Prepared for:
Tronox LLC
Henderson, Nevada

Phase B Source Area Investigation Work Plan
Area IV (Western and Southern LOUs)
Tronox LLC Facility
Henderson, Nevada

ENSR Corporation
May 2008
Document No.: 04020-023-430 – IV

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TRONOX

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May 16, 2008

Ms. Shannon Harbour, P.E.
Nevada Division of Environmental Protection
2030 East Flamingo Road, Suite 230
Las Vegas, Nevada 89119-0818

Subject: Phase B Source Area Investigation – Area IV Work Plan
TRONOX LLC, Henderson, Nevada

Dear Ms. Harbour:

Tronox LLC (Tronox) has undertaken an Environmental Conditions Assessment (ECA) as directed by the Nevada Division of Environmental Protection (NDEP). Towards this work, Tronox has prepared the attached *Phase B Source Area Investigation – Area IV, Tronox LLC, Henderson Nevada*. This is the second of the “Area” work plans, and incorporates NDEP comments on the Area I document. It is one of the set of six Phase B work plans which collectively will provide information to be used in assessing soil, soil gas and groundwater impacts at the Tronox Henderson facility. The associated CD will be provided under a separate submittal to NDEP within two business days.

Please contact me at (702) 651-2234 if you have any comments or questions concerning this correspondence.

Sincerely,

SM Crowley

Susan M. Crowley
Staff Environmental Specialist

Overnight Mail

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Crouse	George	Syngenta		X	
Erickson	Lee	Stauffer		X	
Kelly	Joe	Montrose			
Sundberg	Paul	Montrose		X	
Gibson	Jeff	AmPac			
Richards	Curt	Olin		X	
Bellotti	Michael	Olin		X	
Wilkinson	Craig	Timet		X	
Mack	Joel	Montrose Counsel			

Phase B Source Area Investigation
Work Plan – Area IV
Tronox LLC Facility
Henderson, Nevada

Responsible 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.

SMCrowley 5-14-08

Susan M. Crowley, CEM 1428 exp. date 3/8/09
Staff Environmental Specialist
Tronox LLC

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ABBREVIATIONS AND ACRONYMS

AP	Ammonium Perchlorate
ASTM	American Society for Testing and Materials
bgs	below ground surface
BMI	Black Mountain Industrial
BRC	Basic Remediation Company
CAS	Columbia Analytical Services
CEM	Certified Environmental Manager
CSM	Conceptual Site Model
DOT	Department of Transportation
ECA	Environmental Conditions Assessment
EDD	electronic data deliverable
ft/ft	feet per foot
HASP	Health and Safety Plan
HHRA	Human Health Risk Assessment
LOU	Letter of Understanding
MCL	Maximum Contaminant Level
ml	milliliter
MSSL	Medium Specific Screening Levels
NDEP	Nevada Division of Environmental Protection
OCHs	organochlorine herbicides
OCPs	organochlorine pesticides
OPPs	organophosphorus pesticides
PCB	polychlorinated biphenyl
PDF	Portable Document File
PRGs	Preliminary Remediation Goals
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RPD	relative percent difference
SAPs	sampling and analytical plans
SPLP	Synthetic Precipitation Leaching Procedure
SRCs	Site-related chemicals
TDS	total dissolved solids
Tronox	Tronox LLC
USEPA	United States Environmental Protection Agency

ABBREVIATIONS AND ACRONYMS (continued)

VOC	volatile organic compound
WDC	Water Development Corporation

1.0 Introduction

This document presents the Area IV Work Plan (Work Plan), which is part of the Phase B Source Area Investigation at the Tronox LLC (Tronox) facility located within the Black Mountain Industrial (BMI) Complex in Henderson, Nevada (the Site). The Site is owned and operated by Tronox, headquartered in Oklahoma City, Oklahoma. Tronox was formerly known as Kerr-McGee Chemical LLC. The Source Area Investigation, including Phase A and Phase B, is being conducted under the regulatory oversight of the Nevada Division of Environmental Protection (NDEP) and is being submitted as part of the Environmental Conditions Assessment (ECA) as required by NDEP (2004).

The Phase B activities follow the Phase A Source Area Investigation (ENSR 2007b) and are intended to further characterize soil and groundwater conditions at the source areas within the roughly 450-acre Site **(Figure 1)**.

At the request of the NDEP, the Phase B Source Area Investigation field activities have been segmented into investigations of soil gas, soil and groundwater, and background groundwater conditions with each segment requiring separate, stand-alone work plans that describe the goals, scope of work, and methods used to implement each investigation.

To investigate the approximately 70 source areas on the Site and their potential affect on soil conditions, the Site has been subdivided into four "Areas" (Area I, II, III, and IV) as shown on **Figure 2**. The Phase B soil investigation by ENSR does not include investigation of soils in Parcels A through D, F, G, and H (see **Figure 2**), which are for sale, and are being investigated by the Basic Remediation Company (BRC) independently, of ENSR's Phase B Source Area Investigation. Both the ENSR and BRC investigations, will address deeper soils, as defined by NDEP. (Parcel E consists of land that is jointly used by Montrose Chemical and others, and evaluation of this parcel will be addressed at a later date. Soil investigations of Parcels I and J are being conducted by the tenants of those parcels independently of ENSR's Phase B Source Area Investigation.)

Whereas the Site has been subdivided into four Areas for the soil investigation, Tronox will evaluate groundwater conditions and soil gas on a Site-wide basis including Parcels A through D, and F through J.

Individual work plan documents have been prepared that describe the scope of work to investigate each of the four Areas. This document presents the work plan to investigate soil and groundwater conditions in Area IV. The Area I Work Plan was submitted on April 3 (ENSR 2008c), and NDEP provided comments on May 6, 2008 (NDEP 2008b). Additionally, a separate work plan to evaluate soil gas and the vapor intrusion pathway for the entire Site has been prepared (ENSR 2008b). This work plan was approved with conditions by the NDEP on March 26, 2008. The work plans for Area II and Area III remain to be submitted for review by NDEP.

The four Area investigation work plans focus on evaluation of potential source areas for the Site-Related Analytes as shown on **Table 1**, (which was updated and forwarded to NDEP on March 18, 2008; Tronox 2008). (The site-related analytes, herein after referred to as site-related chemicals [SRCs], increased slightly from the full list of SRCs addressed in previous reports.) Potential source areas were identified by the NDEP in their August 15, 1994 Letter of Understanding (LOU). Seventy areas have been identified as potential source areas on the Tronox Site. Sixty-nine areas are formally designated as LOUs (i.e., LOU 1 through LOU 69). An area identified as the former U.S. Vanadium Site has not been designated an LOU, but is considered herein as the 70th potential source area. Of the 70 potential source areas on the Site, 13 are within Area IV as shown in **Figure 3** and as listed below:

- LOU-4 – Former Hardesty Chemical Company Site
- LOU-25 – Process Hardware Storage Area
- LOU-26 – Trash Storage Area
- LOU-27 – PCB Storage Area
- LOU-28 – Hazardous Waste Storage Area
- LOU-41 – Unit 1 Tenant Stains
- LOU-42 – Unit 2 Salt Conveyor
- LOU-59 – Portion of the Storm Sewer System
- LOU-60 – Portion of the Former Acid Drain System
- LOU-62 – Former State Industries, Inc. Site Including Impoundments and Catch Basin
- LOU-63 – Former J.B. Kelley, Inc., Trucking Site
- LOU-65a – Former Ebony Construction Sites
  - 65b – Former Buckles Construction Company Site
  - 65c – Former Nevada Precast Concrete Products
  - 65d – Former Green Ventures International Site, and
- LOU-66 – Above-Ground Diesel Storage Tank Leased by Flintkote Co.

The network of clay and tile pipelines that make up the Storm Sewer System (LOU 59) is located throughout the Site in Areas II, III and IV (**Figure 3**). For the Area IV Work Plan, only the portion of the system that is located within the Area IV boundary will be discussed and evaluated. The other portions of the Storm Sewer System will be included, as appropriate, in the Area II and III Work Plans.

The network of pipelines that make up the former Acid Drain System (LOU 60) is located between the Unit Buildings (1 through 6) and the Former Trade Effluent Settling Ponds Area (LOU 1) (**Figure 3**). For the Area IV Work Plan, only the portion of the system that is located within the Area IV boundary will be discussed and evaluated. The other portions of the Acid Drawn System will be included, as appropriate, in the other three area work plans. The Area IV Work Plan includes a compilation of individual sampling and analysis plans for each of the 13 LOUs that are presented in **Appendix A**. The LOUs adjacent to Area IV are also shown on **Figure 3,** and are/will be addressed in work plans for Areas I, II, and III.

It is important to note that the work plan for Area IV is designed to investigate both soil and groundwater within the Area (**Figure 3**). Results of the BRC soil investigations on Tronox sale Parcels A, B, C, D, F and G will be incorporated into the final Phase B Source Area Investigation report. LOUs 65c and 65d are located in Parcels F and G, respectively, and are included herein only for groundwater sampling.

In several cases individual LOUs have been combined with overlapping or adjacent LOUs into a single consolidated LOU package in **Appendix A**. This has been done to simplify the discussion of the investigations to occur at each LOU. The combined LOU packages for Area IV are: LOUs 4, 26, 27 and 28; and LOUs 41 and 65a through 65d.

The data package for LOU 66, located within the Chemstar property boundary, is included for informational purposes only. No Phase B investigations (soil vapor sampling, soil sampling or groundwater sampling) will be conducted on this property.

1.1 Purpose and Objectives

The purpose of this Area IV Work Plan is to describe the assessment of each potential source area, the sampling and data-gathering methods to be used, the locations to be sampled, the rationale for the locations proposed, and the analytical methodologies to be employed for the Phase B Source Area Investigation of Area IV.

The objective of the Area IV investigation is to gather information on the nature and extent of SRCs that may have been released to the environment in each of the respective potential source areas. Additionally, the scope-of-work has been designed to gather information for human health risk-based decision-making purposes. As such, samples of soil and groundwater will be collected and analyzed to support the evaluation of potential routes of exposure (e.g., direct contact pathway, soil-to-groundwater pathway, and groundwater pathway) in an industrial/commercial setting. The evaluation of the potential for migration of volatile organic compounds (VOCs) that may migrate from groundwater and/or soil to indoor air will be evaluated on a Site-wide basis under a separate soil gas survey work plan (ENSR 2008b) as noted above.

The distribution of sampling locations is designed in part to evaluate potential sources within each LOU and to provide general coverage within each Area supporting the planned future risk assessment, assuming that the receptors have equal probability of contacting environmental media within operationally (or on other basis) defined exposure areas of the Site. To evaluate source areas, proposed soil borings are placed at locations where constituents are anticipated to occur in soil at the highest concentrations or "worst case scenario" for most source areas. In a few cases, where containment structures cover "worst case" locations, sampling is proposed adjacent to the containments. Soil borings are also placed in locations outside the boundary of LOUs to gain additional insight into the horizontal extent of constituents in soil. The number of samples to be collected from Area IV is designed to provide a large enough statistical sample population to allow for completion of the planned risk assessment program.

Data from the investigation will be evaluated in conjunction with data from the other Area investigations to identify the exposure areas that will be used as part of the site-specific human health risk assessment (HHRA). The exposure areas will be identified based on current or planned operational areas, the SRC data, and chemical distribution across the Site. In addition, a screening level risk assessment will be performed for each of the source areas, using U.S. EPA Region VI Medium Specific Screening Levels (MSSLs) (updated March 2008 [USEPA 2008]) and screening levels from appropriate state and federal guidance, to provide further information for defining exposure areas.. The screening level risk assessment will consist of a simple comparison of the sample analytical results to the MSSLs or other appropriate state and federal screening levels, which is in essence, the first step (Hazard Identification) of the full four-step risk assessment process to be used as part of the site-specific HHRA.

The site-specific HHRA will be performed generally consistent with the methods presented in Section 9 of the Basic Remediation Company (BRC) Closure Plan (BRC, 2007a). However, some modifications to the BRC Closure Plan are necessary so that the methods are appropriate for the evaluation of the Tronox Areas I through IV. Site-specific modifications to the BRC Closure Plan will be discussed in a separate memorandum that will be prepared following discussions with NDEP, and will include, but may not be limited to, the following:

- Exposure areas, pathways and receptors and associated exposure factors

- Selection of chemicals of potential concern
- Methodology for evaluation of soil gas results to evaluate the potential vapor intrusion pathway
- Elimination of pathways not applicable in the HHRA for the four Tronox Areas, such as the evaluation of flux chamber measurements.

The HHRA will be prepared as a separate document following completion of the site investigation report described in Section 3.0.

Upon completing field activities and receipt of the analytical results, the Area IV investigation data will be compiled. The data will undergo comprehensive data validation as described by NDEP guidance (NDEP 2006) and in the QAPP (ENSR 2008d). Upon completion of the data validation, the Area IV data will be discussed with NDEP. If data gaps are identified, additional field sampling may be proposed as an addendum to the Area IV Work Plan.

1.2 Documents of Record

Previously prepared planning documents for the BMI Common Areas in general, and the Site in particular, have been reviewed and approved by the NDEP. These documents are considered documents of record and are referenced as appropriate herein to refer the reader to detailed prior discussions on Site conditions and information used to develop the LOU data packages and sampling and analysis plans. These documents include the following:

- *Environmental Conditions Assessment* (Kleinfelder 1993);
- *Response to Letter of Understanding, Henderson, Nevada Facility* (Kerr-McGee 1996);
- *Phase II Environmental Conditions Assessment, Kerr-McGee Chemical LLC, Henderson, Nevada* (ENSR 1997);
- *Conceptual Site Model, Kerr-McGee Facility, Henderson, Nevada* (ENSR 2005);
- *Upgradient Investigation Work Plan , Tronox LLC Facility, Henderson, Nevada Site* (ENSR 2006a);
- *Upgradient Investigation Work Plan Addendum, Tronox LLC Facility, Henderson, Nevada Site* (ENSR 2006b);
- *Phase A Source Area Investigation Work Plan, Tronox LLC Facility, Henderson, Nevada Site* (ENSR 2006c);
- *Upgradient Investigation Results Report, Tronox LLC Facility, Henderson, Nevada Site* (ENSR 2006e);
- *Addendum to the Phase A Source Area Investigation Work Plan, Tronox LLC Facility, Henderson, Nevada Site* (ENSR 2007a)*;*

- *Phase A Source Area Investigation Results Report, Tronox LLC Facility, Henderson, Nevada* (ENSR 2007b);
- *Revisions to the Upgradient Investigation Results*, *Tronox LLC Facility, Henderson, Nevada Site* (ENSR 2007c);
- *Phase B Source Area Investigation Work Plan – Soil Gas Survey, Tronox LLC Facility, Henderson, Nevada (ENSR 2008b);* and
- *Phase B Source Area Investigation Work Plan Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada (ENSR 2008c).*

Additional documents that have been prepared to define field procedures and protocols, quality assurance and quality control (QA/QC), and health and safety are as follows:

- *Basic Remediation Company (BRC) Field Sampling and Standard Operating Procedures for the BMI Common Areas* (BRC 2007b);
- *Health and Safety Plan (HASP) Revision 3* (ENSR 2008a); and
- *Quality Assurance Project Plan (QAPP), Tronox LLC Facility, Henderson, Nevada* (ENSR 2008d).

1.3 Project Organization

The Tronox project manager is Susan Crowley. Ms. Crowley is a Nevada-Certified Environmental Manager (CEM # 1428, expiring March 8, 2009) and is the person who serves as the point of contact for regulatory and environmental issues pertinent to the Site. She is located at the Tronox Henderson Facility. Her telephone number is (702) 651-2234. Ms. Crowley manages the consultants and subcontractors that will be performing the tasks described in this Work Plan. Ms. Crowley will be supported by Tronox hydrogeologist Mr. Tom Reed.

ENSR Corporation is Tronox's environmental consultant. Mr. Michael Flack (Senior Program Manager and Hydrogeologist), Dr. Keith Bailey of Environmental Answers LLC (Engineer), Dr. Lisa Bradley (Senior Toxicologist), Brian Ho, CEM (Phase B Investigation Team Leader and Field Manager), Elizabeth Perry (Geostatistician), and Robert Kennedy (Senior Chemist and Data QA/QC Officer) comprise ENSR's senior team, who along with ENSR Staff Geologists and Engineers will be assisting with this project as needed. Ms. Elizabeth Martinez will be responsible for QA/QC of documents.

Boart-Longyear and Water Development Corporation (WDC) have been solicited for competitive bids to advance the soil borings, using either sonic or hollow-stem auger equipment, and to install additional groundwater monitor wells. Both firms are licensed by the State of Nevada to install water wells.

The primary analytical laboratories that will be used for the analytical program (excluding radionuclides) will be the Columbia Analytical Services (CAS) Laboratories in Rochester, NY; Kelso, WA; and Houston, TX (Nevada certification numbers NY000322008A, WA35, and TX014112007A, respectively). The radionuclides analysis will be performed by GEL Laboratories, LLC of Charlestown, South Carolina (Nevada certification number SC12). Analysis of soil samples for asbestos will be performed by EMSL Analytical, Inc. of Westmont, New Jersey – the same laboratory that performed the asbestos analysis for the Phase A Source Area Investigation. Laboratory data for the analytical suites will be provided to Tronox in hard copy format as well as Tronox-specific EQuIS™ electronic data deliverable (EDD) format. The laboratory will provide sample receipt notification upon receipt of samples at the laboratory.

