Facilities |
| USACE | United States Army Corps of Engineers |
| USDOT | United States Department of Transportation |
| USEPA | United States Environmental Protection Agency |
| VCA | Voluntary Cleanup Agreement |
| VCP | Voluntary Cleanup Program |

# 1.0 INTRODUCTION AND DESCRIPTION OF REMEDIAL PROGRAM

## 1.1 Introduction

On behalf of the Nassau Metals Corporation ("Nassau Metals"), Remedial Engineering, P.C ("Remedial Engineering") has prepared this Site Management Plan ("SMP") for the Best Equities LLC-owned portion of Site No. V-00159-2, located east of Arthur Kill Road, which is designated as Operable Unit 2 ("OU-2") as shown on Figures 1 and 2. Remedial Engineering is a New York State professional service corporation organized primarily for the purpose of providing engineering services for clients of Roux Associates, Inc. ("Roux Associates"). Site No. V-00159-2 is defined in the Voluntary Cleanup Agreement ("VCA") between the NYSDEC and Nassau Metals (W2-0801-01-04, dated January 4, 2002 and amended April 16, 2010) as the property formerly owned, in its entirety, by Nassau Metals that will be referred to, herein, as the "VCA Property". Under this agreement, Nassau Metals entered into New York State's Voluntary Cleanup Program ("VCP") to address the environmental conditions at the VCA Property. For the purposes of managing activities at the VCA Property, now owned by multiple entities, Nassau Metals has subdivided the former facility into the following operable units, which are depicted on Figure 2:

- OU-1: The Nassau Metals-owned portion of the VCA Property located east of Arthur Kill Road;
- OU-2: The Best Equities LLC-owned portion of the VCA Property located east of Arthur Kill Road; and
- OU-3: The Nassau Metals-owned portion of the VCA Property located west of Arthur Kill Road.

Separate FERs and SMPs will be issued for each operable unit. OU-2 is the subject of this SMP and will be referred to, herein, as "the Site." The metes and bounds Site descriptions for all operable units, including OU-2, are included as Appendix A. Monitoring will not be performed in areas beyond the limits of the composite cover system. These areas have no historical evidence/documentation of filling, waste disposal or active operations having occurred within the limits of OU-2.

After completion of the remedial work described in the Final Engineering Report ("FER") for OU-2 (Appendix B), contamination was left in the subsurface at this Site, which is hereafter

referred to as "remaining contamination." This SMP was prepared to manage remaining contamination at the Site until the Declaration of Covenants and Restrictions (Appendix C) is extinguished. All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Remedial Engineering, on behalf of Nassau Metals, in accordance with the general requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated November, 2009, and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls ("ICs") and Engineering Controls ("ECs") that are required by the Declaration of Covenants and Restrictions for the Site.

### 1.1.1 Purpose

The site contains contamination left after completion of the remedial action. Engineering Controls have been incorporated into the site remedy to control exposure to remaining contamination during the use of the Site to ensure protection of public health and the environment. A Declaration of Covenants and Restrictions recorded with the Richmond County Clerk will require compliance with this SMP and all ECs and ICs placed on the site. The ICs place restrictions on Site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required by the Declaration of Covenants and Restrictions for contamination that remains at the site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Declaration of Covenants and Restrictions and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the site after completion of the Remedial Action, including: (1) implementation and management of all Engineering and Institutional Controls; (2) media monitoring; and (3) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports.

To address these needs, this SMP includes two plans: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs and (2) a Monitoring Plan for implementation of Site Monitoring.

This plan also includes a description of the Periodic Review Report for the periodic submittal of data, information, recommendations, and certifications to the NYSDEC.

It is important to note that:

- This SMP details the Site-specific implementation procedures that are required by the Declaration of Covenants and Restrictions. Failure to properly implement the SMP is a violation of the Declaration of Covenants and Restrictions, which is grounds for revocation of the VCA Release and Covenant Not to Sue ("VCA Release").
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the VCA (Index #W2-0801-01-04 Site #V-00159-2) for the Site, and thereby subject to applicable penalties.

### 1.1.2 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Declaration of Covenants and Restrictions for the Site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

## 1.2 VCA Property and Site Background

This section provides a description of the location and history of the VCA Property, where applicable, and the Site, nature and extent of contamination, and the remedial action.

### 1.2.1 VCA Property and Site Location and Description

The VCA Property is located in Staten Island County of Richmond, New York. The VCA Property consists of three operable units. Operable Unit 2 is identified as Section 5, Block 7971 and Lot 250 on the Richmond County Tax Map. Operable Unit 2 is an approximate 8.48-acre area bordered to the north by Richmond Valley Road, on the south by the Nassau Metals-owned portion (OU-1) of the VCA Property, to the east by Page Avenue and to the west by Arthur Kill

Road (see Figure 2). The boundaries of the site are more fully described in the Metes and Bounds description for OU-2 provided in Appendix A.

### 1.2.2 VCA Property Operational History

Manufacturing at the former facility located within the limits of the VCA Property began around 1900. The Tottenville Copper Company was the original operator at the VCA Property, and used copper, lead, tin, and zinc as part of their manufacturing process. In 1923, a fire destroyed a portion of the facility, which was subsequently rebuilt. In 1931, Nassau Metals became the operator of the facility. The facility became the centralized site for the reclamation of non-ferrous scrap metals from Western Electric plants as well as from other telephone companies. The scrap metals were refined and formed into metal products, including copper wire, solder, and lead sleeving. The facility contained two primary manufacturing operations, which were both located in OU-1: 1) copper was handled in Building 10/10X (formerly known as the "red metals" building), and 2) lead and tin were handled in Building 2 (formerly known as the "white metals" building).

Small quantities of organic chemicals were used for equipment maintenance during the facility's history.

Much of the VCA Property east of Arthur Kill Road has been filled in over the years to support the expansion of the facility. Fill material consisted of soil, construction debris, telephone equipment, slag, and refractory bricks. The filled areas were then occupied by buildings, on-site roadways, or pavement. The creation of land using fill material ceased by the 1970s.

In 1973, a wastewater treatment facility was built on site to treat metals-bearing wastewater. The wastewater treatment facility was located in the southeastern portion of the Site within OU-1. During the initial operation of the wastewater treatment facility, approximately 6 to 7 cubic yards of dry, vacuum-filtered sludge were generated per week. Until 1979, the sludge was stockpiled on the ground underneath the Page Avenue overpass. From 1979 through 1981, the sludge was stored in the "red metals" building in containers, and processed for precious metals recovery. Starting in 1981, the sludge was sent off site for precious metals recovery.

In 1981, copper operations in the "red metals" building ceased. The building was decommissioned and demolished in 1984-1985. Lead and tin operations in Building 2 (the "white metals" building) continued until 1991. The "white metals" building was demolished in 1996-1997. Demolition activities are documented in the May 7, 1997 Building Demolition Completion Report prepared by Roux Associates. Additional building demolition on the south side of the VCA Property was performed by Roux Associates in 1998. Demolition activities are documented in the June 3, 1998 Phase I Building Demolition Completion Report. In 1999, all electroplating manufacturing operations moved from the south side of the property to Building 41 (aka 236 Richmond Valley Road) on the north side of the VCA Property. 286 Richmond Valley Road was the former administration building for the Nassau Metals facility. Following the transfer of operations, all remaining buildings on the south side of Mill Creek, including the wastewater treatment facility, were demolished. Decommissioning and demolition activities for these buildings are documented in the August 2000 Completion Report for Nassau Metals Corporation Phase II Building Closure and Demolition Project prepared by Environmental Engineering Services. All manufacturing operations were terminated at the VCA Property in 2001.

### 1.2.3 VCA Property Regulatory History

After all decommissioning and demolition activities were performed at the VCA Property and manufacturing operations were subsequently terminated in 2001, Nassau Metals entered into a VCA (W3-081-97-09) with the NYSDEC to evaluate environmental conditions at the VCA Property in preparation for anticipated redevelopment of the Nassau Metals-owned portion of the Site. In accordance with the VCA, a Remedial Investigation ("RI") was performed to characterize the nature and extent of contamination at the VCA Property as discussed in Section 1.3 below. Based on the results of the RI, a Remedial Action Work Plan ("RAWP") and subsequent remedial design were developed to address sources of contamination identified at the VCA Property. A summary of the remedial action, which includes additional detail on the regulatory history of the VCA Property is provided in Section 1.4. Following the performance of the remedial action, Nassau Metals initiated the process to amend the existing VCA, which subdivides the VCA Property into three operable units (OU-1, OU-2 and OU-3), as discussed previously. The VCA

Amendment #1 was fully executed on April 16, 2010. Accordingly, separate FERs and SMPs have been prepared for each operable unit. OU-2 is the subject of this SMP.

### 1.2.4 Geologic Conditions

The VCA Property is located in the southwestern portion of Staten Island, New York (Figure 1). Prior to the Remedial Action, the majority of the VCA Property east of Arthur Kill Road was underlain by fill material, which varied in thickness but averaged approximately 8 feet. Over 450,000 cubic yards of fill underlie the VCA Property, assuming an 8-foot thickness of fill across the VCA Property east of Arthur Kill Road. The fill material is comprised of fine to coarse sand with minor amounts of silt and clay, wire, slag, bricks, glass, plastic, wood, metal and parts of old telephones. The fill material is directly underlain by low permeability estuarine deposits in the vicinity of Mill Creek, and glacial moraine deposits in areas of the Site furthest from Mill Creek. The estuarine deposits are comprised of peat, clay and silt, and range in thickness from 2 ft to 9 ft at the Site. Previous geotechnical analyses indicate that the vertical permeability of the estuarine deposits is very low, measuring $3.96 \times 10^{-8}$ cm/sec (Weston, 1997). Where present, the estuarine deposits will act as a low permeability barrier between the overlying fill and the underlying glacial moraine deposits.

The glacial moraine deposits are comprised of sand with minor amounts of gravel, silt, and clay. These deposits range in thickness from 32 ft to 58 ft at the Site. The glacial moraine deposits comprise the ground-water aquifer beneath the Site. However, the groundwater beneath the Site is not used as a drinking water supply. Drinking water in Staten Island has been supplied by the upstate New York reservoirs since the early 1970s.

Underlying the glacial moraine deposits is the Raritan Clay, which was encountered during previous investigations ranging in depths from 52 ft to 72 ft at the Site (Weston, 1997). Previous geotechnical analyses indicate that the vertical permeability of the Raritan Clay is very low, ranging from 1.95 x 10 to $2.20 \times 10^{-8}$ cm/sec (Weston, 1997). Bedrock reportedly lies approximately 300 ft bls beneath Staten Island (Perlmutter and Arnow, 1953).

The water table underlying the VCA Property occurs within portions of the base of the fill material and in the glacial moraine. Depth to water beneath the VCA Property ranged from 1 ft to 10 ft bls during April 2010. Three synoptic rounds of water-level measurements were made in selected wells at the Site from May 20 through May 22, 1998. The ground-water flow direction was determined during the May 20, 1998 low tide water-level measurements to be towards Mill Creek from both the south and north portions of the VCA Property. The two remaining water-level measurement rounds were evaluated (low and high tides), and the resulting groundwater flow patterns are consistent with the May 20, 1998 water-level measurement round. These data indicate that tidal influences generally do not affect the overall ground-water flow directions. However, due to the 4-5 ft change in surface-water elevations observed during the tidal cycle, it is expected that during high tide, surface water will recharge groundwater within the immediate vicinity of Mill Creek. This phenomenon is commonly referred to as bank storage.

