

Area I

			Labor				boratory ^D :	CAS Kelso,	S WA			Columbi F	a Analytical S Rochester, N	Services Y			GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical		
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ⁴	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1,B}	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ر. (EPA 9012A)	e OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8, E} (EPA 8082)	Radionuclides ^{9.}	PCBs ^{8, E} (EPA 1668A)	OPPs ^{10, F} (8141A)	Organic Acids ^F	Rationale for Revision	Location Description and Rationale for Investigation
					Wells	are orga	nized by g	rid location a	as shown	on Plate	e A - Start	ing point	is on the n	orthwest	ern-most	grid in A	Area I (A-3) an	nd ending wi	th the south	eastern-mo	st grid cove	ring Area I (O-4).
A-3	Parcel A	H-48	H-48B	TD = 41.1 ft	Qal *	6/18/2008	No	х	Х	Х	х	Х	х	Х	Х		х		Х	х	F, K, N	Serves as a stepout, generally upgradient for LOU 67 (Delbert Madsen Site), for general Site coverage and for BRC Parcel A.
A-5	Parcel A	PC-40	PC-40B	15 - 55	Qal	6/18/2008	Yes	х	х	х	х	Х	х	х	х		х		x	х	F, N	Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I.
B-3	Parcel A	H-49A	H-49AB	TD = 49 ft	Qal *	6/24/2008	No	х	х	х	x	Х	х	х	х		x				K, N	Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I.
D-3	Parcel A	MC-62	MC-62B	TD = 59 ft	Qal *	6/23/2008	No	х	х	х	х	Х	х	х	х		х				K, N	Located for general Site coverage and to evaluate downgradient from Area I.
D-4	Parcel B	PC-72	PC-72B	15 -35	Qal	6/23/2008	No	х	х	х	x	Х	х	Х	Х		X				N	Located to serve as a lateral stepout for M-95 for general Site coverage; and to evaluate downgradient from Area I.
E-1	Parcel D	MC-45	MC-45B	TD = 35.33 ft	Qal *	6/25/2008	Yes	х	х	х	х	Х	х	х	х		х		х	х	F, K, N	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
E-3	Parcel A	MC-65	MC-65B	TD = 41.78 ft	Qal *	6/20/2008	No	х	х	х	х	Х	х	х	Х		х				K, N	Located for general Site coverage and to evaluate downgradient from Area I.
E-3	Parcel A	MC-66	MC-66B	TD = 47.52 ft	Qal *	6/20/2008	No	х	Х	х	х	Х	х	х	х		х				K, N	Located for general Site coverage and to evaluate downgradient from Area I.
E-5	Parcel B	M-44	M-44B	5 - 35	Qal/MCfg1	6/24/2008	No	x	х	х	x	Х	х	х	х		x		x	x	F, N	Located to evaluate LOU 68 and as a lateral stepout for well M-95 and to evaluate BRC Parcels B and I.
E-6	Parcel I	M-94	M-94B	12 - 22	Qal	6/25/2008	No	Х	х	х	х	Х	х	х	х		x				N	Located to evaluate LOU 68; BRC Parcels B and I and the downgradient area of the Site.
E-6	Parcel I	M-95	M-95B	12 - 22	Qal	6/24/2008	Yes	Х	Х	Х	х	Х	Х	Х	х		х				N	Located to evaluate LOU 68; BRC Parcel B; and the downgradient area of the Site.
E-7	Parcel I	M-96	M-96B	10.5 - 20.5	Qal	7/9/2008	No	Х	Х	Х	х	Х	Х	Х	х		х				N	Located to evaluate LOU 68; BRC Parcel B; and the downgradient area of the Site.
F-2	Parcel D	MC-53	MC-53B	20 - 40	Qal *	6/25/2008	No	х	х	х	х	Х	х	х	х		х				Ν	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
F-4	Parcel B	PC-37	PC-37B	16.8 - 41.8	Qal	6/20/2008	No	x	х	х	х	х	х	х	х		×				N	Located to serve as a downgradient stepout for LOU 68; to evaluate downgradient areas; and for general Site coverage.
G-1	Olin	MC-3	MC-3B	TD = 44.25 ft	Qal *		No	x	x	х	x	х	x	x	х		x				K, N	Located offsite to the west for general Site coverage; to evaluate potential offsite sources to the west; and to evaluate BRC Parcels C and E.
G-2	Parcel D	MC-94	MC-94B	TD = 40 ft	Qal *		No	х	х	х	х	х	х	х	х		х				K, N	Located to evaluate potential offsite sources to the west; for general Site coverage; and to evaluate downgradient from Area I.
G-2	Parcel E	MC-97	MC-97B	TD = 42 ft	Qal *	6/25/2008	No	х	х	х	х	х	х	x	х		х				K, N	Located to evaluate potential offsite sources to the west; for general Site coverage; and to evaluate downgradient from Area I.
G-3	Parcel D	MC-55	MC-55B	TD = 23 ft	Qal *		No	х	х	х	х	х	х	х	х		х				K, N	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
H-2	Parcel C	H-28A	H-28AB	TD = 51 ft	MCfg1 *		No	х	x	х	х	х	x	x	х		x				K, N	Serves as a close stepout downgradient for LOU 1 and LOU 10; for general Site coverage; and to evaluate potential offsite sources to the west.
H-2	Parcel C	MC-32	MC-32B	TD = 34 ft	Qal *	6/25/2008	No	х	x	х	x	х	x	x	x		x				K, N	Located to serve as a downgradient stepout for LOU 10; to evaluate potential offsite sources to the west; to provide general Site coverage; and to evaluate BRC Parcels C and E. This was a dry well - no water sample collected in June 2008.
H-2	I	M-6A	M-6AB	26.8 - 41.5	Qal/MCfg1	6/27/2008	No	х	x	х	x	х	x	x	х	х	X	х	x	x	E, F, G	Located as a downgradient stepout for LOU 1 and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
H-3	I	M-7B	M-7BB	25.5 - 50.5	Qal/MCfg1	6/26/2008	Yes	х	х	х	х	х	х	х	х	х	х	х	х	х	E, F	Located as a downgradient stepout for LOU 1and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
H-3	Parcel D	MC-59	MC-59B	TD = 32.58 ft	Qal *		No	х	x	х	х	х	х	x	x		×				K, N	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
H-6	Parcel D	M-23	M-23B	9.4 - 37.4	Qal	6/25/2008	No	х	х	х	х	х	х	x	х		×		x	x	F, N	Located to serve as a upgradient stepout for LOU 68; as a downgradient stepout for LOU 1; to evaluate BRC Parcels C and D; and for general Site coverage.
H-8	Parcel J	M-48	M-48B	6.1 - 36.1	Qal/MCfg1	7/9/2008	Yes	х	х	х	х	Х	х	х	х		х				N	Located to evaluate LOU 69 and to evaluate BRC Parcels B and J.
I-4	I	M-98	M-98B	19 - 29	Qal		Yes	х	х	х	х	Х	х	х	х		х					Located to evaluate LOU 1 and for general Site coverage.
I-5	I	M-99	M-99B	16 - 31	Qal		No	х	х	х	х	х	х	х	х		×					Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
I-6	I	M-100	M-100B	19 - 29	Qal		No	x	х	х	х	Х	х	х	х		x					Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
I-7	I	M-101	M-101B	17 - 27	Qal		No	x	x	х	х	Х	х	х	х		x					Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
J-2	BRC	AA-BW-02	AA-BW-02B	33 - 53	MCfg1 *		No	x	х	х	х	х	х	х	х		x					Located to evaluate constituents from off-Site sources to the west, and for general Site coverage.
J-8	I	M-102	M-102B	19.4 - 39.4	Qal		No	x	x	x	x	х	х	x	х		×					Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
K-2	I	M-5A	M-5AB	40 - 50	MCfg1	6/26/2008	Yes	Х	х	Х	х	х	Х	х	х	х	х	х	x	x	E, F	Located to evaluate LOU 2 (Open Area South of the Trade Effluent Ponds); as an upgradient stepout for LOU 1 and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.

Table 3

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

						Lab	oratory ^D :	CAS Kelso, V	WA			Columbia R	a Analytical S ochester, NY	ervices			GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical		Γ
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1,B}	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ر. (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8, E} (EPA 8082)	Radionuclides ^{9.}	PCBs ^{8, E} (EPA 1668A)	OPPs ^{10, F} (8141A)	Organic Acids ^F	Rationale for Revision	
		1			Wells	are orgar	nized by g	rid location a	s showr	on Plate	A - Start	ting point i	is on the no	orthwest	ern-most	grid in A	Area I (A-3) ar	d ending wit	th the south	eastern-mos	st grid cove	rin
K-2	I	TR-2	TR-2B	144.5 - 174.5	MCfg1	7/8/2008	No	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	Х	Х	E, F	То
K-3	I	MW-16	MW-16B	24.7 - 39.7	MCfg1	6/26/2008	No	х	х	х	х	х	х	х	х		х					Ne
K-5	I	M-69	M-69B	19.9 - 39.3	Qal/MCfg1	7/8/2008	No	х	х	х	х	х	x	х	Х		x					Lo
K-5	I	M-79	M-79B	10.8 - 35.4	Qal/MCfg1	6/29/2008	No	х	х	х	х	х	х	х	х		х					Lo
K-6	1	M-83	M-83B	10.8-40.3	Qal/MCfg1		No	х	х	х	х	х	х	х	х		x		x	x	F	Lo 23
K-6	1	M-84	M-84B	11.8 - 34.1	Qal/MCfg1	6/29/2008	No	x	x	х	х	х	х	x	x		x					Lo 22
K-7	1	M-86	M-86B	11.3 -40.9	Qal/MCfg1		No	x	x	х	x	х	х	х	х		x				G	Lo
K-8	1	M-88	M-88B	7.3 - 36.8	Qal/MCfg1	6/25/2008	No	x	x	x	х	x	x	x	x		x					Lo
K-9	1	M-129	M-129B	20 - 40	MCfg1		No	x	x	х	х	х	х	х	х		x				н	Lo
K-9	TIMET	CLD1-R	CLD1-RB	25 -35	Qal/MCfg1	7/10/2008	No	x	x	х	x	х	x	х	х		x					Se
L-2	1	M-127	M-127B	35-50	MCfg1		No	x	x	x	х	х	x	x	x	x	x	x	x	x	E, F, H	Ne
L-3	1	M-126	M-126B	19.7 - 39.7	MCfg1	6/29/2008	No	x	х	x	x	х	х	x	х		x					Ne
L-4	1	M-14A	M-14AB	20 - 40	MCfg1	6/30/2008	No	x	x	x	х	х	х	x	х		x					Lo
L-4	1	M-57A	M-57AB	20 - 40	MCfq1	6/27/2008	No	x	x	x	x	x	x	x	x		x					Lo
L-5	1	I-B	I-BB	17.8 - 42.5	Qal/MCfq1	7/8/2008	No	x	x	x	x	x	x	x	x		x					Lo
L-6	1	M-55	M-55B	14.6 - 44.6	Qal/MCfg1	7/1/2008	Yes	x	x	x	x	х	x	x	х		x					Lo
L-6	I	M-65	M-65B	14.4 - 39	Qal/MCfg1	7/2/2008	No	x	х	x	х	х	х	x	х		x					Lo
L-6	I	M-78	M-78B	21.5 - 41.5	Qal/MCfg1		No	х	х	Х	х	х	х	х	Х		х					Lo
L-8	I	M-61	M-61B	9.3 - 38.8	Qal/MCfg1	6/26/2008	No	х	х	Х	х	х	Х	х	Х		х					Lo
L-8	I	M-67	M-67B	7.8 - 37.8	Qal/MCfg1	6/27/2008	No	х	х	х	х	х	х	х	х		х					Lo
L-8	I	M-68	M-68B	11.2 - 39.8	Qal/MCfg1	6/27/2008	No	х	х	х	х	х	х	х	х		х					Lo
L-9	TIMET	CLD2-R	CLD2-RB	20 - 40.27	Qal	7/10/2008	No	x	х	х	х	х	х	х	х		x				0	Se
L-9	I	M-130	M-130B	20 - 40	MCfg1		No	x	х	х	х	х	x	х	х		x				Н	Lo
L-10	TIMET	CLD3-R	CLD3-RB	nr	MCfg1*	7/10/2008	No	×	x	х	х	х	х	x	x		x				0	Lo
M-1	Olin	H-38	H-38B	25 - 50	Qal*		No	х	x	х	х	х	Х	х	х		х					To
M-2	I	TR-4	TR-4B	124.5 - 144.5	MCfg1	7/9/2008	No	х	х	х	х	х	х	x	х	х	x	х	х	х	E, F	Lo VC
M-3	I	M-125	M-125B	35-50	MCfg1		No	х	х	x	х	х	х	х	х	х	х	х	х	х	E, H, M, F	Ne fro
M-8	1	M-39	M-39B	24.9 - 39.9	Qal/MCfg1	7/8/2008	Yes	х	х	х	х	х	Х	х	х		х		X	х	F	Lo
N-4	I	M-142	M-142B	30-45	MCfg1		No	x	x	х	х	х	х	х	х		x		х	х	F, H	Ne Sh
O-2	I	M-123	M-123B	34-51	MCfg1	7/11/2008	No	х	х	х	х	х	х	x	x	х	х	х	х	х	E, F, H, M	Ne off:
O-4	I	M-124	M-124B	34-49	MCfg1	7/11/2008	No	x	x	x	x	x	х	x	x		x				н	Ne