2.0 Source Area Investigation for Area IV

This section provides a brief summary of the site conditions within Area IV and the approach used to develop the soil and groundwater sampling and analytical plans (SAPs) for Area IV. The potential source areas that will be evaluated, including associated soil borings and wells for the Area IV investigation are shown on **Plate A.**

The list of SRCs for which samples will be investigated in the Phase B Source Area Investigation is presented in **Table 1**. The soil SAP is presented in **Table 2**, which lists the soil borings proposed for Area IV, the rationale for each soil boring location, the sample depths, and the analytical program for each soil sample. The groundwater SAP is presented in **Table 3**, which lists the monitoring wells proposed for sampling in Area IV along with the analytical plan for each groundwater sample.

2.1 Site Conditions

Background information including the Site description, Site location, physical setting, regional and local geology, hydrogeology, etc., are described in detail in the *Conceptual Site Model (CSM) Report* (ENSR 2005) and the *Phase A Source Area Investigation Report* (ENSR 2007b). **Figure 4** shows local groundwater conditions within Area IV that were developed from groundwater levels collected in May and December 2007 as well as historic wind direction for the Site. The general hydrogeologic conditions within Area IV are summarized as follows:

- Groundwater is generally encountered in the fine-grained facies within uppermost Muddy Creek Formation (MCfg1) below most of Area IV. In the southernmost portion of Area IV however, groundwater could be initially encountered in the uppermost coarse-grained facies of the Muddy Creek Formation (MCcg1).

- The depth to groundwater measured in May and December 2007 ranges from about 27 to 80 feet below ground surface (bgs) and is generally deepest in the southernmost portion of the Area.

- The groundwater flow direction in Area IV varies from 0.013 ft/ft in the south of Area IV to a gradient of about 0.02 feet per foot (ft/ft) measured in the north of Area IV **(Figure 4)**.

- The prevailing wind direction for the period between March 2003 and 2008 is to the northwest and south-southeast at wind speeds up to about 8 to 13 miles per hour (Community Environmental Monitoring Program 2008).

2.2 Development of Area IV Sampling and Analytical Plans

The scope of work for each potential source area was designed to address the Phase B Source Area Investigation objectives as described in Section 1.1. **Appendix A** contains the data packages for each LOU in Area IV. Included in the LOU data packages are associated historic data and recent information from the Phase A Source Area Investigation, and figures showing the LOU and locations of proposed Phase B soil and groundwater samples. Each data package contains a set of soil and groundwater SAPs that are LOU-specific. The LOU-specific SAPs have been consolidated into Area IV SAPs for soil and groundwater and are shown as **Table 2** (Soils Sampling and Analysis Plan) and **Table 3** (Groundwater Sampling and Analysis Plan). LOU-specific sample locations as shown in the data packages have been consolidated and are shown on **Plate A.**

For LOUs that include conveyances (e.g., pipelines) that cross Area IV boundaries into Areas I, II or III for example, the Area IV SAPs list only those sample locations that are in Area IV. (Sample locations to evaluate conveyances that cross into Areas I, II, or III will be listed in the respective SAPs for each Area.)

The data packages incorporate NDEP comments from their review of draft LOU data package submittals. Historic information in the data packages is derived from a number of sources including:

- *Environmental Conditions Assessment Report* (Kleinfelder 1993);
- *Response to Letter of Understanding, Henderson, Nevada Facility (*Kerr-McGee 1996);
- *Personal communications with Susan Crowley , Tronox,*
- *Personal communications with Keith Bailey, Environmental Answers,*
- *Phase II Environmental Conditions Assessment, Kerr-McGee Chemical LLC, Henderson, Nevada* (ENSR 1997);
- *Conceptual Site Model (CSM), Kerr-McGee Facility, Henderson, Nevada* (ENSR 2005);
- *Aerial Reconnaissance of Hazardous Waste Sources BMI Industrial Complex, Henderson, 1943-1979* (USEPA 1980);
- *Phase A Source Area Investigation Results, Tronox LLC Facility, Henderson, Nevada (ENSR 2007b); and*
- *NDEP Response to: Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada (NDEP 2008b).*

Descriptions of each LOU including details of the process waste streams associated with each LOU were based on information from the Environmental Conditions Assessment (Kleinfelder 1993), the Response to Letter of Understanding (Kerr-McGee 1996), the Phase A Source Area Investigation Results (ENSR 2007b), and interviews with Tronox employees. The LOU data packages in Appendix A along with the LOU data packages that will be provided in the Work Plans for Areas I, II, and III contain more detailed information than the CSM report (ENSR 2005). As such, the LOU data packages and Phase B Source Area Investigation results will be used to revise the CSM, including associated CSM figures, three-dimensional cartoons, and measles chart. The CSM will be updated after completion of the Phase B soil, soil gas, and groundwater investigation.

2.2.1 Evaluation of LOUs

An LOU summary was prepared for each of the 70 recognized potential source areas on the Tronox property. This facilitated incorporating data on potential impacts of adjacent LOUs into the 13 LOUs in Area IV. As noted above, several individual overlapping or adjacent LOUs have been consolidated into a single LOU data package. For each of the 13 LOUs the following were described:

- Closure goals;
- Site investigation area details, including size, location, and current status and features;
- LOU information such as construction details, historical and/or current operations, years of operation, materials used, and process waste streams generated and received;
- adjacent or overlapping LOUs;
- LOUs with the potential to affect the specific LOU;
- known or potential chemical classes associated with the LOU;

- known or potential release mechanisms;
- results of historical sampling; and,
- historical data, including Phase A data.

Each LOU summary includes a discussion of the proposed investigation/rationale and constituents for soil, groundwater, and soil gas. A more detailed discussion of the data reviewed as part of the LOU evaluations is provided below.

As part of the evaluation of an LOU, the goal of closure was developed with the input from Tronox and is based on the current and proposed future use of the area. A summary of the closure goals for LOUs in Area IV is presented in **Table 4**. Closure is not being requested for LOU 59 (Storm Sewer System, still active) and LOU 66 (Above-Ground Diesel Storage Tank Leased by Flintkote Co.) located on Chemstar property. For currently operating LOUs, the Phase B Investigation and subsequent HHRA will provide a “baseline” condition for the LOU and the surrounding area. If current operations do not exacerbate contamination, future closure would not require sampling for the full SRC list (i.e., if a chemical is not detected in the Phase B Investigation and is not a part of the process associated with the LOU, it would not be analyzed for at the time of closure).

The Site investigation area for each LOU is described, including the dimensions/area, location within the Site, and current status and features of the LOU. These descriptions were developed through review of historical documents, available aerial photographs, recent Site visits, and interviews with Tronox employees. The description provides information about the construction details, historical and/or current operations, years of operation, materials used, and process waste streams generated. To further evaluate potential SRCs at an LOU, process waste streams received from other LOUs or areas of the Site were included in the summary and considered when designing the Phase B scope of work for a particular LOU. SRCs associated with the known process waste streams are provided in a table in the LOU summary.

Associated SRCs for adjacent and/or overlapping LOUs were considered when evaluating an LOU. If an adjacent or overlapping LOU was considered to have the potential to affect the primary LOU, the lists of known or potential chemical classes were compared and analytes were added, if necessary, to the primary LOU’s scope of work based on the affecting LOU. A brief description of the affecting LOU and the additional analytes added is included in the LOU summary.

In order to evaluate suitable locations and sampling depths for the Phase B soil borings, known or potential release mechanisms were evaluated. Potential release mechanisms (i.e., infiltration, surface runoff, etc.) associated with an LOU is based on surface features, LOU construction, and historical operations. Known releases noted in historical documents are described and considered. In addition, analytical results and historical soil and groundwater sampling locations from previous investigations were evaluated for their adequacy to address potential or known releases.

Data from the Phase A Source Area Investigation (ENSR 2007b) were also evaluated. For an LOU with a Phase A sampling location within its boundaries, Phase A data were used as indicators of possible previously unknown SRCs at that LOU. SRCs detected in Phase A borings, and not already associated with an LOU, were added to the “Known or Potential Chemical Classes” list. For LOUs with no Phase A locations within their boundaries, the closest Phase A location is provided. The Phase A data in these cases is provided in the LOU summary only as an indication of subsurface soil and groundwater conditions in the vicinity of the LOU. Analytical data from the Phase A Source Area Investigation were reviewed and constituent classes detected in soil were compared to the list of “Known or Potential Chemical Classes” identified for the specific LOU. Phase

A constituent classes not consistent with the “Known or Potential Chemical Classes” list were added to the Phase B analytical program. Based on the location of the Phase A sample locations, a determination was made as to whether or not they were located in “worst case” areas of the LOU. If not, Phase B investigations were proposed.

A soil boring assessment has been proposed as part of the Phase B Source Area Investigation to evaluate the known and potential source areas onsite. In general, soil borings designed to assess an LOU will be drilled within the LOU boundaries. In cases where drilling within an LOU is not possible (e.g., an LOU is active or the integrity of containment could be compromised) soil borings will be located adjacent to the LOU. Soil borings upgradient and downgradient of an LOU will also be sampled to further assess the LOU and the impact, if any, on surrounding areas.

The Phase B soil borings consist of two categories, “judgmental” and “random.” Judgmental boring locations are designed to evaluate known or potential chemical classes associated with a specific LOU based on the known process waste streams. These soil borings are located in or near an LOU at locations considered to be either “worst case”, representative of soil conditions at the LOU, or in areas of reported or known releases. The Phase B analytical program for the judgmental borings is based on known or potential chemical classes specifically associated with an LOU.

To further evaluate the possibility of additional potential source areas beyond the 70 already identified onsite, an additional random soil boring assessment will be implemented area-wide as part of the Phase B Source Area Investigation. With the concurrence of NDEP, the Site has been divided into 4-acre grids as shown on **Plate A**. Each grid has been further subdivided into 25 subsections, one of which was randomly selected to be sampled for the Area IV investigation (**Plate A**). Soil samples from the randomly located borings will be collected at an initial interval of 0.5 feet bgs and each 10 feet thereafter, extending to the water table. In areas where surface features were noted, such as minor stains or above ground pipelines, judgmental soil samples will only be collected at 0.5 feet and 10 feet bgs.

Within Area IV of the Site, the combined random and judgmental soil boring evaluation program will include the drilling of 47 soil borings. Each random sample location is designated with an identifier such as RSAQ5. The prefix symbol “R” identifies the sample as random; “SA” indicates it is a source area investigation boring, and “Q5” denotes the grid identifier.

To be conservative, a modified Phase A Source Area Investigation soil sampling suite is proposed (see Section 2.3.2).

Groundwater conditions upgradient and downgradient of the LOU, and/or at the LOU will be evaluated by sampling existing or new groundwater monitoring wells. Groundwater beneath the Site is considered to be a Site-wide issue therefore, the full Phase A Source Area Investigation groundwater sampling analytical suite will be implemented for each proposed well (see Section 2.3.3).

2.2.2 Evaluation of Other Potential Sources

The Phase B scope of work includes sampling locations for potential source areas not identified as LOUs. A review of Phase A data suggests that offsite sources of constituents may exist. Soil borings designed to evaluate areas not associated with a specific LOU are listed in **Table 5**. These proposed borings include judgmental and random borings as described in Section 2.2.1 and will be analyzed for the modified Phase A analytical suite (see Section 2.3.2).

2.3 Summary of Area IV Investigation

The proposed soil and groundwater sampling locations shown on **Plate A** were selected to determine the nature and extent of SRCs within Area IV. Soil samples will be collected at 47 locations within Area IV. Groundwater samples will be collected from 18 wells within or adjacent to Area IV. Because the movement of groundwater transcends man-made features such as LOU boundaries, groundwater samples will also be collected from additional wells that are located in Area I, II and III [north (downgradient) or east/west (cross-gradient) of Area IV]. In total, groundwater samples will be collected from 1 wells under this work plan of which about 28 percent were sampled during the Phase A Source Area Investigation **(Plate A)**.

The following is a summary of the soil and groundwater sampling program for the Phase B Source Area Investigation for Area IV. Procedures and protocols for collecting soil and groundwater samples are presented in the QAPP (ENSR 2008d).

2.3.1 Surface Soil Sampling for Asbestos

Asbestos fibers were identified in surface soil samples from the Phase A Source Area Investigation (ENSR 2007b). As a result, surface soil samples will be collected and analyzed for asbestos as part of the Phase B Source Area Investigation. The sample will be collected from a depth of 0 (surface) to 2-inches bgs.

Soil samples from 47 locations will be collected in Area IV for asbestos analysis by the modified elutriator method of Berman and Kolk based on United States Environmental Protection Agency (USEPA) 640/R-97/028. Each sample location corresponds with a Phase B soil boring location; asbestos samples will be collected at each soil boring location proposed for the Area IV investigation (**Plate A**). **Table 2** lists the locations where surface soil samples for asbestos analysis will be collected. Sampling procedures are described in the QAPP (ENSR 2008d).

The number of samples to be collected, when combined with the Phase A Source Area Investigation results for Area IV, is designed to provide a sufficient statistical sample population and geographic distribution for the Site-wide HHRA.

2.3.2 Subsurface Soil Sampling

Soil samples will be collected at 47 locations within Area IV and analyzed for constituent classes that were identified as follows:

- constituents that were identified in an LOU based on historical site investigations;
- constituents that were identified as historically being used or stored at an LOU;
- constituents that were or are potentially associated with process waste streams at an LOU; and
- constituents that were associated with overlapping or adjacent LOUs.

In addition, soil samples from randomly selected sample locations will be analyzed for the modified Phase A list of SRCs (see below).

The analytes listed on **Table 1** are the same analytes used for the Phase A samples with the following modifications:

- Analysis of soil for polychlorinated biphenyl (PCB) compounds will not be performed on Phase B soil samples except at locations where it is documented that PCBs were used or stored (e.g., LOU 40 – PCB Transformer Spill [Area III] and LOU 27 – PCB Storage Area [Area IV]) or reported in Phase A samples (e.g., boring SA09 in LOU 35 – Truck Emptying/Dumping Site [Area I]). The basis for this decision is that PCBs were only detected in one out of 130 soil samples (i.e., Phase A boring SA09 at 0.47J mg/kg at 20 feet bgs) in the Phase A Source Area Investigation (ENSR 2007b). For those soil or groundwater samples collected from LOU 27, PCBs will be analyzed by USEPA method 1668, for congener analysis as per NDEP 2008b.

- Analysis of soil for organophosphorus pesticides (OPPs) will not be performed on Phase B soil samples. The basis for this decision is that there is no documentation to indicate OPPs were used, manufactured, or stored on the Site. Moreover, OPPs (Demeton-O) were detected in only one out of 36 Phase A soil samples (i.e., Phase A boring SA17 at 0.092J mg/kg). SA17 is located in Beta Ditch, which also received waste effluent from offsite sources west of the Tronox Site.

- Analysis of soil for organochlorine pesticides (OCPs) will be performed on Phase B soil samples to assess the potential for OCP use on the Site, to have contributed to a groundwater plume of organic contaminants identified under the Site. Soil sample will be collected at all proposed sampling depths (surface, every 10 feet to the capillary fringe, and at the capillary fringe), for each sampling location. However, only the surface and capillary fringe samples will initially be analyzed. All other samples will be placed on hold, pending the results of the initial samples. If OCPs are detected in either sample, the remaining samples for that location will be analyzed.

- Analysis of soil for organochlorine herbicides (OCHs) will not be performed on Phase B soil samples. The basis for this decision is that there is no documentation to indicate OCHs were used, manufactured, or stored on the Site. Moreover, OCHs were not detected in any of the Phase A soil samples analyzed.

- Analyses of soil for radionuclides will consist of alpha spectroscopy for Radium-226, Thorium - 230/232, Uranium 234/235 and Uranium 238; beta counting will be used for Radium-228. Unlike the Phase A Source Area Investigation, Phase B soil samples will not be analyzed using gamma spectroscopy as the default analytical technique.

- Formaldehyde was added to the Phase B analyte list since formaldehyde may have been associated with LOU 38 – Former Satellite Accumulation Point, Ammonium Perchlorate (AP) Change House/Laboratory, and LOU 54 – AP Plant Area Change House/Laboratory Septic Tank.

In general, soil samples for the Phase B Source Area Investigation will be collected initially at a depth of 0.5 foot bgs and thereafter at 10-foot depth intervals to the level of the water table. The soil sampling program proposed for Area IV, including a complete list of soil borings, the proposed sample depths, and the analytical program for each sample is shown in **Table 2**.

2.3.3 Groundwater Sampling

The Phase A Source Area Investigation Results Report (ENSR 2007b) identified SRCs in groundwater that were present at concentrations above comparison levels. The Phase A Source Area Investigation Results

Report, the ECA report (Kleinfelder 1993), and the CSM report (ENSR 2005) form the basis for further evaluation of SRCs in shallow groundwater as part of the Phase B Source Area Investigation.

As shown on **Figure 5**, groundwater samples will be collected from 18 wells within or adjacent to Area IV as part of the Site-wide evaluation of SRCs in groundwater. **Table 3** lists the wells that will be sampled for laboratory analyses as part of the Area IV investigation of groundwater.

Groundwater samples will be analyzed for the list of SRCs shown on **Table 1**. Unlike the Phase A analytical program for groundwater samples with one exception, the Phase B groundwater samples will not be analyzed for PCBs because PCBs were not detected in the Phase A samples that were collected from 27 wells spread across the Site. Similarly, groundwater samples will not be analyzed for OPPs because OPPs were not detected in the Phase A samples that were collected from 27 wells spread across the Site.

2.3.3.1 Groundwater Sampling in Area IV

Groundwater samples will be collected from 18 wells across Area IV as shown on **Figure 5**. The sample locations were selected to:

- evaluate specific LOU areas as identified in the CSM report (ENSR 2005) as potential source areas, and
- further evaluate the horizontal extent of SRCs that was identified in the *Phase A Source Area Investigation Results Report* (ENSR 2007b).

