Basic Remediation
COMPANY

SITE RELATED CHEMICALS (SRC)

FEBRUARY 09, 2006

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulations and ordinances.

Dr. Ranajit Sahu, C.E.M. (No. EM-1699, Exp. 10/07/2007)
BRC Project Manager

Table 1
Chemicals Known or Suspected to be Associated with Historical Site Operations
Upper and Lower Ponds and Ditches
Former BMI Common Areas

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
1	(2-chlorovinyl)benzene	622-25-3	TIC	potential TIC (8260 or 8270) - originally identified as chemical class "chloroalkylbenzenes"	S, A	M
2	(4-chlorobutyl)benzene	4830-93-7	TIC	potential TIC (8260 or 8270) - originally identified as chemical class "chloroalkylbenzenes"	S, A	M
3	(beta-chloroethyl)benzene	622-24-2	TIC	potential TIC (8260 or 8270) - originally identified as chemical class "chloroalkylbenzenes"	S, A	M
4	1,1,1,2-tetrachloroethane	630-20-6	8260B		S, A	M
5	1,1,1-trichloroethane	71-55-6	8260B		S, A	K, T, M
6	1,1,2,2,-tetrachloroethane	79-34-5	8260B		S, A	M
7	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	8260B		S, A	
8	1,1,2-trichloroethane	79-00-5	8260B		S, A	T, M
9	1,1-dichloroethane	75-34-3	8260B		S, A	T, M
10	1,1-dichloroethene	75-35-4	8260B		S, A	T, M
11	1,1-dichloropropene	563-58-6	8260B	See cis-1,1- and trans-1,1- isomers	S, A	M
12	1,2,3,4,6,7,8,9-octachlorodibenzofuran	39001-02-0	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
13	1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin	3268-87-9	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
14	1,2,3,4,6,7,8-heptachlorodibenzofuran	67562-39-4	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
15	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	35822-46-9	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
16	1,2,3,4,7,8,9-heptachlorodibenofuran	55673-89-7	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
17	1,2,3,4,7,8-hexachlorodibenzofuran	70648-26-9	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
18	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	39227-28-6	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
19	1,2,3,4-tetrachlorobenzene	634-66-2	TIC	Laboratory research suggests this constituent can be reported as 8270 TIC - standard is not commercially available, so method development not an option	S, A	M
20	1,2,3,5-tetrachlorobenzene	634-90-2	TIC	Method 8260 was considered as an option; laboratory research suggests this constituent can be reported as 8270 TIC - standard is not commercially available, so method development is not an option	S, A	M
21	1,2,3,6,7,8-hexachlorodibenzofuran	57117-44-9	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
22	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	57653-85-7	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
23	1,2,3,7,8,9-hexachlorodibenzofuran	72918-21-9	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
24	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	19408-74-3	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
25	1,2,3,7,8-pentachlorodibenzofuran	57117-41-6	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
26	1,2,3,7,8-pentachlorodibenzo-p-dioxin	40321-76-4	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
27	1,2,3-trichlorobenzene	87-61-6	8260B		S, A	M
28	1,2,3-trichloropropane	96-18-4	8260B		S, A	M
29	1,2,4,5-tetrachlorobenzene	95-94-3	8270C		S, A	M
30	1,2,4-trichlorobenzene	120-82-1	8260B		S, A	M, PS, M
31	1,2,4-trimethylbenzene	95-63-6	8260B	constituent occasionally listed under 8270 as well as 8260; laboratory research has confirmed that 8260 is appropriate.	S, A	M
32	1,2,4-trithiolane	289-16-7	TIC	laboratory research confirmed that reporting as potential TIC (8260 or 8270) is possible - standard is not commercially available & method development not an option.	S, A	PS
33	1,2-dichlorobenzene	95-50-1	8260B	constituent occasionally listed under 8270 as well as 8260; laboratory research has confirmed that 8260 is appropriate.	S, A	K, M, PS
34	1,2-dichloroethane	107-06-2	8260B		S, A	T
35	1,2-dichloropropane	78-87-5	8260B		S, A	T
36	1,2-diphenylhydrazine	122-66-7	8270C		S, A	M
37	1,3,5-trichlorobenzene	108-70-3	8260B	constituent occasionally listed under 8270 as well as 8260; laboratory research has confirmed that 8260 is appropriate.	S, A	M
38	1,3,5-trimethylbenzene	108-67-8	8260B		S, A	M
39	1,3-dichlorobenzene	541-73-1	8260B	constituent occasionally listed under 8270 as well as 8260; laboratory research has confirmed that 8260 is appropriate.	S, A	M, PS, T
40	1,3-dichloropropene	542-75-6	8260B	as cis- and trans- isomers	S, A	M
41	1,4-dichlorobenzene	106-46-7	8260B	constituent occasionally listed under 8270 as well as 8260; laboratory research has confirmed that 8260 is appropriate.	S, A	K, M, PS
42	1,4-dioxane	123-91-1	8270C		S, A	PS, M
43	1-chloro-4-ethylbenzene	622-98-0	TIC	potential TIC (8260 or 8270) - originally identified as chemical class "chloroalkylbenzenes"	S, A	M
44	1-nitropropane	108-03-2	TIC	standard is not commercially available & method development not an option - TIC reporting is consistent with Montrose's approach for this constituent	S, A	M
45	2,2,2-Trichloroethanol	115-20-8	TIC	standard is not commercially available & method development not an option	S, A	M
46	2,2'-dichlorobiphenyl	13029-08-8	8082	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S,A	M
47	2,2,6,6-Tetrachlorocyclohexanol	56207-45-5	TIC	by 8270C as a breakdown product/surrogate of tetrachlorocyclohexane	S, A	M
48	2,3,4,6,7,8-hexachlorodibenzofuran	60851-34-5	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
49	2,3,4,7,8-pentachlorodibenzofuran	57117-31-4	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T
50	2,3,7,8-tetrachlorodibenzofuran	51207-31-9	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	T

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51	2,3,7,8-tetrachlorodibenzo-p-dioxin	1746-01-6	8290	reported as toxic equivalent (TEQ); Method 1613 was considered as an analytical method, but laboratory research indicates that Method 8290 is appropriate	S, A	PS, T
52	2,3'-dichlorobiphenyl	25569-80-6	8082	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S,A	M
53	2,3-dichlorobiphenyl	16605-91-7	8082	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S,A	M
54	2,4,5-trichlorophenol	95-95-4	8270C		S, A	M
55	2,4,6-trichlorophenol	88-06-2	8270C		S, A	M, PS
56	2,4-D	94-75-7	8151A		S, A	K, T, PS, M
57	2,4 DB	94-82-6	8151A		S, A	K, T, PS, M
58	2,4'-dichlorobenzophenone	85-29-0	TIC	potential TIC (8260 or 8270); if identified as TIC in samples from site, method development will be considered	S, A	PS
59	2,4-dichlorobenzophenone	19811-05-3	TIC	potential TIC (8260 or 8270); - standard is not commercially available	S, A	PS
60	2,4'-dichlorobiphenyl	34883-43-7	8082	Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S,A	M
61	2,4-dichlorobiphenyl	33284-50-3	8082	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S,A	M
62	2,4-dichlorophenol	120-83-2	8270C		S, A	M
63	2,4-dichlorostyrene	2123-27-5	TIC	identified as dichlorostyrene. Isomers identified: 2,5-, 2,4-, 2,6- and 3,4- ; potential TIC (8260 or 8270) See all isomers - standard is not commercially available	S, A	M
64	2,4-dimethylphenol	105-67-9	8270C			PS
65	2,4-dinitrotoluene	121-14-2	8270C		S, A	
66	2,5-dichlorobiphenyl	34883-39-1	8082	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S, A	M
67	2,5-dichlorostyrene	1123-84-8	TIC	identified as dichlorostyrene. Isomers identified: 2,5-, 2,4-, 2,6- and 3,4- ; potential TIC (8260 or 8270) See all isomers - standard is not commercially available	S, A	M
68	2,6-dichlorobiphenyl	33146-45-1	8082 or 1668	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S, A	M
69	2,6-dichlorostyrene	28469-92-3	TIC	identified as dichlorostyrene. Isomers identified: 2,5-, 2,4-, 2,6- and 3,4- ; potential TIC (8260 or 8270) See all isomers - standard is not commercially available	S, A	M
70	2-chlorobenzaldehyde	89-98-5	TIC	Standard is not commercially available	S, A	M
71	2-chlorobenzenethiol	6320-03-2	TIC	standard is not commercially available	S, A	PS
72	2-chlorobenzyl chloride	611-19-8	TIC	TIC reporting based on laboratory research & consistent with Montrose approach; Standard is not commercially available	S, A	M
73	2-chloroiodobenzene	615-41-8	TIC	standard is not commercially available & method development not an option - TIC reporting is consistent with Montrose's approach for this constituent	S, A	PS
74	2-chlorophenol	95-57-8	8270C		S, A	M
75	2-chlorotoluene	95-49-8	8260B		S, A	M
76	2-hexanone	591-78-6	8260B		S, A	K, M
77	2-methylnaphthalene	91-57-6	8270C		S, A	M
78	2-nitropropane	79-46-9	8260B	Laboratory research indicated potential target analyte via 8260; TBD	S, A	M

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
79	3,3'-dichlorobiphenyl	2050-67-1	8082	Laboratory research suggested either method 8082 or 1668 viable; 8082 consistent with Montrose approach	S, A	M
80	3,4-dichlorobenzophenone	6284-79-3	TIC	potential TIC (8260 or 8270) - standard is not commercially available.	S, A	PS
81	3,4'-dichlorobiphenyl	2974-90-5	8082	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S, A	M
82	3,4-dichlorobiphenyl	2974-92-7	8082	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S, A	M
83	3,4-dichlorostyrene	2039-83-0	TIC	identified as dichlorostyrene. Isomers identified: 2,5-, 2,4-, 2,6- and 3,4 ; potential TIC (8260 or 8270) See all isomers - standard is not commercially available	S, A	M
84	3,5-dichlorobiphenyl	34883-41-5	8082	reporting as aroclors since tox data is based on aroclors; Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S, A	M
85	3,5-Heptanedione, 2,6-dimethyl-	18362-64-6	TIC	TIC reporting possbile based on laboratory research - standard is not commercially available	S, A	PS
86	3-chlorobenzenethiol	2037-31-2	TIC	standard is not commercially available; TIC reporting consistent with Pioneer/Stauffer approach	S, A	PS
87	3-chlorobenzyl chloride	620-20-2	TIC	Standard is not commercially available; TIC reporting consistent with Montrose approach	S, A	M
88	3-hexene-2,5-dione	4436-75-3	TIC	potential TIC (8270); historically reported as TIC. Standard is not commercially available	S, A	PS
89	4,4'-DDD	72-54-8	8081A			M, PS, T, K
90	4,4'-DDE	72-55-9	8081A		S, A	M, PS, T, K
91	4,4'-DDT	50-29-3	8081A		S, A	K, M, PS, T
92	4,4'-dichlorobenzophenone	90-98-2	TIC	Laboratory research confirmed that a standard is available. Method development per 8260 or 8270 will be performed if constituent routinely seen as a TIC; TIC reporting consistent with Montrose approach; PS considering 8260 but has not confirmed viability.	S, A	PS, M
93	4,4'-dichlorobiphenyl	2050-68-2	8082	Laboratory research indicates either 8082 or 1668 viable; 8082 consistent with Montrose approach	S, A	M
94	4,4'-Dichloromethylbiphenyl	1667-10-3	TIC	Montrose has identified 4,4'-dichloromethylbiphenyl for dichloromethylbiphenyl - says possibly 8082 aroclor analysis, but will not be uniquely identified - standard is not commercially available		M
95	4-bromophenyl phenyl ether	101-55-3	8270C		S, A	K, M, PS, T
96	4-chloro-3-methylphenol	59-50-7	8270C		S, A	M
97	4-chlorobenzenesulfonic acid	98-66-8	TIC	standard is not commercially available	S, A	K, M
98	4-chlorobenzyl chloride	104-83-6	TIC	Standard is not commercially available; TIC reporting consistent with Montrose approach	S, A	M
99	4-chlorothioanisole	123-09-1	8270C		S, A	PS
100	4-chlorotoluene	106-43-4	8260B		S, A	M
101	4-methyl-2-pentanone	108-10-1	8260B		S, A	K, T
102	4-nitrophenol	100-02-7	8270C		S, A	M
103	acenaptht hene	83-32-9	8270C		S, A	T, K
104	acenapthylene	208-96-8	8270C		S, A	T, K
105	acetaldehyde	75-07-0	8315A		S, A	M
106	acetone	67-64-1	8260B		S, A	K, M, T
107	acetonitrile	75-05-8	8260B		S, A	K, PS, M, T

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
108	acetophenone	98-86-2	8270C		S, A	K, PS, M, T
109	actinium-227	14952-40-0	Rad - calc	Back-quantitate from Th-227 using 901.1 / HASL GA-01-R		T
110	actinium-228	14331-83-0	901.1 / HASL GA-01-R		S, A	T, K
111	aldrin	309-00-2	8081A		S, A	M
112	alumina	1344-28-1	6010 & 6020	as aluminum	S, A	K, T
113	alumina silicate	1335-30-4	6010 & 6020	as aluminum and as silicon; CAS is for aluminum silicate; laboratories confirm can be run as aluminum and silicon by 6010/6020	S, A	T
114	aluminum (Al)	7429-90-5	6010 & 6020		S, A	K, T, M
115	ammonium chloride	12125-02-9	350.1	as ammonia	S, A	K, M
116	ammonium hydroxide	1336-21-6	350.1	as ammonia	S, A	T
117	ammonium perchlorate	7790-98-9	314	as perchlorate (LC/MS/MS option if interferences)	S, A	K
118	anthracene	120-12-7	8310 / 8270C		S, A	T, K
119	antimony	7440-36-0	6010 & 6020		S, A	K, M, T
120	Aroclor 1016	12674-11-2	8082		S, A	T, K
121	Aroclor 1221	11104-28-2	8082		S, A	T, K
122	Aroclor 1232	11141-16-5	8082		S, A	T, K
123	Aroclor 1242	53469-21-9	8082		S, A	T, K
124	Aroclor 1248	12672-29-6	8082		S, A	T, K
125	Aroclor 1254	11097-69-1	8082		S, A	PS, T, K
126	Aroclor 1260	11096-82-5	8082		S, A	T, K
127	arsenic	7440-38-2	6010 & 6020		S, A	K, M, PS, T
128	arsenic trioxide	1327-53-3	6010 & 6020	as arsenic	S, A	K
129	asbestos	1332-21-4	ISO 10312 TEM		S	K, PS, T
130	barium	7440-39-3	6010 & 6020		S, A	K, M, T
131	barium chloride	10361-37-2	6010 & 6020 / 300.0	as barium/as chloride	S, A	T
132	barium hydroxide	17194-00-2	6010 & 6020	as barium	S, A	K
133	barium oxide	1304-28-5	6010 & 6020	as barium	S, A	K
134	barium sulfate	7727-43-7	6010 & 6020 / 300.0	as barium/as sulfate	S, A	K
135	barium sulfide	21109-95-5	6010 & 6020 / 376.1	as barium/as sulfide	S, A	K
136	benzene	71-43-2	8260B		S, A	K, M, PS, T
137	benzene,(methylsulfinyl)	1193-82-4	TIC	Laboratory research confirmed potential TIC (8260 or 8270) - standard is not commercially available	S, A	PS
138	benzene,1-chloro-4-(methylsulfonyl)	98-57-7	TIC	potential TIC (8260 or 8270) - standard is not commercially available	S, A	PS
139	benzenesulfonic acid	98-11-3	HPLC		S, A	PS
140	benzenesulfonic acid, phenyl ester	1208-20-4	TIC	Standard is not commercially available - TIC reporting consistent with PS approach		PS
141	benzenethiol	108-98-5	8270C		S, A	PS
142	benzo(a)anthracene	56-55-3	8310 / 8270C	may have been mis-spelled in documents as "benzo(a)abthracene"	S, A	T, K
143	benzo(a)pyrene	50-32-8	8310 / 8270C		S, A	PS, T, K, M
144	benzo(b)fluoranthene	205-99-2	8270C		S, A	PS
145	benzo(g,h,i)perylene	191-24-2	8270C		S, A	T, K
146	benzo(k)fluoranthene	207-08-9	8270C		S, A	PS, M
147	benzoic acid	65-85-0	8270C		S, A	M, PS
148	benzophenone	119-61-9	TIC	potential TIC (8260 or 8270)	S, A	PS
149	benzoylchloride, 2-chloro	609-65-4	TIC	Standard is not commercially available	S, A	PS
150	benzoylchloride, 3-chloro	618-46-2	TIC	Standard is not commercially available	S, A	PS
151	benzoylchloride, 4-chloro	122-01-0	TIC	Standard is not commercially available	S, A	PS
152	beryllium	7440-41-7	6010 & 6020		S, A	K, M, T
153	BHC, alpha-	319-84-6	8081A		S, A	PS, M
154	BHC, beta-	319-85-7	8081A		S, A	PS, M
155	BHC, delta-	319-86-8	8081A		S, A	PS, M
156	*bis* para-chlorophenyl disulfide	1142-19-4	8270C		S, A	PS
157	*bis* para-chlorophenyl sulfone	80-07-9	8270C		S, A	PS

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
158	bis(2-ethylhexyl)phthalate	117-81-7	8270C		S, A	PS, M
159	bis(chloromethyl)ether	542-88-1	TIC	Laboratory research confirmed potential for TIC reporting - standard is not commercially available; TIC reporting consistent with Montrose approach	S, A	PS
160	bismuth-210	14331-79-4	Rad - calc	Back-quantitate from Pb-210 using 901.1 / HASL GA-01-R	S, A	T
161	bismuth-211	15229-37-5	Rad - calc	Back-quantitate from Th-227 or Pb-211using 901.1 / HASL GA-01-R		T
162	bismuth-212	14913-49-6	901.1 / HASL GA-01-R		S, A	T, K
163	bismuth-214	14733-03-0	901.1 / HASL GA-01-R		S, A	T
164	borate	11129-12-7	6010 & 6020	as boron	S, A	K
165	borax	1303-96-4	6010 & 6020	as sodium	S, A	K
166	boric acid	10043-35-3	pH	as pH	S, A	K
167	boron	7440-42-8	6010 & 6020		S, A	K
168	boron carbide	12069-32-8	6010 & 6020	as boron	S, A	K
169	boron tribromide	10294-33-4	6010 & 6020	as boron	S, A	K
170	boron trichloride	10294-34-5	6010 & 6020	as boron	S, A	K
171	bromine (Br)	7726-95-6	300	as bromide (soluble in water)	S, A	K
172	bromobenzene	108-86-1	8260B		S, A	M
173	bromodichloromethane	75-27-4	8260B		S, A	T, M
174	bromoform	75-25-2	8260B		S, A	T, M
175	bromomethane	74-83-9	8260B		S, A	T
176	butylbenzyl phthalate	85-68-7	8270C		S, A	K, M, PS, T
177	butylchloral	76-36-8	TIC	potential TIC (8260 or 8270) - standard is not commercially available.	S, A	M
178	cadmium	7440-43-9	6010 & 6020		S, A	K, M, T
179	calcium (Ca)	7440-70-2	6010 & 6020		S, A	K, PS, T, M
180	calcium carbonate ($CaCO_3$)	471-34-1	310.1	as alkalinity (also hydrated form)	A	K, M, PS
181	calcium chloride	10035-04-8	6010 & 6020 / 300.0	as calcium/as chloride	S, A	K, T
182	calcium fluoride	7789-75-5	6010 & 6020 / 300.0	as calcium/as fluoride	S, A	T
183	calcium hydroxide	1305-62-0	6010 & 6020	as calcium	S, A	K, PS
184	calcium hypochlorite	7778-54-3	6010 & 6020 / 300.0	as calcium/as chloride	S, A	K
185	calcium orthophosphate	7758-87-4	6010 & 6020 / 365.2	as calcium/as orthophosphate	S, A	K
186	calcium oxide	1305-78-8	6010 & 6020	as calcium	S, A	K, T, PS
187	calcium sulfate ($CaSO_4$)	7778-18-9	6010 & 6020 / 300.0	as calcium/as sulfate	S, A	K, T
188	carbamide	57-13-6	TIC	potential TIC (8260 or 8270) - standard is not commercially available	S, A	K, T
189	carbon disulfide	75-15-0	8260B		S, A	T
190	carbon tetrachloride	56-23-5	8260B		S, A	M, PS, T
191	carbonic acid	463-79-6	pH	as pH	S, A	K
192	carbophenothion	786-19-6	8141A		S, A	PS
193	chloral	75-87-6	551.1		S, A	M
194	chloral hydrate	302-17-0	TIC	potential TIC (8260 or 8270)	S, A	M
195	chlordane	57-74-9	8081A		S, A	K
196	chlordane, alpha	5103-71-9	8081A		S, A	K
197	chlordane, gamma	5103-74-2	8081A		S, A	K, M, PS, T
198	chlorine (Cl)	7782-50-5	300	as chloride; historically present in gas form	S, A	K, M, PS, T
199	chlorite	14998-27-7	300		S, A	K, M, PS, T
200	chloroacetaldehyde	107-20-0	8315A		S, A	M
201	chlorobenzaldehyde	35913-09-8	TIC	potential TIC (8260 or 8270)	S, A	PS
202	chlorobenzene	108-90-7	8260B		S, A	K, M, PS, T
203	chlorodibromomethane	124-48-1	8260B		S, A	M
204	chloroethane	75-00-3	8260B		S, A	M
205	chloroform	67-66-3	8260B		S, A	K, M, PS, T
206	chloromethane	74-87-3	8260B		S, A	T, M