### 1.3 Nature and Extent of Contamination

An RI was performed to characterize the nature and extent of contamination at the site. The results of the RI are described in detail in the following reports (Appendix B):

- December 1991 United States Environmental Protection Agency ("USEPA") Site Investigation Report prepared by Malcolm Pirnie, Inc.;
- May 1997 Initial Study Report prepared by Roy F. Weston, Inc.;
- September 1998 Site Investigation Report prepared by Roux Associates;
- November 1998 Voluntary Cleanup Program Remedial Alternatives Report prepared by Roux Associates;
- October 2000 Voluntary Cleanup Program Supplemental Site Investigation Report prepared by Roux Associates; and
- February 2001 Voluntary Cleanup Program Revised Remedial Alternatives and Preliminary Design Report prepared by Roux Associates.

Over 450,000 cubic yards of fill immediately underlie the VCA Property. Based upon the results of the various investigations performed, it was determined that the fill material contains wire, slag, bricks, metal, and other manmade materials.

As part of this effort in OU-2, ten (10) samples of the fill material were submitted for metals analysis and one (1) sample of the fill material was submitted for metals analysis using the toxicity characteristic leaching procedure ("TCLP"). The TCLP analysis was performed to determine whether or not this material would be classified as a Resource Conservation and Recovery Act ("RCRA") characteristically hazardous waste if the fill material was removed from the ground since this classification does not apply if the fill materials remain in place. The one TCLP sample yielded a concentration of lead exceeding USEPA regulatory levels for classifying the material as RCRA characteristically hazardous waste. The preconstruction tabular and graphical summaries of analytical data generated during the performance of the RI are presented in these reports (Appendix B) cited above.

### 1.4 Summary of Remedial Action

The remedial action for OU-2 was performed at various times between September 26, 2006 and August 29, 2008 in accordance with the applicable portions of the NYSDEC-approved Specifications, Project Plans, and Contract Documents ("Final Design Documents") dated February 14, 2006, with exceptions noted in the FER for OU-2 (Appendix B). The Final Design Documents and FER, which were prepared for Nassau Metals by Remedial Engineering, P.C. ("Remedial Engineering") are considered a part of the VCA as an addendum to the RAWP for the VCA Property. The RAWP is presented as Exhibit "B" of the January 3, 2002 VCA and consists of the February 28, 2001 VCP Revised Remedial Alternatives and Preliminary Design Report ("RRAPDR") and five addenda. The addenda include two separate comment letters presented by the NYSDEC, the New York State Department of Health ("NYSDOH"), and the New York City Department of Environmental Protection ("NYCDEP"), Nassau Metals' response to those comments, and a revised project schedule.

In addition, a set of "for construction" contract documents dated May 2006 was issued to the bidders for the remedial construction. In addition, four addenda to the May 17, 2006 contract documents were issued to the bidders during the bid phase (Addendum No. 1 dated June 5, 2006; Addendum No. 2 dated June 20, 2006; Addendum No. 3 dated June 23, 2006 and Addendum No. 4 dated June 30, 2006). These documents did not change the essential elements of the

remedy. They were issued to finalize contractual elements missing from the February 14, 2006 set; provide additional language regarding the dredge window imposed on work in Mill Creek and the embayment areas; and provide minor design modifications based on value engineering conducted during the bid phase and questions from the bidders.

The major components of the remedial action are identified below:

- permitting;
- contractor submittals;
- implementation and management of a site-specific Health and Safety Plan;
- preconstruction meeting, mobilization and site preparation;
- water management;
- soil excavation and on-site placement within limits of OU-1 and OU-2;
- construction of the composite geosynthetic clay liner ("GCL") Cap;
- construction of the asphalt caps;
- construction of the concrete caps;
- rehabilitation of the site stormwater system;
- installation of off-site fill materials;
- seeding of composite GCL Cap areas;
- monitoring well abandonment and construction;
- surveying and As-Built Drawings;
- equipment decontamination; and
- demobilization.

Although each major component of the remedial action is discussed in depth in the respective FER for OU-2 (Appendix B); a description of some of the key elements of the remedial action is also provided below. For reference purposes, a set of the as-built drawings are provided in Appendix L.

### 1.4.1 Key Elements of Remedial Action

The following subsections of this SMP describe the key elements of the remedial action regarding soil excavation; construction of the composite cover system and transportation and disposal of generated waste.

#### 1.4.1.1 Soil Excavation

Within the proposed areas of remediation at 236 Richmond Valley Road, impacted soil was excavated up to 2 feet below final design grade, relocated within the footprint of the composite GCL caps constructed within the limits of OU-1 and OU-2, where applicable, and regraded to the preliminary grades shown on As-Built Drawing AB-1 (Appendix L). Accordingly, an allocation of the quantity of excavated material consolidated below the capped portions of the Site for OU-1 and OU-2 cannot be made in this SMP. Removed soil was loaded into off-road dump tracks, temporarily staged prior to consolidation within designated areas below the capped portions of the VCA Property for OU-1 and OU-2.

#### 1.4.1.2 Composite Cover System

As part of the Site remedy, a composite cover system (refer to Figures 2 and 3) was created that consisted of existing and newly constructed components listed below:

Pre-remediation Components:

- pre-construction building caps; and
- pre-construction asphalt caps.

Post-remediation Components:

- post-construction composite GCL caps;
- post-construction asphalt cap; and
- post-construction concrete caps.

Clean fill certifications and chemical and physical data, where applicable, for all imported topsoil, sand, dense graded aggregate ("DGA"), stone and riprap used to construct the newly constructed components of the composite cover system are provided in the FER for OU-2. For reference purposes, the remedial design Site-specific soil cleanup objectives and proposed post-remediation

criteria for on-site re-use of excavated materials/ imported fill materials within the newly constructed components of the composite cap is provided in Table 1.

The components of the composite cover system are described in greater detail in the following subsections of this SMP.

#### 1.4.1.2.1 Pre-Construction Building Caps

Residual contamination is potentially located below the existing concrete slab/ foundation within the footprint of the following buildings located at OU-2:

- 286 Richmond Valley Road, with an approximate area of 9,000 square feet; and
- 236 Richmond Valley Road, with an approximate area of 70,500 square feet.

These areas are referred to herein as the "pre-construction building caps." As-built construction details for each pre-construction building cap are not known since the buildings were constructed prior to the performance of the remedial action. However, the thickness of the each preconstruction building cap is estimated to be 8 to 12 inches presumably consisting of a 4 to 6 inch thick concrete layer over a 4 to 6 inch stone sub base layer. The limits of the pre-construction building caps are shown on Figure 2. A typical cross-section of the pre-construction building caps is depicted on Detail 1 on Figure 3.

#### 1.4.1.2.2 Pre-Construction Asphalt Caps

Residual contamination is potentially present below the limits of the pre-construction asphalt parking areas in and around the two on-site buildings within OU-2. These areas are referred to herein as the "pre-construction asphalt caps" and cover an overall area approximately 118,000 square feet in size. As-built construction details for the pre-construction asphalt cap are not known since the asphalt was installed prior to the performance of the remedial action. However, the thickness of the each pre-construction asphalt cap is estimated to be 6 to 10 inches presumably consisting of a 2 to 4 inch thick asphalt layer over a 4 to 6 inch stone sub base layer. The limits of the pre-construction asphalt caps are shown on Figure 2. A typical cross-section of the pre-construction asphalt caps is depicted on Detail 2 on Figure 3.

#### 1.4.1.2.3 Post-Construction Composite GCL Cap

A composite GCL cap was installed in upland areas (above the 4-foot elevation) at several locations west, north and east of the building located at 236-286 Richmond Valley road as shown on Figure 2. Construction of this portion of the composite GCL cap included the following key components:

- installation of a GCL (Bentonite DN as manufactured by CETCO);
- installation of perforated high density polyethylene (HDPE) drainage pipe layer;
- installation of an 18-inch sand layer with a minimum permeability of 0.01 centimeters per second (cm/sec);
- installation of 6-inch topsoil layer; and
- seeding with the following mix rate: 45% Carmen Chewing Fescue, 25% Kentucky Blue Grass, 15% Red Top and 15% Astoria Bentgrass.

A typical cross-section of the composite GCL cap constructed is depicted on Detail 3 on Figure 3.

#### 1.4.1.2.4 Post-Construction Asphalt Cap

An area of approximately 65,100 square feet surrounding 236 Richmond Valley Road was capped with a minimum of 4 inches of asphalt, 8 inches of DGA/ 0.75-inchcrushed stone and 12 inches of common fill. Prior to installing the asphalt cap, a visual barrier was installed 2 feet below the top of asphalt cap over the un-remediated subgrade, which also serves as the demarcation layer between clean fill and potential residual contamination. The limits of the post-construction asphalt cap are shown on Figure 2. A typical cross-section of the post-construction asphalt cap is depicted on Detail 4 on Figure 3.

#### 1.4.1.2.5 Post-Construction Concrete Caps

Two types of concrete caps were installed within the limits of OU-2. These caps consisted of the four sets of "tree islands" located within the limits of the active parking east of 236 Richmond Valley road and the concrete walkways/ curbs located directly north, east and south along the perimeter of 236 Richmond Valley Road. These areas are collectively referred to herein as the "post-construction concrete caps." The limits of these caps are shown on Figure 2.

The areas within the limits of the 4 sets of islands were capped with 4 inches of concrete, except for an approximate 5-foot by 5-foot area around existing trees. The limits of this component of the post-construction concrete cap are also shown on Figure 2. A typical cross-section of this component of the post-construction concrete cap is depicted on Detail 5 on Figure 3.

The areas within the limits of the concrete walkways/ curbs were capped with a minimum of 4 inches of concrete, 8 inches of DGA/ 0.75-inchcrushed stone and 12 inches of common fill. Prior to installing these caps, a visual barrier was installed 2 feet below the top of concrete cap over the un-remediated subgrade, which also serves as the demarcation layer between clean fill and potential residual contamination. The limits of this component of the post-construction concrete cap are shown on Figure 2. A typical cross-section of this component of the post-construction concrete cap is depicted on Detail 6 on Figure 3.

#### 1.4.1.3 Waste Transportation and Disposal

All C&D debris, bulky waste and spent filter bags generated during the performance of the remedial action at OU-1 and OU-2 was transported and disposed at an appropriate recycling facility/ transfer station. In addition, the following contaminated wastes were generated, transported, and disposed at appropriate treatment, storage, and disposal facilities ("TSDFs") during the performance of the remedial action at OU-1 and OU-2:

- 212.65 tons of hazardous sediments generated from cleaning the former on-site sanitary/ sewer system;
- 326.27 tons of hazardous petroleum-impacted soil excavated along the south bank of Mill Creek;
- 5.5 tons of non-hazardous spent wastewater treatment facility media; and
- 10,399 gallons of non-hazardous construction wastewater generated from cleaning a portion of the former sanitary/ sewer system.

