Summary of Available Data for LOU 60 Acid Drain System
Area IV

Tronox Facility – Henderson, Nevada

Name of LOU: **Acid Drain System**

Goal of Closure:

- Closure for future commercial/industrial use.

Site Investigation Area:

- Size: Approximately 3,400 linear feet in Area IV and approximately 21,100 linear feet throughout the Site.
- Location: Southwestern portion of the Site, in the vicinity of Units 1 and 2.
- Current Status/Features: The Acid Drain System is currently inactive and inlet drains have been plugged. The system is buried in Area IV.

Description:

Acid Drain System in Area IV

- Between 1945 and 1976, the segments of the Acid Drain System in Area IV may have carried effluent from the basements of Units 1 and 2 [Ref. 3].
- Potentially, effluent from a tank farm associated with LOU 4 (Hardesty Chemical Company), located within Unit 2, may have entered the Acid Drain System. The tank farm consisted of one aboveground storage tank (AST) for sulfuric acid, one UST for kerosene storage, and one underground storage tank (UST) for benzene storage [Ref. 4, 5, 6, and 7].
- LOU 28 (Hazardous Waste Storage Area) was historically used for staging both hazardous and non-hazardous waste [Ref. 1 and 3].
  - Historically, wastes handled at LOU 28 included waste oil, flammable wastes, bases, acids, and miscellaneous compatible wastes [Ref. 3].
  - More recently, the two ASTs currently located in LOU 28 were used to store chlorate [Ref. 8].
  - Surface runoff from LOU 28 flowed to the northeast toward a manhole or sump of the Acid Drain System located at the intersection of Avenue G and Seventh Street [Ref. 3].
- LOU 62 (State Industries, Inc. site) located in the southern portion of the Site south of Units 2 and 3, consists of two surface impoundments that received spent pickling process wastes (for solar evaporation) generated during the manufacture of water heaters [Ref. 3].
  - Prior to June 1, 1974, approximately 35,000 gallons per month of waste streams were discharged to the Acid Drain System (LOU 60) [Ref. 3].
  - Wastes included spent sulphuric acid, borax, soda ash, phosphates, and TURCO II H.T.C soap, and spent cyanide [Ref. 3].

  - Spent cyanide wastes were typically mixed with calcium hypochlorate to destroy cyanide prior to discharge. On June 21, 1971 un-neutralized cyanide waste was discharged to the Beta Ditch [Ref. 3].
- Discharges to the Acid Drain System occurred on at least three occasions in 1974 to facilitate repairs to the leaking liner in one of the surface impoundments in LOU 62 [Ref. 3].
- The Acid Drain System in Area IV also received effluent from off-site sources to the west.

A description of the Site-wide extent of the Acid Drain System is detailed below to provide the current understanding (based the documents reviewed) of the historical and current use of the system and the process waste streams that are known to have entered or may have potentially entered the system. Phase B Source Area Investigations for the segments of the Acid Drain System in Area IV are discussed in the "Proposed Phase B Soil Investigation/Rationale" section of this LOU Summary document.

- The Acid Drain System consisted of a network of pipes, sumps and treatment areas used to collect waste acid effluent from throughout the BMI Industries Complex in the 1940s [Ref. 3].
- Acid-resistant materials were used to construct components of the Acid Drain System [Ref. 3].

<u>Circa 1941 or 1942 to November 1945</u>:

- The Acid Drain System was utilized until 1945, during production of magnesium metal at the BMI complex [Ref. 3].
- The Acid Drain System received acid effluent from various sources in the BMI Industrial Complex including the following [Ref. 3]:
  - the chlorine plant (located west of the Site on Olin Chemical LLC property);
  - the preparation building (present day location is within the Chemstar area);
  - the flux plant (present-day location unknown) and neutralization area (area presently occupied by the Mn Leach Plant); and
  - all 10 chlorination buildings and associated electrolysis buildings (Units 1 through 10).
- The Acid Drain System had a single outfall point located west of the Acid Effluent Neutralization Plant (present-day location is north of the Tronox Steam Plant) [Ref. 3].

- Acid effluent was originally neutralized (using waste caustic liquor from the chlorine plant) prior to disposal in the Trade Effluent Settling Ponds (LOU 1) [Ref. 3].
- From the Acid Effluent Neutralization Plant (part of the LOU 60 system), effluent was transported along a surface conveyance (e.g., a flume) for disposal in the Trade Effluent Settling Ponds (LOU 1) [Ref. 3].
- Acid neutralization was discontinued when the pipeline carrying caustic liquor to the Acid Effluent Neutralization Plant disintegrated [Ref. 3].
- Since then, un-treated acid waste was apparently discharged directly to the Trade Effluent Settling Ponds (LOU 1) [Ref. 3].

1945 – 1976:

- Use of the Acid Drain System after 1945 is not well documented [Ref. 1 and 3].
- The Acid Drain System was used by several companies to discharge various wastes from 1945 to 1976 [Ref. 3].
- Segments of the Acid Drain System may have carried effluent from the basements of Units 1 through 5. As a result, this segment of the system could have carried effluents from State Industries, a Timet shop (location unknown), Jones Chemical, a Stauffer office building, and U.S. Lime (Chemstar) [Ref. 3].
- Another segment of the Acid Drain System provided drainage from the Unit 6 manganese dioxide process and various portions of Timet [Ref. 3].
- Between 1945 and 1990, Unit 5 was used to produce sodium perchlorate. Process waste streams may have been discharged from Unit 5 into the Acid Drain System [Ref. 3].
- Magnesium perchlorate was produced in Unit 5 between 1969 and 1976. Process waste streams were discharged from this process through the Acid Drain System [Ref. 3].
- Review of a July 11, 1950 aerial photograph indicates that the flume that conveyed waste from the Acid Effluent Neutralization Plant to the Trade Effluent Settling Ponds (LOU 1) had been removed. Discharges from the Acid Drain System after this conveyance was disconnected, would have followed surface drainage patterns and entered the Beta Ditch [Ref. 3].

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

Post 1976:

- A March 16, 1984 letter from Kerr-McGee Chemical Corporation to NDEP indicates that the Acid Drain System was plugged many years ago, and that basement drains in Units 4 and 5 were being sealed with concrete in March 1984 [Ref. 3].

Known or Potential Chemical Classes:

- Metals
- Hexavalent chromium
- Cyanide (associated with LOU 62)
- Wet chemistry analytes
- VOC (associated with LOU 4)
- SVOC (associated with LOU 4)
- TPH (associated with LOU 4)
- Organochlorine pesticides (associated with LOU 4)

Process Waste Streams Associated with LOU 60 in Area IV	Known or Potential Constituents Associated with LOU 60 in Area IV
Effluent from drains in the basements of Units 1 and 2 prior to 1984 [Ref. 3].	• Metals (hexavalent chromium, magnesium, boron) • Phosphates • Chlorides • Ammonia • Chlorate • Wet chemistry analytes
Unknown effluents from off-site facilities to the west (Jones Chemical and Stauffer) were discharged into the Acid Drain System from 1945 through 1976.	• Metals • Hexavalent chromium • Sulfates • Wet chemistry analytes • VOC • SVOC • TPH • Organochlorine pesticides
Process Waste Streams Associated with LOU 60 in Other Areas	**Known or Potential Constituents Associated with LOU 60 in Other Areas**
Process waste streams from magnesium production during U.S. Government activities [Ref. 3]: - Caustic liquor - Acid process liquors - Magnesium chloride solutions	• Metals (Magnesium) • Sodium hydroxide • Hydrochloric acid solutions • Chlorides

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

Unknown effluents from off-site facilities to the east (Timet, Stauffer) and the center of the Site (Chemstar) were discharged into the Acid Drain System from 1945 through 1976.	• Metals • Hexavalent chromium • Sulfates • Wet chemistry analytes • VOC • SVOC • TPH • Organochlorine pesticides
Process Waste Streams Associated with LOU 4 (Hardesty Chemical Site) that May Have Been Conveyed by LOU 60	**Known or Potential Constituents Associated with LOU 4 that May Have Been Conveyed by LOU 60**
Effluents from Hardesty Chemical Site [Ref. 3].	• Metals • Wet chemistry analytes • VOC • SVOC • TPH • Organochlorine pesticides
Process Waste Streams Associated with LOU 27 (PCB Storage Area) that May Have Been Conveyed by LOU 60	**Known or Potential Constituents Associated with LOU 27 that May Have Been Conveyed by LOU 60**
PCB cooling oil, PCB-containing waste oil from transformer servicing, drums of solid waste from maintenance activities (PCB contaminated rags, oil sorb, and concrete).	• PCBs • TPH
Process Waste Streams Associated with LOU 28 (Hazardous Waste Storage Area) that May Have Been Conveyed by LOU 60	**Known or Potential Constituents Associated with LOU 28 that May Have Been Conveyed by LOU 60**
Non-hazardous and hazardous wastes	• Used oil • Flammable maintenance parts washing wastes • Hexavalent chromium-contaminated material • Miscellaneous compatible wastes
Process Waste Streams Associated with LOU 62 (State Industries Inc. Site) that May Have Been Conveyed by LOU 60	**Known or Potential Constituents Associated with LOU 62 that May Have Been Conveyed by LOU 60**
Pickling process wastes from State Industries, Inc. process line and surface impoundment that was periodically drained for pond maintenance [Ref. 3].	• Metals (iron, total chromium, barium, arsenic, cadmium, lead, and selenium) • Cyanide • Sulfuric acid • Borax • Soda ash • Phosphates

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

	• Pickle liquor ($FeSO_4$) • TURCO II HTC Soap • Wet chemistry analytes
Neutralized and un-neutralized waste cyanide solution [Ref. 3].	• Cyanide
Process Waste Streams Associated with LOU 43 (Unit 4) & LOU 61 (Unit 5) that May Have Been Conveyed by LOU 60	**Known or Potential Constituents Associated with LOUs 43 and 61 that May Have Been Conveyed by LOU 60**
Process liquor, spillage and washwater collected in the basements of Unit 4 (LOU 43) and Unit 5 (LOU 61) [Ref. 3].	• Metals (magnesium, boron) • Hexavalent chromium • Chlorate • Perchlorate • Ammonia • Wet chemistry analytes
Effluent solutions from chlorates, perchlorates and magnesium metal processes in Unit 4 (LOU 43) between 1945 and 1983 [Ref. 3].	• Metals • Hexavalent chromium • Perchlorate • Ammonia • Chlorate • Wet chemistry analytes
Prior to 1976 – Brine rinse and wash-water from water softeners from sodium perchlorate process in Unit 5 (LOU 61) [Ref. 3].	• Metals • Wet chemistry analytes
Unit 5 (LOU 61) cooling tower blowdown and reboiler wastes discharged between 1972 and January 1976 [Ref. 3].	• Metals (manganese) • Hexavalent chromium • Hexametaphosphates • Neutralized sulfuric acid • Sodium • Sulfite and borate ions
Condensate from various steam traps, and wash-water from trenches along north wall of cell floor in Unit 5 (LOU 61) [Ref. 3].	• Metals (magnesium) • Hexavalent chromium • Chlorides • Phosphates • Perchlorate • Chlorate • Ammonia • Wet chemistry analytes

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

Boron process neutralization tank waste solution from Unit 5 (LOU 61) [Ref. 3]	• Metals (boron) • Magnesium sulfate • Neutralized sulfuric acid • Neutralized boric acid
Halide wall solid and screen filter wastes from Unit 5 (LOU 61) were sluiced and discharged to the BMI ponds via the Acid Drain System prior to January 1976 [Ref. 3].	• Solid silicate scale
Process Waste Streams Associated with LOU 44 (Unit 6) that May Have Been Conveyed by LOU 60	**Known or Potential Constituents Associated with LOU 44 that May Have Been Conveyed by LOU 60**
Solutions from the basement of Unit 6 [Ref. 3].	• Metals (hexavalent chromium) • Manganese sulfates
Ammonium perchlorate process waste including filter slurry [Ref. 3].	• Metals (chromium) • Ammonia • Perchlorate • Wet chemistry analytes

Overlapping or Adjacent LOUs:

The following LOUs overlap or are adjacent to LOU 60 in Area IV:

Overlapping LOUs

- LOU 4 (Former Hardesty Chemical Site) – Overlaps one of the eastern branches of LOU 60 in Area IV.
- LOU 25 (Process Hardware Storage Area) – Overlaps the central branch of LOU 60 in Area IV.
- LOU 27 (PCB Storage Area) – Overlaps one of the eastern branches of LOU 60 in Area IV.
- LOU 41 (Unit 1 Tennant Stains) – Overlaps one of the western branches of LOU 60 in Area IV.
- LOU 65a and 65b – (Ebony Construction and Buckles Construction Company) – Overlaps one of the western branches of LOU 60 in Area IV.