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
207	chloromethyl phthalimide	17564-64-6	TIC	per Phase I report, an intermediate in trithion process, presumably consumed - not listed as a constituent of the waste stream; compound is in current laboratory MS library and can be reported as a TIC if present; standard is not commercially available	S, A	PS
208	chromic hydroxide ($Cr(OH)_3$)	1308-14-1	6010 & 6020	as chromium	S, A	K
209	chromium chloride	39345-92-1	6010 & 6020 / 300.0	as total chromium/as chloride	S, A	T
210	chromium oxide	11118-57-3	6010 & 6020	as chromium	S, A	T
211	chromium sesquioxide	1308-38-9	6010 & 6020	as chromium	S, A	K
212	chromium, hexavalent	18540-29-9	7196A	sample prep method 3060A	S, A	K, M
213	chromium, total (Cr)	7440-47-3	6010 & 6020	as total chromium	S, A	K, M, PS, T
214	chrysene	218-01-9	8270C		S, A	T, K, M
215	cis-1,2-dichloroethene	156-59-2	8260B		S, A	T, M
216	cis-1,3-dichloropropene	10061-01-5	8260B		S, A	M
217	citric acid	77-92-9	pH	as pH	S, A	K, T
218	cobalt (Co)	7440-48-4	6010 & 6020		S, A	K, M, PS, T
219	cobalt sulfide	1317-42-6	6010 & 6020 / 376.1	as cobalt/as sulfide	S, A	K
220	cobaltic oxide	1308-04-9	6010 & 6020	as cobalt	S, A	K
221	copper (Cu)	7440-50-8	6010 & 6020		S, A	K, M, PS, T
222	copper sulfate	7758-98-7	6010 & 6020	as copper	S, A	T
223	copper sulfide	11115-78-9	6010 & 6020 / 376.1	as copper/as sulfide	S, A	K
224	cupric oxide	1317-38-0	6010 & 6020	as copper	S, A	K
225	cyanide	57-12-5	9010/9014	Other possible analyses include 335.1 / 335.2; laboratory research confirmed 9010/9014 appropriate	S, A	K, M, T
226	cyclododecene	1501-82-2	TIC	standard is not commercially available	S, A	M
227	cymene	99-87-6	8260B		S, A	M
228	dibenzo(a,h)anthracene	53-70-3	8310 / 8270C		S, A	T, K
229	dibromochloroethane	73506-94-2	8260B		S, A	M
230	dibromochloropropane	96-12-8	8260B		S, A	M
231	dicamba	1918-00-9	8151A		S, A	K, M, PS, T
232	dichloroacetaldehyde	79-02-7	551.1		S, A	M
233	dichloroanthracene, 9,10-	605-48-1	TIC	Montrose identified dichloroanthracene; potential TIC (8260 or 8270) - standard is not commercially available.	S, A	M
234	dichlorobenzil, 2,2'-	3457-46-3	8270C	Montrose identified dichlorobenzil, analysis is for 2,2'-dichlorobenzil	S, A	M
235	dichlorodifluoromethane	75-71-8	8260B		S, A	M
236	Dichloroprop	120-36-5	8151A		S, A	K
237	Dieldrin	60-57-1	8081A		S, A	M
238	diethyl phthalate	84-66-2	8270C		S, A	PS
239	dimethyl phthalate	131-11-3	8270C		S, A	K, M, PS, T
240	dimethyldisulfide	624-92-0	8260B		S, A	PS
241	di-n-butylphthalate	84-74-2	8270C		S, A	PS, M
242	di-n-octyl phthalate	117-84-0	8270C		S, A	PS
243	Dinoseb (syn: dinitrobutyl phenol)	88-85-7	8151A		S, A	K, M, PS, T
244	diphenyl sulfide	139-66-2	8270C	reported using 8270 for borrow pit sampling	S, A	PS
245	diphenyldisulfide	882-33-7	8270C	reported using 8270 for borrow pit sampling	S, A	PS
246	diphenyl sulfone	127-63-9	8270C	reported using 8270 for borrow pit sampling	S, A	PS
247	endosulfan I	959-98-8	8081A	as Endosulfan I and Endosulfan II (CAS 959-98-8 and 33213-65-9, respectively)	S, A	PS, M
248	endosulfan sulfate	1031-07-8	8081A		S, A	M
249	Endrin	72-20-8	8081A		S, A	M
250	Endrin aldehyde	7421-93-4	8081A		S, A	M
251	Endrin ketone	53494-70-5	8081A		S, A	K, M, PS, T
252	ethane	74-84-0	RSK175	water samples only	A	K, M, PS, T
253	ethanol	64-17-5	8260B	Laboratory research indicates that either 8015 or 8260 appropriate	S, A	PS, M

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
254	ethylbenzene	100-41-4	8260B		S, A	K, M, T
255	ethylene	74-85-1	RSK175	water samples only	A	K, M, PS, T
256	ethylene glycol	107-21-1	8015B		S, A	K
257	ethylene glycol monobutyl ether	111-76-2	TIC		S, A	T
258	ferric chloride	7705-08-0	6010 & 6020 / 300.0	as iron/as chloride	S, A	T, K, M
259	ferric hydroxide	1309-33-7	6010 & 6020	as iron	S, A	M
260	ferric oxide	1309-37-1	6010 & 6020	as iron	S, A	K
261	ferrous iron (Fe)	7439-89-6	6010 & 6020	iron	S, A	K, T, M
262	ferrous oxide	1345-25-1	6010 & 6020/150.1	as iron, as pH	S, A	K
263	fluoranthene	206-44-0	8270C		S, A	T, K, M
264	fluorene	86-73-7	8270C		S, A	T, K
265	formaldehyde	50-00-0	8315A		S, A	K, PS
266	heptachlor	76-44-8	8081A		S, A	K, M, PS, T
267	heptachlor epoxide	1024-57-3	8081A		S, A	PS, M
268	heptane	142-82-5	8260B		S, A	PS
269	hexachlorobenzene	118-74-1	8270C		S, A	M, PS, T, K
270	hexachlorobutadiene	87-68-3	8270C	Laboratory research indicates 8270 appropriate; 8260 may also be viable option	S, A	M
271	hexachloroethane	67-72-1	8270C		S, A	PS
272	hydrochloric acid	7647-01-0	150.1	as pH	S, A	K, M, PS, T
273	hydrofluoric acid (HF)	7664-39-3	150.1	as pH	S, A	T
274	hydroxymethyl phthalimide	118-29-6	8270C	reported using 8270 for borrow pit sampling.	S, A	PS
275	indeno(1,2,3-cd)pyrene	193-39-5	8270C		S, A	T, K
276	iodine chloride	7790-99-0	345.1 / 300.0/160.1	as iodine, as chloride and TDS per PS	S, A	PS, T
277	iron hydroxide	11113-66-9	6010 & 6020	as iron	S, A	K
278	isoheptane	31394-54-4	TIC	Standard is not commercially available; TIC reporting consistent with PS approach	S, A	PS
279	isopropylbenzene	98-82-8	8260B		S, A	M
280	lead (Pb)	7439-92-1	6010 & 6020		S, A	K, M, PS, T
281	lead mono-oxide	1317-36-8	6010 & 6020	as lead	S, A	K
282	lead sulfide	1314-87-0	6010 & 6020 / 376.1	as lead/as sulfide	S, A	K
283	lead-206	13966-27-3	6010/6020	Stable isotope; analyze as lead by 6010/6020	S, A	T
284	lead-207	14119-29-0	6010/6020	Stable isotope; analyze as lead by 6010/6020	S, A	T
285	lead-208	13966-28-4	6010/6020	Stable isotope; analyze as lead by 6010/6020	S, A	T
286	lead-210	14255-04-0	901.1 / HASL GA-01-R		S, A	K
287	lead-211	015816-77-0	901.1 / HASL GA-01-R			T
288	lead-212	15092-94-1	901.1 / HASL GA-01-R		S, A	T, K
289	lead-214	15067-28-4	901.1 / HASL GA-01-R		S, A	T
290	Lindane	58-89-9	8081A		S, A	PS
291	lithium (Li)	7439-93-2	6010/6020		S, A	T
292	lithium chloride	7447-41-8	6010 & 6020 / 300.0	as lithium/as chloride	S, A	T
293	magnesium (Mg)	7439-95-4	6010 & 6020		S, A	K, PS, T, M
294	magnesium carbonate (from magnesite)	546-93-0	6010 & 6020 / 310.1	as magnesium/as carbonate alkalinity	S, A	K, PS, T
295	magnesium chlorate	10326-21-3	6010 & 6020 / 300.0	as magnesium/as chloride	S, A	K
296	magnesium chloride ($MgCl_2$)	7786-30-3	6010 & 6020 / 300.0	as magnesium/as chloride	S, A	K, PS, T
297	magnesium hydroxide	12141-11-6	6010 & 6020	as magnesium	S, A	K, PS
298	magnesium oxide (MgO)	1309-48-4	6010 & 6020	as magnesium	S, A	K, PS, T
299	magnesium perchlorate	10034-81-8	6010 & 6020/314	as perchlorate (LC/MS/MS option if interferences)	S, A	K
300	magnesium sulfate ($MgSO_4$)	7487-88-9	6010 & 6020 / 300.0	as magnesium/as sulfate	S, A	K
301	manganese (Mn)	7439-96-5	6010 & 6020		S, A	K, T, M
302	manganese dioxide	1313-13-9	6010 & 6020	as manganese	S, A	K
303	manganese oxide	11129-60-5	6010 & 6020	as manganese	S, A	K

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
304	manganese perchlorate	13770-16-6	314	as perchlorate (LC/MS/MS option if interferences)	S, A	K
305	manganese sulfate	7785-87-7	6010 & 6020 / 300.0	as manganese/as sulfate	S, A	K
306	MCPP	93-65-2	8151A		S, A	K, M, PS, T
307	mercury (Hg)	7439-97-6	7471A / 7470A		S, A	K, M, PS, T
308	methane	74-82-8	RSK175	water samples only	A	K, M, PS, T
309	methanol	67-56-1	8015B	consistent with PS and K approach	S, A	K, PS, T
310	methanone, (3-chlorophenyl)(4-chlorophenyl)	7498-66-0	TIC	standard is not comercially available; can be reported as a TIC, if	S, A	PS
311	methoxychlor	72-43-5	8081A		S, A	M
312	methyl carbophenothion	953-17-3	8141A	changed from prior submittal - not total carbophenothion	S, A	PS
313	methyl ethyl ketone	78-93-3	8260B		S, A	K, T
314	methyl mercury	22967-92-6	EPA 1630	Cold Vapor Atomic Fluorescence Spectrometry (CVAFS) method for water samples only	A	K
315	methyl tert-butyl ether	1634-04-4	8260B		S, A	K
316	methylene chloride	75-09-2	8260B		S, A	M, T
317	molybdenum (Mo)	7439-98-7	6010 & 6020		S, A	K, M, T
318	molybdenum trioxide	1313-27-5	6010 & 6020	as molybdenum	S, A	K
319	naphthalene	91-20-3	8270C		S, A	T, K, M
320	n-butylbenzene	104-51-8	8260B		S, A	M
321	nickel (Ni)	7440-02-0	6010 & 6020		S, A	K, M, PS, T
322	nickel mono-oxide	1313-99-1	6010 & 6020	as nickel (nickel monoxide = NiO)	S, A	K
323	nickel sulfide	11113-75-0	6010 & 6020 / 376.1	as nickel/as sulfide	S, A	K
324	niobium	7440-03-1	6010 & 6020		S, A	T
325	niobium chloride	10026-12-7	6010 & 6020 / 300.0	as niobium/as chloride	S, A	T
326	niobium pentoxide (Nb_2O_5)	1313-96-8	6010 & 6020	as niobium	S, A	T
327	nitric acid (HNO_3)	7697-37-2	300	as pH / as nitrate	S, A	T
328	nitrobenzene	98-95-3	8270C		S, A	K
329	nitrogen chloride (NCl_3)	10025-85-1	300 / 350.1	as chloride / as ammonia	S, A	PS, M
330	n-nitroso-di-n-propylamine	621-64-7	8270C		S, A	K, M, PS, T
331	nonanal	124-19-6	8260B			PS
332	n-propylbenzene	103-65-1	8260B		S, A	M
333	O,O,S-Trimethylphosphorodithionate	2953-29-9	TIC	standard is not commercially available; TIC approach consistent with PS approach	S, A	PS
334	O,O-diethylphosphorodithioic acid	298-06-6	HPLC		S, A	PS
335	O,O-dimethylphosphorodithioic acid	756-80-9	HPLC		S, A	PS
336	O,P'-DDD	53-19-0	8081A	Based on laboratory research, can add to 8081 list	S, A	PS
337	O,P'-DDE	3424-82-6	8081A	Demonstrated performance by 8081 by STL	S, A	PS
338	o-cresol (syn: 2-methylphenol)	95-48-7	8270C		S, A	K, M, PS, T
339	octachlorostyrene	29082-74-4	8270C		S, A	T, K, M
340	palladium	7440-05-3	6020		S, A	T
341	paraformaldehyde	30525-89-4	TIC	potential TIC (8260 or 8270); standard is not commercially available	S, A	PS
342	PCB-77	32598-13-3	8082	WHO congener (3)	S, A	K, M, PS, T
343	PCB-81	70362-50-4	8082	WHO congener (3)	S, A	K, M, PS, T
344	PCB-105	32598-14-4	8082	WHO congener (3)	S, A	K, M, PS, T
345	PCB-114	74472-37-0	8082	WHO congener (3)	S, A	K, M, PS, T
346	PCB-118	31508-00-6	8082	WHO congener (3)	S, A	K, M, PS, T
347	PCB-123	65510-44-3	8082	WHO congener (3)	S, A	K, M, PS, T
348	PCB-126	57465-28-8	8082	WHO congener (3)	S, A	K, M, PS, T
349	PCB-156	38380-08-4	8082	WHO congener (3)	S, A	K, M, PS, T
350	PCB-157	69782-90-7	8082	WHO congener (3)	S, A	K, M, PS, T
351	PCB-167	52663-72-6	8082	WHO congener (3)	S, A	K, M, PS, T
352	PCB-169	32774-16-6	8082	WHO congener (3)	S, A	K, M, PS, T
353	PCB-189	39635-31-9	8082	WHO congener (3)	S, A	K, M, PS, T
354	p-chloroaniline	106-47-8	8270C		S, A	K, M, PS, T

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
355	p-chlorobenzenethiol	106-54-7	8270C		S, A	PS
356	pentachlorobenzene	608-93-5	8270C		S, A	M
357	pentachlorocyclohexane	319-94-8	TIC	as gamma-pentachlorocyclohexene	S, A	M
358	pentachlorophenol	87-86-5	8270C		S, A	M
359	perchloric acid ($HClO_4$)	7601-90-3	pH/314.0	as pH / as perchlorate	S, A	T
360	phenanthrene	85-01-8	8270C		S, A	T, K
361	phenol	108-95-2	8270C		S, A	PS, M
362	Phosmet	732-11-6	8141A		S, A	PS
363	phosphoric acid	7664-38-2	pH	as pH	S, A	K, PS, M
364	phosphorodithioic acid	15834-33-0	TIC	TIC reporting possible; standard is not commercially available. Identified by PS as phosphorodithioic acid ester.		PS
365	phosphorus (P)	7723-14-0	6010 & 6020	as phosphorus	S, A	K, PS, T, M
366	phosphorus pentasulfide	1314-80-3	6010 & 6020	as phosphorus	S, A	PS
367	phosphorus pentoxide	1314-56-3	6010 & 6020	as phosphorus	S, A	K
368	phosphorus trichloride	7719-12-2	6010 & 6020	as phosphorus	S, A	M
369	phthalic acid	88-99-3	HPLC		S, A	PS
370	phthalimide	85-41-6	TIC	potential TIC (8260 or 8270) - standard is not commercially available	S, A	PS
371	platinum	7440-06-4	6010 & 6020		S, A	K
372	polonium-210	13981-52-7	Rad - calc	Back-quantitate from Pb-210 using 901.1 / HASL GA-01-R	S, A	T, K
373	polonium-212	15389-34-1	Rad - calc	Back-quantitate from Bi-212 using 901.1 / HASL GA-01-R	S, A	T
374	polonium-214	15735-67-8	Rad - calc	Back-quantitate from Bi-214 using 901.1 / HASL GA-01-R	S, A	T
375	polonium-216	15756-58-8	Rad - calc	Back-quantitate from Pb-212 using 901.1 / HASL GA-01-R	S, A	T
376	polonium-218	15422-74-9	Rad - calc	Back-quantitate from Pb-214 using 901.1 / HASL GA-01-R	S, A	T
377	potassium (K)	7440-09-7	6010 & 6020		S, A	K, T, M
378	potassium chlorate ($KClO_3$)	3811-04-9	6010 & 6020 / 300.0	as potassium/as chlorate	S, A	K
379	potassium chloride (KCl)	7447-40-7	6010 & 6020 / 300.0	as potassium/as chloride	S, A	K, T
380	potassium hydroxide	1310-58-3	6010 & 6020 / pH	as potassium and as pH	S, A	T
381	potassium oxide	12136-45-7	6010 & 6020	as potassium	S, A	K
382	potassium perchlorate ($KClO_4$)	7778-74-7	6010 & 6020/314.0	as potassium/as perchlorate (LC/MS/MS option if interferences)	S, A	K
383	potassium phosphate	7778-53-2	6010 & 6020/365.3	as potassium, as phosphate	S, A	K
384	potassium-40	13966-00-2	901.1 / HASL GA-01-R		S, A	T
385	propylene glycol	57-55-6	8015B		S, A	K
386	protactinium-234	15100-28-4	Rad - calc	Back-quantitiate from U-238 using HASL A-01-R Mod	S, A	T
387	pyrene	129-00-0	8270C		S, A	T, K
388	pyridine	110-86-1	8270C		S, A	K, M
389	radium-223	15623-45-7	Rad - calc	Isotope is naturally-occurring isotope and member of Uranium-235 decay chain, most of which are not included in the project radionuclide analytical suite; used in cancer treatment and radioimmunotherapy; has relatively short half-life (11.4 days). Back-quantitate from Th-227 using 901.1 / HASL GA-01-R.	S, A	K
390	radium-224	13233-32-4	Rad - calc	Back-quantitate from Th-227 or Pb-211 using 901.1 / HASL GA-01-R	S, A	T
391	radium-226	13982-63-3	Rad - 903.0		S, A	T, K
392	radium-228	15262-20-1	Rad - 904.0		S, A	T, K
393	radon-222	14859-67-7	913		A	T, K
394	sec-butylbenzene	135-98-8	8260B		S, A	M
395	selenium (se)	7782-49-2	6010 & 6020		S, A	K, M, T
396	silicon	7440-21-3	6010 & 6020		S, A	T
397	silicon tetrabromide	7789-66-4	6010 & 6020 / 300.0	as silicon/as bromide	S, A	K
398	silicon tetrachloride	10026-04-7	6010 & 6020 / 300.0	as silicon/as chloride	S, A	K
399	silver (Ag)	7440-22-4	6010 & 6020		S, A	K, M, T
400	silver nitrate	7761-88-8	6010 & 6020 / 300.0	as silver/as nitrate	S, A	T
401	Silvex (syn: 2,4,5-TP)	93-72-1	8151A		S, A	K, M, PS, T

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
402	sodium (Na)	7440-23-5	6010 & 6020		S, A	K, T, M
403	sodium arsenite	7784-46-5	6010 & 6020	as sodium , as arsenic	S, A	K
404	sodium bicarbonate	144-55-8	6010/6020/310.1		S, A	T
405	sodium borate ($B_4H_2O_7$)	1330-43-4	6010 & 6020 /310.1	as sodium	S, A	K
406	sodium borohydride	16940-66-2	6010 & 6020	as sodium and boron	S, A	K
407	sodium carbonate (Na_2CO_3)	497-19-8	6010 & 6020 / 310.1	as sodium/as carbonate alkalinity	S, A	K, PS, T
408	sodium chlorate ($NaClO_3$)	7775-09-9	6010 & 6020 / 300.0	as sodium/as chloride	S, A	K
409	sodium chloride (NaCl)	7647-14-5	6010 & 6020 / 300.0	as sodium/as chloride	S, A	K, PS, T
410	sodium chromate	7775-11-3	6010 & 6020	as sodium, chromium	S, A	K
411	sodium dichromate	10588-01-9	6010 & 6020 / 7196A	as sodium and chromium/hexavalent chromium	S, A	K
412	sodium gluconate ($C_6H_{11}NaO_7$)	527-07-1	6010 & 6020	as sodium	S, A	T
413	sodium hexametaphosphate	10124-56-8	6010 & 6020 / 365.3	as sodium/total phosphate	S, A	K
414	sodium hydrosulfide	16721-80-5	6010 & 6020 / 376.1	as sodium/sulfide	S, A	K
415	sodium hydroxide (NaOH)	1310-73-2	6010 & 6020 / pH / 310.1	as sodium/pH/alkalinity	S, A	K, M, PS, T
416	sodium hypochlorite	7681-52-9	6010 & 6020 / 300.0	as sodium/as chloride	S, A	K, M, PS, T
417	sodium oxide	1313-59-3	6010 & 6020	as sodium	S, A	K
418	sodium perchlorate ($NaClO_4$)	7601-89-0	6010 & 6020/314	as sodium/perchlorate (LC/MS/MS option if interferences)	S, A	K
419	sodium sulfate	7727-73-3	6010 & 6020 / 300.0	as sodium/as sulfate	S, A	K, PS
420	sodium sulfite	7757-83-7	6010 & 6020 / 377.1	as sodium/as sulfite	S, A	K
421	strontium	7440-24-6	6010 & 6020		S,A	K
422	strontium carbonate	1633-05-2	6010 & 6020 / 310.1	as strontium/as carbonate alkalinity	S, A	K
423	styrene	100-42-5	8260B		S, A	T, M
424	sulfenone	80-00-2	TIC	potential TIC - standard is not commercially available	S,A	PS
425	sulfur	7704-34-9	6010 & 6020		S, A	K, M
426	sulfur trioxide	7446-11-9	300	as sulfate	S, A	K
427	sulfuric acid (H_2SO_4)	7664-93-9	pH	as pH	S, A	K, M, PS, T
428	tert-butylbenzene	98-06-6	8260B			M
429	tetrachloroethene	127-18-4	8260B		S, A	M, K, T
430	tetrachlorothiophene	6012-97-1	TIC	Standard is not commercially available.	S, A	PS
431	tetrasodium EDTA	64-02-8	6010 & 6020	as sodium; because EDTA is non-toxic, it is not included in analytical program	S, A	T
432	thallium (Tl)	7440-28-0	6010 & 6020		S, A	K, M, T
433	thallium-207	14133-67-6	901.1 / HASL GA-01-R			T
434	thallium-208	14913-50-9	901.1 / HASL GA-01-R		S, A	T
435	thorium-227	15623-47-9	901.1 / HASL GA-01-R			T
436	thorium-228	14274-82-9	HASL A-01-R Mod		S, A	T, K
437	thorium-230	14269-63-7	HASL A-01-R Mod		S, A	T, K
438	thorium-231	14932-40-2	Rad - calc	Back-quantitate from U-235 using HASL A-01-R Mod	S, A	T
439	thorium-232	7440-29-1	HASL 300 A-01-R Mod		S, A	T, K
440	thorium-234	15065-10-8	Rad - calc	Back-quantitate from U-238 using HASL A-01-R Mod	S, A	T, K
441	tin (Sb)	7440-31-5	6010 & 6020		S, A	K, PS, T, M
442	tin chloride	7646-78-8	6010 & 6020 / 300.0	as tin/as chloride	S, A	T
443	tin dioxide (SnO_2)	18282-10-5	6010 & 6020	as tin	S, A	K, T
444	titania (TiO2)	13463-67-7	6010 & 6020	as titanium	S, A	K, T
445	titanium (Ti)	7440-32-6	6010 & 6020		S, A	K, PS, T
446	titanium chloride	11130-18-0	6010 & 6020 / 300.0	as titanium/as chloride	S, A	T
447	titanium tetrachloride ($TiCl_4$)	7550-45-0	6010 & 6020 / 300.0	as titanium/as chloride	S, A	K, T
448	toluene	108-88-3	8260B		S, A	K, M, PS, T
449	toxaphene	8001-35-2	8081A		S, A	PS
450	trans-1,2-dichloroethene	156-60-5	8260B		S, A	T, M
451	trans-1,3-dichloropropene	10061-02-6	8260B		S, A	M
452	trichloroethene	79-01-6	8260B		S, A	M, K, T

Table 1
Chemicals Known or Suspected to be Associated with Historical Site Operations
Upper and Lower Ponds and Ditches
Former BMI Common Areas