Table 3

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

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Location Description and Rationale for Investigation
ng Area I (O-4).
o evaluate for SRCs in upper Muddy Creek Fm.
lew monitoring well to evaluate SRCs in upper Muddy Creek from offsite sources from west.
ocated to evaluate LOU 32 and to evaluate the western end of the Groundwater Barrier Wall.
ocated to evaluate LOU 1; LOU 32 and the western end of the Groundwater Injection Trenches; and for general Site overage.
ocated to evaluate LOU 32 and the Groundwater Injection Area; as an upgradient stepout for LOU 1, and LOUs 22 and 3; and for general Site coverage.
ocated to evaluate LOU 32 and the Groundwater Injection Trench area; as an upgradient stepout for LOU 1 and LOUs 2 and 23; and for general Site coverage.
ocated to evaluate LOU 32 and the Groundwater Injection Trench area; as an upgradient stepout for LOU 1, LOUs 22 nd 23; and for general Site coverage.
ocated to serve as an upgradient stepout for LOU 1; as a downgradient stepout for LOU 32; to evaluate possible offsite ources to the east; and for general Site coverage.
ocated to evaluate the eastern end of the barrier wall. Well was drilled and installed in March 2008.
erves as a close stepout downgradient of LOU 5 (Beta Ditch) and general Site coverage. Located on Timet.
lew monitoring well located to evaluate LOU 2; to evaluate potential offsite sources to the west; and for general Site overage. Well was drilled and installed in June 2008, but not yet sampled for Phase B.
lew monitoring well located to serve as an up- to crossgradient stepout for LOU 2; to evaluate potential offsite sources om the west; and for general Site coverage.
ocated as an upgradient stepout for LOUs 30, 56, and 58; as a downgradient well for LOU 39; and for general Site overage.
ocated to serve as an upgradient stepout for LOU 32; to evaluate the west end of the Groundwater Barrier Wall; and r general Site coverage.
ocated as a downgradient stepout for LOU 56 and LOU 58; as an upgradient stepout for LOU 57, and for general Site overage.
ocated just upgradient of the groundwater barrier wall; to evaluate LOU 32; to serve as a downgradient stepout for OUs 19, 31, and 55 and for general Site coverage.
ocated to serve as an upgradient stepout for LOU 32; as a downgradient stepout for LOU 57; and for general Site overage.
ocated to evaluate LOU 32; as a downgradient stepout for LOU 55; and for general Site coverage.
ocated to evaluate LOU 32 and the eastern end of the Groundwater Barrier Wall.
ocated to serve as an upgradient stepout for LOU 32 and for general Site coverage.
ocated to serve as a downgradient stepout for LOU 5 and 20; as an upgradient stepout for LOU 32; as an evaluation of e east end of the Groundwater Barrier Wall; and for general Site coverage.
erves as a close stepout downgradient of LOU 5; and a further downgradient stepout for LOU 20 (Pond C-1 and ssociated Piping), and for general Site coverage. Located on Timet.
ocated to evaluate LOU 5 and the eastern end of the barrier wall. Well was installed in March 2008 but not yet ampled for Phase B.
ocated to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I. Located on Timet.
o evaluate possible offsite sources from the west, as an upgradient stepout to LOU 5 (Beta Ditch) and for general Site overage. Depth of screen will be confirmed in the field.
ocated to serve as a downgradient stepout for LOU 5; to evaluate possible offsite sources to the west (particularly for OCs); and for general Site coverage.
lew monitoring well located to serve as a downgradient stepout for LOUs 5 and 54; to evaluate potential offsite sources om the west; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.
ocated to serve as a downgradient stepout for LOUs 5, 18, 20, and 21; and for general Site coverage.
lew monitoring well constructed in borehole for SA87 to evaluate LOU 39 (Satellite Accumulation Point, AP Maintenanci hop). Well was installed in June 2008 but not yet sampled for Phase B.
lew monitoring well located to evaluate LOU 35; as an upgradient stepout for LOUs 38 and 54; to evaluate potential ffsite sources to the west; and for general Site coverage. PCB analysis for groundwater requested by NDEP at this ccation. Well was installed in June 2008 but not yet sampled for Phase B.
lew monitoring well located to evaluate LOU 64; serve as a downgradient stepout for LOU 63; as an upgradient stepout or LOU 39; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.

						Lab	ooratory ^D :	CAS Kelso,	S WA			Columbia R	a Analytical S lochester, NY	ervices			GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV		
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1,B}	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide J. (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8, E} (EPA 8082)	Radionuclides ^{9.}	PCBs ^{8, E} (EPA 1668A)	OPPs ^{10, F} (8141A)	Organic Acids ^F	Rationale for Revision	
					Wells	are orgar	nized by g	rid location	as showr	on Plate	A - Star	ting point	is on the no	orthwest	ern-mos	grid in A	Area I (A-3) ar	d ending wit	th the south	eastern-mos	st grid cover	ring
O-4	I	M-128	M-128B	40-55	MCfg1		No	х	х	х	х	х	x	х	х		x				н	New and
					Numb	er of Field	Samples:	64	64	64	64	64	64	64	64	8	64	8	16	16		-
QA/QC Sam	ples:				Humb		oumpico.	04	04	04					04				10	10		
	Field Dupli	cates (10%))					7	7	7	7	7	7	7	7	1	7	0	2	2		
	Field Blank	S						1	1	1	1	1	1	1	1	1	1	0	1	1		
	Equipment	Rinseate B	lanks					3	3	3	3	3	3	3	3	0	3	0	1	1		
	Trip Blank	Samples						0	0	14	0	0	0	0	0	0	0	0	0	0		
	Matrix Spik	ie (5%)	(===)					4	4	4	4	3	3	4	3	1	4	0	1	4		
	Matrix Spik	e Duplicate	e (5%)			T - 4 -		4	4	4	4	3	3	4	3	1	4	0	1	4		
						lota	I Samples:	83	83	97	83	81	81	83	81	12	83	8	22	28		
Notes:																						
*	Well complet	ion informat	ion or boring l	og not available	Soil type infe	rred from n	earby wells	and geologic cro	oss-section	provided in	the Phase	A Source Ar	ea Investigatio	n Report (ENSR 200	7) ENSR i	s in the process	of obtaining scre	en interval info	rmation from B	МІ	
Х	Sample will h	ne collected	and analyzed	og not available	. Con type inte		carby wens	and geologie en	033 3001011	provided in		A Obuice An	ca mesugate	in Report (or obtaining sore				
blank	No sample co	ollected und	er Phase B sa	ampling plan.																		
1.	It is anticipate	ed that the la	arge majority of	of the flow to the	e well will be fr	om the coa	rse-grained	sediments. As	such, in the	cases whe	re there are	e two lithologi	es present aci	ross the sc	reen interv	al, the wate	r sampled will re	present conditio	ons in the coars	e-grained interv	/al.	
2.	Metals analy	ses includes	aluminum, A	ntimony, Arsen	ic, Barium, Bei	yllium, Boro	on, Cadmiun	n, Chromium, C	obalt, Copp	er, Iron, Le	ad, Magnes	sium, Mangar	nese, Mercury	, Molybden	um, Nickel	, Platinum,	Potassium, Sele	nium, Silver, So	dium, Strontium	n, Tin, Titanium	, Thallium, Tun	igste
3.	VOCs = Vola	tile organic	compounds (t	o include analy	sis for naphtha	lene).																
4.	Hexavalent C	Chromium.																				
5.	Complete list	t of wet cher	nistry parame	ters is shown o	n Table 1. All g	roundwater	r samples wi	Il have pH meas	sured in the	field.												
6.	OCPs = Orga	anochlorine	pesticides (to	include analysi	s for hexachlor	obenzene).																
7.	SVOCs = Se	mi volatile o	rganic compo	unds.																		
8. 0	Polychiofinat	ed Bipnenyi	S. falaba caoc r	oporting for ico		and inotonic	l Ironium o	nd Padium 226	nlue Podi	um 229 hu	hoto counti		וכ									
9. 10		anonhosnho	rous Pesticide				, Utarilum, a		, pius raun	um-220 Dy		ing (per NDEr	-).									
TBD	To Be Deterr	mined when	well is constru	ucted.																		
nr	Not recorded	l in Tronox d	latabase (scre	en intervals to	be acquired fro	m BMI).																
Qal	Quaternary A	Alluvium.	,		•	,																
6/25/2008	Yellow indica	tes sample	was collected	on the date she	own.																	
MS/MSD	Matrix Spike	sample and	Matrix Spike	Duplicate samp	ole (fill 2nd set	of bottles fo	or MS sample	e and 3rd set of	bottles for I	MSD sampl	e).											
MCfg1	Muddy Creek	<pre>< Formation</pre>	 first fine-grai 	ined facies.																		
Х	Green-shadir	ng indicates	items that hav	ve been added	or changed fro	m Table 3 i	n the April 2	008 Area I Worl	k Plan origir	ally review	ed by NDE	Ρ.										
A	Sample ID w	as added to	convey samp	le ID nomencla	ture to field sa	mpling team	n ("B" suffix o	denotes sample	e is associate	ed with Pha	ise B).											
В	Soll type colu	umn was add	ued to conform	n with NDEP re	quest.	in obiopir -	the comple	containara ta th		to loborate												
	Laboratory in	itormation w	as added to a	SSIST TIEID SAMP	ling personnei	in snipping	the sample	containers to th	ne appropria	te laborato	у.											
F	OPPs and O	roanic Acide	were added	nay 0, 2000). Der NDEP (July	21 2008)																	
G	Well was add	ded to Table	3 per NDEP	(May 6, 2008)	, 2000).																	
Ĥ	Screen interv	al was adde	ed to Table 3 a	after this well w	as drilled and i	nstalled in	July 2008.															
J	Column was	added by Tr	ronox because	e it was unclear	in previous tal	oles that cya	anide will be	analyzed in all	proposed w	ells. Cyani	de is condu	ucted as part	of the Wet Ch	emistry an	alysis.							
К	For screen in	tervals marl	ked as "TD=",	total well depth	is given where	e screen int	erval is not l	known. A downh	hole camera	will be use	d to determ	nine actual sc	reen intervals.									
М	Based on Ph	ase A result	s, these locati	ions were selec	ted for PCB sa	mpling.																

N The listed location area was revised to more clearly indicate the Parcel ID number (or other location indicator) that the well is in.
 O Well was sampled as part of the Phase B Area I investigation in June-July 2008.

Table 3

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

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Location Description and Rationale for Investigation
ng Area I (O-4).
ew monitoring well to serve as a downgradient stepout for LOUs 35 and 64; as an upgradient stepout for LOUs 39, 52, d 57; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.
ten, Uranium, Vanadium, Zinc

