

Susan Crowley Staff Environmental Specialist (702) 651-2234 Fax (405) 302-4607 susan.crowley@tronox.com

July 11, 2008

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

## Subject: Revised Documents for Phase B Area IV Work Plan Tronox LLC, Henderson, Nevada

Dear Ms. Harbour:

Enclosed is the revised Plate A, Table 2, and Table 3 requested for the Tronox LLC Henderson Facility Phase B Area IV work plan. These revisions are being provided in response to the June 18, 2008 NDEP comments to the Area IV Work Plan and the June 23, 2008 NDEP conference call.

These tables reflect the changes in sampling and analysis requested.

If you have any comments or questions concerning this correspondence, please contact me at your convenience (702) 651-2234.

Sincerely,

Sm howley

Susan Crowley Staff Environmental Specialist

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Distribution list Area 4 WP.xls

Tronox. Adding value beyond the product.

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5					
Lambeth	Jeff	Veolia			
Guerriero	Joe	AIG		Х	
Giroux	Barry	GEI		Х	
	,				
Stowers	Kirk	Broadbent			
Sahu	Rahnijit	BMI		Х	
Crouse	George	Syngenta		Х	
Erickson	Lee	Stauffer		Х	
Kelly	Joe	Montrose			
Sundberg	Paul	Montrose		Х	
Gibson	Jeff	AmPac			
Richards	Curt	Olin		Х	
Bellotti	Michael	Olin		X	
Wilkinson	Craig	Timet		X	
Mack	Joel	Montrose Counsel		~	

Locatio	Geo- technical Tests <sup>10.</sup>	Asbestos <sup>9.</sup> EPA/540/R- 97/028	PCBs <sup>8.</sup> (EPA 8082 and 1668A)	Dioxins/ Furans <sup>7.</sup>	Radio- nuclides <sup>6.</sup>	SVOCs <sup>5.</sup> (EPA 8270C)	OCPs <sup>4.</sup> (8081A)	Total Cyanide (EPA 9012A)	Wet Chemistry <sup>3.</sup>	VOCs <sup>2.</sup> (EPA 8260B)	TPH- DRO/ORO (EPA 8015B)	Hex Cr (EPA 7199)	Metals (EPA 6020)	Perchlorate (EPA 314.0)	Sample Depths <sup>1.</sup> (ft, bgs)	Sample ID Number	Phase B Boring No.	LOU Number	Grid Location
southeastern most grid in Are	ng with the	5) and endir	rea IV (P-	grid in A	rn most	orthweste	on the n	ing point is	Plate A - Start	own on F	tion as sh	grid loca	anized by	ings are orga	Bor				
Boring located to evaluate soils fo		Х			~										0.0	RSAP5-0.0	RSAP5	n/a	P-5
				Х	X X	X X	X Hold		X X	X X	X X	X X	X X	X X	0.5 10	RSAP5-0.5 RSAP5-10		n/a n/a	P-5 P-5
					X	X	Hold		X	X	X	X	X	X	20	RSAP5-20		n/a	P-5
					Х	Х	Hold		Х	Х	Х	Х	Х	Х	30	RSAP5-30		n/a	P-5
					Х	Х	Х		Х	Х	Х	Х	Х	Х	37	RSAP5-37	50100	n/a	P-5
Boring located to evaluate LOU 4 <sup>2</sup> LOU 41 at probable location of fo		Х		Х	Х	х	Х	Х	Х	Х	х	х	х	Х	0.0	RSAQ3-0.0 RSAQ3-0.5	RSAQ3	<u>41</u> 41	Q-3 Q-3
LOU 41 at probable location of lo				^	X	X	Hold	X	X	X	X	X	X	X	10	RSAQ3-0.5 RSAQ3-10		41	Q-3
					X	X	Hold	X	X	X	X	X	X	X	20	RSAQ3-20		41	Q-3
				-	Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	30	RSAQ3-30		41	Q-3
Boring located to evaluate LOU 41		v			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	40	RSAQ3-40 SA169-0.0	SA169	41 41, 60	Q-3
(Acid Drain System). Boring locat		Х		х	Х	Х	х		Х	х	х	х	Х	Х	0.0	SA169-0.0 SA169-0.5	5A 169	41,60	Q-3 Q-3
and adjacent to LOU 60 at a high				~	X	X	Hold		X	X	X	X	X	X	10	SA169-10		41,60	Q-3
detailed information).					Х	Х	Hold		Х	Х	Х	Х	Х	Х	20	SA169-20		41, 60	Q-3
			]		X	X	Hold		X	Х	X	X	X	Х	30	SA169-30		41,60	Q-3
Boring located to evaluate LOU 65		х			Х	Х	Х		Х	Х	Х	Х	Х	Х	40	SA169-40 SA193-0.0	SA193	41, 60 65a	Q-3 Q-3
Located in an area previously des		^		х	Х	Х	х		Х	х	Х	х	Х	Х	0.0	SA193-0.0 SA193-0.5	5A195	65a	Q-3
information).				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	X	X	Hold		X	X	X	X	X	X	10	SA193-10		65a	Q-3
·					Х	Х	Hold		Х	Х	Х	Х	Х	Х	20	SA193-20		65a	Q-3
				-	X	Х	Hold		Х	X	X	X	X	X	30	SA193-30		65a	Q-3
Boring located to evaluate LOU 59		Х			Х	Х	Х		Х	Х	Х	Х	Х	Х	40	SA193-40 SA211-0.0	SA211	65a 59, 60	Q-3 Q-3
evaluate point of entry to Tronox for		~		Х	Х	Х	х	Х	Х	х	Х	Х	х	Х	0.5	SA211-0.0 SA211-0.5	JAZTI	59,60	Q-3
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	10	SA211-10		59, 60	Q-3
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	20	SA211-20		59, 60	Q-3
					X	X	Hold	X	X	X	X	X	X	X	30	SA211-30		59,60	Q-3
Boring located to evaluate LOU 60		Х			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	40	SA211-40 SA212-0.0	SA212	59, 60 60	Q-3 Q-3
multiple piping).		X		Х	Х	Х	Х	Х	х	Х	Х	х	Х	х	0.5	SA212-0.5	0/1212	60	Q-3
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	10	SA212-10		60	Q-3
					Х	Х	Hold	Х	X	Х	Х	Х	Х	X	20	SA212-20		60	Q-3
				-	X	X	Hold X	X	X	X X	X	X X	X	X X	30 40	SA212-30		60 60	Q-3
Boring located to evaluate LOU 60		Х			~	Х	^	Χ	^	~	Х	~	Х	^	0.0	SA212-40 SA213-0.0	SA213	60	Q-3 Q-4
multiple piping).		~		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	0.5	SA213-0.5	0/1210	60	Q-4
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	10	SA213-10		60	Q-4
					<u>X</u>	X	Hold	X	X	X	X	X	X	X	20	SA213-20		60	Q-4
					X	X X	Hold X	X X	X	X X	X X	X X	X X	X X	30 40	SA213-30 SA213-40		60 60	Q-4 Q-4
Boring located to evaluate LOU 59		Х			Λ	Λ	~	X	~	~	~	~		Λ	0.0	SA213-40	SA214	59,60	Q-4 Q-4
located at a potential worst-case re				Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	0.5	SA214-0.5		59, 60	Q-4
piping.				-	Х	Х	Hold	X	Х	Х	Х	Х	Х	X	10	SA214-10		59, 60	Q-4
					X X	X X	Hold Hold	X X	X X	X X	X X	X X	X X	X X	20 30	SA214-20 SA214-30		59, 60 59, 60	Q-4 Q-4
					X X	X	X	X X	X	X	X	X	X	X	30	SA214-30 SA214-40		59,60	Q-4 Q-4
Boring located to evaluate norther		Х				~	~	~			~~~~	~			0.0	RSAQ4-0.0	RSAQ4	4	Q-4
in a low spot to evaluate the weste				Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	RSAQ4-0.5		4	Q-4
	Х				X	X	Hold		X	X	X	X	X	X	10	RSAQ4-10		4	Q-4
					X	X X	Hold Hold		X X	X X	X X	X X	X X	X X	20 30	RSAQ4-20 RSAQ4-30		4 4	Q-4 Q-4
					X	X	X		X	X	X	X	X	X	40	RSAQ4-40		4	Q-4
Boring located to evaluate norther		Х													0.0	SA138-0.0	SA138	4	Q-4
of the former pipelines associated				Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	SA138-0.5		4	Q-4
northern and southern portions of					X	X	Hold		X	X	X	X	X	X	10	SA138-10		4	Q-4
for detailed information).					X	X X	Hold Hold		X X	X X	X X	X X	X X	X X	20 30	SA138-20 SA138-30		4 4	Q-4 Q-4
					X	X	X		X	X	X	X	X	X	35	SA138-35		4	Q-4 Q-4
Boring located to evaluate souther		Х													0.0	SA84-0.0	SA84	4, 60	Q-4
of LOU 60 (Acid Drain System). L				Х	Х	Х	X		Х	Х	Х	Х	Х	Х	0.5	SA84-0.5		4, 60	Q-4
adjacent to LOU 60 to evaluate po					X	X X	Hold Hold		X X	X	X X	X X	X X	X X	10 20	SA84-10 SA84-20		4,60	Q-4 Q-4
1					X X	X	Hold		X	X X	X	X	X	X	30	SA84-20 SA84-30		4,60	Q-4 Q-4
					X	X	X		X	X	X	X	X	X	35	SA84-35		4, 60	Q-4
		Х													0.0	SA101-0.0	SA101	4, 27	Q-4
Boring located to evaluate souther (Former PCB Storage Area). Loca			Х	Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	SA101-0.5		4, 27	Q-4