ID	Chemical	CAS Number	Analytical Method	Notes	Media [1]	Company Association [2]
453	trichlorofluoromethane	75-69-4	8260B		S, A	T, M
454	trimethylbenzene	25551-13-7	8260B	see 1,2,4- and 1,3,5- isomers	S, A	PS
455	tri-sodium phosphate	7601-54-9	6010 & 6020 / 300.0	as sodium/as orthophosphate	S, A	T
456	tungsten (W)	7440-33-7	6010 & 6020		S, A	K, T
457	tungsten chloride	13283-01-7	6010 & 6020 / 300.0	as tunsten/as chloride	S, A	T
458	tungsten trioxide	1314-35-8	6010 & 6020	as tungsten	S, A	K
459	uranium (U)	7440-61-1	6010 & 6020		S, A	T, K
460	uranium-233/234	13968-55-3/13966-29-5	HASL A-01-R Mod		S, A	T,K
461	uranium-235/236	15117-96-1/13982-70-2	HASL A-01-R Mod		S, A	K
462	uranium-238	7440-61-1	HASL A-01-R Mod		S, A	T, K
463	vanadium (V)	7440-62-2	6010 & 6020		S, A	K, M, T
464	vanadium chloride	7718-98-1	6010 & 6020 / 300.0	as vanadium/as chloride	S, A	T
465	vanadium pentoxide	1314-62-1	6010 & 6020	as vanadium	S, A	K
466	vinyl chloride	75-01-4	8260B		S, A	T, M
467	white phosphorus	12185-10-3	7580M	According to Montrose, white phosphorus has been identified as a potential constituent of phosphorus trichloride, which was used in the 4,4'-dichlorobenzil process; this form of phosphorus readily oxidizes upon exposure to oxygen and undergoes hydrolysis upon exposure to moisture, both of which would be the case if it were present in effluent transported to the Common Areas; therefore, it is not expected to be present in this form in soil or ground water due to historical Common Areas activities. BRC to analyze in subset of samples with NDEP concurrence	S, A	M
468	xylene(s)	1330-20-7	8260B		S, A	M, K, M, T
469	zinc (Zn)	7440-66-6	6010 & 6020		S, A	K, M, PS, T
470	zinc oxide	1314-13-2	6010 & 6020	as zinc	S, A	K
471	zinc sulfide	1314-98-3	6010 & 6020 / 376.1	as zinc/as sulfide	S, A	K
472	zircon	10101-52-7	6010 & 6020	as zirconium and silicon	S, A	T
473	zirconium (Zr)	7440-67-7	6010 & 6020	as zircon	S, A	T
474	zirconium oxide (ZrO)	12036-01-0	6010 & 6020	as zirconium	S, A	T

Footnotes:
(1) Abbreviations used: S =soil sample; A =aqueous sample
(2) Abbreviations used: K = Kerr-McGee; M = Montrose; PS = Pioneer/PStauffer; T = TIMET

Table 2
Site-Related Chemicals Not Included in Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Item#	Chemical [(1)]	CAS Number	Notes
1	2-chlorobenzoic acid	118-91-2	Standard is not commercially available
2	3-chlorobenzoic acid	535-80-8	Standard is not commercially available
3	3-hexene-2,5-dione, (E)- (syn: trans-1,2-diacetylethylene)	820-69-9	Not reportable as TIC; not in the laboratories' MS libraries; standard is not commercially available. Its isomer (1,2-diacetylethylene is in the laboratory's MS library and can be reported as a TIC, if present.
4	4-chlorobenzoic acid	74-11-3	Standard is not commercially available
5	acetylene	74-86-2	Historically present in gas form
6	ammonia (anhydrous) (NH_3)	7664-41-7	historically present in gas form.
7	argon	7440-37-1	historically present in gas form
8	bis(2-chlorophenyl)methanone (syn: bischlorophenylmethanone)		laboratory research unable to identify this unknown isomer, consistent with Montrose, CAS # and analytical method unknown
9	bis(3-chlorophenyl)methanone (syn: bischlorophenylmethanone)		laboratory research unable to identify this unknown isomer, consistent with Montrose, CAS # and analytical method unknown
10	bromine gas	7726-95-6	Historically present in gas form
11	carbon (syn: graphite)	7782-42-5	NDEP/BRC discussed during 12/06/04 telephone conference - dropped from program due to low toxicity
12	carbon dioxide	124-38-9	historically present in gas form
13	carbon oxide sulfide (syn: carbonyl sulfide)	463-58-1	NDEP/BRC discussed during 12/06/04 telephone conference - dropped from program because compound is a gas
14	cerium	7440-45-1	As noted in TIMET's SRC documentation, small quantities of this compound (less than 2 pounds) are stored in cans at the HTL (TIMET's on-site lab) for use in experiments, and are carefully inventoried. Their presence is therefore not expected in the Common Areas, and they are thus not included in the analytical program.
15	cesium-134	13967-70-9	As discussed during 12/06/04 NDEP/BRC conference call, this nuclide is well-known to be associated with nuclear fallout, and would not be associated with industrial operations at the BMI Complex. Therefore, this isotope is not included in the analytical program
16	cesium-137	10045-97-3	As discussed during 12/06/04 NDEP/BRC conference call, this nuclide is well-known to be associated with nuclear fallout, and would not be associated with industrial operations at the BMI Complex. Therefore, this isotope is not included in the analytical program
17	chlorine gas	7782-50-5	Historically present in gas form
18	cobalt-57	13981-50-5	isotope is not a member of the Uranium-235, Uranium-238 or Thorium-232 decay chains; does not occur naturally; as reported in literature, is produced by cyclotron irradiation of iron and nuclear weapons explosions, and is used as radiolabel in laboratory and medical tests; do not expect to be present in soils or ground water as a result of historical site operations. As discussed during the 12/06/04 NDEP/BRC conference call, this isotope will not be included in the analytical program.
19	cobalt-60	10198-40-0	isotope is not a member of the Uranium-235, Uranium-238 or Thorium-232 decay chains; does not occur naturally; as reported in literature, is produced in structural steels and other alloys of nuclear vessels and from nuclear weapon explosions; is used for sterilization of medical equipment and food industry; do not expect to be present in soils or ground water as a result of historical site operations. As discussed during the 12/06/04 NDEP/BRC conference call, this isotope will not be included in the analytical program.
20	compressed air	NA	historically present in gas form
21	denatonium benzoate	3734-33-6	As discussed during 12/06/04 NDEP/BRC conference call, this constituent not included in analytical program due to low toxicity
22	dimethyldithioic acid		Unable to identify; Probably short-hand for O,O-dimethyl dithiophosphoric acid. Alpha has analyzed O,O-dimethyl dithiophosphoric acid (CAS = 756-80-9) by HPLC/UV. Standard is not commercially available for dimethyldithioic acid

Table 2
Site-Related Chemicals Not Included in Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Item#	Chemical [(1)]	CAS Number	Notes
23	erbium	7440-52-0	As noted in TIMET's SRC documentation, small quantities of this compound (less than 2 pounds) are stored in cans at the HTL (TIMET's on-site lab) for use in experiments, and are carefully inventoried. Their presence is therefore not expected in the Common Areas, and they are thus not included in the analytical program.
24	ether (syn: ethyl ether)	60-29-7	Not included in analytical program due to its historical presence in gas form
25	germanium	7440-56-4	As noted in TIMET's SRC documentation, small quantities of this compound (less than 2 pounds) are stored in cans at the HTL (TIMET's on-site lab) for use in experiments, and are carefully inventoried. Their presence is therefore not expected in the Common Areas, and they are thus not included in the analytical program.
26	gluconate		Cannot identify "gluconate" by itself in online databases - compounds containing gluconate can be found, but gluconate itself is a chemical fraction. Standard is not commercially available for gluconate.
27	helium	7440-59-7	Historically present in gas form
28	hydrogen	1333-74-0	Historically present in gas form
29	hydrogen chloride gas	7647-01-0	Historically present in gas form
30	hydrogen peroxide	7722-84-1	relatively unstable compound that requires stabilization to avoid deterioration over time; no known analysis method
31	hydrogen sulfide	7783-06-4	Historically present in gas form
32	hypochlorite (ClO^-)	14380-61-1	hypochlorite combines readily with cations; not expected to be present in ionic form (i.e., sodium hypochlorite) this ion would be expected to follow reduction to the cation and the chloride ion
33	iridium (Ir)	7439-88-5	As noted in TIMET's SRC documentation, small quantities of this compound (less than 2 pounds) are stored in cans at the HTL (TIMET's on-site lab) for use in experiments, and are carefully inventoried. Their presence is therefore not expected in the Common Areas, and they are thus not included in the analytical program.
34	natural gas	8006-14-2	Historically present in gas form
35	nitrogen (N)	7727-37-9	Historically present in gas form
36	phosgene (syn: carbonyl dichloride; carbonic dichloride)	75-44-5	As discussed at 12/06/04 conference call, this constituent not included in analytical program due to its historical presence as a gas
37	polonium-215		Not included in analytical program based on half-life of 0.001 seconds
38	polyethylene glycol	25322-68-3	have been unable to identify appropriate analysis based on laboratory inquiries; standard is not commercially available; based on low toxicity (polyethylene glycol is a compound commonly found in personal care items such as toothpaste and cosmetics) this constituent is not included in analytical program.
39	protactinium-231	14331-85-2	Large possibility of reporting a false positive. According to the laboratory, it has a 1.6% branching ratio and reasonable assumptions can't be made to back-calculate from any other nuclide.
40	quartz (syn: silicon dioxide)	14808-60-7	Ubiquitous inert mineral with low associated toxicity [if desired, could be analyzed as silicon by method 6010 & 6020]
41	radon-219	14835-02-0	Not included in analytical program due to half-life of 3.96 seconds
42	radon-220	22481-48-7	Not included in analytical program due to half-life of 55.6 seconds
43	rhenium	7440-15-5	As noted in TIMET's SRC documentation, small quantities of this compound (less than 2 pounds) are stored in cans at the HTL (TIMET's on-site lab) for use in experiments, and are carefully inventoried. Their presence is therefore not expected in the Common Areas, and they are thus not included in the analytical program.
44	ruthenium	7440-18-8	As noted in TIMET's SRC documentation, small quantities of this compound (less than 2 pounds) are stored in cans at the HTL (TIMET's on-site lab) for use in experiments, and are carefully inventoried. Their presence is therefore not expected in the Common Areas, and they are thus not included in the analytical program.
45	silica	7631-86-9	Removed from analytical program per NDEP

Table 2
Site-Related Chemicals Not Included in Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Item#	Chemical [(1)]	CAS Number	Notes
46	sodium alpha olefin sulfonate	68439-57-6	per K-M Phase I report, compound was a raw material used in the production of Tumbleleaf defoliant. The production process reportedly consisted of simply dry-mixing ingredients at the Complex, and reportedly produced no waste stream. It seems unlikely that the compound would have been discharged to the Ponds. Also, constituent used in personal care products and found to have very low toxicity. Based on this information, constituent not included in analytical program.
47	sodium hyposulfide		unknown compound; appears to be typo for sodium hydrosulfide
48	sodium thiophenate	930-69-8	per Phase I, compound is speculated as being potential constituent of pre-1975 waste stream from batch distillation of thiophenol/parachlorothiophenol; that waste stream was not characterized to confirm; compound not reported in post-1975 waste stream; no known SW846 method has been found to be applicable; compound not in lab MS library · standard is not commercially available
49	sulfur dioxide	7446-09-5	Not included in analytical program due to its historical presence in gas form
50	teflon (syn: polytetrafluoroethylene; PFTE)	9002-84-0	Teflon is commonly associated with everyday life, including use in soil and ground water sampling equipment and materials. It is referenced in the Phase I report as a constituent of asbestos filter cake generated as part of an asbestos slurry filtration process (to reduce slurry volume). The filter cake was disposed of off-site. This filtration process was reportedly initiated in 1981, after discontinuation of Pioneer/Stauffer use of the Upper and Lower Ponds and ditches. Therefore, there is little likehood that this constituent is present in soil or ground water as a result of historical Common Areas activities.
51	tetrachlorocyclohexane		Standard is not commercially available; constituent is metabolite of lindane break-down products; not a separate compound found isolated in the environment - Montrose identifies "from process data review" - not in analytical database.
52	tetrachlorostyrene		Standard is not commercially available; constituent is a photodegradation by-product of octachlorostyrene; not a separate compound found isolated in the environment - Montrose identifies "from process data review" - not in analytical database.
53	trichlorostyrene		Standard is not commercially available; constituent is photodegradation by-product of octachlorostyrene; not a separate compound - Montrose identifies "from process data review" - not in analytical database
53	thorium-229	15594-54-4	Constituent is used as a tracer in laboratory analysis for QA/QC purposes; not a target analyte.
54	Unknown #1 [formula: $(C_6H_5S)_2$ - P - I - I]		Unknown compound
55	Unknown #2 [formula: $(C_6H_5S)_2$ - P = O]		Unknown compound
56	Unknown #3 [formula: (ClC_6H_4S) - P = O]		Unknown compound
57	Unknown #4 [formula: $(ClC_6H_4S)_2$ - P - I - I]		Unknown compound
58	Unknown #5 [formula: chloro-tris $(ClC_6H_4S)_3$		Unknown compound
59	Unknown #6 [formula: tris (C6H5S)3-P]		Unknown compound
60	uranium-232	14158-29-3	Constituent is used as a tracer in laboratory analysis for QA/QC purposes; not a target analyte.
61	yttrium	7440-65-5	As noted in TIMET's SRC documentation, small quantities of this compound (less than 2 pounds) are stored in cans at the HTL (TIMET's on-site lab) for use in experiments, and are carefully inventoried. Their presence is therefore not expected in the Common Areas, and they are thus not included in the analytical program.
	Typographical errors		
1	1,4-dichlorophenyldisulphide		Unknown compound (not in online databases); appears to be typo for 4,4-dichlorophenyldisulphide (syn: bis para-chlorophenyl disulfide)
2	hypochloric acid $(HClO_2)$		cannot identify in online databases by name or formula; assume hydrochloric (HCl) or hypochlorus acid (HClO)

Table 2
Site-Related Chemicals Not Included in Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Item#	Chemical [(1)]	CAS Number	Notes
3	phenlos		Unable to identify in online databases; suspected mis-spelling of "phenols"; to be analyzed as individual phenol compounds
4	silica dioxide		compound not found in online chemical databases; assumed to be typo for silicon dioxide
5	sodium hyposulfide		unknown compound; appears to be typo for sodium hydrosulfide
6	sodium potassium		two separate elements, unknown as a compound; suspect that it was intended to be separated by a comma in document
	Partial chemical names		
1	*bis* para-chlorophenyl		unable to identify in online databases; appears to be fragment of chemical name (probably "bis para-chlorophenyl disulfide" or "bis para-chlorophenyl sulfone")
2	bis(4-chlorophenyl)		unable to identify in online databases; appears to be incomplete form of "disulfide, bis(4-chlorophenyl)"
3	bis-chlorophenylmethanone		unable to identify in online databases; appears to be truncated form of bis(4-chlorophenyl)methanone, a synonym for 4,4'-dichlorobenzophenone
4	chloral dichlorobenzil		appears to be a combined listing of two separate compounds (chloral and dichlorobenzil), which are both included in the analytical program separately; assumption confirmed by Montrose
5	chloromethyl intermediate		incomplete form of chemical name
6	dichlorobenzophenone		unable to identify in online databases; appears to be abbreviated form of 4,4'-dichlorobenzophenone
7	dichlorodiphenyldisulfide		unable to identify in online databases; appears to be abbreviated form of 4,4-dichlorodiphenyl disulfide, a synonym for bis para-chlorophenyl disulfide
8	dichlorodiphenylsulfone		appears to be abbreviated form of 4,4-dichlorodiphenyl sulfone, a synonym for bis para-chlorophenyl sulfone
9	disulfide		unable to identify in online databases; appears to be incomplete form of "disulfide, bis(4-chlorophenyl)"
10	dithio acid		per Stauffer, appears to be short-hand for O,O-diethylphosphorodithioic acid
11	dithio acid salt		per Stauffer, appears to be short-hand for O,O-diethylphosphorodithioic acid salts
12	dithio salt		per Stauffer, appears to be short-hand for O,O-diethylphosphorodithioic acid salts
13	hypochlorite		not expected to be present in ion form; may be partial name of compound (i.e., sodium hypochlorite) CAS-14380-61-1
14	soda arsenite		Unable to identify in online databases as written; assume it is short-hand for sodium arsenite; sodium arsenite can be found in Table 1.
15	sulfone		Unable to identify as written; suspected fragment of chemical name (possibly "bis para-chlorophenyl sulfone" or "diphenylsulfone")
16	trans-1,3-dichloroprop		Unable to identify in online databases; suspected truncation of "trans 1,3-dichloropropene"
17	thiol		unknown compound; may be shortened form of p-thiol or thiophenol

Table 3
Constituents Included in Analytical Program as TIC Analyses
Upper and Lower Ponds Ditches
Former BMI Common Areas

Item#	Chemical	CAS #	Notes	Media [1]	Company Association [2]
1	(2-chlorovinyl)benzene	622-25-3	potential TIC (8260 or 8270) - originally identified as chemical class "chloroalkylbenzenes"	S, A	M
2	(4-chlorobutyl)benzene	4830-93-7	potential TIC (8260 or 8270) - originally identified as chemical class "chloroalkylbenzenes"	S, A	M
3	(beta-chloroethyl)benzene	622-24-2	potential TIC (8260 or 8270) - originally identified as chemical class "chloroalkylbenzenes"	S, A	M
4	1,2,3,4-tetrachlorobenzene	634-66-2	Laboratory research suggests this constituent can be reported as 8270 TIC - standard is not commercially available, so method development not an option	S, A	M
5	1,2,3,5-tetrachlorobenzene	634-90-2	Method 8260 was considered as an option; laboratory research suggests this constituent can be reported as 8270 TIC - standard is not commercially available, so method development is not an option	S, A	M
6	1,2,4-trithiolane	289-16-7	laboratory research confirmed that reporting as potential TIC (8260 or 8270) is possible - standard is not commercially available & method development not an option.	S, A	PS
7	1-chloro-4-ethylbenzene	622-98-0	potential TIC (8260 or 8270) - originally identified as chemical class "chloroalkylbenzenes"	S, A	M
8	1-nitropropane	108-03-2	TIC reporting is consistent with Montrose's approach for this constituent - standard is not commercially available & method development not an option	S, A	M
9	2,2,2-Trichloroethanol	115-20-8	TIC reporting indicated as option by laboratories & is consistent with Montrose's approach for this constituent - standard is not commercially available & method development not an option	S, A	M
10	2,2,6,6-Tetrachlorocyclohexanol	56207-45-5	by 8270C as a breakdown product/surrogate of tetrachlorocyclohexane	S, A	M
11	2,4'-Dichlorobenzophenone	85-29-0	potential TIC (8260 or 8270); if identified as TIC in samples from site, method development will be considered	S, A	PS
12	2,4-dichlorobenzophenone	19811-05-3	potential TIC (8260 or 8270); - standard is not commercially available	S, A	PS
13	2,4-dichlorostyrene	2123-27-5	identified as dichlorostyrene. Isomers identified: 2,5-, 2,4-, 2,6- and 3,4- ; potential TIC (8260 or 8270) See all isomers - standard is not commercially available	S, A	M
14	2,5-dichlorostyrene	1123-84-8	identified as dichlorostyrene. Isomers identified: 2,5-, 2,4-, 2,6- and 3,4- ; potential TIC (8260 or 8270) See all isomers - standard is not commercially available	S, A	M
15	2,6-dichlorostyrene	28469-92-3	identified as dichlorostyrene. Isomers identified: 2,5-, 2,4-, 2,6- and 3,4- ; potential TIC (8260 or 8270) See all isomers - standard is not commercially available	S, A	M
16	2-chlorobenzaldehyde	89-98-5	Standard is not commercially available	S, A	M
17	2-chlorobenzenethiol	6320-03-02	standard is not commercially available	S, A	M
18	2-chlorobenzyl chloride	611-19-8	TIC reporting based on laboratory research & consistent with Montrose approach; Standard is not commercially available	S, A	M
19	2-chloroiodobenzene	615-41-8	TIC reporting based on laboratory research - standard is not commercially available	S, A	M

Table 3
Constituents Included in Analytical Program as TIC Analyses
Upper and Lower Ponds Ditches
Former BMI Common Areas

Item#	Chemical	CAS #	Notes	Media [1]	Company Association [2]
20	3,4-dichlorobenzophenone	6284-79-3	potential TIC (8260 or 8270) - standard is not commercially available.	S, A	PS
21	3,4-dichlorostyrene	2039-83-0	identified as dichlorostyrene. Isomers identified: 2,5-, 2,4-, 2,6- and 3,4- ; potential TIC (8260 or 8270) See all isomers - standard is not commercially available	S, A	M
22	3,5-Heptanedione, 2,6-dimethyl-	18362-64-6	TIC reporting possbile based on laboratory research - standard is not commercially available	S, A	M
23	3-chlorobenzenethiol	2037-31-2	standard is not commercially available; TIC reporting consistent with Pioneer/Stauffer approach	S, A	M
24	3-chlorobenzyl chloride	620-20-2	Standard is not commercially available; TIC reporting consistent with Montrose approach	S, A	M
25	3-hexene-2,5-dione	4436-75-3	potential TIC (8270); historically reported as TIC. Standard is not commercially available	S, A	PS
26	4,4'-dichlorobenzophenone	90-98-2	Laboratory research confirmed that a standard is available. Method development per 8260 or 8270 will be performed if constituent routinely seen as a TIC; TIC reporting consistent with Montrose approach; PS considering 8260 but has not confirmed viability.	S, A	PS, M
27	4,4'-Dichloromethylbiphenyl	1667-10-3	Montrose has identified 4,4'-dichloromethylbiphenyl for dichloromethylbiphenyl - says possibly 8082 aroclor analysis, but will not be uniquely identified - standard is not commercially available		M
28	4-chlorobenzenesulfonic acid	98-66-8	standard is not commercially available	S, A	K, M
29	4-chlorobenzyl chloride	104-83-6	Standard is not commercially available; TIC reporting consistent with Montrose approach	S, A	M
30	benzene,(methylsulfinyl)	1193-82-4	Laboratory research confirmed potential TIC (8260 or 8270) - standard is not commercially available	S, A	PS
31	benzene,1-chloro-4-(methylsulfonyl)	98-57-7	potential TIC (8260 or 8270) - standard is not commercially available	S, A	PS
32	benzenesulfonic acid, phenyl ester	1208-20-4	TIC reporting consistent with PS approach; Standard is not commercially available		PS
33	benzophenone	119-61-9	potential TIC (8260 or 8270)	S, A	PS
34	benzoylchloride, 2-chloro	609-65-4	Standard is not commercially available	S, A	PS
35	benzoylchloride, 3-chloro	618-46-2	Standard is not commercially available	S, A	PS
36	benzoylchloride, 4-chloro	122-01-0	Standard is not commercially available	S, A	PS
37	bis(chloromethyl)ether	542-88-1	Laboratory research confirmed potential for TIC reporting - standard is not commercially available; TIC reporting consistent with Montrose approach	S, A	PS
38	butylchloral	76-36-8	potential TIC (8260 or 8270) - standard is not commercially available.	S, A	M
39	carbamide	57-13-6	potential TIC (8260 or 8270) - standard is not commercially available	S, A	K, T
40	cyclododecene	1501-82-2	standard is not commercially available	S, A	M
41	chloral hydrate	302-17-0	potential TIC (8260 or 8270)	S, A	M
42	chlorobenzaldehyde	35913-09-8	potential TIC (8260 or 8270)	S, A	PS
43	chloromethyl phthalimide	175-64-6	potential TIC (8260 or 8270)	S, A	PS

