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 H Emergency Response Plan* (the "ERP"), 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 ERP, dated August 2020. The ERP was revised in response to EPA comments dated July 16, 2020. The ERP 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 ERP and finds that they are acceptable. Therefore, EPA approves the ERP.

If there is any conflict between the Performance Standards as stated in the ERP 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,

Christopher Smith
Project Manager

NUCLEAR METALS, INC. SUPERFUND SITE

CONCORD, MASSACHUSETTS

Remedial Design Work Plan – Appendix H

Emergency Response Plan (ERP)

Prepared by:

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

August 2020

Contents

Abbreviations and Acronyms

ABC	Airway, Breathing, and Circulation
AFD	Acton Fire Department
ARAR	Applicable or Relevant and Appropriate Requirements
CCA	Chemically Controlled Area
CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERT	Community Emergency Response Team
CFD	Concord Fire Department
CFR	Code of Federal Regulations
CPR	Cardiopulmonary Resuscitation
CRSP	Community Relations Support Plan
DU	Depleted uranium
EE/CA	Engineering Evaluation/Cost Analysis
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
ERP	Emergency Response Plan
FSP	Field Sampling Plan
HASP	Health and Safety Plan
HAZMAT	Hazardous Materials
HMEP	Hazardous Materials Emergency Plan
HSM	Health and Safety Manager
HSO	Health and Safety Officer
ICC	Incident Control Center

LEPC	Local Emergency Planning Committee
MassDEP	Massachusetts Department of Environmental Protection
MSDS	Material Safety Data Sheet
NFPA	National Fire Protection Association
NMI	Nuclear Metals, Inc.
NTCRA	Non-Time Critical Removal Action
OSHA	Occupational Safety and Health Agency
PC	Project Coordinator
POP	Project Operations Plan
PPE	Personnel Protective Equipment
QAPP	Quality Assurance Project Plan
RAWP	Remedial Action Work Plan
RCA	Radiation Controlled Area
RD/RA	Remedial Design/ Remedial Action
RQ	reportable quantity
RSO	Radiation Safety Officer
Site	Nuclear Metals, Inc. Superfund Site in Concord, MA
SOW	Statement of Work
SPM	Site Project Manager

USEPA	United States Environmental Protection Agency

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. RA Projects 1) – 4) below are outlined in Section 1.4 of the SOW. The need for RA Project 5) was identified during the Groundwater NTCRA. The five RA projects are:

1) excavation and off-site disposal of contaminated sediments, underground drain lines and debris, and non-HB soils, or "Site-wide Soils and Sediments";

2) ISS of DU in HB soils and of DU and natural uranium in overburden and bedrock groundwater or "ISS";

3) containment of HB stabilized soils with a low-permeability vertical wall and horizontal sub-grade cover or "HB Containment";

4) hydraulic containment and ex-situ treatment of VOCs and 1,4-dioxane in groundwater; and,

5) 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 bedrock 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 Bedrock 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, a "Site Maintenance and Inspection Plan" (SMIP) 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

1.2 Purpose

The purpose of the ERP is to minimize hazards to human health or the environment from fires, releases of hazardous constituents or other emergency conditions. This plan describes the actions personnel will take in response to emergencies or unplanned releases at the Site. These actions include predetermined arrangements with local, state and federal emergency responders to coordinate emergency services, identification of the roles and responsibilities of the emergency coordinator and alternates. As part of the ERP, necessary supplies and onsite

emergency equipment are identified as are methods for stop work and emergency evacuation planning.

1.3 Format of Document

This document is organized in the following sections:

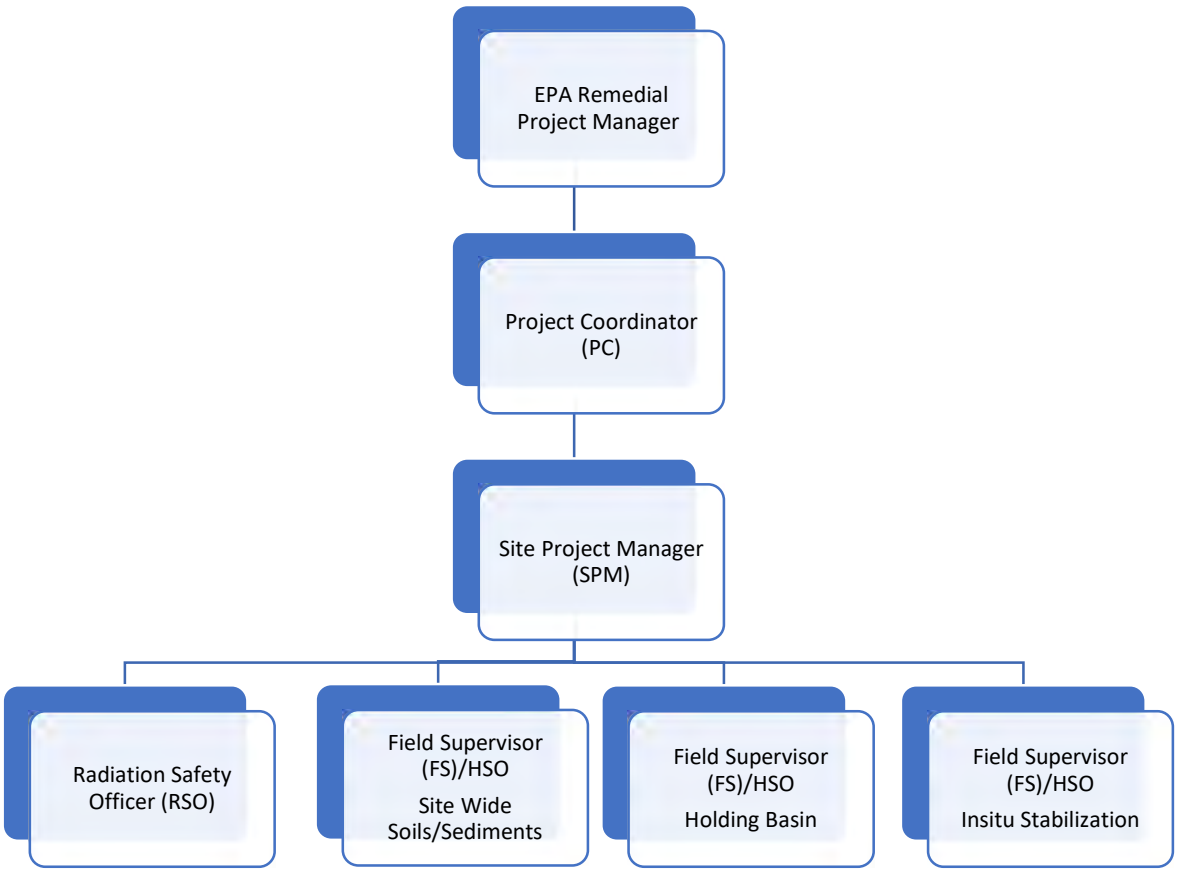
- **Section 1 – Introduction:** Describes the purpose, scope, and organization of this document;
- **Section 2 –Project Personnel:** Summarizes the responsibilities of key personnel and outlines the chain of command between each in the event of an emergency;
- **Section 3 – Types of Emergencies and Response Procedures:** Summarizes what types of emergencies are deemed possible at the site and outlines specific response actions to be completed in the event of an emergency;
- **Section 4 – Emergency Decontamination Measures:** Outlines procedures to be followed in the event of an emergency within a Radiation Controlled Area (RCA) or Chemically Controlled Area (CCA);
- **Section 5 – Evacuation Procedures:** Summarizes steps to be initialized if an emergency results in the need for a total evacuation or need for a Public Evacuation;
- **Section 6 – Evacuation Routes**: Outlines the standards to be implemented in work areas to maintain proper Emergency Egresses;
- **Section 7- Emergency Response Information and Personnel:** Provides a summary of the public departments involved in the Emergency Response process and outlines the required information to be shared between the departments;
- **Sections 8-12-** Summarizes additional steps and procedures to be implemented included:
    - **Emergency Response Equipment**
    - **Hazard Identification, evaluation and vulnerability analysis**
    - **Spill Potential Analysis**
    - **Storage and Disposal Plans**
    - **Facility Self-Inspection Checklists, Training Information and Meeting Logs;**
- **Section 13- Communication of ERP Contents:** Summarizes tasks that the Field Supervisor/Health and Safety Officer (FS/HSO) will perform prior to commencement of field operations;
- **Section 14- Reporting of Emergency Events:** Outlines requirements for reporting to the Agencies in the event an emergency situation arises at the Site.

2. Project Personnel

All site personnel will be familiarized with the location of the nearest working telephone or radio communication device, and the nearest emergency exit. A list of emergency telephone numbers (Table 2-1) as well as a copy of a map with the route to the nearest exit will be posted in each subcontractor's office.

Sections 2.1 through 2.5 describe the site communication chain of command and the responsibilities of key project personnel. Figure 2-1 is an organizational chart that illustrates the chain of command.

Figure 2-1 Organizational Chart



2.1 Site Communication Lines of Command

In accordance with the procedures set forth in the HASP, all members of each subcontractor will report to their company's Field Supervisor/Health and Safety Officer (FS/HSO). The Field Supervisors will also act as the Health and Safety Officer (HSO) for all work being performed under their firm's scope. FS/HSOs will be responsible to report to the Site Project Manager (SPM) for any manners involving health and safety. In addition to contractor specified FS/HSOs, a Radiation Safety Officer (RSO) will work in conjunction with the contractor FS/HSO in order to monitor health and safety measures that pertain to radiological contaminants and their handling. As with the FS/HSO, the RSO will report directly to the SPM for health and safety concerns.

The responsibilities of specific project individuals and coordination with the Town of Concord Police and Fire Departments responding personnel are defined as follows.

2.2 Project Coordinator

The PC is responsible for administration of all actions by Respondents required by the Settlement Agreement. The PC is responsible for supervising and directing the implementation of the Work. The PC coordinates activities with EPA's remedial project manager and is the interface between the community and the Respondents on matters related to the RD/RA.

2.3 Site Project Manager

The SPM reports to the PC and is responsible for overseeing all activities at the Site, including interacting with the regulatory agencies, preparing reports and work plans, and processing and evaluating data. The SPM will establish project needs and monitor work in progress to ensure that final deliverables adhere to requirements. The SPM's responsibilities include ensuring that all work incorporates the HASP requirements into work plans and ensures support is provided for personnel engaged in safety related tasks. The SPM will coordinate any addenda or modifications of this ERP.

The SPM or designee will be present at the Site at all times during the performance of on-site activities and is responsible for directing the daily physical work activities. The SPM is the on-site individual responsible to implement emergency procedures and determine appropriate response actions. Depending upon the circumstances and time permitting, the SPM will review proposed response actions with the FS/HSO and/or RSO. Specific responsibilities for the SPM include:

- Evaluating and assessing emergency incidents or situations;

- Assigning personnel and coordinating emergency response activities;
- Communicating the specific hazards to field personnel;
- Notifying the FS/HSO, RSO, and PC of an emergency situation;
- Notifying appropriate emergency response agencies; and
- Evaluating the safety of personnel in the event of an emergency and coordinating any necessary evacuation.

2.4 Field Supervisors/ Health and Safety Officer (FS/HSO)

Due to the nature of the work, subcontractor field supervisors will also be responsible for the role of Health and Safety Officers for their employees and firms working under them. FS/HSOs have the principal work area safety responsibility for their personnel. FS/HSOs ensure this responsibility is effectively carried out by integrating safety procedures into work plans and communicating safety requirements to workers each day. FS/HSOs monitor work to ensure work is being conducted as planned and in a safe manner.

