



Site Management Plan (SMP)
Nevada Environmental Response
Trust Site
Clark County, Nevada

Prepared for:
Nevada Environmental Response Trust

Prepared by:
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Site Management Plan

**Nevada Environmental Response Trust
(Former Tronox LLC Site)
Clark County, Nevada**

Nevada Environmental Response Trust (NERT) Representative Certification

I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of the Trust. Based on my own involvement and/or my inquiry of the person or persons who manage the system(s) or those directly responsible for gathering the information or prepared the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Signature:  not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Name: Jay A. Steinberg, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

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Company: Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Date: April 11, 2012

Site Management Plan
Nevada Environmental Response Trust
(Former Tronox LLC Site)
Clark County, Nevada

Responsible Certified Environmental Manager (CEM) for this project

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and, to the best of my knowledge, comply with all applicable federal, state and local statutes, regulations and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Wendy Seider

April 10, 2012

Wendy Seider

Date

Certified Environmental Manager
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Acronyms

2,3,7,8-TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
ACM	asbestos-containing material
AOC	Administrative Order on Consent
BCL	basic comparison level
BEC	Basic Environmental Company
BMI	Black Mountain Industrial
BMP	Best Management Practice
BRC	Basic Remediation Company
CEM	Certified Environmental Manager
COPC	chemical of potential concern
ECA	Excavation Control Area
ENVIRON	ENVIRON International Corporation
ERMP	Environmental Risk Management Plan
ft	foot
GWETS	groundwater extraction and treatment system
HASP	health and safety plan
HHRA	human health risk assessment
ITRC	Interstate Technology & Regulatory Council
KMCC	Kerr-McGee Chemical Corporation
LOU	Letter of Understanding
MCL	maximum contaminant level
msl	mean sea level
NDEP	Nevada Division of Environmental Protection
Northgate	Northgate Environmental Management, Inc.
OCP	organochlorine pesticide
OSHA	Occupational Safety and Health Administration
OSSM	Olin, Stauffer, Syngenta Montrose
PCB	polychlorinated biphenyl
PID	photo ionization detector
PPE	personal protective equipment
PPT	parts per trillion
RAW	removal action work plan
RZ	remediation zone
SMP	Site Management Plan
SVOC	semi-volatile organic compound
SWPPP	Storm Water Pollution Prevention Plan
TDS	total dissolved solids
TEQ	toxicity equivalent
Timet	Titanium Metals Corp.
TPH	total petroleum hydrocarbon
Trust	Nevada Environmental Response Trust
USEPA	U.S. Environmental Protection Agency

Acronyms (Continued)

UST	underground storage tank
Veolia	Veolia Water North America
VOC	volatile organic compound
WAPA	Western Area Power Administration

Executive Summary

This Site Management Plan (SMP) provides a decision framework for the management of residual chemicals in soil and groundwater at a 453-acre site in Clark County, Nevada, near the City of Henderson (the Site). The Site was previously owned and operated by Tronox LLC (Tronox). The Site is currently owned by the Nevada Environmental Response Trust (the Trust), which was created in conjunction with the settlement of Tronox's bankruptcy proceeding. This SMP describes procedures to address the known remaining environmental conditions at the Site, as well as contingency actions to be taken if previously unknown environmental conditions are encountered.

This SMP addresses the following:

- Procedures for long-term compliance with this SMP; and
- Risk management measures to be implemented during construction activities.

This SMP applies to the following areas of the Site:

- Areas of the Site that have been designated as Excavation Control Areas (ECAs), where known impacted soil has been left in-place. ECAs are identified and discussed in Appendix A of this SMP;
- Areas of the Site where unexpected environmental contamination is encountered during construction/demolition/excavation/investigation activities; and
- Areas of the Site where concentrations of contaminants in groundwater exceed current regulatory standards.

All owners, operators, tenants, lessees, project managers and other entities with responsibility for Site activities (collectively "Site Occupants") shall have the independent obligation to:

1. Review available information concerning Site environmental conditions;
2. Determine the applicability of this SMP with respect to the expected and actual Site conditions and the intended land use;
3. Establish management procedures to ensure that the risk management measures outlined in this SMP are properly implemented and maintained; and
4. Comply with applicable policies, environmental covenants, laws, and regulations.

Existing Environmental Conditions

Numerous potential contaminant source areas have been investigated and remediated at the Site. When current soil remediation activities end, some areas of impacted soil will remain, and these ECAs are subject to the provisions of this SMP. A regional groundwater plume containing perchlorate, hexavalent chromium, and other contaminants underlies most of the Site. The portions of the groundwater plume that are subject to the provisions of this SMP are those areas where the plume exceeds regulatory levels. Additionally, any areas of the Site where unexpected contamination is encountered are also subject to the provisions of this SMP.

General Risk Management

This SMP describes measures that will be implemented to mitigate risks to human health and the environment related to potential exposure to any residual chemicals of potential concern (COPCs) during periods of typical operations and non-construction activity. These measures include:

- Providing required notification to current and future Site Occupants of the known environmental conditions at the Site and the requirements of the SMP;
- Conducting additional risk analysis and modification of the SMP, as appropriate, if there is any significant change in land use proposed for the Site, or if any significant change in toxicity values for COPCs occurs;
- Modifying the SMP at least annually to address any changes to each ECA, including additional characterization data and/or new limits, based on work conducted during the previous year;
- Ensuring that groundwater from the Site is not used for drinking water or any other purpose unless the Nevada Division of Environmental Protection (NDEP) approves its use;
- Following appropriate health and safety procedures (including use of appropriate personal protective equipment [PPE]) for activities that disturb subsurface Site soil (e.g., utility repairs);
- Conducting appropriate ongoing operation and maintenance to verify the continued adequacy of risk management measures, such as evaluating ongoing environmental monitoring data (e.g., groundwater monitoring data) to determine if there are any significant changes in Site environmental conditions that require potential modification of this SMP;
- Monitoring changes in COPC toxicity parameters to assess if additional or lesser mitigation may be needed based on an updated understanding of toxicity of the COPCs at the Site; and
- Inspecting the Site as necessary to verify that risk management controls are being implemented and that they are effective in limiting potential exposure to COPCs at the Site.

Soil Basic Comparison Levels

Site-specific soil screening levels (including Basic Comparison Levels (BCLs) as well as asbestos and arsenic limits), have been developed for the Site (Table 1). The most recent version of the BCLs, which can be found on the NDEP website (<http://ndep.nv.gov/bmi/technical.htm>) should be used. These screening levels will be used to evaluate whether or not:

- a. Excavated soil can be reused as fill at the Site; and
- b. Additional soil removal should be considered at locations where soil contamination is observed during construction activities.

As explained in the *Removal Action Work Plan for Phase B Soil Remediation of Remedial Zones RZ-B through RZ-E (RAW)*, Tronox LLC, Henderson, Nevada, revised May 28, 2010 (Northgate, 2010e), for purposes of designating potential remediation areas, "contaminated" soil is generally defined as concentrations exceeding NDEP worker BCLs, or modified risk-based goals as agreed upon by NDEP. For metals where background concentrations exceed NDEP BCLs (e.g., arsenic), "contaminated" soil is defined as concentrations greater than background. There are no NDEP BCLs for asbestos; therefore, "contaminated" soil is defined as one or more long amphibole fibers and greater than five long chrysotile fibers counted per sample. Based on a bioaccessibility study performed in 2010 (Northgate, 2010d), NDEP has approved a Site-specific BCL for dioxins/furans (as 2,3,7,8-tetrachlorodibenzo-p-dioxin toxicity equivalents [2,3,7,8-TCDD TEQ]) of 2,700 parts per trillion (ppt) (NDEP, 2010b).

Risk Management During Construction Activities

This SMP summarizes risk management measures and procedures to be implemented during construction to mitigate potential risks to human health and the environment from potential exposure to COPCs, and to manage soil and groundwater during construction activities. These measures and procedures include:

- Development and implementation of a project-specific health and safety plan (HASP) that describes health and safety training requirements for on-Site workers, PPE to be used, and other precautions to be undertaken to minimize direct contact with soil and groundwater;
- Implementation of mitigation measures, such as dust and odor control, decontamination of construction and transportation equipment, and storm water pollution prevention controls;
- Sampling and analysis of groundwater generated during construction dewatering activities to determine appropriate storage and disposal practices;
- Management of abandoned underground storage tanks (USTs), sumps, pipes, and buried drums or containers that may be encountered during Site construction activities;
- Protection of the existing groundwater remediation systems during Site construction activities and implementation of NDEP-approved modifications to the existing systems; and
- Management of soil potentially impacted by COPCs that is handled during construction activities. Soil management protocols include identifying COPC-impacted soil that may be excavated during Site construction activities and contingencies if previously unknown soil contamination is encountered. Appropriate handling and disposition of contaminated soil that are excavated is described.

Groundwater Risk Management Considerations

Due to the groundwater contamination in the aquifer underlying the Site, measures must be taken to prevent new construction from creating additional potential pathways for migration of COPCs in groundwater. For example, if new construction requires deep pile foundations, mitigation measures must be included to reduce the potential for vertical cross-contamination or for creating conduits for downward contaminant migration. The Site Occupant will prepare a design report for review by NDEP and the Trust describing the measures that will be taken and

demonstrating their effectiveness in preventing potential migration pathways of COPCs caused by new construction.

The Trust currently operates a groundwater remediation system at the Site. This system is required to operate continuously. New construction must not interfere with operation of the remediation system. Procedures have been developed to coordinate construction activities to minimize disturbance to the remediation system, and if necessary, to allow the system to be modified in a way that does not adversely affect its operation.

1 Introduction

On behalf of the Nevada Environmental Response Trust (the Trust), ENVIRON International Corporation (ENVIRON) has prepared this Site Management Plan (SMP) for the Trust's Site located in Clark County, Nevada, near the City of Henderson. The Site is a 453-acre area that is part of the larger Black Mountain Industrial (BMI) complex. Tronox formerly owned and operated the Site. In conjunction with the settlement of Tronox's bankruptcy, the Trust took title to the Site. The exclusive purpose and functions of the Trust include, but are not limited to: (i) own the Site for purposes of implementing the Settlement Agreement; (ii) carry out administrative and property management functions related to the Site; and (iii) manage and/or fund implementation of Environmental Actions for the Henderson Legacy Conditions that are approved by the Nevada Division of Environmental Protection (NDEP). Tronox has a long-term lease for approximately 373 acres of the Site and continues its manufacturing operations at the Site. The general location of the Site is shown on Figure 1, and the locations of key Site features are shown on Figure 2.

On behalf of Tronox, Northgate Environmental Management Inc. (Northgate) prepared a draft Environmental Risk Management Plan (ERMP) for the Site, dated December 20, 2010 (Northgate, 2010m). The draft ERMP assumed that each area of the Site, which contained environmental media with chemical concentrations above regulatory criteria and standards, would be covered by an individual and discrete Environmental Covenant/Institutional Control. Subsequent to the February 14, 2011 effective date, the Trust, in consultation with NDEP, decided to pursue a general Environmental Covenant for the (entire 453-acre) Site. Therefore, the draft ERMP has been revised by ENVIRON (on behalf of the Trust) to reflect this change in approach. Where appropriate and applicable, portions of this document (now called the SMP) have been taken directly from the draft ERMP completed by Northgate, as revised based on NDEP comments issued to the Trust on March 11, 2011.

This SMP was prepared following extensive environmental investigations and human health risk analyses that were performed at the Site for over 25 years with oversight from NDEP. Various documents listed in Section 6 (References) describe investigation and remedial activities.

Contact information for NDEP, the Trust, and Tronox is provided in Table 6.

1.1 Scope of the Site Management Plan

This SMP applies to the following conditions at the Site:

- Areas of the Site where impacted soil has been left in-place. These areas have been designated as Excavation Control Areas (ECAs) and are discussed in detail in the Excavation Control Areas Plan, which is Appendix A of this SMP;
- Areas of the Site where concentrations of contaminants in groundwater exceed current regulatory standards; and
- Areas of the Site where unexpected environmental contamination is encountered during construction/excavation/demolition activities.

This SMP provides a decision framework to manage residual chemicals in soil and groundwater at the Site in a manner that:

- a. Protects human health and the environment;
- b. Is consistent with current and planned future land uses;
- c. Satisfies NDEP and other involved regulatory agencies with oversight authority; and
- d. Satisfies the property owner's concerns.

1.2 Organization of the SMP

This SMP contains the following sections:

- Section 2 – A description of the Site background, including current and future planned land use and hazards associated with existing structures;
- Section 3 – A description of general risk management measures to mitigate potential long-term risks to human health and the environment, which includes procedures for long-term compliance with this SMP;
- Section 4 – A description of risk management measures for soil for new construction and existing buildings at the Site; and
- Section 5 – A description of risk management measures for groundwater for new construction and existing buildings at the Site.

1.3 Responsibilities

All Site Occupants will be provided with copies of this SMP and have the responsibility to ensure that the risk management measures and procedures described herein are fully implemented in any applicable activity or operation. The Trust will provide a copy of the most current SMP to a Site Occupant upon the start of the Site Occupant's occupancy at the Site, and each time the SMP is revised or updated. The Site Occupant is responsible for providing a copy of the SMP to its contractors or any other third party invited to the Site by the Site Occupant. Each Site Occupant shall certify that it will comply with the provisions herein, consistent with the model certification provided as Appendix B.

The Trust, as property owner, shall have the primary obligation to:

- Ensure that the risk management measures and procedures described in this SMP reflect conditions actually encountered and the intended land use;
- Comply with applicable policies, laws, and regulations including any Environmental Covenants that are recorded for the Site;
- Establish procedures for inspection, maintenance, and monitoring of the risk management measures that are implemented, and establish protocols for future sub-surface activities to ensure long-term compliance with the SMP; and

- Assure that the SMP is reviewed by qualified environmental professionals and updated, as necessary, to address significant changes in environmental conditions, land uses, and/or applicable laws and regulations.

1.4 Compliance with the SMP

The Trust, as property owner, shall be responsible for providing the requirements of this SMP to Site Occupants.

A checklist of notification and reporting requirements to NDEP and the Trust for Site Occupants is provided as Appendix C. The checklist serves only as a reference: compliance with the requirements listed thereon is not a substitute for compliance with this entire SMP. The Trust, as property owner, shall maintain documentation of the notifications and written documentation provided by the Site Occupants.

The Trust will inspect the Site as necessary to verify that risk management controls are being implemented and that they are effective in limiting potential exposure to COPCs at the Site. The Trust will record incidents of non-compliance with the SMP. The Trust is responsible for tracking and overseeing the correction of non-compliant incidents.

1.5 Regulatory Oversight and Status

NDEP provides regulatory oversight for this project. Tronox (formerly Kerr McGee Chemical LLC) and NDEP signed several agreements, dated between 1986 and 2005, that governed much of the activities performed at the Site. The Trust and NDEP have entered into the following agreements, which govern activities currently being performed at the site:

- 2011: Interim Consent Agreement; and
- 2011: Action Memorandum.

Both of these documents address those portions of the previous agreements between Tronox and NDEP that NDEP has determined were not completed by Tronox.

1.6 Representations and Limitations

The risk management protocols specified in this SMP are based on an understanding of current Site environmental conditions and current policies, laws, and regulations. No representation is made as to the applicability of this SMP to future Site conditions, which may vary from current conditions, as conditions may change or new information may become available. This plan is not intended to conflict with or supplant any laws or regulations regarding on-going operations at the Site.

In the event of changed Site conditions or new information, further Site investigation and evaluation may be necessary to assess human health risks and to establish the specific procedures for remediation or containment of hazardous materials on the Site.

2 Site Background

This section provides an overview of the Site, including Site description, land use, and hazards associated with existing structures.

2.1 Site Description and Land Use

2.1.1 Physical Characteristics

The Site is a 453-acre property (Figure 2) that is generally rectangular in shape with the long side in the north-south direction. Elevations across the Site range from 1,677 to 1,873 feet above mean sea level (msl). The land surface slopes toward the north at a gradient of approximately 0.023 feet per foot (ft/ft). The developed portions of the Site have been modified by grading to accommodate plant facility buildings, surface impoundments, access roads, a former landfill, and other Site features.

2.1.2 Current Land Use

Tronox currently operates processes on a portion of the Site (Facility) to produce manganese dioxide, boron trichloride, elemental boron, and batteries. The Facility includes numerous buildings, sheds, labs, ponds, tanks, and pipelines related to the production of manganese dioxide, boron trichloride, elemental boron, and batteries. The current operating areas are shown on Figure 2.

The major buildings on the Facility include Unit Buildings 1 through 6, which are aligned in a row extending in a west-east direction across the center of the Site. These buildings were constructed during World War II for magnesium production. Tronox currently uses Units 5 and 6 for production of manganese dioxide, and Unit 5 is also used for storage. Units 1, 2, and 4 are no longer used and have been partially demolished. A portion of Unit 4 has also been retrofitted to house an advanced industrial battery manufacturing process. Operation of the battery manufacturing is planned to begin in late 2011. Tronox currently uses Unit 3 for office and storage activities. In addition, Tronox produces boron products within a Boron Plant to the north of Unit 4, and production of manganese sulfate solution (for use in the manganese dioxide production process) is performed within a Leach Plant north of Units 5 and 6. Other buildings present on the Facility include an administration building, a change house, a laboratory building, a maintenance shop, a steam plant, and various storage buildings (Figure 2).

The Site is generally rectangular, but certain interior portions of the rectangle have been carved out and are owned and used by other companies, such as L'Hoist (formerly Chemstar, a lime producer), Titanium Metals Corp (Timet), and the Western Area Power Administration (WAPA). In addition, an area within the northwestern portion of the subject Site consists of groundwater treatment facilities, which are operated on behalf of the Trust by an outside contractor, Veolia Water North America (Veolia)¹. Four lined ponds on the Site (known as WC-West, WC-East, Mn-1, and AP-5) contain process-related wastewater, and an additional lined pond (known as GW-11) collects extracted groundwater from remediation activities. In addition, the Site is

¹ Veolia is referred to as the groundwater extraction and treatment system (GWETS) Contractor.

traversed (from west to east) by a drainage ditch known as the Beta Ditch that historically conveyed liquid wastes from the Site (and other sites located to the west). The Beta Ditch, which is currently blocked by an earthen dam near its eastern end, has been re-graded, channelized, and now includes a retention basin. The west end of the Beta Ditch at the Site continues to receive storm water drainage from the neighboring property to the west.

The Site is crossed by asphalt and concrete roads, dirt roads, active utility lines, a high-pressure chlorine line, and railroad spurs. An extensive network of active and inactive underground utility lines is present under the roads and open areas at the Site. Figure 3 shows a map of the known utilities present on the Site. The map of utilities on the Site should not be considered all inclusive, as many unknown utilities exist on the Site.

Within the boundaries of the Site, and as shown on Figure 2, are Parcels A, B (a portion was sold to Robert and Sandra Ellis in 2008), C, D, E (contains extraction wells related to the OSSM Groundwater Treatment System), F, G, H, I (sold to Rolly Properties LLC in 2008), and J (sold to Robert and Sandra Ellis in 2008). These parcels are at the edges of the Site at the north, west, and south. Most of the parcels are not currently in use and have had soil remediation completed. Impacted soil on parcels A/B and parcels C/D/F/G/H has been excavated in accordance with work plans submitted to and approved by NDEP (Basic Environmental Company, 2008). Excavation and removal of soil from parcels A/B was completed in 2007 and excavation and removal of soil from parcels C/D/F/G/H began in March 2010 and was completed in April 2010 (Northgate, 2010e). No investigation or remediation on Parcel E has been performed or is planned due to the continued operation of the OSSM Groundwater Treatment System for the foreseeable future (NDEP, 2010a).

2.1.3 Planned Future Land Use

Tronox currently leases portions of the Site for its manufacturing activities and intends to continue such operations indefinitely. Several parcels within the Site have been sold (Figure 2). The Site area is zoned for industrial use, and there are no current plans to develop the Site for residential use.

2.2 Hazards Associated with Existing Structures

2.2.1 Existing Subsurface Structures That May Require Future Removal

While some of the original ponds and pipelines within the Site area have been removed, a number of these structures still remain in-place, supporting ongoing operations, and may need to be removed during future development of the Site area.

2.2.2 Hazardous Materials Associated with Existing Structures and Current Operations

Many of the existing buildings within the Site are either known or suspected to contain hazardous materials, such as ACM, lead-based paints, and equipment/materials containing PCBs and mercury. In addition, hazardous materials have been or are being stored, and hazardous waste has been or is being generated at existing buildings within the Site.

Hazardous materials associated with existing structures or operations within the Site area are outlined below:

- Many of the existing buildings within the Site are known or suspected to contain ACM due to their age and construction (Converse Consultants, 2010).
- Given the age of buildings within the Site and the common use of lead-based paints before 1978, lead-based paints were most likely used on the majority of buildings/structures within the Site.
- Transformers or capacitors containing PCBs may be present within the Site. In addition, buildings with fluorescent lighting may contain PCBs and mercury in the light ballasts, and caulking used in the buildings may contain PCBs.
- Tronox currently operates processes to produce manganese dioxide, boron trichloride, and elemental boron. These operations involve the use of hazardous materials and generate wastes that are managed in accordance with federal, state, and local laws and regulations.

Future demolition, repair, and/or redevelopment activities at the Site need to incorporate measures to assess the presence of these hazardous materials and specify how they will be addressed within the planned action.

3 General Risk Management

This section of the SMP addresses actions that shall be implemented to mitigate risks to human health and the environment related to potential exposure to COPCs during periods of general (non-construction) Site activity. Any construction that will disturb the soil, building foundations, or pavement shall be completed in a manner that is consistent with the procedures detailed in Sections 4 and 5 of this SMP. Components of the SMP addressing general risk management are as follows:

- Providing required notification to current and future Site Occupants of the known environmental conditions at the Site and the requirements of the SMP;
- Ensuring that future land uses are consistent with the planned land use assumed in this SMP in terms of exposure risk assumptions;
- Prohibiting the use of untreated groundwater at the Site;
- Establishing a notification procedure and protocols for future subsurface activity to ensure long-term compliance with this SMP;
- Reviewing annually and modifying this SMP, as necessary, to address:
 - Any new COPCs encountered at the Site;
 - Any newly-developed toxicological data relating to COPCs;
 - Any significant changes in exposure assumptions because of an intended land use that is different from the planned land use upon which this SMP is based;
 - Any changes to each ECA, including additional characterization data and/or new limits, based on work conducted during the previous year;
 - Any change in ownership of all or portions of the Site (e.g., sale of parcels);
 - Any new processes or hazardous materials handled by the Site Occupants; and
 - Any new tenants on the Site.
- Evaluating groundwater monitoring data collected to determine if there is any need to modify this SMP; and
- Inspecting the Site as necessary to verify that risk management controls are being implemented and that they are effective in limiting potential exposure to COPCs at the Site.

3.1 Notifications and Approvals

The Trust, as property owner, shall be responsible for providing this SMP to Site Occupants. All current and future Site Occupants shall be provided a copy of this SMP and shall certify that they will comply with the provisions herein (see Appendix B).

Site Occupants are required to notify NDEP and the Trust of the following activities:

- Prior to disturbing any soil within an ECA (as defined in Section 4.1 below) including, but not limited to, disturbances during future demolition work, grading, foundation

excavation, utility work, facility maintenance activities, or other construction-related activity, a work plan must be submitted for approval by NDEP and the Trust.

- Within 24 hours of discovering previously unknown soil contamination or buried debris at the Site. In addition, the NDEP 24-hour Spill Notification Line must be called (1-888-331-6337 or (775) 687-9485) whenever unknown soil contamination or buried debris is discovered at the Site. See Section 4.3: Contingency Actions for Encountering Previously Unknown Contaminated Soil.
- When the results of chemical testing from soil stockpiles indicate excavated soil contains COPCs at concentrations that exceed the soil screening levels (Table 1) for the Site.
- Prior to the implementation of any activity that may affect groundwater (e.g., excavation to groundwater table, dewatering, etc.) at the Site. If these types of activities are anticipated or planned, a mitigation plan must be submitted to NDEP and the Trust for approval.
- Prior to commencement of any activity that could impact the groundwater remediation systems or monitoring wells. Any proposed modification to the groundwater treatment system, including temporary shutdown of the system or restricted access to system components, must be approved by both NDEP and the Trust.
- Prior to conducting any activity where Site workers could potentially come in contact with contaminated soil or groundwater.

In addition, Site Occupants are required to notify the Trust of the following activities:

- Prior to the use or addition of new processes or hazardous materials by Site Occupants.

A checklist of notification and reporting requirements to NDEP and the Trust for Site Occupants is provided as Appendix C. The checklist serves only as a reference; compliance with the requirements listed thereon is not a substitute for compliance with this entire SMP.

3.2 Prohibiting Use of Site Groundwater

Perchlorate, hexavalent chromium, VOCs, and other chemicals are known to be present in groundwater at concentrations that exceed U.S. maximum contaminant levels (MCLs) and Nevada BCLs for drinking water and Nevada surface water standards applicable to the Las Vegas Wash. Therefore, groundwater beneath the Site may not be used for drinking water or for any other purpose until such time that a risk assessment is performed that demonstrates the proposed use of groundwater does not represent a significant risk and the use of groundwater at the Site is approved by NDEP.

3.3 Health and Safety Plans for Future Subsurface Activities

Site Occupants must require each contractor with workers that may contact groundwater or disturb soil at the Site to prepare its own project-specific health and safety plan (HASp). The

requirement for preparation of a project-specific HASP also applies to activities involving work in utility vaults or other sub-grade areas (e.g., utility maintenance or modifications in subfloor areas of buildings) where potential exposure to accumulated VOC vapors may occur.

Every Site Occupant has the responsibility to manage its operations in a safe manner and in compliance with all State and Federal occupational safety and health requirements. Each project-specific HASP must be consistent with State and Federal Occupational Safety and Health Administration (OSHA) standards for hazardous waste operations (29 Code of Federal Regulations 1910.120) and any other applicable health and safety standards. Each contractor will provide copies of its HASP to the Site Occupant who has contracted for the contractor's work and to the property owner (upon request). Among other things, a contractor's HASP will include a description of health and safety training requirements for on-Site personnel, a description of the level of personal protective equipment (PPE) to be used, air monitoring requirements, confined space entry procedures, if applicable (e.g., work in utility vaults), and any other applicable precautions to be undertaken to minimize direct contact with contaminated soil and groundwater or exposure to COPC vapors. Site workers must have the appropriate level of health and safety training and must use the appropriate level of PPE, as determined in the relevant HASP. The Site Occupant who has contracted for such services is responsible for ensuring the above requirements are met.

3.4 Long-Term Compliance; Periodic Review and Update of SMP

The Trust, as property owner, shall maintain documentation of notification of the requirements of this SMP to Site Occupants. Site Occupants will inform their employees, contractors, or any other third party invited to the Site about the SMP, as needed, to ensure compliance. To the extent that subsurface work is performed, documentation shall be maintained by the Site Occupant to show that the protocols for the subsurface activities were followed as required by the SMP.

This SMP, and any addenda, will be reviewed by the Trust at least annually. The review will address new COPCs encountered at the Site and not addressed in the existing SMP; any newly available toxicological data relating to COPCs; any significant changes in land use from the planned land use on which this SMP is based; any updates to the ECAs, including modifications to the description and/or limits; addition of new ECAs if previously unknown contamination is found and then left in-place; any change in ownership of all or portions of the Site; any new processes or hazardous materials handled by the Site Occupants; and any new tenants on the Site. The Trust will update the SMP, as needed, based on the periodic review of the SMP and annual review of Site conditions. The updated SMP will be submitted to NDEP for review and approval. Once approved, the Trust will distribute copies of the updated SMP to Site Occupants, as necessary.

3.4.1 Evaluation of Groundwater Monitoring Data

The Trust, as property owner, will compile and review groundwater monitoring data to determine if there has been any significant change in the nature, extent, or concentration of COPCs in groundwater that would require potential modification of this SMP. The groundwater monitoring

data will be evaluated in accordance with a schedule proposed by the Trust and approved by NDEP. Currently, NDEP requires that groundwater data are reviewed on a semi-annual basis.

3.4.2 Annual Report

The Trust, as property owner, shall prepare an annual report summarizing and evaluating the results of the inspection/maintenance/monitoring activities and documenting the continued adequacy of the implemented risk management measures. This report shall include documentation that appropriate notifications have been made, as discussed in Section 3.1, and that appropriate protocols for subsurface activities have been implemented. This annual report shall be submitted to NDEP for review and approval.

4 Risk Management for Soil

This section addresses precautions that will be taken to mitigate potential risks to human health and the environment from COPCs in soil during future Site activities. Precautions to be taken during any soil disturbing activity will include the following:

- Implementation of procedures to characterize and manage Site soil during construction excavation and trenching activities, as established in this Section;
- Implementation of best management practices (BMPs) for construction sites, including control of dust generation at the Site, decontamination of equipment, and prevention of sediment from leaving the Site in storm water runoff; and
- Implementation of proper health and safety precautions, as discussed in Section 3.3.

4.1 Soil Management Protocols

Future demolition work, grading, foundation excavation, utility work, facility maintenance activities, and other construction-related activities may require soil to be excavated or relocated within the Site.

Soil that may be encountered during these future activities is divided into two categories:

1) ECA Soils:

- a.) Areas of Known Soil Contamination Left In-Place: Soil located in areas of known soil contamination that are being left in-place. ENVIRON notes that, if a majority of an ECA is to be excavated, consideration will be given to the feasibility of complete removal of soils in that entire ECA;
- b.) Building Perimeter Soils: The top 3 inches of soil located within 10 feet of Site building footprints that is potentially impacted by lead or asbestos (i.e., adjacent to buildings known to have exterior lead paint or asbestos-containing siding); and
- c.) Uncharacterized Potentially Contaminated Soils: Soil located in areas that are likely to be contaminated (e.g., underneath the Unit Buildings), but have not been previously characterized due to the presence of structures or other obstructions.

2) Previously Unknown Contaminated Soils: Soil encountered during construction/demolition/development/investigation or other soil disturbing activities that is visibly stained, discolored, shiny, or oily, or that has a noticeable solvent- or hydrocarbon-like odor that has not previously been discovered or characterized. These soils are not within an ECA.

Areas of known soil contamination that are being left in-place (i.e., ECAs) are identified in Appendix A. Prior to the disturbance of soil within any ECA, NDEP and the Trust must be notified. A work plan for disturbing any soil within an ECA must be submitted for approval by NDEP and the Trust, prior to disturbance of any ECA soil.

Whenever soil in known or suspected contaminated areas is being excavated or exposed, the entity performing the work shall characterize the soil to determine if the soil is contaminated with COPCs. Soil management protocols are also applicable when previously unknown soil contamination is encountered during construction/demolition/development/investigation or other soil disturbing activities.

Subsequent to completing activities outlined in approved work plans, the Site Occupant must prepare a written report summarizing the remedial actions completed (See Section 4.5).

4.2 Soil Management Actions for ECA Soils

There are a number of areas within the Site where it is likely that soil containing COPCs may be encountered during construction/demolition/development/investigation or other soil disturbing activities. This section describes the soil-handling procedures that will be implemented for ECA soils.

4.2.1 Stockpile Management for ECA Soils

ECA soil that is excavated will be stockpiled for chemical analysis, as described in Section 4.2.2. The Site Occupant will place soil stockpiles on a double layer plastic liner and will cover the stockpile with plastic sheeting or tarp at all times except when material is being handled. The top covering will be adequately secured so that all surface areas are covered. Berms will be constructed around the stockpile area to control precipitation run-on and run-off.

4.2.2 Sampling and Analysis of Stockpiles for ECA Soils

If sampling is required for disposal of excavated soil (e.g., where existing characterization data are insufficient for landfill disposal) or if excavated soil is being considered for reuse on-Site, one composite sample will be collected from random locations from within every 250 cubic yards of stockpiled soil for the first 1,000 cubic yards and per every 1,000 cubic yards for each additional 1,000 cubic yards. Composite soil samples shall consist of at least four subsamples representative of the stockpiled soil. All samples will be submitted to a state-certified laboratory and analyzed for an appropriate suite of chemicals based upon the following criteria:

- Soil from an individual ECA area of known soil contamination left in-place will be analyzed, if needed for disposal or reuse on-site, for the analytes listed in the Summary of ECAs Table in Appendix A.
- Soil from areas within 10 feet of the perimeter of Site buildings potentially impacted by lead or asbestos will be analyzed for lead using EPA Method 6010 and asbestos by the EPA elutriator method (U.S. Environmental Protection Agency [USEPA], 1997).
- Soil from uncharacterized potentially contaminated ECA areas will be analyzed for the same broad suite of chemicals as was done previously for uncharacterized ECAs (see Section 4.3). The analytical requirements for these ECA areas are also included in the Summary of ECAs Table in Appendix A.

A summary of stockpile sampling requirements for ECA soils is provided in Table 2.

4.2.3 Disposition of Sampled Stockpiles of ECA Soils

Analytical results will be compared to the soil screening levels provided in Table 1.¹ If chemical concentrations in the soil stockpile samples do not exceed the soil screening levels, the soil can be reused at the Site for backfill, either within the project area from where it was excavated, or in other areas of the Site, subject to approval from the Trust.

If chemical concentrations in the soil stockpile samples exceed the soil screening levels, the soil will be managed in accordance with all applicable laws and regulations. NDEP and the Trust will be notified when the results of chemical testing indicate excavated soil contains COPCs at concentrations that exceed the soil screening levels for the Site.

4.2.4 Confirmation Sampling for ECA Excavations

When excavation of ECAs is undertaken, confirmation soil samples shall be collected from the limits of excavation as follows:

- Sidewall samples will be collected from discrete locations from freshly exposed soil at a depth equal to approximately one half of the excavation depth at a minimum frequency of every 50 linear feet of sidewall excavation face. If the excavation depth is less than 2 feet, then no sidewall samples are required.
- Bottom confirmation samples will be collected from excavation bottoms at discrete locations on approximately 50-foot centers for areas greater than approximately 2,500 square feet. For excavations that are less than 2,500 square feet, one bottom confirmation sample will be collected.
- If visible or otherwise noticeable contamination remains at the limits of the planned excavation, then field judgment will be used to collect the confirmation samples within the visible/noticeable contamination. This procedure will document the level and location of contamination that is requested to remain in-place.

Laboratory analysis of the confirmation soil samples shall include the same analyses that were used for the soil stockpile (See Section 4.2.2 and the Summary of ECAs Table in Appendix A). A summary of confirmation sampling requirements is provided in Table 2. The results of all confirmation sampling will be reported to NDEP and the Trust. If the results of the confirmation soil sampling indicate that all COPC concentrations are below soil screening levels, no additional excavation is required. If the results of the confirmation soil samples indicate COPC concentrations above the soil screening levels, further overexcavation and additional confirmation sampling is required unless otherwise approved by NDEP and the Trust.

¹ The soil screening levels in Table 1 are the current BCLs, the NDEP-approved Site-specific comparison level for dioxins/furans, and NDEP-approved background levels. If, in the future, any of these comparison levels change, the soil screening levels in Table 1 will be updated to reflect the most current comparison levels. At all times, the most recent version of the BCLs, which can be found on the NDEP website (<http://ndep.nv.gov/bmi/technical.htm>) should be used.

4.3 Contingency Actions for Encountering Previously Unknown Contaminated Soil

In addition to the ECA soil areas at the Site, previously unknown contaminated soil may be observed during earthwork activities or building demolition, such as when existing building slabs are removed, during grading work, or within excavations for trenches or building foundations. If during any earthwork, building demolition, or other activities at the Site, soil is encountered that is visibly stained, discolored, shiny, or oily, or that has a noticeable solvent- or hydrocarbon-like odor, contingency actions must be taken as summarized below. In addition, soils within any excavation that extend to greater than 10 feet below grade (unless previously characterized) shall be covered by the contingency actions described in this section.

If previously unknown soil contamination or buried debris is observed at the Site, NDEP and the Trust shall be notified within 24 hours. In addition, the NDEP 24-hour Spill Notification Line must be called (1-888-331-6337 or (775) 687-9485) whenever unknown soil contamination or buried debris is discovered at the Site. If contamination is discovered by odors, then the soil must be field tested with a photo ionization detector (PID) for contamination. A sample of the visibly contaminated or odorous soil must be collected for laboratory analysis and analyzed for the full suite of analytes, at a minimum, for Site COPCs by the following analytical methods, which are also summarized in Table 4:

- Metals by EPA Methods 6010 and 6020;
- Mercury by EPA Method 7470/7471;
- Hexavalent chromium by EPA Method 7196A or 7199/3060A;
- Cyanide by EPA Method 9012;
- Perchlorate by EPA Method 314.0 or 6850;
- VOCs by EPA Method 8260;
- SVOCs (incl. Hexachlorobenze and Benzo(a)Pyrene) by EPA Method 8270;
- PAHs by EPA Method 8310 or 8270;
- Dioxins/Furans by EPA Method 8290;
- PCBs by EPA Method 8082;
- OCPs by EPA Method 8081A;
- pH by EPA Method 9045;
- Inorganic anions (bromide, chloride, fluoride, nitrate as nitrate, sulfate, nitrite as N, nitrate as N, and orthophosphate as phosphate) by EPA Method 9056;
- Sulfide by EPA Method 9034; and
- Asbestos by Modified EPA Method 540/R-97/028.

