May

Shannon Harbour

From: Brian Rakvica
Sent: Wednesday, May 21, 2008 8:37 AM
To: 'Keith Bailey'; 'Crowley, Susan'; Shannon Harbour
Subject: RE: Hend Mixing Zone 5-08.xls

Keith,

Thanks...I will get the info from SCOP on the calcs.

Brian

From: Keith Bailey [mailto:okbailey@flash.net]
Sent: Wednesday, May 21, 2008 8:25 AM
To: Brian Rakvica; 'Crowley, Susan'; Shannon Harbour
Subject: RE: Hend Mixing Zone 5-08.xls

Brian,

A couple of clarifications:

1) Black and Veatch estimated the 1785 mg/L TDS for the Wash at an 80 MGD "effluent flow" as part of the modeling work they did for the SCOP project. Willard Pack made a presentation at a "NWRA" meeting in Sparks NV February 22, 2007 (copy of slides attached, see page 9 for TDS). I found the info on the internet.
2) The spreadsheet we submitted calculates the dilution factor for each Tronox discharge constituent to bring the concentration of that constituent to the beneficial use standard. For example, in the case of TDS, the final blended concentration of Wash water would be 1900 mg/L at the dilution factor of 38.2.

I hope this helps.

Keith

From: Brian Rakvica [mailto:brakvica@ndep.nv.gov]
Sent: Wednesday, May 21, 2008 8:32 AM
To: Crowley, Susan; Shannon Harbour
Cc: Keith Bailey
Subject: RE: Hend Mixing Zone 5-08.xls

Susan and Keith,

Can you also clarify...it appears that the Table indicates the following:

Under current conditions...boron appears to be the dominating factor for dilution issues and requires aminimum Wash flow of 61.1 MGD.

Under theorized future conditions, TDS may also be an issue although this is more confusing because of the tautological nature of the calculations...

At 80 MGD Wash Flow TRX estimates an upgradient concentration of 1785 ppm TDS...with a 1900 ppm RMHQ it

is not clear what the estimated mixed concentration would be...

Also, same issue at other flow rates.

I would also request that you provide us with a copy of the B&V paper.

In addition, it may be useful to sit down with yourselves and Willard and discuss the inputs as it is not clear if B&V has all the pertinent tributray data.

thanks,

Brian

From: Crowley, Susan [mailto:Susan.Crowley@tronox.com]
Sent: Tue 5/20/2008 3:40 PM
To: Brian Rakvica; Shannon Harbour
Cc: Keith Bailey
Subject: RE: Hend Mixing Zone 5-08.xls

Brian,
I received your message and will respond tomorrow?. Thanks.

TRONOX LLC
Susan Crowley
PO Box 55
Henderson, NV 89009
office 702.651.2234
cell 702.592.7727
efax 405.302.4607
email susan.crowley@tronox.com

It's the set of our sails, not the force of the gales, that determines the way we go.

From: Brian Rakvica [mailto:brakvica@ndep.nv.gov]
Sent: Tuesday, May 20, 2008 3:23 PM
To: Crowley, Susan; Shannon Harbour
Cc: Keith Bailey
Subject: RE: Hend Mixing Zone 5-08.xls

Also, FYI....it is not clear that the gross alpha numbers are appropriately adjusted...have you subtracted uranium?

From: Crowley, Susan [mailto:Susan.Crowley@tronox.com]
Sent: Tuesday, May 20, 2008 3:13 PM
To: Shannon Harbour
Cc: Brian Rakvica; Keith Bailey
Subject: FW: Hend Mixing Zone 5-08.xls

Shannon,
Tronox promised to forward our review of how the SCOP project might affect our NV0023060 permit mixing zones and the attached spreadsheet helps us begin that process. A question ... for TDS we used the target value of 1,900 ppm (Brian mentioned this value in the May 15th meeting). Is this value based upon TMDL's, wash beneficial

use or another guide. I could not find a reference to this number in the NAC beneficial use standards but remember it (or something similar to it) from our 1998 work with Cathy Pool (NDEP's original permit writer for the NV0023060 permit). Do you know where this number originated?

TRONOX LLC
Susan Crowley
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From: Keith Bailey [mailto:okbailey@flash.net]
Sent: Tuesday, May 20, 2008 12:56 PM
To: Crowley, Susan
Cc: 'Guerriero, Joseph'
Subject: Hend Mixing Zone 5-08.xls

Susan,

Attached is the revised mixing zone calculation spreadsheet. Note that the TDS limit for Las Vegas Wash is not on the NAC 445A.144 table, but 1900 ppm is the figure used by Brian Rakvica.

TDS and boron seem to be the drivers relative to mixing zone dilution.

After your review, please pass this on to Shannon Harbour. That should be the last of our deliverables from the meetings last week.

Keith

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If you are not the intended recipient of this e-mail message, any use, distribution or copying of the message is prohibited.
Please let me know immediately by return e-mail if you have received this message by mistake, then delete the e-mail message.
Thank you.

DRAFT 5-20-2008

Tronox Las Vegas Wash Mixing Zone Evaluation
Comparison of Wash Standards to Tronox Effluent (2nd & 4th Qtr 2007 DMRs)

	2nd Qtr 2007 DMR			4th Qtr 2007 DMR			Effluent	Las Vegas		2nd Qtr 2007		4th Qtr 2007		Calculated
Mixing Zone Constituent (from NPDES permit)	April 30 day avg mg/L (4)	May 30 day avg mg/L (4)	June 30 day avg mg/L (4)	October 30 day avg mg/L (4)	November 30 day avg mg/L (4)	December 30 day avg mg/L (4)	Maximum 30 day avg mg/L (4)	Wash Water Standard mg/L (4)		Upgradient Las Vegas Wash Conc (1) mg/L (4)	Minimum Dilution Factor Needed	Upgradient Las Vegas Wash Conc (1) mg/L (4)	Minimum Dilution Factor Needed	Minimum Upstream Wash Flow, MGD (8)
Total Dissolved Solids	6290			5800			6290	1900	Note 5	1660	18.3	1690	20.9	30.3
Total Inorganic Nitrogen	1.78	1.09	2.14	1.4	1.12	1.87	2.14	-		14.86	Not needed (3)	13.83	Not needed (3)	-
Color	12	11.25	6.67	5	10	8.33	12	-		30	Not needed (3)	15	Not needed (3)	-
Gross Alpha (pCi/L) (2)	16.99	11.29	12.43	11.89	8.2	8.36	16.99	15	Note 7	6.48	0.2	7.09	0.3	0.4
Iron, total	0.76	2.6	1.97	0.76	0.77	0.67	2.6	5		0.114	Not needed	Not analyzed		-
Manganese	0.98			0.84			0.98	0.2	Note 6	0.053	5.3	0.08	6.5	9.4
Chromium (Total)	0.009	0.013	0.01	0.011	0.018	0.016	0.018	0.1	Note 6	Not analyzed	Not needed	Not analyzed	Not needed	-
Boron	3.7			3.2			3.7	0.75	Note 6	0.68	42.1	Not analyzed	Not needed	61.1
Chloride	2000			2000			2000	1500		275	0.4	290	0.4	0.6

Notes:

Highlighted boxes are worst case required dilution factors
Highlighted boxes are worst case minimum upstream Wash flow

(1) Quarterly Average for "LVW UPGRADIENT" samples in DMRs.
(2) "Gross Alpha + adjusted error" values were used since they are higher numbers.
(3) Tronox discharge concentration is below the upgradient Wash concentration.
(4) Except for Gross Alpha.
(5) Note that as Las Vegas Wash flow decreases, the TDS concentration will increase. See Black & Veatch paper by Willard Peck, Feb 22, 2007. Table on page 9, at 80 mgd wash flow the TDS is projected at 1785 mg/L, at 30 mgd wash flow the TDS is projected at 2416 mg/L. Required dilution factor at 1785 mg/L TDS is: 38.2 55.4 MGD
(6) LV Wash beneficial use standard for Mn is 200 ppb (0.2 ppm), B is 750 ppb (.75 ppm), Total Cr is 100 ppb (0.1 ppm). NAC 445A.144
(7) Assumes Wash standard is EPA drinking water MCL for Gross Alpha
(8) At Tronox Permitted 1.45 MGD

BUILDING A WORLD OF DIFFERENCE®

Water Quality Modeling of the Las Vegas Wash

Willard Pack, P.E.

NWRA Conference
Sparks, NV
February 22, 2007

BUILDING A WORLD OF DIFFERENCE®

Outline

- Background
- LV Wash Model
- Model Assumptions
- Methodology and Calibration
- Results
- Summary

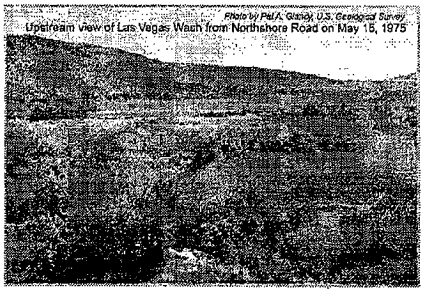
See page 9 for TDS.

Background

Background (cont.)

- Las Vegas has been discharging to the LV Wash since 1955
- Clean Water Coalition formed in 2002
- Systems Conveyance and Operations Program (SCOP)
  - Alternate Discharge
  - Wash Protection
  - Help Protect Water Quality for Southern Nevada

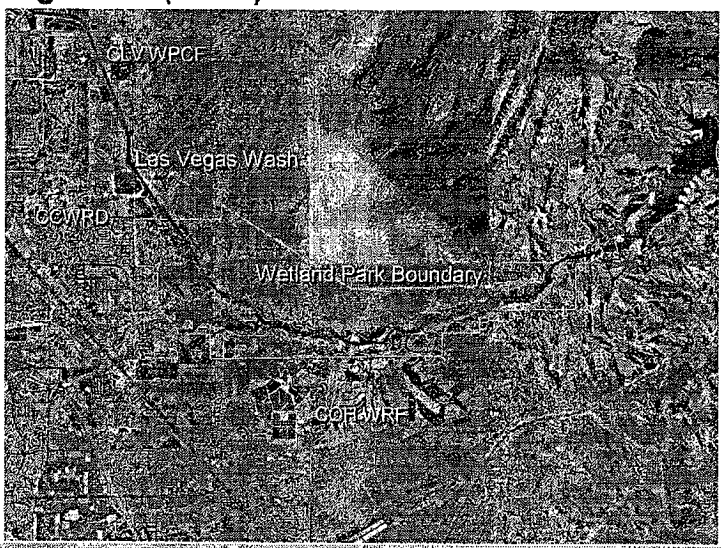
Background (cont.)



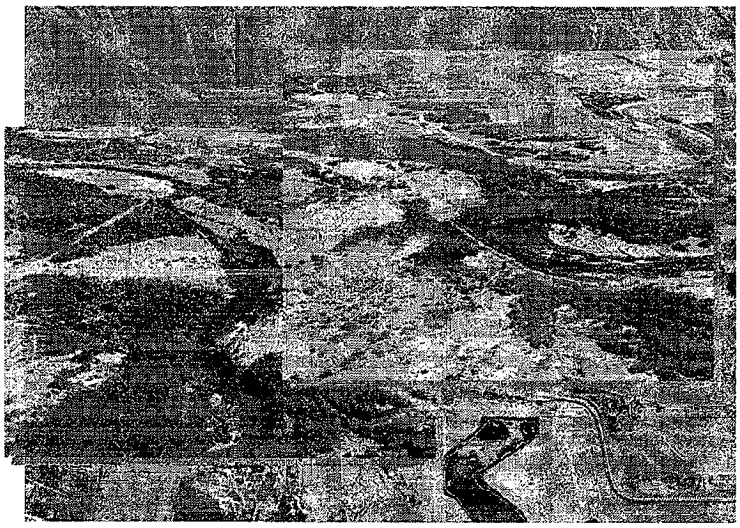
LV Wash in 1975

LV Wash in 1999

Background (cont.)



Background (cont.)



Model Assumptions

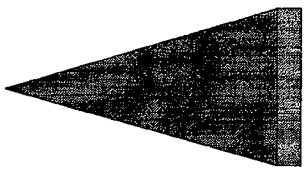
- Pollutant loading from precipitation and atmosphere is negligible
- The removal or loss of pollutants due to evapotranspiration is negligible
- The rate of percolation out of the wetlands is negligible
- The removal of Total Dissolved Solids (TDS) by biological or sedimentation mechanisms is negligible

Model Assumptions (cont.)

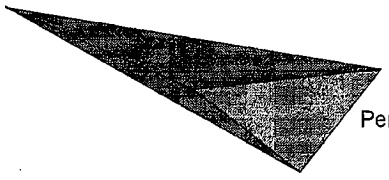
- Total Kjeldahl Nitrogen (TKN) entering the wetland would be converted to ammonia
- If water is removed for irrigation, it is removed at the weir so pollutant concentrations would be the same as the wetland effluent

Methodology and Calibration

Wetland Configuration

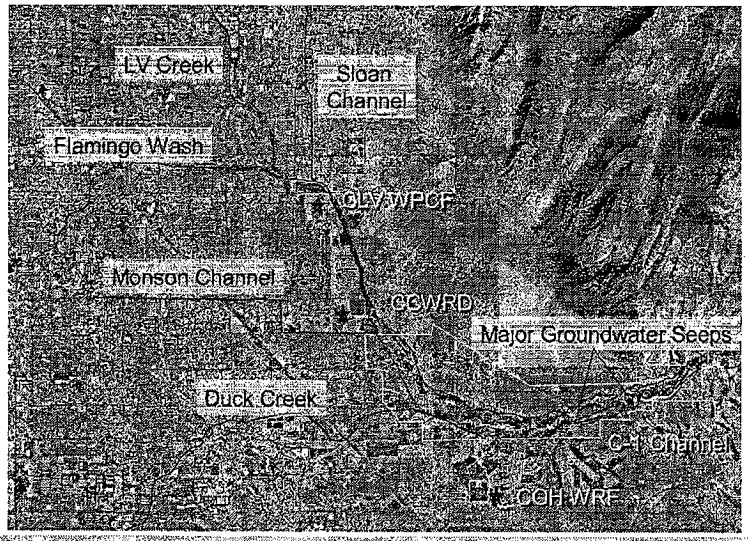


Top View



Perspective View

Methodology and Calibration (cont.)

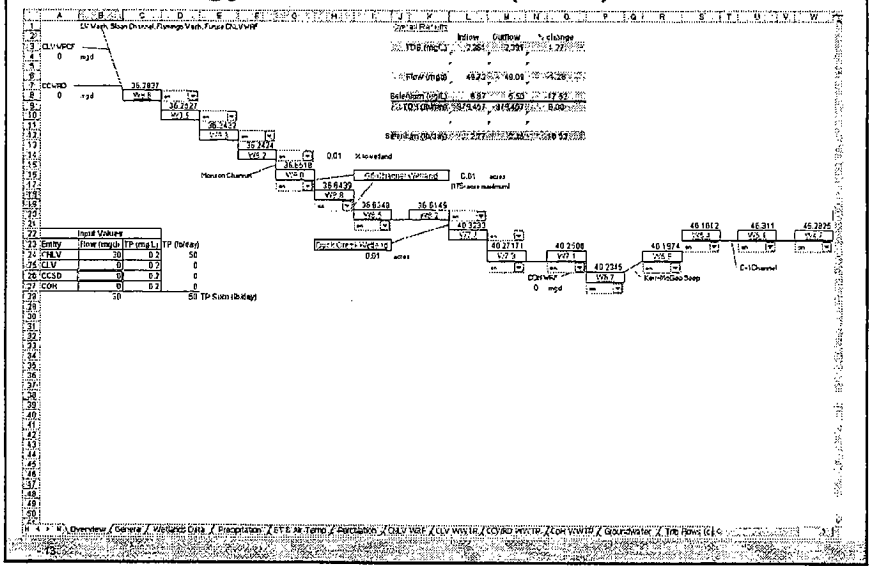


Methodology and Calibration (cont.)

Modeled Parameters

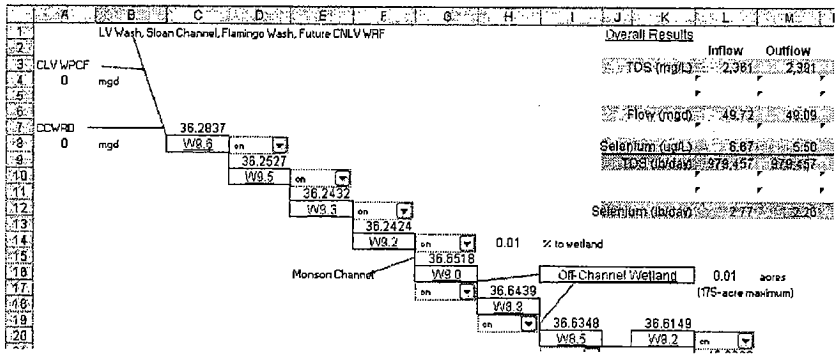
- Flow
- Temperature
- Total Inorganic Nitrogen (TIN)
- Total Phosphorus (TP)
- Selenium
- Total Dissolved Solids (TDS)

Methodology and Calibration (cont.)



Methodology and Calibration (cont.)

Wetland Nodes



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Methodology and Calibration (cont.)

Data Sheet

Month	Flow (mgd)						Temperature (deg C)						COD (mg/l)					
	1997	1998	1999	2000	2001	Average	1997	1998	1999	2000	2001	Average	1997	1998	1999	2000	2001	Average
January						4.1						9.6						50.00
February						3.7						14.2						50.00
March						5.6						18.3						50.00
April						5.0						24.5						50.00
May						4.1						25.3						50.00
June						4.0						26.8						50.00
July						6.4						28.8						50.00
August						5.6						22.8						50.00
September						7.2						18.7						50.00
October						5.5						11.0						50.00
November						5.7						10.5						50.00
December						4.2						7.0						50.00

Month	TKN						NO2 + NO3 (mg/l as N)						TP					
	1997	1998	1999	2000	2001	Average	1997	1998	1999	2000	2001	Average	1997	1998	1999	2000	2001	Average
January						0.1						6.13						0.03
February						0.15						6.51						0.02
March						0.19						4.52						0.02
April						0.10						3.96						0.01
May						0.10						4.53						0.02
June						0.10						4.52						0.02
July						0.19						3.61						0.01
August						0.10						4.53						0.02
September						0.65						4.53						0.03
October						0.40						2.67						0.06
November						0.19						4.53						0.02
December						0.19						4.53						0.02

Month	TSS						TDS						Selenium (ug/L)				
	1997	1998	1999	2000	2001	Average	2001	2002	2003	2004	2005	Average	2001	2002	2003	2004	2005	Average
January						65.00	3470	2410	3200	3240	2510	3,166		17.5	15.2		13.4	15.37
February						65.00					3,011	3,011		14.53				14.53
March						65.00					3,011	3,011		14.53				14.53
April						81.00	3010	3000	2940	3300	3090	3,068		15.7	14.8		15.2	15.90
May						81.00					3,011	3,011		14.53				14.53
June						65.00					3,011	3,011		14.53				14.53
July						65.00	3090	2950	3140	2980	2910	3,068		11.4		13.6	17.2	13.73
August						65.00					3,011	3,011		14.53				14.53
September						93.00					3,011	3,011		14.53				14.53
October						65.00	3400	3200	3200	3270	3260	3,266		11.4	15.8	13	8.3	12.13
November						65.00					3,011	3,011		14.53				14.53
December						65.00					3,011	3,011		14.53				14.53

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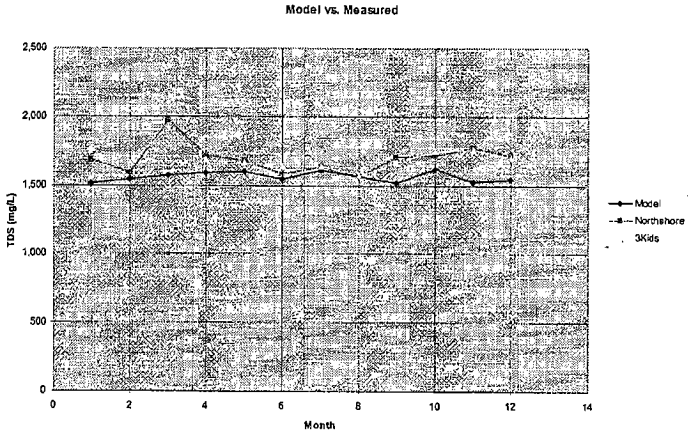
Methodology and Calibration (cont.)



Results

Month	Flow (mgd)	TIN (mg/L)	TP (mg/L)	TDS (mg/L)	Temp (°C)	Selenium (µg/L)
Jan	17.9	6.1	0.04	4,179	10.4	8.1
Feb	19.4	5.8	0.06	4,323	11.5	6.8
Mar	19.4	6.0	0.04	4,460	16.3	7.3
Apr	18.7	5.9	0.02	4,453	20.2	8.6
May	18.2	6.5	0.04	4,703	25.6	6.9
Jun	17.2	6.7	0.04	4,704	28.2	6.6
Jul	20.3	5.7	0.03	4,618	28.6	7.9
Aug	21.8	5.6	0.33	4,102	27.8	6.7
Sep	22.2	5.8	0.12	3,754	25.0	7.6
Oct	18.1	4.9	0.07	4,887	20.2	7.4
Nov	18.9	6.0	0.04	4,201	14.0	7.2
Dec	16.9	6.1	0.04	4,417	10.8	6.6
AVG	**19.1**	**5.9**	**0.07**	**4,400**	**20.0**	**7.3**

Results (cont.)

Scenario	Flow (mgd)	TIN (mg/L)	TP (mg/L)	TDS (mg/L)	Temp (°C)	Selenium (µg/L)
No Effluent	19.1	5.9	0.07	4,400	20.0	7.3
30 mgd Effluent	49.1	10.5	0.1	2,416	20.0	5.6
80 mgd Effluent	99.1	12.0	0.2	1,785	20.5	5.0
170 mgd Effluent	189.1	12.7	0.2	1,490	21.0	4.7
300 mgd Effluent	319.1	12.8	0.2	1,361	21.0	4.6
400 mgd Effluent	419.1	12.8	0.2	1,316	21.0	4.5

Summary

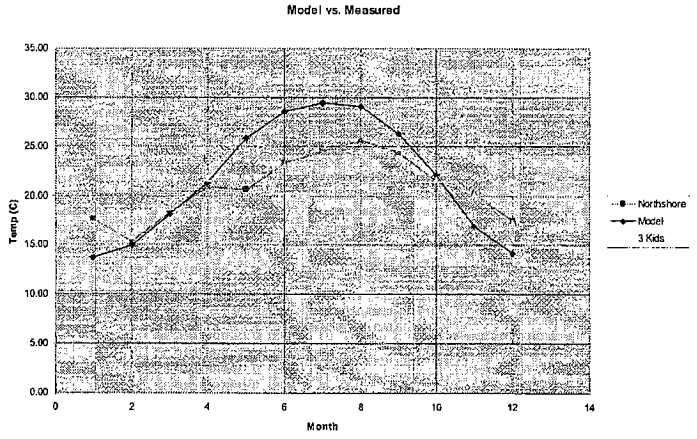
- Model created in Microsoft Excel to simulate 22 planned wetlands and water quality changes
- Calibrated against data downstream of modeled section and found to be fairly accurate
- Model is a potentially powerful tool in creating operation plan for future flows in the Las Vegas Wash through the SCOP project

Water Quality Modeling of the Las Vegas Wash

Willard Pack, P.E.

NWRA Conference
Sparks, NV
February 22, 2007

Methodology and Calibration (cont.)



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From: Crowley, Susan [Susan.Crowley@tronox.com]
Sent: Tuesday, May 20, 2008 3:13 PM
To: Shannon Harbour
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Attachments: Hend Mixing Zone 5-08.xls

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Keith

DRAFT 5-20-2008

Tronox Las Vegas Wash Mixing Zone Evaluation
Comparison of Wash Standards to Tronox Effluent (2nd & 4th Qtr 2007 DMRs)

Mixing Zone Constituent (from NPDES permit)	2nd Qtr 2007 DMR April 30 day avg mg/L (4)	May 30 day avg mg/L (4)	June 30 day avg mg/L (4)	4th Qtr 2007 DMR October 30 day avg mg/L (4)	November 30 day avg mg/L (4)	December 30 day avg mg/L (4)	Effluent Maximum 30 day avg mg/L (4)	Las Vegas Wash Water Standard mg/L (4)		2nd Qtr 2007 Upgradient Las Vegas Wash Conc (1) mg/L (4)	2nd Qtr 2007 Minimum Dilution Factor Needed	4th Qtr 2007 Upgradient Las Vegas Wash Conc (1) mg/L (4)	4th Qtr 2007 Minimum Dilution Factor Needed	Calculated Minimum Upstream Wash Flow, MGD (8)
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Color	12	11.25	6.67	5	10	8.33	12	-		30	Not needed (3)	15	Not needed (3)	-
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Notes:

(1) Quarterly Average for "LVW UPGRADIENT" samples in DMRs.
(2) "Gross Alpha + adjusted error" values were used since they are higher numbers.
(3) Tronox discharge concentration is below the upgradient Wash concentration.
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(7) Assumes Wash standard is EPA drinking water MCL for Gross Alpha
(8) At Tronox Permitted 1.45 MGD

Highlighted boxes are worst case required dilution factors
Highlighted boxes are worst case minimum upstream Wash flow

Shannon Harbour

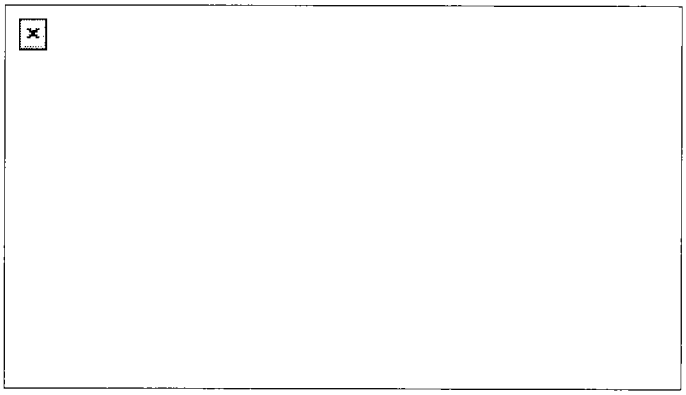
From: Keith Bailey [okbailey@flash.net]
Sent: Monday, May 19, 2008 2:38 PM
To: 'Crowley, Susan'; Shannon Harbour; Brian Rakvica; 'Guerriero, Joseph'; 'McCabe, Eric'
Cc: Alford, Michael
Subject: Tronox Vadose Zone Bioremediation Pilot Test
Attachments: Vadose Zone Bioremediation Proposal.pdf

All,

In our May 15, 2008 meeting between Tronox, NDEP and AIG, Tronox agreed to provide copies of the Shaw proposal covering pilot testing of vadose zone perchlorate remediation at the Henderson site. The proposal, dated November 20, 2007, is attached. The test work is being funded by the US ESTCP.

Shaw has completed sampling of two areas at the Henderson site and has selected a location south of and adjacent to the old D-1 building slab for further tests. Laboratory jar tests are now being conducted to select solid and liquid electron donors for the pilot tests.

Keith



Shaw Environmental, Inc.
111 West Pleasant Street, Suite 105
Milwaukee, Wisconsin 53212-3939
414.291.2357
FAX: 414.291.2385

Shaw® Shaw Environmental, Inc.

VIA EMAIL: okbailey@flash.net

November 20, 2007

Tronox LLC
c/o Mr. Keith Bailey
Environmental Answers, LLC
3229 Persimmon Creek Drive
Edmond, OK 73013

Re: Proposal (No Compensation) for Demonstration of Perchlorate Treatment within Vadose Zone Soils (ESTCP ER-0435)
Tronox LLC – Henderson, NV

Dear Keith,

As we have discussed, Shaw is interested in conducting the above referenced demonstration project at the TRONOX LLC (Tronox) facility in Henderson, Nevada. Shaw has prepared this "No Compensation" proposal for your use in preparing and issuing a work order authorizing us to complete the necessary work activities at the Tronox – Henderson site.

Background

The Environmental Security Technology Certification Program (ESTCP) has awarded a grant to support the completion of a field demonstration project related to the treatment of perchlorate within vadose zone soils. Following is a brief description of the proposed demonstration project, with certain modifications to conform with site and regulatory conditions pertinent to Tronox's operations in Henderson, along with an outline of the initial steps. Further details regarding the ESTCP program can be obtained by visiting their website (http://www.estcp.org).

Technical Description of the Proposed Demonstration Project

The primary focus of this project will be to demonstrate and validate the treatment of perchlorate within vadose zone soils through bioremediation and flushing via two electron donor delivery methods:

Approach #1 – Engineered Infiltration Gallery

For approach #1, an engineered infiltration gallery will be designed to effectively deliver and distribute an electron donor to the perchlorate-impacted vadose soils. The electron donor will be a soluble, food grade, organic rich substrate such as sodium lactate, lactic acid, citric acid, ethanol, etc. The conceptual system design involves the installation of a shallow infiltration gallery or a low profile mound-style infiltration system. Factors to be considered during the donor selection process will include:

- Effectiveness at promoting biological reduction of perchlorate
- Cost and availability
- Material handling and safety concerns
- Regulatory acceptance and permitting requirements

Approach #2 – Shallow Soil Mixing with Organic Amendment and Watering

For approach #2, an organic rich electron donor source will be mechanically blended (via tilling or mixing) into the upper few feet of the soil column. A network of sprinklers or drip irrigation lines will be installed to provide periodic watering of the treatment area to promote vertical distribution of water and organic amendments within the vadose zone. A complex electron donor source such as FBR plant sludge, corn steep liquor, or some other food grade, pathogen free carbon source will be selected for use with this demonstration. The electron donor source will be mixed into the upper 2 to 3 feet of the soils, and an automated sprinkling system will be designed to supply water over the test plot area and promote vertical penetration of the electron donor agent along with the infiltrating waters. Similar factors as those outlined above will be considered when selecting the electron donor agent.

Schematic diagrams (plan and cross-sectional views) of the conceptual treatment approaches are presented in **Attachment A**.

The following elements will be common to both demonstrations:

- Detailed characterization of the demonstration areas will be required to develop fluid flow and chemical fate and transport properties within the vadoze zone and underlying saturated zone areas.
- A series of monitoring wells and other sampling methods (soil sampling, suction lysimeters, conductivity probes, etc) will be utilized to monitor the effectiveness of the amendment delivery and contaminant degradation process.
- In order to comply with the current underground injection control (UIC) permit for Tronox, the water source to be utilized for both treatment areas will be stabilized lake water.
- Detailed cost and performance reporting will be prepared for the project participants including ESTCP, Tronox, State and Federal Regulatory Agenices (as required).

Following are the specific tasks to be completed during the course of this demonstration project:

Task 1 Site Selection

The ideal site would have 30 to 50' of unsaturated soils, perchlorate in soils throughout the vertical unsaturated column at levels ranging from moderate (10 mg/kg) to high (>1,000 mg/kg) levels, and soils with moderate to high permeability (sandy silts, silty sands with some clay, sands, etc).

Data from the site investigation sampling conducted in late 2006 indicated that conditions within certain areas of the Tronox – Henderson site meet the criteria outlined above. In order to confirm the final location of the demonstration plots, six additional test borings are proposed to be installed at the locations indicated on **Figure 1** (Areas 1A/B and 2). The proposed borings will be advanced using hollow-stem auger drilling equipment and each boring will be sampled continuously from the ground surface to the terminal boring depth. Borings will be advanced approximately 3 feet into the first saturated soils, which are expected to be encountered at approximately 30 feet below ground surface (bgs). The purpose of these borings are outlined as follows:

- Confirm vadose zone soil lithology will be suitable for infiltration of amendments/water.
- Confirm that the distribution of perchlorate within the vadose zone is adequate for demonstration purposes.
- Obtain or determine the potential for obtaining in-tact core material from the alluvial deposits for laboratory scale geophysical testing
- Initiation of laboratory scale perchlorate treatability and leachability testing (Task 4)

Selected soil samples will be submitted to Shaw's certified analytical laboratory in Lawrenceville, NJ for the following suite of analyses: perchlorate, chlorate, nitrate as N, sulfate, phosphate as P (ortho), chloride, total organic carbon (TOC), and pH. RCRA metals scans may also be completed on selected samples. Groundwater grab samples will also be obtained from one or more borings and analyzed for the same suite of parameters as outlined above, including both total and dissolved metals scans..

Task 2 Demonstration Plan Preparation

ESTCP requires a detailed plan describing the technical objectives of the study and the proposed methods to be utilized during the demonstration completion. This plan will be developed in conjunction with Task 3.

Task 3 Site Characterization

After confirming that the characteristics of the demonstration area are suitable for the project objectives (Task 1), a series of test borings and wells will be installed and testing will be performed to fully characterize the demonstration area. The characterization phase will include, but may not be limited to, the following:

- Installation of soil borings and monitoring wells
- Collection of soil and groundwater samples
- Laboratory testing on soils including
  - physical properties (grain size)
  - chemical parameters: VOCs, Anions (Perchlorate, Chlorate, Nitrate, Sulfate), TOC, Metals
- Laboratory testing on groundwater including
  - chemical parameters: VOCs, Anions (Perchlorate, Chlorate, Nitrate, Sulfate), TOC, Metals
- Slug, Pump, and Infiltration testing
- Possibly geophysical testing - in conjunction with companion study to be supported by New England Research (NER)

Task 4 Laboratory Studies

Shaw will conduct certain laboratory treatability studies to support the design process. Three specific laboratory studies are currently being contemplated for the following purposes:

1. Electron Donor Selection
2. Evaluation of Perchlorate Leaching rates under differing infiltration scenarios, and
3. Evaluation of preservation methods for perchlorate analysis in soil and groundwater.

Task 5 System Design

The final treatment system and monitoring network components will be designed based on site characteristics established under Task 3 and in accordance with applicable regulatory/permit requirements. A demonstration implementation, startup, and operations and maintenance plan will be developed.

Task 6 System Installation and Startup

Shaw will work with qualified subcontractors to complete the installation of the demonstration system operating and performance monitoring components and will perform startup and baseline sampling activities. Startup testing may include the addition of tracers to aid in the assessment of process effectiveness.

Task 7 System Operations, Maintenance, and Monitoring
Shaw and/or subcontract personnel will operate and maintain the system to insure proper delivery of moisture and amendments is achieved. Shaw personnel will collect samples at regular intervals to assess process performance. Active operations are expected to be conducted over a period of 9 months, with post shutdown monitoring being completed within 3 months of shutdown. A combination of soil sampling, pore water sampling, and groundwater sampling will be used to measure the variability and flux of perchlorate within the vadose zone and to assess the mass of perchlorate degraded within the vadose zone and underlying aquifer zone throughout the demonstration. Fouling control agents may also be added to the amended water to control clogging or plugging within the infiltration gallery.

Task 8 Reporting
ESTCP requires progress reports and detailed performance and cost reporting. These reports will provide information regarding the design, operations, and performance of the treatment approaches as well as compare the costs associated with each. At a minimum it will be necessary to share pertinent details associated with the site location and the demonstration project findings with the ESTCP technical review board. It is not necessary to specifically name the facility; a generic name such as site in Nevada would be suitable. The ESTCP technical review board consists of technical representatives from the ESTCP program office, ESTCP technical support personnel, the various military branches (Army, Navy, and Air Force), EPA, and DOE. This review is limited to the technical progress on the project and does not require access to the Tronox facility by personnel other then Shaw. Information will be shared with the review board at annual in-progress review (IPR) meetings and via written reports. It will not be necessary to provide details regarding the entire facility unless those details have some direct bearing on the demonstration project design and performance.

Task 9 Technology Transfer
ESTCP encourages technology transfer through presentations and publications at conferences and within journals pertinent to the environmental community and particularly the DoD. As mentioned previously, care can be exercised to avoid the disclosure of unnecessary site details such as the specific site name, however, the general demonstration site location would be disclosed.

Anticipated Support Required from Tronox for Project
As noted above, ESTCP has committed grant funding to support the implementation of this demonstration project. However, some in-kind support is anticipated to be required from Tronox to enable this project to be completed at the facility in Henderson, NV. Following is a list of some of the elements that may be required:

- Regular access to the demonstration site location throughout the execution of the project.
- Assistance with clearing subsurface utilities prior to any drilling, excavating, or other subsurface work activities.
- Access to communication lines, power, and water sources within the facility.
- Routine security and system inspections to insure uninterrupted operations can be maintained.

Closing
We look forward to working with Tronox during this technology demonstration project. All services will be performed in accordance with the terms and conditions contained within the Agreement For Construction or Field Services (Class II) between TRONOX LLC and Shaw Environmental, Inc. dated June 8, 2007. Please include the agreed upon indemnity language when issuing the work order authorizing Shaw to proceed with this project.

Please contact me with any questions you may have at 414-291-2357.

Sincerely,
SHAW ENVIRONMENTAL, INC.

Jay Diebold, P.E., P.G.
Program Manager

Attachments

Cc: Paul Hatzinger, PhD., Shaw Environmental, Inc.
Mike DelVecchio, Shaw Environmental, Inc.
Rob Steffan, PhD., Shaw Environmental, Inc.
Andrea Leeson, PhD., ESTCP Program

Shannon Harbour

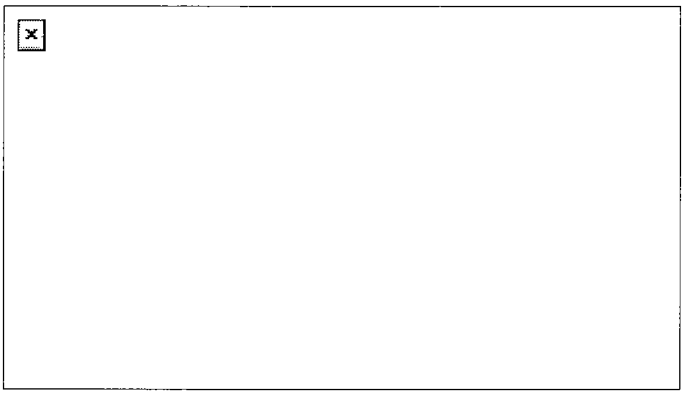
From: Keith Bailey [okbailey@flash.net]
Sent: Monday, May 19, 2008 2:38 PM
To: 'Crowley, Susan'; Shannon Harbour; Brian Rakvica; 'Guerriero, Joseph'; 'McCabe, Eric'
Cc: Alford, Michael
Subject: Tronox Vadose Zone Bioremediation Pilot Test
Attachments: Vadose Zone Bioremediation Proposal.pdf

All,

In our May 15, 2008 meeting between Tronox, NDEP and AIG, Tronox agreed to provide copies of the Shaw proposal covering pilot testing of vadose zone perchlorate remediation at the Henderson site. The proposal, dated November 20, 2007, is attached. The test work is being funded by the US ESTCP.

Shaw has completed sampling of two areas at the Henderson site and has selected a location south of and adjacent to the old D-1 building slab for further tests. Laboratory jar tests are now being conducted to select solid and liquid electron donors for the pilot tests.

Keith



Parkson Pilot Filter Report
KerrMcGee Perchlorate Treatment System
Henderson Nevada

Prepared by: SHAW Environmental Inc.
May 19, 2005

Introduction

A Parkson Dynasand filter was piloted at Kerr McGee's Henderson, Nevada facility from April 22 to April 28, 2005 to obtain information relative to operability and performance for the full scale filter that has been proposed by SHAW Environmental Inc. The proposed filtration system is intended to treat effluent from the DAF units in the existing perchlorate treatment system. The full scale filter is intended to:

- allow the system to process a higher suspended solids loading that is projected due to the planned treatment of AP-5 water,
- provide a degree of redundancy in the event of a short term upset condition in the upstream DAF units and
- reduce the effluent suspended solids under normal operating conditions.

The filter operation was modified in the 3 tests by changing the ratios of DAF feed and DAF effluent flows that were fed to the pilot filter. The test conditions are summarized in the attached data sheet, Appendix 1. Also appended to this report are the Parkson Sand Filter Testing Protocol, and the Installation Diagram documents.

Three tests were performed These are summarized as follows:

- Test 1: Normal operation, 100% DAF effluent at the normal flow rate
- Test 2: Upset condition simulation, 50% DAF feed, 50% DAF effluent
- Test 3: Highly upset condition, 100% DAF feed at reduced filter feed flow and elevated reject flow.

General Data Review

The standard deviation analysis of the Turbidity and TSS data indicates that the Turbidity data for tests 1 and 2 are significantly more consistent than the TSS data. Therefore turbidity data are used below in the presentation of results for tests 1 and 2. Test 3 data are very consistent for both turbidity and TSS. Therefore both turbidity and TSS data have been used in test 3 results shown below.

Summary of Results

	Ave area flow (1) (gpm/ft2)	Reject (% of effluent flow)	Feed TSS (mg/L)	Eff. TSS (mg/L)	Feed Turb. (NTU)	EFF Turb. (NTU)	% TSS Removal	Ave DP (inches H2O)
Test 1	3.3	14.9	11.8	1.0	16.2	1.5	90.7 (2)	4.3
Test 2	3.3	12.7	57.2	5.6	51.3	2.1	95.9 (2)	5.3
Test 3	2.9	19.1	104	2.6	72.7	1.7	97.6 (3)	5.8

Summary of Results Notes:

1. Average area flow rate based on pilot filter effluent flow and total filtration area of 10.7 ft sq.

2. % TSS removal based on test average feed and effluent turbidities.

3. % TSS removal based on test average TSS and turbidity data combined.

Discussion of Results:

The effluent area flow rate of 3.3 gpm/ft2 in tests 1 and 2 is consistent with the proposed Parkson filter size of 300 ft2 at a design effluent flow of 1,000 gpm.

For tests 1 and 2 the reject flow was adjusted to the minimum flow allowed by the Parkson pilot filter. This resulted in a reject flow rate that was significantly higher than is typically projected by Parkson. Parkson's "rule of thumb" reject flow rate is 5% of the feed. This was due to a disproportionately large media washing system that was supplied with the pilot filter. Air lift flow was 0.5 SCFM or 0.047 SCFM/ft2 filter area. This is correspondingly high relative to the full scale design maximum of 0.040 SCFM/ft2. The relatively high air lift and reject flow rates resulted in a relatively clean bed of sand within the filter during the tests.

Based on the very high level of solids rejection (97.6% average) in test 3, the data suggests that %TSS removal was not adversely affected by feed TSS. In fact, TSS removal efficiency improved as filter solids load increased.

The filter bed differential pressure drop was very low under all test conditions (less than 6"). Full scale bed pressure drop values typically ranges from 6" to 18". The design provides for a maximum bed pressure drop of 36". The high reject and air lift rates of the pilot system likely contributed to the low pilot system pressure drop measurements. The data imply that under normal conditions the full scale system will operate adequately with reject and air lift flow rates that are significantly lower than those used in the pilot system, albeit with a potential for a higher media DP.

Conclusions:

1. The pilot Parkson Dynasand filter performed at an average filtration efficiency of 90% or better during all 3 filtration tests. Simular full scale filtration performance is expected based on the use of a media depth and type that is comparable to the pilot system. Parkson is to confirm guaranteed full scale system performance.

2. Reject flow and air lift flow was not properly simulated with the disproportionately large media washing system in the pilot filter. These parameters will need to be optimized with the full scale system.

3. The full scale air lift flow capacity of 0.04 SCFM/ft2 and design reject rate of 15% of effluent flow (150 gpm) are adequate for the full scale design.

4. Media pressure loss in the full scale system may be higher than measured during the pilot operation. The design maximum of 36" is adequate.

APPENDIX 1
Parkson Sand Filter Pilot Log Sheet

Date Time	DAF EFF Flow (GPM)	DAF Feed Flow (GPM)	Area Flow gpm/ft2	Filter BW Flow (GPM)	Air lift Flow (SCFH)	Media DP (inches H2O)	Filter Feed Turb (NTU)	Filter Eff Turb (NTU)	% TURB Removal	Feed TSS (mg/l)	Eff TSS (mg/l)	% TSS Removal
4/22/2005 12:00	40		3.34	4.3	25	4.5	10.5	0.88	91.6	10	0	100.0
4/22/2005 14:00	40		3.31	4.6	25	4	9.67	1.08	88.8			
4/22/2005 16:00	40		3.32	4.5	25	4.5	7.87	1.06	86.5	0	0	
4/22/2005 20:00	40			x	26	5.5	11.1	1.39	87.5			
4/22/2005 23:59	40			x	28	4	10.8	1.5	86.1			
4/23/2005 10:00	40			x	25	5	15.3	2.24	85.4	11	0	100.0
4/23/2005 20:00	40			x	25	3	7.03	1.27	81.9	10	0	100.0
4/23/2005 23:59	40			x	29	4	12.17	1.08	91.1	0	0	
4/24/2005 10:00	40			x	25	5	21.7	2.86	86.8	16	0	100.0
4/24/2005 20:00	40			x	29	4	13.4	1.29	90.4	12	0	100.0
4/25/2005 4:00	40			x	29	4	22.6	1.67	92.6	10	0	100.0
4/25/2005 8:00	40		3.33	4.4	27	4.5	24.6	1.8	92.7	21	0	100.0
4/25/2005 10:00	40		3.31	4.6	27	4.5	20.2	1.83	90.9			
4/25/2005 12:00	40		3.31	4.6	26	4.5	38.6	3.45	91.1	28	0	100.0
4/25/2005 14:00	40		3.30	4.7	26	4.5	16	1.16	92.8	26	12	53.8
4/25/2005 16:00	40		3.30	4.7	25	4.5	33.4	1.75	94.8	13	0	100.0
4/25/2005 20:00	40			x	30	4.5	13.6	1.39	89.8			
4/25/2005 23:59	40			x	29	4	13.5	1.01	92.5	8	0	100.0
4/26/2005 4:00	40			x	29	4	12.5	0.89	92.9	7	1	85.7
4/26/2005 8:00	40		3.07	7.2	26	4	12.4	1.03	91.7	8	3	62.5
4/26/2005 10:00	40		2.95	8.4	23	4	13.6	1.04	92.4	8	0	100.0
Test # 1 Averages	**40.0**	**0.0**	**3.3**	**5.2**	**26.8**	**4.3**	**16.2**	**1.5**	**90.0**	**11.8**	**1.0**	**93.0**
Test # 1 STD DEVIATION	**0.00**		**0.12**	**1.33**	**1.89**	**0.50**	**7.90**	**0.64**	**3.12**	**7.60**	**2.94**	**14.77293626**
4/26/2005 12:00	20	20	3.33	4.4	25	4	12.6	0.92	99.3	81	5	93.8
4/26/2005 14:00	20	20	3.49	2.7	25	4	55.6	1.47	97.4	60	5	91.7
4/26/2005 16:00	20	20	3.48	2.8	25	5	37.2	1.08	97.1	54	3	94.4
4/26/2005 20:00	20	20			31	4.5	34.6	2.15	93.8	15	3	80.0
4/26/2005 23:59	20	20			32	4.5	40.6	2.81	93.1			
4/27/2005 4:00	20	20			34	5	39.5	4.38	88.9			

4/27/2005 8:00	20	20	3.47	2.9	35	6	56.8	3.31	94.2	58	11	81.0
4/27/2005 10:00	20	20	3.20	5.8	35	6	50.02	3.07	93.9	42	6	85.7
4/27/2005 12:00	20	20	3.23	5.4	40	6	56.4	2.23	96.0	76	4	94.7
4/27/2005 14:00	20	20	3.12	6.6	35	7	62.3	2	96.8	51	3	94.1
4/27/2005 16:00	20	20	3.23	5.4	30	6	37.9	1.11	97.1	56	2	96.4
4/27/2005 20:00	20	20			38	5.5	46.8	1.9	95.9	71	4	94.4
4/27/2005 23:59	20	20			30	5.5	39.2	1.37	96.5	65	16	75.4
4/28/2005 4:00	20	20			30	5	35.3	1.07	97.0			
Test # 2 Averages	**20.0**	**20.0**	**3.3**	**4.5**	**31.8**	**5.3**	**51.3**	**2.1**	**95.5**	**57.2**	**5.6**	**89.2**
Test # 2 STD DEVIATION	**0.00**	**0.00**	**0.13**	**1.43**	**4.55**	**0.84**	**22.54**	**0.98**	**2.46**	**17.17**	**4.01**	**7.03**
4/28/2005 8:00	0	36	2.75	6.6	30	6	65.2	1.68	97.4	67	1.2	98.2
4/28/2005 10:00	0	36	2.83	5.7	30	6	49.9	1.96	96.1	96	3.3	96.6
4/28/2005 12:00	0	36	2.82	5.8	30	5	63.5	1.13	98.2	121	2.1	98.3
4/28/2005 14:00	0	38	3.04	5.5	30	6	94.2	1.13	98.8	105	2.8	97.3
4/28/2005 20:00	0	38			30	6	90.5	2.43	97.3	131	3.7	97.2
Test # 3 Averages	**0.0**	**36.8**	**2.9**	**5.9**	**30.0**	**5.8**	**72.7**	**1.7**	**97.6**	**104.0**	**2.6**	**97.5**
Test # 3 STD DEVIATION		**0.98**	**0.11**	**0.42**	**0.00**	**0.40**	**16.97**	**0.50**	**0.91**	**22.14**	**0.89**	**0.65**

Notes :
Test #1 ran well with cosistant results and low pressure drop
Test #2 also ran well with slightly higher pressure drop at similar backwash rate to test #1
Test #3 had an elevated pressure drop and higher backwash rate. Performance during this period was good. After a day of operating in this mode the filter began to clog. After the filter was clogged, switched back to plant effluent and the clog was cleared.
Area flow rate based on filter effluent flow and filtration area of 10.7 gpm/ft2

Appendix 2:

Parkson Sand Filter Testing Protocol, Kerr McGee, Henderson, NV.

General: Reference Parkson Documents and direction from Charles Paterson for equipment setup, temporary tie-ins, media loading and washing.

A. Projected Schedule:

Start Date: April 12, 2005; based on sand washing on April 20, 2005.

B. Test #1 Operating Parameters:

Feed source:	DAF EFFLUENT
Feed flow:	38 gpm
Backwash flow:	apx. 2 gpm (see Note 1)
Air lift flow:	(see Note 2)

Note 1: Set backwash rate based on instructions from Parkson. In general, the backwash rate should be set to the minimum flow that results in acceptable effluent and media pressure drop.

Note 2: Set air rate based on instructions from Parkson.

C. Test #1 Operation:

Day 1, Projected Date: April 21, 2005
Start up filter operation based on the above parameters. Monitor operation and adjust backwash and air lift flows as required. Record any changes to operational parameters and the time they occurred. After initiating operation, record flow and pressure data every 2 hours during the day, every 4 hours at night. After the first 4 hours of operation, start testing and recording filter feed and effluent turbidities. This should be done approximately every 2 hours during the day and every 4 hours at night.

Day 2
Continue to monitor and adjust backwash and air lift flows if required. Continue to record changes to operational parameters. Continue to record flow and pressure data as on day 1. Start sampling filter feed and effluent for off-site TSS analysis. Schedule 5 TSS sampling events. Each spaced in time over the 24 hours of day 2. Each TSS sampling event should include one feed and one effluent sample. At the end of the day there should be 10 samples for TSS analysis.

Day 3: Same as Day 2

Day 4: Same as Day 2

D. Test #2 Operating Parameters:

Feed source:	DAF EFFLUENT & DAF FEED
Feed flow:	19 gpm DAF effluent + 19 gpm DAF feed
Backwash flow:	apx. 2 gpm (see Note 1)
Air lift flow:	(see Note 2)

Note 1: Set backwash rate based on instructions from Parkson. In general, the backwash rate should be set to the minimum flow that results in acceptable effluent and media pressure drop.

Note 2: Set air rate based on instructions from Parkson.

E. Test #2 Operation:

Day 1, Projected Date: April 25, 2005
Same as Day 1, Test #1

Day 2
Same as Day 2, Test #2

Day 3: Same as Day 2

Day 4: Same as Day 2, Additional testing, if required, shall be planned based on review of data by Shaw, KMG and Violia.

Appendix 3

Shaw Shaw Environmental & Infrastructure, Inc.

COMPUTATION SHEET

Page 1 of 1

Client KMG / VIOLIA

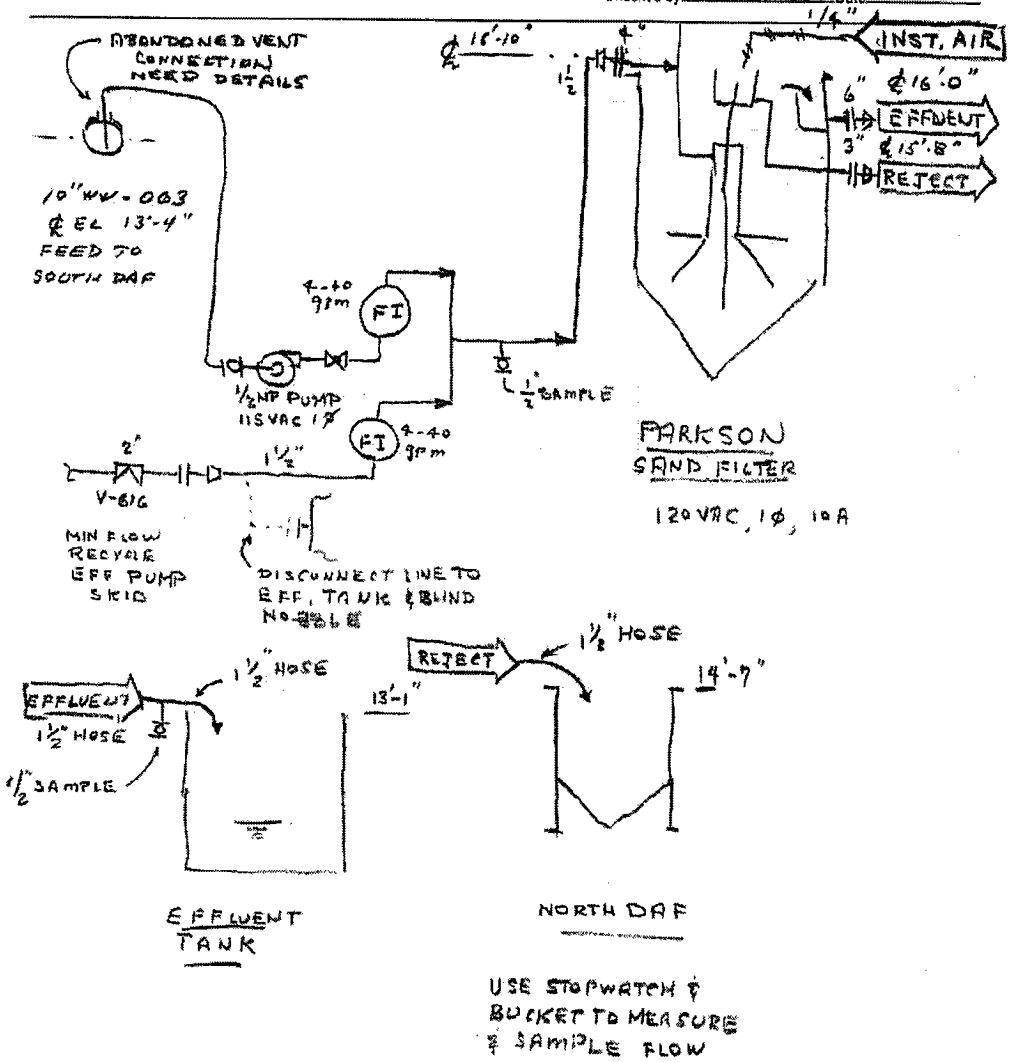
Job #

Site HENDERSON, NV

Computed by RL Date 3/22/05

Description FILTER PILOT CONNECTIONS

Checked by SF Date



Todd Croft

From: Bailey, Keith [Keith.Bailey@tronox.com]
Sent: Friday, February 17, 2006 8:17 AM
To: Nadir Sous
Cc: Crowley, Susan; Todd Croft
Subject: Tronox Henderson Bioplant Sand Filter
Attachments: Hend Parkson Spec.pdf; Parkson Pilot Report.pdf

Nadir,

Thank you for meeting with us Wednesday afternoon. As you requested, attached are two pdf files containing the Parkson sand filter specification and the pilot test report used to design the full scale system. I hope these will assist you in your project review. If you have any further questions, please give me a call at (405) 775-6526.

Keith

<<Hend Parkson Spec.pdf>> <<Parkson Pilot Report.pdf>>

CONTINUOUS BACKWASH SAND FILTER SPECIFICATIONS

SIX (6) DYNASAND® CONTINUOUS BACKWASH SAND FILTER MODULES, MODEL DSF-50 DBTF

Basis of Design: (Influent Description)

Application:	DAF Effluent Filtration
Design Flow:	1,000 USgpm
Total Filtration Area:	300 ft²
Surface Loading Rate:	3.33 gpm/ft² at design flow
Total Suspended Solids (TSS):	None Given
Turbidity:	50 NTU
Chemicals:	High Chlorides

Equipment Description:

1. Modules to be installed in one (1) Buyer-supplied concrete cell.
2. Each module consists of bottom cone, feed inlet pipe, feed distribution radials, airlift pipe, internal sand washer, sand distributor cone, reject compartment with weir and flume, anchor bolts. Filtration area is 50 ft² per module.
3. Approximate shipping weight is 1,500 lbs per module.
4. One (1) NEMA 3R air control panel with FRP enclosure.
5. One (1) lot of grating and grating supports over the filter cells only.
6. One (1) lot of handrails around the perimeter of the filter cells only.
7. One (1) Pressure Transmitter for measuring headloss across the filter cell.

Materials of Construction:

Bottom cone:	FRP with AL6XN Brackets
Sand distribution cone:	FRP
Feed distribution radials:	FRP
Sand washer labyrinth:	High Density Polyethylene
Reject compartment:	FRP
Reject weirs:	Polypropylene
Reject supports:	FRP
Airlift housing:	FRP
Airlift pump assembly:	CPVC
Internal pipe connections:	Rubber with plastic clamps
Feed pipe:	PE
Reject piping:	CPVC
Nuts, bolts and fasteners:	Titanium
Anchor bolts:	Titanium
Grating with toe plates:	FRP
Grating supports:	FRP
Handrails:	EPCS

Filter Media (by Parkson)

Type:	Sand
Filtration depth:	80"
Effective size:	1.4 mm
Uniformity coefficient:	See attached sand spec
Shipping weight:	114 tons

All media will conform in all respects to the latest edition of AWWA B-100.

SERVICES

Compressed Air (by Buyer)

The system will require a minimum of 15.6 cfm of air at 35 psig.
Air to be of instrument quality.

Electrical connection: Controls require 10 Amps at 110V.

PARKSON CORPORATION

DYNASAND® FILTER

1.4 mm Filter Media Specifications

1. Grain Shape, Effective Size (ES), and Uniformity Coefficient (UC)

		Grain Shape	Effective Size	Uniformity Coefficient
	A.	**Sub-Round**	**1.35-1.45 mm**	**1.30 to 1.60**
-or-	**B.**	**Sub-Angular**	**1.55-1.65 mm**	**1.30 to 1.60**

The sand must conform to the conditions of A or B above. The filter media shall predominantly be siliceous material that will resist degradation during handling and use. Crushed gravel is not acceptable. "Sub-Round" grains are essentially round with smooth surfaces (non-angular). "Sub-Angular" grains are essentially sub-angular with multifaceted smooth edges. The effective size is the diameter of the tenth percentile grain (D10). The uniformity coefficient is the diameter of the sixtieth percentile grain divided by the diameter of the tenth percentile grain (D60/D10). The effective size and uniformity coefficient are determined by a dry, 10-minute automatic sieve shaker procedure on a 500-800 gram sample with U.S. Sieve Nos. 8, 10, 12, 14, 16, 18, as well as a pan.

2. **Fines Content**- "Fines" are defined by Parkson for this size filter media as particles *passing through an 18 mesh screen*. Fines should not exceed 1.5% by weight.

3. **Specific Gravity** - dry specific gravity must be greater than 2.5

4. **Hardness** - minimum 6.0 on Moh's scale (ref. *Testing and Inspection of Engineering Materials*; McGraw-Hill Cook Co., New York, NY; 3rd Edition; page 209)

5. **Acid Solubility** - less than 2% total loss in mass after a 30-minute immersion in an approx. 20% by wt. hydrochloric acid (HCl) solution [made by combining equal volumes of water and standard reagent grade 12.1 N (approx.) HCl]

6. **General** - must be in accordance with AWWA Standard B-100-89.

h:\Shared\Ma\Process\Winword\Service\Dsf\Ss14

FINAL

Meeting Minutes

Project:	Tronox (TRX)
Location:	NDEP – Las Vegas Office
Time and Date:	9:30 AM, May 15, 2008
In Attendance:	NDEP – Brian Rakvica, Shannon Harbour
	Tronox –Susan Crowley
	Environmental Answers – Keith Bailey (for TRX)
	BEC – Ranajit Sahu
	ERM – Mark Jones (for BEC)
	AIG – Cindy Hunter, Joseph Guerriero, Eric McCabe

CC: Jim Najima, Paul Black, Teri Copeland

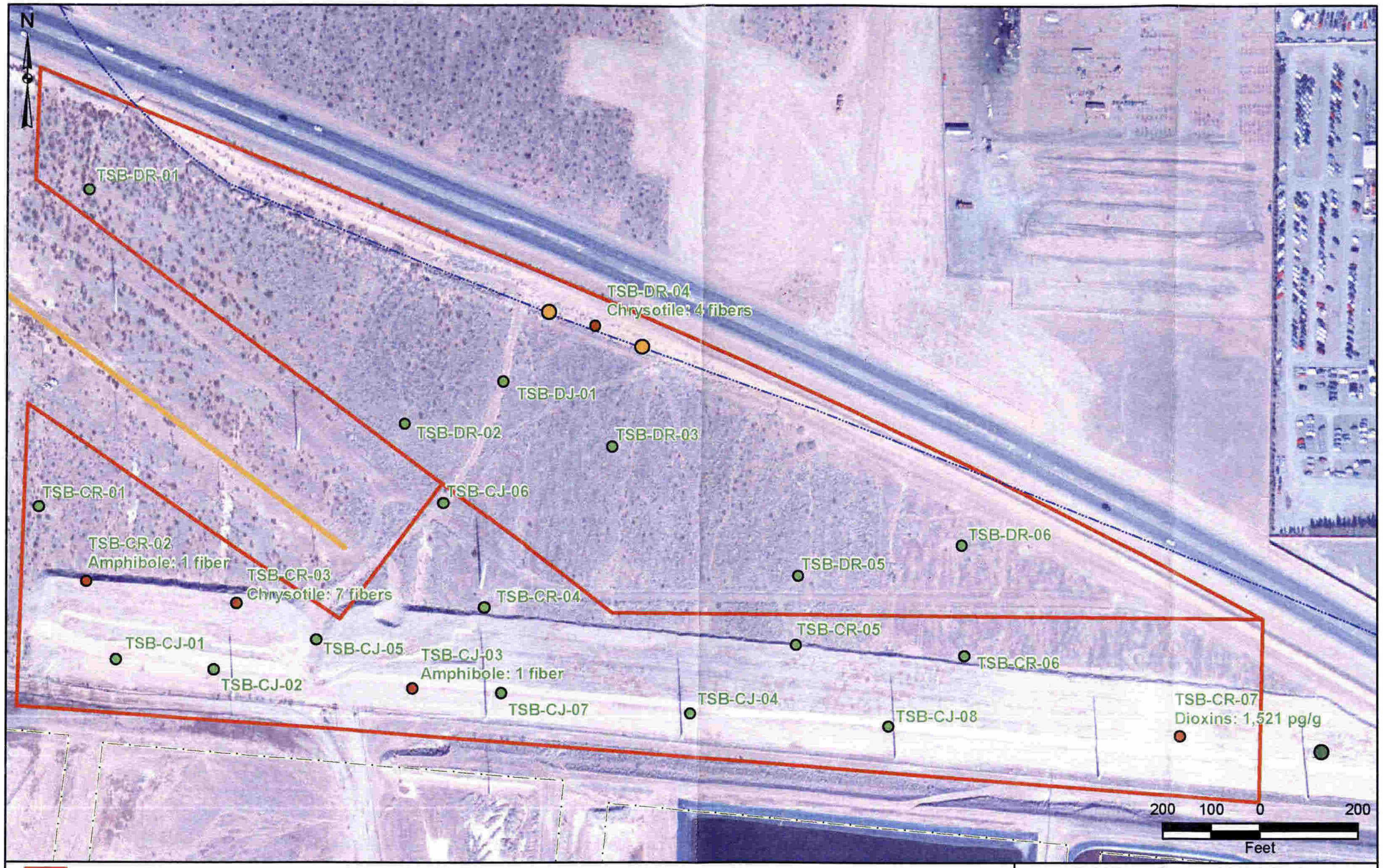
1. The meeting was held to discuss investigation results for Parcels C, D, F, G, and H.
2. TRX explained that Basic Management Incorporated (BMI) was established to mainly manage the utilities and other complex-wide issues. BMI was comprised of the following members: Kerr-McGee (currently TRX, 2/7), Stauffer (2/7), TIMET (2/7), and Chem Star (1/7). BMI has evolved into roles including land remediation and sale.
3. Parcels C, D, F, G, and H are parcels with near-term sale potential. As done previously with the Treco property and TRX Parcels A & B, the top 10 feet of subsurface soil were sampled as proposed in the Phase II Investigation Sampling Analysis Plans (SAPs) for each parcel.
4. TRX stated that they will likely retain groundwater and vapor intrusion liability for existing conditions; however, the new owners would be responsible for any soil characterization or remediation if depths greater than 10 feet below ground surface (fbgs) were disturbed. TRX stated that the existing conditions documented at the time of any no further action determination (NFAD) could serve as a baseline for future owners.
5. TRX is currently investigating site-wide soil gas for vapor intrusion.
6. TRX stated that Parcels A, B, C, D, and the southern portion of H are primarily insured by an AIG insurance policy with BMI for soils and an AIG insurance policy with TRX for groundwater and vapor intrusion (and secondarily for soils). Parcels F, G and the remaining portions of H are insured by only the AIG TRX policy for both soil and groundwater.
7. BEC stated that the shallow soil (0 – 10 fbgs) investigations for Parcels C, D, F, G, and H have been completed and that the data have been validated and subsequently approved by the NDEP.
8. TRX indicated that the 0 – 10 fbgs interval was chosen to account for the depth of utility trenches.
9. BEC provided maps of each parcel and corresponding tables with a summary of the results at each parcel.
10. BEC noted that the smaller (more conservative) value of the two (indoor vs. outdoor) EPA Region VI MSSLs for Workers were selected for the summary tables.
11. BEC stated that the EPA Region IX PRGs were used as screening levels in the summary tables. These values will be changed to EPA Region VI MSSL values prior to the submittal to the NDEP. **ACTION ITEM**
12. BEC stated that the background dataset used for comparison on the tables was the combined BMI and TIMET background datasets that have been approved for site-wide use by the NDEP.
13. Parcel A/B, NFA issued.

14. Parcel C/D,
    a. BEC stated that only asbestos, arsenic, and dioxin were detected above screening levels.
    b. Asbestos, discussion as follows:
        i. NDEP has stated in the past that leaving asbestos contamination in place was not acceptable and that other remedies suggested in the past besides excavation would result in additional future use restrictions.
        ii. BEC stated the risk driver was the construction worker and maintenance worker.
        iii. NDEP stated that it would not be acceptable to leave the asbestos contamination in place if development was not scheduled (i.e. that remediation of the asbestos would need to be conducted prior to the NDEP reviewing a NFAD request due to the possibility of wind blown exposure).
        iv. BEC stated that sample TSB-DR-04 (amphibole detection) was located within a ditch. Excavation would be proposed along the ditch only and not the polygon method. BEC will propose additional samples be collected along the ditch to determine the extent of excavation. BEC stated that this procedure would incorporate the CSM into the remediation process. **ACTION ITEM**
        v. BEC presented two potential areas of excavation for each detection of asbestos: polygon method (used in Parcels A/B remediation) and Kriging method. BEC stated that both methods seem valid. The Kriging method resulted in less excavation being required and was based on the concentration of the detection. The polygon method predicts approximately 4 acres to be remediated (approximately 3,200 cu yd based on a 6 inch depth). NDEP does not concur with the Kriging method.
        vi. BEC and NDEP stated that the source of the asbestos is assumed to be from historical use and disposal, not from current operations/disposal practices.
        vii. NDEP stated that the remediation plan should be submitted after results of the step-out samples have been evaluated and the excavation areas have been determined.
    c. Arsenic, BEC stated that arsenic was demonstrated to be within the range of background after statistical analysis.
    d. Dioxin, discussion as follows:
        i. BEC reported a dioxin concentration in excess of 1,500 ppt TEQ on the eastern side of Parcel C, TSB-CR-07.
        ii. NDEP requested the TEQ concentrations of dioxin for any other detections but BEC did not have the information available to the time. This topic was deferred until NDEP could review the data.
        iii. BEC stated that they will be proposing a 50 ft by 50 ft excavation centered on TSB-CR-07.
        iv. BEC stated that the sample appears to be from a localized burn site, this CSM approach is the purported justification for the limits of excavation.
    e. BEC stated that soil has been stockpiled on top of Parcel C. This complicates the removal of the dioxin and southern asbestos areas. BEC plans to remove the stockpiled material to just above pre-deposition elevations (based on GPS topography) and then excavate contaminated areas.
15. Parcel E, TRX stated that the shape/area of Parcel E (location of a portion of POSSM groundwater treatment system) may change in the future.
16. Parcel F, discussion as follows:
    a. BEC stated that asbestos, PCBs, and PAHs were detected above screening levels.

b. BEC stated that PAHs risk driver at TSB-FR-02.
c. BEC and TRX noted that approximately 5 to 10 ft of fill will be required to bring this parcel to grade for construction.
d. BEC inquired about the possibility of leaving the detected impacts in place under the fill cover. NDEP stated that the answer was likely "no, impacts could not be left in place" but NDEP will check with higher management for confirmation. **ACTION ITEM.**

17. Parcel G, discussion as follows:
    a. TRX stated that the building and land to the north (extending to the existing road) has been added to Parcel G.
    b. BEC stated that two additional samples will be collected one from the east and west sides of the building.
    c. TRX stated that south of the building there is a former stormwater collection basin. TRX and Stauffer flows would collect in this basin as the outlet pipe limited flow. Later, the flows were redirected away from this basin.
    d. BEC stated that only benzo(a)pyrene and asbestos were detected above screening levels.
    e. NDEP indicated that the benzo(a)pyrene detection at TRB-GJ-06 may not have to be remediated, however, NDEP needs to consider this. TRX indicated that this sampling point was located on a high point not a low point. **ACTION ITEM**
18. Parcel H, discussion as follows:
    a. BEC stated that radionuclides were detected slightly above background levels and presented comparative statistics (box and whisker plots). TRX and BEC believe that the associated laboratory error accounts for the elevated amount and that analytical sensitivity should be considered in the screening process.
    b. TRX indicated that only one of several radionuclides in each sample was elevated and that the elevated radionuclide was different for each sample.
    c. TRX stated that if these samples are determined to be within the background range, they should be added to the background dataset.
    d. It was noted that these samples appear to be statistically significant but practically insignificant (in terms of activity differences).
    e. NDEP stated that NDEP, TRX, and BEC should continue this discussion at a later date with other parties (Neptune). **ACTION ITEM**
19. Parcel K, TRX indicated that this Parcel is the old Koch Asphalt area and that a Phase I is currently being drafted and will be submitted to the NDEP sometime in the future.
20. NDEP indicated that the secular equilibrium software was still in development.
21. Deep samples, discussion as follows:
    a. TRX stated that this is part of the site-wide soil investigation and that 6 borings are proposed in the parcels: 1 – east of Parcel C, 3 – in Parcel F, and 2 – in Parcel G.
    b. NDEP stated that one boring in the eastern parcel adjacent to Parcel C would not adequately characterize conditions for the northern parcels. TRX stated that this boring was to characterize the deeper soils in the vicinity of the boring not the northern parcels. BEC and TRX decided that this boring would be proposed as an additional shallow (0 – 10 fbgs) boring. TRX understands that this would result in the 0 -10 fbgs restriction as was completed for Parcels A/B.
22. BRC will send a supplemental sampling plan by e-mail for the additional borings. **ACTION ITEM.**

23. NDEP noted that leaching should be addressed in the final document (i.e. is leaching driving any remediation?).
24. TRX indicated that the template for the final documents for these parcels will be the same as the revised A/B Technical Memorandum that was approved by NDEP. NDEP indicated that this will facilitate review of the documents.
25. NDEP also stated that the Technical Memorandums' review times will be commensurate with the documents level of compliance with the NDEP's previous comments. It was noted that data usability needs significant consideration.
26. It was noted that the priority of these parcels is alphabetical. A combined technical memo for Parcels C and D will likely be sent to NDEP, followed by separate memos for parcels F, G, and H.



Parcel Boundaries
Historical Effluent Ponds
Pioneer/Montrose GW Treatment System
Historical Northwestern Ditch

Supplemental Sampling Locations
- Soil Samples to Groundwater
- Surface Sample for Asbestos

Random Sample / Judgmental Sample
Parcel ID: TSB-CR(J)-01
Sample Number

January 2008 Aerial from AeroTech Mapping.

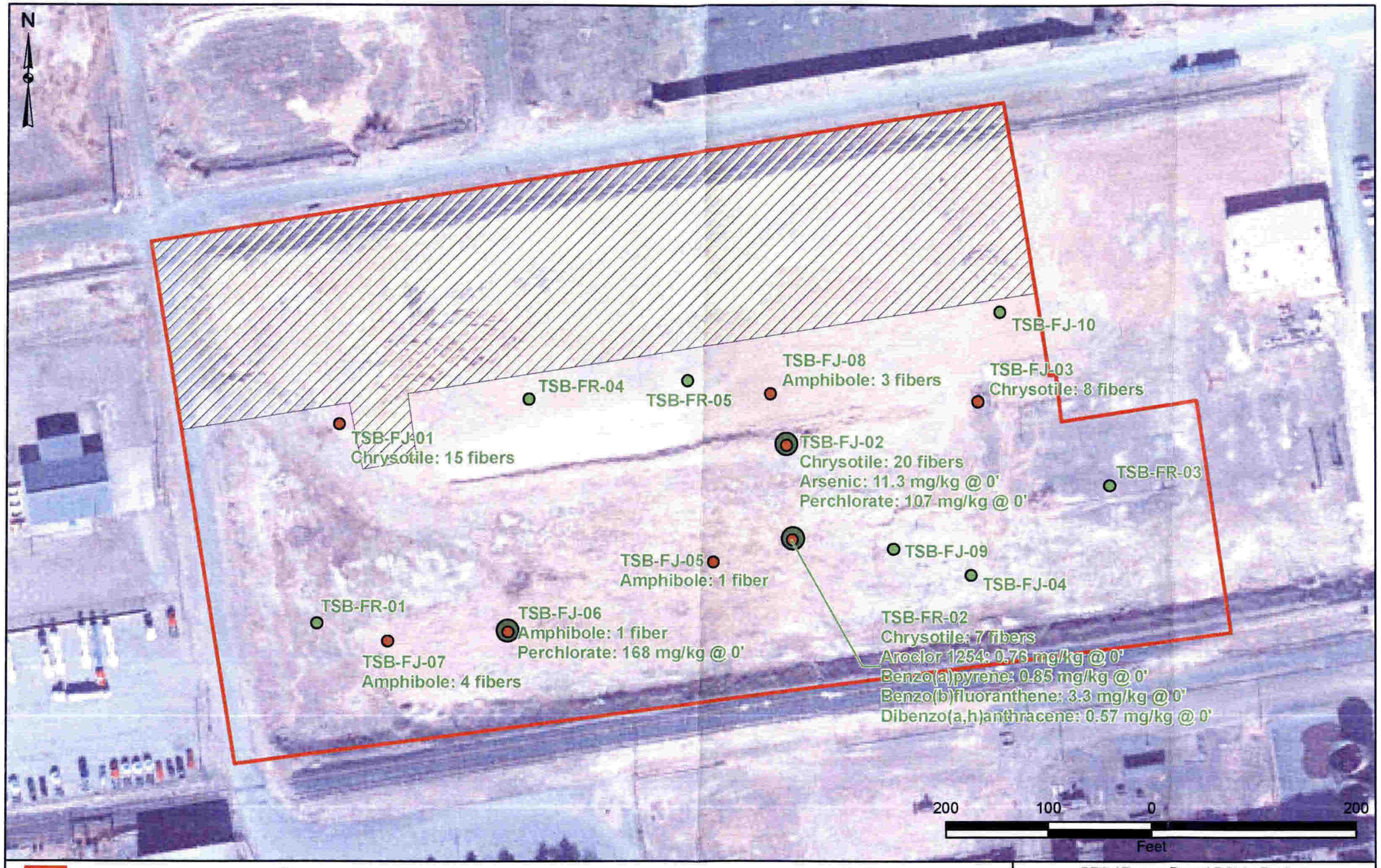
BEC / Tronox Parcels C/D Data Review
BMI Common Areas, Henderson, Nevada

FIGURE

SUMMARY OF EXCEEDANCES PARCELS "C" AND "D"

Basic Environmental COMPANY

Prepared by:	Date	JOB No. 0069073
MKJ	05/08/08	FILE: GIS/BEC/TRONOX/FIGURE_.MXD



Parcel F Boundary

TIMET NFA Area

Supplemental Soil Samples to Groundwater

Random Sample / Judgmental Sample / Parcel ID / TSB-FR(J)-01 / Sample Number

January 2008 Aerial from AeroTech Mapping.

BEC / Tronox Parcel F Data Review
BMI Common Areas, Henderson, Nevada

FIGURE

SUMMARY OF EXCEEDANCES PARCEL "F"

Basic Environmental COMPANY

Prepared by: MKJ | Date 05/06/08 | JOB No. 0069073 | FILE: GIS/BEC/TRONOX/FIGURE_.MXD

Parcel G Boundary

Supplemental Soil Samples to Groundwater

Random Sample / Judgmental Sample / Parcel ID / TSB-GR(J)-01 / Sample Number

January 2008 Aerial from AeroTech Mapping.

BEC / Tronox Parcel G Data Review
BMI Common Areas, Henderson, Nevada

FIGURE

SUMMARY OF EXCEEDANCES PARCEL "G"

Basic Environmental COMPANY

Prepared by:	Date	JOB No. 0069073
MKJ	05/06/08	FILE: GIS/BEC/TRONOX/FIGURE_.MXD

Supplemental Surface Sample for Asbestos

Monitoring Well

Approximate Debris Pile Location

Approximate Pad Mounted Transformer Location

Sample ID Nomenclature: TSB-HR(J)-01 — Parcel ID; Random Sample; Judgmental Sample; Sample Number

January 2008 Aerial from AeroTech Mapping.