Adjacent LOUs

- LOU 26 (Trash Storage Area) – The western portion of LOU 26 is located west of a branch of LOU 60. The eastern portion of LOU 26 is located south of a branch of LOU 60.
- LOU 28 (Hazardous Waste Storage Area) – Located west and south of the eastern branch of the eastern branch of LOU 60.

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

- LOUs 25, 26, 27, 28, 41, 65a and 65b are considered to not have the potential to impact LOU 60 due to the nature of the operations at these LOUs.
- With the exception of LOU 4, known or potential chemical classes associated with adjacent or overlapping LOUs are consistent with those listed for LOU 60; therefore, the addition of other chemical classes to the Phase B Analytical Plan for LOU 60 is not required.

For detailed information on these LOUs, please refer to the specific LOU data package.

Other LOUs Potentially Affecting Soils in LOU 60:

- Unknown Off-Site Sources: An off-site branch of LOU 60 runs north along the western boundary of the Site and eventually connects into the east-west trending branch of LOU 60 that runs north of the Unit 1 and 2 buildings. As a result, the analytical plan for samples collected from LOU 60 will include analyses VOCs, SVOCs, and TPH.
- LOU 4 – Former Hardesty Chemical Company: Process waste streams from LOU 4 may have been discharged to the Acid Drain System between 1946 and 1947. As a result, the analytical plan for samples collected from LOU 60 will include analyses for OCPs.
- LOU 62 Former State Industries Inc.: On June 21, 1971, un-neutralized cyanide waste was discharged to the Beta Ditch [Ref. 3], presumably via the Acid Drain System. Prior to 1974, process waste streams were discharged to the Acid Drain System. After 1974, on at least three occasions, process waste from the surface impoundments were drained to the Acid Drain System to facilitate repairs to one of the leaking liners [Ref. 3]. As a result, the analytical plan for samples collected from LOU 60 will include analyses for cyanide.

For further information please refer to the specific LOU data packages.

Known or Potential Release Mechanisms:

- No releases from the Acid Drain System were documented in the reports reviewed.
- Releases to soil, surface water, or groundwater could have occurred due to breakage of liner pipes or from leakage at pipe joints and connections [Ref. 3].
- If releases occurred on an on-going basis, migration to the groundwater would have been possible [Ref. 3].

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

- If constituents were present in fluids conveyed by the surface drainage system, they could have discharged to surface water of Beta Ditch during infrequent flow events of that channel [Ref. 3].

Results of Historical Sampling:

- None known to have been specifically conducted for LOU 60.

Did Historical Samples Address Potential Release?

- No known historical soil sampling was identified in the documents reviewed.

Summary of Phase A SAI:

Soil

- Phase A Source Area Investigation borings SA03 and SA04 are located adjacent or in close proximity to the pipelines for LOU 60 in Area IV. These borings were specifically sampled to evaluate LOU 60 [Ref. 2].

Groundwater

- Phase A Source Area Investigation wells M-92 and M-97 are located near the pipelines for LOU 60 in Area IV and were sampled specifically to evaluate this LOU [Ref. 2].

Chemical classes detected in Phase A soil borings SA03 and SA04:

- Metals
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes
- VOCs
- SVOCs
- TPH-ORO (SA04 only)
- Organochlorine pesticides
- Dioxins/furans
- Radionuclides
- Asbestos

Analytical results for soil and groundwater from the Phase A sampling event are summarized in: LOU 60 Tables 1 through 5 and LOU 60 Tables 7 through 22 (see attached) [Ref. 2].

Are Phase A Sample Locations in "Worst Case" Areas?

- No

Is Phase B Investigation Recommended?

- Yes

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

Proposed Phase B Soil Investigation/Rationale:

- The Phase B Source Area Investigation of LOU 60 in Area IV consists of collecting soil samples from seven (7) locations.
  - Two (2) soil borings (SA204 and SA148) will be drilled south (upgradient) and adjacent to the east-west trending branch of LOU 60, and north of Units 1 and 2.
  - Two (2) soil borings (RSAR3 and SA111) will be drilled east and west (cross-gradient) of the southern-most branches of LOU 60 in Area IV.
  - Three (3) soil borings (SA169, SA84, and RSAR5) will be drilled east/west (cross-gradient) and north (downgradient) of the branches of LOU 60 located within Unit 1 and 2.
  - The seven borings along with the analytical program to evaluate soil samples from LOU 60 in Area IV are listed on **Table A: Soil Sampling and Analytical Plan for LOU 60**.

- Soil sample locations consist of both judgmental and randomly-placed locations.
- Judgmental sample locations:
  - Designed to evaluate soil for known or potential chemical classes associated with LOU 60, based on the known process waste streams.
  - Five (5) of the seven soil sample locations are judgmental locations and consist of soil borings SA204, SA148, SA169, SA84, and SA111.
- Random sample grid locations:
  - Designed to assess whether unknown constituents associated with LOU 60 are present.
  - Two (2) soil borings (RSAR3 and RSAR5) are randomly-placed sample locations.

Proposed Chemical Classes for Phase B Investigation for soils:

Judgmental and random sample locations will be analyzed for LOU-specific and area-wide constituents consisting of the following:

- Metals (Phase A list)
- Hexavalent chromium
- Cyanide (SA204 and SA148 only)
- Perchlorate
- Wet chemistry analytes
- VOCs
- SVOCs
- TPH-DRO/ORO

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

- Organochlorine pesticides
- Dioxins/furans
- Radionuclides
- Asbestos

Proposed Phase B Groundwater Investigation/Rationale:

- The Phase B groundwater investigation of LOU 60 in Area IV consists of collecting groundwater samples from three locations to evaluate local groundwater conditions and as part of a Site-wide evaluation of constituent trends in groundwater.
  - One (1) well located at the intersection of two branches of LOU 60 will be sampled. This well is M-143.
  - Two (2) wells north (downgradient) of LOU 60 will be sampled. These wells are M-92 and M-13.
  - All three wells along with the analytical program to evaluate groundwater samples associated with LOU 1 are listed on **Table B – Groundwater Sampling and Analytical Plan for LOU 60.**

Proposed Phase B Constituents List for Groundwater:

Groundwater samples will be analyzed for the following analytes:

- Metals (Phase A list)
- Hexavalent chromium
- Cyanide
- Perchlorate
- Wet chemistry analytes
- VOCs
- SVOCs
- TPH
- Organochlorine pesticides
- Radionuclides

Proposed Phase B Soil Gas Investigation/Rationale:

In Area IV, soil gas samples will be collected from three (3) locations to evaluate area conditions for the presence of vapor-phase VOCs in the vadose zone.

- SG88 is located to evaluate VOCs associated with LOU 60 as a potential VOC source.
- SG72 is located to evaluate VOCs associated with LOU 60 as a potential VOC source.
- SG73 is located to evaluate VOCs associated with LOU 60 to and is also upgradient of well M-143.

Details of the soil gas sampling program are contained in the NDEP-approved (March 26, 2008) Soil Gas Survey Work Plan, Tronox LLC, Henderson, Nevada, dated March 20, 2008.

Summary of Available Data for LOU 60 Acid Drain System
Area IV

Tronox Facility – Henderson, Nevada

Proposed Phase B Constituents List for Soil Gas:

- VOCs (EPA TO-15)

References:

1. ENSR, 2005, Conceptual Site Model, Kerr-McGee Facility, Henderson, Nevada, ENSR, Camarillo, California, 04020-023-130, February 2005 and August 2005.
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
3. Kleinfelder, 1993, Environmental Conditions Assessment, Kerr-McGee Chemical Corporation, Henderson, Nevada Facility, April 15, 1993 (Final).
4. Tronox, Susan Crowley, Verbal Communication, February 5, 2008.
5. Hardesty Chemical Tank Farm General Layout: Map HAR-4, 1945.
6. ENSR, 1997, Phase II Environmental Conditions Assessment, Kerr-McGee Chemical LLC, Henderson, Nevada.
7. Kerr-McGee, 1996, Response to Letter of Understanding, Henderson, Nevada Facility, May (revised October 1996).
8. Environmental Answers, Keith Bailey, Verbal Communication, April 9, 2008.

Summary of Available Data for LOU 60 Acid Drain System
Area IV

Tronox Facility – Henderson, Nevada

LOU Figure

J:\TronoxGIS\mxd\Phase_B_WorkPlan\LOUs\lou-60_Acid_Drains_Area-4.mxd

N

1:2,400
1 inch equals 200 feet

200 100 0 200

Feet

AREA I

AREA II

AREA IV

AREA IV

LOU #35 BOUNDARY

LOU #64 BOUNDARY

LOU #45 BOUNDARY

LOU #65c BOUNDARY

LOU #63 BOUNDARY

LOU #4 BOUNDARY

LOU #65a BOUNDARY

LOU #26 BOUNDARY

LOU #28 BOUNDARY

LOU #15 BOUNDARY

LOU #11 BOUNDARY

LOU #41 BOUNDARY

LOU #65b BOUNDARY

LOU #27 BOUNDARY

LOU #36 BOUNDARY

LOU #25 BOUNDARY

LOU #42 BOUNDARY

LOU #65d BOUNDARY

Parcel F

Parcel G

AVENUE H

5th STREET

6th STREET

7th STREET

8th STREET

Acid Drain Reference:
Kleinfelder 1993, Map 31

LEGEND

- LOU #60 Acid Drain System with manholes and sumps with flow direction in Area IV
- LOU #59 Storm Drain System with manholes and sumps with flow direction
- LOU #60 Acid Drain System with manholes and sumps in other areas with flow direction
- Other LOU Boundary

Proposed Phase B Explorations for LOU

- Groundwater Monitoring Well Location
- Boring Location
- Soil Gas Location

Other Explorations

- Phase A Boring Location (Sep. 2007)
- Phase II BRC Sample Location (Oct. 2007)
- Historic Sample Location (pre 2006)
- Existing Well Location (No Proposed Sampling)
- Proposed Phase B Groundwater Location (Other LOU)
- Proposed Phase B Soil Boring Location (Other LOU)
- Proposed Phase B Soil Gas Location (Other LOU)
- Tronox Facility Boundary
- Area Boundary
- Parcel Boundary
- Four Acre Grid Line (Cell reference displayed as row-column, i.e. M-8)

Base Aerial Photo from PBS&J, October 2006

FIGURE NUMBER: 1

SHEET NUMBER: X

SAMPLE LOCATIONS FOR LOU #60 IN AREA IV FORMER ACID DRAIN SYSTEM SEGMENT

Phase B Area IV Source Area Investigation
Tronox Facility
Henderson, Nevada

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

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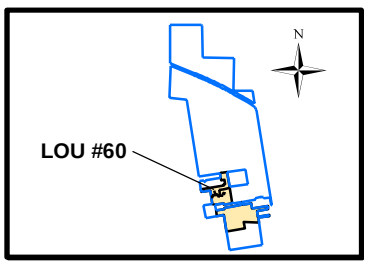

Summary of Available Data for LOU 60 Acid Drain System
Area IV

Tronox Facility – Henderson, Nevada

Sampling and Analytical Plan for LOU 60:

Table A – Soil Sampling and Analytical Plan for LOU 60
Note: There is no Table B for LOU 60

Table A
Soil Sampling and Analytical Plan for LOU 60
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

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 grid Q-3 and ending point on grid R-5.																			
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-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, 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, 60	SA204	SA204-0.0	0													X		Boring located to 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					
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-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-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					
Number of Borings:		7																	
Number of Samples:					35	35	35	35	35	35	0	14	35	35	7	0	7	0	

Notes:

X Sample will be collected and analyzed.
No sample collected under Phase B sampling program.
TPH-DRO/ORC 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).