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cation Description and Characterized Area Rationale
Area IV (U-7).
s for area-wide coverage and not associated with any specific LOU.
J 41 (Tenant stains north of Unit 1). Random boring located within footprint of
f former Tenant stains (See LOU 41 summary for detailed information).
J 41 (Tenant stains north of Unit 1) and a pipeline segment of LOU 60
ocated within footprint of LOU 41 at probable location of former tenant stains igh risk for release location (manhole) (See LOU 41 and 60 summaries for
J 65a (Ebony Construction Sites) and soils north (downgradient) of Unit 1.
described as the location of a release (See LOU 65a summary for detailed
J 59 (storm Sewer System) and LOU 60 (acid Drain System). Located aerally to
ox for LOU 60 piping and adjacent to LOU 59 piping at same location.
J 60 (Acid Drain System). Located at a high risk release location (junction of
J 60 (Acid Drain System). Located at a high risk release location (junction of
J 59 (Storm Sewer System) and LOU 60 (Acid Drain System). For LOU 60 se release point (junction of multiple pipes) and for general coverage of LOU 59
thern area of LOU 4 (Hardesty Chemical Company Site). Random boring located estern portion of this LOU for potential worst case releases.
thern area of LOU 4 (former Hardesty Chemical Company Site) and the outfall ted with this LOU. Located at the outfall of the pipeline that connected the s of LOU 4 to evaluate potential historical releases (See LOU 4 summary
thern area of LOU 4 (Hardesty Chemical Company Site) and a pipeline segment ). Located at a high risk spot for surface releases from LOU 4 and directly a potential pipeline releases.
thern area of LOU 4 (Hardesty Chemical Company Site) and LOU 27
Located downslope of LOU 27 to evaluate potential runoff. The surface of good condition and this area is currently used to store old equipment.

	technical Tests <sup>10.</sup>	97/028	PCBs <sup>8.</sup> (EPA 8082 and 1668A)	Dioxins/ Furans <sup>7.</sup>	Radio- nuclides <sup>6.</sup>	SVOCs <sup>5.</sup> (EPA 8270C)	OCPs <sup>4.</sup> (8081A)	Total Cyanide (EPA 9012A)	Wet Chemistry <sup>3.</sup>	8260B)	TPH- DRO/ORO (EPA 8015B)		Metals (EPA 6020)	Perchlorate (EPA 314.0)	Sample Depths <sup>1.</sup> (ft, bgs)	Sample ID Number	Phase B Boring No.	LOU Number	Grid Location
southeastern most grid in Area	ng with the	5) and endin	rea IV (P-	grid in A				ing point is			tion as sho	grid loca	nized by				1		
Assessment through LOU 27 would					<u>X</u>	X	Hold		X	X	X	X	X	X	20	SA101-20		4, 27	Q-4
releases in from LOU 4.					X	X X	Hold X		X	X X	X	X X	X X	X X	30 40	SA101-30 SA101-40		4, 27 4, 27	Q-4 Q-4
Boring located to evaluate LOU 26		Х			^	^	^			^	^	~	^	^	0.0	SA120-0.0	SA120	26	Q-4 Q-4
area-wide coverage. Located with		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	SA120-0.5	0,1120	26	Q-4
worst case location for the assessr					Х	Х	Hold		Х	Х	Х	Х	Х	Х	10	SA120-10		26	Q-4
					Х	Х	Hold		Х	Х	Х	Х	Х	Х	20	SA120-20		26	Q-4
_					Х	Х	Hold		X	Х	Х	Х	Х	X	30	SA120-30		26	Q-4
Design leasted to evolute LOLL20		V			Х	Х	Х		Х	Х	Х	Х	Х	Х	40 0.0	SA120-40 SA121-0.0	SA121	26	Q-4
Boring located to evaluate LOU 26 and the boring is north (downgradie		Х		х	Х	Х	х		Х	х	Х	Х	Х	Х	0.0	SA121-0.0 SA121-0.5	SAIZI	26, 4 26, 4	Q-4 Q-4
LOU 26 and 4 at a location consider				~	X	X	Hold		X	X	X	X	X	X	10	SA121-0.5 SA121-10		26, 4	Q-4 Q-4
releases.					X	X	Hold		X	X	X	X	X	X	20	SA121-20		26, 4	Q-4
-					Х	Х	Hold		Х	Х	Х	Х	Х	Х	30	SA121-30		26, 4	Q-4
					Х	Х	Х		Х	Х	Х	Х	Х	Х	40	SA121-40		26, 4	Q-4
Boring located to evaluate souther		Х													0.0	SA148-0.0	SA148	4, 60	Q-4
segment of LOU 60 (Acid Drain Sy				Х	X	X	X	X	X	Х	X	X	Х	X	0.5	SA148-0.5		4,60	Q-4
surface releases and also locate al	х				X	X X	Hold Hold	X	X	X X	X X	X	X X	X X	10 20	SA148-10		4,60	Q-4
-	^				X	X	Hold	X	X	X	X	X X	X	X	30	SA148-20 SA148-30		4,60	Q-4 Q-4
-	Х				X	X	X	X X	X	X	X	X	X	X	33	SA148-33		4,60	Q-4
Boring located to evaluate pipeline		Х													0	SA203-0.0	SA203	4	Q-4
Chemical Company Site). Located				Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	SA203-0.5		4	Q-4
jog in the line.					Х	Х	Hold		Х	Х	Х	Х	Х	Х	10	SA203-10		4	Q-4
_					Х	Х	Hold		X	Х	Х	Х	Х	X	20	SA203-20		4	Q-4
_					X	X	Hold		X	X	X	X	X	X	30	SA203-30		4	Q-4
Boring located to evaluate southerr		Х			Х	Х	Х		Х	Х	Х	Х	Х	Х	40 0	SA203-40 SA204-0.0	SA204	4 4, 60	Q-4 Q-4
segment of LOU 60 (Acid Drain Sy		~		х	Х	Х	х	Х	Х	х	Х	Х	Х	Х	0.5	SA204-0.0 SA204-0.5	3A204	4, 60	Q-4 Q-4
in LOU 4. Also directly adjacent to				~	X	X	Hold	X	X	X	X	X	X	X	10	SA204-10		4, 60	Q-4
converted into well M-143.					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	20	SA204-20		4, 60	Q-4
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	30	SA204-30		4, 60	Q-4
					Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	40	SA204-40		4, 60	Q-4
Boring located to evaluate LOU 4 (		Х		N/	X	X	Ň	X	N N	Ň	N	X	X	X	0	RSAQ5-0.0	RSAQ5	4, 28, 59	Q-5
Storage Area), LOU 59 (Storm Sev				Х	X X	X X	X Hold	X X	X	X X	X	X	X X	X	0.5 10	RSAQ5-0.5 RSAQ5-10		4, 28, 59 4, 28, 59	Q-5 Q-5
adjacent to LOU 59 pipeline to eval and 28.			-		X	X	Hold	X X	X	X	X	X	X	X	20	RSAQ5-10 RSAQ5-20		4, 28, 59	Q-5 Q-5
					X	X	Hold	X X	X	X	X	X	X	X	30	RSAQ5-30		4, 28, 59	Q-5
-					X	X	X	X	X	X	X	X	X	X	40	RSAQ5-40		4, 28, 59	Q-5
Boring located as northward stepou		Х													0	RSA205-0.0	SA205	28, 59	Q-5
requested by NDEP in comments of				Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	RSA205-0.5		28, 59	Q-5
Phase A comments and to evaluate					Х	Х	Hold		Х	Х	Х	Х	Х	Х	10	RSA205-10	50150	28, 59	Q-5
Boring located to evaluate LOU 60		Х		V	V	V	V	Х	v	Х	V	Х	х	Х	0.0 0.5	RSAR3-0.0	RSAR3	60, Unit 1	R-3 R-3
boring located directly adjacent to l				Х	X X	X X	X Hold	<u>х</u>	X X	X	X X	X	X	X	10	RSAR3-0.5 RSAR3-10		60, Unit 1 60, Unit 1	R-3
-	Х				X	X	Hold	X	X	X	X	X	X	X	20	RSAR3-20		60, Unit 1	R-3
					X	Х	Hold	X	X	X	X	X	Х	X	30	RSAR3-30		60, Unit 1	R-3
					Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	40	RSAR3-40		60, Unit 1	R-3
Boring located to evaluate Unit 1 a		Х													0.0	SA110-0.0	SA110	Unit 1	R-3
_				Х	Х	Х	Х		X	Х	Х	Х	Х	X	0.5	SA110-0.5		Unit 1	R-3
-1					X	X	Hold		X	X	X	X	X	X	10 20	SA110-10		Unit 1	R-3
-1					X X	X X	Hold Hold		X	X X	X	X	X X	X X	30	SA110-20 SA110-30		Unit 1 Unit 1	R-3 R-3
-1					X	X	X		X	X	X	X	X	X	30 40	SA110-30 SA110-40		Unit 1	R-3 R-3
Boring located to evaluate LOU 59		Х			~	~	~				~	~	~		0.0	SA192-0.0	SA192	59, 65b, Unit1	R-3
and Unit 1 and not associated with				Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	0.5	SA192-0.5		59, 65b, Unit1	R-3
potential releases. Also located in a					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	10	SA192-10		59, 65b, Unit1	R-3
for area coverage.					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	20	SA192-20		59, 65b, Unit1	R-3
					X X	X X	Hold X	X X	X	X X	X	X	X X	X X	30 40	SA192-30 SA192-40		59, 65b, Unit1 59, 65b, Unit1	R-3 R-3

