



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND REGION
FIVE POST OFFICE SQUARE, SUITE 100, BOSTON, MA 02109**

September 15, 2020

Bruce Thompson
de maximis, inc.
200 Day Hill Road, Suite 200
Windsor, CT 06095

Re: Approval of de maximis inc. report titled *Remedial Design Work Plan – Appendix F Post Removal Site Control Plan* (the “PRSCP”), dated August 2020.

Nuclear Metals, Inc. Superfund Site

Dear Mr. Thompson:

EPA, in consultation with the Massachusetts Department of Environmental Protection, has completed its review of the PRSCP, dated August 2020. The PRSCP was revised in response to EPA comments dated July 16, 2020. The PRSCP is subject to the terms and conditions specified in the Consent Decree (CD) for Remedial Design / Remedial Action (RD/RA) for the Nuclear Metals, Inc. Site, which has an effective Date of December 6, 2019.

EPA has reviewed the revisions to the PRSCP and finds that they are acceptable. Therefore, EPA approves the PRSCP.

If there is any conflict between the Performance Standards as stated in the PRSCP and the Performance Standards as stated in the CD and statement of work (SOW), the CD and SOW shall control.

Please do not hesitate to contact me at (617) 918-1339 or at smith.christopher@epa.gov should you have any questions in this regard.

Sincerely,

A handwritten signature in black ink, appearing to read "Christopher Smith".

Christopher Smith
Project Manager

NUCLEAR METALS, INC. SUPERFUND SITE

CONCORD, MASSACHUSETTS

Remedial Design Work Plan - Appendix F

Post Removal Site Control Plan (PRSCP)



de maximis, inc.

200 Day Hill Road, Suite 200

Windsor, CT 06095

August 2020

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1 Introduction

On October 17, 2019, the United States Environmental Protection Agency (USEPA) lodged a Consent Decree (CD) with the United States District Court for the District of Massachusetts Eastern Division in connection with Civil Action No. 19-12097-RGS. The CD was entered by the Court on December 6, 2019. The CD and the Statement of Work (SOW) provided as Appendix B to the CD describe the Remedial Design/Remedial Action (RD/RA) activities to be performed for the Nuclear Metals, Inc. (NMI) Superfund Site (Site) in Concord, Massachusetts. The RD/RA activities are to be undertaken by the Settling Defendants (SDs) to the CD, with funding contributions from the Settling Federal Agencies (SFAs).

To efficiently implement the remedy, the work will be divided into five RA projects, as outlined in Section 1.4 of the SOW. The five RA projects are:

- excavation and off-site disposal of contaminated sediments, underground drain lines and debris, and non-HB soils, or “Site-wide Soils and Sediments”;
- ISS of DU in HB soils and of DU and natural uranium in overburden and bedrock groundwater or “ISS”;
- containment of HB stabilized soils with a low-permeability vertical wall and horizontal sub-grade cover or “HB Containment”;
- ex-situ treatment of VOCs and 1,4-dioxane in groundwater; and
- 1,4-dioxane and VOCs in bedrock groundwater

1.1 Remedial Design Work Plan Overview

Section 3.1 of the SOW requires submittal of a *Remedial Design Work Plan* (RDWP) to summarize pertinent Site information, identify and describe the scopes and procedures for various pre-design investigations, describe the anticipated RD process, and discuss the RD-related deliverables and schedule.

As required by Section 3.3(a) of the SOW, Pre-Design Investigation Work Plans (PDI WPs) have been prepared for the three remedial components (Site-wide Soils and Sediments, ISS, and HB Containment). Hydraulic containment and ex-situ treatment of VOCs and 1,4-dioxane in groundwater as required by the Groundwater NTCRA is operating and does not require further PDI work to complete. However, the extent of 1,4-dioxane and VOCs in groundwater in the area up gradient from the extraction well needs further delineation. Separate PDI WPs were prepared for each remedial component, and are attached to the RDWP as follows:

- Site-wide Soils and Sediment PDI WP (Appendix A)
- ISS PDI WP (Appendix B)

- HB Containment PDI WP (Appendix C)
- 1,4-dioxane and VOCs in Groundwater (Appendix D)

Section 3.4(a) of the SOW requires performance of Treatability Studies (TS) to support the ISS component of the remedy. Separate studies are needed to evaluate and select treatment materials/reagents, for high concentration DU within the HB, low concentration DU outside the HB, and isotopically natural U in bedrock, respectively. In addition to reagent selection, each media will require evaluation to determine the best means to apply the selected reagent. The overall Treatability Study Work Plan (TSWP) is attached as Appendix E.