Table B
Groundwater Sampling and Analysis Plan for LOU 60
Phase B Source Area Investigation Work Plan
Tronox Facility - Henderson, Nevada

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 grid Q-4 and ending point on grid R-4.																
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.
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
					Number of Field Samples:		**3**	**3**	**3**	**3**	**3**	**1**	**3**	**3**	**3**	

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

Summary of Available Data for LOU 60 Acid Drain System
Area IV

Tronox Facility – Henderson, Nevada

Soil and Groundwater Characterization Data

Summary of Available Data for LOU 60 Acid Drain System
Area IV
Tronox Facility – Henderson, Nevada

LOU-specific analytes identified include:

- Metals
- Hexavalent chromium
- Wet chemistry analytes
- Perchlorate
- Acids
- Cyanide
- Caustics

The tables in **BOLD** below present historical data associated with these LOU specific analytes.

LOU 60 Table 1 – Soil Characterization Data – Wet Chemistry
LOU 60 Table 2 – Groundwater Characterization Data – Wet Chemistry
LOU 60 Table 3 – Soil Characterization Data – Dioxins and Dibenzofurans
LOU 60 Table 4 – Soil Characterization Data – Metals
LOU 60 Table 5 – Groundwater Characterization Data – Metals
LOU 60 Table 6 – Groundwater Characterization Data – Routine Monitoring
LOU 60 Table 7 – Soil Characterization Data – Organochlorine Pesticides (OCP)
LOU 60 Table 8 – Groundwater Characterization Data – Organochlorine Pesticides (OCP)
LOU 60 Table 9 – Soil Characterization Data – Organophosphorus Pesticides (OPP)
LOU 60 Table 10 – Groundwater Characterization Data – Organophosphorus Pesticides (OPP)
LOU 60 Table 11 – Soil Characterization Data – PCBs
LOU 60 Table 12 – Groundwater Characterization Data – PCBs
LOU 60 Table 13 – Soil Characterization Data – Perchlorate
LOU 60 Table 14 – Groundwater Characterization Data – Perchlorate
LOU 60 Table 15 – Soil Characterization Data – Radionuclides
LOU 60 Table 16 – Groundwater Characterization Data – Radionuclides
LOU 60 Table 17 – Soil Characterization Data – SVOC
LOU 60 Table 18 – Groundwater Characterization Data – SVOC
LOU 60 Table 19 – Soil Characteristic Data - TPH and Fuel Alcohols
LOU 60 Table 20 – Soil Characterization Data – VOCs
LOU 60 Table 21 – Groundwater Characterization Data – VOCs
LOU 60 Table 22 – Soil Characterization Data – Long Asbestos Fibers in Respirable Soil Fraction
Notes for Phase A Data Tables

LOU 60 Table 1
Soil Characterization Data - Wet Chemistry

Acid Drain System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring No.		SA3	SA3	SA3	SA3	SA3	SA3	SA4	SA4	SA4	SA4	SA4	
Sample ID		SA3-0.5	SA3-0.5D	SA3-10	SA3-20	SA3-30	SA3-40	SA4-0.5	SA4-10	SA4-20	SA4-30	SA4-40	
Sample Depth (ft)		0.5	0.5	10	20	30	40	0.5	10	20	30	40	
Sample Date		11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	
Wet Chemistry Parameter	**MSSL[2] mg/kg**												**Units**
Percent moisture	--	**6.4**	**6.3**	**6.3**	**8.9**	**22.4**	**32.1**	**9.0**	**6.0**	**8.5**	**12.3**	**5.9**	percent
Alkalinity (as CaCO3)	--	**324**	**269**	**162**	**134**	64.4 U	**451**	**476**	**437**	**595**	**278**	**77.5**	mg/kg
Bicarbonate	--	**675**	**296**	**916**	**476**	**139**	**1670**	**1480**	**1630**	**1740**	**723**	**149**	mg/kg
Total Alkalinity	--	**999**	**566**	**1080**	**611**	**139**	**2120**	**1950**	**2070**	**2330**	**1000**	**227**	mg/kg
Ammonia (as N)	--	5.3 UJ	5.3 UJ	5.3 UJ	5.5 UJ	6.4 UJ	7.4 UJ	5.5 UJ	5.3 UJ	5.5 UJ	5.7 UJ	5.3 UJ	mg/kg
Cyanide	1.37E+04	R	R	R	R	R	R	R	R	R	R	R	mg/kg
MBAS	--	2.2 U	2.2 U	2.1 U	2.2 U	2.8 U	3.1 U	2.2 U	2.1 U	2.2 U	**2.7 J**	**2.8 J**	mg/kg
pH (solid)	--	**8.8**	**8.8**	**8.6**	**8.8**	**7.7**	**8.5**	**10**	**7.8**	**9.8**	**9.4**	**8.4**	none
Bromide	--	2.7 U	2.7 U	2.7 U	2.7 U	**3.4**	3.7 U	2.7 U	2.7 U	**92.0**	**1.4 J**	**2.0 J**	mg/kg
Chlorate	--	5.3 U	5.3 U	5.3 U	**17.6 J-**	6.4 UJ	7.4 UJ	5.5 UJ	5.3 U	5.5 U	**91.3 J-**	**119 J-**	mg/kg
Chloride	--	**0.90 J**	**1.0 J**	**13.2**	**130**	**1240**	**120**	**2.8**	**4.4**	**172**	**46.5**	**71.2**	mg/kg
Nitrate (as N)	--	0.21 U	0.21 U	**2.6**	**8.2**	**12.7**	**1.6**	**0.53 J+**	**0.35 J+**	**1.0 J+**	**1.4 J+**	**1.5 J+**	mg/kg
Nitrite	--	0.21 U	0.21 U	0.21 U	**1.7 J**	**11.9**	29.5 U	**0.047 J**	**0.34**	0.22 U	**0.059 J**	**0.14 J**	mg/kg
ortho-Phosphate	--	5.3 U	5.3 U	**1.4 J**	5.5 U	6.4 U	7.4 U	**2.7 J**	**3.1 J**	5.5 U	5.7 U	5.3 U	mg/kg
Sulfate	--	**7.2**	**8.6**	**156**	**267**	**573**	**325**	**19.5**	**24.9**	**87.4**	**733**	**177**	mg/kg
Total Organic Carbon	--	**2780**	**2680**	**3720**	**8300**	**15900**	**6600**	**9550**	**7100**	**7500**	**1600**	**7800**	mg/kg

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)

LOU 60 Table 2
Groundwater Characterization Data - Wet Chemistry

Acid Drain System
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	
	Well ID	M92	M97	
	Sample ID	M92	M97	
	Sample Date	11/29/2006	11/29/2006	
Wet Chemistry Parameters	**MCL[2] ug/L**			**Units**
Total Dissolved Solids	5.00E+05 j	**1850**	**3750**	mg/L
Total Suspended Solids	--	**22.0 J**	**16.0 J**	mg/L
Alkalinity (as CaCO3)	--	5.0 U	5.0 U	mg/L
Bicarbonate	--	**80.0**	**90.0**	mg/L
Total Alkalinity	--	**80.0**	**90.0**	mg/L
Ammonia (as N)	--	50.0 U	50.0 U	ug/L
MBAS	--	0.20 U	**0.24**	mg/L
Cyanide	2.00E+02	R	R	ug/L
pH (liquid)	--	**7.4 J**	**7.3 J**	none
Specific Conductance	--	**1930**	**2410**	umhos/cm
Bromide	--	**0.21 J**	25.0 U	mg/L
Chlorate	--	**3.2 J**	**277**	mg/L
Chloride	2.50E+05	**192**	**1190**	mg/L
Nitrate (as N)	1.00E+04	**4.0**	**8.4**	mg/L
Nitrite	1.00E+03	0.020 U	2.0 U	mg/L
ortho-Phosphate	--	5.0 U	5.0 U	mg/L
Sulfate	2.50E+05 j	**992**	**1150**	mg/L
Total Organic Carbon	--	50.0 U	50.0 U	mg/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted
(j) Secondary Drinking Water Regulation value.

LOU 60 Table 3
Soil Characterization Data - Dioxins and Dibenzofurans

Acid Drain System
Tronox Facility - Henderson, Nevada

			Sampling Program	Ph A[1]	Ph A	Ph A
			Boring No.	SA3	SA3	SA4
			Sample ID	SA3-0.5	SA3-0.5D	SA4-0.5
			Sample Depth (ft)	0.5	0.5	0.5
			Sample Date	11/13/2006	11/13/2006	11/14/2006
chemical_name:	**Method**	**Unit**	**MSSL[2] mg/kg**			
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (a) ng/kg		ng/kg	--	**149.01**		**42.5**
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (a) ng/kg		ng/kg	--			
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (b) ng/kg		ng/kg	--	**149.01**		**42.5**
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (b) ng/kg		ng/kg	--			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	8290 Screen	ng/kg	--	**669.842**	**849.298**	**18.965**
1,2,3,4,6,7,8-Heptachlorodibenzofuran	SW 846 8290	ng/kg	--			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	**53.366**	**71.721**	**2.141**
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	8290 Screen	ng/kg	--	**269.014**	**344.266**	**8.238**
1,2,3,4,7,8,9-Heptachlorodibenzofuran	SW 846 8290	ng/kg	--			
1,2,3,4,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	**281.567**	**356.494**	**23.006**
1,2,3,4,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--			
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	**6.265**	**8.512**	**0.656**
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--			
1,2,3,6,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	**157.518**	**196.405**	**9.753**
1,2,3,6,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--			
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	**13.496**	**17.014**	**1.595**
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--			
1,2,3,7,8,9-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	**45.354**	**27.487**	**4.476**
1,2,3,7,8,9-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--			
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	**15.276**	**19.467**	**1.534**
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--			
1,2,3,7,8-Pentachlorodibenzofuran	8290 Screen	ng/kg	--	**117.401**	**143.365**	**37.501**
1,2,3,7,8-Pentachlorodibenzofuran	SW 846 8290	ng/kg	--			
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	**11.897**	**13.508**	**3.343**
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--			
2,3,4,6,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	**50.697**	**60.179**	**4.497**
2,3,4,6,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--			
2,3,4,7,8-Pentachlorodibenzofuran	8290 Screen	ng/kg	--	**57.175**	**65.924**	**28.443**
2,3,4,7,8-Pentachlorodibenzofuran	SW 846 8290	ng/kg	--			
2,3,7,8-Tetrachlorodibenzofuran	8290 Screen	ng/kg	--	**298.648**	**320.832**	**201.573**
2,3,7,8-Tetrachlorodibenzofuran	SW 846 8290	ng/kg	--			
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	1.80E-05 h,v	**8.039**	**8.466**	**4.487**
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	1.80E-05 h,v			
Octachlorodibenzofuran	8290 Screen	ng/kg	--	**1674.507**	**2372.145**	**38.680**
Octachlorodibenzofuran	SW 846 8290	ng/kg	--			
Octachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	**57.568**	**90.351**	**2.582**

LOU 60 Table 3 (continued)
Soil Characterization Data - Dioxins and Dibenzofurans

Acid Drain System
Tronox Facility - Henderson, Nevada

			Sampling Program	Ph A[1]	Ph A	Ph A
			Boring No.	SA3	SA3	SA4
			Sample ID	SA3-0.5	SA3-0.5D	SA4-0.5
			Sample Depth (ft)	0.5	0.5	0.5
			Sample Date	11/13/2006	11/13/2006	11/14/2006
chemical_name:	**Method**	**Unit**	**MSSL[2] mg/kg**			
Octachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--			
Tetrachlorinated Dibenzofurans, (Total)	SW 846 8290	ng/kg	--			
Total HpCDD	SW 846 8290	ng/kg	--			
Total HpCDF	SW 846 8290	ng/kg	--			
Total HxCDD	SW 846 8290	ng/kg	--			
Total HxCDF	SW 846 8290	ng/kg	--			
Total PeCDD	SW 846 8290	ng/kg	--			
Total PeCDF	SW 846 8290	ng/kg	--			
Total TCDD	SW 846 8290	ng/kg	--			

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)
(a) Calculated assuming 0 for non-detected congeners and 2006 toxic equivalency factors (TEFs).
(b) Calculated assuming 1/2 detection limit as proxy for non-detected congeners and 2006 TEFs.
(h) Dioxins and furans were expressed as 2,3,7,8- TCDD TEQ (toxic equivalents), calculated using the TEFs (Toxic Equivalency Factors) published by Van den Berg et al., 2006.
(v) USEPA, 1998. Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites. OSWER Directive 9200.4-26. April, 1998. Midpoint of the range of 0.005 to 0.02 mg/kg for commercial/industrial soils.