2.3.4 Additional Data Collection

Additional tests will be performed on soil samples collected in Area IV to gather data in support of further site characterization activities or risk assessment modeling. This includes performing tests on soil samples to: 1) evaluate the soil-to-groundwater migration potential of SRCs, and 2) gather data on the physical properties of onsite soils to provide Site-specific parameters.

2.3.4.1 Soil-to-Groundwater Migration Potential of SRCs

The *Phase A Source Area Investigation Results Report* (ENSR 2007b) identified SRCs in soil that have the potential to migrate to groundwater at concentrations of potential concern. Soil samples collected from the alluvium and Muddy Creek formation above the capillary fringe will be analyzed for leachability from the following Area IV soil borings: RSAQ4, SA148, RSAR3, RSAU4 and RSAU5. **Table 2** provides the following information for the sampling locations: grid location, associated LOU, boring number, sample depth(s), SRCs to be analyzed for, expected soil type and rationale for sampling location/depth.

The potential for an SRC to partition from soil to groundwater will be determined using the Synthetic Precipitation Leaching Procedure (SPLP), USEPA Method 1312. The partitioning factor approach uses a leaching agent to evaluate the concentration of the chemical of interest (i.e., target SRC) that might leach from the solid matrix and partition into the pore water thus having the potential to affect water quality. Evaluating the potential for partitioning involves a stepwise process as follows:

- Soil samples are initially analyzed for the target SRCs to determine their solid matrix concentration (**Table 2**);
- Samples are then subjected to the leaching procedure using extraction fluid #2 (reagent water at a pH of 5.0 ±0.05) to derive the leachate;

- Samples will also be subjected to the leaching procedure using extraction fluid #3 (solely reagent water);
- The leachates are then analyzed for the target SRCs to evaluate a chemical's potential to partition from the solid matrix into the pore water.

The leachate data derived from the reagent water and that from the pH 5.0 water will be compared to reflect variable wetting conditions at the site. The SPLP employs as the leaching agent a liquid with a pH of about 5.0 (reagent fluid #2) to reflect slightly acidic precipitation in areas west of the Mississippi (USEPA 1994). The analytical suite will include the SRC chemical categories shown on **Table 2**. SRCs were selected for analysis along the soil-to-groundwater pathway because they were reported above detection limits in Phase A samples, were detected in soil samples in other previous site investigations, and had CSM-indicated concentrations that were greater than their respective comparison level.

2.3.4.2 Geotechnical Testing Program

Soil samples will be collected and sent to a geotechnical engineering laboratory in order to measure physical parameters of the coarse-grained and fine-grained soils encountered during the course of this investigation. The soil samples will be collected from the same borings and sample depths as the soil samples for SPLP analyses as shown on **Table 2**. Soil samples collected for geotechnical testing will be co-located with soil samples for leachability tests in order to facilitate future fate and transport modeling. Data from the geotechnical tests will provide Site-specific data that will be used to support, modeling of the vadose zone for potential contaminant migration pathways, and to support evaluation of remedial alternatives, if necessary.

Fine-grained and coarse-grained soil samples will be collected and analyzed for the following parameters:

- Moisture content (dry weight basis) using American Society for Testing and Materials (ASTM) Method D-2216;
- Particle size analysis using ASTM Method D-422 (for sand and gravel) and C117-04 (for silt and clay);
- Soil Dry Bulk Density using ASTM Method D2937;
- Grain Density using ASTM Method D854;
- Soil Water-Filled Porosity using ASTM Method D2216; and
- Vertical Hydraulic Conductivity using ASTM D5084/USEPA 9100.

3.0 Investigation Report and Schedule

Upon completing field activities and receipt of the analytical results, the Area IV investigation data will be compiled. The Area IV data will be discussed with NDEP. If data gaps are identified, additional field sampling may be proposed as an addendum to the Area IV Work Plan. Elements of the Area IV investigation and results will be integrated with the soil and groundwater data from the Area I, II, and III investigations, the soil gas investigation, and the background water quality investigation to create a report on the results of the Phase B Source Area Investigation for the Site. One document will be provided to the NDEP, which will summarize all the Area investigation results.

The Phase B report will summarize the Site description, LOUs, previous environmental assessments conducted at the Site, including the Phase A results, Site physical conditions and the findings of the soil, soil gas, and groundwater sampling program. The report will be organized similar to the *Phase A Source Area Investigation Results Report* (ENSR 2007b) and will include the following:

- Copies of applicable permits;
- Field logs, groundwater sampling and boring logs;
- Description of field procedures and any deviations from the proposed program;
- Presentation of field observations and analytical results;
- Certified analytical laboratory reports and chain-of-custody documentation;
- Data validation summary report and data validation memorandum;
- Summary tables of results organized by chemical species (i.e., VOCs, SVOCs, metals) and environmental media (i.e., soil, soil gas, and groundwater);
- Figures showing the results of the soil, soil gas and groundwater sampling program organized in a similar fashion as the tables by chemical species and environmental media;
- Discussion of the data and comparison to screening level criteria; and
- Recommendations for additional assessment, as applicable.

The Area IV investigation activities will commence within 30 days following NDEP approval of this Work Plan. Actual start dates will depend on the availability of drilling contractors at the time of approval. General milestones and durations are provided below:

- Field Activities – three to four weeks, inclusive of utility clearance activities at the Site;
- Laboratory Analyses – four to six weeks; and
- Data Validation and Analysis – four to six weeks.

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4.0 References

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TABLES

Table 1
List of Site-Related Chemicals and Reporting Limits
Phase B Source Area Investigation Work Plan - Area IV
Tronox LLC Facility - Henderson, Nevada

Analyte	CAS No.	Method soil / water	Lab RL soil	RL Goal soil	Lab RL water	RL Goal water
Metals			mg/kg		ug/L	
Aluminum	7429-90-5	EPA 6010	1.00E+01	7.50E+01	5.00E+01	5.00E+01
Antimony	7440-36-0	EPA 6020	5.00E-02	3.00E-01	5.00E-02	6.00E+00
Arsenic	7440-38-2	EPA 6020	5.00E-01	1.59E-01	5.00E-01	1.00E+01
Barium	7440-39-3	EPA 6010	2.00E+00	8.20E+01	5.00E+00	2.00E+03
Beryllium	7440-41-7	EPA 6020	2.00E-02	3.00E+00	2.00E-02	4.00E+00
Boron	7440-42-8	EPA 6020	5.00E-01	2.27E+00	5.00E-01	7.30E+02
Cadmium	7440-43-9	EPA 6020	2.00E-02	4.00E-01	2.00E-02	5.00E+00
Calcium	7440-70-2	EPA 6010	1.00E+01	na	5.00E+01	na
Chromium (total)	7440-47-3	EPA 6020	2.00E-01	4.48E+01	2.00E-01	1.09E+01
Chromium (hexavalent)	18540-29-9	EPA 7199/3060A / 218.6	5.00E-01	2.00E+00	1.00E+01	1.00E+02
Cobalt	7440-48-4	EPA 6010	2.00E+00	3.29E+00	1.00E+01	7.30E+01
Copper	7440-50-8	EPA 6010	2.00E+00	4.68E+02	1.00E+01	1.30E+03
Iron	7439-89-6	EPA 6010	4.00E+00	7.53E+00	2.00E+01	3.00E+02
Lead	7439-92-1	EPA 6020	5.00E-02	1.34E+01	2.00E-02	1.50E+01
Magnesium	7439-95-4	EPA 6010	4.00E+00	na	2.00E+01	1.50E+05
Manganese	7439-95-4	EPA 6010	2.00E+00	3.26E+00	5.00E+00	5.00E+01
Mercury	7439-97-6	EPA 7471/7470	2.00E-02	1.64E-01	2.00E-01	2.00E+00
Molybdenum	7439-98-7	EPA 6020	5.00E-02	3.66E-01	5.00E-02	1.82E+01
Nickel	7440-02-0	EPA 6020	2.00E-01	7.00E+00	2.00E-01	7.30E+01
Platinum	7440-06-4	EPA 6020	1.00E-01	na	1.00E-01	na
Potassium	7440-09-7	EPA 6010	2.00E+02	na	2.00E+03	na
Selenium	7782-49-2	EPA 6020	1.00E+00	5.11E+02	1.00E+00	5.00E+01
Silver	7440-22-4	EPA 6020	2.00E-02	2.00E+00	2.00E-02	1.00E+02
Sodium	7440-23-5	EPA 6010	2.00E+01	na	1.00E+02	na
Strontium	7440-24-6	EPA 6010	2.00E+00	7.69E+01	1.00E+01	2.19E+03
Tin	7440-31-5	EPA 6010	1.00E+01	5.48E+02	5.00E+01	2.19E+03
Titanium	7440-32-6	EPA 6010	2.00E+00	1.46E+04	1.00E+01	1.46E+04
Thallium	7440-28-0	EPA 6020	2.00E-02	1.42E-01	2.00E-02	2.00E+00

Table 1 (continued)
List of Site-Related Chemicals and Reporting Limits
Phase B Source Area Investigation Work Plan - Area IV
Tronox LLC Facility - Henderson, Nevada

Analyte	CAS No.	Method soil / water	Lab RL (soil)	RL Goal (soil)	Lab RL (water)	RL Goal (water)
Metals			mg/kg		ug/L	
Uranium	7440-61-1	EPA 6020	2.00E-02	1.53E-02	2.00E-02	3.00E+01
Vanadium	7440-62-2	EPA 6020	2.00E-01	1.02E+02	2.00E-01	3.65E+00
Zinc	7440-66-6	EPA 6010	2.00E+00	6.20E+02	1.00E+01	5.00E+03
Wet Chem Analytes			mg/kg		ug/L	
Alkalinity (total,CO_3^-,HCO_3^-)	na	SM 2320B	2.00E+01	na	2.00E+03	na
Ammonia	7664-41-7	EPA 350.1	5.00E+00	na	5.00E+01	na
Bromide	24959-67-9	EPA 9056	1.00E+00	na	1.00E+02	na
Chlorate	7790-93-4	EPA 9056	2.00E-01	na	2.00E+01	na
Chloride	16887-00-6	EPA 9056	2.00E+00	na	2.00E+02	2.50E+05
Conductivity	na	EPA 9050A	na	na	na	na
Cyanide (total)	57-12-5	EPA 9012A	1.00E+00	1.20E+03	1.00E+01	2.00E+02
Nitrate	7697-37-2	EPA 9056	5.00E-01	na	5.00E+01	1.00E+04
Nitrite	14797-65-0	EPA 9056	5.00E-01	na	5.00E+01	1.00E+03
Perchlorate	14797-73-0	EPA 314.0	1.00E-01	1.00E+01	1.00E+00	1.80E+01
pH	na	EPA 9045C/9040B	na	na	na	na
Phosphate (total)	14265-44-2	EPA 365.1	5.00E-01	na	5.00E+01	na
Sulfate	14808-79-8	EPA 9056	2.00E+00	na	2.00E+02	2.50E+05
Surfactants (MBAS)	na	EPA 425.1	1.00E+00	na	2.00E+01	na
TDS	na	EPA 160.1	na	na	1.00E+04	1.90E+06
Total Organic Carbon	7440-44-0	EPA Lloyd Kahn/ 9060	3.00E+02	na	1.00E+03	na
TSS	na	EPA 160.2	na	na	1.00E+04	na
TPH & Fuel Alcohols			ug/kg		ug/L	
GRO(C6-C10)	na	EPA 8015B	5.00E+01	1.00E+03	na	na
DRO(C10-C28)	na	EPA 8015B	4.00E+04	1.00E+03	na	na
ORO (C28-C40)	na	EPA 8015B	4.00E+04	1.00E+03	na	na
Methanol	67-56-1	EPA 8015B	1.00E+03	3.08E+07	4.00E+02	1.82E+03
Ethanol	64-17-5	EPA 8015B	1.00E+03	na	4.00E+02	na
Ethylene glycol	107-21-1	EPA 8015B	5.00E+03	1.23E+08	5.00E+03	7.30E+03

Table 1 (continued)
List of Site-Related Chemicals and Reporting Limits
Phase B Source Area Investigation Work Plan - Area IV
Tronox LLC Facility - Henderson, Nevada

Analyte	CAS No.	Method	Lab RL	RL Goal	Lab RL	RL Goal
		soil / water	soil		water	
Organochlorine Pesticides and PCBs			mg/kg		ug/L	
4,4'-DDD	72-54-8	EPA 8081A	3.30E-03	8.00E-01	5.00E-02	2.80E-02
4,4'-DDE	72-55-9	EPA 8081A	3.30E-03	7.02E-01	5.00E-02	1.98E-02
4,4'-DDT	50-29-3	EPA 8081A	3.30E-03	7.02E-01	5.00E-02	1.98E-02
Aldrin	309-00-2	EPA 8081A	1.70E-03	1.00E-02	5.00E-02	4.00E-02
alpha-BHC	319-84-6	EPA 8081A	1.70E-03	3.59E-02	5.00E-02	1.10E-03
alpha-Chlordane	5103-71-9	EPA 8081A	1.70E-03	6.47E-01	5.00E-02	2.00E+00
beta-BHC	319-85-7	EPA 8081A	1.70E-03	1.00E-04	5.00E-02	3.74E-03
Chlordane, technical	57-74-9	EPA 8081A	8.30E-03	6.47E-01	2.50E-01	2.00E+00
delta-BHC	319-86-8	EPA 8081A	1.70E-03	3.59E-02	5.00E-02	1.10E-03
Dieldrin	60-57-1	EPA 8081A	3.30E-03	1.10E-02	5.00E-02	4.20E-02
Endosulfan I	959-98-8	EPA 8081A	1.70E-03	3.70E+02	5.00E-02	2.19E+01
Endosulfan II	33213-65-9	EPA 8081A	3.30E-03	3.70E+02	5.00E-02	2.19E+01
Endosulfan sulfate	1031-07-8	EPA 8081A	3.30E-03	3.70E+02	5.00E-02	2.19E+01
Endrin	72-20-8	EPA 8081A	3.30E-03	1.85E+01	5.00E-02	2.00E+00
Endrin aldehyde	7421-93-4	EPA 8081A	3.30E-03	4.98E-02	5.00E-02	1.09E+00
Endrin Ketone	53494-70-5	EPA 8081A	3.30E-03	1.85E+01	5.00E-02	1.09E+00
gamma-BHC (Lindane)	58-89-9	EPA 8081A	1.70E-03	1.74E-01	5.00E-02	2.00E-01
gamma-Chlordane	5103-74-2	EPA 8081A	1.70E-03	6.47E-01	5.00E-02	1.20E+00
Heptachlor	76-44-8	EPA 8081A	1.70E-03	3.83E-02	5.00E-02	4.00E-01
Heptachlor epoxide	1024-57-3	EPA 8081A	1.70E-03	1.89E-02	5.00E-02	2.00E-01
Hexachlorobenzene	118-74-1	EPA 8081A	1.70E-03	1.00E-01	5.00E-02	1.00E+00
Methoxychlor	72-43-5	EPA 8081A	1.70E-02	8.00E+00	5.00E-01	4.00E+01
Toxaphene	8001-35-2	EPA 8081A	3.30E-02	1.57E-01	1.00E+00	3.00E+00
Aroclor 1016	12674-11-2	EPA 8082	3.30E-02	2.03E-01	2.00E-01	5.00E-01
Aroclor 1221	11104-28-2	EPA 8082	6.70E-02	2.03E-01	4.00E-01	5.00E-01
Aroclor 1232	11141-16-5	EPA 8082	3.30E-02	2.03E-01	2.00E-01	5.00E-01
Aroclor 1242	53469-21-9	EPA 8082	3.30E-02	2.03E-01	2.00E-01	5.00E-01
Aroclor 1248	12672-29-6	EPA 8082	3.30E-02	2.03E-01	2.00E-01	5.00E-01
Aroclor 1254	11097-69-1	EPA 8082	3.30E-02	2.03E-01	2.00E-01	5.00E-01
Aroclor 1260	11096-82-5	EPA 8082	3.30E-02	2.03E-01	2.00E-01	5.00E-01

Table 1 (continued)
List of Site-Related Chemicals and Reporting Limits
Phase B Source Area Investigation Work Plan - Area IV
Tronox LLC Facility - Henderson, Nevada

Analyte	CAS No.	Method	Lab RL	RL Goal	Lab RL	RL Goal
		soil / water	soil		water	
Dioxins & Furans			ng/kg			
1,2,3,4,6,7,8,9-Ocatchlorodibenzofuran	39001-02-0	EPA 1613B/ 8290	5.90E-01	*	na	na
1,2,3,4,6,7,8,9-Ocatchlorodibenzo-p-dioxin	3268-87-9	EPA 1613B/ 8290	5.70E-01	*	na	na
1,2,3,4,6,7,8-Heptatchlorodibenzofuran	67562-39-4	EPA 1613B/ 8290	2.20E-01	*	na	na
1,2,3,4,6,7,8-Heptatchlorodibenzo-p-dioxin	35822-46-9	EPA 1613B/ 8290	2.60E-01	*	na	na
1,2,3,4,7,8,9-Heptatchlorodibenzofuran	55673-89-7	EPA 1613B/ 8290	3.50E-01	*	na	na
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	EPA 1613B/ 8290	9.00E-02	*	na	na
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	EPA 1613B/ 8290	1.90E-01	*	na	na
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	EPA 1613B/ 8290	1.00E-01	*	na	na
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	EPA 1613B/ 8290	1.90E-01	*	na	na
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	EPA 1613B/ 8290	1.50E-01	*	na	na
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	EPA 1613B/ 8290	1.90E-01	*	na	na
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	EPA 1613B/ 8290	1.40E-01	*	na	na
1,2,3,7,8-Pentachlorodibenzof-p-dioxin	40321-76-4	EPA 1613B/ 8290	1.50E-01	*	na	na
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	EPA 1613B/ 8290	1.10E-01	*	na	na
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	EPA 1613B/ 8290	1.60E-01	*	na	na
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	EPA 1613B/ 8290	1.20E-01	*	na	na
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	EPA 1613B/ 8290	1.70E-01	1.00E+03	na	na
Radionuclides			pCi/g		pCi/L	
Radium 226	13982-63-3	EPA 9015/ 903.1	5.00E-01	2.60E-03	1.00E+00	5.00E+00
Radium 228	15262-20-1	EPA 9320/ 904.0	5.00E-01	8.10E-09	3.00E+00	5.00E+00
Thorium 228	14274-82-9	EML HASL 300 Alpha Spec	5.00E-02	3.62E-10	3.00E-02	1.59E-02
Thorium 230	14269-63-7	EML HASL 300 Alpha Spec	5.00E-02	1.49E-05	3.00E-02	5.23E-02
Thorium 232	7440-29-1	EML HASL 300 Alpha Spec	1.00E-01	1.90E+00	3.00E-02	4.71E-02
Uranium 234	13966-29-5	EML HASL 300 Alpha Spec	4.00E-02	1.53E-02	3.00E-02	6.74E-02
Uranium 235	15117-96-1	EML HASL 300 Alpha Spec	4.00E-02	1.53E-02	3.00E-02	6.63E-02
Uranium 238	7440-61-1	EML HASL 300 Alpha Spec	4.00E-02	1.53E-02	3.00E-02	5.47E-02