The RDWP will also include the following “Supporting Deliverables”:

- To continue the Post-Removal Site Control (PRSC) requirements established pursuant to the Building NTCRA, this “Post Removal Site Control Plan” (PRSCP) is provided as Appendix F.
- Health and Safety Plan (HASP) – Appendix G
- Emergency Response Plan (ERP) – Appendix H
- Sampling and Analysis Plan: Field Sampling Plan (FSP) – Appendix I
- Sampling and Analysis Plan: Quality Assurance Project Plan (QAPP) – Appendix J
- Site Wide Monitoring Plan (SWMP) – Appendix K
- Community Relations Support Plan (CRSP) – Appendix L

1.2 Purpose

The purpose of the Post Removal Site Control Plan (PRSCP) is to describe the activities necessary to ensure the effectiveness and integrity of the Non-Time-Critical Removal Action (NTCRA) for Buildings during the time between the completion of the Building NTCRA work and the start of the implementation of the final remedy at the Site.

The NTCRA included, but was not limited to, the removal of all contents from, followed by the demolition of, a two-story, five-section interconnected building (Buildings A, B, C, D, and E), a tank house, a hydrogen peroxide tank house, two gas cylinder storage huts, Tank House #2 and four “Butler” metal storage buildings, which had a combined footprint of approximately 185,000 square feet. In conjunction with demolition activities, a temporary cover was installed over the building footprint.

Paragraph 124 of the Building NTCRA Settlement Agreement and Administrative Order on Consent (AOC) requires post-removal site controls after completion of the Work required under that AOC. A PRSCP was prepared pursuant to Building NTCRA SOW Section IV (C) and approved May 31, 2017. Paragraph 10.b of the CD requires continued performance of the post-removal site controls. This PRSCP updates the previous plan.

The objectives of this document are to provide for the following PRSC activities:

- Routine inspection and maintenance for the proper function of the temporary cover;
- Site security;
- Site maintenance; and
- Procedures for documenting PRSC activities.

2 Site Description

A brief history of the site use is presented in Section 2.1. The Removal Action Work Plan for the NTCRA (*de maximis*, 2012) presents a detailed description of the site use and regulatory history. Section 2.2 provides information regarding the current site layout. An on-line collection of EPA-approved documents that provides a thorough data set for the Site can be accessed at www.nmisite.org.

2.1. Site History and Use

The Site is located on a 46.4-acre parcel at 2229 Main Street in the western portion of the Town of Concord, Middlesex County, Massachusetts (Figure 1). The Site formerly had eight interconnected buildings, smaller outbuildings, paved parking areas, a cooling water recharge pond, a former waste holding basin, and areas of fill and/or waste materials. The footprint of buildings at the Site was approximately 185,000 square feet (ft). The Site is bordered by Main Street (Route 62) and several commercial and residential properties to the north, residential properties to the east, and woodland and commercial/ industrial properties to the west. The Assabet River is situated approximately 300 ft north of the Site.

Past operations at the Site involved research and development in physical metallurgy, chemical metallurgy, engineering and product development, fuel element development and manufacture, and high temperature materials (NMI, 1961). A complete list of the examples of the activities and operations at the Site during this period (NMI, 1961) are presented in the RAWP.

The Massachusetts Department of Public Health Radiation Control Program terminated Starmet's Radiactive Material License on November 8, 2011.

2.2 Site Layout

Figure 2 illustrates the current site conditions by identifying the location of remaining utilities, office trailers, drainage structures and remaining building slabs.

3 PRSC Activities

The following describes the post-removal site control activities necessary to ensure the effectiveness and integrity of the removal action for the time between the completion of the NTCRA and the start of the implementation of the final remedy at the Site.

