

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

Name of Facility:	Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area (LOU 24) and Former Old Main Cooling Tower and Recirculation Lines (LOU 46)
Goal of Closure:	<ul style="list-style-type: none"> • Closure for future commercial and industrial uses.
Site Investigation Area:	<p>LOU 24 - Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area:</p> <p><u>Leach Beds</u></p> <ul style="list-style-type: none"> • Size: Approximately 570 feet by 150 feet (2.0 acres). • Location: North of the Manganese (Mn) Leach Plant beneath the northern portion of the historic Mn tailings pile. • Current Status/Features: The leach beds are no longer active and have been covered by the historic Mn tailings pile. <p><u>Associated Conveyance Facilities:</u></p> <ul style="list-style-type: none"> • Size: Unknown • Location: Slurry pipelines ran from the leach plant to the leach beds. The exact route of the lines is unknown, but they likely ran across the area of the existing Manganese tailings pile. • Current Status/Features: Unknown <p><u>Historic Manganese (Mn) Tailings Pile Area</u></p> <ul style="list-style-type: none"> • Size: Approximately 750 feet by 500 feet (8.6 acres). • Location: North of Mn Leach Plant and south of Mn-1 Pond. • Current Status/Features: The historic Mn tailings pile is currently onsite and has been covered with soil. The volume of the pile is estimated at 213,031 cubic yards (Ref. 2). <p>LOU 46 – Former Old Main Cooling Tower and Recirculation Lines:</p> <ul style="list-style-type: none"> • Size: Approximately 50 feet by 700 feet (0.8 acres). • Location: North of the manganese dioxide process leach plant and beneath the historic Mn tailings pile (LOU24). • Current Status/Features: The main cooling tower is no longer present and the historic Mn tailings pile covers the former location.

Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada

Description:

LOU 24 - Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area:

Leach Beds

- From 1951 to early 1975 the site operated leach beds to dewater Mn tailings conveyed to the facility as a slurry (following a mechanical thickener). Waste water was allowed to infiltrate underlying soils of the leach beds [Ref. 5].
- No information is available about the underlying soils after the leach beds were removed from service.
- The leach beds are currently located under the historic Mn tailings pile area [Ref. 5].

Associated Conveyance Facilities

- The associated conveyance facilities carried the Mn ore tailings slurry from the leach plant to the leach beds. The alignment of the conveyance facilities is unknown [Ref. 5].

Historic Mn Tailings Pile Area

- From 1975 to 2004, this area was used for the disposal of Mn tailings from the leach plant process which included the leach beds [Ref. 5].
- Filtering of the manganese tailings began in February 1975 and yielded a semi-dry, solid cake (referred to as manganese tailings material) [Ref. 1].
- The filtered Mn tailings material was stockpiled (with a frontend loader) on top of the former location of the leach beds and over the area shown in Figure 1 [Ref. 5].
- Mn tailing piles were located within other areas of the Site. Those locations are described in LOUs 34W and 34E. Prior to 1985, the tailings piles were consolidated to the current location of the historic tailings pile (LOU 24) and were covered with soil.
- The Mn tailings pile was graded periodically to maintain the desired shape and drainage [Ref. 1 and 5].
- Storm water run-off from the pile flowed to a small north-south trending diversion ditch and into the Beta Ditch (LOU 5) [Ref. 5].
- Concrete removed from the basement of Unit 6 was also disposed of into the Mn tailings pile [Ref. 5].
- From 2001 to 2004, the tailings were stockpiled at the current location of the historic tailings pile and also disposed of at both Environmental Technologies in Apex, Nevada and U.S. Ecology in Beatty, NV [Ref. 6].

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

- Since 2004, all filtered Mn tailings are loaded onto trucks and transported to Environmental Technologies in Apex, Nevada [Ref. 6].
- Currently the historic Mn tailings are covered with soil.
- The current size of the Mn tailings pile remains as it was since approximately 2004 [Ref. 6].

LOU 46 – Former Old Main Cooling Tower and Recirculation Lines:

- The cooling tower unit, constructed of redwood, operated from 1941 to September 1989 serving the Tronox and Timet areas and from 1986 to 1989 serving only the Tronox area. [Ref. 5]
- Hexavalent chromium was added as a treatment chemical (biocide) in the cooling tower [Ref. 5].
- Prior to 1976, effluent from the cooling tower was discharged to the Beta Ditch (LOU 5) [Ref. 5].
- Between 1976 and 1989, effluent was discharged to ponds C-1, WC-West, or WC-East for storage to be recycled back to processes [Ref. 5].
- Historically the cooling tower experienced several recirculation water upsets resulting in discharge of high conductivity water to the Beta Ditch [Ref. 5].
- Upsets reportedly flowed over surface soils and local drainage swales from the cooling tower to the Beta Ditch [Ref. 5 and 6].
- The cooling tower was demolished in 1989 and the debris was transported offsite. The concrete foundation remains beneath the historic Mn tailings pile. [Ref. 5]

Process Waste Streams Associated with LOU 24	Known or Potential Constituents Associated with LOU 24
Leachate from Mn Tailings Pile	<ul style="list-style-type: none"> • Manganese, trace heavy metal sulfides • Wet chemistry analytes
Waste water from dewatering of Mn tailings placed in the leach beds	<ul style="list-style-type: none"> • Manganese, trace heavy metal sulfides • Wet chemistry analytes
Process Waste Stream Associated with LOU 46	Known or Potential Constituents Associated with LOU 46
Cooling tower effluent	<ul style="list-style-type: none"> • Metals (manganese) • Hexavalent chromium • Wet chemistry analytes

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

Several process wastes from historical U.S. Government, Tronox, and Timet processes.	<ul style="list-style-type: none"> • Metal wastes (manganese, boron) • Hexavalent chromium • Wet chemistry analytes
Recirculation cooling water, pass-through and treatment water	<ul style="list-style-type: none"> • Sulfates • Carbonates • Phosphates • Chloride • Sulfide • Perchlorate • Chlorate • Ammonia

Overlapping or Adjacent LOUs: The following LOUs overlap or are adjacent to LOU 24 and LOU 46:

Overlapping LOUs:

- LOUs 24 and 46 overlap.
- LOU 60 (Acid Drain System) – Two branches of the Acid Drain System are located beneath the northern area of LOU 24. One of the branches extends onto the Site from the Timet property to the east and received unknown process waste streams. A third branch is located in the southeastern portion of LOU 24.

Adjacent LOUs:

- LOU 5 (Beta Ditch) – located in the northwest corner of LOU 24.
- LOU 21 (Pond Mn-1) – Located north (downgradient) of LOUs 24 and 46.
- LOU 47 (Leach Plant Area Mn Ore Piles) – Located south (upgradient) of LOUs 24 and 46.
- LOU 50 (Leach Plant Area Leach Tanks) – Located south (upgradient) of LOUs 24 and 46.
- LOU 59 (Storm Sewer System) – Located south (upgradient) of LOUs 24 and 46.
- LOU 60 (Acid Drain System) – Located south (upgradient), west and northwest (cross-gradient) of LOUs 24 and 46.

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

LOUs Potentially Affecting Soils in LOU 24:

- LOU 47 (Leach Plant Area Mn Ore Piles): Runoff from the Mn Ore Piles could potentially affect LOU 24.
- LOU 50 (Leach Plant Area Leach Tanks): LOU 50 could potentially affected soils in the event of a leak; however, no reports of a release have been documented in the reports reviewed.
- LOU 5 (Beta Ditch–Eastern Diversion Ditches): LOU 5 could have potentially affected soils in the event of flooding or overtopping of the Beta Ditch; however, no reports of overtopping or flooding have been recorded in the reports reviewed and the ditch is downgradient of LOU 24.

Known or potential chemical classes associated with LOUs 47 and 50 are consistent with those listed for LOU 24; therefore, the addition of other chemical classes to the Phase B Sampling and Analytical Plan for LOU 24 is not required.

- LOU 59 (Storm Sewer System): A portion of the Storm Sewer System runs along the eastern boundary of LOUs 24 and 46. The system conveyed runoff from the southeast portion of the Site.
- LOU 60 (Acid Drain System): The portion of the Acid Drain System along the northern boundary of LOU 24 conveyed effluent from the southeast portion of the Site to the Trade Effluent Settling Ponds (LOU 1).

No leaks or releases have been reported from LOU 59 and LOU 60; therefore, the possibility of effluent from these LOUs impacting the soils of LOU 24 is minimal. Known or potential chemical classes associated with LOUs 59 and 60 in Area III are consistent with those listed for LOU 24; therefore, the addition of other chemical classes to the Phase B Sampling and Analytical Plan for LOU 24 is not required.

Known or Potential Chemical Classes for LOUs 24 and 46:

- Metals
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

Known or Potential Release Mechanisms:

LOU 24 - Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area:

Leach Beds

- Potential infiltration to subsurface soil.

Associated Conveyance Facilities

- Potential infiltration to subsurface soil.

Historic Mn Tailings Pile Area

- No known releases documented for this LOU.
- Potential infiltration to subsurface soils and groundwater.
- Possible runoff to surface soils carrying both solids and dissolved constituents.

LOU 46 – Former Old Main Cooling Tower and Recirculation Lines:

- Potential infiltration to subsurface soil.
- Documented releases included the following:
 - Main releases were recirculation water upsets. Flow mechanisms include overflow and surface runoff to the Beta Ditch. Discharges often routed to upper BMI ponds to avert discharge to Las Vegas Wash [Ref. 3].
 - In May 1980, a release from the sodium chlorate process entered the recirculation system and was discharged to the Beta Ditch; the volume of the release was approximately 500,000 to 600,000 gallons [Ref. 3].
 - Discharges were routinely reported to NDEP as per NPDES permit. Information in the report included volumes of discharge and analyses for pH, conductivity, sodium chloride, zinc, and phosphate [Ref. 3].

Results of Historical Sampling:

- Mn tailings and Mn ore tested as non-hazardous on several occasions including during the Phase A Source Area Investigation [Ref. 1].
- Upgradient and downgradient monitoring wells (M-31A, M-32, M-33, M-34, M-77, and M-35 among others) are tested for chromium and perchlorate as part of periodic or routine groundwater monitoring programs [Ref. 2]. Groundwater sampling at Wells M-32 through M-35 and M-77 show detectable concentrations of Mn [Ref. 4].

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

Analytical results for soil and groundwater from historical sampling events are summarized in LOUs 24 and 46 Tables 6 through 8 (see attached).

Did Historical Samples Address Potential Release?

- Yes. Samples of the Mn ore and tailings pile are considered to represent the “worst case” concentrations of these materials. Analytical results indicated that both the Mn ore and the tailings are non-hazardous.

Summary of Phase A SAI:

Soil

- Mn ore and the historic Mn tailings pile composite samples were collected and analyzed for metals and radionuclides. Results indicated that the samples are non-hazardous.
- The closest boring (SA13) is approximately 90 feet south (upgradient) of LOU 24 and was not specifically sampled to evaluate LOUs 24 and 46 [Ref. 3].

Groundwater

- None specifically conducted for these LOUs. The closest well sampled (M-31A) is located in the southwest corner of LOU 24 and was not specifically sampled to evaluate these LOUs [Ref. 3].

Chemical classes detected in Phase A soil borings from SA13 include the following:

- Metals
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes
- VOCs
- Organochlorine pesticides
- Dioxins/furans
- Radionuclides
- Asbestos

As a result of the Phase A data, the Phase B analytical plan for samples collected from LOUs 24 and 46 will be expanded to include analyses for organochlorine pesticides, dioxins/furans, radionuclides, and asbestos.