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tion Description and Characterized Area Rationale
rea IV (U-7).
ould compromise containment. Boring also locate to evaluate potential surface
26 (Trash Storage Area) and is north (downgradient) from Unit 1 for general ithin the footprint of LOU 26 at a location considered to represent the ssment of potential releases.
26 (Trash Storage Area), LOU 4 (former Hardesty Chemical Company Site), adient) of Unit 2 for general area coverage. Located within the footprint of sidered to represent the worst case location for the assessment of potential
ern area of LOU 4 (former Hardesty Chemical Company Site) and a pipeline System). Located on the northern edge of LOU 4 to evaluate potential above LOU 60 to evaluate potential pipeline releases.
ne route connecting northern and southern areas of LOU 4 (former Hardesty ted along the former pipeline route to evaluate potential worst case release at a
nern area of LOU 4 (former Hardesty Chemical Company Site) and a pipeline System). Located to evaluate potential worst case location for surface releases to LOU 60 to evaluate potential historical pipeline releases. Boring will be
4 (Former Hardesty Chemical Company Site), LOU 28 (Hazardous Waste Sewer Drain), and for area-wide coverage. Random boring located directly evaluate potential pipeline releases and for general stepout coverage for LOUs 4
pout boring from Phase A boring SA04 (for Hex Cr) to evaluate LOU 59 as ts on Phase A Investigation report and LOU 28 and 59. Located to satisfy NDEP Jate potential pipeline releases from LOU 59.
60 (Acid Drain System), Unit 1, and for general area-wide coverage. Random to LOU 60 at a high risk location (inlet).
1 and for general area-wide coverage and not associated with a specific LOU.
59 (Storm Sewer Drain), LOU 65b (former Buckles Construction Company Site) ith a specific LOU. Located directly adjacent to LOU 59 pipeline to evaluate in accessible area of LOU 65b to evaluate surface releases, and within Unit 1

