

Summary of Available Data for LOU 59 Storm Sewer System in Area III
Tronox Facility – Henderson, Nevada

Name of LOU:	Storm Sewer System in Area III
Goal of Closure:	<ul style="list-style-type: none"> • Continuation of current use – regulatory closure not presently requested.
Site Investigation Area:	<ul style="list-style-type: none"> • Size: Approximately 22,558 linear feet in total <ul style="list-style-type: none"> – Approximately 7,100 linear feet of the Storm Sewer System is located in Area III. • Location: In Area III, segments of the Storm Sewer System run north-south along 9th and 11th Streets and run east-west in the central portion of Area III. There is a small east-west segment of the Storm Sewer System (not connected to the rest of the Area III piping) that connects to piping originating in the Chemstar property and drains to the west and another segment that runs southwest to northeast that connects to the main Area III Storm Sewer System (at the north end of the Leach Plant Area) and drains to the east. There is also a small section of the Storm Sewer System located at the southeastern corner of Area III that collects surface water run-off from an off-site parcel (Figure 1). • Current Status/Features: The Storm Sewer System is currently active.
Description:	<p><u>Storm Sewer System in Area III</u></p> <ul style="list-style-type: none"> • The Storm Sewer System is a subsurface feature that carried storm water run-off and process effluent from the southern portion of the BMI site. • The Storm Sewer System in Area III consists mostly of north-south trending lines in the area of Unit/Buildings 5, 6 and the Leach Plant, and east-west trending lines in the central portion of the Site near the Leach Plant. • The system provided a means to manage both storm water and industrial effluent [Ref. 3]. • Branches of the Storm Sewer System in Area III passed near and carried effluents from Unit Buildings 5 and 6 and surface run-off from LOU 20 (Pond C-1 and Associate Piping) located in Area III, LOUs 34 East and West (Former Manganese Tailings Area), LOU 47 (Leach Plant Area Manganese Ore Piles), LOU 48 (Leach Plant Area Anolyte Tanks), LOU 49 (Leach Plant Area Sulfuric Acid Storage Tanks) LOU 50 (Leach Plant Area Leach Tanks), LOU 51 (Leach Plant Area Transfer Lines), LOU 24 (Leach Beds, Associated Conveyance Facilities and Mn Tailings Area), LOU 46 (Former Old Main Cooling Tower and Recirculation Lines) and some off-site facilities.

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- Constituents associated with on-site processes may have entered the Storm Sewer System through surface run-off.
- The Storm Sewer System in Area III discharged to an off-site location and/or to the LOU 5 (Beta Ditch) northeast of LOU 20 (Pond C-1 and Associated Piping) or north of Unit Building 2 [Ref. 3].

A description of the Site-wide extent of the Storm Sewer System is detailed below to provide the current understanding (based on 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 Storm Sewer System in Area III are discussed in the “Proposed Phase B Soil Investigation/Rationale” section of this LOU summary document.

- The Storm Sewer System comprises a network of concrete and clay tile storm drains (subsurface pipes), manholes (drop inlets), and outfalls (discharge points), which were installed during construction of the original BMI complex in 1941 to 1942 [Ref. 1].
- The system provided a means to manage both storm water and industrial effluent [Ref. 3].
- The Storm Sewer System was constructed of several smaller networks, each of which drained a discrete portion of the BMI complex and discharged to different outfalls [Ref. 3].
- Outfalls occurred along the LOU 5 (Beta Ditch), tributaries to the Beta Ditch, and other drainage ditches. The storm water/effluent ultimately all merged in the Beta Ditch and was conveyed off-site to the upper and lower BMI Ponds [Ref. 3].
- From 1941 through January 1976, the Storm Sewer System conveyed storm water and process effluent from the southern portions of the Site to the Beta Ditch [Ref. 3].
- Onsite run-off from storm events historically would follow local topography, enter nearby drop inlets, and follow the storm drain to an outfall [Ref. 3].
- The Storm Sewer System also historically conveyed effluent from the following off-site sources: U.S. Lime facility (Chemstar), Stauffer Chemical, Jones Chemical, and Timet, Inc. [Ref. 3].
- Between 1945 and 1976, process effluent, or waste water, contained classes of chemicals associated with chlorate, perchlorate, elemental boron, and leach plant processes as well as slurred sodium chlorate filter cake containing 0.05 percent by weight hexavalent chromium [Ref. 3].

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1976 - Present:

- By January 1976, the Storm Sewer System was no longer used to convey process effluent or wastewater. The Kerr-McGee Chemical Corporation (Tronox) attained “zero discharge” status [Ref. 3].
- The Storm Sewer System only conveyed storm water and once-through non-contact cooling water to the Beta Ditch [Ref. 3].
- Currently, process wastewater and fluids are conveyed throughout the Site by a system of surface and subsurface pipelines to onsite lined surface impoundments [Ref. 3].
- Many storm drains located in, or near, process areas have been sealed or retrofitted with a protective berm to reduce the possibility that wastes, process fluids, or process area contaminated storm water runoff would accidentally enter the Storm Sewer System [Ref. 3].

Process Waste Stream Associated with LOU 59	Known or Potential Chemicals Associated with LOU 59
Storm water runoff	<ul style="list-style-type: none"> • Specific to overlapping/adjacent LOUs (see below)
Once through non contact cooling water	<ul style="list-style-type: none"> • None
Process effluent consisting of slurried filter cake, mother liquor and storm water contaminated by spills or releases of process fluids from chlorate production [Ref. 3].	<ul style="list-style-type: none"> • Chlorate • Metals (hexavalent chromium) • Wet chemistry analytes
Process effluents from perchlorate production process including slurried filter cakes and cell bottoms, spent caustic scrubbing solution from chlorine gas scrubbing operation, and AP cooling tower overflow [Ref. 3].	<ul style="list-style-type: none"> • Perchlorate • Chlorate • Metals (Hexavalent chromium, magnesium, platinum). • Ammonia • Wet chemistry analytes • Sodium chloride and sodium hypochlorite
Boron process neutralization tank waste solution from elemental boron process [Ref. 3].	<ul style="list-style-type: none"> • Metals • Wet chemistry analytes • Sodium Borate
Effluent from Manganese Leach Plant Process Area consisting of manganese dioxide cathode wash solution.	<ul style="list-style-type: none"> • Hexametaphosphates • Metals (manganese, magnesium) • Wet chemistry analytes
Stormwater run-on/run-off from manganese tailings area where leach acid thickener underflow sludge (filtered or unfiltered) is disposed.	<ul style="list-style-type: none"> • Metals including heavy metals like barium, zinc, nickel, lead, manganese • Sulfide • Sulfuric acid
Effluent from Manganese Leach Plant Process Area [Ref. 3].	<ul style="list-style-type: none"> • Sulfuric acid liquid wastes. • Manganese sulfate liquid wastes

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Process Waste Streams Associated with LOU 43 (Unit 4) & LOU 61 (Unit 5)	Known or Potential Chemicals Associated with LOU 43 (Unit 4) and LOU 61 (Unit 5)
Process liquor, spillage and washwater collected in basements of Units 4 and 5 [Ref. 3].	<ul style="list-style-type: none"> • Metals (magnesium, boron) • Hexavalent chromium • Chlorate • Perchlorate • Ammonia • Wet chemistry analytes
Effluent solutions from chlorates, perchlorates, and magnesium metal processes in Unit 4 between 1945 and 1983 [Ref. 3].	<ul style="list-style-type: none"> • Metals • Hexavalent chromium • Perchlorate • Ammonia • Chlorate • Wet chemistry analytes
Prior to 1976, brine rinse and washwater from water softeners in the sodium perchlorate process in Unit 5 [Ref. 3].	<ul style="list-style-type: none"> • Metals • Wet chemistry analytes
Unit 5 cooling tower blowdown and reboiler wastes discharged between 1972 to prior to January 1976 [Ref. 3].	<ul style="list-style-type: none"> • Metals (manganese) • Hexavalent chromium • Hexametaphosphates • Neutralized sulfuric acid • Sodium • Sulfite and borate ions
Condensate from various steam traps, and washwater from trenches along the north wall of the cell floor in Unit 5 [Ref. 3].	<ul style="list-style-type: none"> • Metals (magnesium) • Hexavalent chromium • Chlorides • Phosphates • Perchlorate • Chlorate • Ammonia • Wet chemistry analytes
Boron process neutralization tank waste solution from Unit 5 [Ref. 3]	<ul style="list-style-type: none"> • Metals (boron) • Magnesium sulfate • Neutralized sulfuric acid • Neutralized boric acid
Halide wall solid and screen filter wastes from Unit 5 were sluiced and discharged to the BMI ponds via the Acid Drain System prior to January 1976 [Ref. 3].	<ul style="list-style-type: none"> • Solid silicate scale

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Process Waste Streams Associated with LOU 44 (Unit 6)	Known or Potential Chemicals Associated with LOU 44 (Unit 6)
Solutions from the basement of Unit 6 [Ref. 3].	<ul style="list-style-type: none"> • Metals (hexavalent chromium) • Manganese sulfates •
Ammonium perchlorate process waste including filter slurry [Ref. 3].	<ul style="list-style-type: none"> • Metals (chromium) • Ammonia • Perchlorate • Wet chemistry analytes
Process Waste Streams Associated with Manganese Leach Plant (LOUs 34 East and 47-51 and Area 70)	Known or Potential Chemicals Associated with LOUs 34 East and 47-51 and Area 70
Manganese ore piles leachate	<ul style="list-style-type: none"> • Manganese
Manganese tailings piles leachate	<ul style="list-style-type: none"> • Manganese
Manganese anolyte tank releases [Ref. 3]	<ul style="list-style-type: none"> • Manganese sulfate • Heavy metal sulfides
Acid storage tank releases	<ul style="list-style-type: none"> • Sulfuric acid
Leach tanks releases	<ul style="list-style-type: none"> • Sulfuric acid • Heavy metal sulfides
Transfer lines leaks	<ul style="list-style-type: none"> • Manganese
Calcining process releases [Ref. 3]	<ul style="list-style-type: none"> • Manganese dioxide • Sulfuric acid
Cathode wash area releases	<ul style="list-style-type: none"> • Manganese dioxide • Manganese sulfate • Heavy metal sulfides
Transfer piping leaks	<ul style="list-style-type: none"> • Manganese • Manganese sulfate • Heavy metal sulfides

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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 [Ref. 3]	<ul style="list-style-type: none"> • Metals (manganese) • Hexavalent chromium • Wet chemistry analytes
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

Overlapping or Adjacent LOUs:

- The Storm Sewer System is a subsurface feature that carried storm water run-off and process effluent from the southern portion of the BMI site; branches of LOU 59 passed through and carried effluents from State Industries, Inc. Site (LOU 62), Unit Buildings 1 through 6 and all the adjacent LOUs, manganese leach plant area and associated LOUs and some off-site facilities.
- For detailed information on these LOUs, please refer to the specific LOU data package.