The FS/HSO reports to the SPM and will work in coordination with the RSO and SPM to facilitate implementation of the requirements of this HASP. The contractors' site safety officer's name and contact information is listed in Table 3-1. The FS/HSO is responsible for assessing work area safety procedures and is a technical consultant to the project, SPM and workers. The FS/HSO shall perform field observations to ensure workers are implementing work in accordance with this HASP and State and Federal Safety regulations, assist with the development and presentation of safety briefings, review JSAs and work plans, and complete Loss and Near-Loss investigations as needed. The FS/HSO will confirm worker training requirements are satisfied prior to personnel to entering the site.

The FS/HSO will focus on health and safety issues related to the non-radiological portions of the HASP. The FS/HSO shall review radiological work plans as prepared by the RSO to ensure both radiological and traditional health and safety requirements are achieved.

The FS/HSO can recommend to the SPM and PC that Site access of individual Site personnel or companies be restricted or eliminated for non-compliance with this HASP or other health and/or safety reasons.

The FS/HSO has direct responsibility for adherence to the designated safety procedures in an emergency response situation. The FS/HSO shall account for on-site personnel during an

evacuation or serious emergency and report to the SPM that all personnel are accounted for or if personnel are missing. In the event of evacuation, see Section 8 and Section 12 for further information on evacuation procedures and communication requirements.

Emergency communication by the FS/HSO may require the following actions:

- Coordination with outside emergency services and emergency response personnel (communicating with the SPM and PC as soon as practical following an emergency event).
- Establish and demonstrate viability of two-way radio communications and site alarms or other procedures capable of warning site personnel and summoning assistance, e.g., air horn, site radio notification, etc.
- If an accident occurs, the FS/HSO shall immediately investigate what occurred and provide a copy of the Incident Report to the SPM. The Incident Report shall include, at a minimum, a solution that shall be implemented to prevent or minimize similar incidents from re-occurring on-site. The FS/HSO may use all site incidents as "lessons learned" that may be reviewed during the morning tailgate safety briefings.

2.5 Site Radiation Safety Officer

The RSO reports to the SPM and serves as an independent assessor of work area radiological safety and acts as a technical consultant to the project PC, SPM, FS/HSOs and workers. The RSO assists each FS/HSO in integrating radiological safety requirements into their work plans and daily briefings. The RSO is responsible to work with the FS/HSO for the delivery of site-specific radiological safety training and approving personnel as ready for site work based on their medical surveillance and training documentation.

For non-radiological work issues, the RSO will work with the FS/HSO to incorporate safety requirements into radiological work plans such that both radiological and traditional safety requirements are achieved. The RSO can recommend to the SPM and PC that access to the Site of individual personnel be restricted or eliminated for health and/or safety reasons.

3. Types of Emergencies and Response Procedures

3.1 Medical

Emergency medical services at the NMI Property are provided by the Concord Fire Department (CFD). Emergency medical services at the Groundwater Treatment Building are provided by Acton Fire Department (AFD). The closest hospital is:

Emerson Hospital (approximately 3 miles away)

133 Old Road to Nine Acre

Concord, MA 01742

(978) 369-1400

Emerson Hospital provides 24-hour emergency medical care along with the services of a critical care center. A map of directions to Emerson Hospital is presented below:

This map is included in Figure 3-1, which is designed to be a printout to be posted in on-site buildings.

At least one person qualified to perform first aid will be present on the Site at all times during work activity. Persons trained in first aid will have earned a certificate (or equivalent) in first-aid training from the American Red Cross. Additional training for re-certification will be performed as needed to ensure trained worker's certifications do not expire. First aid will be rendered to any person injured while on the Site as appropriate.

All accidents will be reported initially to the SPM and then subsequently to the FS/HSO, the RSO and to the PC. Specific responses for minor and major injuries are presented in Sections 3.1.1 and 3.1.2.

3.1.1 Minor Injuries

Minor injuries will be treated at the Site by qualified First-Aid/CPR (cardiopulmonary resuscitation) providers and if additional treatment beyond first aid is required, the injured personnel will be transported to Emerson Hospital. Accidents involving first-aid only will require entry into a first-aid log book.

3.1.2 Major Injuries

In the case of serious or life-threatening emergencies, Emergency Medical Services (EMS) personnel will be notified by dialing "9-1-1." The injured person will then be transported to medical personnel for further examination and/or treatment. The preferred transport method is a professional emergency transportation service. When professional emergency transportation is not readily available or would result in excessive delay, other transport may be warranted. Under no circumstances will injured persons transport themselves to a medical facility for emergency treatment.

When an injury occurs in a work area, provisions for decontamination of the victim will be made. Life-threatening conditions may preclude normal decontamination procedures. An individual knowledgeable about the hazards of the Site will accompany the injured party to the medical facility to provide detail to medical personnel.

Injuries involving hospitalization or treatment beyond first-aid will be reported to the SPM by telephone followed up with a written Incident Report to the PC RSO. All United States Occupational Safety and Health (OSHA) recordable accidents will be recorded by the FS/HSO on the appropriate OSHA 300 Form. If applicable, the OSHA 300A Forms will be posted in a conspicuous location by the HSO as required by 29 Code of Federal Regulations (CFR) 1904.

3.2 Fire / Explosion

Each piece of mobile equipment on-site, as well as each temporary jobsite trailer, should have at least one appropriate size and type of fire extinguisher located on/in it for use in an emergency.

A need for Class D (metal powders) extinguishers on site is not expected. However, two 30lb Class D extinguishers will be stored on site, in the event that any unoxidized DU materials or titanium powders are unearthed during excavation.

Monthly inspections of all fire extinguishers should be performed by qualified personnel, and documentation retained for all inspections.

3.2.1 Response Procedures for Site Fires

In the event of a fire or explosion, or imminent danger of fire or explosion, the Town of Concord Police and Fire Departments and/or Acton Police and Fire Departments will be notified immediately. If it is safe to do so, site personnel, under the direction of the SPM, will use available equipment to remove and/or isolate flammable or other hazardous materials which may contribute to the fire.

Upon arrival of the Police and Fire Department emergency responders, the SPM and FS/HSOs and/or RSO will advise the fire chief or lead representative of the location, nature, and identification of applicable hazardous materials at the Site.