BEC / Tronox Parcel H Data Review
BMI Common Areas, Henderson, Nevada

FIGURE

SUMMARY OF EXCEEDANCES PARCEL "H"

Basic Environmental COMPANY

Prepared by: MKJ | Date: 05/06/08 | JOB No. 0069073 | FILE: GIS/BEC/TRONOX/FIGURE_.MXD

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCELS C/D INVESTIGATION
CLARK COUNTY, NEVADA
(Page 1 of 5)

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
Dioxins/Furans	TCDD TEQ[n]	pg/g	49	37	76%	1.5	1521	TSB-CR-07 @ 0	--	--	1000	C	1	--	--	--	--	--	--	--	1000	--	--	2 E-6
Asbestos[i]	Chrysotile	Structures	24	13	54%	1	7	TSB-CR-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	See Asbestos Risk Calc.
	Amphibole	Structures	24	2	8%	1	1	TSB-HJ-09 @ 0[l]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
General Chemistry	Bromide	mg/kg	49	11	22%	0.85	7.3	TSB-CR-04 @ 10	2.5	2.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Bromine	mg/kg	49	11	22%	1.7	14.6	TSB-CR-04 @ 10	5	5.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorate	mg/kg	49	9	18%	1.1	12.2	TSB-DR-06 @ 10	5	5.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chloride	mg/kg	49	49	100%	0.42	1870	TSB-DR-03 @ 10	2	224	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorine	mg/kg	49	49	100%	0.85	3730	TSB-DR-03 @ 10	4	447	100000	max	--	--	--	--	--	1110	10	--	--	--	--	--
	Chlorite	mg/kg	86	0	0%	--	--	--	0.2	4	--	--	--	--	--	--	--	--	--	--	--	110000	0.034	--
	Fluoride	mg/kg	49	16	33%	0.48	4.5	TSB-CR-07 @ 10	1	2.2	41000	N	0	--	--	--	--	2.5	1	--	--	41000	0.00011	--
	Nitrate (as N)	mg/kg	49	41	84%	0.13	43.3	TSB-CR-04 @ 10	0.2	2.1	--	--	--	--	--	--	--	102	0	--	--	--	--	--
	Nitrite (as N)	mg/kg	32	0	0%	--	--	--	0.2	0.23	--	--	--	--	--	--	--	0.21	--	--	--	--	--	--
	Orthophosphate as P	mg/kg	49	0	0%	--	--	--	5	5.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Perchlorate	mg/kg	49	48	98%	0.018	28.3	TSB-DR-06 @ 10	0.0403	2.13	790	N	0	--	--	--	--	--	--	--	--	790	0.036	--
	Sulfate	mg/kg	49	49	100%	5.4	16700	TSB-CR-04 @ 10	5	2790	--	--	--	--	--	--	--	4130	4	--	--	--	--	--
Metals	Aluminum	mg/kg	49	49	100%	3430	10800	TSB-DR-05 @ 10	5.1	11.5	100000	max	0	--	--	--	--	15300	0	No	--	1000000	--	--
	Antimony	mg/kg	49	47	96%	0.088	0.32	TSB-CR-07 @ 0	0.51	1.2	450	N	0	5	0	0.3	1	0.5	0	No	--	450	--	--
	Arsenic	mg/kg	49	49	100%	1.3	8	TSB-CJ-08 @ 10	1	2.3	1.8	C	48	29	0	1	49	7.2	3	No	1.8	280	--	--
	Barium	mg/kg	49	49	100%	82.5	340	TSB-CJ-08 @ 10	2	4.6	100000	max	0	1600	0	82	49	836	0	No	--	230000	--	--
	Beryllium	mg/kg	49	49	100%	0.23	0.68	TSB-DR-05 @ 10	0.1	0.23	2200	N	0	63	0	3	0	0.89	0	No	2200	2200	--	--
	Boron	mg/kg	49	21	43%	3.2	22.6	TSB-DR-05 @ 0	10.1	22.9	100000	max	0	--	--	--	--	11.6	5	Yes	--	230000	0.0001	--
	Cadmium	mg/kg	49	29	59%	0.049	0.25	TSB-CR-07 @ 0	0.051	0.12	560	N	0	8	0	0.4	0	0.16	1	No	3000	560	--	--
	Calcium	mg/kg	49	49	100%	8900	91900	TSB-CJ-03 @ 10	50.5	115	--	--	--	--	--	--	--	82800	1	No	--	--	--	--
	Chromium (Total)	mg/kg	49	49	100%	4.1	17.8	TSB-DR-04 @ 10	1	2.3	100000	max	0	--	--	--	--	16.7	1	No	--	1700000	--	--
	Chromium (VI)	mg/kg	49	1	2%	1.3	1.3	TSB-DR-05 @ 0	1	1	64	C	0	38	0	2	0	0.251	1	Yes	64	3353	--	--
	Cobalt	mg/kg	49	49	100%	3.2	8.2	TSB-CJ-03 @ 10	0.2	0.46	1900	C	0	--	--	--	--	16.3	0	No	1900	15000	--	--
	Copper	mg/kg	49	49	100%	6	27.4	TSB-CJ-03 @ 10	1	2.3	42000	N	0	--	--	--	--	30.5	0	No	--	42000	--	--
	Iron	mg/kg	49	49	100%	5950	15500	TSB-CR-06 @ 10	5.1	11.5	100000	max	0	--	--	--	--	19700	0	No	--	790000	--	--
	Lead	mg/kg	49	49	100%	3.8	29.4	TSB-CR-07 @ 0	0.3	0.69	800	N	0	--	--	--	--	35.1	0	No	--	--	--	--
	Lithium	mg/kg	49	48	98%	8.6	23.6	TSB-CJ-08 @ 10	10.1	26.8	--	--	--	--	--	--	--	26.5	0	No	--	--	--	--
	Magnesium	mg/kg	49	49	100%	4100	14600	TSB-CR-03 @ 10	50.5	115	--	--	--	--	--	--	--	17500	0	No	--	--	--	--
	Manganese	mg/kg	49	49	100%	111	841	TSB-CR-07 @ 0	0.2	0.46	35000	N	0	--	--	--	--	1090	0	No	--	35000	--	--
	Mercury	mg/kg	49	22	45%	0.0081	0.0215	TSB-CR-05 @ 0	0.0336	0.0382	340	N	0	--	--	--	--	0.11	0	No	--	340	--	--
	Molybdenum	mg/kg	49	22	45%	0.38	1.1	TSB-DJ-01 @ 10	0.51	1.2	5700	N	0	--	--	--	--	2	0	No	--	5700	--	--
	Nickel	mg/kg	49	49	100%	6	18.5	TSB-CJ-03 @ 10	0.51	1.2	23000	N	0	130	0	7	48	30	0	No	--	23000	--	--
	Niobium	mg/kg	49	1	2%	4.2	4.2	TSB-DR-06 @ 0	2.5	5.7	--	--	--	--	--	--	--	2.8	1	Yes	--	--	--	--
	Palladium	mg/kg	49	49	100%	0.09	0.9	TSB-CR-04 @ 10	0.1	0.23	--	--	--	--	--	--	--	1.5	0	No	--	--	--	--
	Phosphorus (as P)	mg/kg	49	49	100%	377	1640	TSB-DR-04 @ 0	50.5	115	--	--	--	--	--	--	--	--	--	No	--	--	--	--
	Platinum	mg/kg	49	0	0%	--	--	--	0.1	0.23	--	--	--	--	--	--	--	0.099	--	No	--	--	--	--
	Potassium	mg/kg	49	49	100%	787	4480	TSB-DR-05 @ 0	10.1	22.9	--	--	--	--	--	--	--	3890	2	Yes	--	--	--	--
	Selenium	mg/kg	49	0	0%	--	--	--	0.51	1.2	5700	N	--	5	--	0.3	--	0.6	--	No	--	5700	--	--
	Silicon	mg/kg	49	49	100%	113	511	TSB-CR-07 @ 0	25.2	57.3	--	--	--	--	--	--	--	4150	0	No	--	--	--	--
	Silver	mg/kg	49	49	100%	0.038	0.18	TSB-CR-01 @ 10	0.2	0.46	5700	N	0	34	0	2	0	0.2609	0	No	--	5700	--	--
Metals	Sodium	mg/kg	49	49	100%	186	2300	TSB-CJ-04 @ 10	20.2	45.9	--	--	--	--	--	--	--	1320	6	Yes	--	--	--	--
	Strontium	mg/kg	49	49	100%	50.7	446	TSB-CR-04 @ 10	0.51	1.2	100000	max	0	--	--	--	--	808	0	No	--	680000	--	--
	Sulfur	mg/kg	49	30	61%	431	24800	TSB-CR-04 @ 10	1010	2740	--	--	--	--	--	--	--	--	--	No	--	--	--	--
	Thallium	mg/kg	49	3	6%	0.19	0.45	TSB-DR-04 @ 10	0.2	0.46	80	N	0	--	--	--	--	1.8	0	No	--	80	--	--
	Tin	mg/kg	49	32	65%	0.28	1.2	TSB-CJ-02 @ 10	0.2	0.46	100000	max	0	--	--	--	--	0.8	2	No	--	680000	--	--
	Titanium	mg/kg	49	49	100%	257	719	TSB-DR-05 @ 10	0.51	1.2	100000	max	0	--	--	--	--	1010	0	No	--	4200000	--	--
	Tungsten	mg/kg	49	0	0%	--	--	--	0.51	1.2	--	--	--	--	--	--	--	2.5	--	No	--	--	--	--
	Uranium	mg/kg	49	49	100%	0.39	2.7	TSB-CR-04 @ 10	0.1	0.23	230	N	0	--	--	--	--	2.7	0	Yes	--	230	0.012	--
	Vanadium	mg/kg	49	49	100%	19.1	48.7	TSB-CR-06 @ 10	1	2.3	5700	N	0	6000	0	300	0	59.1	0	No	--	5700	--	--
	Zinc	mg/kg	49	49	100%	14	49.8	TSB-CJ-05 @ 0	2	4.6	100000	max	0	12000	0	620	0	121	0	No	--	340000	--	--
	Zirconium	mg/kg	49	49	100%	8.7	28.2	TSB-DR-05 @ 10	10.1	22.9	--	--	--	--	--	--	--	179	0	No	--	--	--	--
Organochlorine Pesticides	2,4-DDD	mg/kg	49	4	8%	0.0018	0.0066	TSB-CR-07 @ 0	0.0017	0.0019	11	C	0	--	--	--	--	--	--	--	11	--	--	6 E-10
	2,4-DDE	mg/kg	49	8	16%	0.0023	0.085	TSB-CJ-05 @ 0	0.0017	0.018	7.8	C	0	--	--	--	--	--	--	--	7.8	--	--	1 E-8
	4,4-DDD	mg/kg	49	1	2%	0.0019	0.0019	TSB-DR-04 @ 10	0.0017	0.0019	11	C	0	16	0	0.8	0	--	--	--	11	--	--	2 E-10

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCELS C/D INVESTIGATION
CLARK COUNTY, NEVADA
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
Organochlorine Pesticides	4,4-DDE	mg/kg	49	17	35%	0.0018	0.2	TSB-CJ-05 @ 0	0.0017	0.018	7.8	C	0	54	0	3	0	--	--	--	7.8	--	--	3 E-8
	4,4-DDT	mg/kg	49	14	29%	0.0018	0.096	TSB-CJ-05 @ 0	0.0017	0.018	7.8	C	0	32	0	2	0	--	--	--	7.8	470	0.0002	1 E-8
	Aldrin	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	0.11	C	--	0.5	--	0.02	--	--	--	--	0.11	21	--	--
	alpha-BHC	mg/kg	49	5	10%	0.0021	0.046	TSB-CJ-05 @ 0	0.0017	0.0019	0.4	C	0	0.0005	5	0.00003	5	--	--	--	0.4	--	--	1 E-7
	alpha-Chlordane	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	beta-BHC	mg/kg	49	23	47%	0.002	0.18	TSB-CR-07 @ 0	0.0017	0.018	1.4	C	0	0.003	21	0.0001	23	--	--	--	1.4	--	--	1 E-7
	Chlordane	mg/kg	49	0	0%	--	--	--	0.017	0.019	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	delta-BHC	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dieldrin	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	0.12	C	--	0.004	--	0.0002	--	--	--	--	0.12	34	--	--
	Endosulfan I	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	4100	N	--	18	--	0.9	--	--	--	--	--	4100	--	--
	Endosulfan II	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	4100	N	--	18	--	0.9	--	--	--	--	--	4100	--	--
	Endosulfan sulfate	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	210	N	--	1	--	0.05	--	--	--	--	--	210	--	--
	Endrin aldehyde	mg/kg	49	1	2%	0.0029	0.0029	TSB-CR-07 @ 0	0.0017	0.0019	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin ketone	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	gamma-Chlordane	mg/kg	49	1	2%	0.004	0.004	TSB-CR-07 @ 0	0.0017	0.0019	7.2	C	0	10	0	0.5	0	--	--	--	7.2	450	0.0000089	6 E-10
	Heptachlor	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	0.43	C	--	23	--	1	--	--	--	--	0.43	340	--	--
	Heptachlor epoxide	mg/kg	49	0	0%	--	--	--	0.0017	0.0019	0.21	C	--	0.7	--	0.03	--	--	--	--	0.21	8.9	--	--
	Lindane	mg/kg	49	1	2%	0.013	0.013	TSB-CJ-05 @ 0	0.0017	0.0019	1.9	C	0	0.009	1	0.0005	1	--	--	--	1.9	270	0.000048	7 E-9
	Methoxychlor	mg/kg	49	5	10%	0.002	0.0078	TSB-CJ-06 @ 0	0.0033	0.0038	3400	N	0	160	0	8	0	--	--	--	--	3400	0.0000023	--
	Toxaphene	mg/kg	49	0	0%	--	--	--	0.067	0.077	1.7	C	--	31	--	2	--	--	--	--	1.7	--	--	--
Petroleum Hydrocarbons	TPH (as Gasoline)	mg/kg	47	0	0%	--	--	--	0.1	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oil/Grease	mg/kg	49	0	0%	--	--	--	201	229	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	TPH (as Diesel)	mg/kg	49	0	0%	--	--	--	25	29	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radionuclides	Radium-226	pCi/g	49	28	57%	0.844	1.15	TSB-CJ-07 @ 10	0.0476	0.0937	0.0069	C	49	0.32	49	0.016	49	2.36	0	No	0.0069	--	--	--
	Radium-228	pCi/g	49	49	100%	1.23	2.13	TSB-CJ-07 @ 0	0.0958	0.174	0.14	C	49	1.2	49	0.059	49	2.94	0	No	0.14	--	--	--
	Thorium-228	pCi/g	48	48	100%	1.07	2.26	TSB-CR-03 @ 0	0.1	0.1	0.25	C	48	66	0	3.3	0	2.28	0	No	0.25	--	--	--
	Thorium-230	pCi/g	48	48	100%	0.802	2.17	TSB-CR-02 @ 10	0.1	0.1	8.4	C	0	6.1	0	0.3	48	3.01	0	No	8.4	--	--	--
	Thorium-232	pCi/g	48	48	100%	0.92	2.15	TSB-CR-07 @ 0	0.1	0.1	7.4	C	0	6.1	0	0.3	48	2.23	0	No	7.4	--	--	--
	Uranium-233/234	pCi/g	49	49	100%	0.838	2.26	TSB-DR-01 @ 10	1	1	11	C	0	2240	0	112	0	2.84	0	Yes	11	--	--	2 E-7
	Uranium-235/236	pCi/g	49	32	65%	0.0296	0.0782	TSB-CJ-04 @ 0	1	1	0.38	C	0	0.78	0	0.039	23	0.21	0	No	0.38	--	--	--
	Uranium-238	pCi/g	49	49	100%	0.8	1.87	TSB-CR-02 @ 10	1	1	1.6	C	1	0.12	49	0.006	49	2.37	0	No	1.6	--	--	--
SVOCs	1,2,4,5-Tetrachlorobenzene	mg/kg	49	0	0%	--	--	--	0.33	0.38	210	N	--	--	--	--	--	--	--	--	--	210	--	--
	1,2-Diphenylhydrazine	mg/kg	49	0	0%	--	--	--	0.33	0.38	2.4	C	--	--	--	--	--	--	--	--	2.4	--	--	--
	1,4-Dioxane	mg/kg	49	0	0%	--	--	--	0.33	0.38	170	C	--	--	--	--	--	--	--	--	170	--	--	--
	2,2'-/4,4'-Dichlorobenzil	mg/kg	49	0	0%	--	--	--	0.33	0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4,5-Trichlorophenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	68000	N	--	270	--	14	--	--	--	--	--	68000	--	--
	2,4,6-Trichlorophenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	170	C	--	0.2	--	0.008	--	--	--	--	170	680	--	--
	2,4-Dichlorophenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	2100	N	--	1	--	0.05	--	--	--	--	--	2100	--	--
	2,4-Dimethylphenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	14000	N	--	9	--	0.4	--	--	--	--	--	14000	--	--
	2,4-Dinitrophenol	mg/kg	49	0	0%	--	--	--	1.6	1.8	1400	N	--	0.3	--	0.01	--	--	--	--	--	1400	--	--
	2,4-Dinitrotoluene	mg/kg	49	0	0%	--	--	--	0.33	0.38	1400	N	--	0.0008	--	4E-05	--	--	--	--	--	1400	--	--
	2,6-Dinitrotoluene	mg/kg	49	0	0%	--	--	--	0.33	0.38	680	N	--	0.0007	--	0.00003	--	--	--	--	--	680	--	--
	2-Chloronaphthalene	mg/kg	49	0	0%	--	--	--	0.33	0.38	26000	N	--	--	--	--	--	--	--	--	--	26000	--	--
	2-Chlorophenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	240	N	--	4	--	0.2	--	--	--	--	--	240	--	--
	2-Methylnaphthalene	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Nitroaniline	mg/kg	49	0	0%	--	--	--	1.6	1.8	2000	N	--	--	--	--	--	--	--	--	--	2000	--	--
	2-Nitrophenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3,3'-Dichlorobenzidine	mg/kg	49	0	0%	--	--	--	1.6	1.8	4.3	C	--	0.007	--	0.0003	--	--	--	--	4.3	--	--	--
	3-Methylphenol/4-Methylphenol	mg/kg	49	0	0%	--	--	--	0.66	0.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Nitroaniline	mg/kg	49	0	0%	--	--	--	1.6	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Bromophenyl phenyl ether	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chloro-3-Methylphenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorophenyl phenyl ether	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorothioanisole	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Nitrophenol	mg/kg	49	0	0%	--	--	--	1.6	1.8	5500	N	--	--	--	--	--	--	--	--	--	5500	--	--
	Acenaphthene	mg/kg	49	0	0%	--	--	--	0.33	0.38	33000	N	--	570	--	29	--	--	--	--	--	33000	--	--

TABLE 1
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TRONOX PARCELS C/D INVESTIGATION
CLARK COUNTY, NEVADA
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
SVOCs	Acenaphthylene	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acetophenone	mg/kg	49	0	0%	--	--	--	0.33	0.38	1700	sat	--	--	--	--	--	--	--	--	--	25000	--	--
	Aniline	mg/kg	49	0	0%	--	--	--	0.33	0.38	340	C	--	--	--	--	--	--	--	--	340	4800	--	--
	Anthracene	mg/kg	49	0	0%	--	--	--	0.33	0.38	100000	max	--	12000	--	590	--	--	--	--	--	260000	--	--
	Azobenzene	mg/kg	49	0	0%	--	--	--	0.33	0.38	17	C	--	--	--	--	--	--	--	--	17	--	--	--
	Benzenethiol	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzo(a)anthracene	mg/kg	49	0	0%	--	--	--	0.33	0.38	2.3	C	--	2	--	0.08	--	--	--	--	2.3	--	--	--
	Benzo(a)pyrene	mg/kg	49	0	0%	--	--	--	0.33	0.38	0.23	C	--	8	--	0.4	--	--	--	--	0.23	--	--	--
	Benzo(b)fluoranthene	mg/kg	49	0	0%	--	--	--	0.33	0.38	2.3	C	--	5	--	0.2	--	--	--	--	2.3	--	--	--
	Benzo(g,h,i)perylene	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzo(k)fluoranthene	mg/kg	49	0	0%	--	--	--	0.33	0.38	23	C	--	49	--	2	--	--	--	--	23	--	--	--
	Benzoic acid	mg/kg	49	0	0%	--	--	--	1.6	1.8	100000	max	--	400	--	20	--	--	--	--	--	2700000	--	--
	Benzyl alcohol	mg/kg	49	0	0%	--	--	--	0.33	0.38	100000	max	--	--	--	--	--	--	--	--	--	210000	--	--
	Benzyl butyl phthalate	mg/kg	49	0	0%	--	--	--	0.33	0.38	240	sat	--	930	--	810	--	--	--	--	--	140000	--	--
	bis(2-Chloroethoxy) methane	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(2-Chloroethyl) ether	mg/kg	49	0	0%	--	--	--	0.33	0.38	0.62	C	--	0.0004	--	0.00002	--	--	--	--	0.62	--	--	--
	bis(2-Chloroisopropyl) ether	mg/kg	49	0	0%	--	--	--	0.33	0.38	8.1	C	--	--	--	--	--	--	--	--	8.1	4300	--	--
	bis(2-Ethylhexyl) phthalate	mg/kg	49	1	2%	0.04	0.04	TSB-DR-03 @ 0	0.33	0.38	140	C	0	--	--	--	--	--	--	--	140	14000	0.000027	3 E-9
	bis(p-Chlorophenyl) disulfide	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(p-Chlorophenyl) sulfone	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Carbazole	mg/kg	49	0	0%	--	--	--	0.33	0.38	96	C	--	0.6	--	0.03	--	--	--	--	96	--	--	--
	Chrysene	mg/kg	49	0	0%	--	--	--	0.33	0.38	230	C	--	160	--	8	--	--	--	--	230	--	--	--
	Dibenzo(a,h)anthracene	mg/kg	49	0	0%	--	--	--	0.33	0.38	0.23	C	--	2	--	0.08	--	--	--	--	0.23	--	--	--
	Dibenzofuran	mg/kg	49	0	0%	--	--	--	0.33	0.38	1700	N	--	--	--	--	--	--	--	--	--	1700	--	--
	Dibutyl phthalate	mg/kg	49	0	0%	--	--	--	0.33	0.38	68000	N	--	2300	--	270	--	--	--	--	--	68000	--	--
	Diethyl phthalate	mg/kg	49	0	0%	--	--	--	0.33	0.38	100000	max	--	--	--	--	--	--	--	--	--	550000	--	--
	Dimethyl phthalate	mg/kg	49	0	0%	--	--	--	0.33	0.38	100000	max	--	--	--	--	--	--	--	--	--	6800000	--	--
	Di-n-octyl phthalate	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	10000	--	10000	--	--	--	--	--	--	--	--
	Diphenyl sulfone	mg/kg	49	0	0%	--	--	--	0.33	0.38	2100	N	--	--	--	--	--	--	--	--	--	2100	--	--
	Fluoranthene	mg/kg	49	0	0%	--	--	--	0.33	0.38	24000	N	--	4300	--	210	--	--	--	--	--	24000	--	--
	Fluorene	mg/kg	49	0	0%	--	--	--	0.33	0.38	26000	N	--	560	--	28	--	--	--	--	--	26000	--	--
	Hexachloro-1,3-butadiene	mg/kg	49	0	0%	--	--	--	0.33	0.38	25	C	--	2	--	0.1	--	--	--	--	25	680	--	--
	Hexachlorobenzene	mg/kg	49	4	8%	0.035	0.37	TSB-CJ-05 @ 0	0.33	0.38	1.2	C	0	2	0	0.1	2	--	--	--	1.2	550	0.00069	3 E-7
	Hexachlorocyclopentadiene	mg/kg	49	0	0%	--	--	--	1.6	1.8	4100	N	--	400	--	20	--	--	--	--	--	4100	--	--
	Hexachloroethane	mg/kg	49	0	0%	--	--	--	0.33	0.38	140	C	--	0.5	--	0.02	--	--	--	--	140	680	--	--
	Hydroxymethyl phthalimide	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Indeno(1,2,3-cd)pyrene	mg/kg	49	0	0%	--	--	--	0.33	0.38	2.3	C	--	14	--	0.7	--	--	--	--	2.3	--	--	--
	Isophorone	mg/kg	49	0	0%	--	--	--	0.33	0.38	2000	C	--	0.5	--	0.03	--	--	--	--	2000	140000	--	--
	Naphthalene	mg/kg	49	0	0%	--	--	--	0.33	0.38	190	N	--	84	--	4	--	--	--	--	--	190	--	--
	Nitrobenzene	mg/kg	49	0	0%	--	--	--	0.33	0.38	110	N	--	0.1	--	0.007	--	--	--	--	--	110	--	--
	N-nitrosodi-n-propylamine	mg/kg	49	0	0%	--	--	--	0.33	0.38	0.27	C	--	0.00005	--	0.000002	--	--	--	--	0.27	--	--	--
	N-nitrosodiphenylamine	mg/kg	49	0	0%	--	--	--	0.33	0.38	390	C	--	1	--	0.06	--	--	--	--	390	--	--	--
	o-Cresol	mg/kg	49	0	0%	--	--	--	0.33	0.38	34000	N	--	15	--	0.8	--	--	--	--	--	34000	--	--
	Octachlorostyrene	mg/kg	49	2	4%	0.039	0.065	TSB-CJ-05 @ 0	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	p-Chloroaniline	mg/kg	49	0	0%	--	--	--	0.33	0.38	2700	N	--	0.7	--	0.03	--	--	--	--	--	2700	--	--
	p-Chlorothiophenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pentachlorobenzene	mg/kg	49	0	0%	--	--	--	0.33	0.38	550	N	--	--	--	--	--	--	--	--	--	550	--	--
	Pentachlorophenol	mg/kg	49	0	0%	--	--	--	1.6	1.8	10	C	--	0.03	--	0.001	--	--	--	--	10	13000	--	--
	Phenanthrene	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenol	mg/kg	49	0	0%	--	--	--	0.33	0.38	100000	max	--	100	--	5	--	--	--	--	--	210000	--	--
	Phenyl Disulfide	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenyl Sulfide	mg/kg	49	0	0%	--	--	--	0.33	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phthalic acid	mg/kg	49	0	0%	--	--	--	1.6	1.8	100000	max	--	--	--	--	--	--	--	--	--	680000	--	--
	p-Nitroaniline	mg/kg	49	0	0%	--	--	--	1.6	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pyrene	mg/kg	49	0	0%	--	--	--	0.33	0.38	32000	N	--	4200	--	210	--	--	--	--	--	32000	--	--
	Pyridine	mg/kg	49	0	0%	--	--	--	0.66	0.76	680	N	--	--	--	--	--	--	--	--	--	680	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCELS C/D INVESTIGATION
CLARK COUNTY, NEVADA
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
VOCs	1,1,1,2-Tetrachloroethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	7.1	C	--	--	--	--	--	--	--	--	7.1	2000	--	--
	1,1,1-Trichloroethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1400	sat	--	2	--	0.1	--	--	--	--	--	17000	--	--
	1,1,2,2-Tetrachloroethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	0.9	C	--	0.003	--	0.0002	--	--	--	--	0.9	3900	--	--
	1,1,2-Trichloroethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1.9	C	--	0.02	--	0.0009	--	--	--	--	1.9	150	--	--
	1,1-Dichloroethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	2300	sat	--	23	--	1	--	--	--	--	--	2900	--	--
	1,1-Dichloroethylene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	430	N	--	0.06	--	0.003	--	--	--	--	--	430	--	--
	1,1-Dichloropropene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichlorobenzene	mg/kg	49	2	4%	0.00098	0.0017	TSB-CR-01 @ 10	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichloropropane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1.6	C	--	--	--	--	--	--	--	--	1.6	11	--	--
	1,2,4-Trichlorobenzene	mg/kg	49	4	8%	0.0012	0.014	TSB-CR-01 @ 10	0.005	0.0057	240	N	0	5	0	0.3	0	--	--	--	--	240	0.000058	--
	1,2,4-Trimethylbenzene	mg/kg	49	4	8%	0.0021	0.0045	TSB-CR-01 @ 0	0.005	0.0057	200	N	0	--	--	--	--	--	--	--	--	200	0.000029	--
	1,2-Dibromo-3-chloropropane	mg/kg	49	0	0%	--	--	--	0.01	0.011	0.018	C	--	--	--	--	--	--	--	--	0.018	7.5	--	--
	1,2-Dichlorobenzene	mg/kg	49	1	2%	0.00036	0.00036	TSB-CJ-01 @ 10	0.005	0.0057	370	sat	0	17	0	0.9	0	--	--	--	--	410	0.000014	--
	1,2-Dichloroethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	0.77	C	--	0.02	--	0.001	--	--	--	--	0.77	35	--	--
	1,2-Dichloroethylene	mg/kg	49	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2-Dichloropropane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	0.77	C	--	0.03	--	0.001	--	--	--	--	0.77	21	--	--
	1,3,5- Trichlorobenzene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	mg/kg	49	5	10%	0.00029	0.0019	TSB-CR-01 @ 0	0.005	0.0057	70	N	0	--	--	--	--	--	--	--	--	70	0.000081	--
	1,3-Dichlorobenzene	mg/kg	49	3	6%	0.00034	0.0008	TSB-CR-01 @ 0	0.005	0.0057	130	N	0	--	--	--	--	--	--	--	--	130	0.000044	--
	1,3-Dichloropropane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	370	N	--	--	--	--	--	--	--	--	--	370	--	--
	1,4-Dichlorobenzene	mg/kg	49	3	6%	0.00027	0.00051	TSB-CR-01 @ 0	0.005	0.0057	7.5	C	0	2	0	0.1	0	--	--	--	7.5	11000	0.00000052	8 E-10
	1-Nonanal	mg/kg	49	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2,3-Trimethylbutane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dichloropropane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dimethylpentane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,3-Dimethylpentane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4-Dimethylpentane	mg/kg	49	0	0%	--	--	--	0.02	0.023	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Chlorotoluene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	510	sat	--	--	--	--	--	--	--	--	--	570	--	--
	2-Nitropropane	mg/kg	49	0	0%	--	--	--	0.01	0.011	0.34	C	--	--	--	--	--	--	--	--	0.34	6500	--	--
	2-Phenylbutane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	220	sat	--	--	--	--	--	--	--	--	--	420	--	--
	3,3-dimethylpentane	mg/kg	49	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-ethylpentane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Methylhexane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorotoluene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acetone	mg/kg	49	9	18%	0.0066	0.79	TSB-DR-01 @ 0	0.02	0.023	56000	N	0	16	0	0.8	0	--	--	--	--	56000	0.000014	--
	Acetonitrile	mg/kg	49	0	0%	--	--	--	0.05	0.057	2000	N	--	--	--	--	--	--	--	--	--	2000	--	--
	Benzene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1.5	C	--	0.03	--	0.002	--	--	--	--	1.5	120	--	--
	Bromobenzene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	110	N	--	--	--	--	--	--	--	--	--	110	--	--
	Bromodichloromethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	2.4	C	--	0.6	--	0.03	--	--	--	--	2.4	1000	--	--
	Bromomethane	mg/kg	49	0	0%	--	--	--	0.01	0.011	13	N	--	0.2	--	0.01	--	--	--	--	--	13	--	--
	Carbon disulfide	mg/kg	49	0	0%	--	--	--	0.005	0.0057	720	sat	--	32	--	2	--	--	--	--	--	1200	--	--
	Carbon tetrachloride	mg/kg	49	0	0%	--	--	--	0.005	0.0057	0.53	C	--	0.07	--	0.003	--	--	--	--	0.53	790	--	--
	Freon-11	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1300	N	--	--	--	--	--	--	--	--	--	1300	--	--
	Freon-12	mg/kg	49	0	0%	--	--	--	0.01	0.011	310	N	--	--	--	--	--	--	--	--	--	310	--	--
	Freon-113	mg/kg	48	0	0%	--	--	--	0.005	0.0057	5600	sat	--	--	--	--	--	--	--	--	--	69000	--	--
	Chlorobenzene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	460	N	--	1	--	0.07	--	--	--	--	--	460	--	--
	Chlorobromomethane	mg/kg	48	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorodibromomethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	2.4	C	--	0.4	--	0.02	--	--	--	--	2.4	1400	--	--
	Chloroethane	mg/kg	49	0	0%	--	--	--	0.01	0.011	6.5	C	--	--	--	--	--	--	--	--	6.5	19000	--	--
	Chloroform	mg/kg	49	5	10%	0.00056	0.0023	TSB-CJ-01 @ 10	0.005	0.0057	0.52	C	0	0.6	0	0.03	0	--	--	--	0.52	190	0.00003	1 E-8
	Chloromethane	mg/kg	49	0	0%	--	--	--	0.01	0.011	160	N	--	--	--	--	--	--	--	--	--	160	--	--
	cis-1,2-Dichloroethylene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	150	N	--	0.4	--	0.02	--	--	--	--	--	150	--	--
	cis-1,3-Dichloropropylene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1.6	C	--	0.004	--	0.0002	--	--	--	--	1.6	48	--	--
	Cymene	mg/kg	48	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dibromomethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	550	N	--	--	--	--	--	--	--	--	--	550	--	--
	Dichloromethane	mg/kg	48	0	0%	--	--	--	0.005	0.0057	21	C	--	0.02	--	0.001	--	--	--	--	21	9800	--	--
	Ethanol	mg/kg	49	0	0%	--	--	--	0.25	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCELS C/D INVESTIGATION
CLARK COUNTY, NEVADA
(Page 5 of 5)

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
VOCs	Ethylbenzene	mg/kg	49	3	6%	0.00037	0.0022	TSB-CR-01 @ 0	0.005	0.0057	230	sat	0	13	0	0.7	0	--	--	--	--	6000	0.00000095	--
	Hexane, 2-methyl-	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Isopropylbenzene	mg/kg	49	1	2%	0.00029	0.00029	TSB-CR-01 @ 0	0.005	0.0057	520	N	0	--	--	--	--	--	--	--	--	520	0.000011	--
	m,p-Xylene	mg/kg	49	7	14%	0.00087	0.011	TSB-CR-01 @ 0	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl disulfide	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl ethyl ketone	mg/kg	48	1	2%	0.011	0.011	TSB-CJ-06 @ 0	0.02	0.023	34000	sat	0	--	--	--	--	--	--	--	--	130000	0.00000018	--
	Methyl iodide	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl isobutyl ketone	mg/kg	49	0	0%	--	--	--	0.02	0.023	17000	sat	--	--	--	--	--	--	--	--	--	52000	--	--
	Methyl n-butyl ketone	mg/kg	49	0	0%	--	--	--	0.02	0.023	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MTBE (Methyl tert-butyl ether)	mg/kg	49	0	0%	--	--	--	0.005	0.0057	72	C	--	--	--	--	--	--	--	--	72	20000	--	--
	n-Butyl benzene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	240	sat	--	--	--	--	--	--	--	--	--	560	--	--
	n-Heptane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	n-Propyl benzene	mg/kg	49	2	4%	0.001	0.001	TSB-CR-01 @ 0	0.005	0.0057	240	sat	0	--	--	--	--	--	--	--	--	560	0.00001	--
	o-Xylene	mg/kg	49	3	6%	0.00047	0.0041	TSB-CR-01 @ 0	0.005	0.0057	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Styrene (monomer)	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1700	sat	--	4	--	0.2	--	--	--	--	--	20000	--	--
	tert-Butyl benzene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	390	sat	--	--	--	--	--	--	--	--	--	500	--	--
	Tetrachloroethylene	mg/kg	49	2	4%	0.001	0.0027	TSB-CR-01 @ 0	0.005	0.0057	1.7	C	0	0.06	0	0.003	0	--	--	--	1.7	2400	0.0000024	3 E-9
	Toluene	mg/kg	49	2	4%	0.00051	0.00056	TSB-CR-06 @ 0	0.005	0.0057	520	sat	0	12	0	0.6	0	--	--	--	--	22000	0.00000026	--
	trans-1,2-Dichloroethylene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	180	N	--	0.7	--	0.03	--	--	--	--	--	180	--	--
	trans-1,3-Dichloropropylene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1.6	C	--	0.004	--	0.0002	--	--	--	--	1.6	48	--	--
	Tribromomethane	mg/kg	49	0	0%	--	--	--	0.005	0.0057	240	C	--	0.8	--	0.04	--	--	--	--	240	14000	--	--
	Trichloroethylene	mg/kg	49	0	0%	--	--	--	0.005	0.0057	0.092	C	--	0.06	--	0.003	--	--	--	--	0.092	110	--	--
	Vinyl acetate	mg/kg	49	0	0%	--	--	--	0.005	0.0057	1400	N	--	170	--	8	--	--	--	--	--	1400	--	--
	Vinyl chloride	mg/kg	49	0	0%	--	--	--	0.005	0.0057	0.86	C	--	0.01	--	0.0007	--	--	--	--	0.86	150	--	--
	Xylenes (total)	mg/kg	49	5	10%	0.0014	0.015	TSB-CR-01 @ 0	0.01	0.011	210	sat	0	210	0	10	0	--	--	--	--	640	0.000023	--
																						Total Non-Cancer Hazard Index:	0.084	
																						Total Incremental Lifetime Cancer Risk - Non-Radionuclides:		2 E-6
																						Total Incremental Lifetime Cancer Risk - Radionuclides:		2 E-7

a - Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the data set.
b - The quantitation limits shown include samples which had detections. For screening purposes, the detection limit was used for comparison to the screening levels.
c - From USEPA Region 6 Medium-Specific Screening Levels (MSSLs) table, March 2008 (and the 2007 USEPA radionuclide PRG webpage; http://epa-prgs.ornl.gov/radionuclides). Values used are the lower of the indoor and outdoor worker soil MSSLs. Several chemicals have both cancer and non-cancer toxicity criteria. For these chemicals USEPA calculates MSSLs for both cancer and non-cancer endpoints; however only the lower value is published in its MSSL table. The other value is included in a separate spreadsheet table. Both values are shown on separate columns on this table and are included in the screening-level risk assessment calculations.
d - Values used are the maximum from the shallow soils background dataset presented in the Background Shallow Soil Summary Report, BMI Complex and Common Area Vicinity (BRC/TIMET 2007).
e - Based on results of statistical comparison tests performed between shallow background and site datasets (see Table _).
f - Non-cancer hazard indices were calculated by dividing the maximum detected value (or maximum non-detect limit, if higher) by its non-cancer MSSL (lower of indoor/outdoor workers). The total non-cancer hazard index is the sum of all chemical-specific hazard indices.
g - Theoretical upper-bound incremental lifetime cancer risks were calculated by dividing the maximum detected value (or maximum non-detect limit, if higher) by its cancer MSSL (lower of indoor/outdoor workers) times 1E-6. The total incremental lifetime cancer risk is the sum of all chemical-specific cancer risks.
h - Agency for Toxic Substances and Disease Registry (ATSDR) action level of 1.0 parts per billion (ppb).
i - Asbestos results shown are for long protocol structures (>10um).
C = Cancer
N = Non-Cancer
sat = Soil Saturation
max = Region 6 Ceiling Limit
SSL = soil screening level
MSSL = medium-specific screening level

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL F INVESTIGATION
CLARK COUNTY, NEVADA
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
Dioxins/Furans	TCDD TEQ[h]	pg/g	23	9	39%	0.7	80.5	TSB-FJ-03 @ 0	--	--	1000	C	0	--	--	--	--	--	--	--	1000	--	--	8 E-8
Asbestos[i]	Chrysotile	Structures	17	10	59%	1	20	TSB-FJ-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	See Asbestos Risk Calc.
	Amphibole	Structures	17	4	24%	1	4	TSB-HJ-09 @ 0'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
General Chemistry	Bromide	mg/kg	34	4	12%	2	5.1	TSB-FJ-10 @ 10	2.5	2.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Bromine	mg/kg	34	4	12%	3.9	10.2	TSB-FJ-10 @ 10	5	5.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorate	mg/kg	34	22	65%	2	198	TSB-FR-01 @ 10	5	5.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chloride	mg/kg	34	34	100%	0.93	3270	TSB-FJ-02 @ 0	2	216	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorine	mg/kg	34	34	100%	1.9	6540	TSB-FJ-02 @ 0	4	431	100000	max	--	--	--	--	--	1110	9	--	--	--	--	--
	Chlorite	mg/kg	68	0	0%	--	--	--	0.2	4	--	--	--	--	--	--	--	--	--	--	--	110000	0.059	--
	Fluoride	mg/kg	34	14	41%	0.42	2.4	TSB-FJ-09 @ 0	1	1.1	41000	N	0	--	--	--	--	--	--	--	--	--	--	--
	Nitrate (as N)	mg/kg	34	34	100%	0.41	184	TSB-FJ-02 @ 0	0.2	10.3	--	--	--	--	--	--	--	2.5	0	--	--	41000	0.000059	--
	Nitrite (as N)	mg/kg	10	2	20%	0.79	10.5	TSB-FR-01 @ 0	0.2	0.42	--	--	--	--	--	--	--	102	2	--	--	--	--	--
	Orthophosphate as P	mg/kg	34	2	6%	6	6.3	TSB-FR-01 @ 10	5	5.6	--	--	--	--	--	--	--	0.21	2	--	--	--	--	--
	Perchlorate	mg/kg	34	31	91%	0.0198	168	TSB-FJ-06 @ 0	0.0413	20.6	790	N	2	--	--	--	--	--	--	--	--	--	--	--
	Sulfate	mg/kg	34	34	100%	14.8	2270	TSB-FJ-08 @ 0	5	106	--	--	--	--	--	--	--	4130	0	--	--	790	0.21	--
Metals	Aluminum	mg/kg	34	34	100%	4650	11600	TSB-FR-01 @ 0	10.1	11.1	100000	max	0	--	--	--	--	15300	0	No	--	--	--	--
	Antimony	mg/kg	34	34	100%	0.14	0.32	TSB-FJ-06 @ 0	1	1.1	450	N	0	5	0	0.3	2	0.5	0	No	--	1000000	--	--
	Arsenic	mg/kg	34	34	100%	2.4	11.3	TSB-FJ-02 @ 0	2	2.2	1.8	C	34	29	0	1	34	7.2	1	No	1.8	280	--	--
	Barium	mg/kg	34	34	100%	67	859	TSB-FJ-06 @ 0	4	4.5	100000	max	0	1600	0	82	33	836	1	No	--	230000	--	--
	Beryllium	mg/kg	34	34	100%	0.39	0.84	TSB-FR-01 @ 0	0.2	0.22	2200	N	0	63	0	3	0	0.89	0	No	2200	2200	--	--
	Boron	mg/kg	34	9	26%	5.8	13.4	TSB-FJ-06 @ 0	20.2	22.2	100000	max	0	--	--	--	--	11.6	3	Yes	--	230000	0.000097	--
	Cadmium	mg/kg	34	8	24%	0.1	0.25	TSB-FJ-06 @ 0	0.1	0.11	560	N	0	8	0	0.4	0	0.16	2	No	3000	560	--	--
	Calcium	mg/kg	34	34	100%	4160	97000	TSB-FR-02 @ 10	101	111	--	--	--	--	--	--	--	82800	1	No	--	--	--	--
	Chromium (Total)	mg/kg	34	34	100%	5.2	19	TSB-FR-01 @ 0	2	2.2	100000	max	0	--	--	--	--	16.7	2	Yes	--	1700000	0.000011	--
	Chromium (VI)	mg/kg	34	0	0%	--	--	--	1	20	64	C	--	38	--	2	--	0.251	--	No	64	3353	--	--
	Cobalt	mg/kg	34	34	100%	4.7	11.2	TSB-FR-01 @ 0	0.4	0.45	1900	C	0	--	--	--	--	16.3	0	No	1900	15000	--	--
	Copper	mg/kg	34	34	100%	10.4	25.1	TSB-FJ-06 @ 0	2	2.2	42000	N	0	--	--	--	--	30.5	0	No	--	42000	--	--
	Iron	mg/kg	34	34	100%	8620	22300	TSB-FR-01 @ 0	10.1	11.1	100000	max	0	--	--	--	--	19700	1	No	--	790000	--	--
	Lead	mg/kg	34	34	100%	5.1	39.8	TSB-FJ-06 @ 0	0.61	0.67	800	N	0	--	--	--	--	35.1	2	No	--	--	--	--
	Lithium	mg/kg	34	32	94%	5.7	22.7	TSB-FJ-01 @ 10	10.1	55.1	--	--	--	--	--	--	--	26.5	0	No	--	--	--	--
	Magnesium	mg/kg	34	34	100%	5910	12600	TSB-FJ-01 @ 10	101	111	--	--	--	--	--	--	--	17500	0	No	--	--	--	--
	Manganese	mg/kg	34	34	100%	154	775	TSB-FJ-06 @ 0	0.4	0.45	35000	N	0	--	--	--	--	1090	0	No	--	35000	--	--
	Mercury	mg/kg	34	10	29%	0.0088	0.0413	TSB-FJ-06 @ 0	0.0336	0.0371	340	N	0	--	--	--	--	0.11	0	No	--	340	--	--
	Molybdenum	mg/kg	34	18	53%	0.29	1.1	TSB-FJ-06 @ 0	1	1.1	5700	N	0	--	--	--	--	2	0	No	--	5700	--	--
	Nickel	mg/kg	34	34	100%	8.1	22.6	TSB-FR-01 @ 0	1	1.1	23000	N	0	130	0	7	34	30	0	No	--	23000	--	--
	Niobium	mg/kg	34	2	6%	9	9.9	TSB-FR-01 @ 0	5	5.6	--	--	--	--	--	--	--	2.8	2	Yes	--	--	--	--
	Palladium	mg/kg	34	34	100%	0.17	0.66	TSB-FR-01 @ 10	0.2	0.22	--	--	--	--	--	--	--	1.5	0	No	--	--	--	--
	Phosphorus (as P)	mg/kg	34	34	100%	648	1440	TSB-FR-01 @ 0	101	111	--	--	--	--	--	--	--	--	--	No	--	--	--	--
	Platinum	mg/kg	34	5	15%	0.021	0.15	TSB-FJ-06 @ 0	0.2	0.22	--	--	--	--	--	--	--	0.099	2	Yes	--	--	--	--
	Potassium	mg/kg	34	34	100%	1190	3930	TSB-FR-01 @ 0	20.2	22.2	--	--	--	--	--	--	--	3890	1	No	--	--	--	--
	Selenium	mg/kg	34	0	0%	--	--	--	1	1.1	5700	N	--	5	--	0.3	--	0.6	--	No	--	5700	--	--
	Silicon	mg/kg	34	34	100%	92.8	426	TSB-FJ-06 @ 0	50.4	55.6	--	--	--	--	--	--	--	4150	0	No	--	--	--	--
	Silver	mg/kg	34	34	100%	0.052	0.21	TSB-FR-01 @ 0	0.4	0.45	5700	N	0	34	0	2	0	0.2609	0	No	--	5700	--	--
Metals	Sodium	mg/kg	34	34	100%	169	2910	TSB-FJ-02 @ 0	40.3	44.5	--	--	--	--	--	--	--	1320	4	Yes	--	--	--	--
	Strontium	mg/kg	34	34	100%	117	353	TSB-FR-01 @ 10	1	1.1	100000	max	0	--	--	--	--	808	0	No	--	680000	--	--
	Sulfur	mg/kg	34	17	50%	458	919	TSB-FJ-06 @ 0	1010	1110	--	--	--	--	--	--	--	--	--	No	--	--	--	--
	Thallium	mg/kg	34	0	0%	--	--	--	0.4	0.45	80	N	--	--	--	--	--	1.8	--	No	--	80	--	--
	Tin	mg/kg	34	31	91%	0.43	1.1	TSB-FJ-06 @ 0	0.4	0.45	100000	max	0	--	--	--	--	0.8	3	Yes	--	680000	0.0000016	--
	Titanium	mg/kg	34	34	100%	343	1010	TSB-FR-01 @ 0	1	1.1	100000	max	0	--	--	--	--	1010	0	No	--	4200000	--	--
	Tungsten	mg/kg	34	2	6%	1.1	1.2	TSB-FR-01 @ 0	1	1.1	--	--	--	--	--	--	--	2.5	0	No	--	--	--	--
	Uranium	mg/kg	34	34	100%	0.58	3.2	TSB-FR-01 @ 10	0.2	0.22	230	N	0	--	--	--	--	2.7	1	No	--	230	--	--
	Vanadium	mg/kg	34	34	100%	27.4	65.8	TSB-FR-01 @ 0	2	2.2	5700	N	0	6000	0	300	0	59.1	1	Yes	--	5700	0.012	--
	Zinc	mg/kg	34	34	100%	23.6	67.1	TSB-FJ-06 @ 0	4	4.5	100000	max	0	12000	0	620	0	121	0	No	--	340000	--	--
	Zirconium	mg/kg	34	23	68%	14.4	35.7	TSB-FR-01 @ 0	20.2	22.2	--	--	--	--	--	--	--	179	0	No	--	--	--	--
Organochlorine Pesticides	2,4-DDD	mg/kg	34	0	0%	--	--	--	0.0017	0.018	11	C	--	--	--	--	--	--	--	--	11	--	--	--
	2,4-DDE	mg/kg	34	2	6%	0.0019	0.0079	TSB-FJ-08 @ 0	0.0017	0.018	7.8	C	0	--	--	--	--	--	--	--	7.8	--	--	2 E-9
	4,4-DDD	mg/kg	34	0	0%	--	--	--	0.0017	0.018	11	C	--	16	--	0.8	--	--	--	--	11	--	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL F INVESTIGATION
CLARK COUNTY, NEVADA
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
Organochlorine Pesticides	4,4-DDE	mg/kg	34	7	21%	0.0019	0.073	TSB-FR-02 @ 0	0.0017	0.018	7.8	C	0	54	0	3	0	--	--	--	7.8	--	--	9 E-9
	4,4-DDT	mg/kg	34	5	15%	0.0019	0.089	TSB-FR-02 @ 0	0.0017	0.018	7.8	C	0	32	0	2	0	--	--	--	7.8	470	0.00019	1 E-8
	Aldrin	mg/kg	34	0	0%	--	--	--	0.0017	0.018	0.11	C	--	0.5	--	0.02	--	--	--	--	0.11	21	--	--
	alpha-BHC	mg/kg	34	4	12%	0.0021	0.059	TSB-FR-02 @ 0	0.0017	0.018	0.4	C	0	0.0005	4	0.00003	4	--	--	--	0.4	--	--	1 E-7
	alpha-Chlordane	mg/kg	34	0	0%	--	--	--	0.0017	0.018	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	beta-BHC	mg/kg	34	12	35%	0.0018	0.14	TSB-FR-02 @ 0	0.0017	0.018	1.4	C	0	0.003	9	1E-04	12	--	--	--	1.4	--	--	1 E-7
	Chlordane	mg/kg	34	0	0%	--	--	--	0.017	0.18	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	delta-BHC	mg/kg	34	0	0%	--	--	--	0.0017	0.018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dieldrin	mg/kg	34	0	0%	--	--	--	0.0017	0.018	0.12	C	--	0.004	--	0.0002	--	--	--	--	0.12	34	--	--
	Endosulfan I	mg/kg	34	0	0%	--	--	--	0.0017	0.018	4100	N	--	18	--	0.9	--	--	--	--	--	4100	--	--
	Endosulfan II	mg/kg	34	0	0%	--	--	--	0.0017	0.018	4100	N	--	18	--	0.9	--	--	--	--	--	4100	--	--
	Endosulfan sulfate	mg/kg	34	0	0%	--	--	--	0.0017	0.018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin	mg/kg	34	0	0%	--	--	--	0.0017	0.018	210	N	--	1	--	0.05	--	--	--	--	--	210	--	--
	Endrin aldehyde	mg/kg	34	1	3%	0.02	0.02	TSB-FJ-06 @ 0	0.0017	0.018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin ketone	mg/kg	34	0	0%	--	--	--	0.0017	0.018	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	gamma-Chlordane	mg/kg	34	0	0%	--	--	--	0.0017	0.018	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	Heptachlor	mg/kg	34	0	0%	--	--	--	0.0017	0.018	0.43	C	--	23	--	1	--	--	--	--	0.43	340	--	--
	Heptachlor epoxide	mg/kg	34	0	0%	--	--	--	0.0017	0.018	0.21	C	--	0.7	--	0.03	--	--	--	--	0.21	8.9	--	--
	Lindane	mg/kg	34	0	0%	--	--	--	0.0017	0.018	1.9	C	--	0.009	--	0.0005	--	--	--	--	1.9	270	--	--
	Methoxychlor	mg/kg	34	0	0%	--	--	--	0.0033	0.034	3400	N	--	160	--	8	--	--	--	--	--	3400	--	--
	Toxaphene	mg/kg	34	0	0%	--	--	--	0.068	0.69	1.7	C	--	31	--	2	--	--	--	--	1.7	--	--	--
Petroleum Hydrocarbons	TPH (as Gasoline)	mg/kg	32	1	3%	0.29	0.29	TSB-FJ-10 @ 0	0.1	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oil/Grease	mg/kg	34	0	0%	--	--	--	202	222	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	TPH (as Diesel)	mg/kg	34	3	9%	66	5500	TSB-FR-04 @ 0	25	1100	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radionuclides	Radium-226	pCi/g	34	25	74%	0.798	1.12	TSB-FJ-04 @ 10	0.0564	0.0943	0.0069	C	34	0.32	34	0.016	34	2.36	0	No	0.0069	--	--	--
	Radium-228	pCi/g	34	33	97%	1.48	2.02	TSB-FR-04 @ 0	0.11	0.177	0.14	C	34	1.2	33	0.059	34	2.94	0	No	0.14	--	--	--
	Thorium-228	pCi/g	34	34	100%	1.21	2.12	TSB-FJ-01 @ 0	0.1	0.1	0.25	C	34	66	0	3.3	0	2.28	0	No	0.25	--	--	--
	Thorium-230	pCi/g	34	34	100%	0.792	1.67	TSB-FR-01 @ 10	0.1	0.1	8.4	C	0	6.1	0	0.3	34	3.01	0	No	8.4	--	--	--
	Thorium-232	pCi/g	34	34	100%	1.15	1.92	TSB-FJ-02 @ 0	0.1	0.1	7.4	C	0	6.1	0	0.3	34	2.23	0	No	7.4	--	--	--
	Uranium-233/234	pCi/g	31	31	100%	0.725	2.56	TSB-FJ-06 @ 10	1	1	11	C	0	2240	0	112	0	2.84	0	No	11	--	--	--
	Uranium-235/236	pCi/g	31	21	68%	0.0318	0.0787	TSB-FJ-06 @ 10	1	1	0.38	C	0	0.78	0	0.039	14	0.21	0	No	0.38	--	--	--
	Uranium-238	pCi/g	31	31	100%	0.643	1.77	TSB-FJ-06 @ 10	1	1	1.6	C	0	0.12	31	0.006	31	2.37	0	No	1.6	--	--	--
SVOCs	1,2,4,5-Tetrachlorobenzene	mg/kg	34	0	0%	--	--	--	0.33	0.37	210	N	--	--	--	--	--	--	--	--	--	210	--	--
	1,2-Diphenylhydrazine	mg/kg	34	0	0%	--	--	--	0.33	0.37	2.4	C	--	--	--	--	--	--	--	--	2.4	--	--	--
	1,4-Dioxane	mg/kg	34	0	0%	--	--	--	0.33	0.37	170	C	--	--	--	--	--	--	--	--	170	--	--	--
	2,2'-/4,4'-Dichlorobenzil	mg/kg	34	0	0%	--	--	--	0.33	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4,5-Trichlorophenol	mg/kg	34	0	0%	--	--	--	0.33	0.37	68000	N	--	270	--	14	--	--	--	--	--	68000	--	--
	2,4,6-Trichlorophenol	mg/kg	34	0	0%	--	--	--	0.33	0.37	170	C	--	0.2	--	0.008	--	--	--	--	170	680	--	--
	2,4-Dichlorophenol	mg/kg	34	0	0%	--	--	--	0.33	0.37	2100	N	--	1	--	0.05	--	--	--	--	--	2100	--	--
	2,4-Dimethylphenol	mg/kg	34	0	0%	--	--	--	0.33	0.37	14000	N	--	9	--	0.4	--	--	--	--	--	14000	--	--
	2,4-Dinitrophenol	mg/kg	34	0	0%	--	--	--	1.6	1.8	1400	N	--	0.3	--	0.01	--	--	--	--	--	1400	--	--
	2,4-Dinitrotoluene	mg/kg	34	0	0%	--	--	--	0.33	0.37	1400	N	--	0.0008	--	0.00004	--	--	--	--	--	1400	--	--
	2,6-Dinitrotoluene	mg/kg	34	0	0%	--	--	--	0.33	0.37	680	N	--	0.0007	--	0.00003	--	--	--	--	--	680	--	--
	2-Chloronaphthalene	mg/kg	34	0	0%	--	--	--	0.33	0.37	26000	N	--	--	--	--	--	--	--	--	--	26000	--	--
	2-Chlorophenol	mg/kg	34	0	0%	--	--	--	0.33	0.37	240	N	--	4	--	0.2	--	--	--	--	--	240	--	--
	2-Methylnaphthalene	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Nitroaniline	mg/kg	34	0	0%	--	--	--	1.6	1.8	2000	N	--	--	--	--	--	--	--	--	--	2000	--	--
	2-Nitrophenol	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3,3'-Dichlorobenzidine	mg/kg	34	0	0%	--	--	--	1.6	1.8	4.3	C	--	0.007	--	0.0003	--	--	--	--	4.3	--	--	--
	3-Methylphenol/4-Methylphenol	mg/kg	34	0	0%	--	--	--	0.67	0.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Nitroaniline	mg/kg	34	0	0%	--	--	--	1.6	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Bromophenyl phenyl ether	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chloro-3-Methylphenol	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorophenyl phenyl ether	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorothioanisole	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Nitrophenol	mg/kg	34	0	0%	--	--	--	1.6	1.8	5500	N	--	--	--	--	--	--	--	--	--	5500	--	--
	Acenaphthene	mg/kg	34	0	0%	--	--	--	0.33	0.37	33000	N	--	570	--	29	--	--	--	--	--	33000	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL F INVESTIGATION
CLARK COUNTY, NEVADA
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
SVOCs	Acenaphthylene	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acetophenone	mg/kg	34	2	6%	0.046	0.062	TSB-FJ-06 @ 0	0.33	0.37	1700	sat	--	--	--	--	--	--	--	--	--	25000	0.000015	--
	Aniline	mg/kg	34	0	0%	--	--	--	0.33	0.37	340	C	--	--	--	--	--	--	--	--	340	4800	--	--
	Anthracene	mg/kg	34	1	3%	0.041	0.041	TSB-FR-02 @ 0	0.33	0.37	100000	max	0	12000	0	590	0	--	--	--	--	260000	0.0000014	--
	Azobenzene	mg/kg	34	0	0%	--	--	--	0.33	0.37	17	C	--	--	--	--	--	--	--	--	17	--	--	--
	Benzenethiol	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzo(a)anthracene	mg/kg	34	2	6%	0.096	0.83	TSB-FR-02 @ 0	0.33	0.37	2.3	C	0	2	0	0.08	2	--	--	--	2.3	--	--	4 E-7
	Benzo(a)pyrene	mg/kg	34	1	3%	0.85	0.85	TSB-FR-02 @ 0	0.33	0.37	0.23	C	1	8	0	0.4	1	--	--	--	0.23	--	--	4 E-6
	Benzo(b)fluoranthene	mg/kg	34	1	3%	3.3	3.3	TSB-FR-02 @ 0	0.33	0.37	2.3	C	1	5	0	0.2	1	--	--	--	2.3	--	--	1 E-6
	Benzo(g,h,i)perylene	mg/kg	34	1	3%	1.9	1.9	TSB-FR-02 @ 0	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzo(k)fluoranthene	mg/kg	34	1	3%	2.9	2.9	TSB-FR-02 @ 0	0.33	0.37	23	C	0	49	0	2	1	--	--	--	23	--	--	1 E-7
	Benzoic acid	mg/kg	34	2	6%	0.23	0.32	TSB-FR-02 @ 0	1.6	1.8	100000	max	0	400	0	20	0	--	--	--	--	2700000	0.00000067	--
	Benzyl alcohol	mg/kg	34	1	3%	0.34	0.34	TSB-FJ-06 @ 0	0.33	0.37	100000	max	0	--	--	--	--	--	--	--	--	210000	0.0000018	--
	Benzyl butyl phthalate	mg/kg	34	0	0%	--	--	--	0.33	0.37	240	sat	--	930	--	810	--	--	--	--	--	140000	--	--
	bis(2-Chloroethoxy) methane	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(2-Chloroethyl) ether	mg/kg	34	0	0%	--	--	--	0.33	0.37	0.62	C	--	0.0004	--	0.00002	--	--	--	--	0.62	--	--	--
	bis(2-Chloroisopropyl) ether	mg/kg	34	0	0%	--	--	--	0.33	0.37	8.1	C	--	--	--	--	--	--	--	--	8.1	4300	--	--
	bis(2-Ethylhexyl) phthalate	mg/kg	34	3	9%	0.048	1.4	TSB-FJ-09 @ 0	0.33	0.37	140	C	0	--	--	--	--	--	--	--	140	14000	0.0001	1 E-8
	bis(p-Chlorophenyl) disulfide	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(p-Chlorophenyl) sulfone	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Carbazole	mg/kg	34	1	3%	0.068	0.068	TSB-FR-02 @ 0	0.33	0.37	96	C	0	0.6	0	0.03	1	--	--	--	96	--	--	4 E-9
	Chrysene	mg/kg	34	4	12%	0.043	2.1	TSB-FR-02 @ 0	0.33	0.37	230	C	0	160	0	8	0	--	--	--	230	--	--	9 E-9
	Dibenzo(a,h)anthracene	mg/kg	34	1	3%	0.57	0.57	TSB-FR-02 @ 0	0.33	0.37	0.23	C	1	2	0	0.08	1	--	--	--	0.23	--	--	2 E-6
	Dibenzofuran	mg/kg	34	0	0%	--	--	--	0.33	0.37	1700	N	--	--	--	--	--	--	--	--	--	1700	--	--
	Dibutyl phthalate	mg/kg	34	3	9%	0.047	4.7	TSB-FJ-06 @ 0	0.33	0.37	68000	N	0	2300	0	270	0	--	--	--	--	68000	0.000069	--
	Diethyl phthalate	mg/kg	34	0	0%	--	--	--	0.33	0.37	100000	max	--	--	--	--	--	--	--	--	--	550000	--	--
	Dimethyl phthalate	mg/kg	34	0	0%	--	--	--	0.33	0.37	100000	max	--	--	--	--	--	--	--	--	--	6800000	--	--
	Di-n-octyl phthalate	mg/kg	34	2	6%	0.21	0.28	TSB-FJ-06 @ 0	0.33	0.37	--	--	0	10000	0	10000	0	--	--	--	--	--	--	--
	Diphenyl sulfone	mg/kg	34	0	0%	--	--	--	0.33	0.37	2100	N	--	--	--	--	--	--	--	--	--	2100	--	--
	Fluoranthene	mg/kg	34	4	12%	0.041	2.8	TSB-FR-02 @ 0	0.33	0.37	24000	N	0	4300	0	210	0	--	--	--	--	24000	0.00012	--
	Fluorene	mg/kg	34	0	0%	--	--	--	0.33	0.37	26000	N	--	560	--	28	--	--	--	--	--	26000	--	--
	Hexachloro-1,3-butadiene	mg/kg	34	0	0%	--	--	--	0.33	0.37	25	C	--	2	--	0.1	--	--	--	--	25	680	--	--
	Hexachlorobenzene	mg/kg	34	0	0%	--	--	--	0.33	0.37	1.2	C	--	2	--	0.1	--	--	--	--	1.2	550	--	--
	Hexachlorocyclopentadiene	mg/kg	34	0	0%	--	--	--	1.6	1.8	4100	N	--	400	--	20	--	--	--	--	--	4100	--	--
	Hexachloroethane	mg/kg	34	0	0%	--	--	--	0.33	0.37	140	C	--	0.5	--	0.02	--	--	--	--	140	680	--	--
	Hydroxymethyl phthalimide	mg/kg	34	1	3%	0.12	0.12	TSB-FJ-06 @ 0	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Indeno(1,2,3-cd)pyrene	mg/kg	34	1	3%	1.9	1.9	TSB-FR-02 @ 0	0.33	0.37	2.3	C	0	14	0	0.7	1	--	--	--	2.3	--	--	8 E-7
	Isophorone	mg/kg	34	0	0%	--	--	--	0.33	0.37	2000	C	--	0.5	--	0.03	--	--	--	--	2000	140000	--	--
	Naphthalene	mg/kg	34	1	3%	0.04	0.04	TSB-FR-02 @ 0	0.33	0.37	190	N	0	84	0	4	0	--	--	--	--	190	0.0019	--
	Nitrobenzene	mg/kg	34	0	0%	--	--	--	0.33	0.37	110	N	--	0.1	--	0.007	--	--	--	--	--	110	--	--
	N-nitrosodi-n-propylamine	mg/kg	34	0	0%	--	--	--	0.33	0.37	0.27	C	--	0.00005	--	0.000002	--	--	--	--	0.27	--	--	--
	N-nitrosodiphenylamine	mg/kg	34	0	0%	--	--	--	0.33	0.37	390	C	--	1	--	0.06	--	--	--	--	390	--	--	--
	o-Cresol	mg/kg	34	0	0%	--	--	--	0.33	0.37	34000	N	--	15	--	0.8	--	--	--	--	--	34000	--	--
	Octachlorostyrene	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	p-Chloroaniline	mg/kg	34	0	0%	--	--	--	0.33	0.37	2700	N	--	0.7	--	0.03	--	--	--	--	--	2700	--	--
	p-Chlorothiophenol	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pentachlorobenzene	mg/kg	34	0	0%	--	--	--	0.33	0.37	550	N	--	--	--	--	--	--	--	--	--	550	--	--
	Pentachlorophenol	mg/kg	34	0	0%	--	--	--	1.6	1.8	10	C	--	0.03	--	0.001	--	--	--	--	10	13000	--	--
	Phenanthrene	mg/kg	34	3	9%	0.095	1.1	TSB-FR-02 @ 0	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenol	mg/kg	34	1	3%	0.44	0.44	TSB-FJ-06 @ 0	0.33	0.37	100000	max	0	100	0	5	0	--	--	--	--	210000	0.0000021	--
	Phenyl Disulfide	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenyl Sulfide	mg/kg	34	0	0%	--	--	--	0.33	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phthalic acid	mg/kg	34	0	0%	--	--	--	1.6	1.8	100000	max	--	--	--	--	--	--	--	--	--	680000	--	--
	p-Nitroaniline	mg/kg	34	0	0%	--	--	--	1.6	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pyrene	mg/kg	34	3	9%	0.04	1.9	TSB-FR-02 @ 0	0.33	0.37	32000	N	0	4200	0	210	0	--	--	--	--	32000	0.000059	--
	Pyridine	mg/kg	34	0	0%	--	--	--	0.67	0.73	680	N	--	--	--	--	--	--	--	--	--	680	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL F INVESTIGATION
CLARK COUNTY, NEVADA
(Page 4 of 5)

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
VOCs	1,1,1,2-Tetrachloroethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	7.1	C	--	--	--	--	--	--	--	--	7.1	2000	--	--
	1,1,1-Trichloroethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1400	sat	--	2	--	0.1	--	--	--	--	--	17000	--	--
	1,1,2,2-Tetrachloroethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	0.9	C	--	0.003	--	0.0002	--	--	--	--	0.9	3900	--	--
	1,1,2-Trichloroethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1.9	C	--	0.02	--	0.0009	--	--	--	--	1.9	150	--	--
	1,1-Dichloroethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	2300	sat	--	23	--	1	--	--	--	--	--	2900	--	--
	1,1-Dichloroethylene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	430	N	--	0.06	--	0.003	--	--	--	--	--	430	--	--
	1,1-Dichloropropene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichlorobenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichloropropane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1.6	C	--	--	--	--	--	--	--	--	1.6	11	--	--
	1,2,4-Trichlorobenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	240	N	--	5	--	0.3	--	--	--	--	--	240	--	--
	1,2,4-Trimethylbenzene	mg/kg	34	6	18%	0.00041	0.0086	TSB-FJ-10 @ 0	0.005	0.0056	200	N	0	--	--	--	--	--	--	--	--	200	0.000043	--
	1,2-Dibromo-3-chloropropane	mg/kg	34	0	0%	--	--	--	0.01	0.011	0.018	C	--	--	--	--	--	--	--	--	0.018	7.5	--	--
	1,2-Dichlorobenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	370	sat	--	17	--	0.9	--	--	--	--	--	410	--	--
	1,2-Dichloroethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	0.77	C	--	0.02	--	0.001	--	--	--	--	0.77	35	--	--
	1,2-Dichloroethylene	mg/kg	34	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2-Dichloropropane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	0.77	C	--	0.03	--	0.001	--	--	--	--	0.77	21	--	--
	1,3,5- Trichlorobenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	mg/kg	34	3	9%	0.00061	0.0038	TSB-FJ-10 @ 0	0.005	0.0056	70	N	0	--	--	--	--	--	--	--	--	70	0.00008	--
	1,3-Dichlorobenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	130	N	--	--	--	--	--	--	--	--	--	130	--	--
	1,3-Dichloropropane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	370	N	--	--	--	--	--	--	--	--	--	370	--	--
	1,4-Dichlorobenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	7.5	C	--	2	--	0.1	--	--	--	--	7.5	11000	--	--
	1-Nonanal	mg/kg	34	1	3%	0.0033	0.0033	TSB-FJ-07 @ 0	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2,3-Trimethylbutane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dichloropropane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dimethylpentane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,3-Dimethylpentane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4-Dimethylpentane	mg/kg	34	0	0%	--	--	--	0.02	0.022	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Chlorotoluene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	510	sat	--	--	--	--	--	--	--	--	--	570	--	--
	2-Nitropropane	mg/kg	34	0	0%	--	--	--	0.01	0.011	0.34	C	--	--	--	--	--	--	--	--	0.34	6500	--	--
	2-Phenylbutane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	220	sat	--	--	--	--	--	--	--	--	--	420	--	--
	3,3-dimethylpentane	mg/kg	34	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-ethylpentane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Methylhexane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorotoluene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acetone	mg/kg	34	9	26%	0.0056	1.9	TSB-FJ-10 @ 0	0.02	0.022	56000	N	0	16	0	0.8	1	--	--	--	--	56000	0.000034	--
	Acetonitrile	mg/kg	34	0	0%	--	--	--	0.05	0.056	2000	N	--	--	--	--	--	--	--	--	--	2000	--	--
	Benzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1.5	C	--	0.03	--	0.002	--	--	--	--	1.5	120	--	--
	Bromobenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	110	N	--	--	--	--	--	--	--	--	--	110	--	--
	Bromodichloromethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	2.4	C	--	0.6	--	0.03	--	--	--	--	2.4	1000	--	--
	Bromomethane	mg/kg	34	0	0%	--	--	--	0.01	0.011	13	N	--	0.2	--	0.01	--	--	--	--	--	13	--	--
	Carbon disulfide	mg/kg	34	0	0%	--	--	--	0.005	0.0056	720	sat	--	32	--	2	--	--	--	--	--	1200	--	--
	Carbon tetrachloride	mg/kg	34	0	0%	--	--	--	0.005	0.0056	0.53	C	--	0.07	--	0.003	--	--	--	--	0.53	790	--	--
	Freon-11	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1300	N	--	--	--	--	--	--	--	--	--	1300	--	--
	Freon-12	mg/kg	34	0	0%	--	--	--	0.01	0.011	310	N	--	--	--	--	--	--	--	--	--	310	--	--
	Freon-113	mg/kg	34	0	0%	--	--	--	0.005	0.0056	5600	sat	--	--	--	--	--	--	--	--	--	69000	--	--
	Chlorobenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	460	N	--	1	--	0.07	--	--	--	--	--	460	--	--
	Chlorobromomethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorodibromomethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	2.4	C	--	0.4	--	0.02	--	--	--	--	2.4	1400	--	--
	Chloroethane	mg/kg	34	0	0%	--	--	--	0.01	0.011	6.5	C	--	--	--	--	--	--	--	--	6.5	19000	--	--
	Chloroform	mg/kg	34	0	0%	--	--	--	0.005	0.0056	0.52	C	--	0.6	--	0.03	--	--	--	--	0.52	190	--	--
	Chloromethane	mg/kg	34	0	0%	--	--	--	0.01	0.011	160	N	--	--	--	--	--	--	--	--	--	160	--	--
	cis-1,2-Dichloroethylene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	150	N	--	0.4	--	0.02	--	--	--	--	--	150	--	--
	cis-1,3-Dichloropropylene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1.6	C	--	0.004	--	0.0002	--	--	--	--	1.6	48	--	--
	Cymene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dibromomethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	550	N	--	--	--	--	--	--	--	--	--	550	--	--
	Dichloromethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	21	C	--	0.02	--	0.001	--	--	--	--	21	9800	--	--
	Ethanol	mg/kg	34	0	0%	--	--	--	0.25	0.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL F INVESTIGATION
CLARK COUNTY, NEVADA
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
VOCs	Ethylbenzene	mg/kg	34	2	6%	0.00041	0.00048	TSB-FJ-10 @ 0	0.005	0.0056	230	sat	0	13	0	0.7	0	--	--	--	--	6000	0.00000093	--
	Hexane, 2-methyl-	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Isopropylbenzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	520	N	--	--	--	--	--	--	--	--	--	520	--	--
	m,p-Xylene	mg/kg	34	3	9%	0.0012	0.0026	TSB-FJ-10 @ 0	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl disulfide	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl ethyl ketone	mg/kg	34	3	9%	0.0045	0.013	TSB-FJ-10 @ 0	0.02	0.022	34000	sat	0	--	--	--	--	--	--	--	--	130000	0.00000017	--
	Methyl iodide	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl isobutyl ketone	mg/kg	34	0	0%	--	--	--	0.02	0.022	17000	sat	--	--	--	--	--	--	--	--	--	52000	--	--
	Methyl n-butyl ketone	mg/kg	34	2	6%	0.0022	0.0071	TSB-FJ-06 @ 0	0.02	0.022	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MTBE (Methyl tert-butyl ether)	mg/kg	34	0	0%	--	--	--	0.005	0.0056	72	C	--	--	--	--	--	--	--	--	72	20000	--	--
	n-Butyl benzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	240	sat	--	--	--	--	--	--	--	--	--	560	--	--
	n-Heptane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	n-Propyl benzene	mg/kg	34	1	3%	0.0014	0.0014	TSB-FJ-10 @ 0	0.005	0.0056	240	sat	0	--	--	--	--	--	--	--	--	560	0.00001	--
	o-Xylene	mg/kg	34	2	6%	0.00083	0.00083	TSB-FJ-06 @ 0	0.005	0.0056	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Styrene (monomer)	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1700	sat	--	4	--	0.2	--	--	--	--	--	20000	--	--
	tert-Butyl benzene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	390	sat	--	--	--	--	--	--	--	--	--	500	--	--
	Tetrachloroethylene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1.7	C	--	0.06	--	0.003	--	--	--	--	1.7	2400	--	--
	Toluene	mg/kg	34	1	3%	0.00047	0.00047	TSB-FJ-06 @ 0	0.005	0.0056	520	sat	0	12	0	0.6	0	--	--	--	--	22000	0.00000025	--
	trans-1,2-Dichloroethylene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	180	N	--	0.7	--	0.03	--	--	--	--	--	180	--	--
	trans-1,3-Dichloropropylene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1.6	C	--	0.004	--	0.0002	--	--	--	--	1.6	48	--	--
	Tribromomethane	mg/kg	34	0	0%	--	--	--	0.005	0.0056	240	C	--	0.8	--	0.04	--	--	--	--	240	14000	--	--
	Trichloroethylene	mg/kg	34	0	0%	--	--	--	0.005	0.0056	0.092	C	--	0.06	--	0.003	--	--	--	--	0.092	110	--	--
	Vinyl acetate	mg/kg	34	0	0%	--	--	--	0.005	0.0056	1400	N	--	170	--	8	--	--	--	--	--	1400	--	--
	Vinyl chloride	mg/kg	34	0	0%	--	--	--	0.005	0.0056	0.86	C	--	0.01	--	0.0007	--	--	--	--	0.86	150	--	--
	Xylenes (total)	mg/kg	34	2	6%	0.0028	0.0034	TSB-FJ-10 @ 0	0.01	0.011	210	sat	0	210	0	10	0	--	--	--	--	640	0.000017	--
PCBs	Aroclor 1016	mg/kg	28	0	0%	--	--	--	0.033	0.036	24	C	--	--	--	--	--	--	--	--	24	41	--	--
	Aroclor 1221	mg/kg	14	0	0%	--	--	--	0.033	0.036	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
	Aroclor 1232	mg/kg	14	0	0%	--	--	--	0.033	0.036	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
	Aroclor 1242	mg/kg	14	0	0%	--	--	--	0.033	0.036	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
	Aroclor 1248	mg/kg	14	1	7%	0.074	0.074	TSB-FJ-03 @ 0	0.033	0.036	0.83	C	0	--	--	--	--	--	--	--	0.83	12	0.0062	9 E-8
	Aroclor 1254	mg/kg	14	1	7%	0.76	0.76	TSB-FR-02 @ 0	0.033	0.036	0.83	C	1	--	--	--	--	--	--	--	0.83	12	0.063	9 E-7
	Aroclor 1260	mg/kg	14	0	0%	--	--	--	0.033	0.036	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
																						Total Non-Cancer Hazard Index:	0.35	
																						Total Incremental Lifetime Cancer Risk - Non-Radionuclides:		1 E-5
																						Total Incremental Lifetime Cancer Risk - Radionuclides:		--

a - Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the data set.
b - The quantitation limits shown include samples which had detections. For screening purposes, the detection limit was used for comparison to the screening levels.
c - From USEPA Region 6 Medium-Specific Screening Levels (MSSLs) table, March 2008 (and the 2007 USEPA radionuclide PRG webpage; http://epa-prgs.ornl.gov/radionuclides). Values used are the lower of the indoor and outdoor worker soil MSSLs. Several chemicals have both cancer and non-cancer toxicity criteria. For these chemicals USEPA calculates MSSLs for both cancer and non-cancer endpoints; however only the lower value is published in its MSSL table. The other value is included in a separate spreadsheet table. Both values are shown on separate columns on this table and are included in the screening-level risk assessment calculations.
d - Values used are the maximum from the shallow soils background dataset presented in the Background Shallow Soil Summary Report, BMI Complex and Common Area Vicinity (BRC/TIMET 2007).
e - Based on results of statistical comparison tests performed between shallow background and site datasets (see Table _).
f - Non-cancer hazard indices were calculated by dividing the maximum detected value (or maximum non-detect limit, if higher) by its non-cancer MSSL (lower of indoor/outdoor workers). The total non-cancer hazard index is the sum of all chemical-specific hazard indices.
g - Theoretical upper-bound incremental lifetime cancer risks were calculated by dividing the maximum detected value (or maximum non-detect limit, if higher) by its cancer MSSL (lower of indoor/outdoor workers) times 1E-6. The total incremental lifetime cancer risk is the sum of all chemical-specific cancer risks.
h - Agency for Toxic Substances and Disease Registry (ATSDR) action level of 1.0 parts per billion (ppb).
i - Asbestos results shown are for long protocol structures (>10um).
C = Cancer
N = Non-Cancer
sat = Soil Saturation
max = Region 6 Ceiling Limit
SSL = soil screening level
MSSL = medium-specific screening level

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL G INVESTIGATION
CLARK COUNTY, NEVADA
(Page 1 of 5)

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
Dioxins/Furans	TCDD TEQ[h]	pg/g	11	6	55%	0.7	14	TSB-GJ-06 @ 0	--	--	1000	C	0	--	--	--	--	--	--	--	1000	--	--	1 E-8
Asbestos[i]	Chrysotile	Structures	10	4	40%	1	6	TSB-GJ-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	See Asbestos Risk Calc.
	Amphibole	Structures	10	1	10%	1	1	TSB-HJ-09 @ 0'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
General Chemistry	Bromide	mg/kg	20	0	0%	--	--	--	2.5	2.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Bromine	mg/kg	20	0	0%	--	--	--	5	5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorate	mg/kg	20	12	60%	2.1	17.9	TSB-GR-02 @ 5	5	5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chloride	mg/kg	20	20	100%	3.6	1230	TSB-GR-02 @ 5	2.1	106	--	--	--	--	--	--	--	1110	1	--	--	--	--	--
	Chlorine	mg/kg	20	20	100%	7.3	2470	TSB-GR-02 @ 5	4.1	213	100000	max	--	--	--	--	--	--	--	--	--	110000	0.022	--
	Chlorite	mg/kg	40	0	0%	--	--	--	0.2	0.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Fluoride	mg/kg	20	7	35%	0.38	2.3	TSB-GJ-05 @ 5	1	1.1	41000	N	0	--	--	--	--	2.5	0	--	--	41000	0.000056	--
	Nitrate (as N)	mg/kg	20	20	100%	0.52	52	TSB-GR-02 @ 5	0.21	2.1	--	--	--	--	--	--	--	102	0	--	--	--	--	--
	Nitrite (as N)	mg/kg	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	0.21	--	--	--	--	--	--
	Orthophosphate as P	mg/kg	20	0	0%	--	--	--	5	5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Perchlorate	mg/kg	20	20	100%	0.186	39.9	TSB-GJ-01 @ 0	0.0413	2.11	790	N	0	--	--	--	--	--	--	--	--	790	0.051	--
	Sulfate	mg/kg	20	20	100%	22.1	2620	TSB-GJ-07 @ 5	5.2	269	--	--	--	--	--	--	--	4130	0	--	--	--	--	--
Metals	Aluminum	mg/kg	20	20	100%	6980	8790	TSB-GJ-06 @ 5	10.1	10.9	100000	max	0	--	--	--	--	15300	0	No	--	1000000	--	--
	Antimony	mg/kg	20	20	100%	0.16	0.25	TSB-GR-02 @ 0	1	1.1	450	N	0	5	0	0.3	0	0.5	0	No	--	450	--	--
	Arsenic	mg/kg	20	20	100%	2.4	4.8	TSB-GR-01 @ 5	2	2.2	1.8	C	20	29	0	1	20	7.2	0	No	1.8	280	--	--
	Barium	mg/kg	20	20	100%	144	206	TSB-GJ-07 @ 5	4	4.4	100000	max	0	1600	0	82	20	836	0	No	--	230000	--	--
	Beryllium	mg/kg	20	20	100%	0.48	0.6	TSB-GR-02 @ 0	0.2	0.22	2200	N	0	63	0	3	0	0.89	0	No	2200	2200	--	--
	Boron	mg/kg	20	0	0%	--	--	--	20.2	21.9	100000	max	--	--	--	--	--	11.6	--	No	--	230000	--	--
	Cadmium	mg/kg	20	5	25%	0.11	0.17	TSB-GJ-06 @ 0	0.1	0.11	560	N	0	8	0	0.4	0	0.16	1	No	3000	560	--	--
	Calcium	mg/kg	20	20	100%	12700	50900	TSB-GJ-06 @ 0	101	109	--	--	--	--	--	--	--	82800	0	No	--	--	--	--
	Chromium (Total)	mg/kg	20	20	100%	8.2	14.2	TSB-GJ-05 @ 0	2	2.2	100000	max	0	--	--	--	--	16.7	0	Yes	--	1700000	0.0000084	--
	Chromium (VI)	mg/kg	20	0	0%	--	--	--	1	1	64	C	--	38	--	2	--	0.251	--	No	64	3353	--	--
	Cobalt	mg/kg	20	20	100%	5.7	8.1	TSB-GJ-01 @ 0	0.4	0.44	1900	C	0	--	--	--	--	16.3	0	No	1900	15000	--	--
	Copper	mg/kg	20	20	100%	12.5	19.5	TSB-GR-02 @ 5	2	2.2	42000	N	0	--	--	--	--	30.5	0	No	--	42000	--	--
	Iron	mg/kg	20	20	100%	10700	15200	TSB-GJ-05 @ 5	10.1	10.9	100000	max	0	--	--	--	--	19700	0	No	--	790000	--	--
	Lead	mg/kg	20	20	100%	7.1	13.5	TSB-GJ-06 @ 0	0.61	0.66	800	N	0	--	--	--	--	35.1	0	No	--	--	--	--
	Lithium	mg/kg	20	20	100%	9.9	21.9	TSB-GJ-02 @ 0	10.1	10.9	--	--	--	--	--	--	--	26.5	0	No	--	--	--	--
	Magnesium	mg/kg	20	20	100%	7190	11900	TSB-GJ-07 @ 5	101	109	--	--	--	--	--	--	--	17500	0	No	--	--	--	--
	Manganese	mg/kg	20	20	100%	252	711	TSB-GJ-06 @ 0	0.42	1.1	35000	N	0	--	--	--	--	1090	0	No	--	35000	--	--
	Mercury	mg/kg	20	0	0%	--	--	--	0.0336	0.0365	340	N	--	--	--	--	--	0.11	--	No	--	340	--	--
	Molybdenum	mg/kg	20	6	30%	0.5	0.69	TSB-GJ-06 @ 0	1	1.1	5700	N	0	--	--	--	--	2	0	No	--	5700	--	--
	Nickel	mg/kg	20	20	100%	12.5	16.7	TSB-GJ-02 @ 0	1	1.1	23000	N	0	130	0	7	20	30	0	No	--	23000	--	--
	Niobium	mg/kg	20	1	5%	9.2	9.2	TSB-GR-02 @ 0	5	5.5	--	--	--	--	--	--	--	2.8	1	Yes	--	--	--	--
	Palladium	mg/kg	20	20	100%	0.29	0.79	TSB-GJ-07 @ 5	0.2	0.22	--	--	--	--	--	--	--	1.5	0	No	--	--	--	--
	Phosphorus (as P)	mg/kg	20	20	100%	613	1140	TSB-GJ-02 @ 0	101	109	--	--	--	--	--	--	--	--	--	No	--	--	--	--
	Platinum	mg/kg	20	0	0%	--	--	--	0.2	0.22	--	--	--	--	--	--	--	0.099	--	Yes	--	--	--	--
	Potassium	mg/kg	20	20	100%	1290	2630	TSB-GJ-06 @ 5	20.2	21.9	--	--	--	--	--	--	--	3890	0	No	--	--	--	--
	Selenium	mg/kg	20	0	0%	--	--	--	1	1.1	5700	N	--	5	--	0.3	--	0.6	--	No	--	5700	--	--
	Silicon	mg/kg	20	20	100%	72.5	223	TSB-GJ-06 @ 0	50.4	54.7	--	--	--	--	--	--	--	4150	0	No	--	--	--	--
	Silver	mg/kg	20	20	100%	0.084	0.22	TSB-GR-02 @ 5	0.4	0.44	5700	N	0	34	0	2	0	0.2609	0	No	--	5700	--	--
Metals	Sodium	mg/kg	20	20	100%	365	886	TSB-GJ-07 @ 5	40.4	43.8	--	--	--	--	--	--	--	1320	0	No	--	--	--	--
	Strontium	mg/kg	20	20	100%	151	359	TSB-GJ-07 @ 5	1	1.1	100000	max	0	--	--	--	--	808	0	No	--	680000	--	--
	Sulfur	mg/kg	20	16	80%	442	1550	TSB-GJ-07 @ 5	1010	1090	--	--	--	--	--	--	--	--	--	No	--	--	--	--
	Thallium	mg/kg	20	0	0%	--	--	--	0.4	0.44	80	N	--	--	--	--	--	1.8	--	No	--	80	--	--
	Tin	mg/kg	20	20	100%	0.43	0.63	TSB-GR-02 @ 0	0.4	0.44	100000	max	0	--	--	--	--	0.8	0	No	--	680000	--	--
	Titanium	mg/kg	20	20	100%	442	737	TSB-GJ-05 @ 5	1	1.1	100000	max	0	--	--	--	--	1010	0	Yes	--	4200000	0.00018	--
	Tungsten	mg/kg	20	0	0%	--	--	--	1	1.1	--	--	--	--	--	--	--	2.5	--	No	--	--	--	--
	Uranium	mg/kg	20	20	100%	0.8	1.7	TSB-GJ-07 @ 5	0.2	0.22	230	N	0	--	--	--	--	2.7	0	No	--	230	--	--
	Vanadium	mg/kg	20	20	100%	32.8	53.2	TSB-GJ-05 @ 5	2	2.2	5700	N	0	6000	0	300	0	59.1	0	Yes	--	5700	0.0093	--
	Zinc	mg/kg	20	20	100%	25.1	37.4	TSB-GJ-02 @ 5	4	4.4	100000	max	0	12000	0	620	0	121	0	No	--	340000	--	--
	Zirconium	mg/kg	20	20	100%	18	26.2	TSB-GJ-06 @ 0	20.2	21.9	--	--	--	--	--	--	--	179	0	No	--	--	--	--
Organochlorine Pesticides	2,4-DDD	mg/kg	20	0	0%	--	--	--	0.0017	0.14	11	C	--	--	--	--	--	--	--	--	11	--	--	--
	2,4-DDE	mg/kg	20	3	15%	0.0018	0.042	TSB-GJ-04 @ 0	0.0017	0.14	7.8	C	0	--	--	--	--	--	--	--	7.8	--	--	2 E-8
	4,4-DDD	mg/kg	20	1	5%	0.002	0.002	TSB-GR-01 @ 5	0.0017	0.14	11	C	0	16	0	0.8	0	--	--	--	11	--	--	1 E-8