LOU 60 Table 4
Soil Characterization Data - Metals

Acid Drain System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
Boring No.		SA3	SA3	SA3	SA3	SA3	SA3	SA4	SA4	SA4	SA4	SA4
Sample ID		SA3-0.5	SA3-0.5D	SA3-10	SA3-20	SA3-30	SA3-40	SA4-0.5	SA4-10	SA4-20	SA4-30	SA4-40
Sample Depth (ft)		0.5	0.5	10	20	30	40	0.5	10	20	30	40
Sample Date		11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
Metals	**MSSL[2] mg/kg**	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum	1.00E+05	7000	6820	6130	6960	7760	13500	7490	6040	6640	4260	5630
Antimony	4.50E+02	0.17 J-	0.16 J-	0.17 J-	0.094 J-	0.13 J-	0.23 J-	0.17 J-	0.14 J-	0.17 J-	0.12 J-	0.15 J-
Arsenic	2.80E+02	3.5	2.9	3.0	3.5	61.6	27.7	13.4	11.3	5.3	6.1	8.6
Barium	1.00E+05	181 J+	144 J+	161 J+	188 J+	667 J	43.6 J	155 J+	151 J+	176 J+	79.7 J+	152 J+
Beryllium	2.20E+03	0.52	0.47	0.46	0.46	0.40 J	0.81	0.51	0.36	0.49	0.31	0.39
Boron	1.00E+05	5.7 UJ	5.0 UJ	3.7 UJ	5.8 UJ	25.6 UJ	24.2 UJ	4.5 UJ	4.7 UJ	5.0 UJ	4.8 UJ	6.9 UJ
Cadmium	5.60E+02	0.15	0.13	0.084	0.077	0.077	0.099	0.087	0.088	0.080	0.053 J	0.082
Calcium	--	40900 J	19800 J	19300 J	30200 J	120000 J	30000 J	21100	25300	38800	9480	26600
Chromium (Total)	7.10E+01	10.7	9.6	9.4	7.0	18.5 J-	34.6 J-	11.2	7.2	10.7	7.3	19.1
Chromium-hexavalent	5.00E+02	0.11 J	0.21 U	0.21 U	0.22 U	0.26 U	0.29 U	0.12 J	0.21 U	1.7	0.23 U	0.54
Cobalt	2.10E+03	6.5	6.3 J-	5.9 J-	6.9 J-	4.0 J-	5.1 J-	6.3 J-	3.8 J-	5.9 J-	3.7 J-	4.1 J-
Copper	4.20E+04	12.3 J-	13.3 J-	12.0 J-	10.3 J-	9.9 J	11.7 J	12.9 J-	8.4 J-	11.8 J-	9.1 J-	10.4 J-
Iron	1.00E+05	12000 J-	11300	12000	8290	6880	11900	13300	8350	11500	6470	11200
Lead	8.00E+02	12.4	12.1	8.0	7.7	4.6	8.3	14.5	6.3	7.0	6.3	6.3
Magnesium	--	7260 J-	6640 J-	5890 J-	10100 J-	45900 J-	40800 J-	7570 J-	5530 J-	10500 J-	5110 J-	6050 J-
Manganese	3.50E+04	329 J	369 J	264 J	289 J	119	160	254 J	176 J	295 J	157 J	186 J
Molybdenum	5.70E+03	0.49 J	0.57	0.52 J	0.31 J	0.44 J	0.80	0.45 J	0.42 J	0.51 J	0.46 J	1.7
Nickel	2.30E+04	13.5 J-	12.0 J-	11.5 J-	11.0 J-	10.2 J-	12.5 J-	13.2 J-	9.3 J-	12.2 J-	8.5 J-	11.1 J-
Platinum	--	0.019 J	0.016 J	0.016 J	0.015 J	0.019 J	0.023 J	0.033 J	0.012 J	0.017 J	0.011 U	0.014 J
Potassium	--	1890 J-	1830 J-	1600 J-	1480 J-	1570	3260	2080 J-	2480 J-	1300 J-	1100 J-	1590 J-
Selenium	5.70E+03	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.14 UJ	0.16 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ	0.12 UJ
Silver	5.70E+03	0.14 J	0.13 J	0.12 J	0.11 J	0.15 J	0.18 J	0.13 J	0.11 J	0.13 J	0.061 J	0.11 J
Sodium	--	383 J-	344 J-	317 J-	756 J-	1620 J-	669 J-	1520 J-	823 J-	556 J-	360 J-	609 J-
Strontium	1.00E+05	226 J+	152 J+	154 J+	228 J+	299 J	119 J	131 J+	187 J+	260 J+	175 J+	304 J+
Thallium	--	0.10 U	0.15 U	0.082 U	0.12 U	0.09 U	0.18 U	0.077 U	0.074 U	0.076 U	0.08 U	0.074 U
Tin	--	0.54	0.52	0.48	0.36	0.36	0.66	0.52	0.42	0.47	0.39	0.63
Titanium	--	527	498	504	353	363	581	586	429	507	330	517
Tungsten	--	0.38 UJ	0.32 UJ	0.30 UJ	0.19 UJ	0.49 UJ	0.33 UJ	0.34 UJ	0.23 UJ	0.37 UJ	0.32 UJ	0.46 UJ
Uranium	--	1.3	0.89	0.91	1.4	10.6	3.7	0.89	0.85	2.0	0.94	1.6
Vanadium	5.70E+03	32.6 J-	29.9 J-	33.9 J-	23.9 J-	36.2 J-	33.7 J-	35.4 J-	22.2 J-	34.2 J-	22.8 J-	30.6 J-
Zinc	1.00E+05	27.6 J-	29.0 J-	24.8 J-	22.9 J-	29.5 UJ	49.2 UJ	29.4 J-	20.1 J-	23.9 J-	17.3 J-	22.7 J-
Mercury	3.41E+02 (t)	0.013 J-	0.019 J-	0.013 J-	0.0073 UJ	0.0086 UJ	0.0098 UJ	0.014 J-	0.014 J-	0.0073 UJ	0.0076 UJ	0.0071 UJ

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)
(t) Value for mercury and compounds.

LOU 60 Table 5
Groundwater Characterization Data - Metals

Acid Drain System
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	
	Well ID:	M92	M97	
	Sample ID	M92-Z	M97-Z	
	Sample Date	05/08/2007	05/11/2007	
Metals	**MCL[2] ug/L**			**Unit**
Aluminum	5.00E+01 j	32.6 U	197 U	ug/L
Antimony	6.00E+00	0.50 U	12.5 U	ug/L
Arsenic	1.00E+01	**95.7**	**181**	ug/L
Barium	2.00E+03	18.2 U	**33.8 J**	ug/L
Beryllium	4.00E+00	1.8 U	2.2 U	ug/L
Boron	7.30E+03 c	**1820**	**4710**	ug/L
Cadmium	5.00E+00	0.057 U	1.4 U	ug/L
Calcium	--	**155000**	**277000**	ug/L
Chromium (Total)	1.00E+02	**15.1 J-**	70.0 U	ug/L
Chromium-hexavalent	1.09E+02 c	**15.9 J**	**60.5 J**	ug/L
Cobalt	7.30E+02 c	**0.32 J-**	7.8 U	ug/L
Copper	1.30E+03 p	2.4 U	6.3 U	ug/L
Iron	3.00E+02 j	188 UJ	235 UJ	ug/L
Lead	1.50E+01 u	0.49 U	12.3 U	ug/L
Magnesium	1.50E+05 a	**83500**	**182000**	ug/L
Manganese	5.00E+01 j	6.8 U	8.5 U	ug/L
Molybdenum	1.82E+02 c	**18.7**	**17.2 J**	ug/L
Nickel	7.30E+02 c	10.3 UJ	12.9 U	ug/L
Platinum	--	0.10 U	2.5 U	ug/L
Potassium	--	**9650**	**15900**	ug/L
Selenium	5.00E+01	**2.3 J**	25.0 U	ug/L
Silver	1.00E+02 j	0.20 U	5.1 U	ug/L
Sodium	--	**373000**	**598000**	ug/L
Strontium	2.19E+04 c	**2760**	**7070**	ug/L
Thallium	2.00E+00	1.0 U	8.0 U	ug/L
Tin	2.19E+04 c	**0.23 J**	5.0 U	ug/L
Titanium	1.46E+05 c	4.9 U	9.8 U	ug/L
Tungsten	--	1.8 UJ	12.5 U	ug/L
Uranium	3.00E+01	**8.3 J+**	**36.1**	ug/L
Vanadium	3.65E+01 c	32.0 U	40.0 UJ	ug/L
Zinc	5.00E+03 j	2.0 UJ	25.0 U	ug/L
Mercury	2.00E+00	0.093 U	0.093 U	ug/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted
(j) Secondary Drinking Water Regulation value.
(c) Equal to the USEPA Region 9 Preliminary Remediation Goals (PRGs) for tapwater (October, 2004).
(p) The national primary drinking water regulations (b) lists a treatment technology action level of 1.3 mg/l as the MCL for Copper. Therefore, the secondary value is not used.
(u) See footnote (b). Treatment technology action level.
(a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.

LOU 60 Table 6
Groundwater Characterization Data - Routine Monitoring[1]

Acid Drain System
Tronox Facility - Henderson, Nevada

Well ID	Date	Depth to water (ft)	Perchlorate mg/l	Qual	MCL[2] ug/l	Total Chromium mg/l	Qual	MCL[2] ug/l	TDS mg/l	Qual	MCL[2] ug/l	Nitrate (as N) mg/l	Qual	MCL[2] ug/l	Chlorate mg/l	Qual	MCL[2] ug/l
M-92	2/3/2006	36.67	0.89	d	1.80E+01 a,m	<0.01	ud	1.00E+02			5.00E+05 j			1.00E+04			--
M-92	5/4/2006	36.65	0.62	d	1.80E+01 a,m	<0.01	ud	1.00E+02	1980		5.00E+05 j			1.00E+04			--
M-92	8/2/2006	36.95	0.567	d	1.80E+01 a,m	<0.01	ud	1.00E+02	1670		5.00E+05 j			1.00E+04			--
M-92	11/1/2006	36.96	0.676	d	1.80E+01 a,m	<0.01	ud	1.00E+02	1920		5.00E+05 j			1.00E+04			--
M-92	1/31/2007	37.21	0.674		1.80E+01 a,m	<0.02	U	1.00E+02	1990		5.00E+05 j			1.00E+04			--
M-92	5/3/2007	37.24	0.695	J	1.80E+01 a,m	<0.02	U	1.00E+02	1920	J	5.00E+05 j			1.00E+04			--
M-92	8/1/2007	37.77	0.752		1.80E+01 a,m	<0.02	U	1.00E+02	1990		5.00E+05 j			1.00E+04			--
M-97	2/3/2006	39.83	60	d	1.80E+01 a,m	0.055	d	1.00E+02			5.00E+05 j			1.00E+04			--
M-97	5/4/2006	39.89	61	d	1.80E+01 a,m	0.06	d	1.00E+02	3640		5.00E+05 j			1.00E+04			--
M-97	8/2/2006	40.10	62	d	1.80E+01 a,m	0.067	d	1.00E+02	3140		5.00E+05 j			1.00E+04			--
M-97	11/1/2006	40.07	80	d	1.80E+01 a,m	0.072	d	1.00E+02	3600		5.00E+05 j			1.00E+04			--
M-97	1/31/2007	40.37	77.7		1.80E+01 a,m	0.066		1.00E+02	3660		5.00E+05 j			1.00E+04			--
M-97	5/3/2007	40.43	76.8	J	1.80E+01 a,m	0.063		1.00E+02	3770	J	5.00E+05 j			1.00E+04			--
M-97	8/1/2007	40.97	89.2		1.80E+01 a,m	0.61		1.00E+02	3730		5.00E+05 j			1.00E+04			--

Notes:
1. ENSR, 2007, Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, July-September 2007, November 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted
< = less than the reporting limit
Blank cell or --- = no data and or no qualifier
Qual = data qualifiers applied by laboratory or during data validation
TDS = Total Dissolved Solids
mg/l = milligram per liter
(a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.
(m) Equal to the provisional action level derived by NDEP as referenced in "Defining a Perchlorate Drinking Water Standard". NDEP Bureau of Corrective Action. URL [http://ndep.nv.gov/bca/perchlorate02_05.htm].
(j) Secondary Drinking Water Regulation value.

