Application

Kennecott
Eagle Minerals

Humboldt Mill

Mining Permit Application
Volume IIB

Environmental Impact Assessment
Appendix B-1 continued (2 of 5)

Project I.D.: 06W003

Kennecott Eagle Minerals Company
Ishpeming, Michigan

December 2008

Foth

Appendix A

Historical Data

A-1

Historical Soil Results

Historical Soil Results

Event Date	Parameter	Units	Data Level	10th 75 Ton Pile	11th 75 Ton Pile	12th 75 Ton Pile	13th 75 Ton Pile	14th 75 Ton Pile	9th 75 Ton Pile	Background soils	D_E_	D_W_1	H_O_W_	Humboldt Piles Composite	MW-106	PCB-4	PL-1	PL-10	PL-11	PL-12	PL-2	PL-3	PL-4	PL-5	PL-6	PL-7	PL-8	PL-9	SB-1 SW	SB-1"	SB-1	SB-1'	SB-10"	SB-2"	SB-2	SB-2'	SB-2EW	SB-3"	SB-3
1/13/1992	**VOC**																																					
	1,2,4-Trimethylbenzene	ug/Kg	Tier 3																																			
	1,3,5-Trimethylbenzene	ug/Kg	Tier 3																																			
	Benzene	ug/kg	Tier 1																																			
	Benzene	ug/kg	Tier 3																																			
	Ethylbenzene	ug/kg	Tier 1																																			
	Ethylbenzene	ug/kg	Tier 3																																			
	Methyl T-Butyl ether	ug/kg	Tier 3																																			
	Toluene	ug/kg	Tier 1																																			
	Toluene	ug/kg	Tier 3																																			
	TVAH	ug/kg	Tier 3																																			
	Xylenes	ug/kg	Tier 1																																			
	Xylenes	ug/kg	Tier 3																																			
	PAH																																					
	1-Methyl-naphthalene	ug/kg	Tier 3																																			
	2-Methyl naphthalene	ug/kg	Tier 3																																			
	Acenaphthene	ug/kg	Tier 1																																			
	Acenaphthene	ug/kg	Tier 3																																			
	Acenaphthylene	ug/kg	Tier 1																																			
	Acenaphthylene	ug/kg	Tier 3																																			
	Anthracene	ug/kg	Tier 1																																			
	Anthracene	ug/kg	Tier 3																																			
	Benzo (a) anthracene	ug/kg	Tier 1																																			
	Benzo (a) anthracene	ug/kg	Tier 3																																			
	Benzo (a) pyrene	ug/kg	Tier 1																																			
	Benzo (a) pyrene	ug/kg	Tier 3																																			
	Benzo (b) Fluoranthene	ug/kg	Tier 1																																			
	Benzo (b) Fluoranthene	ug/kg	Tier 3																																			
	Benzo (g,h,i) perylene	ug/kg	Tier 1																																			
	Benzo (g,h,i) perylene	ug/kg	Tier 3																																			
	Benzo (k) Fluoranthene	ug/kg	Tier 1																																			
	Benzo (k) Fluoranthene	ug/kg	Tier 3																																			
	Chrysene	ug/kg	Tier 1																																			
	Chrysene	ug/kg	Tier 3																																			
	Dibenzo (a,h) anthracene	ug/kg	Tier 1																																			
	Dibenzo (a,h) anthracene	ug/kg	Tier 3																																			
	Fluoranthene	ug/kg	Tier 1																																			
	Fluoranthene	ug/kg	Tier 3																																			
	Fluorene	ug/kg	Tier 1																																			
	Fluorene	ug/kg	Tier 3																																			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 1																																			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 3																																			
	Naphthalene	ug/kg	Tier 1																																			
	Naphthalene	ug/kg	Tier 3																																			
	Phenanthrene	ug/kg	Tier 1																																			
	Phenanthrene	ug/kg	Tier 3																																			
	Pyrene	ug/kg	Tier 1																																			
	Pyrene	ug/kg	Tier 3																																			
3/31/1992	**VOC**																																					
	Benzene	ug/kg	Tier 2	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U																													
	Ethylbenzene	ug/kg	Tier 2	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U																													
	Toluene	ug/kg	Tier 2	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U																													
	Xylenes	ug/kg	Tier 2	<30 U	<30 U	<30 U	<30 U	<30 U	<30 U																													
	VOC-PAH																																					
	Acenaphthene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Acenaphthylene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Anthracene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Benzo (a) anthracene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Benzo (a) pyrene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Benzo (b) Fluoranthene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Benzo (g,h,i) perylene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Benzo (k) Fluoranthene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Chrysene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Dibenzo (a,h) anthracene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Fluoranthene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Fluorene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Naphthalene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													
	Phenanthrene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																													