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL G INVESTIGATION
CLARK COUNTY, NEVADA
(Page 2 of 5)

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
Organochlorine Pesticides	4,4-DDE	mg/kg	20	11	55%	0.0019	0.91	TSB-GJ-04 @ 0	0.0017	0.18	7.8	C	0	54	0	3	0	--	--	--	7.8	--	--	1 E-7
	4,4-DDT	mg/kg	20	11	55%	0.0018	0.61	TSB-GJ-04 @ 0	0.0017	0.18	7.8	C	0	32	0	2	0	--	--	--	7.8	470	0.0013	8 E-8
	Aldrin	mg/kg	20	0	0%	--	--	--	0.0017	0.14	0.11	C	--	0.5	--	0.02	--	--	--	--	0.11	21	--	--
	alpha-BHC	mg/kg	20	0	0%	--	--	--	0.0017	0.14	0.4	C	--	0.0005	--	0.00003	--	--	--	--	0.4	--	--	--
	alpha-Chlordane	mg/kg	20	0	0%	--	--	--	0.0017	0.14	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	beta-BHC	mg/kg	20	10	50%	0.0018	0.15	TSB-GJ-04 @ 0	0.0017	0.14	1.4	C	0	0.003	9	0.0001	10	--	--	--	1.4	--	--	1 E-7
	Chlordane	mg/kg	20	0	0%	--	--	--	0.017	1.4	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	delta-BHC	mg/kg	20	0	0%	--	--	--	0.0017	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dieldrin	mg/kg	20	0	0%	--	--	--	0.0017	0.14	0.12	C	--	0.004	--	0.0002	--	--	--	--	0.12	34	--	--
	Endosulfan I	mg/kg	20	0	0%	--	--	--	0.0017	0.14	4100	N	--	18	--	0.9	--	--	--	--	--	4100	--	--
	Endosulfan II	mg/kg	20	0	0%	--	--	--	0.0017	0.14	4100	N	--	18	--	0.9	--	--	--	--	--	4100	--	--
	Endosulfan sulfate	mg/kg	20	0	0%	--	--	--	0.0017	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin	mg/kg	20	0	0%	--	--	--	0.0017	0.14	210	N	--	1	--	0.05	--	--	--	--	--	210	--	--
	Endrin aldehyde	mg/kg	20	0	0%	--	--	--	0.0017	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin ketone	mg/kg	20	0	0%	--	--	--	0.0017	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	gamma-Chlordane	mg/kg	20	0	0%	--	--	--	0.0017	0.14	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	Heptachlor	mg/kg	20	0	0%	--	--	--	0.0017	0.14	0.43	C	--	23	--	1	--	--	--	--	0.43	340	--	--
	Heptachlor epoxide	mg/kg	20	0	0%	--	--	--	0.0017	0.14	0.21	C	--	0.7	--	0.03	--	--	--	--	0.21	8.9	--	--
	Lindane	mg/kg	20	0	0%	--	--	--	0.0017	0.14	1.9	C	--	0.009	--	0.0005	--	--	--	--	1.9	270	--	--
	Methoxychlor	mg/kg	20	1	5%	0.01	0.01	TSB-GJ-05 @ 5	0.0034	0.27	3400	N	0	160	0	8	0	--	--	--	--	3400	0.000079	--
	Toxaphene	mg/kg	20	0	0%	--	--	--	0.069	5.4	1.7	C	--	31	--	2	--	--	--	--	1.7	--	--	--
Petroleum Hydrocarbons	TPH (as Gasoline)	mg/kg	19	0	0%	--	--	--	0.1	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oil/Grease	mg/kg	20	0	0%	--	--	--	202	219	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	TPH (as Diesel)	mg/kg	20	0	0%	--	--	--	26	5000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radionuclides	Radium-226	pCi/g	20	20	100%	0.795	1.3	TSB-GJ-02 @ 0	0.0611	0.0898	0.0069	C	20	0.32	20	0.016	20	2.36	0	No	0.0069	--	--	--
	Radium-228	pCi/g	20	20	100%	1.58	2.04	TSB-GJ-02 @ 0	0.114	0.171	0.14	C	20	1.2	20	0.059	20	2.94	0	No	0.14	--	--	--
	Thorium-228	pCi/g	20	20	100%	1.28	2.33	TSB-GJ-06 @ 0	0.1	0.1	0.25	C	20	66	0	3.3	0	2.28	1	No	0.25	--	--	--
	Thorium-230	pCi/g	20	20	100%	1.05	1.98	TSB-GJ-04 @ 0	0.1	0.1	8.4	C	0	6.1	0	0.3	20	3.01	0	No	8.4	--	--	--
	Thorium-232	pCi/g	20	20	100%	1.18	1.97	TSB-GR-01 @ 0	0.1	0.1	7.4	C	0	6.1	0	0.3	20	2.23	0	No	7.4	--	--	--
	Uranium-233/234	pCi/g	18	18	100%	0.795	1.98	TSB-GJ-02 @ 0	1	1	11	C	0	2240	0	112	0	2.84	0	No	11	--	--	--
	Uranium-235/236	pCi/g	18	13	72%	0.046	0.0962	TSB-GJ-04 @ 0	1	1	0.38	C	0	0.78	0	0.039	14	0.21	0	No	0.38	--	--	--
	Uranium-238	pCi/g	18	18	100%	0.817	1.55	TSB-GJ-02 @ 0	1	1	1.6	C	0	0.12	18	0.006	18	2.37	0	No	1.6	--	--	--
SVOCs	1,2,4,5-Tetrachlorobenzene	mg/kg	20	0	0%	--	--	--	0.33	0.36	210	N	--	--	--	--	--	--	--	--	--	210	--	--
	1,2-Diphenylhydrazine	mg/kg	20	0	0%	--	--	--	0.33	0.36	2.4	C	--	--	--	--	--	--	--	--	2.4	--	--	--
	1,4-Dioxane	mg/kg	20	0	0%	--	--	--	0.33	0.36	170	C	--	--	--	--	--	--	--	--	170	--	--	--
	2,2'-/4,4'-Dichlorobenzil	mg/kg	20	0	0%	--	--	--	0.33	3.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4,5-Trichlorophenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	68000	N	--	270	--	14	--	--	--	--	--	68000	--	--
	2,4,6-Trichlorophenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	170	C	--	0.2	--	0.008	--	--	--	--	170	680	--	--
	2,4-Dichlorophenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	2100	N	--	1	--	0.05	--	--	--	--	--	2100	--	--
	2,4-Dimethylphenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	14000	N	--	9	--	0.4	--	--	--	--	--	14000	--	--
	2,4-Dinitrophenol	mg/kg	20	0	0%	--	--	--	1.6	1.8	1400	N	--	0.3	--	0.01	--	--	--	--	--	1400	--	--
	2,4-Dinitrotoluene	mg/kg	20	0	0%	--	--	--	0.33	0.36	1400	N	--	0.0008	--	0.00004	--	--	--	--	--	1400	--	--
	2,6-Dinitrotoluene	mg/kg	20	0	0%	--	--	--	0.33	0.36	680	N	--	0.0007	--	0.00003	--	--	--	--	--	680	--	--
	2-Chloronaphthalene	mg/kg	20	0	0%	--	--	--	0.33	0.36	26000	N	--	--	--	--	--	--	--	--	--	26000	--	--
	2-Chlorophenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	240	N	--	4	--	0.2	--	--	--	--	--	240	--	--
	2-Methylnaphthalene	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Nitroaniline	mg/kg	20	0	0%	--	--	--	1.6	1.8	2000	N	--	--	--	--	--	--	--	--	--	2000	--	--
	2-Nitrophenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3,3'-Dichlorobenzidine	mg/kg	20	0	0%	--	--	--	1.6	1.8	4.3	C	--	0.007	--	0.0003	--	--	--	--	4.3	--	--	--
	3-Methylphenol/4-Methylphenol	mg/kg	20	0	0%	--	--	--	0.67	0.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Nitroaniline	mg/kg	20	0	0%	--	--	--	1.6	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Bromophenyl phenyl ether	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chloro-3-Methylphenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorophenyl phenyl ether	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorothioanisole	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Nitrophenol	mg/kg	20	0	0%	--	--	--	1.6	1.8	5500	N	--	--	--	--	--	--	--	--	--	5500	--	--
	Acenaphthene	mg/kg	20	1	5%	0.14	0.14	TSB-GJ-06 @ 0	0.33	0.36	33000	N	0	570	0	29	0	--	--	--	--	33000	0.000011	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL G INVESTIGATION
CLARK COUNTY, NEVADA
(Page 3 of 5)

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
SVOCs	Acenaphthylene	mg/kg	20	1	5%	0.15	0.15	TSB-GJ-06 @ 0	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acetophenone	mg/kg	20	0	0%	--	--	--	0.33	0.36	1700	sat	--	--	--	--	--	--	--	--	--	25000	--	--
	Aniline	mg/kg	20	0	0%	--	--	--	0.33	0.36	340	C	--	--	--	--	--	--	--	--	340	4800	--	--
	Anthracene	mg/kg	20	1	5%	0.45	0.45	TSB-GJ-06 @ 0	0.33	0.36	100000	max	0	12000	0	590	0	--	--	--	--	260000	0.0000017	--
	Azobenzene	mg/kg	20	0	0%	--	--	--	0.33	0.36	17	C	--	--	--	--	--	--	--	--	17	--	--	--
	Benzenethiol	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzo(a)anthracene	mg/kg	20	2	10%	0.06	1.2	TSB-GJ-06 @ 0	0.33	0.36	2.3	C	0	2	0	0.08	1	--	--	--	2.3	--	--	5 E-7
	Benzo(a)pyrene	mg/kg	20	2	10%	0.04	0.99	TSB-GJ-06 @ 0	0.33	0.36	0.23	C	1	8	0	0.4	1	--	--	--	0.23	--	--	4 E-6
	Benzo(b)fluoranthene	mg/kg	20	2	10%	0.049	1.1	TSB-GJ-06 @ 0	0.33	0.36	2.3	C	0	5	0	0.2	1	--	--	--	2.3	--	--	5 E-7
	Benzo(g,h,i)perylene	mg/kg	20	2	10%	0.075	0.53	TSB-GJ-06 @ 0	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzo(k)fluoranthene	mg/kg	20	2	10%	0.043	1.3	TSB-GJ-06 @ 0	0.33	0.36	23	C	0	49	0	2	0	--	--	--	23	--	--	6 E-8
	Benzoic acid	mg/kg	20	0	0%	--	--	--	1.6	1.8	100000	max	--	400	--	20	--	--	--	--	--	2700000	--	--
	Benzyl alcohol	mg/kg	20	0	0%	--	--	--	0.33	0.36	100000	max	--	--	--	--	--	--	--	--	--	210000	--	--
	Benzyl butyl phthalate	mg/kg	20	0	0%	--	--	--	0.33	0.36	240	sat	--	930	--	810	--	--	--	--	--	140000	--	--
	bis(2-Chloroethoxy) methane	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(2-Chloroethyl) ether	mg/kg	20	0	0%	--	--	--	0.33	0.36	0.62	C	--	0.0004	--	0.00002	--	--	--	--	0.62	--	--	--
	bis(2-Chloroisopropyl) ether	mg/kg	20	0	0%	--	--	--	0.33	0.36	8.1	C	--	--	--	--	--	--	--	--	8.1	4300	--	--
	bis(2-Ethylhexyl) phthalate	mg/kg	20	0	0%	--	--	--	0.33	0.36	140	C	--	--	--	--	--	--	--	--	140	14000	--	--
	bis(p-Chlorophenyl) disulfide	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(p-Chlorophenyl) sulfone	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Carbazole	mg/kg	20	1	5%	0.059	0.059	TSB-GJ-06 @ 0	0.33	0.36	96	C	0	0.6	0	0.03	1	--	--	--	96	--	--	4 E-9
	Chrysene	mg/kg	20	3	15%	0.069	1.7	TSB-GJ-06 @ 0	0.33	0.36	230	C	0	160	0	8	0	--	--	--	230	--	--	7 E-9
	Dibenzo(a,h)anthracene	mg/kg	20	1	5%	0.18	0.18	TSB-GJ-06 @ 0	0.33	0.36	0.23	C	0	2	0	0.08	1	--	--	--	0.23	--	--	2 E-6
	Dibenzofuran	mg/kg	20	0	0%	--	--	--	0.33	0.36	1700	N	--	--	--	--	--	--	--	--	--	1700	--	--
	Dibutyl phthalate	mg/kg	20	0	0%	--	--	--	0.33	0.36	68000	N	--	2300	--	270	--	--	--	--	--	68000	--	--
	Diethyl phthalate	mg/kg	20	0	0%	--	--	--	0.33	0.36	100000	max	--	--	--	--	--	--	--	--	--	550000	--	--
	Dimethyl phthalate	mg/kg	20	0	0%	--	--	--	0.33	0.36	100000	max	--	--	--	--	--	--	--	--	--	6800000	--	--
	Di-n-octyl phthalate	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	10000	--	10000	--	--	--	--	--	--	--	--
	Diphenyl sulfone	mg/kg	20	0	0%	--	--	--	0.33	0.36	2100	N	--	--	--	--	--	--	--	--	--	2100	--	--
	Fluoranthene	mg/kg	20	2	10%	0.077	0.8	TSB-GJ-06 @ 0	0.33	0.36	24000	N	0	4300	0	210	0	--	--	--	--	24000	0.000033	--
	Fluorene	mg/kg	20	0	0%	--	--	--	0.33	0.36	26000	N	--	560	--	28	--	--	--	--	--	26000	--	--
	Hexachloro-1,3-butadiene	mg/kg	20	0	0%	--	--	--	0.33	0.36	25	C	--	2	--	0.1	--	--	--	--	25	680	--	--
	Hexachlorobenzene	mg/kg	20	0	0%	--	--	--	0.33	0.36	1.2	C	--	2	--	0.1	--	--	--	--	1.2	550	--	--
	Hexachlorocyclopentadiene	mg/kg	20	0	0%	--	--	--	1.6	1.8	4100	N	--	400	--	20	--	--	--	--	--	4100	--	--
	Hexachloroethane	mg/kg	20	0	0%	--	--	--	0.33	0.36	140	C	--	0.5	--	0.02	--	--	--	--	140	680	--	--
	Hydroxymethyl phthalimide	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Indeno(1,2,3-cd)pyrene	mg/kg	20	1	5%	0.52	0.52	TSB-GJ-06 @ 0	0.33	0.36	2.3	C	0	14	0	0.7	0	--	--	--	2.3	--	--	2 E-7
	Isophorone	mg/kg	20	0	0%	--	--	--	0.33	0.36	2000	C	--	0.5	--	0.03	--	--	--	--	2000	140000	--	--
	Naphthalene	mg/kg	20	0	0%	--	--	--	0.33	0.36	190	N	--	84	--	4	--	--	--	--	--	190	--	--
	Nitrobenzene	mg/kg	20	0	0%	--	--	--	0.33	0.36	110	N	--	0.1	--	0.007	--	--	--	--	--	110	--	--
	N-nitrosodi-n-propylamine	mg/kg	20	0	0%	--	--	--	0.33	0.36	0.27	C	--	0.00005	--	0.000002	--	--	--	--	0.27	--	--	--
	N-nitrosodiphenylamine	mg/kg	20	0	0%	--	--	--	0.33	0.36	390	C	--	1	--	0.06	--	--	--	--	390	--	--	--
	o-Cresol	mg/kg	20	0	0%	--	--	--	0.33	0.36	34000	N	--	15	--	0.8	--	--	--	--	--	34000	--	--
	Octachlorostyrene	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	p-Chloroaniline	mg/kg	20	0	0%	--	--	--	0.33	0.36	2700	N	--	0.7	--	0.03	--	--	--	--	--	2700	--	--
	p-Chlorothiophenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pentachlorobenzene	mg/kg	20	0	0%	--	--	--	0.33	0.36	550	N	--	--	--	--	--	--	--	--	--	550	--	--
	Pentachlorophenol	mg/kg	20	0	0%	--	--	--	1.6	1.8	10	C	--	0.03	--	0.001	--	--	--	--	10	13000	--	--
	Phenanthrene	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenol	mg/kg	20	0	0%	--	--	--	0.33	0.36	100000	max	--	100	--	5	--	--	--	--	--	210000	--	--
	Phenyl Disulfide	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenyl Sulfide	mg/kg	20	0	0%	--	--	--	0.33	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phthalic acid	mg/kg	20	0	0%	--	--	--	1.6	1.8	100000	max	--	--	--	--	--	--	--	--	--	680000	--	--
	p-Nitroaniline	mg/kg	20	0	0%	--	--	--	1.6	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pyrene	mg/kg	20	2	10%	0.085	1.2	TSB-GJ-06 @ 0	0.33	0.36	32000	N	0	4200	0	210	0	--	--	--	--	32000	0.000038	--
	Pyridine	mg/kg	20	0	0%	--	--	--	0.67	0.72	680	N	--	--	--	--	--	--	--	--	--	680	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL G INVESTIGATION
CLARK COUNTY, NEVADA

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
VOCs	1,1,1,2-Tetrachloroethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	7.1	C	--	--	--	--	--	--	--	--	7.1	2000	--	--
	1,1,1-Trichloroethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1400	sat	--	2	--	0.1	--	--	--	--	--	17000	--	--
	1,1,2,2-Tetrachloroethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	0.9	C	--	0.003	--	0.0002	--	--	--	--	0.9	3900	--	--
	1,1,2-Trichloroethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1.9	C	--	0.02	--	0.0009	--	--	--	--	1.9	150	--	--
	1,1-Dichloroethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	2300	sat	--	23	--	1	--	--	--	--	--	2900	--	--
	1,1-Dichloroethylene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	430	N	--	0.06	--	0.003	--	--	--	--	--	430	--	--
	1,1-Dichloropropene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichlorobenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichloropropane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1.6	C	--	--	--	--	--	--	--	--	1.6	11	--	--
	1,2,4-Trichlorobenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	240	N	--	5	--	0.3	--	--	--	--	--	240	--	--
	1,2,4-Trimethylbenzene	mg/kg	20	3	15%	0.00042	0.00082	TSB-GJ-03 @ 0	0.005	0.0055	200	N	0	--	--	--	--	--	--	--	--	200	0.000028	--
	1,2-Dibromo-3-chloropropane	mg/kg	20	0	0%	--	--	--	0.01	0.011	0.018	C	--	--	--	--	--	--	--	--	0.018	7.5	--	--
	1,2-Dichlorobenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	370	sat	--	17	--	0.9	--	--	--	--	--	410	--	--
	1,2-Dichloroethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	0.77	C	--	0.02	--	0.001	--	--	--	--	0.77	35	--	--
	1,2-Dichloroethylene	mg/kg	20	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2-Dichloropropane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	0.77	C	--	0.03	--	0.001	--	--	--	--	0.77	21	--	--
	1,3,5- Trichlorobenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	70	N	--	--	--	--	--	--	--	--	--	70	--	--
	1,3-Dichlorobenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	130	N	--	--	--	--	--	--	--	--	--	130	--	--
	1,3-Dichloropropane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	370	N	--	--	--	--	--	--	--	--	--	370	--	--
	1,4-Dichlorobenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	7.5	C	--	2	--	0.1	--	--	--	--	7.5	11000	--	--
	1-Nonanal	mg/kg	20	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2,3-Trimethylbutane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dichloropropane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dimethylpentane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,3-Dimethylpentane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4-Dimethylpentane	mg/kg	20	0	0%	--	--	--	0.02	0.022	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Chlorotoluene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	510	sat	--	--	--	--	--	--	--	--	--	570	--	--
	2-Nitropropane	mg/kg	20	0	0%	--	--	--	0.01	0.011	0.34	C	--	--	--	--	--	--	--	--	0.34	6500	--	--
	2-Phenylbutane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	220	sat	--	--	--	--	--	--	--	--	--	420	--	--
	3,3-dimethylpentane	mg/kg	20	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-ethylpentane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Methylhexane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorotoluene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acetone	mg/kg	20	16	80%	0.0055	0.046	TSB-GR-01 @ 0	0.02	0.022	56000	N	0	16	0	0.8	0	--	--	--	--	56000	0.00000082	--
	Acetonitrile	mg/kg	20	0	0%	--	--	--	0.05	0.055	2000	N	--	--	--	--	--	--	--	--	--	2000	--	--
	Benzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1.5	C	--	0.03	--	0.002	--	--	--	--	1.5	120	--	--
	Bromobenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	110	N	--	--	--	--	--	--	--	--	--	110	--	--
	Bromodichloromethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	2.4	C	--	0.6	--	0.03	--	--	--	--	2.4	1000	--	--
	Bromomethane	mg/kg	20	0	0%	--	--	--	0.01	0.011	13	N	--	0.2	--	0.01	--	--	--	--	--	13	--	--
	Carbon disulfide	mg/kg	20	0	0%	--	--	--	0.005	0.0055	720	sat	--	32	--	2	--	--	--	--	--	1200	--	--
	Carbon tetrachloride	mg/kg	20	0	0%	--	--	--	0.005	0.0055	0.53	C	--	0.07	--	0.003	--	--	--	--	0.53	790	--	--
	Freon-11	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1300	N	--	--	--	--	--	--	--	--	--	1300	--	--
	Freon-12	mg/kg	20	0	0%	--	--	--	0.01	0.011	310	N	--	--	--	--	--	--	--	--	--	310	--	--
	Freon-113	mg/kg	20	0	0%	--	--	--	0.005	0.0055	5600	sat	--	--	--	--	--	--	--	--	--	69000	--	--
	Chlorobenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	460	N	--	1	--	0.07	--	--	--	--	--	460	--	--
	Chlorobromomethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorodibromomethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	2.4	C	--	0.4	--	0.02	--	--	--	--	2.4	1400	--	--
	Chloroethane	mg/kg	20	0	0%	--	--	--	0.01	0.011	6.5	C	--	--	--	--	--	--	--	--	6.5	19000	--	--
	Chloroform	mg/kg	20	0	0%	--	--	--	0.005	0.0055	0.52	C	--	0.6	--	0.03	--	--	--	--	0.52	190	--	--
	Chloromethane	mg/kg	20	0	0%	--	--	--	0.01	0.011	160	N	--	--	--	--	--	--	--	--	--	160	--	--
	cis-1,2-Dichloroethylene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	150	N	--	0.4	--	0.02	--	--	--	--	--	150	--	--
	cis-1,3-Dichloropropylene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1.6	C	--	0.004	--	0.0002	--	--	--	--	1.6	48	--	--
	Cymene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dibromomethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	550	N	--	--	--	--	--	--	--	--	--	550	--	--
	Dichloromethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	21	C	--	0.02	--	0.001	--	--	--	--	21	9800	--	--
	Ethanol	mg/kg	20	0	0%	--	--	--	0.25	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL G INVESTIGATION
CLARK COUNTY, NEVADA
(Page 5 of 5)

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
VOCs	Ethylbenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	230	sat	--	13	--	0.7	--	--	--	--	--	6000	--	--
	Hexane, 2-methyl-	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Isopropylbenzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	520	N	--	--	--	--	--	--	--	--	--	520	--	--
	m,p-Xylene	mg/kg	20	1	5%	0.00064	0.00064	TSB-GJ-03 @ 0	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl disulfide	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl ethyl ketone	mg/kg	20	1	5%	0.0038	0.0038	TSB-GJ-06 @ 0	0.02	0.022	34000	sat	0	--	--	--	--	--	--	--	--	130000	0.00000017	--
	Methyl iodide	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl isobutyl ketone	mg/kg	20	0	0%	--	--	--	0.02	0.022	17000	sat	--	--	--	--	--	--	--	--	--	52000	--	--
	Methyl n-butyl ketone	mg/kg	20	0	0%	--	--	--	0.02	0.022	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MTBE (Methyl tert-butyl ether)	mg/kg	20	0	0%	--	--	--	0.005	0.0055	72	C	--	--	--	--	--	--	--	--	72	20000	--	--
	n-Butyl benzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	240	sat	--	--	--	--	--	--	--	--	--	560	--	--
	n-Heptane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	n-Propyl benzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	240	sat	--	--	--	--	--	--	--	--	--	560	--	--
	o-Xylene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Styrene (monomer)	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1700	sat	--	4	--	0.2	--	--	--	--	--	20000	--	--
	tert-Butyl benzene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	390	sat	--	--	--	--	--	--	--	--	--	500	--	--
	Tetrachloroethylene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1.7	C	--	0.06	--	0.003	--	--	--	--	1.7	2400	--	--
	Toluene	mg/kg	20	2	10%	0.00059	0.00075	TSB-GJ-03 @ 0	0.005	0.0055	520	sat	0	12	0	0.6	0	--	--	--	--	22000	0.00000025	--
	trans-1,2-Dichloroethylene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	180	N	--	0.7	--	0.03	--	--	--	--	--	180	--	--
	trans-1,3-Dichloropropylene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1.6	C	--	0.004	--	0.0002	--	--	--	--	1.6	48	--	--
	Tribromomethane	mg/kg	20	0	0%	--	--	--	0.005	0.0055	240	C	--	0.8	--	0.04	--	--	--	--	240	14000	--	--
	Trichloroethylene	mg/kg	20	0	0%	--	--	--	0.005	0.0055	0.092	C	--	0.06	--	0.003	--	--	--	--	0.092	110	--	--
	Vinyl acetate	mg/kg	20	0	0%	--	--	--	0.005	0.0055	1400	N	--	170	--	8	--	--	--	--	--	1400	--	--
	Vinyl chloride	mg/kg	20	0	0%	--	--	--	0.005	0.0055	0.86	C	--	0.01	--	0.0007	--	--	--	--	0.86	150	--	--
	Xylenes (total)	mg/kg	20	0	0%	--	--	--	0.01	0.011	210	sat	--	210	--	10	--	--	--	--	--	640	--	--
																						Total Non-Cancer Hazard Index:	0.084	
																						Total Incremental Lifetime Cancer Risk - Non-Radionuclides:		8 E-6
																						Total Incremental Lifetime Cancer Risk - Radionuclides:		--

a - Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the data set.
b - The quantitation limits shown include samples which had detections. For screening purposes, the detection limit was used for comparison to the screening levels.
c - From USEPA Region 6 Medium-Specific Screening Levels (MSSLs) table, March 2008 (and the 2007 USEPA radionuclide PRG webpage; http://epa-prgs.ornl.gov/radionuclides). Values used are the lower of the indoor and outdoor worker soil MSSLs. Several chemicals have both cancer and non-cancer toxicity criteria. For these chemicals USEPA calculates MSSLs for both cancer and non-cancer endpoints; however only the lower value is published in its MSSL table. The other value is included in a separate spreadsheet table. Both values are shown on separate columns on this table and are included in the screening-level risk assessment calculations.
d - Values used are the maximum from the shallow soils background dataset presented in the Background Shallow Soil Summary Report, BMI Complex and Common Area Vicinity (BRC/TIMET 2007).
e - Based on results of statistical comparison tests performed between shallow background and site datasets (see Table _).
f - Non-cancer hazard indices were calculated by dividing the maximum detected value (or maximum non-detect limit, if higher) by its non-cancer MSSL (lower of indoor/outdoor workers). The total non-cancer hazard index is the sum of all chemical-specific hazard indices.
g - Theoretical upper-bound incremental lifetime cancer risks were calculated by dividing the maximum detected value (or maximum non-detect limit, if higher) by its cancer MSSL (lower of indoor/outdoor workers) times 1E-6. The total incremental lifetime cancer risk is the sum of all chemical-specific cancer risks.
h - Agency for Toxic Substances and Disease Registry (ATSDR) action level of 1.0 parts per billion (ppb).
i - Asbestos results shown are for long protocol structures (>10um).
C = Cancer
N = Non-Cancer
sat = Soil Saturation
max = Region 6 Ceiling Limit
SSL = soil screening level
MSSL = medium-specific screening level

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL H INVESTIGATION
CLARK COUNTY, NEVADA
(Page 1 of 5)

Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
Dioxins/Furans	TCDD TEQ[h]	pg/g	42	19	45%	0.19	6.9	TSB-HR-08 @ 10'	--	--	1000	C	0	--	--	--	--	--	--	--	1000	--	--	7 E-9
Asbestos[i]	Chrysotile	Structures	21	6	29%	1	8	TSB-HJ-09 @ 0'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	See Asbestos Risk Calc.
	Amphibole	Structures	21	3	14%	1	2	TSB-HJ-09 @ 0'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
General Chemistry	Bromide	mg/kg	42	5	12%	0.77	2.3	TSB-HR-03 @ 10'	2.6	2.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Bromine	mg/kg	42	5	12%	1.5	4.5	TSB-HR-03 @ 10'	1.1	5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorate	mg/kg	42	7	17%	1.2	10.3	TSB-HJ-06 @ 10'	5.2	5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chloride	mg/kg	42	40	95%	0.4	820	TSB-HJ-10 @ 0'	2.1	106	--	--	--	--	--	--	--	1110	0	--	--	--	--	--
	Chlorine	mg/kg	42	40	95%	0.79	1640	TSB-HJ-10 @ 0'	0.87	212	100000	max	0	--	--	--	--	--	--	--	--	110000	0.015	--
	Chlorite	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Fluoride	mg/kg	42	19	45%	0.58	1.7	TSB-HJ-10 @ 10'	1	1.1	41000	N	0	--	--	--	--	2.5	0	--	--	41000	0.000041	--
	Nitrate (as N)	mg/kg	42	38	90%	0.26	39.4	TSB-HR-01 @ 10'	0.21	2.2	--	--	--	--	--	--	--	102	0	--	--	--	--	--
	Nitrite (as N)	mg/kg	42	1	2%	0.13	0.13	TSB-HR-03 @ 0'	0.21	0.22	--	--	--	--	--	--	--	0.21	0	--	--	--	--	--
	Orthophosphate as P	mg/kg	42	0	0%	--	--	--	5.2	5.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Perchlorate	mg/kg	42	35	83%	0.0024	22.2	TSB-HR-04 @ 0'	0.0104	1.04	790	N	0	--	--	--	--	--	--	--	--	790	0.028	--
	Sulfate	mg/kg	42	39	93%	3.5	640	TSB-HR-04 @ 10'	5.2	54.7	--	--	--	--	--	--	--	4130	0	--	--	--	--	--
Metals	Aluminum	mg/kg	42	42	100%	4320	9970	TSB-HR-07 @ 10'	13	133	100000	max	0	--	--	--	--	15300	0	No	--	1000000	--	--
	Antimony	mg/kg	42	25	60%	0.15	0.24	TSB-HJ-03 @ 0'	1	5.4	450	N	0	5	0	0.3	0	0.5	0	No	--	450	--	--
	Arsenic	mg/kg	42	42	100%	1.3	5.2	TSB-HJ-01 @ 10'	2.1	10.9	1.8	C	35	29	0	1	42	7.2	0	No	1.8	280	--	--
	Barium	mg/kg	42	42	100%	97.2	275	TSB-HR-05 @ 10'	4.2	21.8	100000	max	0	1600	0	82	42	836	0	No	--	230000	--	--
	Beryllium	mg/kg	42	42	100%	0.35	0.74	TSB-HR-07 @ 10'	0.26	2.7	2200	N	0	63	0	3	0	0.89	0	No	2200	2200	--	--
	Boron	mg/kg	42	0	0%	--	--	--	26	265	100000	max	--	--	--	--	--	11.6	--	No	--	230000	--	--
	Cadmium	mg/kg	42	3	7%	0.14	0.15	TSB-HJ-01 @ 0'	0.13	1.3	560	N	0	8	0	0.4	0	0.16	0	Yes	3000	560	0.0023	4 E-10
	Calcium	mg/kg	42	42	100%	9250	158000	TSB-HR-05 @ 0'	130	2720	--	--	--	--	--	--	--	82800	1	No	--	--	--	--
	Chromium (Total)	mg/kg	42	42	100%	5.7	14.8	TSB-HJ-09 @ 0'	2.1	10.9	100000	max	0	--	--	--	--	16.7	0	Yes	--	1700000	0.0000087	--
	Chromium (VI)	mg/kg	--	--	--	--	--	--	--	--	64	C	--		--		--		--	--	64	3353	--	--
	Cobalt	mg/kg	42	42	100%	4.7	9.5	TSB-HJ-09 @ 10'	0.42	2.2	1900	C	0	--	--	--	--	16.3	0	No	1900	15000	--	--
	Copper	mg/kg	42	42	100%	7.2	23.8	TSB-HJ-06 @ 0'	2.6	26.5	42000	N	0	--	--	--	--	30.5	0	No	--	42000	--	--
	Iron	mg/kg	42	42	100%	7930	15700	TSB-HJ-09 @ 0'	26	265	100000	max	0	--	--	--	--	19700	0	No	--	790000	--	--
	Lead	mg/kg	42	42	100%	4	14.1	TSB-HJ-01 @ 0'	0.63	3.3	800	N	0	--	--	--	--	35.1	0	No	--	--	--	--
	Lithium	mg/kg	42	20	48%	3.2	47.7	TSB-HJ-04 @ 10'	10.4	22.2	--	--	--	--	--	--	--	26.5	4	No	--	--	--	--
	Magnesium	mg/kg	42	42	100%	5680	17000	TSB-HJ-04 @ 10'	130	1330	--	--	--	--	--	--	--	17500	0	No	--	--	--	--
	Manganese	mg/kg	42	42	100%	218	558	TSB-HJ-02 @ 0'	1	5.4	35000	N	0	--	--	--	--	1090	0	No	--	35000	--	--
	Mercury	mg/kg	42	19	45%	0.0076	0.0332	TSB-HJ-04 @ 10'	0.0347	0.037	340	N	0	--	--	--	--	0.11	0	No	--	340	--	--
	Molybdenum	mg/kg	42	23	55%	0.16	1	TSB-HJ-06 @ 0'	1	5.4	5700	N	0	--	--	--	--	2	0	No	--	5700	--	--
	Nickel	mg/kg	42	42	100%	10.2	21.7	TSB-HJ-05 @ 0'	1	5.4	23000	N	0	130	0	7	42	30	0	No	--	23000	--	--
	Niobium	mg/kg	42	4	10%	5.7	11.7	TSB-HJ-05 @ 10'	5.2	27.2	--	--	--	--	--	--	--	2.8	4	Yes	--	--	--	--
	Palladium	mg/kg	42	41	98%	0.16	1	TSB-HR-04 @ 10'	0.26	5.4	--	--	--	--	--	--	--	1.5	0	No	--	--	--	--
	Phosphorus (as P)	mg/kg	42	42	100%	667	2020	TSB-HJ-10 @ 0'	130	2720	--	--	--	--	--	--	--	--	--	No	--	--	--	--
	Platinum	mg/kg	42	0	0%	--	--	--	0.26	2.7	--	--	--	--	--	--	--	0.099	--	No	--	--	--	--
	Potassium	mg/kg	42	42	100%	704	2530	TSB-HJ-07 @ 0'	26	265	--	--	--	--	--	--	--	3890	0	No	--	--	--	--
	Selenium	mg/kg	42	0	0%	--	--	--	1	5.4	5700	N	--	5	--	0.3	--	0.6	--	No	--	5700	--	--
	Silicon	mg/kg	42	42	100%	73.3	578	TSB-HJ-11 @ 10'	52.1	272	--	--	--	--	--	--	--	4150	0	No	--	--	--	--
	Silver	mg/kg	42	18	43%	0.078	0.13	TSB-HJ-02 @ 10'	0.42	2.2	5700	N	0	34	0	2	0	0.2609	0	Yes	--	5700	0.00039	--
Metals	Sodium	mg/kg	42	41	98%	159	1050	TSB-HJ-04 @ 10'	52.1	530	--	--	--	--	--	--	--	1320	0	No	--	--	--	--
	Strontium	mg/kg	42	42	100%	77.1	500	TSB-HR-04 @ 10'	1	5.4	100000	max	0	--	--	--	--	808	0	No	--	680000	--	--
	Sulfur	mg/kg	42	2	5%	1310	2400	TSB-HJ-04 @ 10'	1040	2220	--	--	--	--	--	--	--	--	--	No	--	--	--	--
	Thallium	mg/kg	42	0	0%	--	--	--	0.42	2.2	80	N	--	--	--	--	--	1.8	--	No	--	80	--	--
	Tin	mg/kg	42	15	36%	0.064	0.66	TSB-HJ-09 @ 0'	0.42	2.2	100000	max	0	--	--	--	--	0.8	0	No	--	680000	--	--
	Titanium	mg/kg	42	42	100%	294	740	TSB-HJ-05 @ 10'	1.3	27.2	100000	max	0	--	--	--	--	1010	0	Yes	--	4200000	0.00018	--
	Tungsten	mg/kg	42	0	0%	--	--	--	1.3	13.3	--	--	--	--	--	--	--	2.5	--	No	--	--	--	--
	Uranium	mg/kg	42	42	100%	0.6	2.4	TSB-HJ-06 @ 10'	0.26	2.7	230	N	0	--	--	--	--	2.7	0	No	--	230	--	--
	Vanadium	mg/kg	42	42	100%	28.2	49.7	TSB-HJ-09 @ 10'	2.1	10.9	5700	N	0	6000	0	300	0	59.1	0	No	--	5700	--	--
	Zinc	mg/kg	42	42	100%	22.1	37.8	TSB-HJ-09 @ 0'	4.2	21.8	100000	max	0	12000	0	620	0	121	0	No	--	340000	--	--
	Zirconium	mg/kg	42	42	100%	9	26.4	TSB-HJ-09 @ 10'	20.9	109	--	--	--	--	--	--	--	179	0	No	--	--	--	--
Organochlorine Pesticides	2,4-DDD	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	11	C	--	--	--	--	--	--	--	--	11	--	--	--
	2,4-DDE	mg/kg	42	1	2%	0.014	0.014	TSB-HJ-09 @ 0'	0.0018	0.0019	7.8	C	0	--	--	--	--	--	--	--	7.8	--	--	2 E-9
	4,4-DDD	mg/kg	42	1	2%	0.0035	0.0035	TSB-HJ-09 @ 0'	0.0018	0.0019	11	C	0	16	0	0.8	0	--	--	--	11	--	--	3 E-10

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL H INVESTIGATION
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
Organochlorine Pesticides	4,4-DDE	mg/kg	42	2	5%	0.0036	0.06	TSB-HJ-09 @ 0'	0.0018	0.019	7.8	C	0	54	0	3	0	--	--	--	7.8	--	--	8 E-9
	4,4-DDT	mg/kg	42	2	5%	0.0019	0.089	TSB-HJ-09 @ 0'	0.0018	0.019	7.8	C	0	32	0	2	0	--	--	--	7.8	470	0.00019	1 E-8
	Aldrin	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	0.11	C	--	0.5	--	0.02	--	--	--	--	0.11	21	--	--
	alpha-BHC	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	0.4	C	--	0.0005	--	0.00003	--	--	--	--	0.4	--	--	--
	alpha-Chlordane	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	beta-BHC	mg/kg	42	3	7%	0.002	0.04	TSB-HJ-09 @ 0'	0.0018	0.0019	1.4	C	0	0.003	2	0.0001	3	--	--	--	1.4	--	--	3 E-8
	Chlordane	mg/kg	42	0	0%	--	--	--	0.018	0.019	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	delta-BHC	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dieldrin	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	0.12	C	--	0.004	--	0.0002	--	--	--	--	0.12	34	--	--
	Endosulfan I	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	4100	N	--	18	--	0.9	--	--	--	--	--	4100	--	--
	Endosulfan II	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	4100	N	--	18	--	0.9	--	--	--	--	--	4100	--	--
	Endosulfan sulfate	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	210	N	--	1	--	0.05	--	--	--	--	--	210	--	--
	Endrin aldehyde	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Endrin ketone	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	gamma-Chlordane	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	7.2	C	--	10	--	0.5	--	--	--	--	7.2	450	--	--
	Heptachlor	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	0.43	C	--	23	--	1	--	--	--	--	0.43	340	--	--
	Heptachlor epoxide	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	0.21	C	--	0.7	--	0.03	--	--	--	--	0.21	8.9	--	--
	Lindane	mg/kg	42	0	0%	--	--	--	0.0018	0.0019	1.9	C	--	0.009	--	0.0005	--	--	--	--	1.9	270	--	--
	Methoxychlor	mg/kg	42	0	0%	--	--	--	0.0034	0.0037	3400	N	--	160	--	8	--	--	--	--	--	3400	--	--
	Toxaphene	mg/kg	42	0	0%	--	--	--	0.07	0.074	1.7	C	--	31	--	2	--	--	--	--	1.7	--	--	--
Petroleum Hydrocarbons	TPH (as Gasoline)	mg/kg	41	0	0%	--	--	--	0.1	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Oil/Grease	mg/kg	42	0	0%	--	--	--	208	222	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	TPH (as Diesel)	mg/kg	42	2	5%	6.6	13	TSB-HR-07 @ 0'	26	28	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radionuclides	Radium-226	pCi/g	42	42	100%	0.698	2.46	TSB-HR-02 @ 10'	1	1	0.0069	C	42	0.32	42	0.016	42	2.36	2	Yes	0.0069	--	--	4 E-4
	Radium-228	pCi/g	42	42	100%	1.05	3.01	TSB-HJ-07 @ 0'	2	2	0.14	C	42	1.2	37	0.059	42	2.94	1	No	0.14	--	--	--
	Thorium-228	pCi/g	42	42	100%	1.52	2.92	TSB-HJ-11 @ 0'	0.1	0.1	0.25	C	42	66	0	3.3	0	2.28	9	Yes	0.25	--	--	1 E-5
	Thorium-230	pCi/g	42	42	100%	0.84	3.03	TSB-HR-03 @ 10'	0.1	0.1	8.4	C	0	6.1	0	0.3	42	3.01	2	Yes	8.4	--	--	4 E-7
	Thorium-232	pCi/g	42	42	100%	1.11	2.74	TSB-HJ-11 @ 0'	0.1	0.1	7.4	C	0	6.1	0	0.3	42	2.23	3	Yes	7.4	--	--	4 E-7
	Uranium-233/234	pCi/g	42	42	100%	0.937	3.52	TSB-HR-02 @ 10'	1	1	11	C	0	2240	0	112	0	2.84	5	Yes	11	--	--	3 E-7
	Uranium-235/236	pCi/g	42	35	83%	0.0112	0.159	TSB-HR-02 @ 10'	1	1	0.38	C	0	0.78	0	0.039	31	0.21	0	No	0.38	--	--	--
	Uranium-238	pCi/g	42	41	98%	0.839	2.6	TSB-HR-03 @ 10'	1	1	1.6	C	11	0.12	41	0.006	41	2.37	4	Yes	1.6	--	--	2 E-6
SVOCs	1,2,4,5-Tetrachlorobenzene	mg/kg	42	0	0%	--	--	--	0.34	0.37	210	N	--	--	--	--	--	--	--	--	--	210	--	--
	1,2-Diphenylhydrazine	mg/kg	42	0	0%	--	--	--	0.34	0.37	2.4	C	--	--	--	--	--	--	--	--	2.4	--	--	--
	1,4-Dioxane	mg/kg	42	0	0%	--	--	--	0.34	0.37	170	C	--	--	--	--	--	--	--	--	170	--	--	--
	2,2'-/4,4'-Dichlorobenzil	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4,5-Trichlorophenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	68000	N	--	270	--	14	--	--	--	--	--	68000	--	--
	2,4,6-Trichlorophenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	170	C	--	0.2	--	0.008	--	--	--	--	170	680	--	--
	2,4-Dichlorophenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	2100	N	--	1	--	0.05	--	--	--	--	--	2100	--	--
	2,4-Dimethylphenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	14000	N	--	9	--	0.4	--	--	--	--	--	14000	--	--
	2,4-Dinitrophenol	mg/kg	42	0	0%	--	--	--	1.7	1.8	1400	N	--	0.3	--	0.01	--	--	--	--	--	1400	--	--
	2,4-Dinitrotoluene	mg/kg	42	0	0%	--	--	--	0.34	0.37	1400	N	--	0.0008	--	4E-05	--	--	--	--	--	1400	--	--
	2,6-Dinitrotoluene	mg/kg	42	0	0%	--	--	--	0.34	0.37	680	N	--	0.0007	--	0.00003	--	--	--	--	--	680	--	--
	2-Chloronaphthalene	mg/kg	42	0	0%	--	--	--	0.34	0.37	26000	N	--	--	--	--	--	--	--	--	--	26000	--	--
	2-Chlorophenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	240	N	--	4	--	0.2	--	--	--	--	--	240	--	--
	2-Methylnaphthalene	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Nitroaniline	mg/kg	42	0	0%	--	--	--	1.7	1.8	2000	N	--	--	--	--	--	--	--	--	--	2000	--	--
	2-Nitrophenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3,3'-Dichlorobenzidine	mg/kg	42	0	0%	--	--	--	1.7	1.8	4.3	C	--	0.007	--	0.0003	--	--	--	--	4.3	--	--	--
	3-Methylphenol/4-Methylphenol	mg/kg	42	0	0%	--	--	--	0.69	0.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Nitroaniline	mg/kg	42	0	0%	--	--	--	1.7	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Bromophenyl phenyl ether	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chloro-3-Methylphenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorophenyl phenyl ether	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorothioanisole	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Nitrophenol	mg/kg	42	0	0%	--	--	--	1.7	1.8	5500	N	--	--	--	--	--	--	--	--	--	5500	--	--
	Acenaphthene	mg/kg	42	0	0%	--	--	--	0.34	0.37	33000	N	--	570	--	29	--	--	--	--	--	33000	--	--

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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
SVOCs	Acenaphthylene	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acetophenone	mg/kg	42	0	0%	--	--	--	0.34	0.37	1700	sat	--	--	--	--	--	--	--	--	--	25000	--	--
	Aniline	mg/kg	42	0	0%	--	--	--	0.34	0.37	340	C	--	--	--	--	--	--	--	--	340	4800	--	--
	Anthracene	mg/kg	42	0	0%	--	--	--	0.34	0.37	100000	max	--	12000	--	590	--	--	--	--	--	260000	--	--
	Azobenzene	mg/kg	42	0	0%	--	--	--	0.34	0.37	17	C	--	--	--	--	--	--	--	--	17	--	--	--
	Benzenethiol	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzo(a)anthracene	mg/kg	42	0	0%	--	--	--	0.34	0.37	2.3	C	--	2	--	0.08	--	--	--	--	2.3	--	--	--
	Benzo(a)pyrene	mg/kg	42	0	0%	--	--	--	0.34	0.37	0.23	C	--	8	--	0.4	--	--	--	--	0.23	--	--	--
	Benzo(b)fluoranthene	mg/kg	42	0	0%	--	--	--	0.34	0.37	2.3	C	--	5	--	0.2	--	--	--	--	2.3	--	--	--
	Benzo(g,h,i)perylene	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Benzo(k)fluoranthene	mg/kg	42	0	0%	--	--	--	0.34	0.37	23	C	--	49	--	2	--	--	--	--	23	--	--	--
	Benzoic acid	mg/kg	42	0	0%	--	--	--	1.7	1.8	100000	max	--	400	--	20	--	--	--	--	--	2700000	--	--
	Benzyl alcohol	mg/kg	42	0	0%	--	--	--	0.34	0.37	100000	max	--	--	--	--	--	--	--	--	--	210000	--	--
	Benzyl butyl phthalate	mg/kg	42	1	2%	0.11	0.11	TSB-HJ-01 @ 10'	0.34	0.37	240	sat	0	930	0	810	0	--	--	--	--	140000	0.0000026	--
	bis(2-Chloroethoxy) methane	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(2-Chloroethyl) ether	mg/kg	42	0	0%	--	--	--	0.34	0.37	0.62	C	--	0.0004	--	0.00002	--	--	--	--	0.62	--	--	--
	bis(2-Chloroisopropyl) ether	mg/kg	42	0	0%	--	--	--	0.34	0.37	8.1	C	--	--	--	--	--	--	--	--	8.1	4300	--	--
	bis(2-Ethylhexyl) phthalate	mg/kg	42	1	2%	0.069	0.069	TSB-HJ-01 @ 10'	0.34	0.37	140	C	0	--	0	--	0	--	--	--	140	14000	0.000026	3 E-9
	bis(p-Chlorophenyl) disulfide	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	bis(p-Chlorophenyl) sulfone	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Carbazole	mg/kg	42	0	0%	--	--	--	0.34	0.37	96	C	--	0.6	--	0.03	--	--	--	--	96	--	--	--
	Chrysene	mg/kg	42	0	0%	--	--	--	0.34	0.37	230	C	--	160	--	8	--	--	--	--	230	--	--	--
	Dibenzo(a,h)anthracene	mg/kg	42	0	0%	--	--	--	0.34	0.37	0.23	C	--	2	--	0.08	--	--	--	--	0.23	--	--	--
	Dibenzofuran	mg/kg	42	0	0%	--	--	--	0.34	0.37	1700	N	--	--	--	--	--	--	--	--	--	1700	--	--
	Dibutyl phthalate	mg/kg	42	0	0%	--	--	--	0.34	0.37	68000	N	--	2300	--	270	--	--	--	--	--	68000	--	--
	Diethyl phthalate	mg/kg	42	0	0%	--	--	--	0.34	0.37	100000	max	--	--	--	--	--	--	--	--	--	550000	--	--
	Dimethyl phthalate	mg/kg	42	0	0%	--	--	--	0.34	0.37	100000	max	--	--	--	--	--	--	--	--	--	6800000	--	--
	Di-n-octyl phthalate	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	10000	--	10000	--	--	--	--	--	--	--	--
	Diphenyl sulfone	mg/kg	42	0	0%	--	--	--	0.34	0.37	2100	N	--	--	--	--	--	--	--	--	--	2100	--	--
	Fluoranthene	mg/kg	42	0	0%	--	--	--	0.34	0.37	24000	N	--	4300	--	210	--	--	--	--	--	24000	--	--
	Fluorene	mg/kg	42	0	0%	--	--	--	0.34	0.37	26000	N	--	560	--	28	--	--	--	--	--	26000	--	--
	Hexachloro-1,3-butadiene	mg/kg	42	0	0%	--	--	--	0.34	0.37	25	C	--	2	--	0.1	--	--	--	--	25	680	--	--
	Hexachlorobenzene	mg/kg	42	0	0%	--	--	--	0.34	0.37	1.2	C	--	2	--	0.1	--	--	--	--	1.2	550	--	--
	Hexachlorocyclopentadiene	mg/kg	42	0	0%	--	--	--	1.7	1.8	4100	N	--	400	--	20	--	--	--	--	--	4100	--	--
	Hexachloroethane	mg/kg	42	0	0%	--	--	--	0.34	0.37	140	C	--	0.5	--	0.02	--	--	--	--	140	680	--	--
	Hydroxymethyl phthalimide	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Indeno(1,2,3-cd)pyrene	mg/kg	42	0	0%	--	--	--	0.34	0.37	2.3	C	--	14	--	0.7	--	--	--	--	2.3	--	--	--
	Isophorone	mg/kg	42	0	0%	--	--	--	0.34	0.37	2000	C	--	0.5	--	0.03	--	--	--	--	2000	140000	--	--
	Naphthalene	mg/kg	42	0	0%	--	--	--	0.34	0.37	190	N	--	84	--	4	--	--	--	--	--	190	--	--
	Nitrobenzene	mg/kg	42	0	0%	--	--	--	0.34	0.37	110	N	--	0.1	--	0.007	--	--	--	--	--	110	--	--
	N-nitrosodi-n-propylamine	mg/kg	42	0	0%	--	--	--	0.34	0.37	0.27	C	--	0.00005	--	0.000002	--	--	--	--	0.27	--	--	--
	N-nitrosodiphenylamine	mg/kg	42	0	0%	--	--	--	0.34	0.37	390	C	--	1	--	0.06	--	--	--	--	390	--	--	--
	o-Cresol	mg/kg	42	0	0%	--	--	--	0.34	0.37	34000	N	--	15	--	0.8	--	--	--	--	--	34000	--	--
	Octachlorostyrene	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	p-Chloroaniline	mg/kg	42	0	0%	--	--	--	0.34	0.37	2700	N	--	0.7	--	0.03	--	--	--	--	--	2700	--	--
	p-Chlorothiophenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pentachlorobenzene	mg/kg	42	0	0%	--	--	--	0.34	0.37	550	N	--	--	--	--	--	--	--	--	--	550	--	--
	Pentachlorophenol	mg/kg	42	0	0%	--	--	--	1.7	1.8	10	C	--	0.03	--	0.001	--	--	--	--	10	13000	--	--
	Phenanthrene	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenol	mg/kg	42	0	0%	--	--	--	0.34	0.37	100000	max	--	100	--	5	--	--	--	--	--	210000	--	--
	Phenyl Disulfide	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phenyl Sulfide	mg/kg	42	0	0%	--	--	--	0.34	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Phthalic acid	mg/kg	42	0	0%	--	--	--	1.7	1.8	100000	max	--	--	--	--	--	--	--	--	--	680000	--	--
	p-Nitroaniline	mg/kg	42	0	0%	--	--	--	1.7	1.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Pyrene	mg/kg	42	0	0%	--	--	--	0.34	0.37	32000	N	--	4200	--	210	--	--	--	--	--	32000	--	--
	Pyridine	mg/kg	42	0	0%	--	--	--	0.69	0.73	680	N	--	--	--	--	--	--	--	--	--	680	--	--

TABLE 1
SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL H INVESTIGATION
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
VOCs	1,1,1,2-Tetrachloroethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	7.1	C	--	--	--	--	--	--	--	--	7.1	2000	--	--
	1,1,1-Trichloroethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1400	sat	--	2	--	0.1	--	--	--	--	--	17000	--	--
	1,1,2,2-Tetrachloroethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	0.9	C	--	0.003	--	0.0002	--	--	--	--	0.9	3900	--	--
	1,1,2-Trichloroethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1.9	C	--	0.02	--	0.0009	--	--	--	--	1.9	150	--	--
	1,1-Dichloroethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	2300	sat	--	23	--	1	--	--	--	--	--	2900	--	--
	1,1-Dichloroethylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	430	N	--	0.06	--	0.003	--	--	--	--	--	430	--	--
	1,1-Dichloropropene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichlorobenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,3-Trichloropropane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1.6	C	--	--	--	--	--	--	--	--	1.6	11	--	--
	1,2,4-Trichlorobenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	240	N	--	5	--	0.3	--	--	--	--	--	240	--	--
	1,2,4-Trimethylbenzene	mg/kg	42	8	19%	0.00038	0.00055	TSB-HJ-04 @ 10'	0.0052	0.0055	200	N	0	--	--	--	--	--	--	--	--	200	0.000028	--
	1,2-Dibromo-3-chloropropane	mg/kg	42	0	0%	--	--	--	0.01	0.011	0.018	C	--	--	--	--	--	--	--	--	0.018	7.5	--	--
	1,2-Dichlorobenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	370	sat	--	17	--	0.9	--	--	--	--	--	410	--	--
	1,2-Dichloroethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	0.77	C	--	0.02	--	0.001	--	--	--	--	0.77	35	--	--
	1,2-Dichloroethylene	mg/kg	42	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2-Dichloropropane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	0.77	C	--	0.03	--	0.001	--	--	--	--	0.77	21	--	--
	1,3,5- Trichlorobenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,3,5-Trimethylbenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	70	N	--	--	--	--	--	--	--	--	--	70	--	--
	1,3-Dichlorobenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	130	N	--	--	--	--	--	--	--	--	--	130	--	--
	1,3-Dichloropropane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	370	N	--	--	--	--	--	--	--	--	--	370	--	--
	1,4-Dichlorobenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	7.5	C	--	2	--	0.1	--	--	--	--	7.5	11000	--	--
	1-Nonanal	mg/kg	42	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2,3-Trimethylbutane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dichloropropane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,2-Dimethylpentane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,3-Dimethylpentane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2,4-Dimethylpentane	mg/kg	42	0	0%	--	--	--	0.021	0.022	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Chlorotoluene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	510	sat	--	--	--	--	--	--	--	--	--	570	--	--
	2-Nitropropane	mg/kg	42	0	0%	--	--	--	0.01	0.011	0.34	C	--	--	--	--	--	--	--	--	0.34	6500	--	--
	2-Phenylbutane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	220	sat	--	--	--	--	--	--	--	--	--	420	--	--
	3,3-dimethylpentane	mg/kg	42	0	0%	--	--	--	0.01	0.011	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-ethylpentane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3-Methylhexane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4-Chlorotoluene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Acetone	mg/kg	42	9	21%	0.0062	0.019	TSB-HJ-07 @ 10'	0.021	0.022	56000	N	0	16	0	0.8	0	--	--	--	--	56000	0.00000039	--
	Acetonitrile	mg/kg	42	1	2%	0.021	0.021	TSB-HR-03 @ 10'	0.052	0.055	2000	N	0	--	--	--	--	--	--	--	--	2000	0.000028	--
	Benzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1.5	C	--	0.03	--	0.002	--	--	--	--	1.5	120	--	--
	Bromobenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	110	N	--	--	--	--	--	--	--	--	--	110	--	--
	Bromodichloromethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	2.4	C	--	0.6	--	0.03	--	--	--	--	2.4	1000	--	--
	Bromomethane	mg/kg	42	0	0%	--	--	--	0.01	0.011	13	N	--	0.2	--	0.01	--	--	--	--	--	13	--	--
	Carbon disulfide	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	720	sat	--	32	--	2	--	--	--	--	--	1200	--	--
	Carbon tetrachloride	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	0.53	C	--	0.07	--	0.003	--	--	--	--	0.53	790	--	--
	Freon-11	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1300	N	--	--	--	--	--	--	--	--	--	1300	--	--
	Freon-12	mg/kg	42	0	0%	--	--	--	0.01	0.011	310	N	--	--	--	--	--	--	--	--	--	310	--	--
	Freon-113	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	5600	sat	--	--	--	--	--	--	--	--	--	69000	--	--
	Chlorobenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	460	N	--	1	--	0.07	--	--	--	--	--	460	--	--
	Chlorobromomethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chlorodibromomethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	2.4	C	--	0.4	--	0.02	--	--	--	--	2.4	1400	--	--
	Chloroethane	mg/kg	42	0	0%	--	--	--	0.01	0.011	6.5	C	--	--	--	--	--	--	--	--	6.5	19000	--	--
	Chloroform	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	0.52	C	--	0.6	--	0.03	--	--	--	--	0.52	190	--	--
	Chloromethane	mg/kg	42	0	0%	--	--	--	0.01	0.011	160	N	--	--	--	--	--	--	--	--	--	160	--	--
	cis-1,2-Dichloroethylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	150	N	--	0.4	--	0.02	--	--	--	--	--	150	--	--
	cis-1,3-Dichloropropylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1.6	C	--	0.004	--	0.0002	--	--	--	--	1.6	48	--	--
	Cymene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Dibromomethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	550	N	--	--	--	--	--	--	--	--	--	550	--	--
	Dichloromethane	mg/kg	42	10	24%	0.0035	0.017	TSB-HJ-05 @ 10'	0.0052	0.0055	21	C	0	0.02	0	0.001	10	--	--	--	21	9800	0.0000017	8 E-10
	Ethanol	mg/kg	42	0	0%	--	--	--	0.26	0.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--

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SOIL DATA AND SCREENING-LEVEL RISK ASSESSMENT RESULTS SUMMARY
TRONOX PARCEL H INVESTIGATION
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Parameter of Interest	Chemical	Result Unit	Total Count	Detect Count	Detect Frequency	Min. Detect[a]	Max. Detect[a]	Location of Max. Detect	Min. Non-Detect Limit[b]	Max. Non-Detect Limit[b]	Worker Soil MSSL[c]	MSSL Basis	Count of Detects > MSSL	SSL (DAF = 20)[c]	Count of Detects > SSL (20)	SSL (DAF = 1)[c]	Count of Detects > SSL (1)	Max. Bkgrd[d]	Count of Detects > Bkgrd	Above Bkgrd?[e]	Worker Cancer MSSL[c]	Worker Non-Cancer MSSL[c]	Non-Cancer Hazard Index[f]	Incremental Lifetime Cancer Risk[g]
VOCs	Ethylbenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	230	sat	--	13	--	0.7	--	--	--	--	--	6000	--	--
	Hexane, 2-methyl-	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Isopropylbenzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	520	N	--	--	--	--	--	--	--	--	--	520	--	--
	m,p-Xylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl disulfide	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl ethyl ketone	mg/kg	42	0	0%	--	--	--	0.021	0.022	34000	sat	--	--	--	--	--	--	--	--	--	130000	--	--
	Methyl iodide	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methyl isobutyl ketone	mg/kg	42	0	0%	--	--	--	0.021	0.022	17000	sat	--	--	--	--	--	--	--	--	--	52000	--	--
	Methyl n-butyl ketone	mg/kg	42	0	0%	--	--	--	0.021	0.022	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	MTBE (Methyl tert-butyl ether)	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	72	C	--	--	--	--	--	--	--	--	72	20000	--	--
	n-Butyl benzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	240	sat	--	--	--	--	--	--	--	--	--	560	--	--
	n-Heptane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	n-Propyl benzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	240	sat	--	--	--	--	--	--	--	--	--	560	--	--
	o-Xylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Styrene (monomer)	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1700	sat	--	4	--	0.2	--	--	--	--	--	20000	--	--
	tert-Butyl benzene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	390	sat	--	--	--	--	--	--	--	--	--	500	--	--
	Tetrachloroethylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1.7	C	--	0.06	--	0.003	--	--	--	--	1.7	2400	--	--
	Toluene	mg/kg	42	5	12%	0.00054	0.0017	TSB-HJ-08 @ 10'	0.0052	0.0055	520	sat	0	12	0	0.6	0	--	--	--	--	22000	0.00000025	--
	trans-1,2-Dichloroethylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	180	N	--	0.7	--	0.03	--	--	--	--	--	180	--	--
	trans-1,3-Dichloropropylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1.6	C	--	0.004	--	0.0002	--	--	--	--	1.6	48	--	--
	Tribromomethane	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	240	C	--	0.8	--	0.04	--	--	--	--	240	14000	--	--
	Trichloroethylene	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	0.092	C	--	0.06	--	0.003	--	--	--	--	0.092	110	--	--
	Vinyl acetate	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	1400	N	--	170	--	8	--	--	--	--	--	1400	--	--
	Vinyl chloride	mg/kg	42	0	0%	--	--	--	0.0052	0.0055	0.86	C	--	0.01	--	0.0007	--	--	--	--	0.86	150	--	--
	Xylenes (total)	mg/kg	42	0	0%	--	--	--	0.01	0.011	210	sat	--	210	--	10	--	--	--	--	--	640	--	--
PCBs	Aroclor 1016	mg/kg	42	0	0%	--	--	--	0.034	0.037	24	C	--	--	--	--	--	--	--	--	24	41	--	--
	Aroclor 1221	mg/kg	42	0	0%	--	--	--	0.034	0.037	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
	Aroclor 1232	mg/kg	42	0	0%	--	--	--	0.034	0.037	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
	Aroclor 1242	mg/kg	42	0	0%	--	--	--	0.034	0.037	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
	Aroclor 1248	mg/kg	42	0	0%	--	--	--	0.034	0.037	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
	Aroclor 1254	mg/kg	42	0	0%	--	--	--	0.034	0.037	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
	Aroclor 1260	mg/kg	42	0	0%	--	--	--	0.034	0.037	0.83	C	--	--	--	--	--	--	--	--	0.83	12	--	--
																						Total Non-Cancer Hazard Index:	0.046	
																						Total Incremental Lifetime Cancer Risk - Non-Radionuclides:		6 E-8
																						Total Incremental Lifetime Cancer Risk - Radionuclides:		4 E-4
																						Total Incremental Lifetime Cancer Risk - Radionuclides (Max. Background):		4 E-4

a - Range of detections include estimated values of detect results between the detection limit and reporting limit. As such some minimum detected concentrations may be below the minimum reporting limit. In these cases the respective sample results are flagged in the data set.
b - The quantitation limits shown include samples which had detections. For screening purposes, the detection limit was used for comparison to the screening levels.
c - From USEPA Region 6 Medium-Specific Screening Levels (MSSLs) table, March 2008 (and the 2007 USEPA radionuclide PRG webpage; http://epa-prgs.ornl.gov/radionuclides). Values used are the lower of the indoor and outdoor worker soil MSSLs. Several chemicals have both cancer and non-cancer toxicity criteria. For these chemicals USEPA calculates MSSLs for both cancer and non-cancer endpoints; however only the lower value is published in its MSSL table. The other value is included in a separate spreadsheet table. Both values are shown on separate columns on this table and are included in the screening-level risk assessment calculations.
d - Values used are the maximum from the shallow soils background dataset presented in the Background Shallow Soil Summary Report, BMI Complex and Common Area Vicinity (BRC/TIMET 2007).
e - Based on results of statistical comparison tests performed between shallow background and site datasets (see Table _).
f - Non-cancer hazard indices were calculated by dividing the maximum detected value (or maximum non-detect limit, if higher) by its non-cancer MSSL (lower of indoor/outdoor workers). The total non-cancer hazard index is the sum of all chemical-specific hazard indices.
g - Theoretical upper-bound incremental lifetime cancer risks were calculated by dividing the maximum detected value (or maximum non-detect limit, if higher) by its cancer MSSL (lower of indoor/outdoor workers) times 1E-6. The total incremental lifetime cancer risk is the sum of all chemical-specific cancer risks.
h - Agency for Toxic Substances and Disease Registry (ATSDR) action level of 1.0 parts per billion (ppb).
i - Asbestos results shown are for long protocol structures (>10um).
C = Cancer
N = Non-Cancer
sat = Soil Saturation
max = Region 6 Ceiling Limit
SSL = soil screening level
MSSL = medium-specific screening level

FINAL

Meeting Minutes

Project: Tronox (TRX)
Location: NDEP – Las Vegas Office
Time and Date: 8:30 AM, May 15, 2008
In Attendance: NDEP – Brian Rakvica, Shannon Harbour
Tronox –Susan Crowley
Environmental Answers – Keith Bailey (for TRX)
AIG – Cindy Hunter, Joseph Guerriero, Eric McCabe

CC: Jim Najima, Paul Hackenberry, Brian Giroux, Todd Croft

1. The meeting was held to discuss various topics including on-site and off-site remediation and sampling.
2. Mixing Zone Calculations
   a. TRX has developed a spreadsheet to calculate the dilution factor needed dependent upon the flow remaining in the Las Vegas Wash after the SCOP project has been completed.
   b. NDEP stated that NAC445A.144 contains the standards for beneficial use for toxic substances. Boron, manganese and iron appear to be the most likely issues, however, preliminary calculations show no problems.
   c. TRX stated that the TDS that TRX discharges is currently 6,000 ppm, however, the addition of caustic for pH control (discussed below) is increasing the TDS.
   d. TRX will provide the mixing zone calculations spreadsheet to the NDEP next week. **ACTION ITEM.**
   e. NDEP stated that the SCOP project is projecting a base wash flow of 20 MGD and approximately 30 MGD of effluent flow from the existing wastewater treatment facilities.
   f. NDEP stated that the City of North Las Vegas was constructing a wastewater treatment facility that would discharge directly into Las Vegas Wash when operational.
   g. TRX stated that they hoped to maintain their existing discharge to the LV Wash.
3. NPDES Permit Exceedances
   a. TRX stated that they have had several pH exceedances of their NPDES permit.
   b. TRX has been adding approximately 330 gallons per day of 25% caustic in following the FBR system to bring the pH above 6.5 as specified in their permit.
   c. TRX stated that they have been in communication with BWPC and were trying to talk with Al Tinney on the possibility of changing the pH limit to 6.0 as was reportedly allowed for the City of Henderson WRF discharge permit.
   d. NDEP noted that changing the pH limit would open the permit up to EPA review.
   e. NDEP and TRX discussed the possibility of discharging using an UIC permit but that TDS would make this problematic.
4. Alternative Remediation Testing
   a. TRX noted that two remediation pilot tests were being considered and stated the following:
      i. The first pilot test is for a vadose zone treatment pilot study using an Environmental Security Technology Certification Program (ESTCP) grant.
         1) Shaw Environmental has collected samples from several 35 ft by 35 ft test blocks near the old D-1 Building/slab and has initiated column studies. The samples contained approximately 50 mg/kg perchlorate.

2) TRX will provide the work plan for the pilot study to NDEP and AIG. **ACTION ITEM.**

ii. The second test was for a groundwater treatment system using an Edible Oil Substrate Permeable Reactive Barrier (EOS PRB).
   1) TRX has been investigating the political and technological possibility of using the well line located north of the Athens Road Well Field (ARWF) on City of Henderson (COH) property for the EOS PRB.
   2) EOS would be injected into the groundwater followed by water (stabilized Lake Mead water or COH RIB water) to smear the EOS within the formation. The EOS would provide electron donor for the destruction of perchlorate.
   3) TRX speculates that each injection would last approximately 3 – 4 months.
   4) TRX has contacted COH and believes that COH is receptive to the idea.
   5) If the SCOP project uses the COH RIBs for infiltration of dewatering water, the EOS PRB would be adversely affected and TRX would look into moving the EOS PRB to approximately 200 ft downgradient of the Athens Road piezometer well line to minimize this effect.
   6) NDEP noted that TRX should consider the magnitude and impact of any metals that would be liberated in the reducing zone created by the EOC PRB.
   7) TRX stated that the reducing zone should be similar to the one created by AMPAC's in-situ bioremediation system (i.e. would have a similar ORP) and that adverse metals mobilization should not be a major issue.
   8) TRX stated that the objective of this location of the pilot treatment system would be to "plug" the possible gap in capture at ARWF and reduce the concentration of perchlorate in that area but not necessarily to concentrations less than 4 or 18 ppb.

5. Seep Capture
   a. NDEP noted that the quarterly performance reports indicate low perchlorate mass recovery at the Seep Well Field.
   b. TRX noted that NDEP's direction in the past has been to lower the perchlorate concentration in the Las Vegas Wash; therefore, TRX concentrated effort in the Seep area.
   c. NDEP stated that with the current conditions in the Las Vegas Wash, the NDEP would prefer to capture the approximately 50 pounds per day perchlorate more efficiently.
   d. NDEP and TRX discussed the possibility of an additional extraction well in the ARWF and eliminate the extraction from the Seep Well Field except for what was needed for dilution of the FRB influent for optimal system operation.
   e. NDEP noted that part of this evaluation would also be to determine how long it would take the area between the ARWF and the Seep to "clean up".
   f. It was also discussed that the pilot tests, if successful, might be helpful in cleaning up the area between the ARWF and the Seep.
   g. Discussed how TRX would deal with dilution issues as the Seep water is partially used to dilute TDS. TRX noted that a limited number of Seep wells may be left on line or stabilized lake water may be used.
6. Groundwater Capture
   a. TRX stated the groundwater capture investigation has demonstrated inward flow at the western end of the ARWF but the eastern end is slightly outward.

b. TRX is in the process of bringing ART-6 back online to try to achieve inward flow on the east side of the well field. ART-6 is currently covered by fill material for a COH building.
c. TRX stated that the COH is planning development of the area around the ARWF and will be raising the grade. TRX will have to raise the well heads as well as the utilities and pump flow lines. If wells are not raised, then TRX would have the wells located in vaults, creating confined space entry, which is not practical or cost effective for the current daily monitoring.

7. AP-5 Pond, GW-11, and FBR Remediation System
   a. TRX stated that the AP-5 Pond was recently sampled. Only the northwest quadrant exhibited crystals.
   b. TRX noted that they are hoping to close this pond around April of 2009. Prior to disposal, the solids in AP-5 would be removed and washed. The wash water would be discharged into GW-11.
   c. TRX stated that the perchlorate concentration in GW-11 is approximately 4 mg/L and the hexavalent chromium (Cr-VI) concentration is approximately 0.08 mg/L.
   d. TRX stated that GW-11 would eventually be used as a large equalization basin for the FBR system. The conveyance system would be modified to send the extracted groundwater to GW-11 on a continual basis (instead current operations of discharge to GW-11 only when upset system conditions exist). The FBR system would then have a more consistent influent contaminant loading. TRX indicated that this would not likely occur within the next couple of years.
   e. TRX stated that the GAC system pretreatment for the FBR system is to remove organics to prevent system upset. TRX indicated that the sampling on the effluent of the GAC system has been consistently less that 1 μg/L for organochlorine pesticides. TRX stated that Veolia will be replacing the GAC carbon this year.
8. Nevada Pic-A-Part (Parcel I)
   a. TRX conducted a site walk on this parcel yesterday and noted several small stained areas that had been left behind by the former tenant.
   b. TRX has not been able to contact Mr. David Christensen, owner and operator of Nevada Pic-A-Part. TRX will have upper management attempt contact.
   c. NDEP has also been unsuccessful in contacting Mr. Christensen. NDEP to follow up.
9. Remediation of Other Contaminants
   a. NDEP noted that TRX's NPDES permit limitation is focused on the remediation system objectives and that TRX should be aware that this <u>may</u> change at renewal.
   b. NDEP stated that the TRX is responsible for any contamination discovered in the soil or groundwater on its property; therefore, TRX will ultimately have to treat any contaminants that enter their remediation systems regardless of the source. This is the direction NDEP is giving all of the companies.
10. Groundwater Sampling Plan
    a. NDEP stated that the review of this document has not been completed because the groundwater sampling locations will ultimately be based on the Phase A and Phase B investigation results.
    b. TRX indicated that the Phase B Results should be available by the end of the year.
    c. NDEP expects that the frequency will decrease; the number of sampling locations will decrease and the analytical suites will increase.

Shannon Harbour

From: Shannon Harbour
Sent: Wednesday, May 14, 2008 3:06 PM
To: 'Crowley, Susan'
Cc: Brian Rakvica; Keith Bailey; Flack, Mike; Bilodeau, Sally; Jim Najima
Subject: RE: Agenda Trx-NDEP-ENSR 5-8-08 Teleconf Minutes - Trx Red-lined.doc
Attachments: 080508_NDEP-TRX_Conf_Call_Phase_B-A1.doc

Susan,

I have reviewed the revisions to the teleconference minutes and it seems that TRX has added information not discussed during the call. Minutes should only contain the information that was discussed during the call. I will remove the text about additional items. To expedite the RTC process, you may email the additional items to me to add to the administrative record. Please contact me with any questions.

Shannon

Shannon Harbour, P.E.
Special Projects Branch
NDEP BCA-Las Vegas Office

From: Crowley, Susan [mailto:Susan.Crowley@tronox.com]
Sent: Wednesday, May 14, 2008 11:23 AM
To: Shannon Harbour
Cc: Brian Rakvica; Keith Bailey; Flack, Mike; Bilodeau, Sally
Subject: Agenda Trx-NDEP-ENSR 5-8-08 Teleconf Minutes - Trx Red-lined.doc

Shannon,
As always, thanks for preparing the minutes of our teleconference on Thursday, May 8th. In the teleconference we discussed NDEP's comments re the Tronox Phase B Area I SAP and agreed on a number of items.

I've attached the meeting minutes that have been edited at this end. It is our hope that the final meeting minutes can be used effectively as the Tronox response to comments ... with the understanding that we will be providing the Area I errata pages of Table 2 and Table 3, as well as a revised Plate A (which has the hole locations shifted as NDEP has indicated). In addition, we are on target for providing the Area IV Work Plan (SAP) to you (which will be revised as needed to be consistent with information in these Area I minutes). The Area IV will be delivered to your office on May 19th.

Please let me know if you have any questions or need anything prior to the transmittal of the Area IV Work Plan. See you tomorrow. Thanks again.

TRONOX LLC
Susan Crowley
PO Box 55
Henderson, NV 89009
office 702.651.2234
cell 702.592.7727

efax 405.302.4607
email susan.crowley@tronox.com

It's the set of our sails, not the force of the gales, that determines the way we go.

FINAL

Meeting Minutes

Project: Tronox (TRX)
Location: Conference Call
Time and Date: 1:30 PM, May 8, 2008
In Attendance: NDEP – Brian Rakvica, Shannon Harbour
Tronox –Susan Crowley
Environmental Answers – Keith Bailey (for TRX)

CC: Jim Najima

1. The meeting was held to discuss future Phase B submittals and NDEP's comments to the *Phase B, Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada* (Phase B Area I SAP).
2. The following are TRX's response to comments (RTCs) regarding NDEP's May 6, 2008 Response to the Phase B Area I SAP:
   a. RTC 1, TRX will add requested text.
   b. RTC 2, TRX acknowledges this comment.
   c. RTC 3, TRX will clarify plans for preparing a Human Health Risk Assessment including whether the BRC closure plan approach will be used
   d. RTC 4, TRX stated that broad suite analyses are proposed for currently operating LOUs to provide "baseline" conditions in these areas and if the current operations do not exacerbate contamination future closure would not require sampling for the full SRC list. TRX stated that if a chemical is not detected and is also not a part of the process, then TRX proposes not to conduct future investigations for this chemical.
   e. RTC 5, TRX stated that they are planning a human health risk assessment (HHRA) and will add text to future Phase B SAPs.
   f. RTC 6, TRX stated that deep borings will be advanced in Parcels F (3 borings), G (2 borings), and the small triangular section on the east side of C (1 boring). TRX is not planning any deep characterization in the other Parcels (A, B, C, D, and H).
   g. RTC 7, TRX will use Region VI MSSLs per NDEP's guidance.
   h. RTC 8.a, TRX stated that the sample Tables do not show PCB analyses, but TRX will check the text and revise as necessary. NDEP noted that text in Appendix A, LOU packets stated that PCB would be sampled in groundwater monitoring well M-123.
   i. RTC 8.b, TRX stated that radium will be analyzed using alpha and beta spectrometry.
   j. RTC 9.a, TRX will modify the table at the bottom of page 2-7 as requested.
   k. RTC 9.b.i, TRX will run EPA Method 1312 using 2 preparation methods: 1) with reagent water and 2) with reagent water at pH 5.00 ± 0.05.
   l. RTC 9.b.ii, TRX stated that pH will be analyzed in the field. Laboratory pH will not meet hold times.
   m. RTC 9.c, TRX acknowledges this comment.
   n. RTC 9.d, TRX proposes to sample from the alluvium and Muddy Creek formation for the SPLP tests.
   o. RTC 9.e, TRX will revise the sample locations.
   p. RTC 9.f, TRX acknowledges this comment and will revise the sampling locations.
   q. RTC 9.g, TRX does not agree with this comment. Leaching tests are designed to provide data on movement of SRCs through the alluvium and Muddy Creek soils. Data

from the tests can be used for multiple locations, making it unnecessary to perform a leach test at each LOU.

r. RTC 9.h, TRX stated that the SPLP samples may be used for modeling in the HHRA.

s. RTC 10, TRX acknowledges this comment and will remove Section 3.

t. RTC 11, TRX will collect two samples from any sample with 10 NTU or greater. One sample will be field filtered the other will not. NDEP noted that this procedure should be consistent with the BRC SOPs.

u. RTC 12, TRX acknowledges this comment and will schedule a meeting with NDEP to discuss the Phase B report once data are validated. NDEP will provide guidance at the meeting on use of appropriate statistical tests.

v. RTC 13, TRX acknowledges this comment. If additional investigation work is required, an addendum to the work plan will be proposed.

w. RTC 14, TRX acknowledges this comment.

x. RTC 15.a, TRX acknowledges this comment and will modify text and/or tables as necessary.

y. RTC 15.b, TRX will modify text and/or tables as necessary.

z. RTC 15.c, TRX stated that OCPs will be sampled and analyzed in soils and at the capillary fringe. OCP samples will be collected at other proposed sampling depths but will be placed on hold pending the results of the surface and capillary fringe samples.

aa. RTC 15.d, TRX acknowledges this comment.

bb. RTC 15.e, TRX will add requested text.

cc. RTC 15.f, TRX does not agree with this comment. However, TRX noted that this comment does not change anything substantive in the Phase B Area I SAP. Evaluation of LOU 32 could simplify future closure (see RTC 4 above).

dd. RTC 15.g, TRX acknowledges this comment and will add the SVOC analysis in SA66 and TPH-DRO/ORO to SA67.

ee. RTC 15.h, TRX acknowledges this comment and will modify the table as necessary.

ff. RTC 15.i, TRX acknowledges this comment and will modify the table as necessary.

gg. RTC 15.j, TRX acknowledges this comment and will modify the table as necessary.

hh. RTC 16.a and b, TRX will modify the table to add a column for the soil type(s) expected across the screened interval of each groundwater monitoring well. If the screen interval crosses the AA/MCF interface, TRX will note which unit the sampled groundwater is expected to represent. For example, if the screened interval was 90% AA and 10 % MCF, TRX would note that the groundwater collected would be expected to represent AA conditions. NDEP clarified that it is interested in determining potential bias of the samples where the well screen covers more than one soil type.

ii. RTC 16.c, TRX acknowledges this comment.

jj. RTC 16.d, TRX will review (see RTC 8a).

kk. RTC 17, TRX acknowledges this comment.

ll. RTC 18, TRX acknowledges this comment and will discuss in revised work plans (see RTC for comment 16.a and b).

mm. RTC 19, TRX acknowledges this comment and will modify the figure as necessary.

nn. RTC 20, TRX acknowledges this comment and will modify the plate as necessary. TRX noted and the NDEP agreed that if TRX updates Plate A of the Phase B Area I SAP, then the individual figures for the Appendix A LOU packets do not need to be revised.

oo. RTC 21.a - k, TRX acknowledges this comments and will modify the overall figure as necessary. Individual LOU figures in the Area I work plan will not be revised. .

pp. RTC 21.l, TRX stated that the former acid drain system is located at 10 – 20 fbgs in places and that excavation with a backhoe is very difficult due to collocated utilities. TRX believes that the former acid drain system is constructed of relatively short segments (approximately 5 to 6 ft lengths) and therefore sampling anywhere along the pipeline should be representative of possible worst case scenario conditions. TRX will check the length of the pipe segments, the construction material of the pipe, and the location of other utilities prior to the advancement of these borings.

qq. RTC 21.m, TRX acknowledges this comment and will revise Plate A in lieu on any revisions to the LOU figures.

3. TRX stated that they will provide errata for the Phase B Area I SAP, as needed.
4. TRX stated that the Phase B, Area VI SAP was being revised per NDEP's comments and would be submitted by May 19, 2008.
5. TRX will consider consolidating Phase B, Areas II and III into one SAP that will be submitted in mid-June.
6. TRX stated that the soil gas field work has commenced.
7. TRX stated that the field work for the Phase B Area I SAP should commence after Memorial Day.

May. 07, 2008

Lake Mead cleanup proves successful

EPA, water officials cooperate to reduce levels of perchlorate

By KEITH ROGERS
REVIEW-JOURNAL

While environmental officials in other states have been bickering over who is responsible for cleaning up contamination from the rocket fuel ingredient, perchlorate, and to what level, water quality officials in Nevada have blazed a trail to follow.

J.C. Davis, a spokesman for the Southern Nevada Water Authority, credits the Nevada Division of Environmental Protection with spearheading the cleanup effort that has dramatically reduced levels of it in Lake Mead since it was first discovered there a decade ago.

He said the turning point came when hydrologists were able pinpoint locations where the contamination was entering Las Vegas Wash, which empties into Lake Mead, Southern Nevada's primary drinking water source.

"The key is you take it out before it gets into the lake," Davis said Tuesday.

The tainted groundwater is intercepted, perchlorate is extracted and clean water is then released to continue its course to the lake.

"The people who were actually manufacturing perchlorate stepped up without any compulsory requirements and did the cleanup," he said, recalling how water officials and former rocket fuel manufacturers around Henderson huddled with Nevada environmental officials in the late 1990s to plot a course of action.

"Everybody said, 'What's the object?' The goal is to protect drinking water customers instead of about arguing whether or not it was regulated or to what level of cleanup," Davis said.

Perchlorate has been known to affect the thyroid at high levels.