If there is evidence that other chemicals may be present that could present a potential health risk through direct contact by Site workers, additional analyses shall be performed as requested by NDEP and the Trust. If it is determined that no additional analyses beyond the initial analyses are required, as approved by NDEP and the Trust, soil excavation may proceed to the extent needed to continue construction activities. The excavated soil will be managed in stockpiles as described below in Sections 4.3.2 and 4.3.3.

If the results of the evaluation sample indicate COPCs are present in soil at concentrations above the soil screening levels, NDEP and the Trust must be notified, and the Site Occupant must receive approval from NDEP and the Trust prior to continued construction/utility work or backfilling activities. Additional actions may also be necessary (e.g., submittal of a work plan for approval by NDEP and the Trust for management of the soil, additional excavation, use of additional PPE to prevent or limit worker exposure), as described in Section 4.3.1.

4.3.1 Soil Management of Previously Unknown Contaminated Soil

The Site Occupant conducting the work will manage soils remaining in-place in areas of previously unknown contaminated soil, as discussed in this Section. Prior to commencement of any work, the Site Occupant must prepare and submit a work plan detailing any proposed sampling activities, investigations or remediation (collectively referred to as “remedial actions”) for approval by NDEP and the Trust. Remedial actions will not commence prior to the approval of the work plan by both NDEP and the Trust.

Depending on the apparent extent of contamination, the level of contamination, the construction schedule, and physical constraints, management of the contaminated soil could be handled in different ways. Examples of potential proposed remedial action approaches, which would be detailed in the work plan, for these areas are outlined below:

- *Excavate and Remove, Collect Confirmation Samples.* Unsaturated zone soils that potentially contain chemicals above soil screening levels are excavated and stockpiled. The stockpiled soil is managed as described in Sections 4.3.2 and 4.3.3. Confirmation soil samples are then collected from the excavation sidewalls and floor to verify that impacted soils have been removed. Confirmation samples shall be collected at the frequency described in Section 4.3.5. Excavation is considered complete if confirmation soil sample results are below soil screening levels. After soil excavation is considered complete and approved by both NDEP and the Trust, the excavation may be backfilled with clean soil, and development work may continue.
- *In Situ Characterization.* The extent of impacted soils is characterized *in situ* by collecting soil samples from soil borings prior to excavation (i.e., the extent is characterized in advance using samples collected from soil borings). Based on the nature and extent of contamination, the Site Occupant may proceed with the excavation and disposal of impacted soils, as well as collection of post-excavation confirmation sampling (as described above), or evaluate and implement other remedial measures, as appropriate.

If known soil contamination is left in-place, the area would be designated as an ECA and managed as such. Reasons for leaving known soil contamination in-place could include: 1) if complete excavation is not practicable at that time (e.g., there are physical constraints such as a building); or 2) if operation of the regional groundwater remediation system adequately addresses any potential impact due to the identified impacted soil. NDEP would consider specific cases for ceasing excavation with confirmation samples exhibiting concentrations greater than soil screening levels. If approved by NDEP, the Site Occupant would have to provide data and documentation in a written report for the approved excavation limits.

Subsequent to completing activities outlined in the approved work plan, the Site Occupant must prepare a written report summarizing the remedial actions completed (See Section 4.5). The report must be submitted to and approved by both NDEP and the Trust.

4.3.2 Stockpile Management for Previously Unknown Contaminated Soil

Previously unknown contaminated soil that is excavated will be stockpiled for chemical analysis, as described in Section 4.3.3. The Site Occupant will place soil stockpiles on a double layer plastic liner and will cover the stockpile with plastic sheeting or tarp at all times except when material is being handled. The top covering will be adequately secured so that all surface areas are covered. Berms will be constructed around the stockpile area to control precipitation run-on and run-off.

4.3.3 Sampling and Analysis of Stockpiles for Previously Unknown Contaminated Soil

If sampling is required for disposal of excavated soil (e.g., where existing characterization data are insufficient for landfill disposal or if excavated soil is being considered for reuse on-Site), one composite sample will be collected from random locations from within every 250 cubic yards of stockpiled soil for the first 1,000 cubic yards and per every 1,000 cubic yards for each additional 1,000 cubic yards. Composite soil samples shall consist of at least four subsamples representative of the stockpiled soil. All samples will be submitted to a state-certified laboratory and analyzed for the same broad suite of chemicals as was done previously (see Section 4.3 and Table 4).

A summary of stockpile sampling requirements for previously unknown contaminated soil is provided in Table 3.

4.3.4 Disposition of Sampled Stockpiles for Previously Unknown Contaminated Soil

Analytical results will be compared to the soil screening levels provided in Table 1.² If chemical concentrations in the soil stockpile samples do not exceed the soil screening levels, the soil can

² The soil screening levels in Table 1 are the current BCLs, the NDEP-approved Site-specific comparison level for dioxins/furans, and NDEP-approved background levels. If, in the future, any of these comparison levels change, the soil screening levels in Table 1 will be updated to reflect the most current comparison levels. At all times, the most recent version of the BCLs, which can be found on the NDEP website (<http://ndep.nv.gov/bmi/technical.htm>) should be used.

be reused at the Site for backfill, either within the project area from where it was excavated, or in other areas of the Site, subject to approval from the Trust.

If chemical concentrations in the soil stockpile samples exceed the soil screening levels, the soil will be managed in accordance with all applicable laws and regulations. NDEP and the Trust will be notified when the results of chemical testing indicate excavated soil contains COPCs at concentrations that exceed the soil screening levels for the Site.

4.3.5 Confirmation Sampling for Excavations in Areas of Previously Unknown Contaminated Soil

For excavations in previously unknown contamination areas, confirmation samples will be collected from in-place soils at the limits of the excavation as follows:

- Sidewall samples will be collected from discrete locations from freshly exposed soil at a depth equal to approximately one half of the excavation depth at a minimum frequency of every 50 linear feet of sidewall excavation face. If the excavation depth is less than 2 feet, then no sidewall samples are required.
- Bottom confirmation samples will be collected from excavation bottoms at discrete locations on approximately 50-foot centers for areas greater than approximately 2,500 square feet. For excavations that are less than 2,500 square feet, one bottom confirmation sample will be collected.
- If visible or otherwise noticeable contamination remains at the limits of the planned excavation, then field judgment will be used to collect the confirmation samples within the visible/noticeable contamination. This procedure will document the level and location of contamination that is requested to remain in-place.

Laboratory analysis of the confirmation soil samples shall include the same analyses that were used for the soil stockpile. A summary of confirmation sampling requirements is provided in Table 3. The results of all confirmation sampling will be reported to NDEP and the Trust. If the results of the confirmation soil sampling indicate that all COPC concentrations are below soil screening levels, no additional excavation is required. If the results of the confirmation soil sampling indicate COPC concentrations above the soil screening levels, further overexcavation and additional confirmation sampling is required unless otherwise approved by NDEP and the Trust.

4.4 Construction Impact Mitigation Measures

This section outlines measures that must be implemented to mitigate potential impacts to human health and the environment during earthwork construction. Measures must be implemented to mitigate the potential impacts of the following activities:

- Dust generation associated with soil excavation and loading activities, construction or transportation equipment traveling over on-Site soil, and wind traversing COPC-containing soil stockpiles;

- Tracking soil off the Site with construction or transportation equipment; and
- Transporting sediments from the Site in surface water run-off.

The mitigation measures for these potential activities will include, but are not limited to, the following:

- Implementing dust control measures (Section 4.4.1);
- Decontaminating construction and transportation equipment (Section 4.4.2); and
- Implementing Storm Water Pollution Prevention Plans (SWPPPs), BMPs, and applicable controls (Section 4.4.3).

These mitigation measures are discussed in more detail below. Prior to beginning any soil disturbing activities, earthwork or construction, the Site Occupant conducting the work shall prepare and submit to the appropriate authorities, including NDEP and the Trust, a plan describing mitigation measures that will be implemented during Site excavation, sampling, and construction activities. The mitigation measures must be approved by NDEP and the Trust (and any other relevant agency) prior to implementation of soil disturbing activities. The Site Occupant shall also provide copies of all permits required for construction in the ECAs to the Trust prior to starting any construction.

4.4.1 Dust Control Measures

Dust control measures will be implemented during construction activities at the project area to minimize dust generation. It is particularly important to minimize the exposure of on-Site construction workers to dust containing COPCs, and to prevent nuisance dust and dust containing COPCs from migrating off-Site. Dust generation may be associated with excavation activities, truck traffic, ambient wind traversing soil stockpiles, loading of transportation vehicles, and other earthwork.

Dust control measures may include the following:

- Mist or spray reclaimed water while performing excavation activities and loading transportation vehicles;
- Limit vehicle speeds on the property to 5 miles per hour;
- Control excavation activities to minimize dust generation; and
- Minimize drop heights while loading transportation vehicles.

Soil stockpiles generated as a result of excavating soil potentially impacted by COPCs will be underlain with double layer plastic sheeting and covered with plastic sheeting or tarps.

4.4.2 Decontaminating Vehicles and Construction Equipment

Construction equipment and transportation vehicles that contact soil that potentially contains COPCs or has been confirmed to contain COPCs within the project area will be decontaminated

before they leave the project area, to minimize the potential for their tracking COPC-containing soil onto roadways.

A decontamination plan for the decontamination of vehicles and construction equipment must be included in the mitigation measures plan referenced above in Section 4.4. Decontamination methods will include scraping, brushing, and/or vacuuming to remove dirt on vehicle exteriors and wheels. If these dry decontamination methods are not adequate, methods such as steam cleaning, high-pressure washing, and use of cleaning solutions will be used, as necessary, to remove soil. Wash water resulting from decontamination activities must be collected and managed in accordance with all applicable laws and regulations.

4.4.3 Storm Water Pollution Controls

The Site is subject to storm water regulations. To ensure that the Site complies with these regulations, all construction activities shall conform to NDEP storm water management requirements, including requirements for development and implementation of BMPs as specified in a SWPPP. Any Site Occupant performing work at the Site that is subject to NDEP storm water management requirements must implement specific BMPs appropriate to the construction plans and specifications.

4.5 Documentation of Remedial Actions Taken

After completion of a remedial action for either ECA soils or previously unknown contaminated soils, the Site Occupant must prepare a report that describes the field activities, findings, remedial actions taken, and analytical results. The report shall be submitted to NDEP and the Trust within 15 business days after completion of the remedial action for approval.

The report shall include, at a minimum, the following information:

- An excavation summary;
- A figure depicting the location where the remedial action was taken;
- Surveyed coordinates for the limits of excavation within ECAs or due to discovered contaminated soils;
- A summary of laboratory analytical results of soil stockpile and soil post-excavation confirmation sampling, as well as a compilation of laboratory analytical data reports and data validation reports;
- An estimate of the volume—and approximate location—of excavated soil that exceeded soil screening levels;
- A summary of excavated soil transported to an off-site disposal facility, including the dates the soil was transported and the estimated quantity of soil transported; and
- Proof of proper disposal of contaminated soil.

5 Risk Management for Groundwater

This section addresses risk management for groundwater, including limiting the potential for creating migration pathways during construction, dewatering considerations, and protection/removal/relocation of monitoring wells and remediation system components.

5.1 Reducing the Potential for Creating Conduits to Groundwater During Deep Construction Activities

Because subsurface material at the Site includes sands and gravels, most construction at the Site utilizes a slab on grade. However, it is possible that designs for new construction will include deep foundations. If deep foundations are required for new construction at the Site, they will be cast in place, reducing the potential to create vertical conduits for migration of soil vapor from groundwater into overlying buildings.

It is unlikely that piles or deep excavations will be used in future construction, because of the nature of the subsurface material. However, if piles or deep excavations are planned that would penetrate the first aquifer zone underlying the Site (i.e., approximately 30 feet below ground surface), mitigation measures will be employed to minimize:

- a. The potential to drive shallow, chemically-impacted soil into deeper soils;
- b. The potential to create conduits for the migration of shallow, chemically-impacted groundwater to deeper groundwater; and
- c. The potential to create conduits for the migration of soil vapor from groundwater into overlying buildings.

Mitigation measures may include pre-drilling through chemically-impacted soil or groundwater and using conductor casing to prevent downward or upward migration of COPCs. Alternatively, if a geotechnical evaluation indicates that the aquitard sediments will seal around the installed piles to prevent formation of conduits, piles may be installed using a cone-shaped tip on the end of the pile to prevent soil from migrating to deeper zones. Other mitigation measures that can effectively reduce the potential for driving impacted soil deeper, or creating conduits for groundwater migration, may also be used, if their effectiveness can be demonstrated to the satisfaction of NDEP and the Trust.

NDEP and the Trust must be notified prior to the implementation of any activities that will affect groundwater (e.g., excavation to groundwater table, dewatering, etc.). If these types of activities are anticipated or planned in areas of known groundwater contamination, a mitigation plan must be submitted to NDEP and the Trust. The mitigation plan will at a minimum describe the mitigation measures that will be implemented and demonstrate their effectiveness in preventing downward or upward migration of COPCs. Both NDEP and the Trust must approve the mitigation plan prior to implementation of these activities.

5.2 Dewatering

NDEP and the Trust must be notified prior to commencement of any on-Site dewatering activities.

If dewatering is to be performed, then the groundwater must be sampled in planned work areas and analyzed for the analytical parameters listed in Table 5 to determine appropriate management practices. In addition, dewatering activities must be properly permitted.

5.3 Protection and Removal/Relocation of Existing Groundwater Monitoring Wells and Remediation System Components

Veolia, outside contractor to the Trust, currently operates groundwater remediation systems located on the Site, as well as in off-Site locations. The layout of major features of the existing groundwater treatment systems are shown on Figure 2. Components of the remediation systems include an on-Site bentonite-slurry barrier wall, three different areas of groundwater extraction wells, single and double-contained pipelines, air relief structures, electrical power and instrumentation conduits, fiber-optic instrument systems, electrical field control panels, leak detection systems, radio frequency communication links, settlement pin monuments, three groundwater treatment systems, ponds, and a network of groundwater monitoring wells. Existing groundwater monitoring and extraction wells are identified on Figure 4.

The groundwater remediation systems operate continuously, except when it is necessary to shut them off for required maintenance. Any parties planning any activities that could impact the groundwater remediation systems or monitoring wells, including construction work within 50 feet of the groundwater remediation systems or monitoring wells, where the use of construction equipment may accidentally damage a well or other component of the system, must notify and receive approval from both NDEP and the Trust prior to commencement of work.

The planned construction work must take appropriate measures to protect the integrity of these features. These measures should allow for the continued operation of these systems and wells while minimizing any shutdowns of system components. Issues that should be considered include:

- Procedures for planning and implementing remedial system modifications that may be necessary due to Site development activities; and
- Measures to be taken to protect remedial system components during construction.

5.3.1 Removal or Relocation of Remediation System Components and Monitoring Wells

If the location of existing remediation system wells and pipelines conflicts with any planned activity, it may be possible to remove or relocate the affected well or pipeline; however, this will only be considered when no other alternatives are feasible or acceptable.

Any proposed modification to the groundwater treatment system(s), including temporary shutdown of the system(s), must be approved by both NDEP and the Trust. Potential conflicts between future construction projects and the location of existing remediation system components should be identified and resolved during the design stage. Relocation or removal of any remediation system components may only occur with the prior approval of NDEP and the Trust.

5.3.2 Protection of Existing Groundwater Wells and Remediation System Components

Before any activity starts, the Site Occupant shall confirm with the Trust the location of all extraction and monitoring wells that are within or near the construction zone. Before commencing construction work, the Site Occupant shall appropriately protect all groundwater monitoring and extraction wells. The Site Occupants shall provide and place steel plate or equivalent protective measures over the existing pipelines and power and control conduits during construction activities.

5.3.3 Shutdown of Remediation Systems

Planned shutdowns of the remediation system(s) must be identified in a work plan that will be submitted to NDEP, the Trust, and Veolia for approval. If construction activities require a planned shutdown of any portion of the remediation system(s), previously approved procedures addressing such shutdown shall be followed. The work plan shall require that the Site Occupant provide NDEP, the Trust, and Veolia with written notice at least 5 business days before the proposed shutdown, and NDEP, the Trust, and Veolia must approve the planned shutdown.

If the Site Occupant's activities result in an unplanned shutdown (e.g., due to breaking a pipe that causes the release of untreated groundwater) of any component of the remediation system(s), they must immediately verbally notify and receive approval from both NDEP, the Trust, and Veolia prior to system shutdown. In addition, within 24 hours of the shutdown, the Site Occupant must provide a written explanation to NDEP, the Trust, and Veolia of the reason for and the duration of the shutdown.

5.3.4 Remediation System Access

Site development must be performed in such a way that all groundwater wells, pull boxes, and the groundwater treatment system(s) and associated components can be accessed for sampling, operation, and maintenance. If access to a well or other remediation system component is planned to be restricted during construction activities, the Site Occupant must provide written notification to NDEP and the Trust of the reason for and the duration of the proposed restricted access and receive approval from both NDEP and the Trust before creating the restriction.

5.3.5 Accidental Releases of Untreated Groundwater

Before starting any activity within 50 feet of any component of the groundwater monitoring, extraction, and treatment systems, the Site Occupant shall prepare a contingency plan to outline actions that would be taken if damage is caused to any remediation system component in a manner that causes the release of untreated groundwater. The Site Occupant must submit the contingency plan to NDEP and the Trust for review and approval before starting any activities within 50 feet of remediation system components.

The contingency plan shall identify any emergency equipment the Site Occupant may need to retain on-Site during these activities to control or contain potential releases of untreated groundwater.

If Site activities result in the release of untreated groundwater, the Site Occupant shall immediately notify NDEP and the Trust of the release and the status of remediation system operations. If the remediation system(s) are shut down due to damage to the system(s) or to control the release of untreated groundwater, the Site Occupant must provide NDEP and the Trust with a written explanation for the shutdown. The Site Occupant must take immediate action to control the source of the spill, and contain untreated groundwater that has been released, in accordance with its approved contingency plan. Efforts shall be made to avoid release of untreated groundwater into storm sewers.

6 References

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Tables

TABLE 1 Soil Screening Levels				
Parameter of Interest	Chemical	Unit	NDEP 2012 Worker BCL^a or Site-Specific Screening Level	Basis
Organic Acids	4-Chlorobenzenesulfonic acid	mg/kg	117	sat
	Benzenesulfonic acid	mg/kg	100,000	max
	Diethyl phosphorodithioic acid	mg/kg	90,800	N
	Dimethyl phosphorodithioic acid	mg/kg	100,000	max
	Phthalic acid	mg/kg	100,000	max
Organophosphate Pesticides	Azinphos-Methyl	mg/kg	--	--
	Bolstar	mg/kg	--	--
	Chlorpyrifos	mg/kg	2,050	N
	Coumaphos	mg/kg	--	--
	Demeton-O	mg/kg	--	--
	Demeton-S	mg/kg	--	--
	Diazinon	mg/kg	616	N
	Dichlorvos	mg/kg	6.6	C
	Dimethoate	mg/kg	--	--
	Disulfoton	mg/kg	27.4	N
	EPN	mg/kg	--	--
	Ethoprop	mg/kg	--	--
	Ethyl Parathion	mg/kg	4,100	N
	Famphur	mg/kg	--	--
	Fensulfothion	mg/kg	--	--
	Fenthion	mg/kg	--	--
	Malathion	mg/kg	13,700	N
	Merphos	mg/kg	--	--
	Methyl Parathion	mg/kg	171	N
	Mevinphos	mg/kg	--	--
	Naled	mg/kg	1,370	N
	Phorate	mg/kg	--	--
	Ronnel	mg/kg	34,200	N
Stirophos	mg/kg	79.8	C	
Sulfotep	mg/kg	--	--	
Thionazin	mg/kg	--	--	
Tokuthion	mg/kg	--	--	
Trichloronate	mg/kg	--	--	
Organochlorine Pesticides	4,4'-DDD	mg/kg	11.1	C
	4,4'-DDE	mg/kg	7.81	C
	4,4'-DDT	mg/kg	7.81	C
	Aldrin	mg/kg	0.113	C
	Alpha-BHC	mg/kg	270	N
	Alpha-chlordane	mg/kg	--	--
	Beta-BHC	mg/kg	53.9	N
	Delta-BHC	mg/kg	--	--
	Dieldrin	mg/kg	0.12	C
	Endosulfan	mg/kg	4,100	N

TABLE 1 Soil Screening Levels				
Parameter of Interest	Chemical	Unit	NDEP 2012 Worker BCL^a or Site-Specific Screening Level	Basis
	Endosulfan I	mg/kg	--	--
	Endosulfan II	mg/kg	--	--
	Endosulfan Sulfate	mg/kg	--	--
	Endrin	mg/kg	205	N
	Endrin Aldehyde	mg/kg	--	--
	Endrin Ketone	mg/kg	--	--
	Gamma-BHC (Lindane)	mg/kg	8.98	N
	Gamma-chlordane	mg/kg	--	--
	Heptachlor	mg/kg	0.426	C
	Heptachlor Epoxide	mg/kg	0.21	C
	Methoxychlor	mg/kg	3,420	N
	Tech-Chlordane	mg/kg	7.19	C
	Toxaphene	mg/kg	1.74	C
SVOCs	1,4-Dioxane	mg/kg	19.2	C
	2-Methylnaphthalene	mg/kg	--	--
	Acenaphthene	mg/kg	2,560	N
	Acenaphthylene	mg/kg	147	sat
	Anthracene	mg/kg	9,920	N
	Benz(a)anthracene	mg/kg	2.34	C
	Benzo(a)pyrene	mg/kg	0.234	C
	Benzo(b)fluoranthene	mg/kg	2.34	C
	Benzo(g,h,i)perylene	mg/kg	34,100	N
	Benzo(k)fluoranthene	mg/kg	23.4	C
	bis(2-Ethylhexyl)phthalate	mg/kg	137	C
	Butyl benzyl phthalate	mg/kg	240	sat
	Chrysene	mg/kg	234	C
	Dibenz(a,h)anthracene	mg/kg	0.234	C
	Diethyl phthalate	mg/kg	100,000	max
	Dimethyl phthalate	mg/kg	100,000	max
	Di-N-Butyl phthalate	mg/kg	68,400	N
	Di-N-Octyl phthalate	mg/kg	--	--
	Fluoranthene	mg/kg	24,400	N
	Fluorene	mg/kg	3,670	N
	Hexachlorobenzene ^c	mg/kg	1.2	C
	Indeno(1,2,3-cd)pyrene	mg/kg	2.34	C
	Naphthalene	mg/kg	17.4	C
	Nitrobenzene	mg/kg	15.1	C
	Octachlorostyrene	mg/kg	--	--
	Phenanthrene	mg/kg	24.5	sat
	Pyrene	mg/kg	19,300	N
	Pyridine	mg/kg	667	N
VOCs	1,1,1 ,2-Tetrachloroethane	mg/kg	20.3	C
	1,1,1-Trichloroethane	mg/kg	1,390	sat

TABLE 1 Soil Screening Levels				
Parameter of Interest	Chemical	Unit	NDEP 2012 Worker BCL ^a or Site-Specific Screening Level	Basis
	1,1,2,2-Tetrachloroethane	mg/kg	2.59	C
	1,1,2-Trichloroethane	mg/kg	5.80	C
	1,1-Dichloroethane	mg/kg	23.3	C
	1,1-Dichloroethene	mg/kg	1,400	N
	1,1-Dichloropropene	mg/kg	--	--
	1,2,3-Trichlorobenzene	mg/kg	--	--
	1,2,3-Trichloropropane	mg/kg	0.106	C
	1,2,4-Trichlorobenzene	mg/kg	110	N
	1,2,4-Trimethylbenzene	mg/kg	671	N
	1,2-Dibromo-3-chloropropane	mg/kg	0.0583	C
	1,2-Dichlorobenzene	mg/kg	373	sat
	1,2-Dichloroethane	mg/kg	2.41	C
	1,2-Dichloropropane	mg/kg	4.54	C
	1,3,5-Trimethylbenzene	mg/kg	254	sat
	1,3-Dichlorobenzene	mg/kg	373	sat
	1,3-Dichloropropane	mg/kg	71.6	N
	1,4-Dichlorobenzene	mg/kg	14.3	C
	2,2-Dichloropropane	mg/kg	--	--
	2-Butanone	mg/kg	34,100	sat
	2-Chlorotoluene	mg/kg	511	sat
	2-Hexanone	mg/kg	2,150	N
	2-Methoxy-2-methyl-butane	mg/kg	--	--
	4-Chlorotoluene	mg/kg	511	sat
	4-Isopropyltoluene	mg/kg	647	sat
	4-Methyl-2-pentanone	mg/kg	17,200	sat
	Acetone	mg/kg	100,000	max
	Benzene	mg/kg	4.50	C
	Bromobenzene	mg/kg	695	sat
	Bromochloromethane	mg/kg	--	--
	Bromodichloromethane	mg/kg	3.6	C
	Bromoform	mg/kg	242	C
	Bromomethane	mg/kg	42.9	N
	Carbon tetrachloride	mg/kg	4.07	C
	Chlorobenzene	mg/kg	695	sat
	Chloroethane	mg/kg	1,100	C
	Chloroform	mg/kg	1.71	C
	Chloromethane	mg/kg	8.95	C
	cis-1,2-Dichloroethene	mg/kg	791	N
	cis-1,3-Dichloropropene	mg/kg	--	--
	Dibromochloromethane	mg/kg	6.15	C
	Dibromomethane	mg/kg	210	N
	Dichlorodifluoromethane	mg/kg	340	sat
	Ethyl t-butyl ether	mg/kg	--	--

TABLE 1 Soil Screening Levels				
Parameter of Interest	Chemical	Unit	NDEP 2012 Worker BCL^a or Site-Specific Screening Level	Basis
	Ethylbenzene	mg/kg	21.0	C
	Ethylene dibromide	mg/kg	0.185	C
	Hexachlorobutadiene	mg/kg	24.6	C
	Isopropyl ether	mg/kg	--	--
	Isopropylbenzene	mg/kg	647	sat
	m-Xylene	mg/kg	214	Sat
	Methyl tert butyl ether	mg/kg	216	C
	Methylene chloride	mg/kg	60.4	C
	Naphthalene	mg/kg	17.4	C
	N-Butylbenzene	mg/kg	237	sat
	N-Propylbenzene	mg/kg	237	sat
	o-Xylene	mg/kg	282	sat
	p-Xylene	mg/kg	375	sat
	sec-Butylbenzene	mg/kg	223	sat
	Styrene	mg/kg	1,730	sat
	t-Butyl alcohol	mg/kg	21,300	sat
	tert-Butylbenzene	mg/kg	393	sat
	Tetrachloroethene	mg/kg	3.28	C
	Toluene	mg/kg	521	sat
	trans-1,2-Dichloroethylene	mg/kg	600	N
	trans-1,3-Dichloropropene	mg/kg	--	--
	Trichloroethene	mg/kg	5.49	C
	Trichlorofluoromethane	mg/kg	1,980	sat
	Vinyl Chloride	mg/kg	1.86	C
	Xylenes, total	mg/kg	214	sat
TPH	Oil Range Organics (TPH-oil)	mg/kg	100 ^d	--
	TPH-d	mg/kg	100 ^d	--
	TPH-g	mg/kg	100 ^d	--
PCBs	Aroclor-1 016	mg/kg	23.6	C
	Aroclor-1 221	mg/kg	0.826	C
	Aroclor-1 232	mg/kg	0.826	C
	Aroclor-1 242	mg/kg	0.826	C
	Aroclor-1 248	mg/kg	0.826	C
	Aroclor-1 254	mg/kg	0.826	C
	Aroclor-1 260	mg/kg	0.826	C
	Total PCBs	mg/kg	0.826	C
	TCDD TEQ ^e	pg/g	2,700 ^f	C
General Chemistry	Cyanide	mg/kg	13,700	N
	Perchlorate	mg/kg	795	N
Dioxins/Furans	TCDD TEQ ^g	pg/g	2,700 ^f	C
Metals	Aluminum	mg/kg	100,000	max
	Antimony	mg/kg	454	N
	Arsenic	mg/kg	7.2 ^h	--

TABLE 1 Soil Screening Levels				
Parameter of Interest	Chemical	Unit	NDEP 2012 Worker BCL ^a or Site-Specific Screening Level	Basis
	Barium	mg/kg	100,000	max
	Beryllium	mg/kg	2,230	N
	Boron	mg/kg	100,000	max
	Cadmium	mg/kg	560	N
	Chromium (III)	mg/kg	100,000	max
	Chromium (VI)	mg/kg	1,360	C
	Cobalt	mg/kg	337	N
	Copper	mg/kg	42,200	N
	Iron	mg/kg	100,000	max
	Lead	mg/kg	800 ^j	--
	Magnesium	mg/kg	100,000	max
	Manganese	mg/kg	100,000	max
	Mercury	mg/kg	341	N
	Molybdenum	mg/kg	5,680	N
	Nickel	mg/kg	21,800	N
	Platinum	mg/kg	--	--
	Potassium	mg/kg	--	--
	Selenium	mg/kg	5,680	N
	Silver	mg/kg	5,680	N
	Sodium	mg/kg	--	--
	Strontium	mg/kg	100,000	max
	Thallium	mg/kg	79.5 ⁱ	N
	Tin	mg/kg	100,000	max
	Titanium	mg/kg	100,000	max
	Tungsten	mg/kg	8,510	N
	Uranium	mg/kg	3,400	N
	Vanadium	mg/kg	5,680	N
	Zinc	mg/kg	100,000	max
Asbestos	Long amphibole fibers Long chrysotile fibers	fibers	1 or more ⁱ More than 5 ⁱ	--

a - From User's Guide and Background Technical Document for Nevada Division of Environmental Protection (NDEP) Basic Comparison Levels (BCLs) for Human Health for the BMI Complex and Common Areas, Revision 7, January 2012. Values for the worker are the lower of the indoor and outdoor worker soil BCLs. Any user of Table 1 should use the most current version of the BCLs. Please check the NDEP website (at <http://ndep.nv.gov/bmi/technical.htm>) for the most current version of the BCLs.

b - BCL based on mixed isomer.

c - Hexachlorobenzene analyzed using both EPA Methods 8081 and 8270. Data reported based on EPA 8270 as it was deemed to be the superior method.

d - 100 mg/kg total TPH value used for screening.

e - TCDD equivalents based on WHO 2005 TEFs for the 12 co-planer PCBs; the detection limit was used for non-detect values.

f - Site-specific value (from NDEP, Letter to Tronox LLC re: Response to: Results of Bioaccessibility Study for Dioxin/Furans in Soil, Tronox LLC, Henderson, Nevada (Revised), May 25, 2010. (NDEP, 2010b)).

g - TCDD equivalents based on WHO 2005 TEFs for the 17 dioxin and furan congeners.

h - Based on regional background concentrations.

i - Site-specific value.

C = Cancer

N = Noncancer

sat = soil saturation

max = risk-based value is greater than 100,000 mg/kg

-- = undefined

**Table 2
Summary of Confirmation Sampling and Stockpile Sampling Requirements for ECA Soils**

ECA Categories of Contaminated Soil	Definition of ECA Category	Laboratory Analysis for Confirmation and Stockpile Sampling	Confirmation Sampling	Stockpile Sampling
1) Areas of Known Soil Contamination Left In-Place	Soil located in areas of known soil contamination that are being left in-place.	List of laboratory analyses required for individual ECAs included in Summary of ECAs Table in Appendix A.	<ul style="list-style-type: none"> • Sidewall samples will be collected from discrete locations from freshly exposed soil at a depth equal to approximately one half of the excavation depth at a minimum frequency of every 50 linear feet of sidewall excavation face. If the excavation depth is less than 2 feet, then no sidewall samples are required. • Bottom confirmation samples will be collected from excavation bottoms at discrete locations on approximately 50-foot centers for areas greater than approximately 2,500 square feet. For excavations that are less than 2,500 square feet, one bottom confirmation sample will be collected. • If visible or otherwise noticeable contamination remains at the limits of the planned excavation, then field judgment will be used to collect the confirmation samples within the visible/noticeable contamination. This procedure will document the level and location of contamination that is requested to remain in-place. 	One composite sample will be collected from random locations from within every 250 cubic yards of stockpiled soil for the first 1,000 cubic yards and per every 1,000 cubic yards for each additional 1,000 cubic yards. Composite soil samples shall consist of at least four subsamples representative of the stockpiled soil.
2) Building Perimeter Soils	The top 3 inches of soil located within 10 feet of Site building footprints that is potentially impacted by lead or asbestos (i.e., adjacent to buildings known to have exterior lead paint or asbestos-containing siding).	Lead by EPA Method 6010; & Asbestos by the EPA elutriator method		
3) Uncharacterized Potentially Contaminated Soils	Soil located in areas that are likely to be contaminated (e.g., underneath the Unit Buildings), but have not been previously characterized due to the presence of structures or other obstructions.	<p>All confirmation and stockpile samples will be submitted to a state-certified laboratory and analyzed for the full suite of analytes for Site COPCs by the following analytical methods:</p> <p>Metals by EPA Methods 6010 and 6020; Mercury by EPA Method 7470/7471; Hexavalent chromium by EPA Method 7196A or 7199/3060A; Cyanide by EPA Method 9012; Perchlorate by EPA Method 314.0 or 6850; VOCs by EPA Method 8260; SVOCs (incl. HCB and B(a)P) by EPA Method 8270; PAHs by EPA Method 8310 or 8270; Dioxins/Furans by EPA Method 8290; PCBs by EPA Method 8082; OCPs by EPA Method 8081A; pH by EPA Method 9045; Inorganic anions by EPA Method 9056; Sulfide by EPA Method 9034; and Asbestos by Modified EPA Method 540/R-97/028.</p>		

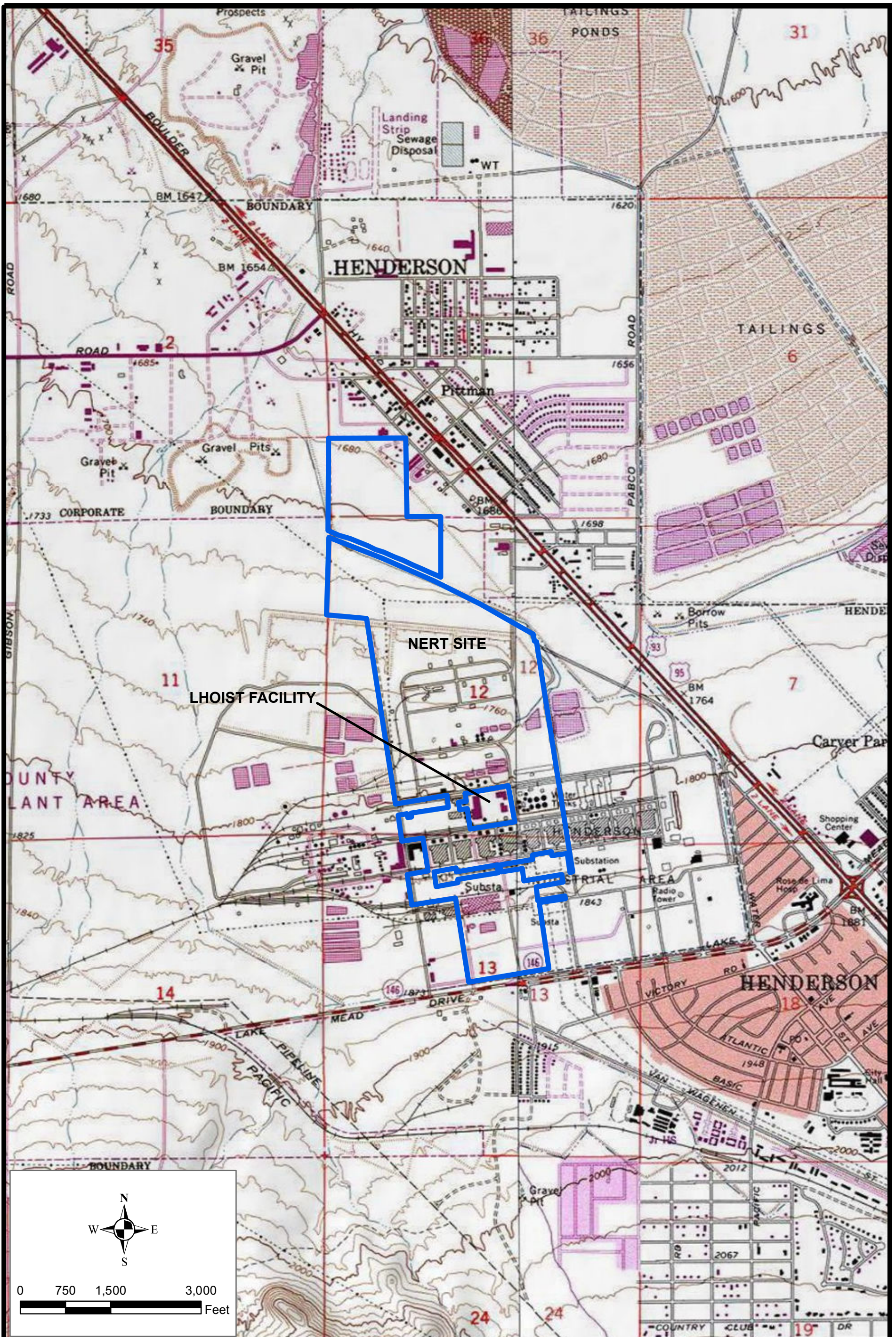
Table 3			
Summary of Confirmation Sampling and Stockpile Sampling Requirements for Previously Unknown Contaminated Soils			
Definition of Category	Laboratory Analysis for Confirmation and Stockpile Sampling	Confirmation Sampling	Stockpile Sampling
<p>Soil encountered during construction/ demolition/ development/ investigation or other soil disturbing activities that is visibly stained, discolored, shiny, or oily, or that has a noticeable solvent- or hydrocarbon-like odor that has not previously been discovered or characterized.</p>	<p>All confirmation and stockpile samples will be submitted to a state-certified laboratory and analyzed for the full suite of analytes for Site COPCs by the following analytical methods:</p> <p>Metals by EPA Methods 6010 and 6020; Mercury by EPA Method 7470/7471; Hexavalent chromium by EPA Method 7196A or 7199/3060A; Cyanide by EPA Method 9012; Perchlorate by EPA Method 314.0 or 6850; VOCs by EPA Method 8260; SVOCs (incl. HCB and B(a)P) by EPA Method 8270; PAHs by EPA Method 8310 or 8270; Dioxins/Furans by EPA Method 8290; PCBs by EPA Method 8082; OCPs by EPA Method 8081A; pH by EPA Method 9045; Inorganic anions by EPA Method 9056; Sulfide by EPA Method 9034; and Asbestos by Modified EPA Method 540/R-97/028.</p>	<ul style="list-style-type: none"> • Sidewall samples will be collected from discrete locations from freshly exposed soil at a depth equal to approximately one half of the excavation depth at a minimum frequency of every 50 linear feet of sidewall excavation face. If the excavation depth is less than 2 feet, then no sidewall samples are required. • Bottom confirmation samples will be collected from excavation bottoms at discrete locations on approximately 50-foot centers for areas greater than approximately 2,500 square feet. For excavations that are less than 2,500 square feet, one bottom confirmation sample will be collected. • If visible or otherwise noticeable contamination remains at the limits of the planned excavation, then field judgment will be used to collect the confirmation samples within the visible/noticeable contamination. This procedure will document the level and location of contamination that is requested to remain in-place. 	<p>One composite sample will be collected from random locations from within every 250 cubic yards of stockpiled soil for the first 1,000 cubic yards and per every 1,000 cubic yards for each additional 1,000 cubic yards. Composite soil samples shall consist of at least four subsamples representative of the stockpiled soil.</p>