Event Date	Parameter	Units	Data Level	10th 75 Ton Pile	11th 75 Ton Pile	12th 75 Ton Pile	13th 75 Ton Pile	14th 75 Ton Pile	9th 75 Ton Pile	Background soils	D_E_	D_W_1	H_O_W_	Humboldt Piles Composite	MW-106	PCB-4	PL-1	PL-10	PL-11	PL-12	PL-2	PL-3	PL-4	PL-5	PL-6	PL-7	PL-8	PL-9	SB-1 SW	SB-1"	SB-1	SB-1'	SB-10"	SB-2"	SB-2	SB-2'	SB-2EW	SB-3"	SB-3
	Pyrene	ug/kg	Tier 2	<330 U	<330 U	<330 U	<330 U	<330 U	<330 U																														
10/23/1995	**Metal**																																					
	Arsenic	mg/kg	Tier 3																																			
	Barium	mg/kg	Tier 3																																			
	Cadmium	mg/kg	Tier 1																																			
	Cadmium	mg/kg	Tier 3																																			
	Chromium	mg/kg	Tier 1																																			
	Chromium	mg/kg	Tier 3																																			
	Copper	mg/kg	Tier 3																																			
	Iron	mg/kg	Tier 3																																			
	Lead	mg/kg	Tier 1																																			
	Lead	mg/kg	Tier 3																																			
	Manganese	mg/kg	Tier 3																																			
	Mercury	mg/kg	Tier 3																																			
	Nickel	mg/kg	Tier 3																																			
	Selenium	mg/kg	Tier 3																																			
	Silver	mg/kg	Tier 3																																			
	Zinc	mg/kg	Tier 3																																			
	PCBs																																					
	Aroclor-1016	ug/kg	Tier 1																																			
	Aroclor-1221	ug/kg	Tier 1																																			
	Aroclor-1232	ug/kg	Tier 1																																			
	Aroclor-1242	ug/kg	Tier 1																																			
	Aroclor-1248	ug/kg	Tier 1																																			
	Aroclor-1254	ug/kg	Tier 1																																			
	Aroclor-1260	ug/kg	Tier 1																																			
	Aroclor-1262	ug/kg	Tier 1																																			
	Aroclor-1268	ug/kg	Tier 1																																			
	Physical Property																																					
	Percent Solids	%	Tier 1																																			
	VOC																																					
	1,1,1-Trichloroethane	ug/kg	Tier 1																																			
	1,1,2,2-Tetrachloroethane	ug/kg	Tier 1																																			
	1,1,2-Trichloroethane	ug/kg	Tier 1																																			
	1,1-Dichloroethene	ug/kg	Tier 1																																			
	1,2,4-Trimethylbenzene	ug/Kg	Tier 3																																			
	1,2-Dichlorobenzene	ug/kg	Tier 1																																			
	1,2-Dichloroethane	ug/kg	Tier 1																																			
	1,2-Dichloropropane	ug/kg	Tier 1																																			
	1,3,5-Trimethylbenzene	ug/Kg	Tier 3																																			
	1,3-Dichlorobenzene	ug/kg	Tier 1																																			
	1,3-Dichloropropene	ug/kg	Tier 1																																			
	1,4-Dichlorobenzene	ug/kg	Tier 1																																			
	2-Chloroethyl Vinyl Ether	ug/kg	Tier 1																																			
	Benzene	ug/kg	Tier 3												<10 U																							
	Bromodichloromethane	ug/kg	Tier 1																																			
	Bromoform	ug/kg	Tier 1																																			
	Bromomethane	ug/kg	Tier 1																																			
	Carbon Tetrachloride	ug/kg	Tier 1																																			
	Chlorobenzene	ug/kg	Tier 1																																			
	Chlorodibromomethane	ug/kg	Tier 1																																			
	Chloroethane	ug/kg	Tier 1																																			
	Chloroform	ug/kg	Tier 1																																			
	Chloromethane	ug/kg	Tier 1																																			
	Dichlorodifluoromethane	ug/kg	Tier 1																																			
	Ethylbenzene	ug/kg	Tier 1																																			
	Ethylbenzene	ug/kg	Tier 3												<10 U																							
	Fluorotrichloromethane	ug/Kg	Tier 1																																			
	Methyl T-Butyl ether	ug/kg	Tier 3																																			
	Methylene Chloride	ug/kg	Tier 1																																			
	t-1,3-Dichloropropene	ug/kg	Tier 1																																			
	Tetrachloroethene	ug/kg	Tier 1																																			
	Toluene	ug/kg	Tier 1																																			
	Toluene	ug/kg	Tier 3												<10 U																							
	trans-1,2-Dichloroethene	ug/kg	Tier 1																																			
	Trichloroethene	ug/kg	Tier 1																																			
	TVAH	ug/kg	Tier 3																																			
	Vinyl Chloride	ug/kg	Tier 1																																			
	Xylenes	ug/kg	Tier 1																																			