LOUs Potentially Affecting Soils in LOU 59 in Area III:

- LOUs adjacent to Unit 4 Building: Branches of the Storm Sewer System pass along the east side of Unit 4 Building and adjacent LOUs (12, 15, 29, 43 and 61) and carried storm runoff or effluents from these LOUs. As a result, the analytical plan for samples collected from LOU 59 will include analyses for asbestos, PCBs, SVOCs, and TPH-DRO/ORO.
- LOUs adjacent to Unit 5 Building: Branches of the Storm Sewer System pass through Unit 5 Building and adjacent LOUs (33, 40, 43 and 61) and carried storm runoff or effluents from these LOUs. As a result, the analytical plan for samples collected from LOU 59 will include analyses for asbestos, platinum, PCB, SVOCs, and TPH.
- LOUs adjacent to Unit 6 Building: Branches of the Storm Sewer System pass through Unit 6 Building and adjacent LOUs (37 and 44) and carried storm runoff or effluents from these LOUs. As a result, the analytical plan for samples collected from LOU 59 will include analyses for asbestos, PCB, SVOCs, and TPH.

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- LOUs associated with Manganese Leach Plant: Branches of the Storm Sewer System pass through the manganese Leach Plant Area and associated LOUs (34 East, 47 through 51) and carried storm runoff or effluents from these LOUs. As a result, the analytical plan for samples collected from LOU 59 will include analyses for asbestos and tungsten.
- LOUs 24 and 46: The Storm Sewer System runs along the eastern boundary of LOU 24 (Leach Beds, Associated Conveyance Facilities, and Mn Tailings Area) and LOU 46 (Former Old Main Cooling Tower and Recirculation Lines) and carried storm runoff, water from cooling tower upsets or effluents from these LOUs. As a result, the analytical plan for samples collected from LOU 59 will include analyses for hexavalent chromium.
- For further information please refer to the LOU data packages.

Known or Potential Chemical Classes:

- Metals (including hexavalent chromium)
- Wet chemistry analytes
- Perchlorate
- Chlorate
- Ammonia
- Caustic solutions
- SVOC (associated with LOU 29, 40, and 37)
- VOC (associated with LOU 29, 40, and 37)
- TPH (associated with LOU 29, 43, 40, and 37)
- PCB (associated with LOU 29, 43, 61, 40, and 37)
- Platinum (associated with LOU 33 in Unit 5)
- Tungsten (associated with Manganese Leach Plant Area)

Known or Potential Release Mechanisms:

- Releases to soil, surface water, or groundwater could have been waste constituent pathways associated with the storm sewer system.
- Potential releases to soil could have occurred due to breakage of liner pipes or from leakage at pipe joints and connections (no releases documented).
- If releases occurred on an on-going basis, migration to groundwater was possible (no releases documented).
- Prior to 1976, constituents present in waters conveyed by the Storm Sewer System discharged to surface water of LOU 5 (Beta Ditch) [Ref 3].

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Results of Historical Sampling:

- No known historical soil sampling in documents reviewed specifically conducted for this LOU in Area III was identified.
- Upgradient and downgradient monitoring wells (M-11, M-31A, and M-77) are tested for chromium, hexavalent chromium, perchlorate, manganese, TDS, pH, and electrical conductivity as part of periodic or routine groundwater monitoring programs [Ref. 4].

Analytical results for groundwater from historical sampling events are summarized in LOU 59 Table 6 (see attached).

Did Historical Samples Address Potential Release?

- No

Summary of Phase A SAI:

Soil

- Borings SA07 and SA08 were located within the LOU in Area III and were specifically designed to evaluate this LOU [Ref. 2]. Boring SA13 was drilled south (upgradient) of a central east-west segment of the system [Ref. 2], but was not specifically designed to evaluate this LOU.

Groundwater

- Groundwater grab sample GWSA08 was taken from open boreholes SA08, which is located within the LOU 59 in Area III and was sampled specifically to evaluate this LOU [Ref. 2].
- Groundwater grab sample M-29 (GWSA08) was designed specifically to evaluate this LOU [Ref. 2].

Analytical results for groundwater from historical sampling events are summarized in LOU 59 Tables 1 through 5 and Tables 7 through 22 (see attached).

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

- No

Is Phase B Investigation Recommended?

- Yes

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Proposed Phase B Soil Investigation/Rationale:

The Phase B Source Area Investigation for LOU 59 in Area III consists of collecting soil samples from the following seven (7) locations:

- Borings SA171, RSAQ8, SA37, SA174, SA34, SA132, and RSAR7 are located less than 50 feet from the Storm Sewer System alignment to provide evaluation.
- 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 59 in Area III, based on the known process waste streams.
 - Five (5) of the sample locations are judgmental locations and consist of soil borings SA171, SA37, SA174, SA34, and SA132.
- Random sample grid locations:
 - Designed to assess whether unknown constituents associated with LOU 59 a in Area III.
 - Two (2) soil borings (RSAQ8 and RSAR7) are randomly-placed sample locations.
 - All seven soil borings along with the analytical program to evaluate soil samples from LOU 59 in Area III are listed in **Table A – Soil Sampling and Analytical Plan for LOU 59**.

Proposed Chemical Classes for Phase B Investigation for soils:

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

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

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

- Radionuclides
- Dioxins/furans
- Asbestos

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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
- Asbestos
- Radionuclides

Proposed Phase B Groundwater Investigation/Rationale:

The Phase B groundwater investigation of LOU 59 in Area III consists of collecting groundwater samples from six (6) locations to evaluate local groundwater conditions and as part of Site-wide evaluation of constituent trends in groundwater.

- Wells CLD4-R and MW-6R are located east (downgradient) of LOU 59 in Area III.
- Wells M-31A, M-33, M-77, and M-122 are located on the Site and are less than 80 feet downgradient from the Storm Sewer System alignment to provide evaluation.
- The six wells along with the analytical program to evaluate groundwater samples associated with LOU 59 in Area III are listed on **Table B: Groundwater Sampling and Analytical Plan for LOU 59.**

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

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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.

- Soil Gas points SG35 and SG37 are each located less than 60 feet of the Storm Sewer System alignment to provide evaluation.

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:

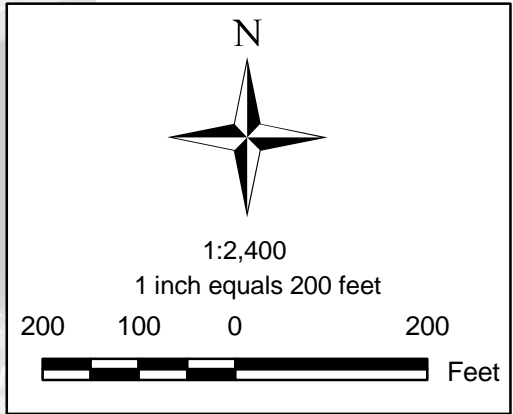
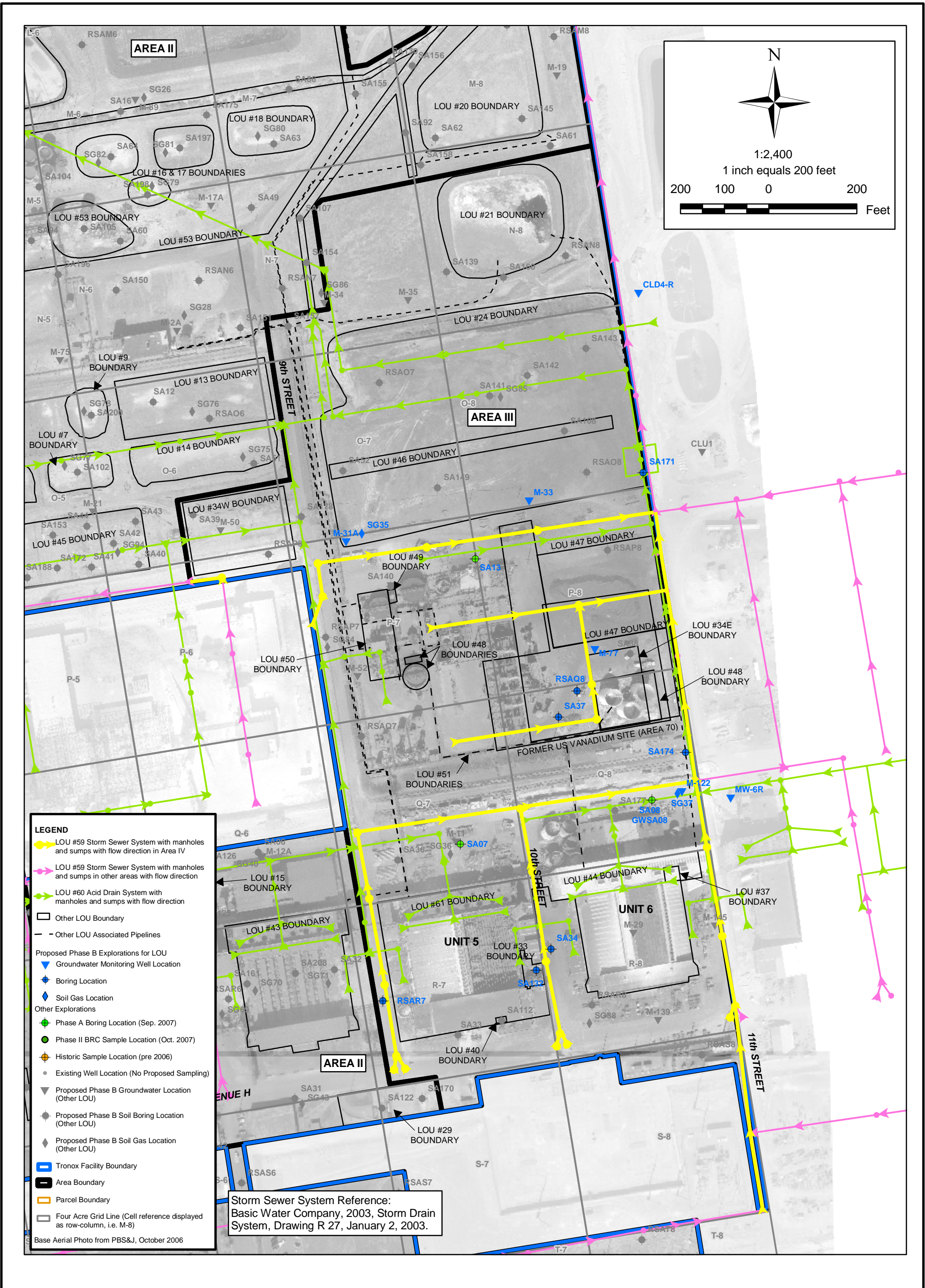
- VOCs (by EPA TO-15)

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, 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. ENSR, 2007b, Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, July-September 2007, November 2007.

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LOU Figure



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

Storm Sewer System Reference:
Basic Water Company, 2003, Storm Drain System, Drawing R 27, January 2, 2003.