All TSDFs were permitted under the Resource Conservations and Recovery Act ("RCRA"), Toxic Substances Control Act ("TSCA"), and/or by the State in which the TSDF is located, where applicable. The haulers of all wastes were permitted and licensed to transport wastes in New York and all localities and states through which they transported the wastes. All transporters, where

applicable, were permitted in accordance with RCRA, United States Department of Transportation ("USDOT"), state and local requirements, and possessed an EPA identification number. All vehicles used for the transportation of wastes, where applicable, were also in conformance with USDOT and USEPA requirements and the requirements of all states through which the wastes were transported. All applicable manifesting and placarding transportation requirements were implemented. In accordance with the Final Design Documents, all trucks were visually inspected and properly decontaminated prior to leaving the site.

### 1.5 Remaining Contamination

As discussed in Section 1.3, fill material containing wire, slag, bricks, metal, and other manmade materials underlie the Site. The fill material contains elevated concentrations of metals, in particular lead, above the remedial design Site-specific cleanup levels summarized in Table 1. The actual percentage of characteristic hazardous waste remaining on-site cannot be accurately determined; however, 70% of the preconstruction fill material samples collected during the RI across the entire VCA Property failed TCLP. It has been assumed that a similar percentage of soil located below remediated areas of OU-2 may be classified as characteristic hazardous waste. All of the fill material is contained below the composite cover system described in Section 1.4.1.2. The demarcation layer varies for each component of the composite cover system as noted below:

| Element of Composite Cover System | Demarcation Layer | Depth of Demarcation Layer |
|---|---|---|
| Pre-Construction Building Caps | Stone Subbase | Estimated to be 8 to 12 inches below grade |
| Pre-Construction Asphalt Caps | Stone Subbase | Estimated to be 6 to 10 inches below grade |
| Post-Construction Composite GCL Cap | GCL | 2 feet below grade |
| Post-Construction Asphalt Cap | SKAPS GT-131 Visual Barrier | 2 feet below grade |
| Post-Construction Concrete Cap (Sidewalk/ Curbs) | SKAPS GT-131 Visual Barrier | 2 feet below grade |

# 2.0 ENGINEERING AND INSTITUTIONAL CONTROL PLAN

## 2.1 Introduction

### 2.1.1 General

Since remaining contaminated soil exists beneath the Site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment. This Engineering and Institutional Control Plan describes the procedures for the implementation and management of all EC/ICs at the Site. The EC/IC Plan is one component of the SMP and is subject to revision by NYSDEC.

### 2.1.2 Purpose

This plan provides:

- A description of all EC/ICs on the site;
- The basic implementation and intended role of each EC/IC;
- A description of the key components of the ICs set forth in the Declaration of Covenants and Restrictions;
- A description of the features to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan ("EWP") (Appendix D) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site; and
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the Site remedy, as determined by the NYSDEC.

## 2.2 Engineering Controls

### 2.2.1 Engineering Control Systems

#### 2.2.1.1 Composite Cover System

Exposure to remaining contamination in soil/fill at the site is prevented by a composite cover system that covers remaining contamination as described in Section 1.4.1.2. This composite cover system is comprised of the following components:

Pre-remediation Components:

- pre-construction building cap; and

- pre-construction asphalt caps.

Post-remediation Components:

- post-construction composite GCL caps;
- post-construction asphalt cap; and
- post-construction concrete caps.

The Excavation Work Plan ("EWP") that appears in Appendix D outlines the procedures required to be implemented in the event the cover system is breached, penetrated, or temporarily removed and/ or any underlying remaining contamination is disturbed. For reference purposes, the remedial design Site-specific soil cleanup objectives and proposed post-remediation criteria for on-site re-use of excavated materials/ imported fill materials within the top two feet of the post-construction composite GCL, asphalt and concrete caps is provided in Table 1. Procedures for the inspection and maintenance of this cover are provided in the Monitoring Plan included in Section 3 of this SMP.

### 2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when effectiveness monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.6 of NYSDEC DER-10.

#### 2.2.2.1 Composite Cover System

The composite cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

## 2.3 Institutional Controls

A series of Institutional Controls is required by the VCA to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the site to restricted industrial/commercial uses only. Adherence to these Institutional Controls

on the site is required by the Declaration of Covenants and Restrictions and will be implemented under this Site Management Plan. The Institutional Controls and Site restrictions that apply to the Site are:

- Compliance with the Declaration of Covenants and Restrictions and this SMP by the Grantor and the Grantor's successors and assigns.
- All Engineering Controls must be operated and maintained as specified in this SMP.
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP.
- Unless prior written approval by the NYSDEC or if the Department shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens (hereinafter referred to as "the Relevant Agency") is first obtained, there shall be no construction, use, or occupancy of the Site that results in the disturbance or excavation of the Site which threatens the integrity of the composite cover system, or which results in unacceptable human exposure to contaminated soils.
- The Controlled Property may be used for restricted industrial/restricted commercial use only (not including day care, child care, and medical care) provided the long-term Engineering and Institutional Controls included in the SMP remain in use without the express written waiver of such prohibition by the NYSDEC or other Relevant Agency.
- The owner of the Site shall maintain the composite cover system, where appropriate, or after obtaining the written approval from the Relevant Agency, by modifying with alternative materials.
- Vegetable gardens and farming on the Controlled Property are prohibited.
- The site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are unchanged from previous certification or that any changes to the controls were approved by the NYSDEC; and (2) nothing has occurred that impairs the ability of the controls to protect public health and the environment or that constitute a violation or failure to comply with the SMP.
- NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls. This certification shall be submitted annually or at an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

- The owner of the Site shall prohibit the use of the groundwater underlying the Site without treatment rendering it safe for drinking water or industrial purposes, as appropriate, unless the user first obtains permission to do so from the Relevant Agency.

- This Declaration is and shall be deemed a covenant that shall run with the land and shall be binding upon all future owners of the Site and shall provide that the owner, and its successors and assigns, consent to the enforcement by the Relevant Agency, of the prohibitions and restrictions that Paragraph X of the VCA requires to be recorded and hereby covenants not to contest the authority of the Department to seek enforcement.

- Any deed of conveyance including the portion of the Site referred to as the Site shall recite that the said conveyance is subject to this Declaration of Covenants and Restrictions.

Institutional Controls identified in the Declaration of Covenants and Restrictions may not be discontinued without an amendment to or extinguishment of the Declaration of Covenants and Restrictions.

### 2.3.1 Excavation Work Plan

The site has been remediated for restricted industrial/commercial use. Any future intrusive work that will penetrate the composite cover system, encounter or disturb the remaining contamination and/ or expose underlying, remaining contamination (including any modifications or repairs to the composite cover system) will be performed in compliance with the EWP that is attached as Appendix D to this SMP. In addition, any work conducted pursuant to the EWP must also be conducted, at a minimum, in accordance with the following plans:

- Procedures defined in a project-specific Health and Safety Plan ("HASP"). A sample HASP is provided as a guide/ template in Appendix E;

- Procedures defined in the general Community Air Monitoring Plan ("CAMP") provided in Appendix F;

- Procedures defined in the general Construction Contingency Plan ("CCP") provided in Appendix G;

- Procedures defined in the general Quality Assurance Project Plan ("QAPP") provided in Appendix K; and

- Procedures defined in a project-specific Stormwater Pollution Prevention Plan ("SWPPP") that shall be prepared in accordance with the minimum requirements specified in Section 2.11 of the EWP.

The project-specific HASP and SWPPP and amendments/ revisions to the general CAMP, CCP, and QAPP, if warranted, must be prepared and submitted as part of the notification described in Section 2.0 of the EWP.

The Site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, fluids management, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations and bridge footings). The Site owner will ensure that Site development activities will not interfere with, or otherwise impair or compromise, the engineering controls described in the SMP for OU-2.

## 2.4 Inspections and Notifications

### 2.4.1 Inspections

Inspections of all remedial components installed at the site will be conducted at the frequency specified in the SMP Monitoring Plan schedule (see Section 3.1.2). A comprehensive Site-wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether Engineering Controls continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Declaration of Covenants and Restrictions;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If Site records are complete and up to date; and
- Changes, or needed changes, to the remedial or monitoring system;

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 4).

If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the EC/ICs implemented at the Site by a qualified environmental professional as determined by NYSDEC.

### 2.4.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are required under the terms of the VCA, 6NYCRR Part 375, and/or Environmental Conservation Law.
- 15-day advance notice of any proposed ground-intrusive activities pursuant to the EWP.
- Notice within 48-hours of any damage or defect to the foundations or structures that reduces or has the potential to reduce the effectiveness of other Engineering Controls and likewise any action to be taken to mitigate the damage or defect.
- Notice within 48-hours of any emergency, such as a fire, flood, or earthquake that reduces or has the potential to reduce the effectiveness of Engineering Controls in place at the site, including a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action shall be submitted to the NYSDEC within 45 days and shall describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the VCA, and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing.

### 2.5 Construction Contingency Plan

Emergencies may include injury to personnel, fire or explosion, environmental release, or serious weather conditions. A general Construction Contingency Plan ("CCP") is provided as Appendix G that outlines requirements for addressing these types of contingency problems.

#### 2.5.1 Emergency and General Contact Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Owner or Owner's representative(s) should contact the appropriate party from the contact list identified in Table 2. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the Owner's qualified environmental professional, Roux Associates. These emergency and general contact lists must be maintained in an easily accessible location at the site.

#### 2.5.2 Map and Directions to Nearest Health Facility

Site Location: Nassau Metals Corporation, 1 Nassau Place, Staten Island, New York
Nearest Hospital Name: Staten Island University Hospital South
Hospital Location: 375 Seguine Avenue, Staten Island
Hospital Telephone: (718) 226-2000

Directions to the Hospital:

1. Exit Facility and turn right onto Arthur Kill Road traveling north
2. At first traffic signal turn right onto Richmond Valley Road traveling west
3. At first traffic signal turn right onto Page Avenue traveling south
4. Turn left on Hylan Boulevard traveling east
5. Turn Right on Segunie Avenue and follow signs to Emergency Room

*Total Distance:* Approximately 4.0 miles

*Total Estimated Time*: Approximately 10 minutes

For a map showing the route from the Site to the hospital, see Figure 4.

### 2.5.3 Response Procedures

A general CCP is provided as Appendix G that outlines required response procedures. The Site-specific CCP should be updated as warranted.

# 3.0 SITE MONITORING PLAN

## 3.1 Introduction

### 3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the composite cover system, and all affected site media identified below. This Monitoring Plan may only be revised with the approval of NYSDEC.

### 3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards;
- Assessing achievement of the remedial performance criteria;
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., well logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control ("QA/QC") requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Periodic inspection and periodic certification.

Quarterly monitoring of the performance of the remedy and overall reduction in contamination on site will be conducted for the first two years following installation of the composite cover system (ending April 2011). Following two years of monitoring, a revised monitoring frequency will be proposed for NYSDEC review and approval. It is currently anticipated that composite cover system monitoring will be conducted on an annual basis and groundwater monitoring will be discontinued. The frequency thereafter is anticipated to decrease with NYSDEC concurrence. Monitoring/inspection programs are summarized in Table 3 and discussed in greater detail in the following subsections of this SMP:

- Composite cover system monitoring;
- Groundwater monitoring;
- Inspection of stormwater sewers; and
- General Site inspection.