3.1 Routine Inspections and Maintenance of Site

Routine Inspections and maintenance will be performed at the Site during the PRSC period to maintain site control and security. The following site elements will be routinely inspected:

- Temporary cover over the building slabs
- Temporary cover over the holding basin
- Temporary cover over the landfill.
- Site fencing and gates
- Site security controls
- Site drainage structures

An EPDM rubber (ethylene propylene diene monomer (M-class) rubber) temporary cover was installed over the slabs of former Building A, B, C, D, E, B-1, B-2, B-3, B-4 and Tank House. To ensure that the temporary cover continues to function as intended, a plan that involves periodic inspections and maintenance has been developed. The periodic inspections and maintenance will be performed as described in this section to ensure the structural integrity of the temporary cover.

3.1.1 Inspection of Temporary Cover

Inspections of the temporary covers shall consist of walking the entire cover, seams and anchor points to observe the physical conditions of the cap. The temporary covers shall be inspected twice per year; once during the first week of April and then during the first week of October. Additional inspections may occur following severe weather events. The temporary cover shall be inspected for conditions that may affect the integrity of the cover. Such conditions may include, but are not limited to, the following:

- Physical damage such as tears or holes in the cover material;
- Inspection of seam integrity;
- Ensure anchor baton strips are secure;
- Debris deposits; and
- Vandalism

3.1.2 Repair of Temporary Covers

Should conditions develop that jeopardize the effectiveness or integrity of the temporary covers, measures shall be taken to address those conditions. The measures shall include any necessary repairs to ensure the structural integrity of the temporary covers. de maximis (or designee) will determine the scope and extent of repairs or maintenance to the temporary cover. Based on their routine inspections and maintenance, de maximis and/or designee shall make any repairs that are deemed necessary to ensure the functional operation of the temporary covers.

Ordinary repairs that may be required to ensure the integrity of the temporary covers may include, but are not limited to, the following:

- Repair physical damage such as tears or holes in the cover material;
- Repair seams;
- Re-secure anchor baton strips;
- Removes debris deposits; and
- Report vandalism to Concord Police

4 Site Fencing and Gates

Chain-link fencing fully encompasses the perimeter of the former building footprint. Access to the Site is provided by a swing gate along the driveway entrance at Main Street, and by several man-gates along portions of the perimeter fence.

4.1 Inspection of Fencing and Gates

Inspections of the Fencing and Gates shall consist of walking the entire perimeter fence to observe the physical conditions of the fencing and gates. The fencing and gates shall be inspected monthly. The fencing and gates shall be inspected for conditions that may affect the integrity of fencing and gates. Such conditions may include, but are not limited to, the following:

- Physical damage due to fallen tree branches;
- Physical damage such as tears or holes in the fence fabric material;
- Physical damage to the gates or locks;
- Unsecured gates
- Fence Fabric ties missing or loose;
- Vegetation growth; and
- Vandalism

4.1.1 Repair of Fencing and Gates

Should conditions develop that jeopardize the effectiveness or integrity of the perimeter fencing or gates, measures shall be taken to address those conditions. The measures shall include any necessary repairs to ensure the integrity of the fencing and gates. de maximis (or designee) will determine the scope and extent of repairs or maintenance to the fencing and gates. Based on their routine inspections and maintenance, de maximis or designee shall make any repairs that are deemed necessary to ensure the functional operation of the fencing and gates. Ordinary repairs that may be required to ensure the integrity of the fencing and gates may include, but are not limited to, the following:

- Repair physical damage such as damage due to fallen tree branches;
- Repair/replace damaged fence fabric;
- Re-secure fence fabric ties;
- Re-secure gates and/or replace locks;
- Removal of wooded vegetation; and
- Report vandalism to Concord Police

5 Site Security Controls

The goals of site security and maintenance measures are to limit access and thereby reduce the potential for human exposure to hazardous materials located at the Site, and to prevent unauthorized access to the property. Security measures implemented at the Site include:

- Access within the fenced portions of the Site is limited to only authorized personnel, which includes representatives of EPA, MassDEP, the Settling Defendants, and their respective consultants and contractors engaged for the RD/RA.
- As discussed above, chain-link fencing already fully encompasses the perimeter of the Site. Access to the Site is provided by a swing gate along the driveway entrance at Main Street, and by several man-gates along portions of the perimeter fence. These features will always be locked except when access is necessary for equipment and personnel to perform PRSC or RD/RA activities. All existing gates are secured and locked.
- Signage has been posted on all perimeter fencing to warn potential intruders against trespassing. Within the fence line, signs and placards that indicate the potential presence of hazardous substances/radiological controlled areas have been posted. In addition, yellow and magenta safety chains are present to demarcate areas where radiologically elevated surface soils were identified.
- Exterior lighting has been installed to provide a safe working environment and to aid in the detection of and to deter intruders.
- Electronic security and alarm systems have been installed on Site work trailers.
- Presence of site worker(s) during the work day.

