

**APPENDIX A**

**SUMMARY OF EXCAVATION CONTROL AREAS (ECAs)**

## DOCUMENT REVISION TRACKING

SMP Revision	Date	Summary of ECA Revision
0	December 2011	Original report included in SMP
2	July 2015	Removal of ECA #E3 from the ECA list in March 2014. A discussion of the removal can be found in Section 2.13. Expansion of ECA #C17 as discussed in Section 2.7.17. Expansion of ECA #D3 as discussed in Section 2.8.3.
3	December 2016	Creation of ECA #C19 as discussed in Section 2.7.19.

## CONTENTS

<b>1. INTRODUCTION</b>	<b>1</b>
<b>2. EXCAVATION CONTROL AREAS (ECAS) WITH KNOWN CONTAMINATION LEFT IN PLACE</b>	<b>2</b>
2.1 Soil Screening Levels	2
2.2 Discolored Soil	2
2.3 Reasons for Establishing ECAs	2
2.4 Decision Rules for Establishing the Extent of ECAs	3
2.5 Overview of ECAs	4
2.6 Description of ECAs in RZ-B	4
2.7 Description of ECAs in RZ-C	7
2.8 Description of ECAs in RZ-D	12
2.9 Description of ECAs in RZ-E	16
2.10 Definition of ECA Boundaries	16
2.11 Demarcation Fencing	16
2.12 Additional Investigation for Unit Buildings, Leach Plant, and Ponds	17
2.13 Remediated ECA #E3: Facilities at East End of Beta Ditch	17
2.14 Annual Review and Update	17

## LIST OF TABLES

Table A-1	Summary of Excavation Control Areas (ECAs)
Table A-2	ECA #C17 Expansion Area Sample
Table A-3	Confirmation Soil Sample Results for Former ECA #E3
Table A-4	ECA #C19 Soil Results for Discolored Soil Left In Place

## LIST OF FIGURES

Figure 1	Excavation Control Areas – All Remediation Zones
Figure 1a	Excavation Control Areas – All Remediation Zones (without Remediation Polygons)
Figure 2	Excavation Control Areas in RZ-B
Figure 2a	Excavation Control Areas in RZ-B (without Remediation Polygons)
Figure 2b	Excavation Control Areas B2, B3, B4, and B5
Figure 2c	Excavation Control Areas B6 and B7
Figure 3	Excavation Control Areas in RZ-C
Figure 3a	Excavation Control Areas in RZ-C (without Remediation Polygons)
Figure 3b	Excavation Control Areas C1, C2, C3, and C4
Figure 3c	Excavation Control Areas C5, C6, C7, C8, C9, C10, C11, C12, and C13
Figure 3d	Excavation Control Areas C12, C13, C14, C15, and C16
Figure 3e	Excavation Control Areas C17 and C19
Figure 3f	Excavation Control Areas C18
Figure 4	Excavation Control Areas in RZ-D
Figure 4a	Excavation Control Areas in RZ-D (without Remediation Polygons)
Figure 4b	Excavation Control Areas D1 and D2
Figure 4c	Excavation Control Areas D3 and D4

Figure 4d	Excavation Control Areas D5, D6, D7, and D8
Figure 4e	Excavation Control Areas D9 and D10
Figure 5	Excavation Control Areas in RZ-E
Figure 5a	Excavation Control Areas in RZ-E (without Remediation Polygons)
Figure 5b	Excavation Control Area E1
Figure 5c	Excavation Control Area E2
Figure 6a	ECA & LOU Locations
Figure 6b	ECA & LOU Descriptions

### **LIST OF ATTACHMENTS**

Attachment A	NV Energy Trench Detail Email and Drawing
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 an approximately 264-acre site in unincorporated Clark County, surrounded by the City of Henderson, Nevada (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 on February 14, 2011.

## 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, metals (including arsenic), hexavalent chromium, dioxin/furans, volatile and semi-volatile organic compounds (VOCs and SVOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), organochlorine pesticides (OCPs), and others. Site-specific soil screening levels (including Nevada Division of Environmental Protection [NDEP] worker Basic Comparison Levels [BCLs]<sup>1</sup> 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 (RAW), Tronox LLC, Henderson, Nevada*, revised May 28, 2010 (Northgate, 2010b), 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. A target remediation goal of 7.2 milligrams per kilogram (mg/kg) for arsenic was approved by NDEP on August 20, 2010 (NDEP, 2010d) in response to Tronox's August 13, 2010 errata to the RAW (Northgate, 2010b). There are no NDEP BCLs for asbestos; therefore, "contaminated" soil is defined as one, or more, long amphibole protocol structures and greater than five long chrysotile protocol structures counted per sample, which were the criteria used in the NDEP-approved RAW (Northgate, 2010b) and in the *Interim Soil Removal Action Completion Report* (ENVIRON 2012a). Based on the bioavailability study, NDEP has approved a Site-specific soil screening level 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,c).