A record of the findings of each monitoring/ inspection event and maintenance activity performed, when applicable, will be kept in a dedicated log book by the inspector, and also documented on the OU-2 Site MI&M Form. The preparation and submission of the respective MI&M Form is discussed in Section 3.8. If any maintenance is required as a result of observations noted during the performance of a periodic monitoring/ inspection event, corrective measures will be initiated within 60 days and completed within 120 days, to the extent that is practical. Confirmation of the completion of maintenance activities will be documented in the subsequent Periodic Review Report.

### 3.2 Composite Cover System Monitoring

As discussed in Section 1.4.12, the composite cover system consists of the following components:

Pre-remediation Components:

- pre-construction building cap; and
- pre-construction asphalt caps.

Post-remediation Components:

- post-construction composite GCL caps;

- post-construction asphalt cap (post-construction); and
- post-construction concrete caps.

MI&M requirements for each component of the composite cover system are discussed in the following subsections of this SMP.

### 3.2.1 Pre-Construction Building Caps

Based upon the findings of periodic inspections, the maintenance needs of the pre-construction building caps will be evaluated and corrective actions will be taken when necessary. A brief summary of the key maintenance concerns and the respective corrective actions for these caps are provided below:

- Significant Cracks or Settlement Observed:

  These deficiencies will be sealed or repaired, if the underlying subbase layer is exposed, in accordance with the minimum requirements shown on Detail 1 of Figure 3.

### 3.2.2 Pre-Construction Asphalt Cap

Based upon the findings of periodic inspections, the maintenance needs of the pre-construction asphalt cap will be evaluated and corrective actions will be taken when necessary. A brief summary of the key maintenance concerns and the respective corrective actions for these caps are provided below:

- Significant Cracks, Pot-Holes or Delaminations Observed:

  These deficiencies will be sealed or repaired to restore the cover to the specifications presented on Detail 2 of Figure 3.

- Vegetation Observed:

  The vegetation will be removed and the resulting hole/ crack will be sealed or repaired to restore the cover to the specifications presented in Detail 2 of Figure 3.

### 3.2.3 Post-Construction Composite GCL Cap

Based upon the findings of periodic inspections, the maintenance needs of the post-construction composite GCL cap will be evaluated and corrective actions will be taken when necessary.

A brief summary of the key maintenance concerns and the respective corrective actions is provided below:

- Poor Vegetative Coverage or Dead/ Stressed Vegetation Observed:

  Where limited growth is observed or dead or stressed vegetation is observed, the cause of the problem will be evaluated and corrective measures taken to improve/ restore growth in these areas of the Site. If applicable, the topsoil may be analyzed for acidity or nutrient value. If problems persist despite the maintenance procedures, consultation with Soil Conservation Service personnel may be used to identify, for example, an alternative seed mixture or fertilization schedules.

- Erosion problems or Exposed GCL Observed:

  Areas where exposed GCL or erosion problems (i.e., rills or gullies) are observed will be repaired by regrading the localized area, adding the required fill material and/ or topsoil, and reseeding as necessary.

- Indications of Animal, Rodent, or Insect Disturbance Observed:

  If burrowing mammals are observed breaching the soil cover, as evidenced by exposed fill material, they will be eradicated by a licensed exterminator.

- Significant Growth of Trees or Shrubs Observed:

  If significant tree and shrub growth is observed, a mowing event will be performed to control growth.

- Any deficiencies or repairs will be performed to the specifications presented on Detail 3 of Figure 3.

### 3.2.4 Post-Construction Asphalt Cap

Based upon the findings of periodic inspections, the maintenance needs of the post-construction asphalt cap will be evaluated and corrective actions will be taken when necessary. A brief summary of the key maintenance concerns and the respective corrective actions for these caps are provided below:

- Significant Cracks, Pot-Holes or Delaminations Observed:

  These deficiencies will be sealed or repaired to restore the cover to the specifications presented in Figure 3.

- Vegetation Observed:

  The vegetation will be removed and the resulting hole/ crack will be sealed or repaired to restore the cover to the specifications presented in Figure 3.

### 3.2.5 Post-Construction Concrete Caps

Based upon the findings of periodic inspections, the maintenance needs of the post-construction concrete caps will be evaluated and corrective actions will be taken when necessary. A brief summary of the key maintenance concerns and the respective corrective actions for these caps are provided below:

- Significant Cracks or Settlement Observed:

  These deficiencies will be sealed or repaired, if the underlying sub base layer is exposed, in accordance with the minimum requirements shown on Detail 5 of Figure 3.

## 3.3 Groundwater Monitoring

Groundwater monitoring will be performed on a periodic basis as required by the NYSDEC.

The network of monitoring wells has been installed to monitor both upgradient and downgradient groundwater conditions at the VCA Property across OU-1 and OU-2. The network of wells has been designed to include the following: monitoring wells MW-101 and MW-107 are located upgradient on the north and south sides of Mill Creek, respectively, with MW-102 and MW-103 located on the north side of Mill Creek and MW-104, MW-105, and MW-106 located on the south side (Figure 2). Monitoring wells are water table wells. Only MW-101 is located within the limits of OU-2, with the remainder of the VCA Property monitoring wells located on OU-1. Monitoring well construction logs are included as Appendix H.

Groundwater monitoring has been initiated and will continue to be performed on a quarterly basis from all wells for two years (July 2009 to April 2011). The data generated during the initial, July 2009 groundwater sampling event will be referenced, for comparison purposes, as the baseline groundwater sampling event. These results are summarized in Table 4. Following April 2011, Nassau Metals will propose a revised sampling frequency and monitoring well network for review and approval by the NYSDEC that will be based on a review of the anticipated groundwater sampling data to be generated as a result of the April 2011 sampling event.

Prior to sample collection, the monitoring wells will be gauged and then purged via low-flow means using a submersible or peristaltic pump. Unless otherwise approved by NYSDEC, the

USEPA *Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures* will be employed. Samples and parameter readings will be collected using a flow-through cell to prevent sample contact with atmospheric air. All well sampling activities will be recorded in a field book and a groundwater-sampling log (Appendix I) will be prepared. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network. Groundwater samples will be analyzed for the Target Analyte List of metals by a NYSDOH ASP certified laboratory.

The sampling frequency may be modified with the approval NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC. Deliverables for the groundwater monitoring program are specified below.

### 3.3.1 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced (as per the Monitoring Plan), if an event renders the wells unusable.

Repairs and/or replacement of wells or other related components (i.e., j-plugs or locks) in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with NYSDEC's "Commissioner Policy on Groundwater Monitoring Well Decommissioning" (CP-43). Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

### 3.4 Inspection of Stormwater Sewers

Based upon the periodic inspections, the maintenance needs of the Site's stormwater and sanitary sewers located within the limits of OU-2 will be evaluated and corrective actions will be taken when necessary. As part of this effort, the catch basin grates/ manhole covers will be removed, prior to performing an inspection of each structure. A brief summary of the key maintenance concerns and the respective corrective actions is provided below:

- Blockage Observed:

  The vegetation or debris causing the blockage will be removed.

- Damage Observed:

  If the integrity of the catch basin or manhole and associated piping is damaged, the damaged component will be repaired or replaced. In addition, the sediment and water within and downstream of the damaged section will be removed and properly characterized prior to off-site disposal.

Because there are no known point sources located within the limits of OU-2 and all stormwater from the Site ultimately discharges to Mill Creek, a State Pollution Discharge Elimination System (SPDES) permit is not applicable for OU-2. Any construction-related activities on the site are subject to the substantive requirements of SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-10-001).

### 3.5 General Site Inspection

Based upon the periodic inspections, the maintenance needs of the Site, in general, will be evaluated and corrective actions will be taken when necessary. A brief summary of the key maintenance concerns and the respective corrective actions are provided below:

- Site Locks Missing:

  Replacement locks will be installed.

- Significant Damage to Perimeter Fencing/ Gates Observed:

  The fencing/ gates will be repaired.

- Vandalism/ Trespassing/ Dumping Observed:

  The appropriate authorities (i.e., police and NYSDEC) will be contacted.

### 3.6 Site-Wide Monitoring and Inspection

Site-wide monitoring and inspections will be performed on a regular schedule at a minimum of once a year as described in Sections 3.2 through 3.5 above. Initially, these inspections will be performed on a quarterly basis. Site-wide inspections will also be performed after all severe weather conditions that may affect Engineering Controls or monitoring devices. During these inspections, an inspection form will be completed (Appendix J). The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection; and
- The site management activities being conducted including where appropriate, confirmation sampling and a health and safety inspection.

### 3.7 Monitoring Quality Assurance/Quality Control

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan ("QAPP") prepared for the site (Appendix K). Main Components of the QAPP include:

- QA/QC Objectives for Data Measurement
- Sampling Program:
  - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
  - Sample holding times will be in accordance with the NYSDEC ASP requirements.
  - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will not be collected for this Site.
- Sample Tracking and Custody
- Calibration Procedures:
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.

  - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.

- Analytical Procedures
- Internal QC and Checks
- QA Performance and System Audits
- Preventative Maintenance Procedures and Schedules
- Corrective Action Measures

Preparation of a Data Usability Summary Report ("DUSR"), which typically will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method will not be generated or provided.

### 3.8 Monitoring Reporting Requirements

During the post-remediation monitoring phase Periodic Review Reports shall be submitted. Forms and any other information generated during regular monitoring events and inspections will be kept on file, off-site with the Site Owner or Owner's Designee. All forms, and other relevant reporting formats used during the monitoring/ inspection events, will be (1) subject to approval by NYSDEC, where applicable, and (2) submitted with each Periodic Review Report, as specified in the Reporting Plan of this SMP. A summary of the monitoring program deliverables is provided in Table 5.

#### 3.8.1 Periodic Review Reports

A summary of all MI&M activities performed and corrective action measures identified during the reported period will be reported to NYSDEC on a periodic basis, at a minimum of once per year, in the Periodic Review Report described in Section 4.3 of this SMP.

# 4.0 INSPECTIONS, REPORTING, AND CERTIFICATIONS

## 4.1 Site Inspections

### 4.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 of this SMP. At a minimum, a site-wide inspection will be conducted annually. Inspections of remedial components will also be conducted whenever a severe condition has taken place, such as an erosion or flooding event that may affect the ECs.

### 4.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms for their respective system which are contained in Appendices I, and J. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records (as requested by the NYSDEC), including all media sampling data tables, generated for the site during the reporting period will be provided in electronic format in each respective periodic Review Report.

### 4.1.3 Evaluation of Records and Reporting

The results of the inspection and site monitoring observations/ data will be evaluated as part of the EC/IC certification to confirm that the:

- EC/ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented;
- Corrective actions are being performed, when applicable; and
- The site remedy continues to be protective of public health and the environment and is performing as designed in the Final Design Documents and FER.

### 4.2 Certification of Engineering and Institutional Controls

After the last inspection of the reporting period, a Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction.
- The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department.
- Nothing has occurred that would impair the ability of the control to protect the public health and environment.
- Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control.
- 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.
- If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document.
- Use of the site is compliant with the Declaration of Covenants and Restrictions.
- The engineering control systems are performing as designed and are effective.
- 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.
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form 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, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative] for the site.

The signed certification will be submitted on annual basis with the supporting, Periodic Review Report(s), described below, and other related documentation, if applicable, submitted during the

certification period. At a minimum, an annual Periodic Review Report will be submitted with each submitted annual certification.