Prolonged exposures can reduce the amount of thyroid hormones that control the body's ability to break down food and produce energy.

Once cleanup measures were in place, perchlorate levels fell rapidly, even during drought years like this year when the lake's level is reduced and dilution is comparatively low.

At first, treatment by one former manufacturer, Kerr-McGee, focused on extracting perchlorate using an ion exchange process.

But in 2004, the preferred method switched to using bacteria that consumes perchlorate.

The chemical was manufactured near Henderson at the former Kerr-McGee Chemical Corp., now Tronox, and the former Pacific Engineering & Production Company of Nevada. The compound, ammonium perchlorate, was used as an oxidizer for rocket fuel.

While perchlorate can't be removed through conventional filtration or ozonation processes at the plants that treat drinking water from Lake Mead, the level in local treated drinking water last year was less than 2 parts per billion. That's down from an average of 8 parts per billion to 10 parts per billion in 2004. The highest reading in November 2000 was 24 parts per billion.

A 2006 study by the Centers for Disease Control and Prevention that explored adverse health effects in women who drank water and ate food contaminated by low levels of perchlorate focused on levels of nearly 3 parts per billion, which amounts to about a teaspoon of water in an Olympic-sized swimming pool.

Davis said since cleanup efforts have taken effect, perchlorate in Lake Mead has been consistently below 3 parts per billion.

"We didn't wait for regulations because we know those things take time," he said

Contact reporter Keith Rogers at krogers@reviewjournal.com or 702-383-0308.

Find this article at:
http://www.lvrj.com/news/18721249.html

☐ Check the box to include the list of links referenced in the article.

ndep
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

May 6, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Phase B Source Area Investigation Work Plan, Area I (Northern LOUs), Tronox LLC Facility, Henderson, Nevada
Dated April 3, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Phase B, Area I Sampling Analysis Plan (SAP) identified above and finds the document acceptable with the conditions and comments provided in Attachment A.

Errata sheets should be submitted based on the comments found in Appendix A. TRX should additionally provide an annotated response-to-comments (RTC) letter as part of the errata submittal. Alternately, in place of an RTC letter, TRX can discuss these comments with the NDEP in a meeting or via phone. Please advise the NDEP regarding the schedule for this submittal. Please note that it is NDEP's intent that TRX should be able to proceed with implementation of this SAP upon submittal of the erratum and RTC letter (or completion of meeting with NDEP in lieu of the RTC letter).

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

Attachments A and B

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, DAQEM, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Teri Copeland, 5737 Kanan Road #182, Agoura Hills CA 91301
Paul Hackenberry, Hackenberry Associates, LLC, 550 W. Plumb Lane B425, Reno, NV 89509
Paul Black, Neptune and Company, Inc., 8550 West 14th Street, Suite 100, Lakewood, CO 80215

Attachment A

1. General comment, it is the NDEP's understanding that the purpose of this work plan is to complete site characterization for Area I of the Site. It is the NDEP's understanding that the outputs of the implementation of this work plan will be: definition of decision units; definition of exposure areas; demonstration of the usability and adequacy of the data; completion of some degree of human health risk assessment; or collection of more data. If this is incorrect, please discuss with the NDEP. In future SAPs, please provide additional discussion on this issue.
2. General comment, TRX should note that the NDEP does not necessarily agree that the selected wells in the Appendix A LOU packets are representative of the up-gradient, cross-gradient, and/or down-gradient conditions at the corresponding LOU. It is noted, however, that the overall coverage of the groundwater sampling plan appears adequate.
3. General comment, TRX should clarify with the NDEP if a human health risk assessment (HHRA) work plan is going to be developed by TRX or if TRX is going to rely on the methodologies presented by others (e.g.: BRC's Section 9.0 of the approved *Closure Plan*). Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
4. General comment, TRX should clarify with the NDEP if the areas proposed for "continued use" are going to undergo a HHRA. If not, please explain what, if any, additional actions will be taken for these areas once site characterization is completed. Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
5. General comment, it is not clear that this SAP was developed with risk assessment as the output of the investigations. It is requested that future SAPs explicitly discuss this relationship and how the data that is being collected addresses the needs of a risk assessment. Please clarify this in all future SAPs in addition to providing clarification in the RTC for the Area I SAP.
6. Section 1.0, page 1-1, fourth paragraph, NDEP understands that deeper soils (greater than 10' bgs) may be investigated as part of the "Area" investigations for "Parcels" F, G, H and I. Please discuss this matter with the NDEP if this understanding is incorrect.
7. Section 1.1, page 1-3, TRX states that the USEPA Region IX PRGs may be used for a "screening level risk assessment". Per the NDEP's guidance under separate cover, please do not use the USEPA Region IX PRGs as they are not current. Region VI MSSLs should be used instead.
8. Section 2.3.2, page 2-6, the NDEP has the following comments:
   a. Regarding PCB analysis, please note the USEPA Method 1668 should be used for PCB congener analysis for any areas associated with trespass plumes from the west. Please advise the NDEP of any locations where this analysis will be completed, if applicable.
   b. Regarding radionuclide analyses, please note, as discussed with TRX previously, it is expected that the radionuclide analyses will be consistent with the methods (and preparatory methods) used for the BRC/TIMET background data set.
9. Section 2.3.4.1, the NDEP has the following comments on proposed sample locations for SPLP analyses and physical analyses (Please provide errata sheets as necessary to address these comments in the Area I SAP. These comments should also be addressed in future SAP submittals.):

a. TRX should add the following columns to the table at the bottom of page 2-7:
   i. LOU Number
   ii. Sample depth
   iii. Expected soil type
   iv. Analytes
   v. Rationale
b. TRX has proposed using EPA Method 1312, extraction fluid #2 (reagent water at pH 5.00 ± 0.05). NDEP suggests that TRX additionally use EPA Method 1312, extraction method #3 (reagent water) for comparison by evaluating the following:
   i. All soil wet chemistry for pH if wet chemistry was prepared with equivalent reagent grade water. (For worst case scenario, look for areas of known acid releases)
   ii. All groundwater samples for pH.
c. The minimum sampling depth for the SPLP samples should be located below the source maximum depth (e.g. pond or landfill invert depth). The maximum depth for the SPLP samples should not be greater than the capillary fringe depth. Any samples located within the capillary fringe would potentially be in some state of equilibrium between the soil and liquid phases and therefore not representative of leachability.
d. NDEP suggests that TRX consider sampling different soil types for leachability.
e. NDEP has noted that two of the proposed sample locations proposed for SPLP analyses are located within the influence of the recharge trenches and that TRX has not provided any rationale for these SPLP sampling locations. NDEP suggests that no more than one boring if any be located in this area pending on TRX rationale for the collection of these SPLP samples.
f. The NDEP requests that the samples collected for geotechnical analysis be co-located with the samples collected for leaching characteristics. This will better facilitate any future fate and transport modeling.
g. NDEP suggests that geotechnical and leaching samples be collected for each LOU.
h. The NDEP requests that TRX discuss the anticipated future use of these samples with the NDEP prior to the collection of the SPLP samples.

10. Section 3, after a cursory review of this section, the NDEP has determined that this section should be excluded from this document. The topics discussed in this section are addressed in the Quality Assurance Project Plan (QAPP), which has been approved by the NDEP. TRX should remove Section 3 and reference the QAPP in future submittals. TRX should note that this Section was not reviewed by the NDEP and it is expected that the approved QAPP will dictate the project procedures.
11. Section 3.3.2, page 3-3, as discussed with TRX previously, filtering of groundwater samples is not acceptable. If TRX complies with the SOP for low flow sampling, filtering should not be an issue. Failure to comply with the SOP will result in rejection of the data by the NDEP. If the referenced SOP includes filtering of groundwater samples, the SOP needs to be revised and resubmitted.
12. Section 4, the NDEP suggests that this section removed and a meeting scheduled between TRX and NDEP after the receipt of the analytical data to discuss the statistical analyses that should be used to evaluate the collected data. In addition, the procedures for evaluating data adequacy and usability should be discussed with the NDEP.
13. Section 5.0, page 5-1, TRX states that a final report will be developed and recommendations for additional work will be made. It is suggested that TRX instead discuss the data with the

NDEP and propose additional work as an addendum to this work plan. This is consistent with USEPA's recommended approaches for expedited site characterization.

14. Table 1, please note that the adequacy of the reporting limits in this table have not been reviewed by the NDEP as it is TRX's responsibility to insure that appropriate data is collected.
15. Table 2, Soil Sampling and Analysis Plan (SAP), the NDEP has the following comments (Please revise and resubmit this table. These comments should be additionally addressed in future SAP submittals.):
    a. General comment, in future SAPs, TRX should closely review column "LOU Number" against the "Location Description and Characterized Area Rationale" column and the text and tables of the LOU packets for consistency. NDEP has noted several discrepancies in these columns and the LOU packets.
    b. General comment, in future SAPs, TRX should review the Appendix A LOU packets to check that all LOUs that are associated with a specific boring are discussed in the "Location Description and Characterized Area Rationale" column for the corresponding boring.
    c. General comment, organochlorine pesticides (OCPs) should be sampled to depth in all borings that OCP sampling has been indicated by TRX and/or requested by NDEP. All of Area I is underlain by a plume of organic contaminants that (at least partially) originates to the west of the TRX Site. It is noted that areas within the TRX Site may have also contributed to this plume.
    d. General comment, TRX should note that the appropriate sampling depth for asbestos is the top 2 inches of soil (as indicated in the SOP).
    e. General comment, TRX should revise the table to note that all samples within the 0-1' bgs interval will be collected from 0-0.5' bgs unless the area is paved. If the area is paved it is expected that the sample will be collected from a representative depth beneath the pavement. Alternately, if an unpaved area is within a reasonable distance the sample could simply be moved to the unpaved area.
    f. General comment, NDEP does not believe that LOU 32 (Chromium and Perchlorate Groundwater Remediation Unit) needs to be separately characterized at this time as it is an active remediation area with no reported releases of untreated groundwater with detectable perchlorate or chromium concentrations. Additionally, all borings and groundwater monitoring wells proposed to characterize this LOU are associated with at least one other LOU.
    g. SA66 and SA67, TRX has proposed this boring to evaluate LOU 5 – Beta Ditch, which is in Area II. LOU 5 is in Area II; therefore, there is not an Appendix A LOU packet available for review at this time. Additionally, these two borings are located adjacent to the Area I/Area II boundary. TRX should suspend advancement of these borings for inclusion in the Area II SAP so that NDEP can review the rationale and information included in the Appendix A LOU 5 packet for appropriateness of the proposed analytes and locations of these borings. Alternately, TRX can proceed with the installation of these borings if TRX believes that the analytical suites are sufficiently broad as to address both Areas sufficiently; however, the NDEP suggests that TRX add SVOC analysis to SA 66 and TPH-DRO/ORO analysis to SA67 for consistency with the area.
    h. RSAN2 is not associated with LOU 35 according to the Appendix A LOU 35 packet and Table 5.

i. The following borings should be advanced to the water table to be consistent with other borings. (If this depth is not feasible, TRX should supply justification/rationale for the difference in boring depth.): RSAL5, SA152, SA176, and SA189.
j. The following borings should include the corresponding analyses:
   i. TPH-DRO/ORO: SA69, SA79, and SA82
   ii. VOCs: SA79
   iii. SVOCs: SA79 and SA82
   iv. Organochlorine pesticides (OCPs): SA46, SA47, SA74, SA75, SA181, and SA183.
   v. Asbestos: SA152
   vi. PCBs: SA48, SA56, SA166, SA180

16. Table 3, Groundwater SAP, the NDEP has the following comments (Please revise and resubmit this table. These comments should be additionally addressed in future SAP submittals.):
    a. General comment, TRX should note that if the well screen is not know or cannot be determined, then the data collected from the corresponding well may not be useable. TRX should verify the well screen interval as part of the implementation of the SAP.
    b. General comment, TRX should note that the proposed wells should not be screened across the entire water bearing zone (WBZ). NDEP suggests that the proposed wells be able to discretely sample both the alluvial aquifer and transitional Muddy Creek zones. Significant differences have been observed from samples collected from these two strata. NDEP acknowledges that this guidance differs from previous guidance, however, additional data has been received by the NDEP which supports this change.
    c. General comment, TRX should review the Appendix A LOU packets to check that all LOUs that are associated with a monitoring well are discussed in the "Rationale" column for the corresponding monitoring well.
    d. M-123, PCBs should be added to the sampling plan for this well per the text in LOU 35 Appendix A packet.
17. Tables 6 and 7, please note that these tables have not been reviewed by the NDEP as it is TRX's responsibility to insure that appropriate data is collected. It is expected that these tables are consistent with the approved QAPP.
18. Figure 4, it is noted that wells that are designated as "dry" may be a function of the screened interval as deeper portions of the water table aquifer are likely saturated. For example, the transitional Muddy Creek formation or the upper portion of the Muddy Creek formation. This issue should be considered in future SAPs and reports.
19. Figure 5, Phase B Well Locations, TRX should update and resubmit this figure based on NDEP's comments.
20. Plate A, TRX should update and resubmit this plate based on NDEP's comments.
21. Appendix A, the NDEP has the following comments:
    a. General comment, TRX should check the legends of Figure 1 in each of the LOU packets for inclusion of all symbols used on each figure. For example, the following symbols should be defined: bold yellow dashed line, bold grey dashed line, solid thin black line, etc. Please address this in future SAPs.
    b. General comment, TRX should review the NDEP's comments for Figure 1 for each LOU and make appropriate changes to the Soil and Groundwater Sampling Plans (Table 2, Table 3, and Appendix A: Tables A and B). NDEP has provided Attachment B to this letter, which contains LOU maps with hand-noted revisions to illustrate NDEP's

comments. If TRX concurs with these changes, Plate A should be revised to reflect these changes. It is not necessary to revise and resubmit each Figure in Appendix A.

c. General comment, NDEP has noted that the cation data from the Phase A Investigation were collected several months after the anion data. Please note that these data are not useable for cation/anion balance. Also, please contact the NDEP to explain this collection procedure as it is very atypical.

d. LOU 1, (Former) Trade Effluent Settling Ponds, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Table B, please see the above comments for Table 3 as applicable.
   iii. Figure 1, the NDEP has the following comments:
      1. General comment, LOU 60 should be noted.
      2. SA79 should be relocated within the white-stained area located approximately 100 feet west-northwest from the originally proposed location of SA79.
      3. RSAI2 should be relocated within the white-stained area adjacent to the east of LOU 10 located approximately 230 feet north of the originally proposed location of RSAI2. This boring should be relocated to better characterize LOU 10.
      4. RSAI3 should be relocated to just south of LOU 10 to better characterize LOU 10.

e. LOU 2, Open Area South of the Trade Effluent Settling Ponds, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. SA134 should be added to this figure.
      2. SA15 marker should be added to this figure.
      3. M6A should be added to the groundwater sampling analysis plan for LOU 2.

f. LOU 10, On-Site Hazardous Waste Landfill (Closed) , the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, RSAI2 and RSAI3 should be relocated as discussed in the above LOU 1 comments.

g. LOU 22 and LOU 23, Ponds WC-West and WC-East, respectively, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. SA79 should be relocated as discussed in the above LOU 1 comments.
      2. RSAJ8 may be removed from the sampling plan. The NDEP believes that this boring is located too far cross-gradient from LOU 23 for characterization of this LOU.
      3. M-84 should be replaced with well M-86 in the groundwater sampling plan.

h. LOU 35, Truck Emptying/Dumping Site, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. An additional boring should be added in the large white-stained area near the northwest corner of LOU 35.
      2. An additional boring should be added in the large white-stained area south of SA09 near the western boundary of grid O-3.

3. SA166 should be located as discussed in the following LOU 60 comments.

i. LOU 38, Former Satellite Accumulation Point AP-Laboratory, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, RSAN3 should be relocated adjacent to the northern boundary of LOU #38 in order to place the boring in the down-gradient side of the site based on topography unless TRX has information/additional rationale for locating the boring adjacent to the western boundary of this LOU.

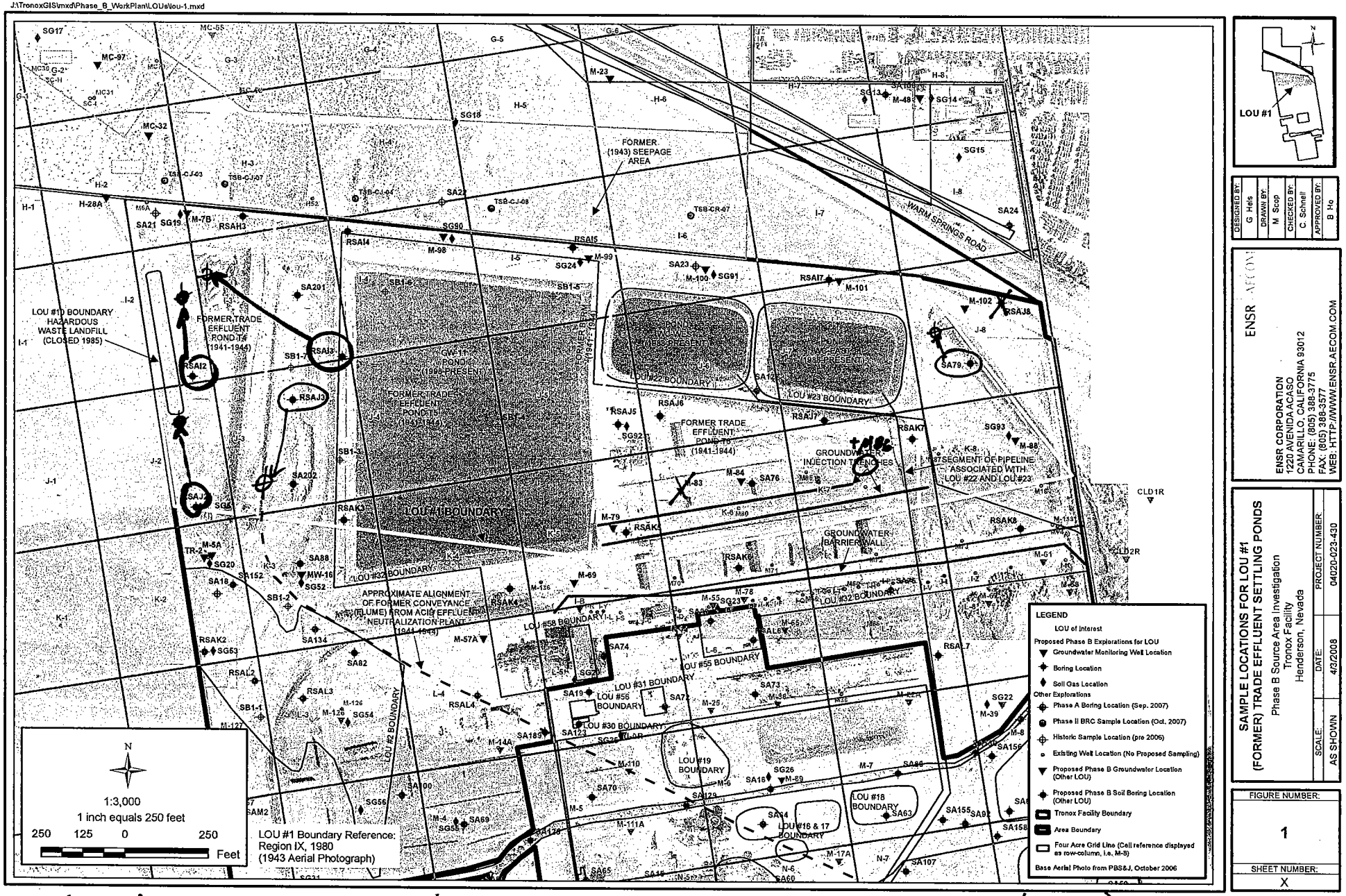
j. LOU 54, AP Plant Area Change House / Laboratory Septic Tank, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. TRX should indicate the location of the septic tank.
      2. SA85 should be located at the outlet for the septic tank.
      3. If the septic tank location is unknown, then TRX should advance three borings in this LOU to triangulate the approximate location of the septic tank.

k. LOU 58, AP Plant Area New Building D-1, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, TRX should review the location of RSAL5 and relocate it as necessary. The aerial photograph seems to indicate the presence of structures on the proposed location for this boring.

l. LOU 60, Former Acid Drain System Segment, the NDEP has the following comments:
   i. Table A, please see the above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. Borings RSAL4, SA50, SA82, SA134, SA166, and SA182, SA189 should be located directly over the former acid drain by using a backhoe or other similar equipment to locate the drain. NDEP requests that TRX locate the borings over joints in the former acid drain system if discovered.
      2. RSAJ3 should be relocated to the outlet of the former acid drain system.
      3. An additional boring should be located to the west of the outlet of the acid drain system approximately the same distance as SA202 is from the outlet to the east.

m. LOU 64, Koch Materials Company Site (Former Asphalt Batch Plant) , the NDEP has the following comments:
   i. Table A, please see above comments for Table 2 as applicable.
   ii. Figure 1, the NDEP has the following comments:
      1. SA46 should be relocated approximately 75 ft west of the eastern boundary and 90 ft north of the southern boundary of LOU 64.
      2. SA50 and SA182 should be located as discussed in the above LOU 60 comments.
      3. RSAO4 should be moved to the approximate location of former boring TS, BG.
      4. An additional sample should be located within the disturbed approximately square area between LOU 64 and LOU 35 (located to the south of the "pan handle" of LOU 64).

Attachment B



Page 10

For: Lou 1, Lou 10, Lou 22 & Lou 23 (8 changes)

X = delete δ = relocate boring +O = add well

Page 11

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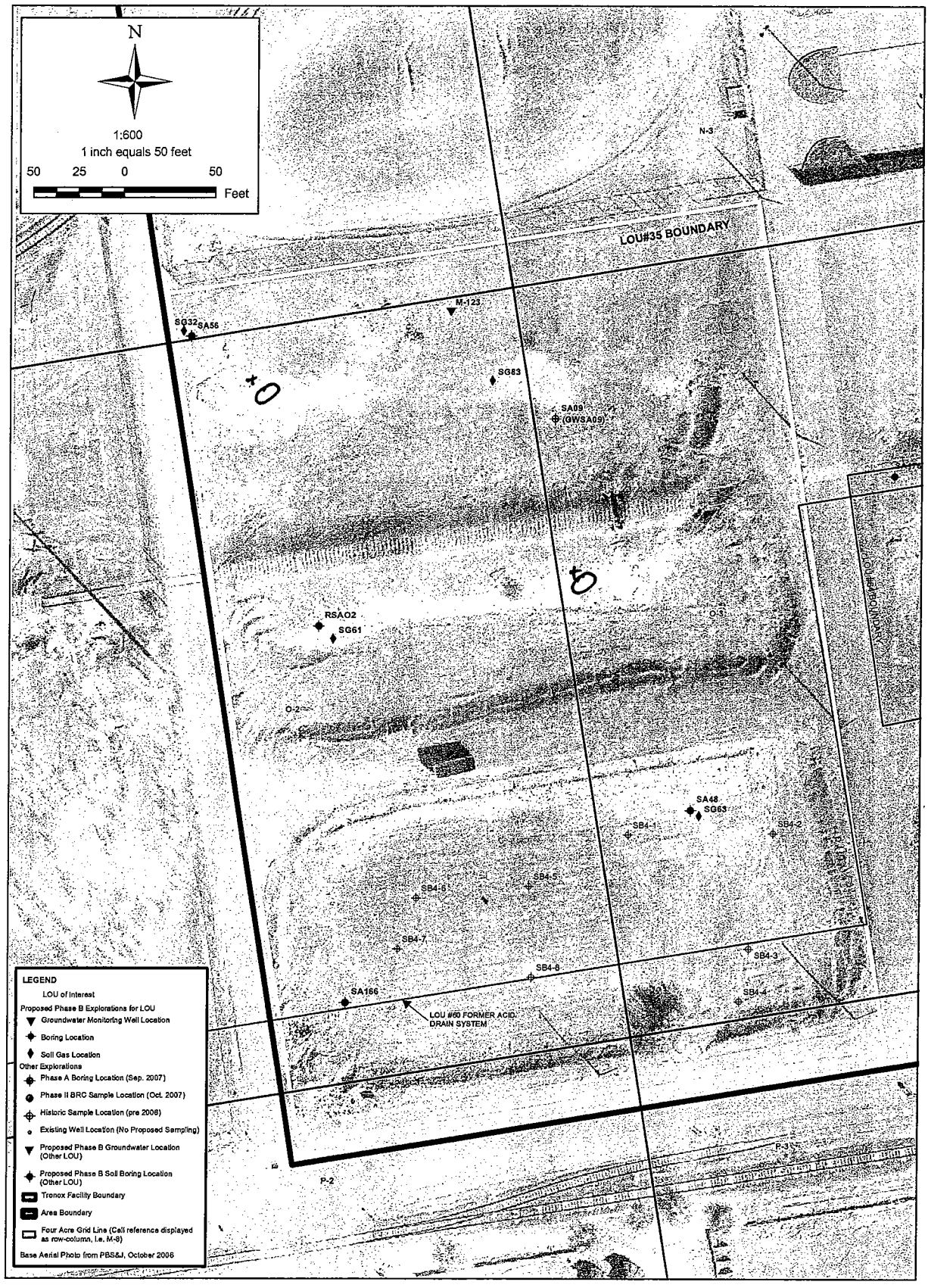
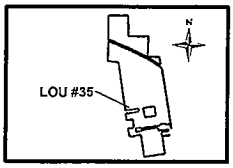


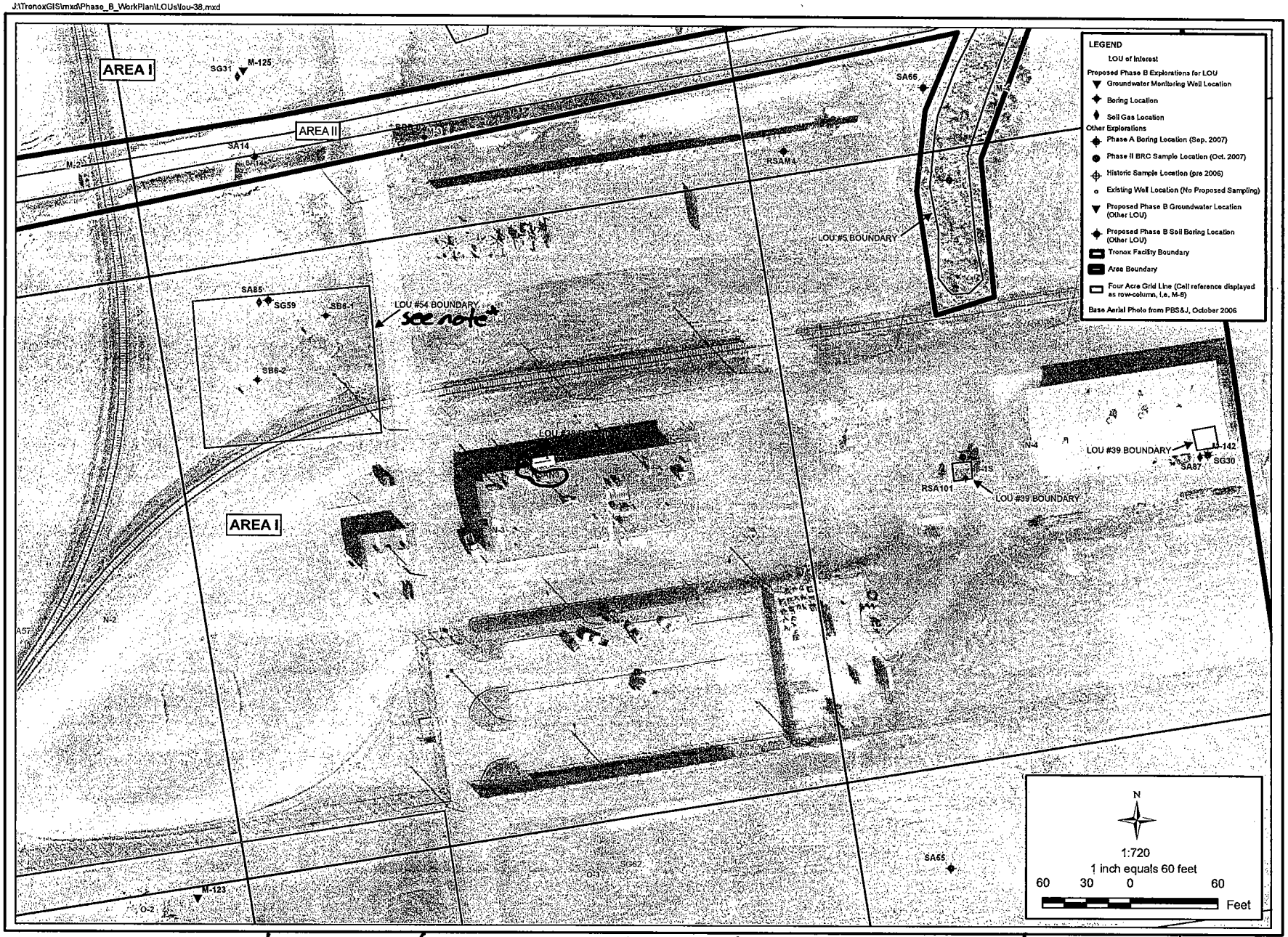
For: LOU 35 (2 changes)
+O = add'l borings

SHEET NUMBER: 1	FIGURE NUMBER: X	SAMPLE LOCATIONS FOR LOU #35 TRUCK EMPTYING/DUMPING SITE Phase B Source Area Investigation Tronox Facility Henderson, Nevada	ENSR | AECOM ENSR CORPORATION 1220 AVENIDA ACASO CAMARILLO, CALIFORNIA 93012 PHONE: (805) 388-3775 FAX: (805) 388-3577 WEB: HTTP://WWW.ENSR.AECOM.COM

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/2/2008	04020-023-430

DESIGNED BY:	B. Ho
DRAWN BY:	M. Scop
CHECKED BY:	C. Schnell
APPROVED BY:	B. Ho





Page 12

For: LOU 38 & LOU 54

* = relocate boring to ◊

*LOU 54, move boring SA85 to septic tank outlet OR if unknown, outlet add 2 additional borings in vicinity to triangulate location of septic system

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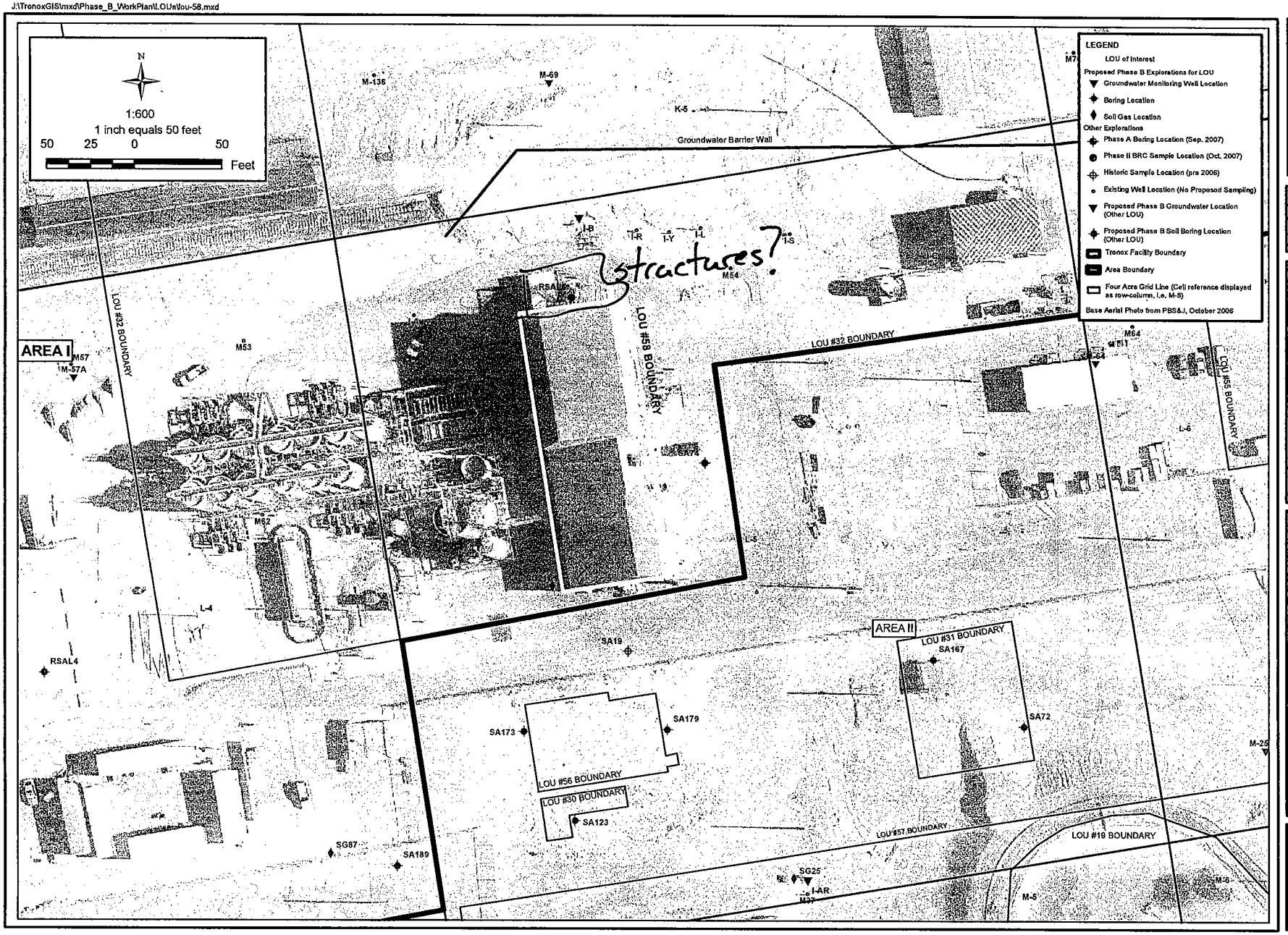

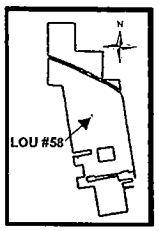

DESIGNED BY:	G. Hels
DRAWN BY:	M. Scop
CHECKED BY:	C. Schnell
APPROVED BY:	B. Ho

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SAMPLE LOCATIONS FOR LOU #58
AP PLANT AREA NEW BUILDING D-1
Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

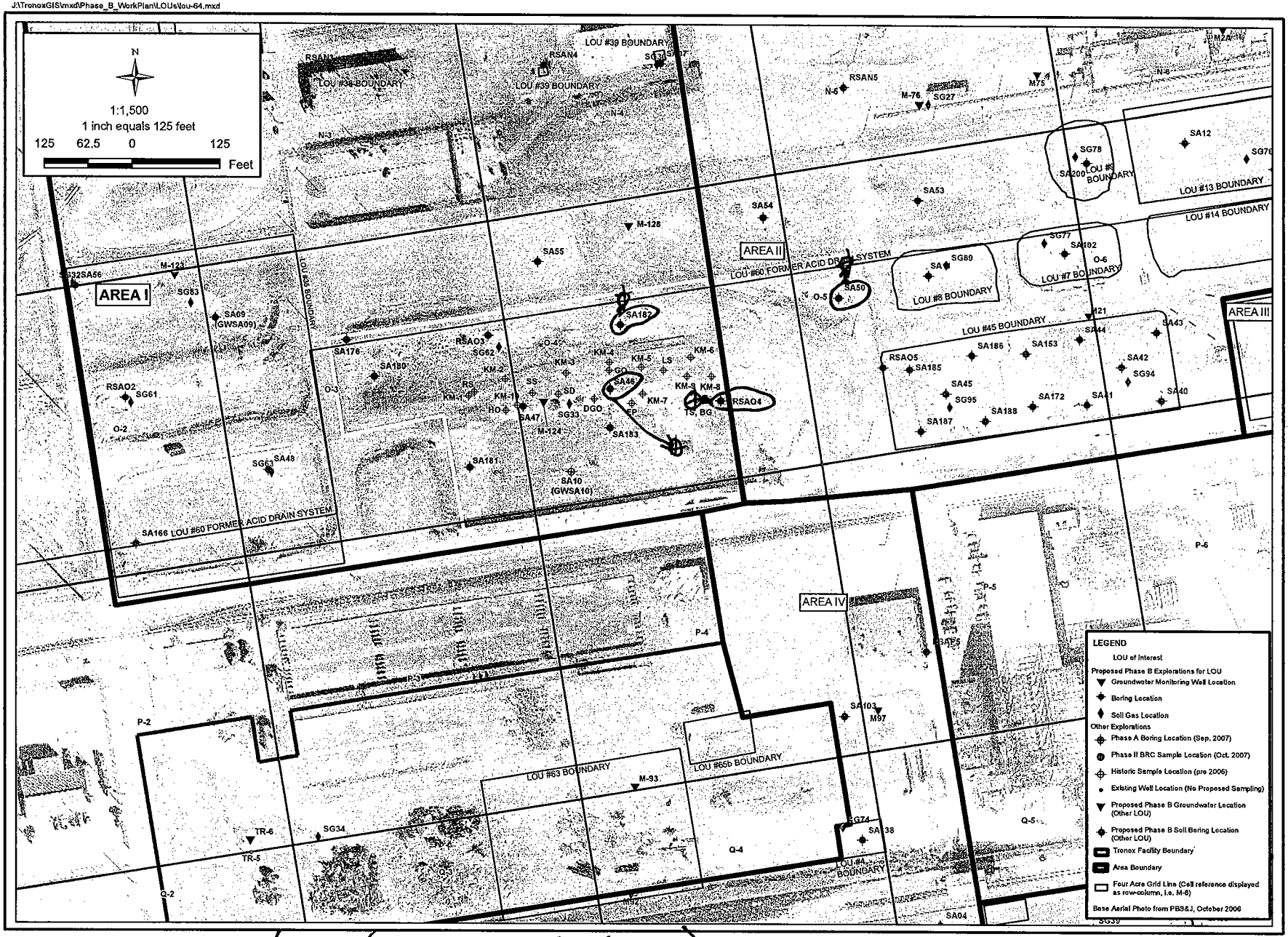
SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/2/2008	04020-023-430

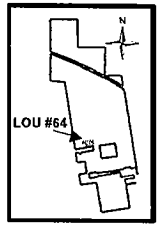
FIGURE NUMBER: 1

SHEET NUMBER: X

Page 13

For: LOU 58





DESIGNED BY:	G. Hels
DRAWN BY:	M. Scop
CHECKED BY:	C. Schnell
APPROVED BY:	B. Ho

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SAMPLE LOCATIONS FOR LOU #64
KOCH MATERIALS COMPANY SITE
(FORMER ASPHALT BATCH PLANT)
Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/3/2008	04020-023-430

FIGURE NUMBER: 1

SHEET NUMBER: X

Page 14

For: LOU 64 (3 area I changes)

δ^{ϕ} = relocate boring to ϕ location

Page 15

For LOU 60 (4 Area I changes

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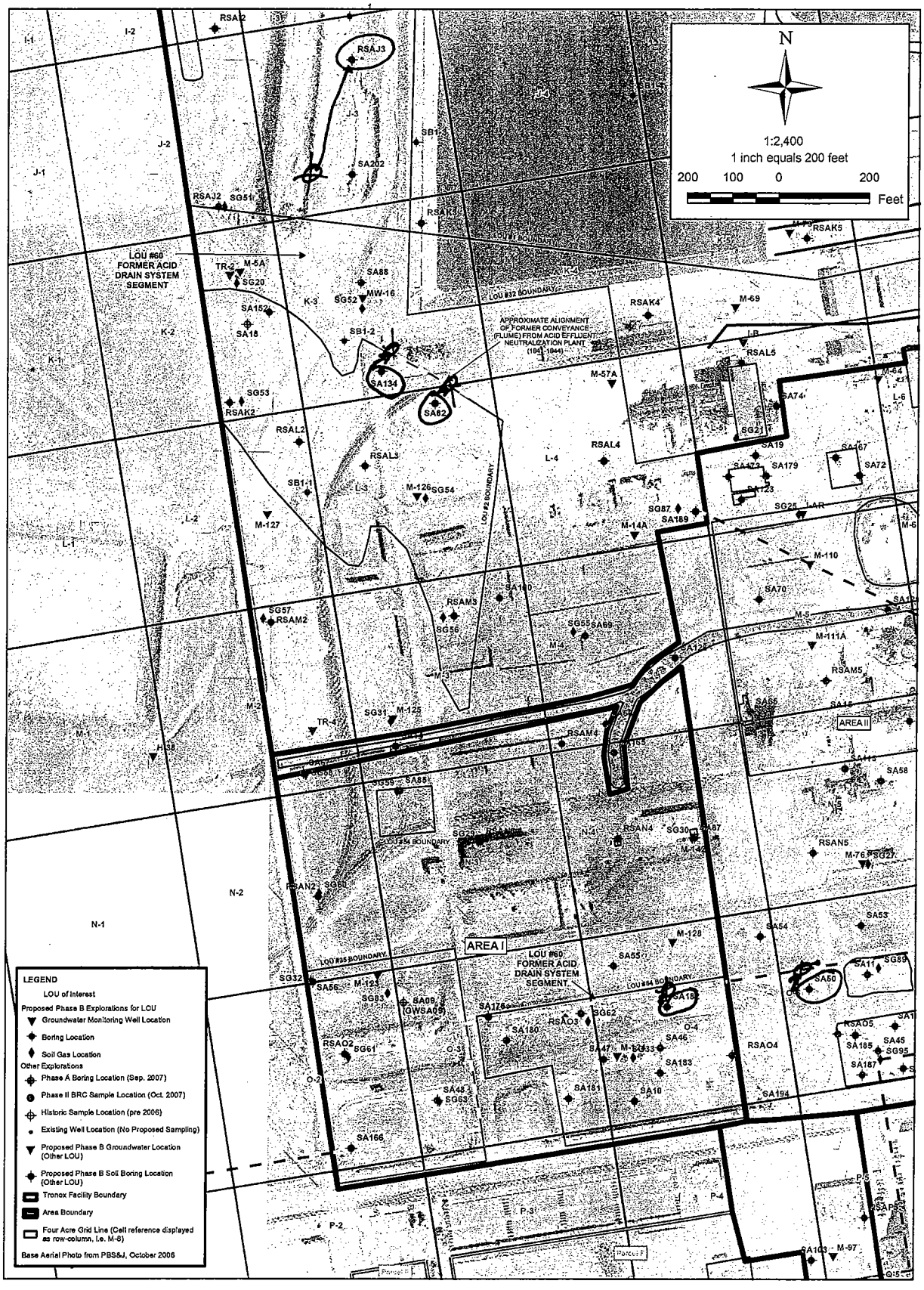

SHEET NUMBER:	FIGURE NUMBER:
X	1

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

Phase B Source Area Investigation
Tronox Facility
Henderson, Nevada

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	4/2/2[illegible]	04020-023-430

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DESIGNED BY:
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C. Schnell
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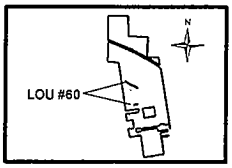
B. Ho



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NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

May 5, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Data Validation Summary Report (DVSR), *Tronox Parcel H Investigation, January 2008, BMI Industrial Complex, Clark County, Nevada*
Dated April 28, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified DVSR and finds that the document is acceptable. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, DAQEM, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Dave Gratson, Neptune and Company, 1505 15th Street, Suite B, Los Alamos, NM 87544

April

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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

April 16, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Quality Assurance Project Plan (QAPP), *Tronox LLC Facility, Henderson, Nevada*
Dated , April 7, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified QAPP and finds that the document is acceptable. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, DAQEM, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Teri Copeland, 5737 Kanan Road #182, Agoura Hills CA 91301
Paul Hackenberry, Hackenberry Associates, LLC, 550 W. Plumb Lane B425, Reno, NV 89509
Paul Black, Neptune and Company, Inc., 8550 West 14th Street, Suite 100, Lakewood, CO 80215
Dave Gratson, Neptune and Company, 1505 15th Street, Suite B, Los Alamos, NM 87544

Brian Rakvica

From: Brian Rakvica
Sent: Tuesday, April 08, 2008 6:37 AM
To: Keith Bailey; 'Crowley, Susan'
Cc: 'Ranajit (Ron) Sahu'; 'Mark Jones'; 'Paul Black'; 'Kelly Black'; Shannon Harbour; Jim Najima; Bill Frey (bfrey@ag.nv.gov); Brian Rakvica
Subject: TRX Parcels A and B NFA
Importance: High
Attachments: 080408 TRX Parcels A B NFA.doc

Susan and Keith,

Attached is the cleaned up NFA. Hard copy to follow.

Please note that there are issues that should be dealt with in future Deliverables, however, it is believed that these issues would not materially change the NFA status.

These issues are annotated below for your information. A response is not necessary or desired.

Thanks,

Brian

Brian A. Rakvica, P.E.
Supervisor, Special Projects Branch
Bureau of Corrective Actions
Nevada Division of Environmental Protection
2030 East Flamingo Road, Suite 230
Las Vegas, Nevada 89119
tel: 702-486-2850 x 247
e: brakvica@ndep.nv.gov
fax: 702-486-5733 (please note the new fax number)

General Comments

1) A few of the previous General Comments have aspects that are much broader in application than just for these parcels. Some of the issues that, although addressed adequately for the purposes of this report, should be discussed further with NDEP prior to future deliverables include:

- A continued desire to have site data and decisions tied back to the Conceptual Site Model in all Deliverables so that full understanding of the rationale for decisions can be achieved.
- The inclusion/exclusion of lead from the HI calculations for risk assessments. It is uncommon practice to include lead in the HI calculations.
- Appropriate cleanup goals given that USEPA is no longer updating their Region 9 Preliminary Remediation Goals.
- The use of gamma method EPA 901.1 for Radium-226 and Radium-228 is generally not considered compatible with alpha method EPA 903.1 and beta method EPA 904.0, and should not be presented as compatible in future Deliverables.

Specific Comments

1) Attachment E: In the Uranium Isotope Data Review for 2007 Tronox Parcels A/B Investigation memo, it is stated that the thorium and radium analyses for site and background are "considered comparable". NDEP has stated several times that the gamma method (EPA 901.1) is not considered comparable with the alpha (EPA 903.1) and beta (EPA 904.0) methods. In fact, the boxplots and probability plots in Attachment F show noticeably different distributions for the background and site data for these radionuclides. This is an indication that the methods do indeed differ, and that it may not be appropriate to dismiss radium as being within background levels, at least not without presenting an argument for that conclusion.

2) Attachment E – Final paragraph: This Attachment pertains only to radionuclides, and we note that uranium is identified as potentially above background, so the final paragraph is an overstatement of the situation. Consequently, the first sentence is incorrect and should be changed (there is evidence of uranium contamination, and this Attachment deals only with radionuclides, but the sentence implicates all chemicals).

3) Page 9, second paragraph: This paragraph oversimplifies the radium issue. Rather than just saying that some site radionuclides appear to be slightly lower than background, an explanation needs to be provided. The explanation is likely to be related to the different methods that were used for radium analysis in the site and background data.

4) Previous comment #17: Niobium does have detections in background according to Table 2. However, according to Table 3, it is brought through as greater than background on the basis of "Non-Detect in Background". Please clean up the tables for this chemical.

5) Previous comment #23 and related text, and Table 4: The previous comment asked for sample size calculations for asbestos. It is not clear that the calculations are appropriate. The formula used for the other chemicals is probably not the correct formula to use for asbestos because of the nature of the data. NDEP and TRONOX should consider the most appropriate approach to use to assess data adequacy for asbestos.

6) A better justification and/or spatial model will be considered to assist in determining remediation boundaries in the future.

7) There are some inconsistencies in the text...e.g.: there are no soil vapor data however soil data vapor validation is discussed in the report.

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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

April 8, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to:
Technical Memorandum – Data Review for 2007 Tronox Parcels A/B Investigation
Dated February 11, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified report and finds that No Further Action (NFA) is required at this time with the following conditions:

1. TRX retains the responsibility to address any environmental impacts to groundwater beneath the property referred to as Parcels A and B. As such, additional investigation may be necessary on this property as it relates to TRX's responsibilities. TRX must be granted access to the site for activities such as well or soil boring installations or other investigative or remedial efforts.
2. The materials presented to the NDEP do not evaluate the possibility of a vapor intrusion concern from contamination in groundwater. It is anticipated that this issue will be addressed as part of the investigation of groundwater issues in the region.
3. The site soils beneath 10' below ground surface have not been evaluated to date. The property owner should note that these soils should not be disturbed without additional investigation or evaluation.
4. To limit liability, the property owner should ensure that activities at the property do not exacerbate existing, sub-surface, environmental conditions.
5. The site use is suitable for purposes of commercial or industrial use only.

Please contact the undersigned with any questions at brakvica@ndep.nv.gov or (702) 486-2850 x 247.

Sincerely,

Brian A. Rakvica, P.E.
Supervisor, Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office

BAR:s

CC: Jim Najima, NDEP, BCA, Carson City
Shannon Harbour, NDEP, BCA, Las Vegas
William J. Frey, AG's Office, Carson City
Keith Bailey, Environmental Answers, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, Clark County Comprehensive Planning, PO Box 551741, Las Vegas, NV, 89155-1741
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Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
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Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

FINAL

Meeting Minutes

Project:	Tronox (TRX)
Location:	Conference Call
Time and Date:	10:00 AM, Friday April 4, 2008
In Attendance:	NDEP – Brian Rakvica, Shannon Harbour Tronox –Susan Crowley Environmental Answers – Keith Bailey (for TRX)

CC: Jim Najima, Paul Black, Paul Hackenberry, Teri Copeland

1. The meeting was held to discuss various topics including deep soil sampling at the TRX facility.
2. TRX stated that the Phase B, Area 1 Sampling Analysis Plan (SAP) will include soil sampling for Area 1 and groundwater sampling for Area 1 plus Parcels A, B, C, and D.
   a. LOU area maps will include groundwater wells that will be sampled for the Phase B SAP.
   b. A separate groundwater sampling map will be generated for the Area because of readability issues.
3. TRX stated that the Area 4 SAP will include groundwater sampling for Parcels F, G, and H.
4. TRX is on schedule to submit the area SAPs every other week until all are submitted.
5. TRX stated that the SAPs for each of the areas will contain approximately the same front text and organization, as such; TRX requested that NDEP send any preliminary comments to TRX informally so that subsequent Phase B SAPs can be revised if needed before submittal. The NDEP will attempt to accommodate this request. **ACTION ITEM.**
6. TRX will submit the Revised QAPP likely by Monday April 7, 2008. The QAPP will contain SOPs from Colombia, Test America, and GEL laboratories.
7. TRX reported that the analytical results for radionuclides at Parcel H have been received and that they appear to fall within the range of background.
8. NDEP stated that they will not be scheduling an Annual Meeting between SNWA, EPA, TRX and NDEP this year.
9. NDEP will check the status of the review for the Parcel A and B Technical Memorandum, Revision 1. **ACTION ITEM.**
10. Deep soil investigation of Parcels.
    a. TRX stated that they will be extending the limits of Parcel G to the north and will propose to install two additional borings on either side of the existing building. TRX will propose to extend these borings down to groundwater and additionally sample at 20, 30 (if groundwater has not been encountered) and the capillary fringe.
    b. TRX stated that they will propose a boring in the triangular area east of Parcel C (0-10feet);
    c. TRX will propose three additional borings in Parcel F, extending existing boring locations to the groundwater capillary fringe as described above.
    d. These borings will be submitted as an addendum to the corresponding SAPs.

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Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

April 3, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Data Validation Summary Report (DVSR) *for the Tronox Parcels C, D, F, and G Investigation - November 2007, BMI Industrial Complex, Clark County, Nevada*
(Revised)
Dated March 28, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified DVSR revision and finds that the document is acceptable. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Ebrahim Juma, Clark County Comprehensive Planning, PO Box 551741, Las Vegas, NV, 89155-1741
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Dave Gratson, Neptune and Company, 1505 15th Street, Suite B, Los Alamos, NM 87544

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STATE OF NEVADA
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Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

April 3, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, Appendix C – Data Validation Summary Report (DVSR)
Dated February 27, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's DVSR identified above and provides comments in Attachment A. TRX should note that this DVSR was reviewed for completeness, rationality, accuracy of the text with the tables and a random crosscheck with laboratory reports. This review did not encompass 100% of the report but was a sampling of the laboratory reports and database against the tables provided in the report. Errata pages should be submitted based on the comments found in Appendix A. Please advise the NDEP regarding the schedule for this submittal. TRX should additionally provide an annotated response-to-comments letter as part of the submittal.

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
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Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Dave Gratson, Neptune and Company, 1505 15th Street, Suite B, Los Alamos, NM 87544

Attachment A

1. Hexavalent Chromium, Sample M-11, Report number 221809, the laboratory report for Sample M-11 in SDG 221809 indicates this sample was analyzed past the holding time; however, this sample is not included in Table D-3 nor is the result under that SDG qualified. These results should be reviewed and this potential discrepancy clarified
2. DVSR, Memorandum dated January 29, 2008, the Memorandum refers to Report number 22057R; the correct report name is 220257R.
3. Sample M-10_11/07/07, this sample was analyzed under two different SDGs, 221802 and 221809, with the analysis for TDS under both. The DVSR should clarify that these analyses were split between two SDGs and discuss how the TDS results were used since they were reported in both SDGs.

Brian Rakvica

From: Brian Rakvica
Sent: Wednesday, April 02, 2008 9:27 AM
To: Shannon Harbour; 'Crowley, Susan'
Cc: 'Keith Bailey'; 'Paul S. Hackenberry, Jr.'; 'Paul Black'; 'terilcopeland@aol.com'; Brian Rakvica
Subject: RE: NDEP-TRX March 27, 2008 Conference Call - Final Minutes

All,

Regarding comment 5 in the minutes, as follows:

1. TRX stated that they are not anticipating or proposing any deeper soil characterization on the sale Parcels.
    a. TRX has conducted and proposed characterization to address specific pathways for risk assessment: 0 to 10 feet below ground surface (fbgs) to address the direct contact pathway and soil gas survey for indoor air pathway. Groundwater sampling will be performed on a site-wide basis including sales parcels.
    b. TRX stated that if 0 to 10 fbgs is not impacted then there shouldn't be any deeper contamination other than that associated with groundwater.
    c. NDEP responded that for contaminants (such as organics), concentrations could actually increase with depth given the conditions at the site.
    d. TRX believes that there would also be a corresponding increase in the groundwater concentration if there was deeper soil contamination.
    e. NDEP stated that there could be a difference between Parcels A, B, C, and D and Parcels F, and G because the latter may contain source areas.
    f. TRX concurred that Parcels F and G may have deeper impacts and will check groundwater to determine any impact. If groundwater is not being increasingly impacted across Parcels F & G, deep soil samples may not be needed.

We would like to offer some additional thoughts which may be worthwhile to discuss. As follows:

Regarding 5(b), if groundwater is contaminated but shallow soil is not…deeper samples should be considered.

Regarding 5(d) this argument would depend upon several factors, one factor being that the upgradient contamination was less than the leachate/groundwater mix at the point of concern. This argument greatly simplifies contaminant fate and transport in the subsurface soils.

Argument 5(f) this argument depends on the assumptions associated with Argument 5(d).

We just want to be certain that we do not simplify things to the point of where we may miss an opportunity to grab a sample when it is opportune.

Please advise if we need to discuss.

Thanks,

Brian

Mar

From: Shannon Harbour
Sent: Friday, March 28, 2008 10:54 AM
To: 'Crowley, Susan'
Cc: Keith Bailey; Brian Rakvica; 'Paul S. Hackenberry, Jr.'; Paul Black; 'terilcopeland@aol.com'; Jim Najima
Subject: NDEP-TRX March 27, 2008 Conference Call - Final Minutes

Susan,

Attached is the electronic version of final minutes from yesterday's NDEP-TRX conference call. As a follow-up comment to the conference, the NDEP would like to note that comments provided for the set of five LOU areas did not "recommend not establishing source area bounds" but stated that the source areas should be characterized first and that since the focus of the Phase B work plans is to investigate the source areas, TRX should provide rationale for boring not located within the vicinity of the source areas. NDEP did not mean to imply that TRX could not move forward with step-out sampling, rather that if there is a choice between a source area sample and a step-out sample, the source area sample should have priority over the step-out sample if the source area has not been characterized.

Please contact me if you have any questions or additional comments.

Sincerely,
Shannon

Shannon Harbour, P.E.
Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office
2030 E Flamingo Rd Suite 230
Las Vegas, NV 89119
702-486-2850 x 240 (work)
702-486-5733 (fax)

Shannon Harbour

From: Shannon Harbour
Sent: Friday, March 28, 2008 10:54 AM
To: 'Crowley, Susan'
Cc: Keith Bailey; Brian Rakvica; 'Paul S. Hackenberry, Jr.'; Paul Black; 'terilcopeland@aol.com'; Jim Najima
Subject: NDEP-TRX March 27, 2008 Conference Call - Final Minutes
Attachments: 080327_Phase_B_Conf_Call.doc

Susan,

Attached is the electronic version of final minutes from yesterday's NDEP-TRX conference call. As a follow-up comment to the conference, the NDEP would like to note that comments provided for the set of five LOU areas did not "recommend not establishing source area bounds" but stated that the source areas should be characterized first and that since the focus of the Phase B work plans is to investigate the source areas, TRX should provide rationale for boring not located within the vicinity of the source areas. NDEP did not mean to imply that TRX could not move forward with step-out sampling, rather that if there is a choice between a source area sample and a step-out sample, the source area sample should have priority over the step-out sample if the source area has not been characterized.

Please contact me if you have any questions or additional comments.

Sincerely,
Shannon

Shannon Harbour, P.E.
Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office
2030 E Flamingo Rd Suite 230
Las Vegas, NV 89119
702-486-2850 x 240 (work)
702-486-5733 (fax)

FINAL

Meeting Minutes

Project:	Tronox (TRX)
Location:	Conference Call
Time and Date:	8:00 AM, Thursday March 27, 2008
In Attendance:	NDEP – Brian Rakvica, Shannon Harbour
	Tronox –Susan Crowley
	Environmental Answers – Keith Bailey (for TRX)

CC: Jim Najima, Teri Copeland, Paul Black, Paul Hackenberry

1. The meeting was held to discuss various issues including the Phase B Work Plan (WP) submittals and sale parcels A, B, C, D, F, G, and H (Parcels).
2. TRX stated that the submittal schedule submitted last week should be modified. The Phase B WPs will be submitted one week later than proposed. The submittal schedule will now be as follows:
   a. Phase B, Area 1 – April 4, 2008
   b. Phase B, Area 4 – April 18, 2008
   c. Phase B, Area 3 – May 2, 2008
   d. Phase B, Area 2 – May 16, 2008
   e. Alluvial Groundwater Background Sampling – May 30, 200Groundwater sampling for the entire site, including the proposed sales parcels, will be included in the four area work plans. Background alluvial groundwater sampling is needed, but since alluvial water does not extend upgradient of the site, cross-gradient sampling will be needed.
3. TRX has received NDEP's approval of the Soil Gas Survey WP and will begin implementation as soon as possible.
4. TRX stated that the objective of the Phase B WPs is to both sample worst case source area locations and to bound the limits of the source areas identified on-site. TRX is concerned about consistency of review by the NDEP and its consultants, for example: comments last year requested bounding sources, while more recent comments on a set of five LOUs recommended not establishing source area bounds in the Phase B work plan.
5. TRX stated that they are not anticipating or proposing any deeper soil characterization on the sale Parcels.
   a. TRX has conducted and proposed characterization to address specific pathways for risk assessment: 0 to 10 feet below ground surface (fbgs) to address the direct contact pathway and soil gas survey for indoor air pathway. Groundwater sampling will be performed on a site-wide basis including sales parcels.
   b. TRX stated that if 0 to 10 fbgs is not impacted then there shouldn't be any deeper contamination other than that associated with groundwater.
   c. NDEP responded that for contaminants (such as organics), concentrations could actually increase with depth given the conditions at the site.
   d. TRX believes that there would also be a corresponding increase in the groundwater concentration if there was deeper soil contamination.
   e. NDEP stated that there could be a difference between Parcels A, B, C, and D and Parcels F, and G because the latter may contain source areas.

f. TRX concurred that Parcels F and G may have deeper impacts and will check groundwater to determine any impact. If groundwater is not being increasingly impacted across Parcels F & G, deep soil samples may not be needed.

6. NDEP and TRX discussed Parcel I (Nevada Pic-A-Part).
   a. David Christensen has hired a CEM.
   b. TRX has the expectation that the site will be restored to "pre-occupation conditions".
   c. NDEP and TRX were in agreement that any data collected for the Pic-A-Part cleanup should be supportive of an NFA.
   d. NDEP will use the data from Parcels A and B to support the CSM for Parcel I.
7. NDEP reported that the Revised Technical Memorandum for Parcels A and B was still in review. NDEP to follow-up on the status of the review. **ACTION ITEM.**
8. TRX reported that there were asbestos detections on Parcels C and D.
9. NDEP will check to see if there are any files on the former Koch Asphalt facility that was located at the TRX site. **ACTION ITEM.**
10. TRX will review the Request for Time Extension of Combination TRX Remedial Project Reports dated February 22, 2007 to see if they have a NDEP-signed modification request. If located, TRX will supply to NDEP for inclusion in the TRX file. If TRX cannot locate this document, they will follow-up with Bill Frey. **ACTION ITEM.**
11. TRX believes the Parcel investigations are considered part of ECA (Phase II AOC) requirements. NDEP stated that prioritization of certain areas have been assigned by TRX but the site was divided into smaller areas at the behest of the NDEP and the same process ECA process (ECA analytical suites, NDEP approval of work, etc.) has been and will be applied to the entire site.

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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

March 26, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, October – December 2007
Dated February 27, 2008

Dear Ms. Crowley,

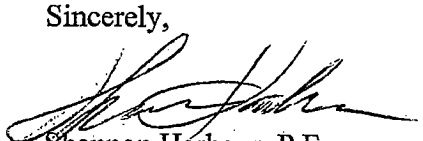
The NDEP has received and reviewed TRX's above-identified performance report and provides comments in Attachment A. These comments should be addressed in future performance report submittals. TRX should additionally provide an annotated response-to-comments letter as part of the next performance report submittal unless otherwise noted.

Additionally, pursuant to Section VI, paragraph 2 of the 2005 Administrative Order on Consent between TRX (formerly Kerr McGee Chemical LLC) and NDEP, the NDEP, at its discretion, may reduce the quarterly performance reporting to semi-annual reporting. Therefore, TRX may begin to report to the NDEP-BCA on a semi-annual schedule. Commencing immediately, TRX is only required to submit a Semi-Annual (July – December) and Annual (January – June) Performance Report. The Semi-Annual and Annual reports should be submitted by February 28th and August 28th of each year, respectively.

TRX should note that this does not change any permit reporting requirements, etc. Additionally, TRX should continue to provide timely notification to NDEP about significant remedial system upsets or shutdowns, well destruction, etc.

It is suggested that the issues in Attachment A be discussed, in person, with the NDEP at the next available date. Please contact the NDEP to arrange this meeting. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,



Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
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Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

Attachment A

1. Section 2.0, page 2-2, second paragraph, please notify the NDEP when the new injection trench has been installed. TRX should additionally report the installation in the corresponding performance report.
2. Section 2.0, page 2-2, fourth paragraph, TRX should remove this discussion until TRX has evidence to present that their assumptions are correct. It is suggested that this discussion (and similar discussions throughout the report) be deferred to the Capture Zone Evaluation.
3. Section 3.0, page 3-2, the NDEP has the following comments:
   a. TRX states that the anomalously high concentration of chromium in well ART-1 is believed to be due to "chromium leaching from the stainless steel screen". Please explain the chemical conditions in this well that would facilitate this leaching. Also, well ART-1 is not a new well so please explain what has changed in the recent past to facilitate this leaching.
   b. Last paragraph, TRX states that PC-68 will be abandoned because "it is no longer needed." Please provide rationale for this statement.
4. Section 5.0, page 5-1, TRX notes that approximately 77% of pond AP-5 has been treated. NDEP would like to discuss TRX's plans for the use of the excess treatment capacity once pond AP-5 is remediated.
5. Figure 11, it is requested that the scale on this Figure be adjusted so that more recent data can be presented in a meaningful fashion. NDEP is amenable to addressing this in any number of ways and would like to discuss this matter with TRX. This comment also applies to other Figures.
6. Appendix C, Response To Comments (RTC), the NDEP has the following comments:
   a. RTC 1.a, as noted above, TRX should notify NDEP when the Interceptor well field rehabilitation is complete and include in the next performance report.
   b. RTC 1.c, as noted above, TRX should remove this discussion until TRX has evidence to present that their assumptions are correct.
   c. RTC 5.d, the NDEP has the following comments:
      i. TRX states that influent and effluent samples are collected annually from the activated carbon system. Please provide the annual sampling analytical results for the activated carbon influent and effluent sampling in the next performance report.
      ii. Please note that based upon a review of groundwater data from neighboring properties to the west it appears that a plume of high concentration organics is approaching the western edge of the TRX on-Site treatment system. For example, chloroform at concentrations in excess of 6,000 micrograms/liter.
      iii. It should be noted that the groundwater treatment system operated north of the Olin property is not effective in treating beta-BHC. This system uses two stages of granular activated carbon as well as air stripping. TRX should consider this when examining options to address beta-BHC.
   d. RTC 5.e, the NDEP discussed having TRX report a minimum of the last 5 quarters of data in the hard copy of the report. The electronic version of the database included with the performance report was to contain all historical and current data. Please include all historical data in the electronic version of the database included with the next performance report.

Shannon Harbour

From: Crowley, Susan [Susan.Crowley@tronox.com]
Sent: Tuesday, March 25, 2008 2:26 PM
To: Shannon Harbour
Cc: Keith Bailey
Subject: FW: Tronox Submission Schedule
Attachments: Phase B Workplan Areas.pdf

Shannon,
Keith indicated on March 14th that Tronox would be prepared to forward the first of the area based work plans (based upon the data packages) this Friday – March 28th. Please see the message below. This first work plan is not yet of the quality that either Keith or I would expect needed for your review – and so we are requesting that the due date for this first (and subsequent area work plans) be pushed back by one week. Our intent in this request is that we would be capable of supplying NDEP with a document that would not require iterations to be acceptable for moving into the field. This would ultimately save both of us resources. Your thoughts?

Also, Keith and I would like to call tomorrow so that we can discuss the groundwater and deeper soils characterization on the sales parcels. Will you be in the office tomorrow morning – or Thursday morning? Let me know. Thanks.

TRONOX LLC
Susan Crowley
PO Box 55
Henderson, NV 89009
office 702.651.2234
cell 702.592.7727
efax 405.302.4607
email susan.crowley@tronox.com

It's the set of our sails, not the force of the gales, that determines the way we go.

From: Keith Bailey [mailto:okbailey@flash.net]
Sent: Friday, March 14, 2008 12:24 PM
To: 'Shannon Harbour'; 'Brian Rakvica'; Crowley, Susan
Cc: 'Flack, Mike'; 'Bilodeau, Sally'; 'Ho, Brian'; 'Caceres-Schnell, Carmen'
Subject: Tronox Submission Schedule

Shannon,

As we discussed on the phone yesterday, Tronox is planning to submit to NDEP, six separate work plans associated with the Phase B Site Investigation program. The six work plans include:

1) Soil Gas Survey – measurement of VOC levels in soils over the entire site (including the sales parcels) to support evaluation of the vapor intrusion risk pathway.
2) Area I Source Area Investigation – evaluation of potential sources (about 12 LOUs) in the area of the old Trade Effluent ponds and the west side of the site (see attached pdf map showing proposed site areas).
3) Area II Source Area Investigation – evaluation of potential sources in the center of the site,

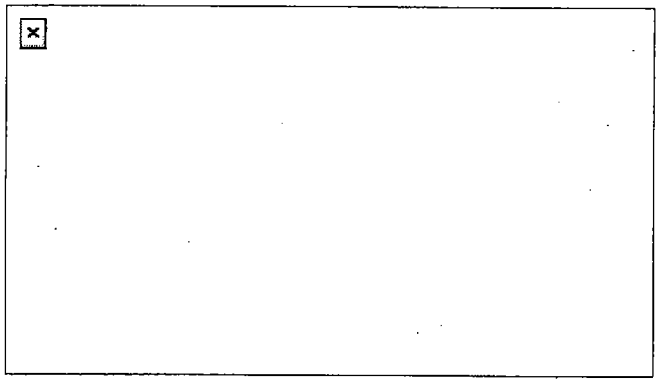
including the old AP, S and P ponds along with the C-1 pond and Unit buildings 3 and 4.

4) Area III Source Area Investigation – evaluation of potential sources the eastern portion of the site where current MnO_2 operations are located. Since this area includes active operations, closure is not being requested, but data will be collected to provide an indication of potential sources.
5) Area IV Source Area Investigation – evaluation of potential sources south of the Unit buildings.
6) Alluvial Groundwater Background Sampling – revision of the groundwater sampling proposal included in the Phase A report Appendix I.

Tronox anticipates submitting the Soil Gas Survey Work Plan to NDEP by March 21, 2008, followed by the Area I Source Area Investigation Work Plan by March 28, 2008. The remaining four work plans will be submitted roughly every other week thereafter.

If you have questions or comments, please call me at (405) 216-9213 or call Susan Crowley at (702) 651-2234 (Susan is out today and tomorrow, but will return Monday).

Keith



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Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

March 24, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Response to NDEP 1-14-08 Request for an Updated Site-Related Chemical (SRC) *List, Tronox LLC, Henderson, Nevada*
Dated March 12, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Updated SRC List identified above and provides comments in Attachment A. A Revised SRC List should be submitted **by April 24, 2008** based on the comments found in Appendix A. TRX should additionally provide an annotated response-to-comments letter as part of the Revised SRC List submittal

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
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Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

Attachment A

1. Table 1, the following constituents are listed on Table 1 as a site related chemical (SRC) but not on Table 2. Please revise Table 2 for consistency.
   a. Dibenz(a,h)anthracene
   b. Methyl tert-butyl ether (MTBE)
2. Table 2, "Applicable SRCs other than analyte" Column, the general listing for "fuel oxygenates" is listed in Table 2 but is not listed in Table 1. Please add Fuel Oxygenates to Table 1.
3. Table 2, the following constituents are listed as a site related chemical in Table 2 but are not specifically listed or have a general listing (as shown in the "Applicable SRCs other than analyte column" in Table 2) in Table 1. Please revise Table 1 for consistency.
   a. Nitrite
   b. Metadichlorobenzene (1,3-Dichlorobenzene)

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Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

March 24, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Response to NDEP 1-14-08 Request for an Updated Site-Related Chemical (SRC) *List, Tronox LLC, Henderson, Nevada*
Dated March 12, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Updated SRC List identified above and provides comments in Attachment A. A Revised SRC List should be submitted **by April 24, 2008** based on the comments found in Appendix A. TRX should additionally provide an annotated response-to-comments letter as part of the Revised SRC List submittal

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
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Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

Attachment A

1. Table 1, the following constituents are listed on Table 1 as a site related chemical (SRC) but not on Table 2. Please revise Table 2 for consistency.
   a. Dibenz(a,h)anthracene
   b. Methyl tert-butyl ether (MTBE)
2. Table 2, "Applicable SRCs other than analyte" Column, the general listing for "fuel oxygenates" is listed in Table 2 but is not listed in Table 1. Please add Fuel Oxygenates to Table 1.
3. Table 2, the following constituents are listed as a site related chemical in Table 2 but are not specifically listed or have a general listing (as shown in the "Applicable SRCs other than analyte column" in Table 2) in Table 1. Please revise Table 1 for consistency.
   a. Nitrite
   b. Metadichlorobenzene (1,3-Dichlorobenzene)

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Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

March 24, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Data Validation Summary Report (DVSR), *Tronox Parcels C, D, R, and G Investigation, November 2007, BMI Industrial Complex, Clark County, Nevada*
Dated February 27, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's DVSR identified above and provides comments in Attachment A. TRX should note that this DVSR was reviewed for completeness, rationality, accuracy of the text with the tables and a random crosscheck with laboratory reports. This review did not encompass 100% of the report but was a sampling of the laboratory reports and database against the tables provided in the report. Errata pages should be submitted based on the comments found in Appendix A. Please advise the NDEP regarding the schedule for this submittal. TRX should additionally provide an annotated response-to-comments letter as part of the submittal.

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850, extension 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
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Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Paul Black, Neptune and Company, Inc., 8550 West 14th Street, Suite 100, Lakewood, CO 80215
Dave Gratson, Neptune and Company, 1505 15th Street, Suite B, Los Alamos, NM 87544

Attachment A

1. Table 2-1, three Analysis Dates for laboratory sample F7K150237005, in Table 2-7, page 17 of 31 appears incorrect.
2. Database, the Analytical Method name "KWSR" is included in the database. This method is not included in Table 1-2. The report should clarify the name KWSR or correct the database.
3. Tables 2-9 and 2-10, a number of the values in the Limit column are incorrect. In some cases they appear to match the QL value, in other instances their origin is unclear. The values in the Limit column should show the maximum RPD, difference, or RER value that is acceptable.

Shannon Harbour

From: Crowley, Susan [Susan.Crowley@tronox.com]
Sent: Tuesday, March 04, 2008 4:40 PM
To: Shannon Harbour
Cc: Keith Bailey; bho@ensr.aecom.com; Bilodeau, Sally; Flack, Mike
Subject: Delivery Date for the First of the Phase B Collection of Data Packages (Revised Phase B Work Plans)

Shannon,

To confirm our phone conversation of several moments ago – next Friday (March 14th) we will provide you with a delivery date for the first of the revised Phase B Work Plans. There will be at least three additional Phase B Work Plans which will follow this first at later dates. Thanks.

TRONOX LLC
Susan Crowley
PO Box 55
Henderson, NV 89009
office 702.651.2234
cell 702.592.7727
efax 405.302.4607
email susan.crowley@tronox.com

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Leo M. Drozdoff, P.E., Administrator

March 4, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection (NDEP) Response to:
Strategy and *Concept for Tronox Mailing List, Tronox LLC, Henderson, Nevada*
Dated February 27, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified letter response and finds the proposed strategy and concept acceptable. It is requested that Community Involvement Plan (CIP) be revised to address the mailing list changes as outlined in the TRX letter response. The revised CIP should be submitted to the NDEP by **April 4, 2008**, as specified in an NDEP letter dated March 3, 2008 Re: Request for Revised Community Involvement Plans. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 x 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

CC: Jim Najima, NDEP, BCA, Carson City
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March 4, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to:
Revisions to the Upgradient Investigations Results Report, Tronox LLC, Henderson, Nevada
Dated September 27, 2007

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's letter response identified above and provides comments in Attachment A. A revised submittal is not requested. It is suggested that this data be used for Site characterization purposes. The deeper samples may or may not be consistent with background; however, this will not be known until a deeper background data set is approved. Please contact the undersigned with any questions at (702) 486-2850 x 240 or sharbour@ndep.nv.gov.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
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Paul Black, Neptune and Company, 8550 West 14th Avenue, Suite 100, Lakewood, CO 80215

Attachment A

1. Review comments were provided by the NDEP in a letter dated March 23, 2007 on all sections of the report and on several of the appendices. This revised report offers only revisions to the Executive Summary and Chapter 5, and appends a new Appendix J. This is noted clearly in the TRX response to comments (RTC), page 1 of 19. However, the NDEP's comments herein apply to these sections only. All of the comments previously made on other sections of the document still stand and will instead be addressed in the next complete version of this report (if necessary).
2. NDEP still questions the separate comparisons of the "upgradient" data set with the COH and BRC background data sets. These data sets do not completely separate geologies that are reflected in the combined background data set. The separation, if warranted, should be based on geologic differences, as noted in the NDEP's final comments on the shallow background data set. For several metals, the background data can be reasonably combined (no geologic differences). For some, there are both geologic and depth differences, all of which can be considered as background comparisons are performed. The following is taken from the background report: "BRC/TIMET sample locations BRC-BKG-1 through BRC-BKG-9 and sample location BRC-BKG-11, and Environ sample locations BG-01 through BG-03 are downgradient of the McCullough Range. BRC/TIMET sample location BRC-BKG-12 and Environ sample location BG-04 are located in an alluvial fan area containing mixed McCullough Range and River Mountains geologic materials. Environ sample locations BG-05, BG-06, BG-07, and BG-08 are located downgradient from the River Mountains." Please note that Table J-1 would be revised if other subsets of background data were used. Consequently, no comments are made on Table J-1 at this time.
3. A few site related chemicals in the "upgradient" data set appear elevated compared with background. This makes it difficult to support conclusions that these "upgradient" data are fully representative of background soil conditions. Given the richness of the current background dataset, especially with respect to the McCullough Range, it is suggested that TRX instead use the "upgradient" soil data for site characterization.
4. NDEP notes that a comparability issue between Site data and background data was discovered after the submittal of this report. NDEP notes that any discussions regarding radionuclides would need to be revised based upon this discovery.
5. NDEP noted a lot of exact duplication between the Executive Summary and Chapter 5. Perhaps the Executive Summary can be shortened or the two sections in question can be focused differently. Note also that Figures 4-9 are appended to the main text and Appendix J.
6. There are some statistical calculations based on log-data in the Attachments. NDEP does not find as much value in these analyses because log transformations mask high concentrations. This does not seem useful for background comparisons.

Specific Comments

1. Page ES-1, 1st paragraph, please note that the correct date of the NDEP comments is March 23, 2007.
2. Page ES-2, TRX states "the deeper samples (>20 ft), the Muddy Creek formation." NDEP does not concur that the Muddy Creek formation (MCf) begins at 20 feet below

ground surface (ft bgs). It would be more appropriate to characterize this as deep alluvium.

3. Page ES-2, TRX notes that there are a few compounds that appear to be elevated relative to background. These include: perchlorate, boron and others. It would also be important to note that both perchlorate and boron were produced at the TRX Site.
4. Page ES-3, 1st and 2nd paragraphs (and Page 5-2, bullet 4 of 5). These paragraphs overstate the likelihood that the observed values are actually representative of background. A more appropriate wording might state that it is "possible" that the observed values represent background conditions, rather than that it is "likely" that they do. Some of the metals, in particular, exhibit concentrations sufficiently greater than background that even the general statement could be questioned. For example, cadmium concentrations are considerably greater than background. It is not clear that the conclusions as stated are reasonable for all metals.
5. Page ES-3, Upgradient Groundwater, upgradient groundwater concentrations indicate elevated concentrations of perchlorate and chromium and possibly some other metals. TRX should consider trying to qualitatively match the chemicals that have high concentrations in both soil and groundwater.
6. Page ES-3, Upgradient Groundwater, the groundwater data appear to be from the Muddy Creek formation. It is not clear what the intended use might be for these data, given the statement in the last paragraph of this section that "even un-impacted wells might not be an appropriate background reference".
7. Page ES-3, Groundwater Sampling Methods Comparison, an RPD can be calculated if there is one data point from two different datasets. It might not be statistically useful, but it can be calculated. It would also help if some summary statistics were presented.
8. Table ES-1, the title and label for this table could clarify the subsets of data included. It is not clear that it is useful to include the NA columns in the background data set on page 2 of 2 of this table. The same issue applies to Table J-2.
9. Page 4 of 19 in response-to-comments (RTC), items 4d and 4f, see General comment #2. The general issue is one of if or how to subset the background data for comparison.
10. Page 4 of 19 in RTC, items 4m and 4n, NDEP's preference would have been to provide the explanation rather than to delete text. The explanation is reasonable and just needs to be added to the text.
11. Page 5 of 19 in RTC, item 12, if the northern McCullough Range is the primary source, does this mean that the most appropriate background data subset for comparison is the McCullough Range data? If so, such comparison might be sufficient.
12. Page 7 of 19 in RTC, item 21a, if the radionuclide data are not going to be used as a background dataset in the future, this should be made clearer in the conclusions and perhaps in the executive summary.
13. Page 9 of 19 in RTC, item 22, this explanation should be provided in the text.
14. Page 10 of 19 in RTC, item 26, if comparisons are going to be made, it would be preferable to make them statistically. RPDs can be reported as well, but a paired t-test would allow the two methods to be compared statistically.
15. Page 11 of 19 in RTC, item 28, this explanation should be provided in the text.
16. Page 13 of 19 in RTC, item 29o, see general comment #2 above. NDEP does not necessarily concur. The general issue is one of how to subset the background data for

comparison. It seems that other arguments have been made that the McCullough dataset might be most appropriate for comparison here.

17. Page 13 of 19 in RTC, item 30, the conclusion does not quite follow. NDEP is aware of at least one form of potential radioactive contamination that is natural (imported ores that are higher in, at least, uranium content). NDEP also notes that given the recent discussions about analytical methods for radionuclides, some of the radionuclide results seem low compared to background and hence, some further investigation of the analytical methods (prep methods in particular) is warranted. No apparent discussion of this issue could be found in the document.
18. Page 17 of 19 in RTC, item 36a, TRX should note that, in principle, Gehan's ranking scheme could be used for the K-W test and might be more defensible than using a substitution method.
19. Appendix J, the NDEP has the following comments:
    a. Page J-1. The histograms are described here but statistical presentations in Attachments 2 and 3 are not. The box plots are useful for understanding the differences in concentrations by depth and could be described here and perhaps should be moved in front of Attachment 2 on secular equilibrium. NDEP also notes that the histograms presented here are really bar charts and that the final bars sometimes cover a range of concentrations that is not defined on the upper end (> some value). It would be more helpful when comparing data to show all the data.
    b. Page J-1, Histograms and Discussion/Interpretation of Statistical, Results, TRX should clarified herein as to how non-detects are handled in both the histograms and statistical analyses. It is important to understand exactly how the non-detects are being incorporated into the analyses especially because low detection frequency is an issue for several of the analytes being studied. TRX should note that there appear to be non-detect issues for boron, cadmium (in background), tungsten, and antimony.
    c. Page J-1 and elsewhere, Discussion/Interpretation section, the NDEP would find it helpful if more physical evidence was reported for the alluvium/Muddy Creek distinction. (For example, soil boring logs might have information that shows that soil samples are a different material in the transition from 20 ft to 30 ft bgs samples.)
    d. Pages J-1 and J-2, whenever the TRX data are shown to be significantly less than (statistically or by observation of histograms) either of the background data subsets, further investigation as to the appropriateness of the background data for comparison should be performed. Also, see General Comment 2.
    e. Page J-2, 2nd paragraphs, based on the histogram, the TRX zinc data do not appear to be significantly lower than the BRC zinc data.
    f. Page J-3, Lead-212 paragraph, the logic for determining that the upgradient lead-212 data are likely to represent background is not compelling. TRX might find worth in reviewing the analytical methods and results to see if there is any reason to believe that there is a high bias in the data or otherwise exploring other datasets for similar issues for Pb-212.
    g. Page J-3, 5th paragraph, the first sentence implies that geology is considered when selecting an appropriate background data set for comparison to site data. Although the consideration of similar depth horizons is an important aspect of comparability, no specific consideration of comparable geology is discussed in this report. The background comparisons in this report would benefit greatly to include this

comparison. The selection of background data should be based on similar geologic formations as that of the upgradient data for comparisons.

h. Page J-3, 5th paragraph, NDEP has noted that Th-228 may also be elevated vs. background. However, this is not the case for some of the other radionuclides in the Th chain (Ra-228 and Th-232). TRX should provide some further explanation especially since these radionuclides also appear to be in secular equilibrium.

i. Page J-3, final sentence, TRX again overstates the likelihood that the observed values are actually representative of background. A more appropriate wording would state that it is "possible" that the observed values represent background conditions, rather than that it is "likely" that they do.

j. Page J-4, Discussion of groundwater, TRX should include some discussion of why groundwater data show some contamination but the soil samples often do not. A specific chemical of concern noted by NDEP is chromium.

k. Page J-4, the secular equilibrium analysis seems reasonable; however, there are a few observations that need to be made considering issues with secular equilibrium evaluation for other Companies' data sets. The ANOVA results presented in this report demonstrate secular equilibrium under the null hypothesis of secular equilibrium. No other data sets that we have looked at from the Companies, including background, pass this test (parametric or non-parametric). NDEP believes that there are 2 technical issues. One is that sample size has a large impact on ANOVA results. For this dataset there appear to be 12 samples included in the ANOVA analysis. In the background dataset there are 120 samples. Classical statistical tests find statistical differences as the sample size increases. The second potential issue with the radionuclide background data is that the different analytical methods naturally produce minor differences even if the radionuclides exist in near-secular equilibrium so that secular equilibrium is difficult to prove using ANOVA methods. The alternative that NDEP is pursuing is to reverse the null and alternative hypotheses and to allow a range of options in each hypothesis. TRX should note that at the moment, it would also be helpful to make clear which analytical methods were used for radionuclide data. For now, the issue is that it is surprising to see the ANOVA methods provide success here, given the lack of success with other Companies' data sets. Further investigation of other data sets will be forthcoming.

l. Page J-5,2nd bullet, NDEP recommends that the final sentence be extended to read, "However, it is recognized that there is uncertainty in this approach because the data have not been independently evaluated and because they come from the Tronox site, albeit upgradient of the primary activities on the site."

m. Page J-5, after the 4th bullet, NDEP recommends adding an additional bullet that says, "This dataset may be used to help characterize the southern portion of the Tronox site."

n. Table J-1, the NDEP has the following comments:

   i. The decision logic for this table can be summarized as follows: if the TRX upgradient data was found to be lower than <u>either</u> the City of Henderson or the BRC/TIMET background data sets it was considered consistent with background. This is flawed in that it essentially compares the TRX data to the higher concentrations within each data set. This is not conservative and has no basis.

ii. As noted elsewhere in this letter, it would have been more appropriate to split the existing shallow background data set by geology, as appropriate.
iii. Since this table notes that site-related chemicals are elevated relative to background, the Upgradient samples are not consistent with background conditions.

o. Appendix J, Histograms, the NDEP has the following comments:
i. It is not clear how non-detects were handled in the development of these bar charts. It would be helpful o note if half the detection limit was used or if the full detection limit was used.
ii. As the NDEP has noted previously, it is not helpful to have the last bar in the chart to be greater than value X. This results in the charts lacking context.
iii. It is noted that for antimony (and several other compounds, such as tungsten) that TRX appears to have elevated detection limits. This issue should be addressed with the laboratory in future sampling efforts.
iv. As noted previously, boron, which is a site-related chemical, appears elevated relative to background. Also, TRX should note that the use of the term "most" in this chart decreases the meaning of the chart.
v. Cadmium appears to be clearly elevated relative to background.
vi. Copper appears to be clearly elevated relative to background.
vii. Perchlorate appears to be clearly elevated relative to background.
viii. There is no histogram for Lead-212 although it is discussed in the text.
ix. Although these histograms are very useful visual tools for comparison of the datasets by analyte, presenting them with relative frequency (%) as the vertical axis and the sample size for each data set given in the key would be preferable so that the differences in sample sizes are normalized when viewing the histograms. Sample sizes should be provided on the figures as well.
x. The order of the histograms is not quite alphabetical either by full analyte name or by chemical abbreviation (e.g., lead comes between magnesium and manganese). Presenting these in alphabetical order would make it easier to access the information.