SHEET NUMBER: X
FIGURE NUMBER: 1

SAMPLE LOCATIONS FOR LOU #59 IN AREA III STORM DRAIN SYSTEM SEGMENT

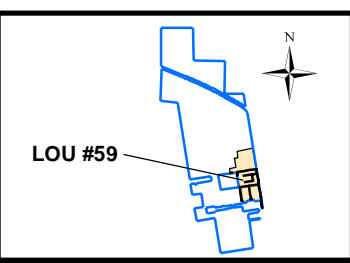
Phase B Area III Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	6/3/2008	04020-023-430

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Sampling and Analytical Plans for LOU 59:

Table A – Soil Sampling and Analytical Plan for LOU 59
Table B – Groundwater Sampling and Analytical Plan for LOU 59

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)	OCs 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).																				
Q-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 to LOUs 21, 59 and 60 piping at a reasonable release location to evaluate all five LOUs.
Q-8	21, 24, 46, 59, 60		SA171-0.5	0.5	X	X	X			X	X		X		X	X				
Q-8	21, 24, 46, 59, 60		SA171-10	10	X	X	X			X	X		Hold		X					
Q-8	21, 24, 46, 59, 60		SA171-20	20	X	X	X			X	X		Hold		X					
Q-8	21, 24, 46, 59, 60		SA171-30	30	X	X	X			X	X		Hold		X					
Q-8	21, 24, 46, 59, 60		SA171-40	40	X	X	X			X	X		X		X					
Q-8	34E, 47, 48, 59, A70	RSAQ8	RSAQ8-0.0	0.0														X		Boring located to evaluate LOU 47 (Leach Plant Mn Ore Pile Area), LOU 48 (Leach Plant Anolyte Storage Tanks), and LOU 59 (Storm Sewer System). Random boring in accessible location within LOUs 47 and 48 and nearby LOU 59 for accessible area coverage and a low spot.
Q-8	34E, 47, 48, 59, A70		RSAQ8-0.5	0.5	X	X	X	X		X	X		X	X	X	X			X	
Q-8	34E, 47, 48, 59, A70		RSAQ8-10	10	X	X	X	X		X	X		Hold	X	X				X	
Q-8	34E, 47, 48, 59, A70		RSAQ8-20	20	X	X	X	X		X	X		Hold	X	X					
Q-8	34E, 47, 48, 59, A70		RSAQ8-30	30	X	X	X	X		X	X		Hold	X	X					
Q-8	34E, 47, 48, 59, A70		RSAQ8-40	40	X	X	X	X		X	X		X	X	X					
Q-8	47, 48, 51, 59	SA37	SA37-0.0	0.0														X		Boring located to evaluate LOU 51 (Mn Leach Plant Area Transfer Lines), LOU 47 (Leach Plant Area Mn Ore Pile Area), LOU 48 (Leach Plant Sewer System), LOU 59 (Storm Sewer System), and Area 70 (Former U.S. Vanadium Site). Located at an accessible location at low spot of LOUs 47, 48 and 51 and Area 70 for worst case releases and nearby LOU 59 pipeline for possible releases.
Q-8	47, 48, 51, 59		SA37-0.5	0.5	X	X	X	X	X	X	X		X	X	X	X				
Q-8	47, 48, 51, 59		SA37-10	10	X	X	X	X	X	X	X		Hold	X	X					
Q-8	47, 48, 51, 59		SA37-20	20	X	X	X	X	X	X	X		Hold	X	X					
Q-8	47, 48, 51, 59		SA37-30	30	X	X	X	X	X	X	X		Hold	X	X					
Q-8	47, 48, 51, 59		SA37-40	40	X	X	X	X	X	X	X		X	X	X					
Q-8	21, 59, 60	SA174	SA174-0.0	0.0														X		Boring located to evaluate LOU 21 (Pond Mn-1 and Associated Piping), LOU 59 (Storm Sewer System), and LOU 60 (Acid Drain System). Located adjacent to all three LOU pipelines at a reasonable release location from edge of street with differential load potential.
Q-8	21, 59, 60		SA174-0.5	0.5	X	X	X			X	X		X		X	X				
Q-8	21, 59, 60		SA174-10	10	X	X	X			X	X		Hold		X					
Q-8	21, 59, 60		SA174-20	20	X	X	X			X	X		Hold		X					
Q-8	21, 59, 60		SA174-30	30	X	X	X			X	X		Hold		X					
Q-8	21, 59, 60		SA174-40	40	X	X	X			X	X		X		X					
R-7	40, 59, 61	RSAR7	RSAR7-0.0	0.0														X		Boring located to evaluate soils for known or potential chemical classes associated with LOU 40 (PCB Transformer Spill), LOU 59 (Storm Sewer System), and LOU 61 (Old Sodium Chlorate Plant Decommissioning and Unit-5 Basement). Random boring located adjacent to LOU 59 piping near a logical release point a (manhole) and randomly near LOUs 40 and 61 for area coverage.
R-7	40, 59, 61		RSAR7-0.5	0.5	X	X	X	X		X	X		X	X	X	X				
R-7	40, 59, 61		RSAR7-10	10	X	X	X	X		X	X		Hold	X	X					
R-7	40, 59, 61		RSAR7-20	20	X	X	X	X		X	X		Hold	X	X					
R-7	40, 59, 61		RSAR7-30	30	X	X	X	X		X	X		Hold	X	X					
R-7	40, 59, 61		RSAR7-40	40	X	X	X	X		X	X		X	X	X					
R-7	33, 59, 61	SA132	SA132-0.0	0.0														X		Located to evaluate LOU 33 (Former Sodium Perchlorate Platinum By-Product Filter), LOU 59 (Storm Sewer System), and LOU 61 (Old Sodium Chlorate Plant Decommissioning and Unit-5 Basement). Located at high risk point, adjacent to containment in pavement crack within LOU 33 and nearby LOUs 59 and 61 for area coverage.
R-7	33, 59, 61		SA132-0.5	0.5	X	X	X	X		X	X		X		X	X				
R-7	33, 59, 61		SA132-10	10	X	X	X	X		X	X		Hold		X					
R-7	33, 59, 61		SA132-20	20	X	X	X	X		X	X		Hold		X					
R-7	33, 59, 61		SA132-30	30	X	X	X	X		X	X		Hold		X					
R-7	33, 59, 61		SA132-40	40	X	X	X	X		X	X		X		X					
R-8	33, 44, 61, 59	SA34	SA34-0.0	0.0														X		Boring located to evaluate LOU 33 (Former Sodium Perchlorate Platinum By-Product Filter), LOU 44 (Unit-6 Basement), LOU 59 (Storm Sewer System), and LOU 61 (Old Sodium Chlorate Plant Decommissioning and Unit-5 Basement). Located in between LOUs 44, 33 and 61 to evaluate all three LOUs and adjacent to LOU 59 to evaluate pipeline releases.
R-8	33, 44, 61, 59		SA34-0.5	0.5	X	X	X	X		X	X		X		X	X			X	
R-8	33, 44, 61, 59		SA34-10	10	X	X	X	X		X	X		Hold		X				X	
R-8	33, 44, 61, 59		SA34-20	20	X	X	X	X		X	X		Hold		X					
R-8	33, 44, 61, 59		SA34-30	30	X	X	X	X		X	X		Hold		X					
R-8	33, 44, 61, 59		SA34-40	40	X	X	X	X		X	X		X		X					
Number of Borings:		7																		
Number of Samples:					35	35	35	25	5	35	35	0	14	15	35	7	0	7	2	
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-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.
P-8	III	M-77	29 - 43.8	Qal/MCfg1	no	X	X	X	X	X	X	X	X	Located to evaluate LOUs 34E, 47 through 51 and Area 70 (former U.S. Vanadium); as a downgradient step out for LOUs 33, 40, and 61; as a crossgradient step out for LOU 59; and for general Site coverage.
Q-8	III	M-122	TBD	TBD	new well	X	X	X	X	X	X	X	X	New monitoring well located to serve as a downgradient step out for LOUs 37, 44, and 60; as an upgradient step out for LOUs 34E, 47, 48, 51, 59 and Area 70 (former U.S. Vanadium); to evaluate possible offsite sources to the east; and for general Site coverage.
Q-9	IIIE	MW-6R	nr	nr	no	X	X	X	X	X	X	X	X	Located to serve as a downgradient step out for LOUs 37 and 44; as a crossgradient step out for LOUs 59 and 60; to evaluate possible offsite sources to the east; and for general Site coverage.
Number of Field Samples:						6	6	6	6	6	6	6	6	

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 LOU 59 Storm Sewer System in Area III
Tronox Facility – Henderson, Nevada

Soil and Groundwater Characterization Data

Summary of Available Data for LOU 59 Storm Sewer System in Area III
Tronox Facility – Henderson, Nevada

LOU-specific analytes identified include:

- Wet chemistry analytes
- Metals
- Hexavalent Chromium
- Organochlorine pesticides
- PCBs
- Perchlorate
- SVOCs
- TPH-DRO/ORO
- VOCs

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

LOU 59 Table 1 – Soil Characterization Data – Wet Chemistry

LOU 59 Table 2 – Groundwater Characterization Data – Wet Chemistry

LOU 59 Table 3 – Soil Characterization Data – Dioxins and Dibenzofurans

LOU 59 Table 4 – Soil Characterization Data – Metals

LOU 59 Table 5 – Groundwater Characterization Data – Metals

LOU 59 Table 6 – Groundwater Characterization Data – Routine Monitoring

LOU 59 Table 7 – Soil Characterization Data – Organochlorine Pesticides (OCP)

LOU 59 Table 8 – Groundwater Characterization Data – Organochlorine Pesticides (OCP)

LOU 59 Table 9 – Soil Characterization Data – Organophosphorus Pesticides (OPP)

LOU 59 Table 10 – Groundwater Characterization Data – Organophosphorus Pesticides (OPP)

LOU 59 Table 11 – Soil Characterization Data – PCBs

LOU 59 Table 12 – Groundwater Characterization Data – PCBs

LOU 59 Table 13 – Soil Characterization Data – Perchlorate

LOU 59 Table 14 – Groundwater Characterization Data – Perchlorate

LOU 59 Table 15 – Soil Characterization Data – Radionuclides

LOU 59 Table 16 – Groundwater Characterization Data – Radionuclides

LOU 59 Table 17 – Soil Characterization Data – SVOC

LOU 59 Table 18 – Groundwater Characterization Data – SVOC

LOU 59 Table 19 – Soil Characteristic Data - TPH and Fuel Alcohols

LOU 59 Table 20 – Soil Characterization Data – VOCs

LOU 59 Table 21 – Groundwater Characterization Data – VOCs

LOU 59 Table 22 – Soil Characterization Data – Long Asbestos Fibers in Respirable Soil Fraction

Notes for all tables presented at the end of the tables.