### 4.3 Periodic Review Report

A Periodic Review Report will be submitted to the Department, at a minimum, every year, beginning eighteen months after the VCA Release is issued. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the OU-2 site described in Appendix A (Metes and Bounds). The report will be submitted within 45 days of the end of each certification period. The report will include:

- Results of the required site monitoring/ inspections and severe condition inspections, if applicable;
- A summary of maintenance activities performed, if any;
- All applicable inspection forms and other records (as requested by the NYSDEC) generated for the site during the reporting period in electronic format;
- The following information for each sampling event performed during the reporting period:
  - Date of event(s).
  - Personnel conducting sampling.
  - Description of the activities performed.
  - Type of samples collected (e.g., groundwater).
  - Copies of well sampling forms.
  - Data summary tables of contaminants of concern by media (groundwater), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. Copies of all laboratory data sheets and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format as an appendix to the Periodic Review Report.
  - A figure referencing well sampling locations.
- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the 100% Remedial Design and approved modifications documented in the FER for OU-2;

- Identification of any needed repairs or modifications;
- Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
- Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
- The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted electronically to the NYSDEC Regional Office in which the site is located.

### 4.4 Corrective Measures Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

**Table 1. Remedial Design Site Cleanup Objectives and Proposed Post-Remediation Criteria for On-site Reuse/ Import of Fill Materials Nassau Metals Corporation, Staten Island, New York**

| Parameter | Remedial Design Soil Cleanup Objectives | | Proposed Criteria for Post-Remediation On-site Re-use of Excavated Material/ Imported Fill Materials | |
|---|---|---|---|---|
| | | | Part 375 Restricted Use Standards[2] | |
| | NYSDEC RSCOs[1] | Part 375 Unrestricted Use Standards[1] | Protection of Public Health (Commercial Standard) | Protection of Groundwater |
| **VOCSs (ug/kg)** | | | | |
| 1,1,1-Trichloroethane | 800 | 680 | 500,000 | 680 |
| 1,1,2,2-Tetrachloroethane | 600 | -- | -- | -- |
| 1,1,2-Trichlorotrifluoroethane | 6,000 | -- | -- | -- |
| 1,2,3-Trichloropropane | 400 | -- | -- | -- |
| 1,1-Dichloroethane | 200 | 270 | 240,000 | 270 |
| 1,1-Dichloroethene | 400 | 330 | 500,000 | 330 |
| 1,2-Dichloroethane | 100 | 20 | 30,000 | 20 |
| 1,3-Dichloropropane | 300 | -- | -- | -- |
| 2-Butanone (MEK) | 300 | 120 | 500,000 | 120 |
| 4-Methyl-2-pentanone (MIBK) | 1,000 | -- | -- | -- |
| Acetone | 200 | 50 | 500,000 | 50 |
| Benzene | 60 | 60 | 44,000 | 60 |
| Carbon disulfide | 2,700 | -- | -- | -- |
| Carbon tetrachloride | 600 | 760 | 22,000 | 760 |
| Chlorobenzene | 1,700 | 1,100 | 500,000 | 1,100 |
| Chloroethane | 1,900 | -- | -- | -- |
| Chloroform | 300 | 370 | 350,000 | 370 |
| Dibromochloromethane | -- | -- | -- | -- |
| Ethylbenzene | 5,500 | 1,000 | 390 | 1,000 |
| Methylene chloride | 100 | 50 | 500,000 | 50 |
| Tetrachloroethene | 1,400 | 1,300 | 150,000 | 1,300 |
| Toluene | 1,500 | 700 | 500,000 | 700 |
| trans-1,2-Dichloroethene | 300 | 190 | 500,000 | 190 |
| Trichloroethene | 700 | 470 | 200,000 | 470 |
| Vinyl chloride | 200 | 20 | 13,000 | 20 |
| Xylenes (total) | 1,200 | 260 | 500,000 | 260 |
| **SVOCSs (ug/kg)** | | | | |
| 1,2,4-Trichlorobenzene | 3,400 | -- | -- | -- |
| 1,2-Dichlorobenzene | 7,900 | 8,400 | 500,000 | 1,100 |
| 1,3-Dichlorobenzene | 1,600 | 2,400 | 280,000 | 2,400 |
| 1,4-Dichlorobenzene | 8,500 | 1,800 | 130,000 | 1,800 |
| 2,4,5-Trichlorophenol | 100 | -- | -- | -- |
| 2,4-Dichlorophenol | 400 | -- | -- | -- |
| 2,4-Dinitrophenol | 200 | -- | -- | -- |
| 2,6-Dinitrotoluene | 1,000 | -- | -- | -- |
| 2-Chlorophenol | 800 | -- | -- | -- |
| 2-Methylnaphthalene | 36,400 | -- | -- | -- |
| 2-Methylphenol | 100 | 330 | 500,000 | 330 |
| 2-Nitroaniline | 430 | -- | -- | -- |
| 2-Nitrophenol | 330 | -- | -- | -- |
| 3,3'-Dichlorobenzidine | -- | -- | -- | -- |
| 3-Nitroaniline | 500 | -- | -- | -- |
| 4-Chloro-3-methylphenol | 240 | -- | -- | -- |
| 4-Chloroaniline | 220 | -- | -- | -- |
| 4-Methylphenol | 900 | -- | -- | -- |
| 4-Nitrophenol | 100 | -- | -- | -- |
| Acenaphthene | 50,000 | 20,000 | 500,000 | 98,000 |
| Acenaphthylene | 50,000 | 100,000 | 500,000 | 107,000 |
| Anthracene | 50,000 | 100,000 | 500,000 | 1,000,000 |

**Table 1. Remedial Design Site Cleanup Objectives and Proposed Post-Remediation Criteria for On-site Reuse/ Import of Fill Materials Nassau Metals Corporation, Staten Island, New York**

| Parameter | Remedial Design Soil Cleanup Objectives | | Proposed Criteria for Post-Remediation On-site Re-use of Excavated Material/ Imported Fill Materials | |
|---|---|---|---|---|
| | | | Part 375 Restricted Use Standards[2] | |
| | NYSDEC RSCOs[1] | Part 375 Unrestricted Use Standards[1] | Protection of Public Health (Commercial Standard) | Protection of Groundwater |
| **SVOCSs (ug/kg)** | | | | |
| Aniline | 100 | -- | -- | -- |
| Benzo[a]anthracene | 224 | 1,000 | 5,600 | 1,000 |
| Benzo[a]pyrene | 61 | 1,000 | 1,000 | 22,000 |
| Benzo[b]fluoranthene | 220 | 1,000 | 5,600 | 1,700 |
| Benzo[g,h,i]perylene | 50,000 | 100,000 | 500,000 | 1,000,000 |
| Benzo[k]fluoranthene | 220 | 800 | 56,000 | 1,700 |
| Bis(2-ethylhexyl) phthalate | 50,000 | -- | -- | -- |
| Butylbenzyl phthalate | 50,000 | -- | -- | -- |
| Chrysene | 400 | 1,000 | 56,000 | 1,000 |
| Dibenzo[a,h]anthracene | 14 | 330 | 560 | 1,000,000 |
| Dibenzofuran | 6,200 | 7,000 | 350,000 | 210,000 |
| Diethyl phthalate | 7,100 | -- | -- | -- |
| Dimethyl phthalate | 2,000 | -- | -- | -- |
| Di-n-butyl phthalate | 8,100 | -- | -- | -- |
| Di-n-octyl phthalate | 50,000 | -- | -- | -- |
| Fluoranthene | 50,000 | 100,000 | 500,000 | 1,000,000 |
| Fluorene | 50,000 | 30,000 | 500,000 | 386,000 |
| Hexachlorobenzene | 410 | 330 | 6,000 | 3,200 |
| Indeno[1,2,3-cd]pyrene | 3,200 | 500 | 5,600 | 8,200 |
| Isophorone | 4,400 | -- | -- | -- |
| Naphthalene | 13,000 | 12,000 | 500,000 | 12,000 |
| Nitrobenzene | 200 | -- | -- | -- |
| Pentachlorophenol | 1,000 | 800 | 6,700 | 800 |
| Phenanthrene | 50,000 | 100,000 | 500,000 | 1,000,000 |
| Phenol | 30 | 330 | 500,000 | 330 |
| Pyrene | 50,000 | 100,000 | 500,000 | 1,000,000 |
| **Metals (mg/kg)** | | | | |
| Aluminum | 33,000 | -- | -- | -- |
| Antimony | 4.3 (SB) | -- | -- | -- |
| Arsenic | 9.7 (SB) | 13 | 16 | 16 |
| Barium | 300 | 350 | 400 | 820 |
| Beryllium | 0.72 (SB) | 7.2 | 590 | 47 |
| Cadmium | 1 | 2.5 | 9.3 | 7.5 |
| Calcium | 35,000 | -- | -- | -- |
| Chromium | 15 (SB) | -- | -- | -- |
| Cobalt | 30 | -- | -- | -- |
| Copper | 365 (SB) | 50 | 270 | 1,720 |
| Iron | 17,000 (SB) | -- | -- | -- |
| Lead | 500 | 63 | 1,000 | 450 |
| Magnesium | 5,000 | -- | -- | -- |
| Manganese | 5,000 | 1600 | 10,000 | 2,000 |
| Mercury | 0.3 (SB) | 0.18 | 2.8 (See Note 3) | 0.73 (See Note 3) |
| Nickel | 34.9 (SB) | 30 | 310 | 130 |
| Potassium | 43,000 | -- | -- | -- |
| Selenium | 2 | 3.9 | 1,500 | 4 |
| Silver | -- | 2 | 1,500 | 8.3 |
| Sodium | 8,000 | -- | -- | -- |
| Thallium | -- | -- | -- | -- |
| Vanadium | 150 | -- | -- | -- |
| Zinc | 333 (SB) | 109 | 10,000 | 2,480 |