- Snow removal
- Brush will continue to be cleared away from the perimeter fence, parking lot islands, and former building areas.

5.1 Inspection of Site Security Systems

Inspections of the Site Security Systems shall consist of physical inspection of all components of site security. Inspections will be performed monthly. Inspections may include, but are not limited to, the following:

- Physical damage due to perimeter fencing;
- Inspection of site postings/signage;
- Exterior lighting;
- Electronic Security System(s)
- Vegetation growth; and
- Vandalism

5.1.1 Repair of Site Security Systems

Should conditions develop that jeopardize the effectiveness or integrity of the Site Security Systems, measures shall be taken to address those conditions. The measures shall include any necessary repairs to ensure the integrity of the Site Security Systems. de maximis (or designee) will determine the scope and extent of repairs or maintenance to the Site Security Systems. Based on their routine inspections and maintenance, de maximis shall make any repairs that are deemed necessary to ensure the functional operation of the Site Security Systems. Ordinary repairs that may be required to ensure the integrity of the Site Security Systems may include, but are not limited to, the following:

- Repair physical damage to the perimeter fencing;
- Repair/replace posting/ signage;
- Replace lighting;
- Repair electronic security system(s);
- Removal of woody vegetation along perimeter fencing;
- Maintain vegetation- parking lot islands and former building areas;
- Following winter event, snow and ice will be removed from access roads, driveways, parking lots (near site trailers), and fire hydrants. Snow removal activities will allow for ready access for emergency vehicles and for access and egress from the Site of Site workers; and
- Report vandalism to Concord Police

5.1.2 Site Drainage Structures

The goal of Site Drainage Structure maintenance measures is to maintain proper drainage from parking lots, access driveways and run-off from the temporary cap located at the Site. Site Drainage Structure maintenance to be implemented at the Site include:

5.1.2.1 Inspection of Drainage Structures

Inspections of the Site Drainage Structures shall consist of physical inspection of all components of the drainage system. Inspections may include, but are not limited to, the following:

- Physical damage to drainage structures;
- Silt, vegetation and other debris deposition in the structures and outlets.

The drainage structures shall be inspected twice per year; once during the first week of April and then during the first week of October. Should conditions develop that jeopardize the effectiveness or integrity of the existing drainage systems, measures shall be taken to address those conditions. The measures shall include any necessary repairs to ensure the integrity of the drainage structures. de maximis (or designee) will determine the scope and extent of repairs or maintenance to the drainage structures. Based on their routine inspections and maintenance, de maximis shall make any repairs that are deemed necessary to ensure the functional operation of the drainage structures. Ordinary repairs that may be required to ensure the integrity of the fencing and gates may include, but are not limited to, the following:

- Removal of silt, vegetation and other debris from the control structures and outlets;
- Repair/replace damaged drainage structures;

6 Work Facilities & Site Utilities

Site work facilities and utilities to remain during PRSC period are shown on Figure 2. The following provides a summary of facilities and site utilities to be maintained during the PRSC:

Work Facilities:

- Double Wide office Trailer (2nd parking lot tier)
- Truck Scale
- Scale House Trailer
- 3 Sealand storage containers
- 2 Sheds
- 1 Bathroom facilities
- Asphalt roads and parking areas.

Site Utilities:

- Electrical- There are four temporary electrical services that provide service to work trailers and site lighting. These temporary electrical services will be maintained throughout the PRSC.
- Water Service- The existing water service (Pump House #1) will be maintained throughout the PRSC period. The existing potable water service will be utilized as a water supply to the site trailers and for use during PRSC activities.
- Telecommunications- Phone and internet service will be maintained to the office trailers

7 Field Documentation, Reporting and Record Keeping

Each inspection shall be documented using an inspection report form. An example of inspection and maintenance forms are provided in Attachment A. Digital photographs shall also be used to document each inspection. Inspection photographs may be vitally important. Over time, photographs may serve to provide a pictorial history of the evolving characteristics of the area of temporary cover and the surrounding areas. Photographs may be used to demonstrate that some observed conditions have existed for some time.