Analytical results for soil and groundwater from the Phase A sampling event are summarized in LOUs 24 and 46 Tables 1 through 5 and LOUs 24 and 46 Tables 9 through 23 [Ref. 3] (see attached).

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

Are Phase A Sample Locations in “Worst Case” Areas?

LOU 24 – Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area:

- The Phase A samples from the Mn tailings area are considered to be “worst case” locations; however, the Phase A samples are not “worst case” locations for the leach beds.

LOU 46 – Former Old Main Cooling Tower and Recirculation Lines:

- No
- Yes

Is Phase B Investigation Recommended?

Proposed Phase B Soil Investigation/Rationale:

The Phase B Source Area Investigation for LOUs 24 and 46 will consist of collecting soil samples from the following 12 locations:

- Nine (9) soil borings will be drilled within the boundaries of LOUs 24 and 46.
- Three (3) soil borings will be drilled north (downgradient) of LOUs 24 and 46.
- All 12 soil borings along with the analytical program to evaluate soil samples from LOUs 24 and 46 are listed on **Table A – Soil Sampling and Analytical Plan for LOUs 24 and 46.**
- 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 LOUs 24 and 46, based on the known process waste streams.
 - Nine (9) of the 12 sample locations are judgmental locations and include soil borings SA139, SA160, SA141, SA142, SA143, SA52, SA149, SA108, and SA171.
- Random sample grid locations:
 - Designed to assess whether unknown constituents associated with the LOUs are present.
 - Three (3) of the 12 sample locations are randomly-placed locations and include soil borings RSAN8, RSOA7, and RSOA8.

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

Proposed Phase B Constituents List for Soils:

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

- Metals (Phase A list)
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes

Judgmental sample locations will also be analyzed for the following constituents for area-wide coverage purposes:

- VOCs
- Dioxins/furans
- Radionuclides
- Asbestos

Random sample grid locations will be analyzed for the following list of Phase A Site-related chemicals for area-wide coverage purposes:

- Metals (Phase A list)
- Hexavalent chromium
- Perchlorate
- Wet chemistry analytes
- VOCs
- SVOCs
- TPH-DRO/ORO
- Organochlorine pesticides
- Dioxins/furans
- Radionuclides
- Asbestos

Proposed Phase B Groundwater Investigation/Rationale:

The Phase B groundwater investigation of LOUs 24 and 46 consists of collecting groundwater samples from five locations to evaluate local groundwater conditions and as part of the Site-wide evaluation of constituent trends in groundwater.

- Wells M-34 and M-35 are located north of LOU 24 (downgradient) to evaluate local groundwater impacts due to potential releases.
- Well CLD4-R is located east of the Site boundary and northeast of LOU 24 (downgradient) to evaluate local groundwater impacts due to potential releases.
- Well M-31A is located within LOU 24, at the southwest corner of the historic Mn tailings pile, south (upgradient) of the former Old Main Cooling Tower, to evaluate local groundwater impacts due to potential releases.

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines**

Tronox Facility – Henderson, Nevada

- Well M-33 is located within LOU 24, south (upgradient) of the former Old Main Cooling Tower to evaluate groundwater impacts due to potential releases.
- The five wells and the analytical program to evaluate groundwater samples associated with LOUs 24 and 46 are listed on **Table B – Groundwater Sampling and Analytical Plan for LOUs 24 and 46.**

Proposed Phase B Constituents List for Groundwater:

Groundwater samples will be analyzed for the following analytes:

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

Proposed phase B Soil Gas Investigation/Rationale:

Soil gas samples will be collected from two (2) locations to evaluate area conditions for the presence of vapor-phase VOCs in the vadose zone.

- SG85 and SG35 are located within LOU 24 to assess potential VOC concentrations in the vadose zone from operations at LOUs 24 and 46.

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.

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, 2007a, Manganese Tailings Report, Kerr-McGee Facility, Henderson, Nevada, ENSR, Camarillo, California, 04020-023-420, April, 2007.
3. ENSR, 2007b, Phase A Source Area Investigation Results, Tronox Facility, Henderson, Nevada, September 2007.

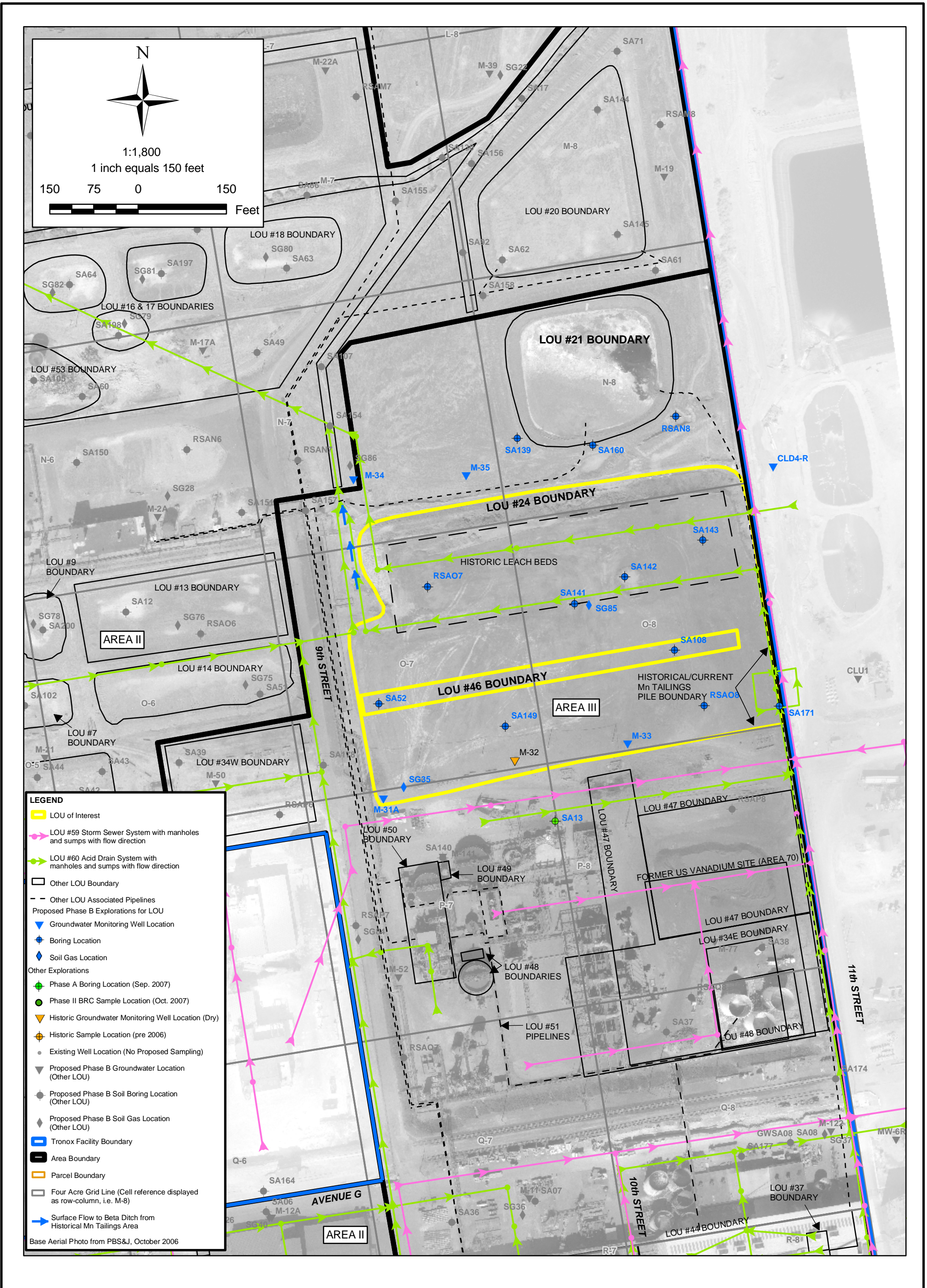
**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines**

Tronox Facility – Henderson, Nevada

4. ENSR, 2007c, Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, July-September 2007, November 2007.
5. Kleinfelder, 1993, Environmental Conditions Assessment, Kerr-McGee Chemical Corporation, Henderson, Nevada Facility, April 15, 1993 (Final)
6. Tronox, Susan Crowley, verbal communication, January 14, 2008.

Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada

LOU Figure



SHEET NUMBER: X

FIGURE NUMBER: 1

SAMPLE LOCATIONS FOR LOU #24 AND #46
MN TAILINGS AREA AND
OLD MAIN COOLING TOWER
 Phase B Area III Source Area Investigation
 Tronox Facility
 Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/4/2008	04020-023-430

ENSR | AECOM

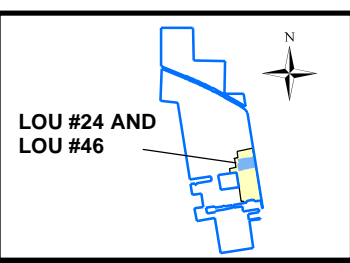
ENSR CORPORATION
 1220 AVENIDA ACASO
 CAMARILLO, CALIFORNIA 93012
 PHONE: (805) 388-3775
 FAX: (805) 388-3577
 WEB: HTTP://WWW.ENSR.AECOM.COM

DESIGNED BY:
B. Ho

DRAWN BY:
M. Scop

CHECKED BY:
C. Schnell

APPROVED BY:
B. Ho



**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

Sampling and Analytical Plans for LOUs 24 and 46:

- Table A – Soil Sampling and Analytical Plan for LOUs 24 and 46
- Table B – Groundwater Sampling and Analytical Plan for LOUs 24 and 46