Table 3
Constituents Included in Analytical Program as TIC Analyses
Upper and Lower Ponds Ditches
Former BMI Common Areas

Item#	Chemical	CAS #	Notes	Media [1]	Company Association [2]
44	dichloroanthracene, 9, 10-	605-48-1	potential TIC (8260 or 8270) - standard is not commercially available.	S, A	M
45	ethylene glycol monobutyl ether	111-76-2	by 8270C	S, A	T
46	isoheptane	31394-54-4	Standard is not commercially available; TIC reporting consistent with PS approach	S, A	PS
47	methanone, (3-chlorophenyl)(4-chlorophenyl)	7498-66-0	standard is not comercially available; can be reported as a TIC, if present	S, A	PS
48	O,O,S-Trimethylphosphorodithionate	2953-29-9	standard is not commercially available; TIC approach consistent with PS approach	S, A	M
49	paraformaldehyde	30525-89-4	potential TIC (8260 or 8270); standard is not commercially available	S, A	PS
50	pentachlorocyclohexane	319-94-8	as gamma-pentachlorocyclohexene	S, A	M
51	phosphorodithioic acid	15834-33-0	TIC reporting possible; standard is not commercially available.	S, A	PS
52	phthalimide	85-41-6	potential TIC (8260 or 8270) - standard is not commercially available	S, A	PS
53	sulfenone	80-00-2	potential TIC - standard is not commercially available	S,A	PS
54	tetrachlorothiophene	6012-97-1	Standard is not commercially available.	S, A	M

Notes
(1) Abbreviations used: S = Soil sample, A = Aqueous sample
(2) Abbreviations used: K = Kerr-McGee, M = Montrose, PS = Pioneer Stauffer, T = TIMET

Table 4
Chemical Families and Mixtures Associated with Historical Site Operations
Upper and lower Ponds Ditches
Former BMI Common Areas

	Chemical Family	Analytical Approach
1	alkyl alkane	to be reported as TICs if present, consistent with Montrose approach
2	alkane	Laboratory research suggests TIC - class of compounds; TIC reporting consistent with Montrose approach
3	benzene family, organic species	to be reported as individual VOCs and SVOCs using 8260B and 8270C (full suite analysis with TICs)
4	beta emitters	to be reported as individual isotopes using radionuclide suite
5	brominated hydrocarbons	several brominated hydrocarbons are included in the analytical program included in the broad-suite 8260 analysis
6	C10 furan	potentially reportable as TIC (8260 or 8270)
7	chelant	Kerr-McGee identified this as Nalco 1745, a class of dithiocarbonates; no analytical method identified
8	chlorates	to be reported as chlorate using 300.0, and as individual metals using 6010 / 6020 (full suite analysis)
9	chlorides	to be reported as chloride using 300.0, and as individual metals using 6010 / 6020 (full suite analysis)
10	chlorobenzoic acid esters	2-chlorobenzoic acid (CAS 118-91-2, 3-chlorobenzoic acid (CAS 535-80-8), 4-chlorobenzoic acid (CAS 74-11-3) Identified by Montrose - "difficult to identify, screen out based on analytical limitations.Remove from analyte list."
11	chlorinated benzene compound	several chlorinated benzene compounds are included in 8260 analysis
12	chlorinated herbicides	Identified by Kerr-McGee as tumbleaf defoliant; suggest 8151A
13	chlorinated ketones	may have been mis-spelled in documents as "chloronated keytones"; to be analyzed as individual compounds by 8315A / 8260B (full suite analysis with TICs)
14	chlorinated organics	to be reported as individual VOCs and SVOCs using 8260B and 8270C (full suite analysis with TICs) KM
15	chlorinated paraffins	KM - says by 8260
16	chloroalkylbenzene(s)	the following four chloralkylbenzene compounds are potential TICs by 8260B or 8270C: (4-chlorobutyl)benzene, (2-chlorovinyl)benzene, 1-chloro-4-ethylbenzene, and (beta-chloroethyl)benzene
17	coagulants	Kerr-McGee identified analysis as ions and metals and 425.1 for surfactants (ferric sulfide, aluminum sulfate, ferric chloride)
18	DDT and metabolites	in common usage, term generally refers to DDT, DDD, and DDE, all of which are included in the 8081A analysis; term could theoretically include any DDT breakdown product, many of which are potential TICs by 8260B or 8270C
19	DDT, sulfonated metabolites	context in Phase I report indicates that this class of compounds could result from interactions of DDT and metabolites (see above) with sulfuric acid in waste stream; specific compounds cannot be reliably identified based on this hypothesized presumption
20	dichlorobiphenyl	as Aroclors; toxicity data are based on aroclors, not the individual isomers; Montrose proposes analyzing 12 dichlorobiphenyl isomers - 2,2'- , 2,3- , 2,3'- , 2,4- , 2,4'- , 2,5- , 2,6- , 3,3'- , 3,4- , 3,4'- , 3,5- , and 4,4'-dichlorobiphenyl - the 2,4'- and 4,4'- isomers are "of the greatest environmental significance based on the World Health Organization list." See each of the 12 isomers listed (Method 8082)
21	dichlorostyrene	included as 2,5-, 2,4-, 2,6- and 3,4- isomers; potential TIC (8260 or 8270) - standards for these isomers are not commercially available
22	diesel	As TPH
23	dioxin	to be reported as individual congeners using 8290 (full suite analysis)
24	freon	to be reported as dichlorodifluoromethane, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane using 8260B
25	furans	to be reported as individual furan congeners using 8290 (full suite analysis)

Table 4
Chemical Families and Mixtures Associated with Historical Site Operations
Upper and lower Ponds Ditches
Former BMI Common Areas

	Chemical Family (continued)	Constituents (see listings in Table 1 for analytical approach)
26	gasoline	As TPH
27	glycols	The glycols are a large and varied class of compounds used in a variety of industries such as fiber and textile processing, food industry, paper processing, personal care, plastics, water and wastewater treatment, etc.; this term likely refers to ethylene glycol and propylene glycol, which are glycols commonly used in industry, and are used in antifreeze and de-icing solutions; these two compounds are included in the analytical program as individual constituents to be reported using 8015B
28	grease	As TPH
29	gross alpha radiation	to be analyzed and reported by Rad - 900.0 / 9310
30	gross beta radiation	to be analyzed and reported by Rad - 900.0 / 9310
31	heavy metal sulfides	to be reported as individual metals using 6010 / 6020 (full suite analysis); to be reported as sulfide using 376.1
32	heavy metals	to be reported as individual metals using 6010 / 6020 (full suite analysis)
33	heptanes	As heptane
34	inorganics	to be reported as individual metals using 6010 / 6020 (full suite analysis)
35	insecticides	KM - 8081A
36	ketones	May have been mis-spelled in documents as "keytones"; to be reported as individual compounds using 8315A / 8260B (full suite analysis with TICs)
37	magnesium salts	to be reported as magnesium using 6010 / 6020; to be reported as chlorides, sulfides, sulfates using 300.0 / 376.1
38	metal chlorides	to be reported as individual metals using 6010 & 6020 (full suite analysis); to be reported as chloride using 300.0
39	metal oxides	to be reported as individual metals using 6010 & 6020 (full suite analysis)
40	mixed chloride and sulfate salts (Ca, Mg,K)	to be reported as calcium, magnesium, and potassium using 6010 / 6020; to be reported as chlorides, sulfides, sulfates using 300.0 / 376.1
41	O,O-diethylphosphorodithioic acid (DTA), sodium salt(s)	to be reported as O,O-diethylphosphorodithioic acid using HPLC; to be reported as sodium using 6010 & 6020
42	O,O-dimethylphosphorodithioic acid (DMPT), sodium salt(s)	to be reported as O,O-dimethylphosphorodithioic acid using HPLC; to be reported as sodium using 6010 & 6020
43	organic acids	included in analytical program - see Table 6, HPLC method
44	organochlorine pesticides	Identified by Kerr-McGee; method 8081A. Additional constituents listed are "DDT, DDE. Insecticides, and pesticides."
45	organophosphorus pesticides	Identified by Kerr-McGee; method 8141A
46	oxygenated chlorides	to be reported as chloride using 300.0
47	PAHs	to be reported as individual compounds using 8310 / 8270C (full suite analysis with TICs)
48	PCB	to be reported as individual isomers using 8082 (full suite analysis)
49	pesticides	to be reported as individual organochlorine and organophosphorus compounds using 8081A / 8141A (full suite analysis with TICs)
50	phthalate	document refers to phthalate in generic sense (i.e., "phthalate compounds", "phthalate wastes"); to be analyzed as individual phthalate compounds using 8270C (full suite analysis with TICs)
51	polychlorinated biphenyls (PCBs)	to be reported as individual isomers using 8082 (full suite analysis); may have been mis-spelled in documents as "polychlorinated biphenols"
52	polychlorobenzene	Specific compounds will be identified in the 8260 and 8270 methods and as TICs.

Table 4
Chemical Families and Mixtures Associated with Historical Site Operations
Upper and lower Ponds Ditches
Former BMI Common Areas

	Chemical Family (continued)	Constituents (see listings in Table 1 for analytical approach)
53	radionuclides (NORM)	individual isotopes of Uranium-238 and Thorium-232 decay chains and select other radionuclides to be analyzed as noted
54	rare earth elements	propose to omit
55	sulfonated organics	several are included in the analytical program; the remaining to be reported as TICs, for those in MS library
56	sulfonated metabolites of DDT	unable to identify - to be reported as TICs if in MS library.
57	SVOCs	to be reported as individual compounds using 8270C (full suite analysis with TICs)
58	tin oxides	to be reported as tin using 6010 / 6020
59	total petroleum hydrocarbons (TPH)	constituents will be detected by 8260B and/or 8270C (full suite analysis); if desired, TPH can be run as extractable and purgeable ranges (motor oil, kerosene, diesel, gasoline) using 8015B
60	VOCs	to be reported as individual compounds using 8260B (full suite analysis with TICs)

	Chemical Mixture	Constituents (see listings in Table 1 for analytical approach)
61	acid effluent, wastes	primarily hydrochloric acid wastes, also sulfuric and other acids
62	anolyte solution	sulfuric acid, manganese sulfate
63	anti-foam agent	wide variety of surfactants containing unknown chemicals and varying formulae from different manufacturers
64	battery acids	metals; pH
65	brass	6010 & 6020 as copper and zinc
66	brine, brine sludge	magnesium and calcium hydroxides and carbonates; sodium carbonate; sodium chloride; sodium chlorate; TDS
67	caustic solution, scrubber solution, scrubber waste, and cell liquor	sodium hydroxide; sodium hypochlorite; chlorine; hydrochloric acid; sodium chloride; sodium hypochlorate; sodium perchlorate; mixed chloride and sulfate salts (Ca, Mg, K); TDS
68	chlorine liquifaction sludge	carbon; chlorine; chloroform; carbon tetrachloride; hexachloroethane
69	coal	PAHs Kerr-McGee proposes TOC analysis
70	coke	PAHs Kerr-McGee proposes TOC analysis
71	copperferron	6010 & 6020 as copper and iron
72	CSD solids, sludge and wastes	metal chlorides and oxides, particularly vanadium and chromium; rutile ore; coke; radionuclides
73	degreaser	VOCs
74	diatomaceous earth (used as filter media)	6010 as silica Kerr-McGee, 310.1 as alkalinity
75	filter aid, cellulose filter aid	6010 as silica Kerr-McGee, 310.1 as alkalinity
76	flammables	to be reported as 1010 for flashpoint
77	flocculent	have been unable to determine chemical constituents of this material historically used in KM manganese dioxide process - KM identified "alum, caustic, ferric chloride, ferric sulfate, ferrous sulfate, lime, sulfides, and polyelectrolytes" - proposed analysis is as ions and metals, EPA 425.1 for surfactants, and TOC for polyelectrolytes
78	fume scrubber waste	organics and heavy metals
79	gear lubricant	SVOCs, metals
80	glass material	silica
81	heavy oils/tars	PAHs, SVOCs
82	hydraulic fluid, hydraulic oil & grease	SVOCs; metals
83	kiln Flue dust	calcium and magnesium oxides and carbonates CaO-MgO, CaCO3-MgCO3
84	lab wastes	caustic and acid solutions; formaldehyde titrant; acetone; nitric and hydrofluoric acids;
85	leach liquor effluent, wastes	magnesium; magnesium chloride; hydrochloric acid; nitric acid; citric acid; urea; sodium gluconate; titanium; nitrate; sulfate; chlorine; titanium; sodium; calcium; magnesium; TDS

Table 4
Chemical Families and Mixtures Associated with Historical Site Operations
Upper and lower Ponds Ditches
Former BMI Common Areas

	Chemical Mixture	Constituents (see listings in Table 1 for analytical approach)
86	low pH water	pH
87	manganese ore	manganese and other metals
88	natural gas	not proposing to test for gasses
89	oil, oil & grease, oily sludges or waste, waste oil	SVOCs, metals
90	paint	VOCs; SVOCs - KM says metals as well
91	paint thinner	VOCs
92	paraffin	VOCs; SVOCs - KM says 8015M (C_{13}-C_{22} range)
93	petroleum hydrocarbons (kerosene, gasoline, diesel, motor oil)	VOCs; SVOCs; metals
94	pickling acids	pH
95	polychlor still bottoms	PCBs; dichlorobenzenes; PAHs
96	rubber hydrocarbon solvent	include aromatic compounds such as benzene and toluene (8260) and mineral spirits (8015)
97	rutile ore	titanium and other metals; radionuclides
98	sewage effluent	COD; VOCs
99	slag	metals
100	sludge	metals, PCBs, pesticides, SVOCs
101	smut	magnesium; magnesium, sodium, fluorspar, and calcium chlorides; sulfuric acid; sodium hydroxide
102	sodium-potassium cooling jacket waste	TIMET reported as a cooling alloy; these metals will be detected as sodium and potassium
103	solvents	VOCs
104	stainless steel	metals
105	steel	metals
106	synthetic detergent	KM says they will analyze as surfactants via EPA 425.1
107	tank mud	referenced as a constituent of the waste streams associated with the sodium chlorate and manganese dioxide production processes; chemical constutuents could include any of the raw materials, products or intermediates for those processes, including: sodium chlorate, sodium chloride, sodium dichromate, hydrochloric acid, sodium hydroxide, urea, soda ash, strontium carbonate, silica, graphite, manganese dioxide, manganese sulfate, sulfuric acid, copper, and manganese. KM proposes 6010/6020 for metals, 150.1 for pH, 7196A for hexavalent chromium (?), and ions
108	tar-like materials	PAHs; SVOCs
109	titanium fines dust collector	titanium; magnesium; magnesium chloride
110	Tumbleaf Defoliant	sodium chlorate; soda ash; urea; sodium alpha olefin sulfonate
111	water	generic term; program to analyze for individual constituents

Table 5
Listing of Site-Related Chemicals by CAS# with Synonyms
Upper and Lower Ponds Ditches
Former BMI Common Areas

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
1	formaldehyde	50-00-0	8315A	formalin
2	4,4'-DDT	50-29-3	8081A	pp-DDT, DDT
3	benzo(a)pyrene	50-32-8	8310 / 8270C	
4	O,P'-DDD	53-19-0	8081A	2,4-DDD
5	dibenzo(a,h)anthracene	53-70-3	8310 / 8270C	
6	carbon tetrachloride	56-23-5	8260B	
7	benzo(a)anthracene	56-55-3	8310 / 8270C	
8	cyanide	57-12-5	9010/9014	
9	carbamide	57-13-6	TIC	urea
10	propylene glycol	57-55-6	8015B	
11	chlordane	57-74-9	8081A	
12	Lindane	58-89-9	8081A	gamma-BHC; gamma BHC; BHC-gamma; BHC, gamma-; gamma benzene hexachloride
13	4-chloro-3-methylphenol	59-50-7	8270C	
14	Dieldrin	60-57-1	8081A	
15	tetrasodium EDTA	64-02-8	6010 & 6020	
16	ethanol	64-17-5	8015B	ethyl alcohol
17	benzoic acid	65-85-0	8270C	
18	methanol	67-56-1	8015B	methyl alcohol
19	acetone	67-64-1	8260B	
20	chloroform	67-66-3	8260B	ethyl chloride
21	hexachloroethane	67-72-1	8270C	
22	benzene	71-43-2	8260B	
23	1,1,1-trichloroethane	71-55-6	8260B	1,1,1-TCA; methyl chloroform
24	Endrin	72-20-8	8081A	
25	methoxychlor	72-43-5	8081A	
26	4,4'-DDD	72-54-8	8081A	
27	4,4'-DDE	72-55-9	8081A	pp-DDE, DDE
28	methane	74-82-8	RSK175	
29	bromomethane	74-83-9	8260B	
30	ethane	74-84-0	RSK175	
31	ethylene	74-85-1	RSK175	
32	chloromethane	74-87-3	8260B	
33	chloroethane	75-00-3	8260B	
34	vinyl chloride	75-01-4	8260B	
35	acetonitrile	75-05-8	8260B	
36	acetaldehyde	75-07-0	8315A	
37	methylene chloride	75-09-2	8260B	dichloromethane
38	carbon disulfide	75-15-0	8260B	
39	bromoform	75-25-2	8260B	tribromomethane
40	bromodichloromethane	75-27-4	8260B	
41	1,1-dichloroethane	75-34-3	8260B	
42	1,1-dichloroethene	75-35-4	8260B	
43	trichlorofluoromethane	75-69-4	8260B	Freon-11
44	dichlorodifluoromethane	75-71-8	8260B	Freon-12
45	chloral	75-87-6	551.1	trichloroacetaldehyde
46	1,1,2-trichloro-1,2,2-trifluoroethane	76-13-1	8260B	Freon-113
47	butylchloral	76-36-8	TIC	
48	heptachlor	76-44-8	8081A	
49	citric acid	77-92-9	pH	
50	1,2-dichloropropane	78-87-5	8260B	
51	methyl ethyl ketone	78-93-3	8260B	2-butanone
52	1,1,2-trichloroethane	79-00-5	8260B	
53	trichloroethene	79-01-6	8260B	TCE; trichloroethylene
54	dichloroacetaldehyde	79-02-7	551.1	
55	1,1,2,2,-tetrachloroethane	79-34-5	8260B	
56	2-nitropropane	79-46-9	8260B	
57	sulfenone	80-00-2	TIC	1-Chloro-4-(phenylsulfonyl)benzene

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
58	*bis* para-chlorophenyl sulfone	80-07-9	8270C	4,4'-dichlorodiphenyl sulfone; benzene, 1,1'-sulfonylbis(4-chloro)-; bis(4-chlorophenyl)sulfone; bis(p-chlorophenyl)sulfone
59	acenapththene	83-32-9	8270C	
60	diethyl phthalate	84-66-2	8270C	
61	di-n-butylphthalate	84-74-2	8270C	
62	phenanthrene	85-01-8	8270C	
63	2,4'-dichlorobenzophenone	85-29-0	TIC	
64	phthalimide	85-41-6	TIC	
65	butylbenzyl phthalate	85-68-7	8270C	
66	fluorene	86-73-7	8270C	
67	1,2,3-trichlorobenzene	87-61-6	8260B	
68	hexachlorobutadiene	87-68-3	8270C	
69	pentachlorophenol	87-86-5	8270C	
70	2,4,6-trichlorophenol	88-06-2	8270C	
71	Dinoseb (syn: dinitrobutyl phenol)	88-85-7	8151A	
72	phthalic acid	88-99-3	HPLC	
73	2-chlorobenzaldehyde	89-98-5	TIC	
74	4,4'-dichlorobenzophenone	90-98-2	TIC	bis(4-chlorophenyl)methanone; bischlorophenylmethanone; dichlorobenzophenone; methanone, bis(4-chlorophenyl)-
75	naphthalene	91-20-3	8270C	
76	2-methylnaphthalene	91-57-6	8270C	
77	MCPP	93-65-2	8151A	
78	Silvex (syn: 2,4,5-TP)	93-72-1	8151A	
79	2,4-D	94-75-7	8151A	
80	2,4 DB	94-82-6	8151A	
81	o-cresol (syn: 2-methylphenol)	95-48-7	8270C	
82	2-chlorotoluene	95-49-8	8260B	
83	1,2-dichlorobenzene	95-50-1	8260B	1,2-DCB; o-; ortho-dichlorobenzene; o-dichlorobenzene
84	2-chlorophenol	95-57-8	8270C	
85	1,2,4-trimethylbenzene	95-63-6	8260B	
86	1,2,4,5-tetrachlorobenzene	95-94-3	8270C	
87	2,4,5-trichlorophenol	95-95-4	8270C	
88	dibromochloropropane	96-12-8	8260B	DBCP
89	1,2,3-trichloropropane	96-18-4	8260B	
90	tert-butylbenzene	98-06-6	8260B	
91	benzenesulfonic acid	98-11-3	HPLC	BSA; benzene sulfonic acid
92	benzene,1-chloro-4-(methylsulfonyl)	98-57-7	TIC	4-Chlorophenyl methyl sulfone
93	4-chlorobenzenesulfonic acid	98-66-8	TIC	chlorobenzene sulfonic acid; chlorobenzenesulfonic acid; monochlorobenzene sulfonic acid (MCBSA); para-chlorobenzene sulfonic acid
94	isopropylbenzene	98-82-8	8260B	cumene
95	acetophenone	98-86-2	8270C	
96	nitrobenzene	98-95-3	8270C	
97	cymene	99-87-6	8260B	isopropyltoluene
98	4-nitrophenol	100-02-7	8270C	
99	ethylbenzene	100-41-4	8260B	
100	styrene	100-42-5	8260B	
101	4-bromophenyl phenyl ether	101-55-3	8270C	
102	n-propylbenzene	103-65-1	8260B	
103	n-butylbenzene	104-51-8	8260B	
104	4-chlorobenzyl chloride	104-83-6	TIC	references in company documents to non-specific chlorobenzyl chloride
105	2,4-dimethylphenol	105-67-9	8270C	
106	4-chlorotoluene	106-43-4	8260B	