Table 4
Analytical Parameters for Soil Sampling for Full Suite of COPCs
Analytical Parameters
Metals by EPA Methods 6010 and 6020
Mercury by EPA Method 7470/7471
Hexavalent chromium by EPA Method 7196A or 7199/3060A
Cyanide by EPA Method 9012
Perchlorate by EPA Method 314.0 or 6850
VOCs by EPA Method 8260
SVOCs (incl. Hexachlorobenze and Benzo(a)Pyrene) by EPA Method 8270
PAHs by EPA Method 8310 or 8270
Dioxins/Furans by EPA Method 8290
PCBs by EPA Method 8082
OCPs by EPA Method 8081A
pH by EPA Method 9045
Inorganic anions (bromide, chloride, fluoride, nitrate as nitrate, sulfate, nitrite as N, nitrate as N, and orthophosphate as phosphate) by EPA Method 9056
Sulfide by EPA Method 9034
Asbestos by Modified EPA Method 540/R-97/028

Table 5 Analytical Parameters for Groundwater Sampling for Dewatering Activities
Analytical Parameters
Perchlorate by EPA Method 314
Metals by EPA Method 200.7 or 200.8
Hexavalent Chromium by EPA Method 7195 or SM 4500CR-D
TDS by EPA Method SM 2540C
pH by EPA Method 150 or 9040
Specific Conductance (EC) by EPA Method SM 2510B
Phenolic Compounds by EPA Method 420.1, 420.2
Inorganic Anions by EPA Method 300
Ammonia by EPA Method 350
Total Organic Carbon (TOC) by EPA Method SM 5310C
Total Organic Halogen (TOX) by EPA Method 9020B or SM 5320B
Fluoride by EPA Method SM 4500F-C

Table 6 Contact Information		
Entity Name	Address and Phone Number	Contact Name
Nevada Division of Environmental Protection (NDEP) Bureau of Corrective Actions Special Projects Branch http://ndep.nv.gov/bmi/index.htm	901 S. Stewart Street, Suite 4001 Carson City, Nevada 89701 (775) 687-9332 (office)	<u>Primary Contact:</u> Shannon Harbour, P.E., Supervisor, Special Projects Branch <u>Secondary Contact:</u> Greg Lovato, Bureau Chief
NDEP Bureau of Corrective Actions 24-hour Spill Reporting Hotline http://ndep.nv.gov/bca/spil_rpt.htm	1-888-331-6337 or (775) 687-9485	No specific contact name
Nevada Environmental Response Trust (Trust)	35 East Wacker Drive, Suite 1550 Chicago, IL 60601 (312) 505-2688 (office)	Jay A. Steinberg, not individually but solely as President of the Environmental Trust Trustee
	6001 Shellmound Street, Suite 700 Emeryville, CA 94608 (510) 655-7400 (office)	Allan J. DeLorme, ENVIRON, Managing Principal
Tronox, LLC (Lessee; Site Occupant)	P.O. Box 55 Henderson, NV 89009-7000 (702) 651-2233 (office)	Fredrick R. Stater, Plant Manager – Henderson
Veolia Water North America [Groundwater Extraction and Treatment System (GWETS) Contractor]	P.O. Box 90578 510 Fourth Street Henderson, NV 89099 (310) 863-4749 (mobile, Sachin) (702) 289-3186 (mobile, Russell)	<u>Primary Contact:</u> Sachin Chawla, Regional Manager <u>Secondary Contact:</u> Russell Speckin, Site Maintenance Manager

Figures



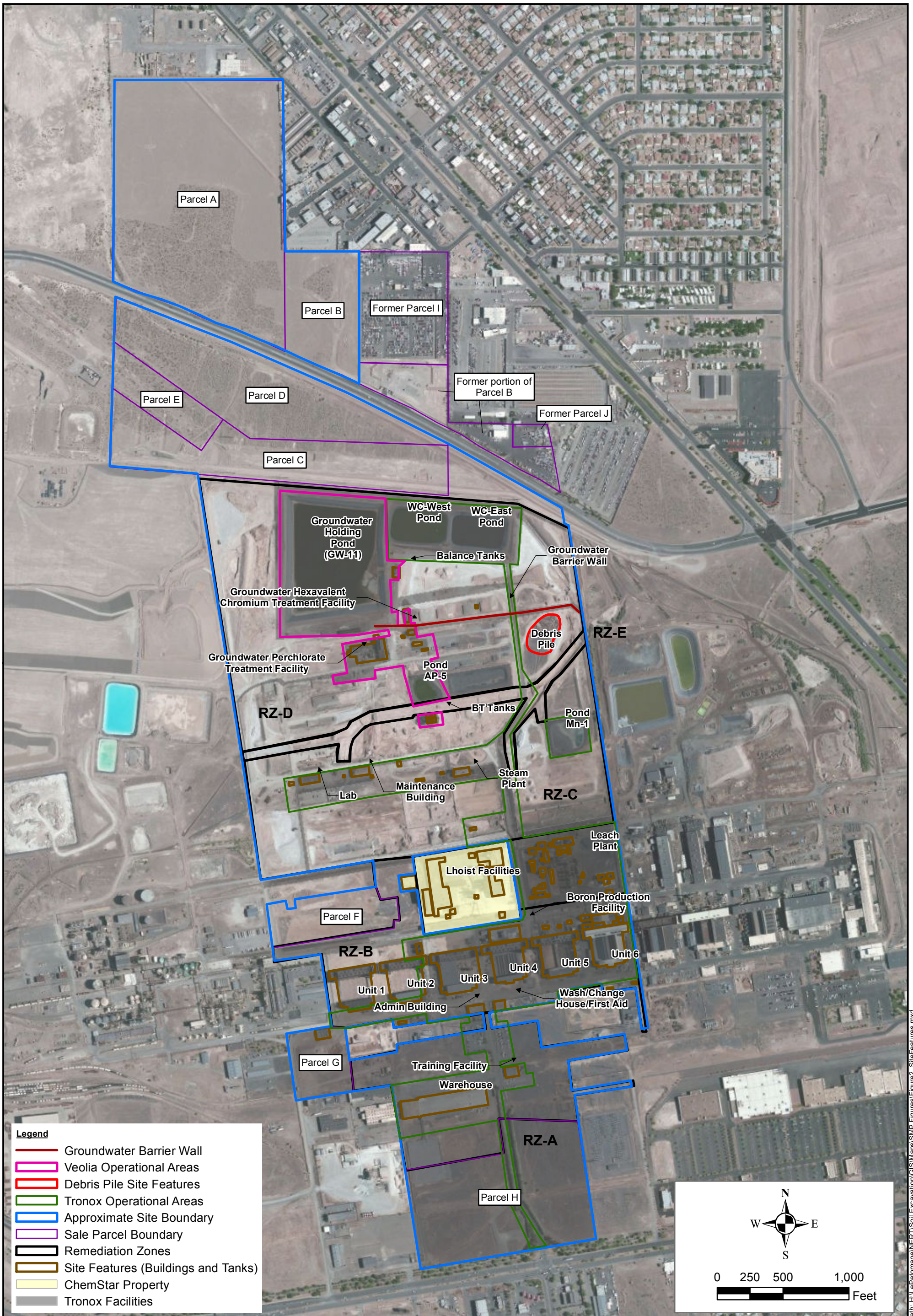
ENVIRON

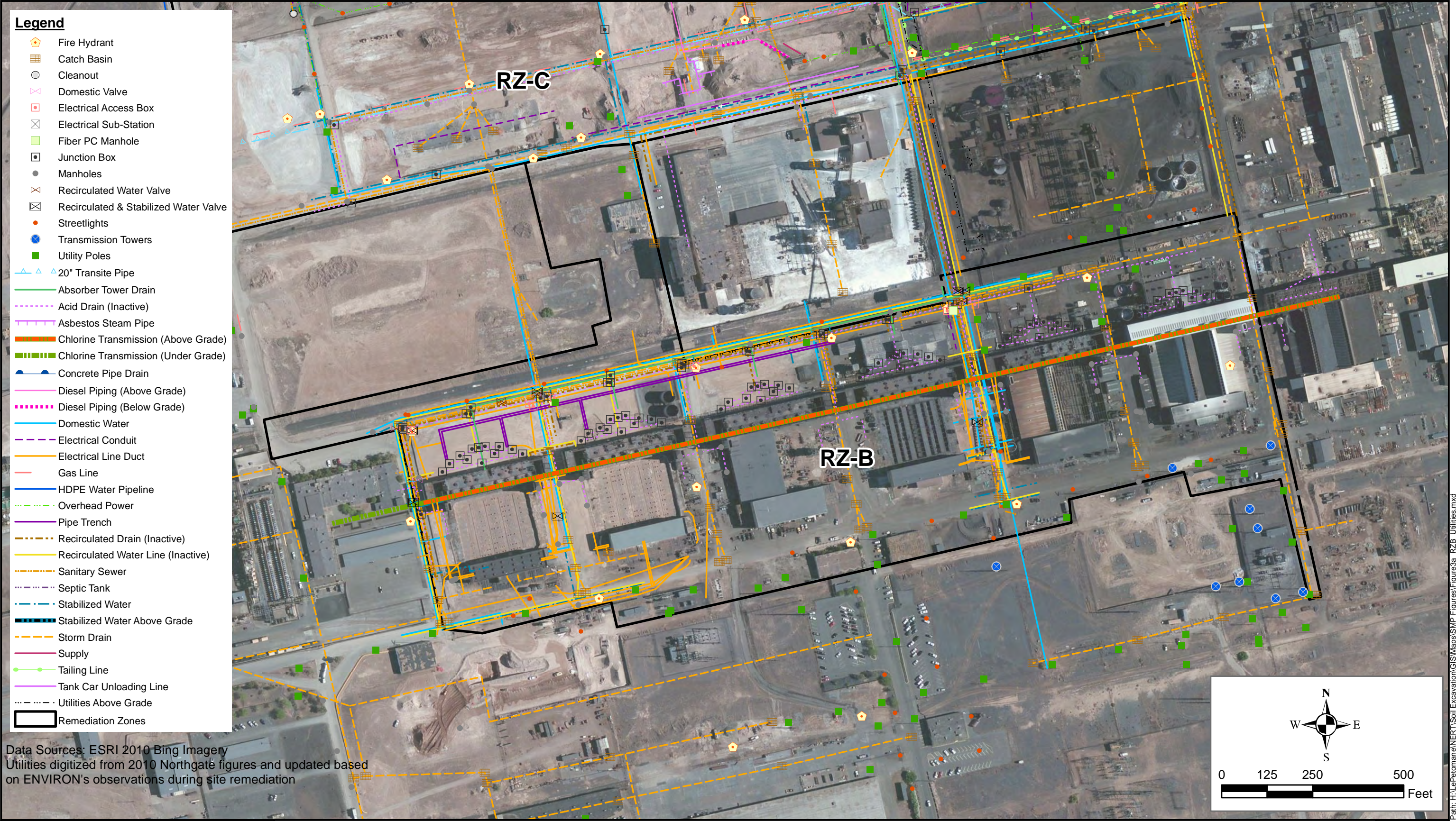
2200 Powell St., Suite 700, Emeryville, CA 94608

Site Location Map
 Nevada Environmental Response Trust Site, Henderson, Nevada

Drafter: EA Date: 5/22/2012 Contract Number: 21-29100 Approved by: Revised:

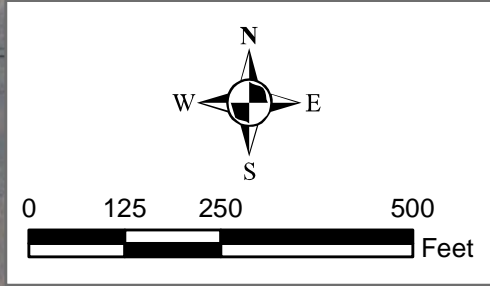
Figure
1





- Legend**
- Fire Hydrant
 - Catch Basin
 - Cleanout
 - Domestic Valve
 - Electrical Access Box
 - Electrical Sub-Station
 - Fiber PC Manhole
 - Junction Box
 - Manholes
 - Recirculated Water Valve
 - Recirculated & Stabilized Water Valve
 - Streetlights
 - Transmission Towers
 - Utility Poles
 - 20" Transite Pipe
 - Absorber Tower Drain
 - Acid Drain (Inactive)
 - Asbestos Steam Pipe
 - Chlorine Transmission (Above Grade)
 - Chlorine Transmission (Under Grade)
 - Concrete Pipe Drain
 - Diesel Piping (Above Grade)
 - Diesel Piping (Below Grade)
 - Domestic Water
 - Electrical Conduit
 - Electrical Line Duct
 - Gas Line
 - HDPE Water Pipeline
 - Overhead Power
 - Pipe Trench
 - Recirculated Drain (Inactive)
 - Recirculated Water Line (Inactive)
 - Sanitary Sewer
 - Septic Tank
 - Stabilized Water
 - Stabilized Water Above Grade
 - Storm Drain
 - Supply
 - Tailing Line
 - Tank Car Unloading Line
 - Utilities Above Grade
 - Remediation Zones

Data Sources: ESRI 2010 Bing Imagery
 Utilities digitized from 2010 Northgate figures and updated based
 on ENVIRON's observations during site remediation



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Remediation Zone B Utilities
 Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
3a

6001 Shellmound St., Suite 700, Emeryville, CA 94608

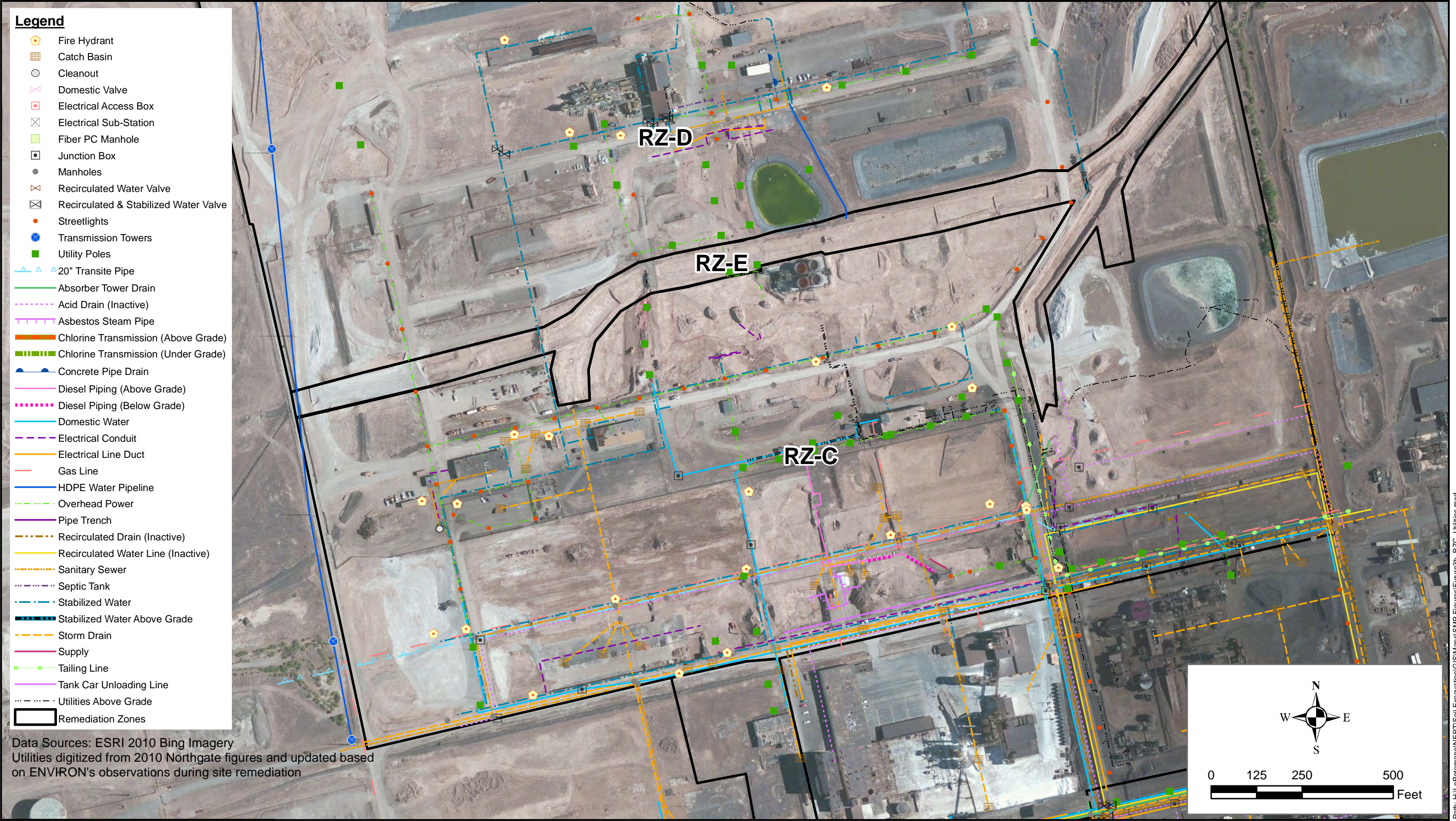
Drafter: EMcC

Date: 12/29/2011

Contract Number: 21-28200

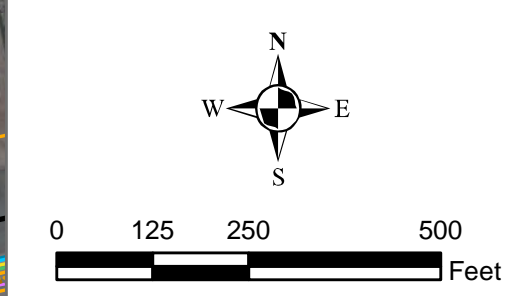
Approved by: DR

Revised:



- Legend**
- Fire Hydrant
 - Catch Basin
 - Cleanout
 - Domestic Valve
 - Electrical Access Box
 - Electrical Sub-Station
 - Fiber PC Manhole
 - Junction Box
 - Manholes
 - Recirculated Water Valve
 - Recirculated & Stabilized Water Valve
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 - Utility Poles
 - 20" Transite Pipe
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 - Pipe Trench
 - Recirculated Drain (Inactive)
 - Recirculated Water Line (Inactive)
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 - Septic Tank
 - Stabilized Water
 - Stabilized Water Above Grade
 - Storm Drain
 - Supply
 - Tailing Line
 - Tank Car Unloading Line
 - Utilities Above Grade
 - Remediation Zones

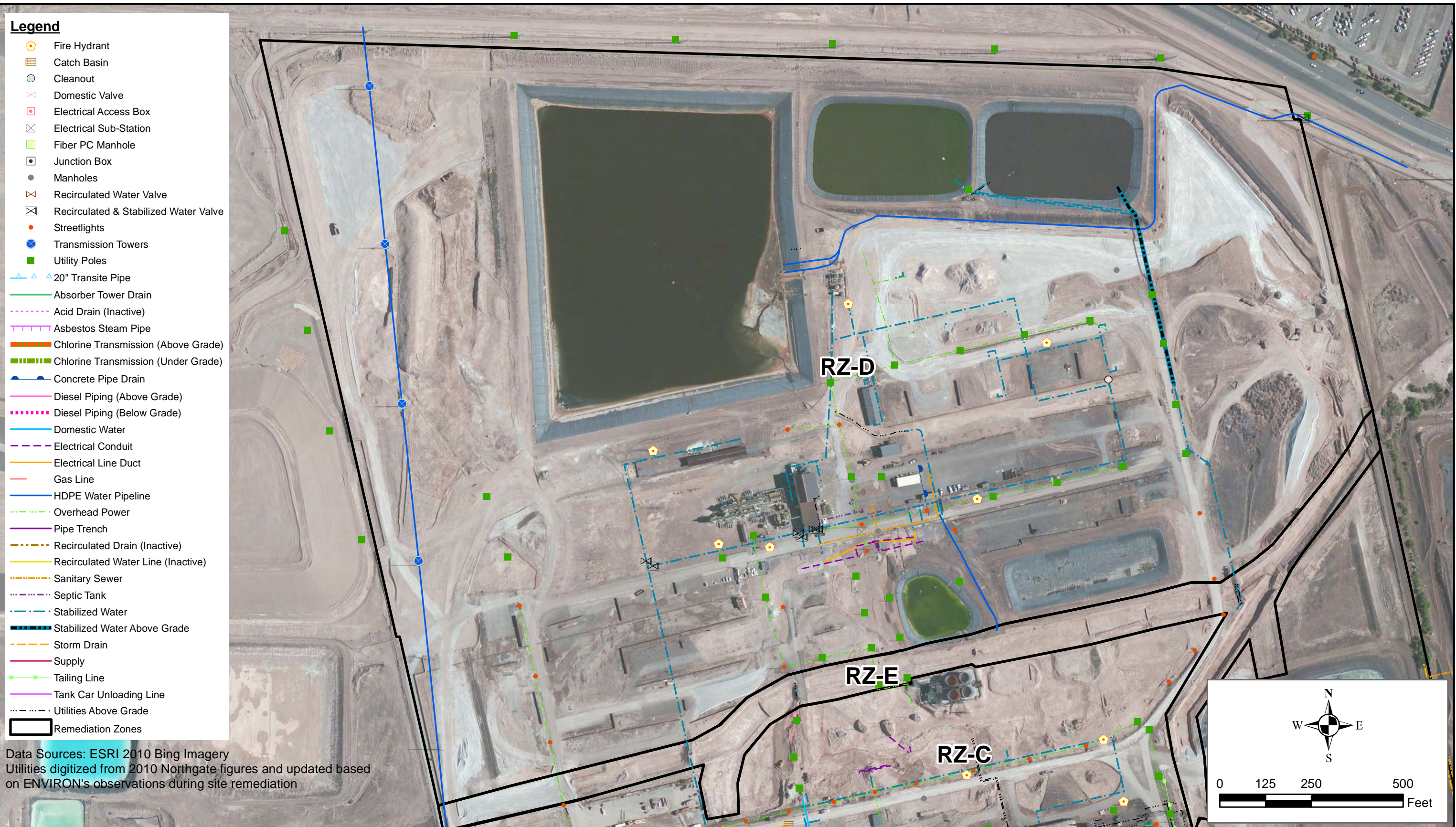
Data Sources: ESRI 2010 Bing Imagery
 Utilities digitized from 2010 Northgate figures and updated based
 on ENVIRON's observations during site remediation



Remediation Zone C Utilities
 Nevada Environmental Response Trust Site, Henderson, Nevada

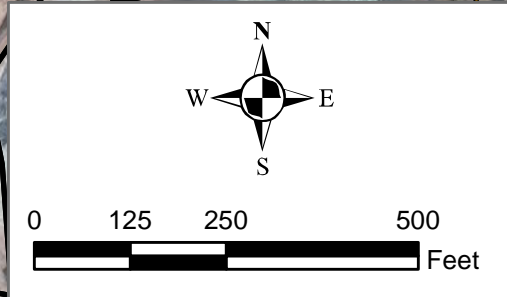
Figure
3b

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- Legend**
- Fire Hydrant
 - Catch Basin
 - Cleanout
 - Domestic Valve
 - Electrical Access Box
 - Electrical Sub-Station
 - Fiber PC Manhole
 - Junction Box
 - Manholes
 - Recirculated Water Valve
 - Recirculated & Stabilized Water Valve
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 - Sanitary Sewer
 - Septic Tank
 - Stabilized Water
 - Stabilized Water Above Grade
 - Storm Drain
 - Supply
 - Tailing Line
 - Tank Car Unloading Line
 - Utilities Above Grade
 - Remediation Zones

Data Sources: ESRI 2010 Bing Imagery
 Utilities digitized from 2010 Northgate figures and updated based on ENVIRON's observations during site remediation



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Remediation Zone D Utilities
 Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
3c

6001 Shellmound St., Suite 700, Emeryville, CA 94608

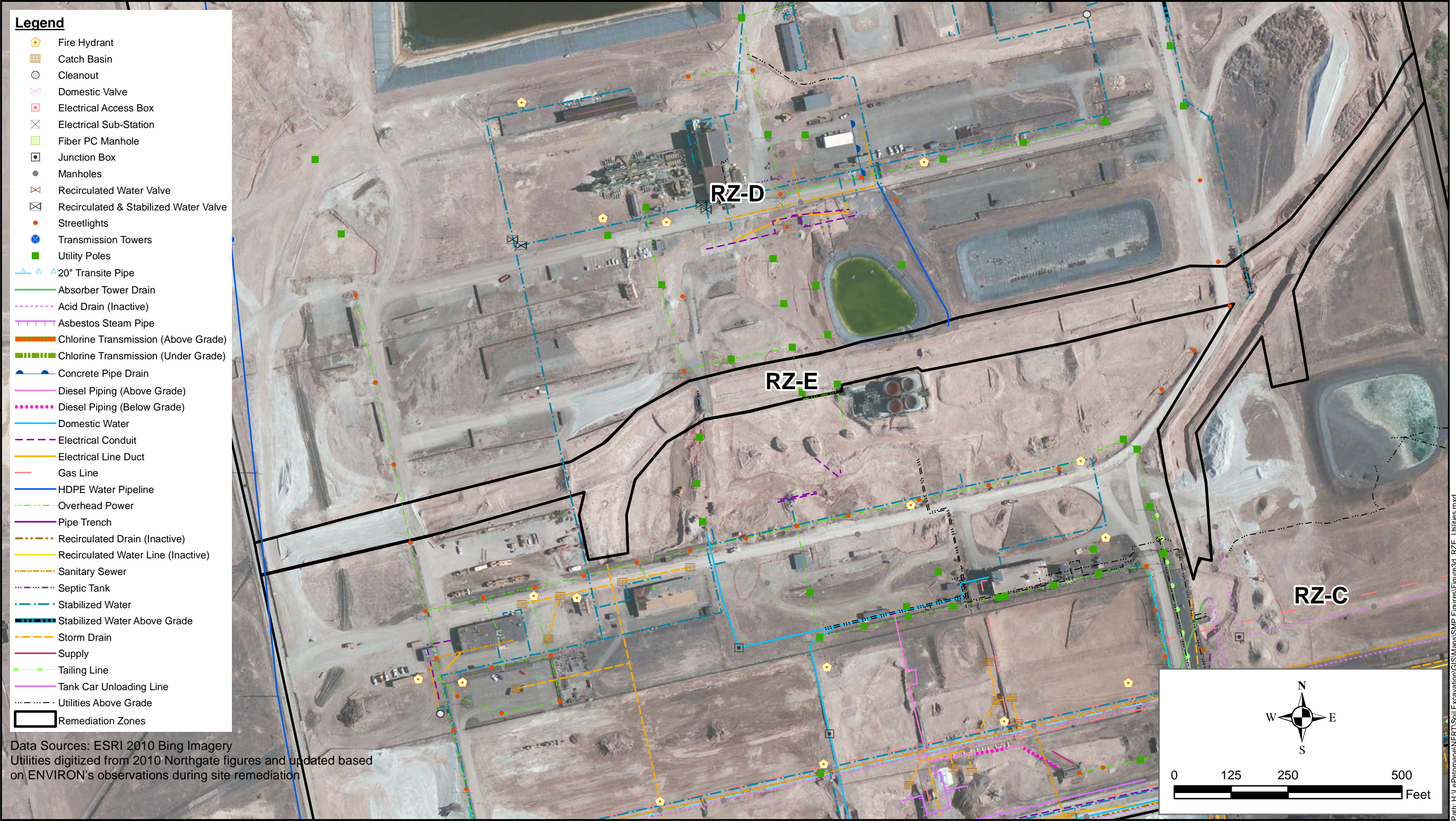
Drafter: EMcC

Date: 12/29/2011

Contract Number: 21-28200

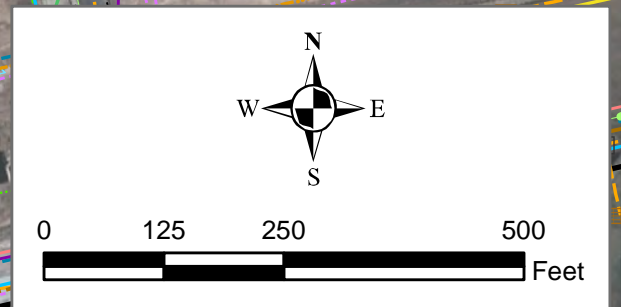
Approved by: DR

Revised:



- Legend**
- Fire Hydrant
 - Catch Basin
 - Cleanout
 - Domestic Valve
 - Electrical Access Box
 - Electrical Sub-Station
 - Fiber PC Manhole
 - Junction Box
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 - Recirculated Drain (Inactive)
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 - Stabilized Water
 - Stabilized Water Above Grade
 - Storm Drain
 - Supply
 - Tailing Line
 - Tank Car Unloading Line
 - Utilities Above Grade
 - Remediation Zones

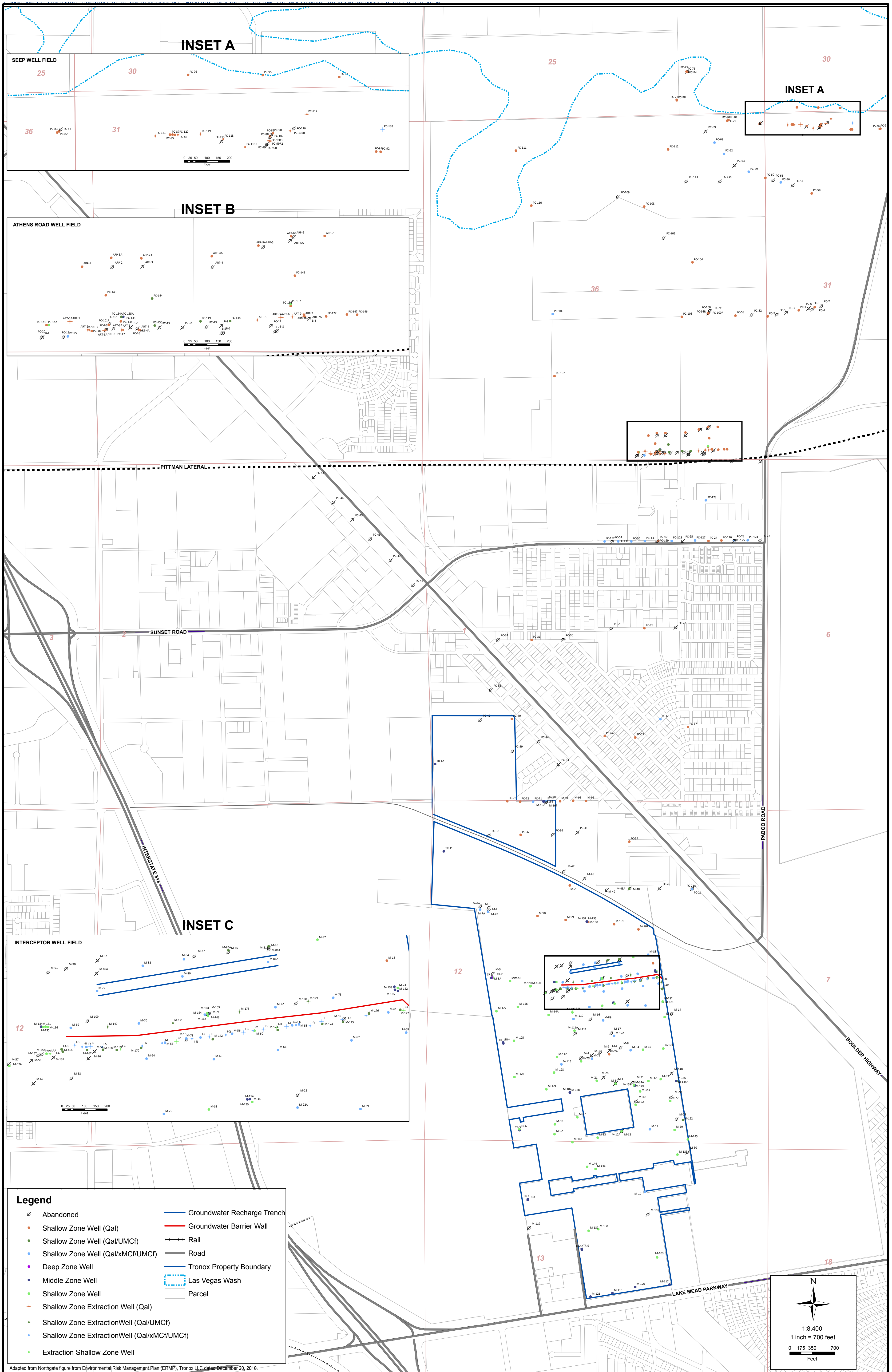
Data Sources: ESRI 2010 Bing Imagery
 Utilities digitized from 2010 Northgate figures and updated based
 on ENVIRON's observations during site remediation



Remediation Zone E Utilities
 Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
3d

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Adapted from Northgate figure from Environmental Risk Management Plan (ERMP), Tronox LLC dated December 20, 2010.

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2200 Powell St., Suite 700, Emeryville, CA 94608

Well Locations
 Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
4

Drafter: RS Date: 11/14/2011 Contract Number: 29-291001 Approved by: Revised:

Appendix A
Summary of Excavation Control Areas (ECAs)



Summary of Excavation Control Areas (ECAs):
Areas of Known Soil Contamination Left In-Place and
Uncharacterized Potentially Contaminated Soils

Nevada Environmental Response Trust Site
Clark County, Nevada

Prepared for:
Nevada Environmental Response Trust

Prepared by:
ENVIRON International Corporation
Emeryville, California

Date:
December 2011
Revised April 2012
With May 2012 Errata

Project Number:
21-29100F

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- Attachment B Area I LOU Packages (provided in electronic format on CD)
- Attachment C Area II LOU Packages (provided in electronic format on CD)
- Attachment D Area III LOU Packages (provided in electronic format on CD)
- Attachment E Area IV LOU Packages (provided in electronic format on CD)
- Attachment F Analytical Results Summary Tables (provided in electronic format on CD)
- Attachment G Executable Table of Remaining Soil Results (provided in electronic format on CD)

1 Introduction

This report provides a summary of areas where known impacted soil has been left in-place and areas where uncharacterized potentially contaminated soils might be located at a 453-acre site in Clark County, Nevada, near the City of Henderson (the Site). These areas have been designated as Excavation Control Areas (ECAs).

The Site was previously owned and operated by Tronox LLC (Tronox). Prior to Tronox, the Site was owned and operated by Kerr McGee Chemical LLC. The Site is currently owned by the Nevada Environmental Response Trust (the Trust), which was created in conjunction with the settlement of Tronox's bankruptcy proceeding.

2 Excavation Control Areas (ECAs) With Known Contamination Left In-Place

2.1 Soil Screening Levels

Chemicals of potential concern (COPCs) in Site soils include perchlorate, asbestos, arsenic, dioxin/furans, volatile and semi-volatile organic compounds (VOCs and SVOCs) and others. Site-specific soil screening levels (including NDEP worker Basic Comparison Levels (BCLs)¹ for most COPCs, as well as screening levels based on other criteria for arsenic, asbestos, and dioxins/furans, as described below) have been developed for the Site (see Table 1 of SMP).