**Table 1. Remedial Design Site Cleanup Objectives and Proposed Post-Remediation Criteria for On-site Reuse/ Import of Fill Materials Nassau Metals Corporation, Staten Island, New York**

| Parameter | Remedial Design Soil Cleanup Objectives | | Proposed Criteria for Post-Remediation On-site Re-use of Excavated Material/ Imported Fill Materials | |
|---|---|---|---|---|
| | | | Part 375 Restricted Use Standards[2] | |
| | NYSDEC RSCOs[1] | Part 375 Unrestricted Use Standards[1] | Protection of Public Health (Commercial Standard) | Protection of Groundwater |
| **PCBs (ug/kg)** | | | | |
| Aroclor-1016 | -- | -- | -- | -- |
| Aroclor-1221 | -- | -- | -- | -- |
| Aroclor-1232 | -- | -- | -- | -- |
| Aroclor-1242 | -- | -- | -- | -- |
| Aroclor-1248 | -- | -- | -- | -- |
| Aroclor-1254 | -- | -- | -- | -- |
| Aroclor-1260 | -- | -- | -- | -- |
| Aroclor-1262 | -- | -- | -- | -- |
| Total PCBs: | 10,000 | 1,000 | 1,000 | 3,200 |
| **Pesticides (ug/kg)** | | | | |
| 4,4'-DDD | 2,900 | 3.3 | 92,000 | 14,000 |
| 4,4'-DDE | 2,100 | 3.3 | 62,000 | 17,000 |
| 4,4'-DDT | 2,100 | 3.3 | 47,000 | 136,000 |
| Aldrin | 41 | 5 | 680 | 190 |
| alpha-BHC | 110 | 20 | 3,400 | 20 |
| Chlordane (alpha) | 540 | -- | -- | -- |
| beta-BHC | 200 | 36 | 3,000 | 90 |
| **Pesticides (ug/kg)** | | | | |
| delta-BHC | 300 | 40 | 500,000 | 250 |
| Dieldrin | 44 | 94 | 1,400 | 100 |
| Endosulfan I | 900 | 2,400 | 200,000 (see note 4) | 102,000 |
| Endosulfan II | 900 | 2,400 | 200,000 (see note 4) | 102,000 |
| Endosulfan sulfate | 1,000 | 2,400 | 200,000 (see note 4) | 1,000,000 |
| Endrin ketone | -- | -- | -- | -- |
| Endrin | 100 | 14 | 89,000 | 60 |
| gamma-BHC (Lindane) | 60 | 100 | 9,200 | 100 |
| gamma-Chlordane | 540 | -- | -- | -- |
| Heptachlor epoxide | 20 | -- | -- | -- |
| Heptachlor | 100 | 42 | 15,000 | 380 |
| Methoxychlor | -- | -- | -- | -- |
| **Herbicides (ug/kg)** | | | | |
| 2,4-D | 500 | -- | -- | -- |
| 2,4,5-TP (Silvex) | 700 | 3,800 | 500,000 | 3,800 |
| 2,4,5-T | 1,900 | -- | -- | -- |

Notes:

[1] - All chemicals of concern were below NYSDEC RSCOs or Part 375 Unrestricted Use Standards for all imported fill materials.

[2] - Based on the lower of the Protection of Public Health Commercial Standard and Protection of Groundwater Standard.

[3] - Based on the lower of the values for mercury (elemental) or mercury (inorganic salts).

[4] - Based on the sum of endosulfan I, endosulfan II and endosulfan sulfate.

SB - Site Background

NYSDEC - New York State Department of Environmental Conservation

RSCOs - Recommended Soil Cleanup Objectives

-- No Standard available

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

**Table 2. Emergency and General Contact List Nassau Metals Corporation, Staten Island, New York**

| Contact Person/ Affiliation | | | Contact Number |
|---|---|---|---|
| **Emergency Response Agencies** | | | |
| **Affiliation** | | | **Contact Number** |
| Fire Department | | | 911 (Emergency)<br>(718) 494-4296 (Non-Emergency) |
| Police Department 123rd Precinct | | | 911 (Emergency)<br>(718) 948-9311 (Non -Emergency) |
| Ambulance | | | 911 |
| Staten Island University Hospital South Side 375 Seguine Avenue, Staten Island, New York | | | (718 ) 226-2000 |
| Concentra Occupational Clinic 595 Division Street, Elizabeth, New Jersey | | | (908 ) 289-5646 |
| National Response Center | | | (800) 424-8802 |
| New York State Spill Hotline | | | (800) 457-7362 |
| Center for Disease Control | | | (404) 639-3311 |
| Chemtrec | | | (800) 424-9300 |
| National Capital Poison Center | | | (800) 222-1222 |
| **Project Personnel** | | | |
| **Affiliation** | **Project Role** | **Name** | **Contact Number** |
| NYSDEC | Project Manager | Ioana Monteanu-Ramnic. P.E. | Office: (718) 482-4065 |
| Client<br>(Nassau Metals Corporation) | Project Manager | John Galasso, P.E. | Office: (908) 582-5382<br>Cell: (908) 307-2140 |
| Owner<br>(Best Equities LLC) | Project Manager | Jack Friedman | Cell: (917) 837-9581 |
| Qualified Professional<br>(Remedial Engineering, P.C.) | Certifying Engineer | Noelle M. Clarke, P.E. | Office: (631) 232-2600<br>Cell: (631) 807-6523 |
| Qualified Professional<br>(Roux Associates, Inc.) | Project Manager | Omar Ramotar, P.E. | Office: (631) 232-2600<br>Cell: (631) 553-9274 |
| Environmental Contractor<br>(To Be Determined) | Project Manager | To Be Determined | To Be Determined |
| Environmental Contractor<br>(To Be Determined) | Field Project Manager | To Be Determined | To Be Determined |
| Environmental Contractor<br>(To Be Determined) | Site Health and Safety Officer | To Be Determined | To Be Determined |

**Table 3. Monitoring Inspection Schedule**
**Nassau Metals Corporation, Staten Island, New York**

| Monitoring Program | Frequency[1] | Matrix | Analysis |
|---|---|---|---|
| Composite Cover System Monitoring | Quarterly for 1st two years[2] | Grass, stone, sand, pavement, concrete | Not applicable |
| Groundwater Monitoring | Quarterly for 1st two years[3] | Groundwater | Target Analyte List of Metals per USEPA Method 8010B/7471 |
| Inspection of Stormwater System | Quarterly for 1st two years[2] | Potential sediment accumulation | Not applicable |
| General Site Inspection | Quarterly for 1st two years[2] | Not applicable | Not applicable |

**Notes:**

1. The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH
2. After two years, continued monitoring is anticipated to occur on an annual basis
3. After two years, the need for continued monitoring will be evaluated

**Table 4. Summary of Metals and Field Parameters Detected in Groundwater During Baseline Event**
**Nassau Metals Corporation, Staten Island, New York**

| Parameter (Concentrations in µg/L) | NYSDEC AWQSGVs (µg/L) | **Sample Designation:** / **Sample Date:** | MW-101 7/7/2009 | MW-102 7/7/2009 | MW-103 7/7/2009 | MW-104 7/7/2009 | MW-105 7/7/2009 |
|---|---|---|---|---|---|---|---|
| Aluminum | -- | | 1,400 | 100 U | 100 U | 100 U | 100 U |
| Antimony | 3 | | 7.5 U | 7.5 U | 7.5 U | 7.5 U | 7.5 U |
| Arsenic | 25 | | 20 U | 20 U | 20 U | 20 U | 20 U |
| Barium | 1,000 | | 220 | 70 | 200 | 140 | 200 |
| Beryllium | 3 | | 4.0 U | 4.0 U | 4.0 U | 4.0 U | 4.0 U |
| Cadmium | 5 | | 2.0 U | 2.0 U | 2.0 U | 2.0 U | 2.0 U |
| Calcium | -- | | 63,000 | 61,000 | 37,000 | 110,000 | 61,000 |
| Chromium | 50 | | 25 U | 25 U | 25 U | 25 U | 25 U |
| Cobalt | -- | | 10 U | 10 U | 10 U | 10 U | 10 U |
| Copper | 200 | | 25 U | 25 U | 36 | 25 U | 70 |
| Iron | -- | | 930 | 150 U | 300 | 2,400 | 7,800 |
| Lead | 25 | | 5.0 U | 5.0 U | **40** | 5.0 U | **54** |
| Magnesium | -- | | 9,800 | 11,000 | 120,000 | 48,000 | 15,000 |
| Manganese | 300 | | **420** | 48 | 65 | **350** | **320** |
| Mercury | 0.7 | | 0.20 U | 0.20 U | 0.20 U | 0.20 U | 0.20 U |
| Nickel | 100 | | 10 U | 10 U | 10 U | 10 U | 18 |
| Potassium | -- | | 2,500 U | 2,500 U | 49,000 | 20,000 | 18,000 |
| Selenium | 10 | | 25 U | 25 U | 25 U | 25 U | 25 U |
| Silver | 50 | | 10 U | 10 U | 10 U | 10 U | 10 U |
| Sodium | 20,000 | | **42,000** | **35,000** | **210,000** | **170,000** | **120,000** |
| Thallium | 0.5 | | 5.0 U | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Vanadium | -- | | 25 U | 25 U | 25 U | 25 U | 25 U |
| Zinc | 2,000 | | 25 U | 25 U | 25 U | **2,200** | 1,600 |
| | | | | | | | |
| pH (Standard Units) | -- | | 6.86 | 6.48 | 8.4 | 7.4 | 6.81 |
| Conductivity (mS/cm) | -- | | 0.591 | 0.508 | 1.99 | 1.78 | 1.06 |
| Turbidity (NTU) | -- | | 80.1 | 11 | 3.1 | 8.4 | 1.4 |
| Dissolved Oxygen (mg/L) | -- | | 0.81 | 0.64 | 0.37 | 0.72 | 0.57 |
| Oxidation-Reduction Potential (mV) | -- | | 132 | 127 | -211 | -137 | -84 |
| Temperature (Celsius) | -- | | 21.7 | 19.27 | 23.56 | 18.62 | 18.88 |

**Notes:**

U - Not Detected
µg/L - Micrograms per liter
NYSDEC - New York State Department of Environmental Conservation
AWQSGVs - Ambient Water Quality Standards and Guidance Values
Bold - Exceeds NYSDEC AWQSGV
mS/cm - millisiemens per centimeter
NTU - Nephelometric turbidity units
mg/L - milligrams per liter
mV - millivolts

**Table 4. Summary of Metals and Field Parameters Detected in Groundwater During Baseline Event**
**Nassau Metals Corporation, Staten Island, New York**

| Parameter (Concentrations in µg/L) | NYSDEC AWQSGVs (µg/L) | **Sample Designation:** / **Sample Date:** | MW-106 7/7/2009 | MW-107 7/7/2009 |
|---|---|---|---|---|
| Aluminum | -- | | 100 U | 210 |
| Antimony | 3 | | 7.5 U | 7.5 U |
| Arsenic | 25 | | 20 U | 20 U |
| Barium | 1,000 | | 80 | 51 |
| Beryllium | 3 | | 4.0 U | 4.0 U |
| Cadmium | 5 | | **7.9** | 2.1 |
| Calcium | -- | | 67,000 | 72,000 |
| Chromium | 50 | | 25 U | 25 U |
| Cobalt | -- | | 10 U | 10 U |
| Copper | 200 | | 67 | 25 U |
| Iron | -- | | 1,600 | 700 |
| Lead | 25 | | **65** | 5.0 U |
| Magnesium | -- | | 12,000 | 6,000 |
| Manganese | 300 | | 130 | **990** |
| Mercury | 0.7 | | 0.20 U | 0.20 U |
| Nickel | 100 | | 30 | 25 |
| Potassium | -- | | 11,000 | 6,300 |
| Selenium | 10 | | 25 U | 25 U |
| Silver | 50 | | 10 U | 10 U |
| Sodium | 20,000 | | **45,000** | 8,900 |
| Thallium | 0.5 | | 5.0 U | 5.0 U |
| Vanadium | -- | | 25 U | 25 U |
| Zinc | 2,000 | | **2,100** | 870 |
| | | | | |
| pH (Standard Units) | -- | | 7.63 | 7.29 |
| Conductivity (mS/cm) | -- | | 0.711 | 0.459 |
| Turbidity (NTU) | -- | | 6.4 | 0.1 |
| Dissolved Oxygen (mg/L) | -- | | 0.68 | 1.35 |
| Oxidation-Reduction Potential (mV) | -- | | -144 | -23 |
| Temperature (Celsius) | -- | | 18.31 | 22.8 |

**Notes:**

U - Not Detected
µg/L - Micrograms per liter
NYSDEC - New York State Department of Environmental Conservation
AWQSGVs - Ambient Water Quality Standards and Guidance Values
Bold - Exceeds NYSDEC AWQSGV
mS/cm - millisiemens per centimeter
NTU - Nephelometric turbidity units
mg/L - milligrams per liter
mV - millivolts

**Table 5. Monitoring/ Inspection Report Submission Schedule**
**Nassau Metals Corporation, Staten Island, New York**

| Task | Reporting Frequency[1] |
|---|---|
| Preparation and Submission of Periodic Review Reports | Quarterly for 1st two years[2] |
| Preparation and Submission of Annual Certification | Annually |
| Preparation and Submission of Corrective Measures Plan | As needed |
| Preparation and Submission of Revisions to NYSDEC-approved SMP and referenced EWP, HASP, CAMP, QAPP and CCP | As needed |
| Preparation and Submission of Project-Specific SWPPP | As needed |

**Notes:**

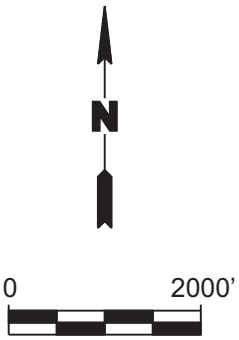
1. The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH.
2. After two years, the periodic submission of Periodic Review Reports is anticipated to occur on an annual basis concurrently with the submission of the annual certification.