Table 1 (continued)
List of Site-Related Chemicals and Reporting Limits
Phase B Source Area Investigation Work Plan - Area IV
Tronox LLC Facility - Henderson, Nevada

Analyte	CAS No.	Method soil / water	Lab RL	RL Goal	Lab RL	RL Goal
			soil		water	
VOCs			mg/kg		ug/L	
1,1,1,2-Tetrachloroethane	630-20-6	EPA 8260	5.00E-03	7.28E-01	1.00E+00	4.32E-02
1,1,1-Trichloroethane	71-55-6	EPA 8260	5.00E-03	1.00E-01	1.00E+00	2.00E+02
1,1,2,2-Tetrachloroethane	79-34-5	EPA 8260	5.00E-03	9.29E-02	1.00E+00	5.53E-03
1,1,2-Trichloroethane	79-00-5	EPA 8260	5.00E-03	1.61E-01	1.00E+00	5.00E+00
1,1-Dichloroethane	75-34-3	EPA 8260	5.00E-03	1.00E+00	1.00E+00	8.11E+01
1,1-Dichloroethene	75-35-4	EPA 8260	5.00E-03	4.13E+01	1.00E+00	7.00E+00
1,1-Dichloropropene	563-58-6	EPA 8260	5.00E-03	1.76E-01	2.00E+00	3.95E-02
1,2,3-Trichlorobenzene	120-82-1	EPA 8260	5.00E-03	2.34E-01	2.00E+00	7.00E+01
1,2,3-Trichloropropane	96-18-4	EPA 8260	5.00E-03	7.60E-03	2.00E+00	5.60E-04
1,2,4-Trichlorobenzene	120-82-1	EPA 8260	5.00E-03	3.00E-01	2.00E+00	7.00E+01
1,2,4-Trimethylbenzene	95-63-6	EPA 8260	5.00E-03	1.70E+01	2.00E+00	1.23E+00
1,2-Dibromo-3-chloropropane	96-12-8	EPA 8260	5.00E-03	2.02E-01	5.00E+00	2.00E-01
1,2-Dibromoethane	106-93-4	EPA 8260	5.00E-03	7.30E-03	1.00E+00	5.00E-02
1,2-Dichlorobenzene	95-50-1	EPA 8260	5.00E-03	9.00E-01	2.00E+00	2.60E+02
1,2-Dichloroethane	107-06-2	EPA 8260	5.00E-03	1.00E-03	1.00E+00	5.00E+00
1,2-Dichloropropane	78-87-5	EPA 8260	5.00E-03	7.42E-02	1.00E+00	5.00E+00
1,3,5-Trimethylbenzene	108-67-8	EPA 8260	5.00E-03	1.60E-03	2.00E+00	1.23E+00
1,3-Dichlorobenzene	541-73-1	EPA 8260	5.00E-03	1.80E-02	2.00E+00	1.83E+01
1,3-Dichloropropane	142-28-9	EPA 8260	5.00E-03	3.61E+01	2.00E+00	1.22E+01
1,4-Dichlorobenzene	106-46-7	EPA 8260	5.00E-03	1.00E-01	2.00E+00	7.50E+01
2,2-Dichloropropane	594-20-7	EPA 8260	5.00E-03	7.42E-02	2.00E+00	1.65E-02
2-Butanone	78-93-3	EPA 8260	1.00E-02	7.82E-02	1.00E+01	6.97E+02
2-Chlorotoluene	95-49-8	EPA 8260	5.00E-03	4.30E-03	5.00E+00	1.22E+01
2-Hexanone	591-78-6	EPA 8260	1.00E-02	2.79E-02	1.00E+01	2.00E+02
4-Chlorotoluene	106-43-4	EPA 8260	5.00E-03	5.60E+01	5.00E+00	1.22E+01
4-Methyl-2-pentanone	108-10-1	EPA 8260	1.00E-02	4.70E+03	1.00E+01	1.99E+02
Acetone	67-64-1	EPA 8260	2.00E-02	8.00E-01	2.00E+01	5.48E+02
Benzene	71-43-2	EPA 8260	5.00E-03	2.00E-03	1.00E+00	5.00E+00
Bromobenzene	108-86-1	EPA 8260	5.00E-03	9.22E+00	2.00E+00	2.03E+00
Bromochloromethane	74-97-5	EPA 8260	5.00E-03	1.83E-01	2.00E+00	1.81E-02

Table 1 (continued)
List of Site-Related Chemicals and Reporting Limits
Phase B Source Area Investigation Work Plan - Area IV
Tronox LLC Facility - Henderson, Nevada

Analyte	CAS No.	Method soil / water	Lab RL soil mg/kg	RL Goal soil mg/kg	Lab RL water ug/L	RL Goal water ug/L
VOCs						
Bromodichloromethane	75-27-4	EPA 8260	5.00E-03	1.83E-01	1.00E+00	2.10E-01
Bromoform	75-25-2	EPA 8260	5.00E-03	4.00E-02	1.00E+00	8.30E-04
Bromomethane	74-83-9	EPA 8260	5.00E-03	1.31E+00	2.00E+00	8.66E-01
Carbon Tetrachloride	56-23-5	EPA 8260	5.00E-03	3.00E-03	1.00E+00	5.00E+00
Chlorobenzene	108-90-7	EPA 8260	5.00E-03	7.00E-02	1.00E+00	3.90E+01
Chloroethane	75-00-3	EPA 8260	5.00E-03	6.49E-01	2.00E+00	4.64E-01
Chloroform	67-66-3	EPA 8260	5.00E-03	3.00E-02	1.00E+00	8.00E+01
Chloromethane	74-87-3	EPA 8260	5.00E-03	1.56E+01	2.00E+00	6.70E-01
cis-1,2-Dichloroethene	156-92-2	EPA 8260	5.00E-03	1.46E+01	1.00E+00	7.00E+01
cis-1,3-Dichloropropene	10061-01-5	EPA 8260	5.00E-03	1.76E-01	1.00E+00	3.95E-02
Dibromochloromethane	124-48-1	EPA 8260	5.00E-03	2.55E-01	1.00E+00	3.20E-01
Dibromomethane	74-95-3	EPA 8260	5.00E-03	2.34E+01	1.00E+00	6.08E+00
Dichlorodifluoromethane	75-71-8	EPA 8260	5.00E-03	3.08E+01	1.00E+00	3.95E+01
Diisopropyl ether (DIPE)	108-20-3	EPA 8260	5.00E-03	na	1.00E+00	na
Ethylbenzene	100-41-4	EPA 8260	5.00E-03	7.40E+02	1.00E+00	7.00E+02
Ethyl-tert-butyl ether (ETBE)	637-92-3	EPA 8260	5.00E-03	3.64E+00	1.00E+00	1.10E+00
Hexachlorobutadiene	87-68-3	EPA 8260	5.00E-03	1.00E-01	5.00E+00	8.62E-02
Isopropyl Benzene	98-28-8	EPA 8260	5.00E-03	2.00E+02	2.00E+00	6.58E+01
Methylene Chloride	75-09-2	EPA 8260	5.00E-03	1.00E-03	2.00E+00	5.00E+00
Methyl-tert-butyl ether (MTBE)	1634-04-4	EPA 8260	5.00E-03	3.64E+00	1.00E+00	2.00E+01
Naphthalene	91-20-3	EPA 8260	5.00E-03	4.00E+00	2.00E+00	6.20E-01
n-Butylbenzene	104-51-8	EPA 8260	5.00E-03	2.19E+02	2.00E+00	2.43E+01
n-Propylbenzene	103-65-1	EPA 8260	5.00E-03	2.19E+02	2.00E+00	2.43E+01
p-Isopropyltoluene	99-87-6	EPA 8260	5.00E-03	9.00E+01	2.00E+00	2.06E+01
sec-Butylbenzene	135-98-8	EPA 8260	5.00E-03	1.63E+02	2.00E+00	2.43E+01
Styrene	100-42-5	EPA 8260	5.00E-03	1.80E+03	1.00E+00	1.00E+02
tert-Amyl-methyl ether (TAME)	994-05-8	EPA 8260	5.00E-03	na	1.00E+00	na
tert-Butyl alcohol (TBA)	75-65-0	EPA 8260	1.00E-01	na	1.00E+02	na
tert-Butylbenzene	98-06-6	EPA 8260	5.00E-03	1.97E+02	2.00E+00	2.43E+01
Tetrachloroethene	127-18-4	EPA 8260	5.00E-03	3.00E-03	1.00E+00	5.00E+00

Table 1 (continued)
List of Site-Related Chemicals and Reporting Limits
Phase B Source Area Investigation Work Plan - Area IV
Tronox LLC Facility - Henderson, Nevada

Analyte	CAS No.	Method soil / water	Lab RL soil	RL Goal soil	Lab RL water	RL Goal water
VOCs			mg/kg		ug/L	
Toluene	108-88-3	EPA 8260	5.00E-03	6.00E-01	1.00E+00	1.50E+02
trans-1,2-Dichloroethene	156-60-5	EPA 8260	5.00E-03	2.35E+01	1.00E+00	1.00E+02
trans-1,3-Dichloropropene	10061-02-6	EPA 8260	5.00E-03	1.76E-01	1.00E+00	3.95E-02
Trichloroethene	79-01-6	EPA 8260	5.00E-03	3.00E-03	1.00E+00	5.00E+00
Trichlorofluoromethane	75-69-4	EPA 8260	5.00E-03	1.09E-01	1.00E+00	1.80E+01
Vinyl Chloride	75-01-4	EPA 8260	5.00E-03	7.46E-02	1.00E+00	2.00E+00
Xylenes (total)	1330-20-7	EPA 8260	5.00E-03	9.00E+01	1.00E+00	1.00E+04
SVOCs			mg/kg		ug/L	
1,4-Dioxane	123-91-1	EPA 8270	6.60E-02	1.57E+01	2.00E-01	6.11E-01
2-Methylnaphthalene	91-57-6	EPA 8270	6.60E-03	1.88E+01	2.00E-01	6.20E-01
Acenaphthene	83-32-9	EPA 8270	6.60E-03	2.92E+03	2.00E-01	3.65E+01
Acenaphthylene	208-96-8	EPA 8270	6.60E-03	2.92E+03	2.00E-01	3.65E+01
Anthracene	120-12-7	EPA 8270	6.60E-03	2.40E+04	2.00E-01	1.83E+02
Benzo(a)anthracene	56-55-3	EPA 8270	6.60E-03	8.00E-02	2.00E-01	9.21E-03
Benzo(a)pyrene	50-32-8	EPA 8270	6.60E-03	2.11E-02	2.00E-01	2.00E-01
Benzo(b)fluoranthene	205-99-2	EPA 8270	6.60E-03	2.00E-01	2.00E-01	9.21E-03
Benzo(g,h,i)perylene	191-24-2	EPA 8270	6.60E-03	7.17E+01	2.00E-01	1.83E+01
Benzo(k)fluoranthene	207-08-9	EPA 8270	6.60E-03	2.00E+00	2.00E-01	9.21E-02
Bis(2-ethylhexyl)phthalate	117-81-7	EPA 8270	6.60E-03	1.23E+01	2.00E-01	6.00E+00
Butylbenzylphthalate	85-68-7	EPA 8270	6.60E-03	1.23E+04	2.00E-01	7.30E+02
Chrysene	218-01-9	EPA 8270	6.60E-03	8.00E+00	2.00E-01	9.21E-01
Dibenzo(a,h)anthracene	53-70-3	EPA 8270	6.60E-03	2.11E-02	2.00E-01	9.21E-04
Diethylphthalate	84-66-2	EPA 8270	6.60E-03	1.50E+00	2.00E-01	2.92E+03
Dimethylphthalate	131-11-3	EPA 8270	6.60E-03	6.16E+05	2.00E-01	3.65E+04
Di-n-butylphthalate	84-74-2	EPA 8270	6.60E-03	2.70E+02	2.00E-01	3.65E+02
Di-n-octylphthalate	117-84-0	EPA 8270	6.60E-03	2.46E+03	2.00E-01	1.46E+02
Fluoranthene	206-44-0	EPA 8270	6.60E-03	2.10E+02	2.00E-01	1.46E+02
Fluorene	86-73-7	EPA 8270	6.60E-03	2.63E+03	2.00E-01	2.43E+01
Hexachlorobenzene	118-74-1	EPA 8270	6.60E-03	1.00E-01	2.00E-01	1.00E+00

Table 1 (continued)
List of Site-Related Chemicals and Reporting Limits
Phase B Source Area Investigation Work Plan - Area IV
Tronox LLC Facility - Henderson, Nevada

Analyte	CAS No.	Method soil / water	Lab RL	RL Goal	Lab RL	RL Goal
			soil		water	
SVOCs			mg/kg		ug/L	
Indeno(1,2,3-cd)pyrene	193-39-5	EPA 8270	6.60E-03	2.11E-01	2.00E-01	9.21E-03
Naphthalene	91-20-3	EPA 8270	6.60E-03	4.00E+00	2.00E-01	6.20E-01
Nitrobenzene	98-95-3	EPA 8270	6.60E-03	1.03E+01	2.00E-01	3.40E-01
Octachlorostyrene	29082-74-4	EPA 8270	6.60E-03	na	2.00E-01	na
Phenanthrene	85-01-8	EPA 8270	6.60E-03	9.60E+00	2.00E-01	1.80E+02
Pyrene	129-00-0	EPA 8270	6.60E-03	2.10E+02	2.00E-01	1.83E+01
Pyridine	110-86-1	EPA 8270	6.60E-03	6.16E+01	2.00E-01	3.65E+00
Asbestos			structures/gPM10			
Amphibole Protocol Structures	na	EPA/540/R-97/028 modified	3.00E+06	na	na	na
Chrysotile Protocol Structures	na	EPA/540/R-97/028 modified	3.00E+06	na	na	na
Formaldehyde			mg/kg		ug/L	
Formaldehyde	50-00-0	EPA 8315A	1.00E+03	1.0E+04	8.00E+00	5.5E+02