Locat	Geo- technical Tests <sup>10.</sup>	Asbestos <sup>9.</sup> EPA/540/R- 97/028	PCBs <sup>8.</sup> (EPA 8082 and 1668A)	Dioxins/ Furans <sup>7.</sup>	Radio- nuclides <sup>6.</sup>	SVOCs <sup>5.</sup> (EPA 8270C)	OCPs <sup>4.</sup> (8081A)	Total Cyanide (EPA 9012A)	Wet Chemistry <sup>3.</sup>	VOCs <sup>2.</sup> (EPA 8260B)	TPH- DRO/ORO (EPA 8015B)	Hex Cr (EPA 7199)	Metals (EPA 6020)	Perchlorate (EPA 314.0)	Sample Depths <sup>1.</sup> (ft, bgs)	Sample ID Number	Phase B Boring No.	LOU Number	Grid Location
outheastern most grid in Are	ng with the	5) and endir	rea IV (P-	grid in A	rn most	orthweste	on the n	ing point is	Plate A - Star	own on l	tion as she	grid loca	nized by	ings are orga	Bor				
Boring located to evaluate LOU 5		Х													0.0	SA209-0.0	SA209	59, 60	R-3
release locations for both LOUs (				Х	X	X X	X Hold	X X	X X	X X	X X	X X	X X	X X	0.5 10	SA209-0.5 SA209-10		59, 60 59, 60	R-3 R-3
					X	X	Hold	X	X	X	X	X	X	X	20	SA209-20		59, 60	R-3
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	X	30	SA209-30		59, 60	R-3
Boring located to evaluate LOU 2		Х			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	40 0.0	SA209-40 RSAR4-0.0	RSAR4	59, 60 25, 59, Unit 2	R-3 R-4
Unit 2 area coverage. Random d		Χ		х	Х	Х	х	Х	Х	Х	Х	Х	Х	Х	0.5	RSAR4-0.5	NOAN4	25, 59, Unit 2	R-4
releases in LOU 25 and adjacent					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	10	RSAR4-10		25, 59, Unit 2	R-4
					X	X X	Hold Hold	X X	X X	X X	X X	X X	X X	X X	20 30	RSAR4-20 RSAR4-30		25, 59, Unit 2 25, 59, Unit 2	R-4 R-4
					X	X	X	X	X	X	X	X	X	X	40	RSAR4-30 RSAR4-40		25, 59, Unit 2	R-4
Boring located downslope of LOI		Х													0.0	SA29-0.0	SA29	25, Unit 2	R-4
and for general coverage of Unit				Х	X	X	X		X X	X	X X	X X	X X	X X	0.5	SA29-0.5 SA29-10		25, Unit 2	R-4
					X	X X	Hold Hold		X	X X	X	X	X	X	10 20	SA29-10 SA29-20		25, Unit 2 25, Unit 2	R-4 R-4
					Х	Х	Hold		Х	Х	Х	X	Х	Х	30	SA29-30		25, Unit 2	R-4
		N/			Х	Х	Х		Х	Х	Х	Х	Х	Х	35	SA29-35	01111	25, Unit 2	R-4
Boring located to evaluate LOU 2 (Acid Drain System) and for Unit :		Х		х	Х	X	Х		Х	Х	х	х	х	Х	0.0	SA111-0.0 SA111-0.5	SA111	25, 59, 60, Unit 2 25, 59, 60, Unit 2	R-4 R-4
releases, at the inlet for LOU 60 p				~	X	X	Hold		X	X	X	X	X	X	10	SA111-10		25, 59, 60, Unit 2	R-4
evaluate local piping releases.					Х	Х	Hold		Х	Х	Х	Х	Х	Х	20	SA111-20		25, 59, 60, Unit 2	R-4
					X	X	Hold X		X X	X X	X X	X X	X	X X	30 40	SA111-30 SA111-40		25, 59, 60, Unit 2 25, 59, 60, Unit 2	R-4 R-4
Boring located to evaluate LOU 2		Х			Λ	~	~		Λ	~	Λ	~	~	~	0.0	SA190-0.0	SA190	25, 00, 0111 2 25, Unit 1	R-4
a general stepout for LOU 25 and				Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	SA190-0.5		25, Unit 1	R-4
					X	X	Hold Hold		X X	X X	X X	X X	X X	X X	10 20	SA190-10 SA190-20		25, Unit 1 25, Unit 1	R-4 R-4
					X	X X	Hold		X	X	X	X	X	X	30	SA190-20 SA190-30		25, Unit 1 25, Unit 1	R-4 R-4
					X	X	X		X	X	X	X	X	X	40	SA190-40		25, Unit 1	R-4
Located as a general upgradient		Х		N/	X	Ň	Ň		N/	V	N/	V	N/	N/	0.0	SA191-0.0	SA191	4, Unit 2	R-4
				Х	X	X X	X Hold		X X	X X	X X	X X	X X	X X	0.5 10	SA191-0.5 SA191-10		4, Unit 2 4, Unit 2	R-4 R-4
					X	X	Hold		X	X	X	X	X	X	20	SA191-20		4, Unit 2	R-4
					Х	Х	Hold		Х	Х	Х	Х	Х	Х	30	SA191-30		4, Unit 2	R-4
Boring located to evaluate LOU 4		Х			Х	Х	Х		Х	Х	Х	Х	Х	Х	40 0.0	SA191-40 RSAR5-0.0	RSAR5	4, Unit 2 4, 59, 60	R-4 R-5
and LOU 60 (Acid Drain System)		Х		х	Х	Х	х		Х	Х	Х	Х	Х	х	0.5	RSAR5-0.5	10/110	4, 59, 60	R-5
Boring adjacent to LOU 59 and Lo					Х	Х	Hold		Х	Х	Х	Х	Х	Х	10	RSAR5-10		4, 59, 60	R-5
					X	X X	Hold Hold		X X	X X	X X	X X	X X	X X	20 30	RSAR5-20 RSAR5-30		4, 59, 60 4, 59, 60	R-5 R-5
					X	X	X		X	X	X	X	X	X	40	RSAR5-30		4, 59, 60	R-5
Boring located within LOU 42 (for		Х													0.0	SA135-0.0	SA135	42	R-5
(conveyor and inlet hopper). Bori				Х	X X		X Hold		X X			X X	X	X X	0.5 10	SA135-0.5		42	R-5 R-5
					X		Hold		X			X	X	X	20	SA135-10 SA135-20		42 42	R-5
					Х		Hold		Х			Х	Х	Х	30	SA135-30		42	R-5
Desing leasted approximately 200		V			Х		Х		Х			Х	Х	Х	40	SA135-40	DCACO	42	R-5
Boring located approximately 200 specific LOU.		Х		х	Х	х	Х		Х	Х	Х	х	х	Х	0.0	RSAS3-0.0 RSAS3-0.5	RSAS3	n/a n/a	S-3 S-3
				Х	Х	Х	Hold		Х	Х	Х	Х	Х	Х	10	RSAS3-10		n/a	S-3
				X X	X	X	Hold		X	X	X	X	X	X	20	RSAS3-20		n/a	S-3
				X	X	X X	Hold X		X X	X X	X X	X X	X X	X X	30 40	RSAS3-30 RSAS3-40		n/a n/a	S-3 S-3
Boring located to evaluate LOU 5		Х		~	7	~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0.0	RSAS4-0.0	RSAS4	59	S-4
Random boring adjacent to LOU				Х	Х	Х	Х		Х	Х	Х	Х	Х	X	0.5	RSAS4-0.5		59	S-4
comparison purposes and for are					X	X X	Hold Hold		X X	X X	X X	X X	X X	X X	10 20	RSAS4-10 RSAS4-20		59 59	S-4 S-4
					X	X	Hold		X	X	X	X	X	X	30	RSAS4-20 RSAS4-30		59	S-4
					Х	Х	X		Х	Х	Х	Х	Х	Х	40	RSAS4-40		59	S-4
Boring located 150 feet south of L		Х		v	v	~	~		v	~	v	v	v	v	0.0	RSAS5-0.0	RSAS5	n/a	S-5
associated with a specific LOU.				Х	X	X X	X Hold		X X	X X	X X	X X	X	X X	0.5 10	RSAS5-0.5 RSAS5-10		n/a n/a	S-5 S-5
					X	X	Hold		Х	X	X	X	X	Х	20	RSAS5-20		n/a	S-5
					Х	X	Hold		Х	X	Х	Х	X	Х	30	RSAS5-30		n/a	S-5
Boring located 100 feet south-sou		Х			Х	Х	Х		Х	Х	Х	Х	Х	Х	40	RSAS5-40 RSAS6-0.0	RSAS6	n/a n/a	S-5 S-6
associated with a specific LOU.		~		х	Х	Х	х		Х	х	Х	Х	х	Х	0.0	RSAS6-0.0	NOAGU	n/a	S-6
	1				Х	Х	Hold		Х	Х	Х	Х	Х	Х	10	RSAS6-10		n/a	S-6

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tion Description and Characterized Area Rationale
rea IV (U-7).
59 (storm Sewer System) and LOU 60 (acid Drain System). Located at high risk (junctions and bends in piping).
25 (Process Hardware Storage Area), LOU 59 (Storm Sewer System), and for during located at a low spot of LOU 25 to evaluate worst-case scenario surface t to LOU 59 to evaluate piping releases.
U 25 (Process Hardware Storage Area) and to evaluate surface runoff releases 2.
25 (Process Hardware Storage Area), LOU 59 (Storm Sewer Drain), LOU 60 2 area coverage. Located in the central portion of LOU 25 to evaluate surface piping to evaluate surface runoff into the inlet, and near LOU 59 piping to
25 (Process Hardware Storage Area) and for Unit 1 area-coverage. Located as d for general coverage of Unit 1.
stepout for LOU 4 and for general coverage of Unit 2.
4 (Former Hardesty Chemical Company Site), LOU 59 (Storm Sewer System), ) and for Unit 3 area-wide coverage. Random boring as a step out for LOU 4. _OU 60 to evaluate potential piping releases, and for general coverage of Unit 3.
rmer location of salt conveyor) to evaluate worst-case scenario release location ring to be converted to Well M-144.
0 feet south of Unit 1 for area-wide coverage and not associated with any
59 (Storm Sewer System) 350 feet south of Unit 2 for area-wide coverage. 59 piping to evaluate potential piping releases, adjacent to SG46 for VOC ea-wide coverage.
Unit 3 for area-wide coverage and north (downgradient) of WAPA Site and not Adjacent to SG65 for VOC comparison purposes.
utheast of Tronox Administration Building for area-wide coverage and not