Laboratory Qualifiers:
d = the sample was diluted
ud = the sample was dilluted and was not detected above the sample reporting limit

Validation Qualifiers:
U = the analyte was analyzed for, but was not detected above the sample reporting limit
J = the result is an estimated quantity

LOU 60 Table 7
Soil Characterization Data - Organochlorine Pesticides (OCP)

Acid Drain System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	Ph A	
Boring No.		SA3	SA3	SA4	
Sample ID		SA3-0.5	SA3-0.5D	SA4-0.5	
Sample Depth (ft)		0.5	0.5	0.5	
Sample Date		11/13/2006	11/13/2006	11/14/2006	
Organochlorine Pesticides	**PRG[2] mg/kg**				**Unit**
4,4'-DDD	1.10E+01	0.0018 U	0.0018 U	0.0019 U	mg/kg
4,4'-DDE	7.80E+00	0.0018 U	**0.0020**	0.0019 U	mg/kg
4,4'-DDT	7.80E+00	0.0018 U	0.0018 U	0.0019 U	mg/kg
Aldrin	1.10E-01	0.0018 U	0.0018 U	0.0019 U	mg/kg
Alpha-BHC	4.00E-01 (bbb)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Alpha-chlordane	1.40E+00 (y)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Beta-BHC	1.40E+00 (bbb)	0.0018 U	0.0018 U	**0.0036**	mg/kg
Delta-BHC	--	0.0018 U	0.0018 U	0.0019 U	mg/kg
Dieldrin	1.20E-01	0.0018 U	0.0018 U	0.0019 U	mg/kg
Endosulfan I	4.10E+03 (aa)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Endosulfan II	4.10E+03 (aa)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Endosulfan Sulfate	4.10E+03 (aa)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Endrin	2.10E+02	0.0018 U	0.0018 U	0.0019 U	mg/kg
Endrin Aldehyde	2.10E+02 (k)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Endrin Ketone	2.10E+02 (k)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Gamma-BHC (Lindane)	1.90E+00 (bbb)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Gamma-Chlordane	1.40E+00 (y)	0.0018 U	0.0018 U	0.0019 U	mg/kg
Heptachlor	4.30E-01	0.0018 U	0.0018 U	0.0019 U	mg/kg
Heptachlor Epoxide	2.10E-01	0.0018 U	0.0018 U	0.0019 U	mg/kg
Methoxychlor	3.40E+03	0.0035 UJ	0.0035 UJ	**0.0048**	mg/kg
Tech-Chlordane	1.40E+00	0.011 U	0.011 U	0.011 U	mg/kg
Toxaphene	1.70E+00	0.053 U	0.053 U	0.055 U	mg/kg

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)
(bbb) BHC listed as HCH in the MSSL table.
(y) Value for chlordane (technical) used as surrogate for alpha-chlordane and gamma-chlordane based on structural similarities.
(z) Value for alpha-BHC used as surrogate for delta-BHC based on structural similarities.
(aa) Value for endosulfan used as surrogate for endosulfan I, endosulfan II and endosulfan sulfate based on structural similarities.
(k) Value for endrin used as surrogate for endrin aldehyde and endrin ketone due to structural similarities.

LOU 60 Table 8
Groundwater Characterization Data - Organochlorine Pesticides (OCP)

Acid Drain System
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A
	Well ID	M92	M97
	Sample ID	M92	M97
	Sample Date	11/29/2006	11/29/2006
Organochlorine Pesticides	**MCL[2] ug/l**	ug/L	ug/L
4,4'-DDD	2.80E-01 c	0.050 U	0.050 U
4,4'-DDE	1.98E-01 c	0.050 U	0.050 U
4,4'-DDT	1.98E-01 c	0.050 U	0.050 U
Aldrin	4.00E-03 c	0.050 U	0.050 U
Alpha-BHC	1.10E-02 c, (bbb)	0.050 U	0.050 U
Alpha-chlordane	2.00E+00 (l)	0.050 U	0.050 U
Beta-BHC	3.74E-02 c, (bbb)	0.050 U	0.050 U
Delta-BHC	1.10E-02 c, (z)	0.050 U	0.050 U
Dieldrin	4.20E-03 c, (z)	0.050 U	0.050 U
Endosulfan I	2.19E+02 c, (aa)	0.050 U	0.050 U
Endosulfan II	2.19E+02 c, (aa)	0.050 U	0.050 U
Endosulfan Sulfate	2.19E+02 c, (aa)	0.050 U	0.050 U
Endrin	2.00E+00	0.050 U	0.050 U
Endrin Aldehyde	1.09E+01 c, (k)	0.050 U	0.050 U
Endrin Ketone	1.09E+01 c, (k)	0.050 U	0.050 U
Gamma-BHC (Lindane)	2.00E-01	0.050 U	0.050 U
Gamma-Chlordane	2.00E+00 (l)	0.050 U	0.050 U
Heptachlor	4.00E-01	0.050 U	0.050 U
Heptachlor Epoxide	2.00E-01	0.050 U	0.050 U
Methoxychlor	4.00E+01	0.10 U	0.10 U
Tech-Chlordane	2.00E+00 (l)	0.50 U	0.50 U
Toxaphene	3.00E+00	2.0 U	2.0 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted
(c) Equal to the USEPA Region 9 Preliminary Remediation Goals (PRGs) for tapwater (October, 2004).
(bbb) BHC listed as HCH in the PRG table.
(l) Value for chlordane used as surrogate for alpha-chlordane, chlordane (technical) and gamma-chlordane due to structural similarities.
(z) Value for alpha-BHC used as surrogate for delta-BHC based on structural similarities.
(aa) Value for endosulfan used as surrogate for endosulfan I, endosulfan II and endosulfan sulfate based on structural similarities.
(k) Value for endrin used as surrogate for endrin aldehyde and endrin ketone due to structural similarities.

LOU 60 Table 9
Soil Characterization Data - Organophosphorus Pesticides (OPPs)

Acid Drain System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	Ph A	
Boring No.		SA3	SA3	SA4	
Sample ID		SA3-0.5	SA3-0.5D	SA4-0.5	
Sample Depth (ft)		0.5	0.5	0.5	
Sample Date		11/13/2006	11/13/2006	11/14/2006	
OPPs	**PRG[2] mg/kg**				**Unit**
Azinphos-methyl	--	0.014 U	0.014 U	0.014 UJ	mg/kg
Bolstar	--	0.014 U	0.014 U	0.014 U	mg/kg
Chlorpyrifos	2.10E+03	0.021 U	0.021 U	0.022 U	mg/kg
Coumaphos	--	0.014 U	0.014 U	0.014 UJ	mg/kg
Demeton-O	--	0.042 U	0.042 U	0.043 U	mg/kg
Demeton-S	--	0.016 U	0.016 U	0.016 U	mg/kg
Diazinon	6.20E+02	0.024 U	0.023 U	0.024 U	mg/kg
Dichlorvos	6.60E+00	0.025 U	0.025 U	0.025 U	mg/kg
Dimethoate	--	0.024 U	0.023 U	0.024 U	mg/kg
Disulfoton	2.70E+01	0.051 U	0.051 U	0.053 U	mg/kg
EPN	--	0.014 UJ	0.014 UJ	0.014 U	mg/kg
Ethoprop	--	0.016 U	0.016 U	0.016 U	mg/kg
Ethyl Parathion	4.10E+03	0.019 UJ	0.019 UJ	0.020 U	mg/kg
Famphur	--	0.014 U	0.014 U	0.014 UJ	mg/kg
Fensulfothion	--	0.014 U	0.014 U	0.014 U	mg/kg
Fenthion	1.70E+02 (ff)	0.035 U	0.035 U	0.036 U	mg/kg
Malathion	1.40E+04	0.016 U	0.016 U	0.016 U	mg/kg
Merphos	--	0.032 U	0.032 U	0.033 U	mg/kg
Methyl parathion	1.70E+02	0.021 U	0.021 U	0.022 U	mg/kg
Mevinphos	--	0.016 U	0.016 U	0.016 U	mg/kg
Naled	1.40E+03	0.035 UJ	0.035 UJ	0.036 UJ	mg/kg
Phorate	--	0.021 U	0.021 U	0.022 U	mg/kg
Ronnel	3.40E+04	0.019 U	0.019 U	0.020 U	mg/kg
Stirphos	--	0.016 U	0.016 U	0.016 UJ	mg/kg
Sulfotep	--	0.021 U	0.021 U	0.022 U	mg/kg
Thionazin	--	0.019 U	0.019 U	0.020 U	mg/kg
Tokuthion	--	0.021 U	0.021 U	0.022 U	mg/kg
Trichloronate	--	0.021 U	0.021 U	0.022 U	mg/kg

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)
(ff) Value for methyl parathion used as surrogate for fenthion based on structural similarities.

LOU 60 Table 10
Groundwater Characterization Data - Organophosphorus Pesticides (OPPs)

Acid Drain System
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	
	Well ID	M92	M97	
	Sample ID	M92	M97	
	Sample Date	11/29/2006	11/29/2006	
OPPs	**MCL[2] ug/l**			**Unit**
Azinphos-methyl	--	2.5 UJ	2.5 UJ	ug/L
Bolstar	--	1.0 U	1.0 U	ug/L
Chlorpyrifos	1.09E+02 c	1.0 U	1.0 U	ug/L
Coumaphos	--	1.0 U	1.0 U	ug/L
Demeton-O	1.46E+00 c,(cc)	1.0 U	1.0 U	ug/L
Demeton-S	1.46E+00 c,(cc)	1.0 U	1.0 U	ug/L
Diazinon	3.28E+01	1.0 U	1.0 U	ug/L
Dichlorvos	2.32E-01	1.0 U	1.0 U	ug/L
Dimethoate	7.30E+00	1.0 U	1.0 U	ug/L
Disulfoton	1.46E+00	0.50 U	0.50 U	ug/L
EPN	3.65E-01	1.2 U	1.2 U	ug/L
Ethoprop	--	0.50 U	0.50 U	ug/L
Ethyl Parathion	9.12E+00 c,(tt)	1.0 U	1.0 U	ug/L
Famphur	--	1.0 U	1.0 U	ug/L
Fensulfothion	--	2.5 U	2.5 U	ug/L
Fenthion	9.10E+00 c,(ff)	2.5 U	2.5 U	ug/L
Malathion	7.30E+02	1.2 U	1.2 U	ug/L
Merphos	1.09E+00	5.0 U	5.0 U	ug/L
Methyl parathion	9.12E+00	4.0 U	4.0 U	ug/L
Mevinphos	--	6.2 U	6.2 U	ug/L
Naled	7.30E+01	1.0 UJ	1.0 UJ	ug/L
Phorate	7.30E+00	1.2 U	1.2 U	ug/L
Ronnel	1.82E+03	10 U	10 U	ug/L
Stirphos	--	3.5 U	3.5 U	ug/L
Sulfotep	1.82E+01	1.5 U	1.5 U	ug/L
Thionazin	--	1.0 U	1.0 U	ug/L
Tokuthion	--	1.6 U	1.6 U	ug/L
Trichloronate	--	0.50 U	0.50 U	ug/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted
(c) Equal to the USEPA Region 9 Preliminary Remediation Goals (PRGs) for tapwater (October, 2004).
(cc) Value for demeton used as surrogate for demeton-o and demeton-s based on structural similarities.
(tt) Value for parathion-methyl used as surrogate for parathion-ethyl due to structural similarities.
(ff) Value for methyl parathion used as surrogate for fenthion based on structural similarities.