** RL Goal for the TEQ sum for all congeners is 1000 pg/g*
na = not applicable

Grid Location	LOU Number	Phase B Boring No.	Sample ID Number	Sample Depths[1] (ft, bgs)	Perchlorate (EPA 314.0)	Metals (EPA 6020)	Hex Cr (EPA 7199)	TPH-DRO/ORO (EPA 8015B)	VOCs[2] (EPA 8260B)	Wet Chemistry[3]	Total Cyanide (EPA 9012A)	OCPs[4] (8081A)	SVOCs[5] (EPA 8270C)	Radio-nuclides[6]	Dioxins/ Furans[7]	PCBs[8] (EPA 1668)	Asbestos[9] EPA/540/R-97/028	Geo-technical Tests[10]	Location Description and Characterized Area Rationale
Borings are organized by grid location as shown on Plate A - Starting point is on the northwestern most grid in Area IV (P-5) and ending with the southeastern most grid in Area IV (U-7).																			
P-5	n/a	RSAP5	RSAP5-0.0	0.0													X		Boring located to evaluate soils for area-wide coverage.
P-5	n/a		RSAP5-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
P-5	n/a		RSAP5-10	10	X	X	X	X	X	X		Hold	X	X					
P-5	n/a		RSAP5-20	20	X	X	X	X	X	X		Hold	X	X					
P-5	n/a		RSAP5-30	30	X	X	X	X	X	X		Hold	X	X					
P-5	n/a		RSAP5-37	37	X	X	X	X	X	X		X	X	X					
Q-3	41	RSAQ3	RSAQ3-0.0	0.0													X		Boring located to evaluate LOU 41 (Tenant stains north of Unit 1).
Q-3	41		RSAQ3-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-3	41		RSAQ3-10	10	X	X	X	X	X	X		Hold	X	X					
Q-3	41		RSAQ3-20	20	X	X	X	X	X	X		Hold	X	X					
Q-3	41		RSAQ3-30	30	X	X	X	X	X	X		Hold	X	X					
Q-3	41		RSAQ3-40	40	X	X	X	X	X	X		X	X	X					
Q-3	41, 60	SA169	SA169-0.0	0.0													X		Boring located to evaluate LOU 41 (Tenant stains north of Unit 1) and a pipeline segment of LOU 60 (Acid Drain System).
Q-3	41, 60		SA169-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-3	41, 60		SA169-10	10	X	X	X	X	X	X		Hold	X	X					
Q-3	41, 60		SA169-20	20	X	X	X	X	X	X		Hold	X	X					
Q-3	41, 60		SA169-30	30	X	X	X	X	X	X		Hold	X	X					
Q-3	41, 60		SA169-40	40	X	X	X	X	X	X		X	X	X					
Q-3	65a	SA193	SA193-0.0	0.0													X		Boring located to evaluate LOU 65a (Ebony Construction Sites) and soils north (downgradient) of Unit 1.
Q-3	65a		SA193-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-3	65a		SA193-10	10	X	X	X	X	X	X		Hold	X	X					
Q-3	65a		SA193-20	20	X	X	X	X	X	X		Hold	X	X					
Q-3	65a		SA193-30	30	X	X	X	X	X	X		Hold	X	X					
Q-3	65a		SA193-40	40	X	X	X	X	X	X		X	X	X					
Q-4	4	RSAQ4	RSAQ4-0.0	0.0													X		Boring located to evaluate northern area of LOU 4 (Hardesty Chemical Company Site).
Q-4	4		RSAQ4-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-4	4		RSAQ4-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	4		RSAQ4-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	4		RSAQ4-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	4		RSAQ4-40	40	X	X	X	X	X	X		X	X	X					
Q-4	4, 60	SA84	SA84-0.0	0.0													X		Boring located to evaluate northern area of LOU 4 (Hardesty Chemical Company Site) and a pipeline segment of LOU 60 (Acid Drain System).
Q-4	4, 60		SA84-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-4	4, 60		SA84-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA84-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA84-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA84-35	35	X	X	X	X	X	X		X	X	X					
Q-4	4, 27	SA101	SA101-0.0	0.0													X		Boring located to evaluate northern area of LOU 4 (Hardesty Chemical Company Site) and LOU 27 (Former PCB Storage Area).
Q-4	4, 27		SA101-0.5	0.5	X	X	X	X	X	X		X	X	X	X	X			
Q-4	4, 27		SA101-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 27		SA101-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 27		SA101-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 27		SA101-40	40	X	X	X	X	X	X		X	X	X					
Q-4	26	SA120	SA120-0.0	0.0													X		Boring located to evaluate LOU 26 (Trash Storage Area) and is north (downgradient) from Unit 1 for general area-wide coverage.
Q-4	26		SA120-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-4	26		SA120-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	26		SA120-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	26		SA120-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	26		SA120-40	40	X	X	X	X	X	X		X	X	X					
Q-4	26, 4	SA121	SA121-0.0	0.0													X		Boring located to evaluate LOU 26 (Trash Storage Area), LOU 4 (former Hardesty Chemical Company Site), and the boring is north (downgradient) of Unit 2 for general area coverage.
Q-4	26, 4		SA121-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-4	26, 4		SA121-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	26, 4		SA121-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	26, 4		SA121-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	26, 4		SA121-40	40	X	X	X	X	X	X		X	X	X					
Q-4	4	SA138	SA138-0.0	0.0													X		Boring located to evaluate northern area of LOU 4 (former Hardesty Chemical Company Site).
Q-4	4		SA138-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-4	4		SA138-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	4		SA138-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	4		SA138-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	4		SA138-35	35	X	X	X	X	X	X		X	X	X					
Q-4	4, 60	SA148	SA148-0.0	0.0													X		Boring located to evaluate southern area of LOU 4 (former Hardesty Chemical Company Site) and a pipeline segment of LOU 60 (Acid Drain System).
Q-4	4, 60		SA148-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-4	4, 60		SA148-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA148-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA148-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA148-35	35	X	X	X	X	X	X		X	X	X					
Q-4	4	SA203	SA203-0.0	0													X		Boring located to evaluate pipeline route connecting northern and southern areas of LOU 4 (former Hardesty Chemical Company Site).
Q-4	4		SA203-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-4	4		SA203-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	4		SA203-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	4		SA203-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	4		SA203-40	40	X	X	X	X	X	X		X	X	X					

Grid Location	LOU Number	Phase B Boring No.	Sample ID Number	Sample Depths[1] (ft, bgs)	Perchlorate (EPA 314.0)	Metals (EPA 6020)	Hex Cr (EPA 7199)	TPH-DRO/ORO (EPA 8015B)	VOCs[2] (EPA 8260B)	Wet Chemistry[3]	Total Cyanide (EPA 9012A)	OCPs[4] (8081A)	SVOCs[5] (EPA 8270C)	Radio-nuclides[6]	Dioxins/ Furans[7]	PCBs[8] (EPA 1668)	Asbestos[9] EPA/540/R-97/028	Geo-technical Tests[10]	Location Description and Characterized Area Rationale
Borings are organized by grid location as shown on Plate A - Starting point is on the northwestern most grid in Area IV (P-5) and ending with the southeastern most grid in Area IV (U-7).																			
Q-4	4, 60	SA204	SA204-0.0	0													X		Boring located to evaluate southern area of LOU 4 (former Hardesty Chemical Company Site) and a pipeline segment of LOU 60 (Acid Drain System).
Q-4	4, 60		SA204-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-4	4, 60		SA204-10	10	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA204-20	20	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA204-30	30	X	X	X	X	X	X		Hold	X	X					
Q-4	4, 60		SA204-40	40	X	X	X	X	X	X		X	X	X					
Q-5	4, 28, 59	RSAQ5	RSAQ5-0.0	0													X		Boring located to evaluate LOU 4 (Former Hardesty Chemical Company Site), LOU 28 (Hazardous Waste Storage Area), LOU 59 (Storm Sewer Drain), and for area-wide coverage.
Q-5	4, 28, 59		RSAQ5-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-5	4, 28, 59		RSAQ5-10	10	X	X	X	X	X	X		Hold	X	X					
Q-5	4, 28, 59		RSAQ5-20	20	X	X	X	X	X	X		Hold	X	X					
Q-5	4, 28, 59		RSAQ5-30	30	X	X	X	X	X	X		Hold	X	X					
Q-5	4, 28, 59		RSAQ5-40	40	X	X	X	X	X	X		X	X	X					
Q-5	28, 59	SA205	RSA205-0.0	0													X		Boring located as northward stepout boring from Phase A boring SA04 (for Hex Cr) to evaluate LOU 59 as requested by NDEP in comments on Phase A investigation report and LOU 28.
Q-5	28, 59		RSA205-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
Q-5	28, 59		RSA205-10	10	X	X	X	X	X	X		Hold	X	X					
R-3	60, Unit 1	RSAR3	RSAR3-0.0	0.0													X		Boring located to evaluate LOU 60 (Acid Drain System), Unit 1, and for general area-wide coverage.
R-3	60, Unit 1		RSAR3-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
R-3	60, Unit 1		RSAR3-10	10	X	X	X	X	X	X		Hold	X	X					
R-3	60, Unit 1		RSAR3-20	20	X	X	X	X	X	X		Hold	X	X					
R-3	60, Unit 1		RSAR3-30	30	X	X	X	X	X	X		Hold	X	X					
R-3	60, Unit 1		RSAR3-40	40	X	X	X	X	X	X		X	X	X					
R-3	Unit 1	SA110	SA110-0.0	0.0													X		Boring located to evaluate Unit 1 and for general area-wide coverage.
R-3	Unit 1		SA110-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
R-3	Unit 1		SA110-10	10	X	X	X	X	X	X		Hold	X	X					
R-3	Unit 1		SA110-20	20	X	X	X	X	X	X		Hold	X	X					
R-3	Unit 1		SA110-30	30	X	X	X	X	X	X		Hold	X	X					
R-3	Unit 1		SA110-40	40	X	X	X	X	X	X		X	X	X					
R-3	59, 65b, Unit1	SA192	SA192-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer Drain), LOU 65b (former Buckles Construction Company Site) and Unit 1.
R-3	59, 65b, Unit1		SA192-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
R-3	59, 65b, Unit1		SA192-10	10	X	X	X	X	X	X		Hold	X	X					
R-3	59, 65b, Unit1		SA192-20	20	X	X	X	X	X	X		Hold	X	X					
R-3	59, 65b, Unit1		SA192-30	30	X	X	X	X	X	X		Hold	X	X					
R-3	59, 65b, Unit1		SA192-40	40	X	X	X	X	X	X		X	X	X					
R-4	25, 59, Unit 2	RSAR4	RSAR4-0.0	0.0													X		Boring located to evaluate LOU 25 (Process Hardware Storage Area), LOU 59 (Storm Sewer System), and for Unit 2 area coverage.
R-4	25, 59, Unit 2		RSAR4-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
R-4	25, 59, Unit 2		RSAR4-10	10	X	X	X	X	X	X		Hold	X	X					
R-4	25, 59, Unit 2		RSAR4-20	20	X	X	X	X	X	X		Hold	X	X					
R-4	25, 59, Unit 2		RSAR4-30	30	X	X	X	X	X	X		Hold	X	X					
R-4	25, 59, Unit 2		RSAR4-40	40	X	X	X	X	X	X		X	X	X					
R-4	25, Unit 2	SA29	SA29-0.0	0.0													X		Boring located to evaluate potential impacts associated with surface runoff from LOU 25 (Process Hardware Storage Area) and for Unit 2 area coverage.
R-4	25, Unit 2		SA29-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
R-4	25, Unit 2		SA29-10	10	X	X	X	X	X	X		Hold	X	X					
R-4	25, Unit 2		SA29-20	20	X	X	X	X	X	X		Hold	X	X					
R-4	25, Unit 2		SA29-30	30	X	X	X	X	X	X		Hold	X	X					
R-4	25, Unit 2		SA29-35	35	X	X	X	X	X	X		X	X	X					
R-4	25, 59, 60, Unit 2	SA111	SA111-0.0	0.0													X		Boring located to evaluate LOU 25 (Process Hardware Storage Area), LOU 59 (Storm Sewer Drain), LOU 60 (Acid Drain System) and for Unit 2 area coverage.
R-4	25, 59, 60, Unit 2		SA111-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
R-4	25, 59, 60, Unit 2		SA111-10	10	X	X	X	X	X	X		Hold	X	X					
R-4	25, 59, 60, Unit 2		SA111-20	20	X	X	X	X	X	X		Hold	X	X					
R-4	25, 59, 60, Unit 2		SA111-30	30	X	X	X	X	X	X		Hold	X	X					
R-4	25, 59, 60, Unit 2		SA111-40	40	X	X	X	X	X	X		X	X	X					
R-4	25, Unit 1	SA190	SA190-0.0	0.0													X		Boring located to evaluate LOU 25 (Process Hardware Storage Area) and for Unit 1 area-coverage.
R-4	25, Unit 1		SA190-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
R-4	25, Unit 1		SA190-10	10	X	X	X	X	X	X		Hold	X	X					
R-4	25, Unit 1		SA190-20	20	X	X	X	X	X	X		Hold	X	X					
R-4	25, Unit 1		SA190-30	30	X	X	X	X	X	X		Hold	X	X					
R-4	25, Unit 1		SA190-40	40	X	X	X	X	X	X		X	X	X					
R-4	Unit 2	SA191	SA191-0.0	0.0													X		Boring located to evaluate for Unit 2 area coverage.
R-4	Unit 2		SA191-0.5	0.5	X	X	X	X	X	X		X		X	X				
R-4	Unit 2		SA191-10	10	X	X	X	X	X	X		Hold		X					
R-4	Unit 2		SA191-20	20	X	X	X	X	X	X		Hold		X					
R-4	Unit 2		SA191-30	30	X	X	X	X	X	X		Hold		X					
R-4	Unit 2		SA191-40	40	X	X	X	X	X	X		X		X					
R-5	4, 59, 60	RSAR5	RSAR5-0.0	0.0													X		Boring located to evaluate LOU 4 (Former Hardesty Chemical Company Site), LOU 59 (Storm Sewer System), and LOU 60 (Acid Drain System) and for Unit 3 area-wide coverage.
R-5	4, 59, 60		RSAR5-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
R-5	4, 59, 60		RSAR5-10	10	X	X	X	X	X	X		Hold	X	X					
R-5	4, 59, 60		RSAR5-20	20	X	X	X	X	X	X		Hold	X	X					
R-5	4, 59, 60		RSAR5-30	30	X	X	X	X	X	X		Hold	X	X					
R-5	4, 59, 60		RSAR5-40	40	X	X	X	X	X	X		X	X	X					
R-5	42	SA135	SA135-0.0	0.0													X		Boring located in LOU 42 to evaluate local soil impacts due to potential releases.
R-5	42		SA135-0.5	0.5	X	X	X			X		X		X	X				
R-5	42		SA135-10	10	X	X	X			X		Hold		X					
R-5	42		SA135-20	20	X	X	X			X		Hold		X					
R-5	42		SA135-30	30	X	X	X			X		Hold		X					
R-5	42		SA135-40	40	X	X	X			X		X		X					

Grid Location	LOU Number	Phase B Boring No.	Sample ID Number	Sample Depths[1] (ft, bgs)	Perchlorate (EPA 314.0)	Metals (EPA 6020)	Hex Cr (EPA 7199)	TPH-DRO/ORO (EPA 8015B)	VOCs[2] (EPA 8260B)	Wet Chemistry[3]	Total Cyanide (EPA 9012A)	OCPs[4] (8081A)	SVOCs[5] (EPA 8270C)	Radio-nuclides[6]	Dioxins/Furans[7]	PCBs[8] (EPA 1668)	Asbestos[9] EPA/540/R-97/028	Geo-technical Tests[10]	Location Description and Characterized Area Rationale
Borings are organized by grid location as shown on Plate A - Starting point is on the northwestern most grid in Area IV (P-5) and ending with the southeastern most grid in Area IV (U-7).																			
S-3	n/a	RSAS3	RSAS3-0.0	0.0													X		Boring located approximately 200 feet southwest of Unit 1 for area-wide coverage.
S-3	n/a		RSAS3-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
S-3	n/a		RSAS3-10	10	X	X	X	X	X	X		Hold	X	X	X				
S-3	n/a		RSAS3-20	20	X	X	X	X	X	X		Hold	X	X	X				
S-3	n/a		RSAS3-30	30	X	X	X	X	X	X		Hold	X	X	X				
S-3	n/a		RSAS3-40	40	X	X	X	X	X	X		X	X	X	X				
S-4	59	RSAS4	RSAS4-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) 350 feet south of Unit 2 for area-wide coverage.
S-4	59		RSAS4-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
S-4	59		RSAS4-10	10	X	X	X	X	X	X		Hold	X	X					
S-4	59		RSAS4-20	20	X	X	X	X	X	X		Hold	X	X					
S-4	59		RSAS4-30	30	X	X	X	X	X	X		Hold	X	X					
S-4	59		RSAS4-40	40	X	X	X	X	X	X		X	X	X					
S-5	n/a	RSAS5	RSAS5-0.0	0.0													X		Boring located 150 feet south of Unit 3 for area-wide coverage and north (downgradient) of WAPA Site.
S-5	n/a		RSAS5-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
S-5	n/a		RSAS5-10	10	X	X	X	X	X	X		Hold	X	X					
S-5	n/a		RSAS5-20	20	X	X	X	X	X	X		Hold	X	X					
S-5	n/a		RSAS5-30	30	X	X	X	X	X	X		Hold	X	X					
S-5	n/a		RSAS5-40	40	X	X	X	X	X	X		X	X	X					
S-6	n/a	RSAS6	RSAS6-0.0	0.0													X		Boring located 100 feet south-southeast of Tronox Administration Building for area-wide coverage.
S-6	n/a		RSAS6-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
S-6	n/a		RSAS6-10	10	X	X	X	X	X	X		Hold	X	X					
S-6	n/a		RSAS6-20	20	X	X	X	X	X	X		Hold	X	X					
S-6	n/a		RSAS6-30	30	X	X	X	X	X	X		Hold	X	X					
S-6	n/a		RSAS6-40	40	X	X	X	X	X	X		X	X	X					
S-7	n/a	RSAS7	RSAS7-0.0	0.0													X		Boring located to evaluate soil for general area-wide coverage.
S-7	n/a		RSAS7-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
S-7	n/a		RSAS7-10	10	X	X	X	X	X	X		Hold	X	X					
S-7	n/a		RSAS7-20	20	X	X	X	X	X	X		Hold	X	X					
S-7	n/a		RSAS7-30	30	X	X	X	X	X	X		Hold	X	X					
S-7	n/a		RSAS7-40	40	X	X	X	X	X	X		X	X	X					
T-3	59	RSAT3	RSAT3-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) and for general area-wide coverage.
T-3	59		RSAT3-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
T-3	59		RSAT3-10	10	X	X	X	X	X	X	X	Hold	X	X					
T-3	59		RSAT3-20	20	X	X	X	X	X	X	X	Hold	X	X					
T-3	59		RSAT3-30	30	X	X	X	X	X	X	X	Hold	X	X					
T-3	59		RSAT3-40	40	X	X	X	X	X	X	X	X	X	X					
T-4	59	RSAT4	RSAT4-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) and for general area-wide coverage.
T-4	59		RSAT4-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
T-4	59		RSAT4-10	10	X	X	X	X	X	X		Hold	X	X					
T-4	59		RSAT4-20	20	X	X	X	X	X	X		Hold	X	X					
T-4	59		RSAT4-30	30	X	X	X	X	X	X		Hold	X	X					
T-4	59		RSAT4-40	40	X	X	X	X	X	X		X	X	X					
T-5	n/a	RSAT5	RSAT5-0.0	0.0													X		Boring located approximately 200 feet west of Tronox Purchasing/Training Building to evaluate soils for general area-wide coverage.
T-5	n/a		RSAT5-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
T-5	n/a		RSAT5-10	10	X	X	X	X	X	X		Hold	X	X					
T-5	n/a		RSAT5-20	20	X	X	X	X	X	X		Hold	X	X					
T-5	n/a		RSAT5-30	30	X	X	X	X	X	X		Hold	X	X					
T-5	n/a		RSAT5-40	40	X	X	X	X	X	X		X	X	X					
T-5	59	SA115	SA115-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) and for general area-wide coverage.
T-5	59		SA115-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
T-5	59		SA115-10	10	X	X	X	X	X	X	X	Hold	X	X					
T-5	59		SA115-20	20	X	X	X	X	X	X	X	Hold	X						
T-5	59		SA115-30	30	X	X	X	X	X	X	X	Hold	X						
T-5	59		SA115-40	40	X	X	X	X	X	X	X	X	X						
T-5	59	SA116	SA116-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) and for general area-wide coverage.
T-5	59		SA116-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
T-5	59		SA116-10	10	X	X	X	X	X	X	X	Hold	X	X					
T-5	59		SA116-20	20	X	X	X	X	X	X	X	Hold	X	X					
T-5	59		SA116-30	30	X	X	X	X	X	X	X	Hold	X	X					
T-5	59		SA116-40	40	X	X	X	X	X	X	X	X	X	X					
T-6	59, 62	SA119	SA119-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) adjacent to former State Industries building (Building T-5) and LOU 62 (State Industries, Inc. Site).
T-6	59, 62		SA119-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
T-6	59, 62		SA119-10	10	X	X	X	X	X	X	X	Hold	X	X					
T-6	59, 62		SA119-20	20	X	X	X	X	X	X	X	Hold	X	X					
T-6	59, 62		SA119-30	30	X	X	X	X	X	X	X	Hold	X	X					
T-6	59, 62		SA119-40	40	X	X	X	X	X	X	X	X	X	X					
T-6	n/a	RSAT6	RSAT6-0.0	0.0													X		Boring located to evaluate soils for general area-wide coverage.
T-6	n/a		RSAT6-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
T-6	n/a		RSAT6-10	10	X	X	X	X	X	X		Hold	X	X					
T-6	n/a		RSAT6-20	20	X	X	X	X	X	X		Hold	X	X					
T-6	n/a		RSAT6-30	30	X	X	X	X	X	X		Hold	X	X					
T-6	n/a		RSAT6-40	40	X	X	X	X	X	X		X	X	X					
T-6	59	SA118	SA118-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System).
T-6	59		SA118-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
T-6	59		SA118-10	10	X	X	X	X	X	X		Hold	X	X					