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
107	1,4-dichlorobenzene	106-46-7	8260B	1,4-DCB; p-; para-dichlorobenzene; p-dichlorobenzene
108	p-chloroaniline	106-47-8	8270C	
109	p-chlorobenzenethiol	106-54-7	8270C	parachlorothiophenol; 4-chlorothiophenol; benzenethiol, 4-chloro-; sometimes abbreviated as p-Thiol or p-thiophenol
110	1,2-dichloroethane	107-06-2	8260B	ethylene dichloride
111	chloroacetaldehyde	107-20-0	8315A	
112	ethylene glycol	107-21-1	8015B	
113	1-nitropropane	108-03-2	TIC	
114	4-methyl-2-pentanone	108-10-1	8260B	methyl isobutyl ketone; MIBK
115	1,3,5-trimethylbenzene	108-67-8	8260B	
116	1,3,5-trichlorobenzene	108-70-3	8260B	
117	bromobenzene	108-86-1	8260B	
118	toluene	108-88-3	8260B	
119	chlorobenzene	108-90-7	8260B	monochlorobenzene, MCB, chlorobenzol
120	phenol	108-95-2	8270C	
121	benzenethiol	108-98-5	8270C	thiophenol
122	pyridine	110-86-1	8270C	
123	ethylene glycol monobutyl ether	111-76-2	TIC	2-Butoxy-1-ethanol
124	2,2,2-Trichloroethanol	115-20-8	TIC	
125	bis(2-ethylhexyl)phthalate	117-81-7	8270C	
126	di-n-octyl phthalate	117-84-0	8270C	
127	hydroxymethyl phthalimide	118-29-6	8270C	HMP; hydroxymethylphthalimide; hydroxy-methyl phthalimide
128	hexachlorobenzene	118-74-1	8270C	
129	benzophenone	119-61-9	TIC	phenyl ketone; diphenyl ketone
130	anthracene	120-12-7	8310 / 8270C	
131	Dichloroprop	120-36-5	8151A	
132	1,2,4-trichlorobenzene	120-82-1	8260B	
133	2,4-dichlorophenol	120-83-2	8270C	
134	2,4-dinitrotoluene	121-14-2	8270C	
135	benzoylchloride, 4-chloro	122-01-0	TIC	
136	1,2-diphenylhydrazine	122-66-7	8270C	
137	4-chlorothioanisole	123-09-1	8270C	chlorothioanisole; p-chlorophenyl methyl sulfide; 4-chlorophenyl methyl sulfide; benzene, 1-chloro-4-(methylthio)-
138	1,4-dioxane	123-91-1	8270C	
139	nonanal	124-19-6	8260B	
140	chlorodibromomethane	124-48-1	8260B	dibromochloromethane
141	tetrachloroethene	127-18-4	8260B	PCE; tetrachloroethylene
142	diphenyl sulfone	127-63-9	8270C	diphenylsulfone; phenyl sulfone; benzene, 1,1'-sulfonylbis-
143	pyrene	129-00-0	8270C	
144	dimethyl phthalate	131-11-3	8270C	
145	sec-butylbenzene	135-98-8	8260B	
146	diphenyl sulfide	139-66-2	8270C	phenyl sulfide
147	heptane	142-82-5	8260B	
148	sodium bicarbonate	144-55-8	6010/6020/310.1	
149	cis-1,2-dichloroethene	156-59-2	8260B	
150	trans-1,2-dichloroethene	156-60-5	8260B	
151	benzo(g,h,i)perylene	191-24-2	8270C	
152	indeno(1,2,3-cd)pyrene	193-39-5	8270C	
153	benzo(b)fluoranthene	205-99-2	8270C	
154	fluoranthene	206-44-0	8270C	
155	benzo(k)fluoranthene	207-08-9	8270C	
156	acenapthylene	208-96-8	8270C	
157	chrysene	218-01-9	8270C	
158	1,2,4-trithiolane	289-16-7	TIC	

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
159	O,O-diethylphosphorodithioic acid	298-06-6	HPLC	diethylphosphorodithioic acid; sometimes referred to in company documentation as DTA
160	chloral hydrate	302-17-0	TIC	
161	aldrin	309-00-2	8081A	
162	BHC, alpha-	319-84-6	8081A	alpha benzene hexachloride; BHC-alpha; alpha BHC
163	BHC, beta-	319-85-7	8081A	beta benzene hexachloride; BHC-beta; beta BHC
164	BHC, delta-	319-86-8	8081A	delta benzene hexachloride; BHC-delta; delta BHC
165	pentachlorocyclohexane	319-94-8	TIC	gamma-pentachlorocyclohexene
166	carbonic acid	463-79-6	pH	
167	calcium carbonate ($CaCO_3$)	471-34-1	310.1	also, hydrated form
168	sodium carbonate (Na_2CO_3)	497-19-8	6010 & 6020 / 310.1	soda ash
169	sodium gluconate ($C_6H_{11}NaO_7$)	527-07-1	6010 & 6020	
170	1,3-dichlorobenzene	541-73-1	8260B	1,3-DCB; metadichlorobenzene; meta-dichlorobenzene
171	1,3-dichloropropene	542-75-6	8260B	
172	bis(chloromethyl)ether	542-88-1	TIC	dichlorodimethyl ether; oxybis[chloromethane]; sometimes referred to in company documents as BCME
173	magnesium carbonate (from magnesite)	546-93-0	6010 & 6020 / 310.1	magnesite
174	1,1-dichloropropene	563-58-6	8260B	
175	2-hexanone	591-78-6	8260B	
176	dichloroanthracene, 9,10-	605-48-1	TIC	
177	pentachlorobenzene	608-93-5	8270C	
178	benzoylchloride, 2-chloro	609-65-4	TIC	
179	2-chlorobenzyl chloride	611-19-8	TIC	references in company documents to non-specific chlorobenzyl chloride
180	2-chloroiodobenzene	615-41-8	TIC	Benzene, 1-chloro-2-iodo-
181	benzoylchloride, 3-chloro	618-46-2	TIC	
182	3-chlorobenzyl chloride	620-20-2	TIC	references in company documents to non-specific chlorobenzyl chloride
183	n-nitroso-di-n-propylamine	621-64-7	8270C	
184	(beta-chloroethyl)benzene	622-24-2	TIC	
185	(2-chlorovinyl)benzene	622-25-3	TIC	
186	1-chloro-4-ethylbenzene	622-98-0	TIC	
187	dimethyldisulfide	624-92-0	8260B	DMDS; methyl disulfide
188	1,1,1,2-tetrachloroethane	630-20-6	8260B	
189	1,2,3,4-tetrachlorobenzene	634-66-2	TIC	
190	1,2,3,5-tetrachlorobenzene	634-90-2	TIC	
191	Phosmet	732-11-6	8141A	Imidan
192	O,O-dimethylphosphorodithioic acid	756-80-9	HPLC	dimethyl phosphorodithioic acid; sometimes referred to in company documentation as DMPT
193	carbophenothion	786-19-6	8141A	Trithion, ethyl carbophenothion
194	diphenyldisulfide	882-33-7	8270C	phenyl disulfide; diphenyl disulfide
195	methyl carbophenothion	953-17-3	8141A	methyl Trithion
196	endosulfan I	959-98-8	8081A	
197	heptachlor epoxide	1024-57-3	8081A	
198	endosulfan sulfate	1031-07-8	8081A	
199	2,5-dichlorostyrene	1123-84-8	TIC	
200	*bis* para-chlorophenyl disulfide	1142-19-4	8270C	dichlorodiphenyl sulfide; bis(p-chlorophenyl)-disulfide; bis(p-chlorophenyl)disulfide; 1,4-dichlorophenyldisulfide; disulfide, bis(4-chlorophenyl)
201	benzene,(methylsulfinyl)	1193-82-4	TIC	methyl phenyl sulfoxide; phenyl methyl sulfoxide

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
202	benzenesulfonic acid, phenyl ester	1208-20-4	TIC	
203	borax	1303-96-4	6010 & 6020	
204	barium oxide	1304-28-5	6010 & 6020	
205	calcium hydroxide	1305-62-0	6010 & 6020	
206	calcium oxide	1305-78-8	6010 & 6020	lime
207	cobaltic oxide	1308-04-9	6010 & 6020	
208	chromic hydroxide ($Cr(OH)_3$)	1308-14-1	6010 & 6020	
209	chromium sesquioxide	1308-38-9	6010 & 6020	chromic oxide
210	ferric hydroxide	1309-33-7	6010 & 6020	
211	ferric oxide	1309-37-1	6010 & 6020	iron oxide
212	magnesium oxide (MgO)	1309-48-4	6010 & 6020	calcined magnesite, magnesia
213	potassium hydroxide	1310-58-3	6010 & 6020 / pH	
214	sodium hydroxide (NaOH)	1310-73-2	6010 & 6020 / pH / 310.1	caustic soda
215	manganese dioxide	1313-13-9	6010 & 6020	
216	molybdenum trioxide	1313-27-5	6010 & 6020	
217	sodium oxide	1313-59-3	6010 & 6020	
218	niobium pentoxide (Nb_2O_5)	1313-96-8	6010 & 6020	
219	nickel mono-oxide	1313-99-1	6010 & 6020	
220	zinc oxide	1314-13-2	6010 & 6020	
221	tungsten trioxide	1314-35-8	6010 & 6020	
222	phosphorus pentoxide	1314-56-3	6010 & 6020	
223	vanadium pentoxide	1314-62-1	6010 & 6020	
224	phosphorus pentasulfide	1314-80-3	6010 & 6020	phosphorous pentasulfide; phosphorous sulfide
225	lead sulfide	1314-87-0	6010 & 6020 / 376.1	
226	zinc sulfide	1314-98-3	6010 & 6020 / 376.1	
227	lead mono-oxide	1317-36-8	6010 & 6020	
228	cupric oxide	1317-38-0	6010 & 6020	
229	cobalt sulfide	1317-42-6	6010 & 6020 / 376.1	cobalt (II) sulfide
230	arsenic trioxide	1327-53-3	6010 & 6020	
231	xylene(s)	1330-20-7	8260B	
232	sodium borate ($B_4H_2O_7$)	1330-43-4	6010 & 6020 /310.1	
233	asbestos	1332-21-4	ISO 10312 TEM	
234	alumina silicate	1335-30-4	6010 & 6020	
235	ammonium hydroxide	1336-21-6	350.1	
236	alumina	1344-28-1	6010 & 6020	aluminum oxide
237	ferrous oxide	1345-25-1	6010 & 6020/150.1	iron oxide is generic term
238	cyclododecene	1501-82-2	TIC	sometimes referred to in company documentation as CDEN
239	strontium carbonate	1633-05-2	6010 & 6020 / 310.1	
240	methyl tert-butyl ether	1634-04-4	8260B	MTBE
241	4,4'-Dichloromethylbiphenyl	1667-10-3	TIC	dichloromethylbiphenyl; 4,4'-bis(chloromethyl)-1,1'-biphenyl
242	2,3,7,8-tetrachlorodibenzo-p-dioxin	1746-01-6	8290	
243	dicamba	1918-00-9	8151A	
244	3-chlorobenzenethiol	2037-31-2	TIC	
245	3,4-dichlorostyrene	2039-83-0	TIC	
246	3,3'-dichlorobiphenyl	2050-67-1	8082	
247	4,4'-dichlorobiphenyl	2050-68-2	8082	
248	2,4-dichlorostyrene	2123-27-5	TIC	
249	O,O,S-Trimethylphosphorodithionate	2953-29-9	TIC	
250	3,4'-dichlorobiphenyl	2974-90-5	8082	
251	3,4-dichlorobiphenyl	2974-92-7	8082	
252	1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin	3268-87-9	8290	
253	O,P'-DDE	3424-82-6	8081A	2,4-DDE
254	dichlorobenzil, 2,2'-	3457-46-3	8270C	
255	potassium chlorate ($KClO_3$)	3811-04-9	6010 & 6020 / 300.0	
256	3-hexene-2,5-dione	4436-75-3	TIC	
257	(4-chlorobutyl)benzene	4830-93-7	TIC	

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
258	chlordane, alpha	5103-71-9	8081A	
259	chlordane, gamma	5103-74-2	8081A	
260	tetrachlorothiophene	6012-97-1	TIC	
261	3,4-dichlorobenzophenone	6284-79-3	TIC	
262	2-chlorobenzenethiol	6320-03-2	TIC	
263	Endrin aldehyde	7421-93-4	8081A	
264	aluminum (Al)	7429-90-5	6010 & 6020	
265	ferrous iron (Fe)	7439-89-6	6010 & 6020	
266	lead (Pb)	7439-92-1	6010 & 6020	
267	lithium (Li)	7439-93-2	6010/6020	
268	magnesium (Mg)	7439-95-4	6010 & 6020	
269	manganese (Mn)	7439-96-5	6010 & 6020	
270	mercury (Hg)	7439-97-6	7471A / 7470A	
271	molybdenum (Mo)	7439-98-7	6010 & 6020	
272	nickel (Ni)	7440-02-0	6010 & 6020	
273	niobium	7440-03-1	6010 & 6020	
274	palladium	7440-05-3	6020	
275	platinum	7440-06-4	6010 & 6020	
276	potassium (K)	7440-09-7	6010 & 6020	
277	silicon	7440-21-3	6010 & 6020	
278	silver (Ag)	7440-22-4	6010 & 6020	
279	sodium (Na)	7440-23-5	6010 & 6020	
280	strontium	7440-24-6	6010 & 6020	
281	thallium (Tl)	7440-28-0	6010 & 6020	
282	thorium-232	7440-29-1	HASL 300 A-01-R Mod	
283	tin (Sb)	7440-31-5	6010 & 6020	
284	titanium (Ti)	7440-32-6	6010 & 6020	
285	tungsten (W)	7440-33-7	6010 & 6020	
286	antimony	7440-36-0	6010 & 6020	
287	arsenic	7440-38-2	6010 & 6020	
288	barium	7440-39-3	6010 & 6020	
289	beryllium	7440-41-7	6010 & 6020	
290	boron	7440-42-8	6010 & 6020	
291	cadmium	7440-43-9	6010 & 6020	
292	chromium, total (Cr)	7440-47-3	6010 & 6020	trivalent Cr; trivalent chrome
293	cobalt (Co)	7440-48-4	6010 & 6020	
294	copper (Cu)	7440-50-8	6010 & 6020	
295	uranium (U)	7440-61-1	6010 & 6020	
296	uranium-238	7440-61-1	HASL A-01-R Mod	
297	vanadium (V)	7440-62-2	6010 & 6020	
298	zinc (Zn)	7440-66-6	6010 & 6020	
299	zirconium (Zr)	7440-67-7	6010 & 6020	
300	calcium (Ca)	7440-70-2	6010 & 6020	
301	sulfur trioxide	7446-11-9	300	
302	potassium chloride (KCl)	7447-40-7	6010 & 6020 / 300.0	
303	lithium chloride	7447-41-8	6010 & 6020 / 300.0	
304	magnesium sulfate ($MgSO_4$)	7487-88-9	6010 & 6020 / 300.0	
305	methanone, (3-chlorophenyl)(4-chlorophenyl)	7498-66-0	TIC	
306	titanium tetrachloride ($TiCl_4$)	7550-45-0	6010 & 6020 / 300.0	
307	tri-sodium phosphate	7601-54-9	6010 & 6020 / 300.0	
308	sodium perchlorate ($NaClO_4$)	7601-89-0	6010 & 6020/314	
309	perchloric acid ($HClO_4$)	7601-90-3	pH/314.0	
310	tin chloride	7646-78-8	6010 & 6020 / 300.0	sometimes abbreviated as Sn chloride
311	hydrochloric acid	7647-01-0	150.1	HCl; muriatic acid; hydrogen chloride
312	sodium chloride (NaCl)	7647-14-5	6010 & 6020 / 300.0	rock salt
313	phosphoric acid	7664-38-2	pH	potassium phosphate
314	hydrofluoric acid (HF)	7664-39-3	150.1	
315	sulfuric acid (H_2SO_4)	7664-93-9	pH	sulphuric acid
316	sodium hypochlorite	7681-52-9	6010 & 6020 / 300.0	bleach; sodium hydrochlorite
317	nitric acid (HNO_3)	7697-37-2	300	
318	sulfur	7704-34-9	6010 & 6020	sulphur, octasulfur

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
319	ferric chloride	7705-08-0	6010 & 6020 / 300.0	
320	vanadium chloride	7718-98-1	6010 & 6020 / 300.0	sometimes abbreviated as V chloride
321	phosphorus trichloride	7719-12-2	6010 & 6020	
322	phosphorus (P)	7723-14-0	6010 & 6020	phosphorous
323	bromine (Br)	7726-95-6	300	
324	barium sulfate	7727-43-7	6010 & 6020 / 300.0	barite
325	sodium sulfate	7727-73-3	6010 & 6020 / 300.0	
326	sodium sulfite	7757-83-7	6010 & 6020 / 377.1	
327	calcium orthophosphate	7758-87-4	6010 & 6020 / 365.2	tricalcium phosphate
328	copper sulfate	7758-98-7	6010 & 6020	
329	silver nitrate	7761-88-8	6010 & 6020 / 300.0	
330	sodium chlorate ($NaClO_3$)	7775-09-9	6010 & 6020 / 300.0	
331	sodium chromate	7775-11-3	6010 & 6020	
332	calcium sulfate ($CaSO_4$)	7778-18-9	6010 & 6020 / 300.0	gypsum
333	potassium phosphate	7778-53-2	6010 & 6020/365.3	
334	calcium hypochlorite	7778-54-3	6010 & 6020 / 300.0	
335	potassium perchlorate ($KClO_4$)	7778-74-7	6010 & 6020/314.0	
336	selenium (se)	7782-49-2	6010 & 6020	
337	chlorine (Cl)	7782-50-5	300	
338	sodium arsenite	7784-46-5	6010 & 6020	
339	manganese sulfate	7785-87-7	6010 & 6020 / 300.0	
340	magnesium chloride ($MgCl_2$)	7786-30-3	6010 & 6020 / 300.0	sometimes abbreviated as Mg chloride
341	silicon tetrabromide	7789-66-4	6010 & 6020 / 300.0	
342	calcium fluoride	7789-75-5	6010 & 6020 / 300.0	Fluorspar
343	ammonium perchlorate	7790-98-9	314	perchloric acid, ammonium salt
344	iodine chloride	7790-99-0	345.1 / 300.0/160.1	
345	toxaphene	8001-35-2	8081A	
346	nitrogen chloride (NCl_3)	10025-85-1	300 / 350.1	nitrogen trichloride
347	silicon tetrachloride	10026-04-7	6010 & 6020 / 300.0	
348	niobium chloride	10026-12-7	6010 & 6020 / 300.0	sometimes abbreviated as Nb chloride
349	magnesium perchlorate	10034-81-8	6010 & 6020/314	perchloric acid, magnesium salt
350	calcium chloride	10035-04-8	6010 & 6020 / 300.0	
351	boric acid	10043-35-3	pH	
352	cis-1,3-dichloropropene	10061-01-5	8260B	
353	trans-1,3-dichloropropene	10061-02-6	8260B	
354	zircon	10101-52-7	6010 & 6020	zirconium silicate
355	sodium hexametaphosphate	10124-56-8	6010 & 6020 / 365.3	
356	boron tribromide	10294-33-4	6010 & 6020	
357	boron trichloride	10294-34-5	6010 & 6020	
358	magnesium chlorate	10326-21-3	6010 & 6020 / 300.0	
359	barium chloride	10361-37-2	6010 & 6020 / 300.0	
360	sodium dichromate	10588-01-9	6010 & 6020 / 7196A	
361	Aroclor 1260	11096-82-5	8082	PCB 1260
362	Aroclor 1254	11097-69-1	8082	
363	Aroclor 1221	11104-28-2	8082	
364	iron hydroxide	11113-66-9	6010 & 6020	
365	nickel sulfide	11113-75-0	6010 & 6020 / 376.1	
366	copper sulfide	11115-78-9	6010 & 6020 / 376.1	
367	chromium oxide	11118-57-3	6010 & 6020	
368	borate	11129-12-7	6010 & 6020	
369	manganese oxide	11129-60-5	6010 & 6020	manganese mono-oxide; manganese monoxide
370	titanium chloride	11130-18-0	6010 & 6020 / 300.0	sometimes abbreviated as Ti chloride
371	Aroclor 1232	11141-16-5	8082	
372	zirconium oxide (ZrO)	12036-01-0	6010 & 6020	
373	boron carbide	12069-32-8	6010 & 6020	
374	ammonium chloride	12125-02-9	350.1	
375	potassium oxide	12136-45-7	6010 & 6020	
376	magnesium hydroxide	12141-11-6	6010 & 6020	
377	white phosphorus	12185-10-3	7580M	
378	Aroclor 1248	12672-29-6	8082	
379	Aroclor 1016	12674-11-2	8082	
380	2,2'-dichlorobiphenyl	13029-08-8	8082	

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
381	radium-224	13233-32-4	Rad - calc	
382	tungsten chloride	13283-01-7	6010 & 6020 / 300.0	sometimes abbreviated as W chloride
383	titania (TiO2)	13463-67-7	6010 & 6020	titanium dioxide
384	manganese perchlorate	13770-16-6	314	
385	potassium-40	13966-00-2	901.1 / HASL GA-01-R	
386	lead-206	13966-27-3	6010/6020	
387	lead-208	13966-28-4	6010/6020	
388	uranium-233/234	13968-55-3/13966-29-5	HASL A-01-R Mod	
389	polonium-210	13981-52-7	Rad - calc	
390	radium-226	13982-63-3	Rad - 903.0	
391	lead-207	14119-29-0	6010/6020	
392	thallium-207	14133-67-6	901.1 / HASL GA-01-R	
393	lead-210	14255-04-0	901.1 / HASL GA-01-R	
394	thorium-230	14269-63-7	HASL A-01-R Mod	
395	thorium-228	14274-82-9	HASL A-01-R Mod	
396	bismuth-210	14331-79-4	Rad - calc	
397	actinium-228	14331-83-0	901.1 / HASL GA-01-R	
398	bismuth-214	14733-03-0	901.1 / HASL GA-01-R	
399	radon-222	14859-67-7	913	
400	bismuth-212	14913-49-6	901.1 / HASL GA-01-R	
401	thallium-208	14913-50-9	901.1 / HASL GA-01-R	
402	thorium-231	14932-40-2	Rad - calc	
403	actinium-227	14952-40-0	Rad - calc	
404	chlorite	14998-27-7	300	
405	thorium-234	15065-10-8	Rad - calc	
406	lead-214	15067-28-4	901.1 / HASL GA-01-R	
407	lead-212	15092-94-1	901.1 / HASL GA-01-R	
408	protactinium-234	15100-28-4	Rad - calc	
409	uranium-235/236	15117-96-1/13982-70-2	HASL A-01-R Mod	
410	bismuth-211	15229-37-5	Rad - calc	
411	radium-228	15262-20-1	Rad - 904.0	
412	polonium-212	15389-34-1	Rad - calc	
413	polonium-218	15422-74-9	Rad - calc	
414	radium-223	15623-45-7	Rad - calc	
415	thorium-227	15623-47-9	901.1 / HASL GA-01-R	
416	polonium-214	15735-67-8	Rad - calc	
417	polonium-216	15756-58-8	Rad - calc	
418	lead-211	15816-77-0	901.1 / HASL GA-01-R	
419	phosphorodithioic acid	15834-33-0	TIC	listed in documents as phosphorodithioic acid ester
420	2,3-dichlorobiphenyl	16605-91-7	8082	
421	sodium hydrosulfide	16721-80-5	6010 & 6020 / 376.1	sodium hydrogen sulfide
422	sodium borohydride	16940-66-2	6010 & 6020	
423	barium hydroxide	17194-00-2	6010 & 6020	
424	chloromethyl phthalimide	17564-64-6	TIC	n-chloromethylphthalimide, CMP used as short-hand in reports
425	tin dioxide (SnO_2)	18282-10-5	6010 & 6020	
426	3,5-Heptanedione, 2,6-dimethyl-	18362-64-6	TIC	
427	chromium, hexavalent	18540-29-9	7196A	hexavalent chrome
428	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	19408-74-3	8290	
429	2,4-dichlorobenzophenone	19811-05-3	TIC	
430	barium sulfide	21109-95-5	6010 & 6020 / 376.1	
431	methyl mercury	22967-92-6	EPA 1630	
432	trimethylbenzene	25551-13-7	8260B	
433	2,3'-dichlorobiphenyl	25569-80-6	8082	
434	2,6-dichlorostyrene	28469-92-3	TIC	
435	octachlorostyrene	29082-74-4	8270C	
436	paraformaldehyde	30525-89-4	TIC	paraform
437	isoheptane	31394-54-4	TIC	
438	PCB-118	31508-00-6	8082	