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)	TPH-GRO (EPA 8015B)	VOCs ² (EPA 8260B)	Wet Chemistry ³	Total Cyanide (EPA 9012A)	OCPs ⁴ (EPA 8081A)	SVOCs ⁵ (EPA 8270C)	Radio-nuclides ⁶	Dioxins/Furans ⁷	PCBs ⁸ (EPA 8082 and 1668A)	Asbestos ⁹ (EPA/540/R-97/028)	Geo-technical Tests ¹⁰	Rationale	
Borings are organized by grid location as shown on Plate A - Starting point is on the northwestern most grid in Area 3 (N-7) and ending with the southeastern most grid in Area 3 (S-8).																					
N-8	21, 24, 46	RSAN8	RSAN8-0.0	0.0																Boring located to evaluate LOU 24 (Manganese [Mn] Tailings Pile Area), LOU 46 (Former Old Main Cooling Tower and Recirculation Lines), and LOU 21 (Pond Mn-1 and Associated Piping).	
N-8	21, 24, 46		RSAN8-0.5	0.5	X	X	X	X		X	X		X	X	X	X					
N-8	21, 24, 46		RSAN8-10	10	X	X	X	X		X	X		Hold	X	X				X	Located near the perimeter of two LOUs and associated piping at a high release potential location (down slope and low spot).	
N-8	21, 24, 46		RSAN8-20	20	X	X	X	X		X	X		Hold	X	X						
N-8	21, 24, 46		RSAN8-30	30	X	X	X	X		X	X		Hold	X	X						
N-8	21, 24, 46		RSAN8-40	40	X	X	X	X		X	X		X	X	X						
N-8	21, 24, 46	SA139	SA139-0.0	0.0															X	Boring located to evaluate LOU 21 (Pond Mn-1 and Associated Piping), LOU 24 (Mn Tailings area), and LOU 46 (Former Old Main Cooling Tower and Recirculation Lines). Located near the perimeter of two LOUs and associated piping at a high release potential location (down slope and low spot).	
N-8	21, 24, 46		SA139-0.5	0.5	X	X	X			X	X		X		X	X					
N-8	21, 24, 46		SA139-10	10	X	X	X			X	X		Hold	X							
N-8	21, 24, 46		SA139-20	20	X	X	X			X	X		Hold	X							
N-8	21, 24, 46		SA139-30	30	X	X	X			X	X		Hold	X							
N-8	21, 24, 46		SA139-40	40	X	X	X			X	X		X		X						
N-8	21, 24, 46	SA160	SA160-0.0	0.0															X	Boring located to evaluate upgradient LOU 24 (Mn Tailings Pile Area), LOU 46 (Former Old Main Cooling Tower and Recirculation Lines) and LOU 21 (Pond Mn-1 and Associated Piping). Located near perimeter of two LOUs and piping at high release potential location (down slope and low spot).	
N-8	21, 24, 46		SA160-0.5	0.5	X	X	X			X	X		X		X	X					
N-8	21, 24, 46		SA160-10	10	X	X	X			X	X		Hold	X							
N-8	21, 24, 46		SA160-20	20	X	X	X			X	X		Hold	X							
N-8	21, 24, 46		SA160-30	30	X	X	X			X	X		Hold	X							
N-8	21, 24, 46		SA160-40	40	X	X	X			X	X		X		X						
O-7	24, 46	SA52	SA52-0.0	0.0															X	Boring located to evaluate LOU 24 (Mn Tailings Pile Area) and LOU 46 (Former Old Main Cooling Tower and Recirculation Lines). Located within the footprint of both LOUs at a topographically area for worst case coverage.	
O-7	24, 46		SA52-0.5	0.5	X	X	X			X	X		X		X	X					
O-7	24, 46		SA52-10	10	X	X	X			X	X		Hold	X					X		
O-7	24, 46		SA52-20	20	X	X	X			X	X		Hold	X							
O-7	24, 46		SA52-30	30	X	X	X			X	X		Hold	X							
O-7	24, 46		SA52-40	40	X	X	X			X	X		X		X						
O-7	24, 46	SA149	SA149-0.0	0.0															X	Boring located to evaluate LOU 24 (Mn Tailings Pile Area) and LOU 46 (Former Old Main Cooling Tower and Recirculation Lines). Located within LOU 24 and just upgradient of LOU 46 to provide coverage of both LOUs.	
O-7	24, 46		SA149-0.5	0.5	X	X	X			X	X		X		X	X					
O-7	24, 46		SA149-10	10	X	X	X			X	X		Hold	X							
O-7	24, 46		SA149-20	20	X	X	X			X	X		Hold	X							
O-7	24, 46		SA149-30	30	X	X	X			X	X		Hold	X							
O-7	24, 46		SA149-40	40	X	X	X			X	X		X		X						
O-8	24, 46	SA108	SA108-0.0	0.0															X	Boring located to evaluate LOU 24 (Mn Tailings Pile Area) and LOU 46 (Former Old Main Cooling Tower and Recirculation Lines). Located within the footprint of both LOUs at a slight low spot to provide reasonable coverage of both.	
O-8	24, 46		SA108-0.5	0.5	X	X	X			X	X		X		X	X					
O-8	24, 46		SA108-10	10	X	X	X			X	X		Hold	X							
O-8	24, 46		SA108-20	20	X	X	X			X	X		Hold	X							
O-8	24, 46		SA108-30	30	X	X	X			X	X		Hold	X							
O-8	24, 46		SA108-40	40	X	X	X			X	X		X		X						
O-8	24, 46, 60	SA141	SA141-0.0	0.0															X	Boring located to evaluate LOU 24 (Mn Tailings Pile Area), LOU 46 (Former Old Main Cooling Tower and Recirculation Lines), and LOU 60 (Acid Drain System). Located within LOU 24, just downgradient of LOU 46 and adjacent to LOU 60 drain pipe to evaluate likely release locations from all three LOUs.	
O-8	24, 46, 60		SA141-0.5	0.5	X	X	X			X	X		X		X	X					
O-8	24, 46, 60		SA141-10	10	X	X	X			X	X		Hold	X							
O-8	24, 46, 60		SA141-20	20	X	X	X			X	X		Hold	X							
O-8	24, 46, 60		SA141-30	30	X	X	X			X	X		Hold	X							
O-8	24, 46, 60		SA141-40	40	X	X	X			X	X		X		X						
O-8	24, 46, 60	SA142	SA142-0.0	0.0															X	Boring located to evaluate LOU 24 (Mn Tailings Pile Area), LOU 46 (Former Old Main Cooling Tower and Recirculation Lines), and LOU 60 (Acid Drain System). Located within LOU 24, just downgradient of LOU 46 and adjacent to LOU 60 drain pipe to evaluate likely release locations from all three LOUs.	
O-8	24, 46, 60		SA142-0.5	0.5	X	X	X			X	X		X		X	X					
O-8	24, 46, 60		SA142-10	10	X	X	X			X	X		Hold	X							
O-8	24, 46, 60		SA142-20	20	X	X	X			X	X		Hold	X							
O-8	24, 46, 60		SA142-30	30	X	X	X			X	X		Hold	X							
O-8	24, 46, 60		SA142-40	40	X	X	X			X	X		X		X						
O-8	24, 46	SA143	SA143-0.0	0.0															X	Boring located to evaluate LOU 24 (Mn Tailings Pile Area) and LOU 46 (Former Old Main Cooling Tower and Recirculation Lines). Located within LOU 42 and downgradient of LOU 46 to provide coverage of both LOUs.	
O-8	24, 46		SA143-0.5	0.5	X	X	X			X	X		X		X	X					
O-8	24, 46		SA143-10	10	X	X	X			X	X		Hold	X							
O-8	24, 46		SA143-20	20	X	X	X			X	X		Hold	X							
O-8	24, 46		SA143-30	30	X	X	X			X	X		Hold	X							
O-8	24, 46		SA143-40	40	X	X	X			X	X		X		X						
O-8	21, 24, 46, 59, 60	SA171	SA171-0.0	0.0															X	Boring located to evaluate LOU 21 (Pond Mn-1 and Associated Piping), LOU 24 (Mn Tailings Pile Area), LOU 46 (Former Old Main Cooling Tower and Recirculation Lines), LOU 59 (Storm Sewer System), and LOU 60 (Acid Drain System). Located within LOU 24 nearby LOU 46 and adjacent LOUs 21, 59 and 60 piping at a reasonable release location to evaluate all five LOUs.	
O-8	21, 24, 46, 59, 60		SA171-0.5	0.5	X	X	X			X	X		X		X	X					
O-8	21, 24, 46, 59, 60		SA171-10	10	X	X	X			X	X		Hold	X							
O-8	21, 24, 46, 59, 60		SA171-20	20	X	X	X			X	X		Hold	X							
O-8	21, 24, 46, 59, 60		SA171-30	30	X	X	X			X	X		Hold	X							
O-8	21, 24, 46, 59, 60		SA171-40	40	X	X	X			X	X		X		X						
Number of Borings:					9																
Number of Samples:					45	45	45	0	0	45	45	0	18	0	45	9	0	9	1		
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. The 0.5 ft bgs sample will be collected from the 0.0 to 0.5 ft bgs interval, unless the area is paved. If area is paved, samples will be collected at 0.5 feet below or from a representative depth beneath the pavement. Alternately, 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 isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).																					
7. Dioxins/furans will be analyzed by EPA Method 8290 for all samples. Screening reports will be provided for 90% of the samples and full data packages for 10% of the samples.																					
8. Polychlorinated biphenyls - Sample locations will be analyzed by USEPA methods 8082 and 1668A. Concrete surfaces at these locations will also include chip and/or wipe samples per EPA Region 1 SOP for Sampling Concrete in the Field (1997).																					
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).																					

Grid Location	Location Area	Monitoring Well No.	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)	OCPs ³ (EPA 8081A)	SVOCs ⁴ (EPA 8270C)	Radio-nuclides ⁵	Rationale
Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area III (N-7) and ending with the southeastern-most grid covering Area III (Q-9).														
N-7	IIIW	M-34	25 - 40	Qal/MCfg1	no	X	X	X	X	X	X	X	X	Located to serve as a downgradient step out for LOU 46; as a cross-gradient step out for LOUs 20, 22, 23, and 60; and for general Site coverage.
N-7	III	M-35	25 - 40	Qal/MCfg1	no	X	X	X	X	X	X	X	X	Located to serve as a downgradient step out for LOUs 24 and 46; as an crossgradient step out for LOU 21; and for general Site coverage.
N-9	IIIE	CLD-4R	nr	nr	no	X	X	X	X	X	X	X	X	Serves as a step out downgradient well for LOUs 24 and 46; as a step out upgradient well for LOU 21; as a cross-gradient step out to LOUs 59 and 60; and general Site coverage located on Timet.
O-8	III	M-33	30 - 45	MCfg1	no	X	X	X	X	X	X	X	X	Located to serve as a downgradient step out for LOU 59; as upgradient step out for LOUs 24 and 46; and for general Site coverage.
P-7	III	M-31A	35 - 55	MCfg1	yes	X	X	X	X	X	X	X	X	Located to serve as a downgradient step out for LOU 59; as an upgradient step out for LOUs 24 and 46; as a crossgradient step out for LOUs 20, 22, and 23; and for general Site coverage.
Number of Field Samples:						5	5	5	5	5	5	5	5	

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 isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP).
- (a) Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.
- IIIN/E/W/S Well located outside (north, east, west, or south) of Area III.
- TBD To be determined when well is constructed.
- nr Not recorded in the All Wells Database (June 2008).
- Qal Quaternary Alluvium
- 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 LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

Soil and Groundwater Characterization Data

**Summary of Available Data for LOUs 24 and 46
Leach Beds, Associated Conveyance Facilities and Mn Tailings Area
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility – Henderson, Nevada**

LOU-specific analytes identified include:

- Metals (Phase A list)
- Wet chemistry analytes
- Hexavalent chromium
- Perchlorate
- VOCs
- SVOCs
- Dioxins/furans
- Radionuclides
- Asbestos

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

LOUs 24 and 46 Table 1 - Soil Characterization Data - Wet Chemistry

LOUs 24 and 46 Table 2 - Groundwater Characterization Data - Wet Chemistry

LOUs 24 and 46 Table 3 - Soil Characterization Data - Dioxins and Dibenzofurans

LOUs 24 and 46 Table 4 - Soil Characterization Data - Metals

LOUs 24 and 46 Table 5 - Groundwater Characterization Data - Metals

LOUs 24 and 46 Table 6 - Groundwater Characterization Data - Routine Monitoring

LOUs 24 and 46 Table 7 - Summary of Historical Groundwater Analytical Data

LOUs 24 and 46 Table 8 - Summary of Historical Soil Analytical Data

LOUs 24 and 46 Table 9 - Soil Characterization Data - Organochlorine Pesticides (OCPs)

LOUs 24 and 46 Table 10 - Groundwater Characterization Data - Organochlorine Pesticides (OCPs)

LOUs 24 and 46 Table 11 - Soil Characterization Data - Organophosphorus Pesticides (OPPs)

LOUs 24 and 46 Table 12 - Groundwater Characterization Data - Organophosphorus Pesticides (OPPs)

LOUs 24 and 46 Table 13 - Soil Characterization Data - PCBs

LOUs 24 and 46 Table 14 - Groundwater Characterization Data - PCBs

LOUs 24 and 46 Table 15 - Soil Characterization Data - Perchlorate

LOUs 24 and 46 Table 16 - Groundwater Characterization Data - Perchlorate

LOUs 24 and 46 Table 17 - Soil Characterization Data - Radionuclides

LOUs 24 and 46 Table 18 - Groundwater Characterization Data - Radionuclides

LOUs 24 and 46 Table 19 - Soil Characterization Data - SVOCs

LOUs 24 and 46 Table 20 - Groundwater Characterization Data - SVOCs

LOUs 24 and 46 Table 21 - Soil Characterization Data - VOCs

LOUs 24 and 46 Table 22 - Groundwater Characteristic Data - VOCs

LOUs 24 and 46 Table 23 - Soil Characterization Data - Long Asbestos Fibers in Respirable Soil Fraction

Notes for Phase A Data Tables are presented at the end of the tables.