As explained in the *Removal Action Work Plan for Phase B Soil Remediation of Remedial Zones RZ-B through RZ-E, Tronox LLC, Henderson, Nevada, revised May 28, 2010 (RAW)* (Northgate, 2010d), for purposes of designating potential remediation areas, "contaminated" soil is generally defined as concentrations exceeding NDEP worker BCLs, or modified risk-based goals as approved by NDEP. For metals where background concentrations exceed NDEP BCLs (e.g., arsenic), "contaminated" soil is defined as concentrations greater than background. There are no NDEP BCLs for asbestos; therefore, "contaminated" soil is defined as one, or more, long amphibole fibers and greater than five long chrysotile fibers counted per sample. Based on the bioavailability study, NDEP has approved a Site-specific BCL for dioxins/furans (as 2,3,7,8-tetrachlorodibenzo-p-dioxin toxicity equivalents [2,3,7,8-TCDD TEQ]) of 2,700 parts per trillion (ppt).

2.2 Discolored Soil

During soil remediation activities performed in 2010-2011, areas with discolored soil were encountered and investigated. Based on discolored soil characteristics and analytical testing results, most encountered discolored soils were excavated and disposed off-site. Some discolored soils with known or suspected concentrations of COPCs above soil screening levels remain in place at the Site due to their location beneath or in close proximity to operational structures, features, or utilities; therefore, ECAs have been established in these areas. In areas with discolored soil with reported concentrations of COPCs below soil screening levels, ECAs have not been established.

2.3 Reasons for Establishing ECAs

The ECAs summarized in this report have been established in areas of the Site where existing infrastructure or facility operations preclude the removal (excavation) of contaminated soil.

The reasons for establishing ECAs at the Site are generally as follows:

¹ The most recent version of the BCLs, which can be found on the NDEP website (<http://ndep.nv.gov/bmi/technical.htm>), should be used.

- Contaminated and/or discolored soil areas are located beneath existing operational structures, and it is technically infeasible or cost prohibitive to access these areas for excavation.
- Contaminated and/or discolored soil areas are located in close proximity to utilities or other Site features (e.g., the active pond berms), and excavating soil in these areas poses a potential safety hazard and/or could result in damage to the utilities/features.
- Soil with unknown conditions and/or limited analytical test results is located beneath existing operational structures or facilities, and it is technically infeasible or cost prohibitive to access these areas for investigation and/or excavation.

In addition, the excavation program conducted at the Site generally has not addressed vadose zone soils at depths greater than ten feet below ground surface. Therefore, vadose zone soils across the Site at depths greater than 10 feet below original grade are identified as an ECA.

2.4 Decision Rules for Establishing the Extent of ECAs

The following set of general decision rules was developed to determine the lateral and vertical extent of the ECAs during and post-excavation. The decision rules were used as a guideline and were modified as necessary based on field conditions.

1. Excavations will be limited such that all active utility lines will be protected (unless known to be out of service, all utility lines are assumed to be active);
2. Excavations will not be within 5 feet of water lines;
3. Excavations will not be within 2 feet of all other active utility lines;
4. Excavation will not be within 12 feet of the center line of active railroad lines. Excavations beyond this point shall be sloped 3:1 (horizontal to vertical) to the bottom of the excavation;
5. Excavations that are 3 feet deep or less will have vertical sides except where they are supporting utilities, in such case the ground will be sloped 1:1;
6. Excavations that are deeper than 3 feet will have a 1:1 slope, unless otherwise noted; and
7. Excavations next to concrete foundations or footings will be sloped 2:1, starting below the top of the foundations.

The above decision rules are based on the following:

- Temporary construction sloping of 1:1 is based on field observations of native material stability;
- The setback from water lines was established through discussions with Basic Water staff;
- The setback from the railroad tracks was developed from standard setback requirements for shoring established by Union Pacific Railroad.

- Setbacks from all other utility lines is based on engineering judgment; and
- Slopes in the area of footings are based on common geotechnical engineering principals.

2.5 Overview of ECAs

The ECAs for the Site are identified in Table 1 and Figures 1 through 6. It would be technically infeasible or cost-prohibitive to remediate most of these areas because they are generally located beneath existing operational facilities/roadways or within critical utility corridors where excavation would be unsafe and/or would likely damage utilities. Note that there are no ECAs north of the GW-11 and WC ponds.

Table 1 lists the Remediation Zones (RZs) that are associated with the proposed ECAs and provides a summary of: 1) the rationale for proposing each ECA; 2) the engineering controls currently in place; 3) sampling locations relevant to each ECA; 4) Letter of Understanding (LOU) areas relevant to each ECA; 5) expected depths of contamination; 6) a brief summary of discolored soil characterization results; 7) chemicals of potential concern (COPCs); and 8) minimum required analyses. Text describing each of the ECAs is provided below. Figures 1 through 5d show the locations of each of the ECAs on the Site, as well as soil sample locations where pertinent data has been collected for characterization of impacted soils within ECAs. Figures 6a/6b show which LOU areas are relevant to each ECA. Attachment A contains correspondence and a diagram regarding NV Energy utility requirements. Packets of documentation relating to LOU Areas I through IV are provided in Attachments B through E. Tables summarizing analytical results for all soil samples collected from the Site are included in Attachment F. An executable table of results for soil samples remaining on the Site is included in Attachment G.

2.6 Description of ECAs in RZ-B

2.6.1 ECA #B1: Unit Buildings 1 through 6, Including Soil within 50 feet of Unit Buildings 1 through 6

ECA #B1 includes soil beneath the entire building footprint of Unit Buildings 1 through 6, as well as soil within 50 feet of Unit Buildings 1 through 6 (Figure 2). The unit buildings themselves and adjacent pavement, where present, provide an engineering control, capping the soil and preventing or greatly limiting the potential for contact with contaminated soil in the majority of the ECA. In addition, access to portions of this ECA near Unit Buildings 1 and 2 is restricted with fencing and locked gates.

Unit Building 1

Unit Building 1 currently supports the high-pressure chlorine line used by the Timet facility. Because of the building obstruction, characterization of soils beneath the building footprint has not been performed, and soils beneath the building footprint, including portions of excavation polygons RZ-B-01, -04A, -04B, -04C, and -14, which extend under the footprint of Unit Building 1, cannot be excavated.

Unit Building 2

Unit Building 2 currently supports the high-pressure chlorine line used by the Timet facility. Because of the building obstruction, characterization of soils beneath the building footprint has

not been performed, and soils beneath the building footprint, including portions of excavation polygons RZ-B-06, -06A, and -07B, which extend under the footprint of Unit Building 2, cannot be excavated. A portion of ECA #B4 (Former Hazardous Waste Storage Area) overlaps with ECA #B1 near the northeastern corner of Unit Building 2.

Unit Building 3

Unit Building 3 is currently used for chlorine line support, Tronox Facility engineering offices, and includes an electrical substation. Because of the building obstruction, characterization of soils beneath the building footprint has not been performed, and soils beneath the building footprint, including a portion of excavation polygon RZ-B-12, which extends under the footprint of Unit Building 3, cannot be excavated. A portion of ECA #B5 (Sodium Chlorate Filter Cake Process Area) overlaps with ECA #B1 in the northeastern corner of Unit Building 3.

Unit Building 4

Unit Building 4 is currently used for chlorine line support, storage of materials associated with the Tronox Facility Boron Plant, the Tronox Advanced Battery Manufacturing Process, and includes an electrical substation. Because of the building obstruction, characterization of soils beneath the building footprint has not been performed and soils beneath the building footprint cannot be excavated. A portion of ECA #B6 (Soils Beneath Approximately 6 Feet Deep in Polygons RZ-B-20 and -21) overlaps with ECA #B1 near the eastern portion of Unit Building 4.

Unit Building 5

Unit Building 5 is currently used for chlorine line support and Tronox Facility operations. Because of the building obstruction, characterization of soils beneath the building footprint has not been performed and soils beneath the building footprint cannot be excavated.

Unit Building 6

Unit Building 5 is currently used for chlorine line support and Tronox Facility operations. Because of the building obstruction, characterization of soils beneath the building footprint has not been performed and soils beneath the building footprint cannot be excavated.

Soils Within Approximately 50 Feet of Unit Buildings

Soils within approximately 50 feet of all six Unit Buildings are included within ECA B1 since characterization of these soils is limited and since remedial excavation could not be performed immediately adjacent to Unit Building structures due to concerns about building structural support.

2.6.2 ECA #B2: Portion of Polygons RZ-B-04C/05/09A/11/12/13 Extending into Avenue G

There are various active and inactive utility lines that run beneath Avenue G, north of the Unit Buildings, including sanitary sewer, storm drain, domestic water, and various other lines. Many of these utilities are active. The portions of polygons RZ-B-04C, -05, -09A, -11, -12, and -13 in the vicinity of these utilities beneath Avenue G are included in ECA #B2, as shown on Figure 2. Because of the fragility of some of the older utility lines in this area, soil has not been excavated within a minimum of 5 feet of the lines as described in Section 2.4 of this report. The asphalt

pavement (Avenue G) provides an engineering control for ECA #B2, preventing or greatly limiting the potential for contact with contaminated soil.

2.6.3 ECA #B3: Fire Hydrant

A fire hydrant is located along 7th Street, just south of Avenue G. Since the hydrant is active, the hydrant itself, and soils in the immediate vicinity have not been removed, including portions of polygon RZ-B-11. This portion of RZ-B-11 is included in ECA #B3, as shown on Figure 2. The asphalt pavement (7th Street) provides a partial engineering control for ECA #B3, limiting the potential for contact with contaminated soil.

2.6.4 ECA #B4: Former Hazardous Waste Storage Area

The former hazardous waste storage area is beneath two tanks and a membrane-lined containment area currently used by Tronox. Soils beneath the former hazardous waste storage area include portions of RZ-B-07A, -08, -09, and -10 all of which have been excavated to the extent possible without risking damage to the membrane. This area has been designated as ECA #B4, as shown in Figure 2. The former hazardous waste storage area is overlain by high density polyethylene sheeting for containment of tank contents. This sheeting provides an engineering control, preventing or greatly limiting the potential for contact with contaminated soil.

2.6.5 ECA #B5: Sodium Chlorate Filter Cake Process Area

The sodium chlorate filter cake process area is part of the Manganese Dioxide process operations. The concrete slab for the process area is approximately 52' x 46' x 12" thick. The slab is underlain by 2" of sand and a 20 mil membrane. The entire slab, including a portion of excavation polygon RZ-B-13 within the slab area, is designated as ECA #B5, as shown on Figure 2. RZ-B-13 has been excavated to the edge of the slab, with minimal setback and a near vertical slope. One confirmation sample (SSAQ6-02) was collected from the bottom of the excavation area where a discolored soil layer extended beneath the slab. The sample was analyzed for dioxins/furans, SVOCs, arsenic, manganese, and magnesium. The results indicated that concentrations of arsenic and benzo(a)pyrene were above soil screening levels. The concrete slab and underlying membrane provide an engineering control, preventing or greatly limiting the potential for contact with contaminated soil.

2.6.6 ECA #B6: Soils Beneath Approximately 6 Feet Deep in Polygons RZ-B-20 and RZ-B-21

Access for excavation of soils beneath 6 feet (and to the surface east of an active Tronox water line) within excavation polygons RZ-B-20 and -21 was limited by the presence of several active subgrade utilities, including water, storm drain, and electrical lines. These utilities are located at depths of less than 6 feet. Remedial excavation was performed to 6 feet deep, with temporary supports for some of the utility lines; however, deeper excavation could not be performed without compromising the utility lines. The portions of RZ-B-20 and -21 in the vicinity of these utilities are included in ECA #B6, as shown on Figure 2. The asphalt pavement for 9th Street and a minimum of 6 feet of clean backfill material provides an engineering control for ECA #B6, preventing or greatly limiting the potential for contact with contaminated soil.

2.6.7 ECA #B7: Soils within Polygon RZ-B-22

Access for excavation of soils within excavation polygon RZ-B-22 is limited by the presence of subgrade utilities, building foundation, and other surface features. Excavation polygon RZ-B-22 is included in ECA #B7, as shown on Figure 2. Asphalt pavement for Avenue H covers most of the area and provides an engineering control for ECA #B7, preventing or greatly limiting the potential for contact with contaminated soil.

2.7 Description of ECAs in RZ-C

2.7.1 ECA #C1: Portions of RZ-C-01/01A Beneath 4th Street

Access to excavation of soils within portions of excavation polygons RZ-C-01 and -01A is limited by the presence of an existing roadway (4th Street), which is in use and cannot be removed. Therefore, the portions of RZ-C-01 and -01A beneath 4th Street are included in ECA #C1, as shown on Figure 3. Asphalt pavement for 4th Street provides a partial engineering control for ECA #C1, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.2 ECA #C2: Portions of RZ-C-03/04/05A Beneath 5th Street

Access to excavation of soils within portions of excavation polygons RZ-C-03, -04, and -05A is limited by the presence of an existing roadway (5th Street), which is in use and cannot be removed. Therefore, the portions of RZ-C-03, -04, and -05A beneath 5th Street are included in ECA #C2, as shown on Figure 3. Asphalt pavement for 5th Street provides a partial engineering control for ECA #C2, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.3 ECA #C3: Portion of RZ-C-06 Beneath Fire Hydrant and Utilities Along Avenue F

There are four active utility lines and a fire hydrant that run beneath Avenue F in the vicinity of RZ-C-06, including domestic and stabilized water lines, a sanitary sewer line, and a storm drain line. Excavation in RZ-C-06 extended to a depth of 9 feet below ground surface (bgs) with a slope of 1:1 along the southern side of the polygon excavation. The portion of RZ-C-06 in the vicinity of these utilities beneath Avenue F is included in ECA #C3, as shown on Figure 3. The asphalt pavement for Avenue F provides a partial engineering control for ECA #C3. Clean imported backfill material was placed to create a 3:1 slope and orange snow fencing was used as a visual demarcation between the clean backfill material and impacted soil below. The clean backfill material provides a further engineering control, preventing or greatly limiting the potential for contact with contaminated soils.

2.7.4 ECA #C4: Concrete Foundation

Access to excavation of soils within portions of excavation polygons RZ-C-06 and -09B is limited by the presence of a concrete foundation. Therefore, the portions of RZ-C-06 and -09B beneath the foundation are included in ECA #C4. The soils beneath the concrete foundation have not been characterized, so in addition to the portions of RZ-C-06 and -09B beneath the foundation, the remainder of the concrete foundation area is also included in ECA #C4, as shown on Figure

3. The concrete foundation provides an engineering control for ECA #C4, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.5 ECA #C5: Water, Fiber Optic, and Electric Utility Lines Through and Near RZ-C-11/13

Access to excavation of soils within and adjacent to portions of excavation polygons RZ-C-11 and -13 is limited by the presence of active subsurface utilities, including water and fiber optic utility lines. A portion of polygon RZ-C-11 was excavated to approximately 6 feet deep around the utilities and the area was backfilled with clean imported soil; however, portions of RZ-C-11 and -13, as well as discolored soils deeper than the original excavation depth of polygon RZ-C-13, were not excavated. One excavation extent (EE-C13-1) sample was collected within the black layer remaining in the southeastern sidewall of RZ-C-13 on June 20, 2011. This sample was analyzed for HCB, SVOCs/PAHs, arsenic, and manganese. Results indicated that the concentrations of these constituents were below the soil screening levels, with the exception of HCB. Therefore, the portions of RZ-C-11 and -13 in the vicinity of these utilities, including where discolored soils are known or suspected to be present, are included in ECA #C5, as shown on Figure 3. Clean imported backfill material in the northern portion of the ECA provides a partial engineering control.

2.7.6 ECA #C6: Discolored Soil at Former Pump House Yard

During excavation activities, discolored soil from the ground surface to a depth of at least 10 feet was discovered in the area of the former pump house yard. An excavation extent sample was collected from the soil that remained within the eastern sidewall of RZ-C-15 under the former pump house yard (EE-C15-1). The sample was analyzed for HCB, SVOCs/PAHs, arsenic, and manganese. The results for this sample indicated concentrations of these constituents were below soil screening levels. However, an additional excavation extent sample was collected from the sidewall of RZ-C-24, also within the former pump house yard. The sample was analyzed for HCB, SVOCs/PAHs, arsenic, and manganese. The results for this sample indicated that arsenic was present at a concentration above the soil screening level. Because of the extent and depth of the discolored soil and the limited access in this area due to facility perimeter fencing and former pump house yard utilities, this area is designated as ECA #C6, as shown on Figure 3. Perimeter fencing surrounding this area provides a partial engineering control for ECA #C6, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.7 ECA #C7: Avenue F Utilities, Railroad Line, and Roadway

The road into the Lhoist (formerly Chemstar) plant (Avenue F) is active and used by trucks entering and exiting the plant, and excavation in the road would limit use of the road by Lhoist. Lhoist hauls 24 hours a day, five days a week. In addition, there are several utility lines that run beneath Avenue F, including domestic and stabilized water lines, a sanitary sewer line, electrical conduits, a storm drain line, and others. Many of these utilities are active and will not be removed. The water line is extremely fragile with a high potential to break due to construction activities. Additionally, two railroad lines run through a portion of RZ-C-13A. The southern-most railroad line is active.

The extent of ECA #C7 is shown on Figure 3. Access to excavation of soils within portions of excavation polygons RZ-C-09B, -12, -13, -13A, -14, -15, -24, -26, and -27 is limited by the presence of Avenue F and nearby utilities and rail lines. Accessible discolored soils were removed from the excavation area north of Avenue F; however, discolored soil remains in place in the southern excavation sidewall and likely extends beneath Avenue F. Two excavation extent samples (EE-C24-1 and EE-C24-2) were collected from the sidewall along Avenue F and the sidewall of the former pump house yard on June 23 and 30, respectively. These samples were analyzed for HCB, SVOCs/PAHs, arsenic, and manganese. Arsenic was detected at a concentration above the soil screening level.

Four excavation extent samples (EE-C27-1, EE-C27-2 and duplicate EE-C27-4, and EE-C27-3) were collected from the sidewalls and bottom of the excavation area underneath the diesel fuel line, gas line, and Avenue F on June 16, 2011. These samples were analyzed for arsenic, lead, manganese, and perchlorate. Arsenic and lead were detected at concentrations above soil screening levels in EE-C27-1. Arsenic was detected at a concentration above the soil screening level in EE-C27-2 and duplicate EE-C27-4.

Two discolored soil samples (DS-C24-1 and duplicate DS-C24-2) were collected from a gray/white layer found near the top of the southern sidewall of RZ-C-24 adjacent to ACM pipes and under Avenue F on May 4, 2011. These samples were analyzed for HCB, SVOCs/PAHs, arsenic and manganese. Results from these samples indicated that the concentrations of these constituents were below soil screening levels, with the exception of benzo(a)pyrene.

Clean imported backfill material was placed in this area and orange snow fencing was used as a visual demarcation between the clean backfill material and impacted soils below. The clean backfill material; Avenue F, which is paved with asphaltic concrete; the pavement adjacent to the road; and the railroad tracks provide engineering controls for the majority of the ECA #C7, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.8 ECA #C8: 9th Street Utilities and Roadway

There are a variety of utility lines that run beneath and above 9th Street in the vicinity of RZ-C-22A and -22B including a gas line, a sanitary sewer line, a water line, a tailing line, and an overhead power line, all of which are active. Excavation in these areas would encounter these utility lines. Therefore, soils beneath the 9th Street roadway and in the vicinity of these utilities, including portions of RZ-C-22A and -22B and areas outside these polygons where discolored soil was observed, are included in ECA #C8, as shown on Figure 3. 9th Street and the pavement adjacent to the road provide an engineering control for ECA #C8, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.9 ECA #C9: Diesel Tank and Pipelines

An aboveground diesel tank and associated pipelines provide the emergency fuel source for the Tronox Facility steam plant. The diesel tank is serviced by two pipelines (an inlet and an outlet). A portion of one of these lines is below ground. Portions of excavation polygons RZ-C-19, -22, -23 and -27 extend in the vicinity of the pipelines or underneath the diesel tank containment

structure. Therefore, portions of these excavation polygons cannot be excavated and are included in ECA #C9, as shown on Figure 3. In addition, discolored soil was observed beneath the tank and pipelines. Initially, Northgate collected a discolored soil sample (SSAO5-09) of gray/black shaly, peat-like material on February 11, 2011. The sample was analyzed for dioxins, SVOCs, arsenic, manganese, magnesium, and asbestos. Results from SSAO5-09 indicated concentrations of HCB, arsenic, and magnesium were above soil screening levels for these constituents. During the excavation of the area, ENVIRON collected characterization sample from a black layer under the diesel tank and analyzed the sample for dioxins, SVOCs/PAHs, arsenic, lead, cobalt, manganese, magnesium, and perchlorate. Results indicated that concentrations of arsenic, lead, and manganese were above soil screening levels. Additional samples DS-C19-1, EE-C23-1, and EE-C20-1 were also collected from this area and indicated concentrations of arsenic, lead, and perchlorate were above soil screening levels. In addition, on April 20, 2011, ENVIRON collected a discolored soil sample (DS-C10-1) from the gray/black shaly layers within the east sidewall of RZ-C-10. The sample was analyzed for dioxins, HCB, arsenic, lead, cobalt, manganese, magnesium, and perchlorate. Results indicated that concentrations of HCB, magnesium, and perchlorate were above soil screening levels for these constituents. Discolored soil within the accessible areas on both sides of the diesel fuel pipelines was removed. About a twelve-foot wide and 75-foot long section of discolored soil was inaccessible under the diesel fuel pipelines and remained in place. ECA #C9 includes the full length of the diesel pipelines from the tank to the steam plant, in addition to the portions within polygons. The diesel tank containment structure provides a partial engineering control, preventing or greatly limiting the potential for contact with contaminated soil in that area.

2.7.10 ECA #C10: Areas with Discolored Soil

Following excavation of polygon RZ-C-17, discolored soil was identified in two areas within RZ-C-17, deeper than the original excavation depth for this area. A trench was dug to investigate the extent of the discolored soil and one characterization sample (DS-C17-1) was collected from the trench on May 6, 2011. The sample was analyzed for dioxins, HCB, arsenic, magnesium, and perchlorate. Results from DS-C17-1 indicated concentrations of dioxins and HCB were above soil screening levels. Because of the extent and depth of the discolored soil, and because the area was within areas where remedial excavation had been completed, it was decided, in consultation with NDEP, to leave these soils in place. This area is designated as ECA #C10, as shown on Figure 3. Six inches to one foot of clean imported backfill material was placed in the northern portion and approximately three feet of clean imported backfill material was placed in the southern portion of ECA #C10. The clean backfill material provides an engineering control for ECA #C10, limiting the potential for contact with contaminated soil.

2.7.11 ECA #C11: Natural Gas Pipeline

Excavation of soils is limited by the presence of an active subsurface natural gas pipeline which runs to the Tronox Facility steam plant. Discolored soil was observed beneath and around portions of the pipeline. Three excavation extent samples (EE-C20-1, EE-C21-1 and duplicate EE-C21-2) were collected from the sidewalls of areas underneath the gas line on June 16, 2011. EE-C20-1 was analyzed for arsenic, lead, manganese and perchlorate, and EE-C21-1

and its duplicate were analyzed for SVOCs/PAHs, arsenic, manganese, and perchlorate. Results from EE-C20-1 indicated concentrations of arsenic, lead, and perchlorate were above soil screening levels. Results from EE-C21-1 and its duplicate indicated concentrations of benzo(a)pyrene, arsenic, and perchlorate were above soil screening levels. The area where the pipeline runs, including portions of polygons RZ-C-16, -17, -19, -20, 22A, -22B and -23 in the vicinity of the natural gas pipeline are designated as ECA #C11, as shown on Figure 3.

2.7.12 ECA #C12: Steam Plant and Associated Features

The steam plant and associated utilities and infrastructure in the vicinity of the steam plant within the excavation areas include a portion of the plant building, above-ground piping, pipe racks, pipe rack pole footings, a 15 kV transmission line, and a transformer pad. Portions of excavation polygons RZ-C-16, -16A, and -42 extend under the footprint of the steam plant and associated facilities. Some of the pipe rack footings are failing and the pipe racks are leaning. Excavation in these areas would exacerbate the condition requiring temporary support of the racks and construction of new foundations. Therefore, the steam plant and associated features are designated as ECA #C12, as shown in Figure 3. The transformer concrete pad and the steam plant slab provide partial engineering controls, preventing or greatly reducing the potential for contact with contaminated soil.

2.7.13 ECA #C13: Steam Line

Excavation of soils is limited by the presence of an active aboveground steam line that is used for facility process support, including a black discolored soil seam along the southwestern edge of polygon RZ-E-14A. On May 18, 2011, excavation extent sample EE-14A-1 was collected and analyzed for dioxins, HCB, arsenic, magnesium, and VOCs. Analytical results indicated that concentrations of constituents tested were below soil screening levels, with the exception of the dioxin TEQ value, which was reported above the soil screening level. Therefore, soil in the vicinity of the steam line, including a portion of excavation polygon RZ-C-44 is designated as ECA #C13, as shown on Figure 3.

2.7.14 ECA #C14: Process Road

Access to excavation of soils within portions of excavation polygons RZ-C-28B, -28C, -34, -36, -37, -38, -39, -39A, -39C, -40, -40A, -40B, -41, and -42 is limited by the presence of an existing active roadway (Process Road). Therefore, the portions of these polygons beneath the Process Road are included in ECA #C14, as shown on Figure 3. The Process Road is partially paved with asphalt and has also been covered with an approximately 3 inch layer of crushed limestone. The asphalt pavement and crushed limestone of the Process Road provide an engineering control for ECA #C14, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.15 ECA #C15: Steam Plant Roadway

Excavation of soils within the southern portion of excavation polygon RZ-C-42 is limited by the presence of the existing steam plant roadway, which is in use. Therefore, the portion of RZ-C-42 beneath the steam plant roadway is included in ECA #C15, as shown on Figure 3. The steam

plant roadway, which is paved with asphalt, provides an engineering control for ECA #C15, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.16 ECA #C16: BT Tank Area

The BT tanks and containment structure are actively used by Veolia as part of the treatment system for remediating groundwater. Because of the BT Tank Area obstruction, soils beneath and adjacent to the BT Tank Area, including portions of excavation polygons RZ-C-28D, -28F, -29, -30 and RZ-E-08, -08A, and -08B, which extend under the footprint of the BT Tank Area, cannot be excavated. On May 4, 2011, excavation extent samples EE-E08A-1 and duplicate EE-E08A-2, and EE-D09-1 were collected from discolored soil areas within the north sidewall of RZ-E-09, the south sidewall of RZ-E-08A, near a concrete culvert at the east end of RZ-E-09, and along the east side of the BT Tanks. The analytical results for excavation extent samples EE-E08A-1 and EE-E08A-2 indicated that concentrations of dioxins, HCB, arsenic, OCPs, and perchlorate were above soil screening levels. The results for excavation extent sample EE-E09-1 indicated that concentrations of OCPs were above soil screening levels. In addition, confirmation sample CS-C30-1 was collected following removal of discolored soils on the east side of the BT Tanks and was analyzed for dioxins and perchlorate, both of which were found in concentrations above soil screening levels. Therefore, the BT Tank Area is designated as ECA #C16, as shown in Figure 3. This ECA also includes an approximately 5-foot border around the BT tank containment structure, which was not excavated due to stability concerns. The containment structure surrounding the BT tanks provides an engineering control, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.17 ECA #C17: MN-1 Pond

ECA #C17 includes soil beneath the entire operating Tronox Facility MN-1 Pond area, including the pond, pond berms, and adjacent areas. The extent of ECA #C17 is shown on Figure 3. Because of the MN-1 Pond obstruction, the area remains generally uncharacterized and most soils within the ECA cannot be excavated. The MN-1 pond and its liner provide an engineering control, preventing or greatly limiting the potential for contact with contaminated soil.

2.7.18 ECA #C18: Leach Plant Equipment and Facilities

ECA #C18 includes soil beneath the entire operating Tronox Facility Leach Plant area, including the plant equipment and facilities. The extent of ECA #C18 is shown on Figure 3. Because of the Leach Plant obstruction, the area remains generally uncharacterized and soils beneath the Leach Plant footprint, including excavation polygon RZ-C-45, which extend under the footprint of the Leach Plant, cannot be excavated. The asphalt pavement within the Leach Plant provides an engineering control, preventing or greatly limiting the potential for contact with contaminated soil.

2.8 Description of ECAs in RZ-D

2.8.1 ECA #D1: NV Energy Transmission Line Towers

NV Energy prohibits excavating within 10 feet of the footings for the towers. Polygons RZ-D-01B, RZ-D-02, RZ-D-03, and RZ-D-12 and areas of discolored soil extend into these areas and therefore, portions of these areas cannot be excavated. An excavation extent sample (EE-D02-

1) was collected from the discolored soil remaining in place under the utility pole and was analyzed for dioxins, HCB, arsenic, and perchlorate. The results indicated that concentrations were above soil screening levels for dioxins, HCB, and arsenic. This area is designated as ECA #D1, as shown on Figure 4. NV Energy will be notified of the presence of contaminated soil under and adjacent to their tower footings. The correspondence with NV Energy detailing the allowable excavation criteria is presented in Attachment A.

2.8.2 ECA #D2: Asphalt Pavement Area

Following excavation of polygon RZ-D-14, discolored soil was identified in the southern sidewall of the excavation, as well as to the west and southwest of the polygon excavation. Accessible discolored soil was removed; however, due to the obstruction of an asphalt paved area south of polygon RZ-D-14, discolored soil remains in place beneath the asphalt paved area. Discolored soil sample DS-D14-1 was collected within the southern sidewall of RZ-D-14 and was analyzed for dioxins, HCB, and OCPs. Results indicated that concentrations of dioxins, HCB, and OCPs were above soil screening levels. This area is designated as ECA #D2, as shown on Figure 4. The asphalt pavement provides an engineering control, preventing or greatly limiting the potential for contact with contaminated soil.

2.8.3 ECA #D3: GW-11 and WC Ponds and Berms

The GW-11 and WC ponds are actively used by Veolia and Tronox. The berms around the ponds contain impacted soil, but this soil cannot be excavated because of the potential to compromise the integrity of the pond berms. Discolored soil samples DS-DB-1 and duplicate DS-DB-2 were collected from black discolored soil along the slope of and adjacent to the GW-11 Pond berm, and were analyzed for dioxins, HCB, SVOCs/PAHs, arsenic, lead, cobalt, manganese, magnesium, and perchlorate. Results indicated concentrations of dioxins, HCB, and magnesium were above soil screening levels. Following removal of soil to the south, three excavation extent samples (EE-D10-1, EE-DB-1, and EE-DB-2) were collected from the black discolored soil on the berm and analyzed for dioxins, HCB, and magnesium. Concentrations of magnesium were above soil screening levels in the three samples. In addition, soils beneath the ponds remain uncharacterized. Therefore, this area has been designated as ECA #D3, as shown in Figure 4. The ponds are double-lined and impacted soil may have been removed from within the pond footprints during construction.

Northgate's *Revised Engineering Evaluation of Slope Stability, WC and GW-11 Pond Embankments*, dated October 18, 2010, was approved by NDEP in their letter of November 24, 2010. The revised slope stability evaluation proposed to extend excavation slopes below the ground surface at an inclination of 3:1 to design depths. The embankments and the area from the toe of the embankment to the toe of the adjacent excavation has been capped at the surface with concrete-treated aggregate and this engineering control prevents dust generation, acts as a surface marker, and greatly reduces the potential for contact with the contaminated soil.

2.8.4 ECA #D4: Groundwater Treatment System Equalization Tanks and Associated Piping

Equalization tanks for the groundwater treatment system and associated influent and effluent pipelines, electrical and control lines for the equalization tanks, and water supply lines for the Veolia equalization tanks, Quonset hut, and chromium treatment plant are actively used by Veolia and cannot be removed. Excavation polygons RZ-D-16, -16A, -17C, and -18 extend beneath the equalization tanks and associated utilities, and therefore portions of these excavation polygons cannot be excavated. Excavations have been partially performed in polygons RZ-D-16 and -16A; however, some contaminated soil remains below the pipelines. The depths to the utility lines range from 3 inches to 3 feet in these areas. The utilities include, among others, two buried 8-inch effluent lines and two on-grade effluent lines. Approximately 1 foot of clean crushed limestone backfill material has been placed over the utilities in this area. These areas are designated as ECA # D4, and are shown on Figure 4.

The equalization tanks are on concrete pads and the pads provide an engineering control for this portion of ECA #D4. Additionally, portions of this ECA have been covered at the ground surface with concrete-treated aggregate or clean crushed limestone, which provide an engineering control for much of this ECA. These engineering controls prevent or mitigate the potential for contact with contaminated soil.

2.8.5 ECA #D5: Treatment Plant Chemical Storage Area

ECA #D5 includes soil beneath the entire Treatment Plant Chemical Storage Area. The extent of ECA #D5 is shown on Figure 4. Because of the Treatment Plant Chemical Storage Area obstruction, soils beneath the footprint of this area, including a portion of excavation polygon RZ-D-26, which extend under the footprint of the Treatment Plant Chemical Storage Area, cannot be excavated. The asphalt pavement within the Treatment Plant Chemical Storage Area provides an engineering control, preventing or greatly limiting the potential for contact with contaminated soil.

2.8.6 ECA #D6: Facility Roadway

Excavation of soils within a portion of excavation polygon RZ-D-26 is limited by the presence of an existing active facility roadway. Therefore, the portion of RZ-D-26 beneath the facility roadway is included in ECA #D6, as shown on Figure 4. Asphalt pavement for the facility roadway provides an engineering control for ECA #D6, preventing or greatly limiting the potential for contact with contaminated soil.

2.8.7 ECA #D7: Asphalt Pavement, Office Trailers, Cr Treatment Plant, Quonset Hut, and Utilities

Excavation of soils within excavation polygons RZ-D-17 and -28A is limited by the presence of asphalt pavement, office trailers, the chromium treatment plan, a Quonset hut, and various utilities. All of these facilities are in use and cannot be removed. Therefore, polygon RZ-D-28A and a portion of polygon RZ-D-17 are included in ECA #D7, as shown on Figure 4. Asphalt pavement and building foundations covers most of this area, providing an engineering control for ECA #D7, preventing or greatly limiting the potential for contact with contaminated soil.

2.8.8 ECA #D8: AP-5 Pond and Associated Utilities

The AP-5 Pond and associated subgrade and overhead utilities are actively used by Veolia. Utilities in this area include groundwater treatment process water pipelines and electrical conduits and lines. Because of the pond and associated utilities obstruction, soils beneath the pond footprint and in the vicinity of the associated utilities, including within excavation polygons RZ-D-28 and -29, cannot be excavated. In addition, soils beneath the pond are uncharacterized. Therefore, this area has been designated as ECA #D8, as shown in Figure 4.

Excavation has been completed to 1.5 feet bgs in RZ-D-28 and to 0.5 feet bgs in RZ-D-29, below which several utilities were encountered. The original excavation depths of RZ-D-28 of 10 feet bgs and 1.5 feet bgs could not be reached due to the presence of the utilities. Clean crushed limestone backfill material was placed to the approximate original ground surface within each of these polygons to cover impacted soils. The white colored crushed limestone provides a visual demarcation between the clean backfill material and impacted soils below. The clean crushed limestone material provides an engineering control in this portion of ECA #D8. The AP-5 Pond itself also provides an engineering control.

2.8.9 ECA #D9: Dioxin TEQ above Site-Specific BCL Approximately 9-10 Feet Deep

During excavation activities, discolored soils at a depth of approximately 9 to 10 feet bgs were encountered within portions of excavation polygons RZ-D-24, -25, and -25A. Discolored soils were removed, along with some additional deeper non-discolored soils. Following removal, confirmation soil samples were collected. Although the majority of chemical results for confirmation soil samples were below BCLs, the dioxin TEQ value in one confirmation sample (CS-D25A-2) was above the dioxin TEQ BCL. In addition, excavation extent samples EE-D25A-2 and duplicate EE-D25A-3 (located at the property boundary) were collected on August 3, 2011 and analyzed for dioxins and arsenic. Results indicated that dioxins and arsenic were above soil screening levels. The general area including these sample locations has been designated as ECA #D9, as shown on Figure 4. Approximately 10 feet of clean imported backfill material was placed in this area and orange snow fencing was used as a visual demarcation between the clean backfill material and impacted soils below. The clean backfill material provides an engineering control for ECA #D9, preventing or greatly limiting the potential for contact with contaminated soil.

2.8.10 ECA #D10: Groundwater Extraction Well and Related Piping

During excavation activities, discolored soils at an approximate depth of 1 to 3 feet bgs were discovered in the southwestern sidewall, near the southern end of excavation polygon RZ-D-25A. On May 18, 2011, excavation extent sample EE-D25A-1 was collected from the sidewall of the RZ-D-25A polygon excavation and analyzed for dioxins and arsenic. Results indicated that the concentration of arsenic was above the soil screening level. Due to the presence of an existing active groundwater extraction well and related piping, the discolored soils cannot be excavated. Therefore, this area is designated as ECA #D10, as shown on Figure 4. Approximately 1 foot of native soils which are not discolored overlie the discolored soils. The

native soils provide an engineering control for ECA #D10, limiting the potential for contact with contaminated soil.