3.3 Chemical Spill

The following equipment will be maintained at the Site for use during emergency spill response activities:

- Absorbent pads, booms, and mops;
- Squeegees;
- Noncombustible granular absorbent material;
- Polyethylene sheeting;
- 55-gallon drums;
- Shovels and assorted hand tools; and
- Drum liners.

In the event of a major hazardous or radiological material release, the FS/HSO will immediately notify the SPM, RSO, and PC. The PC will in turn contact EPA and Massachusetts Department of Environmental Protection (MassDEP).

An assessment of spills or leaks will be made of the magnitude (major or minor) and potential impact of the release. Personnel will attempt to locate the source of the release, prevent further release, and contain the spilled and/or affected materials as follows:

- Stop and contain the spill. The spill or release area will be approached cautiously. Air monitoring will be continuously performed in the vicinity. If possible, spill containment will initially be made without entering the immediate hazard area.
- Warn other personnel nearby and contact the FS/HSO and/or the RSO. If necessary, the release area will be evacuated, isolated, and secured. Hazards will be identified based on available information from witnesses or material identification documents (placards, Safety Data Sheets [SDSs], logs). The potential hazards will be evaluated to determine the proper personal protection levels, methods, and equipment necessary for response.
- Isolate the area with barrier tape or rope using available personnel to guard the spill area and control entries and exits.
- Minimize exposure. Entry to the release area will be made with the personal protective equipment (PPE), personnel, methods, and equipment necessary to perform the work. For radiological spills, utilize appropriate PPE, consult with and notify RSO, and perform radiological surveys.
- Spill containment and collection will be performed in four steps as follows:
    - Contain the spill with absorbent socks, booms, granules, pads, or construction of temporary dikes;
    - Control the spill at the source by plugging leaks, up-righting containers, overpacking containers, or transferring contents of a leaking container;
    - Collect the spilled material with shovels or heavy equipment as necessary; and
    - Store the spilled material for further treatment or disposal. Treatment and/or disposal options of the material will depend on the amount and type of material.

If workers cannot safely and sufficiently respond to a release, evacuation of the area may be warranted. The decision to evacuate will depend upon the risk of exposure to personnel and the severity of the release. The responding Town of Concord or Town of Acton Police and Fire Departments will be notified in the event of a significant spill. Upon arrival at the Site, the SPM,

FS/HSO and RSO will brief Fire Department responders on the current situation and any potential hazards to which the team may be exposed.

Existing site conditions do not present a significant risk of spillage. It is not anticipated site activities will increase this risk, however these steps will be followed whenever a spill or leak occur.

3.3.1 Personal Protective Equipment

In the event of a spill or leak, the work crew will suspend operations until adequate PPE can be donned. There are not any foreseeable circumstances that indicate greater than Level C PPE will be necessary. Likely scenarios will only necessitate Level D PPE, however respirators will be stored on site in the event that air monitoring indicates situations require respiratory protection. The FS/HSO will determine the required level of PPE based on the contaminant type, amount spilled, and the levels of hazardous substances that are monitored in the air.

3.3.2 Control Measures

After the work crew has donned adequate PPE, immediate measures will be taken to control and contain the spill within site boundaries. The hazardous area will be isolated and all unnecessary personnel will be kept away and upwind of the spill. Flares, smoking, or open flames will not be allowed into the area. All efforts will be made to prevent combustible materials from coming into contact with the spill.

- Small Spills. If the spilled material is a solid, the contaminated material will be shoveled directly into a container, and then covered, labeled, and disposed of as appropriate. If the spilled material is a liquid, a non-combustible absorbent material will be used to absorb the spill. The used sorbent material will be shoveled into a container, and then covered, labeled, and disposed of in an appropriate manner.
- Large Spills. A dike will be constructed in the event of a large liquid spill. Dikes will be constructed using sandbags, absorbent pillows, soil, or any other available, noncombustible material. The size of the dike will be large enough to contain the spill. If possible, standing liquid will be pumped off and containerized. The free liquid will be recycled, if possible, or solidified with an absorbent material. The contained spill and contaminated materials will then be covered, labeled, and properly disposed.

3.3.3 Spill Reporting

Spills that are not completely contained or recovered and result in the discharge of a hazardous substance to the environment will be reported immediately to the FS/HSO, who will report

directly to the SPM and PC. The PC will determine if a reportable quantity was released and will report to the regulatory authorities.

3.4 Electrical / Power

Site work will not be conducted in areas that have not gone through a thorough inspection for live utilities. However, because of the nature of the site, the possible presence of unknown utility lines throughout the property does exist. If an incident involves an unexpected utility, the crew will immediately cease work and report to the FS/HSO. The FS/HSO will notify SPM and one of the officers will contact the needed utility service.

Utility contacts at the NMI Property include:

- Electric, Concord Municipal Light: (978) 318-3101
- Water, Concord Public Works/Sewer: (978) 318-3250
- Natural Gas, National Grid: (800) 548-8000

Utility contacts at the Groundwater Treatment Building include:

- Electric, Eversource Energy: (800) 592-2000
- Water, Acton Water District (978) 263-9107
- Propane, Bursaw Oil (978) 263-8752

If an electrical emergency is encountered during Remedial activities, work will be suspended and 9-1-1 will be contacted. If applicable and possible, an appropriately designated person will turn off the power source at a main switch.

3.5 Severe Weather / Natural Disaster

Adverse weather can take many forms. Thunder and lightning storms, hail, high winds, and tornados are a few examples. Sudden changes in the weather, extreme weather conditions, and natural disasters can create a number of subsequent hazards. Generally as poor working conditions arise slip, trip and fall hazards increase. Natural disasters can induce many secondary hazards such as release of hazardous materials to the environment, structure failure, and fires.

Routinely monitoring weather conditions and reports may help to reduce the impact of severe weather and natural disasters. It may be necessary to halt certain hazardous operations or stop work altogether to allow the situation to pass. The SPM with the assistance of the FS/HSO

and/or the RSO will decide what operations, if any, are safe to perform based on existing and anticipated conditions.