**LOU 59 Area III Table 1
Soil Characterization Data - Wet Chemistry**

Storm Sewer 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	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Units
Boring No.	SA7	SA7	SA7	SA7	SA7	SA7	SA8	SA8	SA8	SA8	SA8	SA13	SA13	SA13	SA13	SA13	SA13		
Sample ID	SA7-0.5	SA7-10	SA7-10D	SA7-20	SA7-30	SA7-34	SA8-0.5	SA8-10	SA8-20	SA8-30	SA8-37	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40		
Sample Depth (ft)	0.5	10	10	20	30	34	0.5	10	20	30	37	0.5	0.5	10	20	30	40		
Sample Date	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	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	--	5.3	5.6	7.1	7.6	6.3	23.3	4.8	6.3	4.7	8.4	26.6	14.1	9.6	4.3	6.1	5.1	20.7	percent
Alkalinity (as CaCO ₃)	--	68.9	53.0 U	70.2	174	158	65.2 U	134	53.4 U	52.4 U	279	68.1 U	58.2 UJ	235 J	71.3 J	53.2 UJ	98.4 J	136 J	mg/kg
Bicarbonate	--	178	212	193	131	340	290	358	247	293	1050	157	279 J	1930 J	523 J	269 J	246 J	699 J	mg/kg
Total Alkalinity	--	247	249	263	305	497	319	492	281	333	1330	157	279 J	2170 J	594	303 J	344 J	835 J	mg/kg
Ammonia (as N)	--	5.3 UJ	5.3 UJ	5.4 UJ	5.4 UJ	5.3 UJ	6.5 UJ	5.3 UJ	5.3 UJ	5.2 UJ	5.5 UJ	6.8 UJ	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	R	R	R	R	R	R	R	R	R	R	R	mg/kg
MBAS	--	4.2 U	4.4 U	4.4 U	4.4 U	4.4 U	5.0 U	5.9	4.2 U	4.4 U	4.3 U	5.6 U	4.2 U	4.3 U	4.2 U	4.3 U	4.3 U	4.8 U	mg/kg
pH (solid)	--	8.2	7.9	8.0	8.3	8.5	7.6	8.4	8.2	8.5	8.9	7.7	7.4	7.7	8.1	8.1	8.4	7.8	none
Bromide	--	1.1 J	0.65 J	2.7 U	2.7 U	2.7 U	32.6 U	2.6 U	2.7 U	2.6 U	2.7 U	1.5 J	2.9 U	2.8 U	2.6 U	2.7 U	2.6 U	3.2 U	mg/kg
Chlorate	--	108 J+	138 J+	183 J+	201 J+	28.7 J+	66.2 J+	16.7 J-	1.9 J-	3.2 J-	4.8 J-	16.8 J-	5.8 U	5.5 UJ	5.2 UJ	5.3 U	5.3 U	6.3 U	mg/kg
Chloride	--	127	160	177	208	46.7	95.6	495 J+	62.3 J+	345 J+	84.5 J+	395 J+	269 J	15.0 J	13.5 J	16.3 J	19.9 J	41.3 J	mg/kg
Nitrate (as N)	--	8.9	7.0	5.3	6.1	0.71 J+	0.89 J+	2.6 J+	1.7 J+	4.4 J+	8.2 J+	14.9	0.23 U	0.42 J+	0.80 J+	0.57 J+	0.17 J+	3.2 J+	mg/kg
Nitrite	--	R	2.1 UJ	2.2 UJ	2.2 UJ	2.1 UJ	2.6 UJ	4.7 J-	2.1 UJ	4.0 J-	2.2 UJ	2.7 UJ	5.7 J	0.10 J	0.55 J	0.11 J	0.74 J	0.13 J	mg/kg
ortho-Phosphate	--	7.2	5.3 U	10.6	5.4 U	2.8 J	6.5 U	2.4 J	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	3.2 J	5.2 U	5.3 U	5.3 U	6.3 U	mg/kg
Sulfate	--	449 J	805 J	120 J	145 J	67.5 J	5380 J	177	696	181	193	15100	13800 J	1080 J	853 J	294 J	174	382 J	mg/kg
Total Organic Carbon	--	6780 J-	1950 J-	4480 J-	5000 J-	925 J-	11600 J-	3480 J-	1220 J-	3150 J-	6400 J-	12900 J-	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).

LOU 59 Area III Table 2
Groundwater Characterization Data - Wet Chemistry

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID		SA8	
Sample ID		M29	
Sample Date		11/17/2006	
Wet Chemistry Parameters	MCL ² mg/L		Units
Total Dissolved Solids	5.00E+02 j	6180 J-	mg/L
Total Suspended Solids	--	449 J-	mg/L
Alkalinity (as CaCO ₃)	--	5.0 U	mg/L
Bicarbonate	--	268	mg/L
Total Alkalinity	--	268	mg/L
Ammonia (as N)	--	79.9	ug/L
MBAS	--	0.20 U	mg/L
Cyanide	2.00E-01	5.0 UJ	ug/L
pH (liquid)	--		none
Specific Conductance	--	6420 J	umhos/cm
Bromide	--	14.1 J-	mg/L
Chlorate	--	15.0	mg/L
Chloride	2.50E+02	229 J-	mg/L
Nitrate (as N)	1.00E+01	9.5	mg/L
Nitrite	1.00E+00	2.0 U	mg/L
ortho-Phosphate	--	5.0 U	mg/L
Sulfate	2.50E+02 j	5330	mg/L
Total Organic Carbon	--	2.2	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 59 Area III Table 3
Soil Characterization Data - Dioxins and Dibenzofurans**

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program				Ph A ¹	Ph A	Ph A	Ph A
Boring No.				SA7	SA8	SA13	SA13
Sample ID				SA7-0.5	SA8-0.5	SA13-0.5	SA13-0.5D
Sample Depth (ft)				0.5	0.5	0.5	0.5
Sample Date				11/20/2006	11/17/2006	11/17/2006	11/17/2006
chemical_name:	Method	Unit	MSSL ² ng/kg				
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (a) ng/kg		ng/kg	--	192	0.014	0.006	
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (a) ng/kg		ng/kg	--	169			
Dioxin 8290 SCREEN Total TEQ-ENSR Calculated (b) ng/kg		ng/kg	--	192	0.063	0.1	
Dioxin SW 846 8290 Total TEQ-ENSR Calculated (b) ng/kg		ng/kg	--	169			
1,2,3,4,6,7,8-Heptachlorodibenzofuran	8290 Screen	ng/kg	--	927.107	0.479	0.047 U	0.325
1,2,3,4,6,7,8-Heptachlorodibenzofuran	SW 846 8290	ng/kg	--	873.925 J			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	85.450	0.714	0.054 U	0.736
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	85.45			
1,2,3,4,7,8,9-Heptachlorodibenzofuran	8290 Screen	ng/kg	--	392.108	0.075 U	0.067 U	0.140 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran	SW 846 8290	ng/kg	--	392.11			
1,2,3,4,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	372.915	0.034 U	0.035 U	0.084 U
1,2,3,4,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--	372.915			
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	8.841	0.043 U	0.041 U	0.060 U
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	8.841			
1,2,3,6,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	249.626	0.030 U	0.031 U	0.079 U
1,2,3,6,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--	249.626			
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	19.448	0.036 U	0.035 U	0.055 U
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	19.448			
1,2,3,7,8,9-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	31.354	0.041 U	0.042 U	0.113 U
1,2,3,7,8,9-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--	31.353			
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	21.698	0.040 U	0.038 U	0.058 U
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	21.698			
1,2,3,7,8-Pentachlorodibenzofuran	8290 Screen	ng/kg	--	199.693	0.023 U	0.028 U	0.050 U
1,2,3,7,8-Pentachlorodibenzofuran	SW 846 8290	ng/kg	--	199.692			
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	16.175	0.030 U	0.023 U	0.055 U
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	16.175			
2,3,4,6,7,8-Hexachlorodibenzofuran	8290 Screen	ng/kg	--	112.484	0.034 U	0.035 U	0.092 U
2,3,4,6,7,8-Hexachlorodibenzofuran	SW 846 8290	ng/kg	--	112.484			
2,3,4,7,8-Pentachlorodibenzofuran	8290 Screen	ng/kg	--	92.926	0.022 U	0.027 U	0.049 U
2,3,4,7,8-Pentachlorodibenzofuran	SW 846 8290	ng/kg	--	92.927			
2,3,7,8-Tetrachlorodibenzofuran	8290 Screen	ng/kg	--	369.233	0.043 U	0.055 U	0.158 U
2,3,7,8-Tetrachlorodibenzofuran	SW 846 8290	ng/kg	--	136.994 J			
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	1.00E+03 h,v	8.965	0.028 U	0.036 U	0.141 U
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	1.00E+03 h,v	8.965			
Octachlorodibenzofuran	8290 Screen	ng/kg	--	2502.073	1.403	0.109 U	0.670
Octachlorodibenzofuran	SW 846 8290	ng/kg	--	2338.457 J			
Octachlorodibenzo-p-Dioxin	8290 Screen	ng/kg	--	191.912	6.973	0.660	3.166

LOU 59 Area III Table 3 (continued)
Soil Characterization Data - Dioxins and Dibenzofurans

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program				Ph A ¹	Ph A	Ph A	Ph A
Boring No.				SA7	SA8	SA13	SA13
Sample ID				SA7-0.5	SA8-0.5	SA13-0.5	SA13-0.5D
Sample Depth (ft)				0.5	0.5	0.5	0.5
Sample Date				11/20/2006	11/17/2006	11/17/2006	11/17/2006
chemical_name:	Method	Unit	MSSL² ng/kg				
Octachlorodibenzo-p-Dioxin	SW 846 8290	ng/kg	--	191.912			
Tetrachlorinated Dibenzofurans, (Total)	SW 846 8290	ng/kg	--	1642.861 J			
Total HpCDD	SW 846 8290	ng/kg	--	151.421			
Total HpCDF	SW 846 8290	ng/kg	--	1846.885 J			
Total HxCDD	SW 846 8290	ng/kg	--	158.189			
Total HxCDF	SW 846 8290	ng/kg	--	1786.919			
Total PeCDD	SW 846 8290	ng/kg	--	154.674			
Total PeCDF	SW 846 8290	ng/kg	--	1665.598			
Total TCDD	SW 846 8290	ng/kg	--	160.412			

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/>].