20. The List of Appendices, shown on page 1-5 of the October 2006 version of the report, needs to be updated to include Appendix J.

Feb

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NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

February 20, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to:
Strategy and Concept for Public Repository, Tronox LLC, Henderson, Nevada
Dated February 15, 2008

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's letter response identified above and finds that the document is acceptable. Please be advised that Stauffer Management Company LLC/Syngenta Crop Protection Inc.; Montrose Chemical Corporation of California; and Olin Corporation (hereinafter referred to as POSSM) has provided a similar response for their strategy and concept for the Information and Document Repository. TRX may wish to coordinate their activities with POSSM to reduce duplication of effort. Please contact the undersigned with any questions at (702) 486-2850 x 240 or sharbour@ndep.nv.gov.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

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Shannon Harbour

From: Keith Bailey [okbailey@flash.net]

Sent: Friday, February 08, 2008 1:21 PM

To: Shannon Harbour; Brian Rakvica; 'Paul Black'; TeriLCopeland@aol.com; 'Paul S. Hackenberry, Jr.'

Cc: susan.crowley@tronox.com; 'Bilodeau, Sally'; 'Perry, Elizabeth'; 'Kennedy, Robert'

Subject: Tronox Response to NDEP letter dated December 7, 2007

Attachments: Rad_response.pdf; Rad_response.doc; Table 2_ Rad_Compare_1_alpha-gamma ratios.xls; Table 1_Henderson_Gamma_Rad_EP_rev.xls; 2-8-08_final.pdf

Shannon,

Attached is the Tronox response to the NDEP letter dated December 7, 2007 regarding radionuclide data. The text is provided in both pdf and Word formats. Two Excel tables and a pdf containing histograms and other plots support the analysis. Hard copies are being sent to the regular distribution list for delivery early next week.

As we proposed to NDEP, Tronox has evaluated the inconsistency issues in the Phase A alpha spec radionuclide data by making a comparison with gamma spec data recalculated from the original spectrum recorded by the Test America Richland lab when they analyzed the samples for radium. We believe the data show a good correlation with radionuclide secular equilibrium and help explain the inconsistencies in the Phase A alpha spec data. While the Richland lab maintains that they followed regular acid digestion procedures for uranium chain nuclides and full digestion (HF) for thorium series nuclides, it appears from the gamma data that full dissolution was not accomplished. As you will see from the submission, we believe that the gamma spec data are usable in salvaging the Phase A radionuclide information.

If you have questions or comments, please contact either Susan Crowley at (702) 651-2234 or Keith Bailey at (405) 216-9213.

Keith

Tronox Response to December 7, 2007 NDEP
Advisement Regarding Radionuclide Analyses for Uranium

NDEP comment
As noted to the Companies via e-mail, it has been discovered that there are differences in the preparatory (prep) methods used for isotopic uranium analyses. Specifically, the use of hydrofluoric acid (HF) versus not using HF. This difference has significant impacts on the data and represents a comparability problem.

What has been discovered is as follows:

1. The BRC/TIMET background data set was analyzed by STL-Saint Louis (STL-SL) for isotopic uranium. STL-SL uses HF.
2. The TRX upgradient data set was analyzed by GEL for isotopic uranium. GEL uses HF.
3. The TRX Phase A data and several other BRC data sets were completed by STL-Richland. STL-Richland does not use HF. This results in significant low bias relative to the background data set for isotopic uranium.

Tronox Response
Tronox has reviewed and evaluated the Tronox Upgradient and Phase A data sets with regard to the issues raised.

NDEP comment
All QAPPs shall be edited to specifically identify the prep method that uses HF for isotopic uranium analysis. Please address this issue **by January 11, 2008**.

Tronox Response
NDEP granted Tronox an extension to February 8 to deliver this response. The next revision of the Tronox QAPP will specifically include this requirement. This revision will be complete and submitted for NDEP approval before the Phase B Investigation begins.

NDEP comment
1. The Companies need to identify all data sets that are not comparable and report this to the NDEP. This will also be requested in the letter. Please address this issue **by January 11, 2008**.

Tronox Response
The NDEP granted Tronox an extension to February 8, 2008 to deliver this response. The Tronox Phase A Investigation dataset for isotopic uranium is not comparable to the BRC/TIMET background study data because a total dissolution prep with HF was not performed prior to the HASL-300 alpha spec analysis. The former STL-Richland (now TestAmercia (TA)-Richland) laboratory has confirmed that only an acid leach without HF was used to digest these samples. TA-Richland has stated that all the Phase A samples analyzed for isotopic thorium by alpha spec were digested with HF in a total dissolution procedure, however Tronox believes the isotopic thorium results are not comparable to the BRC/TIMET dataset based on both the statistical analyses presented in the Phase A report and a subsequent comparison, presented in the attached Table 2, of the results for thorium derived from gamma spectrometry on the same samples.

NDEP comment
2. All parties need to work to identify what other radionuclide data may be compromised. Each company should respond to this issue in the January 11, 2008 Deliverable. If additional radionuclide data is compromised additional changes to QAPPs will be required.

Tronox Response
Tronox has not identified any additional radiochemical data, other than the alpha spec isotopic uranium and thorium Phase A results mentioned above, as compromised by prep or analyses so that the data is not comparable in principle to the BRC/TIMET background dataset.

NDEP comment

3. All parties need to contemplate how we might salvage the data from STL-Richland for isotopic uranium analysis for use in future background comparisons. Some ideas that have been mentioned thus far are as follows:
    a. Complete a side by side study of the two methods and develop a correction factor that could be applied to data from STL-Richland. It should be noted that enough uranium (metal) data may exist to develop this correction factor currently. This is important if any of the data will be used for risk assessments. This item can be addressed by the NDEP for the Companies or the Companies can complete this exercise.
    b. Discard the existing data that is affected by this difference and utilize the total uranium data for background comparisons. It is likely that this is a defensible procedure for addressing background comparisons.
    c. Utilize gamma spectroscopy for future analyses of isotropic uranium (NDEP does not support this).
    d. These ideas need to be contemplated for what will be defensible. NDEP is open to additional suggestions.
    e. Each Company should respond to this issue in the January 11, 2008 Deliverable.

Tronox Response
To salvage the Phase A uranium and thorium data for Phase A Tronox requested that the TA-Richland lab reprocess the raw gamma spec dataset (originally used to measure only the radium) so it included the isotopic uranium and thorium nuclides as well. The exact daughter nuclides and line energies measured were discussed with Dave Gratson at Neptune and are detailed in the attached data validation memo. These gamma spec results are provided in the attached Table 1 and are compared to the original alpha spec results in Table 2.
Ratios of the gamma to alpha spec results for each sample, each nuclide, and the aggregate U and Th isotopes are calculated in Table 2. These results confirm the original Phase A alpha spec data for U and Th were biased low. Moreover the ratios for the U-234 and U-238 nuclides are comparable to the "correction factors" derived by BRC in their comparison of the HF dissolution vs. HNO3 leach prep results for subsamples of the Deep Soil Background and Parcel A/B datasets (see green highlights in Table 2). The similarity of the aggregate U and Th ratios indicates that the alpha spec results for both the U and Th nuclides were biased low even though the lab claims the Th analyses were preceded by total dissolution preparation. Tronox has not been able to determine the exact reason the original Th results also appear biased low.

As discussed in our conference call on January 22, 2008, Tronox has compared the gamma spec data from the Phase A soils at depths from 0 to 10 ft to NDEP-approved background activities, and also evaluated secular equilibrium based on the gamma spec results. The attached statistical analyses using the new gamma spec dataset for U and Th from Phase A soils (0-10 ft deep) corroborates that the gamma data is both more consistent with BRC and COH background datasets and internally more consistent with the assumption of secular equilibrium in the nuclide decay chains. Specific observations based on the comparisons include:

- *The histograms showing both Phase A soils (0-10 ft) and BRC/COH background data show that the Phase A gamma spec results are consistent with background for Ra-226, Ra-228, Th-228, and Th-230. While the medians of Th-232, U-234 and U-238 appear generally greater than background, the highest activity levels in the Phase A samples are similar to the highest activities in the background samples. The box-plots show the same information in a slightly different way.*

- *To evaluate secular equilibrium, histograms and box-plots were prepared for the radionuclides in each decay chain. These show a general normal distribution that is similar for all radionuclides in each decay chain, as would be expected from random variability. Similar histograms and box plots were also prepared for the BRC and COH datasets separately.*

- *In a further evaluation of secular equilibrium, the Phase A data for each decay chain was graphed on a scatterplot. In a world without random errors, all of the points should fall on top of each other, and also on the line representing one-to-one correlation if the samples are in secular equilibrium. Instead, the Phase A data show a clustering of the data points around a central value, as would be expected with random errors. (Note that Th-230 and Ra-226 were measured from the same decay product (Bi-214) and the same emission line, which is reflected in their very high correlation.) Similar scatterplots have been prepared with the BRC and COH datasets.*

- *In addition, similar scatterplots have been prepared that include error bars based on the uncertainties in the analytical results reported by the laboratory. The uncertainties for the U-238 analyses are relatively high, and show that when uncertainty is considered, the U238 and Th230 activities at any given sample overlap. The uncertainties for the remaining radionuclides are lower, but the conclusions are the same – when laboratory uncertainties are considered, activities within each decay chain for any given sample overlap.*

Please note that the relationship with respect to background for the U-238 gamma spec data is now more consistent with Phase A comparison of the uranium metal results measured by IPC-MS to the background U metal dataset as well. Tronox believes the weight of evidence suggests the new gamma spec data is reliable and more accurate than the original biased alpha spec Phase A data. Tronox therefore proposes to replace the original data with the new gamma spec data for both isotopic U and Th.

In regards to NDEP's advisement from January 29,2008 Tronox agrees in principle to utilize methods consistent with the BRC/TIMET background study methods for future investigations. The use of gamma spectrometric data discussed above is only to salvage the Phase A radiochemistry data in a manner that is internally consistent and appropriate for background comparisons.

Table 1. Radionuclide Concentrations in Soil Determined by Gamma Spectroscopy
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	Th-228	Th-230	Th-232	Th-234	U-234	U-235	U-238	Ra-226	Ra-228
		Method:	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300
		Spectroscopy:	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma
		Units:	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g
Location	Sample ID	Sample Date									
MN ORE	MN ORE	01/19/2007	**0.371**	**0.269**	**0.24**	1.77 U	**0.276**	0.0588 U	0.194 U	0.271 U	**0.55**
MN TAILINGS	MN TAILINGS	01/19/2007	**1.31**	**0.982**	**1.9**	2.18 U	**1.07**	0.185 U	0.737 U	0.968 U	**1.54**
SA01	SA1-0.5	11/03/2006	**1.72**	**1.03**	**1.96**	3.58 U	**1.15**	0.165 U	0.609 U	**1.01 J**	**1.6**
SA01	SA1-05	11/03/2006	**1.43**	**1.29**	**1.59**	6.16 U	**1.4**	0.181 U	-0.00812 U	**1.25 J**	**1.69**
SA01	SA1-10	11/03/2006	**1.83**	**1.38**	**1.85**	-0.0734 U	**1.57**	0.0487 U	0.918 U	**1.31 J**	**1.65**
SA02	SA2-0.5	11/03/2006	**1.56**	**1.05**	**2.22**	1.99 U	**1.33**	0.0754 U	1.72 U	**1.02 J**	**1.97**
SA02	SA2-10	11/03/2006	**1.55**	**1.2**	**2.02**	-1.2 U	**1.51**	0.096 U	1.58 U	**1.17 J**	**1.56**
SA02	SA2-20	11/03/2006	**1.7**	**1.17**	**2.01**	6.35 U	**1.32**	0.0702 U	1 U	**1.15 J**	**1.95**
SA02	SA2-30	11/06/2006	**1.15**	**3.57**	**0.999**	4.82 U	**3.83**	0.347 U	**4.56**	**3.39**	1.01 U
SA02	SA2-40	11/06/2006	**1.59**	**1.41**	**1.78**	4.86 U	**1.71**	0.0287 U	**1.99**	**1.34 J**	**1.72**
SA02	SA2-50	11/06/2006	**1.31**	**1.36**	**1.64**	3.88 U	**1.19**	0.00138 U	0.0547 U	**1.3 J**	**1.39**
SA02	SA2-60	11/06/2006	**1.56**	**2.77**	**1.71**	11.9 U	**2.98**	0.195 U	**3.65**	**2.64**	**1.54**
SA03	SA3-0.5	11/13/2006	**1.63**	**0.989**	**2.08**	7.19 U	**1.12**	0.213 U	1.23 U	**0.997 J**	**1.81**
SA03	SA3-0.5D	11/13/2006	**1.79**	**1.15**	**2.25**	0.636 U	**1.27**	0.00458 U	1.67 U	**1.13 J**	2.21 U
SA03	SA3-10	11/13/2006	**1.82**	**1.06**	**1.83**	7.02 U	**1.12**	0.0726 U	**1.3**	**1.01 J**	**1.65**
SA03	SA3-20	11/13/2006	**1.65**	**1.26**	**1.48**	2.56 U	**1.36**	0.0778 U	1.09 U	**1.19 J**	**1.66**
SA03	SA3-30	11/13/2006	**0.394**	**1.63**	**0.587**	3.58 U	**1.64**	0.208 U	**2.14**	**1.59 J**	0.357 U
SA03	SA3-40	11/13/2006	**0.659**	**2.16**	**0.983**	3.62 U	**2.52**	0.0874 U	**2.77**	**2.34**	0.913 U
SA04	SA4-0.5	11/14/2006	**1.72**	**1.15**	**1.83**	1.68 U	**1.17**	0.139 U	0.783 U	**1.1 J**	**1.83**
SA04	SA4-10	11/14/2006	**1.91**	**1.16**	**1.71**	1.62 U	**1.36**	0.059 U	2.3 U	**1.13 J**	**1.81**
SA04	SA4-20	11/14/2006	**1.46**	**1.22**	**1.56**	-0.266 U	**1.23**	0.179 U	**1.67**	**1.19 J**	**1.53**
SA04	SA4-30	11/14/2006	**2.04**	**1.52**	**2.35**	5.03 U	**1.85**	0.113 U	0.871 U	**1.45 J**	**1.91**
SA04	SA4-40	11/14/2006	**1.98**	**1.63**	**2.14**	8.01 U	**2**	0.185 U	0.818 U	**1.6 J**	**1.9**
SA05	SA5-0.5	11/14/2006	**1.7**	**1.14**	**1.56**	0.833 U	**1.31**	0.0168 U	0.338 U	**1.12 J**	**1.92**
SA05	SA5-10	11/14/2006	**1.69**	**1.1**	**1.74**	-1.64 U	**1.1**	0.00665 U	**1.08**	**1.07 J**	**1.66**
SA05	SA5-20	11/14/2006	**1.61**	**1.16**	**1.66**	-2.44 U	**1.31**	0.0627 U	1.53 U	**1.1 J**	**1.52**
SA05	SA5-30	11/14/2006	**1.52**	**2.35**	**1.65**	0.0608 U	**2.53**	0.146 U	**2.4**	**2.29**	**1.68**
SA05	SA5-37	11/14/2006	**0.78**	**2.53**	**1.17**	4.66 U	**2.86**	0.267 U	**3.27**	**2.46**	**0.806 J**
SA06	SA6-0.5	11/14/2006	**1.82**	**1.21**	**1.79**	0.854 U	**1.37**	0.149 U	**1.43**	**1.18 J**	**1.87**
SA06	SA6-0.5D	11/14/2006	**1.8**	**1.35**	**1.92**	6.95 U	**1.21**	-0.00889 U	0.739 U	**1.32 J**	**1.89**
SA06	SA6-10	11/14/2006	**1.6**	**1.09**	**1.66**	3.77 U	**1.05**	0.148 U	**1.17**	**1.07 J**	**1.8**
SA06	SA6-20	11/14/2006	**1.69**	**1.24**	**2.07**	6.19 U	**1.29**	0.137 U	**1.75**	**1.21 J**	**1.63**
SA06	SA6-30	11/14/2006	**1.78**	**1.53**	**2.14**	6.91 U	**1.49**	0.0842 U	**1.54**	**1.49 J**	**1.94**
SA06	SA6-35	11/14/2006	**1.2**	**2.21**	**1.13**	10.5 U	**2.62**	0.254 U	**3.01**	**2.1**	1.1 U
SA07	SA7-0.5	11/20/2006	**1.76**	**1.15**	**1.9**	2.62 U	**1.31**	0.0774 U	**1.27**	**1.12 J-**	**1.83 J-**
SA07	SA7-10	11/20/2006	**1.82**	**1.08**	**2.01**	1.51 U	**1.16**	-0.00061 U	1.55 U	**1.02 J-**	**1.9 J-**
SA07	SA7-10D	11/20/2006	**1.79**	**0.961**	**2.2**	3.03 U	**1.02**	0.0496 U	1.02 U	**0.939 J-**	**1.77 J-**
SA07	SA7-20	11/20/2006	**1.8**	**1.34**	**1.66**	3.37 U	**1.35**	0.0452 U	**1.63**	**1.28 J-**	**1.57 J-**
SA07	SA7-30	11/20/2006	**1.47**	**1.85**	**1.91**	2.38 U	**2.24**	0.159 U	4.19 U	**1.79 J-**	**1.78 J-**
SA07	SA7-34	11/20/2006	**0.799**	**7.69**	**1.45**	11.3 U	**8.01**	**0.49**	**9.04**	**7.49 J-**	**0.805 J-**
SA08	SA8-0.5	11/17/2006	**1.85**	**1.12**	**2.21**	4.26 U	**1.17**	-0.0514 U	**0.978**	**1.07 J-**	**1.76 J-**
SA08	SA8-10	11/17/2006	**1.87**	**1.11**	**2.19**	3.9 U	**1.13**	0.032 U	**1.16**	**1.08 J-**	2.05 UJ

Table 1. Radionuclide Concentrations in Soil Determined by Gamma Spectroscopy
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	Th-228	Th-230	Th-232	Th-234	U-234	U-235	U-238	Ra-226	Ra-228
		Method:	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300
		Spectroscopy:	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma
		Units:	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g
Location	Sample ID	Sample Date									
SA08	SA8-20	11/17/2006	**1.73**	**1.06**	**1.79**	-2.07 U	**1.45**	0.23 U	1.27 U	**1 J-**	**1.88 J-**
SA08	SA8-30	11/17/2006	**1.76**	**1.39**	**1.65**	3.92 U	**1.61**	0.0932 U	1.63 U	**1.34 J-**	**1.85 J-**
SA08	SA8-37	11/17/2006	**0.615**	**3.32**	**1.07**	6.48 U	**3.77**	0.387 U	**3.3**	**3.16 J-**	0.771 UJ
SA09	SA9-0.5	11/06/2006	**1.58**	**1.05**	**1.72**	3.98 U	**1.12**	-0.0974 U	**1.06**	**1.02 J**	**1.64**
SA09	SA9-10	11/06/2006	**1.57**	**1.16**	**1.87**	3.26 U	**1.12**	0.0666 U	1.84 U	**1.12 J**	**1.76**
SA09	SA9-10D	11/06/2006	**1.5**	**1.17**	**1.74**	2.62 U	**1.22**	0.0808 U	2.07 U	**1.14 J**	**1.61**
SA09	SA9-20	11/07/2006	**1.3**	**1.67**	**1.33**	4.53 U	**1.61**	0.209 U	2.57 U	**1.62 J**	**1.47**
SA09	SA9-30	11/07/2006	**0.953**	**2.39**	**1.21**	8.75 U	**2.67**	0.213 U	2.79 U	**2.33**	**0.892 J**
SA09	SA9-40	11/07/2006	**1.71**	**2.21**	**1.81**	6.77 U	**2.35**	0.183 U	**3.04**	**2.11**	**1.72**
SA10	SA10-0.5	11/07/2006	**1.75**	**1.15**	**2.01**	2.17 U	**1.36**	0.0677 U	1.2 U	**1.1 J**	**1.81**
SA10	SA10-10	11/07/2006	**1.58**	**1**	**1.46**	-2.19 U	**1.07**	0.0416 U	**1.27**	**0.978 J**	**1.69**
SA10	SA10-10D	11/07/2006	**1.48**	**0.785**	**1.54**	3.42 U	**0.987**	0.0554 U	1.93 U	**0.759 J**	**1.6**
SA10	SA10-20	11/07/2006	**1.1**	**1.34**	**1.24**	4.22 U	**1.6**	-0.00023 U	0.808 U	**1.31 J**	**0.812 J**
SA10	SA10-30	11/07/2006	**1.06**	**1.44**	**1.2**	1.45 U	**1.43**	0.239 U	**1.56**	**1.4 J**	**1.14**
SA10	SA10-40	11/07/2006	**1.12**	**1.65**	**1.44**	-4.15 U	**1.7**	0.0791 U	**2.01**	**1.58 J**	**1.42**
SA11	SA11-0.5	11/09/2006	**1.7**	**0.98**	**1.77**	1.16 U	**1.12**	0.0572 U	1.08 U	**0.947 J+**	**1.8 J+**
SA11	SA11-0.5D	11/09/2006	**1.43**	**0.929**	**1.61**	0.61 U	**0.935**	0.115 U	**1.19**	**0.905 J+**	**1.87 J+**
SA11	SA11-10	11/09/2006	**2.24**	**1.79**	**2.19**	-0.848 U	**2**	-0.0866 U	1.52 U	**1.7 J+**	**1.95 J+**
SA11	SA11-20	11/09/2006	**1.58**	**1.08**	**1.83**	5.14 U	**1.13**	0.151 U	1.54 U	**1.06 J+**	**1.68 J+**
SA11	SA11-30	11/09/2006	**0.871**	**2.6**	**1.06**	4.39 U	**2.88**	0.0981 U	**3.7**	**2.49 J+**	**1.17 J+**
SA12	SA12-0.5	11/10/2006	**1.81**	**1.21**	**2.01**	0.449 U	**1.2**	-0.00737 U	0.474 U	**1.16 J+**	**1.79 J+**
SA12	SA12-10	11/10/2006	**1.34**	**1.01**	**1.51**	1.41 U	**1.13**	0.178 U	**0.829**	**0.98 J+**	**1.83 J+**
SA12	SA12-20	11/10/2006	**1.8**	**1.93**	**2.29**	4.63 U	**2.04**	0.0603 U	1.61 U	**1.84 J+**	**2.01 J+**
SA12	SA12-30	11/10/2006	**1.03**	**1.47**	**1.14**	0.0751 U	**1.44**	0.0981 U	0.883 U	**1.44 J+**	**1.03 J+**
SA13	SA13-0.5	11/17/2006	**1.85**	**1.14**	**2.1**	1.49 U	**1.3**	0.17 U	1.38 U	**1.12 J-**	**1.68 J-**
SA13	SA13-0.5D	11/17/2006	**1.84**	**1.09**	**2.05**	2.92 U	**1.29**	0.0849 U	**1.24**	**1.06 J-**	**1.87 J-**
SA13	SA13-10	11/17/2006	**1.94**	**1.2**	**2.13**	1.37 U	**1.31**	0.127 U	0.923 U	**1.14 J-**	**2.05 J-**
SA13	SA13-20	11/17/2006	**1.59**	**1.3**	**1.77**	2.42 U	**1.23**	-0.0027 U	0.901 U	**1.27 J-**	**1.78 J-**
SA13	SA13-30	11/17/2006	**1.73**	**1.82**	**1.88**	-1.07 U	**1.87**	0.15 U	**1.77**	**1.73 J-**	**1.88 J-**
SA13	SA13-40	11/17/2006	**1.49**	**1.85**	**1.61**	0.95 U	**2.1**	0.172 U	1.87 U	**1.79 J-**	**1.61 J-**
SA14	SA14-0.5	11/08/2006								**1.07 J+**	**1.85 J+**
SA14	SA14-10	11/08/2006								1.06 U	**1.93 J+**
SA14	SA14-20	11/08/2006								**1.35 J+**	**1.82 J+**
SA14	SA14-30	11/08/2006								**1.47 J+**	**1.38 J+**
SA14	SA14-40	11/08/2006								**1.18 J+**	**0.676 J+**
SA15	SA15-0.5	11/08/2006								**1.19 J+**	**2.11 J+**
SA15	SA15-10	11/08/2006	**1.47 J+**	**1.23 J+**	**2.02 J+**	2.76 U	**1.41 J+**	0.192 U	1.28 U	**1.2 J+**	**1.91 J+**
SA15	SA15-10D	11/08/2006	**1.63 J+**	**1.26 J+**	**2.03 J+**	3.89 U	**1.38 J+**	-0.0311 U	**2.06 J+**	**1.21 J+**	**1.89 J+**
SA15	SA15-20	11/08/2006								**1.43 J+**	**1.84 J+**
SA15	SA15-30	11/08/2006								**1.91 J+**	**0.777 J+**
SA15	SA15-35	11/08/2006								**1.54 J+**	**0.852 J+**
SA16	SA16-0.5	11/09/2006								**1.16 J+**	**1.92 J+**

Table 1. Radionuclide Concentrations in Soil Determined by Gamma Spectroscopy
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	Th-228	Th-230	Th-232	Th-234	U-234	U-235	U-238	Ra-226	Ra-228
		Method:	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300
		Spectroscopy:	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma
		Units:	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g
Location	Sample ID	Sample Date									
SA16	SA16-10	11/09/2006								**1.07 J+**	**1.5 J+**
SA16	SA16-20	11/09/2006								**1.85 J+**	**2.07 J+**
SA16	SA16-30	11/09/2006	**1.35**	**1.75**	**1.26**	4.22 U	**1.97**	0.0173 U	0.97 U	**1.71 J+**	**1.17 J+**
SA17	SA17-0.5	11/15/2006	**1.61**	**1.15**	**1.9**	3.42 U	**1.24**	0.158 U	**1.66**	**1.12 J**	**1.75**
SA17	SA17-0.5D	11/15/2006	**1.77**	**1.15**	**2.03**	-0.487 U	**1.15**	0.0359 U	1.19 U	**1.12 J**	**1.8**
SA17	SA17-10	11/15/2006	**1.49**	**1.24**	**1.9**	0.728 U	**1.44**	-0.00676 U	-0.244 U	**1.2 J**	**1.55**
SA17	SA17-20	11/15/2006	**1.85**	**1.85**	**2.32**	3.67 U	**1.86**	0.0789 U	**1.9**	**1.8 J**	**1.99**
SA17	SA17-25	11/15/2006	**1.12**	**1.85**	**1.3**	2.52 U	**2.09**	0.194 U	2.2 U	**1.81 J**	**1.32**
SA18	SA18-0.5	11/15/2006	**1.98**	**1.23**	**1.83**	4.82 U	**1.31**	0.11 U	2.01 U	**1.19 J**	**1.75**
SA18	SA18-0.5D	11/15/2006	**1.88**	**1.09**	**2.06**	1.16 U	**1.14**	0.0873 U	**1.36**	**1.06 J**	**1.97**
SA18	SA18-10	11/15/2006	**1.76**	**1.31**	**2.02**	0.938 U	**1.36**	0.0485 U	1.35 U	**1.25 J**	**1.78**
SA18	SA18-20	11/15/2006	**1.77**	**1.84**	**1.76**	-1.85 U	**2.07**	0.163 U	2.05 U	**1.8 J**	**1.83**
SA18	SA18-30	11/15/2006	**1.7**	**2.56**	**1.8**	3.33 U	**2.86**	0.161 U	2.64 U	**2.47**	**1.99**
SA19	SA19-0.5	11/16/2006	**1.9**	**1.21**	**1.92**	5.25 U	**1.25**	-0.00974 U	1.18 U	**1.16 J-**	**2 J-**
SA19	SA19-10	11/16/2006	**1.51**	**1.46**	**1.66**	6.38 U	**1.59**	-0.0142 U	**1.58**	**1.43 J-**	**1.63 J-**
SA19	SA19-20	11/16/2006	**1.52**	**1.85**	**1.72**	-0.0207 U	**1.99**	-0.0103 U	1.81 U	**1.76 J-**	**1.7 J-**
SA19	SA19-25	11/16/2006	**1.4**	**1.61**	**1.37**	1.86 U	**1.67**	0.208 U	1.55 U	**1.57 J-**	**1.38 J-**
SA20	SA20-0.5	11/16/2006	**1.67**	**1.05**	**2.11**	4.89 U	**1.17**	0.0905 U	1.16 U	**1 J-**	**1.87 J-**
SA20	SA20-0.5D	11/16/2006	**1.7**	**0.904**	**1.76**	0.797 U	**1.1**	0.189 U	**1.49**	**0.863 J-**	**1.56 J-**
SA20	SA20-10	11/16/2006	**1.52**	**1.34**	**1.82**	0.771 U	**1.46**	0.136 U	0.972 U	**1.31 J-**	**1.63 J-**
SA20	SA20-20	11/16/2006	**1.7**	**1.51**	**1.97**	5.76 U	**1.78**	0.125 U	**1.14**	**1.47 J-**	**1.76 J-**
SA20	SA20-25	11/16/2006	**1.94**	**1.55**	**1.96**	-1.78 U	**1.69**	0.0755 U	1.31 U	**1.52 J-**	**1.82 J-**
SA21	SA21-0.5	11/15/2006	**1.9**	**1.19**	**2**	3.93 U	**1.28**	0.203 U	**1.23**	**1.15 J**	**1.81**
SA21	SA21-10	11/15/2006	**1.58**	**1.28**	**1.75**	0.933 U	**1.25**	0.0579 U	**2.46**	1.22 U	**2**
SA21	SA21-20	11/15/2006	**1.84**	**1.71**	**1.86**	4.65 U	**1.64**	0.0526 U	**1.95**	**1.67 J**	**1.87**
SA21	SA21-20D	11/15/2006	**1.47**	**2.08**	**1.57**	1.64 U	**2.31**	0.0697 U	1.52 U	**2.01**	**1.73**
SA21	SA21-30	11/15/2006	**1.69**	**1.52**	**1.89**	1.26 U	**1.65**	0.104 U	**1.18**	**1.48 J**	**1.87**
SA22	SA22-0.5	11/16/2006	**1.6**	**1.03**	**1.79**	2.16 U	**1.21**	0.0153 U	**1.22**	**1.01 J-**	**1.78 J-**
SA22	SA22-10	11/16/2006	**1.86**	**1.44**	**1.82**	7.4 U	**1.42**	0.111 U	1.12 U	**1.37 J-**	**1.78 J-**
SA22	SA22-20	11/16/2006	**1.64**	**2.34**	**2.11**	0.977 U	**3.12**	0.0904 U	**2.23**	**2.28 J-**	**1.99 J-**
SA23	SA23-0.5	11/09/2006	**1.91**	**1.24**	**2.03**	5.19 U	**1.41**	0.0886 U	0.894 U	**1.11 J+**	**2.06 J+**
SA23	SA23-10	11/09/2006	**1.53**	**1.21**	**1.51**	-1.32 U	**1.21**	0.105 U	**1.24**	**1.18 J+**	1.66 U
SA23	SA23-20	11/09/2006	**1.47**	**1.82**	**1.56**	6.09 U	**1.9**	0.176 U		**1.73 J+**	**1.59 J+**
SA23	SA23-20D	11/09/2006	**1.3**	**1.76**	**1.44**	3.99 U	**2.18**	0.182 U	1.16 U	**1.72 J+**	**1.34 J+**
SA24	SA24-0.5	11/03/2006	**1.66**	**0.999**	**2.02**	2.07 U	**1.21**	0.0387 U	0.885 U	**0.965 J**	**1.79**
SA24	SA24-10	11/03/2006	**1.72**	**1.13**	**1.98**	3.37 U	**1.27**	0.0325 U	0.931 U	**1.08 J**	**1.73**
SA24	SA24-20	11/03/2006	**1.52**	**1.44**	**1.53**	4.73 U	**1.65**	0.0711 U	1.55 U	**1.4 J**	**1.65**
SA24	SA24-25	11/03/2006	**1.68**	**1.67**	**1.62**	2.51 U	**1.8**	0.214 U	2.06	**1.59 J**	**1.68**
SA25	SA25-0.5	11/03/2006	**1.64**	**1.27**	**1.89**	4.97 U	**1.25**	0.0116 U	0.983 U	**1.21 J**	**2.03**
SA25	SA25-10	11/03/2006	**1.53**	**1.24**	**1.56**	3.23 U	**1.56**	0.0886 U	**1.33**	**1.19 J**	**1.61**
SA25	SA25-15	11/03/2006	**1.57**	**1.77**	**1.51**	2.22 U	**1.9**	0.0752 U	0.636 U	**1.69 J**	**1.6**
SA25	SA25-20	11/03/2006	**1.02**	**1.67**	**1.3**	0.903 U	**1.57**	0.185 U	**1.01**	**1.63 J**	**1.35**

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Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	Th-228	Th-230	Th-232	Th-234	U-234	U-235	U-238	Ra-226	Ra-228
		Method:	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300
		Spectroscopy:	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma
		Units:	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g
Location	Sample ID	Sample Date									
SA26	SA26-0.5	11/20/2006	**1.71**	**1.27**	**2.09**	0.61 U	**1.21**	0.0908 U	**2.24**	**1.2 J-**	**1.91 J-**
SA26	SA26-0.5D	11/20/2006	**1.95**	**1.07**	**1.98**	3.34 U	**1.35**	0.00452 U	**1.02**	**1.02 J-**	**1.78 J-**
SA26	SA26-10	11/20/2006	**1.61**	**1.36**	**1.82**	2.87 U	**1.33**	0.00923 U	**1.12**	**1.33 J-**	**1.82 J-**
SA27	SA27-0.5	11/02/2006	**1.62**	**1.02**	**1.96**	4.39 U	**1.32**	-0.0901 U	-0.341 U	**0.985 J**	**1.87**
SA27	SA27-10	11/02/2006	**1.85**	**1.29**	**1.85**	6.81 U	**1.41**	0.141 U	1.4 U	**1.23 J**	**1.84**
SA27	SA27-20	11/02/2006	**1.56**	**1.16**	**1.52**	1.39 U	**1.16**	0.0307 U	0.812 U	**1.11 J**	**1.42**

Data Qualifier Definitions:

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 high.
J-	The result is an estimated quantity and the result may be biased low.
UJ	The analyte was not detected above the sample reporting limit and the reporting limit is approximate.
U	The analyte was analyzed for, but was not detected above the sample reporting limit

Table 2. Comparison of Alpha and Gamma Spectrometric Radionuclide Concentrations in Soil
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	Th-228	Th-228		Th-228		Th-230	Th-230		Th-230		Th-232	Th-232		Th-232		mean
		Analytic Method:	HASL-300	HASL-300		ratio		HASL-300	HASL-300		ratio		HASL-300	HASL-300		ratio		Th isotope
		Spectroscopy Type:	gamma	alpha		gamma		gamma	alpha		gamma		gamma	alpha		gamma		ratio
		Units:	pci/g	pci/g		alpha		pci/g	pci/g		alpha		pci/g	pci/g		alpha		
location	sample ID	sample date																
MN ORE	MN ORE	01/19/2007	0.371	0.517		NA		0.269	0.249 J		NA		0.24	0.514 J		NA		NA
MN TAILINGS	MN TAILINGS	01/19/2007	1.31	1.19		NA		0.982	0.802 J		NA		1.9	0.957 J		NA		NA
SA02	SA2-0.5	11/03/2006	1.56	1.12		1.39		1.05	0.798 J		1.32		2.22	0.994 J		2.23		1.65
SA03	SA3-10	11/13/2006	1.82	0.691 J		2.63		1.06	0.554 J		1.91		1.83	0.601 J		3.04		2.53
SA04	SA4-20	11/14/2006	1.46	0.511 JB		2.86		1.22	0.875 J		1.39		1.56	0.706 J		2.21		2.15
SA05	SA5-30	11/14/2006	1.52	0.481 JB		3.16		2.35	2.23		1.05		1.65	0.59 J		2.80		2.34
SA06	SA6-10	11/14/2006	1.6	0.601 J		2.66		1.09	0.619 JB		1.76		1.66	0.668 J		2.49		2.30
SA07	SA7-20	11/20/2006	1.8	0.488 J		3.69		1.34	0.775 J		1.73		1.66	0.618 J		2.69		2.70
SA11	SA11-10	11/09/2006	2.24	0.663 J		3.38		1.79	0.833 J		2.15		2.19	0.836 J		2.62		2.72
SA13	SA13-40	11/17/2006	1.49	0.659 J		2.26		1.85	0.922 J		2.01		1.61	0.539 J		2.99		2.42
SA15	SA15-10	11/08/2006	1.47 J+	0.868 J		2.26		1.23 J+	0.794 J		2.01		2.02 J+	0.796 J		2.99		2.42
SA15	SA15-10D	11/08/2006	1.63 J+	0.779 J		2.26		1.26 J+	0.529 J		2.01		2.03 J+	0.544 J		2.99		2.42
SA18	SA18-0.5	11/15/2006	1.98	0.763 J		2.60		1.23	0.433 J-		2.84		1.83	0.676 J		2.71		2.71
SA18	SA18-0.5D	11/15/2006	1.88	0.481 J		3.91		1.09	0.495 J-		2.20		2.06	0.658 J		3.13		3.08
SA21	SA21-0.5	11/15/2006	1.9	0.954 J		1.99		1.19	0.671 J-		1.77		2	0.742 J		2.70		2.15
SA26	SA26-0.5	11/20/2006	1.71	0.805 J		2.12		1.27	0.391 J		3.25		2.09	0.759 J		2.75		2.71
SA26	SA26-0.5D	11/20/2006	1.95	0.774 J		2.52		1.07	0.441 J		2.43		1.98	0.729 J		2.72		2.55
		mean ratio				2.65					1.99					2.74		2.46
		%RSD				25.27					28.28					10.04		

Data Qualifier Definitions:

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J-	The result is an estimated quantity and the result may be biased low.
UJ	The analyte was not detected above the sample reporting limit and the reporting limit is approximate.
U	The analyte was analyzed for, but was not detected above the sample reporting limit

- why are ore/tailings samples NA ?

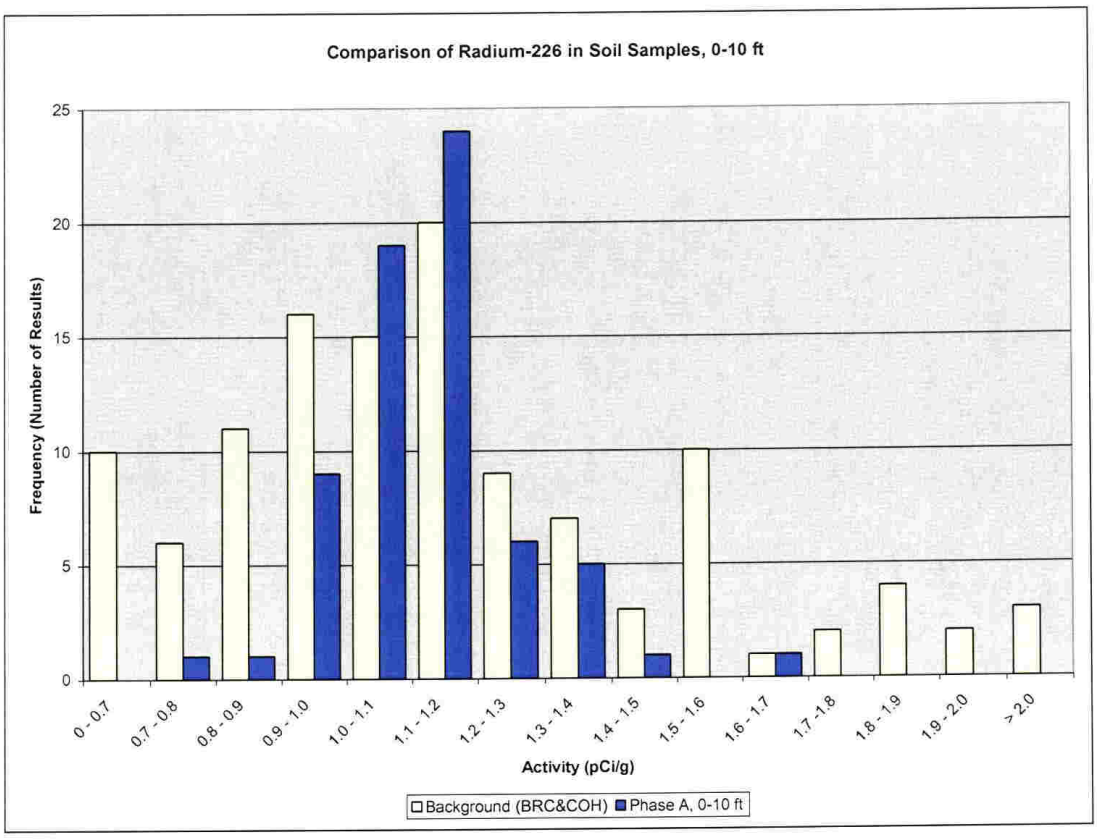
Table 2. Comparison of Alpha and Gamma Spectrometric Radionuclide Concentrations in Soil
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

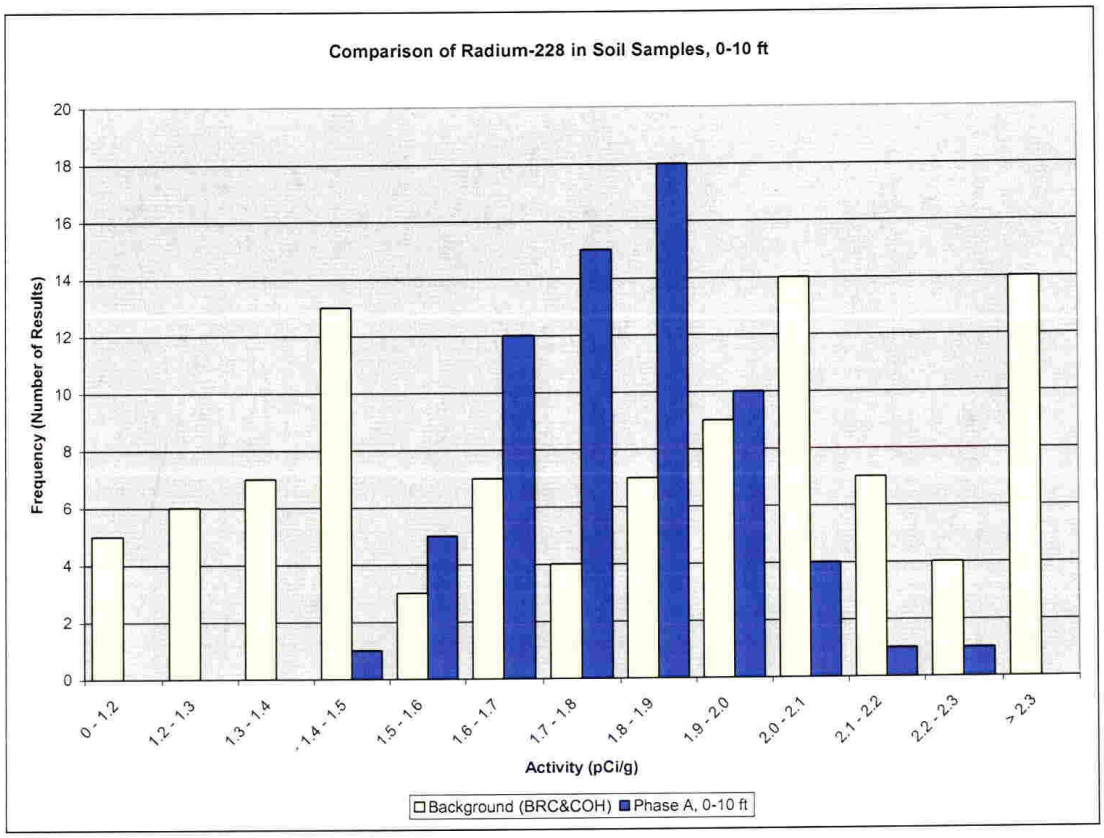
		Analyte:	U-234	U-233/234	U-234	U-235	U-235/236	U-235	U-238	U-238	U-238	mean
		Analytic Method:	HASL-300	HASL-300	ratio	HASL-300	HASL-300	ratio	HASL-300	HASL-300	ratio	U isotope
		Spectroscopy Type:	gamma	alpha	gamma	gamma	alpha	gamma	gamma	alpha	gamma	ratio
		Units:	pci/g	pci/g	alpha	pci/g	pci/g	alpha	pci/g	pci/g	alpha	
location	sample ID	sample date										
MN ORE	MN ORE	01/19/2007	0.276	0.21 J	NA	0.0588 U	0.0311 J	NA	0.194 U	0.217 J	NA	NA
MN TAILINGS	MN TAILINGS	01/19/2007	1.07	0.882	NA	0.185 U	0.0134 U	NA	0.737 U	0.854	NA	NA
SA02	SA2-0.5	11/03/2006	1.33	0.26 J	5.12	0.0754 U	0.035 J-	NA	1.72 U	0.196 J	NA	5.12
SA03	SA3-10	11/13/2006	1.12	0.427 J-	2.62	0.0726 U	0.0123 UJ	NA	1.3	0.292 J-	4.45	3.54
SA04	SA4-20	11/14/2006	1.23	1.35	0.91	0.179 U	0.0181 J	NA	1.67	0.833	2.00	1.46
SA05	SA5-30	11/14/2006	2.53	1.58	1.60	0.146 U	0.0469 J	NA	2.4	1.37	1.75	1.68
SA06	SA6-10	11/14/2006	1.05	0.787	1.33	0.148 U	0.0165 J	NA	1.17	0.483 J	2.42	1.88
SA07	SA7-20	11/20/2006	1.35	0.652 J+	2.07	0.0452 U	0.0145 U	NA	1.63	0.493 J	3.31	2.69
SA11	SA11-10	11/09/2006	2	0.663	3.02	-0.0866 U	0.004 U	NA	1.52 U	0.37 J	NA	3.02
SA13	SA13-40	11/17/2006	2.1	1.05 J+	2.00	0.172 U	0.0274 U	NA	1.87 U	0.813	NA	2.00
SA15	SA15-10	11/08/2006	1.41 J+	0.518 J	2.00	0.192 U	0.0102 U	NA	2.06	0.376 J	5.48	3.74
SA15	SA15-10D	11/08/2006	1.38 J+	0.404 J	2.00	-0.0311 U	0.00471 U	NA	2.01	0.392 J	5.13	3.56
SA18	SA18-0.5	11/15/2006	1.31	0.547 J	2.39	0.11 U	0.00628 U	NA	2.01 U	0.313 J	NA	2.39
SA18	SA18-0.5D	11/15/2006	1.14	0.322 J	3.54	0.0873 U	0.0114 J+	NA	1.36	0.263 J	5.17	4.36
SA21	SA21-0.5	11/15/2006	1.28	0.314 J	4.08	0.203 U	0.0211 J+	NA	1.23	0.237 J	5.19	4.63
SA26	SA26-0.5	11/20/2006	1.21	0.262 J+	4.62	0.0908 U	0.00551 U	NA	2.24	0.137 J	NA	4.62
SA26	SA26-0.5D	11/20/2006	1.35	0.262 J+	5.15	0.00452 U	0.00397 U	NA	1.02	0.146 J	6.99	6.07
		mean ratio			2.83			NA			4.19	3.38
		%RSD			48.35			NA			41.36	
				BRC study* mean ratio	2.7						3.2	

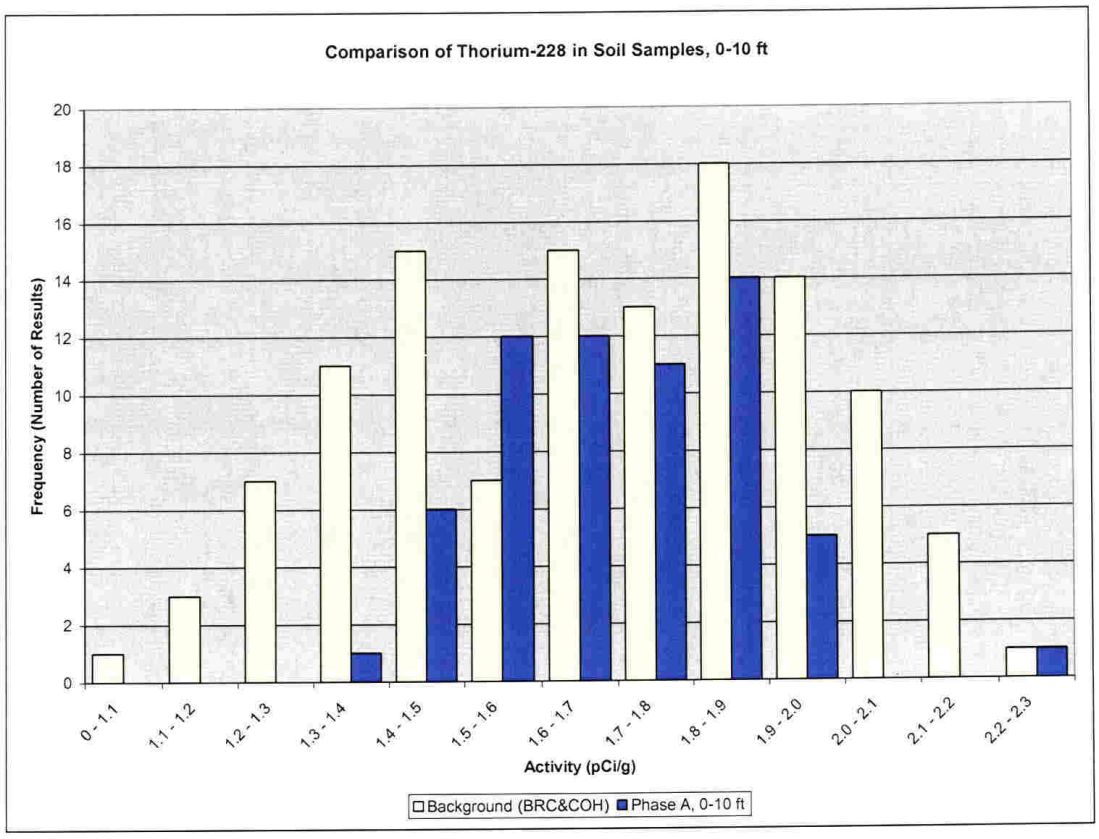
Data Qualifier Definitions:

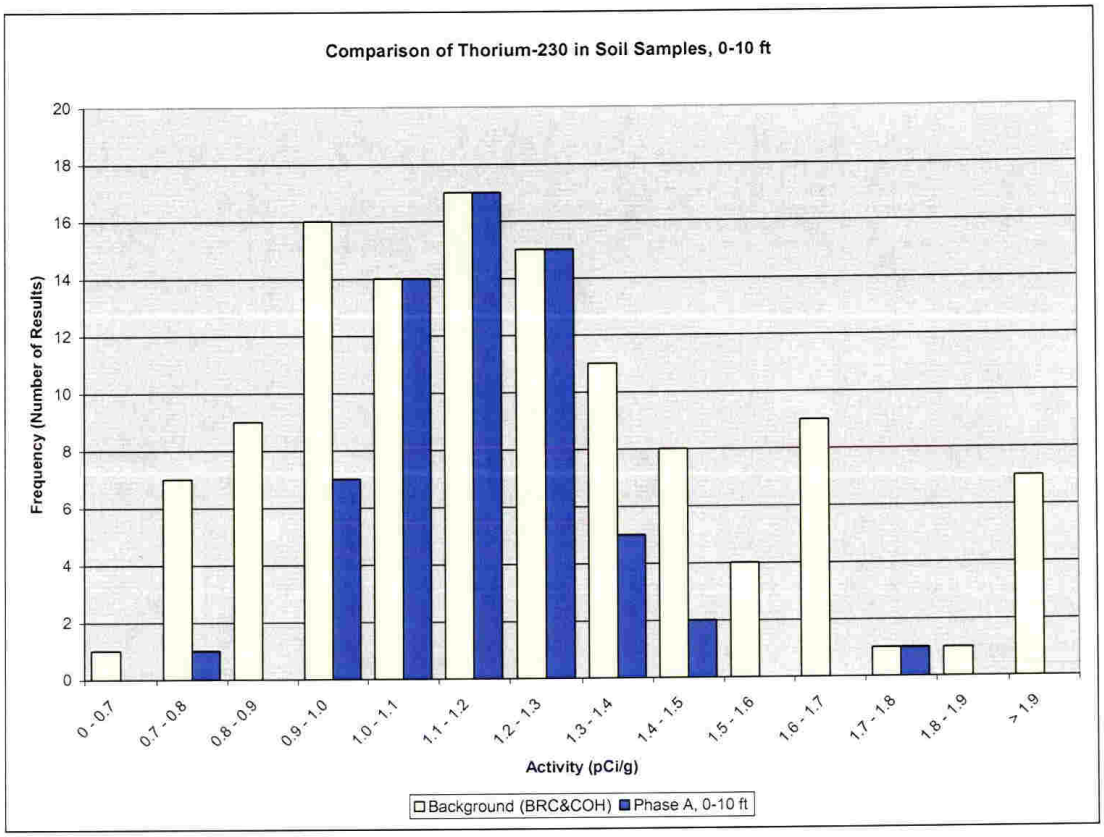
J	The result is an estimated quantity.
J+	The result is an estimated quantity a
J-	The result is an estimated quantity a
UJ	The analyte was not detected above
U	The analyte was analyzed for, but w

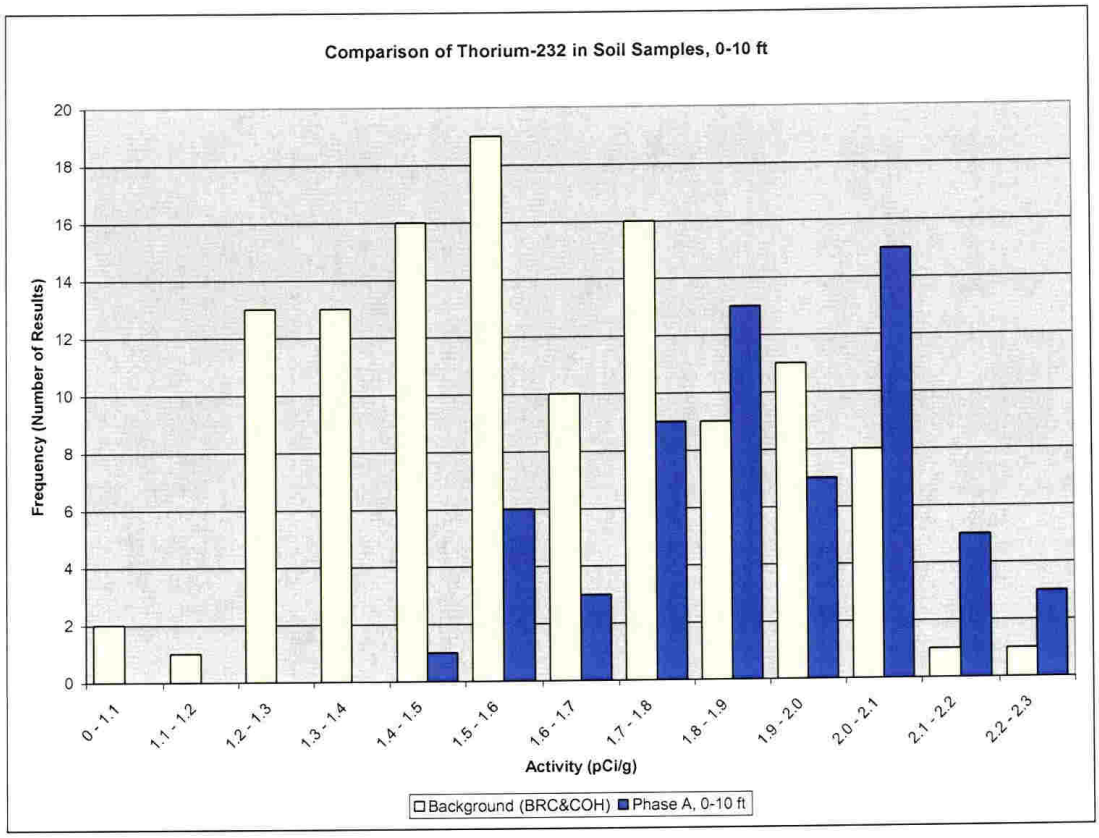
*BRC study ratios compared total dissolution prep to the nitric acid leach prep

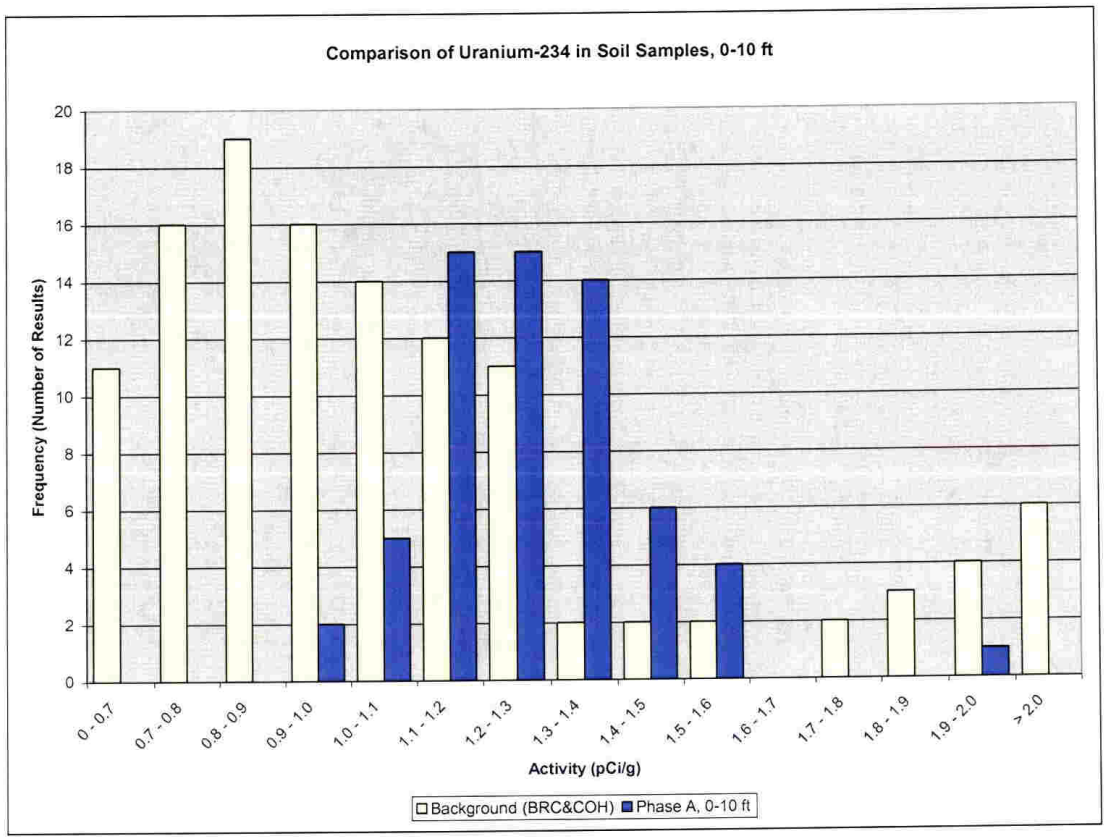

Comparison of Radium-226 in Soil Samples, 0-10 ft
Frequency (Number of Results)
25
20
15
10
5
0
0 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0
1.0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
> 2.0
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

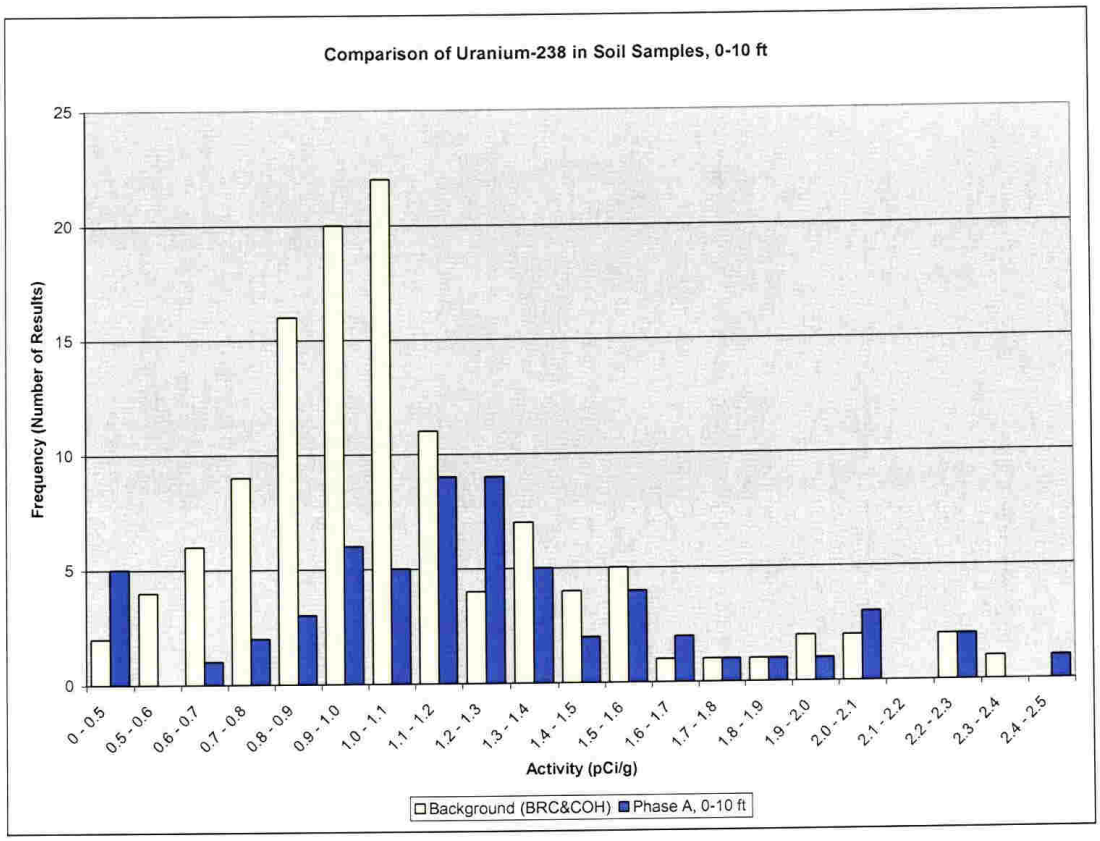

Comparison of Radium-228 in Soil Samples, 0-10 ft
Frequency (Number of Results)
20
18
16
14
12
10
8
6
4
2
0
0 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
2.0 - 2.1
2.1 - 2.2
2.2 - 2.3
> 2.3
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

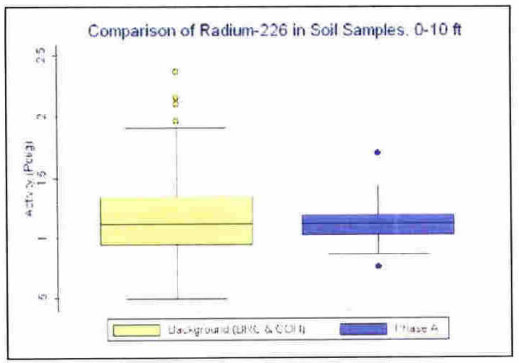

Comparison of Thorium-228 in Soil Samples, 0-10 ft
Frequency (Number of Results)
0
2
4
6
8
10
12
14
16
18
20
0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
2.0 - 2.1
2.1 - 2.2
2.2 - 2.3
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

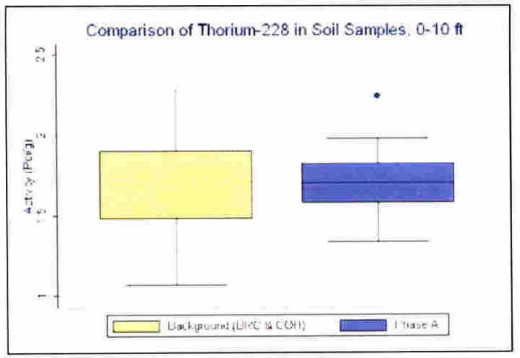

Comparison of Thorium-230 in Soil Samples, 0-10 ft
Frequency (Number of Results)
0
2
4
6
8
10
12
14
16
18
20
0 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0
1.0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
> 1.9
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

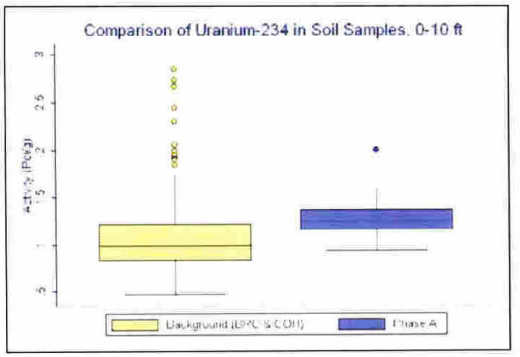

Comparison of Thorium-232 in Soil Samples, 0-10 ft
Frequency (Number of Results)
0
2
4
6
8
10
12
14
16
18
20
0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
2.0 - 2.1
2.1 - 2.2
2.2 - 2.3
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

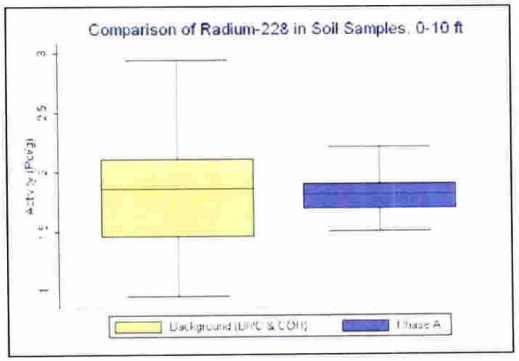

Comparison of Uranium-234 in Soil Samples, 0-10 ft
Frequency (Number of Results)
0
2
4
6
8
10
12
14
16
18
20
0 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0
1.0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
> 2.0
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

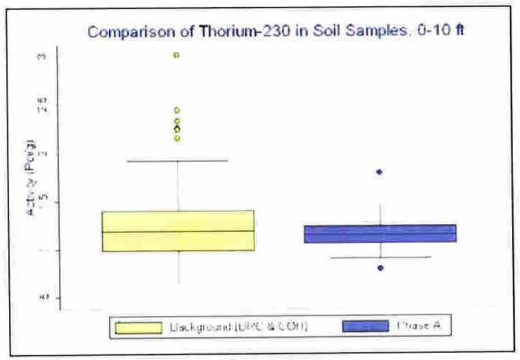

Comparison of Uranium-238 in Soil Samples, 0-10 ft
Frequency (Number of Results)
25
20
15
10
5
0
0 - 0.5
0.5 - 0.6
0.6 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0
1.0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
2.0 - 2.1
2.1 - 2.2
2.2 - 2.3
2.3 - 2.4
2.4 - 2.5
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

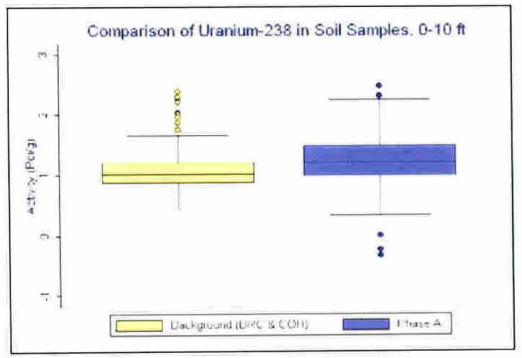

Comparison of Radium-226 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (DPC & COH)
Phase A

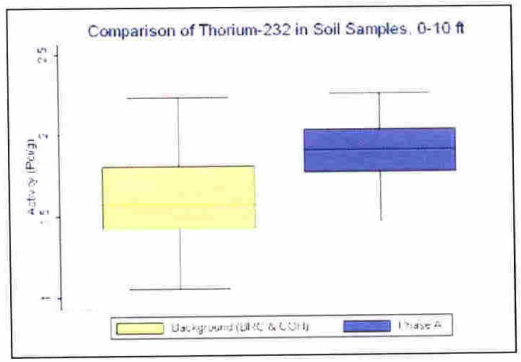

Comparison of Thorium-228 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (DPC & COH)
Phase A

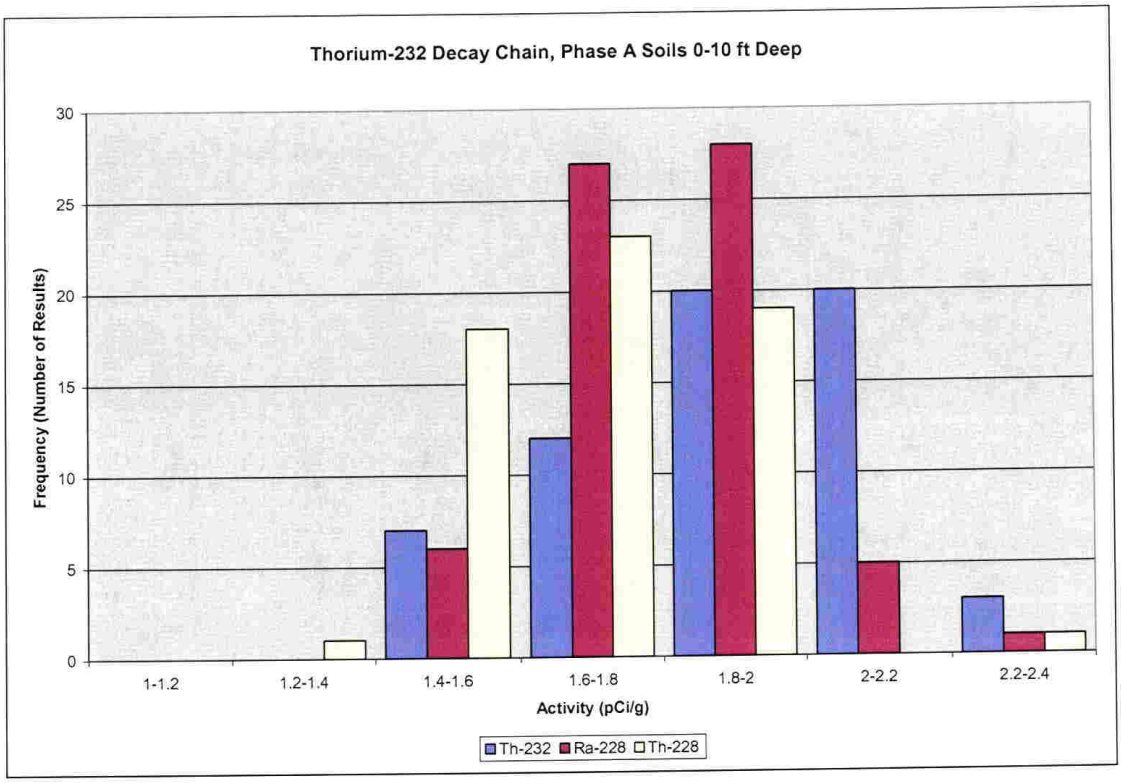

Comparison of Uranium-234 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (DPC & COH)
Phase A

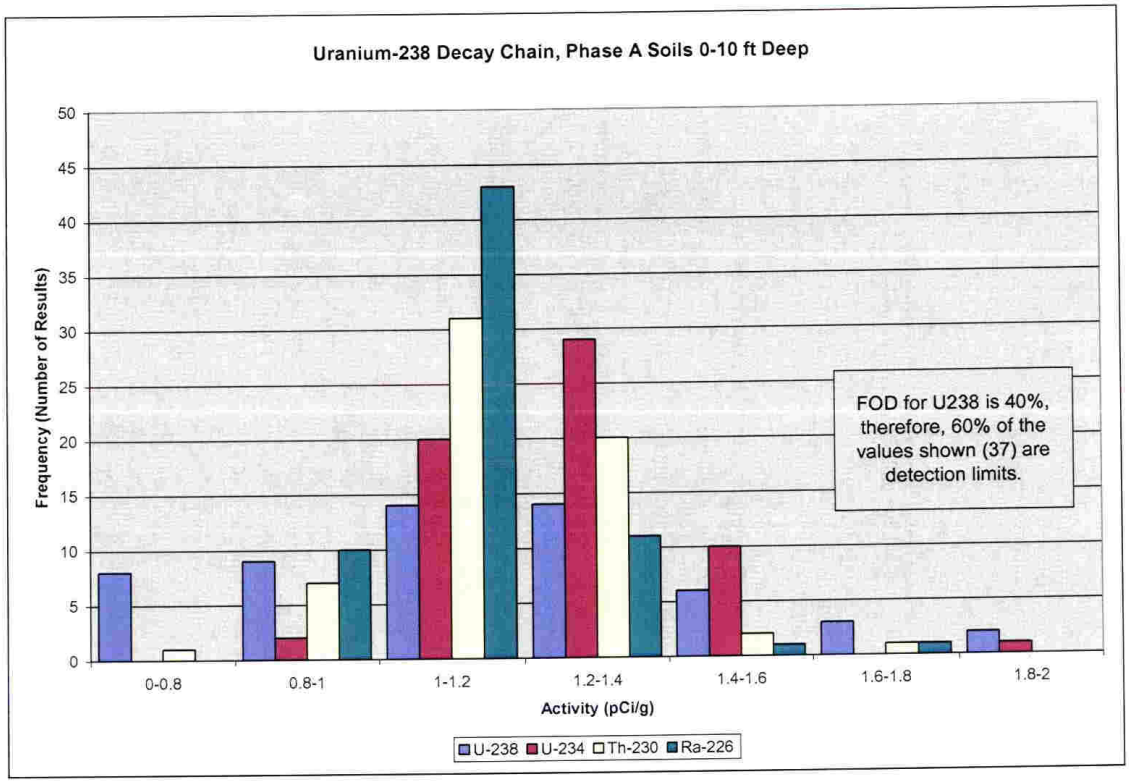

Comparison of Radium-228 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (DPC & COH)
Phase A

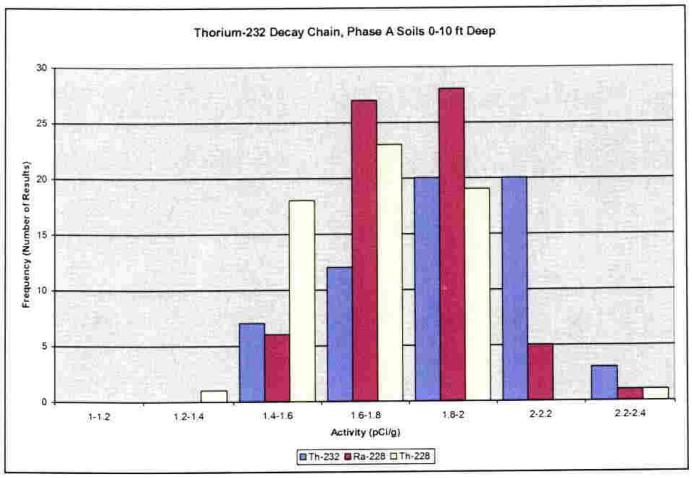

Comparison of Thorium-230 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (DPC & COH)
Phase A

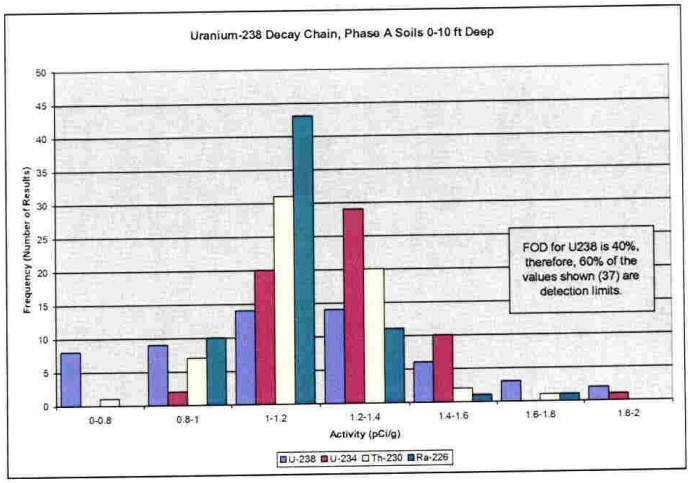

Comparison of Uranium-238 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (DPC & COH)
Phase A

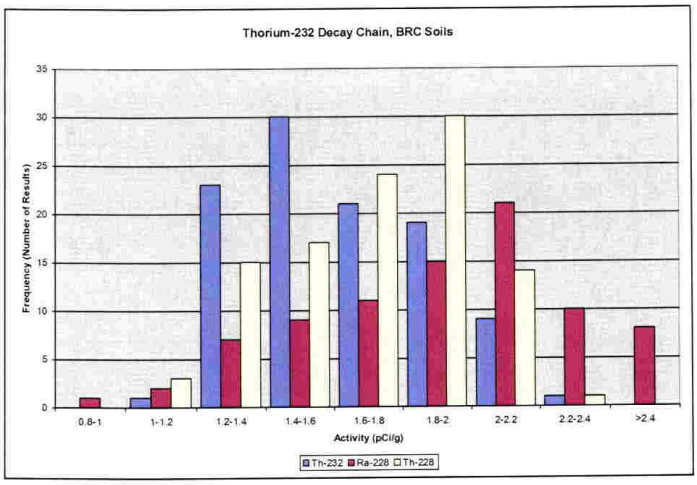

Comparison of Thorium-232 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (DPC & COH)
Phase A

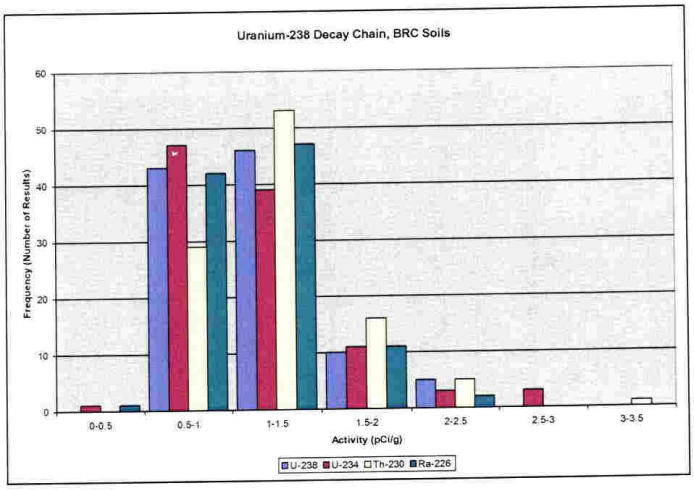

Thorium-232 Decay Chain, Phase A Soils 0-10 ft Deep
Frequency (Number of Results)
30
25
20
15
10
5
0
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
2-2.2
2.2-2.4
Activity (pCi/g)
Th-232
Ra-228
Th-228

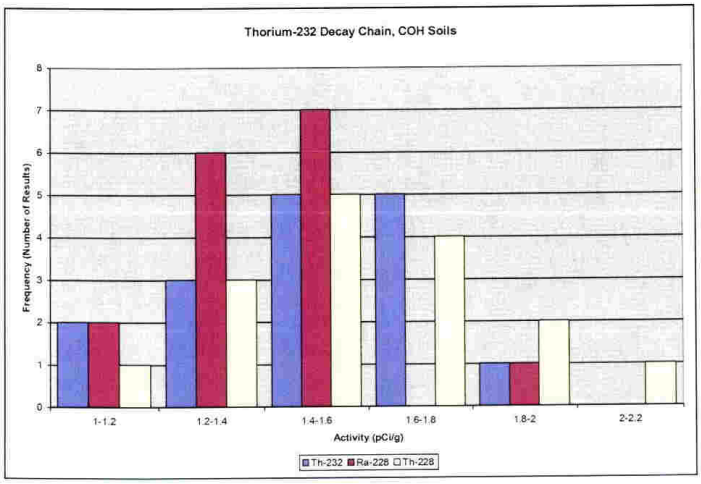

Uranium-238 Decay Chain, Phase A Soils 0-10 ft Deep
Frequency (Number of Results)
50
45
40
35
30
25
20
15
10
5
0
0-0.8
0.8-1
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
Activity (pCi/g)
FOD for U238 is 40%, therefore, 60% of the values shown (37) are detection limits.
U-238
U-234
Th-230
Ra-226

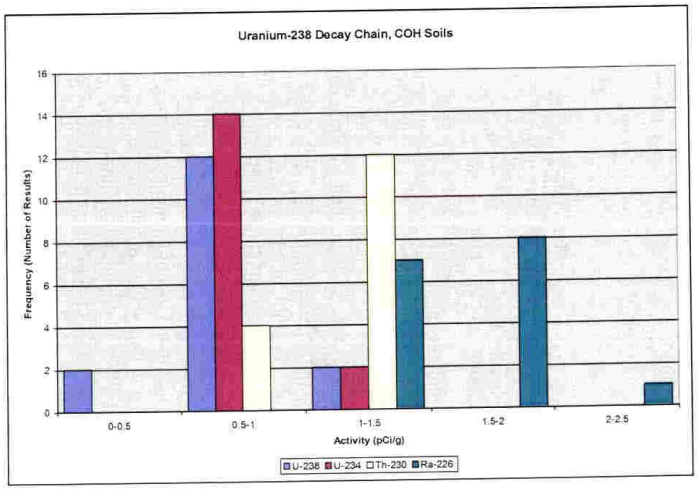

Thorium-232 Decay Chain, Phase A Soils 0-10 ft Deep
Frequency (Number of Results)
Activity (pCi/g)
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
2-2.2
2.2-2.4
Th-232 Ra-228 Th-228