**LOUs 24 and 46 Table 1
Soil Characterization Data - Wet Chemistry**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program	Ph A ¹	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A		
Boring No.	--	--	SA13	SA13	SA13	SA13	SA13	SA13		
Sample ID	Mn Ore	Mn Tailings	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40		
Sample Depth (ft)	0.5	composite	0.5	0.5	10	20	30	40		
Sample Date	01/19/2007	01/19/2007	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006		
Wet Chemistry Parameter	MSSL ² mg/kg								Units	
Percent moisture	--	4.9	19.5	14.1	9.6	4.3	6.1	5.1	20.7	percent
Alkalinity (as CaCO ₃)	--			58.2 UJ	235 J	71.3 J	53.2 UJ	98.4 J	136 J	mg/kg
Bicarbonate	--			279 J	1930 J	523 J	269 J	246 J	699 J	mg/kg
Total Alkalinity	--			279 J	2170 J	594	303 J	344 J	835 J	mg/kg
Ammonia (as N)	--			5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ	mg/kg
Cyanide	1.37E+04			R	R	R	R	R	R	mg/kg
MBAS	--			4.2 U	4.3 U	4.2 U	4.3 U	4.3 U	4.8 U	mg/kg
pH (solid)	--			7.4	7.7	8.1	8.1	8.4	7.8	none
Bromide	--			2.9 U	2.8 U	2.6 U	2.7 U	2.6 U	3.2 U	mg/kg
Chlorate	--			5.8 U	5.5 UJ	5.2 UJ	5.3 U	5.3 U	6.3 U	mg/kg
Chloride	--			269 J	15.0 J	13.5 J	16.3 J	19.9 J	41.3 J	mg/kg
Nitrate (as N)	--			0.23 U	0.42 J+	0.80 J+	0.57 J+	0.17 J+	3.2 J+	mg/kg
Nitrite	--			5.7 J	0.10 J	0.55 J	0.11 J	0.74 J	0.13 J	mg/kg
ortho-Phosphate	--			5.8 U	3.2 J	5.2 U	5.3 U	5.3 U	6.3 U	mg/kg
Sulfate	--			13800 J	1080 J	853 J	294 J	174	382 J	mg/kg
Total Organic Carbon	--			4200 J-	2100 J-	1200 J-	6900 J-	6800 J-	10900 J	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).

LOUs 24 and 46 Table 2
Groundwater Characterization Data - Wet Chemistry

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID		M-31A	
Sample ID		M-31A	
Sample Date		12/06/2006	
Wet Chemistry Parameters	MCL ² mg/L		Units
Total Dissolved Solids	5.00E+02 j	9720	mg/L
Total Suspended Solids	--	25.0 J	mg/L
Alkalinity (as CaCO ₃)	--	5.0 U	mg/L
Bicarbonate	--	108	mg/L
Total Alkalinity	--	108	mg/L
Ammonia (as N)	--	1270	ug/L
MBAS	--	1.8 J	mg/L
Cyanide	2.00E-01	R	ug/L
pH (liquid)	--	7.1 J	none
Specific Conductance	--	2630 J+	umhos/cm
Bromide	--	25.0 U	mg/L
Chlorate	--	3320	mg/L
Chloride	2.50E+02	1130	mg/L
Nitrate (as N)	1.00E+01	17.6	mg/L
Nitrite	1.00E+00	10.0 U	mg/L
ortho-Phosphate	--	500 U	mg/L
Sulfate	2.50E+02 j	1480	mg/L
Total Organic Carbon	--	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.

LOUs 24 and 46 Table 3
Soil Characterization Data - Dioxins and Dibenzofurans

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	Ph A	
Boring No.		SA13	SA13	
Sample ID		SA13-0.5	SA13-0.5D	
Sample Depth (ft)		0.5	0.5	
Sample Date		11/17/2006	11/17/2006	
chemical_name:	MSSL ² ng/kg			Unit
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (a) ng/kg	--	0.006		ng/kg
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (a) ng/kg	--			ng/kg
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (b) ng/kg	--	0.1		ng/kg
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (b) ng/kg	--			ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran	--	0.047 U	0.325	ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran	--			ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	--	0.054 U	0.736	ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	--			ng/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran	--	0.067 U	0.140 U	ng/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran	--			ng/kg
1,2,3,4,7,8-Hexachlorodibenzofuran	--	0.035 U	0.084 U	ng/kg
1,2,3,4,7,8-Hexachlorodibenzofuran	--			ng/kg
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	--	0.041 U	0.060 U	ng/kg
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	--			ng/kg
1,2,3,6,7,8-Hexachlorodibenzofuran	--	0.031 U	0.079 U	ng/kg
1,2,3,6,7,8-Hexachlorodibenzofuran	--			ng/kg
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	--	0.035 U	0.055 U	ng/kg
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	--			ng/kg
1,2,3,7,8,9-Hexachlorodibenzofuran	--	0.042 U	0.113 U	ng/kg
1,2,3,7,8,9-Hexachlorodibenzofuran	--			ng/kg
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	--	0.038 U	0.058 U	ng/kg
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	--			ng/kg
1,2,3,7,8-Pentachlorodibenzofuran	--	0.028 U	0.050 U	ng/kg
1,2,3,7,8-Pentachlorodibenzofuran	--			ng/kg
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	--	0.023 U	0.055 U	ng/kg
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	--			ng/kg
2,3,4,6,7,8-Hexachlorodibenzofuran	--	0.035 U	0.092 U	ng/kg
2,3,4,6,7,8-Hexachlorodibenzofuran	--			ng/kg
2,3,4,7,8-Pentachlorodibenzofuran	--	0.027 U	0.049 U	ng/kg
2,3,4,7,8-Pentachlorodibenzofuran	--			ng/kg
2,3,7,8-Tetrachlorodibenzofuran	--	0.055 U	0.158 U	ng/kg
2,3,7,8-Tetrachlorodibenzofuran	--			ng/kg
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	1.00E+03 h,v	0.036 U	0.141 U	ng/kg
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	1.00E+03 h,v			ng/kg
Octachlorodibenzofuran	--	0.109 U	0.670	ng/kg
Octachlorodibenzofuran	--			ng/kg

LOUs 24 and 46 Table 3 (continued)
Soil Characterization Data - Dioxins and Dibenzofurans

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
 Former Old Main Cooling Tower and Recirculation Lines
 Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	Ph A	
Boring No.		SA13	SA13	
Sample ID		SA13-0.5	SA13-0.5D	
Sample Depth (ft)		0.5	0.5	
Sample Date		11/17/2006	11/17/2006	
chemical_name:	MSSL² ng/kg			Unit
Octachlorodibenzo-p-Dioxin	--	0.660	3.166	ng/kg
Octachlorodibenzo-p-Dioxin	--			ng/kg
Tetrachlorinated Dibenzofurans, (Total)	--			ng/kg
Total HpCDD	--			ng/kg
Total HpCDF	--			ng/kg
Total HxCDD	--			ng/kg
Total HxCDF	--			ng/kg
Total PeCDD	--			ng/kg
Total PeCDF	--			ng/kg
Total TCDD	--			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 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. A value of 1000 ng/kg is applicable to residential soils. The range of 5000 to 20000 ng/kg is applicable to commercial/industrial soils. The Agency for Toxic Substances and Disease Registry (ATSDR) provides a screening level of 50 ng/kg for dioxin in residential soil [<http://www.atsdr.cdc.gov/substances/dioxin/policy/>].

**LOUs 24 and 46 Table 4
Soil Characterization Data - Metals**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
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	
Boring No.	--	--	SA13	SA13	SA13	SA13	SA13	SA13	SA13	
Sample ID	Mn Ore	Mn Tailings	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40		
Sample Depth (ft)	0.5	composite	0.5	0.5	10	20	30	40		
Sample Date	01/19/2007	01/19/2007	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	
Metals	MSSL ² mg/kg									Units
Aluminum	1.00E+05	10300 J	51700 J	7350	8310	5630	7330	7090	8720	mg/kg
Antimony	4.50E+02	3.4	3.6	0.19 J-	0.25 J-	0.18 J-	0.19 J-	0.18 J-	0.19 J-	mg/kg
Arsenic	2.80E+02	24.9	90.1	2.1	2.3	2.1	3.2	3.1	36.4	mg/kg
Barium	1.00E+05	1360 J	473 J	159	181	159 J	197 J	127 J	123 J-	mg/kg
Beryllium	2.20E+03	0.66 U	2.3 J	0.50 J-	0.51 J-	0.37 J-	0.46 J-	0.45 J-	0.55	mg/kg
Boron	1.00E+05	4.4 UJ	65.2 UJ	3.0 J-	3.8 J-	2.6 J-	3.6 J-	3.3 J-	12.9 J-	mg/kg
Cadmium	5.60E+02	7.8 J-	8.2 J-	0.13	0.12	0.11	0.080	0.074	0.11	mg/kg
Calcium	--	361 J-	25500 J-	12600 J	12300 J	9080 J+	21200 J+	15500 J+	28500	mg/kg
Chromium (Total)	7.10E+01	4.0	74.3	12.8 J-	13.8 J-	10.1 J-	11.4 J-	8.8 J-	14.5	mg/kg
Chromium-hexavalent	5.00E+02	0.15 J	0.32	0.23 U	0.12 J	0.21 U	0.21 U	0.21 U	0.25 U	mg/kg
Cobalt	2.10E+03	871	1840	6.9 J-	7.2 J-	6.3 J-	7.3 J-	6.2 J-	5.6 J-	mg/kg
Copper	4.20E+04	155 J	797 J	15.9 J-	14.7 J-	12.6 J	12.7 J	12.1 J	12.4 J-	mg/kg
Iron	1.00E+05	9240 J	54600 J	15600	16100	13200	13200	13600	12600	mg/kg
Lead	8.00E+02	31.8	121	9.0	9.5	9.4	10.4	7.4	8.1	mg/kg
Magnesium	--	80.7 J-	5550 J-	6580 J-	7030 J-	4940 J-	8590 J-	7430 J-	15200	mg/kg
Manganese	3.50E+04	560000	79600	1680	2320	350 J	434 J	219 J	606	mg/kg
Molybdenum	5.70E+03	5.0	31.7	0.58 J	0.52 J	0.60	0.51 J	0.45 J	0.52 J	mg/kg
Nickel	2.30E+04	368 J	788 J	13.9 J-	14.3 J-	11.6 J-	12.5 J-	12.0 J-	14.0 J-	mg/kg
Platinum	--	0.038 J	0.22 J	0.015 J	0.022 J	0.014 J	0.019 J	0.016 J	0.021 J	mg/kg
Potassium	--	3860 J-	10200 J-	2190	2500	1670 J-	1380 J-	1280 J-	2740	mg/kg
Selenium	5.70E+03	1.0 J-	4.4	0.13 UJ	0.12 UJ	0.11 UJ	0.12 UJ	0.11 UJ	0.14 UJ	mg/kg
Silver	5.70E+03	1.9 J-	3.2 J-	0.15 J	0.16 J	0.13 J	0.14 J	0.13 J	0.16 J	mg/kg
Sodium	--	97.5 J-	1650 J-	447 J-	564 J	251 J-	593 J-	694 J-	506 J-	mg/kg
Strontium	1.00E+05	116 J	244 J	130 J-	162 J-	117 J	215 J	310 J	178	mg/kg
Thallium	--	3.3 J+	6.4 J+	0.098 U	0.26 U	0.12 U	0.13 U	0.093 U	0.13 U	mg/kg
Tin	--	0.81	2.0	0.73	0.69	0.59	0.63	0.57	0.60	mg/kg
Titanium	--	65.0 J-	721 J-	830	806	733	689	649	681	mg/kg
Tungsten	--	17.4	52.6	0.36 UJ	0.45 UJ	0.35 UJ	0.40 UJ	0.32 UJ	0.73 UJ	mg/kg
Uranium	--	0.30	2.2	0.92	1.0	0.83	1.4	1.4	3.2	mg/kg
Vanadium	5.70E+03	58.1 J-	179 J-	47.1 J-	48.9 J-	43.4 J-	44.1 J-	41.7 J-	56.3 J-	mg/kg
Zinc	1.00E+05	325 J	940 J	31.5 J-	29.8 J-	27.3 J-	28.2 J-	27.4 J-	30.8 J-	mg/kg
Mercury	3.41E+02 (t)	0.017 J	0.23 J+	0.013 J-	0.017 J-	0.0082 J-	0.012 J-	0.011 J-	0.0084 UJ	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).
- (t) Value for mercury and compounds.