Historical Soil Results

Event Date	Parameter	Units	Data Level	10th 75 Ton Pile	11th 75 Ton Pile	12th 75 Ton Pile	13th 75 Ton Pile	14th 75 Ton Pile	9th 75 Ton Pile	Background soils	D_E_	D_W_1	H_O_W_	Humboldt Piles Composite	MW-106	PCB-4	PL-1	PL-10	PL-11	PL-12	PL-2	PL-3	PL-4	PL-5	PL-6	PL-7	PL-8	PL-9	SB-1 SW	SB-1"	SB-1	SB-1'	SB-10"	SB-2"	SB-2	SB-2'	SB-2EW	SB-3"	SB-3
	Xylenes	ug/kg	Tier 3												<30 U																								
	VOC-PAH																																						
	1-Methyl-naphthalene	ug/kg	Tier 3																																				
	2-Methyl naphthalene	ug/kg	Tier 3																																				
	Acenaphthene	ug/kg	Tier 3												<330 U																								
	Acenaphthylene	ug/kg	Tier 1																																				
	Acenaphthylene	ug/kg	Tier 3												<330 U																								
	Anthracene	ug/kg	Tier 1																																				
	Anthracene	ug/kg	Tier 3												<330 U																								
	Benzo (a) anthracene	ug/kg	Tier 3												<330 U																								
	Benzo (a) pyrene	ug/kg	Tier 1																																				
	Benzo (a) pyrene	ug/kg	Tier 3												<330 U																								
	Benzo (b) Fluoranthene	ug/kg	Tier 1																																				
	Benzo (b) Fluoranthene	ug/kg	Tier 3												<330 U																								
	Benzo (g,h,i) perylene	ug/kg	Tier 1																																				
	Benzo (g,h,i) perylene	ug/kg	Tier 3												<330 U																								
	Benzo (k) Fluoranthene	ug/kg	Tier 1																																				
	Benzo (k) Fluoranthene	ug/kg	Tier 3												<330 U																								
	Chrysene	ug/kg	Tier 3												<330 U																								
	Dibenzo (a,h) anthracene	ug/kg	Tier 1																																				
	Dibenzo (a,h) anthracene	ug/kg	Tier 3												<330 U																								
	Fluoranthene	ug/kg	Tier 1																																				
	Fluoranthene	ug/kg	Tier 3												<330 U																								
	Fluorene	ug/kg	Tier 1																																				
	Fluorene	ug/kg	Tier 3												<330 U																								
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 1																																				
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 3												<330 U																								
	Naphthalene	ug/kg	Tier 1																																				
	Naphthalene	ug/kg	Tier 3												<330 U																								
	Phenanthrene	ug/kg	Tier 1																																				
	Phenanthrene	ug/kg	Tier 3												<330 U																								
	Pyrene	ug/kg	Tier 3												<330 U																								
10/24/1995	**Field**																																						
	pH	S.U.	Tier 2																																				
	Metal																																						
	Arsenic - TCLP	mg/L	Tier 2																																				
	Barium - TCLP	mg/L	Tier 2																																				
	Cadmium	mg/kg	Tier 1																																				
	Cadmium	mg/kg	Tier 2												<0.00005 U																								
	Cadmium - TCLP	mg/L	Tier 2																																				
	Chromium	mg/kg	Tier 1																																				
	Chromium	mg/kg	Tier 2												0.011																								
	Chromium, total - TCLP	mg/L	Tier 2																																				
	Copper - TCLP	mg/L	Tier 2																																				
	Iron - TCLP	mg/L	Tier 2																																				
	Lead	mg/kg	Tier 1																																				
	Lead	mg/kg	Tier 2												0.0036																								
	Lead - TCLP	mg/L	Tier 2																																				
	Manganese - TCLP	mg/L	Tier 2																																				
	Mercury - TCLP	mg/L	Tier 2																																				
	Nickel - TCLP	mg/L	Tier 2																																				
	Selenium - TCLP	mg/L	Tier 2																																				
	Silver - TCLP	mg/L	Tier 2																																				
	Zinc - TCLP	mg/L	Tier 2																																				
	PCBs																																						
	Aroclor-1016	ug/kg	Tier 2												<330 U																								
	Aroclor-1221	ug/kg	Tier 2												<330 U																								
	Aroclor-1232	ug/kg	Tier 2												<330 U																								
	Aroclor-1242	ug/kg	Tier 2												<330 U																								
	Aroclor-1248	ug/kg	Tier 2												<330 U																								
	Aroclor-1254	ug/kg	Tier 2												<330 U																								
	Aroclor-1260	ug/kg	Tier 2												<330 U																								
	Aroclor-1262	ug/kg	Tier 2												<330 U																								
	Aroclor-1268	ug/kg	Tier 2												<330 U																								
	Physical Property																																						
	Cyanide, total	mg/kg	Tier 2																																				
	Percent Solids	%	Tier 1																																				
	Percent Solids	%	Tier 2												92.9																								
	VOC																																						