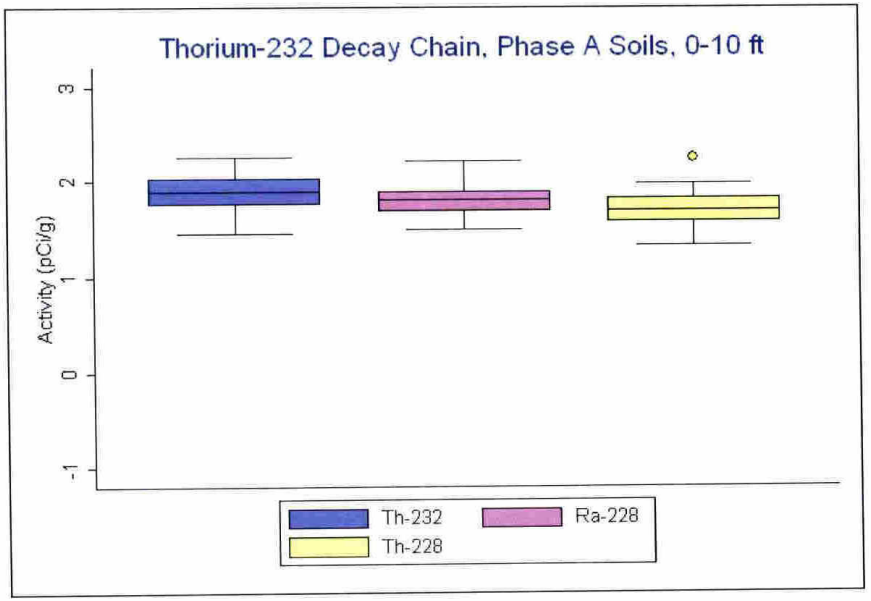

Uranium-238 Decay Chain, Phase A Soils 0-10 ft Deep
Frequency (Number of Results)
Activity (pCi/g)
0-0.8
0.8-1
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
FOD for U238 is 40%, therefore, 60% of the values shown (37) are detection limits.
U-238 U-234 Th-230 Ra-226

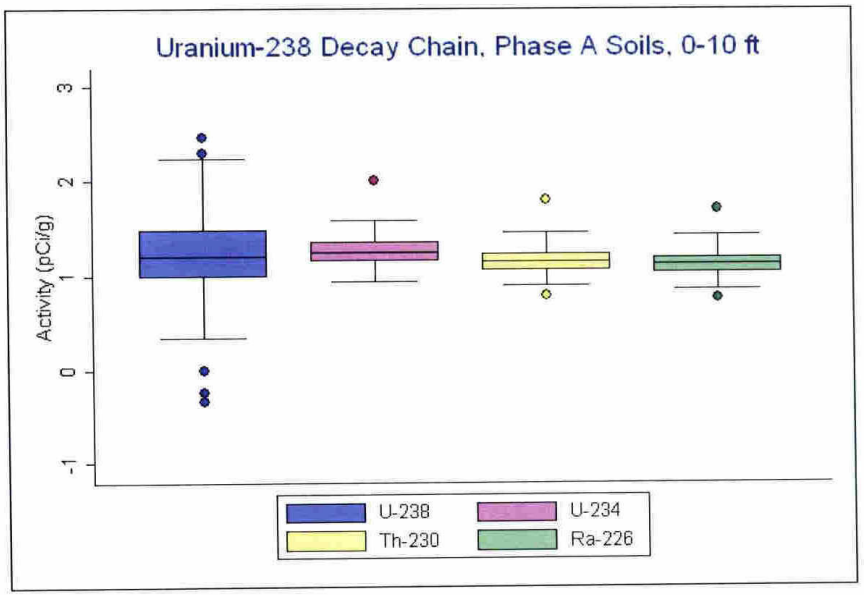

Thorium-232 Decay Chain, BRC Soils
Frequency (Number of Results)
Activity (pCi/g)
0.8-1
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
2-2.2
2.2-2.4
>2.4
Th-232 Ra-228 Th-228

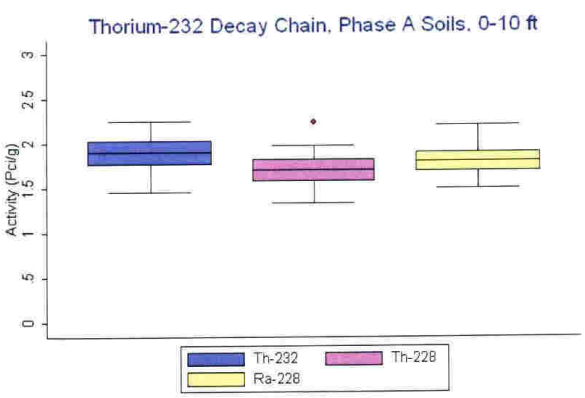

Uranium-238 Decay Chain, BRC Soils
Frequency (Number of Results)
Activity (pCi/g)
0-0.5
0.5-1
1-1.5
1.5-2
2-2.5
2.5-3
3-3.5
U-238 U-234 Th-230 Ra-226

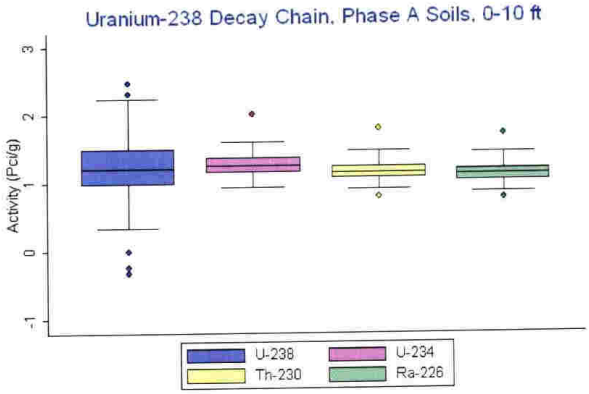

Thorium-232 Decay Chain, COH Soils
Frequency (Number of Results)
Activity (pCi/g)
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
2-2.2
Th-232 Ra-228 Th-228

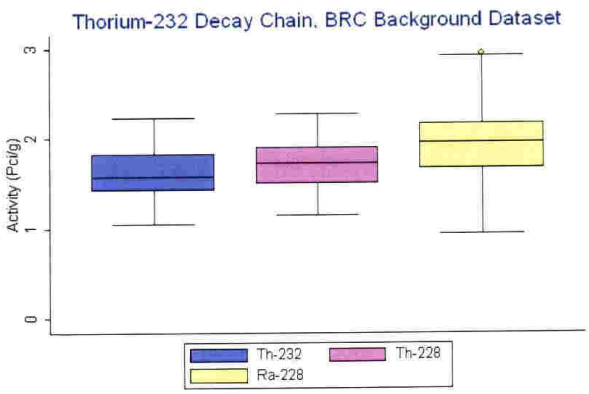

Uranium-238 Decay Chain, COH Soils
Frequency (Number of Results)
Activity (pCi/g)
0-0.5
0.5-1
1-1.5
1.5-2
2-2.5
U-238 U-234 Th-230 Ra-226

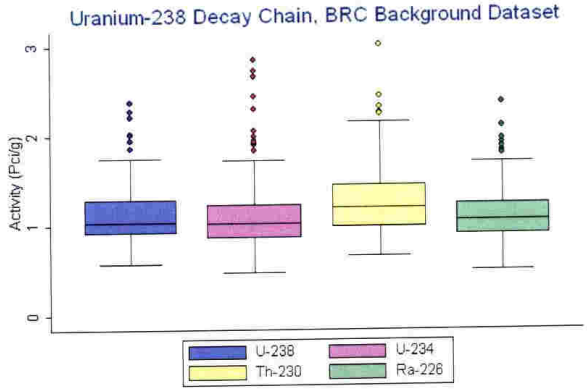

Thorium-232 Decay Chain, Phase A Soils, 0-10 ft
Activity (pCi/g)
-1
0
1
2
3
Th-232
Ra-228
Th-228

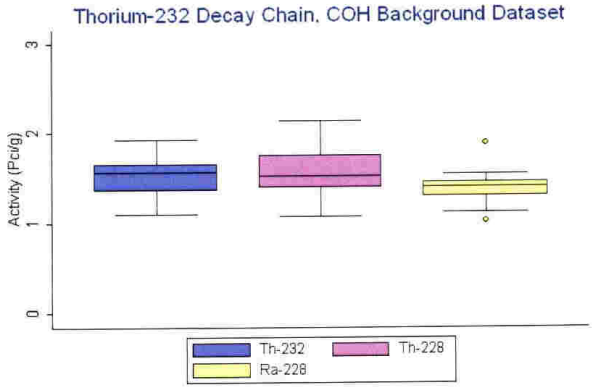

Uranium-238 Decay Chain, Phase A Soils, 0-10 ft
Activity (pCi/g)
-1
0
1
2
3
U-238
U-234
Th-230
Ra-226

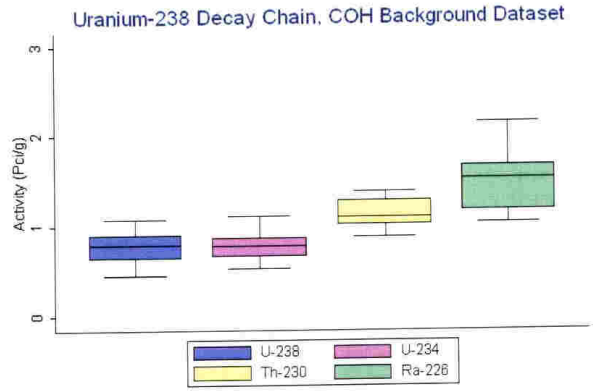

Thorium-232 Decay Chain, Phase A Soils, 0-10 ft
Activity (Pci/g)
0
.5
1
1.5
2
2.5
3
Th-232
Th-228
Ra-228

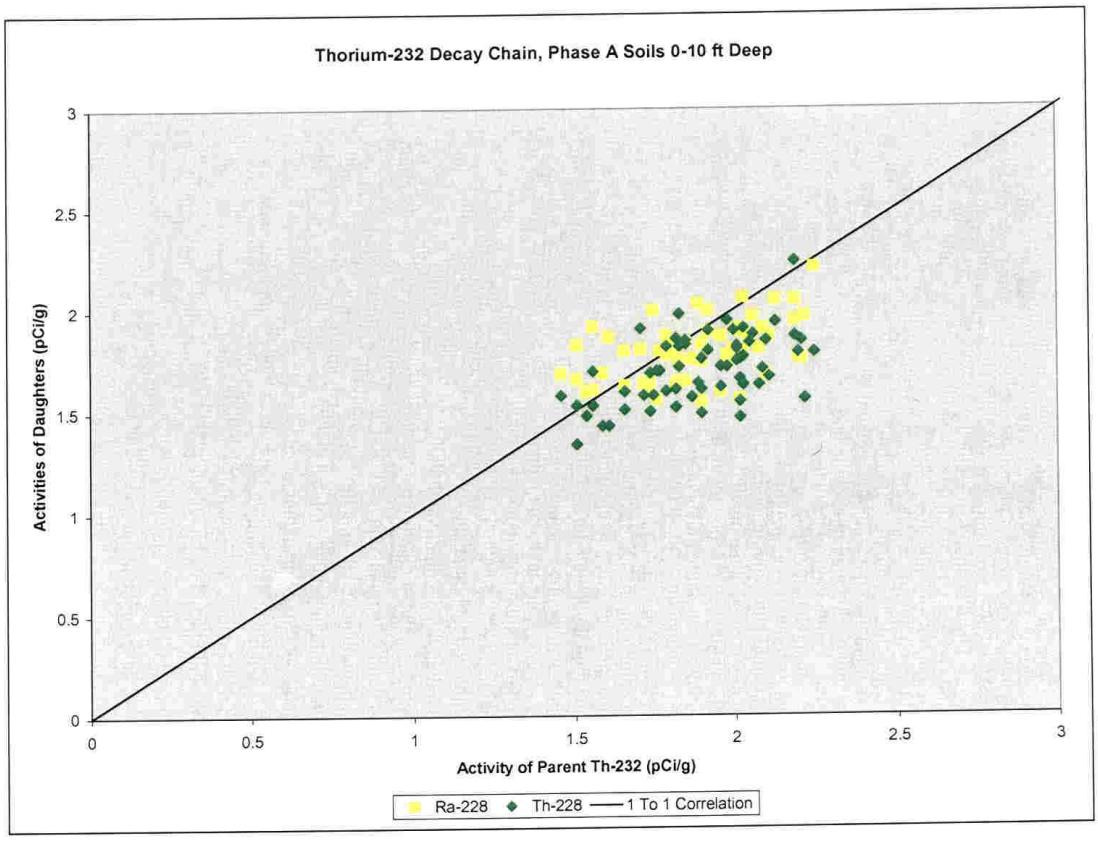

Uranium-238 Decay Chain, Phase A Soils, 0-10 ft
Activity (Pci/g)
-1
0
1
2
3
U-238
U-234
Th-230
Ra-226

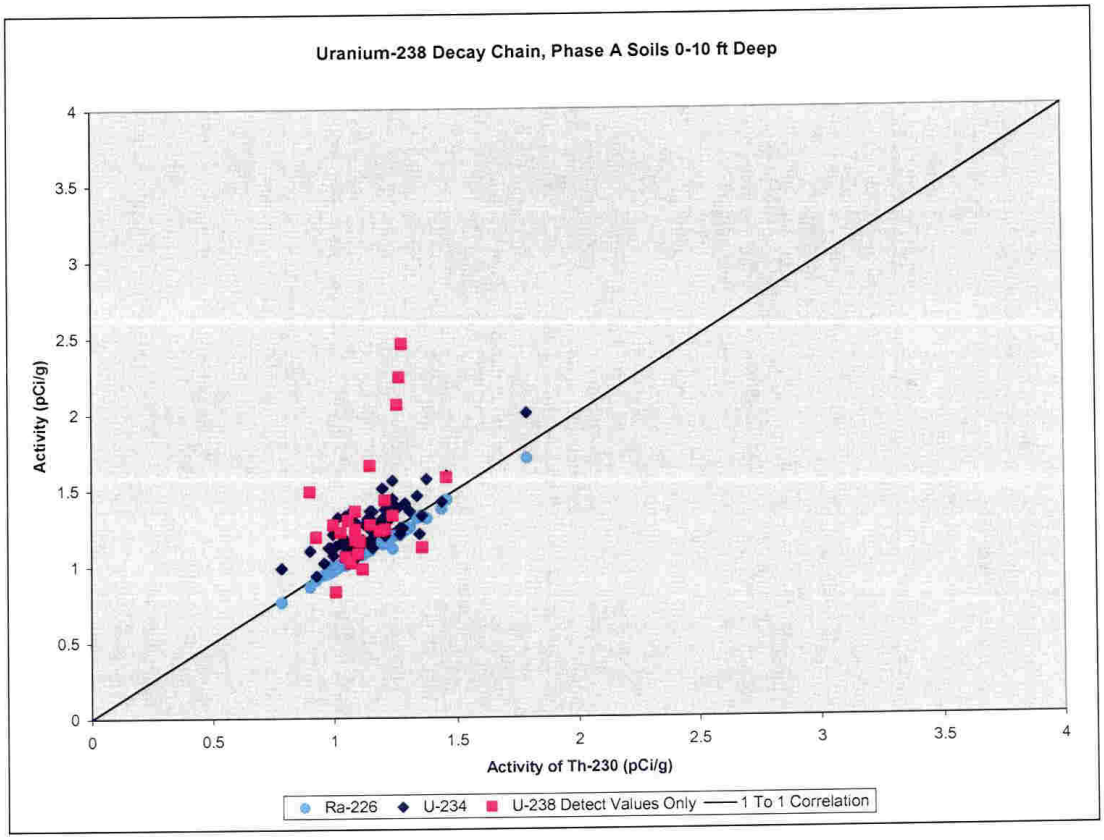

Thorium-232 Decay Chain, BRC Background Dataset
Activity (Pci/g)
0
1
2
3
Th-232
Th-228
Ra-228

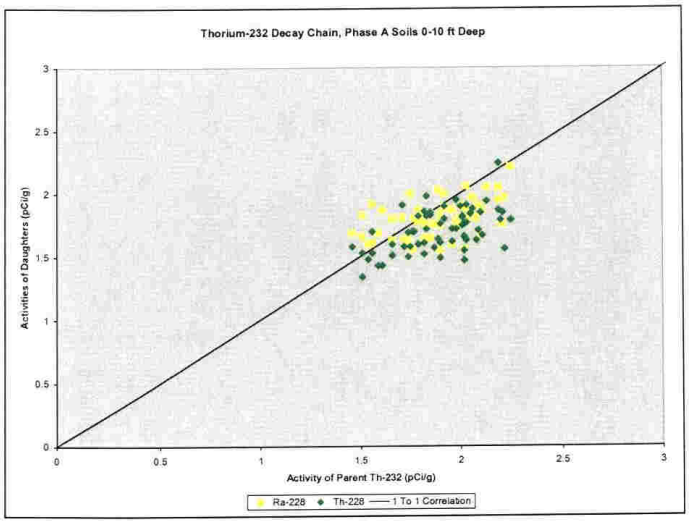

Uranium-238 Decay Chain, BRC Background Dataset
Activity (Pci/g)
0
1
2
3
U-238
U-234
Th-230
Ra-226

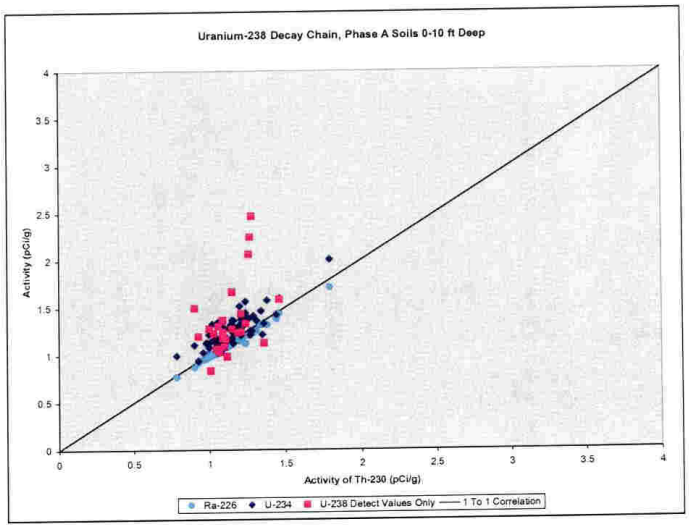

Thorium-232 Decay Chain, COH Background Dataset
Activity (Pci/g)
0
1
2
3
Th-232
Th-228
Ra-228

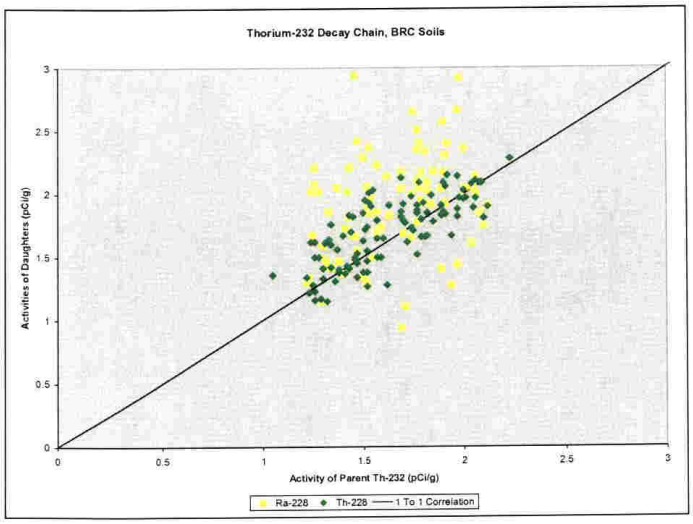

Uranium-238 Decay Chain, COH Background Dataset
Activity (Pci/g)
0
1
2
3
U-238
U-234
Th-230
Ra-226

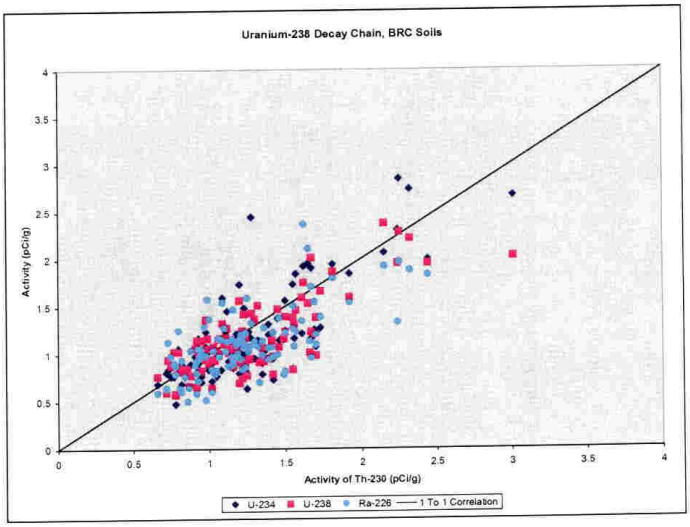

Thorium-232 Decay Chain, Phase A Soils 0-10 ft Deep
Activities of Daughters (pCi/g)
Activity of Parent Th-232 (pCi/g)
0
0.5
1
1.5
2
2.5
3
Ra-228
Th-228
1 To 1 Correlation

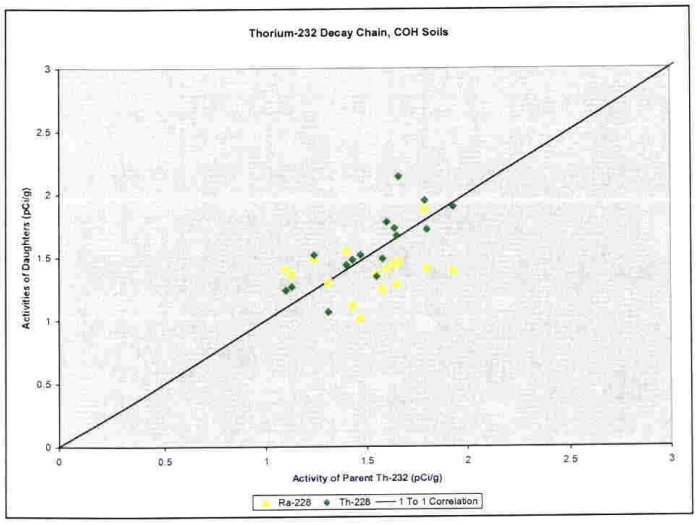

Uranium-238 Decay Chain, Phase A Soils 0-10 ft Deep
Activity (pCi/g)
Activity of Th-230 (pCi/g)
0
0.5
1
1.5
2
2.5
3
3.5
4
Ra-226
U-234
U-238 Detect Values Only
1 To 1 Correlation

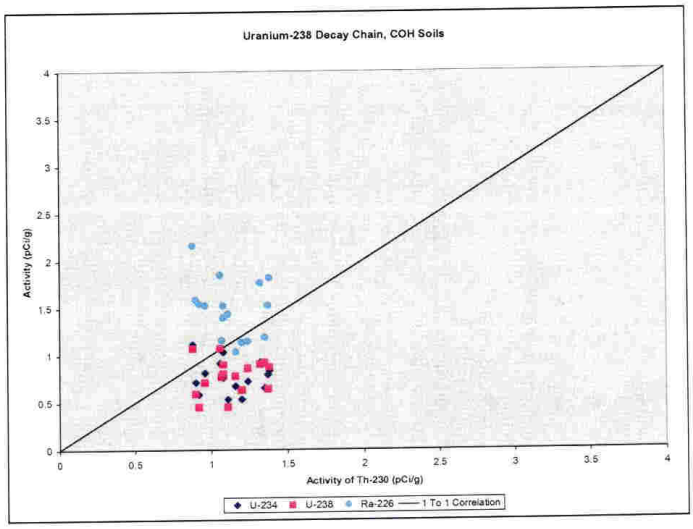

Thorium-232 Decay Chain, Phase A Soils 0-10 ft Deep
Activities of Daughters (pCi/g)
Activity of Parent Th-232 (pCi/g)
Ra-228
Th-228
1 To 1 Correlation


Uranium-238 Decay Chain, Phase A Soils 0-10 ft Deep
Activity (pCi/g)
Activity of Th-230 (pCi/g)
Ra-226
U-234
U-238 Detect Values Only
1 To 1 Correlation

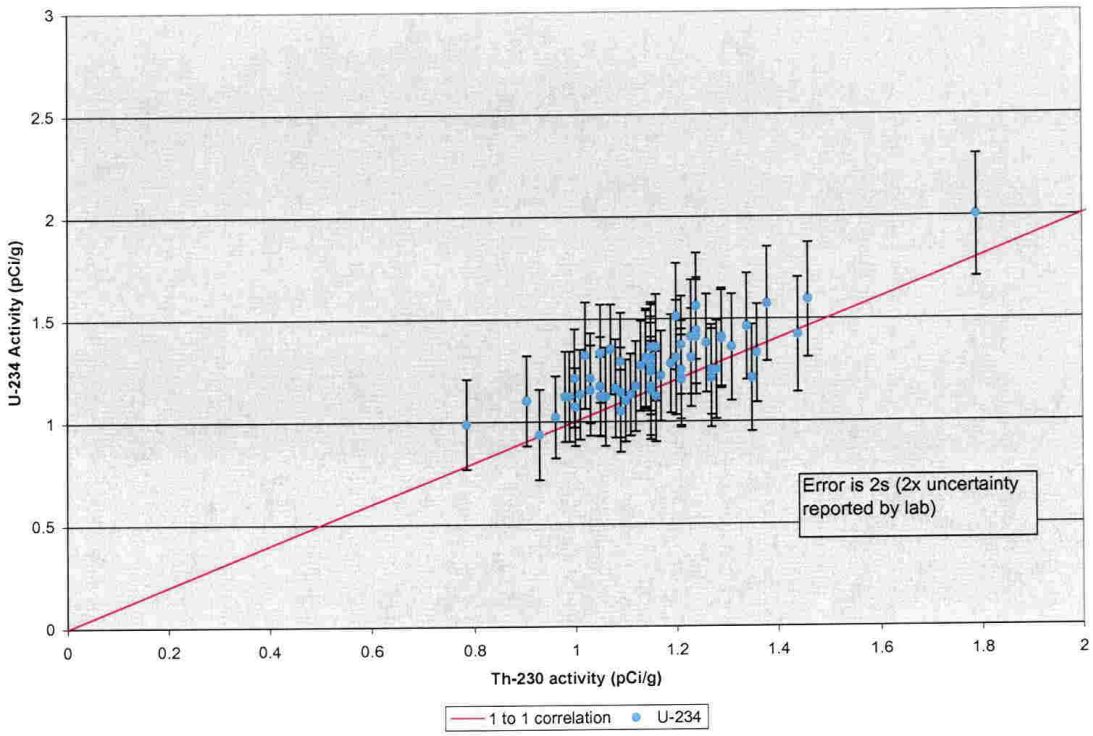

Thorium-232 Decay Chain, BRC Soils
Activities of Daughters (pCi/g)
Activity of Parent Th-232 (pCi/g)
Ra-228
Th-228
1 To 1 Correlation


Uranium-238 Decay Chain, BRC Soils
Activity (pCi/g)
Activity of Th-230 (pCi/g)
U-234
U-238
Ra-226
1 To 1 Correlation

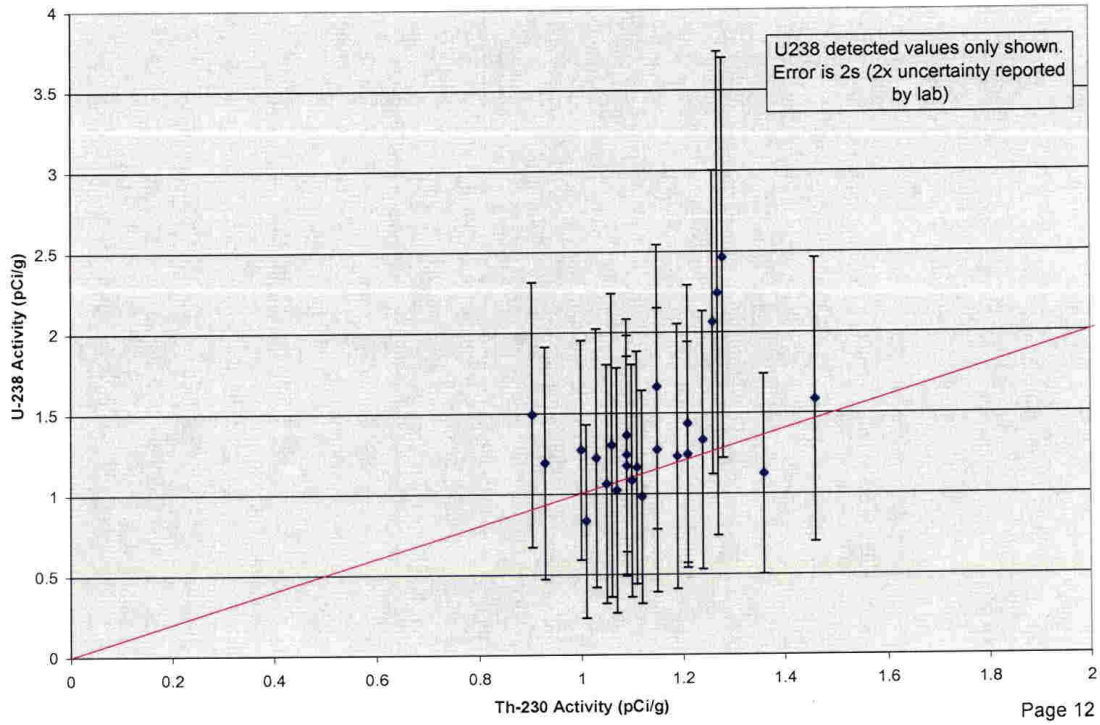

Thorium-232 Decay Chain, COH Soils
Activities of Daughters (pCi/g)
Activity of Parent Th-232 (pCi/g)
Ra-228
Th-228
1 To 1 Correlation


Uranium-238 Decay Chain, COH Soils
Activity (pCi/g)
Activity of Th-230 (pCi/g)
U-234
U-238
Ra-226
1 To 1 Correlation

U-234 vs. Th-230 with Uncertainty
Phase A Soils 0-10 ft, Gamma Method



U-238 vs. Th-230 with Uncertainty
Phase A Soils 0-10 ft, Gamma method



Shannon Harbour

From:	Keith Bailey [okbailey@flash.net]
Sent:	Friday, February 08, 2008 1:21 PM
To:	Shannon Harbour; Brian Rakvica; 'Paul Black'; TeriLCopeland@aol.com; 'Paul S. Hackenberry, Jr.'
Cc:	susan.crowley@tronox.com; 'Bilodeau, Sally'; 'Perry, Elizabeth'; 'Kennedy, Robert'
Subject:	Tronox Response to NDEP letter dated December 7, 2007
Attachments:	Rad_response.pdf; Rad_response.doc; Table 2_ Rad_Compare_1_alpha-gamma ratios.xls; Table 1_Henderson_Gamma_Rad_EP_rev.xls; 2-8-08_final.pdf

Shannon,

Attached is the Tronox response to the NDEP letter dated December 7, 2007 regarding radionuclide data. The text is provided in both pdf and Word formats. Two Excel tables and a pdf containing histograms and other plots support the analysis. Hard copies are being sent to the regular distribution list for delivery early next week.

As we proposed to NDEP, Tronox has evaluated the inconsistency issues in the Phase A alpha spec radionuclide data by making a comparison with gamma spec data recalculated from the original spectrum recorded by the Test America Richland lab when they analyzed the samples for radium. We believe the data show a good correlation with radionuclide secular equilibrium and help explain the inconsistencies in the Phase A alpha spec data. While the Richland lab maintains that they followed regular acid digestion procedures for uranium chain nuclides and full digestion (HF) for thorium series nuclides, it appears from the gamma data that full dissolution was not accomplished. As you will see from the submission, we believe that the gamma spec data are usable in salvaging the Phase A radionuclide information.

If you have questions or comments, please contact either Susan Crowley at (702) 651-2234 or Keith Bailey at (405) 216-9213.

Keith

Shannon Harbour

From: Crowley, Susan [Susan.Crowley@tronox.com]
Sent: Tuesday, February 05, 2008 4:07 PM
To: Shannon Harbour
Cc: Keith Bailey; Brian Rakvica; mflack@ensr.aecom.com
Subject: RE: TRX Schedule

Shannon,
Please see your note below.

Re the Capture Evaluation WP implementation ... we hope to have the **drilling completed (Timet and BMI areas remain) by mid-March.** This is assuming we can mobilize a drill rig in that timeframe. We have ramped up our activities and don't expect this schedule will need revision – but I'll advise you if it does. With the drilling completed, the wells will be **developed by March's end.** They will be sampled and we should have water levels and **analytical in-hand by April's end.** While we'll be advising of our progress (and results determined to date) as we supply the quarterly reports (for remedial performance), the annual report will have a more in-depth explanation of our work and results.

Re the revised Phase B Work Plan, Keith and I will be calling you/Brian tomorrow to discuss timing. Our preference is to get it to you ASAP, however we need to cover our approach on getting your input prior to sending you a very large package for review. We'll call you tomorrow and based upon your thoughts we can commit to a definite delivery date. Thanks.

TRONOX LLC
Susan Crowley
PO Box 55
Henderson, NV 89009
office 702.651.2234
cell 702.592.7727
efax 405.302.4607
email susan.crowley@tronox.com

It's the set of our sails, not the force of the gales, that determines the way we go.

From: Shannon Harbour [mailto:sharbour@ndep.nv.gov]
Sent: Monday, February 04, 2008 11:04 AM
To: Crowley, Susan
Cc: Keith Bailey; Brian Rakvica
Subject: TRX Schedule

Susan,

Could you please send me a quick update on the schedule for the completion of the Groundwater Capture Work Plan implementation? Has the TIMET access agreement been signed? If not, where does this issue stand?

Also, please provide me with a schedule for the submittal of the Phase B Work Plan.

Please respond to this email by the COB tomorrow (Feb 5).

Thanks,
Shannon

Shannon Harbour, P.E.
Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office
2030 E Flamingo Rd Suite 230
Las Vegas, NV 89119
702-486-2850 x 240 (work)
702-486-5733 (fax)

Shannon Harbour

From: Shannon Harbour
Sent: Thursday, January 31, 2008 2:04 PM
To: 'Crowley,Susan'
Cc: 'Keith Bailey'; Brian Rakvica; 'Paul Black'; Teri Copeland; Bilodeau, Sally; 'Gerry, Dave'; 'Bradley, Lisa'
Subject: NDEP Response to LOU 20 Information

Susan,

The NDEP has completed its review of the draft LOU 20 summary information submitted by TRX. The following are NDEP's comments by section:

nmary of Available Data for LOU 20 in EA08

- General comment, the format of this submittal provides the type of background information for a specific site source area that NDEP is looking for.

- General comment – LOU 20, it is not clear how representative the previous soil sample (SA17) is for LOU 20-specific sources. This summary identifies metals, sulfates, phosphates, and paraffin as the known or potential chemical classes that could be associated with the source(s) at LOU 20. Other chemicals were detected in previous sample SA17, which places into question whether SA17 is representative for LOU 20. SA17 could be representative if there is potential for a migration pathway between that sample location and LOU 20. If there is the potential for a migration pathway, then it is appropriate to include the sample as part of the LOU 20 data gap analysis. However, chemicals detected in SA17 should also be analyzed in the proposed Phase B LOU 20 samples. If there is not potential for association of SA17 with LOU 20, then the data should not be included as part of the LOU 20 data gap analysis.

cription

- Clarify if the pond operated as an unlined pond at any time or if the pond was never in operation when the liner was absent.

- Reference is made to Units 4 & 5 and 9th Street. Please notate these items on the figure and provide any additional relevant information regarding these components of LOU 20.

own or Potential Chemical Classes

- Paraffin is listed in this section; however, it is not carried into the Process Waste Stream table or the proposed analytical program.

- Specify what types of metal wastes are associated with the Steam plant boiler blow-down.

- Clarify what Anolyte is and add to the SRC list and analytical program as needed.

own or Potential Release Mechanisms

- Leaks through the liner (or if the pond was in operation without a liner) are not mentioned as a potential release mechanism.

- The mobility of source-related chemicals (including information regarding pH and soil type) should be considered when assessing the significance of the leaching pathway. For sites with existing data at various soil depths, the data distribution with depth should also be considered.

ults of Historical Sampling

- Only samples that have some association (i.e., through the CSM) with an LOU should be included in this section. For example, one historical boring, BDB05, is described but is then considered not to be applicable to LOU 20. Additionally, "Too far" is not adequate rationale for sample applicability. CSM considerations, such as migration pathways, should be used to determine the applicability of previous samples.

mary of Phase SAI

- TRX stated that "potential subsurface releases from the C-1 Pond (if any) might be noticeable in SA17 soil results." If this is true, then rationale should be provided as to why chemicals detected in SA17 are not included in the proposed Phase B samples for LOU 20.

posed Phase B Soil Investigation/Rationale

- The proposed sample locations look reasonable with the exception of the lack of samples along the pipeline south of SA107.

- If there is no potential for contamination in the area between LOU 20 and LOU 21, then drill rig access is not an issue. If there is potential for contamination, then that concern should be addressed in some manner rather than not at all.

posed Chemical Classes for Phase B Investigation for Soils

- Rationale should be provided for not including chemicals that were detected in SA17.

- Sample depths should be identified and correlated to the CSM (e.g., is the source of perchlorate in LOU 20 soil underlying groundwater?)

posed Phase B Constituents List for Groundwater

- If VOCs are detected in groundwater that indicate the potential for a vapor intrusion pathway, then soil gas characterization may be in order.

LOU Map

- The boundaries of LOU 20 should be clearly shown on the figure. It appears that the full extent of the pipeline (which extends to the near the bottom of EA08) is a component of LOU 20; however, this is not necessarily clear nor are there any proposed sampling points along that section of the pipeline.

- Since LOU 21 is referenced and has some association with LOU 20, the boundaries of this LOU, along with any other LOUs within the range of the figure, should be clearly shown on the figure by the notation listed in the legend.

- In addition to a topographical map, some LOUs may require more detailed figures in order to adequately show key components of the source features.

l and Groundwater Characterization Data

- TRX should contemplate using organizing previously collected analytical data on a summary table containing the previous sample IDs, sample depths, and analyses that could be tied into the CSM (in regard to sample locations and waste streams, etc.) in order to document whether data gaps exist in addition to simply including tables of previous analytical data.
- The tables submitted for LOU 20 should be consistent in the presentation of groundwater and soil data. Either all of the tables should combine the soil and groundwater data (e.g. Table 7) or separate the soil and groundwater data (Tables 3 and 4).
- Rather than simply including tables of previous analytical data, it might be more useful (particularly for source areas with more than one previous sample) to include a summary table of previous sample IDs, sample depths, and analyses, and to tie this information to the CSM (i.e., in regard to sample location, waste streams, etc.) in order to document whether or not there are data gaps.

- Note also that the asbestos data in Table 16 needs to include the number of fibers counted in the sample. The analytical sensitivity that is reported is of little use without the fibers counts.

Please contact me with any questions.

Sincerely,
Shannon

Shannon Harbour, P.E.
Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office
2030 E Flamingo Rd Suite 230
Las Vegas, NV 89119
702-486-2850 x 240 (work)
702-486-5733 (fax)

From: Crowley, Susan [mailto:Susan.Crowley@tronox.com]
Sent: Thursday, January 10, 2008 11:38 AM
To: Shannon Harbour
Cc: Brian Rakvica; Keith Bailey; Bilodeau, Sally
Subject: LOU 20 Information

Shannon,
Please find attached a set of files which give you a picture of LOU 20 – more specifically which provided the structure for how information will be organized in the Phase B Work Plan revision - on an LOU-by-LOU basis.

The Word document (Summary of Available Data) reflects the organization of information with the Adobe map and Adobe tables supporting the Summary. The information provided in the Adobe tables has been drawn from a

variety of documents and includes both groundwater and soil data. We will continue to refine how the data tables themselves are presented (so that they cleanly support the Summary of Data document) but we were hoping for NDEP's thoughts on the overall presentation of the LOU 20 package. Please provide us your thoughts?

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Henderson, NV 89009
office 702.651.2234
cell 702.592.7727
efax 405.302.4607
email susan.crowley@tronox.com

It's the set of our sails, not the force of the gales, that determines the way we go.

Tronox Response to December 7, 2007 NDEP
Advisement Regarding Radionuclide Analyses for Uranium

NDEP comment
As noted to the Companies via e-mail, it has been discovered that there are differences in the preparatory (prep) methods used for isotopic uranium analyses. Specifically, the use of hydrofluoric acid (HF) versus not using HF. This difference has significant impacts on the data and represents a comparability problem.

What has been discovered is as follows:

1. The BRC/TIMET background data set was analyzed by STL-Saint Louis (STL-SL) for isotopic uranium. STL-SL uses HF.
2. The TRX upgradient data set was analyzed by GEL for isotopic uranium. GEL uses HF.
3. The TRX Phase A data and several other BRC data sets were completed by STL-Richland. STL-Richland does not use HF. This results in significant low bias relative to the background data set for isotopic uranium.

Tronox Response
Tronox has reviewed and evaluated the Tronox Upgradient and Phase A data sets with regard to the issues raised.

NDEP comment
All QAPPs shall be edited to specifically identify the prep method that uses HF for isotopic uranium analysis. Please address this issue **by January 11, 2008.**

Tronox Response
NDEP granted Tronox an extension to February 8 to deliver this response. The next revision of the Tronox QAPP will specifically include this requirement. This revision will be complete and submitted for NDEP approval before the Phase B Investigation begins.

NDEP comment
1. The Companies need to identify all data sets that are not comparable and report this to the NDEP. This will also be requested in the letter. Please address this issue **by January 11, 2008.**

Tronox Response
The NDEP granted Tronox an extension to February 8, 2008 to deliver this response. The Tronox Phase A Investigation dataset for isotopic uranium is not comparable to the BRC/TIMET background study data because a total dissolution prep with HF was not performed prior to the HASL-300 alpha spec analysis. The former STL-Richland (now TestAmercia (TA)-Richland) laboratory has confirmed that only an acid leach without HF was used to digest these samples. TA-Richland has stated that all the Phase A samples analyzed for isotopic thorium by alpha spec were digested with HF in a total dissolution procedure, however Tronox believes the isotopic thorium results are not comparable to the BRC/TIMET dataset based on both the statistical analyses presented in the Phase A report and a subsequent comparison, presented in the attached Table 2, of the results for thorium derived from gamma spectrometry on the same samples.

NDEP comment
2. All parties need to work to identify what other radionuclide data may be compromised. Each company should respond to this issue in the January 11, 2008 Deliverable. If additional radionuclide data is compromised additional changes to QAPPs will be required.

Tronox Response
Tronox has not identified any additional radiochemical data, other than the alpha spec isotopic uranium and thorium Phase A results mentioned above, as compromised by prep or analyses so that the data is not comparable in principle to the BRC/TIMET background dataset.

NDEP comment

3. All parties need to contemplate how we might salvage the data from STL-Richland for isotopic uranium analysis for use in future background comparisons. Some ideas that have been mentioned thus far are as follows:
    a. Complete a side by side study of the two methods and develop a correction factor that could be applied to data from STL-Richland. It should be noted that enough uranium (metal) data may exist to develop this correction factor currently. This is important if any of the data will be used for risk assessments. This item can be addressed by the NDEP for the Companies or the Companies can complete this exercise.
    b. Discard the existing data that is affected by this difference and utilize the total uranium data for background comparisons. It is likely that this is a defensible procedure for addressing background comparisons.
    c. Utilize gamma spectroscopy for future analyses of isotropic uranium (NDEP does not support this).
    d. These ideas need to be contemplated for what will be defensible. NDEP is open to additional suggestions.
    e. Each Company should respond to this issue in the January 11, 2008 Deliverable.

Tronox Response
To salvage the Phase A uranium and thorium data for Phase A Tronox requested that the TA-Richland lab reprocess the raw gamma spec dataset (originally used to measure only the radium) so it included the isotopic uranium and thorium nuclides as well. The exact daughter nuclides and line energies measured were discussed with Dave Gratson at Neptune and are detailed in the attached data validation memo. These gamma spec results are provided in the attached Table 1 and are compared to the original alpha spec results in Table 2.
Ratios of the gamma to alpha spec results for each sample, each nuclide, and the aggregate U and Th isotopes are calculated in Table 2. These results confirm the original Phase A alpha spec data for U and Th were biased low. Moreover the ratios for the U-234 and U-238 nuclides are comparable to the "correction factors" derived by BRC in their comparison of the HF dissolution vs. HNO3 leach prep results for subsamples of the Deep Soil Background and Parcel A/B datasets (see green highlights in Table 2). The similarity of the aggregate U and Th ratios indicates that the alpha spec results for both the U and Th nuclides were biased low even though the lab claims the Th analyses were preceded by total dissolution preparation. Tronox has not been able to determine the exact reason the original Th results also appear biased low.

As discussed in our conference call on January 22, 2008, Tronox has compared the gamma spec data from the Phase A soils at depths from 0 to 10 ft to NDEP-approved background activities, and also evaluated secular equilibrium based on the gamma spec results. The attached statistical analyses using the new gamma spec dataset for U and Th from Phase A soils (0-10 ft deep) corroborates that the gamma data is both more consistent with BRC and COH background datasets and internally more consistent with the assumption of secular equilibrium in the nuclide decay chains. Specific observations based on the comparisons include:

- *The histograms showing both Phase A soils (0-10 ft) and BRC/COH background data show that the Phase A gamma spec results are consistent with background for Ra-226, Ra-228, Th-228, and Th-230. While the medians of Th-232, U-234 and U-238 appear generally greater than background, the highest activity levels in the Phase A samples are similar to the highest activities in the background samples. The box-plots show the same information in a slightly different way.*

- *To evaluate secular equilibrium, histograms and box-plots were prepared for the radionuclides in each decay chain. These show a general normal distribution that is similar for all radionuclides in each decay chain, as would be expected from random variability. Similar histograms and box plots were also prepared for the BRC and COH datasets separately.*

- *In a further evaluation of secular equilibrium, the Phase A data for each decay chain was graphed on a scatterplot. In a world without random errors, all of the points should fall on top of each other, and also on the line representing one-to-one correlation if the samples are in secular equilibrium. Instead, the Phase A data show a clustering of the data points around a central value, as would be expected with random errors. (Note that Th-230 and Ra-226 were measured from the same decay product (Bi-214) and the same emission line, which is reflected in their very high correlation.) Similar scatterplots have been prepared with the BRC and COH datasets.*

- *In addition, similar scatterplots have been prepared that include error bars based on the uncertainties in the analytical results reported by the laboratory. The uncertainties for the U-238 analyses are relatively high, and show that when uncertainty is considered, the U238 and Th230 activities at any given sample overlap. The uncertainties for the remaining radionuclides are lower, but the conclusions are the same – when laboratory uncertainties are considered, activities within each decay chain for any given sample overlap.*

Please note that the relationship with respect to background for the U-238 gamma spec data is now more consistent with Phase A comparison of the uranium metal results measured by IPC-MS to the background U metal dataset as well. Tronox believes the weight of evidence suggests the new gamma spec data is reliable and more accurate than the original biased alpha spec Phase A data. Tronox therefore proposes to replace the original data with the new gamma spec data for both isotopic U and Th.

In regards to NDEP's advisement from January 29,2008 Tronox agrees in principle to utilize methods consistent with the BRC/TIMET background study methods for future investigations. The use of gamma spectrometric data discussed above is only to salvage the Phase A radiochemistry data in a manner that is internally consistent and appropriate for background comparisons.

Table 2. Comparison of Alpha and Gamma Spectrometric Radionuclide Concentrations in Soil
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	Th-228	Th-228	Th-228	Th-230	Th-230	Th-230	Th-232	Th-232	Th-232	mean
		Analytic Method:	HASL-300	HASL-300	ratio	HASL-300	HASL-300	ratio	HASL-300	HASL-300	ratio	Th isotope
		Spectroscopy Type:	gamma	alpha	gamma	gamma	alpha	gamma	gamma	alpha	gamma	ratio
		Units:	pci/g	pci/g	alpha	pci/g	pci/g	alpha	pci/g	pci/g	alpha	
location	sample ID	sample date										
MN ORE	MN ORE	01/19/2007	0.371	0.517	NA	0.269	0.249 J	NA	0.24	0.514 J	NA	NA
MN TAILINGS	MN TAILINGS	01/19/2007	1.31	1.19	NA	0.982	0.802 J	NA	1.9	0.957 J	NA	NA
SA02	SA2-0.5	11/03/2006	1.56	1.12	1.39	1.05	0.798 J	1.32	2.22	0.994 J	2.23	1.65
SA03	SA3-10	11/13/2006	1.82	0.691 J	2.63	1.06	0.554 J	1.91	1.83	0.601 J	3.04	2.53
SA04	SA4-20	11/14/2006	1.46	0.511 JB	2.86	1.22	0.875 J	1.39	1.56	0.706 J	2.21	2.15
SA05	SA5-30	11/14/2006	1.52	0.481 JB	3.16	2.35	2.23	1.05	1.65	0.59 J	2.80	2.34
SA06	SA6-10	11/14/2006	1.6	0.601 J	2.66	1.09	0.619 JB	1.76	1.66	0.668 J	2.49	2.30
SA07	SA7-20	11/20/2006	1.8	0.488 J	3.69	1.34	0.775 J	1.73	1.66	0.618 J	2.69	2.70
SA11	SA11-10	11/09/2006	2.24	0.663 J	3.38	1.79	0.833 J	2.15	2.19	0.836 J	2.62	2.72
SA13	SA13-40	11/17/2006	1.49	0.659 J	2.26	1.85	0.922 J	2.01	1.61	0.539 J	2.99	2.42
SA15	SA15-10	11/08/2006	1.47 J+	0.868 J	2.26	1.23 J+	0.794 J	2.01	2.02 J+	0.796 J	2.99	2.42
SA15	SA15-10D	11/08/2006	1.63 J+	0.779 J	2.26	1.26 J+	0.529 J	2.01	2.03 J+	0.544 J	2.99	2.42
SA18	SA18-0.5	11/15/2006	1.98	0.763 J	2.60	1.23	0.433 J-	2.84	1.83	0.676 J	2.71	2.71
SA18	SA18-0.5D	11/15/2006	1.88	0.481 J	3.91	1.09	0.495 J-	2.20	2.06	0.658 J	3.13	3.08
SA21	SA21-0.5	11/15/2006	1.9	0.954 J	1.99	1.19	0.671 J-	1.77	2	0.742 J	2.70	2.15
SA26	SA26-0.5	11/20/2006	1.71	0.805 J	2.12	1.27	0.391 J	3.25	2.09	0.759 J	2.75	2.71
SA26	SA26-0.5D	11/20/2006	1.95	0.774 J	2.52	1.07	0.441 J	2.43	1.98	0.729 J	2.72	2.55
		mean ratio			2.65			1.99			2.74	2.46
		%RSD			25.27			28.28			10.04	

Data Qualifier Definitions:

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 high.
J-	The result is an estimated quantity and the result may be biased low.
UJ	The analyte was not detected above the sample reporting limit and the reporting limit is approximate.
U	The analyte was analyzed for, but was not detected above the sample reporting limit

Table 2. Comparison of Alpha and Gamma Spectrometric Radionuclide Concentrations in Soil
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	U-234	U-233/234	U-234 ratio	U-235	U-235/236	U-235 ratio	U-238	U-238	U-238 ratio	mean
		Analytic Method:	HASL-300	HASL-300	gamma	HASL-300	HASL-300	gamma	HASL-300	HASL-300	gamma	U isotope
		Spectroscopy Type:	gamma	alpha	alpha	gamma	alpha	alpha	gamma	alpha	alpha	ratio
		Units:	pci/g	pci/g		pci/g	pci/g		pci/g	pci/g		
location	sample ID	sample date										
MN ORE	MN ORE	01/19/2007	0.276	0.21 J	NA	0.0588 U	0.0311 J	NA	0.194 U	0.217 J	NA	NA
MN TAILINGS	MN TAILINGS	01/19/2007	1.07	0.882	NA	0.185 U	0.0134 U	NA	0.737 U	0.854	NA	NA
SA02	SA2-0.5	11/03/2006	1.33	0.26 J	5.12	0.0754 U	0.035 J-	NA	1.72 U	0.196 J	NA	5.12
SA03	SA3-10	11/13/2006	1.12	0.427 J-	2.62	0.0726 U	0.0123 UJ	NA	1.3	0.292 J-	4.45	3.54
SA04	SA4-20	11/14/2006	1.23	1.35	0.91	0.179 U	0.0181 J	NA	1.67	0.833	2.00	1.46
SA05	SA5-30	11/14/2006	2.53	1.58	1.60	0.146 U	0.0469 J	NA	2.4	1.37	1.75	1.68
SA06	SA6-10	11/14/2006	1.05	0.787	1.33	0.148 U	0.0165 J	NA	1.17	0.483 J	2.42	1.88
SA07	SA7-20	11/20/2006	1.35	0.652 J+	2.07	0.0452 U	0.0145 U	NA	1.63	0.493 J	3.31	2.69
SA11	SA11-10	11/09/2006	2	0.663	3.02	-0.0866 U	0.004 U	NA	1.52 U	0.37 J	NA	3.02
SA13	SA13-40	11/17/2006	2.1	1.05 J+	2.00	0.172 U	0.0274 U	NA	1.87 U	0.813	NA	2.00
SA15	SA15-10	11/08/2006	1.41 J+	0.518 J	2.00	0.192 U	0.0102 U	NA	2.06	0.376 J	5.48	3.74
SA15	SA15-10D	11/08/2006	1.38 J+	0.404 J	2.00	-0.0311 U	0.00471 U	NA	2.01	0.392 J	5.13	3.56
SA18	SA18-0.5	11/15/2006	1.31	0.547 J	2.39	0.11 U	0.00628 U	NA	2.01 U	0.313 J	NA	2.39
SA18	SA18-0.5D	11/15/2006	1.14	0.322 J	3.54	0.0873 U	0.0114 J+	NA	1.36	0.263 J	5.17	4.36
SA21	SA21-0.5	11/15/2006	1.28	0.314 J	4.08	0.203 U	0.0211 J+	NA	1.23	0.237 J	5.19	4.63
SA26	SA26-0.5	11/20/2006	1.21	0.262 J+	4.62	0.0908 U	0.00551 U	NA	2.24	0.137 J	NA	4.62
SA26	SA26-0.5D	11/20/2006	1.35	0.262 J+	5.15	0.00452 U	0.00397 U	NA	1.02	0.146 J	6.99	6.07
		mean ratio			2.83			NA			4.19	3.38
		%RSD			48.35			NA			41.36	
				BRC study* mean ratio	2.7						3.2	

Data Qualifier Definitions:

J	The result is an estimated quantity.
J+	The result is an estimated quantity a
J-	The result is an estimated quantity a
UJ	The analyte was not detected above
U	The analyte was analyzed for, but w

*BRC study ratios compared total dissolution prep to the nitric acid leach prep.

Table 1. Radionuclide Concentrations in Soil Determined by Gamma Spectroscopy
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	Th-228	Th-230	Th-232	Th-234	U-234	U-235	U-238	Ra-226	Ra-228
		Method:	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300
		Spectroscopy:	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma
		Units:	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g
Location	Sample ID	Sample Date									
MN ORE	MN ORE	01/19/2007	**0.371**	**0.269**	**0.24**	1.77 U	**0.276**	0.0588 U	0.194 U	0.271 U	**0.55**
MN TAILINGS	MN TAILINGS	01/19/2007	**1.31**	**0.982**	**1.9**	2.18 U	**1.07**	0.185 U	0.737 U	0.968 U	**1.54**
SA01	SA1-0.5	11/03/2006	**1.72**	**1.03**	**1.96**	3.58 U	**1.15**	0.165 U	0.609 U	**1.01 J**	**1.6**
SA01	SA1-05	11/03/2006	**1.43**	**1.29**	**1.59**	6.16 U	**1.4**	0.181 U	-0.00812 U	**1.25 J**	**1.69**
SA01	SA1-10	11/03/2006	**1.83**	**1.38**	**1.85**	-0.0734 U	**1.57**	0.0487 U	0.918 U	**1.31 J**	**1.65**
SA02	SA2-0.5	11/03/2006	**1.56**	**1.05**	**2.22**	1.99 U	**1.33**	0.0754 U	1.72 U	**1.02 J**	**1.97**
SA02	SA2-10	11/03/2006	**1.55**	**1.2**	**2.02**	-1.2 U	**1.51**	0.096 U	1.58 U	**1.17 J**	**1.56**
SA02	SA2-20	11/03/2006	**1.7**	**1.17**	**2.01**	6.35 U	**1.32**	0.0702 U	1 U	**1.15 J**	**1.95**
SA02	SA2-30	11/06/2006	**1.15**	**3.57**	**0.999**	4.82 U	**3.83**	0.347 U	**4.56**	**3.39**	1.01 U
SA02	SA2-40	11/06/2006	**1.59**	**1.41**	**1.78**	4.86 U	**1.71**	0.0287 U	**1.99**	**1.34 J**	**1.72**
SA02	SA2-50	11/06/2006	**1.31**	**1.36**	**1.64**	3.88 U	**1.19**	0.00138 U	0.0547 U	**1.3 J**	**1.39**
SA02	SA2-60	11/06/2006	**1.56**	**2.77**	**1.71**	11.9 U	**2.98**	0.195 U	**3.65**	**2.64**	**1.54**
SA03	SA3-0.5	11/13/2006	**1.63**	**0.989**	**2.08**	7.19 U	**1.12**	0.213 U	1.23 U	**0.997 J**	**1.81**
SA03	SA3-0.5D	11/13/2006	**1.79**	**1.15**	**2.25**	0.636 U	**1.27**	0.00458 U	1.67 U	**1.13 J**	2.21 U
SA03	SA3-10	11/13/2006	**1.82**	**1.06**	**1.83**	7.02 U	**1.12**	0.0726 U	**1.3**	**1.01 J**	**1.65**
SA03	SA3-20	11/13/2006	**1.65**	**1.26**	**1.48**	2.56 U	**1.36**	0.0778 U	1.09 U	**1.19 J**	**1.66**
SA03	SA3-30	11/13/2006	**0.394**	**1.63**	**0.587**	3.58 U	**1.64**	0.208 U	**2.14**	**1.59 J**	0.357 U
SA03	SA3-40	11/13/2006	**0.659**	**2.16**	**0.983**	3.62 U	**2.52**	0.0874 U	**2.77**	**2.34**	0.913 U
SA04	SA4-0.5	11/14/2006	**1.72**	**1.15**	**1.83**	1.68 U	**1.17**	0.139 U	0.783 U	**1.1 J**	**1.83**
SA04	SA4-10	11/14/2006	**1.91**	**1.16**	**1.71**	1.62 U	**1.36**	0.059 U	2.3 U	**1.13 J**	**1.81**
SA04	SA4-20	11/14/2006	**1.46**	**1.22**	**1.56**	-0.266 U	**1.23**	0.179 U	**1.67**	**1.19 J**	**1.53**
SA04	SA4-30	11/14/2006	**2.04**	**1.52**	**2.35**	5.03 U	**1.85**	0.113 U	0.871 U	**1.45 J**	**1.91**
SA04	SA4-40	11/14/2006	**1.98**	**1.63**	**2.14**	8.01 U	**2**	0.185 U	0.818 U	**1.6 J**	**1.9**
SA05	SA5-0.5	11/14/2006	**1.7**	**1.14**	**1.56**	0.833 U	**1.31**	0.0168 U	0.338 U	**1.12 J**	**1.92**
SA05	SA5-10	11/14/2006	**1.69**	**1.1**	**1.74**	-1.64 U	**1.1**	0.00665 U	**1.08**	**1.07 J**	**1.66**
SA05	SA5-20	11/14/2006	**1.61**	**1.16**	**1.66**	-2.44 U	**1.31**	0.0627 U	1.53 U	**1.1 J**	**1.52**
SA05	SA5-30	11/14/2006	**1.52**	**2.35**	**1.65**	0.0608 U	**2.53**	0.146 U	**2.4**	**2.29**	**1.68**
SA05	SA5-37	11/14/2006	**0.78**	**2.53**	**1.17**	4.66 U	**2.86**	0.267 U	**3.27**	**2.46**	**0.806 J**
SA06	SA6-0.5	11/14/2006	**1.82**	**1.21**	**1.79**	0.854 U	**1.37**	0.149 U	**1.43**	**1.18 J**	**1.87**
SA06	SA6-0.5D	11/14/2006	**1.8**	**1.35**	**1.92**	6.95 U	**1.21**	-0.00889 U	0.739 U	**1.32 J**	**1.89**
SA06	SA6-10	11/14/2006	**1.6**	**1.09**	**1.66**	3.77 U	**1.05**	0.148 U	**1.17**	**1.07 J**	**1.8**
SA06	SA6-20	11/14/2006	**1.69**	**1.24**	**2.07**	6.19 U	**1.29**	0.137 U	**1.75**	**1.21 J**	**1.63**
SA06	SA6-30	11/14/2006	**1.78**	**1.53**	**2.14**	6.91 U	**1.49**	0.0842 U	**1.54**	**1.49 J**	**1.94**
SA06	SA6-35	11/14/2006	**1.2**	**2.21**	**1.13**	10.5 U	**2.62**	0.254 U	**3.01**	**2.1**	1.1 U
SA07	SA7-0.5	11/20/2006	**1.76**	**1.15**	**1.9**	2.62 U	**1.31**	0.0774 U	**1.27**	**1.12 J-**	**1.83 J-**
SA07	SA7-10	11/20/2006	**1.82**	**1.08**	**2.01**	1.51 U	**1.16**	-0.00061 U	1.55 U	**1.02 J-**	**1.9 J-**
SA07	SA7-10D	11/20/2006	**1.79**	**0.961**	**2.2**	3.03 U	**1.02**	0.0496 U	1.02 U	**0.939 J-**	**1.77 J-**
SA07	SA7-20	11/20/2006	**1.8**	**1.34**	**1.66**	3.37 U	**1.35**	0.0452 U	**1.63**	**1.28 J-**	**1.57 J-**
SA07	SA7-30	11/20/2006	**1.47**	**1.85**	**1.91**	2.38 U	**2.24**	0.159 U	4.19 U	**1.79 J-**	**1.78 J-**
SA07	SA7-34	11/20/2006	**0.799**	**7.69**	**1.45**	11.3 U	**8.01**	**0.49**	**9.04**	**7.49 J-**	**0.805 J-**
SA08	SA8-0.5	11/17/2006	**1.85**	**1.12**	**2.21**	4.26 U	**1.17**	-0.0514 U	**0.978**	**1.07 J-**	**1.76 J-**
SA08	SA8-10	11/17/2006	**1.87**	**1.11**	**2.19**	3.9 U	**1.13**	0.032 U	**1.16**	**1.08 J-**	2.05 UJ

Table 1. Radionuclide Concentrations in Soil Determined by Gamma Spectroscopy
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

		Analyte:	Th-228	Th-230	Th-232	Th-234	U-234	U-235	U-238	Ra-226	Ra-228
		Method:	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300
		Spectroscopy:	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma
		Units:	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g
Location	Sample ID	Sample Date									
SA08	SA8-20	11/17/2006	**1.73**	**1.06**	**1.79**	-2.07 U	**1.45**	0.23 U	1.27 U	**1 J-**	**1.88 J-**
SA08	SA8-30	11/17/2006	**1.76**	**1.39**	**1.65**	3.92 U	**1.61**	0.0932 U	1.63 U	**1.34 J-**	**1.85 J-**
SA08	SA8-37	11/17/2006	**0.615**	**3.32**	**1.07**	6.48 U	**3.77**	0.387 U	**3.3**	**3.16 J-**	0.771 UJ
SA09	SA9-0.5	11/06/2006	**1.58**	**1.05**	**1.72**	3.98 U	**1.12**	-0.0974 U	**1.06**	**1.02 J**	**1.64**
SA09	SA9-10	11/06/2006	**1.57**	**1.16**	**1.87**	3.26 U	**1.12**	0.0666 U	1.84 U	**1.12 J**	**1.76**
SA09	SA9-10D	11/06/2006	**1.5**	**1.17**	**1.74**	2.62 U	**1.22**	0.0808 U	2.07 U	**1.14 J**	**1.61**
SA09	SA9-20	11/07/2006	**1.3**	**1.67**	**1.33**	4.53 U	**1.61**	0.209 U	2.57 U	**1.62 J**	**1.47**
SA09	SA9-30	11/07/2006	**0.953**	**2.39**	**1.21**	8.75 U	**2.67**	0.213 U	2.79 U	**2.33**	**0.892 J**
SA09	SA9-40	11/07/2006	**1.71**	**2.21**	**1.81**	6.77 U	**2.35**	0.183 U	**3.04**	**2.11**	**1.72**
SA10	SA10-0.5	11/07/2006	**1.75**	**1.15**	**2.01**	2.17 U	**1.36**	0.0677 U	1.2 U	**1.1 J**	**1.81**
SA10	SA10-10	11/07/2006	**1.58**	**1**	**1.46**	-2.19 U	**1.07**	0.0416 U	**1.27**	**0.978 J**	**1.69**
SA10	SA10-10D	11/07/2006	**1.48**	**0.785**	**1.54**	3.42 U	**0.987**	0.0554 U	1.93 U	**0.759 J**	**1.6**
SA10	SA10-20	11/07/2006	**1.1**	**1.34**	**1.24**	4.22 U	**1.6**	-0.00023 U	0.808 U	**1.31 J**	**0.812 J**
SA10	SA10-30	11/07/2006	**1.06**	**1.44**	**1.2**	1.45 U	**1.43**	0.239 U	**1.56**	**1.4 J**	**1.14**
SA10	SA10-40	11/07/2006	**1.12**	**1.65**	**1.44**	-4.15 U	**1.7**	0.0791 U	**2.01**	**1.58 J**	**1.42**
SA11	SA11-0.5	11/09/2006	**1.7**	**0.98**	**1.77**	1.16 U	**1.12**	0.0572 U	1.08 U	**0.947 J+**	**1.8 J+**
SA11	SA11-0.5D	11/09/2006	**1.43**	**0.929**	**1.61**	0.61 U	**0.935**	0.115 U	**1.19**	**0.905 J+**	**1.87 J+**
SA11	SA11-10	11/09/2006	**2.24**	**1.79**	**2.19**	-0.848 U	**2**	-0.0866 U	1.52 U	**1.7 J+**	**1.95 J+**
SA11	SA11-20	11/09/2006	**1.58**	**1.08**	**1.83**	5.14 U	**1.13**	0.151 U	1.54 U	**1.06 J+**	**1.68 J+**
SA11	SA11-30	11/09/2006	**0.871**	**2.6**	**1.06**	4.39 U	**2.88**	0.0981 U	**3.7**	**2.49 J+**	**1.17 J+**
SA12	SA12-0.5	11/10/2006	**1.81**	**1.21**	**2.01**	0.449 U	**1.2**	-0.00737 U	0.474 U	**1.16 J+**	**1.79 J+**
SA12	SA12-10	11/10/2006	**1.34**	**1.01**	**1.51**	1.41 U	**1.13**	0.178 U	**0.829**	**0.98 J+**	**1.83 J+**
SA12	SA12-20	11/10/2006	**1.8**	**1.93**	**2.29**	4.63 U	**2.04**	0.0603 U	1.61 U	**1.84 J+**	**2.01 J+**
SA12	SA12-30	11/10/2006	**1.03**	**1.47**	**1.14**	0.0751 U	**1.44**	0.0981 U	0.883 U	**1.44 J+**	**1.03 J+**
SA13	SA13-0.5	11/17/2006	**1.85**	**1.14**	**2.1**	1.49 U	**1.3**	0.17 U	1.38 U	**1.12 J-**	**1.68 J-**
SA13	SA13-0.5D	11/17/2006	**1.84**	**1.09**	**2.05**	2.92 U	**1.29**	0.0849 U	**1.24**	**1.06 J-**	**1.87 J-**
SA13	SA13-10	11/17/2006	**1.94**	**1.2**	**2.13**	1.37 U	**1.31**	0.127 U	0.923 U	**1.14 J-**	**2.05 J-**
SA13	SA13-20	11/17/2006	**1.59**	**1.3**	**1.77**	2.42 U	**1.23**	-0.0027 U	0.901 U	**1.27 J-**	**1.78 J-**
SA13	SA13-30	11/17/2006	**1.73**	**1.82**	**1.88**	-1.07 U	**1.87**	0.15 U	**1.77**	**1.73 J-**	**1.88 J-**
SA13	SA13-40	11/17/2006	**1.49**	**1.85**	**1.61**	0.95 U	**2.1**	0.172 U	1.87 U	**1.79 J-**	**1.61 J-**
SA14	SA14-0.5	11/08/2006								**1.07 J+**	**1.85 J+**
SA14	SA14-10	11/08/2006								1.06 U	**1.93 J+**
SA14	SA14-20	11/08/2006								**1.35 J+**	**1.82 J+**
SA14	SA14-30	11/08/2006								**1.47 J+**	**1.38 J+**
SA14	SA14-40	11/08/2006								**1.18 J+**	**0.676 J+**
SA15	SA15-0.5	11/08/2006								**1.19 J+**	**2.11 J+**
SA15	SA15-10	11/08/2006	**1.47 J+**	**1.23 J+**	**2.02 J+**	2.76 U	**1.41 J+**	0.192 U	1.28 U	**1.2 J+**	**1.91 J+**
SA15	SA15-10D	11/08/2006	**1.63 J+**	**1.26 J+**	**2.03 J+**	3.89 U	**1.38 J+**	-0.0311 U	**2.06 J+**	**1.21 J+**	**1.89 J+**
SA15	SA15-20	11/08/2006								**1.43 J+**	**1.84 J+**
SA15	SA15-30	11/08/2006								**1.91 J+**	**0.777 J+**
SA15	SA15-35	11/08/2006								**1.54 J+**	**0.852 J+**
SA16	SA16-0.5	11/09/2006								**1.16 J+**	**1.92 J+**

Table 1. Radionuclide Concentrations in Soil Determined by Gamma Spectroscopy
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

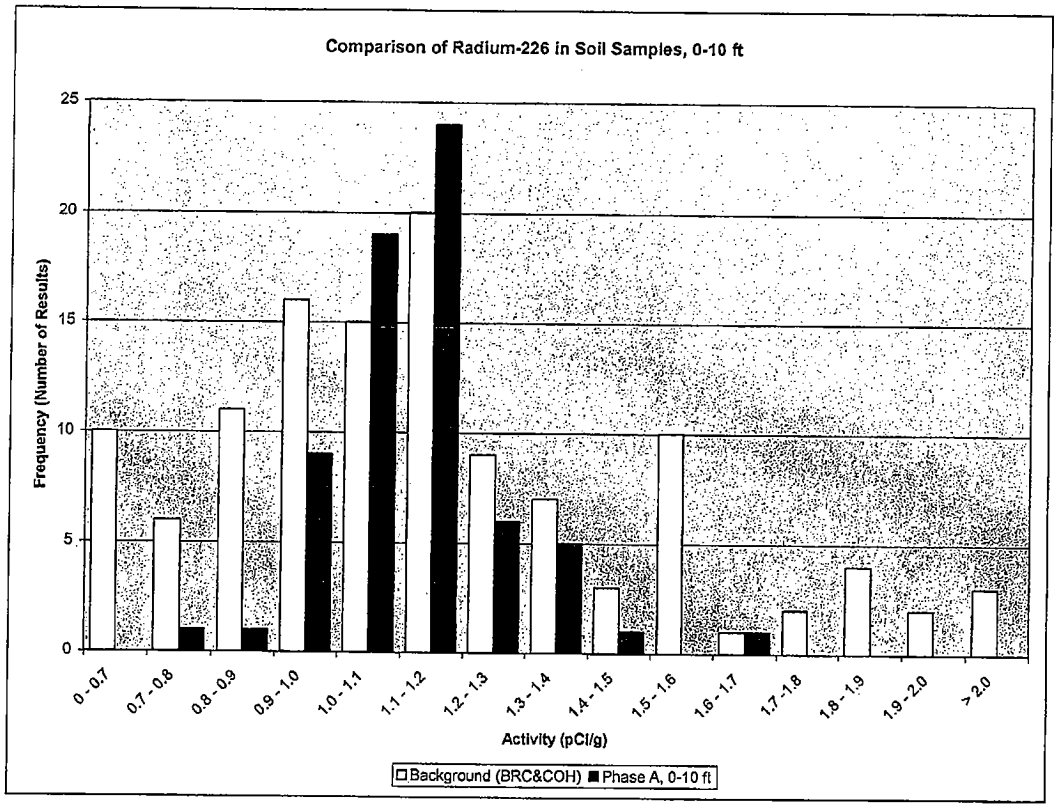
		Analyte:	Th-228	Th-230	Th-232	Th-234	U-234	U-235	U-238	Ra-226	Ra-228
		Method:	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300
		Spectroscopy:	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma
		Units:	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g
Location	Sample ID	Sample Date									
SA16	SA16-10	11/09/2006								**1.07 J+**	**1.5 J+**
SA16	SA16-20	11/09/2006								**1.85 J+**	**2.07 J+**
SA16	SA16-30	11/09/2006	**1.35**	**1.75**	**1.26**	4.22 U	**1.97**	0.0173 U	0.97 U	**1.71 J+**	**1.17 J+**
SA17	SA17-0.5	11/15/2006	**1.61**	**1.15**	**1.9**	3.42 U	**1.24**	0.158 U	**1.66**	**1.12 J**	**1.75**
SA17	SA17-0.5D	11/15/2006	**1.77**	**1.15**	**2.03**	-0.487 U	**1.15**	0.0359 U	1.19 U	**1.12 J**	**1.8**
SA17	SA17-10	11/15/2006	**1.49**	**1.24**	**1.9**	0.728 U	**1.44**	-0.00676 U	-0.244 U	**1.2 J**	**1.55**
SA17	SA17-20	11/15/2006	**1.85**	**1.85**	**2.32**	3.67 U	**1.86**	0.0789 U	**1.9**	**1.8 J**	**1.99**
SA17	SA17-25	11/15/2006	**1.12**	**1.85**	**1.3**	2.52 U	**2.09**	0.194 U	2.2 U	**1.81 J**	**1.32**
SA18	SA18-0.5	11/15/2006	**1.98**	**1.23**	**1.83**	4.82 U	**1.31**	0.11 U	2.01 U	**1.19 J**	**1.75**
SA18	SA18-0.5D	11/15/2006	**1.88**	**1.09**	**2.06**	1.16 U	**1.14**	0.0873 U	**1.36**	**1.06 J**	**1.97**
SA18	SA18-10	11/15/2006	**1.76**	**1.31**	**2.02**	0.938 U	**1.36**	0.0485 U	1.35 U	**1.25 J**	**1.78**
SA18	SA18-20	11/15/2006	**1.77**	**1.84**	**1.76**	-1.85 U	**2.07**	0.163 U	2.05 U	**1.8 J**	**1.83**
SA18	SA18-30	11/15/2006	**1.7**	**2.56**	**1.8**	3.33 U	**2.86**	0.161 U	2.64 U	**2.47**	**1.99**
SA19	SA19-0.5	11/16/2006	**1.9**	**1.21**	**1.92**	5.25 U	**1.25**	-0.00974 U	1.18 U	**1.16 J-**	**2 J-**
SA19	SA19-10	11/16/2006	**1.51**	**1.46**	**1.66**	6.38 U	**1.59**	-0.0142 U	**1.58**	**1.43 J-**	**1.63 J-**
SA19	SA19-20	11/16/2006	**1.52**	**1.85**	**1.72**	-0.0207 U	**1.99**	-0.0103 U	1.81 U	**1.76 J-**	**1.7 J-**
SA19	SA19-25	11/16/2006	**1.4**	**1.61**	**1.37**	1.86 U	**1.67**	0.208 U	1.55 U	**1.57 J-**	**1.38 J-**
SA20	SA20-0.5	11/16/2006	**1.67**	**1.05**	**2.11**	4.89 U	**1.17**	0.0905 U	1.16 U	**1 J-**	**1.87 J-**
SA20	SA20-0.5D	11/16/2006	**1.7**	**0.904**	**1.76**	0.797 U	**1.1**	0.189 U	**1.49**	**0.863 J-**	**1.56 J-**
SA20	SA20-10	11/16/2006	**1.52**	**1.34**	**1.82**	0.771 U	**1.46**	0.136 U	0.972 U	**1.31 J-**	**1.63 J-**
SA20	SA20-20	11/16/2006	**1.7**	**1.51**	**1.97**	5.76 U	**1.78**	0.125 U	**1.14**	**1.47 J-**	**1.76 J-**
SA20	SA20-25	11/16/2006	**1.94**	**1.55**	**1.96**	-1.78 U	**1.69**	0.0755 U	1.31 U	**1.52 J-**	**1.82 J-**
SA21	SA21-0.5	11/15/2006	**1.9**	**1.19**	**2**	3.93 U	**1.28**	0.203 U	**1.23**	**1.15 J**	**1.81**
SA21	SA21-10	11/15/2006	**1.58**	**1.28**	**1.75**	0.933 U	**1.25**	0.0579 U	**2.46**	1.22 U	**2**
SA21	SA21-20	11/15/2006	**1.84**	**1.71**	**1.86**	4.65 U	**1.64**	0.0526 U	**1.95**	**1.67 J**	**1.87**
SA21	SA21-20D	11/15/2006	**1.47**	**2.08**	**1.57**	1.64 U	**2.31**	0.0697 U	1.52 U	**2.01**	**1.73**
SA21	SA21-30	11/15/2006	**1.69**	**1.52**	**1.89**	1.26 U	**1.65**	0.104 U	**1.18**	**1.48 J**	**1.87**
SA22	SA22-0.5	11/16/2006	**1.6**	**1.03**	**1.79**	2.16 U	**1.21**	0.0153 U	**1.22**	**1.01 J-**	**1.78 J-**
SA22	SA22-10	11/16/2006	**1.86**	**1.44**	**1.82**	7.4 U	**1.42**	0.111 U	1.12 U	**1.37 J-**	**1.78 J-**
SA22	SA22-20	11/16/2006	**1.64**	**2.34**	**2.11**	0.977 U	**3.12**	0.0904 U	**2.23**	**2.28 J-**	**1.99 J-**
SA23	SA23-0.5	11/09/2006	**1.91**	**1.24**	**2.03**	5.19 U	**1.41**	0.0886 U	0.894 U	**1.11 J+**	**2.06 J+**
SA23	SA23-10	11/09/2006	**1.53**	**1.21**	**1.51**	-1.32 U	**1.21**	0.105 U	**1.24**	**1.18 J+**	1.66 U
SA23	SA23-20	11/09/2006	**1.47**	**1.82**	**1.56**	6.09 U	**1.9**	0.176 U		**1.73 J+**	**1.59 J+**
SA23	SA23-20D	11/09/2006	**1.3**	**1.76**	**1.44**	3.99 U	**2.18**	0.182 U	1.16 U	**1.72 J+**	**1.34 J+**
SA24	SA24-0.5	11/03/2006	**1.66**	**0.999**	**2.02**	2.07 U	**1.21**	0.0387 U	0.885 U	**0.965 J**	**1.79**
SA24	SA24-10	11/03/2006	**1.72**	**1.13**	**1.98**	3.37 U	**1.27**	0.0325 U	0.931 U	**1.08 J**	**1.73**
SA24	SA24-20	11/03/2006	**1.52**	**1.44**	**1.53**	4.73 U	**1.65**	0.0711 U	1.55 U	**1.4 J**	**1.65**
SA24	SA24-25	11/03/2006	**1.68**	**1.67**	**1.62**	2.51 U	**1.8**	0.214 U	2.06	**1.59 J**	**1.68**
SA25	SA25-0.5	11/03/2006	**1.64**	**1.27**	**1.89**	4.97 U	**1.25**	0.0116 U	0.983 U	**1.21 J**	**2.03**
SA25	SA25-10	11/03/2006	**1.53**	**1.24**	**1.56**	3.23 U	**1.56**	0.0886 U	**1.33**	**1.19 J**	**1.61**
SA25	SA25-15	11/03/2006	**1.57**	**1.77**	**1.51**	2.22 U	**1.9**	0.0752 U	0.636 U	**1.69 J**	**1.6**
SA25	SA25-20	11/03/2006	**1.02**	**1.67**	**1.3**	0.903 U	**1.57**	0.185 U	**1.01**	**1.63 J**	**1.35**

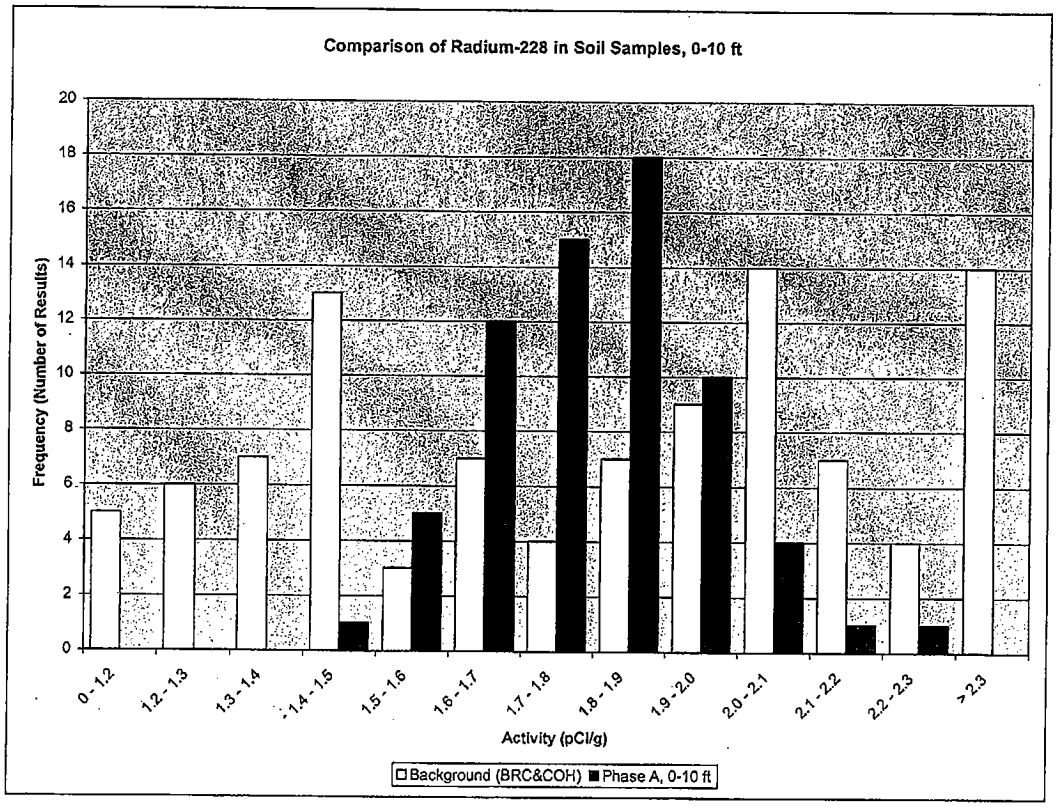
Table 1. Radionuclide Concentrations in Soil Determined by Gamma Spectroscopy
Phase A Source Area Investigation
Tronox Facility, Henderson, Nevada