**LOUs 24 and 46 Table 5
Groundwater Characterization Data - Metals**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID:		M-31A	
Sample ID		M-31A-Z	
Sample Date		05/09/2007	
Metals	MCL ² ug/L		Unit
Aluminum	5.00E+01 j	760 J	ug/L
Antimony	6.00E+00	25.0 U	ug/L
Arsenic	1.00E+01	127 J	ug/L
Barium	2.00E+03	42.5 J	ug/L
Beryllium	4.00E+00	4.4 U	ug/L
Boron	7.30E+03	6950	ug/L
Cadmium	5.00E+00	2.9 U	ug/L
Calcium	--	617000	ug/L
Chromium (Total)	1.00E+02	12300	ug/L
Chromium-hexavalent	1.09E+02	12900 J	ug/L
Cobalt	7.30E+02	15.7 U	ug/L
Copper	1.30E+03 p	12.5 U	ug/L
Iron	3.00E+02 j	470 UJ	ug/L
Lead	1.50E+01 u	24.6 U	ug/L
Magnesium	1.50E+05 a	275000	ug/L
Manganese	5.00E+01 j	127 U	ug/L
Molybdenum	1.82E+02	25.0 U	ug/L
Nickel	7.30E+02	25.8 U	ug/L
Platinum	--	5.0 U	ug/L
Potassium	--	23600	ug/L
Selenium	5.00E+01	50.0 U	ug/L
Silver	1.00E+02 j	10.1 U	ug/L
Sodium	--	1650000	ug/L
Strontium	2.19E+04	14800	ug/L
Thallium	2.00E+00	16.0 U	ug/L
Tin	2.19E+04	10.0 U	ug/L
Titanium	1.46E+05	33.6 J	ug/L
Tungsten	--	25.0 U	ug/L
Uranium	3.00E+01	28.9 J	ug/L
Vanadium	3.65E+01	80.0 U	ug/L
Zinc	5.00E+03 j	97.5 J	ug/L
Mercury	2.00E+00	0.11 J+	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) See footnote (b). Secondary Drinking Water Regulation value.
 - (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.

**LOUs 24 and 46 Table 6
Groundwater Characterization Data - Routine Monitoring¹**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility, Henderson, Nevada

Well ID	Date	Depth to water (ft)	Perchlorate mg/l	Qual	MCL ² mg/l	Total Chromium mg/l	Qual	MCL mg/L	TDS	Qual	MCL mg/L	Nitrate (as N)	Qual	MCL mg/L	Chlorate	Qual	MCL mg/L
M-31A	2/2/2006	46.07	1800	d	1.80E-02 a,m	13	d	1.00E-01 c			5.00E+02 j			1.00E+01			--
M-31A	5/3/2006	46.41	1700	d	1.80E-02 a,m	13	d	1.00E-01 c	8030		5.00E+02 j			1.00E+01			--
M-31A	8/2/2006	46.56	1410	d	1.80E-02 a,m	12	d	1.00E-01 c	6300		5.00E+02 j			1.00E+01			--
M-31A	11/1/2006	47.03	1750	d	1.80E-02 a,m	13	d	1.00E-01 c	9780		5.00E+02 j			1.00E+01			--
M-31A	1/31/2007	46.43	1490		1.80E-02 a,m	13		1.00E-01 c	9710		5.00E+02 j			1.00E+01			--
M-31A	5/2/2007	46.05	1400		1.80E-02 a,m	13		1.00E-01 c	8750		5.00E+02 j			1.00E+01			--
M-31A	8/1/2007	46.84	1710		1.80E-02 a,m	11		1.00E-01 c	9330		5.00E+02 j			1.00E+01			--
M-34	2/2/2006	---	1800	d	1.80E-02 a,m	17	d	1.00E-01 c			5.00E+02 j			1.00E+01			--
M-34	5/3/2006	---	1700	d	1.80E-02 a,m	18	d	1.00E-01 c	8960		5.00E+02 j			1.00E+01			--
M-34	5/7/2006	40.86	1950	d	1.80E-02 a,m			1.00E-01 c	14500		5.00E+02 j			1.00E+01			--
M-34	8/2/2006	---	1550	d	1.80E-02 a,m	18	d	1.00E-01 c	7430		5.00E+02 j			1.00E+01			--
M-34	11/1/2006	---	1910	d	1.80E-02 a,m	18	d	1.00E-01 c	10900		5.00E+02 j			1.00E+01			--
M-34	1/31/2007	---	1860		1.80E-02 a,m	17		1.00E-01 c	12000		5.00E+02 j			1.00E+01			--
M-34	5/2/2007	37.52	1670		1.80E-02 a,m	17		1.00E-01 c	9850		5.00E+02 j			1.00E+01			--
M-34	8/1/2007	---	2130		1.80E-02 a,m	16		1.00E-01 c	11900		5.00E+02 j			1.00E+01			--
M-35	2/2/2006	34.73	810	d	1.80E-02 a,m	9.4	d	1.00E-01 c			5.00E+02 j			1.00E+01			--
M-35	5/3/2006	35.02	550	d	1.80E-02 a,m	9.8	d	1.00E-01 c	6090		5.00E+02 j			1.00E+01			--
M-35	5/7/2006	38.68	945	d	1.80E-02 a,m			1.00E-01 c	9610		5.00E+02 j			1.00E+01			--
M-35	5/7/2006	38.68	777	d	1.80E-02 a,m			1.00E-01 c	9670		5.00E+02 j			1.00E+01			--
M-35	8/2/2006	35.54	694	d	1.80E-02 a,m	11	d	1.00E-01 c	6240		5.00E+02 j			1.00E+01			--
M-35	11/1/2006	35.67	785	d	1.80E-02 a,m	12	d	1.00E-01 c	9070		5.00E+02 j			1.00E+01			--
M-35	1/31/2007	35.74	650		1.80E-02 a,m	12		1.00E-01 c	9530		5.00E+02 j			1.00E+01			--
M-35	5/2/2007	35.52	408		1.80E-02 a,m	6.2		1.00E-01 c	6090		5.00E+02 j			1.00E+01			--
M-35	8/1/2007	35.97	407		1.80E-02 a,m	9.4		1.00E-01 c	7280		5.00E+02 j			1.00E+01			--
M-77	5/3/2006	37.64	180	d	1.80E-02 a,m	0.35	d		2710								
M-77	5/2/2007	37.86	168		1.80E-02 a,m	0.4			2400								

Notes:

1. ENSR, 2007, Quarterly Performance Report for Remediation Systems, Tronox Facility - Henderson, Nevada, July – September 2007.
2. U.S. EPA Maximum Contaminant Level (MCL) values unless noted.
 - (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.

< = 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

Laboratory Qualifiers:

d = the sample was diluted

**LOUs 24 and 46 Table 7
Summary of Historical Groundwater Analytical Data¹**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility, Henderson, Nevada

WELL #	Sample Date	Total Depth (ft bgs)	Depth to Water (ft TOC)	pH (Lab)	EC (Lab, µmho/cm)	Mn (ppm)
M-31A	11/4/03	--	--	--	--	--
M-31A	5/7/04	--	--	7.20	12040.00	--
M-31A	8/4/04	--	--	7.30	11530.00	--
M-32	5/6/99	57.34	47.42	7.16	7660	4.2
M-32	5/5/00	57.34	49.01	7.09	10500	5
M-32	5/2/02	57.34	47.88	7.2	8420	13
M-33	5/6/99	57.70	46.09	7.53	1730	3.6
M-33	5/6/99	57.70	--	--	--	2.1
M-34	5/6/99	42.39	36.69	7.04	19500	0.8
M-34	5/5/00	42.39	37.44	7.22	18900	0.83
M-34	5/4/01	42.39	37.52	7.21	16400	0.76
M-34	4/29/02	42.39	36.38	7.2	14370	0.23
M-35	5/6/99	42.80	34.27	7.13	9720	0.85
M-35	5/5/00	42.80	35.22	7.31	8970	1.2
M-35	5/4/01	42.80	25.40	7.28	9970	2.4
M-35	3/11/02	42.80	--	--	--	0.07
M-35	4/29/02	42.80	34.27	7.2	9370	0.14
M-35	9/9/02	42.80	--	--	--	0.22
M-35	12/9/02	42.80	35.40	7.2	9280	0.061
M-35	4/29/03	42.80	--	--	--	ND<0.15
M-77	5/6/99	48.93	36.43	7.28	6050	14
M-77	5/5/00	48.93	37.14	7.40	5320	22
M-77	5/2/02	48.93	36.41	7.4	4780	36
M-77	5/7/03	48.93	--	--	--	11

Notes:

1. ENSR, 2005, Conceptual Site Model, Kerr-McGee Facility, Henderson, Nevada, ENSR, Camarillo, California, 04020-023-130, February 2005 and August 2005.

ft bgs = feet below ground surface

Mn = Manganese

µmho/cm = micromhos per centimeter

ppm = parts per million

-- = Either no data was obtained or was not analyzed for the respective constituent.

ft TOC = feet from Top of Casing

Labs: KMC

Kerr-McGee Corporation

EC = Electrical Conductivity

MW

Montgomery Watson

ND<0.15 = Not determined, not detected above the designated detection limit, i.e. 0.15

Source: Kerr-McGee Chemical LLC Company, Mother-hen Database.