LOU 60 Table 11
Soil Characterization Data - PCBs

Acid Drain System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
Boring ID		SA3	SA3	SA3	SA3	SA3	SA3	SA4	SA4	SA4	SA4	SA4
Sample ID		SA3-0.5	SA3-0.5D	SA3-10	SA3-20	SA3-30	SA3-40	SA4-0.5	SA4-10	SA4-20	SA4-30	SA4-40
Sample Depth (ft)		0.5	0.5	10	20	30	40	0.5	10	20	30	40
Sample Date		11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
PCBs	MSSL[2] mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aroclor-1016	2.40E+01 (i)	0.035 U	0.035 U	0.035 U	0.036 U	0.043 U	0.049 U	0.036 U	0.035 U	0.036 U	0.038 U	0.035 U
Aroclor-1221	8.30E-01 (i)	0.035 U	0.035 U	0.035 U	0.036 U	0.043 U	0.049 U	0.036 U	0.035 U	0.036 U	0.038 U	0.035 U
Aroclor-1232	8.30E-01 (i)	0.035 U	0.035 U	0.035 U	0.036 U	0.043 U	0.049 U	0.036 U	0.035 U	0.036 U	0.038 U	0.035 U
Aroclor-1242	8.30E-01 (i)	0.035 U	0.035 U	0.035 U	0.036 U	0.043 U	0.049 U	0.036 U	0.035 U	0.036 U	0.038 U	0.035 U
Aroclor-1248	8.30E-01 (i)	0.035 U	0.035 U	0.035 U	0.036 U	0.043 U	0.049 U	0.036 U	0.035 U	0.036 U	0.038 U	0.035 U
Aroclor-1254	8.30E-01 (i)	0.035 U	0.035 U	0.035 U	0.036 U	0.043 U	0.049 U	0.036 U	0.035 U	0.036 U	0.038 U	0.035 U
Aroclor-1260	8.30E-01 (i)	0.035 U	0.035 U	0.035 U	0.036 U	0.043 U	0.049 U	0.036 U	0.035 U	0.036 U	0.038 U	0.035 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker
(March, 2008)
(i) For PCBs, the individual Aroclors were compared to the TSCA action level of 10 mg/kg, for high occupancy, restricted (non-residential) use. (40 CFR Part 761; 63 FR 35383-35474, June 29, 1998).

LOU 60 Table 12
Groundwater Characterization Data - PCBs

Acid Drain System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A[1]	Ph A	
Well ID		M92	M97	
Sample ID		M92	M97	
Sample Date		11/29/2006	11/29/2006	
PCBs	**MCL[2] ug/l**			**Unit**
Aroclor-1016	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1221	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1232	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1242	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1248	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1254	5.00E-01 (bb)	0.10 U	0.10 U	ug/L
Aroclor-1260	5.00E-01 (bb)	0.10 U	0.10 U	ug/L

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted

LOU 60 Table 13
Soil Characterization Data - Perchlorate

Acid Drain System
Tronox Facility - Henderson, Nevada

Boring ID	Sample ID	Sample Depth (ft)	Sample Date	Perchlorate ug/kg	MSSL[1] mg/kg	Sampling Program
SA3	SA3-0.5	0.5	11/13/2006	**1880**	7.95E+02	Ph A[2]
	SA3-0.5D	0.5	11/13/2006	**1540**	7.95E+02	Ph A
	SA3-10	10	11/13/2006	**10200**	7.95E+02	Ph A
	SA3-20	20	11/13/2006	**6100**	7.95E+02	Ph A
	SA3-30	30	11/13/2006	**974**	7.95E+02	Ph A
	SA3-40	40	11/13/2006	**86.7**	7.95E+02	Ph A
SA4	SA4-0.5	0.5	11/14/2006	**3140**	7.95E+02	Ph A
	SA4-10	10	11/14/2006	**496**	7.95E+02	Ph A
	SA4-20	20	11/14/2006	**3800**	7.95E+02	Ph A
	SA4-30	30	11/14/2006	**42800**	7.95E+02	Ph A
	SA4-40	40	11/14/2006	**73900**	7.95E+02	Ph A

Notes:
1. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

LOU 60 Table 14
Groundwater Characterization Data - Perchlorate

Acid Drain System
Tronox Facility - Henderson, Nevada

Well ID Number	Sample ID	Sample Date	Perchlorate	Units	MCL[1] ug/l	Sampling Program
M92	M92	11/29/2006	**610**	ug/L	1.80E+01 a,(m)	Ph A[2]
M97	M97	11/29/2006	**74500**	ug/L	1.80E+01 a,(m)	Ph A

Notes:
1. U.S. EPA Maximum Contaminant Level (MCL) values unless noted
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
(a) NAC 445A.455 Secondary standards. Certain provisions of the National Primary Drinking Water Regulations are adopted by reference (NAC 445A.4525). These values are listed in the first column of this table and are therefore not listed again here. Only NAC 445A.455 Secondary standards are listed.
(m) Equal to the provisional action level derived by NDEP as referenced in "Defining a Perchlorate Drinking Water Standard". NDEP Bureau of Corrective Action. URL [http://ndep.nv.gov/bca/perchlorate02_05.htm].

LOU 60 Table 15
Soil Characterization Data - Radionuclides

Acid Drain System
Tronox Facility - Henderson, Nevada

				Ra-226	Ra-228	Th-228	Th-230	Th-232	U-233/234	U-235/236	U-238	
				(gamma)	(gamma)	(TH MOD)	(TH MOD)	(TH MOD)	(U MOD)	(U MOD)	(U MOD)	
				pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	pCi/g	
			PRG[1] mg/kg	2.60E-02	1.50E-01	2.55E-01	2.02E+01	1.90E+01	3.24E+01	3.98E-01	1.80E+00	
Boring ID Number	**Sample ID**	**Sample Depth (ft)**	**Date**									**Sampling Program**
SA3	SA3-0.5	0.5	11/13/2006	**0.997 J**	**1.81**							Ph A[2]
	SA3-0.5D	0.5	11/13/2006	**1.13 J**	2.21 U							Ph A
	SA3-10	10	11/13/2006	**1.01 J**	**1.65**	**0.691 J**	**0.554 J**	**0.601 J**	**0.427 J-**	0.0123 UJ	**0.292 J-**	Ph A
	SA3-20	20	11/13/2006	**1.19 J**	**1.66**							Ph A
	SA3-30	30	11/13/2006	**1.59 J**	0.357 U							Ph A
	SA3-40	40	11/13/2006	**2.34**	0.913 U							Ph A
SA4	SA4-0.5	0.5	11/14/2006	**1.1 J**	**1.83**							Ph A
	SA4-10	10	11/14/2006	**1.13 J**	**1.81**							Ph A
	SA4-20	20	11/14/2006	**1.19 J**	**1.53**	**0.511 JB**	**0.875 J**	**0.706 J**	**1.35**	**0.0181 J**	**0.833**	Ph A
	SA4-30	30	11/14/2006	**1.45 J**	**1.91**							Ph A
	SA4-40	40	11/14/2006	**1.6 J**	**1.9**							Ph A

Notes:
1. U.S. EPA, Region 9, Preliminary Remediation Goals (PRGs) for industrial soil (October, 2004)
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

LOU 60 Table 16
Groundwater Characterization Data - Radionuclides

Acid Drain System
Tronox Facility - Henderson, Nevada

			Ra-226	Ra-228	Th-228	Th-230	Th-232	U-233/234	U-235/236	U-238	
			pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
		TW PRG [1,2]	8.16E-04	4.58E-02	1.59E-01	5.23E-01	4.71E-01	6.74E-01	6.63E-01	5.47E-01	
Well ID Number	**Sample ID**	**Date**									**Sampling Program**
M92	M92-Z	05/08/2007	**0.241 J**	**0.736 J-**	0.00575 U	**0.0354 B**	0.0198 U	**3.01**	**0.0466 J**	**1.94**	Ph A[3]
M97	M97-Z	05/11/2007	**0.380 J**	**0.788 B**						Ph A	

Notes:
1. Equal to the USEPA Region 9 Preliminary Remediation Goals (PRGs) for tapwater (October, 2004).
2. USEPA, 2004. Radionuclide Toxicity and Preliminary Remediation Goals (PRGs) for Superfund. http://epa-prgs.ornl.gov/radionuclides/download.shtml. August 4, 2004. Soil values are the outdoor worker values; water values are the tapwater values. For radionuclides with decay chains, the PRG for the decay chain was used.
3. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

LOU 60 Table 17
Soil Characterization Data - SVOC

Acid Drain System
Tronox Facility - Henderson, Nevada

		Sampling Program	Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
		Boring No.	SA3	SA3	SA3	SA3	SA3	SA3	SA4	SA4	SA4	SA4	SA4
		Sample ID	SA3-0.5	SA3-0.5D	SA3-10	SA3-20	SA3-30	SA3-40	SA4-0.5	SA4-10	SA4-20	SA4-30	SA4-40
		Sample Depth (ft)	0.5	0.5	10	20	30	40	0.5	10	20	30	40
		Sample Date	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
SVOC	**Analytical Method**	**MSSL[2] mg/kg**	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,4-Dioxane	non-SIM	1.70E+02	71 U	70 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
2-Methylnaphthalene	non-SIM	2.10E+02 (jj)	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
2-Methylnaphthalene	SIM	2.10E+02 (jj)	7.1 U	7.0 U					7.3 U				
Acenaphthene	non-SIM	3.30E+04	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Acenaphthene	SIM	3.30E+04	7.1 U	7.0 U					7.3 U				
Acenaphthylene	non-SIM	3.30E+04 (pp)	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Acenaphthylene	SIM	3.30E+04 (pp)	7.1 U	7.0 U					7.3 U				
Anthracene	non-SIM	1.00E+05	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Anthracene	SIM	1.00E+05	7.1 U	7.0 U					7.3 U				
Benz(a)anthracene	non-SIM	2.30E+00	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Benz(a)anthracene	SIM	2.30E+00	7.1 U	7.0 U					7.3 U				
Benzo(a)pyrene	non-SIM	2.30E-01	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Benzo(a)pyrene	SIM	2.30E-01	7.1 U	7.0 U					7.3 U				
Benzo(b)fluoranthene	non-SIM	2.30E+00	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Benzo(b)fluoranthene	SIM	2.30E+00	7.1 U	7.0 U					7.3 U				
Benzo(g,h,i)perylene	non-SIM	3.20E+04 (w)	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Benzo(g,h,i)perylene	SIM	3.20E+04 (w)	7.1 U	7.0 U					7.3 U				
Benzo(k)fluoranthene	non-SIM	2.30E+01	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Benzo(k)fluoranthene	SIM	2.30E+01	7.1 U	7.0 U					7.3 U				
bis(2-Ethylhexyl)phthalate	non-SIM	1.40E+02	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Butyl benzyl phthalate	non-SIM	2.40E+02	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Chrysene	non-SIM	2.30E+02	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Chrysene	SIM	2.30E+02	7.1 U	7.0 U					7.3 U				
Dibenz(a,h)anthracene	non-SIM	2.30E-01	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Dibenz(a,h)anthracene	SIM	2.30E-01	7.1 U	7.0 U					7.3 U				
Diethyl phthalate	non-SIM	1.00E+05	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Dimethyl phthalate	non-SIM	1.00E+05	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Di-N-Butyl phthalate	non-SIM	6.80E+04	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Di-N-Octyl phthalate	non-SIM	--	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Fluoranthene	non-SIM	2.40E+04	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Fluoranthene	SIM	2.40E+04	7.1 U	7.0 U					7.3 U				
Fluorene	non-SIM	2.60E+04	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Fluorene	SIM	2.60E+04	7.1 U	7.0 U					7.3 U				
Hexachlorobenzene	non-SIM	1.20E+00	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Hexachlorobenzene	SIM	1.20E+00	7.1 U	**10**					**8.8**				

LOU 60 Table 17 (continued)
Soil Characterization Data - SVOC

Acid Drain System
Tronox Facility - Henderson, Nevada

		Sampling Program	Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
		Boring No.	SA3	SA3	SA3	SA3	SA3	SA3	SA4	SA4	SA4	SA4	SA4
		Sample ID	SA3-0.5	SA3-0.5D	SA3-10	SA3-20	SA3-30	SA3-40	SA4-0.5	SA4-10	SA4-20	SA4-30	SA4-40
		Sample Depth (ft)	0.5	0.5	10	20	30	40	0.5	10	20	30	40
		Sample Date	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
SVOC	**Analytical Method**	**MSSL[2] mg/kg**	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Indeno(1,2,3-cd)pyrene	non-SIM	2.30E+00	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Indeno(1,2,3-cd)pyrene	SIM	2.30E+00	7.1 U	7.0 U					7.3 U				
Naphthalene	non-SIM	2.10E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Naphthalene	non-SIM	2.10E+02	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Naphthalene	SIM	2.10E+02	7.1 U	7.0 U					7.3 U				
Nitrobenzene	non-SIM	1.10E+02	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Octachlorostyrene	non-SIM	--	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Phenanthrene	non-SIM	1.00E+05 (n)	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Phenanthrene	SIM	1.00E+05 (n)	7.1 U	7.0 U					7.3 U				
Pyrene	non-SIM	3.20E+04	350 U	350 U	350 U	360 U	430 U	490 U	360 U	350 U	360 U	380 U	350 U
Pyrene	SIM	3.20E+04	**7.0 J**	7.0 U					7.3 U				
Pyridine	non-SIM	6.80E+02	1700 U	1700 U	1700 U	1800 U	2100 U	2400 U	1800 U	1700 U	1700 U	1800 U	1700 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)
(jj) Value for naphthalene used as surrogate for 2-methylnaphthalene based on structural similarities.
(pp) Value for acenaphthene used as surrogate for acenapthylene based on structural similarities.
(w) Value for pyrene used as surrogate for benzo(g,h,i)perylene based on structural similarities.
(n) Value for anthracene used as surrogate for phenanthrene due to structural similarities.