**LOU 59 Area III Table 4
Soil Characterization Data - Metals**

Storm Sewer 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	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A		
Boring No.	SA7	SA7	SA7	SA7	SA7	SA7	SA7	SA8	SA8	SA8	SA8	SA8	SA8	SA13	SA13	SA13	SA13	SA13		
Sample ID	SA7-0.5	SA7-10	SA7-10D	SA7-20	SA7-30	SA7-34	SA8-0.5	SA8-10	SA8-20	SA8-30	SA8-37	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40			
Sample Depth (ft)	0.5	10	10	20	30	34	0.5	10	20	30	37	0.5	0.5	10	20	30	40			
Sample Date	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Units
Aluminum	1.00E+05	6400	5850	7100	6450	6390	7400	6450	6650	6270	6930	8070	7350	8310	5630	7330	7090	8720	mg/kg	
Antimony	4.50E+02	0.36 J-	0.17 J-	0.13 J-	0.15 J-	0.15 J-	0.32 J-	0.15 J-	0.24 J-	0.13 J-	0.18 J-	0.20 J-	0.19 J-	0.25 J-	0.18 J-	0.19 J-	0.18 J-	0.19 J-	mg/kg	
Arsenic	2.80E+02	5.5	2.5	2.3	3.3	4.8	24.3	1.8	2.5	3.4	3.7	44.3	2.1	2.3	2.1	3.2	3.1	36.4	mg/kg	
Barium	1.00E+05	201 J+	147	166	149 J	73.6 J	158 J	143 J+	165 J	161 J	168 J	81.9 J	159	181	159 J	197 J	127 J	123 J-	mg/kg	
Beryllium	2.20E+03	0.41	0.42	0.47	0.46	0.44 J-	0.35 J-	0.40 J-	0.46 J-	0.42 J-	0.45 J-	0.47 J-	0.50 J-	0.51 J-	0.37 J-	0.46 J-	0.45 J-	0.55	mg/kg	
Boron	1.00E+05	48.6 J-	8.7 UJ	8.2 UJ	9.3 UJ	12.3 UJ	36.8 J-	2.5 J-	3.5 J-	6.5 J-	5.6 J-	28.3 J-	3.0 J-	3.8 J-	2.6 J-	3.6 J-	3.3 J-	12.9 J-	mg/kg	
Cadmium	5.60E+02	0.24	0.075	0.084	0.068	0.065	0.084	0.085	0.087	0.090	0.065	0.058 J	0.13	0.12	0.11	0.080	0.074	0.11	mg/kg	
Calcium	--	37500	26400	20500	25200	29000	62700 J+	9930 J+	10500 J+	28800 J+	22800 J+	79600 J+	12600 J	12300 J	9080 J+	21200 J+	15500 J+	28500	mg/kg	
Chromium (Total)	7.10E+01	18.5 J-	8.2 J-	7.9 J-	8.6 J-	7.4 J-	33.8 J-	10.1 J-	11.2 J-	9.3 J-	11.7 J-	40.9 J-	12.8 J-	13.8 J-	10.1 J-	11.4 J-	8.8 J-	14.5	mg/kg	
Chromium-hexavalent	5.00E+02	0.56	0.21 U	0.22 U	0.22 U	0.12 J	0.13 J	0.21 U	0.21 U	0.21 U	0.22 U	0.27 U	0.23 U	0.12 J	0.21 U	0.21 U	0.21 U	0.25 U	mg/kg	
Cobalt	2.10E+03	8.6 J-	6.0 J-	6.2 J-	5.8 J-	5.2 J-	3.1 J-	7.0 J-	6.4 J-	7.6 J-	5.1 J-	3.5 J-	6.9 J-	7.2 J-	6.3 J-	7.3 J-	6.2 J-	5.6 J-	mg/kg	
Copper	4.20E+04	16.5 J-	10.4 J-	11.3 J-	12.0 J-	11.3 J-	9.5 J	12.4 J-	13.5 J	15.6 J	11.7 J	11.7 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	9830	9600	9830	10300	9530	7520	14000	13600	12900	13300	7600	15600	16100	13200	13200	13600	12600	mg/kg	
Lead	8.00E+02	32.5	7.4	7.8	6.7	6.0	4.4	7.6	8.4	6.9	7.8	4.4	9.0	9.5	9.4	10.4	7.4	8.1	mg/kg	
Magnesium	--	8360 J-	5750	6310	8920 J-	8250 J-	19000 J-	6390 J-	5350 J-	7920 J-	7520 J-	51900 J-	6580 J-	7030 J-	4940 J-	8590 J-	7430 J-	15200	mg/kg	
Manganese	3.50E+04	1290	278	262	250	159	171 J	316 J	349 J	289 J	214 J	111 J	1680	2320	350 J	434 J	219 J	606	mg/kg	
Molybdenum	5.70E+03	0.92	0.41 J	0.41 J	0.40 J	0.38 J	0.52 J	0.55	0.54	0.47 J	0.56	0.51 J	0.58 J	0.52 J	0.60	0.51 J	0.45 J	0.52 J	mg/kg	
Nickel	2.30E+04	12.9 J-	11.4 J-	12.1 J-	11.8 J-	11.6 J-	9.8 J-	12.4 J-	12.7 J	18.7 J-	11.5 J-	12.4 J-	13.9 J-	14.3 J-	11.6 J-	12.5 J-	12.0 J-	14.0 J-	mg/kg	
Platinum	--	0.077 J	0.014 J	0.016 J	0.014 J	0.012 J	0.014 J	0.016 J	0.013 J	0.014 J	0.015 J	0.014 U	0.015 J	0.022 J	0.014 J	0.019 J	0.016 J	0.021 J	mg/kg	
Potassium	--	1910	1790	2110	1280	1340	2080 J-	1380 J-	2390 J-	1120 J-	1350 J-	2390 J-	2190	2500	1670 J-	1380 J-	1280 J-	2740	mg/kg	
Selenium	5.70E+03	0.11 U	0.11 U	0.12 U	0.12 U	0.12 U	0.14 UJ	0.11 UJ	0.12 UJ	0.11 UJ	0.12 UJ	0.15 UJ	0.13 UJ	0.12 UJ	0.11 UJ	0.12 UJ	0.11 UJ	0.14 UJ	mg/kg	
Silver	5.70E+03	0.16 J	0.11 J	0.13 J	0.12 J	0.11 J	0.12 J	0.12 J	0.12 J	0.12 J	0.12 J	0.10 J	0.15 J	0.16 J	0.13 J	0.14 J	0.13 J	0.16 J	mg/kg	
Sodium	--	763	314 J-	361 J-	392 J-	638 J-	533 J-	689 J-	1410 J-	591 J-	586 J-	1540 J-	447 J-	564 J	251 J-	593 J-	694 J-	506 J-	mg/kg	
Strontium	1.00E+05	130 J+	133 J-	130 J-	171 J	219 J	2280 J	119 J+	141 J	201 J	206 J	542 J	130 J-	162 J-	117 J	215 J	310 J	178	mg/kg	
Thallium	--	0.38 U	0.21 U	0.20 U	0.12 U	0.10 U	0.32 U	0.087 U	0.14 U	0.080 U	0.076 U	0.16 U	0.098 U	0.26 U	0.12 U	0.13 U	0.093 U	0.13 U	mg/kg	
Tin	--	0.92	0.43	0.52	0.43	0.42	0.39	1.2	0.99	0.55	0.60	0.39	0.73	0.69	0.59	0.63	0.57	0.60	mg/kg	
Titanium	--	364 J+	379 J+	382 J+	454 J+	368 J+	444	583	654	627	577 J	431	830	806	733	689	649	681	mg/kg	
Tungsten	--	1.4 J-	0.41 J-	0.32 J-	0.33 J-	0.30 J-	0.87 J-	0.37 UJ	0.36 UJ	0.28 UJ	0.25 UJ	0.41 UJ	0.36 UJ	0.45 UJ	0.35 UJ	0.40 UJ	0.32 UJ	0.73 UJ	mg/kg	
Uranium	--	0.96	0.86	0.87	1.6	2.1	4.3	0.75	0.93	1.3	2.0	10.2	0.92	1.0	0.83	1.4	1.4	3.2	mg/kg	
Vanadium	5.70E+03	24.1	23.7	23.5	29.8 J-	24.9 J-	30.1 J-	43.1 J-	44.5 J-	41.9 J-	39.5 J-	40.3 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	39.1 J-	21.7 J-	23.0 J-	22.3 J-	21.9 J-	20.3 J-	25.5 J-	26.9 J-	23.8 J-	25.0 J-	19.2 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)	0.0071 U	0.0074 J-	0.024 J-	0.0072 UJ	0.0071 UJ	0.0087 UJ	0.011 J-	0.0073 J-	0.007 UJ	0.010 J-	0.0091 UJ	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
 2. U.S. EPA, Region 6, Medium Specific Screening Levels (MSSLs) for Industrial - Outdoor Worker (March, 2008).
- (t) Value for mercury and compounds.

**LOU 59 Area III Table 5
Groundwater Characterization Data - Metals**

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		PhA ¹	
Well ID:		SA08	
Sample ID		M-29	
Sample Date		11/17/2006	
Metals	MCL ² ug/L		Unit
Aluminum	5.00E+01 j	7.9 U	ug/L
Antimony	6.00E+00	0.94 J	ug/L
Arsenic	1.00E+01	100	ug/L
Barium	2.00E+03	17.2	ug/L
Beryllium	4.00E+00	0.088 UJ	ug/L
Boron	7.30E+03	2670	ug/L
Cadmium	5.00E+00	0.078 J	ug/L
Calcium	--	395000	ug/L
Chromium (Total)	1.00E+02	24.7 J-	ug/L
Chromium-hexavalent	1.09E+02	25.8 J	ug/L
Cobalt	7.30E+02	5.1 J-	ug/L
Copper	1.30E+03 p	11.1 J-	ug/L
Iron	3.00E+02 j	94 U	ug/L
Lead	1.50E+01 u	0.49 U	ug/L
Magnesium	1.50E+05 a	619000	ug/L
Manganese	5.00E+01 j	108 J-	ug/L
Molybdenum	1.82E+02	23.9	ug/L
Nickel	7.30E+02	16.8 J-	ug/L
Platinum	--	0.1 U	ug/L
Potassium	--	15900 J-	ug/L
Selenium	5.00E+01	5.4 J	ug/L
Silver	1.00E+02 j	0.2 U	ug/L
Sodium	--	525000	ug/L
Strontium	2.19E+04	10400	ug/L
Thallium	2.00E+00	0.32 U	ug/L
Tin	2.19E+04	0.2 U	ug/L
Titanium	1.46E+05	6.5 J-	ug/L
Tungsten	--	5 U	ug/L
Uranium	3.00E+01	241	ug/L
Vanadium	3.65E+01	50.7 J-	ug/L
Zinc	5.00E+03 j	16.8 J-	ug/L
Mercury	2.00E+00	0.093 UJ	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.
 - (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 59 Area III Table 6
Groundwater Characterization Data - Routine Monitoring¹

Storm Sewer System
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 ² mg/L	TDS mg/L	Qual	MCL ² mg/L	Nitrate (as N) mg/L	Qual	MCL ² mg/L	Chlorate mg/L	Qual	MCL ² mg/L
M-11	2/2/2006	42.69	52	d	1.80E-02 a,m	2.8	d	1.00E-01	3660		5.00E+02 j			1.00E+01			--
M-11	5/3/2006	43.29	43	d	1.80E-02 a,m	2.7	d	1.00E-01	2980		5.00E+02 j	<0.1	ud	1.00E+01	460	d	--
M-11	8/2/2006	43.50	31.4	d	1.80E-02 a,m	2.8	d	1.00E-01	2700		5.00E+02 j	1.3	d	1.00E+01	230	d	--
M-11	10/31/2006	43.51	33.4	d	1.80E-02 a,m	2.7	d	1.00E-01	3260		5.00E+02 j	3.86	d	1.00E+01	487	d	--
M-11	1/31/2007	43.50	30.6		1.80E-02 a,m	3		1.00E-01	3380		5.00E+02 j			1.00E+01			--
M-11	5/2/2007	43.51	25.1		1.80E-02 a,m	2.7		1.00E-01	3180		5.00E+02 j	3.01		1.00E+01	434		--
M-11	8/2/2007	43.82	33.9		1.80E-02 a,m	2.6		1.00E-01	3400		5.00E+02 j			1.00E+01			--
M-31A	2/2/2006	46.07	1800	d	1.80E-02 a,m	13	d	1.00E-01			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	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	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	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	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	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	9330		5.00E+02 j			1.00E+01			--
M-77	5/3/2006	37.64	180	d	1.80E-02 a,m	0.35	d	1.00E-01	2710		5.00E+02 j			1.00E+01			--
M-77	5/2/2007	37.86	168		1.80E-02 a,m	0.4		1.00E-01	2400		5.00E+02 j			1.00E+01			--