### 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.

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<sup>1</sup> The soil screening levels in Table 1 are the current August 2013 BCLs, the NDEP-approved Site-specific comparison level for dioxins/furans, NDEP-approved background levels, and the criteria used as the basis for asbestos remediation of the Site. 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.

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

- 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 (ft bgs). Therefore, vadose zone soils across the Site at depths greater than 10 ft 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 ft of water lines;
3. Excavations will not be within 2 ft of all other active utility lines;
4. Excavation will not be within 12 ft 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 ft 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 ft 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 Management Incorporated (BMI) 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 A-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.

Table A-1 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)<sup>2</sup>; and 8) minimum required analyses. Text describing each of the ECAs is provided below. Figures 1 through 5c 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, respectively. 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 ft 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 ft 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 historically supported the high-pressure chlorine line used by the Titanium Metals Corporation (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.

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<sup>2</sup> The COPC list in Table A-1 was compiled using the packets of documentation relating to LOU Areas I through IV (provided in Attachments B through E) and existing soil data within each ECA.



#### 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 Ft 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 Ft of Unit Buildings

Soils within approximately 50 ft 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 ft 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 7<sup>th</sup> 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 (7<sup>th</sup> 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 (B(a)P) 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 Ft Deep in Polygons RZ-B-20 and RZ-B-21**

Access for excavation of soils beneath 6 ft (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 ft. Remedial excavation was performed to 6 ft 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 9<sup>th</sup> Street and a minimum of 6 ft 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 (4<sup>th</sup> Street), which is in use and cannot be removed. Therefore, the portions of RZ-C-01 and -01A beneath 4<sup>th</sup> Street are included in ECA #C1, as shown on Figure 3. Asphalt pavement for 4<sup>th</sup> 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 (5<sup>th</sup> Street), which is in use and cannot be removed. Therefore, the portions of RZ-C-03, -04, and -05A beneath 5<sup>th</sup> Street are included in ECA #C2, as shown on Figure 3. Asphalt pavement for 5<sup>th</sup> 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 ft 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 ft 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 hexachlorobenzene (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 ft 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 B(a)P.

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 9<sup>th</sup> 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 9<sup>th</sup> 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. 9<sup>th</sup> 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 a 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, and sample DS-C23-1 also collected from this area indicated concentrations of arsenic, lead, and manganese 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/furans, 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/furans, HCB, arsenic, magnesium, and perchlorate. Results from DS-C17-1 indicated concentrations of dioxins/furans 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. In addition, following excavation of polygon RZ-C-18, one confirmation soil sample (SSA06-06) was collected from the floor of the excavated area on February 9, 2011. This sample was analyzed for dioxins/furans, SVOCs, arsenic, manganese, and magnesium. Results from this sample indicated concentrations of HCB and arsenic were above soil screening levels. Therefore, additional soil excavation was performed in this area to remove the discolored soil. During the soil removal, ENVIRON observed a black discolored soil layer on the ground surface adjacent to polygon RZ-C-18. The layer was excavated to a depth of approximately six ft bgs and included the removal of a subsurface concrete drop culvert and pipe. Due to the significant depth of the material, some of the discolored soil was left in place. One excavation extent sample (EE-C18-1) was collected within the discolored soil at the base of the excavation on May 17, 2011. This sample was analyzed for dioxins/furans, HCB, SVOCs/PAHs, arsenic, manganese, and magnesium. Results from EE-C18-1 indicated concentrations of dioxins/furans, HCB, and B(a)P were above soil screening levels. 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 ft 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 B(a)P, 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/furans, 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 were used by the GWETS operator 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/furans, 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/furans 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.

In 2013, discolored soil was discovered in a non-ECA area to the south of ECA #C17 during construction of Tronox's Waste Water Pond MN-2. The activities of the MN-2 pond construction and previously unknown contaminated soil discovery were detailed in the Geotechnical & Environmental Services, Inc. (GES) report, *Closure Report for Project #12-06, MN-2 Waste Water Pond Construction*, dated October 2013. The discolored soil was sampled in four locations and analyzed as one composite sample. Analytical results for this composite sample are in Table A-2. Arsenic was the only analyte found to exceed the NDEP Site Screening Level as highlighted in Table A-2. The soil was left in-place and covered with approximately 6 inches of clean native fill. Based on this discovery, the southern boundary of ECA #C17 has been extended as shown in Figure 3.