Locatio	Geo- technical Tests <sup>10.</sup>	Asbestos <sup>9.</sup> EPA/540/R- 97/028	PCBs <sup>8.</sup> (EPA 8082 and 1668A)	Dioxins/ Furans <sup>7.</sup>	Radio- nuclides <sup>6.</sup>	SVOCs <sup>5.</sup> (EPA 8270C)	OCPs <sup>4.</sup> (8081A)	Total Cyanide (EPA 9012A)	Wet Chemistry <sup>3.</sup>	VOCs <sup>2.</sup> (EPA 8260B)	TPH- DRO/ORO (EPA 8015B)		Metals (EPA 6020)	Perchlorate (EPA 314.0)	Sample Depths <sup>1.</sup> (ft, bgs)	Sample ID Number	Phase B Boring No.	LOU Number	Grid Location
southeastern most grid in Area	ng with the	5) and endir	rea IV (P-	grid in A	rn most	orthweste	on the n	ting point is	Plate A - Star	own on F	tion as sh	grid loca	nized by	ings are orga	Bori				
					X	X	Hold		X	X	X	X	X	X	20	RSAS6-20		n/a	S-6
					X X	X X	Hold X		X X	X X	X X	X X	X X	X	30 40	RSAS6-30 RSAS6-40		n/a n/a	S-6 S-6
Boring located upgradient of WAP		Х			~	~	~		~	~	Λ	~	~	~	0.0	RSAS7-0.0	RSAS7	n/a	S-0
LOU.				Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	RSAS7-0.5		n/a	S-7
					X	X	Hold		Х	X	X	X	X	X	10	RSAS7-10		n/a	S-7
					X X	X X	Hold Hold		X X	X X	X X	X X	X X	X	20 30	RSAS7-20 RSAS7-30		n/a n/a	S-7 S-7
					X	X	X		X	X	X	X	X	X	40	RSAS7-30 RSAS7-40		n/a	S-7
Boring located to evaluate LOU 59		Х													0.0	RSAT3-0.0	RSAT3	59	T-3
adjacent to LOU 59 piping to evalu				Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	0.5	RSAT3-0.5		59	T-3
					X	X X	Hold	X	X X	X X	X X	X X	X X	X	10 20	RSAT3-10		59 59	T-3
					X X	X	Hold Hold	X	X	X	X	X	X	X	30	RSAT3-20 RSAT3-30		<u>59</u>	T-3 T-3
					X	X	X	X	X	X	X	X	X	X	40	RSAT3-40		59	T-3
Boring located to evaluate LOU 59		Х													0.0	RSAT4-0.0	RSAT4	59	T-4
adjacent to LOU 59 piping to evalu				Х	Х	Х	Х		Х	Х	Х	Х	Х	Х	0.5	RSAT4-0.5		59	T-4
					X	X	Hold		X	X	X	X	X	X	10	RSAT4-10		59	T-4
					X X	X X	Hold Hold		X X	X X	X X	X X	X X	X X	20 30	RSAT4-20 RSAT4-30		59 59	T-4 T-4
					X	X	X		X	X	X	X	X	X	40	RSAT4-40		59	T-4
Boring located approximately 200 f		Х													0.0	RSAT5-0.0	RSAT5	n/a	T-5
area-wide coverage and not assoc				Х	Х	Х	Х		X	Х	Х	Х	Х	X	0.5	RSAT5-0.5		n/a	T-5
					X	X	Hold		X	X	X	X	X	X	10	RSAT5-10		n/a	T-5
					X X	X X	Hold Hold		X X	X X	X	X X	X X	X	20 30	RSAT5-20 RSAT5-30		n/a n/a	T-5 T-5
					X	X	X		X	X	X	X	X	X	40	RSAT5-40		n/a	T-5
Boring located to evaluate LOU 59		Х													0.0	SA115-0.0	SA115	59	T-5
adjacent to LOU 59 piping and mar				Х	Х	Х	Х	X	X	Х	Х	Х	Х	X	0.5	SA115-0.5		59	T-5
structure).					X X	X X	Hold Hold	X	X X	X X	X	X X	X	X	10 20	SA115-10 SA115-20		59 59	T-5 T-5
					X	X	Hold	X	X	X	X	X	X	X	30	SA115-20		59	T-5
					X	X	X	X	X	X	X	X	X	X	40	SA115-40		59	T-5
Boring located to evaluate LOU 59		Х													0.0	SA116-0.0	SA116	59	T-5
adjacent to LOU 59 piping for gene				Х	X	X	X	X	X	X	X	X	X	X	0.5	SA116-0.5		59	T-5
					X X	X X	Hold Hold	X	X X	X X	X X	X X	X	X	10 20	SA116-10 SA116-20		59 59	T-5 T-5
					X	X	Hold	X	X	X	X	X	X	X	30	SA116-30		59	T-5
					Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	40	SA116-40		59	T-5
Boring located to evaluate LOU 59		Х													0.0	SA119-0.0	SA119	59, 62	T-6
T-5) and LOU 62 (State Industries,				Х	X	X	X	X	X	X	X	X	X	X	0.5	SA119-0.5		59,62	T-6
waste water from the surface impo coverage for LOU 62 (on and off T					X X	X X	Hold Hold	X	X X	X X	X	X X	X X	X	10 20	SA119-10 SA119-20		59, 62 59, 62	T-6 T-6
					X	X	Hold	X	X	X	X	X	X	X	30	SA119-30		59, 62	T-6
					Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	40	SA119-40		59, 62	T-6
Boring located to evaluate soils for		Х													0.0	RSAT6-0.0	RSAT6	n/a	T-6
				Х	X X	X X	X Hold		X X	X X	X X	X X	X X	X	0.5 10	RSAT6-0.5 RSAT6-10		n/a n/a	T-6 T-6
					X	X	Hold		X	X	X	X	X	X	20	RSAT6-10 RSAT6-20		n/a	T-6
					X	X	Hold		X	X	X	X	X	X	30	RSAT6-30		n/a	T-6
					Х	Х	Х		Х	Х	Х	Х	Х	Х	40	RSAT6-40		n/a	T-6
Boring located to evaluate LOU 59		Х		V	V	X	V		Y	V	V	V	V	X	0.0	SA118-0.0	SA118	59	T-6
evaluate potential high risk piping r				Х	X X	X	X Hold		X X	X X	X	X X	X	X X	0.5 10	SA118-0.5 SA118-10		59 59	T-6 T-6
					X	X	Hold		X	X	X	X	X	X	20	SA118-20		59	T-6
					X	X	Hold		Х	X	X	X	X	Х	30	SA118-30		59	T-6
					Х	Х	Х		Х	Х	Х	Х	Х	Х	40	SA118-40		59	T-6
Boring located to evaluate LOU 59		Х		V	V	v	V		v	V	V	v	v	V	0.0	RSAT7-0.0	RSAT7	59	T-7
adjacent to LOU 59 piping to evalu				Х	X X	X	X Hold		X X	X X	X X	X X	X	X	0.5 10	RSAT7-0.5 RSAT7-10		59 59	T-7 T-7
					X	X	Hold		X	X	X	X	X	X	20	RSAT7-10 RSAT7-20		<u>59</u>	T-7
					X	X	Hold		X	X	X	X	X	X	30	RSAT7-30		59	T-7
					Х	Х	Х		Х	Х	Х	Х	Х	Х	40	RSAT7-40		59	T-7

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tion Description and Characterized Area Rationale
rea IV (U-7).
PA site, for general area-wide coverage and not associated with a specific
59 (Storm Sewer System) and for general area-wide coverage. Random boring aluate potential piping releases.
59 (Storm Sewer System) and for general area-wide coverage. Random boring aluate potential piping releases.
0 feet west of Tronox Purchasing/Training Building to evaluate soils for general ociated with a specific LOU.
59 (Storm Sewer System) and for general area-wide coverage. Located nanhole/inlet to evaluate high risk piping release locations (piping and inlet
59 (Storm Sewer System) and for general area-wide coverage. Located eneral coverage and adjacent to SG68 for VOC comparison purposes.
59 (Storm Sewer System) adjacent to former State Industries building (Building es, Inc. Site). Located adjacent to LOU 59 piping and manhole/inlet where poundments associated with LOU 62 was released to, as well as for general Tronox site).
for general area-wide coverage and not associated with a specific LOU.
59 (Storm Sewer System). Random boring adjacent to LOU 59 piping to g releases.
59 (Storm Sewer System) and for general area-wide coverage. Random boring aluate potential piping releases.