The best protection against most severe weather episodes and natural disasters is to avoid them. This means seeking shelter before the storm hits. If lightning is a threat, personnel will avoid pipes and electrical equipment and be on alert for damage caused by lightning. The SPM and FS/HSOs will monitor the local weather reports for indications of approaching severe weather and will direct operations appropriately to protect personnel from dangerous conditions.

Blizzard conditions are the most likely severe weather condition for the Site. Snow will be cleared in a prioritized manner, with emergency access routes being the first priority. Snow also will be cleared from fire hydrants and site access perimeter roads to maintain access by the Concord Fire Department during an emergency. Snow accumulation on the roof of the temporary office buildings will also be monitored.

Snow will be removed from all emergency exits after each storm. The path of travel from the point of exit discharge to the public way will be well lit and maintained free of ice, snow, water, or accumulation of other debris so that the path of travel is passable year round.

High winds during tropical storms or hurricanes are also possible at the Site. Should high winds be forecasted, equipment will be stored out of the wind, if possible, or secured to the best practicable extent.

Lightning during thunderstorms occurs regularly during summer months. Lightning could present a hazard to on site personnel, particularly during excavation activities. If a thunderstorm is approaching, work operations will be suspended until the storm passes. If possible, overhead booms will be lowered. Outdoor work will remain halted until 30 minutes after the last thunder is heard.

4. Emergency Decontamination Measures

Treatment of illnesses or injuries to personnel working within a Radiation Controlled Area (RCA) or Chemically Controlled Area (CCA) may be more difficult due to PPE requirements and the potential for exposure to the radiological/ chemical contaminants. The emergency medical care provider must quickly assess the extent of the injury or illness of the victim. A determination will be made if lifesaving medical treatment is critical and if personal decontamination procedures will create additional injuries or aggravate the existing condition. Life-threatening injuries will receive immediate medical attention. Decontamination procedures may be modified or simplified under such circumstances.

The following guidelines are established for workers responding to emergencies where an individual may have been injured or overcome by exposure to a hazardous or radiological substance. (If a truly serious injury exists, only portions of these guidelines may be appropriate to ensure prompt medical treatment).

- Ensure emergency response personnel have donned the appropriate PPE to keep the response personnel from becoming injured.
- Upon arrival at the injured party, stabilize any life-threatening problems, such as spills or fires, and remove (i.e., brush or blot with absorbency pads) visible, gross contamination. If possible, prevent coming in contact with any contamination present at the scene. However, be expedient, and be prepared to transport immediately to the decontamination area.
- If the individual is unconscious, evaluate adequacy of airway, breathing, and circulation (ABCs). If absent, commence rescue breathing or CPR without delay.
- Without delay, efficiently move the injured party away from the accident scene, possible contamination, or any chemical contaminant. Relocate to a nearby “clean” area to expedite removal of respiratory protection and establish communication.
- Notify FS/HSO, SPM and RSO and evaluate the safety of remaining personnel in the area.
- Select an emergency decontamination location upwind and/or uphill from any spills and determine the most effective pathway to emergency vehicles.
- External decontamination will be performed in two stages: washing with soapy water, then rinsing with clear water.

- Quickly remove tape from the injured person's wrists and ankles; assume the individual is injured until an assessment indicates otherwise.
- Quickly cut or tear first layer of PPE (outer suit) off of the injured party and discard. If cutting, always cut away from the body toward the extremities to avoid inflicting further injury.
- Carefully, but quickly, cut second layer of PPE (inner suit, boots, and gloves) off injured party. Always cut away from the body toward the extremities to avoid inflicting further injury. Following stabilization of any injuries, monitor and be on the alert for shock, wrap the injured in a warm blanket or other items to conserve body heat, and be prepared for vomiting.
- Be prepared to turn emergency care over to EMS personnel. Inform arriving emergency medical personnel of the nature and extent of injuries and any potential radiological/chemical hazards present

5. Evacuation Procedures

Due to the industrial characteristics of the Site, provisions will be made to protect the public in the event that an evacuation is required for whatever reason. Evacuation of the Site will be required when:

1. Ambient air conditions contain explosive and persistent levels of combustible gas or dust, or excessive levels of toxic gases;
2. A fire or major accident occurs; or
3. Explosion is imminent or has occurred.

All emergency response at the Site will be coordinated according to site communication line of command defined in Section 3.1. Site evacuation procedures will be followed by all personnel if evacuation is required. No site operations will be required to continue in the case of an evacuation.

If public notifications or evacuations are necessary, those will be performed through the Community Emergency Response Team (CERT) and/or the Local Emergency Planning Committee (LEPC). These organizations and the Town of Concord have developed procedures in their Hazardous Materials Emergency Plan (HMEP) for responding to emergencies that involve the community.

Coordination with these agencies are related to the unknown conditions at the NMI Property. Though these emergency procedures are unlikely, there is a level of uncertainty tied to the excavations to be completed at the NMI Property. These unknown conditions are not applicable to work at the Groundwater Treatment Building as all conditions there are known. In the event of an emergency at the Groundwater Treatment Building, coordination will be handled through the Acton Police and Fire Departments.

5.1 Emergency Signals

In most cases, field personnel will carry cellular telephones or two-way radios for non-line-of-site communications. Where radio communication is not available, the following air-horn signals will be used:

HELP	three short blasts	(. . .)
EVACUATION	three long blasts	(_ _ _)
ALL CLEAR	alternating long and short blasts	(_._.)

5.2 Work Area Evacuation

When conditions warrant work area evacuation, personnel will proceed out of the work area and notify the SPM as soon as is safe to do so. Subsequently all on-site personnel will be notified following the site communication line of command outlined in Section 3.1. The FS/HSO will then continue to monitor the situation at a safe distance. Personnel will pass quickly through decontamination to remove contaminated outer suits. If the hazard is airborne, and workers are already donning respirators they will be retained. Personnel will proceed to the field office to assess the situation. If instrumentation indicates an acceptable condition, respirators may be removed. The advisability and type of further response action will be coordinated and carried out by the FS/HSO.