**LOUs 24 and 46 Table 8
Summary of Historical Soil Analytical Data**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility, Henderson, Nevada

Tailings Sample								
Sample Date: 5/2/1990			Sample Matrix: Soil					
Sample Analysis by: DataChem Laboratories								
Sample #	TCLP Metals, EPA Method 6010 (mg/l)							
	As	Ba	Cd	Cr	Pb	Hg *	Se	Ag
Tailings Sample	< 0.3	< 0.3	0.45	0.14	< 0.3	< 0.0002	< 0.3	0.09
Reporting Limit	0.3	0.5	0.05	0.05	0.3	0.0002	0.3	0.05
MSSL¹ mg/kg	2.80E+02	1.00E+05	5.60E+02	7.10E+01	8.00E+02	3.41E+02	5.70E+03	5.70E+03

MnO₂ Tailings Sample (#4)								
Sample Date: 1/15/1993			Sample Matrix: Soil					
Sample Analysis by: Lockheed Analytical Laboratories								
Sample #	TCLP Metals Extract, EPA Method 6010 (mg/l)							
	As	Ba	Cd	Cr	Pb	Hg *	Se **	Ag
Mn Tailings	<1.0	<10	<0.1	<0.5	<1.0	<0.02	<0.1 N	<0.5
Reporting Limit	1	10	0.1	0.5	1	0.02	0.1	0.5
MSSL mg/kg	2.80E+02	1.00E+05	5.60E+02	7.10E+01	8.00E+02	3.41E+02	5.70E+03	5.70E+03

Notes:

1. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).

mg/l = milligrams per liter

As = Arsenic

Ba = Barium

Cd = Cadmium

Cr = Chromium

Pb = Lead

Hg* = Mercury, Analytical Method is 7471

Se ** = Selenium, Analytical Method 7740

Ag = Silver

MnO₂ = Manganese Dioxide

N = aliquot diluted (1:10) to reduce acetate matrix interferences.

< = not detected above the designated method reporting limit.

Source: Kerr-McGee, 1996b, Response to LOU Comments.

**LOUs 24 and 46 Table 9
Soil Characterization Data - Organochlorine Pesticides (OCPs)**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	Ph A	
Boring No.		SA13	SA13	
Sample ID		SA13-0.5	SA13-0.5D	
Sample Depth (ft)		0.5	0.5	
Sample Date		11/17/2006	11/17/2006	
Organochlorine Pesticides	MSSL ² mg/kg			Unit
4,4'-DDD	1.10E+01	0.0020 U	0.0019 U	mg/kg
4,4'-DDE	7.80E+00	0.0020 U	0.0019 U	mg/kg
4,4'-DDT	7.80E+00	0.0020 U	0.0019 U	mg/kg
Aldrin	1.10E-01	0.0020 U	0.0019 U	mg/kg
Alpha-BHC	4.00E-01	0.0020 U	0.0019 U	mg/kg
Alpha-chlordane	1.40E+00 (y)	0.0020 U	0.0019 U	mg/kg
Beta-BHC	1.40E+00	0.0020 U	0.0019 U	mg/kg
Delta-BHC	--	0.0020 U	0.0019 U	mg/kg
Dieldrin	1.20E-01	0.0020 U	0.0019 U	mg/kg
Endosulfan I	4.10E+03 (aa)	0.0020 U	0.0019 U	mg/kg
Endosulfan II	4.10E+03 (aa)	0.0020 U	0.0019 U	mg/kg
Endosulfan Sulfate	4.10E+03 (aa)	0.0020 U	0.0019 U	mg/kg
Endrin	2.10E+02	0.0020 U	0.0019 U	mg/kg
Endrin Aldehyde	2.10E+02 (k)	0.0020 U	0.0019 U	mg/kg
Endrin Ketone	2.10E+02 (k)	0.0020 U	0.0019 U	mg/kg
Gamma-BHC (Lindane)	1.90E+00	0.0020 U	0.0019 U	mg/kg
Gamma-Chlordane	1.40E+00 (y)	0.0020 U	0.0019 U	mg/kg
Heptachlor	4.30E-01	0.0020 U	0.0019 U	mg/kg
Heptachlor Epoxide	2.10E-01	0.0020 U	0.0019 U	mg/kg
Methoxychlor	3.40E+03	0.0038 U	0.0076	mg/kg
Tech-Chlordane	1.40E+00	0.012 U	0.011 U	mg/kg
Toxaphene	1.70E+00	0.058 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).
- (y) Value for chlordane (technical) used as surrogate for alpha-chlordane and gamma-chlordane 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.

LOUs 24 and 46 Table 10
Groundwater Characterization Data - Organochlorine Pesticides (OCPs)

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID		M-31A	
Sample ID		M-31A	
Sample Date		12/06/2006	
Organochlorine Pesticides	MCL ² ug/L		Unit
4,4'-DDD	2.80E-01	0.050 U	ug/L
4,4'-DDE	1.98E-01	0.050 U	ug/L
4,4'-DDT	1.98E-01	0.050 U	ug/L
Aldrin	4.00E-03	0.050 U	ug/L
Alpha-BHC	1.10E-02	0.050 U	ug/L
Alpha-chlordane	2.00E+00 (l)	0.050 U	ug/L
Beta-BHC	3.74E-02	0.050 U	ug/L
Delta-BHC	1.10E-02 (z)	0.050 U	ug/L
Dieldrin	4.20E-03 (z)	0.050 U	ug/L
Endosulfan I	2.19E+02 (aa)	0.050 U	ug/L
Endosulfan II	2.19E+02 (aa)	0.050 U	ug/L
Endosulfan Sulfate	2.19E+02 (aa)	0.050 U	ug/L
Endrin	2.00E+00	0.050 U	ug/L
Endrin Aldehyde	1.09E+01 (k)	0.050 U	ug/L
Endrin Ketone	1.09E+01 (k)	0.050 U	ug/L
Gamma-BHC (Lindane)	2.00E-01	0.050 U	ug/L
Gamma-Chlordane	2.00E+00 (l)	0.050 U	ug/L
Heptachlor	4.00E-01	0.050 U	ug/L
Heptachlor Epoxide	2.00E-01	0.050 U	ug/L
Methoxychlor	4.00E+01	0.10 U	ug/L
Tech-Chlordane	2.00E+00 (l)	0.50 U	ug/L
Toxaphene	3.00E+00	2.0 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.
 - (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.
 - (l) Value for chlordane used as surrogate for alpha-chlordane, chlordane (technical) and gamma-chlordane due to structural similarities.

LOUs 24 and 46 Table 11
Soil Characterization Data - Organophosphorus Pesticides (OPPs)

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	Ph A	
Boring No.		SA13	SA13	
Sample ID		SA13-0.5	SA13-0.5D	
Sample Depth (ft)		0.5	0.5	
Sample Date		11/17/2006	11/17/2006	
OPPs	MSSL ² mg/kg			Unit
Azinphos-methyl	--	0.015 UJ	0.014 U	mg/kg
Bolstar	--	0.015 UJ	0.014 U	mg/kg
Chlorpyrifos	2.10E+03	0.023 UJ	0.022 U	mg/kg
Coumaphos	--	0.015 UJ	0.014 UJ	mg/kg
Demeton-O	--	0.045 UJ	0.043 U	mg/kg
Demeton-S	--	0.017 UJ	0.017 U	mg/kg
Diazinon	6.20E+02	0.026 UJ	0.024 U	mg/kg
Dichlorvos	6.60E+00	0.027 UJ	0.025 U	mg/kg
Dimethoate	--	0.026 UJ	0.024 U	mg/kg
Disulfoton	2.70E+01	0.056 UJ	0.053 U	mg/kg
EPN	--	0.015 UJ	0.014 U	mg/kg
Ethoprop	--	0.017 UJ	0.017 U	mg/kg
Ethyl Parathion	4.10E+03	0.021 UJ	0.020 U	mg/kg
Famphur	--	0.015 UJ	0.014 U	mg/kg
Fensulfothion	--	0.015 UJ	0.014 U	mg/kg
Fenthion	1.70E+02 (ff)	0.038 UJ	0.037 U	mg/kg
Malathion	1.40E+04	0.017 UJ	0.017 U	mg/kg
Merphos	--	0.035 UJ	0.033 U	mg/kg
Methyl parathion	1.70E+02	0.023 UJ	0.022 U	mg/kg
Mevinphos	--	0.017 UJ	0.017 U	mg/kg
Naled	1.40E+03	0.038 UJ	0.037 UJ	mg/kg
Phorate	--	0.023 UJ	0.022 U	mg/kg
Ronnel	3.40E+04	0.021 UJ	0.020 U	mg/kg
Stirphos	--	0.017 UJ	0.017 U	mg/kg
Sulfotep	--	0.023 UJ	0.022 U	mg/kg
Thionazin	--	0.021 UJ	0.020 U	mg/kg
Tokuthion	--	0.023 UJ	0.022 UJ	mg/kg
Trichloronate	--	0.023 UJ	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.

LOUs 24 and 46 Table 12
Groundwater Characterization Data - Organophosphorus Pesticides (OPPs)

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID		M-31A	
Sample ID		M-31A	
Sample Date		12/06/2006	
OPPs	MCL ² ug/L		Unit
Azinphos-methyl	--	2.5 U	ug/L
Bolstar	--	1.0 U	ug/L
Chlorpyrifos	1.09E+02	1.0 U	ug/L
Coumaphos	--	1.0 U	ug/L
Demeton-O	1.46E+00 (cc)	1.0 U	ug/L
Demeton-S	1.46E+00 (cc)	1.0 U	ug/L
Diazinon	3.28E+01	1.0 U	ug/L
Dichlorvos	2.32E-01	1.0 U	ug/L
Dimethoate	7.30E+00	1.0 U	ug/L
Disulfoton	1.46E+00	0.50 U	ug/L
EPN	3.65E-01	1.2 U	ug/L
Ethoprop	--	0.50 U	ug/L
Ethyl Parathion	9.12E+00 (tt)	1.0 U	ug/L
Famphur	--	1.0 U	ug/L
Fensulfothion	--	2.5 U	ug/L
Fenthion	9.10E+00 (ff)	2.5 U	ug/L
Malathion	7.30E+02	1.2 U	ug/L
Merphos	1.09E+00	5.0 U	ug/L
Methyl parathion	9.12E+00	4.0 U	ug/L
Mevinphos	--	6.2 U	ug/L
Naled	7.30E+01	1.0 U	ug/L
Phorate	7.30E+00	1.2 U	ug/L
Ronnel	1.82E+03	10 U	ug/L
Stirphos	--	3.5 U	ug/L
Sulfotep	1.82E+01	1.5 U	ug/L
Thionazin	--	1.0 U	ug/L
Tokuthion	--	1.6 U	ug/L
Trichloronate	--	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.
(cc) Value for demeton used as surrogate for demeton-o and demeton-s based on structural similarities.
(ff) Value for methyl parathion used as surrogate for fenthion based on structural similarities.
(tt) Value for parathion-methyl used as surrogate for parathion-ethyl due to structural similarities.

**LOUs 24 and 46 Table 13
Soil Characterization Data - PCBs**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring ID		SA13	SA13	SA13	SA13	SA13	SA13	
Sample ID		SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40	
Sample Depth (ft)		0.5	0.5	10	20	30	40	
Sample Date		11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	
PCBs	MSSL ² mg/kg							Unit
Aroclor-1016	2.40E+01 (i)	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U	mg/kg
Aroclor-1221	8.30E-01 (i)	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U	mg/kg
Aroclor-1232	8.30E-01 (i)	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U	mg/kg
Aroclor-1242	8.30E-01 (i)	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U	mg/kg
Aroclor-1248	8.30E-01 (i)	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U	mg/kg
Aroclor-1254	8.30E-01 (i)	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U	mg/kg
Aroclor-1260	8.30E-01 (i)	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 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)
 - (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).