Notes:

1. NSR, 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.
 - (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

LOU 59 Area III Table 7
Soil Characterization Data - Organochlorine Pesticides (OCP)

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A	Ph A ¹	Ph A	Ph A	
Boring No.		SA7	SA8	SA13	SA13	
Sample ID		SA7-0.5	SA8-0.5	SA13-0.5	SA13-0.5D	
Sample Depth (ft)		0.5	0.5	0.5	0.5	
Sample Date		11/20/2006	11/17/2006	11/17/2006	11/17/2006	
Organochlorine Pesticides	MSSL ² mg/kg					Unit
4,4'-DDD	1.10E+01	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
4,4'-DDE	7.80E+00	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
4,4'-DDT	7.80E+00	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Aldrin	1.10E-01	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Alpha-BHC	4.00E-01	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Alpha-chlordane	1.40E+00 (y)	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Beta-BHC	1.40E+00	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Delta-BHC	--	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Dieldrin	1.20E-01	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Endosulfan I	4.10E+03 (aa)	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Endosulfan II	4.10E+03 (aa)	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Endosulfan Sulfate	4.10E+03 (aa)	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Endrin	2.10E+02	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Endrin Aldehyde	2.10E+02 (k)	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Endrin Ketone	2.10E+02 (k)	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Gamma-BHC (Lindane)	1.90E+00	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Gamma-Chlordane	1.40E+00 (y)	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Heptachlor	4.30E-01	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Heptachlor Epoxide	2.10E-01	0.0018 U	0.018 U	0.0020 U	0.0019 U	mg/kg
Methoxychlor	3.40E+03	0.0035 UJ	0.035 U	0.0038 U	0.0076	mg/kg
Tech-Chlordane	1.40E+00	0.011 U	0.11 U	0.012 U	0.011 U	mg/kg
Toxaphene	1.70E+00	0.053 U	0.53 U	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.

LOU 59 Area III Table 8
Groundwater Characterization Data - Organochlorine Pesticides (OCPs)

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID		SA8	
Sample ID		M29	
Sample Date		11/17/2006	
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 (bbb)	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.
 - (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 59 Area III Table 9
Soil Characterization Data - Organophosphorus Pesticides (OPPs)

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A	Ph A ¹	Ph A	Ph A	
Boring No.		SA7	SA8	SA13	SA13	
Sample ID		SA7-0.5	SA8-0.5	SA13-0.5	SA13-0.5D	
Sample Depth (ft)		0.5	0.5	0.5	0.5	
Sample Date		11/20/2006	11/17/2006	11/17/2006	11/17/2006	
OPPs	MSSL ² mg/kg					Unit
Azinphos-methyl	--	0.014 U	0.014 U	0.015 UJ	0.014 U	mg/kg
Bolstar	--	0.014 U	0.014 U	0.015 UJ	0.014 U	mg/kg
Chlorpyrifos	2.10E+03	0.021 U	0.021 U	0.023 UJ	0.022 U	mg/kg
Coumaphos	--	0.014 UJ	0.014 UJ	0.015 UJ	0.014 UJ	mg/kg
Demeton-O	--	0.041 U	0.041 U	0.045 UJ	0.043 U	mg/kg
Demeton-S	--	0.016 U	0.016 U	0.017 UJ	0.017 U	mg/kg
Diazinon	6.20E+02	0.023 U	0.023 U	0.026 UJ	0.024 U	mg/kg
Dichlorvos	6.60E+00	0.024 U	0.024 U	0.027 UJ	0.025 U	mg/kg
Dimethoate	--	0.023 U	0.023 U	0.026 UJ	0.024 U	mg/kg
Disulfoton	2.70E+01	0.051 U	0.050 U	0.056 UJ	0.053 U	mg/kg
EPN	--	0.014 U	0.014 U	0.015 UJ	0.014 U	mg/kg
Ethoprop	--	0.016 U	0.016 U	0.017 UJ	0.017 U	mg/kg
Ethyl Parathion	4.10E+03	0.019 U	0.019 U	0.021 UJ	0.020 U	mg/kg
Famphur	--	0.014 U	0.014 U	0.015 UJ	0.014 U	mg/kg
Fensulfothion	--	0.014 U	0.014 U	0.015 UJ	0.014 U	mg/kg
Fenthion	1.70E+02 (ff)	0.035 U	0.035 U	0.038 UJ	0.037 U	mg/kg
Malathion	1.40E+04	0.016 U	0.016 U	0.017 UJ	0.017 U	mg/kg
Merphos	--	0.032 U	0.032 U	0.035 UJ	0.033 U	mg/kg
Methyl parathion	1.70E+02	0.021 U	0.021 U	0.023 UJ	0.022 U	mg/kg
Mevinphos	--	0.016 U	0.016 U	0.017 UJ	0.017 U	mg/kg
Naled	1.40E+03	0.035 UJ	0.035 UJ	0.038 UJ	0.037 UJ	mg/kg
Phorate	--	0.021 U	0.021 U	0.023 UJ	0.022 U	mg/kg
Ronnel	3.40E+04	0.019 U	0.019 U	0.021 UJ	0.020 U	mg/kg
Stirphos	--	0.016 U	0.016 U	0.017 UJ	0.017 U	mg/kg
Sulfotep	--	0.021 U	0.021 U	0.023 UJ	0.022 U	mg/kg
Thionazin	--	0.019 U	0.019 U	0.021 UJ	0.020 U	mg/kg
Tokuthion	--	0.021 UJ	0.021 UJ	0.023 UJ	0.022 UJ	mg/kg
Trichloronate	--	0.021 U	0.021 U	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.

LOU 59 Area III Table 10
Groundwater Characterization Data - Organophosphorus Pesticides (OPPs)

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID		SA8	
Sample ID		M-29	
Sample Date		11/17/2006	
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 UJ	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.
(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 59 Area III Table 11
Soil Characterization Data - PCBs**

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program	Ph A ¹	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A ¹	Ph A	Ph A	Ph A	Ph A	Ph A ¹	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring ID	SA7	SA7	SA7	SA7	SA7	SA7	SA8	SA8	SA8	SA8	SA8	SA13	SA13	SA13	SA13	SA13	SA13	
Sample ID	SA7-0.5	SA7-10	SA7-10D	SA7-20	SA7-30	SA7-34	SA8-0.5	SA8-10	SA8-20	SA8-30	SA8-37	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40	
Sample Depth (ft)	0.5	10	10	20	30	34	0.5	10	20	30	37	0.5	0.5	10	20	30	40	
Sample Date	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	
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	mg/kg
Aroclor-1016	2.40E+01 (i)	0.035 U	0.035 U	0.036 U	0.036 U	0.035 U	0.043 U	0.035 U	0.035 U	0.035 U	0.036 U	0.045 U	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U
Aroclor-1221	8.30E-01 (i)	0.035 U	0.035 U	0.036 U	0.036 U	0.035 U	0.043 U	0.035 U	0.035 U	0.035 U	0.036 U	0.045 U	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U
Aroclor-1232	8.30E-01 (i)	0.035 U	0.035 U	0.036 U	0.036 U	0.035 U	0.043 U	0.035 U	0.035 U	0.035 U	0.036 U	0.045 U	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U
Aroclor-1242	8.30E-01 (i)	0.035 U	0.035 U	0.036 U	0.036 U	0.035 U	0.043 U	0.035 U	0.035 U	0.035 U	0.036 U	0.045 U	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U
Aroclor-1248	8.30E-01 (i)	0.035 U	0.035 U	0.036 U	0.036 U	0.035 U	0.043 U	0.035 U	0.035 U	0.035 U	0.036 U	0.045 U	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U
Aroclor-1254	8.30E-01 (i)	0.035 U	0.035 U	0.036 U	0.036 U	0.035 U	0.043 U	0.035 U	0.035 U	0.035 U	0.036 U	0.045 U	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 U
Aroclor-1260	8.30E-01 (i)	0.035 U	0.035 U	0.036 U	0.036 U	0.035 U	0.043 U	0.035 U	0.035 U	0.035 U	0.036 U	0.045 U	0.038 U	0.037 U	0.034 U	0.035 U	0.035 U	0.042 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 59 Area III Table 12
Groundwater Characterization Data - PCBs**

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹	
Well ID		SA8	
Sample ID		M-29	
Sample Date		11/17/2006	
PCBs	MCL ² ug/L		Unit
Aroclor-1016	5.00E-01 (bb)	0.10 UJ	ug/L
Aroclor-1221	5.00E-01 (bb)	0.10 UJ	ug/L
Aroclor-1232	5.00E-01 (bb)	0.10 UJ	ug/L
Aroclor-1242	5.00E-01 (bb)	0.10 UJ	ug/L
Aroclor-1248	5.00E-01 (bb)	0.10 UJ	ug/L
Aroclor-1254	5.00E-01 (bb)	0.10 UJ	ug/L
Aroclor-1260	5.00E-01 (bb)	0.10 UJ	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.

**LOU 59 Area III Table 13
Soil Characterization Data - Perchlorate**

Storm Sewer System
Tronox Facility - Henderson, Nevada

Boring ID	Sample ID	Sample Depth (ft)	Sample Date	Perchlorate ug/kg	MSSL¹ ug/kg	Sampling Program
SA8	SA8-0.5	0.5	11/17/2006	17500	7.95E+05	Ph A ²
SA8	SA8-10	10	11/17/2006	1500	7.95E+05	Ph A
SA8	SA8-20	20	11/17/2006	3300	7.95E+05	Ph A
SA8	SA8-30	30	11/17/2006	2690	7.95E+05	Ph A
SA8	SA8-37	37	11/17/2006	12100	7.95E+05	Ph A
SA7	SA7-0.5	0.5	11/20/2006	34300 J	7.95E+05	Ph A
SA7	SA7-10	10	11/20/2006	109000 J	7.95E+05	Ph A
SA7	SA7-10D	10	11/20/2006	113000 J	7.95E+05	Ph A
SA7	SA7-20	20	11/20/2006	12800 J	7.95E+05	Ph A
SA7	SA7-30	30	11/20/2006	8690 J	7.95E+05	Ph A
SA7	SA7-34	34	11/20/2006	31700 J	7.95E+05	Ph A
SA8	SA8-0.5	0.5	11/17/2006	17500	7.95E+05	Ph A
SA8	SA8-10	10	11/17/2006	1500	7.95E+05	Ph A
SA8	SA8-20	20	11/17/2006	3300	7.95E+05	Ph A
SA8	SA8-30	30	11/17/2006	2690	7.95E+05	Ph A
SA8	SA8-37	37	11/17/2006	12100	7.95E+05	Ph A
SA13	SA13-0.5	0.5	11/17/2006	192	7.95E+05	Ph A
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.