#### **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.

#### **2.7.19 ECA #C19: Storm Water Conveyance Modification Discolored Soil**

ECA #C19 includes discolored soil left in-place at and in the vicinity of the Storm Water Conveyance Modification and Property Line Grading Project conducted between February and June 2016. The extent of ECA #C19 is shown on Figure 3e. Discolored soil was discovered during excavation activities required to construct an underground storm water conveyance pipeline. Discolored soil remains in-place at the northern base of the excavation area at a depth of approximately 10 feet and at the southern base of the excavation area at a depth of approximately 18 ft bgs. Confirmation samples collected from the base and sidewalls of the



excavation reported concentrations of Aroclor-1260, arsenic, lead, and manganese above respective BCLs or Site-specific screening levels. In addition, discolored soil was also observed to the south of the former Outfall 002 headwall, including beneath the existing pipeline, at a depth of approximately 7 ft bgs and north of the project area at a depth of approximately 8 ft bgs. A summary of the analytical data for the discolored soil remaining in-place for ECA #C19 is provided in Table A-4. Further details concerning the discolored soil left in-place are included in the Ramboll Environ letter report, *Project Completion Report; Storm Water Conveyance Modification and Property Line Grading Project* dated February 9, 2017.

## **2.8 Description of ECAs in RZ-D**

### **2.8.1 ECA #D1: NV Energy Transmission Line Towers**

NV Energy prohibits excavating within 10 ft 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/furans, HCB, arsenic, and perchlorate. The results indicated that concentrations were above soil screening levels for dioxins/furans, 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/furans, HCB, and OCPs. Results indicated that concentrations of dioxins/furans, 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 the GWETS operator 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/furans, HCB, SVOCs/PAHs, arsenic, lead, cobalt, manganese, magnesium, and perchlorate. Results indicated concentrations of dioxins/furans, 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 collect from the black discolored soil on the berm and analyzed for dioxins/furans, 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 dated 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.

More recently (in 2015), discoloration has been observed in the road cut along the emergency egress route north of the GW-11 and WC Ponds. Therefore, the northern boundary of ECA #D3 has been extended to the Site boundary to include the berm to the north, as shown on Figure 4.

#### **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 equalization tanks, Quonset hut, and chromium treatment plant are actively used by the GWETS operator 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 ft 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 were used by the GWETS operator. 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 ft bgs in RZ-D-28 and to 0.5 ft bgs in RZ-D-29, below which several utilities were encountered. The original excavation depths of RZ-D-28 of 10 ft bgs and 1.5 ft 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 Ft Deep**

During excavation activities, discolored soils at a depth of approximately 9 to 10 ft 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/furans and arsenic. Results indicated that dioxins/furans 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 ft 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 ft 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/furans 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 (4<sup>th</sup> Street), which is in use and cannot be removed. Therefore, the western portions of RZ-E-01 and -03 beneath and adjacent to 4<sup>th</sup> Street are included in ECA #E1, as shown on Figure 5. Asphalt pavement for 4<sup>th</sup> 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 ft 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 ft 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/furans, HCB, arsenic, and perchlorate. Results indicated concentrations of dioxins/furans, 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.

## **2.10 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 A-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 A-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 Remediated 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 was 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 was designated as ECA #E3. A portion of the polygon was covered with clean imported soil.

In October 2013, concurrent with TIMET's excavation on their property line, the east end of the Beta Ditch (ECA #E3) was successfully remediated by excavation. The activities were detailed in the ENVIRON report, *Excavation of Beta Ditch at NERT-TIMET Property Line*, dated March 31, 2014. Confirmation sample results from the excavation are in Table A-3.

## **2.14 Annual Review and Update**

This ECA Summary report will be reviewed at least annually, and updated at least every other year 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.

## TABLES

## **FIGURES**

### **ATTACHMENT A**

**NV ENERGY TRENCH DETAIL EMAIL AND DRAWING**

**ATTACHMENT B**

**LETTER OF UNDERSTANDING (LOU) PACKETS – AREA I  
(PROVIDED ELECTRONICALLY OR ON CD SEPARATELY)**



**ATTACHMENT C**

**LETTER OF UNDERSTANDING (LOU) PACKETS – AREA II  
(PROVIDED ELECTRONICALLY OR ON CD SEPARATELY)**

**ATTACHMENT D**

**LETTER OF UNDERSTANDING (LOU) PACKETS – AREA III  
(PROVIDED ELECTRONICALLY OR ON CD SEPARATELY)**

**ATTACHMENT E**

**LETTER OF UNDERSTANDING (LOU) PACKETS – AREA IV  
(PROVIDED ELECTRONICALLY OR ON CD SEPARATELY)**

**ATTACHMENT F**

**ANALYTICAL RESULTS SUMMARY TABLES  
(PROVIDED ELECTRONICALLY OR ON CD SEPARATELY)**

**ATTACHMENT G**

**EXECUTABLE TABLE OF REMAINING SOIL RESULTS  
(PROVIDED ELECTRONICALLY OR ON CD SEPARATELY)**