7.1 Reporting

An annual report shall be prepared and submitted to the EPA and the MassDEP. The report shall document the inspections, maintenance, and any repairs performed at the Site. The report will contain an assessment of the conditions of the temporary covers based on the visual observations. The report will also include a description of any deficient or unsafe conditions that have been identified. Recommendations, including schedules for additional inspections will be included in the report. Recommendations for corrective measures relating to design, construction, operation, observed conditions, maintenance, or inspection of the temporary covers will also be included in the annual report.

The report will include a copy of all inspection and maintenance forms. A record of the photo documentation will also be submitted with the annual report.

The records of all inspections, including the records of any actions taken to correct conditions found during inspections shall be maintained for a period of time defined by the requirements of the NTCRA.

8 Implementation Schedule and Responsibility

The following table summarizes the schedule of PRSC activities and responsibilities discussed above:



Task	Frequency	Responsibility
Inspection of the Temporary Covers	Twice per Year in April and October	O&M inc.
Site fencing and Gates	Monthly	O&M inc.
Site Security Controls	Monthly	de maximis/O&M inc.
Site Drainage Structures	Twice per Year in April and October	de maximis/O&M inc.



Figures

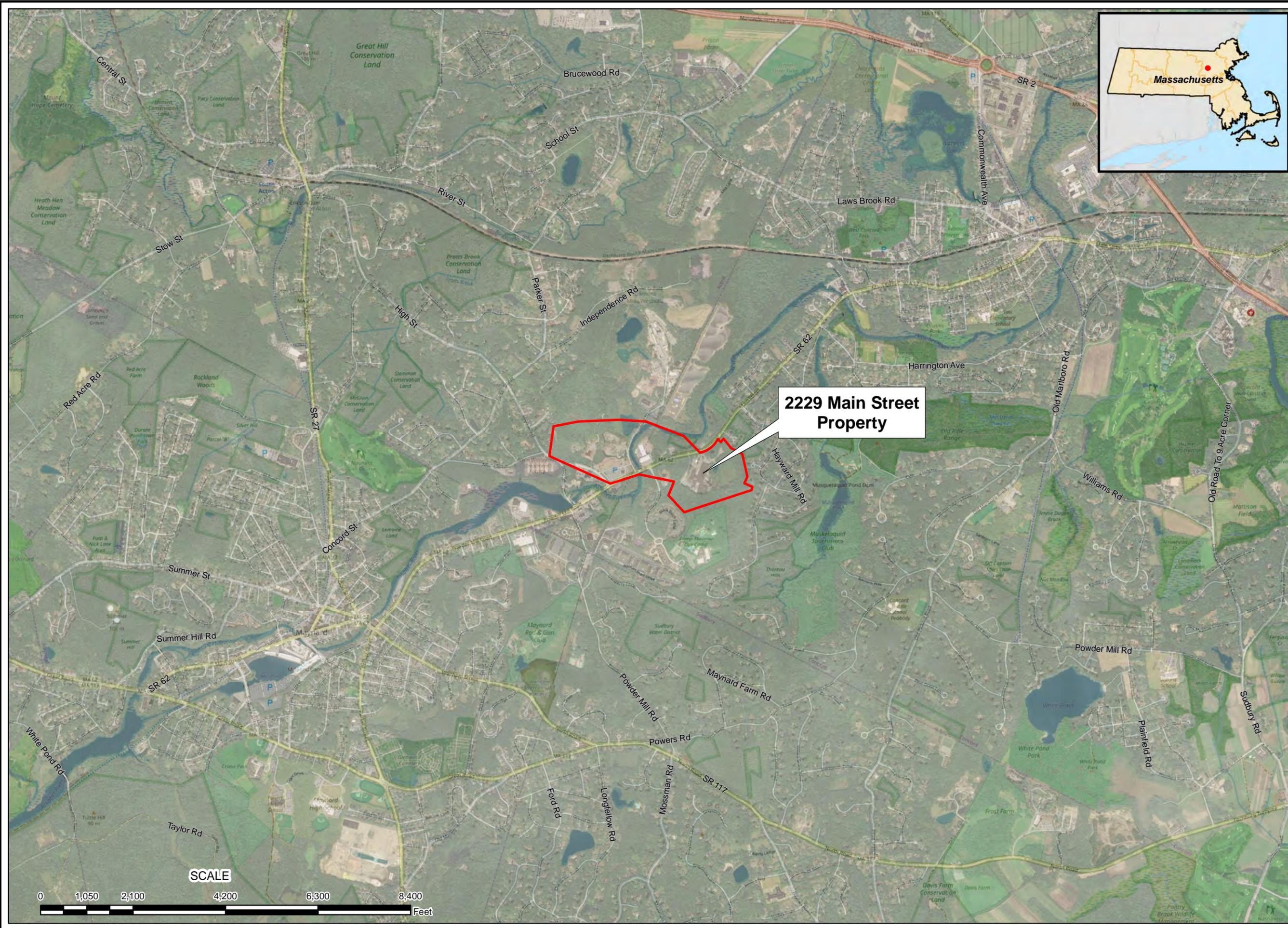


Figure 1

Site Location Map

Nuclear Metals, Inc. Site Remedial Design Work Plan
 Concord, Massachusetts

Description:
 2229 Main Street Property

Map Legend:
 Site Boundary

Spatial Projection:
 Coordinate System:
 MA State Plane Mainland
 FIPS Zone: 2001
 Units: US Survey Feet
 Datum: NAD83

Plot Info:
 File: Fig01_SiteLoc.mxd
 Project No.: 3252
 Plot Date: 11/19/2019
 Arc Operator: LS
 Reviewed by: HG



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Figure 2
POST REMOVAL
SITE CONDITIONS

Post Removal Site
Control Plan

Nuclear Metals Inc. (RD/RA)
Concord, Massachusetts

Description:
Source:
Basemap data including
Utility points and lines
provided by AMEC.
Details originated from
Site Engineering Drawings.

Map Legend:

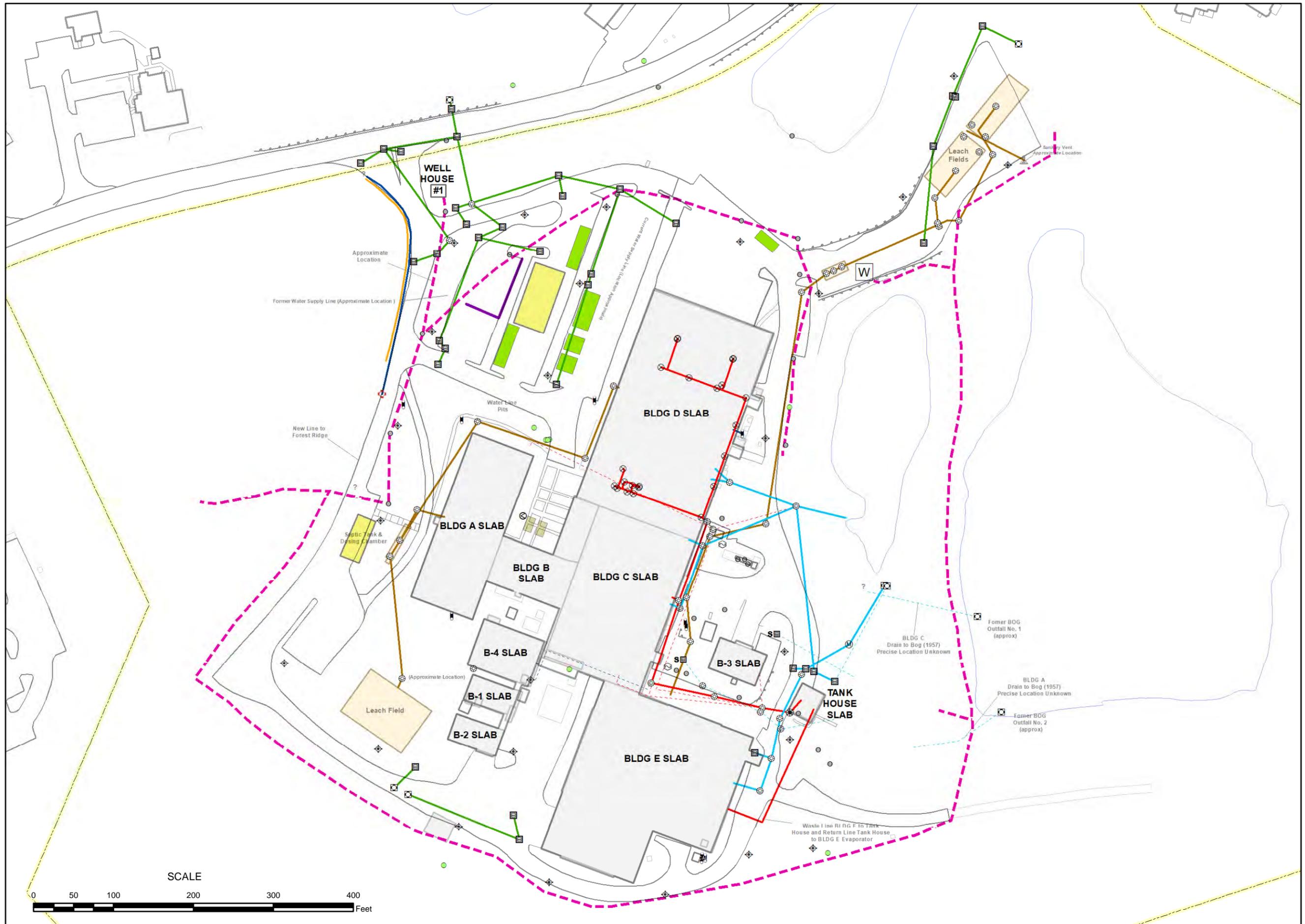
- Catch Basin
- Gas Gate
- Sealed Catch Basin
- Vent
- Diverter
- Drain Manhole
- Electric Manhole
- Floor Drain
- Hydrant
- Light
- Manhole
- Outfall
- Pole
- Valve
- Other or Unknown
- Overhead Electric Line
- Acid or Active Waste Water Drain
- Former Acid Drain
- Natural Gas
- Potable Water Supply/Fire
- Former Fire
- Sanitary
- Parking Drain
- Lines Drain to Cooling Water Pond
- Former Storm Drain
- Electric Ground Surface/Conduit
- Approximate Site Boundary
- Weather Station
- Trailer
- Former Buildings
- Septic System
- Storage Container/Shed
- Water Feature