LOU 59 Area III Table 14
Groundwater Characterization Data - Perchlorate

Storm Sewer System
Tronox Facility - Henderson, Nevada

Well ID Number	Sample ID	Sample Date	Perchlorate	Units	MCL¹ ug/L	Sampling Program
SA8	M-29	11/17/2006	2410	ug/L	1.80E+01 a,(m)	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.

LOU 59 Area III Table 15
Soil Characterization Data - Radionuclides

Storm Sewer System
Tronox Facility - Henderson, Nevada

				Ra-226 (gamma) pCi/g	Ra-228 (gamma) pCi/g	Th-228 (TH MOD) pCi/g	Th-230 (TH MOD) pCi/g	Th-232 (TH MOD) pCi/g	U-233/234 (U MOD) pCi/g	U-235/236 (U MOD) pCi/g	U-238 (U MOD) pCi/g	
Boring ID Number	Sample ID	Sample Depth (ft)	Date									Sampling Program
SA7	SA7-0.5	0.5	11/20/2006	1.12 J-	1.83 J-							Ph A ¹
SA7	SA7-10	10	11/20/2006	1.02 J-	1.9 J-							Ph A
SA7	SA7-10D	10	11/20/2006	0.939 J-	1.77 J-							Ph A
SA7	SA7-20	20	11/20/2006	1.28 J-	1.57 J-	0.488 J	0.775 J	0.618 J	0.652 J+	0.0145 U	0.493 J	Ph A
SA7	SA7-30	30	11/20/2006	1.79 J-	1.78 J-							Ph A
SA7	SA7-34	34	11/20/2006	7.49 J-	0.805 J-							Ph A
SA8	SA8-0.5	0.5	11/17/2006	1.07 J-	1.76 J-							Ph A
SA8	SA8-10	10	11/17/2006	1.08 J-	2.05 UJ							Ph A
SA8	SA8-20	20	11/17/2006	1 J-	1.88 J-							Ph A
SA8	SA8-30	30	11/17/2006	1.34 J-	1.85 J-							Ph A
SA8	SA8-37	37	11/17/2006	3.16 J-	0.771 UJ							Ph A
SA13	SA13-0.5	0.5	11/17/2006	1.12 J-	1.68 J-							Ph A
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

Notes:

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

LOU 59 Area III Table 16
Groundwater Characterization Data - Radionuclides

Storm Sewer System
Tronox Facility - Henderson, Nevada

Well ID Number	Sample ID	Date	Ra-226	Ra-228	Th-228	Th-230	Th-232	U-233/234	U-235/236	U-238	Sampling Program
			pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	
SA8	M-29	11/17/2006	0.745 J	0.602 UJ							Ph A ¹

Notes:

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

LOU 59 Area III Table 17
Soil Characterization Data - SVOCs

Storm Sewer 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	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring No.			SA7	SA7	SA7	SA7	SA7	SA7	SA8	SA8	SA8	SA8	SA8	SA13	SA13	SA13	SA13	SA13	
Sample ID			SA7-0.5	SA7-10	SA7-10D	SA7-20	SA7-30	SA7-34	SA8-0.5	SA8-10	SA8-20	SA8-30	SA8-37	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40
Sample Depth (ft)			0.5	10	10	20	30	34	0.5	10	20	30	37	0.5	0.5	10	20	30	40
Sample Date			11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006
SVOC	Analytical Method	MSSL ² ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/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+05	70 U	350 U	360 U	360 U	350 U	430 U	69 U	350 U	350 U	360 U	450 U	77 U	73 U	340 U	350 U	350 U	420 U
2-Methylnaphthalene	non-SIM	2.10E+05 (jj)	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
2-Methylnaphthalene	SIM	2.10E+05 (jj)	7.0 U						6.9 U					7.7 U	7.3 U				
Acenaphthene	non-SIM	3.30E+07	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Acenaphthene	SIM	3.30E+07	7.0 U						6.9 U					7.7 U	7.3 U				
Acenaphthylene	non-SIM	3.30E+07 (pp)	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Acenaphthylene	SIM	3.30E+07 (pp)	7.0 U						6.9 U					7.7 U	7.3 U				
Anthracene	non-SIM	1.00E+08	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Anthracene	SIM	1.00E+08	7.0 U						6.9 U					7.7 U	7.3 U				
Benz(a)anthracene	non-SIM	2.30E+03	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Benz(a)anthracene	SIM	2.30E+03	7.0 U						6.9 U					7.7 U	7.3 U				
Benzo(a)pyrene	non-SIM	2.30E+02	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Benzo(a)pyrene	SIM	2.30E+02	7.0 U						6.9 U					7.7 U	7.3 U				
Benzo(b)fluoranthene	non-SIM	2.30E+03	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Benzo(b)fluoranthene	SIM	2.30E+03	7.0 U						6.9 U					7.7 U	7.3 U				
Benzo(g,h,i)perylene	non-SIM	3.20E+07 (w)	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Benzo(g,h,i)perylene	SIM	3.20E+07 (w)	7.0 U						6.9 U					7.7 U	7.3 U				
Benzo(k)fluoranthene	non-SIM	2.30E+04	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Benzo(k)fluoranthene	SIM	2.30E+04	7.0 U						6.9 U					7.7 U	7.3 U				
bis(2-Ethylhexyl)phthalate	non-SIM	1.40E+05	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Butyl benzyl phthalate	non-SIM	2.40E+05	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Chrysene	non-SIM	2.30E+05	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Chrysene	SIM	2.30E+05	7.0 U						7.0					7.7 U	7.3 U				
Dibenz(a,h)anthracene	non-SIM	2.30E+02	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Dibenz(a,h)anthracene	SIM	2.30E+02	7.0 U						6.9 U					7.7 U	7.3 U				
Diethyl phthalate	non-SIM	1.00E+08	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Dimethyl phthalate	non-SIM	1.00E+08	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Di-N-Butyl phthalate	non-SIM	6.80E+07	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Di-N-Octyl phthalate	non-SIM	--	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Fluoranthene	non-SIM	2.40E+07	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Fluoranthene	SIM	2.40E+07	7.0 U						27					7.7 U	7.3 U				
Fluorene	non-SIM	2.60E+07	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Fluorene	SIM	2.60E+07	7.0 U						6.9 U					7.7 U	7.3 U				
Hexachlorobenzene	non-SIM	1.20E+03	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Hexachlorobenzene	SIM	1.20E+03	7.0 U						6.9 U					7.7 U	7.3 U				
Indeno(1,2,3-cd)pyrene	non-SIM	2.30E+03	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Indeno(1,2,3-cd)pyrene	SIM	2.30E+03	7.0 U						6.9 U					7.7 U	7.3 U				
Naphthalene	non-SIM	2.10E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	0.79 J	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 U	5.2 U	5.3 U	5.3 U	6.3 U
Naphthalene	non-SIM	2.10E+05	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Naphthalene	SIM	2.10E+05	7.0 U						6.9 U					7.7 U	7.3 U				
Nitrobenzene	non-SIM	1.10E+05	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Octachlorostyrene	non-SIM	--	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U

LOU 59 Area III Table 17 (continued)
Soil Characterization Data - SVOCs

Storm Sewer 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	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring No.			SA7	SA7	SA7	SA7	SA7	SA7	SA8	SA8	SA8	SA8	SA8	SA13	SA13	SA13	SA13	SA13	
Sample ID			SA7-0.5	SA7-10	SA7-10D	SA7-20	SA7-30	SA7-34	SA8-0.5	SA8-10	SA8-20	SA8-30	SA8-37	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40
Sample Depth (ft)			0.5	10	10	20	30	34	0.5	10	20	30	37	0.5	0.5	10	20	30	40
Sample Date			11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006
SVOC	Analytical Method	MSSL ² ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenanthrene	non-SIM	1.00E+08 (n)	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Phenanthrene	SIM	1.00E+08 (n)	7.0 U					6.9 U						7.7 U	7.3 U				
Pyrene	non-SIM	3.20E+07	350 U	350 U	360 U	360 U	350 U	430 U	350 U	350 U	350 U	360 U	450 U	380 U	370 U	340 U	350 U	350 U	420 U
Pyrene	SIM	3.20E+07	7.0 U					12						7.7 U	7.3 U				
Pyridine	non-SIM	6.80E+05	1700 U	1700 U	1700 U	1700 U	1700 U	2100 U	1700 U	1700 U	1700 U	1700 U	2200 U	1900 U	1800 U	1700 U	1700 U	1700 U	2000 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 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.

LOU 59 Area III Table 18
Groundwater Characterization Data - SVOCs

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program			Ph A ¹
			Well No.
			Sample ID
			Sample Date
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)	
Acenaphthene	non-SIM	3.65E+02	10 U
Acenaphthene	SIM	3.65E+02	
Acenaphthylene	non-SIM	3.65E+02 (pp)	10 U
Acenaphthylene	SIM	3.65E+02 (pp)	
Anthracene	non-SIM	1.83E+03	10 U
Anthracene	SIM	1.83E+03	
Benz(a)anthracene	non-SIM	9.21E-02	10 U
Benz(a)anthracene	SIM	9.21E-02	
Benzo(a)pyrene	non-SIM	2.00E-01	10 U
Benzo(a)pyrene	SIM	2.00E-01	
Benzo(b)fluoranthene	non-SIM	9.21E-02	10 U
Benzo(b)fluoranthene	SIM	9.21E-02	
Benzo(g,h,i)perylene	non-SIM	1.83E+02 (w)	10 U
Benzo(g,h,i)perylene	SIM	1.83E+02 (w)	
Benzo(k)fluoranthene	non-SIM	9.21E-01	10 U
Benzo(k)fluoranthene	SIM	9.21E-01	
bis(2-Ethylhexyl)phthalate	non-SIM	6.00E+00	1.5 J
Butyl benzyl phthalate	non-SIM	7.30E+03	10 U
Chrysene	non-SIM	9.21E+00	10 U
Chrysene	SIM	9.21E+00	
Dibenz(a,h)anthracene	non-SIM	9.21E-03	10 U
Dibenz(a,h)anthracene	SIM	9.21E-03	
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	
Fluorene	non-SIM	2.43E+02	10 U
Fluorene	SIM	2.43E+02	
Hexachlorobenzene	non-SIM	1.00E+00	10 U
Hexachlorobenzene	SIM	1.00E+00	
Indeno(1,2,3-cd)pyrene	non-SIM	9.21E-02	10 U
Indeno(1,2,3-cd)pyrene	SIM	9.21E-02	
Naphthalene	non-SIM	6.20E+00	5.0 U
Naphthalene	non-SIM	6.20E+00	10 U
Naphthalene	SIM	6.20E+00	
Nitrobenzene	non-SIM	3.40E+00	10 U
Octachlorostyrene	non-SIM	--	10 U
Phenanthrene	non-SIM	1.80E+03 (n)	10 U

LOU 59 Area III Table 18 (continued)
Groundwater Characterization Data - SVOCs

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program			Ph A ¹
Well No.			SA8
Sample ID			M29 (GWSA08)
Sample Date			11/17/2006
SVOCs	Analytic Method	MCL² ug/L	ug/L
Phenanthrene	SIM	1.80E+03 (n)	
Pyrene	non-SIM	1.83E+02	10 U
Pyrene	SIM	1.83E+02	
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.