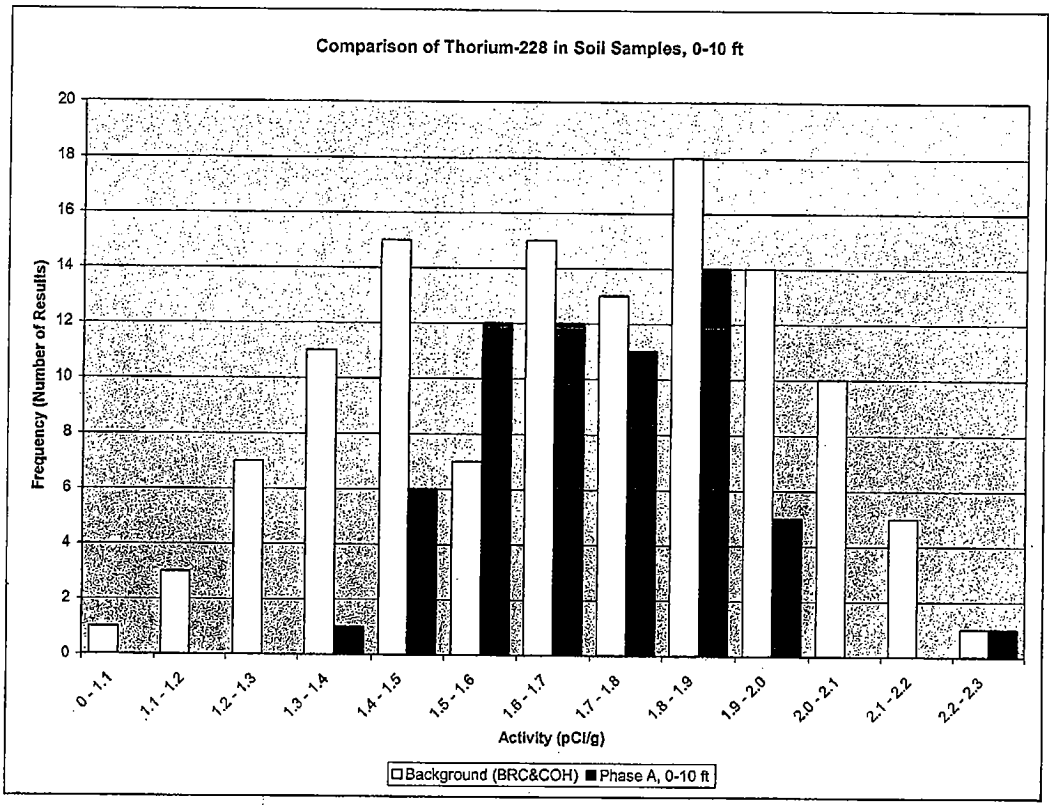
		Analyte:	Th-228	Th-230	Th-232	Th-234	U-234	U-235	U-238	Ra-226	Ra-228
		Method:	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300	HASL-300
		Spectroscopy:	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma	gamma
		Units:	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g	pci/g
Location	Sample ID	Sample Date									
SA26	SA26-0.5	11/20/2006	**1.71**	**1.27**	**2.09**	0.61 U	**1.21**	0.0908 U	**2.24**	**1.2 J-**	**1.91 J-**
SA26	SA26-0.5D	11/20/2006	**1.95**	**1.07**	**1.98**	3.34 U	**1.35**	0.00452 U	**1.02**	**1.02 J-**	**1.78 J-**
SA26	SA26-10	11/20/2006	**1.61**	**1.36**	**1.82**	2.87 U	**1.33**	0.00923 U	**1.12**	**1.33 J-**	**1.82 J-**
SA27	SA27-0.5	11/02/2006	**1.62**	**1.02**	**1.96**	4.39 U	**1.32**	-0.0901 U	-0.341 U	**0.985 J**	**1.87**
SA27	SA27-10	11/02/2006	**1.85**	**1.29**	**1.85**	6.81 U	**1.41**	0.141 U	1.4 U	**1.23 J**	**1.84**
SA27	SA27-20	11/02/2006	**1.56**	**1.16**	**1.52**	1.39 U	**1.16**	0.0307 U	0.812 U	**1.11 J**	**1.42**

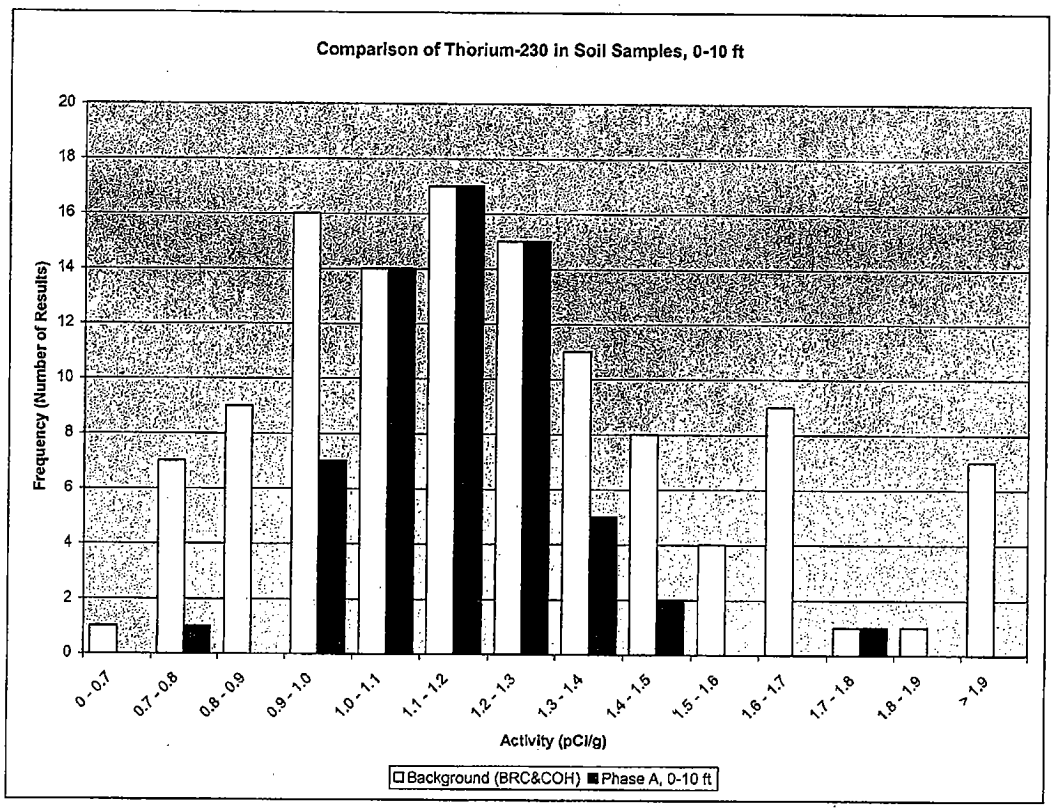
Data Qualifier Definitions:

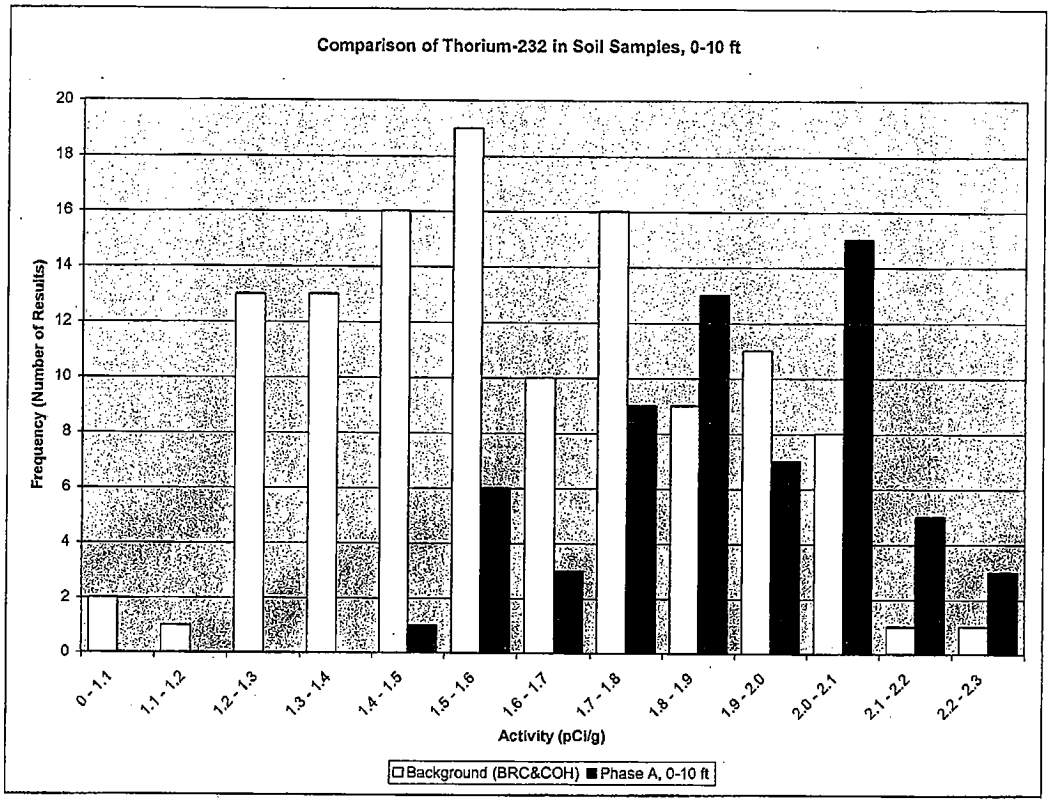
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity and the result may be biased high.
J-	The result is an estimated quantity and the result may be biased low.
UJ	The analyte was not detected above the sample reporting limit and the reporting limit is approximate.
U	The analyte was analyzed for, but was not detected above the sample reporting limit

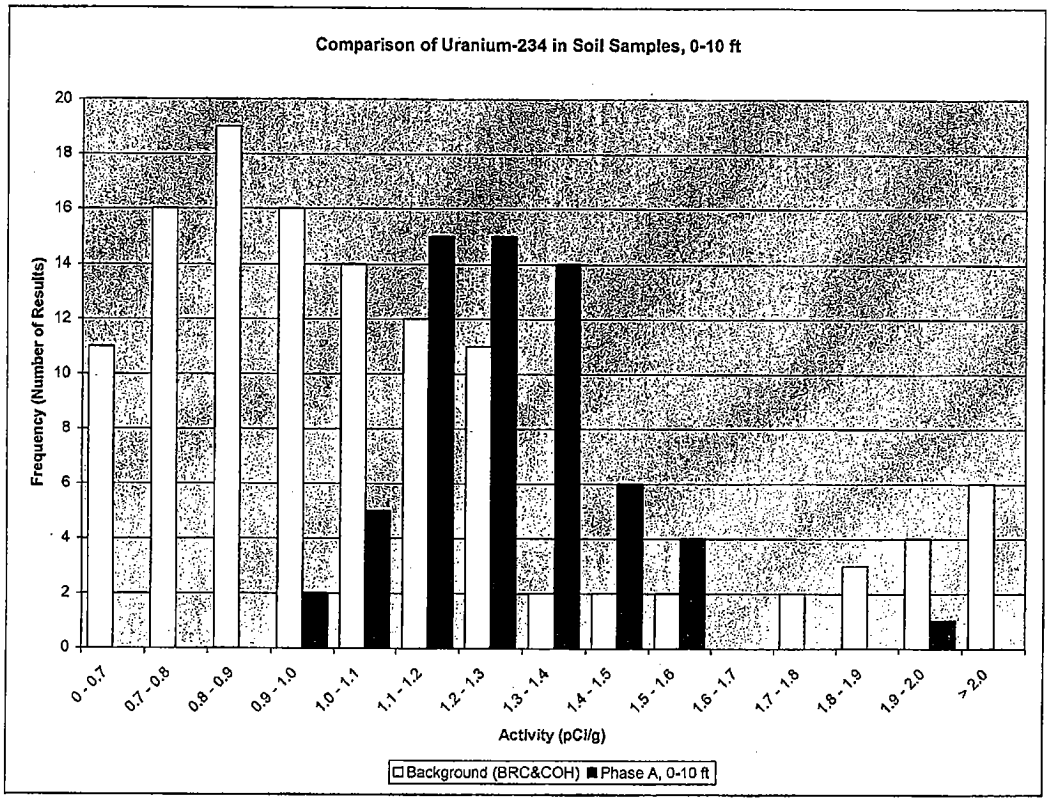

Comparison of Radium-226 in Soil Samples, 0-10 ft
Frequency (Number of Results)
25
20
15
10
5
0
0 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0
1.0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
> 2.0
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

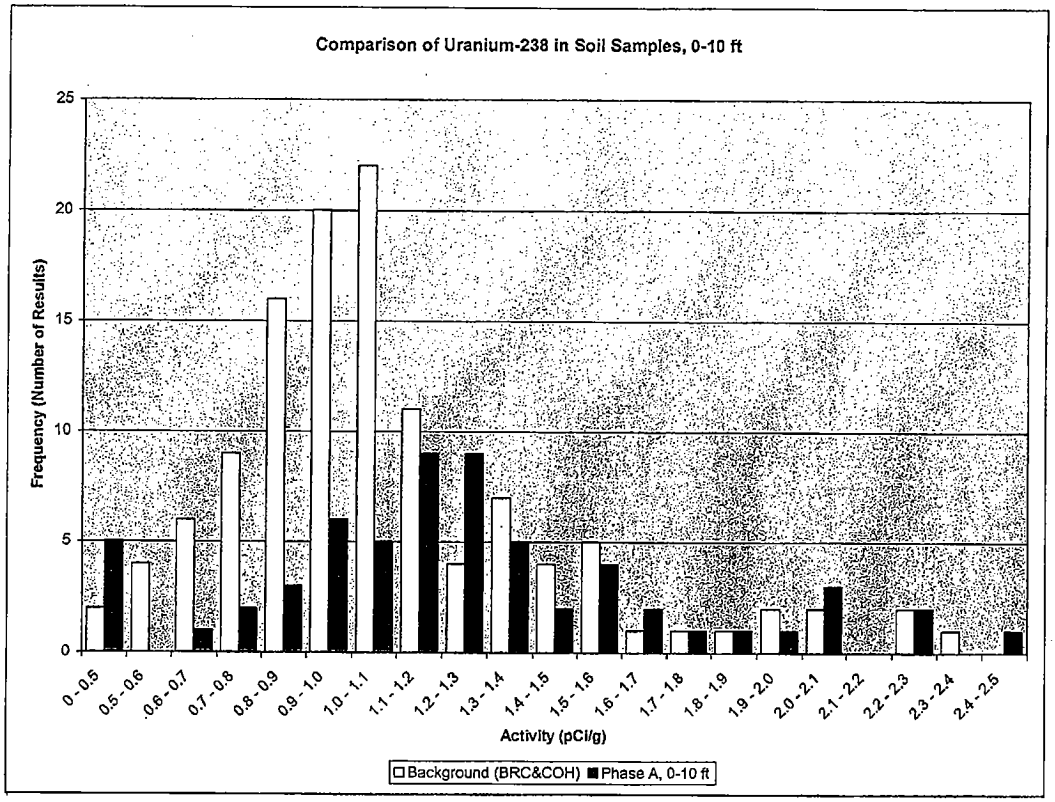

Comparison of Radium-228 in Soil Samples, 0-10 ft
Frequency (Number of Results)
20
18
16
14
12
10
8
6
4
2
0
0 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
2.0 - 2.1
2.1 - 2.2
2.2 - 2.3
> 2.3
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

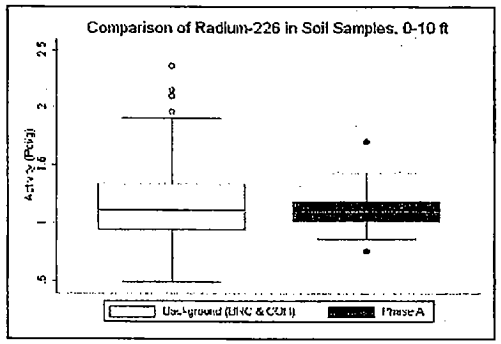

Comparison of Thorium-228 in Soil Samples, 0-10 ft
Frequency (Number of Results)
0
2
4
6
8
10
12
14
16
18
20
0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
2.0 - 2.1
2.1 - 2.2
2.2 - 2.3
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

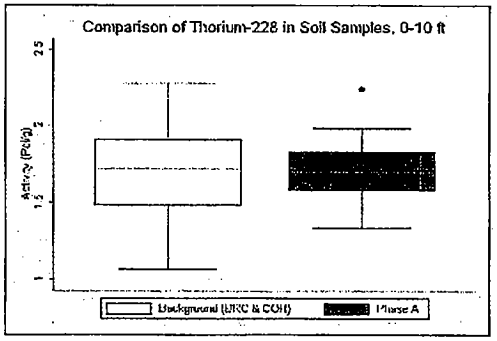

Comparison of Thorium-230 in Soil Samples, 0-10 ft
Frequency (Number of Results)
0
2
4
6
8
10
12
14
16
18
20
0 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0
1.0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
> 1.9
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

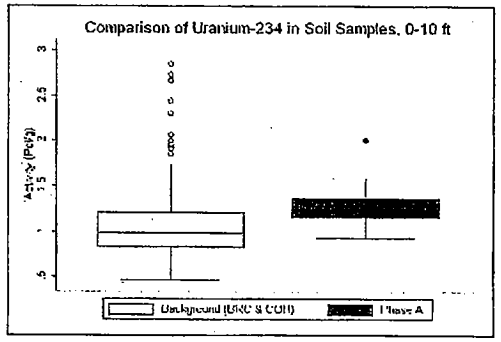

Comparison of Thorium-232 in Soil Samples, 0-10 ft
Frequency (Number of Results)
0
2
4
6
8
10
12
14
16
18
20
0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
2.0 - 2.1
2.1 - 2.2
2.2 - 2.3
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

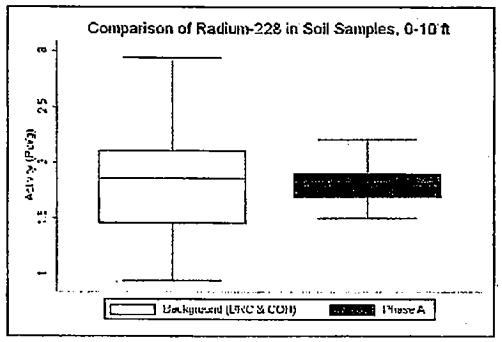

Comparison of Uranium-234 in Soil Samples, 0-10 ft
Frequency (Number of Results)
0
2
4
6
8
10
12
14
16
18
20
0 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0
1.0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
> 2.0
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

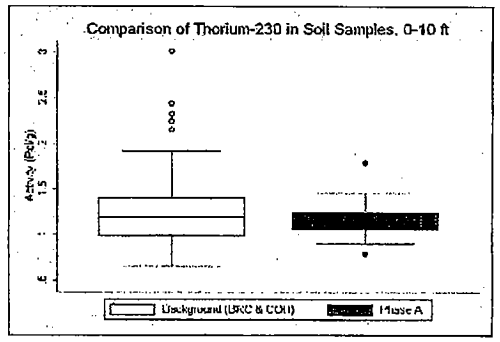

Comparison of Uranium-238 in Soil Samples, 0-10 ft
Frequency (Number of Results)
25
20
15
10
5
0
0 - 0.5
0.5 - 0.6
0.6 - 0.7
0.7 - 0.8
0.8 - 0.9
0.9 - 1.0
1.0 - 1.1
1.1 - 1.2
1.2 - 1.3
1.3 - 1.4
1.4 - 1.5
1.5 - 1.6
1.6 - 1.7
1.7 - 1.8
1.8 - 1.9
1.9 - 2.0
2.0 - 2.1
2.1 - 2.2
2.2 - 2.3
2.3 - 2.4
2.4 - 2.5
Activity (pCi/g)
Background (BRC&COH)
Phase A, 0-10 ft

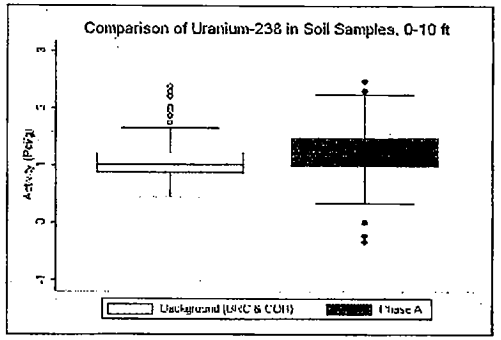

Comparison of Radium-226 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (ERC & COH)
Phase A

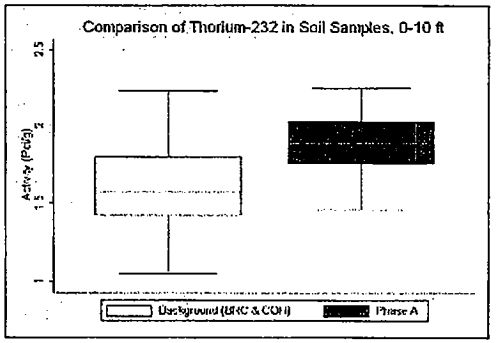

Comparison of Thorium-228 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (ERC & COH)
Phase A

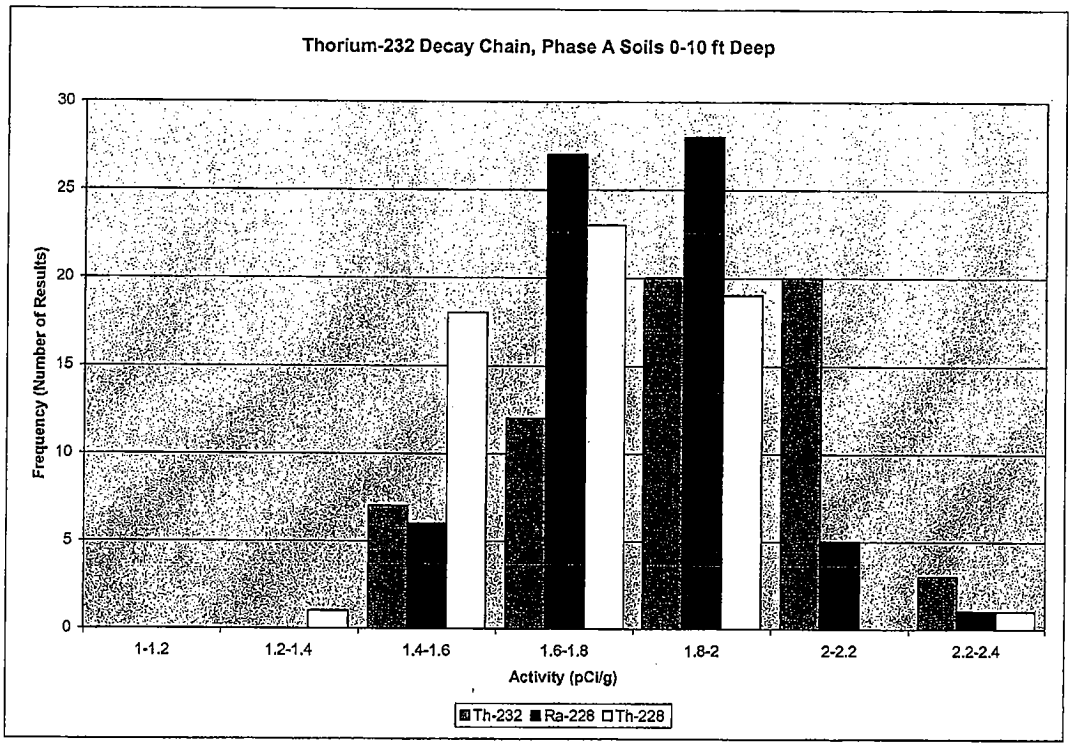

Comparison of Uranium-234 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (ERC & COH)
Phase A

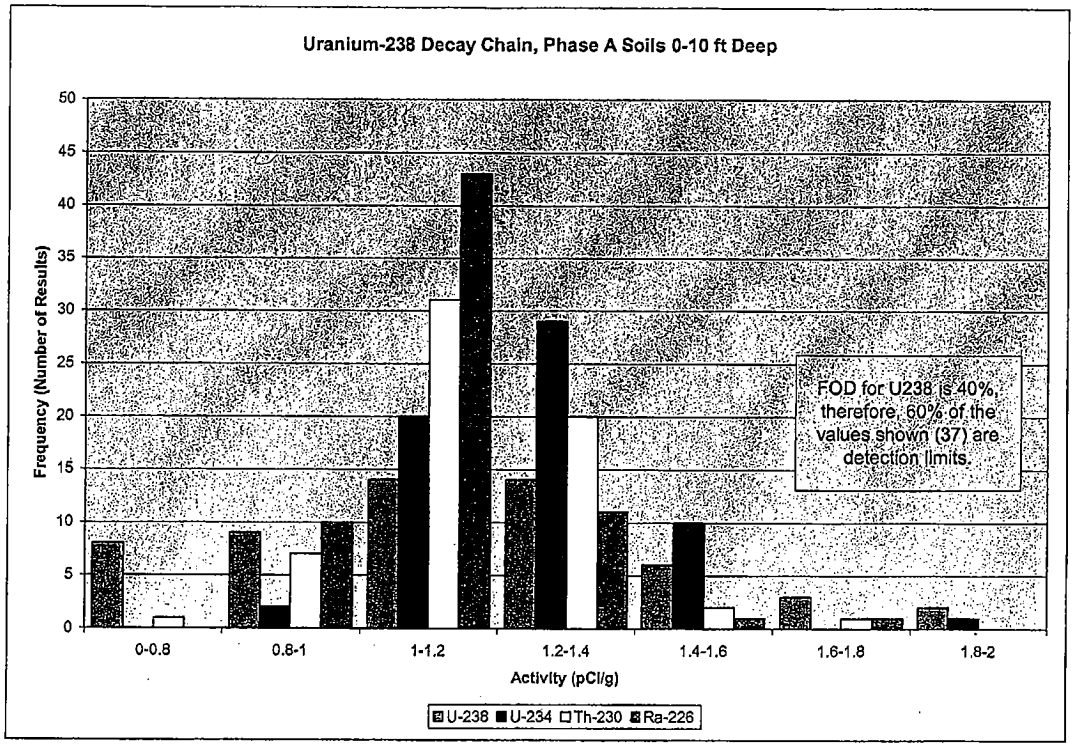

Comparison of Radium-228 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (ERC & COH)
Phase A

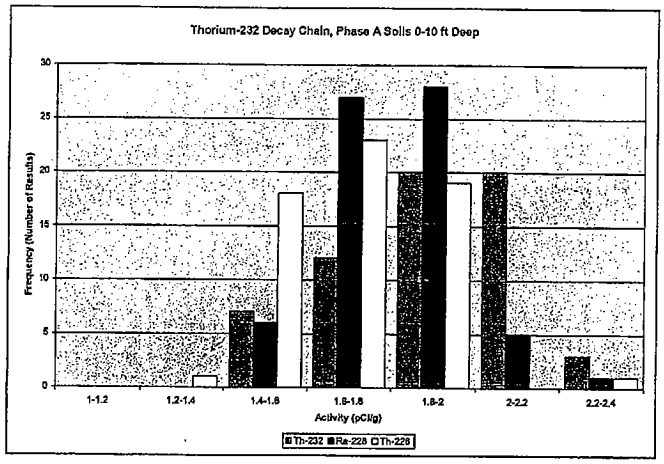

Comparison of Thorium-230 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (ERC & COH)
Phase A

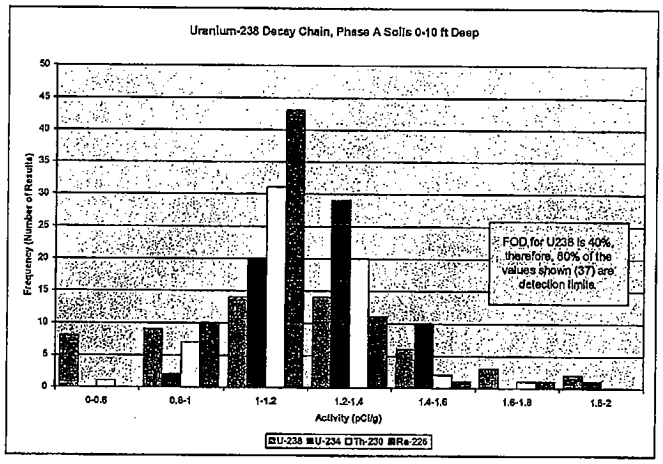

Comparison of Uranium-238 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (ERC & COH)
Phase A

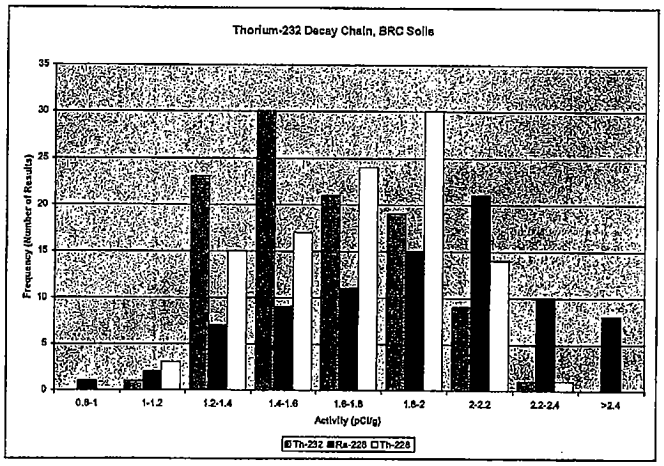

Comparison of Thorium-232 in Soil Samples, 0-10 ft
Activity (Pci/g)
Background (ERC & COH)
Phase A

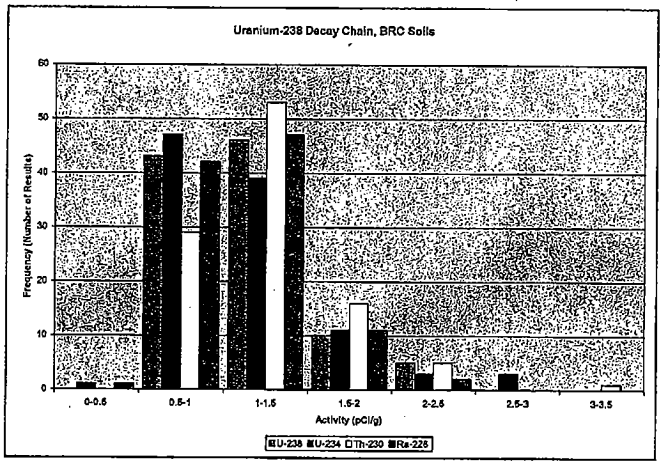

Thorium-232 Decay Chain, Phase A Soils 0-10 ft Deep
Frequency (Number of Results)
30
25
20
15
10
5
0
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
2-2.2
2.2-2.4
Activity (pCi/g)
Th-232 Ra-228 Th-228

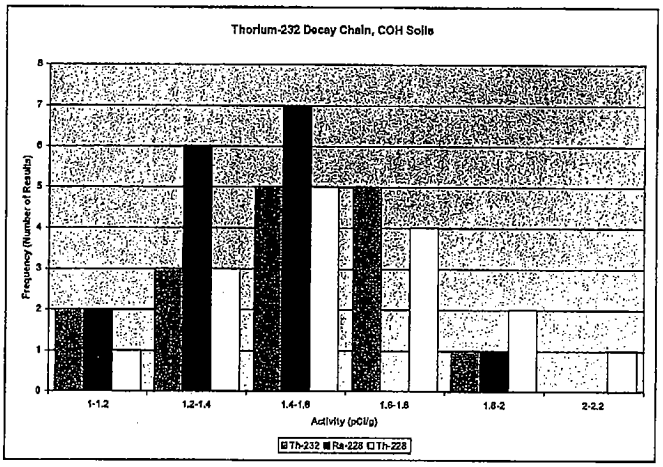

Uranium-238 Decay Chain, Phase A Soils 0-10 ft Deep
Frequency (Number of Results)
50
45
40
35
30
25
20
15
10
5
0
0-0.8
0.8-1
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
Activity (pCi/g)
FOD for U238 is 40%, therefore, 60% of the values shown (37) are detection limits.
U-238 U-234 Th-230 Ra-226

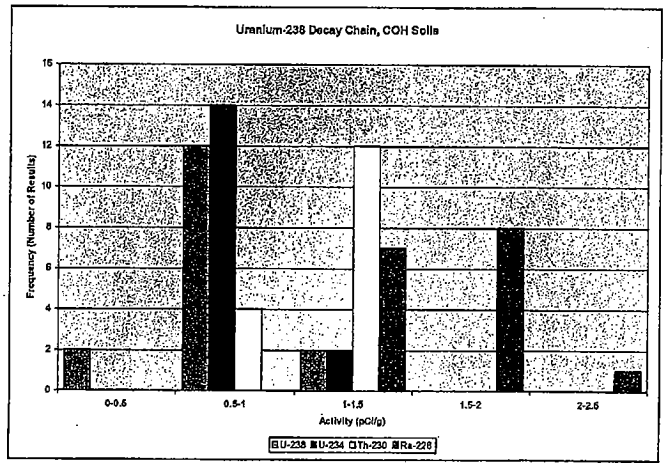

Thorium-232 Decay Chain, Phase A Soils 0-10 ft Deep
Frequency (Number of Results)
Activity (pCi/g)
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
2-2.2
2.2-2.4
Th-232 Ra-228 Th-228

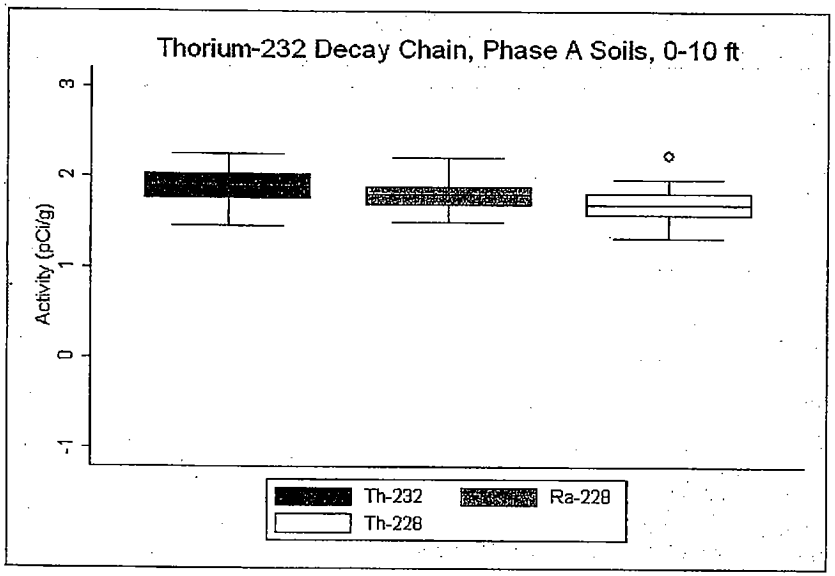

Uranium-238 Decay Chain, Phase A Soils 0-10 ft Deep
Frequency (Number of Results)
Activity (pCi/g)
0-0.5
0.5-1
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
FOD for U238 is 40%, therefore, 60% of the values shown (37) are detection limits.
U-238 U-234 Th-230 Ra-226

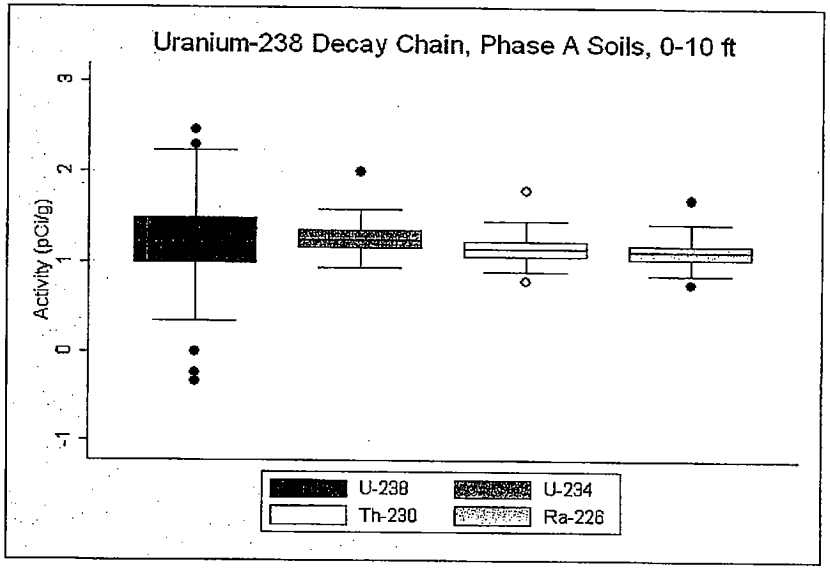

Thorium-232 Decay Chain, BRC Soils
Frequency (Number of Results)
Activity (pCi/g)
0.8-1
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
2-2.2
2.2-2.4
>2.4
Th-232 Ra-228 Th-228

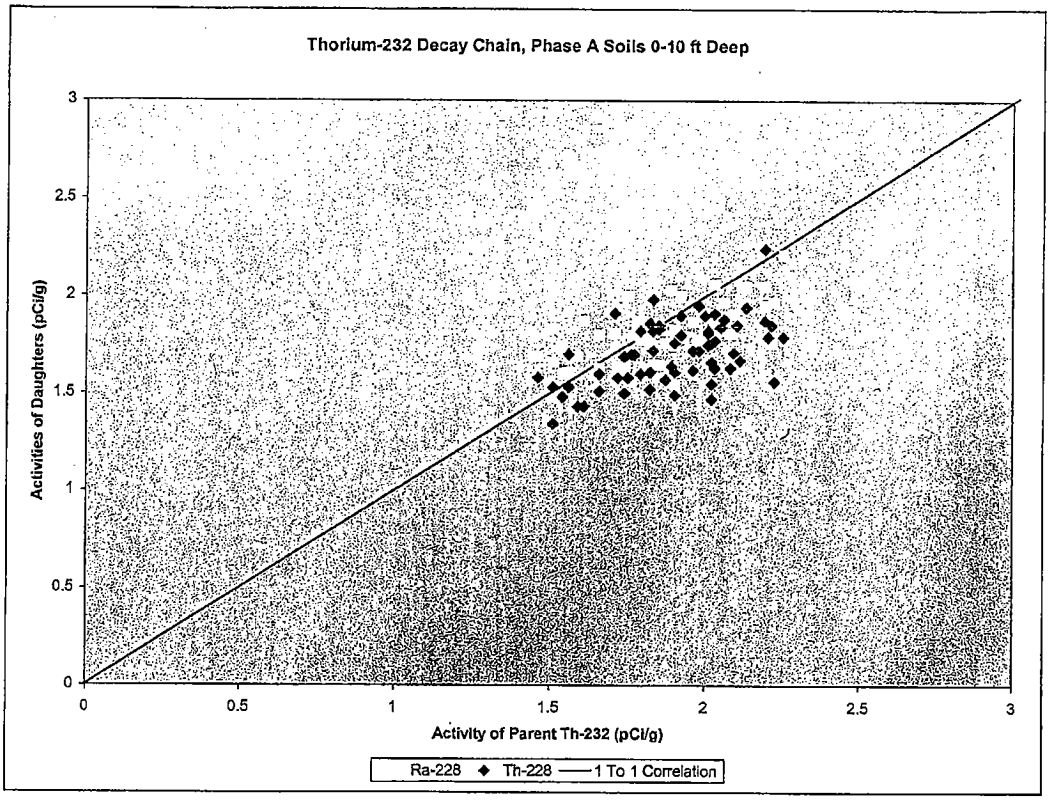

Uranium-238 Decay Chain, BRC Soils
Frequency (Number of Results)
Activity (pCi/g)
0-0.5
0.5-1
1-1.5
1.5-2
2-2.5
2.5-3
3-3.5
U-238 U-234 Th-230 Ra-226

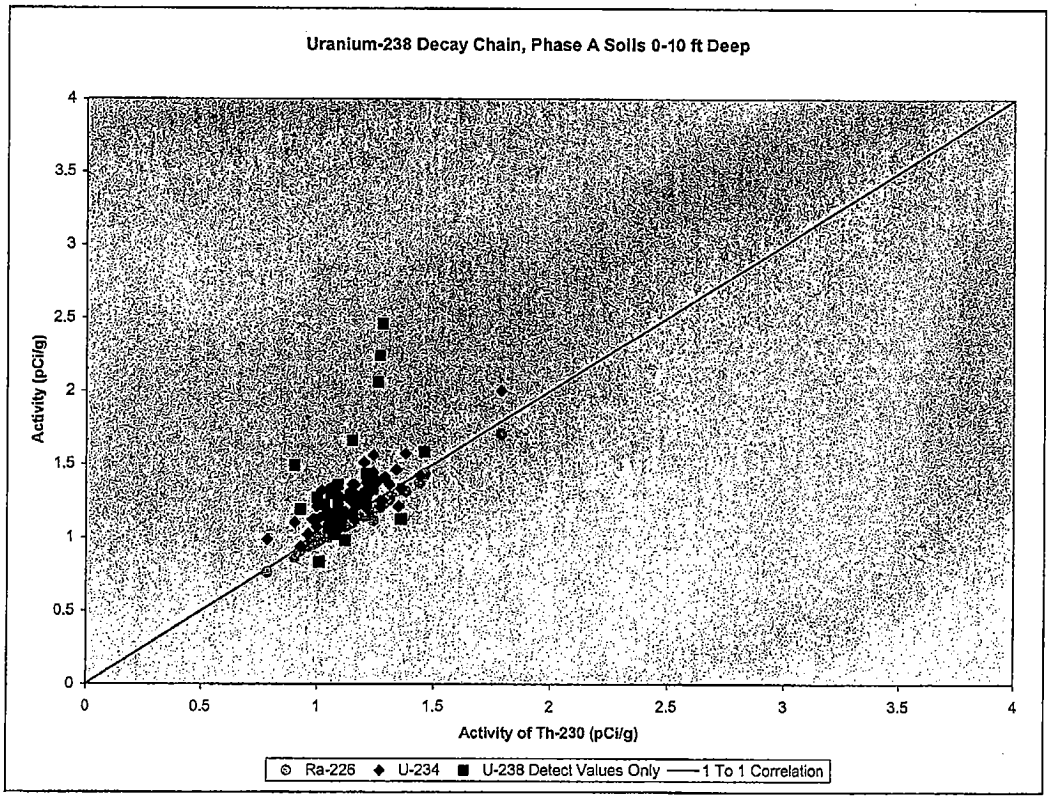

Thorium-232 Decay Chain, COH Soils
Frequency (Number of Results)
Activity (pCi/g)
1-1.2
1.2-1.4
1.4-1.6
1.6-1.8
1.8-2
2-2.2
Th-232 Ra-228 Th-228

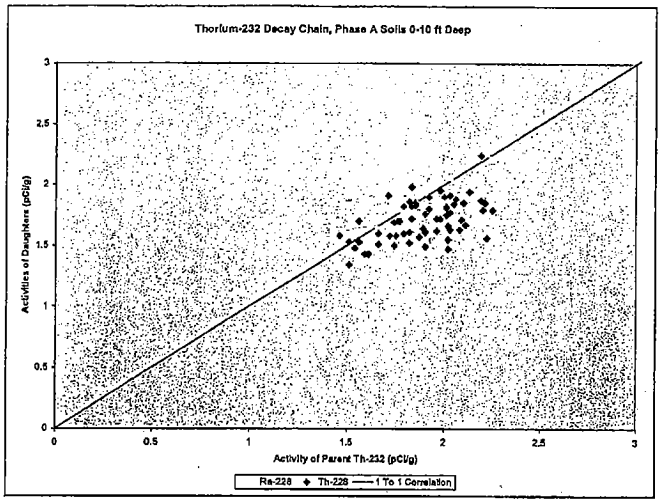

Uranium-238 Decay Chain, COH Soils
Frequency (Number of Results)
Activity (pCi/g)
0-0.5
0.5-1
1-1.5
1.5-2
2-2.5
U-238 U-234 Th-230 Ra-226

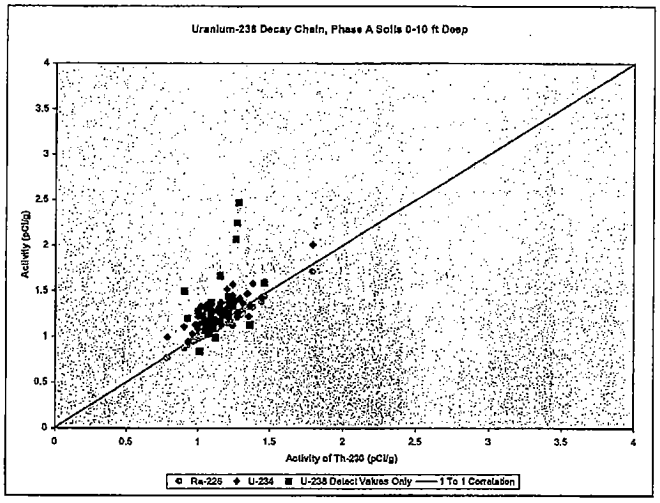

Thorium-232 Decay Chain, Phase A Soils, 0-10 ft
Activity (pCi/g)
-1
0
1
2
3
Th-232
Ra-228
Th-228

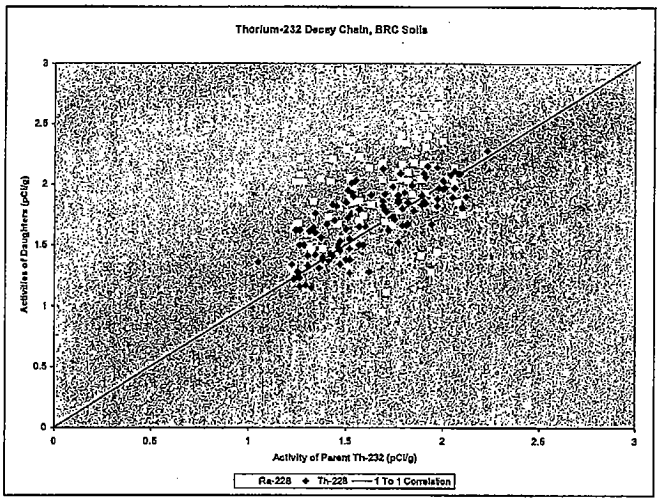

Uranium-238 Decay Chain, Phase A Soils, 0-10 ft
Activity (pCi/g)
-1
0
1
2
3
U-238
U-234
Th-230
Ra-226

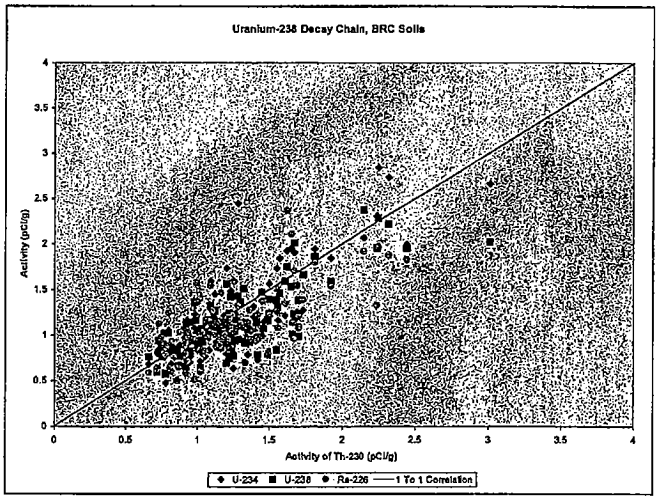

Thorium-232 Decay Chain, Phase A Soils 0-10 ft Deep
Activities of Daughters (pCi/g)
Activity of Parent Th-232 (pCi/g)
0
0.5
1
1.5
2
2.5
3
Ra-228
Th-228
1 To 1 Correlation

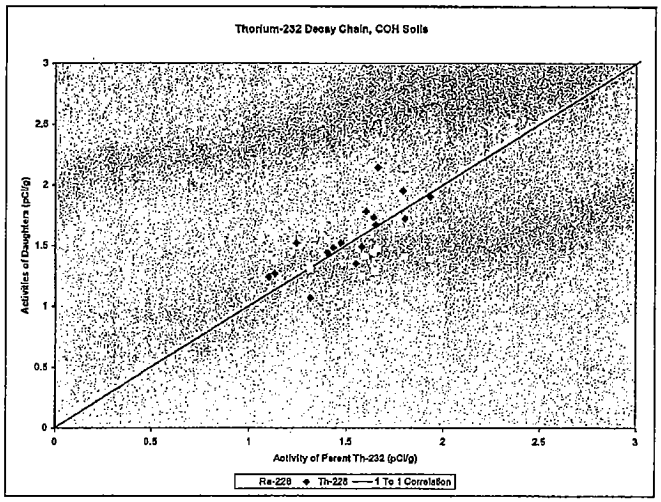

Uranium-238 Decay Chain, Phase A Soils 0-10 ft Deep
Activity (pCi/g)
Activity of Th-230 (pCi/g)
0
0.5
1
1.5
2
2.5
3
3.5
4
Ra-226
U-234
U-238 Detect Values Only
1 To 1 Correlation

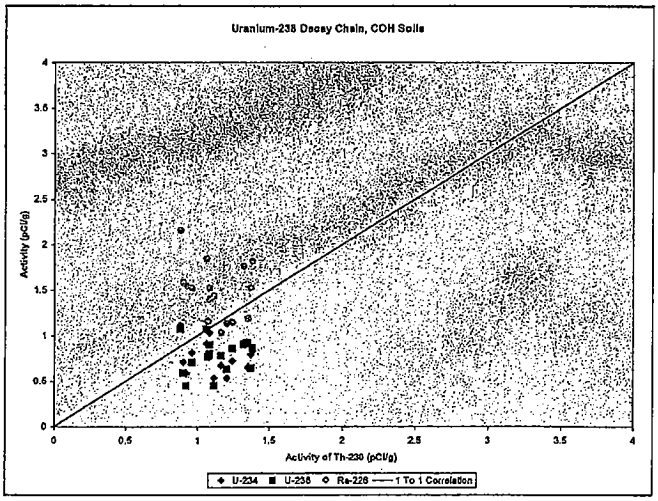

Thorium-232 Decay Chain, Phase A Soils 0-10 ft Deep
Activities of Daughters (pCi/g)
Activity of Parent Th-232 (pCi/g)
Ra-228 Th-228 1 To 1 Correlation


Uranium-238 Decay Chain, Phase A Soils 0-10 ft Deep
Activity (pCi/g)
Activity of Th-230 (pCi/g)
Ra-226 U-234 U-238 Detect Values Only 1 To 1 Correlation

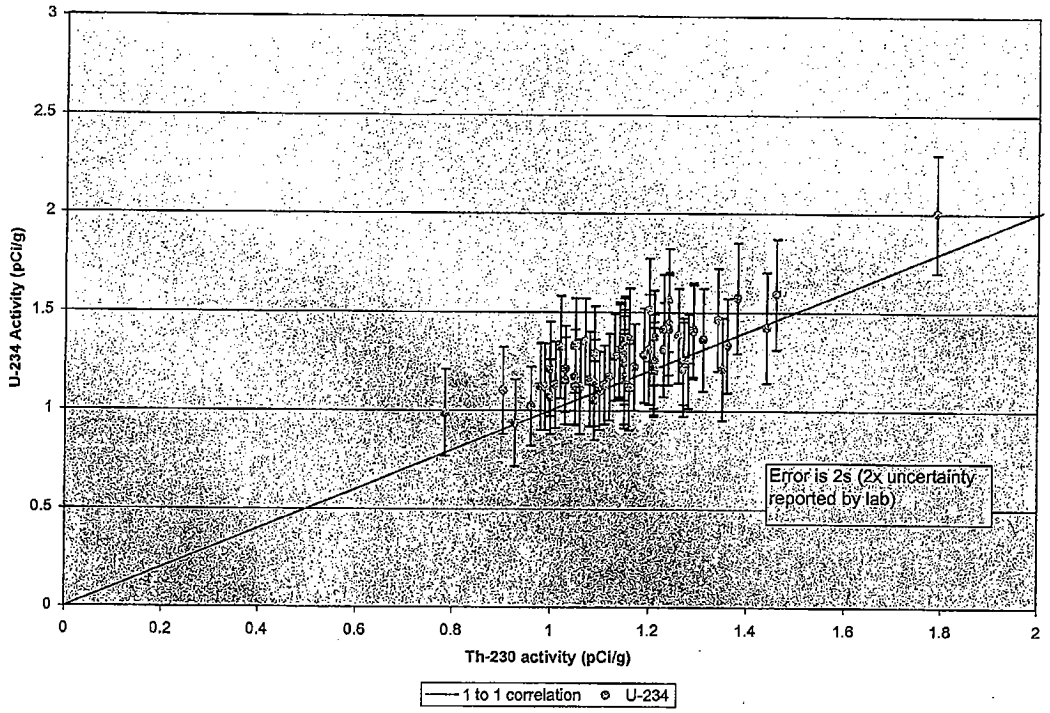

Thorium-232 Decay Chain, BRC Soils
Activities of Daughters (pCi/g)
Activity of Parent Th-232 (pCi/g)
Ra-228 Th-228 1 To 1 Correlation


Uranium-238 Decay Chain, BRC Soils
Activity (pCi/g)
Activity of Th-230 (pCi/g)
U-234 U-238 Ra-226 1 To 1 Correlation

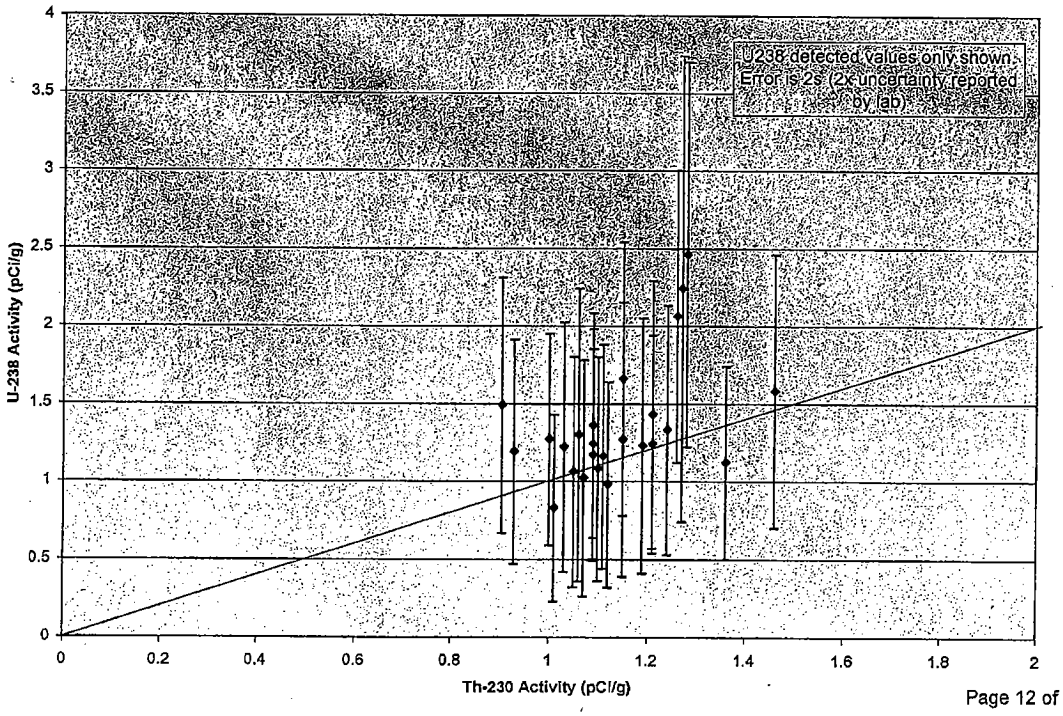

Thorium-232 Decay Chain, COH Soils
Activities of Daughters (pCi/g)
Activity of Parent Th-232 (pCi/g)
Ra-228 Th-228 1 To 1 Correlation


Uranium-238 Decay Chain, COH Soils
Activity (pCi/g)
Activity of Th-230 (pCi/g)
U-234 U-238 Ra-226 1 To 1 Correlation

U-234 vs. Th-230 with Uncertainty
Phase A Soils 0-10 ft, Gamma Method



U-238 vs. Th-230 with Uncertainty
Phase A Soils 0-10 ft, Gamma method



Jan

Shannon Harbour

From: Shannon Harbour
Sent: Thursday, January 24, 2008 11:42 AM
To: 'Crowley,Susan'
Cc: 'Keith Bailey'; Brian Rakvica; 'Kennedy, Robert'; 'Perry, Elizabeth'; 'Gerry, Dave'; 'Paul Black'; paul.duffy@neptuneinc.org; David Gratson
Subject: RE: Jan 23, 2008 Conference Call Draft Minutes
Attachments: 080122_Rad_Conf_Call.doc

All,

Attached are the final minutes from the January 23rd conference call for the radionuclide issues.

(Keith, thanks for the updated schedule for submission.)

Sincerely,
Shannon

Shannon Harbour, P.E.
Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office
2030 E Flamingo Rd Suite 230
Las Vegas, NV 89119
702-486-2850 x 240 (work)
702-486-5733 (fax)

From: Keith Bailey [mailto:okbailey@flash.net]
Sent: Thursday, January 24, 2008 11:35 AM
To: Shannon Harbour; 'Crowley,Susan'; Brian Rakvica; 'Kennedy, Robert'; 'Perry, Elizabeth'; 'Gerry, Dave'
Subject: Jan 23, 2008 Conference Call Draft Minutes

Shannon,

We added a few red-line clarifications to your draft minutes (attached).

Also, ENSR has received the last two sets of gamma spec data from the Richland lab. We expect to have the statistical work completed and submitted to NDEP by February 8, 2008.

If you have questions or comments, please give me a call at (405) 216-9213 or call Susan Crowley at (702) 651-2234.

Thanks.

Keith

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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

January 23, 2008

David Christensen
Nevada Pic-A-Part
5100 North Lamb Boulevard
Las Vegas, NV 89115

Re: **Nevada Pic-A-Part (Parcel "I" – Tronox Facility)**
110 West Rolly, Henderson, NV
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to: *Extension request for the submittal of spill response information requested by the NDEP*
Dated: January 28, 2008

Dear Mr. Christensen:

Based on our telephone conversation this morning and on your subsequent e-mail update, the Nevada Division of Environmental Protection (NDEP) approves the extended deadline April 1, 2008 for the submittal of the information requested in a December 13, 2007 letter from the NDEP for the spill reported on December 12, 2007 (NDEP #: 071212-01).

Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 x 240.

Shannon Harbour, P.E.

Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

cc:

Brian Rakvica, Bureau of Corrective Actions, NDEP, Las Vegas, NV
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Dennis Campbell, Southern Nevada Health District, PO Box 3902, Las Vegas, NV 89127
Susan Crowley, Tronox LLC, PO Box 55, Henderson, Nevada 89009
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Mike Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

FINAL

Meeting Minutes

Project:	Tronox (TRX)
Location:	Conference Call
Time and Date:	9:00 AM, Tuesday, January 22, 2008
In Attendance:	NDEP – Brian Rakvica, Shannon Harbour
	Tronox –Susan Crowley
	Environmental Answers – Keith Bailey (for TRX)
	ENSR –Elizabeth Perry, Robert Kennedy (for TRX)

CC: Jim Najima, Paul Black, Paul Duffy, Dave Gratson

1. The meeting was held to discuss TRX's radionuclide issues pertaining to the NDEP All Companies letter dated December 7, 2007.
2. Discrepancy between the Uranium and Thorium decay chains in the analytical results for the Phase A and Parcels A & B investigations:
   a. STL-Richland used two different preparatory (prep) methods for the Uranium and Thorium radionuclide analyses: Mixed acids (including HF, hence complete dissolution) for the Thorium chain and nitric acid (incomplete dissolution) for the Uranium chain.
   b. TRX used a factor approach for the Parcel A & B dataset to obtain a NFA but this approach doesn't sufficiently address the radionuclide issue for the Phase A dataset.
3. It is believed that the uranium data (ICP metal analysis) exceeds background in the Phase A dataset.
4. TRX needs to demonstrate secular equilibrium.
   a. TRX used alpha spectroscopy (spec) for the Uranium and Thorium chains on 10% of the samples collected for the Phase A investigation (15 samples).
   b. Uranium chain activities were generally less than the Thorium chain activities in the Phase A dataset and this is likely due to the digestion differences discussed above.
5. TRX stated that the Muddy Creek formation (MCf) samples (deeper samples) should be compared to the deep background dataset that is being generated by BRC/TIMET. (Results are expected in early February from BRC).
6. NDEP will send TRX electronic copies of the TIMET and BMI radionuclide responses to the December 7, 2007 letter. **ACTION ITEM.**
7. TRX stated that they are waiting for STL-Richland to provide calculated results for Uranium series and Thorium series radionuclides using the spectra recorded during gamma spectroscopy measurements for Radium-226 and Radium-228 on the 15 samples from the Phase A dataset that were additionally analyzed with alpha spec. STL-Richland has already provided results for 13 of the 15 samples. Results for the remaining two samples are expected this week. TRX will notify NDEP by Monday, January 28, 2008 whether the results from the remaining two samples were received and will provide a submittal date for this information. **ACTION ITEM.**
8. TRX will compare the gamma spec results to the alpha spec results and present the analysis to NDEP.
9. TRX believes that the radionuclide data should be relied on more heavily than the Uranium metal data for comparison to background determinations.
10. NDEP stated that their consultants have been working on the problem of false negatives (apparent lack of equilibrium) when demonstrating secular equilibrium because of the error associated with the analytical results. NDEP will provide feedback to all of the companies as soon as possible.

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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

January 17, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response (Part 1) to:
Technical Memorandum – Data Review for 2007 Tronox Parcels A/B Investigation
Dated December 6, 2007

And

Asbestos Data Review for 2007 Tronox A/B Investigation,
dated December 17, 2007

And

Uranium Isotope Data Review for 2007 Tronox A/B Investigation,
dated December 18, 2007

And

Asbestos Data Review for 2007 Tronox A/B Investigation,
Dated January 9, 2008

And

Supplemental information provided via electronic mail (various dates)

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified report and finds that No Further Action (NFA) is required at this time with the following conditions:

1. TRX retains the responsibility to address any environmental impacts to groundwater beneath the property referred to as Parcels A and B. As such, additional investigation may be necessary on

this property as it relates to TRX's responsibilities. TRX must be granted access to the site for activities such as well or soil boring installations or other investigative or remedial efforts.

2. The materials presented to the NDEP do not evaluate the possibility of a vapor intrusion concern from contamination in groundwater. It is anticipated that this issue will be addressed as part of the investigation of groundwater issues in the region.
3. The site soils beneath 10' below ground surface have not been evaluated to date. The property owner should note that these soils should not be disturbed without additional investigation or evaluation.
4. To limit liability, the property owner should ensure that activities at the property do not exacerbate existing, sub-surface, environmental conditions.
5. The site use is suitable for purposes of commercial or industrial use only.

It should be noted that technical comments are provided under separate cover and are intended to: provide additional clarity for the basis of this NFA; provide clarity for the administrative record; and to provide guidance for development of future Deliverables.

Please contact the undersigned with any questions at brakvica@ndep.nv.gov or (702) 486-2850 x 247.

Sincerely,

Brian A. Rakvica, P.E.
Supervisor, Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office

BAR:sh:jn:wf:bar

CC: Jim Najima, NDEP, BCA, Carson City
Shannon Harbour, NDEP, BCA, Las Vegas
William J. Frey, AG's Office, Carson City
Keith Bailey, Environmental Answers, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Rob Mrowka, Clark County Comprehensive Planning, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, PO Box 248 1186 Lower River Road, Charleston TN 37310-0248
Curt Richards, Olin Corporation, PO Box 248 1186 Lower River Road, Charleston TN 37310-0248
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

ndep
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

January 17, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response (Part 2) to:
Technical Memorandum – Data Review for 2007 Tronox Parcels A/B Investigation
Dated December 6, 2007

And

Asbestos Data Review for 2007 Tronox A/B Investigation,
dated December 17, 2007

And

Uranium Isotope Data Review for 2007 Tronox A/B Investigation,
dated December 18, 2007

And

Asbestos Data Review for 2007 Tronox A/B Investigation,
Dated January 9, 2008

And

Supplemental information provided via electronic mail (various dates)

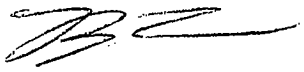
Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified report and found that No Further Action (NFA) was required at this time with the conditions, as noted under separate cover.

Attachment A to this letter is intended to: provide additional clarity for the basis of this NFA; provide clarity for the administrative record; and to provide guidance for development of future Deliverables.

Please contact the undersigned with any questions at brakvica@ndep.nv.gov or (702) 486-2850 x 247.

Sincerely,



Brian A. Rakvica, P.E.
Supervisor, Special Projects Branch
Bureau of Corrective Actions
NDEP-Las Vegas Office

BAR:sh:jn:wf:bar

CC: Jim Najima, NDEP, BCA, Carson City
Shannon Harbour, NDEP, BCA, Las Vegas
William J. Frey, AG's Office, Carson City
Keith Bailey, Environmental Answers, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
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Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

Attachment A

1. General comment, examples of information provided by electronic mail which were used to supplement the review and understanding of Parcels A and B include (but are not limited to):
    a. Probability and box plots (exploratory data analysis);
    b. Revised data tables presenting USEPA SSLs (DAF1 and DAF 20);
    c. Legal descriptions of Parcels A and B (expected to be recorded following the issuance of this NFA). These descriptions serve as the basis of understanding for the definition of Parcels A and B).
    d. In addition, several telephone conferences were held to discuss and clarify technical issues relating to Parcels A and B.
2. General comment, the additional documentation submitted since December 6, 2007 causes some of the very specific conclusions stated in the report to be incorrect. For example, on Page 4, uranium now exceeds the screening level. Some rewording in light of the update information would have been helpful.
3. General comment, the report is lacking transparency in many ways. For example, the CSM is not provided in full, the data are not related back to the CSM fully (for example, consider how the radionuclides are handled), and the risk assessment is minimal. This comment is made in recognition that Parcels A and B appear to have only sporadic and low levels of contamination (now that the asbestos remediation has been performed), in which case a simple risk assessment can be deemed sufficient. However, NDEP expects greater level of detail in other risk assessments performed at TRONOX and elsewhere at the BMI Complex and Common Areas.
4. General comment, a further consideration related to the asbestos remediation is that many of the sample locations have now been remediated or partially remediated. No mention is made of the consequence of this cleanup on the data analysis and risk assessment for all the other chemicals included in the screening risk assessment. The new surface layer could have different concentrations. However, it might be reasonable to assume that the concentration distribution has not changed in any important way for these chemicals. This should be related to the CSM. It might even be reasonable to assume that concentrations are now lower for some chemicals (e.g., dioxins), because of the removal of some soil. Whichever argument is made, it should have been included in the text, and defended in the context of the CSM. A further option is to compare the data across the different depths of data collection. For example, if the concentrations are similar at the different depth intervals of sampling, then it would be reasonable to assume that the old samples are still representative of the current conditions. Consideration of concentrations by depth would also be helpful for understanding the leaching pathway (e.g., to see if concentrations are increasing with depth), and could have resolved some background comparisons for some metals or radionuclides. For example, for several metals and radionuclides the site data are statistically lower than the background data. Without some explanation, this raises issues about the appropriateness of the comparisons.
5. General comment, Although the radionuclide activities appear to be small there are still some outstanding issues that should be addressed in the future. The immediate issues surrounding the radionuclide uranium and thorium analysis appear to have been resolved (methods have been fully identified, and adjustments have been made to the uranium

radionuclide results), and we are comfortable enough with the methods used to predict uranium isotope concentrations for comparison with background and use in the risk assessment. Still of concern is that the uranium metal results fail background comparisons in Parcel A, but none of the other radionuclides fail background comparisons at all. In fact, some of the site radionuclides appear to be slightly lower than background. It might be reasonable to assume that the differences are the result of minor analytical differences, and that all radionuclides are at background concentrations. However, the argument should have been made. The argument includes concerns about the different methods that have been used (gamma-spec for radium, alpha-spec with strong acid digestion for thorium, and alpha-spec with weak acid digestion for uranium as well as uranium as a metal by ICPMS). Since secular equilibrium is expected, the results should be similar for radionuclides within the same chain, but they are not statistically similar. The different methods might provide some explanation.

Our understanding of the Work Plan was that 10% of the samples submitted for gamma-spec analysis for radium would also be submitted for alpha-spec (and beta-spec) analysis for radium. If this had been done, then a better understanding of these inconsistencies might be possible. In our experience, gamma-spec analysis is biased low for some radionuclides. If this is the case here, then this could explain the differences that are seen. Alternatively, a CSM is needed that explains the slightly high uranium concentrations in Parcel A versus Parcel B. Please note that deviations from the Work Plan are not acceptable without NDEP approval.

A further option that could be considered is to perform background comparisons with subsets of the background dataset. We have not looked at the background dataset to see if this would be helpful, however, we recognize that the background dataset shows differences by geology and depth.

The risks are small at this site, but inclusion of uranium in the screening risk assessment raises issues about secular equilibrium and, hence, whether radium should also be included in the risk assessment. Uranium is now driving the cancer endpoint risk assessment, hence the concern. Without uranium the incremental (screening level) risks are, instead, 1x10-6.

It is also not clear yet that it is appropriate to combine cancer risk for radionuclides with those for non-radionuclides. USEPA has for many years not combined risk assessments for these two chemical groups, and this has not been done previously for risk assessments at the BMI Complex and Common Areas. It would help to have a clearer explanation of what is really expected given the data, and the thoughts described above could help provide greater defensibility for the risk assessment. This issue should be discussed between the NDEP and TRX for development of future Deliverables.

6. General comment, we note that use of maximum concentrations across Parcels A and B causes an unusual form of conservatism in the results. That is, if a similar risk assessment had been performed separately for Parcels A and B, then these screening risk assessments would produce lower risks. The maximum concentration must be less in one

area than in the other, for each chemical in turn. It would have been worth noting this in the uncertainty analysis.

7. General comment, it is not clear that it is appropriate to include lead in the HI calculation. Risk assessments for lead are often separated from the bulk of the risk assessment because of the source of information about lead risks. This would not affect the conclusions, but would raise beta-BHC and hexachlorobenzene to the level of drivers for the low HI presented. This issue should be discussed between TRX and the NDEP for the development of future Deliverables.
8. General comment, analytical methods appear to be insufficient (not always providing low enough concentrations) for several analytes, including: antimony, boron, selenium, niobum, and platinum. In the case of antimony this causes failure of the statistical background comparisons tests, and failure of comparison with SSLs. It would be helpful if this issue could be addressed in future sampling events.
9. General comment, please note that the USEPA no longer supports their Preliminary Remediation Goals. Consequently, some care should be taken to make sure that the most up to date toxicological information is being used in the screening risk assessment.
10. General comment, the calculations performed to assess risk following the scraping of soils to address asbestos include a "duration of construction" of 130 days. The USEPA default is 250 days/year. It is not appropriate to deviate from default values without justification.
11. Page 2, we note that the term "robust" has a specific meaning in statistics that is different than intended here. Since the term is used in the context of the data, it is inappropriate. The word "sufficient" could be used instead. Please address this in the development of future Deliverables.
12. Pages 3 and 4, Data Summary, the NDEP has the following comments:
    a. NDEP does not concur with the use of a DAF of 20 for this Site based on source area size and depth to groundwater.
    b. TRX provided a revised evaluation of Site data versus SSLs with a DAF of 1 and it appears that this modification does not materially change the conclusions regarding the Site. At a DAF of 1 the only compounds that were detected and above background were: cadmium and beta-BHC.
    c. The DAF of 1 for beta-BHC is extremely low and is often exceeded by non-detects as well. This is not a useful metric for the basis of a decision and additional lines of evidence must be examined. There is a known source of beta-BHC in soil and groundwater off-Site and the concentrations of this compound at this Site are considered insignificant relative to upgradient data. If beta-BHC were to leach to groundwater it is unlikely that the contribution from this Site could be detected.
    d. Based upon a review of available groundwater data in the region, cadmium does not appear to be leaching to groundwater and is not a concern at this time. It is also noted that the cadmium concentrations at the Site do not appear to pose any health risks. It is also noted that there are only three locations above the SSL DAF 1 and these concentrations are only marginally elevated (0.59 mg/kg maximum versus an SSL of 0.4 mg/kg). All cadmium detections are well below the SSL DAF 20 (8 mg/kg). If cadmium were to leach to groundwater it is expected that this

matter could be addressed by the existing groundwater treatment system, as necessary.

e. It would have been helpful to provide a site-specific model (e.g.: VLEACH to substantiate these concepts). Future Deliverables must address these issues in more detail.

f. Based upon the future use of this Site (commercial/industrial) it is expected that Site activities will not exacerbate the conditions in the soil.

13. Page 4. 1st full paragraph. This paragraph does not seem quite correct in light of the further information provided for uranium. As things stand, uranium as a radionuclide fails PRG comparisons and background comparisons.
14. Page 4, last paragraph, first sentence. It is not clear that this is accurate. The depth to groundwater is similar across the site, however, groundwater has been impacted across the BMI complex. The relevant issue here appears to be the low concentrations in the soil, in which case there is very limited source material for contamination in groundwater. The depth then helps support that argument, rather than the other way around. Beta-BHC appears as a potential problem across the site when SSL comparisons are made. This could be noted in the discussion (that the SSL for beta-BHC is very low, and hard to achieve anywhere at this site, and explain that SSLs are known to be very conservative). An alternative is to refine the model of transport to groundwater in this area using, for example, VLEACH.
15. Page 5, asbestos paragraph. More explanation is appropriate here, since amphibole was collected prior to remediation. Otherwise, what is stated here contradicts what is stated earlier.
16. Page 7. It appears as if mercury exceeds background as well, and should be carried into the screening risk assessment.
17. Page 7. Also, niobium should be considered to be less than background for the same reasoning that is used for platinum and selenium. In general the decision logic for the background comparisons should be consistent across metals and radionuclides.
18. Page 7. As noted in the general comments, more analysis, explanation and discussion is needed regarding uranium and the other radionuclides. It is not reasonable that uranium exceeds background and thorium and radium do not, given the likelihood of secular equilibrium.
19. Page 7. The meaning of the following sentence is not clear – "Although the comparison statistics indicate that these metals levels at the property are above background, the cumulative probability plots and box-and-whisker plots indicate that for several of these metals, the property and background datasets are most likely representative of a single population". Some more information needs to be provided to justify a conclusion that background comparisons fail statistically, but the property and background distributions come from the same population. For example, small analytical differences could be mentioned, or small differences might be related to geologic or depth differences as seen in the background dataset. And, the conclusion could be tied back to the CSM (that these chemicals are not expected to be found as contaminants).
20. Page 10, Review Criterion 3 and 4. It does not appear that the analytical methods are sufficiently sensitive for some of the metals. For example, the antimony data exhibit about 10 high values that exceed background, exceed SSLs, and otherwise create issues for data analysis.

21. Page 10, Review Criterion 3. In addition, issues have been identified associated with the radionuclide analysis, as described in the general comment above. Different methods were used for thorium and uranium, creating differences in activities for radionuclides that are, arguably, in secular equilibrium. In addition, the work plan called for 10% analysis of radium by alpha-spec methods, which have not been performed.
22. Data adequacy section. The formula used is questionable, despite its publication in USEPA documents. The multiplier of 1.16 is based on some simulations that were performed at PNNL to evaluate the difference in power between parametric tests and non-parametric tests. On average in the simulations the difference was a factor of 1.16. This does not mean that this multiplier is appropriate for the characteristics of the data presented here. Because the multiplier is included, some of the statements made are not strictly correct. The test is not based on averages. It is based on the Wilcoxon Rank Sum test, which is a non-parametric test (although the basis of the formula depends on the standard test for normality, the 1.16 multiplier came from simulations of the non-parametric test). The use of z in this formula is also suspect, since its use implies a known standard deviation. The standard deviation is estimated here, in which case t should be used instead of z, and the formula should be based on a t-test instead of a z-test. Finally, results of 0 are not recommended. The raw results are decimal, and are, presumably rounded. It is not appropriate to round any results down, because at least the number on the raw result is needed to prove data adequacy under the assumptions made. That is, the minimum possible integer response should be 1. None of these comments or observations appears to make any substantial difference to the general conclusion that there are enough data, given the assumptions of the model. However, it would be preferable if the statistical analysis and explanation was tightened. These issues must be addressed prior to submittal of future Deliverables.
23. Data adequacy section. Also, since asbestos was a driver for action at this site, some calculations should be presented to verify that sufficient asbestos data have been collected.
24. Page 15 – determination of EPCs. In the middle of the paragraph a statement is made that UCLs were computed. This does not appear to be the case. In addition, it appears initially as if all analytes were evaluated in this way, whereas, asbestos is not. In fact, the approach taken with asbestos to use analytical sensitivity is much more like using a UCL for the other analytes. A clearer distinction could be made.
25. Uncertainty analysis. One more type of uncertainty, or bias, has been introduced in this risk assessment. That is, the use of maximum concentrations across both parcels. Using maxima is clearly conservative, but it is also conservative to apply the maximum to both parcels simultaneously. This could be discussed.
26. Uncertainty analysis. Some discussion of some of the specific uncertainties should be provided in this section.
27. Page 19, 3rd paragraph. "The risk estimates are based on reasonable maximum exposure scenarios," This statement is not strictly true given the use of maximum concentrations in the screening risk assessment. These are not based on a reasonable exposure scenario, instead they are based on a very conservative exposure scenario.
28. Page 19, risk results. The risk results are different if uranium as a radionuclide is included. Some changes to the text are appropriate.

29. Page 20, Summary. "Based on the results of the 2007 investigation, this data review, and the screening-level health risk assessment, there is no evidence to conclude that the Tronox Parcels A and B property is contaminated. In summary, BEC concludes that an NFAD for the property is warranted". This should be reworded. There is evidence of contamination, it is just that the concentrations levels are not at levels of concern for human health risk for the industrial scenario. Some chemicals exhibit concentrations greater than background, and some organic chemicals have been detected. In addition the RME risk for amphibole is 5x10-6, which is based on zero detects of amphibole fibers, and, apparently, insufficient samples to achieve 1x10-6 risk.
30. Figure 4. The term "clean" should be clarified. That is, the site was cleaned because of asbestos contamination. As currently used, an implication is that the areas are clean for all chemicals.
31. Table 1. Results for the pre- and post-remediation asbestos data are not presented in this table, although the main text suggests that they are.
32. Table 2 seems like it should be broken out into two separate tables. In addition, mercury appears elevated relative to background, however is not presented in Table 2.
33. Electronic mail (e-mail) containing boxplots, the boxplot for tin appears to contain an error in presentation.
34. *Uranium Isotope Data Review for 2007 Tronox A/B Investigation*, we note also that much of the needed discussion/explanation about radionuclide issues at this site are discussed in the uranium technical memorandum. Perhaps some discussion is needed with NDEP, but it does not seem unreasonable to conclude that the radionuclide activities at this site are similar to background. The only case based on the raw data for which background comparisons fail is uranium as a metal, and, whereas the failure is statistically significant, the difference in activities between site uranium and background uranium activities is small. If uranium is included in the risk assessment, then the risk (radionuclide and no-radionuclide summed, per the risk assessment technical memorandum) is 4x10-6. However, it is 1x10-6 if uranium is not included, and it is not clear that it needs to be included. We also note that, whereas, these issues are addressed in the memorandum, the issue concerning gamma-spec analysis for radium is not fully resolved and must be resolved in future investigations.

TRONOX

Susan Crowley
Staff Environmental Specialist

(702) 651-2234
fax (405) 302-4607
susan.crowley@tronox.com

January 15, 2008

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

Dear Mr. Rakvica:

Subject: Tronox LLC ECA Quarterly Report – Fourth Quarter 2007

Pursuant to Section XIII of the Consent Agreement, signed September 5, 1996, between Nevada Division of Environmental Protection (NDEP) and Tronox LLC (Tronox), we submit the following quarterly status report for the Henderson facility's Environmental Conditions Assessment (ECA).

Activities Conducted: 10-01-07 to 12-31-07

Conceptual Site Model:
- CSM remains unchanged until additional data justifies revisions.

Upgradient Investigation Results:
- September 27 – Tronox transmitted their response to NDEP comments (RTC) regarding the Upgradient Investigation report. This RTC included a revised executive summary, revised conclusions, and revised statistical histograms to NDEP. This revised information was used during preparation of the Phase A report, discussed below.

Phase A and B - Source Area Investigation
- November 26 – Teleconference between NDEP and Tronox to discuss the Phase B Work Plan in relation to risk based decision making.
- November 29, 2007 – Tronox and NDEP meet to discuss the Phase A Source Area Investigation Results Report and the scope of work for the Phase B – Source Area Investigation Workplan.
- November 30 – NDEP provides response to Tronox's 9-27-07 Phase A Source Area Investigation Results Report.
- December 17 – NDEP provides approval of Appendix G, DVSR, from Phase A Source Area Investigation Results Report.
- December 19 – Tronox provides draft LOU 20 description to NDEP for comment, with the LOU 20 map and analytical tables to follow.

QAPP and SOPs:
- October - December – NDEP-approved BRC SOPs are in use.

Community Involvement Plan and Fact Sheet
- December 19 - Tronox provides NDEP a copy of the revised Fact Sheet for the Henderson site.

Work Plan to Evaluate Effective Groundwater Capture

- October 3 – NDEP provides comments on the Revised Work Plan to Evaluate Effective Groundwater Capture.
- October 31 – Teleconference between NDEP and Tronox to discuss Environmental Conditions Assessment topics, including the Capture Evaluation Work Plan.
- November 14 – Teleconference between NDEP and Tronox to discuss Work Plan to Evaluate Effective Groundwater Capture.
- November 28 – Tronox submits responses to NDEP comments on Work Plan to Evaluate Effective Groundwater Capture.
- December 11 – NDEP provide approval of the Work Plan to Evaluate Effective Capture, with noted exceptions.
- December 2 to 19 – Tronox initiates work to complete well installations and rehabilitations as part of the Work Plan to Evaluate Effective Groundwater Capture. Work will resume in February 2008.

Other

- October 5 – NDEP provides comments to Tronox's Annual Remedial Performance Report dated August 29, 2007.
- October 15 – Tronox issues 3rd Quarter - 2007 ECA Status Report to NDEP.
- November 7 – Tronox attends NDEP-sponsored meeting to discuss McGinley report on Athens Road Groundwater modeling.
- November 9 – Tronox provides a revised DVSR to NDEP for the Annual Remedial Performance Report analytical in response to NDEP 9-19-07 comments.
- November 26 – NDEP provides approval of revised DVSR for the Annual Remedial Performance Report.
- December 7 – NDEP provides notice to the BMI companies regarding the disparity between datasets using different extraction methods for isotopic uranium analysis.
- December 10 – Tronox provides estimated perchlorate removed from the environment to NDEP.
- December 10 – Tronox provides Northshore Road perchlorate concentration and mass loading to NDEP.

Feel free to call me at (702) 651-2234, if you have any questions. Thank you.

Sincerely,

Susan M. Crowley
Staff Environmental Specialist

Overnight Mail

Cc: See attached document distribution list

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Tronox Document Distribution List Updated: 28-Aug-07

Document Name: ECA Quarterly Update

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Bailey	Keith	Environ Answers	X		
Krish	Ed	ENSR	X		
Bilodeau	Sally	ENSR	X		
Gerry	Dave	ENSR	X		
Lambeth	Jeff	Veolia			
McDaniel	Tom	Veolia			
Cheung	Mary	Veolia			
Guerriero	Joe	AIG	X		
Giroux	Barry	GEI	X		
Stowers	Kirk	Broadbent			
		ERM			
Sahu	Rahnijit	BMI	X		
Crouse	George	Syngenta	X		
Erickson	Lee	Stauffer	X		
Kelly	Joe	Montrose			
Sundberg	Paul	Montrose	X		
Gibson	Jeff	AmPac			
Sylvia	Chris	Pioneer	X		
Wilkinson	Craig	Timet	X		
Mack	Joel	Montrose Counsel			

Shannon Harbour

From: Brian Rakvica
Sent: Tuesday, January 15, 2008 6:41 AM
To: 'Crowley, Susan'
Cc: Shannon Harbour
Subject: RE: NDEP's December 7, 2007 letter regarding radionuclides

Susan,

When can we expect to receive the complete answer?