**LOUs 24 and 46 Table 14
Groundwater Characterization Data - PCBs**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID		M-31A	
Sample ID		M-31A	
Sample Date		12/06/2006	
PCBs	MCL ² ug/L		Unit
Aroclor-1016	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1221	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1232	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1242	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1248	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1254	5.00E-01 (bb)	0.10 U	ug/L
Aroclor-1260	5.00E-01 (bb)	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.
(bb) Value for total PCBs.

**LOUs 24 and 46 Table 15
Soil Characterization Data - Perchlorate**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Boring ID	Sample ID	Sample Depth (ft)	Sample Date	Perchlorate ug/kg	MSSL¹ ug/kg	Sampling Program
SA13	SA13-0.5	0.5	11/17/2006	192	7.95E+05	Ph A ²
SA13	SA13-0.5D	0.5	11/17/2006	120	7.95E+05	Ph A
SA13	SA13-10	10	11/17/2006	195	7.95E+05	Ph A
SA13	SA13-20	20	11/17/2006	184	7.95E+05	Ph A
SA13	SA13-30	30	11/17/2006	220	7.95E+05	Ph A
SA13	SA13-40	40	11/17/2006	1490	7.95E+05	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.

**LOUs 24 and 46 Table 16
Groundwater Characterization Data - Perchlorate**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Well ID Number	Sample ID	Sample Date	Perchlorate	MCL¹ ug/L	Units	Sampling Program
M-31A	M-31A	12/06/2006	1740000 J+	1.80E+01 a,(m)	ug/L	Ph A ²

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].

**LOUs 24 and 46 Table 17
Soil Characterization Data - Radionuclides**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
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	
Boring ID Number	Sample ID	Sample Depth (ft)	Date									Sampling Program
SA13	SA13-0.5	0.5	11/17/2006	1.12 J-	1.68 J-							Ph A ¹
SA13	SA13-0.5D	0.5	11/17/2006	1.06 J-	1.87 J-							Ph A
SA13	SA13-10	10	11/17/2006	1.14 J-	2.05 J-							Ph A
SA13	SA13-20	20	11/17/2006	1.27 J-	1.78 J-							Ph A
SA13	SA13-30	30	11/17/2006	1.73 J-	1.88 J-							Ph A
SA13	SA13-40	40	11/17/2006	1.79 J-	1.61 J-	0.659 J	0.922 J	0.539 J	1.05 J+	0.0274 U	0.813	Ph A
MN ORE			01/19/2007	0.271 U	0.55	0.517	0.249 J	0.514 J	0.21 J	0.0311 J	0.217 J	Ph A
MN TAILINGS			01/19/2007	0.968 U	1.54	1.19	0.802 J	0.957 J	0.882	0.0134 U	0.854	Ph A

Notes:

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

LOUs 24 and 46 Table 18
Groundwater Characterization Data - Radionuclides

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
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	
Well ID Number	Sample ID	Date									Sampling Program
M-31A	M-31A-Z	05/09/2007	0.312 J	0.862 UJ	0.0584 U	0.0798 U	0.0285 U	13.7	0.408	8.09	Ph A ¹

Notes:

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

**LOUs 24 and 46 Table 19
Soil Characterization Data - SVOCs**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program			Ph A ¹	Ph A	Ph A	Ph A	Ph A	Ph A
Boring No.			SA13	SA13	SA13	SA13	SA13	SA13
Sample ID			SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40
Sample Depth (ft)			0.5	0.5	10	20	30	40
Sample Date			11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006
SVOCs	Analytical Method	MSSL ² ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,4-Dioxane	non-SIM	1.70E+05	77 U	73 U	340 U	350 U	350 U	420 U
2-Methylnaphthalene	non-SIM	2.10E+05 (jj)	380 U	370 U	340 U	350 U	350 U	420 U
2-Methylnaphthalene	SIM	2.10E+05 (jj)	7.7 U	7.3 U				
Acenaphthene	non-SIM	3.30E+07	380 U	370 U	340 U	350 U	350 U	420 U
Acenaphthene	SIM	3.30E+07	7.7 U	7.3 U				
Acenaphthylene	non-SIM	3.30E+07 (pp)	380 U	370 U	340 U	350 U	350 U	420 U
Acenaphthylene	SIM	3.30E+07 (pp)	7.7 U	7.3 U				
Anthracene	non-SIM	1.00E+08	380 U	370 U	340 U	350 U	350 U	420 U
Anthracene	SIM	1.00E+08	7.7 U	7.3 U				
Benz(a)anthracene	non-SIM	2.30E+03	380 U	370 U	340 U	350 U	350 U	420 U
Benz(a)anthracene	SIM	2.30E+03	7.7 U	7.3 U				
Benzo(a)pyrene	non-SIM	2.30E+02	380 U	370 U	340 U	350 U	350 U	420 U
Benzo(a)pyrene	SIM	2.30E+02	7.7 U	7.3 U				
Benzo(b)fluoranthene	non-SIM	2.30E+03	380 U	370 U	340 U	350 U	350 U	420 U
Benzo(b)fluoranthene	SIM	2.30E+03	7.7 U	7.3 U				
Benzo(g,h,i)perylene	non-SIM	3.20E+07 (w)	380 U	370 U	340 U	350 U	350 U	420 U
Benzo(g,h,i)perylene	SIM	3.20E+07 (w)	7.7 U	7.3 U				
Benzo(k)fluoranthene	non-SIM	2.30E+04	380 U	370 U	340 U	350 U	350 U	420 U
Benzo(k)fluoranthene	SIM	2.30E+04	7.7 U	7.3 U				
bis(2-Ethylhexyl)phthalate	non-SIM	1.40E+05	380 U	370 U	340 U	350 U	350 U	420 U
Butyl benzyl phthalate	non-SIM	2.40E+05	380 U	370 U	340 U	350 U	350 U	420 U
Chrysene	non-SIM	2.30E+05	380 U	370 U	340 U	350 U	350 U	420 U
Chrysene	SIM	2.30E+05	7.7 U	7.3 U				
Dibenz(a,h)anthracene	non-SIM	2.30E+02	380 U	370 U	340 U	350 U	350 U	420 U
Dibenz(a,h)anthracene	SIM	2.30E+02	7.7 U	7.3 U				
Diethyl phthalate	non-SIM	1.00E+08	380 U	370 U	340 U	350 U	350 U	420 U
Dimethyl phthalate	non-SIM	1.00E+08	380 U	370 U	340 U	350 U	350 U	420 U
Di-N-Butyl phthalate	non-SIM	6.80E+07	380 U	370 U	340 U	350 U	350 U	420 U
Di-N-Octyl phthalate	non-SIM	--	380 U	370 U	340 U	350 U	350 U	420 U
Fluoranthene	non-SIM	2.40E+07	380 U	370 U	340 U	350 U	350 U	420 U
Fluoranthene	SIM	2.40E+07	7.7 U	7.3 U				
Fluorene	non-SIM	2.60E+07	380 U	370 U	340 U	350 U	350 U	420 U
Fluorene	SIM	2.60E+07	7.7 U	7.3 U				
Hexachlorobenzene	non-SIM	1.20E+03	380 U	370 U	340 U	350 U	350 U	420 U
Hexachlorobenzene	SIM	1.20E+03	7.7 U	7.3 U				
Indeno(1,2,3-cd)pyrene	non-SIM	2.30E+03	380 UJ	370 UJ	340 UJ	350 UJ	350 UJ	420 UJ
Indeno(1,2,3-cd)pyrene	SIM	2.30E+03	7.7 U	7.3 U				
Naphthalene	non-SIM	2.10E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Naphthalene	non-SIM	2.10E+05	380 U	370 U	340 U	350 U	350 U	420 U
Naphthalene	SIM	2.10E+05	7.7 U	7.3 U				
Nitrobenzene	non-SIM	1.10E+05	380 U	370 U	340 U	350 U	350 U	420 U
Octachlorostyrene	non-SIM	--	380 U	370 U	340 U	350 U	350 U	420 U
Phenanthrene	non-SIM	1.00E+08 (n)	380 U	370 U	340 U	350 U	350 U	420 U
Phenanthrene	SIM	1.00E+08 (n)	7.7 U	7.3 U				
Pyrene	non-SIM	3.20E+07	380 U	370 U	340 U	350 U	350 U	420 U
Pyrene	SIM	3.20E+07	7.7 U	7.3 U				
Pyridine	non-SIM	6.80E+05	1900 U	1800 U	1700 U	1700 U	1700 U	2000 U

Notes:

- ENSR, 2007, Phase A Source Area Investigation Results, Tronox Facility - Henderson, Nevada, September 2007.
- 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 acenaphthylene 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.

**LOUs 24 and 46 Table 20
Groundwater Characterization Data - SVOCs**

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program			Ph A ¹
Well No.			M-31A
Sample ID			M-31A
Sample Date			12/06/2006
SVOCs	Analytic Method	MCL ² ug/L	ug/L
1,4-Dioxane	non-SIM	6.11E+00	10 U
2-Methylnaphthalene	non-SIM	6.20E+00 (jj)	10 U
2-Methylnaphthalene	SIM	6.20E+00 (jj)	0.20 U
Acenaphthene	non-SIM	3.65E+02	10 UJ
Acenaphthene	SIM	3.65E+02	0.20 U
Acenaphthylene	non-SIM	3.65E+02 (pp)	R
Acenaphthylene	SIM	3.65E+02 (pp)	0.20 U
Anthracene	non-SIM	1.83E+03	10 U
Anthracene	SIM	1.83E+03	0.20 U
Benz(a)anthracene	non-SIM	9.21E-02	10 U
Benz(a)anthracene	SIM	9.21E-02	0.20 U
Benzo(a)pyrene	non-SIM	2.00E-01	10 U
Benzo(a)pyrene	SIM	2.00E-01	0.20 U
Benzo(b)fluoranthene	non-SIM	9.21E-02	10 U
Benzo(b)fluoranthene	SIM	9.21E-02	0.20 U
Benzo(g,h,i)perylene	non-SIM	1.83E+02 (w)	10 U
Benzo(g,h,i)perylene	SIM	1.83E+02 (w)	0.20 U
Benzo(k)fluoranthene	non-SIM	9.21E-01	10 U
Benzo(k)fluoranthene	SIM	9.21E-01	0.20 U
bis(2-Ethylhexyl)phthalate	non-SIM	6.00E+00	10 U
Butyl benzyl phthalate	non-SIM	7.30E+03	10 U
Chrysene	non-SIM	9.21E+00	10 U
Chrysene	SIM	9.21E+00	0.20 U
Dibenz(a,h)anthracene	non-SIM	9.21E-03	10 U
Dibenz(a,h)anthracene	SIM	9.21E-03	0.20 U
Diethyl phthalate	non-SIM	2.92E+04	10 U
Dimethyl phthalate	non-SIM	3.65E+05	10 U
Di-N-Butyl phthalate	non-SIM	3.65E+03	10 U
Di-N-Octyl phthalate	non-SIM	1.46E+03	10 U
Fluoranthene	non-SIM	1.46E+03	10 U
Fluoranthene	SIM	1.46E+03	0.23 U
Fluorene	non-SIM	2.43E+02	10 U
Fluorene	SIM	2.43E+02	0.20 U
Hexachlorobenzene	non-SIM	1.00E+00	10 U
Hexachlorobenzene	SIM	1.00E+00	0.20 U
Indeno(1,2,3-cd)pyrene	non-SIM	9.21E-02	10 UJ
Indeno(1,2,3-cd)pyrene	SIM	9.21E-02	0.20 U
Naphthalene	non-SIM	6.20E+00	5.0 U
Naphthalene	non-SIM	6.20E+00	10 UJ
Naphthalene	SIM	6.20E+00	0.20 U
Nitrobenzene	non-SIM	3.40E+00	10 U

LOUs 24 and 46 Table 20 (continued)
Groundwater Characterization Data - SVOCs

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
 Former Old Main Cooling Tower and Recirculation Lines
 Tronox Facility - Henderson, Nevada

Sampling Program			Ph A ¹
Well No.			M-31A
Sample ID			M-31A
Sample Date			12/06/2006
SVOCs	Analytic Method	MCL ² ug/L	ug/L
Octachlorostyrene	non-SIM	--	10 U
Phenanthrene	non-SIM	1.80E+03 (n)	10 U
Phenanthrene	SIM	1.80E+03 (n)	0.20 U
Pyrene	non-SIM	1.83E+02	10 U
Pyrene	SIM	1.83E+02	0.20 U
Pyridine	non-SIM	3.65E+01	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.
 - (jj) Value for naphthalene used as surrogate for 2-methylnaphthalene based on structural similarities.
 - (pp) Value for acenaphthene used as surrogate for acenaphthylene 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.