5.3 Full Site Evacuation

When the FS/HSO determines that conditions warrant full site evacuation, he or she will notify the SPM, RSO, and all site personnel. All personnel will proceed to their pre-assigned assembly area.

When an Evacuation Alarm is sounded, personnel in Exclusion Zones will evacuate the work area through the Contamination Changeout Area when practical. Once evacuated from the RCAs or CCAs all individuals will meet at the assembly area. If exiting other than through the Contamination Changeout Area, individuals will notify the FS/HSO, or the RSO at the assembly area that they have not performed contamination monitoring.

During an emergency the following precautionary measures will be followed:

- Keep upwind of smoke, vapors or spill location;
- Exit through the Contamination Changeout Area if possible;
- If evacuation is not via the Contamination Changeout Area, site personnel will remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone or in a safe place. The RSO and the FS/HSO will predetermine safe places. These will be marked with signs and will have appropriate containers for PPE.

All subcontractor Field Supervisors are responsible to account for their personnel at the assigned assembly area, and reporting to the SPM. The SPM will conduct a head count to ensure all personnel have been evacuated safely. The use of a daily attendance sheet, crew assignment sheet, and visitor sign in sheet will be used to verify evacuation of all who are working on, or visiting, the work site at the time the evacuation becomes necessary.

6. Evacuation Routes

All on-site workers maintain stop-work authority for unsafe conditions or if emergency conditions are present. In turn, all workers maintain the authority to evacuate an area if they deem it necessary. Once initiating any form of evacuation, responsible employees are required to notify the SPM. The SPM will advise the FS/HSO, RSO, and PC as soon as possible. In the event that site evacuation is required, emergency alarms will be sounded as defined in Section 5.1. Radio communication may also be used to alert workers and provide special instructions. Evacuations will not be limited to specific areas.

6.1 Assembly

Situations requiring evacuation may include unusually severe weather conditions, fires, or significant hazardous spills or releases. In the event of project evacuation, the Town of Concord or Acton Police and Fire Departments will be notified immediately. An emergency map that delineates evacuation routes, emergency alarm locations, first aid kit locations, and rally point will be developed prior to site activities.

Life safety considerations for the Facility include:

- Means of egress consisting of exit access, exits and exit discharge;
- Exit signage, where applicable; and
- Emergency lighting within office areas.

In accordance with National Fire Protection Association (NFPA) 801, facilities undertaking RD/RA activities will maintain egress features consistent with that of a facility under construction. However, locked and abandoned facilities where there is no human occupancy need not maintain emergency egress features such as emergency lighting, exit signage, etc.

6.2 Travel Distance

Because of the nature of RD/RA work, most efforts will take place outside. This offers abundant evacuation routes. Though not anticipated, if a work area presents a limited amount of evacuation options, a minimum of two evacuation paths will be determined for the work area. These emergency egresses will be a maximum of a 400 foot travel distance.

6.3 Exit Signs and Emergency / Means of Egress Lighting

Access to exits will be provided and continually maintained throughout the RD/RA process (for temporary office trailers). Exit signs and emergency lights with battery packs will be posted to identify available exits and the path of travel to exits. Signs will be posted along exit access indicating the direction of travel to nearest exit and exit discharge if that direction is not immediately apparent. The line of sight to an exit will be clearly visible at all times.

6.4 Exit Discharge

All emergency exits will discharge to the exterior at grade level. The path of travel from that point of exit discharge to the public way will be well lit and maintained free of ice, snow, water, or accumulation of other debris so that the path of travel is passable year-round.

7. Emergency Response Information and Personnel

Before RD/RA Site activities begin, the SPM, FS/ HSO, and RSO will meet with the CFD and a representative from the Emerson Hospital to inform them of the planned activities at the Site and discuss ambulance access points and entry procedures.

The FS/HSO and SPM will maintain a current inventory of chemicals at the Site, including location and estimated volume. Copies of the associated Safety Data Sheets (SDSs) will be maintained in case of an emergency. In the case of an emergency in which the CFD is called, a copy of the inventory will be provided for reference in dealing with the emergency.

7.1 Site Access During Emergencies

The main field trailer will serve as the Incident Control Center (ICC) for all emergency response actions. The following information will be posted within the ICC:

- Emergency Contact Numbers
- Site maps indicating work areas
- Radiologically Restricted Areas
- Locations of chemical hazards
- Locations of physical hazards
- Security System layout and zones

A site representative will be present during working hours to brief responders and to escort responders around the Site.

First responders to after-hours site emergencies have a Town of Concord lock attached to the secured main gate providing them with the ability to access to the Site. A key box, attached to the main field office trailer shall contain keys to enter the field trailers.

7.2 Local Fire Department for work on NMI Property– Concord Fire Department

Fire detection and emergency response will be on a manual basis, whereby on-site personnel will notify and direct the CFD to the emergency. The CFD is a full time, paid department. The CFD will respond to all fire alarms that are generated from the facility. The CFD response time to the Site is approximately 5 minutes. Hazardous Materials Response / EPA response is

provided by District 3 Hazardous Materials (HAZMAT) Response. MassDEP and EPA will provide support.

7.3 Local Fire Department Groundwater Building- Acton Fire Department

Fire and emergency response will be on a manual basis, whereby on-site personnel will notify and direct the AFD to the emergency. The AFD is a full time, paid department. The AFD will respond to all fire alarms that are generated from the facility. The AFD response time to the Site is approximately 12 minutes. Hazardous Materials Response / EPA response is provided by District 3 Hazardous Materials (HAZMAT) Response. MassDEP and EPA will provide support.