Thanks,

Brian

From: Crowley, Susan [mailto:Susan.Crowley@tronox.com]
Sent: Monday, January 14, 2008 5:35 PM
To: Brian Rakvica
Cc: Keith Bailey; Gerry, Dave
Subject: RE: NDEP's December 7, 2007 letter regarding radionuclides

Brian,
Please see Tronox's response to your e-mail forwarded earlier today. I had hoped to reach Robert Kennedy, as Keith Bailey is out of the office this week, to give you a more detail re our activities over the last several weeks re the rad extraction issue. Both Keith and Robert have been working to understand how best to address the extraction method discrepancy as it relates to the on-site Phase A sampling. As I'm able to gain more detail from Robert, and Keith when he returns, I'll respond with more detail. Thanks.

TRONOX LLC
Susan Crowley
PO Box 55
Henderson, NV 89009
office 702.651.2234
cell 702.592.7727
efax 405.302.4607
email susan.crowley@tronox.com

It's the set of our sails, not the force of the gales, that determines the way we go.

From: Brian Rakvica [mailto:brakvica@ndep.nv.gov]
Sent: Monday, January 14, 2008 8:13 AM
To: Crowley, Susan; okbailey@flash.net; Gerry, Dave; lee.erickson@astrazeneca.com; george.crouse@syngenta.com; npogoncheff@pesenv.com; Paul Sundberg; jkelly@montrosechemical.com; cmrichards@olin.com
Cc: Ranajit Sahu, Ph.D.; Wilkinson, Craig; Kirk Stowers; victoria@tysoncontracting.com; Jim Najima; BILL FREY; Maria Skorska; Shannon Harbour; Brian Rakvica
Subject: NDEP's December 7, 2007 letter regarding radionuclides
Importance: High

All,

The attached letter required a response by January 11, 2008.

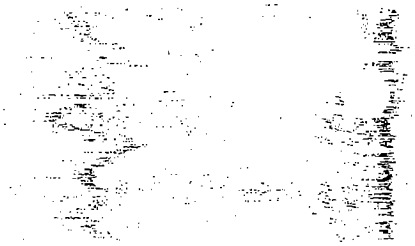
To date, TIMET and BRC have responded.

For the remainder of the Companies, please advise me (in writing) regarding your status before the Close of Business (5:00 PM Pacific) Today (January 14, 2008).

Thanks,

Brian

Brian A. Rakvica, P.E.
Supervisor, Special Projects Branch
Bureau of Corrective Actions
Nevada Division of Environmental Protection
2030 East Flamingo Road, Suite 230
Las Vegas, Nevada 89119
tel: 702-486-2850 x 247
e: brakvica@ndep.nv.gov
fax: 702-486-5733 (please note the new fax number)



TRONOX

Susan Crowley
Staff Environmental Specialist

(702) 651-2234
Fax (405) 302-4607
susan.crowley@tronox.com

January 14, 2008

Mr. Brian Rakvica, P.E.
Nevada Division of Environmental Protection
2030 East Flamingo, Suite 230
Las Vegas, NV 89119-0818

Subject: NDEP Facility ID H-000539 – Response to NDEP December 7, 2007 Letter Regarding Radionuclide Analysis for Uranium

Dear Mr. Rakvica:

Tronox LLC (Tronox) has undertaken an Environmental Conditions Assessment (ECA) as directed by Nevada Division of Environmental Protection (NDEP). Radionuclides are included in the Site Related Chemicals for the site and hence have been analyzed in upgradient / background samples as well as samples collected on-site. As noted in your letter of December 7, 2007 different preparatory methods have been used for isotopic uranium analyses for differing datasets within the complex, presenting a comparability problem from dataset to dataset. Tronox is currently confirming the extraction methods used for the upgradient /background dataset and the Phase A field work dataset, as well evaluating how these extractions have effected the isotopic analyses. This confirmation has not been received from STL.

The two methods indicated in your December 7, 2007 letter, 3a and 3b, are both acceptable to Tronox. Further, it may be necessary to complete both exercises to compare results and ensure past data is usable. Because multiple datasets are effected, our preference is that NDEP complete the exercise in 3a. Tronox will complete the 3b exercise for the Tronox upgradient / background dataset compared to the Tronox Phase A dataset.

Feel free to call either Keith Bailey (405) 216-9213 or me at (702) 651-2234 if you have any questions regarding this correspondence. Thank you.

Sincerely,

Susan Crowley
Staff Environmental Specialist, CEM 1428 exp 3-8-09

Cc: LKBailey
D Gerry

smc/Trx to NDEP - 1-14-08 re Rad Extraction Evaluation.doc

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NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

January 14, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Request for Revised Site-Related Chemical (SRC) List

Dear Ms. Crowley,

The NDEP has reviewed the file for the TRX facility and has noted that the SRC list was last submitted by TRX in March 2006 in an electronic format. It is unclear whether the March 2006 SRC list was updated from the October 2004 version or just modified to include laboratory and analysis information. As stated in a NDEP October 27, 2004 approval letter, the SRC list is considered a living document and should be updated periodically. In the March 2006 SRC list, the table labeled "Alphabetical Site Related Chemicals List" has several discrepancies when compared to the tables labeled "SRC" and "SRC by Method". For example, the Alphabetical Site Related Chemicals List contains broad items (e.g. synthetic detergent, various lab wastes, etc.) while the other two tables contain specific chemicals only. The Alphabetical table should be modified to include more detail about the broad items (perhaps as a supplemental table). Additionally, TRX should also revise the SRC lists as necessary based on data collected from Site investigations completed since the last update. The modified and updated SRC lists should be submitted **by March 14, 2008**. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 x 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Rob Mrowka, Clark County Comprehensive Planning, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Mark Paris, Landwell, 875 West Warm Springs, Henderson, NV 89011
Craig Wilkinson, TIMET, PO Box 2128, Henderson, Nevada, 89009-7003
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nick Pogoncheff, PES Environmental, 1682 Novato Blvd., Suite100, Novato, CA 94947
Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

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January 14, 2008

Ms. Susan Crowley
Tronox LLC
PO Box 55
Henderson, NV 89009

Mr. Curt Richards
Olin Corporation
3855 North Ocoee Street, Suite 200
Cleveland, TN 37312

Mr. Joe Kelly
Montrose Chemical Corp of CA
600 Ericksen Ave NE, Suite 380
Bainbridge Island, WA 98110

Mr. Brian Spiller
Stauffer Management Co LLC
PO Box 15437
Wilmington, DE 19850-5437

Mr. Craig Wilkinson
Titanium Metals Corporation
PO Box 2128
Henderson, NV 89009

Re. **BMI Plant Sites and Common Areas Projects, Henderson, Nevada**
Request for Revised Community Involvement Plans

Dear Sirs and Madam:

NDEP received a request from Basic Remediation Company (BRC) on January 11, 2008 to delete the requirement for a physical document repository from their *Community Involvement Plan* (CIP). Due to the alternate methods that BRC has taken to address outreach concerns, the NDEP approved this request via a letter dated January 14, 2008.

For your information, the alternate methods that BRC has employed include the following:

- Annual distribution of a fact sheet to a geographic area agreed to by NDEP and BRC;
- Quarterly Restoration Advisory Committee meetings;
- Development of a website which makes all documents available to the public;
- Construction and maintenance of a public information kiosk;
- Maintenance of a physical copy of all documents at the BRC offices, these copies are available for public review.

NDEP has previously noted that the existing document repository at the City of Henderson Public Library on Water Street is inadequate. It was expected that the remainder of the BMI Companies might participate in the "to be constructed" BRC document repository. Now that this repository will not be constructed, the remainder of the BMI Companies need to develop a plan to address this issue.

NDEP is amenable to a variety of solutions to address this problem. These solutions can be implemented on a company-specific basis or as a group effort. Examples follow (but are not limited to):

- Adoption of an approach consistent with BRC's approach;
- Rectifying the deficiencies at the existing document repository;
- Construction and operation of a new document repository.

It is requested that each Company propose a response to the issues outlined above **by February 15, 2008.** Please contact me with any questions (tel: 702-486-2850 x247; e-mail: brakvica@ndep.nv.gov).

Sincerely,

Brian A Rakvica, P.E.
Supervisor, Special Projects Branch
Bureau of Corrective Actions

BAR:s

CC: Jim Najima, NDEP, BCA, Carson City
Dante Pistone. NDEP, Carson City
Marysia Skorska, NDEP, BCA, Las Vegas
Shannon Harbour, NDEP, BCA, Las Vegas
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
Rob Mrowka, Clark County Comprehensive Planning, PO Box 551741, Las Vegas, NV, 89155-1741
Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
Rick Kellogg, BRC, 875 West Warm Springs, Henderson, NV 89011
Kirk Stowers, Broadbent & Associates, 8 West Pacific Avenue, Henderson, Nevada 89015
George Crouse, Syngenta Crop Protection, Inc., 410 Swing Road, Greensboro, NC 27409
Nicholas Pogoncheff, PES Environmental, Inc., 1682 Novato Blvd., Suite 100, Novato, CA 94947-7021
Lee Erickson, Stauffer Management Company LLC, P.O. Box 18890 Golden, CO 80402
Keith Bailey, Environmental Answers, 3229 Persimmon Creek Drive, Edmond, OK 73013
Michael Bellotti, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Jeff Gibson, AMPAC, 3770 Howard Hughes Parkway, Suite 300, Las Vegas, Nevada 89109
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110
Jon Erskine, Northgate Environmental Management, Inc., 300 Frank H. Ogawa Plaza, Suite 510, Oakland, CA 94612
Deni Chambers, Northgate Environmental Management, Inc., 300 Frank H. Ogawa Plaza, Suite 510, Oakland, CA 94612
Robert Infelise, Cox Castle Nicholson, 555 California Street, 10th Floor, San Francisco, CA 94104-1513
Michael Ford, Bryan Cave, One Renaissance Square, Two North Central Avenue, Suite 2200, Phoenix, AZ 85004

Brian Rakvica

From: Crowley, Susan [Susan.Crowley@tronox.com]
Sent: Monday, January 14, 2008 5:35 PM
To: Brian Rakvica
Cc: Keith Bailey; Gerry, Dave
Subject: RE: NDEP's December 7, 2007 letter regarding radionuclides
Attachments: Trx to NDEP 1-14-08 - re Rad Extraction Evaluation.pdf

Brian,
Please see Tronox's response to your e-mail forwarded earlier today. I had hoped to reach Robert Kennedy, as Keith Bailey is out of the office this week, to give you a more detail re our activities over the last several weeks re the rad extraction issue. Both Keith and Robert have been working to understand how best to address the extraction method discrepancy as it relates to the on-site Phase A sampling. As I'm able to gain more detail from Robert, and Keith when he returns, I'll respond with more detail. Thanks.

TRONOX LLC
Susan Crowley
PO Box 55
Henderson, NV 89009
office 702.651.2234
cell 702.592.7727
efax 405.302.4607
email susan.crowley@tronox.com

It's the set of our sails, not the force of the gales, that determines the way we go.

From: Brian Rakvica [mailto:brakvica@ndep.nv.gov]
Sent: Monday, January 14, 2008 8:13 AM
To: Crowley, Susan; okbailey@flash.net; Gerry, Dave; lee.erickson@astrazeneca.com; george.crouse@syngenta.com; npogoncheff@pesenv.com; Paul Sundberg; jkelly@montrosechemical.com; cmrichards@olin.com
Cc: Ranajit Sahu, Ph.D.; Wilkinson, Craig; Kirk Stowers; victoria@tysoncontracting.com; Jim Najima; BILL FREY; Maria Skorska; Shannon Harbour; Brian Rakvica
Subject: NDEP's December 7, 2007 letter regarding radionuclides
Importance: High

All,

The attached letter required a response by January 11, 2008.

To date, TIMET and BRC have responded.

For the remainder of the Companies, please advise me (in writing) regarding your status before the Close of Business (5:00 PM Pacific) Today (January 14, 2008).

Thanks,

Brian

Brian A. Rakvica, P.E.
Supervisor, Special Projects Branch

Bureau of Corrective Actions
Nevada Division of Environmental Protection
2030 East Flamingo Road, Suite 230
Las Vegas, Nevada 89119
tel: 702-486-2850 x 247
e: brakvica@ndep.nv.gov
fax: 702-486-5733 (please note the new fax number)

TRONOX

Susan Crowley
Staff Environmental Specialist

(702) 651-2234
Fax (405) 302-4607
susan.crowley@tronox.com

January 14, 2008

Mr. Brian Rakvica, P.E.
Nevada Division of Environmental Protection
2030 East Flamingo, Suite 230
Las Vegas, NV 89119-0818

Subject: NDEP Facility ID H-000539 – Response to NDEP December 7, 2007 Letter Regarding Radionuclide Analysis for Uranium

Dear Mr. Rakvica:

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The two methods indicated in your December 7, 2007 letter, 3a and 3b, are both acceptable to Tronox. Further, it may be necessary to complete both exercises to compare results and ensure past data is usable. Because multiple datasets are effected, our preference is that NDEP complete the exercise in 3a. Tronox will complete the 3b exercise for the Tronox upgradient / background dataset compared to the Tronox Phase A dataset.

Feel free to call either Keith Bailey (405) 216-9213 or me at (702) 651-2234 if you have any questions regarding this correspondence. Thank you.

Sincerely,

Susan Crowley
Staff Environmental Specialist, CEM 1428 exp 3-8-09

Cc: LKBailey
D Gerry

smc/Trx to NDEP - 1-14-08 re Rad Extraction Evaluation.doc

Shannon Harbour

From: Crowley, Susan [Susan.Crowley@tronox.com]
Sent: Thursday, January 10, 2008 11:38 AM
To: Shannon Harbour
Cc: Brian Rakvica; Keith Bailey; Bilodeau, Sally
Subject: LOU 20 Information
Attachments: lou-20 map rev1.pdf; LOU 20 soil_gw_tables rev1.pdf; LOU 20 Summary Table 12-17-07.doc

Shannon,
Please find attached a set of files which give you a picture of LOU 20 – more specifically which provided the structure for how information will be organized in the Phase B Work Plan revision - on an LOU-by-LOU basis.

The Word document (Summary of Available Data) reflects the organization of information with the Adobe map and Adobe tables supporting the Summary. The information provided in the Adobe tables has been drawn from a variety of documents and includes both groundwater and soil data. We will continue to refine how the data tables themselves are presented (so that they cleanly support the Summary of Data document) but we were hoping for NDEP's thoughts on the overall presentation of the LOU 20 package. Please provide us your thoughts?

TRONOX LLC
Susan Crowley
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It's the set of our sails, not the force of the gales, that determines the way we go.

Summary of Available Data for LOU 20 in EA08

Tronox Facility – Henderson, Nevada

Name of LOU:
Site Investigation Area:

Pond C-1 and Associated Piping

- Size: Approximately 175 ft by 275 ft; 1.5 acres
- Location: north end of EA08.

Description:

- C-1 Pond period of operation: October 1974 through October 1994.
- Pond received liquid waste products from Unit 4, Unit 5, and Steam Plant.
- Pond floor covered with 60 mil PVC liner and sidewalls lined with butyl rubber. Lining was removed about 1996.
- Minor excavation of soils occurred during the liner removal.
- Process waste streams - metal wastes and various sulfates & phosphates discharged into the C-1 Pond.
- No wastes from production processes that contained fuels, solvents, PCBs, pesticides, were placed into pond.
- Associated piping system: above-ground plastic piping aligned along 9th Street from Units 4 & 5 to pond, and above-ground piping running from steam plant across 9th Street to pond.
- Pipe system handled low pressure flow with no vents or sample points.
- Pipeline outfalls were in the southeast and southwest corners of Pond C-1.
- Process waste flow was diverted to LOU 21 (Pond Mn-1) if Pond C-1 neared maximum capacity.

Known or Potential Chemical Classes:

- Metals
- Sulfates
- Phosphates
- Paraffin

Process Waste Stream	Known or Potential Chemicals Associated with LOU 20
Steam Plant boiler blow-down	metal wastes – more specific?
boiler plant wash-down	phosphates sulfates
manganese dioxide cathode wash	manganese dioxide Anolyte – ? on SRC list – detergent?
boron neutralization solutions	boron boron trichloride
hot process water softener solutions - from steam production and boron & manganese dioxide production processes.	calcium sulfates phosphates

Summary of Available Data for LOU 20 in EA08
Tronox Facility – Henderson, Nevada

Known or Potential Release Mechanisms:	• Surface releases (Kleinfelder 1993 report: "possible releases from around the edges of the pond could have occurred."), it was also noted that salt concentrations in groundwater beneath this area increased in the early 1990s; • leaching to subsurface – potentially to groundwater (no known releases documented).
Results of Historical Sampling:	• One historical boring (BDB05) was drilled approximately 150 feet west of the pond (CSM – ENSR, 2005). However, this boring was located to evaluate the Beta-Ditch (LOU 5) and not the C-1 pond (LOU 20). This boring is considered too far from LOU 20 to be applicable. • Soil samples were collected following the liner removal to confirm the pond solids were all removed from the area. The location of these results is currently being researched and will be transmitted when found. • Upgradient, cross-gradient, and downgradient monitoring wells (M35, M19, and M39, respectively) are routinely tested for Cr^{+6}, Mn, and perchlorate as part of groundwater monitoring program.
Did Historical Samples Address Potential Release?	No
Summary of Phase A SAI:	Soil: None specifically conducted for this LOU. Closest boring (SA17) is 60 ft to the north (downgradient) within the Beta Ditch (LOU 5) and was not specifically designed to evaluate LOU 20, although potential subsurface releases from the C-1 Pond (if any) might be noticeable in SA17 soil results. Groundwater: None specifically conducted for this LOU. M39 is the closest well sampled, 250 feet to the north (downgradient).
Are Phase A Sample Locations in "Worst Case" Areas?	No
Is Phase B Investigation Recommended?	Yes
Proposed Phase B Soil Investigation/Rationale:	• Boring SA62 located in Pond C-1 at low point of Pond Floor to evaluate for potential subsurface impacts from possible liner leaks. • Boring SA71 located adjacent to the north and downgradient of Pond C-1 to evaluate for impacts from potential over-topping of pond. • Boring SA61 located near southeast corner of the Pond C-1 near pipeline discharge point to evaluate potential

impacts from overspills and surface releases.

- SA140 located near the southwest corner of Pond C-1 pipeline discharge point to evaluate for potential impacts from overspills and surface releases.
- SA107 is located near the associated pipeline to C-1 Pond to evaluate for potential pipeline leaks.
- Note: Drill rig access is limited in the area between LOU 20 and LOU 21. Therefore no borings are proposed in this area.

Proposed Chemical Classes for Phase B Investigation for soils:

LOU Specific Analytes:
- Metals (Phase A list);
- Wet Chemistry

Site-wide Analytes:
- Perchlorate
- Ammonia

Proposed Phase B Groundwater Investigation/Rationale:

- Well M35 is located upgradient to Pond C-1.
- Well M39 is located downgradient to Pond C-1.
- Well M19 is located cross-gradient and only 50 feet from Pond C-1.
- Wells M31A, M34, and M52 are located close to the alignment of associated piping that runs from the Unit 4/Unit 5 process area to the C-1 Pond.
- Well M02A is located near the alignment of associated piping that runs from the Steam Plant to the C-1 Pond.

Proposed Phase B Constituents List for Groundwater:

LOU Specific:
- Metals (Phase A list)
- Wet Chemistry

what is Analyte

Site-wide Analyses:
- Perchlorate
- Ammonia
- VOCs
- Radionuclides
- Organochlorine Pesticides

need to incorporate phase A results

Goal of Closure

- Unrestricted Closure, for commercial/industrial future use

J:\TronoxGIS\mxd\402-SourceAreaPhaseA\phbwp\lou-20.mxd

SHEET NUMBER:	FIGURE NUMBER:
X	X

SAMPLE LOCATIONS FOR LOU #20, C-1 POND AND ASSOCIATED PIPING
PHASE B SOURCE AREA INVESTIGATION
TRONOX FACILITY
HENDERSON, NEVADA

SCALE:	DATE:	PROJECT NUMBER:
AS SHOWN	1/3/2008	04020-023-430

ENSR | AECOM

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CAMARILLO, CALIFORNIA 93012
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DESIGNED BY:	REVISIONS:			
X	NO:	DESCRIPTION:	DATE:	BY:
DRAWN BY:				
X				
CHECKED BY:				
X				
APPROVED BY:				
X				

LOU MAP

Soil and Groundwater Characterization Data

LOU 20 Table 1
Soil and Groundwater Characterization Data - Wet Chemistry
Tronox Facility - Henderson, Nevada

Soil Characterization Data

	C-1 Pond and Associated Piping						
Sampling Program	SI	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring No.	BD-B05	SA17	SA17	SA17	SA17	SA17	
Sample ID	BD-B05	SA17-0.5	SA17-0.5D	SA17-10	SA17-20	SA17-25	
Sample Depth (ft)	1	0.5	0.5	10	20	25	
Sample Date	4/12/1996	11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006	
Wet Chemistry Parameter							Units
Percent moisture		14.7	13.4	12.1	5.8	19.0	percent
Alkalinity (as CaCO3)		160	109	216	217	389	mg/kg
Bicarbonate		524	499	563	439	1260	mg/kg
Total Alkalinity		685	608	778	656	1640	mg/kg
Ammonia (as N)		5.9 UJ	5.8 UJ	5.7 UJ	5.3 UJ	6.2 UJ	mg/kg
Cyanide		R	R	R	R	R	mg/kg
MBAS		2.4 U	2.4 J	2.2 U	2.1 U	2.6 U	mg/kg
pH (solid)	8.1	9.6	9.6	9.7	9.8	8.5	none
Bromide		2.9 U	2.9 U	2.8 U	2.7 U	1.5 J	mg/kg
Chlorate	0.17 B	5.9 UJ	5.8 U	5.7 U	5.3 U	82.9	mg/kg
Chloride		8.7	8.1	5.2	1.9 J	155	mg/kg
Nitrate (as N)		0.48 J+	0.77 J+	0.96 J+	0.21 U	2.5 J+	mg/kg
Nitrite		0.95	0.25	0.83	0.31	0.37	mg/kg
ortho-Phosphate		10.6 J	4.5 J	5.7 U	5.3 U	6.2 U	mg/kg
Sulfate		28.8	24.9	44.4	152	685	mg/kg
Total Organic Carbon		3900	4900	3500	2000	13100	mg/kg

Groundwater Characterization Data

	C-1 Pond and Associated Piping			
Sampling Program	Ph A	Ph A	Ph A	
Well ID	M2A	M31A	M39	
Sample ID	M2A	M31A	M39	
Sample Date	12/04/2006	12/06/2006	12/05/2006	
Wet Chemistry Parameters				Units
Total Dissolved Solids	12700	9720	7270	mg/L
Total Suspended Solids	36.0 J	25.0 J	56.0 J	mg/L
Alkalinity (as CaCO3)	5.0 U	5.0 U	5.0 U	mg/L
Bicarbonate	92.0	108	137	mg/L
Total Alkalinity	92.0	108	137	mg/L
Ammonia (as N)	50.0 U	1270	50.0 U	ug/L
MBAS	0.63	1.8 J	1.2 J	mg/L
Cyanide	R	R	R	ug/L
pH (liquid)	7.2 J	7.1 J	7.1 J	none
Specific Conductance	2450 J+	2630 J+	2360 J+	umhos/cm
Bromide	0.54	25.0 U	2.7	mg/L
Chlorate	4600	3320	1620	mg/L
Chloride	1800	1130	1280	mg/L
Nitrate (as N)	13.6	17.6	12.1	mg/L
Nitrite	22.5	10.0 U	10.0 U	mg/L
ortho-Phosphate	500 U	500 U	5.0 U	mg/L
Sulfate	1250	1480	2720	mg/L
Total Organic Carbon	50.0 U	50.0 U	50.0 U	mg/L

LOU 20 Table 2
Soil Characterization Data - Dioxins and Dibenzofurans
Tronox Facility - Henderson, Nevada

	C-1 Pond and Associated Piping		
Sampling Program	Ph A	Ph A	
Sample ID	SA17-0.5	SA17-0.5D	
Sample Depth (ft)	0.5	0.5	
Sample Date	11/15/2006	11/15/2006	
Chemical Name			Units
Dioxin 8290 SCREEN Total TEQ - ENSR Calculated (a) ng/kg	13.64		ng/kg
Dioxin SW 846 8290 Total TEQ - ENSR Calculated (a) ng/kg			ng/kg
Dioxin 8290 SCREEN Total TEQ - ENSR Calculated (b) ng/kg	13.66		ng/kg
Dioxin SW 846 8290 Total TEQ - ENSR Calculated (b) ng/kg			ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran	1.752	3.563	ng/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-Dioxin	0.279	0.845	ng/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran	0.818	1.760	ng/kg
1,2,3,4,7,8-Hexachlorodibenzofuran	1.703	3.450	ng/kg
1,2,3,4,7,8-Hexachlorodibenzo-p-Dioxin	0.062 U	0.099 U	ng/kg
1,2,3,6,7,8-Hexachlorodibenzofuran	0.773	1.330	ng/kg
1,2,3,6,7,8-Hexachlorodibenzo-p-Dioxin	0.049 U	0.160	ng/kg
1,2,3,7,8,9-Hexachlorodibenzofuran	0.700	1.218	ng/kg
1,2,3,7,8,9-Hexachlorodibenzo-p-Dioxin	0.100	0.163	ng/kg
1,2,3,7,8-Pentachlorodibenzofuran	6.375	11.863	ng/kg
1,2,3,7,8-Pentachlorodibenzo-p-Dioxin	0.042 U	0.220	ng/kg
2,3,4,6,7,8-Hexachlorodibenzofuran	0.440	1.355	ng/kg
2,3,4,7,8-Pentachlorodibenzofuran	3.691	6.606	ng/kg
2,3,7,8-Tetrachlorodibenzofuran	74.100	144.703	ng/kg
2,3,7,8-Tetrachlorodibenzo-p-Dioxin	0.121	0.194	ng/kg
Octachlorodibenzofuran	6.847	14.903	ng/kg
Octachlorodibenzo-p-Dioxin	2.193	5.440	ng/kg
Octachlorodibenzo-p-Dioxin			ng/kg
Tetrachlorinated Dibenzofurans, (Total)			ng/kg
Total HpCDD			ng/kg
Total HpCDF			ng/kg
Total HxCDD			ng/kg
Total HxCDF			ng/kg
Total PeCDD			ng/kg
Total PeCDF			ng/kg
Total TCDD			ng/kg

Notes:
(a) Calculated assuming 0 for non-detected congeners and 2006 toxic equivalency factors (TEFs).

(b) 7

LOU 20 Table 3
Soil Characterization Data - Metals
Tronox Facility - Henderson, Nevada

		C-1 Pond and Associated Piping					
Sampling Program	SI	Ph A	Ph A	Ph A	Ph A	Ph A	
Sample ID	BD-B05	SA17-0.5	SA17-0.5D	SA17-10	SA17-20	SA17-25	
Sample Depth (ft)	1	0.5	0.5	10	20	25	
Sample Date	4/12/1996	11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006	
Metals							Units
Aluminum		13300	14300	8000	4050	5120	mg/kg
Antimony		0.27 J-	0.25 J-	0.21 J-	0.094 J-	0.16 J-	mg/kg
Arsenic	13 B	22.1	37.0	4.2	13.0	13.7	mg/kg
Barium	300 B	142 J	185 J	202 J	136 J	52.7 J	mg/kg
Beryllium		0.93	0.88	0.65	0.30	0.35 J	mg/kg
Boron		8.5 UJ	8.9 UJ	6.9 UJ	6.8 UJ	24.8 UJ	mg/kg
Cadmium		0.089	0.10	0.24	0.091	0.066	mg/kg
Calcium		7470	11600	16700	25900	47300	mg/kg
Chromium (Total)	490	44.6 J-	81.9 J-	23.2 J-	12.5 J-	22.2 J-	mg/kg
Chromium-hexavalent		0.58	1.2	0.16 J	0.39	0.19 J	mg/kg
Cobalt		12.2 J-	11.8 J-	7.1 J-	4.6 J-	2.7 J-	mg/kg
Copper		223 J	175 J	13.6 J	8.3 J	6.7 J	mg/kg
Iron		12600	11500	13300	7190	6130	mg/kg
Lead	240 J	28.6	36.3	8.6	5.1	4.3	mg/kg
Magnesium		11100 J-	10300 J-	7970 J-	5300 J-	36800 J-	mg/kg
Manganese		349	373	325	171	122	mg/kg
Molybdenum		1.1 J	2.4	0.46 J	0.44 J	0.29 J	mg/kg
Nickel		19.3 J-	17.8 J-	15.0 J-	10.7 J-	7.2 J-	mg/kg
Platinum		0.029 J	0.027 J	0.022 J	0.011 U	0.012 U	mg/kg
Potassium		2270	2750	1680	1050	1710	mg/kg
Selenium		0.13 UJ	0.13 UJ	0.12 UJ	0.11 UJ	0.13 UJ	mg/kg
Silver		0.15 J	0.14 J	0.48	0.097 J	0.20 J	mg/kg
Sodium		1420 J-	1860 J-	1090 J-	858 J-	978 J-	mg/kg
Strontium		112 J	165 J	110 J	137 J	220 J	mg/kg
Thallium		0.11 U	0.095 U	0.38 U	0.074 U	0.086 U	mg/kg
Tin		0.52	0.48	0.56	0.32	0.30	mg/kg
Titanium		480	438	638	298	347	mg/kg
Tungsten		9.1 J-	13.9 J-	1.8 J-	2.5 J-	0.64 UJ	mg/kg
Uranium		1.8	2.0	1.6	2.6	3.7	mg/kg
Vanadium	32 J	31.8 J-	30.5 J-	37.9 J-	31.9 J-	26.7 J-	mg/kg
Zinc		206 J-	152 J-	28.9 J-	17.0 J-	26.1 UJ	mg/kg
Mercury	0.53 J	0.0078 UJ	0.0077 UJ	0.0076 UJ	0.0071 UJ	0.0083 UJ	mg/kg

SI
PhA
J
U
B

LOU 20 Table 4
Groundwater Characterization Data - Metals
Tronox Facility - Henderson, Nevada

	C-1 Pond and Associated Piping				
Sampling Program	Ph A	Ph A	Ph A		
Well ID:	M02A	M31A	M39		
Sample ID	M02A-Z	M31A-Z	M39-Z	M39-ZD	
Sample Depth (ft)					
Sample Date	05/09/2007	05/09/2007	05/10/2007	05/10/2007	
Metals					Unit
Aluminum	393 U	760 J	393 U	393 U	ug/L
Antimony	25.0 U	25.0 U	25.0 U	25.0 U	ug/L
Arsenic	100 U	127 J	103 J	100 U	ug/L
Barium	46.5 J	42.5 J	17.0 J	17.6 J	ug/L
Beryllium	4.4 U	4.4 U	4.4 U	4.4 U	ug/L
Boron	3210	6950	10800	10900	ug/L
Cadmium	2.9 U	2.9 U	2.9 U	2.9 U	ug/L
Calcium	713000	617000	620000	633000	ug/L
Chromium (Total)	18100	12300	4580	4700	ug/L
Chromium-hexavalent	18700 J	12900 J	4720 J	4640	ug/L
Cobalt	15.7 U	15.7 U	15.7 U	15.7 U	ug/L
Copper	12.5 U	12.5 U	12.5 U	12.5 U	ug/L
Iron	470 UJ	470 UJ	R	R	ug/L
Lead	24.6 U	24.6 U	24.6 U	24.6 U	ug/L
Magnesium	386000	275000	408000	414000	ug/L
Manganese	17.1 U	127 U	17.1 U	17.1 U	ug/L
Molybdenum	25.0 U	25.0 U	25.0 U	25.0 U	ug/L
Nickel	25.8 U	25.8 U	25.8 U	25.8 U	ug/L
Platinum	5.0 U	5.0 U	5.0 U	5.0 U	ug/L
Potassium	34100	23600	24200	24700	ug/L
Selenium	50.0 U	50.0 U	50.0 U	50.0 U	ug/L
Silver	10.1 U	10.1 U	10.1 U	10.1 U	ug/L
Sodium	1620000	1650000	864000	866000	ug/L
Strontium	18600	14800	14500	14700	ug/L
Thallium	16.0 U	16.0 U	16.0 U	16.0 U	ug/L
Tin	10.0 U	10.0 U	10.0 U	10.0 U	ug/L
Titanium	19.6 U	33.6 J	19.6 U	19.6 U	ug/L
Tungsten	25.0 U	25.0 U	25.0 U	25.0 U	ug/L
Uranium	19.0 J	28.9 J	106	106	ug/L
Vanadium	80.0 U	80.0 U	80.0 UJ	80.0 UJ	ug/L
Zinc	146 J	97.5 J	50.0 U	50.0 U	ug/L
Mercury	0.13 J+	0.11 J+	0.13 U	0.14 U	ug/L

LOU 20 Table 5
Groundwater Characterization Data - Routine Monitoring
Tronox LLC, Henderson, Nevada

Well ID	Date	Depth to water	Perchlorate	Qual	Total Chromium	Qual	TDS	Qual	Nitrate (as N)	Qual	Chlorate	Qual
units		feet	mg/l		mg/l		mg/l		mg/l		mg/l	
M-19	2/2/2006	31.67	1	d	0.2	d						
M-19	5/3/2006	33.14	0.96	d	0.19	d	2950					
M-19	8/2/2006	34.11	0.91	d	0.22	d	2650					
M-19	11/1/2006	35.72	1.83	d	0.32	d	3670					
M-19	1/31/2007	34.92	1.9		0.29		3740					
M-19	5/2/2007	34.51	1.91		0.34		3720					
M-19	8/1/2007	34.93	2.49		0.38		4820					
M-2A	5/5/2006	---	430	d	18	d	12100					
M-2A	5/4/2007	---	362		17		10200					
M-31A	2/2/2006	46.07	1800	d	13	d						
M-31A	5/3/2006	46.41	1700	d	13	d	8030					
M-31A	8/2/2006	46.56	1410	d	12	d	6300					
M-31A	11/1/2006	47.03	1750	d	13	d	9780					
M-31A	1/31/2007	46.43	1490		13		9710					
M-31A	5/2/2007	46.05	1400		13		8750					
M-31A	8/1/2007	46.84	1710		11		9330					
M-34	2/2/2006	---	1800	d	17	d						
M-34	5/3/2006	---	1700	d	18	d	8960					
M-34	5/7/2006	40.86	1950	d			14500					
M-34	8/2/2006	---	1550	d	18	d	7430					
M-34	11/1/2006	---	1910	d	18	d	10900					
M-34	1/31/2007	---	1860		17		12000					
M-34	5/2/2007	37.52	1670		17		9850					
M-34	8/1/2007	---	2130		16		11900					
M-35	2/2/2006	34.73	810	d	9.4	d						
M-35	5/3/2006	35.02	550	d	9.8	d	6090					
M-35	5/7/2006	38.68	945	d			9610					
M-35	5/7/2006	38.68	777	d			9670					
M-35	8/2/2006	35.54	694	d	11	d	6240					
M-35	11/1/2006	35.67	785	d	12	d	9070					
M-35	1/31/2007	35.74	650		12		9530					
M-35	5/2/2007	35.52	408		6.2		6090					
M-35	8/1/2007	35.97	407		9.4		7280					

Source:
November 2007 Quarterly Performance Report
Remediation Systems

LOU 20 Table 5
Groundwater Characterization Data - Routine Monitoring
Tronox LLC, Henderson, Nevada

Well ID	Date	Depth to water	Perchlorate	Qual	Total Chromium	Qual	TDS	Qual	Nitrate (as N)	Qual	Chlorate	Qual
units		feet	mg/l		mg/l		mg/l		mg/l		mg/l	
M-39	2/2/2006	30.42	380	d	4	d						
M-39	5/3/2006	30.36	320	d	3.7	d	4300		2.6	d	1100	d
M-39	8/2/2006	31.20	320	d	4.3	d	4560		3.5	d	1220	d
M-39	11/1/2006	31.53	400	d	4.5	d	6310		10.8	d	1370	d
M-39	1/31/2007	31.78	390		4.5		6730					
M-39	5/2/2007	31.67	403		4.7		6990		10.3		1380	
M-39	8/1/2007	32.10	489		4.6		7280					
M-52	2/2/2006	---	1200	d	10	d						
M-52	5/4/2006	---	1100	d	9.6	d	6760					
M-52	11/2/2006	---	1020	d	9.1	d	7190					
M-52	1/31/2007	---	946		9		8600					
M-52	5/2/2007	---	720		7.9		7450					

Explanation
< = 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
u = the analyte was not detected above the sample reporting limit
ud = the sample was dilluted and was not detected above the sample reporting limit

Validation Qualifiers:
J = the result is an estimated quantity
J- = the result is an estimated quantity and the result may be biased low
U = the analyte was analyzed for, but was not detected above the sample reporting limit
UJ = the sample was not detected above the sample reporting limit and the reporting limit is approximate

Source:
November 2007 Quarterly Performance Report
Remediation Systems

LOU 20 Table 6
Groundwater Characterization Data
Tronox LLC Facility - Henderson, Nevada

Sampling Program: Routine Monitoring

Well ID	Sample Date	Total Depth (ft bgs)	Depth to Water (ft TOC)	pH (Lab)	EC (Lab, µmho/cm)	Cr-total (ppm)	Mn (ppm)	ClO_4 (ppm)
M-19	5/6/99	39.54	33.03	7.14	12000	0.62	0.70	13.0
M-19	5/5/00	39.54	34.50	7.62	11300	0.71	0.34	7.360
M-19	5/4/01	39.54	35.06	7.38	10700	0.88	0.08	0.056
M-19	4/29/02	39.54	34.02	7.3	8360	0.45	0.17	6.8
M-35	5/6/99	42.80	34.27	7.13	9720	4.30	0.85	1000
M-35	5/5/00	42.80	35.22	7.31	8970	3.40	1.20	820
M-35	5/4/01	42.80	25.40	7.28	9970	4.60	2.40	1000
M-35	3/11/02	42.80	--	--	--	--	0.07	--
M-35	4/29/02	42.80	34.27	7.2	9370	6.8	0.14	990
M-35	9/9/02	42.80	--	--	--	--	0.22	--
M-35	12/9/02	42.80	35.40	7.2	9280	6.8	0.061	590
M-35	4/29/03	42.80	--	--	--	--	ND<0.15	--
M-39	5/6/99	42.12	30.59	7.45	8080	2.40	0.44	140
M-39	5/5/00	42.12	31.70	7.54	7680	2.80	1.60	190
M-39	5/2/01	42.12	32.10	7.34	7620	3.30	1.80	280
M-39	3/11/02	42.12	--	--	--	--	0.06	--
M-39	4/29/02	42.12	20.60	7.3	7700	13	ND <0.15	450
M-39	9/9/02	42.12	--	--	--	--	ND <0.15	--
M-39	12/10/02	42.12	--	--	--	--	ND <0.15	--
M-39	5/7/03	42.12	--	--	--	--	ND<0.15	--

Notes:

ft bgs = feet below ground surface
ppm = parts per million
µmho/cm = micromhos per centimeter
ft TOC = feet from Top of Casing
EC = Electrical Conductivity
Cr-total: Total Chromium
Mn = Manganese
ClO_4: Perchlorate
ND<0.15 = Not determined, not detected above the designated detection limit.
-- = Either no data was obtained or was not analyzed for the respective constituent.

LOU 20 Table 7
Soil and Groundwater Characterization Data - Organochlorine Pesticides (OCP)
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data

		C-1 Pond & Assoc. Piping		
Sampling Program	SI	Ph A	Ph A	
Boring No.	BD-B05	SA17	SA17	
Sample ID	BD-B05	SA17-0.5	SA17-0.5D	
Sample Depth (ft)	1	0.5	0.5	
Sample Date	4/12/1996	11/15/2006	11/15/2006	
Organochlorine Pesticides				Unit
4,4'-DDD		0.0020 U	0.0020 U	mg/kg
4,4'-DDE	**0.16**	**0.014**	**0.015**	mg/kg
4,4'-DDT	**0.53**	**0.0068**	**0.0083**	mg/kg
Aldrin		0.0020 U	0.0020 U	mg/kg
Alpha-BHC	ND	0.0020 U	0.0020 U	mg/kg
Alpha-chlordane		0.0020 U	0.0020 U	mg/kg
Beta-BHC	ND	0.0020 U	**0.0026**	mg/kg
Delta-BHC		0.0020 U	0.0020 U	mg/kg
Dieldrin		0.0020 U	0.0020 U	mg/kg
Endosulfan I		0.0020 U	0.0020 U	mg/kg
Endosulfan II		0.0020 U	0.0020 U	mg/kg
Endosulfan Sulfate		0.0020 U	0.0020 U	mg/kg
Endrin		0.0020 U	0.0020 U	mg/kg
Endrin Aldehyde		0.0020 U	0.0020 U	mg/kg
Endrin Ketone		0.0020 U	0.0020 U	mg/kg
Gamma-BHC (Lindane)		0.0020 U	0.0020 U	mg/kg
Gamma-Chlordane		0.0020 U	0.0020 U	mg/kg
Heptachlor		0.0020 U	0.0020 U	mg/kg
Heptachlor Epoxide		0.0020 U	0.0020 U	mg/kg
Methoxychlor		**0.045 J**	**0.055 J**	mg/kg
Tech-Chlordane		0.012 U	0.012 U	mg/kg
Toxaphene		0.059 U	0.058 U	mg/kg

LOU 20 Table 7

~~Soil and~~ Groundwater Characterization Data - Organochlorine Pesticides (OCP)

Tronox LLC Facility - Henderson, Nevada

Groundwater Characterization Data

	C-1 Pond and Associated Piping			
Sampling Program	Ph A	Ph A	Ph A	
Well ID	M2A	M31A	M39	
Sample ID	M2A	M31A	M39	
Sample Date	12/04/2006	12/06/2006	12/05/2006	
Organochlorine Pesticides				Unit
4,4'-DDD	0.050 U	0.050 U	0.050 U	ug/L
4,4'-DDE	0.050 U	0.050 U	0.050 U	ug/L
4,4'-DDT	0.050 U	0.050 U	0.050 U	ug/L
Aldrin	0.050 U	0.050 U	0.050 U	ug/L
Alpha-BHC	0.050 U	0.050 U	0.050 U	ug/L
Alpha-chlordane	0.050 U	0.050 U	0.050 U	ug/L
Beta-BHC	0.050 U	0.050 U	0.050 U	ug/L
Delta-BHC	0.050 U	0.050 U	0.050 U	ug/L
Dieldrin	0.050 U	0.050 U	0.050 U	ug/L
Endosulfan I	0.050 U	0.050 U	0.050 U	ug/L
Endosulfan II	0.050 U	0.050 U	0.050 U	ug/L
Endosulfan Sulfate	0.050 U	0.050 U	0.050 U	ug/L
Endrin	0.050 U	0.050 U	0.050 U	ug/L
Endrin Aldehyde	0.050 U	0.050 U	0.050 U	ug/L
Endrin Ketone	0.050 U	0.050 U	0.050 U	ug/L
Gamma-BHC (Lindane)	0.050 U	0.050 U	0.050 U	ug/L
Gamma-Chlordane	0.050 U	0.050 U	0.050 U	ug/L
Heptachlor	0.050 U	0.050 U	0.050 U	ug/L
Heptachlor Epoxide	0.050 U	0.050 U	0.050 U	ug/L
Methoxychlor	0.10 U	0.10 U	0.10 U	ug/L
Tech-Chlordane	0.50 U	0.50 U	0.50 U	ug/L
Toxaphene	2.0 U	2.0 U	2.0 U	ug/L

LOU 20 Table 8
Soil and Groundwater Characterization Data - Organophosphorus Pesticides (OPPs)
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data

	C-1 Pond and Associated Piping		
Sampling Program	Ph A	Ph A	
Boring No.	SA17	SA17	
Sample ID	SA17-0.5	SA17-0.5D	
Sample Depth (ft)	0.5	0.5	
Sample Date	11/15/2006	11/15/2006	
OPPs			Unit
Azinphos-methyl	0.015 UJ	0.015 UJ	mg/kg
Bolstar	0.015 U	0.015 U	mg/kg
Chlorpyrifos	0.023 UJ	0.023 UJ	mg/kg
Coumaphos	0.015 UJ	0.015 UJ	mg/kg
Demeton-O	0.046 UJ	0.092 J	mg/kg
Demeton-S	0.018 UJ	0.017 UJ	mg/kg
Diazinon	0.026 U	0.025 U	mg/kg
Dichlorvos	0.027 U	0.027 U	mg/kg
Dimethoate	0.026 UJ	0.025 UJ	mg/kg
Disulfoton	0.056 U	0.055 U	mg/kg
EPN	0.015 U	0.015 U	mg/kg
Ethoprop	0.018 U	0.017 U	mg/kg
Ethyl Parathion	0.021 U	0.021 U	mg/kg
Famphur	0.015 UJ	0.015 UJ	mg/kg
Fensulfothion	0.015 U	0.015 U	mg/kg
Fenthion	0.039 U	0.038 U	mg/kg
Malathion	0.018 U	0.017 U	mg/kg
Merphos	0.035 U	0.035 U	mg/kg
Methyl parathion	0.023 U	0.023 U	mg/kg
Mevinphos	0.018 U	0.017 U	mg/kg
Naled	0.039 UJ	0.038 UJ	mg/kg
Phorate	0.023 U	0.023 U	mg/kg
Ronnel	0.021 UJ	0.021 UJ	mg/kg
Stirphos	0.018 UJ	0.017 UJ	mg/kg
Sulfotep	0.023 U	0.023 U	mg/kg
Thionazin	0.021 U	0.021 U	mg/kg
Tokuthion	0.023 U	0.023 U	mg/kg
Trichloronate	0.023 UJ	0.023 UJ	mg/kg

LOU 20 Table 8
Soil and Groundwater Characterization Data - Organophosphorus Pesticides (OPPs)
Tronox LLC Facility - Henderson, Nevada

Groundwater Characterization Data

	C-1 Pond and Associated Piping			
Sampling Program	Ph A	Ph A	Ph A	
Well ID	M2A	M31A	M39	
Sample ID	M2A	M31A	M39	
Sample Date	12/04/2006	12/06/2006	12/05/2006	
OPPs				Unit
Azinphos-methyl	2.5 U	2.5 U	2.5 U	ug/L
Bolstar	1.0 U	1.0 U	1.0 U	ug/L
Chlorpyrifos	1.0 U	1.0 U	1.0 U	ug/L
Coumaphos	1.0 U	1.0 U	1.0 U	ug/L
Demeton-O	1.0 U	1.0 U	1.0 U	ug/L
Demeton-S	1.0 UJ	1.0 U	1.0 UJ	ug/L
Diazinon	1.0 U	1.0 U	1.0 U	ug/L
Dichlorvos	1.0 U	1.0 U	1.0 U	ug/L
Dimethoate	1.0 U	1.0 U	1.0 U	ug/L
Disulfoton	0.50 U	0.50 U	0.50 U	ug/L
EPN	1.2 U	1.2 U	1.2 U	ug/L
Ethoprop	0.50 U	0.50 U	0.50 U	ug/L
Ethyl Parathion	1.0 U	1.0 U	1.0 U	ug/L
Famphur	1.0 U	1.0 U	1.0 U	ug/L
Fensulfothion	2.5 U	2.5 U	2.5 U	ug/L
Fenthion	2.5 U	2.5 U	2.5 U	ug/L
Malathion	1.2 U	1.2 U	1.2 U	ug/L
Merphos	5.0 U	5.0 U	5.0 U	ug/L
Methyl parathion	4.0 U	4.0 U	4.0 U	ug/L
Mevinphos	6.2 U	6.2 U	6.2 U	ug/L
Naled	1.0 UJ	1.0 U	1.0 UJ	ug/L
Phorate	1.2 U	1.2 U	1.2 UJ	ug/L
Ronnel	10 U	10 U	10 U	ug/L
Stirphos	3.5 U	3.5 U	3.5 U	ug/L
Sulfotep	1.5 U	1.5 U	1.5 U	ug/L
Thionazin	1.0 U	1.0 U	1.0 U	ug/L
Tokuthion	1.6 U	1.6 U	1.6 U	ug/L
Trichloronate	0.50 U	0.50 U	0.50 U	ug/L

LOU 20 Table 9
Soil and Groundwater Characterization Data - PCBs
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data
C-1 Pond and Associated Piping

	C-1 Pond and Associated Piping					
Sampling Program	Ph A	Ph A	Ph A	Ph A	Ph A	
Boring ID	SA17	SA17	SA17	SA17	SA17	
Sample ID	SA17-0.5	SA17-0.5D	SA17-10	SA17-20	SA17-25	
Sample Depth (ft)	0.5	0.5	10	20	25	
Sample Date	11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006	
PCBs						Unit
Aroclor-1016	0.039 U	0.038 U	0.038 U	0.035 U	0.041 U	mg/kg
Aroclor-1221	0.039 U	0.038 U	0.038 U	0.035 U	0.041 U	mg/kg
Aroclor-1232	0.039 U	0.038 U	0.038 U	0.035 U	0.041 U	mg/kg
Aroclor-1242	0.039 U	0.038 U	0.038 U	0.035 U	0.041 U	mg/kg
Aroclor-1248	0.039 U	0.038 U	0.038 U	0.035 U	0.041 U	mg/kg
Aroclor-1254	0.039 U	0.038 U	0.038 U	0.035 U	0.041 U	mg/kg
Aroclor-1260	0.039 U	0.038 U	0.038 U	0.035 U	0.041 U	mg/kg

Groundwater Characterization Data
C-1 Pond and Associated Piping

	C-1 Pond and Associated Piping			
Sampling Program	Ph A	Ph A	Ph A	
Well ID	M2A	M31A	M39	
Sample ID	M2A	M31A	M39	
Sample Date	12/04/2006	12/06/2006	12/05/2006	
PCBs				Unit
Aroclor-1016	0.10 U	0.10 U	0.10 U	ug/L
Aroclor-1221	0.10 U	0.10 U	0.10 U	ug/L
Aroclor-1232	0.10 U	0.10 U	0.10 U	ug/L
Aroclor-1242	0.10 U	0.10 U	0.10 U	ug/L
Aroclor-1248	0.10 U	0.10 U	0.10 U	ug/L
Aroclor-1254	0.10 U	0.10 U	0.10 U	ug/L
Aroclor-1260	0.10 U	0.10 U	0.10 U	ug/L

LOU 20 Table 10
Soil and Groundwater Characterization Data - Perchlorate
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data
C-1 Pond and Associated Piping

Boring ID	Sample ID	Sample Depth (ft)	Sample Date	Perchlorate ug/kg	Sampling Program
SA17	SA17-0.5	0.5	11/15/2006	366	Ph A
	SA17-0.5D	0.5	11/15/2006	302	Ph A
	SA17-10	10	11/15/2006	122	Ph A
	SA17-20	20	11/15/2006	792	Ph A
	SA17-25	25	11/15/2006	13500	Ph A

Groundwater Characterization Data
C-1 Pond and Associated Piping

Well ID Number	Sample ID	Sample Date	Perchlorate	Units	Sampling Program
M2A	M2A	12/04/2006	465000	ug/L	Ph A
M31A	M31A	12/06/2006	1740000 J+	ug/L	Ph A
M39	M39	12/05/2006	403000 J+	ug/L	Ph A

LOU 20 Table 11
Soil and Groundwater Characterization Data - Radionuclides
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data
C-1 Pond and Associated Piping

Boring ID Number	Sample ID	Sample Depth (ft)	Date	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	Sampling Program
SA17	SA17-0.5	0.5	11/15/2006	1.12 J	1.75							Ph A
	SA17-0.5D	0.5	11/15/2006	1.12 J	1.8							Ph A
	SA17-10	10	11/15/2006	1.2 J	1.55							Ph A
	SA17-20	20	11/15/2006	1.8 J	1.99							Ph A
	SA17-25	25	11/15/2006	1.81 J	1.32							Ph A

Groundwater Characterization Data
C-1 Pond and Associated Piping

Well ID Number	Sample ID	Date	Ra-226 pci/L	Ra-228 pci/L	Th-228 pci/L	Th-230 pci/L	Th-232 pci/L	U-233/234 pci/L	U-235/236 pci/L	U-238 pci/L	Sampling Program
M2A	M2A-Z	05/09/2007	0.0440 U	0.402 UJ							Ph A
M31	M31A-Z	05/09/2007	0.312 J	0.862 UJ	0.0584 U	0.0798 U	0.0285 U	13.7	0.408	8.09	Ph A
M39	M39-Z	05/10/2007	0.191 J	0.277 U	0.0105 U	5.00 J	0.102 J	55.1	1.19	34.9	Ph A
M39	M39-ZD	05/10/2007	0.185 J	0.106 U	0.0253 U	0.428 B	0.122 J	53.1	1.43	33.3	Ph A

LOU 20 Table 12
Soil and Groundwater Characterization Data - SVOC
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data

C-1 Pond and Associated Piping						
Sampling Program		Ph A	Ph A	Ph A	Ph A	Ph A
Boring No.		SA17	SA17	SA17	SA17	SA17
Sample ID		SA17-0.5	SA17-0.5D	SA17-10	SA17-20	SA17-25
Sample Depth (ft)	Analytical	0.5	0.5	10	20	25
Sample Date	Method	11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
SVOC		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,4-Dioxane	non-SIM	77 U	380 U	380 U	350 U	410 U
2-Methylnaphthalene	non-SIM	390 U	380 U	380 U	350 U	410 U
2-Methylnaphthalene	SIM	7.7 U				
Acenaphthene	non-SIM	390 U	380 U	380 U	350 U	410 U
Acenaphthene	SIM	7.7 U				
Acenaphthylene	non-SIM	390 U	380 U	380 U	350 U	410 U
Acenaphthylene	SIM	7.7 U				
Anthracene	non-SIM	390 U	380 U	380 U	350 U	410 U
Anthracene	SIM	7.7 U				
Benz(a)anthracene	non-SIM	390 U	380 U	380 U	350 U	410 U
Benz(a)anthracene	SIM	7.7 U				
Benzo(a)pyrene	non-SIM	390 U	380 U	380 U	350 U	410 U
Benzo(a)pyrene	SIM	7.7 U				
Benzo(b)fluoranthene	non-SIM	390 U	380 U	380 U	350 U	410 U
Benzo(b)fluoranthene	SIM	7.7 U				
Benzo(g,h,i)perylene	non-SIM	390 U	380 U	380 U	350 U	410 U
Benzo(g,h,i)perylene	SIM	7.7 U				
Benzo(k)fluoranthene	non-SIM	390 U	380 U	380 U	350 U	410 U
Benzo(k)fluoranthene	SIM	7.7 U				
bis(2-Ethylhexyl)phthalate	non-SIM	390 U	380 U	380 U	350 U	410 U
Butyl benzyl phthalate	non-SIM	390 U	380 U	380 U	350 U	410 U
Chrysene	non-SIM	390 U	380 U	380 U	350 U	410 U
Chrysene	SIM	7.7 U				
Dibenz(a,h)anthracene	non-SIM	390 U	380 U	380 U	350 U	410 U
Dibenz(a,h)anthracene	SIM	7.7 U				
Diethyl phthalate	non-SIM	390 U	380 U	380 U	350 U	410 U
Dimethyl phthalate	non-SIM	390 U	380 U	380 U	350 U	410 U
Di-N-Butyl phthalate	non-SIM	390 U	380 U	380 U	350 U	410 U
Di-N-Octyl phthalate	non-SIM	390 U	380 U	380 U	350 U	410 U
Fluoranthene	non-SIM	390 U	380 U	380 U	350 U	410 U
Fluoranthene	SIM	7.7 U				
Fluorene	non-SIM	390 U	380 U	380 U	350 U	410 U
Fluorene	SIM	7.7 U				
Hexachlorobenzene	non-SIM	61 J	45 J	57 J	350 U	410 U
Hexachlorobenzene	SIM	60				
Indeno(1,2,3-cd)pyrene	non-SIM	390 UJ	380 UJ	380 UJ	350 UJ	410 UJ
Indeno(1,2,3-cd)pyrene	SIM	7.7 U				
Naphthalene	non-SIM	5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Naphthalene	non-SIM	390 U	380 U	380 U	350 U	410 U
Naphthalene	SIM	7.7 U				
Nitrobenzene	non-SIM	390 U	380 U	380 U	350 U	410 U

LOU 20 Table 12
Soil and Groundwater Characterization Data - SVOC
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data

		C-1 Pond and Associated Piping				
Sampling Program		Ph A	Ph A	Ph A	Ph A	Ph A
Boring No.		SA17	SA17	SA17	SA17	SA17
Sample ID		SA17-0.5	SA17-0.5D	SA17-10	SA17-20	SA17-25
Sample Depth (ft)	Analytical	0.5	0.5	10	20	25
Sample Date	Method	11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
SVOC		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Octachlorostyrene	non-SIM	390 U	380 U	380 U	350 U	410 U
Phenanthrene	non-SIM	390 U	380 U	380 U	350 U	410 U
Phenanthrene	SIM	7.7 U				
Pyrene	non-SIM	390 U	380 U	380 U	350 U	410 U
Pyrene	SIM	7.7 U				
Pyridine	non-SIM	1900 U	1800 U	1800 U	1700 U	2000 U

Groundwater Characterization Data				
		C-1 Pond and Associated Piping		
Sampling Program		Ph A	Ph A	Ph A
Well No.		M2A	M31A	M39
Sample ID	Analytic	M2A	M31A	M39
Sample Date	Method	12/04/2006	12/06/2006	12/05/2006
SVOCs		ug/L	ug/L	ug/L
1,4-Dioxane	non-SIM	10 U	10 U	10 U
2-Methylnaphthalene	non-SIM	10 U	10 U	10 U
2-Methylnaphthalene	SIM		0.20 U	
Acenaphthene	non-SIM	10 UJ	10 UJ	10 U
Acenaphthene	SIM		0.20 U	
Acenaphthylene	non-SIM	R	R	10 U
Acenaphthylene	SIM		0.20 U	
Anthracene	non-SIM	10 UJ	10 U	10 U
Anthracene	SIM		0.20 U	
Benz(a)anthracene	non-SIM	10 U	10 U	10 U
Benz(a)anthracene	SIM		0.20 U	
Benzo(a)pyrene	non-SIM	10 U	10 U	10 U
Benzo(a)pyrene	SIM		0.20 U	
Benzo(b)fluoranthene	non-SIM	10 U	10 U	10 U
Benzo(b)fluoranthene	SIM		0.20 U	
Benzo(g,h,i)perylene	non-SIM	10 U	10 U	10 U
Benzo(g,h,i)perylene	SIM		0.20 U	
Benzo(k)fluoranthene	non-SIM	10 U	10 U	10 U
Benzo(k)fluoranthene	SIM		0.20 U	
bis(2-Ethylhexyl)phthalate	non-SIM	10 U	10 U	10 U
Butyl benzyl phthalate	non-SIM	10 U	10 U	10 U
Chrysene	non-SIM	10 U	10 U	10 U
Chrysene	SIM		0.20 U	
Dibenz(a,h)anthracene	non-SIM	10 U	10 U	10 U
Dibenz(a,h)anthracene	SIM		0.20 U	

LOU 20 Table 12
Soil and Groundwater Characterization Data - SVOC
Tronox LLC Facility - Henderson, Nevada

Groundwater Characterization Data				
		C-1 Pond and Associated Piping		
Sampling Program		Ph A	Ph A	Ph A
Well No.		M2A	M31A	M39
Sample ID	Analytic	M2A	M31A	M39
Sample Date	Method	12/04/2006	12/06/2006	12/05/2006
SVOCs		ug/L	ug/L	ug/L
Diethyl phthalate	non-SIM	10 U	10 U	10 U
Dimethyl phthalate	non-SIM	10 U	10 U	10 U
Di-N-Butyl phthalate	non-SIM	10 U	10 U	10 U
Di-N-Octyl phthalate	non-SIM	10 U	10 U	10 U
Fluoranthene	non-SIM	10 U	10 U	10 U
Fluoranthene	SIM		0.23 U	
Fluorene	non-SIM	10 U	10 U	10 U
Fluorene	SIM		0.20 U	
Hexachlorobenzene	non-SIM	10 U	10 U	10 U
Hexachlorobenzene	SIM		0.20 U	
Indeno(1,2,3-cd)pyrene	non-SIM	10 U	10 UJ	10 U
Indeno(1,2,3-cd)pyrene	SIM		0.20 U	
Naphthalene	non-SIM	5.0 U	5.0 U	5.0 U
Naphthalene	non-SIM	10 U	10 UJ	10 U
Naphthalene	SIM		0.20 U	
Nitrobenzene	non-SIM	10 U	10 U	10 U
Octachlorostyrene	non-SIM	10 U	10 U	10 U
Phenanthrene	non-SIM	10 U	10 U	10 U
Phenanthrene	SIM		0.20 U	
Pyrene	non-SIM	10 U	10 U	10 U
Pyrene	SIM		0.20 U	
Pyridine	non-SIM	20 UJ	20 U	20 U

LOU 20 Table 13
Soil Characteristic Data - TPH and Fuel Alcohols
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data				C-1 Pond and Associated Piping						
				Fuel Alcohols			Total Petroleum Hydrocarbons			
Boring No.	Sample ID.	Sample Depth (ft)	Sample Date	Ethanol	Ethylene glycol	Methanol	TPH - ORO	TPH - DRO	TPH - GRO	Sampling Program
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
SA17	SA17-0.5	0.5	11/15/2006				29 U	29 U	0.12 U	Ph A
	SA17-0.5D	0.5	11/15/2006				29 U	29 U	0.12 U	Ph A
	SA17-10	10	11/15/2006				28 U	28 U	0.11 U	Ph A
	SA17-20	20	11/15/2006				27 U	27 U	0.11 U	Ph A
	SA17-25	25	11/15/2006				31 U	31 U	0.12 U	Ph A

LOU 20 Table 14
Soil and Groundwater Characterization Data - VOCs
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data	C-1 Pond and Associated Piping							
Sampling Program	SI	SI	SI	Ph A	Ph A	Ph A	Ph A	Ph A
Boring No.	BD-B05	BD-B05	BD-B05	SA17	SA17	SA17	SA17	SA17
Sample ID	BD-B05	BD-B05	BD-B05	SA17-0.5	SA17-0.5D	SA17-10	SA17-20	SA17-25
Sample Depth (ft)	1	2.5	5	0.5	0.5	10	20	25
Sample Date	4/12/1996	4/12/1996	4/12/1996	11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
VOCs	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Bromochloromethane				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Bromodichloromethane				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Bromoform				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Bromomethane				12 U	12 U	11 U	11 U	12 U
Carbon tetrachloride				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Chlorobenzene	NA	ND	ND	5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Chloroethane				5.9 UJ	5.8 UJ	5.7 UJ	5.3 UJ	6.2 UJ
Chloroform				5.9 U	5.8 U	5.7 U	5.3 U	14
Chloromethane				5.9 UJ	5.8 UJ	5.7 UJ	5.3 UJ	6.2 UJ
cis-1,2-Dichloroethene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
cis-1,3-Dichloropropene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Dibromochloromethane				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Dibromomethane				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Dichlorodifluoromethane				5.9 UJ	5.8 UJ	5.7 UJ	5.3 UJ	6.2 UJ
Ethyl t-butyl ether				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Ethylbenzene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Ethylene dibromide				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Hexachlorobutadiene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
isopropyl ether				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Isopropylbenzene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Methyl tert butyl ether				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Methylene chloride				5.9 UJ	23 UJ	5.7 UJ	5.3 UJ	6.2 UJ
N-Butylbenzene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
N-Propylbenzene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
sec-Butylbenzene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Styrene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
t-Butyl alcohol				12 UJ	12 UJ	11 UJ	11 UJ	12 UJ
tert-Butylbenzene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Tetrachloroethene				5.9 U	5.8 U	5.7 U	5.3 U	1.1 J
Toluene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
trans-1,2-Dichloroethylene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U

LOU 20 Table 14
Soil and Groundwater Characterization Data - VOCs
Tronox LLC Facility - Henderson, Nevada

Soil Characterization Data	C-1 Pond and Associated Piping							
Sampling Program	SI	SI	SI	Ph A	Ph A	Ph A	Ph A	Ph A
Boring No.	BD-B05	BD-B05	BD-B05	SA17	SA17	SA17	SA17	SA17
Sample ID	BD-B05	BD-B05	BD-B05	SA17-0.5	SA17-0.5D	SA17-10	SA17-20	SA17-25
Sample Depth (ft)	1	2.5	5	0.5	0.5	10	20	25
Sample Date	4/12/1996	4/12/1996	4/12/1996	11/15/2006	11/15/2006	11/15/2006	11/15/2006	11/15/2006
VOCs	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
trans-1,3-Dichloropropene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Trichloroethene				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Trichlorofluoromethane				5.9 UJ	5.8 UJ	5.7 UJ	5.3 UJ	6.2 UJ
Vinylchloride				5.9 U	5.8 U	5.7 U	5.3 U	6.2 U
Xylene (Total)				12 U	12 U	11 U	11 U	12 U

LOU 20 Table 15
Groundwater Characteristic Data - VOCs
Tronox LLC Facility - Henderson, Nevada

Groundwater Characterization Data

	C-1 Pond and Assoc. Piping		
Sampling Program	Ph A	Ph A	Ph A
Well ID	M2A	M31A	M39
Sample ID	M2A	M31A	M39
Sample Date	12/04/2006	12/06/2006	12/05/2006
VOCs	ug/L	ug/L	ug/L
Naphthalene	5.0 U	5.0 U	5.0 U
1,1,1,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	5.0 U	5.0 U	5.0 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U
1,1-Dichloroethane	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	0.83 J	5.0 U	5.0 U
1,1-Dichloropropene	5.0 U	5.0 U	5.0 U
1,2,3-Trichlorobenzene	5.0 U	5.0 U	5.0 U
1,2,3-Trichloropropane	5.0 U	5.0 U	5.0 U
1,2,4-Trichlorobenzene	5.0 U	5.0 U	5.0 U
1,2,4-Trimethylbenzene	5.0 U	5.0 U	5.0 U
1,2-Dibromo-3-chloropropane	5.0 UJ	5.0 U	5.0 UJ
1,2-Dichlorobenzene	5.0 U	5.0 U	5.0 U
1,2-Dichloroethane	5.0 U	5.0 U	5.0 U
1,2-Dichloropropane	5.0 U	5.0 U	5.0 U
1,3,5-Trimethylbenzene	5.0 U	5.0 U	5.0 U
1,3-Dichlorobenzene	5.0 U	5.0 U	5.0 U
1,3-Dichloropropane	5.0 U	5.0 U	5.0 U
1,4-Dichlorobenzene	5.0 U	5.0 U	5.0 U
2,2-Dichloropropane	5.0 U	5.0 U	5.0 U
2-Butanone	10 U	10 U	10 U
2-Chlorotoluene	5.0 U	5.0 U	5.0 U
2-Hexanone	10 U	10 UJ	10 U
2-Methoxy-2-methyl-butane	5.0 U	5.0 UJ	5.0 U
4-Chlorotoluene	5.0 U	5.0 U	5.0 U
4-Isopropyltoluene	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	10 UJ	10 UJ	10 UJ
Acetone	10 UJ	10 U	10 U
Benzene	5.0 U	5.0 U	5.0 U
Bromobenzene	5.0 U	5.0 U	5.0 U
Bromochloromethane	5.0 U	5.0 U	5.0 U
Bromodichloromethane	5.0 U	5.0 U	5.0 U
Bromoform	5.0 U	4.8 J	5.0 U
Bromomethane	10 UJ	10 U	10 UJ
Carbon tetrachloride	1.2 J	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	5.0 U
Chloroethane	5.0 U	5.0 U	5.0 U
Chloroform	1300 J+	930 J+	820 J+
Chloromethane	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	5.0 U	5.0 U	5.0 U
cis-1,3-Dichloropropene	5.0 U	5.0 U	5.0 U

LOU 20 Table 15
Groundwater Characteristic Data - VOCs
Tronox LLC Facility - Henderson, Nevada

Groundwater Characterization Data

	C-1 Pond and Assoc. Piping		
Sampling Program	Ph A	Ph A	Ph A
Well ID	M2A	M31A	M39
Sample ID	M2A	M31A	M39
Sample Date	12/04/2006	12/06/2006	12/05/2006
VOCs	ug/L	ug/L	ug/L
Dibromochloromethane	5.0 U	5.0 U	5.0 U
Dibromomethane	5.0 U	5.0 U	5.0 U
Dichlorodifluoromethane	5.0 U	5.0 UJ	5.0 U
Ethyl t-butyl ether	5.0 U	5.0 UJ	5.0 U
Ethylbenzene	5.0 U	5.0 U	5.0 U
Ethylene dibromide	5.0 U	5.0 U	5.0 U
Hexachlorobutadiene	5.0 U	5.0 U	5.0 U
isopropyl ether	5.0 U	5.0 UJ	5.0 U
Isopropylbenzene	5.0 U	5.0 U	5.0 U
Methyl tert butyl ether	0.67 J	5.0 U	5.0 U
Methylene chloride	5.0 U	5.0 UJ	5.0 U
N-Butylbenzene	5.0 U	5.0 U	5.0 U
N-Propylbenzene	5.0 U	5.0 U	5.0 U
sec-Butylbenzene	5.0 U	5.0 U	5.0 U
Styrene	R	5.0 U	5.0 U
t-Butyl alcohol	10 UJ	10 UJ	10 UJ
tert-Butylbenzene	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U
Toluene	5.0 U	5.0 U	5.0 U
trans-1,2-Dichloroethylene	5.0 U	5.0 U	5.0 U
trans-1,3-Dichloropropene	5.0 U	5.0 U	5.0 U
Trichloroethene	25	5.0 U	5.0 U
Trichlorofluoromethane	5.0 U	5.0 U	5.0 U
Vinylchloride	5.0 U	5.0 U	5.0 U
Xylene (Total)	10 U	10 UJ	10 U

LOU 20 Table 16
Soil Characterization Data - Long Asbestos Fibers in Respirable Soil Fraction
Tronox LLC Facility - Henderson, Nevada

Soil Characteristic Data

			C-1 Pond and Associated Piping		
			Long Amphibole Protocol Structures	Long Chrysotile Protocol Structures	Sampling Program
No.	**Sample ID**	**Sample Date**	s/gPM10	s/gPM10	
SA17	SA17	12/07/2006	2995000 U	2995000 U	Ph A

Basic Environmental
COMPANY

Transmittal

To: Shannon Harbour ***Date:*** **1/9/08**

From: Ron Sahu
Director of Environmental Services

Company: NDEP
2030 E. Flamingo Road, Suite 230
Las Vegas, Nevada 89119-0818

VIA:
- ☐ Pick up
- ☐ Courier
- ☐ Overnight Courier
- ☑ Hand Delivered
- ☐ US Mail

The following items are for your:

☐ Return	☐ Review & Comments	☐ Signature
☑ Records	☐ Review & Approval	☐ Information

We are transmitting the following:

Tronox Parcels A, B Asbestos Data Review Memo_Rev1 1.9.08
1 hard copy & 1 electronic copy

Comments:

Please call Ron Sahu if you have any questions 626-382-0001.

Received by: _____

cc: Brian Rakvica, NDEP, BCA, Las Vegas
Jim Najima, NDEP Carson City

875 West Warm Springs, Henderson, Nevada 89011 • Phone 702.567.0400 • Fax 702.567.0475

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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

January 8, 2007

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to:
Quarterly Performance Report for Remediation Systems Tronox LLC, Henderson, Nevada, July – September 2007
Dated November 28, 2007

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's Quarterly Performance Report identified above and provides comments in Attachment A. TRX should address these comments in next Performance Report submittal and additionally provide an annotated response-to-comments letter as a part of this submittal. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 x 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:bar:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
Sally Bilodeau, ENSR, 1220 Avenida Acaso, Camarillo, CA 93012-8727
Barry Conaty, Akin, Gump, Strauss, Hauer & Feld, L.L.P., 1333 New Hampshire Avenue, N.W., Washington, D.C. 20036
Brenda Pohlmann, City of Henderson, PO Box 95050, Henderson, NV 89009
Mitch Kaplan, U.S. Environmental Protection Agency, Region 9, mail code: WST-5, 75 Hawthorne Street, San Francisco, CA 94105-3901
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Ranajit Sahu, BRC, 311 North Story Place, Alhambra, CA 91801
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Lee Erickson, Stauffer Management Company, P.O. Box 18890, Golden, CO 80402
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Curt Richards, Olin Corporation, 3855 North Ocoee Street, Suite 200, Cleveland, TN 37312
Paul Sundberg, Montrose Chemical Corporation, 3846 Estate Drive, Stockton, California 95209
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

Attachment A

1. Section 2.0, the NDEP has the following comments:
   a. Page 2-1, last paragraph, TRX should identify which wells are selected for redevelopment.
   b. The last paragraph on page 2-1 states that the effected wells will be redeveloped by early 2008 and the last paragraph on page 2-2 states that the wells should be redeveloped by mid-2008. Please reconcile.
   c. Page 2-2, first paragraph, the NDEP notes that TRX has not provided evidence that supports these assumptions.
2. Section 3.0, page 3-2, first paragraph, TRX states that ARP-5 has been dry since December 2006. TRX should review the well log, well completion forms, etc. for ARP-5 to determine whether this piezometer is currently representative of the first water bearing zone (including the saturated portion of the Upper Muddy Creek formation). TRX could also proactively conduct this review for the other ARP wells to determine their likelihood of becoming dry and their continued representativeness of the first water bearing zone (including the saturated portion of the Upper Muddy Creek formation).
3. Section 4.0, third paragraph, TRX states that the monthly average perchlorate mass removed from the Seep Area Well Field has decreased because of an overall decrease in the perchlorate mass loading to the well field. Please provide more detail such as whether the perchlorate concentrations in the area have decreased, pumping rates have decreased, etc.
4. Table 5, please clarify whether "Capacity" means the maximum flow rate of each system component or the operational flow rate of each system component based on the current contaminant concentrations (i.e. the flow rates of each system component are limited by a maximum allowable contaminant concentration into the FBR remedial system).
5. Appendix C, the NDEP has the following comments to TRX Response to October 5, 2007 NDEP comments on the *Annual Remedial Performance Report for Chromium and Perchlorate* dated August 29, 2007:
   a. Response to comments (RTC) 3.c, TRX states that the inclusion of the lithologic log information from CLD2-R indicated that there is a Muddy Creek high on the east side of the well field. According to Figure 2 of the August 29, 2007 *Annual Remedial Performance Report*, the elevation of the Muddy Creek interface is approximately 1,721 ft at I-K (easternmost well in Interceptor Well Field) and 1,717 ft at CLD2-R, which is lower than I-K; however, the top of the mound between these two wells is shown at 1,723 ft. Please clarify how TRX interpreted the existence of the mound between locations I-K and CLD2-R.
   b. RTC 11.a, please see and respond to above-comment 4.a.
   c. RTC 11.b, the NDEP believes that the text of a report should correspond to the information given in the figures provided in that report. Any changes made to the text of the report should be reflected in the corresponding figures.
   d. TRC 11.c, TRX's response does not address NDEP's comment. Please provide analytical data to substantiate the statement that the three activated carbon vessels (indicated in Figure 7 – located in Appendix C) "remove organics which could harm bacteria".
   e. RTC 13, TRX states that "monitoring data for all of the wells sampled during the reporting period are provided in the Access accessible database in Appendix C." Neither

Appendix C of the August 29, 2007 *Annual Remedial Performance Report* nor Appendix B of the November 28, 2007 *Quarterly Performance Report* have this database included. Only laboratory reports and field sheets are included in these appendices. Additionally, the NDEP has requested that the electronic version of the database include all historic and current site-related data. Please provide this data in the next performance report submittal.

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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

January 7, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to: *Tronox LLC Facility Fact Sheet*
Dated December 13, 2007

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified Fact Sheet and finds that the document is acceptable. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 x 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
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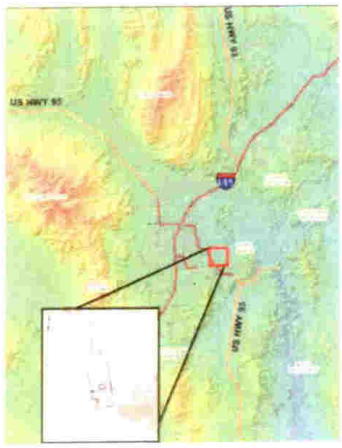
Joe Kelly, Montrose Chemical Corporation of CA, 600 Ericksen Avenue NE, Suite 380, Bainbridge Island, WA 98110

Tronox LLC Henderson Facility
Fact Sheet

The Tronox LLC (Tronox), formerly Kerr-McGee Chemical LLC, Henderson facility is located within the Black Mountain Industrial (BMI) complex. The facility is approximately 450 acres in size and is located 13 miles southeast of Las Vegas in an unincorporated section of Clark County, Nevada. It is completely surrounded by the incorporated area comprising the City of Henderson (COH).



Site Location

Site History

The BMI complex has been the site of industrial operations since 1942 and was originally sited and operated by the U.S. government as a magnesium production plant in support of the World War II effort. Following the war, a portion of the complex was leased by Western Electrochemical Company (WECCO). By August 1952, WECCO had purchased several portions of the complex, including six of the large unit buildings, and produced manganese dioxide, sodium chlorate and various perchlorates. In addition, in the early 1950s, pursuant to a contract with the U.S. Navy, WECCO constructed and operated a plant to produce ammonium perchlorate on land purchased by the Navy. In 1956, WECCO merged with American Potash and Chemical Company (AP&CC) and continued to operate the processes, with the Navy's continued involvement in the ammonium perchlorate process. In 1962, AP&CC purchased the ammonium perchlorate plant from the Navy, but continued to supply the Navy, and its contractors, material from the operating process. AP&CC merged with Kerr-McGee Corporation (Kerr-McGee) in 1967. This merger included boron production processes in California, which were moved to Henderson and began operation in the early 1970s. These included elemental boron, boron trichloride and boron tribromide. In 1994, the boron tribromide process was shut down and dismantled. In 1997, the sodium chlorate process was shut down and in 1998, production of commercial ammonium perchlorate ended as well. The ammonium perchlorate production equipment was used to reclaim perchlorate from on-site materials until early 2002, when the equipment was permanently shut down. In 2005, Kerr-McGee Chemical LLC's name was changed to Tronox LLC. Processes currently operated by Tronox at the Henderson facility are for production of manganese dioxide, boron trichloride and elemental boron.

Air Photo of Tronox LLC Site

Site Investigation and Remediation

A groundwater investigation was initiated by Tronox in July 1981 to comply with the federal Resource Conservation and Recovery Act (RCRA) standards for monitoring the existing on-site impoundments. In December 1983, the Nevada Division of Environmental Protection (NDEP) requested that Tronox investigate the extent of chromium impact in the groundwater beneath the facility.

A Consent Order between Tronox and NDEP, prepared in September 1986, stipulated additional groundwater characterization and the implementation of remedial activities to address chromium in the groundwater. As a result of the 1986 Consent Order, monitor wells, groundwater interceptor wells, a

groundwater treatment system for chromium reduction and two treated-groundwater injection trenches were installed and the treatment of groundwater began in mid-1987. This treatment is on-going today.

In April 1991, Tronox was one of six companies entering into a Consent Agreement with the NDEP to conduct environmental studies to assess site-specific environmental conditions, which are the result of past and present industrial operations and waste disposal practices. The six companies that entered into the Consent Agreement included those past or present entities that conducted business within the BMI complex. The Consent Agreement specified that, among other things, the companies identify, document or address soil, surface water, groundwater or air impacts and document measures that have been taken to address environmental impacts from their respective sites.

In April 1993, in compliance with the 1991 Consent Agreement, Tronox submitted the Phase I Environmental Conditions Assessment (ECA) to NDEP. The purpose of the report was to identify and document site-specific environmental impacts resulting from past or present industrial activities. The Phase I ECA included an assessment of the geologic and hydrologic setting, as well as historical manufacturing activities. In 1994, the NDEP issued a letter of understanding (LOU) that identified 69 data gap areas which needed additional information, either in the form of additional document research or field sampling of site conditions.

During the mid to late 1990s, Tronox collected additional data to fill the LOU identified data gaps. This was done by investigating past operator records as well as through field sampling. Results of this work are described in the Phase II Written Response to the LOU, the Phase II ECA and the Supplemental Phase II ECA, the later two of which were reports describing the results of field sampling of groundwater and soils. Through this effort, potential environmental impacts associated with the 69 LOU areas were evaluated.

In 1997, perchlorate was discovered in the Las Vegas Wash vicinity and this aspect of the ECA was placed on a remedial fast-track. Impact characterization and treatment methodology evaluation was on-going in the late 1990s with installation of a water collection system and temporary ion exchange (IX) process for perchlorate removal. This remedial process began operation in November 1999. Tronox and NDEP entered into a 1999 Consent Agreement, which defined remedial requirements and looked forward to a more permanent treatment process that would replace the temporary IX. After considerable research and process development, a permanent treatment technology was developed. Tronox and NDEP entered into an October 2001 Administrative Order on Consent (AOC) defining the more permanent remedial requirements, which were installed and are operating today. To date, perchlorate remediation efforts have included the design, installation and operation of groundwater extraction as well as surface water collection systems, along with development, design, installation and operation of a permanent treatment process. These activities include:

1) The on-site groundwater barrier wall together with an upgradient collection well field,
2) The Athens Road groundwater collection well field,
3) The seep area collection well field as well as a sump for collection of water in the area where groundwater surfaced, and
4) A treatment process that removes chromium and perchlorate from the collected groundwater then discharges the water in accordance with the limits set forth in the existing National Pollutant Discharge Elimination System (NPDES) permit.

Biological Treatment Plant for Groundwater

The groundwater remediation systems will continue to operate under the direction of NDEP.

In 2004, a list of site-related chemicals was developed based upon investigations associated with operations at the site. This list included raw materials, process chemicals, intermediates, as well as products of all current and previous manufacturers at the site. In 2005, a Conceptual Site Model (CSM) was prepared for the site which consolidated information gathered about environmental impact, both known and potential. Concentrations of the site-related chemicals in both soil and groundwater upgradient of the Tronox site were investigated in 2006. On-site investigation of the site-related chemicals in soil and groundwater continued in 2006 and 2007 with the Phase A Site Investigation. The purpose of the Phase A work was first, to gather extensive data from 27 locations on the site; and second, to determine which of the site-related chemicals were adequately characterized for a future risk assessment and which would require additional characterization. A proposal for a subsequent Phase B Site Investigation to complete characterization of the site was submitted to NDEP as part of the Phase A report.

Future Activities

While much has been learned about site-related chemicals, Tronox, under the supervision of NDEP, will continue to define the nature and extent of impacts to soil and groundwater from its operations. The proposed Phase B Site Investigation, designed to fill data gaps identified in the CSM and the Phase A studies, will be followed by a site-wide human health risk assessment. The risk assessment, planned for the second half 2008, will establish site-specific risk-based action levels and identify additional remedial requirements if any.

December 13, 2007

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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

January 3, 2008

Susan Crowley
Tronox LLC
PO Box 55
Henderson, Nevada 89009

Re: **Tronox LLC (TRX)**
NDEP Facility ID #H-000539
Nevada Division of Environmental Protection Response to: *Data Validation Summary Report: Appendix D of Quarterly Performance Report for Remediation Systems, Tronox LLC, Henderson, Nevada, July – September 2007*
Dated November 28, 2007

Dear Ms. Crowley,

The NDEP has received and reviewed TRX's above-identified Data Validation Summary Report and finds that the document is acceptable. Please contact the undersigned with any questions at sharbour@ndep.nv.gov or (702) 486-2850 x 240.

Sincerely,

Shannon Harbour, P.E.
Staff Engineer III
Bureau of Corrective Actions
Special Projects Branch
NDEP-Las Vegas Office

SH:sh

CC: Jim Najima, NDEP, BCA, Carson City
Brian Rakvica, NDEP, BCA, Las Vegas
Keith Bailey, Environmental Answers LLC, 3229 Persimmon Creek Drive, Edmond, OK 73013
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