LOU 59 Area III Table 19
Soil Characteristic Data - TPH and Fuel Alcohols

Storm Sewer 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	
			MSSL¹	--	1.00E+05	1.00E+05	1.00E+02 wv	1.00E+02 wv	1.00E+02 wv	
Boring No.	Sample ID.	Sample Depth (ft)	Sample Date							Sampling Program
SA7	SA7-0.5	0.5	11/20/2006				26	26 UJ	0.11 UJ	Ph A ²
SA7	SA7-10	10	11/20/2006				26 U	26 U	0.11 UJ	Ph A
SA7	SA7-10D	10	11/20/2006				27 U	27 U	0.11 UJ	Ph A
SA7	SA7-20	20	11/20/2006				27 U	27 U	0.11 UJ	Ph A
SA7	SA7-30	30	11/20/2006				27 U	27 U	0.11 UJ	Ph A
SA7	SA7-34	34	11/20/2006				33 U	33 U	0.13 UJ	Ph A
SA8	SA8-0.5	0.5	11/17/2006			530 U	3600	0.13		Ph A
SA8	SA8-10	10	11/17/2006			27 U	27 U	0.11 U		Ph A
SA8	SA8-20	20	11/17/2006			26 U	26 U	0.10 U		Ph A
SA8	SA8-30	30	11/17/2006			27 U	27 U	0.11 U		Ph A
SA8	SA8-37	37	11/17/2006			34 U	34 U	0.14 U		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.
- (w) Value for pyrene used as surrogate for benzo(g,h,i)perylene based on structural similarities.

LOU 59 Area III Table 20
Soil Characterization Data - VOCs

Storm Sewer 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	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring No.	SA7	SA7	SA7	SA7	SA7	SA7	SA7	SA8	SA8	SA8	SA8	SA8	SA13	SA13	SA13	SA13	SA13	
Sample ID	SA7-0.5	SA7-10	SA7-10D	SA7-20	SA7-30	SA7-34	SA8-0.5	SA8-10	SA8-20	SA8-30	SA8-37	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40	
Sample Depth (ft)	0.5	10	10	20	30	34	0.5	10	20	30	37	0.5	0.5	10	20	30	40	
Sample Date	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	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	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Naphthalene	2.10E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	0.79 J	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	0.54 J	5.4 U	5.4 U	0.37 J	6.5 U	0.95 J	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,1-Dichloroethane	2.30E+06	5.3 U	1.9 J	5.4 U	5.4 U	1.4 J	6.5 U	3.0 J	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	1.8 J	5.3 U	6.3 U
1,1-Dichloroethene	4.70E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2-Dibromo-3-chloropropan	2.00E+01	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	12 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2-Dichlorobenzene	3.70E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2-Dichloroethane	8.40E+02	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,2-Dichloropropane	8.50E+02	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 UJ	5.2 UJ	5.5 UJ	6.8 UJ	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
1,3-Dichlorobenzene	1.40E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,3-Dichloropropane	4.10E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
1,4-Dichlorobenzene	8.10E+03	5.3 U	5.3 U	0.32 J	5.4 U	5.3 U	6.5 U	16 J	5.3 U	5.2 U	5.5 U	6.8 U	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)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
2-Butanone	3.40E+07	11 U	11 U	11 U	11 U	11 U	13 U	14 J	11 U	38	14	14 U	12 U	11 UJ	10 UJ	5.2 J	11 U	13 U
2-Chlorotoluene	5.10E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
2-Hexanone	1.72E+07 (nn)	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ	13 UJ	11 UJ	11 UJ	3.8 J	11 UJ	14 UJ	12 UJ	11 UJ	10 UJ	11 UJ	11 UJ	13 UJ
2-Methoxy-2-methyl-butane	--	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
4-Chlorotoluene	5.10E+05 (ww)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
4-Isopropyltoluene	--	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ	13 UJ	11 UJ	11 U	10 U	11 U	14 U	12 U	11 UJ	10 UJ	11 UJ	11 U	13 U
Acetone	6.00E+07	4.5 J	6.1 J	11 U	11 U	21	6.6 J	90 J	24	250	100	45	5.1 J	9.8 J	10 UJ	34 J	11 U	14
Benzene	1.60E+03	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	0.62 J	0.72 J	6.8 U	5.8 U	5.5 UJ	5.2 UJ	0.19 J	5.3 U	6.3 U
Bromobenzene	1.20E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Bromochloromethane	1.75E+03 (qq)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Bromodichloromethane	2.60E+03	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Bromoform	2.40E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Bromomethane	1.50E+04	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ	13 UJ	11 UJ	11 UJ	10 UJ	11 UJ	14 UJ	12 UJ	11 UJ	10 UJ	11 UJ	11 U	13 U
Carbon tetrachloride	5.80E+02	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Chlorobenzene	5.00E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Chloroethane	7.20E+03	5.3 UJ	5.3 UJ	5.4 UJ	5.4 UJ	5.3 UJ	6.5 UJ	5.3 UJ	5.3 UJ	5.2 UJ	5.5 UJ	6.8 UJ	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
Chloroform	5.80E+02	5.3 U	0.40 J	0.51 J	1.5 J	1.9 J	20	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	0.32 J	4.2 J
Chloromethane	1.70E+05	5.3 UJ	5.3 UJ	5.4 UJ	5.4 UJ	5.3 UJ	6.5 UJ	5.3 UJ	5.3 UJ	5.2 UJ	5.5 UJ	6.8 UJ	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U

LOU 59 Area III Table 20 (continued)
Soil Characterization Data - VOCs

Storm Sewer 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	Ph A	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring No.	SA7	SA7	SA7	SA7	SA7	SA7	SA8	SA8	SA8	SA8	SA8	SA8	SA13	SA13	SA13	SA13	SA13	
Sample ID	SA7-0.5	SA7-10	SA7-10D	SA7-20	SA7-30	SA7-34	SA8-0.5	SA8-10	SA8-20	SA8-30	SA8-37	SA13-0.5	SA13-0.5D	SA13-10	SA13-20	SA13-30	SA13-40	
Sample Depth (ft)	0.5	10	10	20	30	34	0.5	10	20	30	37	0.5	0.5	10	20	30	40	
Sample Date	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/20/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	11/17/2006	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	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	
Dibromochloromethane	2.60E+03	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Dibromomethane	5.90E+05 (xx)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Dichlorodifluoromethane	3.40E+05	5.3 UJ	5.3 UJ	5.4 UJ	5.4 UJ	5.3 UJ	6.5 UJ	5.3 UJ	5.3 UJ	5.2 UJ	5.5 UJ	6.8 UJ	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)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Ethylbenzene	2.30E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Ethylene dibromide	7.00E+01	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Hexachlorobutadiene	2.50E+04	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	1.4 J	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
isopropyl ether	--	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Isopropylbenzene	5.80E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Methylene chloride	2.20E+04	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
N-Butylbenzene	2.40E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
N-Propylbenzene	2.40E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 UJ	5.2 UJ	5.5 UJ	6.8 UJ	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
sec-Butylbenzene	2.20E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 UJ	5.2 UJ	5.5 UJ	6.8 UJ	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
Styrene	1.70E+06	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
t-Butyl alcohol	--	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ	13 UJ	11 UJ	11 UJ	10 UJ	11 UJ	14 UJ	12 UJ	11 UJ	10 UJ	11 UJ	11 UJ	13 UJ
tert-Butylbenzene	3.90E+05	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Tetrachloroethene	1.70E+03	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	2.1 J	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Toluene	5.20E+05	0.36 J	0.58 J	0.31 J	0.31 J	0.45 J	0.37 J	0.82 J	5.3 U	5.2 U	5.5 U	6.8 U	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	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	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)	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Trichloroethene	1.00E+02	5.3 U	5.3 U	5.4 U	5.4 U	5.3 U	6.5 U	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 U	6.3 U
Trichlorofluoromethane	1.40E+06	5.3 UJ	5.3 UJ	5.4 UJ	5.4 UJ	5.3 UJ	6.5 UJ	5.3 UJ	5.3 UJ	5.2 UJ	5.5 UJ	6.8 UJ	5.8 UJ	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 UJ
Vinylchloride	8.60E+02	5.3 UJ	5.3 UJ	5.4 UJ	5.4 UJ	5.3 UJ	6.5 UJ	5.3 UJ	5.3 U	5.2 U	5.5 U	6.8 U	5.8 U	5.5 UJ	5.2 UJ	5.3 UJ	5.3 UJ	6.3 U
Xylene (Total)	2.10E+05	11 U	11 U	11 U	11 U	11 U	13 U	11 UJ	11 U	10 U	11 U	14 U	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.

LOU 59 Area III Table 21
Groundwater Characteristic Data - VOCs

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹
Well ID		SA8
Sample ID		M29
Sample Date		11/17/2006
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
1,1,2,2-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	0.92 J
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 U
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	5.0 U
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 UJ
Chloroform	8.00E+01 r	4.1 J
Chloromethane	1.58E+02	5.0 UJ
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 U
Ethylbenzene	7.00E+02	5.0 U
Ethylene dibromide	--	5.0 U
Hexachlorobutadiene	8.62E-01	5.0 U

**LOU 59 Area III Table 21 (continued)
Groundwater Characteristic Data - VOCs**

Storm Sewer System
Tronox Facility - Henderson, Nevada

Sampling Program		Ph A ¹
Well ID		SA8
Sample ID		M29
Sample Date		11/17/2006
VOCs	MCL ² ug/L	ug/L
isopropyl ether	--	5.0 U
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 U
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 UJ
Vinylchloride	2.00E+00	5.0 U
Xylene (Total)	1.00E+04	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.
(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].

LOU 59 Area III Table 22
Soil Characterization Data - Long Asbestos Fibers in Respirable Soil Fraction

Storm Sewer System
Tronox Facility - Henderson, Nevada

Boring No.	Sample ID	Sample Date	Long Amphibole Protocol Structures s/gPM10	Long Amphibole Protocol Structures (structures/samples)	Long Chrysotile Protocol Structures s/gPM10	Long Chrysotile Protocol Structures (structures/samples)	Sampling Program
SA7	SA7	12/07/2006	2988000 U	0	2990000	1	Ph A ¹
SA8	SA8	12/07/2006	2997000 U	0	5990000	2	Ph A
SA13	SA13	12/08/2006	3000000	1	2996000 U	0	Ph A

Notes:

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

LOU 59 Area III
Notes for Phase A Data Tables

Storm Sewer 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	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