7.4 Telephone Contact Information

The contact numbers for the local fire departments, MassDEP Emergency Response, and EPA Emergency Response are:

Town of Concord Fire Department	911 or (978) 318-3488
Town of Acton Fire Department	911 or (978) 264-9645
MassDEP Emergency Response	(888) 304-1133
EPA Regional Duty Officer of the Emergency Planning and Response Branch	(617) 918-1236
EPA Regional 24-hour Emergency Response line	(617) 723-8928

Mutual Aid for work at the NMI Property is provided from the following neighboring communities as follows:

1. Maynard – Maynard Engine 2
2. Acton – Acton Ladder 28
3. Lincoln – Lincoln Quint

7.5 Town of Concord Emergency Planning

The Town of Concord has a HMEP for the sole purpose of responding to a hazardous materials incident. In the plan, the Site is listed as a potential location for a hazardous materials incident.

The HMEP is authorized and regulated under the Emergency Planning and Community Right to Know Act of 1986 and the Massachusetts Comprehensive Emergency Management Plan.

Additionally, the Concord LEPC meets every two months and is chaired by the Chief of the CFD. The mission of the LEPC is:

> *To provide a comprehensive resource management committee to include the areas of operations, planning, logistics and finance to the Town of Concord in the event of a hazardous materials incident as dictated by the Superfund Amendment and Reauthorization Act.*

Members of the LEPC include representatives from the CFD, Concord Public Health Department, Emerson Hospital, local businesses and citizens.

If public notifications or evacuations are necessary, those will be performed through the CERT and/or the LEPC. These organizations and the Town of Concord have developed procedures in their HMEP for responding to emergencies that involve the community.

8. Emergency Response Equipment

Emergency supplies available at the Site include the following:

1. Fire extinguishers in accordance with OSHA 29 CFR 1910.157;
2. First aid kits;
3. Emergency eye wash stations;
4. Emergency showers;
5. Stretcher; and
6. Blankets and towels.
7. Portable Defibrillator

The CFD HAZMAT equipment is stored in the main field trailer.

9. Hazard Identification, Evaluation and Vulnerability Analysis

Prior to beginning a specific task, the FS/HSO (and RSO if applicable) will develop a Job Hazard Analysis and review safety considerations and potential vulnerabilities with the field crew. The Job Hazard Analysis procedure is defined in detail in the HASP.

10. Spill Potential Analysis

Prior to beginning a specific task, the FS/HSO (and RSO if applicable) will develop a Job Hazard Analysis and review safety considerations with the field crew. This will include an analysis of spill potential.

11. Facility Self-Inspection Checklists, Training Information and Meeting Logs

All site documentation of inspections, training information, and meeting logs will be maintained at the *de maximis* on-site office.

12. Communications of ERP Contents

The FS/HSO will perform the following tasks before starting field operations:

- Review the facility emergency assembly locations for each major operational area with the SPM and on-site workers.
- Determine what on-site communication equipment will be used, e.g., two-way radios, cell phones.
- Determine what off-site communication equipment will be used, e.g., nearest telephone, cell phone.
- Confirm and post emergency telephone numbers, evacuation routes, assembly areas, and route to hospital. Confirm evacuation routes from buildings before each task, as these are subject to change. Communicate the information to site personnel.
- Post appropriate “exit” signs and “Fire Extinguisher” signs. Keep areas near exits and extinguishers clear.
- Establish a clear and simple protocol to communicate when there is an emergency using sirens, speaker horns, or radios.
- Inform hospital and fire department that site work has resumed.
- Check site emergency equipment, supplies, and potable water are present and functional.
- Communicate emergency procedures to personnel for personal injury, exposures, fires, explosions and releases.
- Field Supervisors are to rehearse the emergency response plan procedures before activities begin, including a “practice run” driving the mapped route to the hospital.
- Stay informed of road construction on route to hospital and post changes to map and inform employees of the change if necessary.
- Brief new workers on the Emergency Response Plan.

13. Reporting of Emergency Events

13.1 Emergencies that Involve Hazardous Substances

EPA and MassDEP will be orally notified immediately and receive a written notification within 24 hours of accidents or incidents that include uncontrolled releases outside of the Restricted Area of more than one reportable quantity (RQ) of hazardous chemical or radioactive material, or fires, or explosions. (Note: Hazardous substances and reportable quantities are designated under Section 101(14) of CERCLA. They may also be found in 49 CFR 172.101, List of Hazardous Substances and Reportable Quantities).

The following information will be provided to EPA/MassDEP for an uncontrolled release:

- Name, organization, telephone number, and location of the caller;
- Name and title of the person(s) reporting;
- Date and time of accident/incident;
- Location of accident/incident (i.e. NMI Site, 2229 Main Street (Route 62) Concord, Massachusetts);
- Brief summary of accident/incident including pertinent details such as type of operation ongoing at the time of accident;
- Cause of accident/incident, if known;
- Casualties (fatalities, disabling injuries);
- Details of any existing radiological/chemical hazard or contamination;
- Nature of damage;
- Action taken to ensure safety and security;
- Other damage or injuries sustained (public or private).

The FS/HSO and/or RSO will investigate the cause of any incidents to assess the causes and prevent reoccurrence. The investigation will begin as soon as practical after the incident is under control, but not later than the first work day after the incident. Investigations will follow the procedures described below:

- Interview witnesses and participants as soon as possible or practical.

- Determine the chronological sequence of events (opinions as to cause will not be solicited at this time).
- Note the location, movement, displacement, liquid levels, sounds, noises, or other sensory perceptions experienced by the participants or witnesses.
- Obtain weather data.
- Ascertain the location and position of switches, controls, etc.
- Verify the condition of safeguards.

After the facts have been collected, causal factors should be identified. Two causal factors typically exist, apparent and contributing; there may be several of each. Apparent factors are those which are self-evident or readily-deduced. Contributing factors usually become apparent by questioning why the apparent causal factor was allowed to exist. An Incident Report will be completed by the FS/HSO and or RSO and ne provided to the PC and SPM.

13.2 Other Emergencies

Project personnel are required to report accidents, injuries, illnesses, and near misses, to the immediate supervisor who will immediately notify the FS/HSO and/or RSO. The FS/HSO and/or RSO will immediately arrange appropriate medical care as required. Once immediate medical care for the injured personnel has been accomplished, the FS/HSO and/or RSO will notify the SPM. The SPM will complete a written report within 24 hours and submit to the PC.