LOU 60 Table 18
Groundwater Characterization Data - SVOC

Acid Drain System
Tronox Facility - Henderson, Nevada

			Sampling Program	Ph A[1]	Ph A
			Well No.	M92	M97
			Sample ID	M92	M97
			Sample Date	11/29/2006	11/29/2006
SVOCs	**Analytical Method**	**MCL[2] ug/l**		ug/L	ug/L
1,4-Dioxane	non-SIM	6.11E+00	c	10 U	10 U
2-Methylnaphthalene	non-SIM	6.20E+00	c,(jj)	10 U	10 U
2-Methylnaphthalene	SIM	6.20E+00	c,(jj)		
Acenaphthene	non-SIM	3.65E+02	c	10 U	10 U
Acenaphthene	SIM	3.65E+02	c		
Acenaphthylene	non-SIM	3.65E+02	c,(pp)	10 U	10 U
Acenaphthylene	SIM	3.65E+02	c,(pp)		
Anthracene	non-SIM	1.83E+03	c	10 U	10 U
Anthracene	SIM	1.83E+03	c		
Benz(a)anthracene	non-SIM	9.21E-02	c	10 U	10 U
Benz(a)anthracene	SIM	9.21E-02	c		
Benzo(a)pyrene	non-SIM	2.00E-01		10 U	10 U
Benzo(a)pyrene	SIM	2.00E-01			
Benzo(b)fluoranthene	non-SIM	9.21E-02	c	10 U	10 U
Benzo(b)fluoranthene	SIM	9.21E-02	c		
Benzo(g,h,i)perylene	non-SIM	1.83E+02	c,(w)	10 U	10 U
Benzo(g,h,i)perylene	SIM	1.83E+02	c,(w)		
Benzo(k)fluoranthene	non-SIM	9.21E-01	c	10 U	10 U
Benzo(k)fluoranthene	SIM	9.21E-01	c		
bis(2-Ethylhexyl)phthalate	non-SIM	6.00E+00		**3.2 J**	**1.5 J**
Butyl benzyl phthalate	non-SIM	7.30E+03	c	10 U	10 U
Chrysene	non-SIM	9.21E+00	c	10 U	10 U
Chrysene	SIM	9.21E+00	c		
Dibenz(a,h)anthracene	non-SIM	9.21E-03	c	10 U	10 U
Dibenz(a,h)anthracene	SIM	9.21E-03	c		
Diethyl phthalate	non-SIM	2.92E+04	c	10 U	10 U
Dimethyl phthalate	non-SIM	3.65E+05	c	10 U	10 U
Di-N-Butyl phthalate	non-SIM	3.65E+03	c	10 U	10 U
Di-N-Octyl phthalate	non-SIM	1.46E+03	c	10 U	10 U
Fluoranthene	non-SIM	1.46E+03	c	10 U	10 U
Fluoranthene	SIM	1.46E+03	c		
Fluorene	non-SIM	2.43E+02	c	10 U	10 U
Fluorene	SIM	2.43E+02	c		
Hexachlorobenzene	non-SIM	1.00E+00		10 U	10 U
Hexachlorobenzene	SIM	1.00E+00			
Indeno(1,2,3-cd)pyrene	non-SIM	9.21E-02	c	10 U	10 U
Indeno(1,2,3-cd)pyrene	SIM	9.21E-02	c		
Naphthalene	non-SIM	6.20E+00	c	5.0 U	5.0 U
Naphthalene	non-SIM	6.20E+00	c	10 U	10 U
Naphthalene	SIM	6.20E+00	c		
Nitrobenzene	non-SIM	3.40E+00	c	10 U	10 U
Octachlorostyrene	non-SIM	--	c	10 U	10 U

LOU 60 Table 18 (continued)
Groundwater Characterization Data - SVOC

Acid Drain System
Tronox Facility - Henderson, Nevada

		Sampling Program		Ph A[1]	Ph A
		Well No.		M92	M97
		Sample ID		M92	M97
		Sample Date		11/29/2006	11/29/2006
SVOCs	**Analytical Method**	**MCL[2] ug/l**		ug/L	ug/L
Phenanthrene	non-SIM	1.80E+03	(n)	10 U	10 U
Phenanthrene	SIM	1.80E+03	(n)		
Pyrene	non-SIM	1.83E+02	c	10 U	10 U
Pyrene	SIM	1.83E+02	c		
Pyridine	non-SIM	3.65E+01	c	20 U	20 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted
(c) Equal to the USEPA Region 9 Preliminary Remediation Goals (PRGs) for tapwater (October, 2004).
(jj) Value for naphthalene used as surrogate for 2-methylnaphthalene based on structural similarities.
(pp) Value for acenaphthene used as surrogate for acenapthylene based on structural similarities.
(w) Value for pyrene used as surrogate for benzo(g,h,i)perylene based on structural similarities.
(n) Value for anthracene used as surrogate for phenanthrene due to structural similarities.

LOU 60 Table 19
Soil Characteristic Data - TPH and Fuel Alcohols

Acid Drain System
Tronox Facility - Henderson, Nevada

				Fuel Alcohols			Total Petroleum Hydrocarbons			
				Ethanol	Ethylene glycol	Methanol	TPH - ORO	TPH - DRO	TPH - GRO	
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
			MSSL[1] mg/kg	--	1.00E+05	1.00E+05	1.00E+02 vv	1.00E+02 vv	1.00E+02 vv	
Boring No.	**Sample ID.**	**Sample Depth (ft)**	**Sample Date**							**Sampling Program**
SA3	SA3-0.5	0.5	11/13/2006	53 UJ	92 UJ	53 UJ	27 U	27 U	0.11 U	Ph A[2]
	SA3-0.5D	0.5	11/13/2006	53 UJ	87 UJ	53 UJ	27 U	27 U	0.11 U	Ph A
	SA3-10	10	11/13/2006	53 UJ	79 UJ	53 UJ	27 U	27 U	0.11 U	Ph A
	SA3-20	20	11/13/2006	55 UJ	89 UJ	55 UJ	27 U	27 U	0.11 U	Ph A
	SA3-30	30	11/13/2006	64 UJ	118 UJ	64 UJ	32 U	32 U	0.13 U	Ph A
	SA3-40	40	11/13/2006	74 UJ	115 UJ	74 UJ	37 U	37 U	0.15 U	Ph A
SA4	SA4-0.5	0.5	11/14/2006				**43**	27 U	0.11 U	Ph A
	SA4-10	10	11/14/2006				27 U	27 U	0.11 U	Ph A
	SA4-20	20	11/14/2006				27 U	27 U	0.11 U	Ph A
	SA4-30	30	11/14/2006				29 U	29 U	0.11 U	Ph A
	SA4-40	40	11/14/2006				27 U	27 U	0.11 UJ	Ph A

Notes:
1. U.S. EPA, Region 9, Preliminary Remediation Goals (PRGs) for industrial soil (October, 2004)
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
(vv) Nevada Administrative Code 445A.2272. Contamination of soil: Establishment of action levels. NAC 445A.2272.1.b.

LOU 60 Table 20a
Soil Characterization Data - VOCs

Acid Drain System
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
	Boring No.	SA3	SA3	SA3	SA3	SA3	SA3	SA4	SA4	SA4	SA4	SA4
	Sample ID	SA3-0.5	SA3-0.5D	SA3-10	SA3-20	SA3-30	SA3-40	SA4-0.5	SA4-10	SA4-20	SA4-30	SA4-40
	Sample Depth (ft)	0.5	0.5	10	20	30	40	0.5	10	20	30	40
	Sample Date	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
VOCs	MSSL[3] mg/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Naphthalene	2.10E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,1,1,2-Tetrachloroethane	7.60E+00	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,1,1-Trichloroethane	1.40E+03	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,1,2,2-Tetrachloroethane	9.70E-01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,1,2-Trichloroethane	2.10E+00	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,1-Dichloroethane	2.30E+03	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,1-Dichloroethene	4.70E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,1-Dichloropropene	1.75E+00 (gg)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,2,3-Trichlorobenzene	2.60E+02 (hh)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	**2.2 J**
1,2,3-Trichloropropane	1.60E+00	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,2,4-Trichlorobenzene	2.60E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,2,4-Trimethylbenzene	2.20E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,2-Dibromo-3-chloropropane	2.00E-02	5.3 UJ	5.3 UJ	5.3 UJ	5.5 UJ	6.4 UJ	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,2-Dichlorobenzene	3.70E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,2-Dichloroethane	8.40E-01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,2-Dichloropropane	8.50E-01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,3,5-Trimethylbenzene	7.80E+01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,3-Dichlorobenzene	1.40E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,3-Dichloropropane	4.10E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
1,4-Dichlorobenzene	8.10E+00	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
2,2-Dichloropropane	8.50E-01 (ii)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
2-Butanone	3.40E+04	11 U	11 U	11 U	11 U	13 U	15 UJ	11 U	11 U	11 U	11 U	11 U
2-Chlorotoluene	5.10E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
2-Hexanone	1.72E+04 (nn)	11 UJ	11 UJ	11 UJ	11 UJ	13 UJ	15 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
2-Methoxy-2-methyl-butane	--	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
4-Chlorotoluene	5.10E+02 (ww)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
4-Isopropyltoluene	--	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
4-Methyl-2-pentanone	1.70E+04	11 UJ	11 UJ	11 UJ	11 UJ	13 UJ	15 UJ	11 U	11 U	11 U	11 U	11 U
Acetone	6.00E+04	11 U	11 U	11 U	11 U	13 U	15 UJ	11 U	11 U	11 U	11 U	11 U
Benzene	1.60E+00	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Bromobenzene	1.20E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Bromochloromethane	1.75E+00 (qq)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Bromodichloromethane	2.60E+00	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Bromoform	2.40E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Bromomethane	1.50E+01	11 U	11 U	11 U	11 U	13 U	15 UJ	11 U	11 U	11 U	11 U	11 U
Carbon tetrachloride	5.80E-01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Chlorobenzene	5.00E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Chloroethane	7.20E+00	5.3 UJ	5.3 UJ	5.3 UJ	5.5 UJ	6.4 UJ	7.4 UJ	5.5 UJ	5.3 UJ	5.5 UJ	5.7 UJ	5.3 UJ
Chloroform	5.80E-01	5.3 U	5.3 U	5.3 U	5.5 U	**1.0 J**	**3.9 J**	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Chloromethane	1.70E+02	5.3 UJ	5.3 UJ	5.3 UJ	5.5 UJ	6.4 UJ	7.4 UJ	5.5 UJ	5.3 UJ	5.5 UJ	5.7 UJ	5.3 UJ
cis-1,2-Dichloroethene	1.60E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
cis-1,3-Dichloropropene	1.75E+00 (gg)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U