Item#	Chemical [(1)]	CAS Number	Analytical Method	Synonyms
439	PCB-77	32598-13-3	8082	
440	PCB-105	32598-14-4	8082	
441	PCB-169	32774-16-6	8082	
442	2,6-dichlorobiphenyl	33146-45-1	8082 or 1668	
443	2,4-dichlorobiphenyl	33284-50-3	8082	
444	2,5-dichlorobiphenyl	34883-39-1	8082	
445	3,5-dichlorobiphenyl	34883-41-5	8082	
446	2,4'-dichlorobiphenyl	34883-43-7	8082	
447	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	35822-46-9	8290	
448	chlorobenzaldehyde	35913-09-8	TIC	2-chlorobenzaldehyde
449	PCB-156	38380-08-4	8082	
450	1,2,3,4,6,7,8,9-octachlorodibenzofuran	39001-02-0	8290	
451	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	39227-28-6	8290	
452	chromium chloride	39345-92-1	6010 & 6020 / 300.0	sometimes abbreviated as Cr chloride
453	PCB-189	39635-31-9	8082	
454	1,2,3,7,8-pentachlorodibenzo-p-dioxin	40321-76-4	8290	
455	2,3,7,8-tetrachlorodibenzofuran	51207-31-9	8290	
456	PCB-167	52663-72-6	8082	
457	Aroclor 1242	53469-21-9	8082	
458	Endrin ketone	53494-70-5	8081A	
459	1,2,3,4,7,8,9-heptachlorodibenofuran	55673-89-7	8290	
460	2,2,6,6-Tetrachlorocyclohexanol	56207-45-5	TIC	
461	2,3,4,7,8-pentachlorodibenzofuran	57117-31-4	8290	
462	1,2,3,7,8-pentachlorodibenzofuran	57117-41-6	8290	
463	1,2,3,6,7,8-hexachlorodibenzofuran	57117-44-9	8290	
464	PCB-126	57465-28-8	8082	
465	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	57653-85-7	8290	
466	2,3,4,6,7,8-hexachlorodibenzofuran	60851-34-5	8290	
467	PCB-123	65510-44-3	8082	
468	1,2,3,4,6,7,8-heptachlorodibenzofuran	67562-39-4	8290	
469	PCB-157	69782-90-7	8082	
470	PCB-81	70362-50-4	8082	
471	1,2,3,4,7,8-hexachlorodibenzofuran	70648-26-9	8290	
472	1,2,3,7,8,9-hexachlorodibenzofuran	72918-21-9	8290	
473	dibromochloroethane	73506-94-2	8260B	
474	PCB-114	74472-37-0	8082	

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Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
Ions	**EPA 300.0**	*Bromide*	24959-67-9	TBD	mg/kg	TBD	mg/L
		Bromine	7726-95-6	TBD	mg/kg	TBD	mg/L
		Chlorate	14866-68-3	TBD	mg/kg	TBD	mg/L
		Chloride	16887-00-6	2	mg/kg	0.2	mg/L
		Chlorine (soluble)	7782-50-5	TBD	mg/kg	TBD	mg/L
		Chlorite	14998-27-7	TBD	mg/kg	TBD	mg/L
		Fluoride	16984-48-8	1	mg/kg	0.1	mg/L
		Nitrate (as N)	14797-55-8	0.2	mg/kg	0.02	mg/L
		Nitrite (as N)	14797-65-0	0.2	mg/kg	0.02	mg/L
		Orthophosphate	14265-44-2	5	mg/kg	0.5	mg/L
		Sulfate	14808-79-8	5	mg/kg	0.5	mg/L
	EPA 377.1	*Sulfite*	14265-45-3	5	mg/kg	0.5	mg/L
	EPA 314.0	*Perchlorate*	14797-73-0	40	ug/kg	4	µg/L
Dissolved Gases	**RSK 175**	*Ethane*	74-84-0	NA	NA	2	µg/L
		Ethylene	74-85-1	NA	NA	1	µg/L
		Methane	74-82-8	NA	NA	1	µg/L
Chlorinated Compounds	**VOCs by GC-ECD**	*Chloral*	75-87-6	70	µg/kg	3	µg/L
		Dichloroacetaldehyde	79-02-7	70	µg/kg	20	µg/L
Polychlorinated Dibenzodioxins/ Dibenzofurans	**EPA 8290**	*1,2,3,4,6,7,8,9-Octachlorodibenzofuran*	39001-02-0	10	pg/g	100	pg/L
		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	10	pg/g	100	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	5	pg/g	50	pg/L
		1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	5	pg/g	50	pg/L
		1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	5	pg/g	50	pg/L
		1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	5	pg/g	50	pg/L
		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	5	pg/g	50	pg/L
		1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	5	pg/g	50	pg/L
		1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	5	pg/g	50	pg/L
		1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	5	pg/g	50	pg/L
		1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	5	pg/g	50	pg/L
		1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	5	pg/g	50	pg/L
		1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	5	pg/g	50	pg/L
		2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	5	pg/g	50	pg/L
		2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	5	pg/g	50	pg/L
		2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	1	pg/g	10	pg/L
		2,3,7,8-Tetrachlororodibenzo-p-dioxin	1746-01-6	1	pg/g	10	pg/L
Asbestos	**ISO 10312 TEM**	*Asbestos*	1332-21-4	1	fibers/cm^3	NA	NA

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Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
General Chemistry Parameters	**EPA 350.2**	*Ammonia (as N)*	7664-41-7	50	mg/kg	55	µg/L
	EPA 9010/9014	*Cyanide (Total)*	57-12-5	5	mg/kg	5	µg/L
	EPA 345.1	*Iodine*	7553-56-2	TBD	mg/kg	TBD	mg/L
	EPA 9045C	*pH in soil*	pH	NA	pHunits	NA	NA
	EPA 9040B	*pH in water*	pH	NA	NA	NA	pHunits
	EPA 376.1/376.2	*Sulfide*	18496-25-8	10	mg/kg	1	mg/L
	Mod. EPA 415.1	*Total inorganic carbon*	7440-44-0	NA	mg/kg	TBD	mg/L
	EPA 351.2	*Total Kjeldahl nitrogen (TKN)*	TKN	20	mg/kg	0.2	mg/L
	EPA 415.1	*Total organic carbon (TOC)*	7440-44-0	10	mg/kg	1	mg/L
Metals	**EPA 6020/6010B**	*Aluminum*	7429-90-5	3	mg/kg	30	µg/L
		Antimony	7440-36-0	1	mg/kg	10	µg/L
		Arsenic	7440-38-2	1	mg/kg	10	µg/L
		Barium	7440-39-3	2	mg/kg	20	µg/L
		Beryllium	7440-41-7	0.5	mg/kg	5	µg/L
		Boron	7440-42-8	5	mg/kg	50	µg/L
		Cadmium	7440-43-9	0.5	mg/kg	5	µg/L
		Calcium	7440-70-2	50	mg/kg	500	µg/L
		Chromium	7440-47-3	1	mg/kg	10	µg/L
		Cobalt	7440-48-4	0.5	mg/kg	10	µg/L
		Copper	7440-50-8	1	mg/kg	10	µg/L
		Iron	7439-89-6	10	mg/kg	100	µg/L
		Lead	7439-92-1	0.3	mg/kg	3	µg/L
		Lithium	1313-13-9	5	mg/kg	50	µg/L
		Magnesium	7439-95-4	50	mg/kg	500	µg/L
		Manganese	7439-96-5	1	mg/kg	10	µg/L
		Molybdenum	7439-98-7	1	mg/kg	10	µg/L
		Nickel	7440-02-0	1	mg/kg	10	µg/L
		Niobium	7440-03-1	10	mg/kg	40	µg/L
		Palladium	7440-05-3	0.1	mg/kg	1	µg/L
		Phosphorus	7723-14-0	50	mg/kg	500	µg/L
		Platinum	7440-06-4	0.1	mg/kg	1	µg/L
		Potassium	7440-09-7	50	mg/kg	500	µg/L
		Selenium	7782-49-2	0.5	mg/kg	5	µg/L

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Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
Metals (continued) (continued)	**EPA 6020/6010B**	*Silicon*	7440-21-3	50	mg/kg	500	µg/L
		Silver	7440-22-4	1	mg/kg	10	µg/L
		Sodium	7440-23-5	50	mg/kg	500	µg/L
		Strontium	7440-24-6	1.0	mg/kg	10	µg/L
		Sulfur	7704-34-9	TBD	mg/kg	TBD	µg/L
		Thallium	7440-28-0	1	mg/kg	10	µg/L
		Tin	7440-31-5	1.0	mg/kg	10	µg/L
		Titanium	7440-32-6	1.0	mg/kg	10	µg/L
		Tungsten	7440-33-7	2.5	mg/kg	10	µg/L
		Uranium	7440-61-1	1.0	mg/kg	10	µg/L
		Vanadium	7440-62-2	1.0	mg/kg	10	µg/L
		Zinc	7440-66-6	2	mg/kg	20	µg/L
		Zirconium	7440-67-7	10	mg/kg	500	µg/L
	EPA 7196A	*Chromium (VI)*	18540-29-9	0.4	mg/kg	10	µg/L
	EPA 7470/7471A	*Mercury*	7439-97-6	0.0333	mg/kg	0.2	µg/L
Organophosphorous Pesticides	**EPA 8141A**	*Azinphos-ethyl*	264-27-19	33	µg/kg	10	µg/L
		Azinphos-methyl	86-50-0	13	µg/kg	2.5	µg/L
		Carbophenothion	786-19-6	33	µg/kg	10	µg/L
		Chlorpyrifos	2921-88-2	13	µg/kg	0.5	µg/L
		Coumaphos	56-72-4	13	µg/kg	0.5	µg/L
		Demeton-O	298-03-3	13	µg/kg	1	µg/L
		Demeton-S	126-75-0	13	µg/kg	1	µg/L
		Diazinon	333-41-5	13	µg/kg	0.5	µg/L
		Dichlorvos	62-73-7	13	µg/kg	0.5	µg/L
		Dimethoate	60-51-5	13	µg/kg	0.5	µg/L
		Disulfoton	298-04-4	13	µg/kg	0.5	µg/L
		EPN	2104-64-5	13	µg/kg	0.5	µg/L
		Ethoprop	13194-48-4	13	µg/kg	0.5	µg/L
		Ethyl parathion	56-38-2	13	µg/kg	0.5	µg/L
		Fampphur	52-85-7	13	µg/kg	1	µg/L
		Fenthion	55-38-9	13	µg/kg	0.5	µg/L
		Malathion	121-75-5	13	µg/kg	1.2	µg/L
		Methyl carbophenothion	953-17-3	33	µg/kg	10	µg/L
		Methyl parathion	298-00-0	13	µg/kg	0.5	µg/L
		Mevinphos	7786-34-7	13	µg/kg	10	µg/L

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				Soil		Water	
Organophosphorous Pesticides (continued)	**EPA 8141A**	*Naled*	300-76-5	33	µg/kg	10	µg/L
		O,O,O-Triethyl phosphorothioate (TEPP)	297-97-2	13	µg/kg	0.5	µg/L
		Phorate	298-02-2	13	µg/kg	0.5	µg/L
		Phosmet	732-11-6	66	µg/kg	10	µg/L
		Ronnel	299-84-3	13	µg/kg	10	µg/L
		Stirophos (Tetrachlorovinphos)	22248-79-9	13	µg/kg	2.5	µg/L
		Sulfotep	3689-24-5	13	µg/kg	0.5	µg/L
Chlorinated Herbicides	**EPA 8151A**	*2,4,5-T*	93-76-5	20	µg/kg	1	µg/L
		2,4,5-TP (Silvex)	93-72-1	20	µg/kg	1	µg/L
		2,4-D	94-75-7	80	µg/kg	4	µg/L
		2,4-DB	94-82-6	80	µg/kg	4	µg/L
		Dalapon	75-99-0	40	µg/kg	4	µg/L
		Dicamba	1918-00-9	40	µg/kg	2	µg/L
		Dichloroprop	120-36-5	80	µg/kg	4	µg/L
		Dinoseb	88-85-7	25	µg/kg	0.6	µg/L
		MCPA	94-74-6	8000	µg/kg	400	µg/L
		MCPP	93-65-2	8000	µg/kg	400	µg/L
Organic Acids	**HPLC**	*4-Chlorobenzene sulfonic acid*	98-66-8	0.4	mg/Kg	0.4	mg/L
		Benzenesulfonic acid	98-11-3	0.4	mg/Kg	0.4	mg/L
		O,O-Diethylphosphorodithioic acid	298-06-6	0.4	mg/Kg	0.4	mg/L
		O,O-Dimethylphosphorodithioic acid	756-80-9	0.4	mg/Kg	0.1	mg/L
		Phthalic acid	88-99-3	0.4	mg/Kg	0.4	µg/L
Nonhalogenated Organics	**EPA 8015B**	*Ethylene glycol*	107-21-1	50	mg/kg	10	mg/L
		Ethylene glycol monobutyl ether	111-76-2	TBD	mg/kg	TBD	mg/L
		Methanol	67-56-1	50	mg/kg	5	mg/L
		Propylene glycol	57-55-6	50	mg/kg	10	mg/L
Organochlorine Pesticides	**EPA 8081A**	*2,4-DDD*	53-19-0	1.7	µg/kg	0.05	µg/L
		2,4-DDE	3424-82-6	1.7	µg/kg	0.05	µg/L
		4,4-DDD	72-54-8	1.7	µg/kg	0.05	µg/L
		4,4-DDE	72-55-9	1.7	µg/kg	0.05	µg/L
		4,4-DDT	50-29-3	1.7	µg/kg	0.05	µg/L
		Aldrin	309-00-2	1.7	µg/kg	0.05	µg/L
		alpha-BHC	319-84-6	1.7	µg/kg	0.05	µg/L
		alpha-Chlordane	5103-71-9	1.7	µg/kg	0.05	µg/L
		beta-BHC	319-85-7	1.7	µg/kg	0.05	µg/L
		Chlordane	57-74-9	17	µg/kg	0.5	µg/L
		delta-BHC	319-86-8	1.7	µg/kg	0.05	µg/L

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Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
Organochlorine Pesticides (continued)	**EPA 8081A**	*Dieldrin*	60-57-1	1.7	µg/kg	0.05	µg/L
		Endosulfan I	959-98-8	1.7	µg/kg	0.05	µg/L
		Endosulfan II	33213-65-9	1.7	µg/kg	0.05	µg/L
		Endosulfan sulfate	1031-07-8	1.7	µg/kg	0.05	µg/L
		Endrin	72-20-8	1.7	µg/kg	0.05	µg/L
		Endrin aldehyde	7421-93-4	1.7	µg/kg	0.05	µg/L
		Endrin ketone	53494-70-5	1.7	µg/kg	0.05	µg/L
		gamma-BHC (Lindane)	58-89-9	1.7	µg/kg	0.05	µg/L
		gamma-Chlordane	5103-74-2	1.7	µg/kg	0.05	µg/L
		Heptachlor	76-44-8	1.7	µg/kg	0.05	µg/L
		Heptachlor epoxide	1024-57-3	1.7	µg/kg	0.05	µg/L
		Methoxychlor	72-43-5	3.3	µg/kg	0.1	µg/L
		Toxaphene	8001-35-2	67	µg/kg	2	µg/L
Polychlorinated Biphenyls	**EPA 8082**	*Aroclor 1016*	12674-11-2	33	µg/kg	1	µg/L
		Aroclor 1221	11104-28-2	33	µg/kg	1	µg/L
		Aroclor 1232	11141-16-5	33	µg/kg	1	µg/L
		Aroclor 1242	53469-21-9	33	µg/kg	1	µg/L
		Aroclor 1248	12672-29-6	33	µg/kg	1	µg/L
		Aroclor 1254	11097-69-1	33	µg/kg	1	µg/L
		Aroclor 1260	11096-82-5	33	µg/kg	1	µg/L
		PCB-77	32598-13-3	1	µg/kg	0.01	µg/L
		PCB-81	70362-50-4	1	µg/kg	0.01	µg/L
		PCB-105	32598-14-4	1	µg/kg	0.01	µg/L
		PCB-114	74472-37-0	1	µg/kg	0.01	µg/L
		PCB-118	31508-00-6	1	µg/kg	0.01	µg/L
		PCB-123	65510-44-3	1	µg/kg	0.01	µg/L
		PCB-126	57465-28-8	1	µg/kg	0.02	µg/L
		PCB-156	38380-08-4	1	µg/kg	0.01	µg/L
		PCB-157	69782-90-7	5	µg/kg	0.01	µg/L
		PCB-167	52663-72-6	1	µg/kg	0.01	µg/L
		PCB-169	32774-16-6	1	µg/kg	0.01	µg/L
		PCB-189	39635-31-9	1	µg/kg	0.01	µg/L

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				Soil		Water	
Polynuclear Aromatic Hydrocarbons	**EPA 8310** [1]	*Acenaphthene*	83-32-9	50	µg/kg	5	µg/L
		Acenaphthylene	208-96-8	100	µg/kg	5	µg/L
		Anthracene	120-12-7	30	µg/kg	5	µg/L
		Benzo(a)anthracene	56-55-3	15	µg/kg	5	µg/L
		Benzo(a)pyrene	50-32-8	15	µg/kg	5	µg/L
		Benzo(b)fluoranthene	205-99-2	15	µg/kg	5	µg/L
		Benzo(g,h,i)perylene	191-24-2	30	µg/kg	5	µg/L
		Benzo(k)fluoranthene	207-08-9	15	µg/kg	5	µg/L
		Chrysene	218-01-9	15	µg/kg	5	µg/L
		Dibenzo(a,h)anthracene	53-70-3	30	µg/kg	5	µg/L
		Indeno(1,2,3-cd)pyrene	193-39-5	15	µg/kg	5	µg/L
		Phenanthrene	85-01-8	30	µg/kg	5	µg/L
		Pyrene	129-00-0	30	µg/kg	5	µg/L
Radiochemicals	**EPA 900.0 or EPA 9310**	*Gross alpha*	G_Alpha	10.0	pCi/g	3.0	pCi/L
		Gross beta	G_Beta	10.0	pCi/g	4.0	pCi/L
	EPA 901.1/ HASL GA-01-R	*Actinium-228*	14331-83-0	*	pCi/g	*	pCi/L
		Bismuth-212	14913-49-6	*	pCi/g	*	pCi/L
		Bismuth-214	14733-03-0	*	pCi/g	*	pCi/L
		Cobalt-57	13981-50-5	*	pCi/g	*	pCi/L
		Cobalt-60	10198-40-0	0.2	pCi/g	20.0	pCi/L
		Lead-210	14255-04-0	*	pCi/g	*	pCi/L
		Lead-211	015816-77-0	*	pCi/g	*	pCi/L
		Lead-212	15092-94-1	*	pCi/g	*	pCi/L
		Lead-214	15067-28-4	*	pCi/g	*	pCi/L
		Potassium-40	13966-00-2	*	pCi/g	*	pCi/L
		Thallium-208	14913-50-9	*	pCi/g	*	pCi/L
		Thorium-227	15623-47-9	*	pCi/g	*	pCi/L
		Thorium-234 (from U-235)	15065-10-8	*	pCi/g	*	pCi/L
	EPA 903.0	*Radium-226*	13982-63-3	1.0	pCi/g	1.0	pCi/L
	EPA 904.0	*Radium-228*	15262-20-1	1.0	pCi/g	1.0	pCi/L
	Quantitate from Parent or Daughter Radionuclide	*Actinium-227 (from Th-227)*	14952-40-0	*	pCi/g	*	pCi/L
		Bismuth-210 (from Pb-210)	14331-79-4	*	pCi/g	*	pCi/L
		Bismuth-211 (from Pb-211)	15229-37-5	*	pCi/g	*	pCi/L
		Polonium-210 (from Pb-210)	13981-52-7	*	pCi/g	*	pCi/L
		Polonium-212 (from Bi-212)	13981-52-7	*	pCi/g	*	pCi/L
		Polonium-214 (from Bi-214)	15735-67-8	*	pCi/g	*	pCi/L
		Polonium-216 (from Pb-212)	15756-58-8	*	pCi/g	*	pCi/L

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				Soil		Water	
Radiochemicals (continued)	**Quantitate from Parent or Daughter Radionuclide**	*Polonium-218 (from Pb-214)*	15422-74-9	*	pCi/g	*	pCi/L
		Protactinium-234 (from Th-234)	15100-28-4	*	pCi/g	*	pCi/L
		Radium-223 (from Th-227)	15623-45-7	*	pCi/g	*	pCi/L
		Radium-224 (from Pb-212)	13233-32-4	*	pCi/g	*	pCi/L
		Thallium-207 (from Pb-211)	14133-67-6	*	pCi/g	*	pCi/L
		Thorium-231 (from U-235)	14932-40-2	*	pCi/g	*	pCi/L
		Thorium-232	7440-29-1	1.0	pCi/g	1.0	pCi/L
		Thorium-228	14274-82-9	1.0	pCi/g	1.0	pCi/L
		Thorium-230	14269-63-7	1.0	pCi/g	1.0	pCi/L
		Uranium-233/234	13966-29-5	1.0	pCi/g	1.0	pCi/L
		Uranium 235/236	15117-96-1	1.0	pCi/g	1.0	pCi/L
		Uranium-238(from Th-234)	7440-61-1	1.0	pCi/g	1.0	pCi/L
Radon	**FLUX**	*Radon-220*	22481-48-7	TBD	pCi/g	TBD	pCi/L
		Radon-222	14859-67-7	TBD	pCi/g	TBD	pCi/L
Aldehydes	**EPA 8315A**	*Acetaldehyde*	75-07-0	500	µg/kg	30	µg/L
		Chloroacetaldehyde	107-20-0	1000	µg/kg	10	µg/L
		Formaldehyde	50-00-0	1000	µg/kg	60	µg/L
Semivolatile Organic Compounds	**EPA 8270C** [2]	*1,2,4,5-Tetrachlorobenzene*	95-94-3	330	µg/kg	10	µg/L
		1,2-Diphenylhydrazine	122-66-7	330	µg/kg	10	µg/L
		1,4-Dioxane	123-91-1	330	µg/kg	10	µg/L
		2,2'-Dichlorobenzil	3457-46-3	330	µg/kg	10	µg/L
		2,4,5-Trichlorophenol	95-95-4	330	µg/kg	10	µg/L
		2,4,6-Trichlorophenol	88-06-2	330	µg/kg	10	µg/L
		2,4-Dichlorophenol	120-83-2	330	µg/kg	10	µg/L
		2,4-Dimethylphenol	105-67-9	330	µg/kg	10	µg/L
		2,4-Dinitrophenol	51-28-5	1600	µg/kg	50	µg/L
		2,4-Dinitrotoluene	121-14-2	330	µg/kg	10	µg/L
		2,6-Dinitrotoluene	606-20-2	330	µg/kg	10	µg/L
		2-Chloronaphthalene	91-58-7	330	µg/kg	10	µg/L
		2-Chlorophenol	95-57-8	330	µg/kg	10	µg/L
		2-Methylnaphthalene	91-57-6	330	µg/kg	10	µg/L
		2-Nitroaniline	88-74-4	1600	µg/kg	10	µg/L
		2-Nitrophenol	88-75-5	330	µg/kg	10	µg/L
		3,3-Dichlorobenzidine	91-94-1	1600	µg/kg	10	µg/L
		3-Nitroaniline	99-09-2	1600	µg/kg	10	µg/L
		4,4'-Dichlorobenzil (as 2,2'-dichlorobenzil)	3457-46-3	330	µg/kg	10	µg/L