							La	boratory :	CAS Kelso, V	WA			Columbia R	a Analytical S lochester, NY	ervices			GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ⁴	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1,B}	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide J. (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8, E} (EPA 8082)	Radionuclides ^{9.}	PCBs ^{8, E} (EPA 1668A)	OPPs ^{10, F} (8141A)	Organic Acids ^F	Location Description and Rationale for Investigation
					Wells are	organized	d by grid	location a	is shown on	Plate A -	Starting	g point is	on the no	orthwestern	n-most g	rid in Are	ea I (A-3)	and ending	g with the so	outheastern	-most grid	covering Area I (O-4).
A-3	Parcel A	H-48	H-48B	TD = 41.1 ft	Qal *	6/18/2008	No		Х	Х	х	х	х	х	х	Х		х		х	х	Serves as a stepout, generally upgradient for LOU 67 (Delbert Madsen Site), for general Site coverage and for BRC Parcel A.
A 5	Densel	DC 40	PC-40B	15 - 55	0-1	6/48/2008	Vee		Х	Х	Х	Х	х	х	х	х		х		х	х	Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I.
A-5	Parcel A	PC-40	PC-40BD	15 - 55 (dup)	Qai	6/16/2008	res		х	х	х	х	x	х	х	х		x		х	х	This is a duplicate sample of PC-40B.
B-3	Parcel A	H-49A	H-49AB	TD = 49 ft	Qal *	6/24/2008	No		Х	Х	Х	Х	х	х	х	х		х				Located to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I.
D-3	Parcel A	MC-62	MC-62B	TD = 59 ft	Qal *	6/23/2008	No		Х	Х	Х	Х	х	Х	Х	Х		х				Located for general Site coverage and to evaluate downgradient from Area I.
D-4	Parcel B	PC-72	PC-72B	15 -35	Qal	6/23/2008	No		Х	Х	Х	Х	х	х	Х	Х		х				Located to serve as a lateral stepout for M-95 for general Site coverage; and to evaluate downgradient from Area I.
E-1	Parcel D	MC-45	MC-45B	TD = 35.33 ft	Qal *	6/25/2008	Yes		Х	Х	Х	Х	х	х	Х	Х		х		Х	х	Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
E-3	Parcel A	MC-65	MC-65B	TD = 41.78 ft	Qal *	6/20/2008	No		Х	х	х	х	х	х	х	х		х				Located for general Site coverage and to evaluate downgradient from Area I.
E-3	Parcel A	MC-66	MC-66B	TD = 47.52 ft	Qal *	6/20/2008	No		Х	Х	Х	Х	х	Х	Х	Х		х				Located for general Site coverage and to evaluate downgradient from Area I.
E-5	Parcel B	M-44	M-44B	5 - 35	Qal/MCfg1	6/24/2008	No		Х	Х	Х	Х	х	Х	Х	Х		х		Х	х	Located to evaluate LOU 68 and as a lateral stepout for well M-95 and to evaluate BRC Parcels B and I.
E-6	Parcel I	M-94	M-94B	12 - 22	Qal	6/25/2008	No		Х	Х	Х	Х	х	Х	Х	Х		х				Located to evaluate LOU 68; BRC Parcels B and I and the downgradient area of the Site.
E-6	Parcel I	M-95	M-95B	12 - 22	Qal	6/24/2008	Yes		Х	Х	Х	Х	х	х	Х	Х		х				Located to evaluate LOU 68; BRC Parcel B; and the downgradient area of the Site.
			M-95B	12 - 22				х	Х	Х	х	х	х	х	х	Х		х				This is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles for MSD sample. Label both sets of bottles as M-95B.
E-7	Parcel I	M-96	M-96B	10.5 - 20.5	Qal	7/9/2008	No		Х	Х	Х	Х	х	х	х	х		х				Located to evaluate LOU 68; BRC Parcel B; and the downgradient area of the Site.
F-2	Parcel D	MC-53	MC-53B	20 - 40	Qal *	6/25/2008	No		Х	х	х	х	х	х	х	х		х				Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
F-4	Parcel B	PC-37	PC-37B	16.8 - 41.8	Qal	6/20/2008	No		х	х	х	х	х	х	х	х		x				Located to serve as a downgradient stepout for LOU 68; to evaluate downgradient areas; and for general Site coverage.
G-1	Olin	MC-3	MC-3B	TD = 44.25 ft	Qal *		No		х	х	х	х	х	х	х	х		х				Located offsite to the west for general Site coverage; to evaluate potential offsite sources to the west; and to evaluate BRC Parcels C and E.
G-2	Parcel D	MC-94	MC-94B	TD = 40 ft	Qal *		No		Х	x	х	х	х	x	х	х		х				Located to evaluate potential offsite sources to the west; for general Site coverage; and to evaluate downgradient from Area I.
G-2	Parcel E	MC-97	MC-97B	TD = 42 ft	Qal *	6/25/2008	No		Х	x	х	х	х	х	x	х		х				Located to evaluate potential offsite sources to the west; for general Site coverage; and to evaluate downgradient from Area I.
G-3	Parcel D	MC-55	MC-55B	TD = 23 ft	Qal *		No		х	х	х	х	х	х	х	х		х				Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
H-2	Parcel C	H-28A	H-28AB	TD = 51 ft	MCfg1 *		No		х	x	х	х	х	х	х	х		х				Serves as a close stepout downgradient for LOU 1 and LOU 10; for general Site coverage; and to evaluate potentia offsite sources to the west.
H-2	Parcel C	MC-32	MC-32B	TD = 34 ft	Qal *	6/25/2008	No		х	х	х	х	х	х	х	х		х				Located to serve as a downgradient stepout for LOU 10; to evaluate potential offsite sources to the west; to provide general Site coverage; and to evaluate BRC Parcels C and E. This was a dry well - no water sample collected in Ju 2008.
H-2	I	M-6A	M-6AB	26.8 - 41.5	Qal/MCfg1	6/27/2008	No		х	х	х	х	х	х	х	х	х	х	х	х	х	Located as a downgradient stepout for LOU 1 and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
H-3	I	M-7B	M-7BB	25.5 - 50.5	Qal/MCfg1	6/26/2008	Yes		х	х	х	х	х	х	х	х	х	x	х	х	х	Located as a downgradient stepout for LOU 1and LOU 10; to evaluate possible offsite sources to the west; and for general Site coverage.
H-3	Parcel D	MC-59	MC-59B	TD = 32.58 ft	Qal *		No		х	х	х	х	х	х	х	х		х				Located to evaluate potential offsite sources to the west; for general Site coverage downgradient from Area I.
H-6	Parcel D	M-23	M-23B	9.4 - 37.4	Oal	6/25/2008	No		Х	x	х	х	х	х	x	x		х		Х	x	Located to serve as a upgradient stepout for LOU 68; as a downgradient stepout for LOU 1; to evaluate BRC Parcel C and D; and for general Site coverage.
		111 20	M-23BD	9.4 - 37.4 (dup)	QUI	0,20,2000	110		х	x	х	х	х	х	х	х		х		х	x	This is a duplicate sample of M-23B.
H-8	Parcel J	M-48	M-48B	6.1 - 36.1	Qal/MCfg1	7/9/2008	Yes		Х	Х	х	х	х	х	х	х		х				Located to evaluate LOU 69 and to evaluate BRC Parcels B and J.
1-4	I	M-98	M-98B	19 - 29	Qal		Yes		х	х	х	х	х	х	х	х		х				Located to evaluate LOU 1 and for general Site coverage.
I-5	I	M-99	M-99B	16 - 31	Qal		No		х	х	х	х	х	х	х	х		х				Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
I-6	1	M-100	M-100B	19 - 29	Qal		No		Х	х	х	х	Х	Х	х	х		x				Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.
-7	I	M-101	M-101B	17 - 27	Qal		No		х	х	х	х	Х	Х	х	х		х				Located to evaluate LOU 1; as a downgradient stepout for LOUs 22, 23, and 32; as an upgradient stepout for LOU 69; and for general Site coverage.

Table 3 (Field Version)

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

							Lal	boratory :	CAS Kelso, V	NA			Columbia R	Analytical S ochester, NY	ervices			GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1,B}	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide J. (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8, E} (EPA 8082)	Radionuclides ⁹	PCBs ^{8, E} (EPA 1668A)	OPPs ^{10, F} (8141A)	Organic Acids ^F	
					Wells are	organize	d by grid	location a	as shown on	Plate A	Starting	g point is	on the no	orthwestern	n-most g	rid in Are	ea I (A-3)) and ending	g with the s	outheasterr	n-most grid	cove
J-2	BRC	AA-BW-02	AA-BW-02B	33 - 53	MCfg1 *		No		х	Х	х	х	Х	х	х	х		х				Locate
J-8	I	M-102	M-102B	19.4 - 39.4	Qal		No		х	х	х	х	Х	х	х	х		х				Locate 69; ar
K-2	I	M-5A	M-5AB	40 - 50	MCfg1	6/26/2008	Yes		х	х	х	х	Х	х	х	х	х	х	х	х	х	Locate LOU 1
K-2	1	TR-2	TR-2B	144.5 - 174.5	MCfg1	7/8/2008	No		х	х	х	х	х	х	х	х	х	х	х	х	х	To ev
K-3	I	MW-16	MW-16B	24.7 - 39.7	- MCfg1	6/26/2008	No		x	Х	х	х	Х	х	х	х		x				New r
			MW-16B	24.7 - 39.7				Х	Х	Х	Х	Х	Х	х	х	х		Х			<u> </u>	for MS
K-5	I	M-69	M-69B	19.9 - 39.3	Qal/MCfg1	7/8/2008	No		Х	Х	Х	Х	Х	х	х	х		Х			<u> </u>	Locate
K-5	I	M-79	M-79B	10.8 - 35.4	Qal/MCfg1	6/29/2008	No		х	х	х	х	Х	x	х	х		х				Locate
K-6	I	M-83	M-83B	10.8-40.3	Qal/MCfg1		No		х	х	х	х	х	х	х	х		х		х	х	Locate and 2
K-6	I	M-84	M-84B	11.8 - 34.1	Qal/MCfg1	6/29/2008	No		х	х	х	х	х	х	х	х		х				Locate LOUs
K-7	I	M-86	M-86B	11.3 -40.9	Qal/MCfg1		No		х	х	х	х	х	х	х	х		x				Locate 22 an
K-8	I	M-88	M-88B	7.3 - 36.8	Qal/MCfg1	6/25/2008	No		х	х	х	х	х	х	х	х		х			<u> </u>	Locate
K-9	I	M-129	M-129B	20 - 40	MCfg1		No		x	x	х	х	х	x	х	х		х				Locate
K-9	TIMET	CLD1-R	CLD1-RB	25 -35	Qal/MCfg1	7/10/2008	No		х	х	х	х	х	x	х	х		х			1	Serve
L-2	I	M-127	M-127B	35-50	MCfg1		No		х	х	х	х	х	x	х	х	х	х	х	х	x	New r
			M-126B	19.7 - 39.7					x	х	х	х	х	x	х	x		x			1	New n
L-3	I	M-126	M-126BD	19.7-39.7 (dup)	- MCfg1	6/29/2008	No		x	х	х	х	х	x	х	х		x				This is
L-4	I	M-14A	M-14AB	20 - 40	MCfg1	6/30/2008	No		х	х	х	х	х	х	х	х		х			1	Locate
			M-57AB	20 - 40					х	х	х	х	х	х	х	х		х				Locate for ge
L-4	I	M-57A	M-57ABD	20 - 40 (dup)	- MCfg1	6/27/2008	No		x	х	х	х	х	х	х	х		x				This is
L-5	I	I-B	I-BB	17.8 - 42.5	Qal/MCfg1	7/8/2008	No		х	х	х	х	х	х	х	х		х			1	Locate Site c
L-6	I	M-55	M-55B	14.6 - 44.6	Qal/MCfg1	7/1/2008	Yes		х	Х	х	х	Х	х	х	х		х				Locate LOUs
1-6		M-65	M-65B	14.4 - 39		7/2/2008	No		х	Х	х	х	Х	х	х	х		х				Locate
E-0		101-05	M-65BD	14.4 - 39 (dup)	Qaimoigi	11212000	NO		х	х	х	х	х	х	х	х		х				This is
L-6	I	M-78	M-78B	21.5 - 41.5	Qal/MCfg1		No		х	Х	Х	Х	х	х	Х	Х		х				Locate
L-8	I	M-61	M-61B	9.3 - 38.8	Qal/MCfg1	6/26/2008	No		Х	Х	Х	Х	Х	х	Х	Х		Х				Locate
			M-67B	7.8 - 37.8					х	Х	х	х	x	х	х	х		х				Locate
L-8	I	M-67	M-67BD	7.8 - 37.8 (dup)	Qal/MCfg1	6/27/2008	No		х	Х	Х	Х	Х	х	Х	Х		х				This is
			M-67B	7.8 - 37.8				Х	х	Х	Х	Х	х	Х	Х	Х		х			<u> </u>	This is for MS
L-8	I	M-68	M-68B	11.2 - 39.8	Qal/MCfg1	6/27/2008	No		х	х	х	х	х	х	х	х		х			<u> </u>	Locate of the
L-9	TIMET	CLD2-R	CLD2-RB	20 - 40.27	Qal	7/10/2008	No		х	Х	х	Х	Х	Х	х	х		х				Serve Assoc
L-9	I	M-130	M-130B	20 - 40	MCfg1		No		x	х	х	х	х	х	х	х		Х				Locate sampl
L-10	TIMET	CLD3-R	CLD3-RB	nr	MCfg1*	7/10/2008	No		х	Х	х	Х	х	х	х	х		х				Locate

Table 3 (Field Version)

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

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Location Description and Rationale for Investigation
ering Area I (O-4).
and to evaluate constituents from off. Site sources to the west, and for general Site coverage
ed to evaluate constituents from on-one sources to the west, and to general one coverage.
nd for general Site coverage.
ed to evaluate LOU 2 (Open Area South of the Trade Effluent Ponds); as an upgradient stepout for LOU 1 and 10; to evaluate possible offsite sources to the west; and for general Site coverage.
valuate for SRCs in upper Muddy Creek Fm.
monitoring well to evaluate SRCs in upper Muddy Creek from offsite sources from west. s a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles SD sample. Label both sets of bottles as MW-16B.
ed to evaluate LOU 32 and to evaluate the western end of the Groundwater Barrier Wall.
ed to evaluate LOU 1; LOU 32 and the western end of the Groundwater Injection Trenches; and for general Si age.
ted to evaluate LOU 32 and the Groundwater Injection Area; as an upgradient stepout for LOU 1, and LOUs 22 (3; and for general Site coverage.
ted to evaluate LOU 32 and the Groundwater Injection Trench area; as an upgradient stepout for LOU 1 and s 22 and 23; and for general Site coverage.
ed to evaluate LOU 32 and the Groundwater Injection Trench area; as an upgradient stepout for LOU 1, LOUs d 23; and for general Site coverage.
ed to serve as an upgradient stepout for LOU 1; as a downgradient stepout for LOU 32; to evaluate possible sources to the east; and for general Site coverage.
ed to evaluate the eastern end of the barrier wall. Well was drilled and installed in March 2008.
as a close stepout downgradient of LOU 5 (Beta Ditch) and general Site coverage. Located on Timet.
monitoring well located to evaluate LOU 2; to evaluate potential offsite sources to the west; and for general Sit age. Well was drilled and installed in June 2008, but not yet sampled for Phase B.
monitoring well located to serve as an up- to crossgradient stepout for LOU 2; to evaluate potential offsite es from the west; and for general Site coverage.
s a duplicate sample of M-126B.
ed as an upgradient stepout for LOUs 30, 56, and 58; as a downgradient well for LOU 39; and for general Site age.
ed to serve as an upgradient stepout for LOU 32; to evaluate the west end of the Groundwater Barrier Wall; ar neral Site coverage.
s a duplicate sample of M-57AB.
ed as a downgradient stepout for LOU 56 and LOU 58; as an upgradient stepout for LOU 57, and for general coverage.
ed just upgradient of the groundwater barrier wall; to evaluate LOU 32; to serve as a downgradient stepout for s 19, 31, and 55 and for general Site coverage.
ed to serve as an upgradient stepout for LOU 32; as a downgradient stepout for LOU 57; and for general Site age.
s a duplicate sample of M-65B.
ed to evaluate LOU 32; as a downgradient stepout for LOU 55; and for general Site coverage.
ed to evaluate LOU 32 and the eastern end of the Groundwater Barrier Wall.
ed to serve as an upgradient stepout for LOU 32 and for general Site coverage.
s a duplicate of M-67B.
s a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles SD sample. Label both sets of bottles as M-67B.
ed to serve as a downgradient stepout for LOU 5 and 20; as an upgradient stepout for LOU 32; as an evaluation e east end of the Groundwater Barrier Wall; and for general Site coverage.
es as a close stepout downgradient of LOU 5; and a further downgradient stepout for LOU 20 (Pond C-1 and ciated Piping), and for general Site coverage. Located on Timet.
ted to evaluate LOU 5 and the eastern end of the barrier wall. Well was installed in March 2008 but not yet led for Phase B.
ted to evaluate LOU 67; as general Site coverage; and to evaluate downgradient from Area I. Located on Time