Grid Location	LOU Number	Phase B Boring No.	Sample ID Number	Sample Depths[1] (ft, bgs)	Perchlorate (EPA 314.0)	Metals (EPA 6020)	Hex Cr (EPA 7199)	TPH-DRO/ORO (EPA 8015B)	VOCs[2] (EPA 8260B)	Wet Chemistry[3]	Total Cyanide (EPA 9012A)	OCPs[4] (8081A)	SVOCs[5] (EPA 8270C)	Radio-nuclides[6]	Dioxins/ Furans[7]	PCBs[8] (EPA 1668)	Asbestos[9] EPA/540/R-97/028	Geo-technical Tests[10]	Location Description and Characterized Area Rationale
Borings are organized by grid location as shown on Plate A - Starting point is on the northwestern most grid in Area IV (P-5) and ending with the southeastern most grid in Area IV (U-7).																			
T-6	59		SA118-20	20	X	X	X	X	X	X		Hold	X	X					
T-6	59		SA118-30	30	X	X	X	X	X	X		Hold	X	X					
T-6	59		SA118-40	40	X	X	X	X	X	X		X	X	X					
T-7	59	RSAT7	RSAT7-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) and for general area-wide coverage.
T-7	59		RSAT7-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
T-7	59		RSAT7-10	10	X	X	X	X	X	X		Hold	X	X					
T-7	59		RSAT7-20	20	X	X	X	X	X	X		Hold	X	X					
T-7	59		RSAT7-30	30	X	X	X	X	X	X		Hold	X	X					
T-7	59		RSAT7-40	40	X	X	X	X	X	X		X	X	X					
T-8	59	RSAT8	RSAT8-0.0	0.0													X		Boring located to evaluate LOU 59 (Storm Sewer System) and for general area-wide coverage.
T-8	59		RSAT8-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
T-8	59		RSAT8-10	10	X	X	X	X	X	X		Hold	X	X					
T-8	59		RSAT8-20	20	X	X	X	X	X	X		Hold	X	X					
T-8	59		RSAT8-30	30	X	X	X	X	X	X		Hold	X	X					
T-8	59		RSAT8-40	40	X	X	X	X	X	X		X	X	X					
U-4	62	RSAU4	RSAU4-0.0	0.0													X		Boring located to evaluate former western pond in LOU 62 (State Industries, Inc. Site).
U-4	62		RSAU4-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
U-4	62		RSAU4-10	10	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		RSAU4-20	20	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		RSAU4-30	30	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		RSAU4-40	40	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		RSAU4-50	50	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		RSAU4-60	60	X	X	X	X	X	X	X	X	X	X					
U-4	62	SA146	SA146-0.0	0.0													X		Boring located to evaluate former eastern pond in LOU 62 (State Industries, Inc. Site).
U-4	62		SA146-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
U-4	62		SA146-10	10	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA146-20	20	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA146-30	30	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA146-40	40	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA146-50	50	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA146-60	60	X	X	X	X	X	X	X	X	X	X					
U-4	62	SA147	SA147-0.0	0.0													X		Boring located to evaluate former western pond in LOU 62 (State Industries, Inc. Site).
U-4	62		SA147-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
U-4	62		SA147-10	10	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA147-20	20	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA147-30	30	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA147-40	40	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA147-50	50	X	X	X	X	X	X	X	Hold	X	X					
U-4	62		SA147-60	60	X	X	X	X	X	X	X	X	X	X					
U-5	62	RSAU5	RSAU5-0.0	0.0													X		Boring located to evaluate former eastern pond in LOU 62 (State Industries, Inc. Site).
U-5	62		RSAU5-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
U-5	62		RSAU5-10	10	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		RSAU5-20	20	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		RSAU5-30	30	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		RSAU5-40	40	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		RSAU5-50	50	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		RSAU5-60	60	X	X	X	X	X	X	X	X	X	X					
U-5	62	SA28	SA28-0.0	0.0													X		Boring located to evaluate former eastern pond in LOU 62 (State Industries, Inc. Site).
U-5	62		SA28-0.5	0.5	X	X	X	X	X	X	X	X	X	X	X				
U-5	62		SA28-10	10	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		SA28-20	20	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		SA28-30	30	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		SA28-40	40	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		SA28-50	50	X	X	X	X	X	X	X	Hold	X	X					
U-5	62		SA28-60	60	X	X	X	X	X	X	X	X	X	X					
U-6	n/a	RSAU6	RSAU6-0.0	0.0													X		Boring located to evaluate soil for area-wide coverage.
U-6	n/a		RSAU6-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
U-6	n/a		RSAU6-10	10	X	X	X	X	X	X		Hold	X	X					
U-6	n/a		RSAU6-20	20	X	X	X	X	X	X		Hold	X	X					
U-6	n/a		RSAU6-30	30	X	X	X	X	X	X		Hold	X	X					
U-6	n/a		RSAU6-40	40	X	X	X	X	X	X		Hold	X	X					
U-6	n/a		RSAU6-50	50	X	X	X	X	X	X		Hold	X	X					
U-6	n/a		RSAU6-60	60	X	X	X	X	X	X		X	X	X					
U-7	n/a	RSAU7	RSAU7-0.0	0.0													X		Boring located to evaluate soil for area-wide coverage.
U-7	n/a		RSAU7-0.5	0.5	X	X	X	X	X	X		X	X	X	X				
U-7	n/a		RSAU7-10	10	X	X	X	X	X	X		Hold	X	X					
U-7	n/a		RSAU7-20	20	X	X	X	X	X	X		Hold	X	X					
U-7	n/a		RSAU7-30	30	X	X	X	X	X	X		Hold	X	X					
U-7	n/a		RSAU7-40	40	X	X	X	X	X	X		Hold	X	X					
U-7	n/a		RSAU7-50	50	X	X	X	X	X	X		Hold	X	X					
U-7	n/a		RSAU7-60	60	X	X	X	X	X	X		X	X	X					
Number of Borings:		47																	
Synthetic Precipitate Leaching Procedure (SPLP) Samples[11]:																			

Grid Location	LOU Number	Phase B Boring No.	Sample ID Number	Sample Depths[1.] (ft, bgs)	Perchlorate (EPA 314.0)	Metals (EPA 6020)	Hex Cr (EPA 7199)	TPH-DRO/ORO (EPA 8015B)	VOCs[2.] (EPA 8260B)	Wet Chemistry[3.]	Total Cyanide (EPA 9012A)	OCPs[4.] (8081A)	SVOCs[5.] (EPA 8270C)	Radio-nuclides[6.]	Dioxins/ Furans[7.]	PCBs[8.] (EPA 1668)	Asbestos[9.] EPA/540/R-97/028	Geo-technical Tests[10.]	Location Description and Characterized Area Rationale
Borings are organized by grid location as shown on Plate A - Starting point is on the northwestern most grid in Area IV (P-5) and ending with the southeastern most grid in Area IV (U-7).																			
Grid Location	LOU Number	Phase B Boring No.	Sample ID Number	Sample Depths (ft, bgs)	Perchlorate (EPA 314.0)	Metals (EPA 6020)	Hex Cr (EPA 7199)	TPH-DRO/ORO (EPA 8015B)	VOCs (EPA 8260B)	Wet Chemistry	Cyanide	OCPs (8081A)	SVOCs (EPA 8270C)	Radio-nuclides	Dioxins/ Furans	PCBs (EPA 8082)	Asbestos EPA/540/R-97/028	Geo-technical Testing	Location Description and Characterized Area Rationale
Q-4	4	RSAQ4	RSAQ4-10	10	X	X	X	X	X	X			X	X				X	Soil sample collected below bottom of former AST in the northern part of LOU 4 (former Hardesty Chemical Co. Site) to evaluate leaching potential of Site-related analytes from Alluvium (Qal) soils. Expected soil type: Sand.
Q-4	4	RSAQ4	RSAQ4-DD	DD* = depth (ft)	X	X	X	X	X	X			X	X				X	**Optional sample** - only to be collected if soil type is different than at 10 ft bgs.; **no sample will be collected within the capillary fringe.** Contact between Qal & MCfg1 is approximately 29 feet bgs. Groundwater is expected to occur at approximately 34 feet bgs. Expected soil type: Silt.
Q-4	4	SA148	SA148-20	20	X	X	X	X	X	X			X	X				X	Soil sample collected below bottom of former UST in the southern part of LOU 4 (former Hardesty Chemical Co. Site) to evaluate leaching potential of Site-related analytes from Alluvium (Qal) soils. Expected soil type: Gravelly Sand.
Q-4	4	SA148	SA148-33	33	X	X	X	X	X	X			X	X				X	Soil sample collected from below bottom of former UST in the southern part of LOU 4 (former Hardesty Chemical Co. Site) to evaluate leaching potential of Site-related analytes from Muddy Creek Formation - First Fine-Grained Facies (MCfg1) soils. Contact between Qal and MCfg1 is approximately 31 feet bgs. Groundwater anticipated to be at approximately 42 feet bgs. No soil sample will be collected within capillary fringe. Expected soil type: Silt.
R-3	60	RSAR3	RSAR3-20	20	X	X	X	X	X	X			X	X				X	Soil sample collected from below LOU 60 (Acid Drain System pipeline) to evaluate leaching potential of Site-related analytes from Alluvium (Qal) soils. Expected soil type: Sand.
R-3	60	RSAR3	RSAR3-DD	DD* = depth (ft)	X	X	X	X	X	X			X	X				X	**Optional sample** - only to be collected if soil type is different than at 10 ft bgs.; **no sample will be collected within the capillary fringe.** Contact between Qal & MCfg1 is approximately 29 feet bgs. Groundwater is expected to occur at approximately 34 feet bgs. Expected soil type: Silt.
U-4	62	RSAU4	RSAU4-20	20	X	X	X	X	X	X			X	X				X	Soil sample collected from beneath bottom of former western pond in LOU 62 (State Industries, Inc. Site) to evaluate leaching potential of Site-related analytes. Expected soil type: Gravelly Sand.
U-4	62	RSAU4	RSAU4-50	50	X	X	X	X	X	X			X	X				X	**Optional sample** - only to be collected if Silt/Clay of the Muddy Creek Formation - first fine-grained facies (MCfg1) is encountered at this boring location. If soil type is similar to soils at 20 feet, then no sample will be collected for SPLP analyses. Expected soil type: Silt.
U-5	62	RSAU5	RSAU5-10	10	X	X	X	X	X	X			X	X				X	Soil sample collected from beneath bottom of former eastern pond in LOU 62 (State Industries) to evaluate leaching potential of Site-related analytes from Alluvium (Qal). Expected soil type: Gravelly Sand.
U-5	62	RSAU5	RSAU5-50	50	X	X	X	X	X	X			X	X				X	**Optional sample** - only to be collected if Silt/Clay of the Muddy Creek Formation - first fine-grained facies (MCfg1) is encountered at this boring location. If soil type is similar to soils at 20 feet, then no sample will be collected for SPLP analyses. Expected soil type: Silt.
Number of Samples:					256	256	256	251	251	256	55	93	246	253	51	1	47	10	
		QA/QC Samples:																	
		Field Duplicates (10%)			26	26	26	26	26	26	6	10	25	26	6	1	5		
		Field Blanks			1	1	1	1	1	1	1	1	1	1	1	1	0	0	
		Equipment Rinsate Blanks			15	15	15	11	11	15	5	5	10	14	15	0	0	0	
		Trip Blank Samples			0	0	0	0	18	0	0	0	0	0	0	0	0	0	
		Matrix Spike (5%)			13	13	13	13	13	13	3	5	13	13	3	1	0	0	
		Matrix Spike Duplicate (5%)			13	13	13	13	13	13	3	5	13	13	3	1	0	0	
		Total Sample Count:			324	324	324	315	333	324	73	119	308	320	79	5	52	10	

Notes:

- n/a Not applicable - boring is not associated with a specific LOU but is located to evaluate soil for general area-wide coverage.
- X Sample will be collected and analyzed.
- No sample collected under Phase B sampling program.
- DD* Sample depth to be determined in the field where DD = sample depth (ft).
- TPH-DRO/ORO Total petroleum hydrocarbons - Diesel-Range Organics/Oil-Range Organics.

1. If area is paved, samples will be collected at 0.5 feet below, or if an unpaved area is within a reasonable distance, the sample will be moved to the unpaved area.
2. Samples for VOC analysis will be preserved in the field using sodium bisulfate (or DI water) and methanol preservatives per EPA Method 5035.
3. Consists of wet chemistry parameters (including pH) listed on Table 1 of the Phase B Source Area Work Plan.
4. Organochlorine Pesticides (includes analysis for hexachlorobenzene).
5. Semi-volatile Organic Compounds
6. Radionuclides consists of alpha spec reporting for Thorium-230/232, Uranium 234/235, Uranium-238, and beta spec for Radium-226/228 (per NDEP).
7. Dioxins/furans: 90% will be tested by immunoassay, 10% analyzed by HRGC/HRMS in the laboratory.
8. Polychlorinated biphenyls
9. Soil samples for asbestos analyses will be collected from a depth of 0 to 2-inches bgs.
10. Geotechnical Tests consist of: moisture content (ASTM D-2216), grain size analysis (ASTM D-422 and C117-04), Soil Dry Bulk Density (ASTM D-2937), Grain Density (ASTM D-854, Soil-Water Filled Porosity (ASTM D-2216); Vertical Hydraulic Conductivity (ASTM D-5084/USEPA 9100).
11. SPLP samples will be analyzed by EPA method 1312 using two preparation methods: 1) with extraction fluid #2 (reagent water at pH 5.00±0.05), and 2) with extraction method #3 (reagent water); per NDEP.