Table 6
Proposed Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
Semivolatile Organic Compounds (continued)	**EPA 8270C [2]**	*4-Bromophenyl phenyl ether*	101-55-3	330	µg/kg	10	µg/L
		4-Chloro-3-methylphenol	59-50-7	330	µg/kg	10	µg/L
		4-Chlorophenyl phenyl ether	7005-72-3	330	µg/kg	10	µg/L
		4-Chlorothioanisole	123-09-1	TBD	µg/kg	TBD	µg/L
		4-Chlorothiophenol	106-54-7	TBD	µg/kg	TBD	µg/L
		4-Nitroaniline	100-01-6	1600	µg/kg	50	µg/L
		4-Nitrophenol	100-02-7	1600	µg/kg	50	µg/L
		Acenaphthene	83-32-9	330	µg/kg	10	µg/L
		Acenaphthylene	208-96-8	330	µg/kg	10	µg/L
		Acetophenone	98-86-2	330	µg/kg	10	µg/L
		Aniline	62-53-3	330	µg/kg	10	µg/L
		Anthracene	120-12-7	330	µg/kg	10	µg/L
		Azobenzene	103-33-3	330	µg/kg	10	µg/L
		Benzo(a)anthracene	56-55-3	330	µg/kg	10	µg/L
		Benzo(a)pyrene	50-32-8	330	µg/kg	10	µg/L
		Benzo(b)fluoranthene	205-99-2	330	µg/kg	10	µg/L
		Benzo(g,h,i)perylene	191-24-2	330	µg/kg	10	µg/L
		Benzo(k)fluoranthene	207-08-9	330	µg/kg	10	µg/L
		Benzoic acid	65-85-0	1600	µg/kg	50	µg/L
		Benzyl alcohol	100-51-6	330	µg/kg	10	µg/L
		bis(2-Chloroethoxy)methane	111-91-1	330	µg/kg	10	µg/L
		bis(2-Chloroethyl) ether	54-28-1	330	µg/kg	10	µg/L
		bis(2-Chloroisopropyl) ether	108-60-1	330	µg/kg	10	µg/L
		bis(2-Ethylhexyl) phthalate	117-81-7	330	µg/kg	10	µg/L
		bis(Chloromethyl) ether	111-44-4	330	µg/kg	10	µg/L
		bis(p-Chlorophenyl) sulfone	80-07-9	330	µg/kg	10	µg/L
		bis(p-Chlorophenyl)disulfide	1142-19-4	330	µg/kg	10	µg/L
		Butylbenzyl phthalate	85-68-7	330	µg/kg	10	µg/L
		Carbazole	86-74-8	330	µg/kg	10	µg/L
		Chrysene	218-01-9	330	µg/kg	10	µg/L
		Dibenzo(a,h)anthracene	53-70-3	330	µg/kg	10	µg/L
		Dibenzofuran	132-64-9	330	µg/kg	10	µg/L
		Dichloromethyl ether	542-88-1	330	µg/kg	10	µg/L
		Diethyl phthalate	84-66-2	330	µg/kg	10	µg/L
		Dimethyl phthalate	131-11-3	330	µg/kg	10	µg/L
		Di-n-butyl phthalate	84-74-2	330	µg/kg	10	µg/L
		Di-n-octyl phthalate	117-84-0	330	µg/kg	10	µg/L

Table 6
Proposed Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
Semivolatile Organic Compounds (continued)	**EPA 8270C** [2]	*Diphenyl disulfide*	882-33-7	330	µg/kg	10	µg/L
		Diphenyl sulfide	139-66-2	330	µg/kg	10	µg/L
		Diphenyl sulfone	127-63-9	330	µg/kg	10	µg/L
		Fluoranthene	206-44-0	330	µg/kg	10	µg/L
		Fluorene	86-73-7	330	µg/kg	10	µg/L
		Hexachlorobenzene	118-74-1	330	µg/kg	50	µg/L
		Hexachlorobutadiene	87-68-3	330	µg/kg	50	µg/L
		Hexachlorocyclopentadiene	77-47-4	1600	µg/kg	50	µg/L
		Hexachloroethane	67-72-1	330	µg/kg	10	µg/L
		Hydroxymethyl phthalimide	118-29-6	330	µg/kg	10	µg/L
		Indeno(1,2,3-cd)pyrene	193-39-5	330	µg/kg	10	µg/L
		Isophorone	78-59-1	330	µg/kg	10	µg/L
		m,p-Cresol	106-44-5	660	µg/kg	10	µg/L
		Naphthalene	91-20-3	330	µg/kg	10	µg/L
		Nitrobenzene	98-95-3	330	µg/kg	10	µg/L
		N-nitrosodi-n-propylamine	621-64-7	330	µg/kg	10	µg/L
		N-nitrosodiphenylamine	86-30-6	330	µg/kg	10	µg/L
		o-Cresol	95-48-7	330	µg/kg	10	µg/L
		Octachlorostyrene	29082-74-4	330	µg/kg	10	µg/L
		p-Chloroaniline (4-Chloroaniline)	106-47-8	330	µg/kg	10	µg/L
		p-Chlorobenzenethiol	106-54-7	330	µg/kg	10	µg/L
		Pentachlorobenzene	608-93-5	330	µg/kg	10	µg/L
		Pentachlorophenol	87-86-5	1600	µg/kg	50	µg/L
		Phenanthrene	85-01-8	330	µg/kg	10	µg/L
		Phenol	108-95-2	330	µg/kg	10	µg/L
		Pyrene	129-00-0	330	µg/kg	10	µg/L
		Pyridine	110-86-1	660	µg/kg	10	µg/L
		Thiophenol	108-98-5	330	µg/kg	10	µg/L
		Tentatively Identified Compounds (TICs)		NA	µg/kg	NA	µg/L
Volatile Organic Compounds	**EPA 8260B**	*1,1,1,2-Tetrachloroethane*	630-20-6	5	µg/kg	5	µg/L
		1,1,1-Trichloroethane	71-55-6	5	µg/kg	5	µg/L
		1,1,2,2-Tetrachloroethane	79-34-5	5	µg/kg	5	µg/L
		1,1,2-Trichloroethane	79-00-5	5	µg/kg	5	µg/L
		1,1-Dichloroethane	75-34-3	5	µg/kg	5	µg/L
		1,1-Dichloroethene	75-35-4	5	µg/kg	5	µg/L
		1,1-Dichloropropene	563-58-6	5	µg/kg	5	µg/L
		1,2,3-Trichlorobenzene	87-61-6	5	µg/kg	5	µg/L

Table 6
Proposed Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
Volatile Organic Compounds (continued)	**EPA 8260B**	*1,2,3-Trichloropropane*	96-18-4	5	µg/kg	5	µg/L
		1,2,4-Trichlorobenzene	120-82-1	5	µg/kg	5	µg/L
		1,2,4-Trimethylbenzene	95-63-6	5	µg/kg	5	µg/L
		1,2-Dichlorobenzene	95-50-1	5	µg/kg	5	µg/L
		1,2-Dichloroethane	107-06-2	5	µg/kg	5	µg/L
		1,2-Dichloroethene	540-59-0	10	µg/kg	10	µg/L
		1,2-Dichloropropane	78-87-5	5	µg/kg	5	µg/L
		1,3,5-Trichlorobenzene	108-70-3	5	µg/kg	5	µg/L
		1,3,5-Trimethylbenzene	108-67-8	5	µg/kg	5	µg/L
		1,3-Dichlorobenzene	541-73-1	5	µg/kg	5	µg/L
		1,3-Dichloropropene	542-75-6	5	µg/kg	5	µg/L
		1,3-Dichloropropane	142-28-9	5	µg/kg	5	µg/L
		1,4-Dichlorobenzene	106-46-7	5	µg/kg	5	µg/L
		2,2-Dichloropropane	594-20-7	5	µg/kg	5	µg/L
		2-Chlorotoluene	95-49-8	5	µg/kg	5	µg/L
		2-Hexanone	591-78-6	20	µg/kg	20	µg/L
		2-Nitropropane	79-46-9	10	µg/kg	10	µg/L
		4-Chlorobenzene	108-90-7	5	µg/kg	5	µg/L
		4-Chlorotoluene	106-43-4	5	µg/kg	5	µg/L
		4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/kg	20	µg/L
		Acetone	67-64-1	20	µg/kg	20	µg/L
		Acetonitrile	75-05-8	50	µg/kg	50	µg/L
		Benzene	71-43-2	5	µg/kg	5	µg/L
		Bromobenzene	108-86-1	5	µg/kg	5	µg/L
		Bromodichloromethane	75-27-4	5	µg/kg	5	µg/L
		Bromoform	75-25-2	5	µg/kg	5	µg/L
		Bromomethane	74-83-9	10	µg/kg	10	µg/L
		Carbon disulfide	75-15-0	5	µg/kg	5	µg/L
		Carbon tetrachloride	56-23-5	5	µg/kg	5	µg/L
		Chlorobenzene	108-90-7	5	µg/kg	5	µg/L
		Chlorobromomethane	74-97-5	5	µg/kg	5	µg/L
		Chlorodibromomethane	124-48-1	5	µg/kg	5	µg/L
		Chloroethane	75-00-3	5	µg/kg	5	µg/L
		Chloroform	67-66-3	5	µg/kg	5	µg/L
		Chloromethane	74-87-3	10	µg/kg	10	µg/L
		cis-1,2-Dichloroethene	156-59-2	5	µg/kg	5	µg/L
		cis-1,3-Dichloropropene	10061-01-5	5	µg/kg	5	µg/L

Table 6
Proposed Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
Volatile Organic Compounds (continued)	**EPA 8260B**	*Cymene (Isopropyltoluene)*	99-87-6	10	µg/kg	10	µg/L
		Dibromochloroethane	73506-94-2	5	µg/kg	5	µg/L
		Dibromochloromethane	124-48-1	5	µg/kg	5	µg/L
		Dibromochloropropane	96-12-8	10	µg/kg	5	µg/L
		Dibromomethane	74-95-3	5	µg/kg	5	µg/L
		Dichlorobenzene	25321-22-6	5	µg/kg	5	µg/L
		Dichloromethane (Methylene chloride)	75-09-2	5	µg/kg	5	µg/L
		Dimethyldisulfide	624-92-0	5	µg/kg	5	µg/L
		Ethanol	64-17-5	200	µg/kg	200	µg/L
		Ethylbenzene	100-41-4	5	µg/kg	5	µg/L
		Freon-11(Trichlorofluoromethane)	75-69-4	5	µg/kg	5	µg/L
		Freon-113(1,1,2-trichloro-1,2,2-trifluoroethane)	76-13-1	5	µg/kg	5	µg/L
		Freon-12(Dichlorodifluoromethane)	75-71-8	10	µg/kg	5	µg/L
		Heptane	142-82-5	TBD	µg/kg	TBD	µg/L
		Isoheptane	31394-54-4	TBD	µg/kg	TBD	µg/L
		Isopropylbenzene	98-82-8	5	µg/kg	5	µg/L
		m,p-Xylene	mp-XYL	5	µg/kg	5	µg/L
		Methyl ethyl ketone (2-Butanone)	78-93-3	20	µg/kg	5	µg/L
		Methyl iodide	74-88-4	5	µg/kg	5	µg/L
		MTBE (Methyl tert-butyl ether)	1634-04-4	5	µg/kg	5	µg/L
		n-Butyl benzene	104-51-8	5	µg/kg	5	µg/L
		n-Propylbenzene	103-65-1	5	µg/kg	5	µg/L
		Nonanal	124-19-6	10	µg/kg	10	µg/L
		o-Xylene	95-47-6	5	µg/kg	5	µg/L
		sec-Butylbenzene	135-98-8	5	µg/kg	5	µg/L
		Styrene	100-42-5	5	µg/kg	5	µg/L
		tert-Butyl benzene	98-06-6	5	µg/kg	5	µg/L
		Tetrachloroethene	127-18-4	5	µg/kg	5	µg/L
		Toluene	108-88-3	5	µg/kg	5	µg/L
		trans-1,2-Dichloroethene	156-60-5	5	µg/kg	5	µg/L
		trans-1,3-Dichloropropene	10061-02-6	5	µg/kg	5	µg/L
		Trichloroethane	71-55-6	5	µg/kg	5	µg/L
		Trichloroethene	79-01-6	5	µg/kg	1	µg/L
		Vinyl acetate	108-05-4	5	µg/kg	2	µg/L
		Vinyl chloride	75-01-4	5	µg/kg	2	µg/L
		Xylenes (total)	1330-20-7	10	µg/kg	10	µg/L
		Tentatively Identified Compounds (TICs)		NA	µg/kg	NA	µg/L

Table 6
Proposed Analytical Program
Upper and Lower Ponds Ditches
Former BMI Common Areas

Parameter of Interest	Analytical Method	Compound List	CAS Number	Laboratory Limits			
				Soil		Water	
Water Quality Parameters	**EPA 120.1**	*Conductivity*	COND	NA	mg/kg	10	µohms/cm
	EPA 130.2	*Hardness, total*	Hardness	NA	mg/kg	5	mg/L
	EPA 160.1	*Total dissolved solids*	TDS	NA	mg/kg	5	mg/L
	EPA 160.2	*Total suspended solids*	TSS	NA	mg/kg	5	mg/L
	EPA 310.1	*Alkalinity, total(as calcium carbonate)*	ALK	NA	mg/kg	5	mg/L
		Bicarbonate alkalinity	71-52-3	NA	mg/kg	5	mg/L
		Carbonate alkalinity	3812-32-6	NA	mg/kg	5	mg/L
		Hydroxide alkalinity	OH-ALK	NA	mg/kg	5	mg/L
Flashpoint	**EPA 1010**	*Flammables*	NA	TBD	mg/kg	TBD	mg/L
Total Petroleum Hydrocarbons	**EPA 8015**	*Diesel*	64742-46-7	25	mg/kg	0.5	mg/L
		Gasoline	8006-61-9	25	mg/kg	0.5	mg/L
		Grease	68153-81-1	25	mg/kg	0.5	mg/L
		Mineral Spirits	NA	25	mg/kg	0.5	mg/L
White Phosphorus	**EPA 7580M**	*White phosphorus*	12185-10-3	TBD	mg/kg	TBD	mg/L
Methyl Mercury	**EPA 1630**	*Methyl mercury*	22967-92-6	TBD	mg/kg	TBD	mg/L

Notes:

Reporting Limits - Based on laboratory limits for primary laboratory (STL).

Laboratory limits are subject to matrix interferences and may not always be achieved in all samples.

TBD = To be determined by the laboratory prior to sample analysis and submitted for approval.

The laboratory will be instructed to report the top 25 Tentatively Identified Compounds (TICs) under method 8260B and 8270C.

* = Reporting limit for specific radionuclide to be set based on the performance of Co-60

NA = Not applicable

[1] = For polynuclear aromatic hydrocarbons, Method 8270C is the primary analytical method, but Method 8310 may be used if necessary

[2] = Method 3540 for extraction and Method 3640 for cleanup are to be used as appropriate.

Table 7
Analytical Program for Soil and Water Properties
Upper and Lower Ponds Ditches
Former BMI Common Areas

Soil / Water Chemical Property	Analytical Method	Notes	Media
Alkalinity, Total	310.1	as calcium carbonate ($CaCO_3$)	A
Ammonia	350.2	as nitrogen (N)	S, A
Bicarbonate alkalinity	310.1		A
Carbonate alkalinity	310.1		A
Chemical oxygen demand (COD)	410.4		A
Chlorate	300		S, A
Chloride	300		S, A
Conductivity	120.1		A
Cyanide (Total)	335.1/335.2		S, A
Fluoride	300		S, A
Hardness, total	130.2		A
Hydroxide alkalinity	310.1		A
Iodine	345.1		S, A
Nitrate (NO_3)	300.5		S, A
Nitrite (NO_2)	300		S, A
Perchlorate	314	LCS /MS/ MS an option if interferences are present	S, A
pH	150.1/9045C	150.1 for water; 9045C for soils	S, A
Phosphate(s)	300	as orthophosphate	S, A
Sulfate	300		S, A
Sulfide	376.1		S, A
Sulfite	377.1		S, A
Total dissolved solids (TDS)	160.1		A
Total Kjeldahl nitrogen (TKN)	351.2		S, A
Total organic carbon (TOC)	415.1/9060	415.1 for water; 9060 for soils	S, A
Total suspended solids (TSS)	160.2		A
Atterberg limits	ASTM D4318		S
Cation exchange capacity	9081		S
Grain size	ASTM D422		S
Porosity	ASTM D4404		S
Percent moisture	ASTM D2216-98		S
Dry bulk density	ASTM D1188		S
Bulk density	ASTM D3550		S
Specific gravity (particle density)	ASTM D954-00		S

Notes:
A = Aqueous samples
S = Soil samples
ASTM = American Society for Testing and Materials
All methods are USEPA methods unless otherwise specified.

Table 8
Analytical Program for Flux Chamber Sampling
TO-14 / TO-15 Analyte List
Upper and Lower Ponds Ditches
Former BMI Common Areas

Compound	Reporting Limit	Units	MDL	Units
Acetone	5	ppb(v/v)	0.25	ppb(v/v)
Acetonitrile	1	ppb(v/v)	0.25	ppb(v/v)
Acrolein	0.5	ppb(v/v)	0.13	ppb(v/v)
Acrylonitrile	0.5	ppb(v/v)	0.12	ppb(v/v)
alpha-Methylstyrene	0.2	ppb(v/v)	0.079	ppb(v/v)
Benzene	0.2	ppb(v/v)	0.085	ppb(v/v)
Benzyl chloride	0.2	ppb(v/v)	0.077	ppb(v/v)
Bromodichloromethane	0.2	ppb(v/v)	0.07	ppb(v/v)
Bromoform	0.2	ppb(v/v)	0.073	ppb(v/v)
Bromomethane	0.2	ppb(v/v)	0.066	ppb(v/v)
1,3-Butadiene	0.2	ppb(v/v)	0.06	ppb(v/v)
n-Butane	0.2	ppb(v/v)	0.06	ppb(v/v)
1-Butanol	0.5	ppb(v/v)	0.2	ppb(v/v)
2-Butanone (MEK)	0.5	ppb(v/v)	0.18	ppb(v/v)
Carbon disulfide	0.2	ppb(v/v)	0.065	ppb(v/v)
Carbon tetrachloride	0.2	ppb(v/v)	0.083	ppb(v/v)
Chlorobenzene	0.2	ppb(v/v)	0.071	ppb(v/v)
Dibromochloromethane	0.2	ppb(v/v)	0.072	ppb(v/v)
Chlorodifluoromethane	0.2	ppb(v/v)	0.06	ppb(v/v)
Chloroethane	0.2	ppb(v/v)	0.066	ppb(v/v)
Chloroform	0.2	ppb(v/v)	0.062	ppb(v/v)
Chloromethane	0.5	ppb(v/v)	0.051	ppb(v/v)
3-Chloropropene	0.2	ppb(v/v)	0.059	ppb(v/v)
Cyclohexane	0.5	ppb(v/v)	0.093	ppb(v/v)
n-Decane	0.2	ppb(v/v)	0.11	ppb(v/v)
1,2-Dibromoethane (EDB)	0.2	ppb(v/v)	0.076	ppb(v/v)
Dibromomethane	0.2	ppb(v/v)	0.081	ppb(v/v)
1,2-Dichlorobenzene	0.2	ppb(v/v)	0.083	ppb(v/v)
1,3-Dichlorobenzene	0.2	ppb(v/v)	0.083	ppb(v/v)
1,4-Dichlorobenzene	0.2	ppb(v/v)	0.087	ppb(v/v)
Dichlorodifluoromethane	0.2	ppb(v/v)	0.062	ppb(v/v)
1,1-Dichloroethane	0.2	ppb(v/v)	0.075	ppb(v/v)
1,2-Dichloroethane	0.2	ppb(v/v)	0.062	ppb(v/v)
cis-1,2-Dichloroethene	0.2	ppb(v/v)	0.081	ppb(v/v)
trans-1,2-Dichloroethene	0.2	ppb(v/v)	0.04	ppb(v/v)
1,1-Dichloroethene	0.2	ppb(v/v)	0.06	ppb(v/v)
1,2-Dichloropropane	0.2	ppb(v/v)	0.07	ppb(v/v)
cis-1,3-Dichloropropene	0.2	ppb(v/v)	0.066	ppb(v/v)
trans-1,3-Dichloropropene	0.2	ppb(v/v)	0.065	ppb(v/v)
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0.2	ppb(v/v)	0.069	ppb(v/v)
n-Dodecane	1.0	ppb(v/v)	0.2	ppb(v/v)
Ethylbenzene	0.2	ppb(v/v)	0.081	ppb(v/v)
Ethyl ether	0.5	ppb(v/v)	0.14	ppb(v/v)
n-Heptane	0.2	ppb(v/v)	0.074	ppb(v/v)
Hexachlorobutadiene	1.0	ppb(v/v)	0.088	ppb(v/v)
n-Hexane	0.2	ppb(v/v)	0.048	ppb(v/v)
2-Hexanone	0.5	ppb(v/v)	0.16	ppb(v/v)

Table 8
Analytical Program for Flux Chamber Sampling
TO-14 / TO-15 Analyte List
Upper and Lower Ponds Ditches
Former BMI Common Areas

Compound	Reporting Limit	Units	MDL	Units
Cumene	0.2	ppb(v/v)	0.066	ppb(v/v)
Methanol	10	ppb(v/v)	0.41	ppb(v/v)
Methylene chloride	0.5	ppb(v/v)	0.06	ppb(v/v)
4-Methyl-2-pentanone (MIBK)	0.5	ppb(v/v)	0.16	ppb(v/v)
Methyl tert-butyl ether	0.5	ppb(v/v)	0.13	ppb(v/v)
Naphthalene	0.5	ppb(v/v)	0.13	ppb(v/v)
Nonane	0.2	ppb(v/v)	0.089	ppb(v/v)
n-Octane	0.2	ppb(v/v)	0.062	ppb(v/v)
Pentane	0.5	ppb(v/v)	0.056	ppb(v/v)
n-Propylbenzene	0.2	ppb(v/v)	0.078	ppb(v/v)
Styrene	0.2	ppb(v/v)	0.083	ppb(v/v)
1,1,2,2-Tetrachloroethane	0.2	ppb(v/v)	0.077	ppb(v/v)
Tetrachloroethene	0.2	ppb(v/v)	0.085	ppb(v/v)
Toluene	0.2	ppb(v/v)	0.072	ppb(v/v)
1,2,4-Trichlorobenzene	1.0	ppb(v/v)	0.098	ppb(v/v)
1,1,1-Trichloroethane	0.2	ppb(v/v)	0.062	ppb(v/v)
1,1,2-Trichloroethane	0.2	ppb(v/v)	0.083	ppb(v/v)
Trichloroethene	0.2	ppb(v/v)	0.064	ppb(v/v)
Trichlorofluoromethane	0.2	ppb(v/v)	0.068	ppb(v/v)
1,1,2-Trichloro-1,2,2-trifluoroethane	0.2	ppb(v/v)	0.074	ppb(v/v)
1,2,4-Trimethylbenzene	0.2	ppb(v/v)	0.081	ppb(v/v)
1,3,5-Trimethylbenzene	0.2	ppb(v/v)	0.074	ppb(v/v)
n-Undecane	0.2	ppb(v/v)	0.12	ppb(v/v)
Vinyl acetate	0.5	ppb(v/v)	0.12	ppb(v/v)
Vinyl chloride	0.2	ppb(v/v)	0.048	ppb(v/v)
m-Xylene & p-Xylene	0.2	ppb(v/v)	0.068	ppb(v/v)
o-Xylene	0.2	ppb(v/v)	0.072	ppb(v/v)
Surrogates				
4-Bromofluorobenzene	NA	NA	NA	NA
1,2-Dichloroethane-d4	NA	NA	NA	NA
Toluene-d8	NA	NA	NA	NA

Notes:
ppb(v/v) = Parts per billion, volume to volume

N

Las Vegas Wash

CITY OF HENDERSON LANDFILL

ADB-10
1 ft bgs
3.6 mg/kg

ADB-10
5 ft bgs
0.34 mg/kg

PRAD-08
0 ft bgs
1.1 mg/kg

ADB-07
5 ft bgs
0.29 mg/kg

CITY OF HENDERSON BIRD VIEWING PRESERVE

CITY OF HENDERSON WATER RECLAMATION FACILITY

CITY OF HE... NOR...