							Lal	boratory :	CAS Kelso, V	WA			Columbia R	n Analytical S ochester, NY	ervices			GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical Sparks, NV	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1,B}	Date Sampled (for Phase B)	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide J. (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8, E} (EPA 8082)	Radionuclides ⁸	PCBs ^{8, E} (EPA 1668A)	OPPs ^{10, F} (8141A)	Organic Acids ^F	
					Wells are o	organize	d by grid	location a	as shown on	Plate A	Starting	point is	on the no	orthwestern	n-most g	rid in Ar	ea I (A-3)	and ending	g with the so	outheastern	-most grid	coveri
M-1	Olin	H-38	H-38B	25 - 50	Qal*		No		х	х	х	х	х	х	х	х		х				To evalua Site cove
M-2	ļ	TR-4	TR-4B	124.5 - 144.5	MCfg1	7/9/2008	No		х	х	х	х	х	х	х	х	х	х	х	х	х	Located for VOCs
M-3	1	M-125	M-125B	35-50	MCfa1		No		х	x	х	х	х	x	х	х	х	х	х	х	х	New mor sources f B.
			M-125B	35-50				х	х	х	х	х	х	х	х	х	х	х	х	х	х	This is a for MSD
M-8	Ι	M-39	M-39B	24.9 - 39.9	Qal/MCfg1	7/8/2008	Yes		Х	Х	Х	Х	х	х	х	Х		х		х	х	Located
N-4	T	M-142	M-142B	30-45	MCfg1		No		х	х	х	х	х	х	х	х		х		х	х	New mor Maintena
0-2	I	M-123	M-123B	34-51	MCfa1	7/11/2008	No		х	х	х	х	x	x	х	х	х	х	х	х	х	New mor offsite so location.
0-2		WF123	M-123BD	34-51 (dup)	Meigi	1/11/2000	NO		х	х	х	х	х	x	х	х	х	x	х	х	x	This is a
O-4	Ι	M-124	M-124B	34-49	MCfg1	7/11/2008	No		х	х	х	х	х	x	х	х		х				New mor stepout f
0-4	I	M-128	M-128B	40-55	MCfg1		No		x	x	x	х	x	x	x	x		x				New mor 52, and
Numbe	er of Wells:	64																		•		

Number of Wells:

otes:

Well completion information or boring log not available. Soil type inferred from nearby wells and geologic cross-section provided in the Phase A Source Area Investigation Report (ENSR, 2007). ENSR is in the process of obtaining screen interval information from BMI. х Sample will be collected and analyzed.

No sample collected under Phase B sampling plan. blank

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

2. Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Stiver, Sodium, Strontium, Tin, Titanium, Thallium, Tungste 3. VOCs = Volatile organic compounds (to include analysis for naphthalene).

Hexavalent Chromium. 4.

Complete list of wet chemistry parameters is shown on Table 1. All groundwater samples will have pH measured in the field. 5.

OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene). 6.

7. SVOCs = Semi volatile organic compounds.

8. Polychlorinated Biphenyls.

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

OPPs = Organophosphorous Pesticides 10.

TBD To Be Determined when well is constructed.

Not recorded in Tronox database (screen intervals to be acquired from BMI). nr

Qal Quaternary Alluvium.

6/25/2008 Yellow indicates sample was collected on the date shown.

MS/MSD Matrix Spike sample and Matrix Spike Duplicate sample (fill 2nd set of bottles for MS sample and 3rd set of bottles for MSD sample).

MCfg1 Muddy Creek Formation - first fine-grained facies.

Table 3 (Field Version)

Groundwater Sampling and Analysis Plan for Area I

Phase B Source Area Investigation Work Plan Tronox Facility - Henderson, Nevada

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Location Description and Rationale for Investigation
ing Area I (O-4).
ate possible offsite sources from the west, as an upgradient stepout to LOU 5 (Beta Ditch) and for general erage. Depth of screen will be confirmed in the field.
to serve as a downgradient stepout for LOU 5; to evaluate possible offsite sources to the west (particularly s); and for general Site coverage.
nitoring well located to serve as a downgradient stepout for LOUs 5 and 54; to evaluate potential offsite from the west; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phas
matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles sample. Label both sets of bottles as M-125B.
to serve as a downgradient stepout for LOUs 5, 18, 20, and 21; and for general Site coverage.
nitoring well constructed in borehole for SA87 to evaluate LOU 39 (Satellite Accumulation Point, AP ance Shop). Well was installed in June 2008 but not yet sampled for Phase B.
nitoring well located to evaluate LOU 35; as an upgradient stepout for LOUs 38 and 54; to evaluate potentia ources to the west; and for general Site coverage. PCB analysis for groundwater requested by NDEP at this Well was installed in June 2008 but not yet sampled for Phase B.
duplicate sample of M-123B.
nitoring well located to evaluate LOU 64; serve as a downgradient stepout for LOU 63; as an upgradient for LOU 39; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase for the second sec
nitoring well to serve as a downgradient stepout for LOUs 35 and 64; as an upgradient stepout for LOUs 39 57; and for general Site coverage. Well was installed in June 2008 but not yet sampled for Phase B.
en, Uranium, Vanadium, Zinc



Area II

Laborato							CAS - Ke	lso, WA			CAS - Rocł	nester, NY			GEL - Charleston, SC	STL- Denver	Alpha Analytical		
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ^{F.} (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	Radionuclides ^{9.}	OPPs ^{10.} (8141A)	Organic Acids	Rationale for Revision	Location Description and Rationale for Investigation
				Well	s are organiz	zed by grid l	ocation as	shown on	Plate A -	Starting	point is o	n the nort	nwestern	-most gi	id in Area I	l (L-4) an	d ending w	ith the sout	neastern-most grid covering Area II (S-7).
L-4	IIE	M-14A	M-14AB	20 - 40	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout to LOU 5; and for general Site coverage.
L-5	IIN	I-B	I-BB	17.8 - 42.5	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout to LOUs 30 and 56 and for general Site coverage.
L-5	П	I-AR	I-ARB	25 - 45	MCfg1	yes	х	х	х	х	х	х	Х	Х	х			F	Located as an upgradient stepout for LOUs 30, 31, and 56; and LOU 58 and for general Site coverage.
L-6	IIN	M-55	M-55B	14.6 - 44.6	Qal/MCfg1	yes	R	R	R	R	R	R	R	R	R			D (see Area I)	Located as a downgradient stepout to LOU 55; and for general Site coverage.
L-6	IIN	M-78	M-78B	21.5 - 41.5	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located as a downgradient stepout to LOU 55; and for general Site coverage.
L-6	II	M-64	M-64B	12.7 - 37.3	Qal/MCfg1	no	Х	Х	Х	Х	Х	Х	Х	Х	Х			F	Located to evaluate LOU 55; as a downgradient stepout for LOUs 30 and 56 and for general Site coverage.
L-6	II	M-25	M-25B	24 - 39	Qal/MCfg1	no	х	х	Х	Х	х	x	Х	Х	Х			F	Located to serve as a downgradient stepout for LOUs 16, 19 and 53; as an upgradient stepout for LOU 55; and for general Site coverage.
L-6	II	M-38	M-38B	20 - 35	MCfg1	no	х	х	Х	Х	х	х	х	х	х			F	Located to serve as a downgradient stepout for LOUs 16, 17, 19, and LOU 57; and for general Site coverage.
L-8	IIN	M-68	M-68B	11.2 - 39.8	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout for LOU 5; and for general Site coverage.
L-9	IIN	CLD2-R	CLD2-RB	20 - 40.27	Qal	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout for LOU 5; and for general Site coverage.
M-2	IIN	TR-4	TR-4B	124.5 - 144.5	MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout for LOU 5; and for general Site coverage.
M-3	IIN	M-125	M-125B	35 - 50	MCfg1	new well	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as a downgradient stepout for LOU 5; and for general Site coverage.
M-5	11	M-110	M-110B	30 - 40	Qal/MCfg1	no	X	X	Х	X	X	X	Х	Х	Х			F	Located to evaluate LOU 57 as a downgradient stepout for LOU 5; and for general Site coverage.
M-5	П	M-111A	M-111AB	29.7 - 39.7	MCfg1	no	х	х	х	Х	х	х	Х	Х	Х	х	х	B, C, F	Replacement well for M-111 which was destroyed by site grading and located to evaluate LOU 57; a downgradient stepout for LOU 52; as an upgradient stepout for LOUs 5 and 19; and for general Site coverage.
M-6	П	M-89	M-89B	18 - 38.2	Qal/MCfg1	yes	х	х	х	х	х	х	Х	Х	х	х	х	B, F	Located to evaluate LOU 57; as a downgradient stepout for LOUs 5, 16, 17, and 53; and for general Site coverage.
M-7	П	M-22A	M-22AB	16 - 36	Qal/MCfg1	no	х	х	х	х	х	х	Х	Х	х			F	Located to evaluate LOU 57; as a downgradient stepout for LOUs 5, and 16 through 18; and for general Site coverage.
M-8	IIN	M-39	M-39B	24.9 - 39.9	Qal/MCfg1	yes	R	R	R	R	R	R	R	R	R			D (see Area I)	Located as a downgradient stepout for LOUs 5, 20, 22 (pipelines in Area II) and LOU 23 (pipelines in Area II); and for general Site coverage.
M-8	II	M-19	M-19B	14.5 - 34.5	MCfg1	no	х	х	х	х	х	x	Х	Х	х			F	Located to serve as an upgradient stepout for LOUs 5 and 20; to evaluate LOUs 22 and 23 and potential offsite sources to the east; and as general Site coverage.
N-4	IIN	M-142	M-142B	30 - 45	MCfg1	new well	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as an upgradient stepout for LOU 5; and for general Site coverage.
N-5	П	M-75	M-75B	34.6 - 49.3	Qal/MCfg1	no	х	х	х	Х	х	х	Х	Х	Х			F	Located to serve as a downgradient stepout for LOUs 7, 8, 9, and 45; as an upgradient stepout for LOUs 16, 17, 19, 53 and 57; and for general Site coverage.
N-5	П	M-76	M-76B	34.6 - 49.3	MCcg1	yes	х	х	Х	Х	х	х	х	х	Х			F	Located to serve as a downgradient stepout for LOUs 8 and 45; as an upgradient stepout for LOUs 53 and 57; and for general Site coverage.
N-6	II	M-2A	M-2AB	30 - 40	Qal	yes	х	х	Х	Х	х	x	Х	Х	Х			C, F	Located as a downgradient stepout for LOUs 7, 8, 9, 13, 14, 20, 34, and 45; as an upgradient stepout for LOUs 16, 17, 18, 22, 23, 53, and 57; and for general Site coverage.
N-6	П	M-17A	M-17AB	35 - 45	Qal/MCfg1	no	х	х	х	х	х	х	Х	Х	х			F	Located to evaluate LOU 57; as an upgradient stepout for LOUs 5, 16, 17, 18, 22, and 23; and for general Site coverage.
N-7	11	M-34	M-34B	25 - 40	Qal/MCfg1	no	x	х	х	х	х	х	х	х	х	x	x	B, F	Located to evaluate the outfall of the culvert that empties into the Eastern Diversion segment of LOU 5; as a downgradient stepout for LOUs 13 and 14; as an upgradient step out for LOUs 20, 22, and 23; and for general Site coverage.
N-7	IIE	M-35	M-35B	25 - 40	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area III)	Located to evaluate LOUs 5, 20, 22, and 23; and for general Site coverage.
0-2	IIS	M-123	M-123B	34 - 51	MCfg1	new well	R	R	R	R	R	R	R	R	R			D (see Area I)	Located to serve as an upgradient stepout for LOU 5; and for general Site coverage.
O-5	II	M-21	M-21B	18 - 38	MCfg1	no	Х	х	х	х	х	x	Х	х	х			F	Located to evaluate LOU 45; as an upgradient stepout for LOUs 7, 9, 13 and 14; as a downgradient stepout for LOU 59; and for general Site coverage.
O-6	IIS	M-50	M-50B	39.6 - 59.6	MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area III)	Located to serve as a downgradient well for a segment of LOU 59 located in Area II; as upgradient well for LOUs 13 and 14; and for general Site coverage.
P-5	IIS	M-97	M-97B	35 - 45	MCfg1/MCcg1	yes	R	R	R	R	R	R	R	R	R			D (see Area IV)	Located to serve as an upgradient stepout for LOU 45 and segments of LOU 59 located in Area II; and for general Site coverage.
P-7	II	M-52	M-52B	34.5 - 44.5	MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area III)	Located to evaluate LOUs 43, 11, 12, and 15; and for general Site coverage.