Locati	Geo- technical Tests <sup>10.</sup>	Asbestos <sup>9.</sup> EPA/540/R- 97/028	PCBs <sup>8.</sup> (EPA 8082 and 1668A)	Dioxins/ Furans <sup>7.</sup>	Radio- nuclides <sup>6.</sup>	SVOCs <sup>5.</sup> (EPA 8270C)	OCPs <sup>4.</sup> (8081A)	Total Cyanide (EPA 9012A)	Wet Chemistry <sup>3.</sup>	VOCs <sup>2.</sup> (EPA 8260B)	TPH- DRO/ORO (EPA 8015B)	Hex Cr (EPA 7199)	Metals (EPA 6020)	Perchlorate (EPA 314.0)	Sample Depths <sup>1.</sup> (ft, bgs)	Sample ID Number	Phase B Boring No.	LOU Number	Grid Location
southeastern most grid in Area	ng with the	5) and endii	rea IV (P-	grid in A	rn most	orthweste	on the n	ing point is	Plate A - Star	own on I	tion as sho	grid loca	inized by	ings are orga	Bor				L
Boring located to evaluate LOU 59		Х													0.0	RSAT8-0.0	RSAT8	59	T-8
adjacent to LOU 59 piping and ma				Х	X	X X	X Hold		X X	X X	X X	X X	X X	X X	0.5 10	RSAT8-0.5 RSAT8-10		59 59	T-8 T-8
					X	X	Hold		X	X	X	X	X	X	20	RSAT8-20		59	T-8
					Х	Х	Hold		Х	Х	Х	Х	Х	Х	30	RSAT8-30		59	T-8
Deving located to evolute LOLLES		V			Х	Х	Х		Х	Х	Х	Х	Х	Х	40	RSAT8-40	64040	59	T-8 T-8
Boring located to evaluate LOU 59 Tronox site rather than at a worst-o		Х		х	Х	Х	х		Х	Х	х	х	х	х	0.0	SA210-0.0 SA210-0.5	SA210	59 59	T-8
				~	X	X	Hold		X	X	X	X	X	X	10	SA210-10		59	T-8
					Х	Х	Hold		Х	Х	Х	Х	Х	Х	20	SA210-20		59	T-8
					X	X X	Hold X		X	X X	X X	X	X X	X X	30 40	SA210-30		59	T-8 T-8
Boring located to evaluate former		Х			^	^	^		Х	^	^	Х		^	0.0	SA210-40 RSAU4-0.0	RSAU4	59 62	U-4
and in the center of the former por				Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	0.5	RSAU4-0.5		62	U-4
62 summary for details).					Х	Х	Hold	Х	Х	Х	Х	Х	Х	х	10	RSAU4-10		62	U-4
	Х				X	X	Hold	X	X	X	X	X	X	X	20	RSAU4-20 RSAU4-30		62 62	U-4 U-4
					X X	X X	Hold Hold	X	X X	X X	X X	X X	X X	X X	30 40	RSAU4-30 RSAU4-40		62	U-4 U-4
	Х				X	X	Hold	X	X	X	X	X	X	X	50	RSAU4-50		62	U-4
					Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	60	RSAU4-60		62	U-4
Boring located to evaluate former		Х		N/		Ň	N/	X	× ×	Ň	N/	N/		N/	0.0	SA146-0.0	SA146	62	U-4
of former pond to provide general ( details).				Х	X	X X	X Hold	X	X X	X X	X X	X X	X X	X X	0.5 10	SA146-0.5 SA146-10		62 62	U-4 U-4
					X	X	Hold	X	X	X	X	X	X	X	20	SA146-20		62	U-4
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	30	SA146-30		62	U-4
					Х	Х	Hold	Х	X	Х	Х	Х	Х	X	40	SA146-40		62	U-4
					X X	X X	Hold X	X X	X X	X X	X X	X X	X X	X X	50 60	SA146-50 SA146-60		62 62	U-4 U-4
Boring located to evaluate former		Х			^	^	^	^	~	^	~	~		~	0.0	SA140-00 SA147-0.0	SA147	62	U-4
of former pond to provide general				Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	0.5	SA147-0.5		62	U-4
details).					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	10	SA147-10		62	U-4
					X 	X	Hold Hold	X X	X X	X	X	X	X	X	20 30	SA147-20 SA147-30		62 62	U-4 U-4
					X	X X	Hold	X X	X	X X	X X	X X	X X	X X	40	SA147-30 SA147-40		62	U-4 U-4
					X	X	Hold	X	X	X	X	X	X	X	50	SA147-50		62	U-4
					Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	60	SA147-60		62	U-4
Boring located to evaluate former		Х		V	V	X	V	V	X	V	V	V	×	Y	0.0	RSAU5-0.0	RSAU5	62	U-5
of former pond to provide general details).				Х	X	X X	X Hold	X	X X	X X	X X	X X	X X	X X	0.5 10	RSAU5-0.5 RSAU5-10		62 62	U-5 U-5
	Х				X	X	Hold	X	X	X	X	X	X	X	20	RSAU5-20		62	U-5
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	30	RSAU5-30		62	U-5
	х				X	X	Hold	X	X	X	X	X	X	X	40	RSAU5-40		62	U-5
	~				X X	X X	Hold X	X X	X X	X X	X X	X X	X X	X X	50 60	RSAU5-50 RSAU5-60		62 62	U-5 U-5
Boring located to evaluate former e		Х			χ	~	~	Λ		~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0.0	SA28-0.0	SA28	62	U-5
and in the center of the former pon				Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	0.5	SA28-0.5		62	U-5
62 summary for details).					X	X	Hold	X	X	X	X	X	X	X	10	SA28-10		62	U-5
					X	X X	Hold Hold	X X	X X	X X	X X	X X	X X	X X	20 30	SA28-20 SA28-30		62 62	U-5 U-5
					X	X	Hold	X	X	X	X	X	X	X	40	SA28-40		62	U-5
					Х	Х	Hold	Х	Х	Х	Х	Х	Х	Х	50	SA28-50		62	U-5
Dering leasted to evoluate soil for		V			Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	60	SA28-60	DCALLC	62	U-5
Boring located to evaluate soil for a		Х		х	Х	Х	х		Х	х	Х	х	х	Х	0.0	RSAU6-0.0 RSAU6-0.5	RSAU6	n/a n/a	U-6 U-6
				~	X	X	Hold		X	X	X	X	X	X	10	RSAU6-10		n/a	U-6
					Х	Х	Hold		Х	Х	Х	Х	Х	Х	20	RSAU6-20		n/a	U-6
					X	X	Hold		X	X	X	X	X	X	30	RSAU6-30		n/a	U-6
					X	X X	Hold Hold		X X	X X	X X	X X	X X	X X	40 50	RSAU6-40 RSAU6-50	+	n/a n/a	U-6 U-6
					X	X	X		X	X	X	X	X	X	60	RSAU6-60		n/a	U-6
Boring located to evaluate soil for a		Х													0.0	RSAU7-0.0	RSAU7	n/a	U-7
			Τ	Х	X	X	Х		X	X	X	X	X	X	0.5	RSAU7-0.5		n/a	U-7
					X X	X	Hold Hold		X X	X X	X X	X X	X X	X X	10 20	RSAU7-10 RSAU7-20		n/a n/a	U-7 U-7
					X	X	Hold		X	X	X	X	X	X	30	RSAU7-20 RSAU7-30		n/a n/a	U-7 U-7
]					Х	Х	Hold		Х	X	X	X	Х	X	40	RSAU7-40		n/a	U-7
1					Х	Х	Hold		Х	Х	Х	Х	Х	Х	50	RSAU7-50		n/a	U-7
					Х	Х	Х		Х	Х	Х	Х	Х	Х	60	RSAU7-60		n/a	U-7

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tion Description and Characterized Area Rationale
rea IV (U-7).
59 (Storm Sewer System) and for general area-wide coverage. Random boring hanhole/inlet to evaluate potential releases (piping and inlet).
59 (storm Sewer System). Located areally to evaluate point of exit from the t-case scenario.
r western pond in LOU 62 (State Industries, Inc. Site). Located within footprint ond to provide general coverage of pond area for potential releases (see LOU
r eastern pond in LOU 62 (State Industries, Inc. Site). Located within footprint al coverage of pond area for potential releases (see LOU 62 summary for
er eastern pond in LOU 62 (State Industries, Inc. Site). Located within footprint al coverage of pond area for potential releases (see LOU 62 summary for
er eastern pond in LOU 62 (State Industries, Inc. Site). Located within footprint al coverage of pond area for potential releases (see LOU 62 summary for
er eastern pond in LOU 62 (State Industries, Inc. Site). Located within footprint ond to provide general coverage of pond area for potential releases (see LOU
or area-wide coverage and not associated with a specific LOU.
or area-wide coverage and not associated with a specific LOU.