WESTON HILLS PROPERTY

TUSCANY HILLS PROPERTY

SUNSET ROAD

CITY OF HENDERSON SOUTHERN RIB PONDS

2,000 1,000 0 2,000
Feet

Aroclor Soil Results

- Non-Detect
- < Residential PRG (0.22 mg/kg)
- < Industrial PRG (0.74 mg/kg)
- > Industrial PRG

2005 Alpha Ditch Sampling Location (All < 0.005 mg/kg)

Note: All detected Aroclors within the Eastside Common Areas are either Aroclor 1260 or Aroclor 1254.

BMI Common Areas
Clark County, Nevada

AROCLOR SOIL RESULTS

Basic Remediation COMPANY

Prepared by:	Date	JOB No. 1881425
MWH MKJ	01/17/06	FILE: GIS/BRC/FIGURE_.MXD

ATTACHMENT A

1. Comment 17g Response, it does not appear that there are any chemical standards or toxicological data for the potential metabolites, therefore, it does not appear that there is any way to add these compounds to the SRC and analytical program.

Response: *BRC concurs with the above comment; the SRC list and associated tables present these compounds consistently with this conclusion and no further changes were required.*

2. Comment 29 Response, BRC states **"***The proposed analytical approach is consistent with the overall project DQOs, which focus on the site characterization demonstrating protection of human health and the environment. Because dichlorobiphenyls do not have toxicity criteria or toxicity equivalency factors (TEFs), while toxicity criteria are available for Aroclors, and dichlorobiphenyls are associated with some Aroclors, analysis of Aroclors rather than individual congeners is consistent with the overall project DQOs. The proper USEPA reference is: USEPA. 1996. PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures. National Center for Environmental Assessment, Washington, DC. EPA/600/P– 96/001F."* This response indicates the approach used to analyze for PCBs will be based on Aroclors. However, Table 4 (Item 20) states, "as Aroclors; toxicity data are based on Aroclors, not the individual isomers; Montrose proposes analyzing 12 dichlorobiphenyl isomers - 2,2'- , 2,3- , 2,3'- , 2,4- , 2,4'- , 2,5- , 2,6- , 3,3'- , 3,4- , 3,4'- , 3,5- , and 4,4'-dichlorobiphenyl - the 2,4'- and 4,4'- isomers are 'of the greatest environmental significance based on the World Health Organization list.' See each of the 12 isomers listed (Method 8082)." This statement is in contrast to the response to comment 29 and the isomers (congeners) listed on Table 4 do not match the World Health Organization (WHO) list (see http://www.epa.gov/toxteam/pcbid/tefs.htm). Also, Table 1 and Table 5 contain the major Aroclors. The discrepancy within the SRC should be corrected. One option is to include both Aroclors and the WHO congeners in this document, but indicate that each field/work plan will describe the approach that will be taken and the rationale for using either Aroclors or isomers. There is however a potential for loss of information using an Aroclor only approach. With significant weather the Aroclor pattern changes, making identification of Aroclors difficult. This can potentially result in a report that indicates no Aroclors are present when in fact only a subset of the Aroclor matrix is on-site. Note, the WHO congeners are provided below.

Congener Number	IUPAC Chlorobiphenyl Prefix	1994 WHO TEFs(1)	1997 WHO TEFs(2)		
			Humans/ Mammals	Fish	Birds
PCB-77	3,3',4,4'-Tetra-	0.0005	0.0001	0.0001	0.05
PCB-81	3,4,4',5-Tetra-	--	0.0001	0.0005	0.1
PCB-105	2,3,3',4,4'-Penta-	0.0001	0.0001	<0.000005	0.0001
PCB-114	2,3,4,4',5-Penta-	0.0005	0.0005	<0.000005	0.0001
PCB-118	2,3',4,4',5-Penta-	0.0001	0.0001	<0.000005	0.00001
PCB-123	2,3',4,4',5'-Penta-	0.0001	0.0001	<0.000005	0.00001
PCB-126	3,3',4,4',5-Penta-	0.1	0.1	0.005	0.1
PCB-156	2,3,3',4,4',5-Hexa-	0.0005	0.0005	<0.000005	0.0001

PCB-157	2,3,3',4,4',5'-Hexa-	0.0005	0.0005	<0.000005	0.0001
PCB-167	2,3',4,4',5,5'-Hexa-	0.00001	0.00001	<0.000005	0.00001
PCB-169	3,3',4,4',5,5'-Hexa-	0.01	0.01	0.00005	0.001
PCB-170	2,2',3,3',4,4',5-Hepta-	0.0001	--	--	--
PCB-180	2,2',3,4,4',5,5'-Hepta-	0.00001	--	--	--
PCB-189	2,3,3',4,4',5,5'-Hepta-	0.0001	0.0001	<0.000005	0.00001

1. Ahlborg et al. 1994. Toxic equivalency factors for dioxin-like PCBs: Report on a WHO-ECEH and IPCS consultation, December 1993. Chemosphere, Vol. 28, No. 6, 1049-1067.

2. Van den Berg et al., 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environmental Health Perspectives, 106 (12), 775-792. [http://www.who.int/pcs/docs/dioxin-exec-sum/exe-sum-final.html]

The NDEP requests that both Aroclor and congener analysis be completed. Partial justification is as follows:

- Traditional PCB analytical methods quantify PCBs as the commercial Aroclor mixtures, and the assumption has been that the original congener formulation is retained in the environment. However, individual congeners undergo different physical, chemical, and biological interactions with the environment that alter the congener mixture relative to the original formulation. Congener-specific analysis provides more accurate characterization of weathered, degraded and/or metabolized PCB mixtures (Cicads, 2003).

- Analysis by Aroclor also has the disadvantage of being insensitive to the 4-to-6-chlorine coplanar congeners that are of high potential biological significance in regard to health effects end-points.

- The most appropriate approach is to analyze for individual congeners (Cicads, 2003; USEPA, 2006). Although the USEPA cancer slope factor (SF) for PCBs is based on a rodent bioassay that administered commercial Aroclor mixtures, the USEPA cautions against assessing risk using environmental data only based on Aroclor analysis. The USEPA IRIS (Integrated Risk Information System database) states the following: “although PCB exposures are often characterized in terms of Aroclors, this can be both imprecise and inappropriate, total PCBs or congener or isomer analyses are recommended.” (USEPA, 2006).

- USEPA suggests that “When congener concentrations are available, the slope-factor approach can be supplemented by analysis of dioxin (toxicity equivalencies) TEQs to evaluate dioxin-like toxicity. Risks from dioxin-like [PCB] congeners (evaluated using dioxin TEQs) would be added to risks from the rest of the mixture (evaluated using slope factors applied to total PCBs reduced by the amount of dioxin-like congeners).” (USEPA, 2006).

- PCB dioxin toxicity equivalency factors (TEFs) published by the World Health Organization (WHO: Van den Berg et al., 1998) have been adopted by USEPA and other regulatory agencies.

PCB TEQs are intended to be added to dioxin (TCDD) TEQs and potential health risks are evaluated using the total TCDD TEQ and the TCDD cancer slope factor.

- Based on recommendations by USEPA, ATSDR, WHO, and other regulatory and scientific bodies, it is suggested that both Aroclor and congener-specific analyses be conducted for environmental media of interest at the BMI site and that a site-specific program be formally prepared by qualified experts prior to the initiation of PCB sampling and analysis at the site.

Response: *Attached is a distribution map of Aroclor detections from the Eastside property. BRC proposes to conduct a pilot study in the area where Aroclors have been detected in the Alpha Ditch. The pilot study will include analysis of both Aroclors and PCB-congeners. BRC has added the Montrose list of PCB congeners consisting of 12 compounds (PCB-77, PCB-81, PCB-105, PCB-114, PCB-118,PCB-123, PCB-126, PCB-156, PCB-157, PCB-167, PCB-169, and PCB-189) to the SRC list, to be analyzed for in the analytical program by EPA Method 8082.*

3. Comment 33 Response, this response indicates that 1,4-dioxane will be analyzed via EPA Method 8260. However, the extraction procedure in this method is not specified (purge and trap, azeotrophic or vacuum distillation). If purge and trap is used it is expected that high detection limits (e.g. 80-100 µg/L) would be expected due to the low extraction efficiency with this technique. The detection limit should be evaluated against a risk screening value to determine if a different extraction or analytical method would be required.

Response: *The project team has determined that the risk-screening values for 1,4-dioxane are 6 ug/L (ground water) and 44 mg/kg (soil; EPA Region 9 residential PRGs). As indicated in NDEP's comment, EPA Method 8260 does not typically achieve PQLs for 1,4-dioxane at or below these risk-screening levels. The project laboratory has confirmed that 1,4-dioxane can be analyzed by 8270C, and that the use of this method (as compared to 8260) will provide lower reporting limits. MDL studies indicate that reporting limits could readily be set at levels sufficient to meet the risk-screening levels. The associated SRC tables provided with this response to comments have been revised to reflect this change in analytical methods.*

4. Comment 39 Response, the response to this comment did not explicitly indicate that the laboratory has confirmed that methyl and ethyl carbophenothion co-elute. Also, the response indicates MDL studies have been completed for these two compounds, however this information (MDL study) has not been included in the SRC. Please note that it is acceptable to the NDEP to use carbophenothion as a surrogate for methyl carbophenothion.

Response: *Subsequent to the preliminary discussions regarding these compounds, BRC has determined with laboratory input that it is possible to distinguish methyl and ethyl carbophenothion. In response, the laboratory has established MDLs and reporting limits for both compounds. PQLs are presented in revised Table 6, which is provided with this response to comments. BRC will also provide a supplemental package updating the MDL information for MDLs established since the last submittal. Despite the reporting of each compound individually, as previously discussed, due to lack of toxicity data for methyl carbophenothion, BRC plans to use carbophenothion as a surrogate for methyl carbophenothion in risk assessment.*

5. Comment 53h Response, it is not clear how tetrachlorobenze has been addressed, please provide clarification regarding which isomers have been added to the document and on which table.

Response: *1,2,3,4-Tetrachlorobenzene and 1,2,3,5-tetrachlorobenzene are included in SRC Tables 1 and 3.*

6. Comment 49 Response, the NDEP has discussed the issue of sampling for white phosphorous in a different manner than is proposed in this document. Please update the response to this comment in the revised document.

Response: *As discussed with NDEP, BRC intends to analyze for white phosphorus in samples collected from select locations where it would be most likely to be detected (e.g. from subsurface locations within the former conveyance ditches). This screening process will be discussed in a sampling and analysis plan that will be provided to NDEP under separate cover, apart from the SRC submittal.*

7. Comment 54 Response, it is requested that chlorite be added to the SRC list for completeness.

Response: *In response to NDEP's comment, BRC has added chlorite to the SRC list.*

8. Comment 56 Response, MDL studies are still in progress and have not been completed for a number of both standard and non-standard compounds. The table below lists the MDL status for the non-standard compounds referred to in Attachment A and the status according to Table 6 and Appendix F. Note in several cases Table 6 and Appendix F differ. Table 6 also contains a number of standard compounds that also do not have Laboratory Limit values. MDL studies need to be completed for all SRC compounds so that these can be compared to the appropriate human health or ecological risk value.

Attachment A Response Number	Compound(s)	CAS	Response/Status
21	chloroacetaldehyde	107-20-0	MDL TBD (Table 6) using EPA Method 8315A. Appendix F, Table 5, soil and water MDLs completed.
23, 26	p-chlorobenzethiol and synonym 4-chlorothiophenol	106-54-7	MDL TBD (Table 6) using EPA Method 8270C. Appendix F, Table 4, soil MDL completed
28	2,2'-dichlorobenzil as surrogate for 4,4'-dichlorobenzil	3457-46-3 for 2,2' isomer	MDL TBD (Table 6) using EPA Method 8270C. Appendix F, Table 6, soil and water MDLs completed.
30	dichlorodiphenyl disulfide	1142-19-4	MDL TBD (Table 6) using EPA Method 8270C. Appendix F, Table 4 [Bis(p-chloropheyl)-disulfide] soil MDL completed
31	dichlorodiphenyl sulfone	80-07-9	MDL TBD (Table 6) using EPA Method 8270C, compound listed as bis(p-Chlorophenyl) sulfone. Appendix F, Table 4 (4-Chlorophenyl sulfone), soil MDL completed
34	diphenyl sulfide	139-66-2	MDL TBD (Table 6) using EPA Method 8270C. Appendix F, Table 4 (phenyl sulfide), soil MDL completed
35	diphenyl sulfone	127-63-9	MDL TBD (Table 6) using EPA Method 8270C. Appendix F, Table 4 (phenyl sulfone), soil MDL completed
39	Ethyl and methyl carbophenothion	786-19-6, 953-17-3	MDL TBD (Table 6) using EPA Method 8141A.

Response: *BRC will update the analytical proficiency technical memorandum to reflect the MDLs that have been established since the last submittal.*

9. Summary of Deletions from Table 1, the NDEP has the following comments:
    a. 2,4-D and 2,4-DB, these compounds should be retained on the SRC List based on their historical presence on site and the fact that these compounds are listed as SRCs for the Stauffer site.

Response: *These compounds were detected in certain samples during full suite analysis of historical samples. In response to NDEP's comment, they have been added to the revised Table 1 that is provided with this response to comments. 2,4-D and 2,4-DB are included in Method 8151A (see Table 6), which is part of the broad suite of analyses being performed for the project.*

    b. 4-bromophenyl phenyl ether, this compound was historically used as an additive to flame retardants. BRC notes that it has historically been detected on site. Unless BRC has definitive information to suggest that this compound was not used in flame retardants on site it should be retained as an SRC.

Response: *In response to NDEP's comment, 4-bromophenyl phenyl ether has been retained as an SRC. It is included in Method 8270C (see Table 6), which is part of the broad suite of analyses being performed for the project.*

    c. Benzo(b&k)fluoranthene, BRC references lines #140 and #142 in Table 1. This is incorrect, the reference should be to lines #139 and #141. This type of error is repeated throughout this Summary of Deletions and should be corrected.

Response: *BRC regrets any confusion associated with typographical errors in the Summary of Deletions presentation. As discussed with NDEP, the final SRC submittal consists of the numbered Tables 1 through 8. A revised Summary of Deletions will not be included.*

    d. Sodium potassium, BRC states that this is not a compound. This compound is associated with the TIMET site and is included in their SRC document.

Response: *Regardless of the presence of "sodium potassium" in TIMET's SRC list, BRC reiterates that there is no compound by this name. According to TIMET, this entry refers to a cooling alloy. This chemical mixture is already included in Table 4 (#102; Chemical Families and Mixtures) as such. Impacts due to its use would be assessed using the results of sodium and potassium analyses, which are already included in the analytical program (Table 6).*

    e. There are a number of compounds that BRC has proposed to remove from the SRC list, however, BRC has indicated that these compounds will be addressed by the full suite analysis. Since these compounds have been detected on site previously and will be included in the full suite analysis, BRC should retain these compounds on the SRC list. Additional justification is provided below (from *Hawley's Condensed Chemical Dictionary*, as well as a variety of websites). Herbicides are a sub-set of the chemicals listed below and it should be noted that herbicides were likely used at the site by a variety of companies for weed control and should thus be retained on the SRC list.

i. Acetonitrile – this compound is reported to be a solvent; solvents are used in the BMI Complex.
ii. Acetophenone – this compound is reported to be used in organic synthesis (which occurred in the BMI Complex).
iii. Butylbenzyl phthalate – this compound in reported to be an organic intermediate; organic compounds were produced at the BMI Complex.
iv. Chlordane, gamma – this compound is reported to be a pesticide, pesticides were produced at the BMI Complex.
v. Dicamba – this is a herbicide.
vi. Dimethyl phthalate – this compound is reported to be related to pesticides, pestcides were produced at the BMI Complex.
vii. Dinsoseb – this is a herbicide.
viii. Endrin ketone – this compound is reported to be related to pesticides, pestcides were produced at the BMI Complex.
ix. Ethane – this compound is reported to be associated with refrigerants and fuels and may be associated with any number of historic operations.
x. Ethylene – this compound is reported to be a degradation byproduct of other SRCs.
xi. Heptachlor – this compound is reported to be related to pesticides, pestcides were produced at the BMI Complex.
xii. MCPP – this is a herbicide.
xiii. Methane – this compound is reported to be a degradation byproduct of other SRCs.
xiv. n-nitroso-di-n-propylamine – this compound is reported to be a research chemical.
xv. o-cresol – this compound is related to coal tars, coal tars are likely associated with some aspects of site operations (e.g.: the railroads, roofing materials, paving, etc.)
xvi. p-chloroaniline – this compound is reported to be related to the production of agricultural chemicals; agricultural chemicals were produced at the BMI Complex.
xvii. Silvex – this is a herbicide.

Response: *In response to NDEP's comment, the above-listed compounds have been added back into the SRC list and associated tables. It should be noted that ethane, ethylene, and methane are gases, and can be analyzed only in aqueous samples. The remaining compounds are included in the full suite analyses already planned for the project.*

10. Table 4, to be noted for the administrative record, Table 4 is intended to be four pages. The footer on this table is incorrect, please provide a corrected table.

Response: *The footer information on the above-referenced table has been corrected in the revised table provided with this response to comments.*

11. Table 6, the NDEP has the following comments:
    a. The information in this table for Lead-211, Thallium-207 and 227 is incomplete.
    b. Calcium carbonate is included in the compound list of EPA Method 310.1. This method measures alkalinity (as calcium carbonate) but does not measure calcium carbonate, therefore it is unclear why $CaCO_3$ is included here.
    c. Many of the compounds listed in table 6 have a Laboratory Limit of "TBD". Please note that the sensitivity of the method needs to meet the appropriate Human Health or Ecological Risk value, if possible.

Response: *a. BRC assumes that the third radionuclide referenced in NDEP's comment is Thorium-227. The CAS numbers that were missing for Lead-211 and Thallium-207 have been provided in the revised Table 6 provided with this response to comments letter. Updated reporting limits are also presented for these three radionuclides as well as the other radionuclides for which "TBD" was included in the prior version of this table.*
b. NDEP's comment is correct - EPA Method 310.1 measures alkalinity (as calcium carbonate), not calcium carbonate. The calcium carbonate entry in Table 6 under this method has been removed in the revised table provided with this response to comments.
c. The revised table provided with this response to comments includes updated reporting limit information. BRC's evaluation of data adequacy will include assessment of whether these reporting limits meet the appropriate Human Health and Ecological Risk-Based screening values.

12. Appendix E, the NDEP has the following comment: the memorandum in Appendix E describes seven major topics related to the use of neat compounds to prepare standards for analytical methods. These seven topics, Stability, Solubility, Extraction Efficiency, Adsorption, Chemical Reactions, Chromatographic Performance, and Potential Breakdown are not unique to the use of neat compounds but are applicable in most method development work. Standard traceability, certification, and conformation (e.g. second source) are valid issues with neat compounds. However, the precedence for using neat standards under this SRC List and Analytical Program has already been set. Alpha Analytical Inc.'s Standard Operating Procedure for the Determination of Organic Acids by HPLC requires the use of neat compounds to prepare calibration and confirmation standards. If there were no sources for the compounds of interest in a neat form, this would certainly prohibit the development of an analytical method. However, if there are sources for the compounds of interest, method development should be considered. The seven topics (along with other QA parameters) listed in Appendix E would then need to be evaluated for each compound. Also, Appendix E states, "If these compounds are routinely reported as TICs during the Closure process at concentrations that could appreciably affect risk estimates, method development could be considered." Detection of compounds via TICs provides minimal if any quantitative (e.g. concentration) information. Thus, if these compounds are found using the TIC method, the affect on risk would include a qualitative discussion. The use of TIC analysis is clearly the most expedient method to proceed with in this program, however method development should not be ruled out based on the need to use neat compounds. Please note that this comment also applies to the applicable BRC responses in the RTC letter (including but not limited to: Comment 25 Response, and Comment 42 Response)

Response: *BRC concurs with NDEP's conclusion that the use of TIC analysis is appropriate, and agrees to retain consideration of method development using neat compounds, if circumstances warrant it.*

ADDITIONAL REVISIONS

In addition to the specific revisions noted in the response to comments, the project team updated Table 6 with the laboratories' current reporting limits for the proposed analyte list. During this process, the following additional revisions were made:

1. *The approach for evaluating chloral hydrate has been changed. Method 551.1 was previously proposed as an analytical method appropriate for this compound. However, BRC subsequently determined that this method is applicable to aqueous samples only. Furthermore, none of the project laboratories currently have the capability of analyzing for this compound by this method, and chloral hydrate is considered a "poor responder" in terms of extraction efficiency. STL has confirmed that chloral hydrate is in their MS library and can be seen as a TIC, if present, in either solid or aqueous samples. BRC therefore plans to evaluate for the presence of this compound using TIC reporting, and to consider subsequent method development if it is consistently reported in the Site samples.*

2. *After conferring with multiple radiochemical laboratories, the analytical methods now planned for radionuclides have been revised from what was previously included in the analytical program (see Tables 1 and 6). As discussed with NDEP, Th-229 and U-232 are tracer radionuclides included in analysis for QA/QC purposes, and have been removed from the SRC list and analytical program (see Tables 1, 5 and 6, respectively) and added to the list of chemicals not included in the analytical program (Table 2).*

3. *BRC has determined that ethanol is amenable to either 8015 or 8260 analysis. After confirming that method 8260 would provide lower reporting limits, this analytical method has been selected for the project analytical program.*

Basic Remediation
COMPANY

Transmittal

To: Brian Rakvica ***Date:*** **2/9/06**

From: Ron Sahu
Director of Environmental Services

Company: NDEP
1771 E. Flamingo Road, Suite 121-A
Las Vegas, Nevada 89119

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BRC FINAL SITE RELATED CHEMICALS AND BRC'S RTC (1 DISK)

Comments: Brian, attached are (2) hard copies and (1) disk of the BRC Final Site Related Chemicals (SCR), Tables, and our RTC document.

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