Table 3

Groundwater Sampling And Analysis Plan for Area II Phase B Source Area Investigation Work Plan Tronox Facility - Henderson Nevada

					L	aboratory ^{E.} :	CAS - Ke	lso, WA			CAS - Rocl	nester, NY			GEL - Charleston, SC	STL- Denver	Alpha Analytical	Define de fer	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ^{F.} (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	Radionuclides ^{9.}	OPPs ^{10.} (8141A)	Organic Acids	Revision	Location Description and Rationale for Investigation
				Wells	s are organiz	zed by grid	location as	shown or	Plate A -	Starting	point is o	n the nort	hwesterr	n-most gi	id in Area I	(L-4) an	d ending w	ith the sout	neastern-most grid covering Area II (S-7).
Q-5	П	M-13	M-13B	28 - 48	MCfg1	yes	х	х	х	х	х	х	x	х	х			F	Located to serve as a downgradient stepout for LOU 60; as an upgradient stepout for LOUs 36 and 45; and for general Site coverage.
Q-6	Ш	M-12A	M-12AB	40 - 50	MCfg1	yes	х	х	х	х	х	х	х	х	х			F, H	Located as a downgradient stepout for LOUs 12, 15, 29, 36, 43, 59 and 60; and for general Site coverage.
Q-7	IIN	M-11	M-11B	33.3 - 53	Qal/MCfg1	yes	R	R	R	R	R	R	R	R	R			D (see Area III)	Located to serve as a downgradient stepout for LOUs 29 and 43; and for general Site coverage.
R-5	IIS	M-144	M-144B	TBD	Qal/MCfg1	new well	R	R	R	R	R	R	R	R	R			D (see Area IV)	Co-located with Boring SA133 as an upgradient stepout for LOU 60; and for general Site coverage.
R-5	II M-146B M-146B TBD Qal/MCfg1* no X </td <td></td> <td>F, G</td> <td>Located to evaluate LOU 36; and for general Site coverage.</td>															F, G	Located to evaluate LOU 36; and for general Site coverage.		
T-7	IIS M-10 M10B 43 - 63 MCcg1 no R															D (see Area IV)	Located to serve as an upgradient stepout for LOUs 29, 43 and segments of LOU 60 in Area II; and for general Site coverage.		
OA/OC Sam	nles				Number of Fi	ield Samples:	18	18	18	18	18	18	18	18	18	3	3		
dride our	Field Dupl	licates (10%)					2	2	2	2	2	2	2	2	2	1	1		
	Field Blan	iks It Rinseate Bl	anks				1	1	1	1	1	1	1	1	1	1	1		
	Trip Blank	Samples	uning				0	0	5	0	0	0	0	0	0	0	0		
	Matrix Spi	ike (5%)	(=0()				1	1	1	1	1	1	1	1	1	1	1	-	
	Matrix Spi	ike Duplicate	(5%)		Т	otal Samples:	1 25	1 25	1 30	1 25	1 25	25	1 25	1 25	1 25	1 8	1		
X blank 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. IIIIV/E/W/S TBD (a) TD nr Qal MC(g1 MC(g1 X Z	Well complete Sample will No sample It is anticip. Metals ana VOCS = Vo Hexavalem Complete I OCPs = Or SVOCS = S Polychlorin Radionuclii OPPs = Or Well locate To Be Dete Complete I Total Depti Not recordu Quaternary, Muddy Cre Muddy Cre	letion informat II be collected und ated that the la alyses includes olatile organic t Chromium. List of wet cherr granochlorine Semi volatile o nated Biphenyl des consists o rganophospho ed outside (no ermined when list of wet cherr h of the well de ed in Tronox d y Alluvium. sek Formation ding indicates	ion or boring and analyze er Phase B s arge majority : Aluminum, compounds nistry param pesticides (tr rganic comp s. f alpha spec rous Pesticio rub, east, we well is const nistry param atermined by atabase (sci - first fine-gr - first coarse items that h	log not availat d. sampling plan. r of the flow to 1 Antimony, Arse (to include analy ounds. reporting for is des st, or south) of ructed. eters are show r Site-wide rout reen intervals to ained facies ave been adde	the well will be fi enic, Barium, Be lysis for naphtha in on Table 1. Al sis for hexachlo sotopic Thorium Area II. ine groundwate o be acquired fro d or changed fro	rom the coarse rryllium, Boron, alene). Il groundwater robenzene). and isotopic U Il groundwater r monitoring. om BMI where	e-grained sedir Cadmium, Ch samples will h ranium, and R samples will h possible or de he June 2008	ave pH meas adium-226, p ave pH meas adium-226, p ave pH meas termined by Area II Work	s-section pro- ch, in the ca balt, Copper, sured in the f olus Radium sured in the f downhole ca Plan origina	ises where the field.	by NDEP.	ource Area I blithologies p , Manganese	nvestigation present acro	i Keport (E	een interval, the	ronox is in e water sam num, Potas	the process of npled will repre ssium, Selenium	obtaining infor	in the coarse-grained interval. im, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, Zinc
R A B C D E F G H	Brown-sha Sample ID OPPs and Asterisks w Well was re Laboratory Total Cyan Expected s Hyphen ins	Iding indicates was added to Organic Acids were removed emoved from T information w side was added soil types across serted to corre	items that h convey sam were addec from April 20 Fable 3 beca as added to d per NDEP ss expected ct typograph	ave been remo ple ID nomenc If per NDEP (Ju)08 submission iuse this well is Table 3 to assi (July 21, 2008) screen interval ical error	Ved from Table dature to field sa ly 21, 2008). not located in A ist field sampling based on neart	3 in the June 2 ampling team (' Area II. g personnel in by wells	2008 Area II W 'B" suffix deno shipping the sa	ork Plan orig tes sample is ample contair	nally review associated	ed by NDEF with Phase	, B sampling boratory.	event).							

Table 3 Groundwater Sampling And Analysis Plan for Area II Phase B Source Area Investigation Work Plan Tronox Facility - Henderson Nevada

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						La	aboratory ^{E.} :	CAS - Ke	lso, WA			CAS - Rocł	ester, NY			GEL - Charleston, SC	STL- Denver	Alpha Analytical	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ^{F.} (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	Radionuclides ^{9.}	OPPs ^{10.} (8141A)	Organic Acids	Location Description and Rationale for Investigation
				Wells	are organize	ed by grid lo	ocation as	shown on P	late A - S	tarting po	int is on t	he north	vestern-m	ost grid	in Area	ll (L-5) and e	ending w	vith the sou	heastern-most grid covering Area II (R-5).
L-5	П	I-AR	I-ARB	25 - 45	MCfg1	yes		Х	Х	х	х	х	Х	Х	Х	Х			Located as an upgradient stepout for LOUs 30, 31, and 56; and LOU 58 and for general Site coverage.
L-6	П	M-64	M-64B	12.7 - 37.3	Qal/MCfg1	no		Х	Х	х	х	х	х	х	Х	х			Located to evaluate LOU 55; as a downgradient stepout for LOUs 30 and 56 and for general Site coverage.
L-6	Ш	M-25	M-25B	24 - 39	Qal/MCfg1	no		х	х	х	х	х	х	х	х	х			Located to serve as a downgradient stepout for LOUs 16, 19 and 53; as an upgradient stepout for LOU 55; and for general Site coverage.
L-6	Ш	M-38	M-38B	20 - 35	MCfg1	no		х	х	х	х	х	х	х	х	х			Located to serve as a downgradient stepout for LOUs 16, 17, 19, and LOU 57; and for general Site coverage.
M-5	II	M-110	M-110B	30 - 40	Qal/MCfg1	no		Х	Х	Х	х	х	Х	Х	Х	х			Located to evaluate LOU 57 as a downgradient stepout for LOU 5; and for general Site coverage.
M-5	Ш	M-111A	M-111AB	29.7 - 39.7	MCfg1	no		х	х	х	х	х	х	х	х	х	x	x	Replacement well for M-111 which was destroyed by site grading and located to evaluate LOU 57; a downgradient stepout for LOU 52; as an upgradient stepout for LOUs 5 and 19; and for general Site coverage
Мб	Ш	M 80	M-89B	18 - 38.2		2405		х	х	х	х	х	х	х	х	х	х	х	Located to evaluate LOU 57; as a downgradient stepout for LOUs 5, 16, 17, and 53; and for general Site coverage.
W-O	п	101-03	M-89B	18 - 38.2	Qai/MCIgT	yes	Х	х	Х	х	х	х	х	х	х	х	х	х	This is a matirx spike / matirx spike duplicate sample. Fill one set of bottles for MS sample & a second set of bottles for MSD sample. Label both sets of bottles as M-89B.
M-7	Ш	M-22A	M-22AB	16 - 36	Qal/MCfg1	no		х	Х	х	х	х	х	х	х	х			Located to evaluate LOU 57; as a downgradient stepout for LOUs 5, and 16 through 18; and for general Site coverage.
M-8	Ш	M-19	M-19B	14.5 - 34.5	MCfg1	no		х	х	х	х	х	х	х	х	х			Located to serve as an upgradient stepout for LOUs 5 and 20; to evaluate LOUs 22 and 23 and potential offsite sources to the east; and as general Site coverage.
N-5	Ш	M-75	M-75B	34.6 - 49.3	Qal/MCfg1	no		х	х	х	х	х	х	х	х	х			Located to serve as a downgradient stepout for LOUs 7, 8, 9, and 45; as an upgradient stepout for LOUs 16, 17, 19, 53 and 57; and for general Site coverage.
N-5	Ш	M-76	M-76B	34.6 - 49.3	MCcg1	yes		х	Х	х	х	х	х	х	х	х			Located to serve as a downgradient stepout for LOUs 8 and 45; as an upgradient stepout for LOUs 53 and 57 and for general Site coverage.
N-6	Ш	M-2A	M-2AB	30-40	Qal	ves		х	Х	х	х	х	х	х	х	x			Located as a downgradient stepout for LOUs 7, 8, 9, 13, 14, 20, 34, and 45; as an upgradient stepout for LOUs 16, 17, 18, 22, 23, 53, and 57; and for general Site coverage.
			M-2ABD	30 - 40 (dup)				х	Х	х	х	х	х	х	х	х			This is a duplicate sample of M-2AB.
N-6	Ш	M-17A	M-17AB	35 - 45	Qal/MCfg1	no		х	Х	х	х	х	х	х	х	х			Located to evaluate LOU 57; as an upgradient stepout for LOUs 5, 16, 17, 18, 22, and 23; and for general Site coverage.
N-7	Ш	M-34	M-34B	25 - 40	Qal/MCfg1	no		х	х	х	х	х	х	х	х	х	х	х	Located to evaluate the outfall of the culvert that empties into the Eastern Diversion segment of LOU 5; as a downgradient stepout for LOUs 13 and 14; as an upgradient step out for LOUs 20, 22, and 23; and for genera Site coverage.
O-5	Ш	M-21	M-21B	18 - 38	MCfg1	no		х	х	х	х	х	x	х	х	х			Located to evaluate LOU 45; as an upgradient stepout for LOUs 7, 9, 13 and 14; as a downgradient stepout for LOU 59; and for general Site coverage.
0-5	II	M-13	M-13B	28-48	MCfa1	Ves		х	х	х	х	х	х	Х	х	х			Located to serve as a downgradient stepout for LOU 60; as an upgradient stepout for LOUs 36 and 45; and fo general Site coverage.
Q-5	"	WI-10	M-13BD	28 - 48 (dup)	Molgi	yes		х	х	х	х	х	х	х	х	х			This is a duplicate sample of M-13B.
Q-6	Ш	M-12A	M-12AB	40 - 50	MCfg1	yes		х	х	х	х	х	х	х	х	х			Located as a downgradient stepout for LOUs 12, 15, 29, 36, 43, 59 and 60; and for general Site coverage.
R-5	Ш	M-146	M-146B	TBD	Qal/MCfg1*	no		х	Х	х	х	х	х	х	х	х			Located to evaluate LOU 36; and for general Site coverage.

Notes:

* Well completion information or boring log not available. Soil type inferred from nearby wells and geologic cross-section provided in the Phase A Source Area Investigation Report (ENSR, 2007). Tronox is in the process of obtaining information from BMI. Sample will be collected and analyzed. Х

blank No sample collected under Phase B sampling plan.

1. It is anticipated that the large majority of the flow to the well will be from the coarse-grained sediments. As such, in the cases where there are two lithologies present across the screen interval, the water sampled will represent conditions in the coarse-grained interval.

Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chonnium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc 2.

VOCs = Volatile organic compounds (to include analysis for naphthalene). 3.

4. Hexavalent Chromium.

Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field. 5.

OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene). 6.