Locatio	Geo- technical Tests <sup>10.</sup>	Asbestos <sup>9.</sup> EPA/540/R- 97/028	PCBs <sup>8.</sup> (EPA 8082 and 1668A)	Dioxins/ Furans <sup>7.</sup>	Radio- nuclides <sup>6.</sup>	SVOCs <sup>5.</sup> (EPA 8270C)	OCPs <sup>4.</sup> (8081A)	Total Cyanide (EPA 9012A)	Wet Chemistry <sup>3.</sup>	VOCs <sup>2.</sup> (EPA 8260B)	TPH- DRO/ORO (EPA 8015B)	Hex Cr (EPA 7199)	Metals (EPA 6020)	Perchlorate (EPA 314.0)	Sample Depths <sup>1.</sup> (ft, bgs)	Sample ID Number	Phase B Boring No.	LOU Number	Grid Location
outheastern most grid in Area	ng with the	5) and endi	rea IV (P-	grid in A	rn most	orthweste	on the n	ting point is	Plate A - Star	wn on F	tion as sho	grid loca	nized by	ings are orga	Bor				
															s <sup>11</sup> :	SPLP) Sample	g Procedure (	ecipitate Leaching	Synthetic Pr
Locatio	Geo- technical Testing	Asbestos EPA/540/R- 97/028	PCBs (EPA 8082)	Dioxins/ Furans	Radio- nuclides	SVOCs (EPA 8270C)	OCPs (8081A)	Cyanide	Wet Chemistry	VOCs (EPA 8260B)	TPH- DRO/ORO (EPA 8015B)	Hex Cr (EPA 7199)	Metals (EPA 6020)	Perchlorate (EPA 314.0)	Sample Depths (ft, bgs)	Sample ID Number	Phase B Boring No.	LOU Number	Grid Location
Soil sample collected below bottom of f evaluate leaching potential of Site-relat	х				х	Х			x	х	х	х	х	x	10	RSAQ4-10	RSAQ4	4	Q-4
Optional sample - only to be collected capillary fringe. Contact between Qal approximately 34 feet bgs. Expected s	x				х	х			х	х	х	х	х	х	DD* = depth (ft)	RSAQ4-DD	RSAQ4	4	Q-4
Soil sample collected below bottom of f evaluate leaching potential of Site-relat	х				х	х			х	х	х	х	х	х	20	SA148-20	SA148	4	Q-4
Soil sample collected from below botto evaluate leaching potential of Site-relat Contact between Qal and MCfg1 is app soil sample will be collected within capi	x				х	х			х	х	х	х	х	х	33	SA148-33	SA148	4	Q-4
Soil sample collected from below LOU from Alluvium (Qal) soils. Expected so	х				Х	Х			х	Х	Х	х	х	х	20	RSAR3-20	RSAR3	60	R-3
Optional sample - only to be collected capillary fringe. Contact between Qal approximately 34 feet bgs. Expected s	х				х	х			х	х	х	х	х	х	DD* = depth (ft)	RSAR3-DD	RSAR3	60	R-3
Soil sample collected from beneath bot potential of Site-related analytes. Expe	х				Х	Х			х	Х	х	Х	Х	х	20	RSAU4-20	RSAU4	62	U-4
Optional sample - only to be collected encountered at this boring location. If s Expected soil type: Silt.	x				х	х			х	х	х	х	х	х	50	RSAU4-50	RSAU4	62	U-4
Soil sample collected from beneath bot Site-related analytes from Alluvium (Qa	х				Х	Х			х	Х	х	Х	х	х	10	RSAU5-10	RSAU5	62	U-5
<b>Optional sample</b> - only to be collected encountered at this boring location. If s Expected soil type: Silt.	x				Х	Х			х	х	х	х	х	х	50	RSAU5-50	RSAU5	62	U-5
	18	53	1	57	286	281	105	115	286	281	281	286	286	286				umber of Samples	Ni
				•															
																nles	QA/QC Sam		
		6	1	6	29	29	11	12	29	29	29	29	29	29			Field Duplic		
	0	0	1	1	1	1	1	1	1	1	1	1	1	1		S	Field Blanks		
	0	0	0	15	14	10	5	5	15	11	11	15	15	15		insate Blanks			
	0	0	0	0	0	0	0	0	0 15	18	0	0	0	0			Trip Blank S		
	0	0	1	3	15 15	15 15	6	6	15 15	15 15	15 15	15 15	15 15	15 15		e (5%) Duplicate (5%)	Matrix Spike		
		0			10	10		0	15	10	15	15	10	10		Duplicate (J70)	matrix Spike		

Notes:

Not applicable - boring is not associated with a specific LOU but is located to evaluate soil for general area-wide coverage. n/a

Х Sample will be collected and analyzed.

No sample collected under Phase B sampling program.

DD\* Sample depth to be determined in the field where DD = sample depth (ft).

TPH-DRO/ORO Total petroleum hydrocarbons - Diesel-Range Organics/Oil-Range Organics.

The 0.5 ft bgs sample will be collected from the 0.0 to 0.5 ft bgs interval, unless the area is paved. If area is paved, samples will be collected at 0.5 feet below or from a representative depth beneath the pavement. Alternately, if an unpaved area is within a rea 1. 2. Samples for VOC analysis will be preserved in the field using sodium bisulfate (or DI water) and methanol preservatives per EPA Method 5035.

Consists of wet chemistry parameters (including pH) listed on Table 1 of the Phase B Source Area Work Plan.

3.

Organochlorine Pesticides (includes analysis for hexachlorobenzene). 4.

5. Semi-volatile Organic Compounds

Radionuclides consists of alpha spec reporting for isotopic thorium and isotopic uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP). 6.

Dioxins/furans will be analyzed by EPA Method 8290 for all samples. Screening reports will be provided for 90% of the samples and full data packages for 10% of the samples. 7.

Polychlorinated biphenyls - Sample locations will be analyzed by USEPA methods 8082 and 1668A. Concrete surfaces at these locations will also include chip and/or wipe samples per EPA Region 1 SOP for Sampling Concrete in the Field (1997). 8.

Soil samples for asbestos analyses will be collected from a depth of 0 to 2-inches bgs. 9.

Geotechnical Tests consist of: moisture content (ASTM D-2216), grain size analysis (ASTM D-422 and C117-04), Soil Dry Bulk Density (ASTM D-2937), Grain Density (ASTM D-854, Soil-Water Filled Porosity (ASTM D-2216); Vertical Hydraulic Conductivity (ASPLP samples will be analyzed by EPA method 1312 using two preparation methods: 1) with extraction fluid #2 (reagent water at pH 5.00 ±0.05), and 2) with extraction method #3 (reagent water); per NDEP. 10. 11.