Grid Location	Location Area	Monitoring Well No.	Sample ID Number	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval[1]	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Hex Cr (EPA 7199)	Metals	VOCs[2] (EPA 8260)	Wet Chemistry (a)	Total Cyanide (EPA 9012A)	OCPs[3] (EPA 8081A)	SVOCs[4] (EPA 8270C)	Radio-nuclides[5]	Rationale
Wells are organized by grid location as shown on Plate A - Staring point is on the northwestern-most grid in Area 4 (P-2) and ending with the southeastern-most grid covering Area 4 (W-7).																
P-4	Parcel F	M-93	M-93	35.4 - 45.4	MCfg1	no	X	X	X	X	X		X	X	X	Located to serve as a downgradient stepout for LOUs 41 and 65; as an upgradient stepout for LOU 63; and for general Site coverage.
P-5	IV	M-97	M-97	35 - 45	MCcg1	yes	X	X	X	X	X		X	X	X	Located to serve as a downgradient stepout for LOUs 4, 26, 27, 28, 42, and 59; and for general Site coverage.
Q-4	Parcel F	M-92	M-92	34.9 - 44.9	MCfg1	yes	X	X	X	X	X		X	X	X	Located to serve as a downgradient stepout for LOUs 25, 41, 59, and 65; as an upgradient stepout for LOU 63; and for general Site coverage.
Q-5	II	M-13	M-13	40-50	MCfg1	yes	X	X	X	X	X	X	X	X	X	Located to serve as a downgradient stepout for LOUs 42, 59, and 60 and for general site coverage.
Q-6	II	M-12A	M-12A	28-48	MCcg1	yes	X	X	X	X	X	X	X	X	X	Located to serve as a downgradient stepout for LOUs 59, and 60 and for general site coverage.
R-4	IV	M-143	M-143	TBD	TBD	new well	X	X	X	X	X		X	X	X	New well to be installed; located to evaluate LOUs 4, 25, 26, 27, 28, 42, and 60 for general Site coverage
R-5	IV	M-144	M-144	TBD	TBD	new well	X	X	X	X	X		X	X	X	New well to be installed; located to evaluate LOU 42 and for general site coverage.
S-2	IV	TR-8	TR-8	63 - 93	MCcg1	no	X	X	X	X	X	X	X	X	X	Located to serve as an upgradient stepout for LOUs 41 and 65; to evaluate possible offsite sources to the west (particularly for VOCs); and for general Site coverage.
T-7	IV	M-10	M-10	43 - 63	MCcg1	no	X	X	X	X	X		X	X	X	Located as downgradient stepout for LOU 59; and for general Site coverage.
U-4	IV	TR-10	TR-10	80-100	MCcg1	no	X	X	X	X	X		X	X	X	Located to evaluate LOU 62 and for general Site coverage.
U-4	IV	M-137	M-137	TBD	TBD	new well	X	X	X	X	X	X	X	X	X	New well to be installed; located to serve as a downgradient stepout for LOU 62 (former State Industries western pond), and for general Site coverage.
U-5	IV	M-138	M-138	TBD	TBD	new well	X	X	X	X	X	X	X	X	X	New well to be installed; Located to serve as a downgradient stepout for LOU 62 (former State Industries eastern pond) and for general Site coverage.
V-7	Parcel H	M-103	M-103	69.5 - 89.5	MCfg2	no	X	X	X	X	X		X	X	X	Located to evaluate potential onsite sources in the southeastern portion of the Site and possible upgradient sources.
W-1	Olin Chemical	H-11	H-11	95 - 105	MCcg1	no	X	X	X	X	X		X	X	X	To provide general area-wide upgradient information.
W-4	Parcel H	M-121	M-121	77 - 97	MCfg1	no	X	X	X	X	X		X	X	X	Located to evaluate upgradient (southwest) groundwater conditions on the Site.
W-5	Parcel H	M-118	M-118	138 - 158	MCfg2	no	X	X	X	X	X		X	X	X	Located to evaluate upgradient (south) groundwater conditions on the Site.
W-6	Parcel H	M-120	M-120	80 - 100	MCcg1	yes	X	X	X		X		X	X	X	Located to evaluate upgradient (south) groundwater conditions on the Site.
W-7	Parcel H	M-117	M-117	130 - 150	MCfg2	no	X	X	X		X		X	X	X	Located to evaluate upgradient groundwater conditions on the southeast corner of the Site.
						Number of Field Samples:	**18**	**18**	**18**	**16**	**18**	**5**	**18**	**18**	**18**	

Notes:

X	Sample will be collected and analyzed.
1	It is anticipated that the large majority of the flow to the well will be from the coarse-grained sediments. As such, in the cases where there are two lithologies present across the screen interval, the water sampled will represent conditions in the coarse-grained interval.
2	VOCs = Volatile organic compounds (to include analysis for naphthalene).
3	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).
4	SVOCs = Semi volatile organic compounds.
5	Radionuclides consists of alpha spec reporting for Thorium-230/232, Uranium 234/235, Uranium-238, and beta spec for Radium-226/228 (per NDEP).
(a)	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
TBD	To be determined when well is constructed
MCfg1	Muddy Creek Formation - first fine-grained facies
MCcg1	Muddy Creek Formation - first coarse-grained facies
MCfg2	Muddy Creek Formation - second fine-grained facies

Table 4
Summary of LOU Closure Goals
Phase B Source Area Investigation Work Plan – Area IV
Tronox Facility – Henderson, Nevada

LOU	Closure Goal
LOU 4, 26, 27, and 28	Closure for future commercial and industrial use.
LOU 41, 65a, 65b, 65c, and 65d	Closure for commercial/industrial future use.
LOU 25	Closure for future commercial/industrial use.
LOU 42	Closure for future commercial/industrial use.
LOU 59	Continuation of current use – regulatory closure not presently requested.
LOU 60	Closure for future commercial/industrial use.
LOU 62	Closure for future commercial/industrial use.
LOU 63	Closure for future commercial/industrial use.
LOU 66	Closure not requested. LOU is located within the Chemstar property.

Table 5

Soil Borings Not Associated With An LOU But Included As Part of the Site-wide Investigation

Phase B Source Area Investigation Work Plan - Area IV

Tronox Facility - Henderson, Nevada

Soil Boring No.	Grid Location	Area
RSAP5	P-5	IV
SA110	P-5	IV
SA191	S-4	IV
RSAS3	S-5	IV
RSAS5	S-6	IV
RSAS6	S-7	IV
RSAS7	T-8	IV
RSAT5	T-5	IV
RSAT6	T-6	IV
RSAU6	U-6	IV
RSAU7	U-7	IV

Table 6
Sample Containers, Analytical Methods, and Holding Times for Soil Samples
Phase B Source Area Investigation Work Plan - Area IV
Tronox Facility - Henderson, Nevada

Analyte	Method	Container (Minimum Volume)	Holding Time
Asbestos	EPA/540/R-97/028	I kilogram in plastic bag or glass jar, no preservative	6 months
Cyanide	EPA 9012A	4-oz. glass jar	None
Dioxins/Furans	EPA Method 8290	4-oz. glass jar	30 days
Formaldehyde	EPA Method 8315A	4-oz. glass jar	14 days
Fuel Alcohols (Methanol, Ethanol, Ethylene Glycol)	EPA 8015B	4-oz. glass jar	14 days
General Chemistry Anions/Cations	Prep method 1:10 DI leach / various analytical methods****	4-oz. glass jar	None (leachate holdtime per water methods)
Hexavalent Chromium	EPA 7199 by ion chromatography, EPA 3060A for digestion	4-oz. glass jar	28 days to digestion, then 4 days to analysis of digestate
Metals*	EPA 6010 / 6020	4-oz. glass jar	6 months
Organochlorinated Pesticides and PCBs	EPA Method 8081A and 8082	4-oz. glass jar	14 days
Organophosphorous Pesticides	EPA Method 8141	4-oz. glass jar	14 days
SVOCs	EPA Method 8270	4-oz. glass jar	14 days
Total Organic Carbon	Lloyd Kahn method	4-oz. glass jar	28 days
TPH***	EPA 8015B (EPA 5035 for GRO fraction)	(3) Methanol preserved VOA vials for GRO; glass jar for DRO/ORO.	14 days
VOCs	EPA 8260B/5035	4 40-mL VOA vials**	14 days
Radionuclides:			
Radium-226	EPA 9015	4-oz. poly jar, no preservative	6 months
Radium-228	EPA 9320	4-oz. poly jar, no preservative	6 months
Thorium (Isotopic)	EML HASL 300 Alpha Spec	4-oz. poly jar, no preservative	6 months
Uranium (Isotopic)	EML HASL 300 Alpha Spec	4-oz. poly jar, no preservative	6 months

Note:
* Includes the metals listed on Table 1.
For samples listing 4-oz. glass jar, one metal sleeve can be substituted.
** Three VOA vials preserved with DI water and one VOA vial preserved with methanol.
*** TPH includes GRO, DRO, and ORO.
**** See analytes in GW list (except TDS, TSS, TOC, cyanide, and conductance)

Table 7
Sample Containers, Analytical Methods, and Holding Times for Groundwater Samples
Phase B Source Area Investigation Work Plan - Area IV
Tronox Facility - Henderson, Nevada

Analyte	Method	Container (Minimum Volume)	Holding Time
Perchlorate	EPA 314.0	(1) 125-ml plastic bottle	28 days
Formaldehyde	EPA 8315A	(1) 1-liter amber glass/ no preservative	3 days
Fuel alcohols	EPA 8015B	(1) 40-mL VOA vials	14 days
Hexavalent Chromium	EPA 218.6	(1) 250-ml plastic bottle w/buffer, field filtered	24 hours
Metals*	EPA 6010B / 6020	(1) 500-ml plastic bottle w/ HNO3	6 months
Organochlorinated Pesticides	EPA 8081A	(1) 1-liter amber glass/ no preservative	7 days
Organophosphorous Pesticides	EPA 8141	(1) 1-liter amber glass/ no preservative	7 days
Polychlorinated biphenyls	EPA 8082	(1) 1-liter amber glass/ no preservative	7 days
SVOCs	EPA 8270	(1) 1-liter amber glass/ no preservative	7 days
VOCs	EPA 8260B	(3) 40-ml VOA vials w/HCl	14 days
General Water Chemistry			
Alkalinity	SM 2320B	500-ml plastic no preservative	14 days
Ammonia	EPA 350.1	500-ml plastic w/H2SO4	28 days
Bromide	EPA 9056	125-ml plastic bottle/ no preservative	28 days
Chlorate	EPA 9056	125-ml plastic bottle/ no preservative	28 days
Chloride	EPA 9056	**(2) liter plastic bottles	28 days
Cyanide	EPA 9012A	(1) 500-ml plastic bottle w/ NaOH	14 days
Electrical Conductivity	EPA 9050	125-ml plastic no preservative	28 days
Nitrate	EPA 9056	**Use same bottles	48 hours
Nitrite	EPA 9056	125-ml plastic no preservative	48 hours
pH	EPA 9040	125-ml plastic no preservative	15 minutes
Phosphate	EPA 365.1	125-ml plastic bottle, no preservative	48 hours
Sulfate	EPA 9056	**Use same bottles	28 days
Surfactants (MBAS)	EPA 425.1	125-ml plastic no preservative	48 hours
TDS	EPA 160.1	125-ml plastic no preservative	28 days
Total Organic Carbon	EPA 9060	(2) 40-ml VOA vials w/H2SO4	28 days
TSS	EPA 160.2	125-ml plastic no preservative	7 days
Radionuclides:			
Radium-226	EPA 903.1	(1) 1-liter poly bottle (must be full), Preservative pH <2 HNO3	6 months
Radium-228	EPA 904.0	(1) 1-liter poly bottle (must be full), Preservative pH <2 HNO3	6 months
Thorium (Isotopic)	EML HASL 300 Alpha Spec	(1) 1-liter poly bottle (must be full), Preservative pH <2 HNO3	6 months
Uranium (Isotopic)	EML HASL 300 Alpha Spec	(1) 1-liter poly bottle (must be full), Preservative pH <2 HNO3	6 months

Note:
* Includes the metals listed on Table.
** Chloride, Nitrate, Nitrate, Bromide, and Sulfate use same bottle for all these samples. Sample containers are (2) liter plastic bottles.

FIGURES

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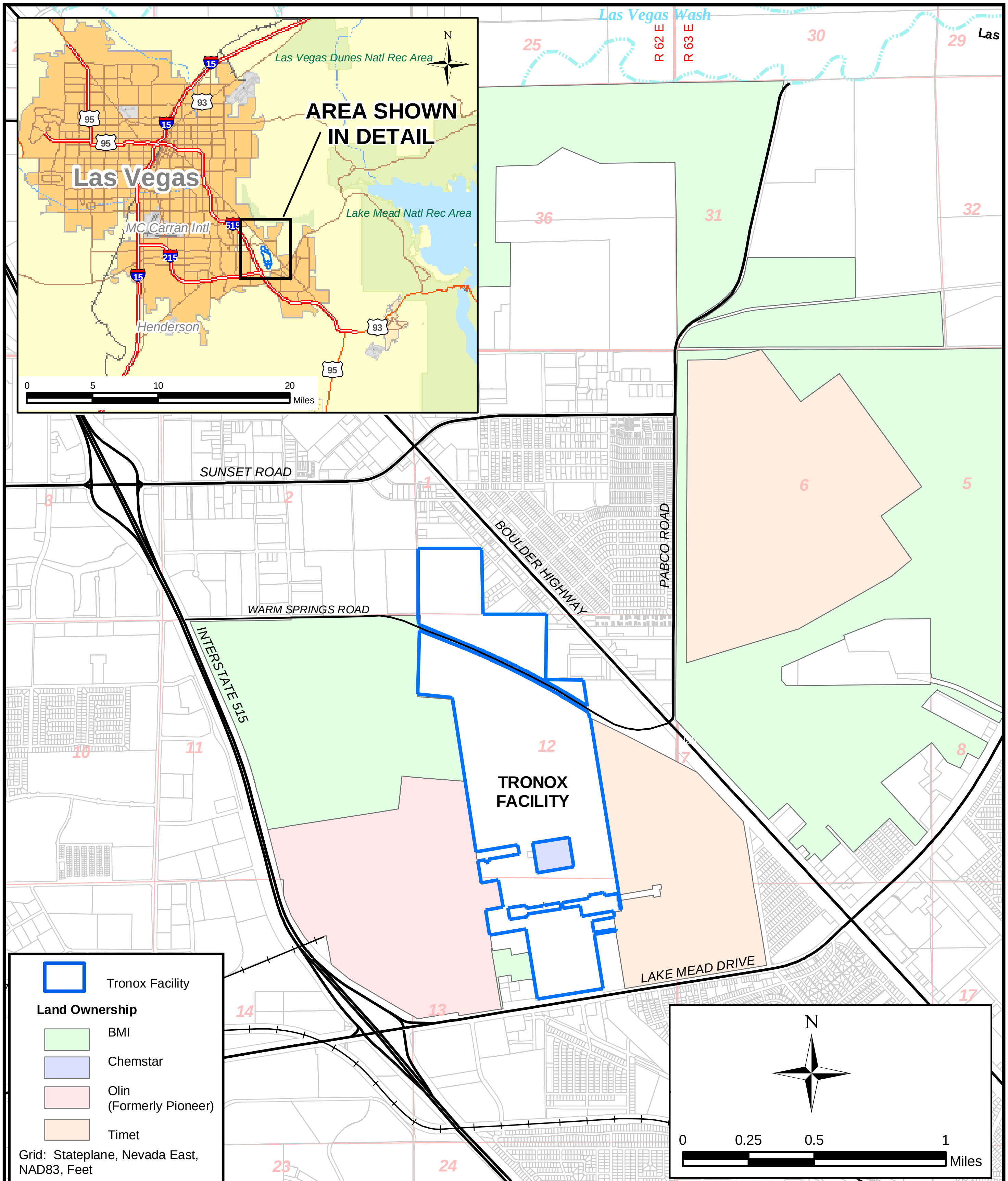

ENSR | AECOM	**SITE LOCATION MAP**	FIGURE NUMBER:
ENSR CORPORATION 1220 AVENIDA ACASO CAMARILLO, CALIFORNIA 93012 PHONE: (805) 388-3775 FAX: (805) 388-3577 WEB: HTTP://WWW.ENSR.AECOM.COM	AREA IV WORKPLAN PHASE B SOURCE AREA INVESTIGATION TRONOX FACILITY HENDERSON, NEVADA	1

DRAWN BY:	DATE:	PROJECT NUMBER:	SHEET NUMBER:
M. Scop	5/14/2008	04020-023	1 of 1

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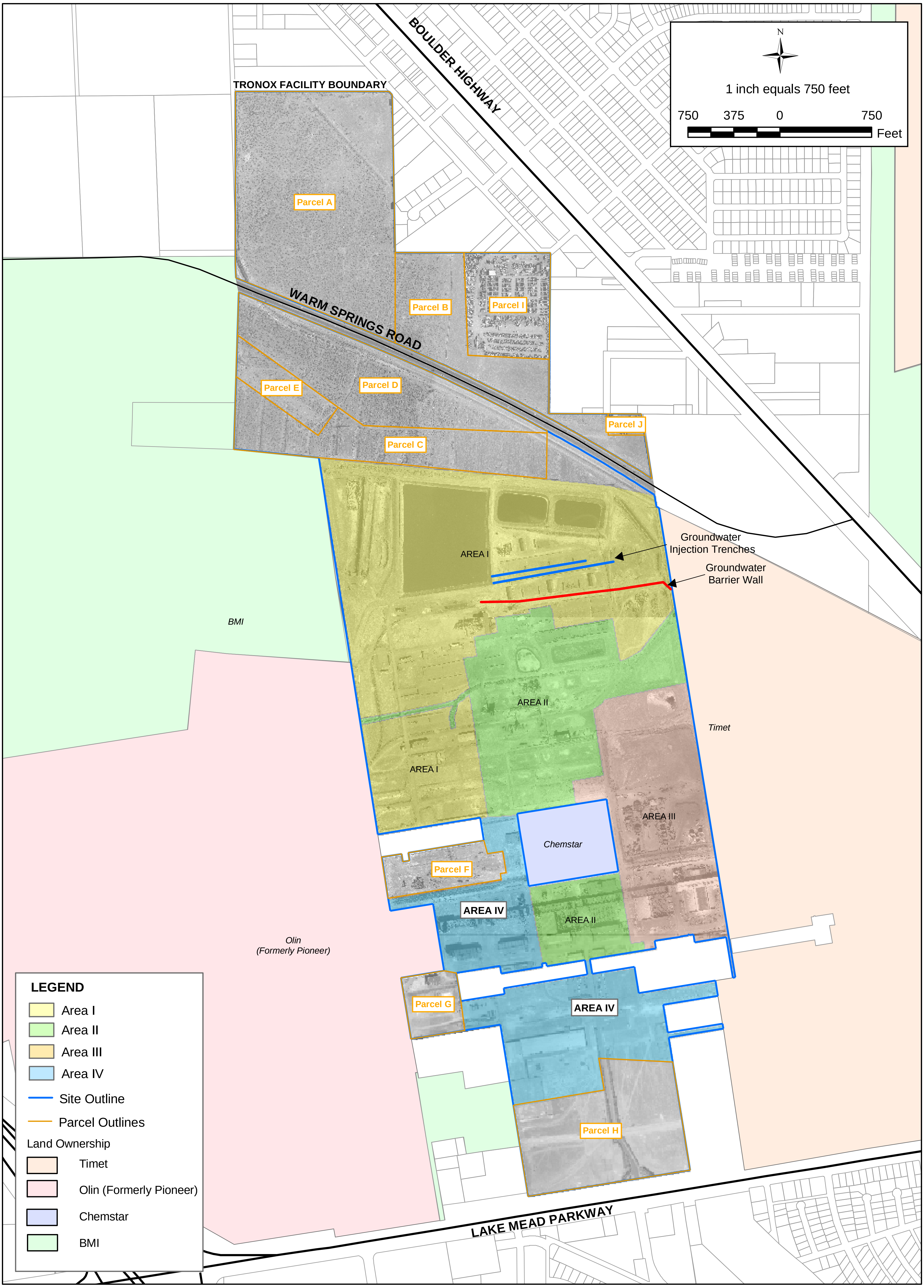

SHEET NUMBER: X

FIGURE NUMBER: 2

PHASE B WORK PLAN SUB-AREAS
AREA IV WORKPLAN
PHASE B SOURCE AREA INVESTIGATION
TRONOX FACILITY
HENDERSON, NEVADA

SCALE:	DATE:	PROJECT NUMBER:
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CHECKED BY:				
B.H.				
APPROVED BY:				
M.F.				