LOU 60 Table 20a (continued)
Soil Characterization Data - VOCs

Acid Drain System
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A
	Boring No.	SA3	SA3	SA3	SA3	SA3	SA3	SA4	SA4	SA4	SA4	SA4
	Sample ID	SA3-0.5	SA3-0.5D	SA3-10	SA3-20	SA3-30	SA3-40	SA4-0.5	SA4-10	SA4-20	SA4-30	SA4-40
	Sample Depth (ft)	0.5	0.5	10	20	30	40	0.5	10	20	30	40
	Sample Date	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/13/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006	11/14/2006
VOCs	MSSL[3] mg/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dibromochloromethane	2.60E+00	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Dibromomethane	5.90E+02 (xx)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Dichlorodifluoromethane	3.40E+02	5.3 UJ	5.3 UJ	5.3 UJ	5.5 UJ	6.4 UJ	7.4 UJ	5.5 UJ	5.3 UJ	5.5 UJ	5.7 UJ	5.3 UJ
Ethyl t-butyl ether	7.90E+01 (kk)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Ethylbenzene	2.30E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Ethylene dibromide	7.00E-02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Hexachlorobutadiene	2.50E+01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
isopropyl ether	--	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Isopropylbenzene	5.80E+02 (zz)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Methyl tert butyl ether	7.90E+01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Methylene chloride	2.20E+01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 UJ	5.3 UJ	5.5 UJ	5.7 UJ	5.3 UJ
N-Butylbenzene	2.40E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
N-Propylbenzene	2.40E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
sec-Butylbenzene	2.20E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Styrene	1.70E+03	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
t-Butyl alcohol	--	11 UJ	11 UJ	11 UJ	11 UJ	13 UJ	15 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
tert-Butylbenzene	3.90E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Tetrachloroethene	1.70E+00	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Toluene	5.20E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
trans-1,2-Dichloroethylene	2.00E+02	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
trans-1,3-Dichloropropene	1.75E+00 (gg)	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Trichloroethene	1.00E-01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Trichlorofluoromethane	1.40E+03	5.3 UJ	5.3 UJ	5.3 UJ	5.5 UJ	6.4 UJ	7.4 UJ	5.5 UJ	5.3 UJ	5.5 UJ	5.7 UJ	5.3 UJ
Vinylchloride	8.60E-01	5.3 U	5.3 U	5.3 U	5.5 U	6.4 U	7.4 UJ	5.5 U	5.3 U	5.5 U	5.7 U	5.3 U
Xylene (Total)	2.10E+02	11 U	11 U	11 U	11 U	13 U	15 UJ	11 U	11 U	11 U	11 U	11 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
3. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008)
(gg) Value for 1,3-dichloropropene used as surrogate for 1,1-dichloropropene, cis-1,3-dichloropropene and trans-1,3-dichloropropene based on structural similarities.
(hh) Value for 1,2,4-trichlorobenzene used as surrogate for 1,2,3-trichlorobenzene based on structural similarities.
(ii) Value for 1,2-dichloropropane used as surrogate for 2,2-dichloropropane based on structural similarities.
(nn) Value for methyl isobutyl ketone used as surrogate for 2-hexanone based on structural similarities.
(ww) Value for 2-chlorotoluene used as surrogate for 4-chlorotoluene based on structural similarities.
(qq) Value for bromodichloromethane used as surrogate for bromochloromethane due to structural similarities.
(xx) Value for methylene bromide used as surrogate for dibromomethane based on structural similarities.
(kk) Value for methyl tertbutyl ether (MTBE) used as surrogate for ethyl-tert-butyl ether (ETBE) based on structural similarities.
(zz) Isopropyl benzene is listed as cumene (isopropylbenzene) in the MSSL table.

LOU 60 Table 21
Groundwater Characteristic Data - VOCs

Acid Drain System
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A
	Well ID	M92	M97
	Sample ID	M92	M97
	Sample Date	11/29/2006	11/29/2006
VOCs	**MCL[2] ug/l**	ug/L	ug/L
Naphthalene	6.20E+00 c	5.0 U	5.0 U
1,1,1,2-Tetrachloroethane	4.32E-01 c	5.0 U	5.0 U
1,1,1-Trichloroethane	2.00E+02	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	5.00E+00	5.0 U	5.0 U
1,1,2-Trichloroethane	5.00E+00	5.0 U	5.0 U
1,1-Dichloroethane	8.11E+02 c	5.0 U	5.0 U
1,1-Dichloroethene	7.00E+00	**14**	**5.4**
1,1-Dichloropropene	3.95E-01 c,gg	5.0 U	5.0 U
1,2,3-Trichlorobenzene	7.16E+00 c,hh	5.0 U	5.0 U
1,2,3-Trichloropropane	5.60E-03 c,yy	5.0 U	5.0 U
1,2,4-Trichlorobenzene	7.00E+01	5.0 U	5.0 U
1,2,4-Trimethylbenzene	1.23E+01	5.0 U	5.0 U
1,2-Dibromo-3-chloropropane	2.00E-01	5.0 U	5.0 U
1,2-Dichlorobenzene	6.00E+02	5.0 U	5.0 U
1,2-Dichloroethane	5.00E+00	5.0 U	5.0 U
1,2-Dichloropropane	5.00E+00	5.0 U	5.0 U
1,3,5-Trimethylbenzene	1.23E+01 c	5.0 U	5.0 U
1,3-Dichlorobenzene	1.83E+02 c	5.0 U	5.0 U
1,3-Dichloropropane	1.22E+02 c	5.0 U	5.0 U
1,4-Dichlorobenzene	7.50E+01	**0.76 J**	5.0 U
2,2-Dichloropropane	1.65E-01 c,ii	5.0 U	5.0 U
2-Butanone	6.97E+03 c	10 U	10 U
2-Chlorotoluene	1.22E+02 c	5.0 U	5.0 U
2-Hexanone	2.00E+03 c,nn	10 UJ	10 UJ
2-Methoxy-2-methyl-butane	--	5.0 U	5.0 U
4-Chlorotoluene	1.22E+02 c,ww	5.0 U	5.0 U
4-Isopropyltoluene	--	5.0 U	5.0 U
4-Methyl-2-pentanone	1.99E+03 c	10 U	10 U
Acetone	5.48E+03 c	10 U	10 U
Benzene	5.00E+00	5.0 U	5.0 U
Bromobenzene	2.03E+01 c	5.0 U	5.0 U
Bromochloromethane	1.81E-01 c,qq	5.0 U	5.0 U
Bromodichloromethane	8.00E+01 r	5.0 U	5.0 U
Bromoform	8.00E+01 r	5.0 U	5.0 U
Bromomethane	8.66E+00 c	10 UJ	10 UJ
Carbon tetrachloride	5.00E+00	5.0 U	5.0 U
Chlorobenzene	1.00E+02 c,o	5.0 U	5.0 U
Chloroethane	4.64E+00	5.0 UJ	5.0 UJ
Chloroform	8.00E+01 r	**30**	**12**
Chloromethane	1.58E+02 c	5.0 UJ	5.0 UJ
cis-1,2-Dichloroethene	7.00E+01	5.0 U	5.0 U
cis-1,3-Dichloropropene	3.95E-01 c,gg	5.0 U	5.0 U

LOU 60 Table 21 (continued)
Groundwater Characteristic Data - VOCs

Acid Drain System
Tronox Facility - Henderson, Nevada

	Sampling Program	Ph A[1]	Ph A
	Well ID	M92	M97
	Sample ID	M92	M97
	Sample Date	11/29/2006	11/29/2006
VOCs	**MCL[2] ug/l**	ug/L	ug/L
Dibromochloromethane	8.00E+01 r	5.0 U	5.0 U
Dibromomethane	6.08E+01 c,xx	5.0 U	5.0 U
Dichlorodifluoromethane	3.95E+02 c	5.0 UJ	5.0 UJ
Ethyl t-butyl ether	1.10E+01 c,kk	5.0 U	5.0 U
Ethylbenzene	7.00E+02	5.0 U	5.0 U
Ethylene dibromide	--	5.0 U	5.0 U
Hexachlorobutadiene	8.62E-01 c	5.0 U	5.0 U
isopropyl ether	--	5.0 U	5.0 U
Isopropylbenzene	6.58E+02 c,zz	5.0 U	5.0 U
Methyl tert butyl ether	2.00E+01 a,uu	5.0 U	5.0 U
Methylene chloride	5.00E+00	5.0 U	5.0 U
N-Butylbenzene	2.43E+02 c	5.0 U	5.0 U
N-Propylbenzene	2.43E+02 c	5.0 U	5.0 U
sec-Butylbenzene	2.43E+02 c	5.0 U	5.0 U
Styrene	1.00E+02	5.0 U	5.0 U
t-Butyl alcohol	--	10 UJ	10 UJ
tert-Butylbenzene	2.43E+02 c	5.0 U	5.0 U
Tetrachloroethene	5.00E+00	5.0 U	5.0 U
Toluene	1.00E+03	5.0 U	5.0 U
trans-1,2-Dichloroethylene	1.00E+02	5.0 U	5.0 U
trans-1,3-Dichloropropene	--	5.0 U	5.0 U
Trichloroethene	5.00E+00	**3.8 J**	5.0 U
Trichlorofluoromethane	--	5.0 UJ	5.0 UJ
Vinylchloride	2.00E+00	5.0 UJ	5.0 UJ
Xylene (Total)	1.00E+04	10 U	10 U

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted

LOU 60 Table 22
Soil Characterization Data - Long Asbestos Fibers in Respirable Soil Fraction

Acid Drain System
Tronox Facility - Henderson, Nevada

			Long Amphibole Protocol Structures	Long Amphibole Protocol Structures	Long Chrysotile Protocol Structures	Long Chrysotile Protocol Structures	Sampling Program
No.	**Sample ID**	**Sample Date**	s/gPM10	(structures/samples)	s/gPM10	(structures/samples)	
SA3	SA3	12/02/2006	**7970000**	**1**	**7970000**	**0**	Ph A[1]
SA4	SA4	12/07/2006	2946000 U	0	**38300000**	**13**	Ph A

Notes:
1. ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

LOU 60 Table 23
Notes for Phase A Data Tables

Acid Drain System
Tronox Facility - Henderson, Nevada

Blank	Not analyzed.
Bold	Bold values are constituents detected above the laboratory sample quantitation limit.
Gray	Grayed out values are non-detected values with the laboratory sample quantitation limits shown.
B	The result may be a false positive totally attributable to blank contamination.
D	Dissolved Metals.
DO	Dissolved Oxygen.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J-	The result is an estimated quantity and the result may be biased low.
J+	The result is an estimated quantity and the result may be biased high.
JB	The result may be biased high partially attributable to blank contamination.
JK	The result is an estimated maximum possible concentration.
R	The result was rejected and unusable due to serious data deficiencies. The presence or absence of the analyte cannot be verified.
S	Soluable metals
T	Total Metals.
U	The analyte was analyzed for, but was not detected above the laboratory sample quantitation limit.
UJ	The analyte was not detected above the laboratory sample quantitation limit and the limit is approximate.
mg/kg	Milligrams per kilogram.
mg/L	Milligrams per liter.
ml/min	Milliliters per minute.
ng/kg	Nanogram per kilogram.
nm	Not measured.
NTUs	Nephelometric Turbidity Units.
ORP	Oxidation-reduction potential.
pCi/g	PicoCuries per gram.
pci/L	PicoCuries per liter.
s/gPM10	Revised protocol structures per gram PM10 fraction dust.
TEF	Toxic Equivalency Factor.
TEQ	Toxic Equivalent Concentration
ug/kg	Micrograms per kilogram.
ug/L	Micrograms per liter.
umhos/cm	MicroSiemens per centimeter.
L	Sample ID suffix indicating the sample was collected using low low-flow pumping rates (100-150 ml/min).
F	Sample ID suffix indicating the sample was collected using low-flow pumping rates (150-480 ml/min) and field filtered.
Z	Sample ID suffix indicating the sample was collected using low-flow pumping rates (150-480 ml/min).
*	No analytical data is available for this sample due to a laboratory error.
(a)	Calculated assuming 0 for non-detected congeners and 2006 toxic equivalency factors (TEFs).
(b)	Calculated assuming 1/2 detection limit as proxy for non-detected congeners and 2006 TEFs.
--	PRG not established