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tion Description and Characterized Area Rationale
rea IV (U-7).
tion Description and Characterized Area Rationale
of former AST in the northern part of LOU 4 (former Hardesty Chemical Co. Site) to elated analytes from Alluvium (Qal) soils. Expected soil type: Sand. ted if soil type is different than at 10 ft bgs.; <b>no sample will be collected within the</b> Qal & MCfg1 is approximately 29 feet bgs. Groundwater is expected to occur at d soil type: Silt.
of former UST in the southern part of LOU 4 (former Hardesty Chemical Co. Site) to elated analytes from Alluvium (Qal) soils. Expected soil type: Gravelly Sand.
totom of former UST in the southern part of LOU 4 (former Hardesty Chemical Co. Site) to elated analytes from Muddy Creek Formation - First Fine-Grained Facies (MCfg1) soils. approximately 31 feet bgs. Groundwater anticipated to be at approximately 42 feet bgs. No apillary fringe. Expected soil type: Silt.
DU 60 (Acid Drain System pipeline) to evaluate leaching potential of Site-related analytes soil type: Sand.
ted if soil type is different than at 10 ft bgs.;no sample will be collected within the Qal & MCfg1 is approximately 29 feet bgs. Groundwater is expected to occur at id soil type: Silt.
bottom of former western pond in LOU 62 (State Industries, Inc. Site) to evaluate leaching xpected soil type: Gravelly Sand.
ted if Silt/Clay of the Muddy Creek Formation - first fine-grained facies (MCfg1) is If soil type is similar to soils at 20 feet, then no sample will be collected for SPLP analyses.
bottom of former eastern pond in LOU 62 (State Industries) to evaluate leaching potential of
(Qal). Expected soil type: Gravelly Sand. ted if Silt/Clay of the Muddy Creek Formation - first fine-grained facies (MCfg1) is If soil type is similar to soils at 20 feet, then no sample will be collected for SPLP analyses.
peopolie distance, the sample will be moved to the unpaved area
asonable distance, the sample will be moved to the unpaved area.
ASTM D-5084/USEPA 9100).

Grid Location	Location Area	Monitoring Well No.	Sample ID Number	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval <sup>1.</sup>	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Hex Cr (EPA 7199)	Metals	VOCs <sup>2.</sup> (EPA 8260)	Wet Chemistry (a)	Total Cyanide (EPA 9012A)	OCPs <sup>3.</sup> (EPA 8081A)	SVOCs <sup>4.</sup> (EPA 8270C)	Radio- nuclides <sup>5.</sup>	Rationale		
			Wells ar	e organized by	grid location a	s shown on	Plate A - St	aring point	t is on the i	northweste	ern-most g	rid in Area	a 4 (P-2) a	and endin	g with the	e southeastern-most grid covering Area 4 (W-7).		
P-4	Parcel F	M-93	M-93	35.4 - 45.4	MCfg1	no	х	х	х	х	х		Х	х	Х	Located to serve as a downgradient stepout for LOUs 41 and 65; as an upgradient stepout for LOU 63; and for general Site coverage.		
P-5	IV	M-97	M-97	35 - 45	MCfg1	yes	х	х	х	x	х		Х	х	х	Located to serve as a downgradient stepout for LOUs 4, 26, 27, 28, 42, and 59; an general Site coverage.		
Q-4	Parcel F	M-92	M-92	34.9 - 44.9	MCfg1	yes	х	х	х	х	х		х	х	х	Located to serve as a downgradient stepout for LOUs 25, 41, 59, 60, and 65; as an upgradient stepout for LOU 63; and for general Site coverage.		
Q-5	II	M-13	M-13	40-50	Qal/MCfg1	yes	х	х	х	x	х	Х	Х	х	х	Located to serve as a downgradient stepout for LOUs 42, 59, and 60 and for general site coverage.		
Q-6	П	M-12A	M-12A	28-48	MCfg1	yes	Х	Х	х	x	х	х	Х	х	х	Located to serve as a downgradient stepout for LOU 59 and for general site coverage.		
R-4	IV	M-143	M-143	TBD	TBD	new well	Х	Х	х	x	х		х	х	х	New well to be installed; located to evaluate LOUs 4, 25, 26, 27, 28, 42, and 60 for general Site coverage		
R-5	IV	M-144	M-144	TBD	TBD	new well	х	Х	х	х	х		х	х	х	New well to be installed; located to evaluate LOU 42 and for general site coverage.		
S-2	IV	TR-8	TR-8	63 - 93	MCcg1/MCfg2	no	х	х	х	х	х	х	х	х	х	Located to serve as an upgradient stepout for LOUs 41 and 65; to evaluate possible offsite sources to the west (particularly for VOCs); and for general Site coverage.		
T-7	IV	M-10	M-10	43 - 63	MCcg1	no	х	Х	х	x	х		Х	х	х	Located as downgradient stepout for LOU 59; and for general Site coverage.		
U-4	IV	TR-10	TR-10	80-100	MCcg1	no	х	х	х	х	х		х	х	х	Located to evaluate LOU 62 and for general Site coverage.		
U-4	IV	M-137	M-137	TBD	TBD	new well	х	х	х	х	х	х	Х	х	х	New well to be installed; located to serve as a downgradient stepout for LOU 62 (former State Industries western pond), and for general Site coverage.		
U-5	IV	M-138	M-138	TBD	TBD	new well	х	х	х	x	x	х	Х	х	х	New well to be installed; Located to serve as a downgradient stepout for LOU 62 (former State Industries eastern pond) and LOU 59 (Storm Sewer System), and for general Site coverage.		
V-7	Parcel H	M-103	M-103	69.5 - 89.5	MCcg1	no	х	х	х	х	х		х	х	х	Located to evaluate potential onsite sources in the southeastern portion of the Site and possible upgradient sources.		
W-1	Olin Chemical	H-11	H-11	95 - 105	MCcg1	no	х	х	х	х	х		х	х	х	To provide general area-wide upgradient information.		
W-4	Parcel H	M-121	M-121	77 - 97	MCcg1	no	х	х	х	х	х		Х	х	х	Located to evaluate upgradient (southwest) groundwater conditions on the Site.		
W-5	Parcel H	M-118	M-118	138 - 158	MCfg2	no	х	х	х	х	х		х	х	х	Located to evaluate upgradient (south) groundwater conditions on the Site.		
W-6	Parcel H	M-120	M-120	80 - 100	MCcg1	yes	х	х	х		х		х	х	х	Located to evaluate upgradient (south) groundwater conditions on the Site.		
W-7	Parcel H	M-117	M-117	130 - 150	MCfg2	no	х	х	х		х		Х	х	х	Located to evaluate upgradient groundwater conditions on the southeast corner of the Site.		
					Number of Fi	eld Samples:	18	18	18	16	18	5	18	18	18			
QA/QC Samples:							0	0			_							
Field Duplicates (10%) Field Blanks						2	2	2	2	2	1	2 1	2	2				
Equipment Rinsate Blanks						18	18	18	18	18	18	18	18	18				
Trip Blank Samples							0	0	0	9	0	0	0	0	0			
Matrix Spike Duplicate (5%)							1	1	1	1	1	1	1	1	1			
Total Sar	nples:		-				41	41	41	48	41	27	41	41	41			

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	Grid Location	Location Area	Monitoring Well No.	Sample ID Number	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval <sup>1.</sup>	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Hex Cr (EPA 7199)	Metals	VOCs <sup>2.</sup> (EPA 8260)	Wet Chemistry (a)	Total Cyanide (EPA 9012A)	OCPs <sup>3.</sup> (EPA 8081A)	SVOCs <sup>4.</sup> (EPA 8270C)	Radio- nuclides <sup>5.</sup>	
Ī				Wells ar	e organized by	grid location a	is shown on	Plate A - St	aring point	is on the	northweste	ern-most g	rid in Are	a 4 (P-2) a	and endin	g with the	southeastern-most grid o

Notes:

Х Sample will be collected and analyzed.

It is anticipated that the large majority of the flow to the well will be from the coarse-grained sediments. As such, in the cases where there are two lithologies present across the screen interval, the water sampled will represent conditions in the coarse-grained interval. 1 VOCs = Volatile organic compounds (to include analysis for naphthalene). 2

3 OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).

SVOCs = Semi volatile organic compounds. 4

Radionuclides consists of alpha spec reporting for isotopic Thorium and isotopic Uranium, and Radium-226, plus Radium-228 by beta counting (per NDEP). 5

(a) Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field.

To be determined when well is constructed. TBD

Qal Qaternary Alluvium

MCfg1 Muddy Creek Formation - first fine-grained facies

MCcg1 Muddy Creek Formation - first coarse-grained facies

MCfg2 Muddy Creek Formation - second fine-grained facies

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Rationale

## I covering Area 4 (W-7).

J:\TronoxGIS\mxd\Phase\_B\_WorkPlan\Area IV WP\PlateA-All\_Phase\_B\_Sampling\_Map.mxd