**Legend:**

EWP - Excavation Work Plan
CAMP - Community Air Monitoring Plan
CCP - Construction Contingency Plan
HASP - Health and Safety Plan
QAPP - Quality Assurance Project Plan
SMP - Site Management Plan
SWPPP - Stormwater Pollution Prevention Plan


QUADRANGLE LOCATION


SOURCE:
USGS; 1966, ARTHUR KILL, NY-NJ
7.5 Minute Topographic Quadrangle




Title:

# SITE LOCATION MAP

SITE MANAGEMENT PLAN FOR OU-2

Prepared for:
NASSAU METALS CORPORATION
STATEN ISLAND, NEW YORK

ROUX
ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

| | | |
|---|---|---|
| Compiled by: O.R. | Date: 08OCT10 | FIGURE |
| Prepared by: G.M.. | Scale: AS SHOWN | 1 |
| Project Mgr.: O.R. | Project No.: 077002Y10 | |
| File: LUC0241403 | | |

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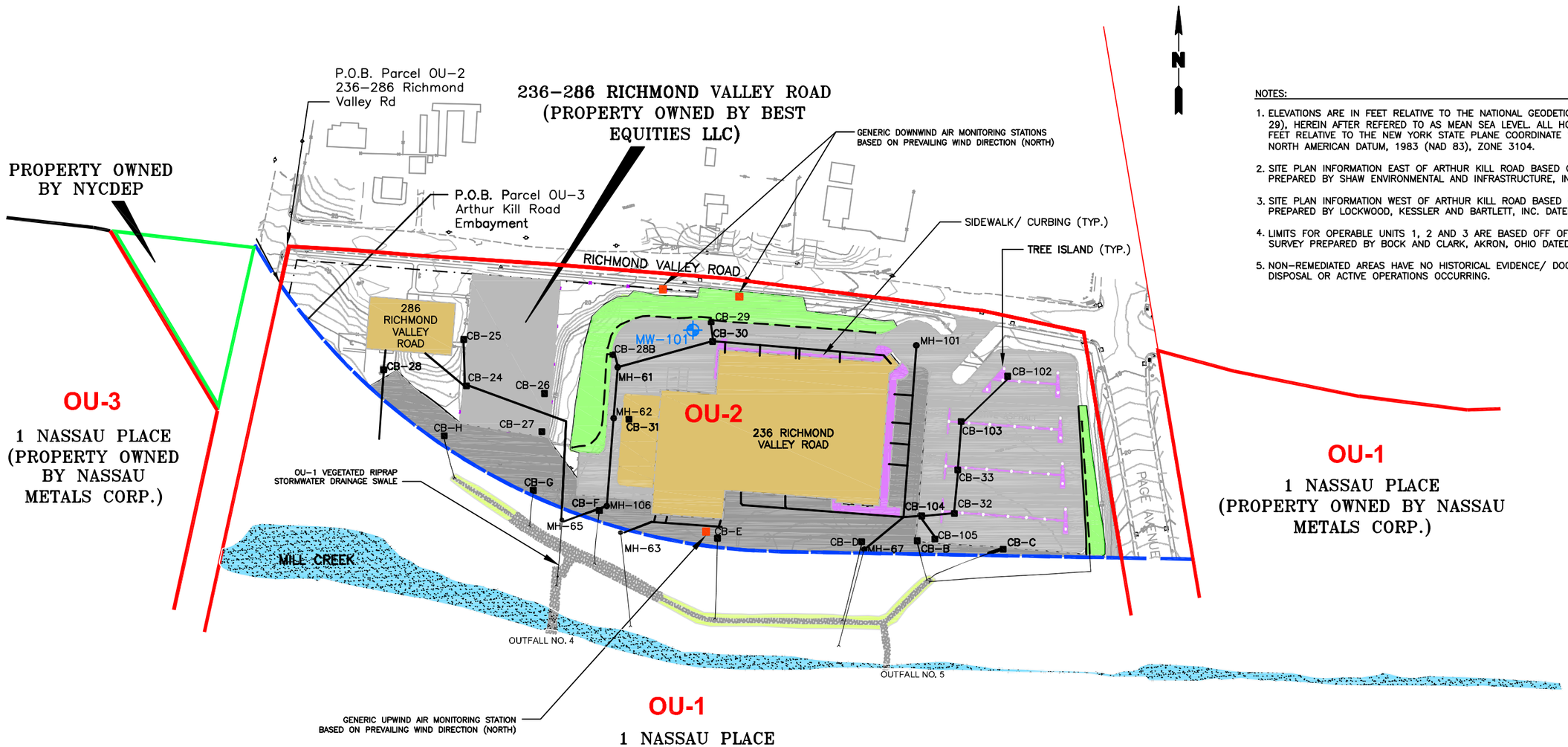


NOTES:

1. ELEVATIONS ARE IN FEET RELATIVE TO THE NATIONAL GEODETIC VERTICAL DATUM, 1929 (NGVD 29), HEREIN AFTER REFERED TO AS MEAN SEA LEVEL. ALL HORIZONTAL LOCATIONS ARE IN FEET RELATIVE TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND ZONE, NORTH AMERICAN DATUM, 1983 (NAD 83), ZONE 3104.
2. SITE PLAN INFORMATION EAST OF ARTHUR KILL ROAD BASED ON FINAL AS-BUILT PLANS PREPARED BY SHAW ENVIRONMENTAL AND INFRASTRUCTURE, INC. DATED JUNE 16, 2008.
3. SITE PLAN INFORMATION WEST OF ARTHUR KILL ROAD BASED ON FINAL AS-BUILT PLANS PREPARED BY LOCKWOOD, KESSLER AND BARTLETT, INC. DATED APRIL 25, 2009.
4. LIMITS FOR OPERABLE UNITS 1, 2 AND 3 ARE BASED OFF OF ALTA/ ASCM LAND TITLE SURVEY PREPARED BY BOCK AND CLARK, AKRON, OHIO DATED MAY 12, 2009.
5. NON-REMEDIATED AREAS HAVE NO HISTORICAL EVIDENCE/ DOCUMENTATION OF FILLING, WASTE DISPOSAL OR ACTIVE OPERATIONS OCCURRING.

LEGEND

- EXISTING BUILDING/STRUCTURE
- MINOR CONTOUR ELEVATION (DASHED WHERE INFERRED) – CONTOUR INTERVAL 1 FOOT (FEET ABOVE MEAN SEA LEVEL). CONTOURS NOT SHOWN WITHIN LIMITS OF CAPPED AREAS FOR CLARITY.
- 5 INDEX CONTOUR ELEVATION (DASHED WHERE INFERRED) – CONTOUR INTERVAL 1 FOOT (FEET ABOVE MEAN SEA LEVEL) CONTOURS NOT SHOWN WITHIN LIMITS OF CAPPED AREAS FOR CLARITY.
- EXISTING FENCELINE
- LIGHT POLE
- EXISTING RAILROAD TRACKS
- ELECTRIC POLE
- NEW FENCE GATE
- VCA SITE BOUNDARY/ OPERABLE UNIT LIMITS
- BOUNDARY BETWEEN OU-1 AND OU-2
- NEW FENCING
- MW-101 LOCATION AND DESIGNATION OF MONITORING WELL
- OU-2 OPERABLE UNIT DESIGNATION
- PRE-CONSTRUCTION BUILDING CAP
- PRE-CONSTRUCTION ASPHALT CAP
- POST-CONSTRUCTION COMPOSITE GCL CAP
- POST-CONSTRUCTION ASPHALT CAP
- POST-CONSTRUCTION CONCRETE CAP (SIDEWALK/ CURBING AND TREE ISLANDS)
- MH-67 MANHOLE LOCATION AND DESIGNATION AND ASSOCIATED SUBSURFACE PIPING
- CB-E CATCH BASIN LOCATION AND DESIGNATION AND ASSOCIATED SUBSURFACE PIPING
- OUTFALL LOCATION AND ASSOCIATED SUBSURFACE PIPING
- SUBSURFACE PERFORATED PIPING AND CLEANOUT

160' 0 160'

Title:

# OU-2 SITE PLAN

SITE MANAGEMENT PLAN FOR OU-2

Prepared For:
NASSAU METALS CORPORATION
STATEN ISLAND, NEW YORK

ROUX ASSOCIATES, INC.
*Environmental Consulting and Management*

| | | |
|---|---|---|
| Compiled by: O.R. | Date: 08OCT10 | FIGURE |
| Prepared by: O.R. | Scale: AS SHOWN | 2 |
| Project Mgr: O.R. | Project: 77002Y10 | |
| File: LUC0241407 | | |

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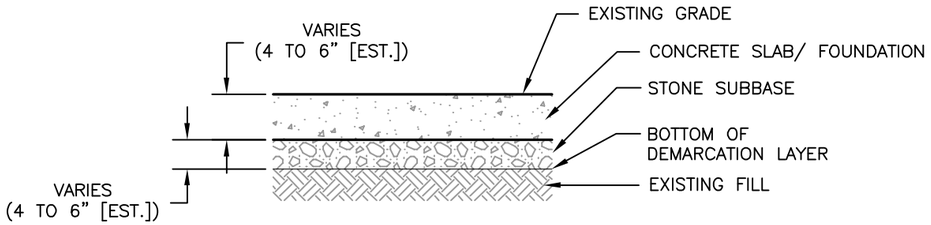
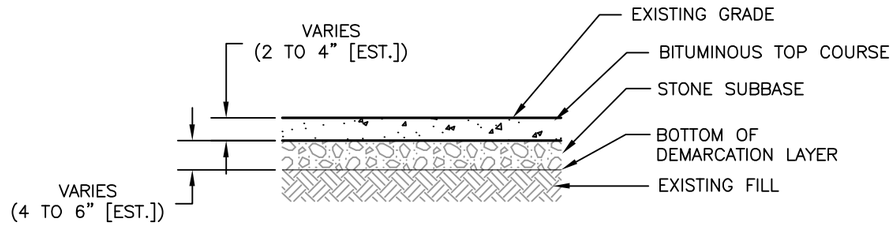