Table 3 (Field Version) Groundwater Sampling And Analysis Plan for Area II

Phase B Source Area Investigation Work Plan Tronox Facility - Henderson Nevada

						La	aboratory ^{E.} :	CAS - Ke	elso, WA			CAS - Roch	ester, NY			GEL - Charleston, SC	STL- Denver	Alpha Analytical	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ^{F.} (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	Radionuclides ^{9.}	OPPs ^{10.} (8141A)	Organic Acids	L
				Wells	are organize	d by grid lo	ocation as	shown on F	Plate A - S	Starting po	oint is on t	he northv	vestern-m	ost grid	in Area	ll (L-5) and e	ending w	ith the sout	heastern-most gr
7.	SVOCs = Semi volatile organic compounds.																		
8.	SVOUS = Semi volatile organic compounds. Polychlorinated Biphenyls.																		
9.	Radionuclio	des consists c	of alpha spec	c reporting for is	otopic Thorium	and isotopic U	ranium, and F	adium-226, pl	lus Radium-	-228 by beta	counting (pe	r NDEP).							
10.	OPPs = Or	ganophospho	rous Pestici	des															
IIIN/E/W/S	Well locate	ed outside (no	orth, east, we	est, or south) of	Area II.														
TBD	To Be Dete	ermined when	well is cons	tructed.															
TD	Total Depth	n of the well d	etermined b	y Site-wide rout	ine groundwate	r monitoring.													
nr	Not recorde	ed in Tronox o	latabase (so	reen intervals t	o be acquired fr	om BMI where	possible or de	etermined by c	lownhole ca	mera).									
Qal	Quaternary	Alluvium.																	
MCfg1	Muddy Cre	ek Formation	- first fine-g	rained facies															
MCcg1	Muddy Cre	ek Formation	- first coars	e-grained facies	3														

Table 3 (Field Version) Groundwater Sampling And Analysis Plan for Area II

Phase B Source Area Investigation Work Plan Tronox Facility - Henderson Nevada

Page 2 of 2

Location Description and Rationale for Investigation

rid covering Area II (R-5).



Area III

Uloui

															-		-		
					La	aboratory ^{E.} :	: CAS-K	elso, WA			CAS - Roch	nester, NY			GEL -Charleston, SC	[,] STL - Denver	Alpha Analytical Sparks, NV	Rationale for	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interva (ft bgs)	I Soil Type Expected Across Screen Interval ^{1.}	d Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ^{F.} (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	Radionuclides ^{9.}	OPPs ^{10.B} (8141A)	Organic Acids ^c	Revision	Location Description and Rationale for Investigation
				,	Wells are organ	nized by grid	l location a	s shown o	n Plate A -	Starting po	oint is on th	ne northwe	stern-mos	st grid in A	Area III (N-7) an	nd ending wit	h the southea	stern-most gi	rid covering Area III (Q-9).
M-8	IIIN	M-19	M-19B	14.5 - 34.5	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area II)	Located to serve as a downgradient step out for LOU 21 and for general Site coverage.
N-7	IIIW	M-34	M-34B	25 - 40	Qal/MCfg1	no	R	R	R	R	R	R	R	R	R			D (see Area II)	Located to serve as a downgradient step out for LOU 46; as a crossgradient step out for LOUs 20, 22, 23, and 60 and for general Site coverage.
N-7	111	M-35	M-35B	25 - 40	MCfg1	no	x	x	x	х	x	x	x	x	x			F	Located to serve as a downgradient step out for LOUs 24 and 46; as an crossgradient step out for LOU 21; and I general Site coverage
N-8		M-147	M-147B	TBD	Qal/MCfg1*	new well	Х	Х	Х	Х	Х	х	Х	Х	Х			F	
N-9	TIMET	CLD-4R	CLD-4RB	nr	Qal/MCfg1*	no	x	x	x	х	х	X	x	x	x			F	Serves as a step out downgradient well for LOUs 24 and 46; as a step out upgradient well for LOU 21; as a cross gradient step out to LOUs 59 and 60; and general Site coverage located on Timet.
O-6	III	M-50	M-50B	39.6 - 59.6	MCfg1	no	Х	х	х	Х	Х	х	Х	Х	X			F	Located to evaluate LOU 34W; as an upgradient step out for LOU 60; and for general Site coverage.
O-8	Ш	M-33	M-33B	30 - 45	MCfg1	no	х	х	х	х	х	х	х	х	Х			F	Located to serve as a downgradient step out for LOU 59; as upgradient step out for LOUs 24 and 46; and for general Site coverage.
O-8	Ш	M-148	M-148B	TBD	MCfg1*	new well	х	x	х	Х	X	х	х	X	×			F	Located south of LOU 46 (Former Old Main Cooling Tower) per NDEP.
O-10	TIMET	CLU1	CLU1B	nr	MCfg1*	no	х	х	х	Х	х	х	Х	Х	x			F	Serves as a step out downgradient for LOUs 34E, 47, 48, 51, and Area 70 (former U.S. Vanadium), and general Site coverage located on Timet.
P-7	ш	M-31A	M-31AB	35 - 55	MCfg1	yes	x	x	x	x	x	x	x	x	x			F	Located to serve as a downgradient step out for LOU 59; as an upgradient step out for LOUs 24 and 46; as a crossgradient step out for LOUs 20, 21, 22, and 23; and for general Site coverage.
P-7	III	M-52	M-52B	34.5 - 44.5	MCfg1	no	x	x	x	x	x	x	x	x	x			F	Located to evaluate LOUs 34E, 47 through 51, and Area 70 (former U.S. Vanadium); as a crossgradient step out for LOUs 20, 21, 22, 23, and 60; and for general Site coverage.
P-7	III	M-141	M-141B	TBD	MCfg1*	new well	Х	X	X	Х	X	Х	X	Х	X			F	New monitoring well co-located with boring SA140 to evaluate LOUs 49 and 50.
P-8	III	M-77	M-77B	29 - 43.8	Qal/MCfg1	no	x	x	x	х	x	x	x	x	X			F	Located to evaluate LOUs 34E, 47 through 51 and Area 70 (former U.S. Vanadium); as a downgradient step out LOUs 33, 40, and 61; as a crossgradient step out for LOU 59; and for general Site coverage.
Q-6	IIIN	M-12A	M-12AB	28-48	MCfg1	yes	R	R	R	R	R	R	R	R	R			D (see Area II)	Located to serve as a upgradient step out for LOUs 20, 22, and 23 and for general Site coverage.
Q-7	Ш	M-11	M-11B	33.3 - 53	Qal/MCfg1	yes	x	x	x	x	x	x	x	x	x			F	Located as a downgradient step out for LOU 61; as an upgradient step out for LOUs 34E, 47 through 51 and Ard 70 (former U.S. Vanadium); as a crossgradient step out for LOUs 20, 22, 23, and 60, and for general Site coverage.
Q-8	Ш	M-122	M-122B	TBD	Qal/MCfg1*	new well	x	х	х	х	х	х	x	x	х			F	New monitoring well located to serve as a downgradient step out for LOUs 37, 44, and 60; as an upgradient step out for LOUs 34E, 47, 48, 51, 59 and Area 70 (former U.S. Vanadium); to evaluate possible offsite sources to the east; and for general Site coverage.
Q-9	TIMET	MW-6R	MW-6RB	39.7 - 59.7	Qal/MCfg1*	no	x	x	x	х	x	x	x	x	x			F	Located to serve as a downgradient step out for LOUs 37and 44; as a crossgradient step out for LOUs 59 and 60 to evaluate possible offsite sources to the east; and for general Site coverage.
R-8	Ш	M-139	M-139B	TBD	MCfg1*	new well	х	х	х	Х	Х	х	х	х	Х			F	Located as an upgradient step out for LOUs 37 and 44, and general Site coverage.
R-8	Ш	M-145	M-145B	TBD	MCfg1*	new well	х	х	х	х	х	х	х	х	х			F	New monitoring well located to serve as a crossgradient step out for LOU 44, to evaluate possible offsite sources to the east; and for general Site coverage.
R-8	Ш	M-29	M-29B	22-42	MCfg1	no	х	х	х	х	х	х	х	х	Х			F	Located to evaluate groundwater conditions beneath the Unit 6 building for LOUs 44 and 37.
T-7	IIIS	M-10	M-10B	43 - 63	MCcg1	no	R	R	R	R	R	R	R	R	R			D (see Area IV)	Located as a downgradient step out for LOUs 33, 40, and 61; and for general Site coverage.
					Number of	Field Samples:	17	17	17	17	17	17	17	17	17	0	0		
WA/QC Sa	Field Du	plicates (10%	%)				2	2	2	2	2	2	2	2	2	0	0	-	
	Field Bla	inks	Disales				1	1	1	1	1	1	1	1	1	0	0	~	
	Equipme Trip Blar	nt Rinseate	Blanks				1 0	1	5	1 0	1 0	1	0	0	0	0	0	~	
	Matrix S	pike (5%)					1	1	1	1	1	1	1	1	1	0	0	~	
	Matrix 5	pike Duplica	ite (5%)		т	otal Samples:	: 23	23	28	23	23	23	23	23	23	0	0	-	
Notoci																			
Notes.	Well comp	pletion inform	ation or bor	ring log not ava	ailable. Soil type ir	nferred from ne	earby wells ar	nd geologic o	cross-section	provided in	the Phase A	Source Area	Investigatio	on Report (ENSR, 2007). EN	NSR is in the pro	cess of obtainir	g information fr	om BMI.
X	Sample w	ill be collecte	d and analy	/zed.	20														
ыалк 1.	It is anticip	pated that the	e large majo	b sampling pla brity of the flow	n. to the well will be	from the coars	se-grained se	diments. As	s such, in the	cases where	e there are tv	vo lithologies	present ac	cross the so	creen interval, the	water sampled	will represent co	onditions in the	coarse-grained interval.
2.	Metals an	alyses includ	les Aluminu	m, Antimony, A	Arsenic, Barium, B	Beryllium, Boro	n, Cadmium,	Chromium,	Cobalt, Copp	er, Iron, Lea	d, Magnesiu	m, Manganes	se, Mercury	, Molybder	num, Nickel, Platir	num, Potassium	, Selenium, Silv	er, Sodium, Stro	ontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, and Zinc.
3. 4.	Hexavaler	nt Chromium.			anaiysis ior naphu														
5. 6	Complete	list of wet ch	emistry para	ameters are sh	nown on Table 1.	All groundwate	er samples w	ill have pH n	neasured in t	he field.									
7.	SVOCs =	Semi-volatile	e organic co	mpounds.															
8. Q	Polychlori	nated Bipher	iyls. s of alpha er	pec reporting fr	or isotopic Thoriun	n and isotopic	I Iranium and	Radium-22	6 plus Radi	um-228 by b	eta counting								
10	OPPs - O	raanonhoent	horous Post	licides	a loctopic monul	in and isotopic	channun, and	- Addium-22	o, pius itau	ani 220 by b	Sia counting	(POINDEF).							

Table 3 Indwater Sampling and Analysis Plan - Area III Phase B Source Area Investigation Work Plan Tronox Facility - Henderson, Nevada Page 1 of 2

					La	boratory ^{E.} :	CAS - K	elso, WA			CAS - Roch	ester, NY			GEL -Charleston, SC	STL - Denver	Alpha Analytical _{Sparks, NV}	Rationale for	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ^{F.} (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	Radionuclides ^{9.}	OPPs ^{10.B} (8141A)	Organic Acids ^C	Revision	
				v	Vells are organ	ized by grid	location as	shown or	n Plate A -	Starting po	oint is on th	e northwes	tern-mos	t grid in /	Area III (N-7) ar	d ending with	the southeas	stern-most g	rid cov
IIIN/E/W/S	Well locate	ed outside (n	orth, east,	west, or south)	of Area III.														
TBD	To be dete	rmined wher	n well is con	structed.															
(a)	Complete I	list of wet che	emistry para	ameters are sho	own on Table 1. A	II groundwate	r samples wil												
TD	Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field. Total Depth of the well determined by Site wide routine groundwater monitoring.																		
nr	Not record	ed in the Tro	nox Databa	ase (June 2008)	- information will	be acquired fi	rom BMI or de	etermined by	/ downhole o	camera.									
Qal	Quaternary	/ Alluvium.																	
MCfg1	Muddy Cre	ek Formatio	n - first fine-	-grained facies.															
MCcg1	Muddy Cre	ek Formatio	n - first coa	rse-grained fac	es.														
Х	Green-sha	ding indicate	es items that	t have been ad	ded or changed fr	om Table 3 in	the June 200	08 Area III W	ork Plan orig	ginally review	ed by NDEP								
R	Brown-sha	ding indicate	es items that	t have been rer	noved from Table	3 in the June	2008 Area II	Work Plan	originally rev	viewed by ND	DEP.								
A	Sample ID	was added t	to convey s	ample ID nome	nclature to field s	ampling team.													
В	OPPs were	e added per	NDEP (July	21, 2008).															
С	Organic Ac	cids were add	ded per ND	EP (July 21, 20	08).														
D	Well was re	emoved from	n Table 3 be	ecause this well	is not located in	Area III.													
E	Laboratory	information	was added	to Table 3 to a	ssist field samplin	g personnel in	n snipping the	sample con	tainers to the	e appropriate	aboratory.								
F	i otai cyani	ide column w	vas added p	DEF NDEP (JUIY	21, 2008).														

Table 3 Groundwater Sampling and Analysis Plan - Area III Phase B Source Area Investigation Work Plan Tronox Facility - Henderson, Nevada Page 2 of 2

Location Description and Rationale for Investigation vering Area III (Q-9).