2.9 Description of ECAs in RZ-E

2.9.1 ECA #E1: Portions of RZ-E-01 and RZ-E-03 Beneath 4th Street

Excavation of soils within the westernmost portions of excavation polygons RZ-E-01 and -03 is limited by the presence of an existing roadway (4th Street), which is in use and cannot be removed. Therefore, the western portions of RZ-E-01 and -03 beneath and adjacent to 4th Street are included in ECA #E1, as shown on Figure 5. Asphalt pavement for 4th Street provides a partial engineering control for ECA #E1, preventing or greatly limiting the potential for contact with contaminated soil.

2.9.2 ECA #E2: Tronox Process Water Lines

Excavation of soils is limited by the presence of Tronox's subsurface process water lines, which are generally less than 3 feet deep. The process water lines are in use and cannot be removed. Discolored soil was observed in the western sidewalls of RZ-E-13, -14, -14B, and at the bottom of the remediation polygon RZ-E-13. In addition, soil with white precipitate was observed in the bottom of RZ-E-14B. Excavation within polygons was performed to within five feet of the Tronox process water pipelines in the area; further excavation toward the west in these polygons was limited by the presence of the pipelines. On June 2, 2011, excavation extent samples EE-E14B-1 and duplicate EE-E14B-2, EE-E14-1 were collected and analyzed for dioxins, HCB, arsenic, and perchlorate. Results indicated concentrations of dioxins, HCB, and arsenic were above soil screening levels. Therefore, soil in the vicinity of the process water lines, including portions of RZ-D-31A and RZ-E-12, -13, -14, -14B, -14C, -15, and -16, is designated as ECA #E2, as shown on Figure 5.

2.9.3 ECA #E3: Facilities at East End of Beta Ditch

Excavation of soils within polygon RZ-E-16B on the east end of the Beta Ditch is limited by the presence of an existing sandbag diversion structure, drainage culverts, the facility perimeter fence line, and an elevated walkway structure. In addition, a layer of beige fibrous soil and debris was observed in an adjacent excavation sidewall and samples BD-1 through BD-5 were collected for bulk asbestos analysis. Samples BD-3 through BD-5 indicated asbestos concentrations above soil screening levels. Therefore, polygon RZ-E-16B is designated as ECA #E3, as shown on Figure 5. A portion of the polygon has been covered with clean imported soil.

2.10 Definition of ECA Boundaries

The ECAs described herein were established based on survey data collected by Las Vegas Paving Corp., the remediation contractor who performed soil excavation activities at the Site during 2010 and 2011. Survey data collected prior to backfilling has been used to establish the key locations of the remaining contaminated soil so that these areas can be accurately identified in the future. ECA boundaries have been established to be inclusive of known remaining contaminated soils. Where possible, ECA boundaries have been established by defining rectangular areas defined by a minimum number of boundary coordinates (corners of the

ECAs). Boundary coordinates of the ECAs are defined by horizontal and vertical coordinates (x,y), which are included on Table 1 for each ECA.

2.11 Demarcation Fencing

In areas where an excavation has left contaminated soil in place, orange plastic fencing (or other demarcation) has been placed on the surface of the impacted soil and secured using pins or spikes prior to covering with clean soil. The fencing serves as a visible indicator during future excavation activities that contaminated soil is being encountered. A memorandum discussing the demarcation fencing was submitted by Tronox on December 15, 2010 and was approved by NDEP on December 16, 2010.

An area adjacent to the WC East and West Ponds was backfilled prior to placing the demarcation fencing. The fill placed in this area is white crushed limestone. The color difference between the white fill and the tan/brown on-site soil provides demarcation in lieu of fencing.

Demarcations are noted in the Comments column of Table 1.

2.12 Additional Investigation for Unit Buildings, Leach Plant, and Ponds

This report presents the limits of ECAs with known contamination left in-place based on currently available data for the Unit Buildings, Tronox Leach Plant, and Tronox process ponds. Very limited data exists for these areas. When these operational structures and features are no longer active, further environmental investigation could be required to further delineate the extent of areas where chemicals exceed Site-specific soil screening levels. This further investigation may change the extent of ECAs pertaining to these structures and features.

2.13 Annual Review and Update

This ECA Summary report will be reviewed and updated at least annually by the Trust in accordance with the SMP for the Site. Modifications to this report will be conducted to address any changes to each ECA, including additional characterization data and/or new limits, based on work conducted during the previous year. In addition, new ECAs will be added to this report if previously unknown contamination is found and left in-place. Any existing ECAs will be removed from this report if the ECA is excavated in its entirety and all appropriate confirmation and documentation procedures have been performed in accordance with the SMP. The updated ECA Summary report will be submitted to NDEP for review and approval.

Table

Table 1. Summary of Excavation Control Areas (ECAs)
Nevada Environmental Response Trust Site
Henderson, Nevada

Remediation Zone	ECA #	ECA Area Description	ECA Boundary Coordinates	Rationale for Proposing ECA	Engineering Controls In Place	Sampling Locations Relevant to ECA	LOU Areas Relevant to ECA (See Attachments B through E)	Expected Depth(s) of Contamination	Characterization of Known Discolored Soil Left In-Place (Bold indicates results above soil screening levels)	Chemicals of Potential Concern (COPCs)	Minimum Required Analyses for Soils (See SMP Table 4 for Analytical Methods)	Comments
RZ-B	B1	Soils underlying Unit Buildings 1 through 6 including soil within 50 feet of Unit Buildings 1 through 6	NW Corner (826872.852; 26717280.373) NE Corner (829183.785; 26717653.684) SE Corner (829247.810; 26717229.230) SW Corner (826942.071; 26716849.599)	Unit Building 1: Remediation zone extends beneath the former Chlorination Building footprint.	Concrete foundations for Unit Buildings 1 through 6	SSAQ3-02, SA03, RSAQ3, SA169, SSAR3-01, SA192, RSAR3, SA110, SA190, SA193, SSAQ3-01, SSAQ4-06, SA120, SSAQ4-07, SSAQ4-03, SA84W, SA84, SA156, SSAQ4-08, SSAR4-04, SA191, SA29, SA111, RSAR4, SSAQ5-01, SA32, RSAR7, SSAR6-04, SSAR7-05, SA33, EE-B21-1	Attachment C, LOUs II: 11, 12, 36, 43 Attachment D, LOUs III: 33, 37, 40, 44, 61 Attachment E, LOUs IV: 4, 25, 26, 27, 28, 41, 42, 65	Unknown	Discolored soil status not known	Asbestos, Metals (incl. arsenic, chromium, platinum, magnesium, manganese, boron), Hexavalent Chromium, Manganese Dioxide, VOCs, SVOCs/PAHs (incl. B(a)P & HCB), Dioxins/Furans, PCBs, OCPs, Perchlorate, Chlorate, Ammonia, Sodium Hexametaphosphate, Acids, Caustics, Surfactants, Wet Chemistry	Asbestos, Metals (incl. arsenic, chromium, platinum, magnesium, manganese, boron), Hexavalent Chromium, Manganese Dioxide, VOCs, SVOCs/PAHs (incl. B(a)P & HCB), Dioxins/Furans, PCBs, OCPs, Perchlorate, pH	Remediation polygon soil remains in place. Soils under Unit Buildings are as yet uncharacterized.
				Unit Building 2: Remediation zone extends beneath the former Chlorination Building footprint.								
				Unit Building 3: Remediation zone extends beneath a small portion of the former Chlorination Building footprint.								
				Unit Building 4: Remediation zone extends beneath the electrical substation and basement portions of the building.								
				Unit Building 5: Soils uncharacterized								
				Unit Building 6: Soils uncharacterized								
			Approx. 50 ft around all Unit Buildings: Soils generally uncharacterized					Discolored soil status not known				
RZ-B	B2	Portions of Polygon RZ-B-04C/05/09/09A/11/12/13 Extending into Avenue G	B2 East: NW Corner (827615.893; 26717499.664) NE Corner (827884.441; 26717539.847) SE Corner (827889.536; 26717531.047) SW Corner (827629.192; 26717489.818) B2 East Central: NW Corner (827469.227; 26717506.675) NE Corner (827616.027; 26717521.781) SE Corner (827596.631; 26717484.871) SW Corner (827468.967; 26717462.725) B2 West Central: NE Corner (827422.984; 26717484.069) NW Corner (827361.622; 26717474.392) SE Corner (827426.283; 26717460.976) SW Corner (827364.921; 26717452.619) B2 West: NW Corner (827190.644; 26717457.781) NE Corner (827295.705; 26717473.640) SE Corner (827301.101; 26717445.001) SW Corner (827193.412; 26717427.198)	Existing roadway and utilities	Asphalt roadway	SA213, SSAQ4-09, SSAQ4-10, RSAQ5, SA204, SSAQ5-01, SA203, SA04	None	Within RZ-B-04C: <0.33' Within RZ-B-05: <5' Within RZ-B-09: <10' Within RZ-B-09A: <4' Within RZ-B-11: <12' Within RZ-B-12: <6' Within RZ-B-13: <0.33'	Discolored soil status not known	Asbestos, Arsenic, Dioxins/Furans, SVOCs/PAHs (incl. HCB & B(a)P)	Asbestos, Arsenic, Dioxins/Furans, SVOCs/PAHs (incl. HCB & B(a)P)	Remediation polygon soil remains in place
RZ-B	B3	Fire Hydrant	NW Corner (827642.763; 26717480.804) NE Corner (827662.992; 26717488.694) SE Corner (827664.740; 26717471.729) SW Corner (827656.989; 26717470.358)	Fire hydrant and water line	Asphalt pavement partially covers the area	RSAQ5, SA156, SSAQ5-05	Attachment E, LOUs IV: 4, 28	<3'	Discolored soil status not known	Metals (incl. arsenic), Hexavalent Chromium, Perchlorate, VOCs, SVOCs/PAHs (incl. B(a)P), OCPs (incl. DDT), Acids (muriatic/hydrochloric and sulfuric), Surfactants, Wet Chemistry	Metals (incl. arsenic), Hexavalent Chromium, Perchlorate, VOCs, SVOCs/PAHs (incl. B(a)P), OCPs (incl. DDT), pH	Remediation polygon soil remains in place
RZ-B	B4	Former Hazardous Waste Storage Area	NW Corner (827478.747; 26717466.618) NE Corner (827607.794; 26717488.297) SE Corner (827630.208; 26717339.256) SW Corner (827501.950; 26717318.220)	Current Tronox Bulk Storage Area	High density polyethylene sheeting caps most of the area	SA203, SA04, SA148, SA84, SSAQ4-08, SSAR4-04, SA156	Attachment E, LOUs IV: 4, 28	10'	Discolored soil status not known	Asbestos, Metals (incl. arsenic), Hexavalent Chromium, Perchlorate, VOCs, SVOCs/PAHs (incl. B(a)P & HCB), Dioxins/Furans, OCPs (incl. DDT), Acids (muriatic/hydrochloric and sulfuric), Surfactants, Wet Chemistry	Asbestos, Metals (incl. arsenic), Hexavalent Chromium, Perchlorate, VOCs, SVOCs/PAHs (incl. B(a)P & HCB), Dioxins/Furans, OCPs (incl. DDT), pH	Remediation polygon soil remains in place
RZ-B	B5	Sodium Chlorate Filter Cake Process Area Discolored soil is present	NW Corner (827939.336; 26717477.228) NE Corner (827994.454; 26717485.654) SE Corner (828003.092; 26717435.368) SW Corner (827947.292; 26717426.103)	A thick concrete slab used in a process operation in the sodium chlorate filter cake process area cannot be removed at this time.	Approximately 12 inch thick concrete slab and underlying membrane	SA05, SA136, SSAQ6-02	Attachment C, LOUs II: 11	<0.33'	SSAQ6-02 analyzed for dioxins, SVOCs, Arsenic, Manganese, Magnesium.	Asbestos, Metals (incl. arsenic), Hexavalent Chromium, SVOCs/PAHs (incl. B(a)P), Wet Chemistry	Asbestos, Metals (incl. arsenic), Hexavalent Chromium, SVOCs/PAHs (incl. B(a)P), pH	Remediation polygon soil remains in place, discolored soil is present
RZ-B	B6	Soils beneath approximately 6 feet deep in polygons RZ-B-20 and RZ-B-21	Going Clockwise NW Corner (828359.077; 26717338.191) NE Corner (828463.555; 26717348.452) SE Corner (828480.431; 26717199.596) SW Corner (828387.761; 26717189.869) Intermediate Point (828384.825; 26717214.058) Intermediate Point (828370.891; 26717211.701)	Access for excavation of soils beneath 6 feet (and to surface east of Tronox water line) is limited by the presence of several subgrade utilities.	Asphalt pavement for 9th Street and a minimum of 6 feet of clean backfill material	SA32, SSAR6-04, RSAR7, EE-B21-1	Attachment C, LOUs II: 43	Unknown	Discolored soil status not known	Metals (incl. arsenic, manganese, boron), Hexavalent Chromium, SVOCs/PAHs (incl. HCB & B(a)P), Perchlorate, Chlorate, Ammonia, Wet Chemistry	Metals (incl. arsenic, manganese, boron), Hexavalent Chromium, SVOCs/PAHs (incl. HCB & B(a)P), Perchlorate, pH	Remediation polygon soil remains in place

Table 1. Summary of Excavation Control Areas (ECAs)
Nevada Environmental Response Trust Site
Henderson, Nevada

Remediation Zone	ECA #	ECA Area Description	ECA Boundary Coordinates	Rationale for Proposing ECA	Engineering Controls In Place	Sampling Locations Relevant to ECA	LOU Areas Relevant to ECA (See Attachments B through E)	Expected Depth(s) of Contamination	Characterization of Known Discolored Soil Left In-Place	Chemicals of Potential Concern (COPCs)	Minimum Required Analyses for Soils	Comments
									(Bold indicates results above soil screening levels)		(See SMP Table 4 for Analytical Methods)	
RZ-B	B7	Soils within polygon RZ-B-22	Going Clockwise NW Corner (828484.613; 26717219.587) Intermediate Point (828521.138; 26717225.519) Intermediate Point (828528.270; 26717182.443) Intermediate Point (828564.531; 26717188.065) Intermediate Point (828567.137; 26717170.406) NE Corner (828615.047; 26717178.512) SE Corner (828635.630; 26717043.726) SW Corner (828497.664; 26717103.533)	Access for excavation of soils within this area is limited by the presence of subgrade utilities, building foundation, asphalt roadway, and other surface features.	Asphalt pavement for Avenue H covers most of the area	SSAR7-05, SA33	Attachment D, LOUs III: 61	<2'	Discolored soil status not known	Metals (incl. arsenic, manganese, boron), Hexavalent chromium, Perchlorate, Chlorate, Ammonia, Wet Chemistry	Metals (incl. arsenic, manganese, boron), Hexavalent chromium, Perchlorate, pH	Remediation polygon soil remains in place
RZ-C	C1	Portion of RZ-C-01A beneath 4th Street	SW Corner (826329.027; 26718372.806) NW Corner (826322.564; 26718433.917) NE Corner (826357.898; 26718438.428) SE Corner (826362.701; 26718377.208)	Existing roadway	Asphalt pavement for 4th Street	SSAN2-03, SA56	Attachment B, LOUs I: 35	<4'	Discolored soil status not known	Metals (incl. arsenic, manganese), Hexavalent Chromium, SVOCs/PAHs, VOCs, OCPs, Perchlorate, Chlorate, Ammonia, Radionuclides, Wet Chemistry	Metals (incl. arsenic, manganese), Hexavalent Chromium, SVOCs/PAHs, VOCs, OCPs, Perchlorate, pH	Remediation polygon soil remains in place
RZ-C	C2	Portion of RZ-C-03/04/05A beneath 5th Street	SW Corner (826696.826; 26718022.888) NW Corner (826665.943; 26718261.256) NE Corner (826747.334; 26718275.799) E Corner (826766.587; 26718165.735) Inside Corner (826716.017; 26718157.534) SE Corner (826735.167; 26718027.515)	Existing roadway	Asphalt pavement for 5th Street	SA48, SSAO3-02, SSAO3-01	Attachment B, LOUs I: 35, 64	<5'	Discolored soil status not known	Metals (incl. arsenic), Hexavalent Chromium, SVOCs/PAHs (incl. HCB), VOCs, OCPs, Perchlorate, Chlorate, Ammonia, Radionuclides, Wet Chemistry	Metals (incl. arsenic), Hexavalent Chromium, SVOCs/PAHs (incl. HCB), VOCs, OCPs, Perchlorate, pH	Remediation polygon soil remains in place
RZ-C	C3	Portion of RZ-C-06 beneath fire hydrant, water line, and Avenue F	SW Corner (826833.930; 26718020.812) NW Corner (826829.015; 26718055.815) NE Corner (826896.595; 26718067.560) SE Corner (826901.830; 26718033.768)	Existing roadway, hydrant, and utilities	Asphalt pavement for Avenue F covers most of the area	SSAO3-03	None	<9'	Discolored soil status not known	Metals (incl. magnesium), Dioxins/Furans, HCB	Metals (incl. magnesium), Dioxins/Furans, HCB	Remediation polygon soil remains in place. Orange snow fencing was used to demarcate ECA boundaries prior to backfilling.
RZ-C	C4	Concrete foundation	NW Corner (826875.233; 26718179.671) NE Corner (827273.281; 26718243.329) SE Corner (827301.825; 26718120.235) SW Corner (826896.452; 26718061.866)	Concrete foundation	Concrete foundation	SSAO3-03, SSAO4-03	Attachment B, LOUs I: 64	<9'	Discolored soil status not known	Metals, Hexavalent Chromium, SVOCs, VOCs, OCPs, Perchlorate, Wet Chemistry	Metals, Hexavalent Chromium, SVOCs, VOCs, OCPs, Perchlorate, pH	Remediation polygon soil remains in place. Additional uncharacterized soil remains in place beneath remainder of foundation. Polygon and non-polygon soils are included in the ECA.
RZ-C	C5	Water, fiber optic, and electric utility lines through and near RZ-C-11/13 Discolored soil is present	NW Corner (827469.580; 26718306.970) NE Corner (827492.378; 26718310.645) Inside E (827507.518; 26718209.457) E Corner (827546.307; 26718216.120) SE Corner (827552.577; 26718178.526) SW Corner (827449.507; 26718161.005) W Corner (827444.791; 26718198.889) Inside W Corner (827484.784; 26718205.830)	Existing below and above ground utilities	Clean backfill covers most of the area	SA50, SSAO5-05, SSAO5-03, EE-C13-1	Attachment C, LOUs II: 45	<10'	EE-C13-1 analyzed for HCB, SVOCs/PAHs, Arsenic, Manganese.	Asbestos, Metals, SVOCs (incl. HCB), VOCs	Asbestos, Metals, SVOCs (incl. HCB), VOCs	Remediation polygon soil remains in place, discolored soil is present
RZ-C	C6	Discolored soil at former pump house yard Discolored soil is present	NW Corner (827658.421; 26718335.303) NE Corner (827753.703; 26718349.262) SE Corner (827777.141; 26718203.193) SW Corner (827680.717; 26718188.018)	Discolored soil from ground surface down to at least 10 feet; limited access due to facility security fencing and former pump house equipment and utilities.	None currently	EE-C15-1, EE-C24-2	Attachment C, LOUs II: 45	Unknown	EE-C15-1 analyzed for HCB, SVOCs/PAHs, Arsenic, Manganese. EE-C15-2 analyzed for HCB, SVOCs/PAHs, Arsenic, Manganese.	Asbestos, Metals (incl. arsenic), SVOCs (incl. HCB), VOCs	Asbestos, Metals (incl. arsenic), SVOCs (incl. HCB), VOCs	Discolored soil layer extends under facility security fencing and former pump house equipment and utilities.
RZ-C	C7	Avenue F Utilities, Railroad line, and Roadway Discolored soil is present	NW Corner (827259.596; 26718129.560) North Edge (827972.111; 26718248.926) North Edge (827970.624; 26718259.709) NE Corner (828331.450; 26718323.872) SE Corner (828344.614; 26718244.392) Inside Corner (827546.209; 26718110.813) S Corner (827553.118; 26718061.680) SW Corner (827275.033; 26718015.647)	Existing fragile utilities (water and gas), railroad line, and Avenue F roadway	Asphalt pavement for Avenue F covers most of the area	SSAO4-03, SSAO4-04, SSAO5-03, SSAP5-03, SA187, SA188, SA41, SA40, SSAO6-05, SA130, RSAP6, EE-C24-1, EE-C27-1, EE-C27-2, EE-C27-3, EE-C27-4, DS-C24-1, DS-C24-2	Attachment B, LOUs I: 64 Attachment C, LOUs II: 45 Attachment D, LOUs III: 34 (west)	Unknown	EE-C24-1 and EE-C24-2 analyzed for HCB, SVOCs/PAHs, Arsenic, Manganese. EE-C27-1 analyzed for Arsenic, Lead, Manganese, Perchlorate. EE-C27-2 analyzed for Arsenic, Lead, Manganese, Perchlorate. EE-C27-3 analyzed for Arsenic, Lead, Manganese, Perchlorate. EE-C27-4 analyzed for Arsenic, Lead, Manganese, Perchlorate. DS-C24-1 and DS-C24-2 analyzed for HCB, SVOCs/PAHs, arsenic, manganese.	Asbestos, Metals (incl. arsenic, manganese, lead, chromium), Heavy Metal Sulfides, Hexavalent Chromium, Dioxins/Furans, SVOCs/PAHs (incl. HCB & B(a)P), VOCs, OCPs, Perchlorate, Wet Chemistry	Asbestos, Metals (incl. arsenic, manganese, lead, chromium), Sulfide, Sulfate, Hexavalent Chromium, Dioxins/Furans, SVOCs/PAHs (incl. HCB & B(a)P), VOCs, OCPs, Perchlorate, pH	Remediation polygon soil remains in place and uncharacterized discolored soil extending under Avenue F. Orange snow fencing was placed as a demarcation between clean backfill material and impacted soils below.
RZ-C	C8	9th Street Utilities and Roadway Discolored soil is present	NW Corner (828211.375; 26718503.458) NE Corner (828319.022; 26718523.165) SE Corner (828354.059; 26718328.030) SW Corner (828214.257; 26718303.875) W Corner (828207.564; 26718341.245) Inside Corner (828235.173; 26718346.171)	Existing utilities and roadway	Asphalt pavement for 9th Street covers most of the area	SA51, SSAO6-03, SSAO7-09, SSAO7-08	Attachment C, LOUs II: 14 Attachment D, LOUs III: 24, 34 (west)	<8'	Discolored soil is present but uncharacterized	Asbestos, Metals (incl. arsenic, chromium, boron, manganese), Heavy Metal Sulfides, Hexavalent Chromium, Perchlorate, Chlorate, Ammonia, Wet Chemistry	Asbestos, Metals (incl. arsenic, chromium, boron, manganese), Sulfide, Sulfate, Hexavalent Chromium, Perchlorate, pH	Remediation polygon soil remains in place and uncharacterized discolored soil extending under Avenue F

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Remediation Zone	ECA #	ECA Area Description	ECA Boundary Coordinates	Rationale for Proposing ECA	Engineering Controls In Place	Sampling Locations Relevant to ECA	LOU Areas Relevant to ECA (See Attachments B through E)	Expected Depth(s) of Contamination	Characterization of Known Discolored Soil Left In-Place (Bold indicates results above soil screening levels)	Chemicals of Potential Concern (COPCs)	Minimum Required Analyses for Soils (See SMP Table 4 for Analytical Methods)	Comments
RZ-C	C9	Diesel Tank and Pipelines Discolored soil is present	NE Corner (827624.863; 26718665.892) NW Corner (827648.964; 26718669.389) Intermediate Point (827667.309; 26718549.556) Intermediate Point (827680.695; 26718551.787) Intermediate Point (827686.272; 26718514.604) Intermediate Point (827675.654; 26718512.765) Intermediate Point (827701.305; 26718349.394) E Corner (827910.196; 26718379.775) Intermediate Point (828026.840; 26718325.402) SE Corner (828034.139; 26718290.482) SW Corner (827965.535; 26718278.026) Intermediate Point (827959.586; 26718315.023) Intermediate Point (827893.672; 26718367.748) W Corner (827674.173; 26718338.738)	Existing diesel tank and pipelines to Steam Plant	Concrete tank containment structure covers most of the area beneath the tank	SSAO6-05, SA130, SA39, SSAO6-02, SSAO6-03, SA43, DS-C19-1, DS-C23-1, EE-C23-1, EE-C20-1	Attachment C, LOUs II: 7, 8, 9, 13, 45 Attachment D, LOUs III: 34	<7'	DS-C19-1 analyzed for Dioxins/Furans, HCB, SVOCs/PAHs, Arsenic, Lead, Cobalt, Manganese, Magnesium. DS-C23-1 analyzed for Dioxins/Furans, SVOCs/PAHs, Arsenic, Lead, Cobalt, Manganese, Magnesium, Perchlorate. EE-C23-1 analyzed for Arsenic, Lead, Manganese, Perchlorate. EE-C20-1 analyzed for Arsenic, Lead, Manganese, Perchlorate.	Asbestos, Metals (incl. arsenic, boron, manganese, lead, chromium), Heavy Metal Sulfides, Manganese Sulfate, Manganese Dioxide, Hexavalent Chromium, Perchlorate, Chlorate, VOCs, SVOCs/PAHs (incl. B(a)P), Chloride, Ammonia, Sulfuric acid, Sodium Hexametaphosphates, Wet Chemistry	Asbestos, Metals (incl. arsenic, boron, manganese, lead, chromium), Sulfide, Sulfate, Hexavalent Chromium, Perchlorate, VOCs, SVOCs/PAHs (incl. B(a)P), Chloride, pH	Remediation polygon soil remains in place and discolored soil (about 4' thick) extends under the Diesel tank and pipelines
RZ-C	C10	Areas with Discolored Soil	NW Corner (827708.254; 26718549.044) NE Corner (827838.504; 26718569.050) SE Corner (827854.408; 26718471.807) SW Corner (827836.374; 26718468.832) Inside Corner (827831.912; 26718499.509) W Corner (827717.096; 26718484.154)	Several areas with discolored soil	None currently	SA114, SA102, SSAO6-01, SSAO6-06, SSAO5-09, EE-C18-1, DS-C10-1, DS-C17-01	Attachment C, LOUs II: 7, 9	Unknown	EE-C18-1 analyzed for Dioxins/Furans, HCB, SVOCs/PAHs, Arsenic, Manganese, Magnesium. DS-C10-1 analyzed for Dioxins/Furans, HCB, Arsenic, Lead, Cobalt, Manganese, Magnesium, Perchlorate. DS-C17-1 analyzed for Dioxins/Furans, HCB, Arsenic, Magnesium, Perchlorate.	Asbestos, Metals (incl. arsenic, magnesium), Hexavalent Chromium, Dioxins/Furans, HCB, Perchlorate, Chlorate, Chloride, Ammonia, Wet Chemistry	Asbestos, Metals (incl. arsenic, chromium), Sulfide, Sulfate, Hexavalent Chromium, Dioxins/Furans, HCB, Perchlorate, Chloride, pH	Discolored soil remains in place
RZ-C	C11	Natural Gas Pipeline Discolored soil is present	E Corner (828219.836; 26718447.034) SE Corner (828223.141; 26718425.219) SW Corner (827867.950; 26718362.776) NW Corner (827819.703; 26718678.488) NE Corner (827848.890; 26718683.466) Inside Corner (827895.840; 26718390.576)	Existing natural gas pipeline to Steam Plant	None currently	SSAN6-06, SSAO6-01, SSAO6-02, SSAO6-03, SA51, SA43, EE-C20-1, EE-C21-1, EE-C21-2	Attachment C, LOUs II: 13, 14 Attachment D, LOUs III: 34	>5'	EE-C20-1 analyzed for Arsenic, Lead, Manganese, Perchlorate. EE-C21-1 and duplicate EE-C21-2 analyzed for SVOCs/PAHs, Arsenic, Manganese, Perchlorate.	Asbestos, Metals (incl. arsenic, boron, chromium, lead, manganese), Heavy Metal Sulfates, Manganese Sulfate, Manganese Dioxide, Hexavalent Chromium, Dioxins/Furans, Perchlorate, Chlorate, SVOCs/PAHs (incl. B(a)P), Sulfuric Acid, Ammonia, Sodium Hexametaphosphates, Wet Chemistry	Asbestos, Metals (incl. arsenic, boron, chromium, lead, manganese), Sulfate, Sulfide, Hexavalent Chromium, Perchlorate, SVOCs/PAHs (incl. B(a)P), pH	Remediation polygon soil remains in place and discolored soil (about 4' thick) extends under the natural gas pipelines
RZ-C	C12	Steam Plant and Associated Features	NW Corner (827705.254; 26718752.860) NE Corner (828091.530; 26718815.721) SE Corner (828108.717; 26718714.581) SW Corner (827720.272; 26718650.047)	Existing Steam Plant, pipe-racks, piping south of Plant, power pole & vault, and transformer pad	Existing Steam Plant building foundation and associated features cover most of the area	SSAN6-06, SSAN6-08	None	<2'	Discolored soil status not known	Dioxins/Furans	Dioxins/Furans	Remediation polygon soil remains in place
RZ-C	C13	Steam Line Discolored soil is present	Going Clockwise NW Corner (828255.541; 26718761.080) NE Corner (828280.131; 26718765.670) Intermediate Point (828303.738; 26718638.785) Intermediate Point (828322.523; 26718641.041) Intermediate Point (828326.215; 26718617.325) Intermediate Point (828304.553; 26718613.586) SE Corner (828307.900; 26718592.764) SW Corner (828287.198; 26718589.169)	Active Steam Line for facility process support	None currently	SA137, EE-14A-1	Attachment D, LOUs III: 24	<10'	EE-14A-1 analyzed for Dioxins/Furans , HCB, Arsenic, Magnesium, VOCs	Metals (incl. arsenic, cobalt, manganese), trace Heavy Metal Sulfides, HCB, Wet Chemistry	Metals (incl. arsenic, cobalt, manganese), Sulfide, Sulfate, HCB, pH	Remediation polygon soil remains in place, discolored soil is present
RZ-C	C14	Process Road	Going Clockwise NW Corner (827265.616; 26718875.892) Intermediate Point (827679.456; 26718941.163) Intermediate Point (827683.232; 26718911.882) Intermediate Point (828064.216; 26718971.523) Intermediate Point (828164.271; 26719032.921) Intermediate Point (828227.448; 26719107.865) NE Corner (828309.091; 26719211.824) SE Corner (828329.527; 26719194.662) Intermediate Point (828224.920; 26719043.285) Intermediate Point (828239.240; 26718932.476) Intermediate Point (828114.219; 26718972.406) Intermediate Point (828090.793; 26718953.318) Intermediate Point (828096.234; 26718882.947) Intermediate Point (828047.965; 26718920.837) Intermediate Point (827812.093; 26718877.064) Intermediate Point (827820.727; 26718823.723) Intermediate Point (827762.221; 26718813.824) Intermediate Point (827752.018; 26718880.149) SW Corner (827274.357; 26718804.939)	Existing process roadway	Process road is covered with clean crushed limestone backfill material	SSAN5-02, SA60, SSAN6-02, SSAN6-01, SA49, SSAN7-03, SA58, SSAN5-05, SA196, SA105, SA150, RSAN6, SA63, SSAN5-03, SA94, SA15	Attachment C, LOUs II: 53, 57	<4'	Discolored soil status not known	Asbestos, Metals (incl. arsenic, chromium, iron), Hexavalent Chromium, Dioxins/Furans, HCB, Perchlorate, Ammonium Perchlorate, Chlorate, Ammonia, Caustics (Sodium hydroxide), Wet Chemistry	Asbestos, Metals (incl. arsenic, chromium, iron), Hexavalent Chromium, Dioxins/Furans, HCB, Perchlorate, pH	Remediation polygon soil remains in place
RZ-C	C15	Steam Plant Roadway	NW Corner (828012.014; 26718821.250) NE Corner (828076.378; 26718839.675) SE Corner (828088.906; 26718796.193) SW Corner (828024.297; 26718778.259)	Existing Steam Plant roadway	Steam Plant asphalt roadway covers most of the area	RSAN6	None	<1'	Discolored soil status not known	Arsenic	Arsenic	Remediation polygon soil remains in place

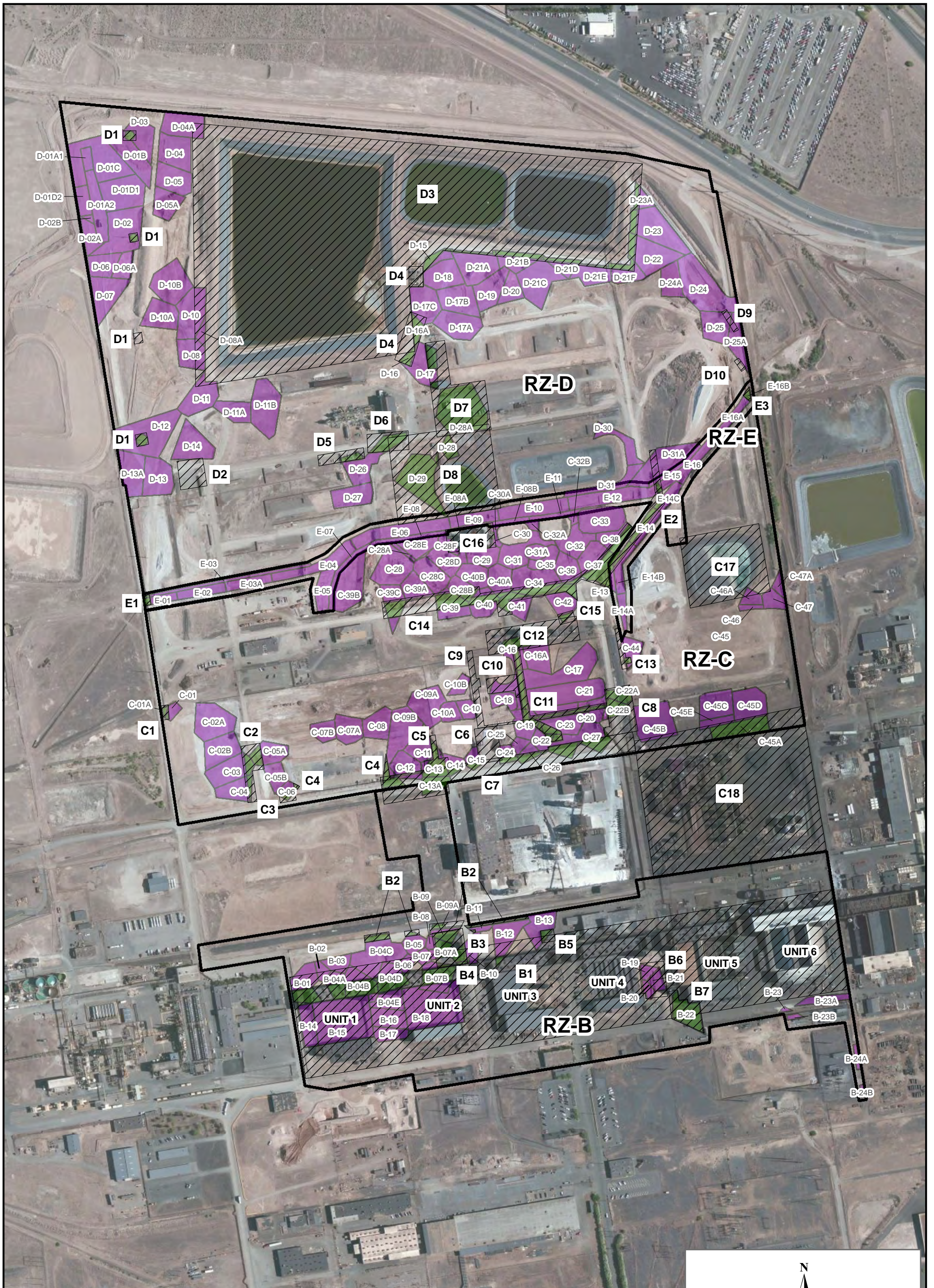
Table 1. Summary of Excavation Control Areas (ECAs)
Nevada Environmental Response Trust Site
Henderson, Nevada