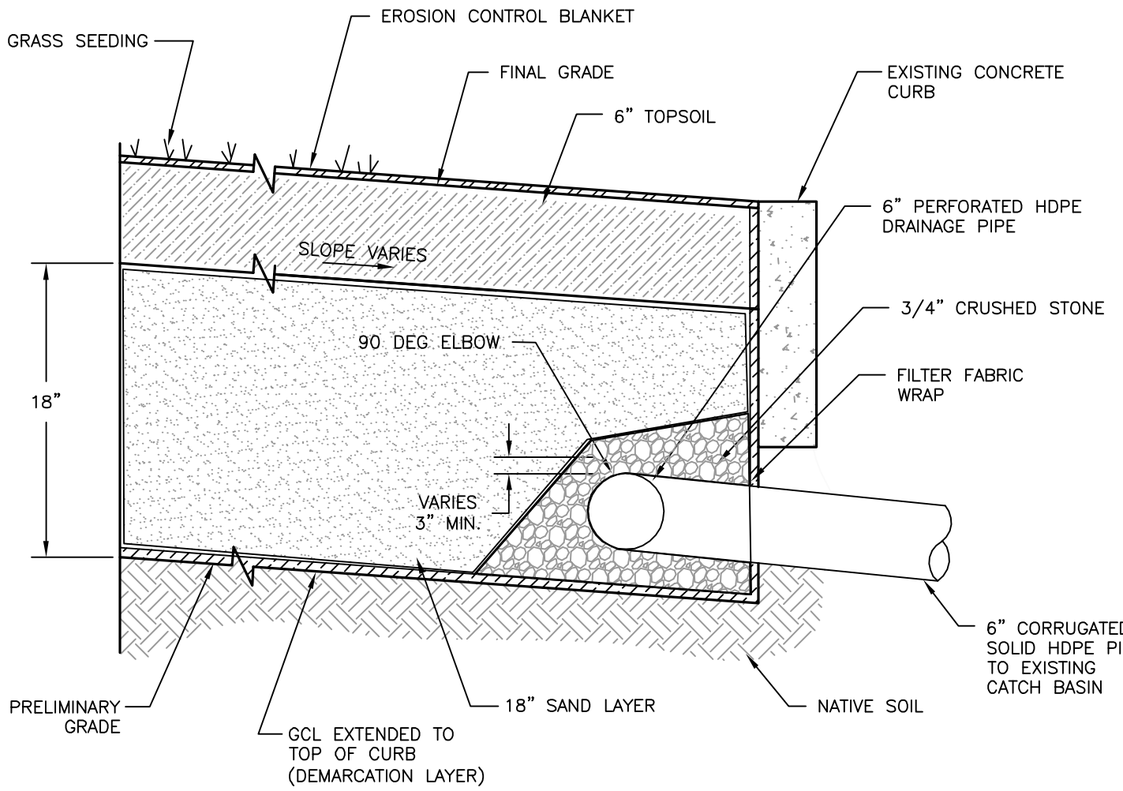

## 1 PRE-CONSTRUCTION BUILDING CAP

SCALE: NOT TO SCALE




## 2 PRE-CONSTRUCTION ASPHALT CAP

SCALE: NOT TO SCALE



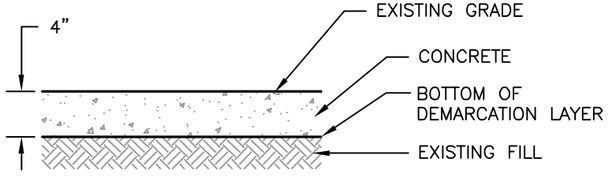

## 3 POST-CONSTRUCTION COMPOSITE GCL CAP

SCALE: NOT TO SCALE



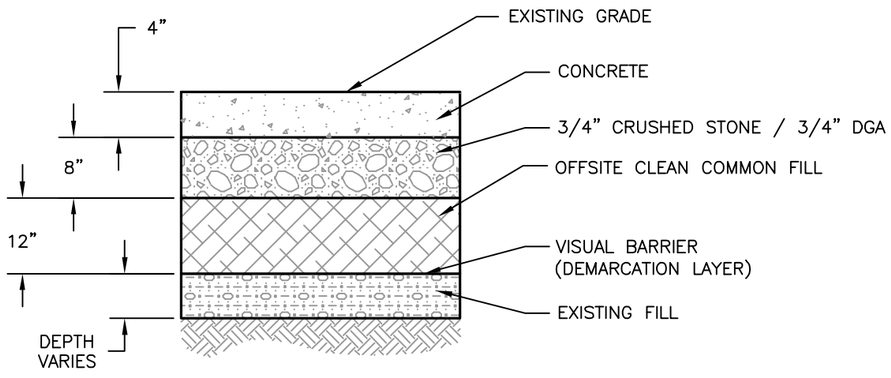

## 4 POST-CONSTRUCTION ASPHALT CAP

SCALE: NOT TO SCALE




## 5 POST-CONSTRUCTION CONCRETE CAP (TREE ISLAND COMPONENT)

SCALE: NOT TO SCALE




## 6 POST-CONSTRUCTION CONCRETE CAP (SIDEWALK/ CURBING COMPONENT)

SCALE: NOT TO SCALE

Title:

**COMPOSITE CAP CROSS-SECTIONS**

SITE MANAGEMENT PLAN FOR OU-2

Prepared For:

NASSAU METALS CORPORATION
STATEN ISLAND, NEW YORK

| | | | |
|---|---|---|---|
| ROUX ASSOCIATES, INC. *Environmental Consulting and Management* | Compiled by: O.R. | Date: 08OCT10 | FIGURE 3 |
| | Prepared by: O.R. | Scale: AS SHOWN | |
| | Project Mgr: O.R. | Project: 77002Y10 | |
| | File: LUC0241406 | | |

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## DIRECTIONS TO HOSPITAL

1. EXIT FACILITY AND HEAD SOUTH ON PAGE AVENUE.
2. TURN LEFT AND HEAD EAST ON HYLAN BOULEVARD.
3. TURN RIGHT AND HEAD SOUTH ON SEGUINE AVENUE. FOLLOW SIGNS TO EMERGENCY ROOM.

Title:

# HOSPITAL ROUTE MAP

HEALTH AND SAFETY PLAN

Prepared for:

NASSAU METALS CORPORATION
STATEN ISLAND, NEW YORK

ROUX
ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

| | | |
|---|---|---|
| Compiled by: O.R. | Date: 08OCT10 | FIGURE |
| Prepared by: G.M.. | Scale: AS SHOWN | 4 |
| Project Mgr.: O.R. | Project No.: 077002Y10 | |
| File: LUC0241404 | | |

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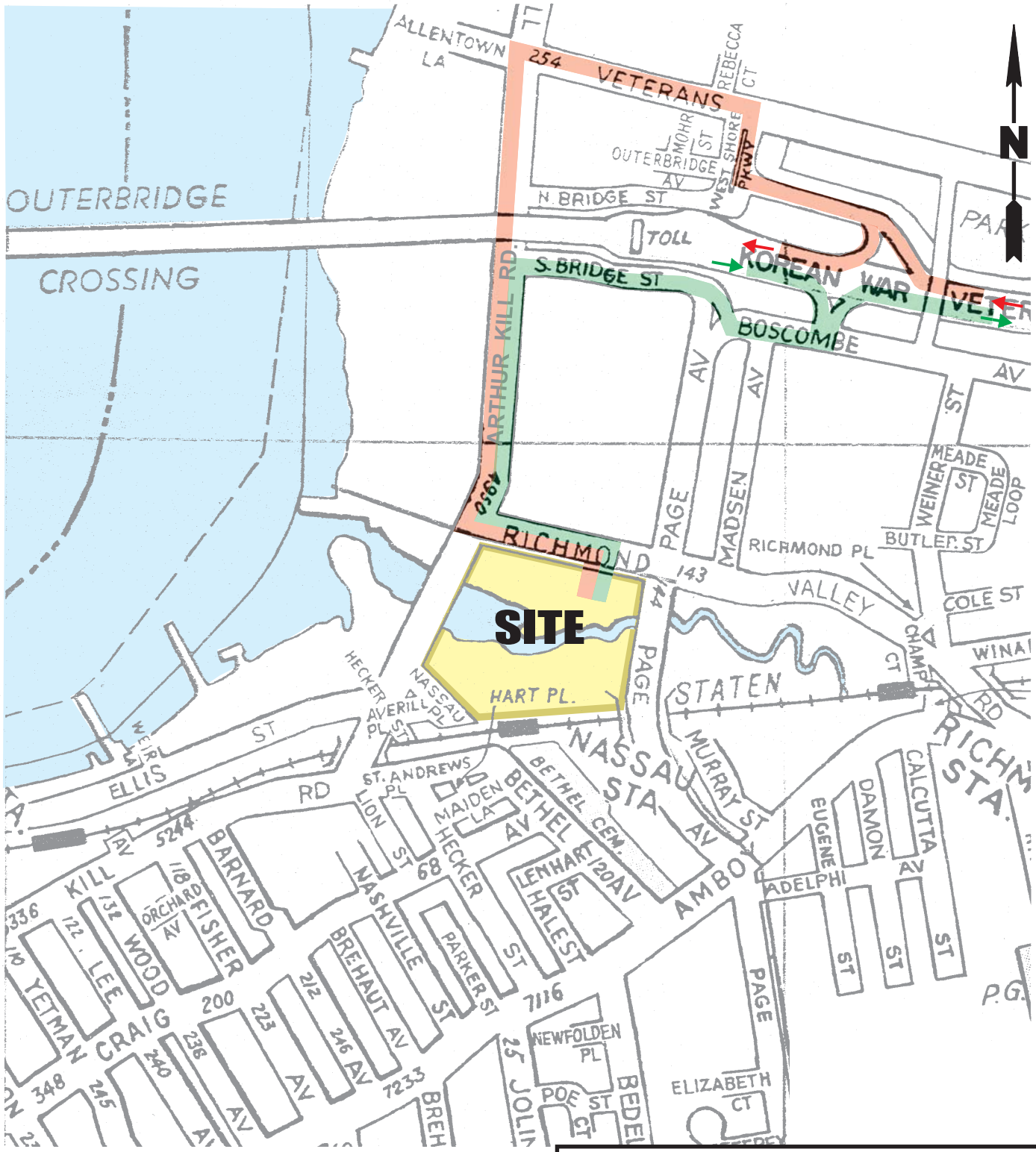


## LEGEND

- To/From West 440
- To/From East 440

Title:

# WASTE TRANSPORT ROUTES

SITE MANAGEMENT PLAN FOR OU-2

Prepared for:

NASSAU METALS CORPORATION
STATEN ISLAND, NEW YORK

ROUX ASSOCIATES, INC.
*Environmental Consulting & Management*

| | | |
|---|---|---|
| Compiled by: O.R. | Date: 08OCT10 | FIGURE |
| Prepared by: G.M.. | Scale: AS SHOWN | 5 |
| Project Mgr.: O.R. | Project No.: 077002Y10 | |
| File: LUC0241405 | | |

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