Spatial Projection:

Coordinate System:
MA State Plane Mainland
FIPS Zone: 2001
Units: US Survey Feet
Datum: NAD83

Plot Info:

File: PRSCP_Post_Removal_Site_Conditions
Project No.: 3243
Plot Date: 8/6/2020
Arc Operator: LDS
Reviewed by: HG



R:\Projects\DEF\demax-15473252-NMI RD & RAD\data\Analysis\GISData\Projects\PRSCP_Figures\PRSCP_Post_Removal_Site_Conditions.mxd

Attachment A

Inspection/Maintenance

Inspector Name: _____

Date of Inspection: _____

No.	Inspection Item	Repair Needed? Y/N/NA	Date Completed	Comments, Notes, Photo Reference, Repair etc.
1.1	Temporary Cover- Building Slabs			
1.1.a.	Physical damage			
1.1.b.	Seam integrity			
1.1.c.	Anchor baton strips are secure			
1.1.d.	Vandalism			
1.2	Temporary Cover- Holding Basin			
1.2.a.	Physical damage			
1.2.b.	Seam integrity			
1.2.c.	Anchor baton strips are secure			
1.2.d.	Vandalism			
1.3	Temporary Cover- Landfill			
1.3.a.	Physical damage			
1.3.b.	Seam integrity			
1.3.c.	Anchor baton strips are secure			
1.3.d.	Vandalism			



2.0	Site Fencing & Gates			
2.a	Physical damage due to fallen tree branches;			
2.b	Damage such as tears or holes in the fence fabric material			
2.c	Physical damage to the gates or locks			
2.d	Unsecured gates			
2.e	Fence Fabric ties missing or loose			
2.f	Vegetation growth			
2.g	Vandalism			
No.	Inspection Item	Repair Needed?	Date Completed	Comments, Notes, Photo Reference, Repair etc.
		Y/N/NA		
3.0	Site Security Systems			
3.a	Physical damage due to perimeter fencing			
3.b	Inspection of site postings/signage			
3.c	Exterior lighting			
3.d	Vegetation growth			
3.e	Vandalism			
4.0	Site Drainage Structures			



4.a	Physical damage to drainage structures			
4.b	Silt, vegetation and other debris deposition in the structures and outlets			