LOUs 24 and 46 Table 21
Soil Characterization Data - VOCs

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	Ph A	Ph A	Ph A	Ph A	Ph A
Boring No.		SA13	SA13	SA13	SA13	SA13	SA13
Sample ID		SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40
Sample Depth (ft)		0.5	0.5	10	20	30	40
Sample Date		11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006
VOCs	MSSL ² ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Naphthalene	2.10E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,1,1,2-Tetrachloroethane	7.60E+03	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,1,1-Trichloroethane	1.40E+06	5.8 U	5.5 UJ	5.2 UJ	0.53 J	5.3 U	6.3 U
1,1,2,2-Tetrachloroethane	9.70E+02	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,1,2-Trichloroethane	2.10E+03	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,1-Dichloroethane	2.30E+06	5.8 U	5.5 UJ	5.2 UJ	1.8 J	5.3 U	6.3 U
1,1-Dichloroethene	4.70E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,1-Dichloropropene	1.75E+03 (gg)	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2,3-Trichlorobenzene	2.60E+05 (hh)	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2,3-Trichloropropane	1.60E+03	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2,4-Trichlorobenzene	2.60E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2,4-Trimethylbenzene	2.20E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2-Dibromo-3-chloropropane	2.00E+01	12 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2-Dichlorobenzene	3.70E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2-Dichloroethane	8.40E+02	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2-Dichloropropane	8.50E+02	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,3,5-Trimethylbenzene	7.80E+04	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
1,3-Dichlorobenzene	1.40E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,3-Dichloropropane	4.10E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,4-Dichlorobenzene	8.10E+03	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
2,2-Dichloropropane	8.50E+02 (ii)	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
2-Butanone	3.40E+07	12 U	11 UJ	10 UJ	5.2 J	11 U	13 U
2-Chlorotoluene	5.10E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
2-Hexanone	1.72E+07 (nn)	12 UJ	11 UJ	10 UJ	11 UJ	11 UJ	13 UJ
2-Methoxy-2-methyl-butane	--	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
4-Chlorotoluene	5.10E+05 (ww)	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
4-Isopropyltoluene	--	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
4-Methyl-2-pentanone	1.70E+07	12 U	11 UJ	10 UJ	11 UJ	11 U	13 U
Acetone	6.00E+07	5.1 J	9.8 J	10 UJ	34 J	11 U	14
Benzene	1.60E+03	5.8 U	5.5 UJ	5.2 UJ	0.19 J	5.3 U	6.3 U
Bromobenzene	1.20E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Bromochloromethane	1.75E+03 (qq)	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Bromodichloromethane	2.60E+03	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Bromoform	2.40E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Bromomethane	1.50E+04	12 UJ	11 UJ	10 UJ	11 UJ	11 U	13 U
Carbon tetrachloride	5.80E+02	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Chlorobenzene	5.00E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Chloroethane	7.20E+03	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
Chloroform	5.80E+02	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	0.32 J	4.2 J
Chloromethane	1.70E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
cis-1,2-Dichloroethene	1.60E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
cis-1,3-Dichloropropene	1.75E+03 (gg)	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Dibromochloromethane	2.60E+03	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U

LOUs 24 and 46 Table 21 (continued)
Soil Characterization Data - VOCs

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	Ph A	Ph A	Ph A	Ph A	Ph A
Boring No.		SA13	SA13	SA13	SA13	SA13	SA13
Sample ID		SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40
Sample Depth (ft)		0.5	0.5	10	20	30	40
Sample Date		11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006
VOCs	MSSL ² ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Dibromomethane	5.90E+05 (xx)	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Dichlorodifluoromethane	3.40E+05	12 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
Ethyl t-butyl ether	7.90E+04 (kk)	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Ethylbenzene	2.30E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Ethylene dibromide	7.00E+01	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Hexachlorobutadiene	2.50E+04	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
isopropyl ether	--	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Isopropylbenzene	5.80E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Methyl tert butyl ether	7.90E+04	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Methylene chloride	2.20E+04	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
N-Butylbenzene	2.40E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
N-Propylbenzene	2.40E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
sec-Butylbenzene	2.20E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
Styrene	1.70E+06	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
t-Butyl alcohol	--	12 UJ	11 UJ	10 UJ	11 UJ	11 UJ	13 UJ
tert-Butylbenzene	3.90E+05	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Tetrachloroethene	1.70E+03	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Toluene	5.20E+05	5.8 U	0.28 J	0.28 J	0.67 J	5.3 U	6.3 U
trans-1,2-Dichloroethylene	2.00E+05	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
trans-1,3-Dichloropropene	1.75E+03 (gg)	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Trichloroethene	1.00E+02	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Trichlorofluoromethane	1.40E+06	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
Vinylchloride	8.60E+02	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 U
Xylene (Total)	2.10E+05	12 U	11 UJ	10 UJ	11 UJ	11 U	13 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).
(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

LOUs 24 and 46 Table 22
Groundwater Characteristic Data - VOCs

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area;
and Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹
Well ID		M-31A
Sample ID		M-31A
Sample Date		12/06/2006
VOCs	MCL ² ug/L	ug/L
Naphthalene	6.20E+00	5.0 U
1,1,1,2-Tetrachloroethane	4.32E-01	5.0 U
1,1,1-Trichloroethane	2.00E+02	5.0 U
1,1,2-Tetrachloroethane	5.00E+00	5.0 U
1,1,2-Trichloroethane	5.00E+00	5.0 U
1,1-Dichloroethane	8.11E+02	5.0 U
1,1-Dichloroethene	7.00E+00	5.0 U
1,1-Dichloropropene	3.95E-01 gg	5.0 U
1,2,3-Trichlorobenzene	7.16E+00 hh	5.0 U
1,2,3-Trichloropropane	5.60E-03	5.0 U
1,2,4-Trichlorobenzene	7.00E+01	5.0 U
1,2,4-Trimethylbenzene	1.23E+01	5.0 U
1,2-Dibromo-3-chloropropane	2.00E-01	5.0 U
1,2-Dichlorobenzene	6.00E+02	5.0 U
1,2-Dichloroethane	5.00E+00	5.0 U
1,2-Dichloropropane	5.00E+00	5.0 U
1,3,5-Trimethylbenzene	1.23E+01	5.0 U
1,3-Dichlorobenzene	1.83E+02	5.0 U
1,3-Dichloropropane	1.22E+02	5.0 U
1,4-Dichlorobenzene	7.50E+01	5.0 U
2,2-Dichloropropane	1.65E-01 ii	5.0 U
2-Butanone	6.97E+03	10 U
2-Chlorotoluene	1.22E+02	5.0 U
2-Hexanone	2.00E+03 nn	10 UJ
2-Methoxy-2-methyl-butane	--	5.0 UJ
4-Chlorotoluene	1.22E+02 ww	5.0 U
4-Isopropyltoluene	--	5.0 U
4-Methyl-2-pentanone	1.99E+03	10 UJ
Acetone	5.48E+03	10 U
Benzene	5.00E+00	5.0 U
Bromobenzene	2.03E+01	5.0 U
Bromochloromethane	1.81E-01 qq	5.0 U
Bromodichloromethane	8.00E+01 r	5.0 U
Bromoform	8.00E+01 r	4.8 J
Bromomethane	8.66E+00	10 U
Carbon tetrachloride	5.00E+00	5.0 U
Chlorobenzene	1.00E+02 o	5.0 U
Chloroethane	4.64E+00	5.0 U
Chloroform	8.00E+01 r	930 J+
Chloromethane	1.58E+02	5.0 U
cis-1,2-Dichloroethene	7.00E+01	5.0 U
cis-1,3-Dichloropropene	3.95E-01 gg	5.0 U
Dibromochloromethane	8.00E+01 r	5.0 U
Dibromomethane	6.08E+01 xx	5.0 U
Dichlorodifluoromethane	3.95E+02	5.0 UJ
Ethyl t-butyl ether	1.10E+01 kk	5.0 UJ
Ethylbenzene	7.00E+02	5.0 U
Ethylene dibromide	--	5.0 U
Hexachlorobutadiene	8.62E-01	5.0 U
isopropyl ether	--	5.0 UJ

LOUs 24 and 46 Table 22 (continued)
Groundwater Characteristic Data - VOCs

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area;
and Former Old Main Cooling Tower and Recirculation Lines
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹
Well ID		M-31A
Sample ID		M-31A
Sample Date		12/06/2006
VOCs	MCL ² ug/L	ug/L
Isopropylbenzene	6.58E+02	5.0 U
Methyl tert butyl ether	2.00E+01 a,uu	5.0 U
Methylene chloride	5.00E+00	5.0 UJ
N-Butylbenzene	2.43E+02	5.0 U
N-Propylbenzene	2.43E+02	5.0 U
sec-Butylbenzene	2.43E+02	5.0 U
Styrene	1.00E+02	5.0 U
t-Butyl alcohol	--	10 UJ
tert-Butylbenzene	2.43E+02	5.0 U
Tetrachloroethene	5.00E+00	5.0 U
Toluene	1.00E+03	5.0 U
trans-1,2-Dichloroethylene	1.00E+02	5.0 U
trans-1,3-Dichloropropene	--	5.0 U
Trichloroethene	5.00E+00	5.0 U
Trichlorofluoromethane	--	5.0 U
Vinylchloride	2.00E+00	5.0 U
Xylene (Total)	1.00E+04	10 UJ

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.
 - (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.
 - (o) See footnote (b). Listed under synonym monochlorobenzene.
 - (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.
 - (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.
 - (uu) NDEP, 1998. Oxygenated Fuel Corrective Action Guidance. Draft. October, 12 1998. URL [http://ndep.nv.gov/bca/mtbe_doc.htm].

LOUs 24 and 46 Table 23
Soil Characterization Data - Long Asbestos Fibers in Respirable Soil Fraction

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
 Former Old Main Cooling Tower and Recirculation Lines
 Tronox Facility - Henderson, Nevada

Boring No.	Sample ID	Sample Date	Long Amphibole Protocol Structures	Long Amphibole Protocol Structures	Long Chrysotile Protocol Structures	Long Chrysotile Protocol Structures	Sampling Program
			s/gPM10	(structures/samples)	s/gPM10	(structures/samples)	
SA13	SA13	12/08/2006	300000	1	2996000 U	0	Ph A ¹

Notes:

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

LOUs 24 and 46
Notes for Phase A Data Tables

Leach Beds, Associated Conveyance Facilities and Mn Tailings Area; and
Former Old Main Cooling Tower and Recirculation Lines
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	Soluble 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.
--	Not established