Figures

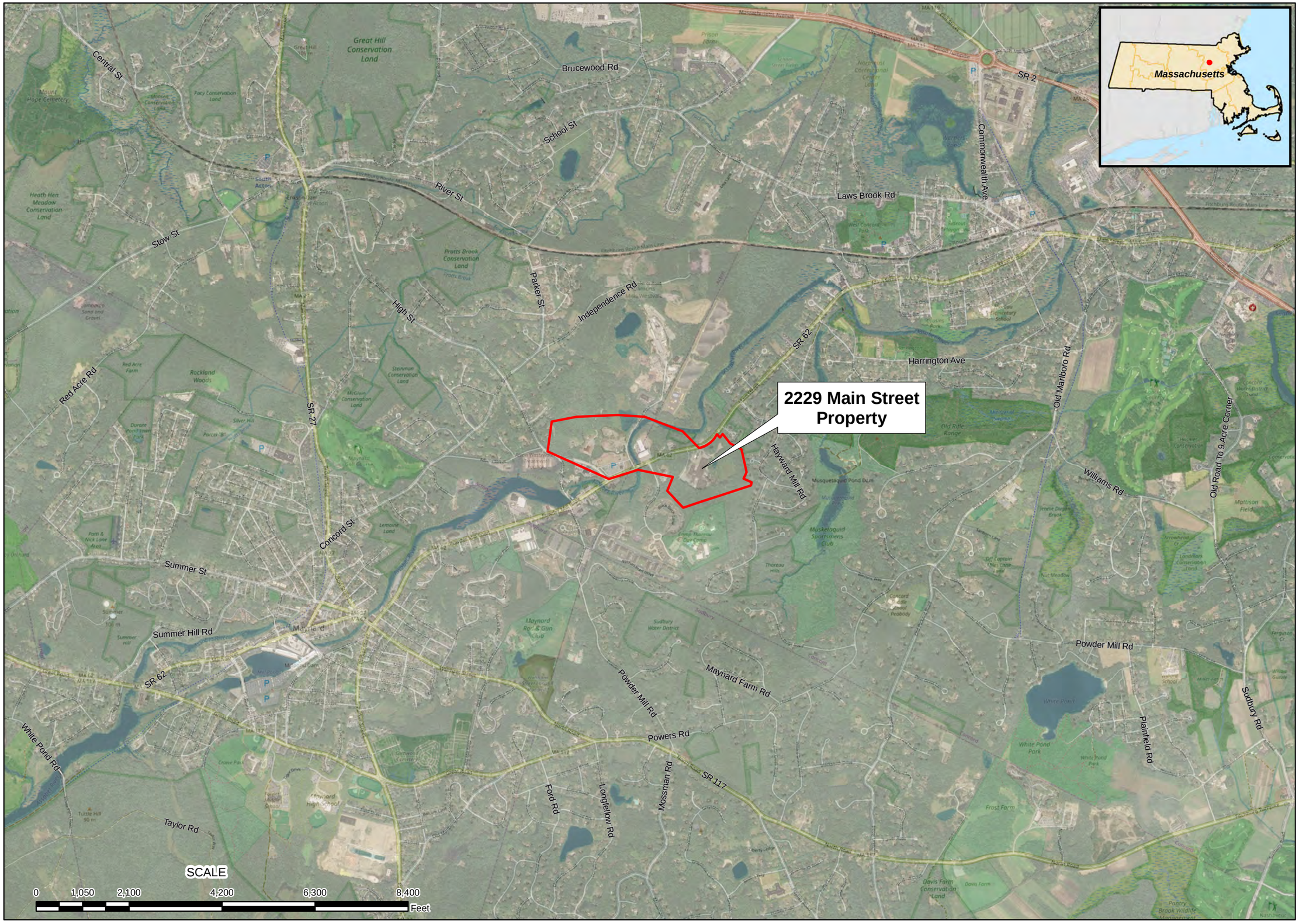


Figure 1

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

ddms
www.ddmsinc.com

de maximis, inc.

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ROUTE TO EMERGENCY MEDICAL FACILITIES

Emerson Hospital

(Approximately 3 Miles Away)

(978) 369-1400

133 Old Road to Nine Acre
Concord, MA

RT-62
Main Street
(2.7 Miles)

RT-2
Concord Turnpike
(0.2 Miles)

Old Road to Nine Acre
(0.1 Miles)

Field Office
2229 Main St.
Concord, MA

Emerson Hospital
133 Old Road to Nine Acre
Concord, MA

0 0.25 0.5 1 Miles

POST IN FIELD OFFICE

Emerson Hospital

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Tables

Table 3-1

LOCAL EMERGENCY TELEPHONE NUMBERS

EMERGENCY TELEPHONE NUMBERS	
Chemical Manufacturers Association Chemical Referral Center	(800) 262-8200
Emerson Hospital	911 or (978) 369-1400
Massachusetts Nuclear Incident Advisory Team (NIAT)	(617) 242-3453
MassDEP Emergency Response	(888) 304-1133
National Response Center	(800) 424-8802
Poison Control Center	911
Project Coordinator: Bruce Thompson	(860) 651-1196
	(860) 662-0526 (cell)
Site Project Managers:	
(ISS component): Amy Hoffmann	(978) 793-7163 (cell)
(1,4-D in Bedrock): Nathan Hunt	(774) 258-1015 (cell)
(Site Wide Soils): Jessie McCusker	(860) 817-7544 (cell)
Radiation Safety Officer: Matt Norton, DDES	(978) 844-0565 (cell)
Field Supervisor/Health and Safety Officer	
(Geosyntec): Dariusz Chlebica	(508) 864-0482 (cell)
(H&A): Ken Aldipedis	(617) 908-3342 (cell)
Town of Concord Fire Department	911 or (978) 318-3488
Town of Concord Police Department	911 or (978) 318-3400
Town of Acton Fire Department	911 or (978) 929-7722
Town of Acton Police Department	911 or (978) 264-9638