Remediation Zone	ECA #	ECA Area Description	ECA Boundary Coordinates	Rationale for Proposing ECA	Engineering Controls In Place	Sampling Locations Relevant to ECA	LOU Areas Relevant to ECA (See Attachments B through E)	Expected Depth(s) of Contamination	Characterization of Known Discolored Soil Left In-Place (Bold indicates results above soil screening levels)	Chemicals of Potential Concern (COPCs)	Minimum Required Analyses for Soils (See SMP Table 4 for Analytical Methods)	Comments
RZ-C	C16	BT Tanks Discolored soil is present	SW Corner (827548.239; 26719084.231) NW Corner (827534.857; 26719181.336) NE Corner (827736.079; 26719213.007) SE Corner (827751.183; 26719109.622)	BT Tanks and containment structure in use by Veolia	Tanks and concrete containment structure cover most of the area	RSAM5, SSAM5-05, SA104, SSAM6-06, SSAM6-02, SSAM6-05, SSAM5-04, EE-E08A-1, EE-E08A-2, EE-E09-1, CS-C30-1	Attachment C, LOUs II: 5, 57	Unknown	EE-E08A-1 and EE-E08A-2 analyzed for Dioxins/Furans, HCB, Arsenic, Lead, OCPs, Perchlorate . EE-E09-1 analyzed for Dioxins/Furans, HCB, Arsenic, Lead, OCPs, Perchlorate . CS-C30-1 analyzed for Dioxins/Furans and Perchlorate .	Asbestos, Metals (incl. chromium, iron), Hexavalent Chromium, Dioxins/Furans, OCPs, Perchlorate, Ammonium Chloride, Sodium Hypochlorite, Wet Chemistry	Asbestos, Metals (incl. chromium, iron), Hexavalent Chromium, Dioxins/Furans, OCPs, Perchlorate, Chloride, pH	Remediation polygon soil remains in place, discolored soil is present
RZ-C	C17	MN-1 Pond	NW Corner (828530.933; 26719146.567) NE Corner (828867.348; 26719208.835) SE Corner (828917.174; 26718920.290) SW Corner (828576.297; 26718849.284)	Existing MN-1 Pond currently in use	Pond and pond liner cover most of the area	None	Attachment C, LOUs II: 20 Attachment D, LOUs III: 21	Unknown	Discolored soil status not known	Metals (incl. manganese, magnesium, boron), Hexavalent Chromium, Perchlorate, Chlorate, Borates, Boron Trichloride, Sodium, Calcium, Phosphates, Sulfates, Carbonates, Potassium, Potassium Phosphate, Potassium Oxide, Sodium Hexametaphosphate, Wet Chemistry	Metals (incl. manganese, magnesium, boron), Hexavalent Chromium, Perchlorate, Phosphates, Sulfates, pH	Uncharacterized soil under existing MN-1 Pond
RZ-C	C18	Leach Plant Equipment and Facilities	SW Corner (828420.523; 26717708.494) NW Corner (828337.943; 26718284.217) NE Corner (829051.753; 26718431.828) SE Corner (829154.957; 26717819.112)	Existing Leach Plant Equipment and Facilities	Asphalt pavement covers portions of the area	SSA08-02	Attachment D, LOUs III: 24, 34 (east), 47, 48, 49, 50, 51	Unknown	Discolored soil status not known	Asbestos, Metals (incl. manganese), trace Heavy Metal Sulfides, Manganese Sulfate, Manganese Dioxide, Sulfuric Acid, Acid Solutions, Wet Chemistry	Asbestos, Metals (incl. manganese), Sulfide, Sulfate, pH	Remediation polygon soil remains in place
RZ-D	D1	NV Energy Transmission Line Towers Discolored soil is present	<u>Northern D1</u> NE Corner (826220.879; 26720878.355) SE Corner (826220.879; 26720837.832) SW Corner (826166.565; 26720837.832) NW Corner (826166.777; 26720878.991) <u>North Central D1</u> NE Corner (826225.830; 26720445.908) SE Corner (826232.021; 26720410.338) SW Corner (826196.445; 26720403.956) NW Corner (826190.742; 26720439.532) <u>South Central D1</u> NE Corner (826244.702; 26720022.402) SE Corner (826251.203; 26719978.146) SW Corner (826215.763; 26719972.036) NW Corner (826209.670; 26720016.563) <u>Southern D1</u> NE Corner (826265.047; 26719595.557) SE Corner (826275.367; 26719546.810) SW Corner (826225.669; 26719535.947) NW Corner (826217.251; 26719585.508)	Existing NV Energy Transmission Line Towers. Excavation can not be performed within 10 ft of towers. Must slope excavation away from towers.	None currently; A spray applied asphaltic coating or asphaltic chip seal is proposed to cover soils. Anticipated completion in Fourth Quarter 2012.	RSAI3, SSAI3-06, SSAJ2-02, SSAI3-02-SW-E, RSAL2, SSAJ2-07, EE-D02-1	Attachment B, LOUs I: 1, 2	<16'	EE-D02-1 analyzed for Dioxins/Furans, HCB, Arsenic, Perchlorate .	Asbestos, Metals (incl. Arsenic), Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs/PAHs (incl. HCB), OCPs (incl. DDT), Perchlorate, Chlorate, Ammonia, Acids (muriatic/hydrochloric), Surfactants, Wet Chemistry	Asbestos, Metals (incl. Arsenic), Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs/PAHs (incl. HCB), OCPs (incl. DDT), Perchlorate, pH	Remediation polygon soil remains in place, discolored soil is present
RZ-D	D2	Asphalt Pavement Area Discolored soil is present	NE Corner (826504.378; 26719487.850) SE Corner (826523.593; 26719369.813) SW Corner (826411.732; 26719351.627) NW Corner (826395.262; 26719473.782)	Discolored soil beneath asphalt pavement	Asphalt pavement partially covers the area	SSAL3-05, DS-D14-1	Attachment B, LOUs I: 2	<3'	DS-D14-1 analyzed for Dioxins/Furans, HCB, OCPs .	Metals, Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs (incl. HCB), OCPs (incl. 4,4'-DDE), Wet Chemistry	Metals, Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs (incl. HCB), OCPs (incl. 4,4'-DDE), pH	Discolored gray layer (6" to 3' thick) remains about 6" below ground surface
RZ-D	D3	GW-11 and WC Ponds and Berms Discolored soil is present	NW Corner (826460.328; 26720911.644) NE Corner (828373.313; 26720739.060) Upper SE Corner (828338.090; 26720280.662) (827526.595; 26720370.766) (827383.781; 26720208.125) Lower SE Corner (827406.547; 26719940.183) SW Corner (826474.538; 26719790.150)	Existing GW-11 and WC ponds and berms; soils uncharacterized; discolored soil in berm on west side of GW-11	Cement treated Aggregate covers the portions of the berms where discolored soil was observed and within and adjacent to previously defined remediation polygons	BERM-K3-01, RSAK3, SSAK3-01, SSAK3-04, SSAK3-08, SSAJ3-04, BERM-14-01, RSAJ7, RSAJ8, BERM-J8-01, SSAK8-01, SSAK8-04, RSAK7, SSAK7-02, BERM-J7-01, BERM-J7-02, RSAJ7, SA127, BERM-J6-01, RSAJ6, SSAJ6-01, SSAJ6-02, RSAJ5, BERM-K5-01, RSAK5, SSAK5-04, BERM-K4-01, RSAK4, SSAK4-01, SSAK4-02, SSAK4-03, RSA14, RSA15, SA23, SA134, SA88, SA202, DS-DB-1, DS-DB-2, EE-DB-1, EE-DB-2, EE-D10-1	Attachment B, LOUs I: 1, 22, 23, 32	Unknown	DS-DB-1 and DS-DB-2 analyzed for Dioxins/Furans, HCB, SVOCs/PAHs, Arsenic, Lead, Cobalt, Manganese, Magnesium, Perchlorate. EE-DB-1, EE-DB-2, and EE-D10-1 analyzed for Dioxins/Furans, HCB, Magnesium	Asbestos, Metals (incl. arsenic, boron, chromium, magnesium, manganese), Manganese Dioxide, Iron Oxide, Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs (incl. HCB), OCPs (incl. DDT and Beta-BHC), Perchlorate, Chlorate, Ammonia, Acids (muriatic/hydrochloric), Surfactants, Sodium Hexametaphosphate, Hypochlorite, Wet Chemistry	Asbestos, Metals (incl. arsenic, boron, chromium, magnesium, manganese, iron), Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs (incl. HCB), OCPs (incl. DDT and Beta-BHC), Perchlorate, pH	GW-11 and WC ponds and berms; discolored soil in berm on west side of GW-11
RZ-D	D4	Groundwater Treatment System Equilization Tanks & Associated Piping	<u>Northern D4</u> NE Corner (827440.425; 26720302.615) SE Corner (827442.031; 26720215.212) SW Corner (827381.495; 26720215.575) NW Corner (827380.140; 26720301.599) <u>Southern D4</u> NE Corner (827456.181; 26720083.735) SE Corner (827391.283; 26719877.025) SW Corner (827320.703; 26719877.025) NW Corner (827386.745; 26720109.654)	Existing treatment system equilization tanks and associated piping	Concrete containment structure covers soils beneath the tanks; clean crushed limestone backfill material covers the area with utilities.	RSAK5, SSAK5-04, SSAK5-05, SSAK6-02	Attachment B, LOUs I: 1, 32	<9'	Discolored soil status not known	Asbestos, Metals (incl. chromium), Iron Oxide, Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs (incl. HCB), OCPs (incl. DDT), Perchlorate, Chlorate, Ammonia, Surfactants, Acids (muriatic/hydrochloric), Wet Chemistry	Asbestos, Metals (incl. chromium, iron), Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs (incl. HCB), OCPs (incl. DDT), Perchlorate, pH	Remediation polygon soil remains in place. Orange snow fencing was used to demarcate ECA boundaries prior to backfilling.




Table 1. Summary of Excavation Control Areas (ECAs)
Nevada Environmental Response Trust Site
Henderson, Nevada

Remediation Zone	ECA #	ECA Area Description	ECA Boundary Coordinates	Rationale for Proposing ECA	Engineering Controls In Place	Sampling Locations Relevant to ECA	LOU Areas Relevant to ECA (See Attachments B through E)	Expected Depth(s) of Contamination	Characterization of Known Discolored Soil Left In-Place (Bold indicates results above soil screening levels)	Chemicals of Potential Concern (COPCs)	Minimum Required Analyses for Soils (See SMP Table 4 for Analytical Methods)	Comments
RZ-D	D5	Treatment Plant Chemical Storage Area	NE Corner (827187.632; 26719531.503) SE Corner (827193.389; 26719486.797) SW Corner (826998.312; 26719453.946) NW Corner (826992.893; 26719498.312)	Asphalt paved chemical storage area	Asphalt pavement covers the area	SA189, SA19, SA173, SA179	None	Unknown	Discolored soil status not known	Asbestos, Perchlorate	Asbestos, Perchlorate	Remediation polygon soil remains in place
RZ-D	D6	Facility Roadway	NE Corner (827377.528; 26719603.239) SE Corner (827381.482; 26719523.163) SW Corner (827206.084; 26719509.769) NW Corner (827202.359; 26719587.326)	Existing roadway	Asphalt pavement covers the area	SA189, SA19, SA173, SA179	Attachment B, LOUs I: 58 Attachment C, LOUs II: 30, 56	Unknown	Discolored soil status not known	Asbestos, Metals, Hexavalent Chromium, Perchlorate, Ammonium Perchlorate, Chlorate, Ammonia, Wet Chemistry	Asbestos, Metals, Hexavalent Chromium, Perchlorate, pH	Remediation polygon soil remains in place
RZ-D	D7	Asphalt Pavement, Office Trailers, Cr Treatment Plant, Quonset Hut, and Utilities	SW Corner (827500.140; 26719576.911) NW Corner (827449.416; 26719975.180) NE Corner (827532.569; 26719987.895) Inner corner (827558.985; 26719796.882) E Corner (827703.092; 26719817.287) SE Corner (827730.440; 26719608.070)	Existing paved area, office trailers, and treatment plant facilities	Asphalt pavement and facility structures cover most of the area	SSAKS-04, SSAL6-01	Attachment B, LOUs I: 32 Attachment C, LOUs II: 31, 55	<0.33'	Discolored soil status not known	Asbestos, Metals (incl. chromium), Iron Oxide, Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs, Perchlorate, Ammonium Perchlorate, Chlorate, Hydrogen Chloride, Wet Chemistry	Asbestos, Metals (incl. chromium, iron), Hexavalent Chromium, Dioxins/Furans, VOCs, SVOCs, Perchlorate, Chloride, pH	Remediation polygon soil remains in place
RZ-D	D8	AP-5 Pond and Associated Utilities Discolored soil is present	SE Corner (827771.063; 26719275.097) SW Corner (827336.478; 26719203.149) NW Corner (827291.450; 26719572.921) NE Corner (827720.111; 26719632.200)	Existing pond and existing subgrade and overhead utilities related to AP-5 pond; soils beneath pond uncharacterized	Pond and pond liner, and clean crushed limestone backfill material cover most of the area	SSAL5-05, SA72, SSAM5-01, SA179	Attachment B, LOUs I: 58 Attachment C, LOUs II: 19, 30, 31, 55, 56, 57	Unknown	Discolored soil is present but was not sampled	Asbestos, Metals, Hexavalent Chromium, Perchlorate, Ammonium Perchlorate, Chlorate, Ammonia, Sodium Chloride, Sodium Hypochlorite, Wet Chemistry	Asbestos, Metals, Hexavalent Chromium, Perchlorate, Chloride, pH	Remediation polygon soil remains in place; AP-5 Pond and berm soils
RZ-D	D9	Dioxin TEQ above Site-Specific BCL approximately 9-10 feet deep Discolored soil is present at property boundary	NW Corner (828709.587; 26720108.132) NE Corner (828730.167; 26720119.572) SE Corner (828781.298; 26720032.585) SW Corner (828761.143; 26720022.189)	Dioxin TEQ above Site-Specific BCL approximately 9-10 feet deep	9-10 feet of clean backfill material covers the area	CS-D25A-2, EE-D25A-2, EE-D25A-3	None	9'-10'	EE-D25A-2 and EE-D25A-3 (located at property boundary) analyzed for Dioxins/Furans and Arsenic.	Arsenic, Dioxins/Furans	Arsenic, Dioxins/Furans	Soil with Dioxin TEQ > BCL remains at depth of 9-10 ft, discolored soil is present. Orange snow fencing was used to demarcate ECA boundaries prior to backfilling
RZ-D	D10	Groundwater Extraction Well and Related Piping Discolored soil is present	SW Corner (828793.960; 26719855.820) NW Corner (828762.991; 26719899.313) NE Corner (828782.182; 26719912.918) SE Corner (828813.277; 26719870.146)	Existing groundwater extraction well and related piping, with discolored soil observed in southwest sidewall of polygon RZ-D-25A	None currently	SSAL8-03, EE-D25A-1	None	<3'	EE-D25A-1 analyzed for Dioxins/Furans and Arsenic.	Arsenic	Arsenic	Discolored soil layer with debris near groundwater extraction well
RZ-E	E1	Portions of RZ-E-01 and RZ-E-03 beneath 4th Street and Facility Roadway	NE corner (826277.519; 26718907.439) SE corner (826285.239; 26718864.891) SW corner (826257.274; 26718860.087) NW corner (826251.012; 26718901.434)	Existing roadways	Asphalt pavement for 4th Street and clean crushed limestone for facility roadway	SSAM2-01, BDT-1-N-15, BDT-1-N-10	Attachment C, LOUs II: 5	<8'	Discolored soil status not known	Metals, Hexavalent Chromium, Cyanide, Dioxins/Furans, HCB, OCPs (incl. 4,4-DDE, 4,4-DDT, aldrin, alpha-BHC, dieldrin), Perchlorate, Chlorate, Ammonia, Sulfates, Carbonates, Phosphates, Chloride, Sulfide, Wet Chemistry	Metals, Hexavalent Chromium, Cyanide, Dioxins/Furans, HCB, OCPs (incl. 4,4-DDE, 4,4-DDT, aldrin, alpha-BHC, dieldrin), Perchlorate, Sulfate, Phosphate, Chloride, Sulfide, pH	Remediation polygon soil remains in place
RZ-E	E2	Tronox Process Water Lines Discolored soil is present	<u>Going Clockwise</u> NW Point (828401.614; 26719519.207) NE Point (828427.851; 26719523.773) E Point (828465.906; 26719292.072) S Point (828232.379; 26718985.521) SW Point (828225.192; 26719038.434) Inside corner (828428.217; 26719333.712)	Existing process water lines	None currently	SA107, SSAN7-04, SSAM7-07, SSAM7-06, SA155, SA86, EE-E14B-1, EE-E14B-2, EE-E14-1, EE-E14C-1	Attachment C, LOUs II: 5	<9'	EE-E14B-1, EE-E14B-2, EE-E14-1 analyzed for Dioxins/Furans, HCB, Arsenic, Perchlorate. EE-E14C-1 analyzed for Dioxins/Furans, HCB, SVOCs, Arsenic, OCPs, Perchlorate.	Asbestos, Metals (incl. arsenic), Hexavalent Chromium, Cyanide, Dioxins/Furans, HCB, B(a)P, OCPs (4,4-DDE, 4,4-DDT, aldrin, alpha-BHC), PCBs, Perchlorate, Chlorate, Ammonia, Sulfates, Carbonates, Phosphates, Chloride, Sulfide, Wet Chemistry	Asbestos, Metals (incl. arsenic), Hexavalent Chromium, Cyanide, OCPs (4,4-DDE, 4,4-DDT, aldrin, alpha-BHC), PCBs, Perchlorate, Sulfate, Phosphate, Chloride, Sulfide, pH	Remediation polygon soil remains in place; Discolored soil along the western sidewall of the excavation performed within RZ-E-14B
RZ-E	E3	Facilities at East End of Beta Ditch Asbestos-impacted soil is present	N Corner (828826.349; 26719790.558) SE Corner (828833.420; 26719732.324) SW Corner (828828.310; 26719729.185) W Corner (828799.830; 26719753.547)	Existing sandbag diversion structure, drainage culverts, perimeter fence line, and elevated walkway structure	None currently	SSAL8-02, BD-1, BD-2, BD-3, BD-4, BD-5	Attachment C, LOUs II: 5	<5'	BD-1, BD-2 analyzed for bulk asbestos. BD-3, BD-4, BD-5 analyzed for bulk asbestos.	Asbestos, Metals (incl. arsenic, manganese), Hexavalent Chromium, Cyanide, OCPs, Perchlorate, Chlorate, Ammonia, Sulfates, Carbonates, Phosphates, Chloride, Sulfide, Wet Chemistry	Asbestos, Metals (incl. arsenic, manganese), Hexavalent Chromium, Cyanide, OCPs, Perchlorate, Sulfate, Phosphate, Chloride, Sulfide, pH	Remediation polygon soil remains in place, discolored soil/debris is present. Plastic sheeting used to demarcate area

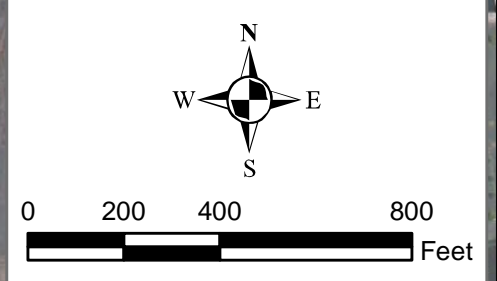
Figures



Legend

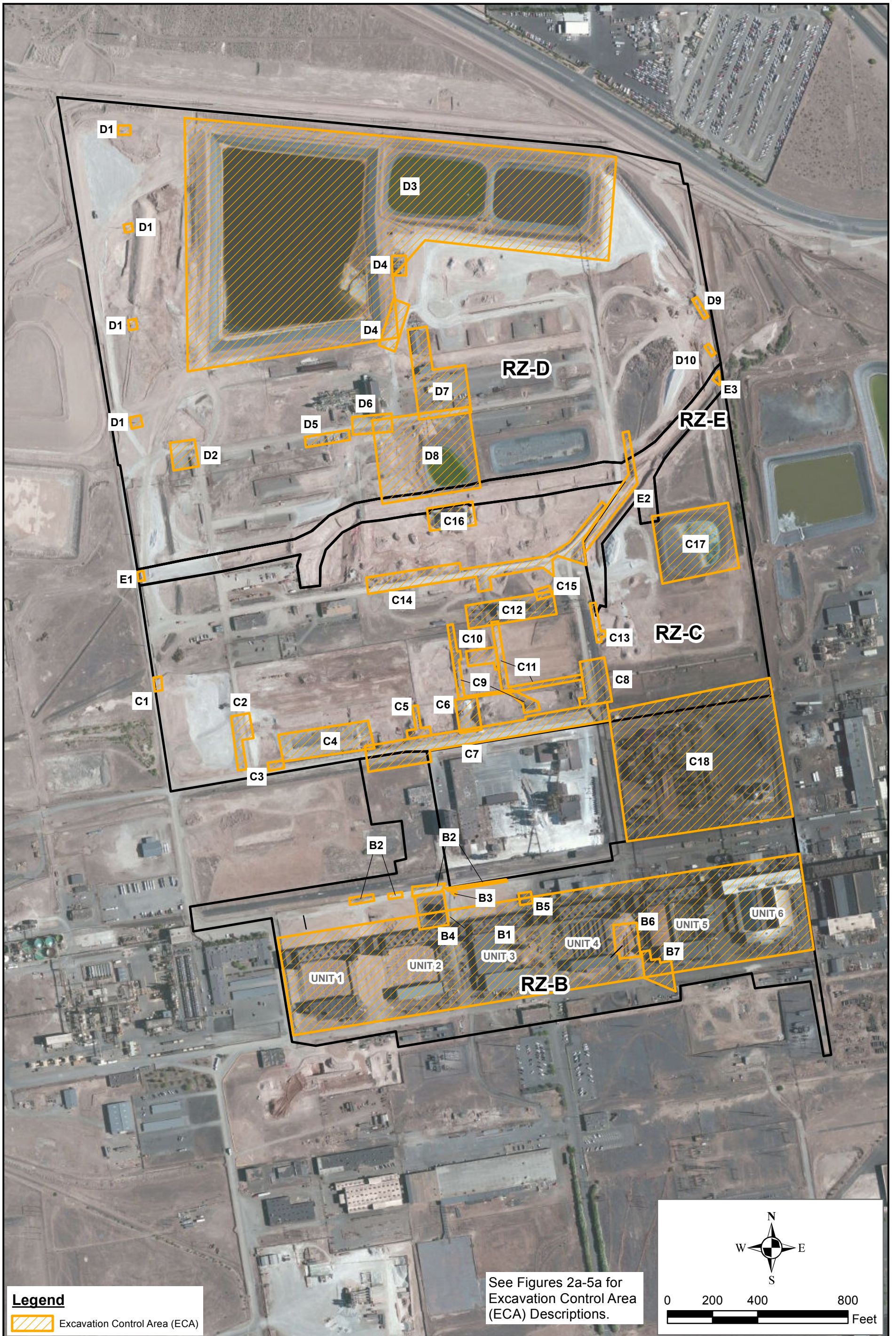
-  Excavation Control Areas (ECAs)
-  Polygon Remediation Completed
-  Polygon Area Inaccessible, Remediation Not Performed

See Figures 2-5 for Excavation Control Area (ECA) Descriptions.



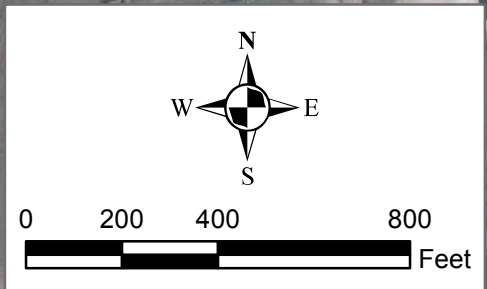
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Legend
 Excavation Control Area (ECA)

See Figures 2a-5a for
 Excavation Control Area
 (ECA) Descriptions.



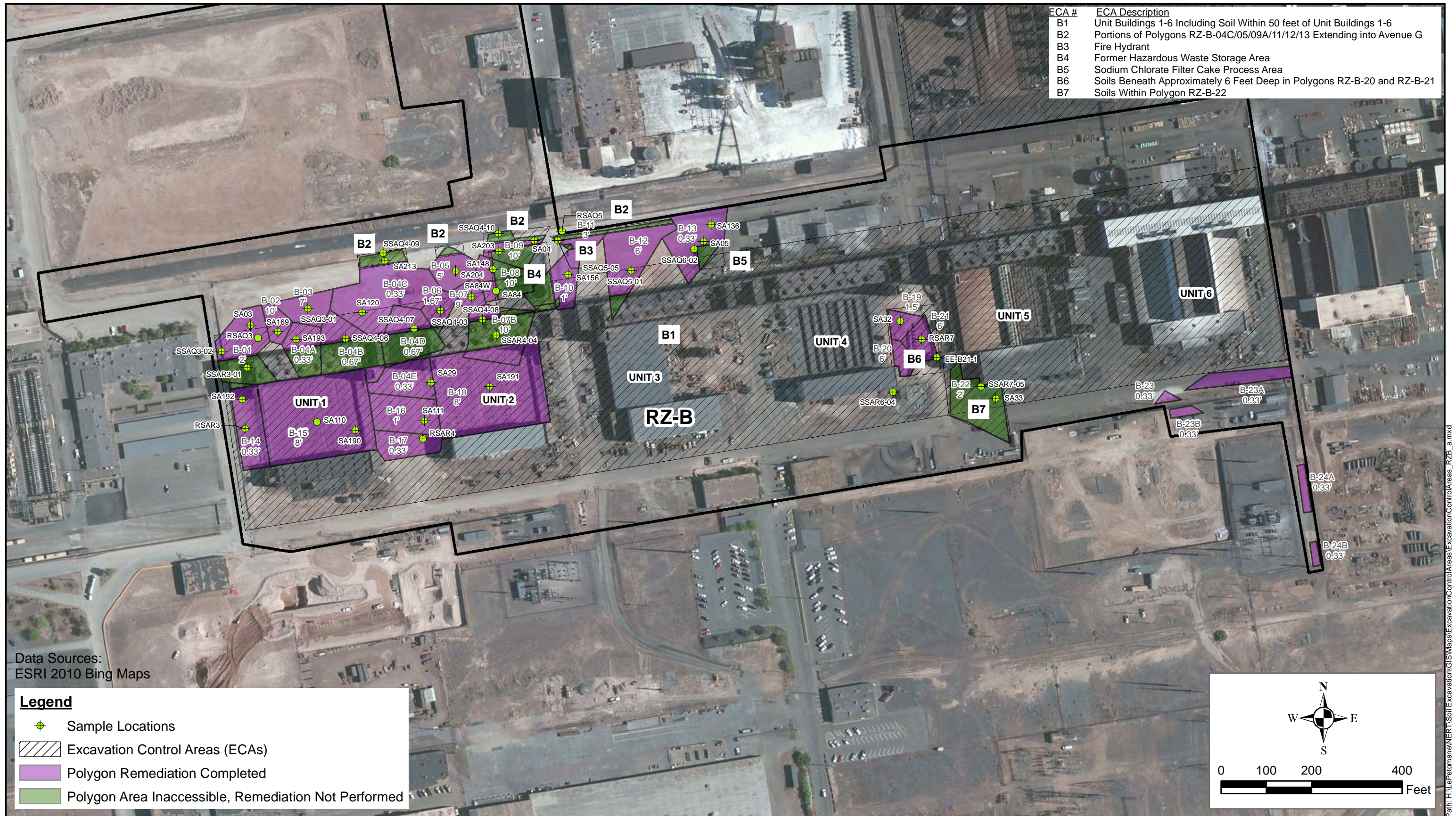
ENVIRON

2200 Powell St., Suite 700, Emeryville, CA 94608

**Excavation Control Areas - All Remediation Zones
 (without Remediation Polygons)**
 Nevada Environmental Response Trust Site, Henderson, Nevada

Drafter: RS Date: 5/18/2012 Contract Number: 21-29100 Approved by: Revised:

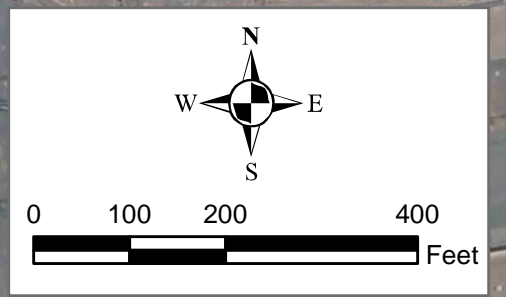
Figure
1a



ECA #	ECA Description
B1	Unit Buildings 1-6 Including Soil Within 50 feet of Unit Buildings 1-6
B2	Portions of Polygons RZ-B-04C/05/09A/11/12/13 Extending into Avenue G
B3	Fire Hydrant
B4	Former Hazardous Waste Storage Area
B5	Sodium Chlorate Filter Cake Process Area
B6	Soils Beneath Approximately 6 Feet Deep in Polygons RZ-B-20 and RZ-B-21
B7	Soils Within Polygon RZ-B-22

Data Sources:
ESRI 2010 Bing Maps

Legend	
	Sample Locations
	Excavation Control Areas (ECAs)
	Polygon Remediation Completed
	Polygon Area Inaccessible, Remediation Not Performed



Excavation Control Areas in RZ-B
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
2

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ECA #	ECA Description
B1	Unit Buildings 1-6 Including Soil Within 50 feet of Unit Buildings 1-6
B2	Portions of Polygons RZ-B-04C/05/09A/11/12/13 Extending into Avenue G
B3	Fire Hydrant
B4	Former Hazardous Waste Storage Area
B5	Sodium Chlorate Filter Cake Process Area
B6	Soils Beneath Approximately 6 Feet Deep in Polygons RZ-B-20 and RZ-B-21
B7	Soils Within Polygon RZ-B-22

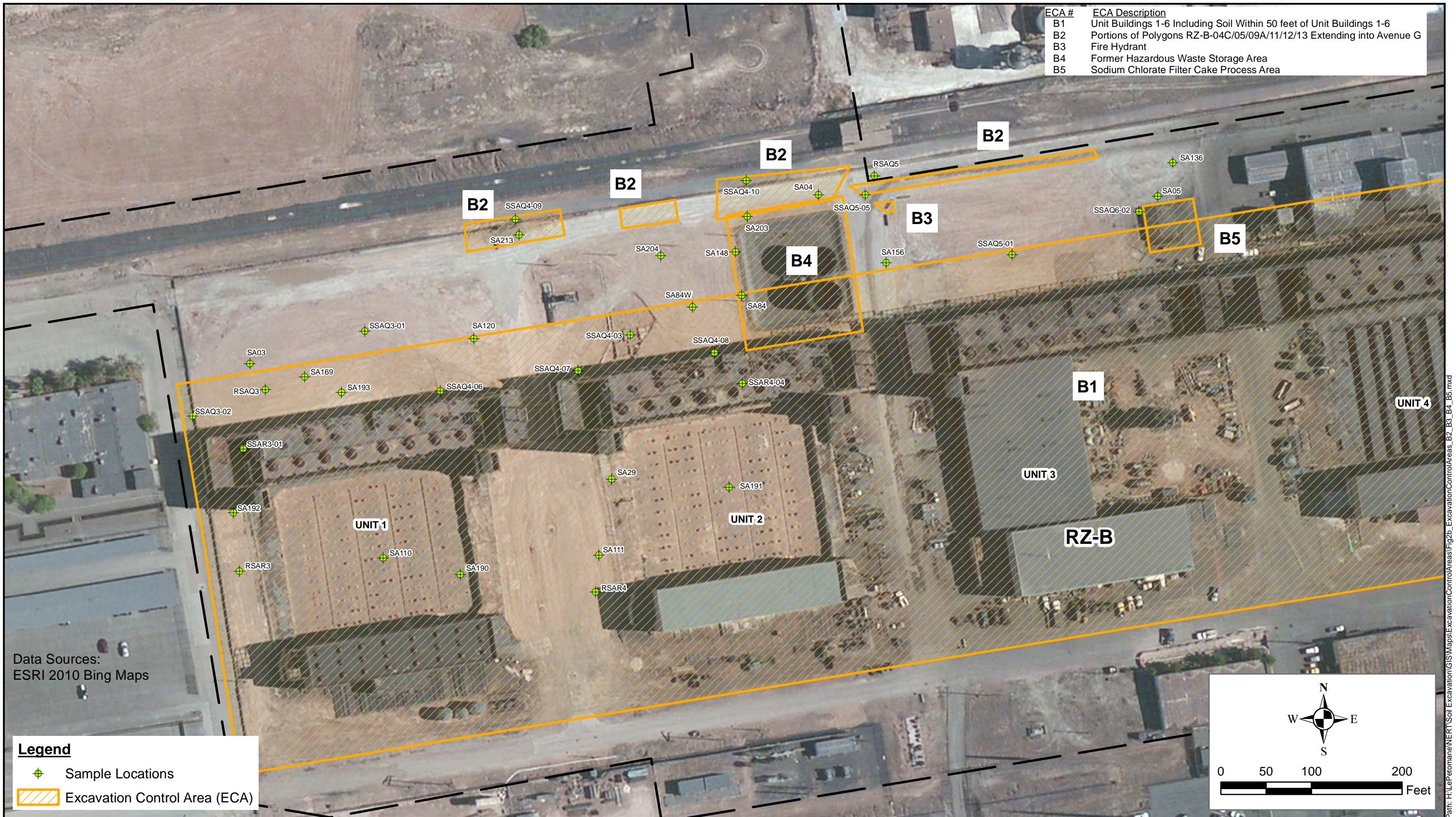
Data Sources:
ESRI 2010 Bing Maps

Legend

- + Sample Locations
- Excavation Control Area (ECA)

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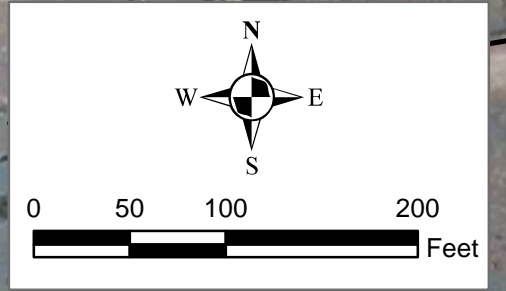
ECA #	ECA Description
B1	Unit Buildings 1-6 Including Soil Within 50 feet of Unit Buildings 1-6
B2	Portions of Polygons RZ-B-04C/05/09A/11/12/13 Extending into Avenue G
B3	Fire Hydrant
B4	Former Hazardous Waste Storage Area
B5	Sodium Chlorate Filter Cake Process Area



Data Sources:
ESRI 2010 Bing Maps

Legend

- + Sample Locations
- Excavation Control Area (ECA)



ENVIRON

Excavation Control Areas B2, B3, B4, and B5
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
2b

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR



Revised:

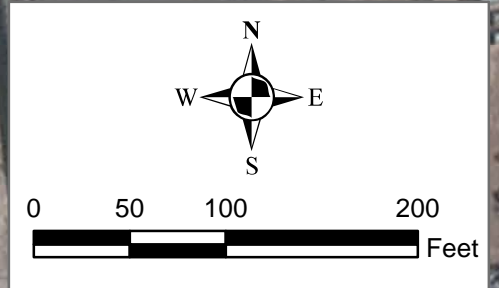
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Data Sources:
ESRI 2010 Bing Maps

Legend

-  Sample Locations
-  Excavation Control Area (ECA)



ENVIRON

Excavation Control Areas B6 and B7
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
2c

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

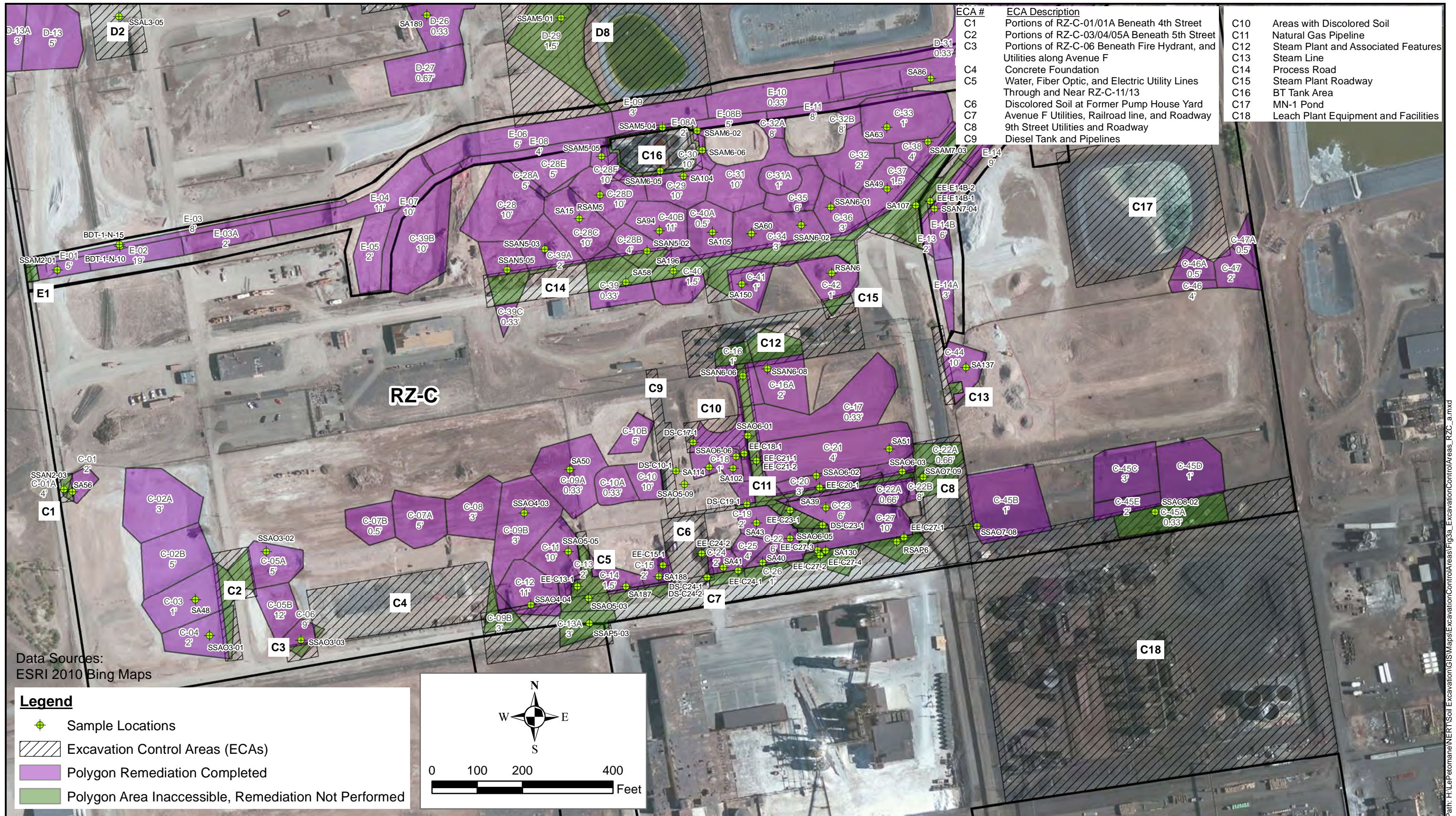
Date: 4/10/2012

Contract Number: 21-28200

Approved by: DR

Revised:

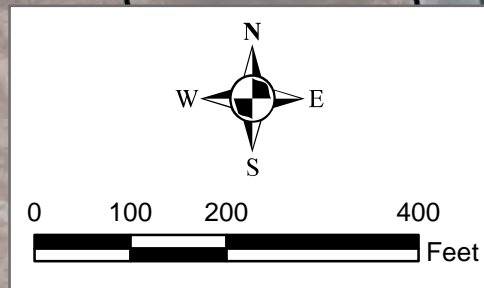
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Data Sources:
ESRI 2010 Bing Maps

Legend

- Sample Locations
- Excavation Control Areas (ECAs)
- Polygon Remediation Completed
- Polygon Area Inaccessible, Remediation Not Performed



ENVIRON

Excavation Control Areas in RZ-C
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
3

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

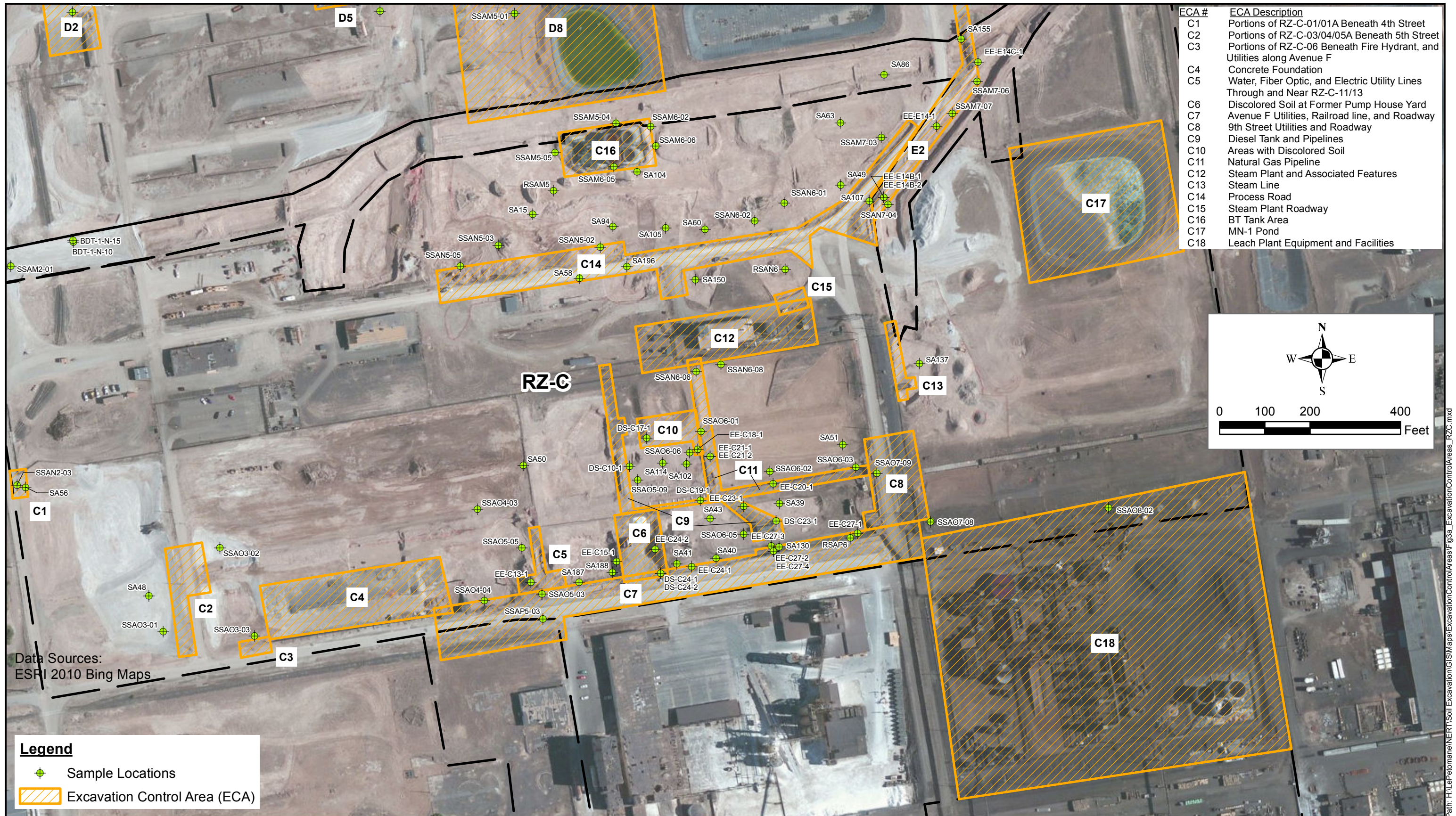
Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

Revised:

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ENVIRON

2200 Powell St., Suite 700, Emeryville, CA 94608

Excavation Control Areas in RZ-C (without Remediation Polygons)
Nevada Environmental Response Trust Site, Henderson, Nevada

Drafter: RS

Date: 5/18/2012

Contract Number: 21-29100

Approved by: DR

Revised:

Figure
3a



Path: H:\LePetomane\NERT\Soil_Excavation\GIS\Maps\ExcavationControlAreas\Fig3a_ExcavationControlAreas_RZC.mxd

ECA #	ECA Description
C1	Portions of RZ-C-01/01A Beneath 4th Street
C2	Portions of RZ-C-03/04/05A Beneath 5th Street
C3	Portions of RZ-C-06 Beneath Fire Hydrant, and Utilities along Avenue F
C4	Concrete Foundation



Data Sources:
ESRI 2010 Bing Maps

Legend

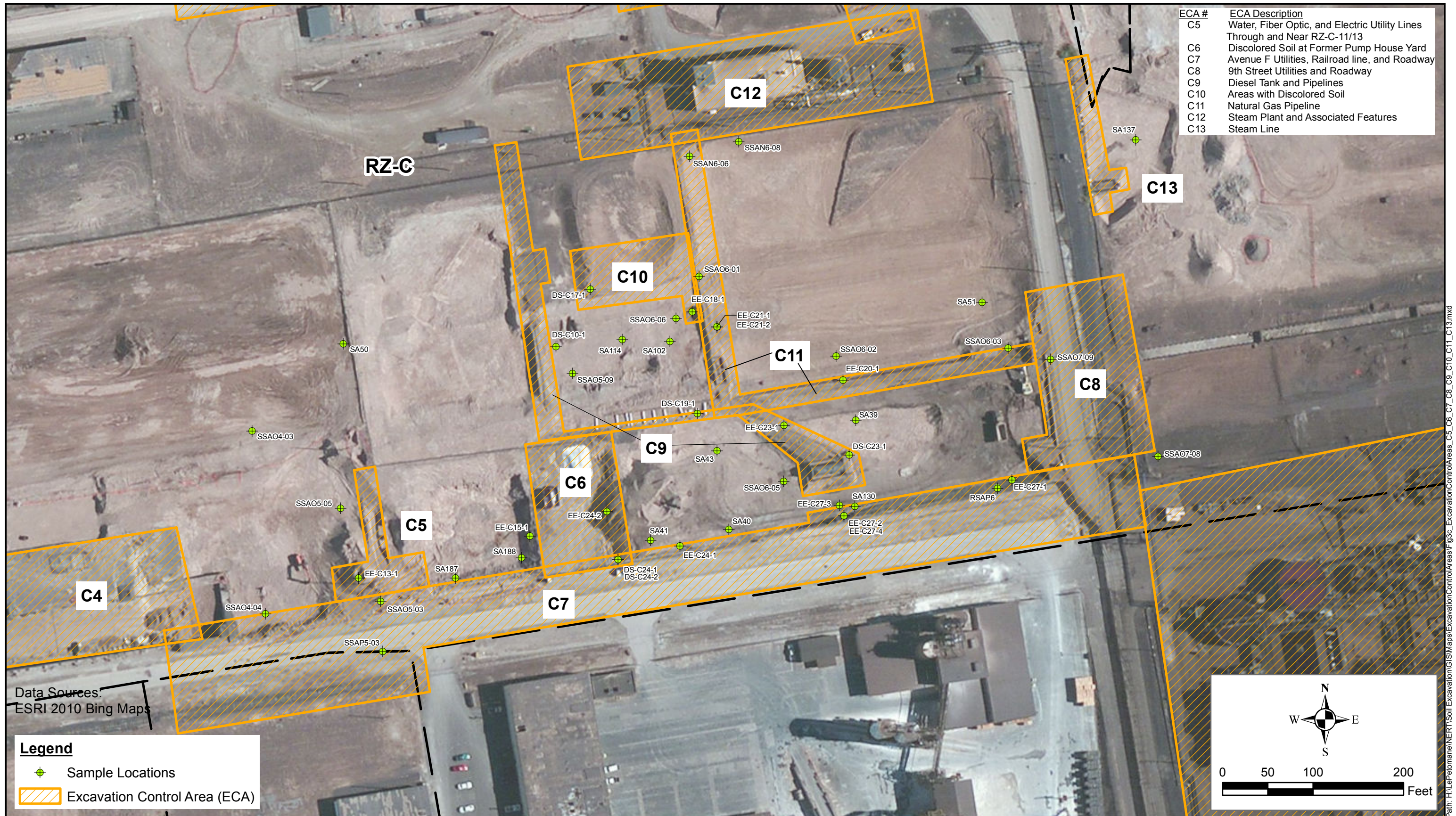
-  Sample Locations
-  Excavation Control Area (ECA)



Excavation Control Areas C1, C2, C3, and C4
Nevada Environmental Response Trust Site, Henderson, Nevada



Figure
3b

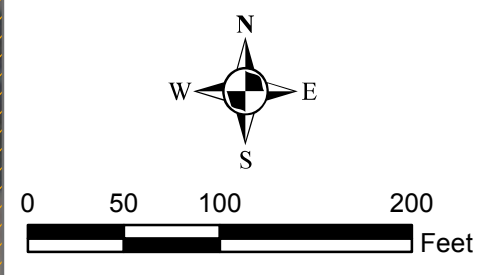
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Data Sources:
ESRI 2010 Bing Maps

Legend

-  Sample Locations
-  Excavation Control Area (ECA)



ENVIRON

2200 Powell St., Suite 700, Emeryville, CA 94608

Excavation Control Areas C5, C6, C7, C8, C9, C10, C11, C12, and C13
Nevada Environmental Response Trust Site, Henderson, Nevada

Drafter: RS

Date: 5/18/2012

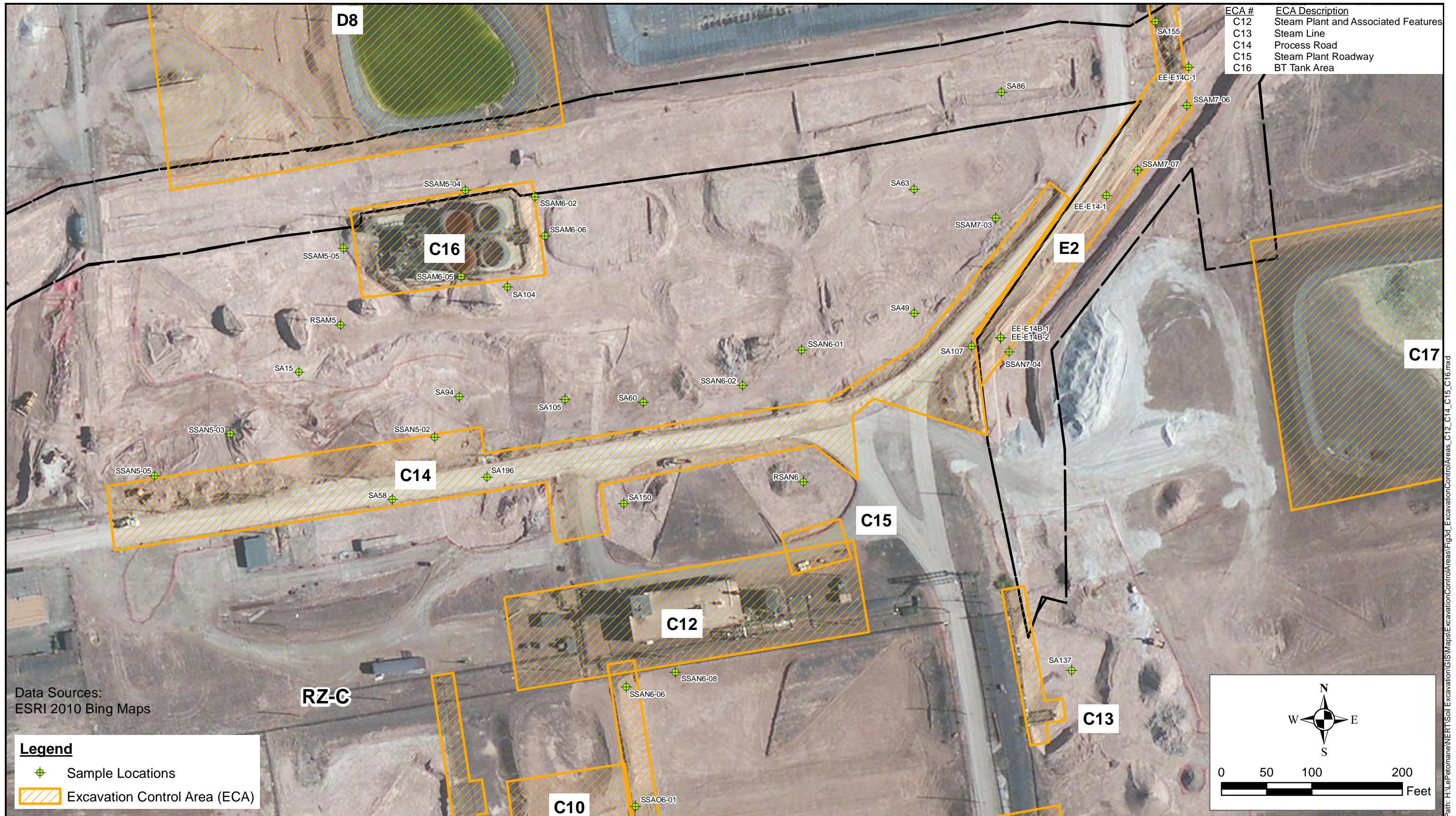
Contract Number: 21-29100

Approved by: DR

Revised:

Figure
3c

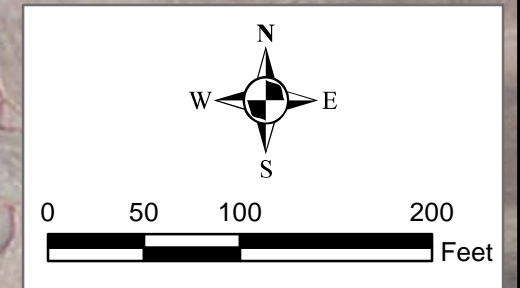
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Data Sources:
ESRI 2010 Bing Maps

Legend

- + Sample Locations
- Excavation Control Area (ECA)



ENVIRON

Excavation Control Areas C12, C13, C14, C15, and C16
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
3d

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

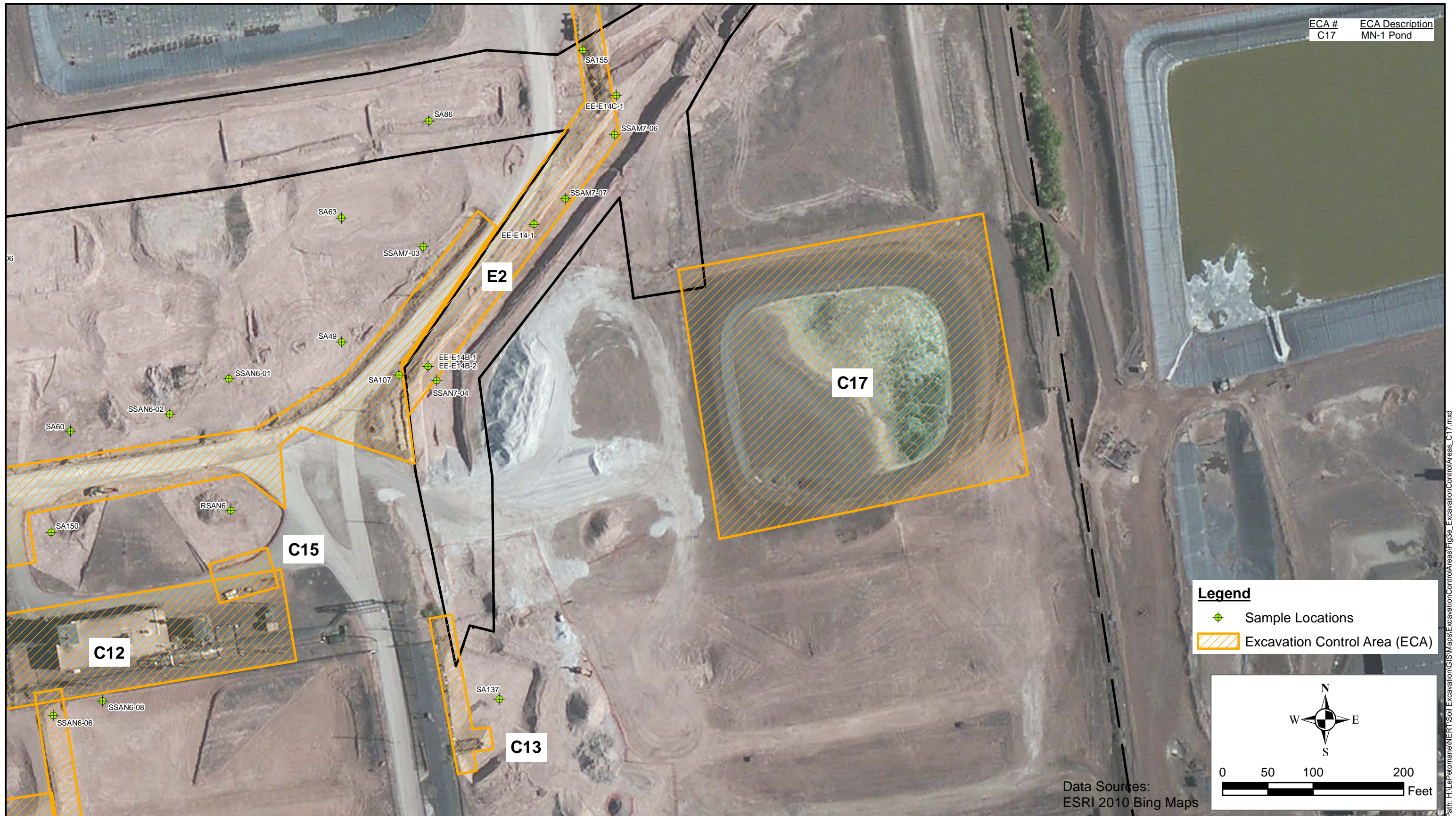
Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

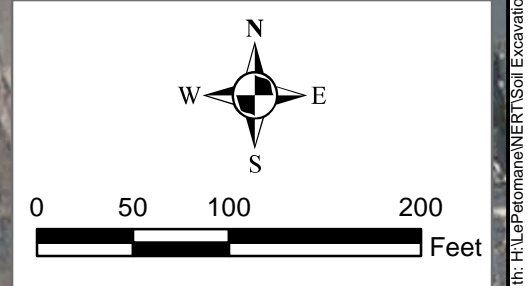
Revised:

Path: H:\LePetomane\NERT\Soil_Excavation\GIS\Map\ExcavationControlAreas\Fig3d_ExcavationControlAreas_C12_C13_C14_C15_C16.mxd



ECA #	ECA Description
C17	MN-1 Pond

Legend	
	Sample Locations
	Excavation Control Area (ECA)



Data Sources:
ESRI 2010 Bing Maps

ENVIRON

Excavation Control Area C17
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
3e

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

Date: 4/10/2012

Contract Number: 21-28200

Approved by: DR

Revised:

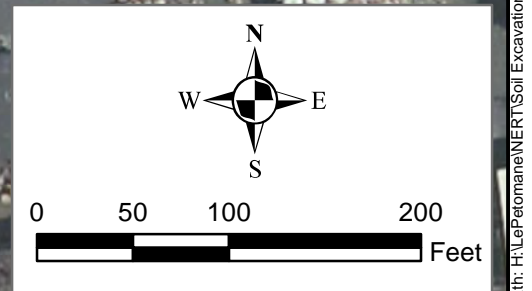
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ECA #	ECA Description
C18	Leach Plant Equipment and Facilities

Data Sources:
ESRI 2010 Bing Maps

Legend	
	Sample Locations
	Excavation Control Area (ECA)



ENVIRON

Excavation Control Area C18
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
3f

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

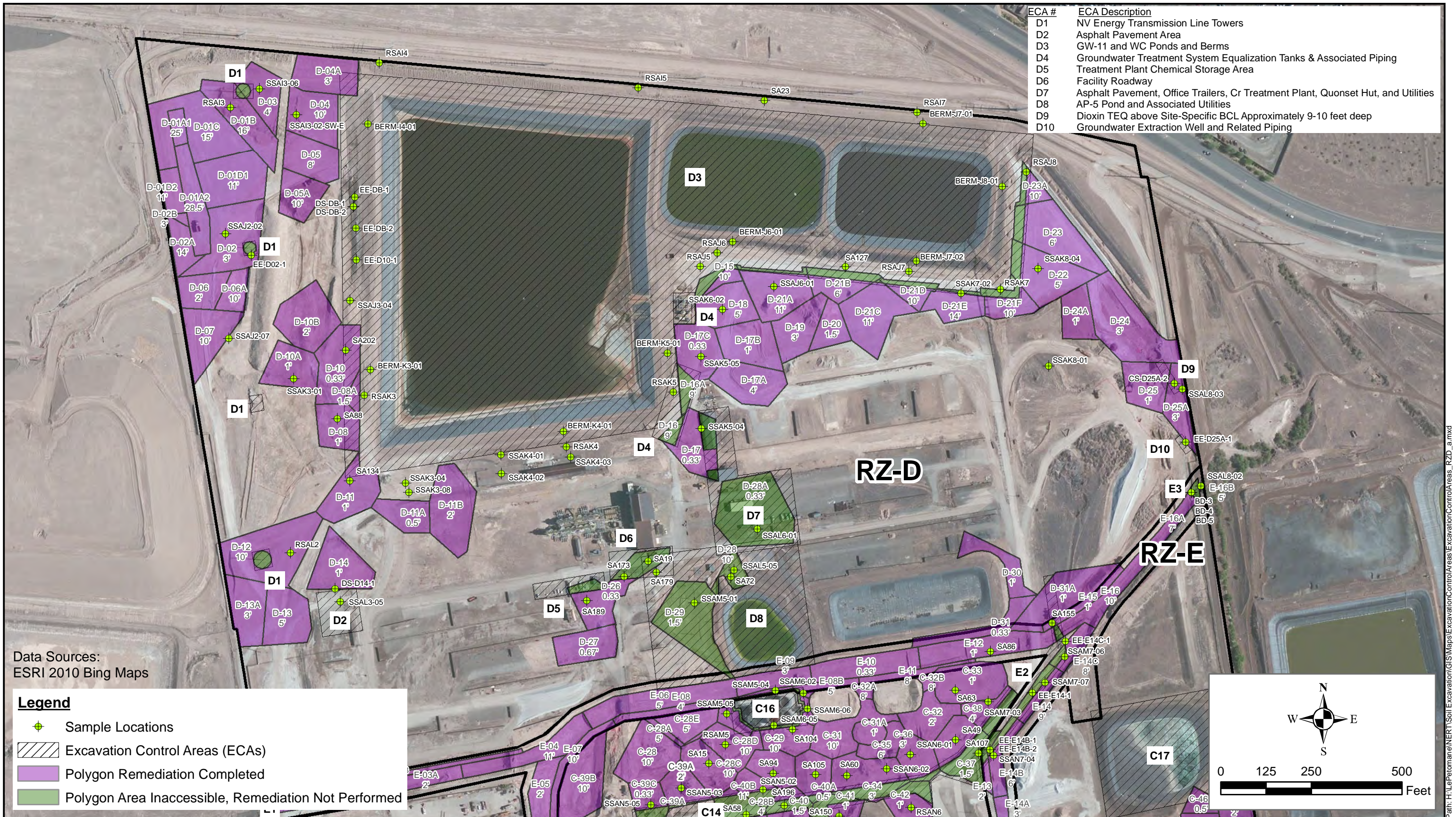
Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

Revised:

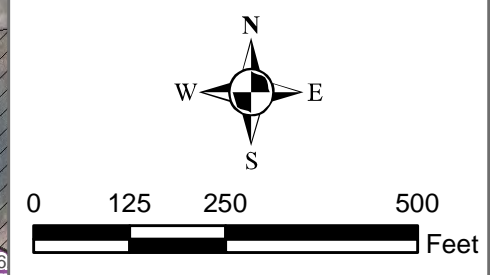
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Data Sources:
ESRI 2010 Bing Maps

Legend

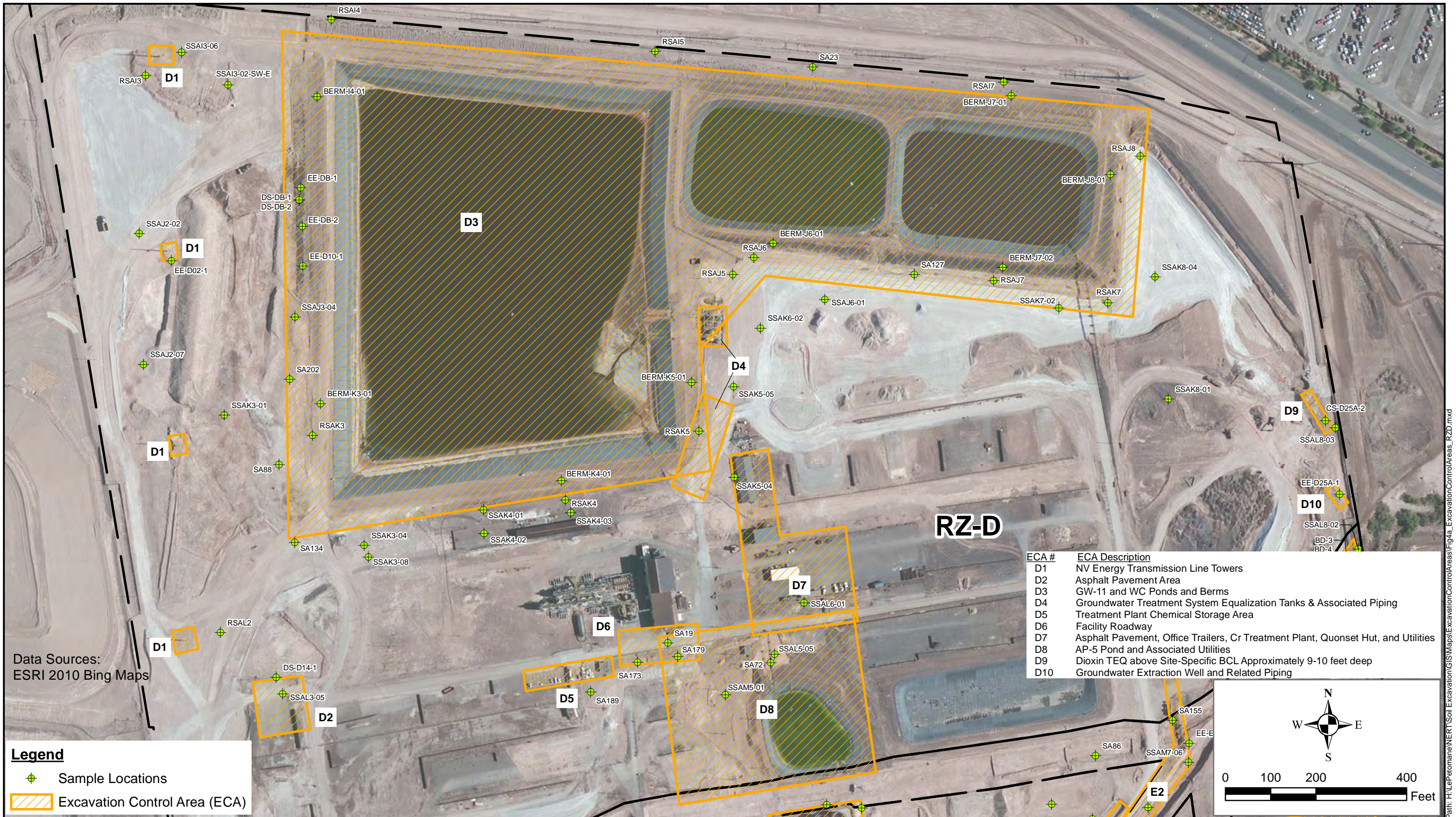
- Sample Locations
- Excavation Control Areas (ECAs)
- Polygon Remediation Completed
- Polygon Area Inaccessible, Remediation Not Performed



Excavation Control Areas in RZ-D
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
4

Path: H:\LeFeteman\NERT\Soil_Excavation\GIS\Maps\ExcavationControlAreas\ExcavationControlAreas_RZD_a.mxd



ENVIRON

Excavation Control Areas in RZ-D (without Remediation Polygons)
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
4a

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

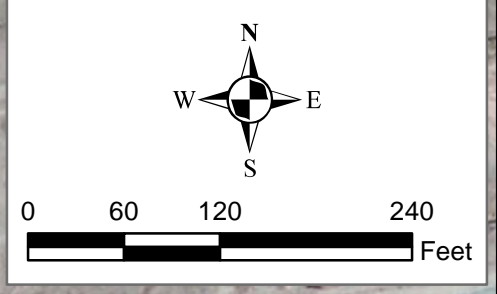
Revised:

Path: H:\LePetomane\NERT\Soil Excavation\GIS\MapSeries\ExcavationControlAreas\Fig4a_ExcavationControlAreas_RZD.mxd

ECA #	ECA Description
D1	NV Energy Transmission Line Towers
D2	Asphalt Pavement Area

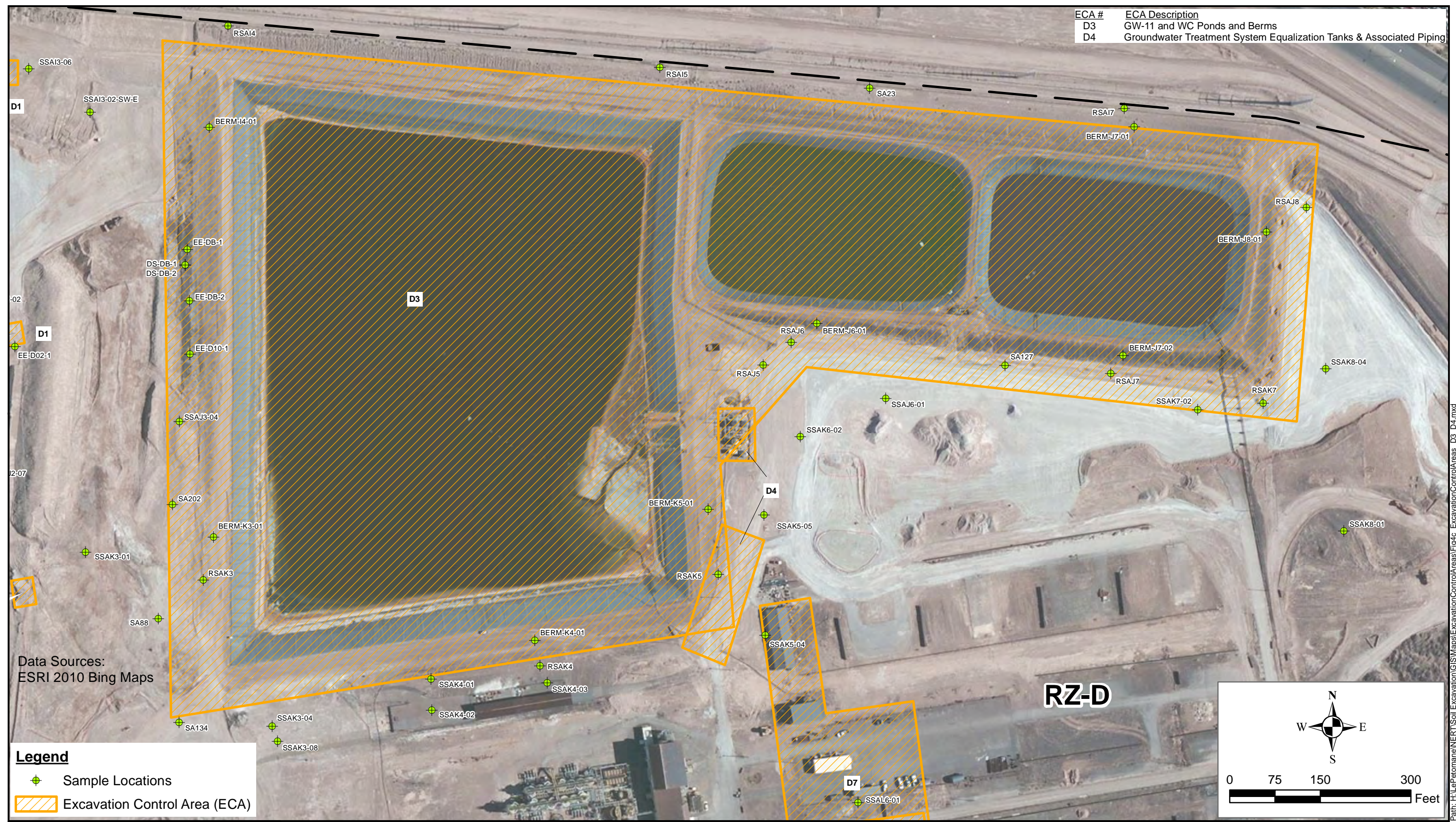


Legend	
	Sample Locations
	Excavation Control Area (ECA)



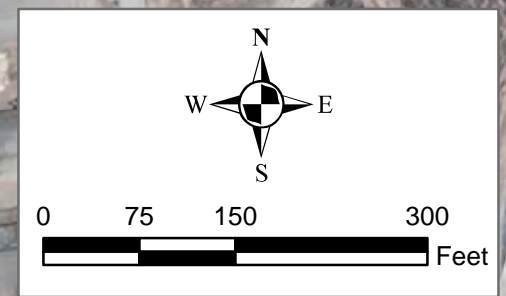
<p>6001 Shellmound St., Suite 700, Emeryville, CA 94608</p>	<p>Excavation Control Areas D1 and D2 Nevada Environmental Response Trust Site, Henderson, Nevada</p>		<p>Figure 4b</p>
	<p>Drafter: RS Date: 3/29/2012 Contract Number: 21-28200</p>	<p>Approved by: _____ Revised: _____</p>	

ECA #	ECA Description
D3	GW-11 and WC Ponds and Berms
D4	Groundwater Treatment System Equalization Tanks & Associated Piping



Data Sources:
ESRI 2010 Bing Maps

Legend	
	Sample Locations
	Excavation Control Area (ECA)



Excavation Control Areas D3 and D4
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
4c

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

Revised:

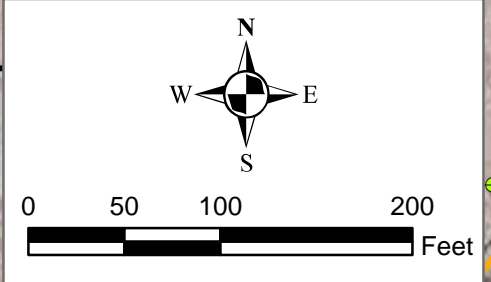
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ECA #	ECA Description
D5	Treatment Plant Chemical Storage Area
D6	Facility Roadway
D7	Asphalt Pavement, Office Trailers, Cr Treatment Plant, Quonset Hut, and Utilities
D8	AP-5 Pond and Associated Utilities

Data Sources:
ESRI 2010 Bing Maps

Legend	
	Sample Locations
	Excavation Control Area (ECA)



Path: H:\LePetomane\NERT\Soil Excavation\GIS\Map\ExcavationControlAreas\Fig4d_ExcavationControlAreas_D5_D6_D7_D8.mxd



ECA #	ECA Description
D9	Dioxin TEQ above Site-Specific BCL Approximately 9-10 feet deep
D10	Groundwater Extraction Well and Related Piping