						La	aboratory ^{E.} :	CAS - Ke	elso, WA			CAS - Roch	ester, NY			GEL -Charleston, SC	STL - Denver	Alpha Analytical Sparks, NV	
Grid Location	Location Area	Monitoring Well No.	Sample ID No. ^A	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	Total Cyanide ^{F.} (EPA 9012A)	OCPs ^{6.} (EPA 8081A)	SVOCs ^{7.} (EPA 8270C)	Radionuclides ^{9.}	OPPs ^{10.B} (8141A)	Organic Acids ^C	
			-		Wells are or	ganized by g	rid location	as shown o	n Plate A -	Starting po	oint is on th	e northwes	stern-most g	rid in Are	a III (N-7)	and ending wit	h the southea	stern-most gri	id (
N-7	ш	M-35	M-35B	25 - 40	MCfg1	no		х	х	х	х	х	х	Х	Х	х			Loo ger
N-8	III	M-147	M-147B	TBD	Qal/MCfg1*	new well		Х	Х	Х	Х	Х	Х	Х	Х	Х			
N-9	TIMET	CLD-4R	CLD-4RB	nr	Qal/MCfg1*	no		x	х	х	х	х	х	Х	х	х			Se gra
O-6	ш	M-50	M-50B	39.6 - 59.6	MCfg1	no		х	х	Х	х	х	х	Х	Х	х			Lo
O-8	Ш	M-33	M-33B	30 - 45	MCfg1	no		х	х	Х	х	х	х	х	х	х			Lo gei
O-8	Ш	M-148	M-148B	TBD	MCfg1*	new well		Х	Х	Х	Х	Х	Х	Х	Х	Х			Lo
O-10	TIMET	CLU1	CLU1B	nr	MCfg1*	no		х	х	х	х	х	х	Х	Х	х			Se Sit
P-7	Ш	M-31A	M-31AB	35 - 55	MCfg1	yes		х	х	х	х	х	х	х	х	х			Lo cro
P-7	Ш	M-52	M-52B	34.5 - 44.5	MCfg1	no		x	х	х	х	х	Х	х	х	х			Lo for
D 7			M-141B	TBD	MOGAR			х	х	х	х	х	х	х	х	х			Ne
P-7		M-141	M-141BD	TBD (dup)	MCtg1"	new well		х	х	х	х	х	х	Х	х	х			Th
De		M 77	M-77B	29 - 43.8		20		x	х	х	х	х	х	х	х	x			Lo for
P-0		IVI-77	M-77B	29 - 43.8		no	Х	х	х	х	х	х	х	х	х	x			Th for
0-7		M-11	M-11B	33.3 - 53	Oal/MCfa1	VAS		x	х	x	х	х	x	х	х	x			Lo 70 cov
			M-11BD	33.3 - 53 (dup)		yca		x	х	х	х	х	х	х	х	x			Th
Q-8	ш	M-122	M-122B	TBD	Qal/MCfg1*	new well		x	х	х	х	х	х	х	х	x			Ne out ea:
Q-9	TIMET	MW-6R	MW-6RB	39.7 - 59.7	Qal/MCfg1*	no		x	х	х	х	х	x	х	х	x			Lo to (
R-8	Ш	M-139	M-139B	TBD	MCfg1*	new well		х	х	х	х	х	х	Х	х	х			Lo
R-8	III	M-145	M-145B	TBD	MCfg1*	new well		х	х	х	х	х	х	Х	Х	Х			Ne to t
R-8	Ш	M-29	M-29B	22-42	MCfg1	no		Х	Х	Х	Х	Х	Х	Х	Х	х			Lo

Notes:

Well completion information or boring log not available. Soil type inferred from nearby wells and geologic cross-section provided in the Phase A Source Area Investigation Report (ENSR, 2007). ENSR is in the process of obtaining information from BMI. Sample will be collected and analyzed. Х

blank No sample collected under Phase B sampling plan.

1. It is anticipated that the large majority of the flow to the well will be from the coarse-grained sediments. As such, in the cases where there are two lithologies present across the screen interval, the water sampled will represent conditions in the coarse-grained interval.

Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Nickel, Platinum, Potassium, Selenium, Silver, Sodium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, and Zinc. 2. VOCs = Volatile organic compounds (to include analysis for naphthalene). 3.

4 Hexavalent Chromium

Complete list of wet chemistry parameters are shown on Table 1. All groundwater samples will have pH measured in the field. 5.

OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene) 6.

7 SVOCs = Semi-volatile organic compounds.

Polychlorinated Biphenyls. 8.

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

10. OPPs = Organophosphorous Pesticides

IIIN/E/W/S Well located outside (north, east, west, or south) of Area III.

TBD To be determined when well is constructed.

TD Total Depth of the well determined by Site wide routine groundwater monitoring.

Not recorded in the Tronox Database (June 2008) - information will be acquired from BMI or determined by downhole camera. nr

Qal Quaternary Alluvium.

Muddy Creek Formation - first fine-grained facies. MCfg1

MCcg1 Muddy Creek Formation - first coarse-grained facies

Location Description and Rationale for Investigation

covering Area III (R-8).

cated to serve as a downgradient step out for LOUs 24 and 46; as an crossgradient step out for LOU 21; and fo neral Site coverage.

rves as a step out downgradient well for LOUs 24 and 46; as a step out upgradient well for LOU 21; as a crossadient step out to LOUs 59 and 60; and general Site coverage located on Timet.

cated to evaluate LOU 34W; as an upgradient step out for LOU 60; and for general Site coverage.

cated to serve as a downgradient step out for LOU 59; as upgradient step out for LOUs 24 and 46; and for neral Site coverage.

cated south of LOU 46 (Former Old Main Cooling Tower) per NDEP.

rves as a step out downgradient for LOUs 34E, 47, 48, 51, and Area 70 (former U.S. Vanadium), and general e coverage located on Timet.

cated to serve as a downgradient step out for LOU 59; as an upgradient step out for LOUs 24 and 46; as a ossgradient step out for LOUs 20, 21, 22, and 23; and for general Site coverage.

cated to evaluate LOUs 34E, 47 through 51, and Area 70 (former U.S. Vanadium); as a crossgradient step out LOUs 20, 21, 22, 23, and 60; and for general Site coverage.

w monitoring well co-located with boring SA140 to evaluate LOUs 49 and 50.

is is a duplicate sample of M-141B.

cated to evaluate LOUs 34E, 47 through 51 and Area 70 (former U.S. Vanadium); as a downgradient step out LOUs 33, 40, and 61; as a crossgradient step out for LOU 59; and for general Site coverage.

is is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles MSD sample. Label both sets of bottles as M-77B.

cated as a downgradient step out for LOU 61; as an upgradient step out for LOUs 34E, 47 through 51 and Area (former U.S. Vanadium); as a crossgradient step out for LOUs 20, 22, 23, and 60, and for general Site verage.

is is a duplicate sample of M-11B.

w monitoring well located to serve as a downgradient step out for LOUs 37, 44, and 60; as an upgradient step t for LOUs 34E, 47, 48, 51, 59 and Area 70 (former U.S. Vanadium); to evaluate possible offsite sources to the st; and for general Site coverage.

cated to serve as a downgradient step out for LOUs 37 and 44; as a crossgradient step out for LOUs 59 and 60; evaluate possible offsite sources to the east: and for general Site coverage.

cated as an upgradient step out for LOUs 37 and 44, and general Site coverage.

w monitoring well located to serve as a crossgradient step out for LOU 44, to evaluate possible offsite sources the east; and for general Site coverage.

cated to evaluate groundwater conditions beneath the Unit 6 building for LOUs 44 and 37.



Area IV

					L	aboratory ^{E.} :	CAS - Ke	elso, WA			CAS - Roche	ester, NY				GEL Charleston, SC	CAS - Houston	STL- Denver	Alpha Analytical _{Sparks, NV}		
Grid Location	Location Area	Monitoring Well No.	Sample ID Number ^{K.}	Screen Interva (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.}) (EPA 7199)	Wet Chemistry ^{5.}	OCPs ^{6.} (EPA 8081A)	Total Cyanide (EPA 9012A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8,L} (EPA 8082)	Radionuclides ^{9.}	PCBs ^{8,L} (EPA 1668A)	OPPs ^{10, A} (EPA 8141A)	Organic Acids ^B	Rationale for Revision	Location Description and Rationale for Investigation
			-	-	Wel	ls are organi	zed by grid	location	as show	n on Plate A	- Starting p	oint is on	the nort	hwestern	-most grid i	n Area 4 (P-2) a	nd ending v	with the sou	theastern-mo	st grid cover	ing Area 4 (W-7).
P-2	Parcel F	TR-6	TR-6B	60-80	MCcg1	No	х	х	х	Х	Х	Х	х	Х	Х	х	Х	Х	Х	A, B, C, F, L	Located to evaluate groundwater migrating onto Tronox from the west.
P-4	Parcel F	M-93	M-93B	35.4 - 45.4	MCfg1	No	х	х	х	х	х	х	х	х		x				F	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-97B	35 - 45	MCfg1	Yes	х	х	х	х	х	х	х	х		x		х	х	A, B, F,J	Located to serve as a downgradient stepout for LOUs 4, 26, 27, 28, 42, and 59; and for general Site coverage.
Q-4	Parcel F	M-92	M-92B	34.9 - 44.9	MCfg1	Yes	х	х	х	х	х	х	х	х		x				F	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	Ш	M-13	M-13B	40-50	Qal/MCfg1	Yes	R	R	R	R	R	R	R	R		R				D (see Area II)	Located to serve as a downgradient stepout for LOUs 42, 59, and 60; and for general Site coverage.
Q-6	Ш	M-12A	M-12AB	28-48	MCfg1	Yes	R	R	R	R	R	R	R	R		R				D (see Area II)	Located to serve as a downgradient stepout for LOU 59 and for general Site coverage.
Q-4	IV	M-143	M-143B	TBD	Qal/MCfg1*	new well	х	х	x	х	х	х	х	х		x		х	х	A, B, F, H	New well to be installed; located to evaluate LOUs 4, 25, 26, 27, 28, 42, and 60; and for general Site coverage
R-5	IV	M-144	M-144B	TBD	Qal/MCfg1*	new well	х	х	x	x	х	x	х	х		x				F	New well to be installed; located to evaluate LOU 42, and for general Site coverage.
S-2	Parcel G	TR-8	TR-8B	63 - 93	MCcg1/MCfg2	No	х	x	x	x	х	x	х	x		x		х	х	A, B, I, J	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-10B	43 - 63	Qal/MCfg1	No	х	x	x	x	х	x	х	x		x				F	Located as stepout for LOU 59; and for general Site coverage.
U-4	IV	TR-10	TR-10B	80-100	MCfg1	No	х	х	х	х	х	х	х	х		x				F	Located to evaluate LOU 62 and for general Site coverage.
U-4	IV	M-137	M-137B	TBD	MCcg1*	new well	х	х	х	x	Х	х	х	х		x					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-138B	TBD	MCcg1*	new well	x	х	х	x	х	х	х	x		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-103B	69.5 - 89.5	MCcg1	No	х	х	х	х	х	х	х	х		х				F, J	Located to evaluate potential onsite sources in the southeastern portion of the Site and possible upgradient sources.
W-1	Olin Chemical	H-11	H-11B	95 - 105	MCcg1	No	х	х	х	x	х	х	х	х		х				F	To provide general area-wide upgradient information.
W-4	Parcel H	M-121	M-121B	77 - 97	MCcg1	No	х	х	x	х	х	х	х	x		x				F, J	Located to evaluate upgradient (southwest) groundwater conditions on the Site.
W-5	Parcel H	M-118	M-118B	138 - 158	MCfg2	No	х	х	x	x	х	х	х	х		x				F	Located to evaluate upgradient (south) groundwater conditions on the Site.
W-6	Parcel H	M-120	M-120B	80 - 100	MCcg1	Yes	х	х	x	х	х	x	х	х		x				F, G	Located to evaluate upgradient (south) groundwater conditions on the Site.
W-7	Parcel H	M-117	M-117B	130 - 150	MCfg2	No	х	х	х	х	х	х	х	х		x				F, G	Located to evaluate upgradient groundwater conditions on the southeast corner of the Site.
QA/QC S	amples:				Number of F	ield Samples:	17	17	17	17	17	17	17	17	1	17	1	4	4	+	
	Field D	uplicates (10)%)				2	2	2	2	2	2	2	2	0	2	0	1	1	+	
	Field B Equips	ianks ient Rinseate	e Blanks				1	1	1	1	1	1	1	1	1	1	1	1	1	-	
	Trip Bl	ank Samples	6				0	0	5	0	0	0	0	0	0	0	0	0	0		
	Matrix Matrix	Spike (5%) Spike Dunlic	ate (5%)				1	1	1	1	1	1	1	1	1	1	1	1	1	-	
					Т	otal Samples:	23	23	28	23	23	23	23	23	4	23	4	9	9		