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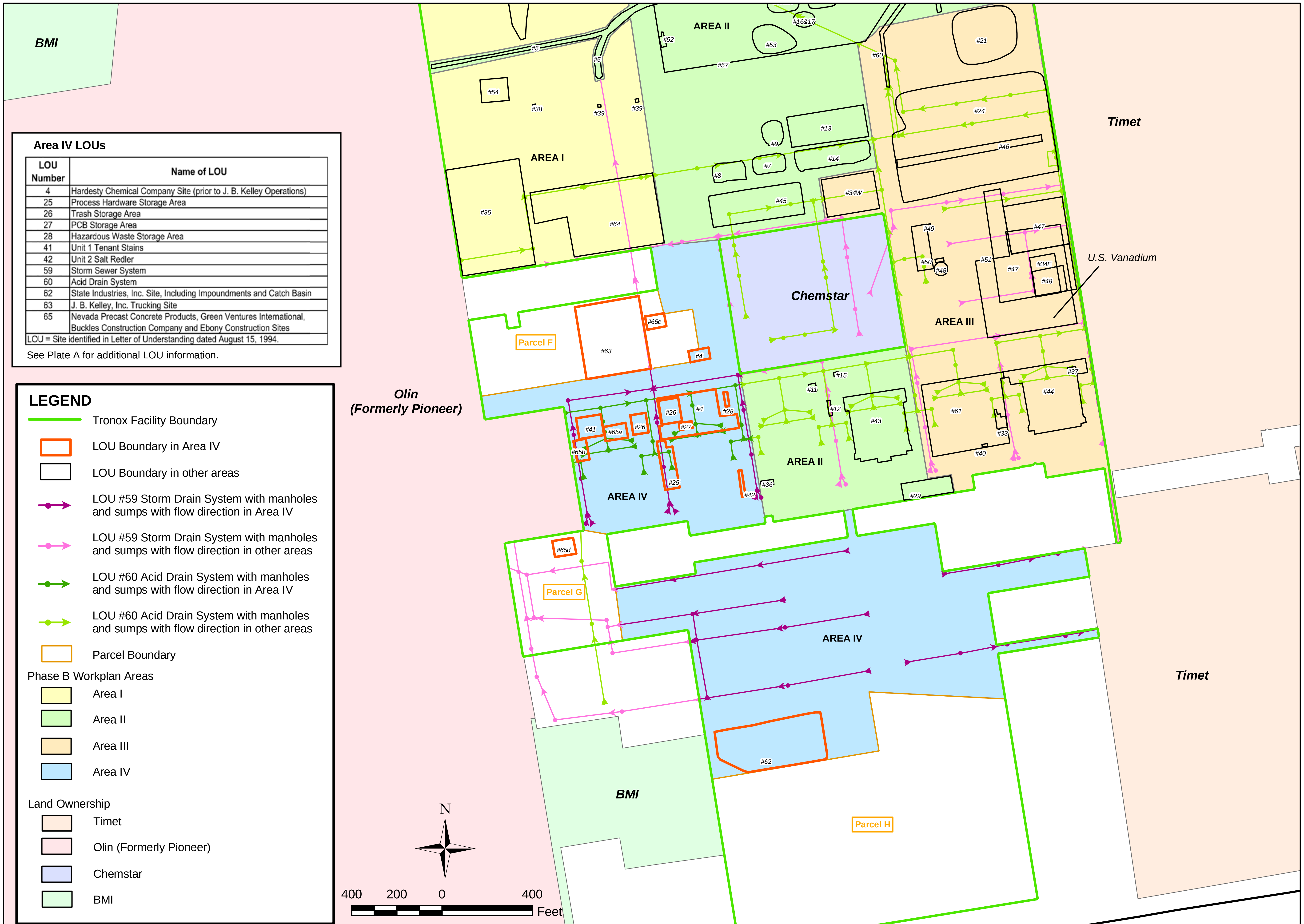
Area IV LOUs

LOU Number	Name of LOU
4	Hardesty Chemical Company Site (prior to J. B. Kelley Operations)
25	Process Hardware Storage Area
26	Trash Storage Area
27	PCB Storage Area
28	Hazardous Waste Storage Area
41	Unit 1 Tenant Stains
42	Unit 2 Salt Redler
59	Storm Sewer System
60	Acid Drain System
62	State Industries, Inc. Site, Including Impoundments and Catch Basin
63	J. B. Kelley, Inc. Trucking Site
65	Nevada Precast Concrete Products, Green Ventures International, Buckles Construction Company and Ebony Construction Sites

LOU = Site identified in Letter of Understanding dated August 15, 1994.

See Plate A for additional LOU information.



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PHASE B AREA IV LOUs
AREA IV WORKPLAN
PHASE B SOURCE AREA INVESTIGATION
TRONOX FACILITY
HENDERSON, NEVADA

PROJECT NUMBER: 04020-023-430
DATE: 5/14/2008
SCALE: AS SHOWN

FIGURE NUMBER: 3

SHEET NUMBER: X

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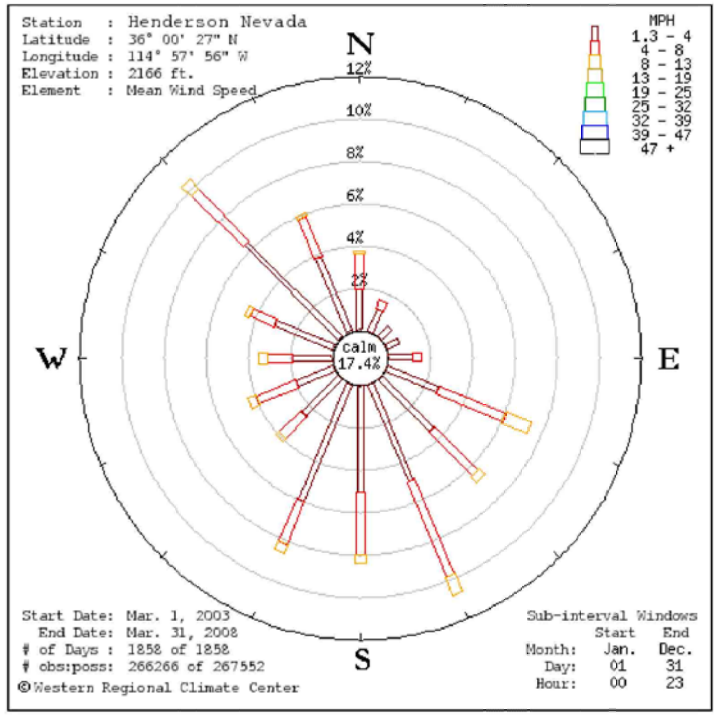
Henderson Nevada



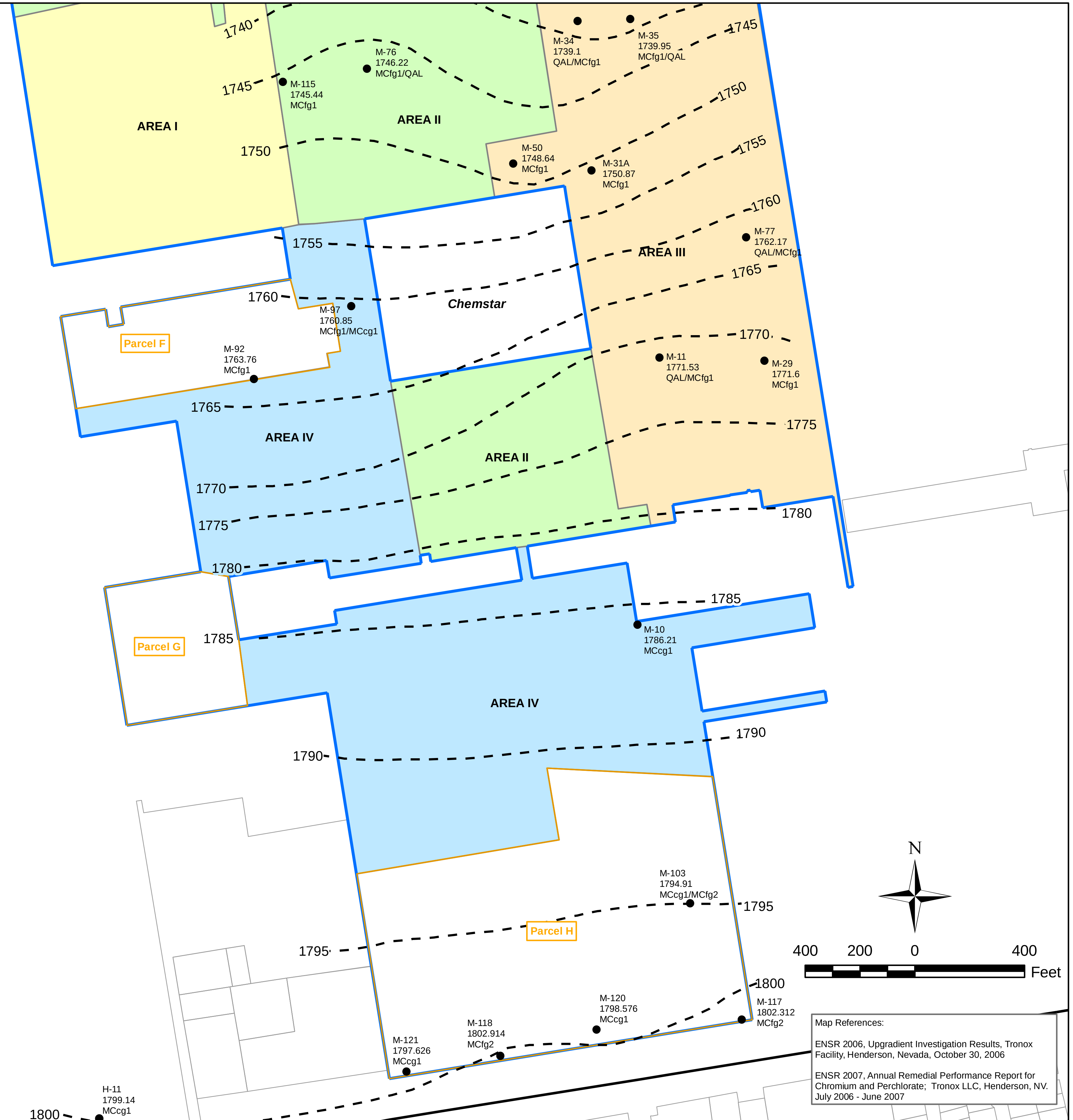
Source: Community Environmental Monitoring Program - http://www.cemp.dri.edu/

Legend

- Tronox Facility Boundary
- Parcel Boundary
- QAL Groundwater Well Screened in Quaternary Alluvium
- MCfg1 Groundwater Well Screened in Muddy Creek Formation - First Fine-Grained Facies
- MCfg1 Groundwater Well Screened in Muddy Creek Formation - Second Fine-Grained Facies
- MCfg1 Groundwater Well Screened in Muddy Creek Formation - First Coarse-Grained Facies
- 1745.44 Water Level Elevation (feet above MSL) Measured March 2006 (ENSR 2006)
- Potentiometric Surface Constructed from water levels measured in April-May 2007. (ENSR 2007)

Phase B Workplan Areas

- Area I
- Area II
- Area III
- Area IV



Map References:

ENSR 2006, Upgradient Investigation Results, Tronox Facility, Henderson, Nevada, October 30, 2006

ENSR 2007, Annual Remedial Performance Report for Chromium and Perchlorate; Tronox LLC, Henderson, NV. July 2006 - June 2007

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GROUNDWATER ELEVATION
AREA IV WORKPLAN
PHASE B SOURCE AREA INVESTIGATION
TRONOX FACILITY
HENDERSON, NEVADA

PROJECT NUMBER: 04020-023-430
DATE: 5/16/2008
SCALE: AS SHOWN

FIGURE NUMBER: 4

SHEET NUMBER: X

Plate A – Phase B Sample Locations and LOUs for Area IV

LOU Number	Name of LOU	Grid
1	Trade Effluent Settling Ponds	Rows I-K
2	Open Area Due South of "Trade Effluent Disposal Ponds"	L-3
3	Air Pollution Emissions Associated with Industrial Processes	-
4	Former Hardesty Chemical Company Site (prior to J. B. Kelley Operations)	Q-4
5	On-Site Portion of Beta Ditch, Including "Small Diversion Ditch" Northwest of Pond C-1	M-2 -M-8
6	Unnamed Drainage Ditch Segment (BMI Landfill)	Offsite
7	Old P-2 Pond and Associated Conveyance Facilities	O-5
8	Old P-3 Pond and Associated Conveyance Facilities	O-5
9	New P-2 Pond and Associated Piping	O-6
10	On-Site Hazardous Waste Landfill (Closed)	I-2
11	Sodium Chlorate Filter Cake Holding Area	Q-6
12	Hazardous Waste Storage Area	R-6
13	Pond S-1	Q-6
14	Pond P-1 and Associated Conveyance Piping	O-6
15	Platinum Drying Unit	Q-6
16 & 17	Ponds AP-1, AP-2, and AP-3 and Associated Transfer Lines	M-6
18	Pond AP-4	M-7
19	Pond AP-5	M-5, M-6
20	Pond C-1 and Associated Piping	M-8
21	Pond Mn-1 and Associated Piping	N-8
22	Pond WC-1 (WC-West) and Associated Piping	J-6
23	Pond WC-2 (WC-East) and Associate Piping	J-7
24	Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area	O-7, O-8
25	Process Hardware Storage Area	R-4
26	Trash Storage Area	Q-3
27	PCB Storage Area	R-4
28	Hazardous Waste Storage Area	R-3
29	Solid Waste Dumpsters	S-6
30	AP Area-Pad 35	L-5
31	Drum Recycling Area	L-5
32	Ground Water Remediation Unit	Rows I-L
33	Sodium Perchlorate Platinum By-Product Filter, Unit 5	R-7
34	Former Manganese Tailings Area	Q-8
35	Truck Emptying/Dumping Site	O-2, O-3
36	Former Satellite Accumulation Point, Unit 3, Maintenance Shop	R-5
37	Former Satellite Accumulation Point, Unit 6, Maintenance Shop	R-8
38	Former Satellite Accumulation Point, AP-Laboratory	N-3
39	Satellite Accumulation Point-AP Maintenance Shop	N-4
40	PCB Transformer Spill	R-7
41	Unit 1 Tenant Stains	Q-3
42	Unit 2 Salt Conveyor	R-5
43	Unit 4 and 5 Basements	R-6
44	Unit 6 Basement	R-8
45	Diesel Storage Tank	O-6
46	Former Old Main Cooling Tower and Recirculation Lines	O-7, O-8
47	Leach Plant Area Manganese Ore Piles	P-8
48	Leach Plant Analyte Tanks	P-7
49	Leach Plant Area Sulfuric Acid Storage Tanks	P-7
50	Leach Plant Area Leach Tanks	P-7
51	Leach Plant Area Transfer Lines	P-8
52	AP Plant Area Screening Building, Dryer Building and Associated Sump	M-5
53	AP Plant Area Tank Farm	N-6
54	AP Plant Area Change House/ Laboratory Septic Tank	N-3
55	Area Affected by July 1990 Fire	L-6
56	AP Plant Area Old Building D-1- Washdown	L-5
57	AP Plant Transfer Lines to Sodium Chlorate Process, AP Plant SI's and Transfer Lines	M-5
58	AP Plant Area New Building D-1 Washdown	M-5
59	Storm Sewer System	Rows N-T
60	Acid Drain System	Rows K-R
61	Old Sodium Chlorate Plant Decommissioning	R-6
62	State Industries, Inc. Site, Including Impoundments and Catch Basin	U-4, U-5
63	J. B. Kelley, Inc. Trucking Site	P-3
64	Koch Materials Company Site	O-3, O-4
65	Nevada Precast Concrete Products, Green Ventures International, Buckles Construction Company and Ebony Construction Sites	P-4, Q-3, R-3, S-3
66	Aboveground Diesel Storage Tank Leased by Flintkote Co. located on Chemstar Property (not shown)	Offsite
67	Delbert Madsen and Estate of Delbert Madsen Site	B-4
68	Southern Nevada Auto Parts Site (Pick A Part)	F-6
69	Dillon Potter Site	H-7
NA	Former U.S. Vanadium Site	P-8, Q-8
LOU = Site identified in Letter of Understanding dated August 15, 1994.		

Sample locations in Areas I, II and III are not finalized and subject to change.

SHEET NUMBER: 1 of 1

FIGURE NUMBER: A

PHASE B SAMPLE LOCATIONS AND LOUs FOR AREA IV

PHASE B AREA IV SOURCE AREA INVESTIGATION
TRONOX FACILITY
HENDERSON, NEVADA

SCALE:	DATE:	PROJECT NUMBER:
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