SSAK8-01

D9

CS-D25A-2
SSAL8-03

D10

EE-D25A-1

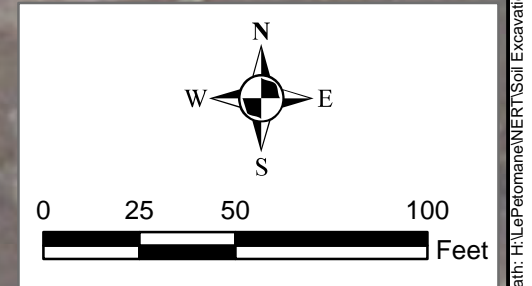
E3

SSAL8-02

BD-3
BD-4
BD-5

Data Sources:
ESRI 2010 Bing Maps

Legend	
	Sample Locations
	Excavation Control Area (ECA)



ENVIRON

Excavation Control Areas D9 and D10
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
4e

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

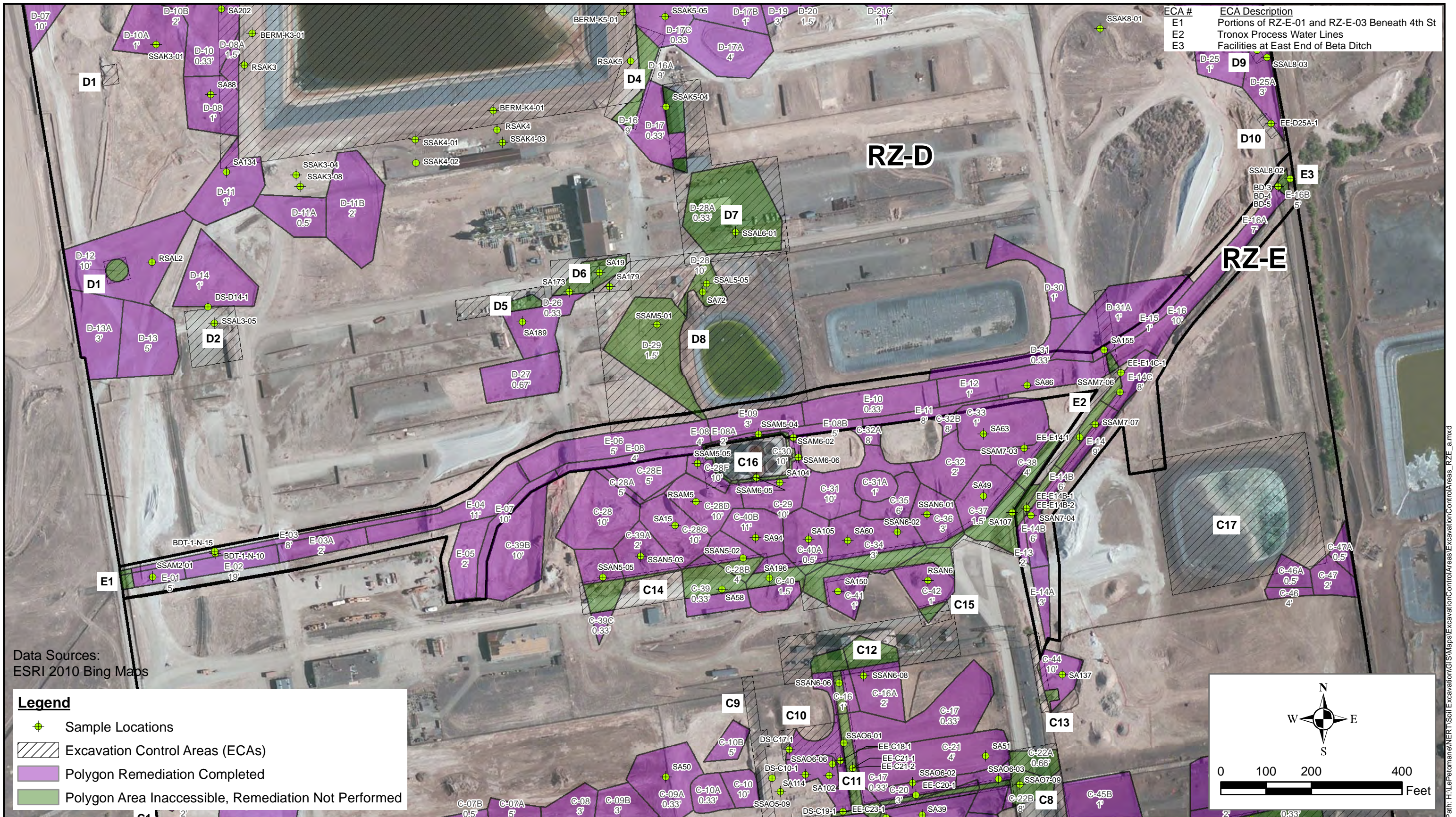
Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

Revised:

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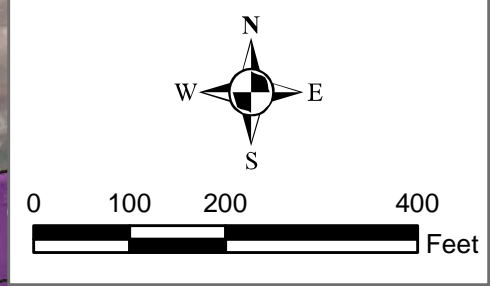


ECA #	ECA Description
E1	Portions of RZ-E-01 and RZ-E-03 Beneath 4th St
E2	Tronox Process Water Lines
E3	Facilities at East End of Beta Ditch

Data Sources:
ESRI 2010 Bing Maps

Legend

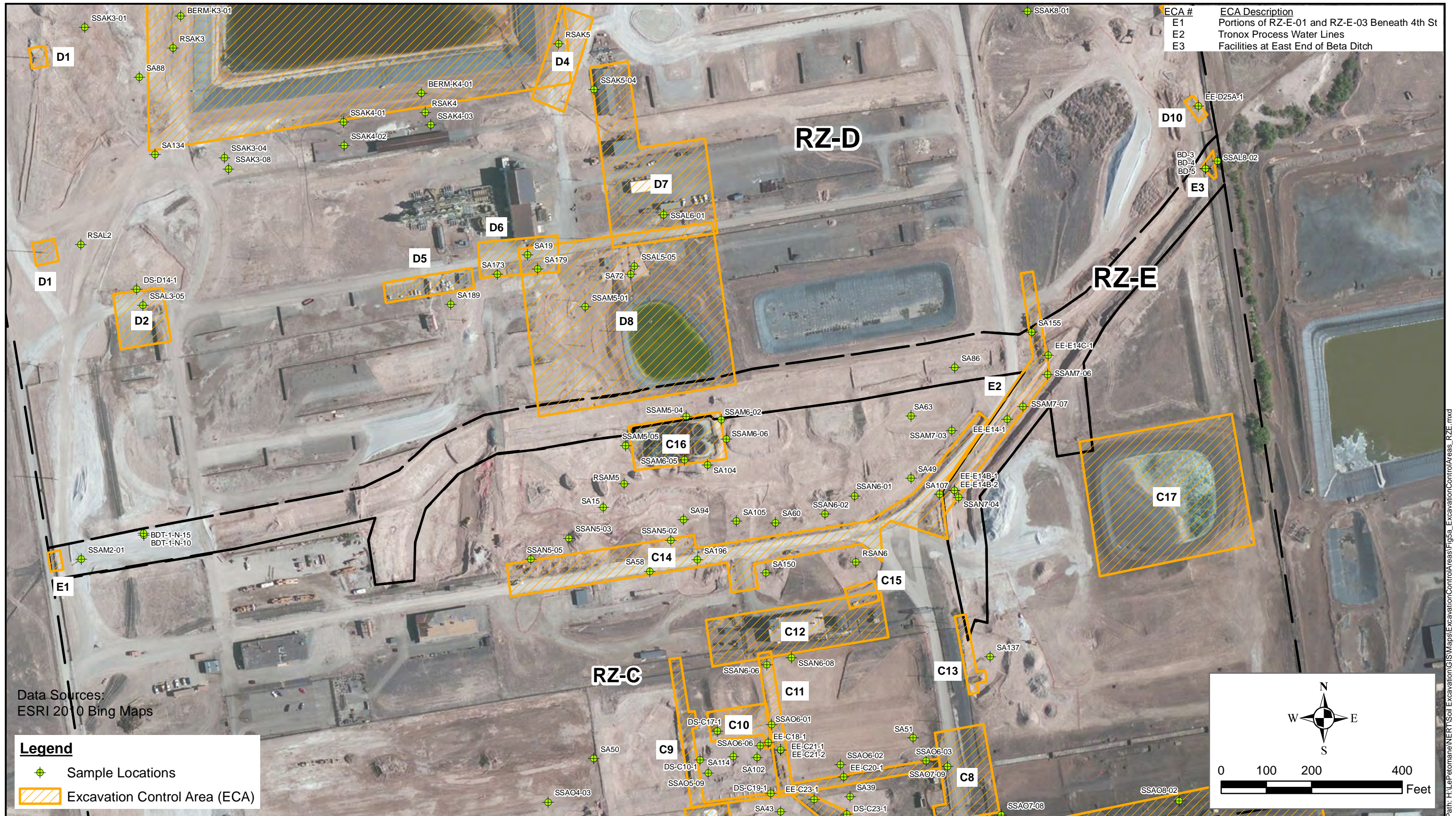
- Sample Locations
- Excavation Control Areas (ECAs)
- Polygon Remediation Completed
- Polygon Area Inaccessible, Remediation Not Performed



Excavation Control Areas in RZ-E
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
5

Path: H:\LeFeteman\NERT\Soil_Excavation\GIS\Maps\ExcavationControlAreas\ExcavationControlAreas_RZ-E_a.mxd



ENVIRON

Excavation Control Areas in RZ-E (without Remediation Polygons)
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
5a

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

Revised:



Path: H:\LePomane\NER\T\Soil Excavation\GIS\Maps\ExcavationControlAreas\Fig5a_ExcavationControlAreas_RZ_E.mxd

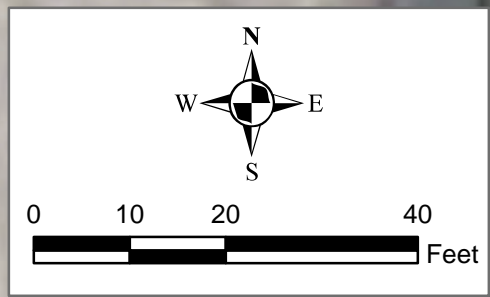
ECA #	ECA Description
E1	Portions of RZ-E-01 and RZ-E-03 Beneath 4th St



Data Sources:
ESRI 2010 Bing Maps

Legend

	Sample Locations
	Excavation Control Area (ECA)



ENVIRON

Excavation Control Area E1
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
5b

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

Revised:

Path: H:\LePetomane\NERT\Soil_Excavation\GIS\Maps\ExcavationControlAreas\Fig5b_ExcavationControlAreas_E1.mxd



ENVIRON

Excavation Control Area E2
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
5c

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

Date: 3/29/2012

Contract Number: 21-28200

Approved by: DR

Revised:

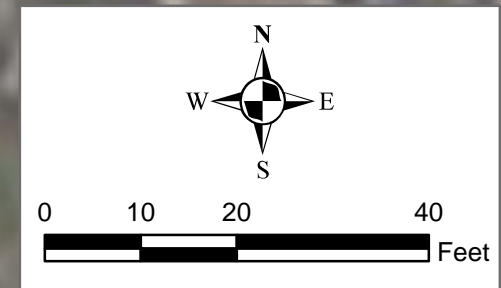
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ECA #	ECA Description
E3	Facilities at East End of Beta Ditch



Data Sources:
ESRI 2010 Bing Maps

Legend	
	Sample Locations
	Excavation Control Area (ECA)



ENVIRON

Excavation Control Area E3
Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
5d

6001 Shellmound St., Suite 700, Emeryville, CA 94608

Drafter: RS

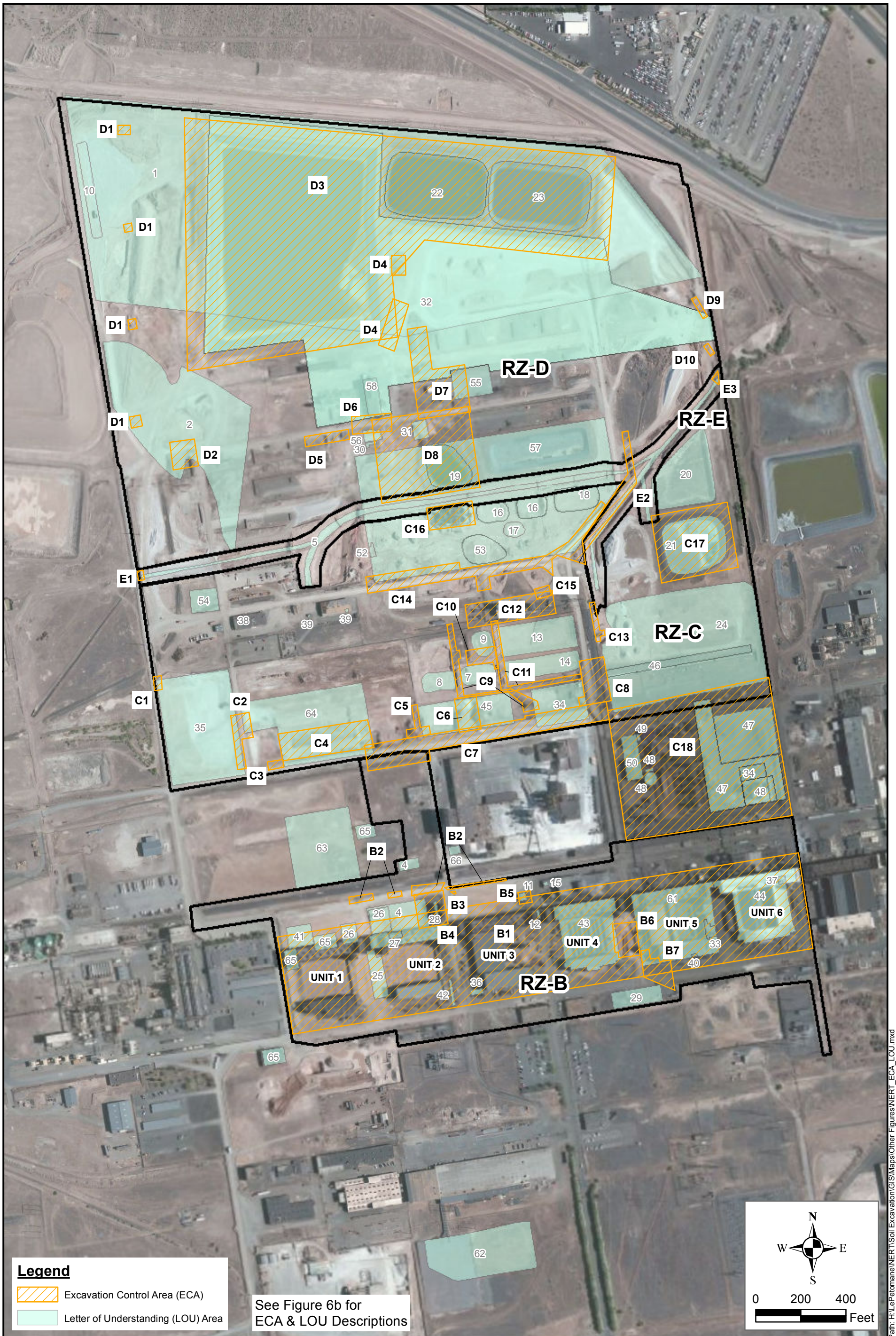
Date: 3/29/2012

Contract Number: 21-28200



Approved by: DR

Revised:

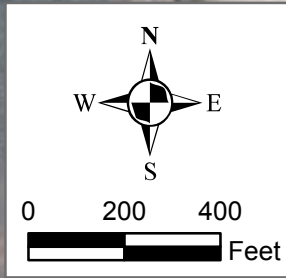
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Legend
 Excavation Control Area (ECA)
 Letter of Understanding (LOU) Area

See Figure 6b for
 ECA & LOU Descriptions



ENVIRON

2200 Powell St., Suite 700, Emeryville, CA 94608

ECA & LOU Locations
 Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
6a

Drafter: EA Date: 5/22/2012 Contract Number: 21-29100F Approved by: Revised:

ECA #	ECA Description	LOU #	LOU Description
RZ-B			
B1	Unit Buildings 1-6 Including Soil Within 50 feet of Unit Buildings 1-6	1	Trade Effluent Settling Ponds
B2	Portions of Polygons RZ-B-04C/05/09A/11/12/13 Extending into Avenue G	2	Open Area Due South of Trade Effluent Settling Ponds
B3	Fire Hydrant	3	Air Pollution Emissions Associated with Industrial Processes
B4	Former Hazardous Waste Storage Area	4	Former Hardesty Chemical Company Site
B5	Sodium Chlorate Filter Cake Process Area	5	On-Site Portion of Beta Ditch Including the Small Diversion Ditch
B6	Soils Beneath Approximately 6 Feet Deep in Polygons RZ-B-20 and RZ-B-21	6	Unnamed Drainage Ditch Segment
B7	Soils Within Polygon RZ-B-22	7	Old P-2 Surface Impoundment
RZ-C			
C1	Portions of RZ-C-01/01A Beneath 4th Street	8	Old P-3 Surface Impoundment
C2	Portions of RZ-C-03/04/05A Beneath 5th Street	9	New P-2 Pond and Associated Piping
C3	Portions of RZ-C-06 Beneath Fire Hydrant, and Utilities along Avenue F	10	On-Site Hazardous Landfill
C4	Concrete Foundation	11	Sodium Chlorate Filter Cake Area North of Unit 3
C5	Water, Fiber Optic, and Electric Utility Line Through and Near RZ-C-11/13	12	Hazardous Waste Storage Area Between Units 3 and 4
C6	Discolored Soil at Former Pump House Yard	13	Closed Surface Impoundment S-1
C7	Avenue F Utilities, Railroad Line, and Roadway	14	Closed Surface Impoundment P-1
C8	9th Street Utilities and Roadway	15	Platinum Drying Unit North of Unit 4
C9	Diesel Tank and Pipelines	16	Ponds AP-1, AP-2 and AP-3 and Associated Transfer Lines
C10	Areas with Discolored Soil	17	Ponds AP-1, AP-2 and AP-3 and Associated Transfer Lines
C11	Natural Gas Pipeline	18	Pond AP-4
C12	Steam Plant and Associated Features	19	Pond AP-5
C13	Steam Line	20	Pond C-1 and Associated Piping
C14	Process Road	21	Pond MN-1 and Associated Piping
C15	Stream Plant Roadway	22	Ponds WC-West and Associated Piping
C16	BT Tank Area	23	Ponds WC-East and Associated Piping
C17	MN-1 Pond	24	Leach Beds, Associated Conveyance Facilities and Former Manganese Tailings Area
C18	Leach Plant Equipment and Facilities	25	Process Hardware Storage Area Between Units 1 and 2
RZ-D			
D1	NV Energy Transmission Line Towers	26	Trash Storage Area North of Units 1 and 2
D2	Asphalt Pavement Area	27	PCB Storage Area - Unit 2
D3	GW-11 and WC Ponds and Berms	28	Hazardous Waste Storage Area North of Unit 2
D4	Groundwater Treatment System Equalization Tanks & Associated Piping	29	Solid Waste Dumpsters
D5	Treatment Plant Chemical Storage Area	30	Ammonium Perchlorate Area- Pad 35
D6	Facility Roadway	31	Drum Crushing and Recycling Area
D7	Asphalt Pavement, Office Trailers, Cr Treatment Plant, Quonset Hut, and Utilities	32	Groundwater Remediation Unit
D8	AP-5 Pond and Associated Utilities	33	Sodium Perchlorate Platinum By-Product Filter
D9	Dioxin TEQ above Site-Specific BCL Approximately 9-10 feet deep	34	Manganese Tailings Area
D10	Groundwater Extraction Well and Related Piping	35	Truck Unloading Area
RZ-E			
E1	Portions of RZ-E-01 and RZ-E-03 Beneath 4th Street	36	Former Satellite Accumulation Point - Unit 3, Maintenance Shop
E2	Tronox Process Water Lines	37	Former Satellite Accumulation Point - Unit 6, Maintenance Shop
E3	Facilities at East End of Beta Ditch	38	Former Satellite Accumulation Point - AP Laboratory
		39	Former Satellite Accumulation Point - AP Maintenance Shop
		40	PCB Transformer Spill
		41	Unit 1 Tenants - Stains
		42	Unit 2 Salt Redler
		43	Unit 4 and 5 Basements
		44	Unit 6 Basements
		45	Diesel Storage Tank Area - Stains
		46	Former Old Main Cooling Tower and Recirculation Lines
		47	Leach Plant Area Manganese Ore Piles
		48	Leach Plant Area Anolyte Tanks
		49	Leach Plant Area Sulfuric Acid Storage Tank
		50	Leach Plant Area Leach Tanks
		51	Leach Plant Area Transfer Lines To/From Unit 6
		52	AP Plant Area Screening Building, Dryer Building, and Associated Sump
		53	AP Plant Area Tank Farm
		54	AP Plant Area Change House/Laboratory and Septic Tank
		55	AP Plant Area Storage Pads - Fire
		56	AP Plant Area Old Building D-1 Washdown
		57	AP Plant Area New Building D-1 Washdown
		58	AP Plant SI and Transfer Lines To/From AP SI
		59	Storm Sewer System
		60	Acid Drain System
		61	Old Sodium Chlorate Plant Decommissioning
		62	State Industries Inc. Site, Including Impoundments and Catch Basin
		63	J.B. Kellet, Inc. Trucking Site
		64	Koch Materials Company
		65	Assorted KMCC Tenants
		66	Flintkote Company
		67	Delbert Madsen and Estate of Delbery Madsen

Path: H:\LePatomane\NERT\Soil Excavation\GIS\Maps\Other Figures\NERT_ECA_LOUdescription.mxd



2200 Powell St., Suite 700, Emeryville, CA 94608

ECA & LOU Descriptions

Nevada Environmental Response Trust Site, Henderson, Nevada

Figure
6b

Drafter: EA

Date: 5/18/2012

Contract Number: 21-29100F

Approved by:

Revised:

Attachment A
NV Energy Trench Detail Email and Drawing

Jim Hampton

From: Harvey, Lisa [LHarvey@nvenergy.com]
Sent: Thursday, July 08, 2010 9:31 AM
To: 'jim.hampton@ngem.com'
Subject: Information
Attachments: DOC070810.pdf

Here is the trenching detail and application.

You will notice the application at the bottom asked for an owner signature, I do not need the owner. Just whoever will be the contact for this. If you have any questions please let me know

Thanks!

Lisa Harvey
NV Energy- Land Services
Right-of-Way Administrator
Transmission conflicts
Office-702-402-5327
Cell- 702-277-3249

-----Original Message-----
From: PER005 [mailto:PER005]
Sent: Thursday, July 08, 2010 10:23 AM
To: Harvey, Lisa
Subject: Scanned from PER005 07/08/2010 09:22

Scanned from PER005.
Date: 07/08/2010 09:22
Pages:3
Resolution:200x200 DPI

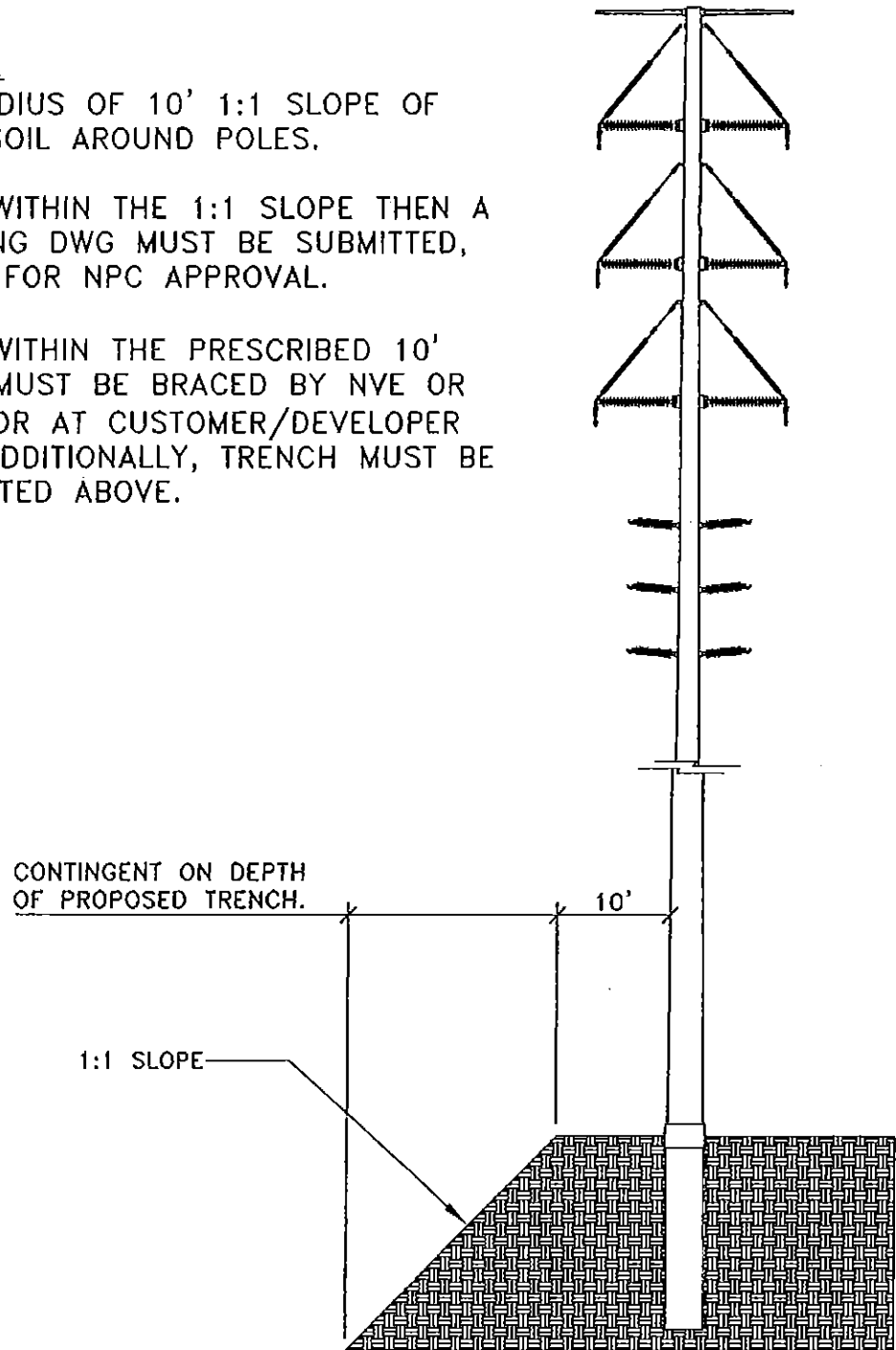
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REQUIREMENTS:

MAINTAIN A RADIUS OF 10' 1:1 SLOPE OF UNDISTURBED SOIL AROUND POLES.

IF TRENCH IS WITHIN THE 1:1 SLOPE THEN A TRENCH SHORING DWG MUST BE SUBMITTED, P.E. STAMPED, FOR NPC APPROVAL.

IF TRENCH IS WITHIN THE PRESCRIBED 10' RADIUS, POLE MUST BE BRACED BY NVE OR NVE CONTRACTOR AT CUSTOMER/DEVELOPER SOLE COST. ADDITIONALLY, TRENCH MUST BE SHORED AS NOTED ABOVE.



DRAWING INFO.		
DRAWN	6/12/01	JLH
DESIGNED	6/12/01	JLH
CHECKED	6/12/01	SA
APPROVED	6/12/01	SA
	DATE	BY
REV. 1	11/12/08	DP



TRENCH DETAIL
POLE STABILITY

SHEET: 1 OF 1

DWG. NO.: STD-02

Attachment B
Letter of Understanding (LOU) Packets – Area I
(provided in electronic format on the included CD)

Attachment C
Letter of Understanding (LOU) Packets – Area II
(provided in electronic format on the included CD)

Attachment D
Letter of Understanding (LOU) Packets – Area III
(provided in electronic format on the included CD)

Attachment E
Letter of Understanding (LOU) Packets – Area IV
(provided in electronic format on the included CD)

Attachment F
Analytical Results Summary Tables
(provided in electronic format on the included CD)

Attachment G
Executable Table of Remaining Soil Results
(provided in electronic format on the included CD)

Appendix B
Certification of Compliance with Site Management Plan

Certification of Compliance with Site Management Plan

The undersigned ("Site Occupant") acknowledges receipt of a copy of the Site Management Plan dated _____ (the "SMP") prepared by ENVIRON International Corporation pertaining to the Nevada Environmental Response Trust Site located in Clark County, Nevada (the "Site"), which Site is more thoroughly described in the SMP. Site Occupant affirms that it is an owner, operator, tenant, lessee, project manager or other entity with responsibility for activities at the Site. Site Occupant specifically acknowledges having read and understood the provisions of the SMP. Site Occupant further acknowledges that it has the responsibility to ensure that the risk management measures and procedures described in the SMP are fully implemented in any applicable activity or operation. Site Occupant certifies that it will comply with all provisions of the SMP applicable to its occupancy of or work upon the Site. Site Occupant further certifies that it has provided or will provide a copy of the SMP to its contractors and any third parties that Site Occupant may invite to the Site and shall ensure said contractors' or invitees' compliance with the SMP.

An executed copy of this Certification of Compliance must be submitted to the Trust representative at the Site before any activity at the Site begins.

Company: _____

By: _____

Printed Name: _____

Title: _____

Date: _____

Appendix C
**Checklist of Notification and Reporting Requirements to the Trust and NDEP for
Site Occupants and Their Contractors**

Checklist of Notification and Reporting Requirements to NDEP and the Trust for Site Occupants¹ and Their Contractors

Site Occupants are required to notify and receive approval from both the Trust and NDEP (unless otherwise noted) of the following activities:

General Site

- ___ Site Occupants must notify the Trust prior to the use or addition of new processes or hazardous materials.
- ___ Site Occupants must notify the Trust and NDEP prior to conducting any activity where Site workers could potentially come in contact with contaminated soil or groundwater.
- ___ Site Occupants must provide the Trust and NDEP with executed certifications that they will comply with the provisions contained in the Site Management Plan (“SMP”), consistent with the model certification provided as Appendix B to the main SMP document.

Soil

- ___ Site Occupants must notify the Trust and NDEP prior to disturbing any soil within an ECA (as defined in Section 4.1 of the main SMP document) including, but not limited to, disturbances during future demolition work, grading, foundation excavation, utility work, facility maintenance activities, or other construction-related activity. A work plan must be submitted by the Site Occupant for approval by NDEP and the Trust.
- ___ Site Occupants must notify the Trust and NDEP within 24 hours of discovering previously unknown soil contamination or buried debris. In addition, the NDEP 24-hour Spill Notification Line must be called (see Table 6 of the main SMP document for phone number) whenever unknown soil contamination or buried debris is discovered at the Site.
- ___ Site Occupants must notify the Trust and NDEP when the results of chemical testing from soil stockpiles indicate excavated soil contains COPCs at concentrations that exceed the soil screening levels (Table 1 of the main SMP document) for the Site.
- ___ Site Occupants must notify the Trust and NDEP within 24 hours of receiving post-excavation confirmation sample results that indicate COPCs are present in remaining soils at concentrations that exceed soil screening levels (Table 1 of the main SMP document) for the Site.
- ___ When an excavation area is considered complete (e.g., when confirmation soil sample results are below soil screening levels for the Site), the Site Occupant must notify the Trust and NDEP for approval, prior to backfilling the excavation with clean soil and continuing construction activities.

Groundwater

- Site Occupants must notify the Trust and NDEP prior to the implementation of any activity that may affect groundwater (e.g., excavation to the groundwater table, dewatering, etc.).

Groundwater Treatment System

- Site Occupants must notify the Trust and NDEP prior to commencement of any activity that could impact the groundwater remediation system or monitoring wells (including any activity within 50 feet of the groundwater remediation systems or monitoring wells, where the use of construction equipment may accidentally damage a well or other component of the system). Before Site work begins, the Site Occupant must confirm with the Trust the location of all extraction and monitoring wells that are within or near the construction zone. Before commencing Site work, the Site Occupant must appropriately protect existing groundwater wells and remediation system components.
- At least 5 working days before any proposed temporary shutdown of the remediation system, the Site Occupant must provide written notice to the Trust, NDEP, and the GWETS Contractor for approval.
- If the Site Occupant's activities result in an unplanned shutdown of any component of the remediation system(s), the Site Occupant must immediately verbally notify and receive approval from both the Trust and NDEP prior to system shutdown.
- Site Occupants must notify the Trust and NDEP prior to any proposed modification to the groundwater treatment system, including removal or relocation of remediation system components and monitoring wells. Any proposed modification to the groundwater treatment system(s) must be approved by both the Trust and NDEP. Potential conflicts between future construction projects and the location of existing remediation system components should be identified and resolved during the design stage. Relocation or removal of any remediation system components may only occur with the prior approval of NDEP and the Trust.
- Site Occupants must notify the Trust and NDEP prior to any restricted access to groundwater system components. If access to a well or other remediation system component is planned to be restricted during any activities, the Site Occupant must provide written notification to NDEP and the Trust of the reason for and the duration of the proposed restricted access and receive approval from both NDEP and the Trust before creating the restriction.
- If any activities result in the release of untreated groundwater, the Site Occupant must immediately notify NDEP and the Trust of the release and the status of remediation system operations.

Site Occupants are required to provide the following written documentation to both NDEP and the Trust (unless otherwise noted):

Soil and Groundwater

___ **Project-Specific Health and Safety Plan (HASP):** Site Occupants must require each contractor with workers that may contact groundwater or disturb soil at the Site to prepare its own project-specific health and safety plan (HASP). Each contractor will provide copies of its HASP to the Site Occupant who has contracted for the contractor's work and to the Trust (upon request). The requirement for preparation of a project-specific HASP also applies to activities involving work in utility vaults or other sub-grade areas (e.g., utility maintenance or modifications in subfloor areas of buildings) where potential exposure to accumulated VOC vapors may occur.

Soil

___ **Construction Impact Mitigation Measures Plan:** The Site Occupant conducting excavation, sampling, or construction activities shall prepare and submit to the appropriate authorities, including NDEP and the Trust, a plan describing mitigation measures (e.g., dust control measures, decontaminating vehicles and construction equipment, and storm water runoff controls) that will be implemented during Site excavation, sampling, and construction activities.

___ **Copies of Permits Required for Construction within ECAs:** The Site Occupant must provide copies of all permits required for construction in the ECAs to the Trust prior to starting any construction.

___ **Sample Results for Previously Unknown Contaminated Soil:** When previously unknown soil contamination is observed, a sample of the visibly contaminated or odorous soil must be collected and analyzed for a list of COPCs listed in Section 4.3 and Table 4 of the main SMP document. The results of the initial soil analyses must be submitted to NDEP and the Trust. If it is determined that no additional analyses beyond the initial analyses are required, as approved by NDEP and the Trust, soil excavation may proceed to the extent needed to continue construction activities.

___ **Remedial Action Work Plan:** Prior to commencement of any activity in ECAs or in areas of previously unknown contaminated soil, the Site Occupant must prepare and submit a work plan detailing any proposed sampling activities, investigations or remediation (collectively referred to as "remedial actions") for approval by NDEP and the Trust.

___ **Report for Leaving Known Soil Contamination In-Place:** If excavation of an area with confirmation samples exhibiting concentrations greater than soil screening levels is ceased, as approved by NDEP, the Site Occupant must provide data and documentation to NDEP and the Trust in a written report for the approved excavation limits.

— **Remedial Action Completion Report.** After completion of a remedial action, the Site Occupant must prepare a written report that must be submitted to and approved by both NDEP and the Trust. The written report must describe the field activities, findings, actions taken, and analytical results, including all post-excavation confirmation sample results (See Section 4.5 of the main SMP document).

Groundwater

— **Groundwater Impact Mitigation Measures Plan:** If activities are anticipated or planned that may affect groundwater (e.g., excavation to the groundwater table, dewatering, etc.), a mitigation plan must be submitted to NDEP and the Trust for approval.

Groundwater Treatment System

— **Contingency Plan for Damage to Groundwater Treatment System Component:** Before starting any activity within 50 feet of any component of the groundwater monitoring, extraction, and treatment systems, the Site Occupant shall prepare a contingency plan to outline actions that would be taken if any remediation system component is damaged in a manner that causes the release of untreated groundwater. The Site Occupant must submit the contingency plan to NDEP and the Trust for review and approval before starting activities in the areas where remediation system components are located.

— **Written Explanation of Unplanned Shutdown of Groundwater Treatment System(s):** Within 24 hours of an unplanned shutdown of any component of a groundwater remediation system (e.g., due to damage to the system or to control the release of untreated groundwater), the Site Occupant must provide a written explanation to NDEP, the Trust, and the GWETS Contractor of the reason for and the duration of the shutdown.

¹ “Site Occupant” is defined as any owner, operator, tenant, lessee, project manager, or entity exercising control over space at the Site. Each Site Occupant has the responsibility to ensure that the risk management measures and procedures described in the SMP are fully implemented in any applicable activity or operation. The Site Occupant is responsible for ensuring its employees and contractors comply with the SMP.