Table 3

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

•	for	
)	n	

					L	aboratory ^{E.} :	CAS - Ke	lso, WA			CAS - Roche	ster, NY				GEL Charleston, SC	CAS - Houston	STL- Denver	Alpha Analytical Sparks, NV	Rationale
Grid Location	Location Area	Monitoring Well No.	Sample ID Number ^{K.}	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	OCPs ^{6.} (EPA 8081A)	Total Cyanide (EPA 9012A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8,L} (EPA 8082)	Radionuclides ^{9.}	PCBs ^{8,L} (EPA 1668A)	OPPs ^{10, A} (EPA 8141A)	Organic Acids ^B	Revisio
				-	Well	s are organi	zed by grid	location	as shown	on Plate A	- Starting p	oint is on	the north	hwestern	most grid i	n Area 4 (P-2) a	nd ending v	with the sou	theastern-mc	ost grid co
Notos																				
*	Well comp	letion informa	tion or borin	a loa not avail	able. Soil type inf	erred from nea	arby wells and	l aeoloaic a	cross-sectio	n provided i	the Phase A	Source Are	ea Investia	ation Repo	t (ENSR 200)7)				
х	Sample wi	Il be collected	and analyze	ed.			aby wend and	i geologie e	1000 00010		The Thase A		a mesuge			,,,,.				
blank	No sample	e collected une	der Phase B	sampling plan	۱.															
1.	It is anticip	ated that the	large majorit	ty of the flow to	o the well will be f	rom the coars	e-grained sed	liments. As	s such, in th	e cases whe	ere there are tv	vo lithologie	es present	across the	screen interv	al, the water samp	led will repre	sent conditior	is in the coarse-	-grained inte
2.	Metals and	alyses include	s Aluminum,	, Antimony, Ar	senic, Barium, Be	eryllium, Boron	, Cadmium, C	Chromium,	Cobalt, Cop	oper, Iron, Le	ead, Magnesiur	m, Mangan	ese, Mercu	ury, Molybd	enum, Nickel	, Platinum, Potass	ium, Seleniu	m, Silver, Sod	lium, Strontium,	Tin, Titaniu
3.	VOCs = Vc	olatile organic	compounds	(to include ar	halysis for naphth	alene)														
4. 5	Hexavalen Complete	it Chromium.	mietry paran	notors are she	we on Table 1 A	ll groupdwator	samples will	havo nH m	opeurod in	the field										
5. 6	OCPs = Organochlorine pesticides (to include analysis for hexachlorobenzene).																			
7.	SVOCs = S	Semi volatile	organic com	pounds.																
8.	Polychlorin	nated Bipheny	ıls.																	
9.	Radionucli	ides consists	of alpha spe	c reporting for	isotopic Thorium	and isotopic L	Iranium, and	Radium-22	6, plus Ra	dium-228 by	beta counting	(per NDEF	P).							
10.	OPPs = Oi	rganophospho	orous Pestici	ides																
TBD	To Be Dete	ermined wher	well is cons	structed.																
Qai MCfa1	Quaternary Muddy Cro	y Alluvium.	- first fino-a	rained facios																
MCcq1	Muddy Cre	ek Formation	- first coars	e-grained faci	es															
MCfg2	Muddy Cre	eek Formation	- second fin	ne-grained faci	ies															
(a)	Complete I	list of wet che	mistry paran	neters are sho	wn on Table 1. A	II groundwater	samples will	have pH m	easured in	the field.										
X	Green-sha	ding indicates	items that h	nave been add	ded or changed fr	om Table 3 in	the May 2008	Area IV W	ork Plan or	iginally revie	wed by NDEP									
R	Brown-sha	ading indicate	s items that h	have been rem	noved from Table	3 in the May 2	008 Area IV	Work Plan	originally re	viewed by N	IDEP.									
А	OPPs were	e added per N	IDEP (July 2	21, 2008).																
В	Organic Ad	cids were add	ed per NDEI	P (July 21, 200	08).															
C	Well was a	added to evalu	late groundv	vater coming o	in pot logotod in	the west.														
F	Laboratory	/ information v	vas added to	ause mis well Table 3 to as	sist field samplin	ned IV.	shinning the	sample cor	tainers to t	he annronria	te laboratory									
F	Total cvan	ide was adde	d per NDFP	(July 21, 2008	3).	g personner in	shipping the				aboratory.									
G	VOCs ana	lysis will be a	ded to thes	e samples as	they were inadve	rtently left off o	of the Table 3	that was re	eviewed by	NDEP.										
н	Grid code	was listed inc	orrectly						,											
1	Location a	rea was revis	ed to reflect	the name of th	ne parcel. The pa	rcel is a part of	area IV													
J	NDEP requ	uested that so	il types be ir	nclusive of all	types encountere	d across scree	ning depth, b	oring logs	were review	ved to ensur	e correct soil ty	pes are lis	ted.							
K	Sample ID	was added to	o convey sar	nple ID nomer	nclature to field sa	ampling team ("B" sutfix den	otes samp	le is associ	ated with Ph	ase B sampling	g event).								
L	PCB colun	nns were add	eu per NDEF	- (Iviay 6, 2008	0)															

Table 3 Groundwater Sampling and Analysis Plan for Area IV Phase B Source Area Investigation Work Plan Tronox Facility - Henderson, Nevada

Page 2 of 2

for Location Description and Rationale for Investigation overing Area 4 (W-7). erval. um, Thallium, Tungsten, Uranium, Vanadium, and Zinc.

						I	_aboratory :	CA Kelso	IS , WA			Columbia / Roc	Analytical chester, N	Services Y			GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical _{Sparks, NV}
Grid Location	Location Area	Monitoring Well No.	Sample ID Number ^{K.}	Screen Interval (ft bgs)	Soil Type Expected Across Screen Interval ^{1.}	Well Sampled for Phase A? (y/n)	Matrix Spike/MS Duplicate	Perchlorate (EPA 314.0)	Metals ^{2.}	VOCs ^{3.} (EPA 8260)	Hex Cr ^{4.} (EPA 7199)	Wet Chemistry⁵.	OCPs ^{6.} (EPA 8081A)	Total Cyanide (EPA 9012A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8,L} (EPA 8082)	Radionuclides ^{9.}	PCBs ^{8,L} (EPA 1668A)	OPPs ^{10, A} (EPA 8141A)	Organic Acids ^B
					Wells	are organize	d by grid lo	cation as sl	hown on l	Plate A - S	Starting poi	nt is on the	northwes	tern-mos	t grid in A	Area 4 (P-2)	and ending wit	h the south	eastern-mo	st grid cove
P-2	Parcel F	TR-6	TR-6B	60-80	MCcg1	No		х	Х	Х	Х	Х	Х	Х	Х	Х	Х	х	Х	Х
P-4	Parcel F	M-93	M-93B	35.4 - 45.4	MCfg1	No		х	х	х	Х	Х	х	х	х		x			
P-5	IV	M-97	M-97B	35 - 45	MCfg1	Yes		х	х	х	х	х	х	х	х		x		х	х
0.4	Parcol F	M 02	M-92B	34.9 - 44.9	MCfa1	Voc		х	x	х	х	х	x	х	х		х			
Q-4	Faiceir	WI-92	M-92B	34.9 - 44.9	MCIgT	Tes	х	х	х	х	х	х	x	х	х		х			
0.1		M 440	M-143B	TBD	0-1/00/-11			х	х	х	х	х	x	х	х		х		х	х
Q-4	IV	IVI-143	M-143BD	TBD (dup)	Qai/MCtg1"	new well		х	х	х	х	х	x	х	х		x		х	х
R-5	IV	M-144	M-144B	TBD	Qal/MCfg1*	new well		х	х	х	х	Х	x	х	х		x			
S-2	Parcel G	TR-8	TR-8B	63 - 93	MCcg1/MCfg2	No		х	х	х	х	Х	x	х	х		x		х	х
T-7	IV	M-10	M-10B	43 - 63	Qal/MCfg1	No		х	х	х	х	Х	x	х	х		х			
U-4	IV	TR-10	TR-10B	80-100	MCfg1	No		х	х	х	х	Х	x	х	х		х			
U-4	IV	M-137	M-137B	TBD	MCcg1*	new well		х	х	х	х	х	x	х	х		х			
			M-138B	TBD	NO (1			х	х	х	х	х	x	x	х		х			
U-5	IV	M-138	M-138BD	TBD (dup)	- MCcg1*	new well		х	х	х	х	х	x	x	x		x			
V-7	Parcel H	M-103	M-103B	69.5 - 89.5	MCcg1	No		х	х	х	х	Х	x	х	х		x			
W-1	Olin Chemical	H-11	H-11B	95 - 105	MCcg1	No		х	х	х	х	Х	x	х	х		х			
W-4	Parcel H	M-121	M-121B	77 - 97	MCcg1	No		х	х	х	х	х	x	х	х		х			
W-5	Parcel H	M-118	M-118B	138 - 158	MCfg2	No		х	х	х	х	Х	x	х	х		x			
W-6	Parcel H	M-120	M-120B	80 - 100	MCcg1	Yes		х	х	х	х	Х	x	х	x		x			
W-7	Parcel H	M-117	M-117B	130 - 150	MCfg2	No		х	х	х	х	х	x	х	x		х			
Number	of Wells:	17						1									1	1	1	

Notes:

* Well completion information or boring log not available. Soil type inferred from nearby wells and geologic cross-section provided in the Phase A Source Area Investigation Report (ENSR, 2007).

X Sample will be collected and analyzed.

blank No sample collected under Phase B sampling plan.

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.

Metals analyses includes Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Platinum, Potassium, Selenium, Strontium, Tin, Titanium, Thallium, Tungsten, Uranium, Vanadium, and Zinc. 2.

VOCs = Volatile organic compounds (to include analysis for naphthalene). 3.

Hexavalent Chromium. 4.

Table 3 (Field Version)

Groundwater Sampling and Analysis Plan for Area IV

Phase B Source Area Investigation Work Plan Tronox Facility - Henderson, Nevada

	Location Description and Rationale for Investigation
ri	ng Area 4 (W-7).
	Located to evaluate groundwater migrating onto Tronox from the west.
	Located to serve as a downgradient stepout for LOUs 41 and 65; as an upgradient stepout for LOU 63; and for general Site coverage.
	Located to serve as a downgradient stepout for LOUs 4, 26, 27, 28, 42, and 59; and for general Site coverage.
	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.
	This is a matrix spike / matrix spike duplicate sample. Fill one set of bottles for MS sample & second set of bottles for MSD sample. Label both sets of bottles as M-92.
	New well to be installed; located to evaluate LOUs 4, 25, 26, 27, 28, 42, and 60; and for general Site coverage
	This is a duplicate sample of M-143B.
	New well to be installed; located to evaluate LOU 42, and for general Site coverage.
	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.
	Located as stepout for LOU 59; and for general Site coverage.
	Located to evaluate LOU 62 and for general Site coverage.
	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.
	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.
	This is a duplicate sample of M-138B.
	Located to evaluate potential onsite sources in the southeastern portion of the Site and possible upgradient sources.
	To provide general area-wide upgradient information.
	Located to evaluate upgradient (southwest) groundwater conditions on the Site.
	Located to evaluate upgradient (south) groundwater conditions on the Site.
	Located to evaluate upgradient (south) groundwater conditions on the Site.
	Located to evaluate upgradient groundwater conditions on the southeast corner of the Site.

						L	_aboratory :	CA Kelso	IS , WA			Columbia / Roc	Analytical chester, N	Services (GEL Charleston, SC	CAS Houston, TX	STL Denver, CO	Alpha Analytical _{Sparks, NV}
Grid Location	n Area Monitoring Well No. Sample ID Number ^{K.} Screen Interval (ft bgs) Screen Interval (ft bgs) Screen Interval ^{1.} Screen Interval ^{1.} (y/n) Perchlorate (EPA 314.0) Duplicate Wells are organized by grid location as sho										Hex Cr ^{4.} (EPA 7199)	Wet Chemistry ^{5.}	OCPs ^{6.} (EPA 8081A)	Total Cyanide (EPA 9012A)	SVOCs ^{7.} (EPA 8270C)	PCBs ^{8,L} (EPA 8082)	Radionuclides ^{9.}	PCBs ^{8,L} (EPA 1668A)	OPPs ^{10, A} (EPA 8141A)	Organic Acids ^B
	Wells are organized by grid location as shown on Plate A - Starting point is on the northwestern-most grid in Area 4 (P-2) and ending with the southeastern-most grid cover																			
5.	Complete I	ist of wet che	mistry paran	neters are sho	wn on Table 1. A	ll groundwater	samples will h	ave pH meas	sured in the	field.										
6.	OCPs = O	rganochlorine	pesticides (to include ana	lysis for hexachlo	robenzene).														
7.	SVOCs = S	Semi volatile o	organic com	pounds.																
8.	Polychlorin	ated Bipheny	/ls.																	
9.	Radionucli	des consists	of alpha spe	c reporting for	isotopic Thorium	and isotopic U	ranium, and R	adium-226, p	olus Radiu	m-228 by b	eta counting	(per NDEP).								
10.	OPPs = Or	ganophospho	orous Pestici	ides																
TBD	To Be Dete	ermined wher	well is cons	structed.																

 Qal
 Quaternary Alluvium.

 MCfg1
 Muddy Creek Formation - first fine-grained facies

 MCcg1
 Muddy Creek Formation - first coarse-grained facies

 MCfg2
 Muddy Creek Formation - second fine-grained facies

Table 3 (Field Version) Groundwater Sampling and Analysis Plan for Area IV Phase B Source Area Investigation Work Plan Tronox Facility - Henderson, Nevada

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Location Description and Rationale for Investigation

ering Area 4 (W-7).