Historical Soil Results

Event Date	Parameter	Units	Data Level	10th 75 Ton Pile	11th 75 Ton Pile	12th 75 Ton Pile	13th 75 Ton Pile	14th 75 Ton Pile	9th 75 Ton Pile	Background soils	D_E_	D_W_1	H_O_W_	Humboldt Piles Composite	MW-106	PCB-4	PL-1	PL-10	PL-11	PL-12	PL-2	PL-3	PL-4	PL-5	PL-6	PL-7	PL-8	PL-9	SB-1 SW	SB-1"	SB-1	SB-1'	SB-10"	SB-2"	SB-2	SB-2'	SB-2EW	SB-3"	SB-3
	1,1,1-Trichloroethane	ug/kg	Tier 1																																			
	1,1,1-Trichloroethane	ug/kg	Tier 2												<10 U																							
	1,1,2,2-Tetrachloroethane	ug/kg	Tier 1																																			
	1,1,2,2-Tetrachloroethane	ug/kg	Tier 2												<10 U																							
	1,1,2-Trichloroethane	ug/kg	Tier 1																																			
	1,1,2-Trichloroethane	ug/kg	Tier 2												<10 U																							
	1,1-Dichloroethane	ug/kg	Tier 2												<10 U																							
	1,1-Dichloroethene	ug/kg	Tier 1																																			
	1,1-Dichloroethene	ug/kg	Tier 2												<10 U																							
	1,2-Dichlorobenzene	ug/kg	Tier 2												<10 U																							
	1,2-Dichloroethane	ug/kg	Tier 1																																			
	1,2-Dichloroethane	ug/kg	Tier 2												<10 U																							
	1,2-Dichloropropane	ug/kg	Tier 1																																			
	1,2-Dichloropropane	ug/kg	Tier 2												<10 U																							
	1,3-Dichlorobenzene	ug/kg	Tier 2												<10 U																							
	1,3-Dichloropropene	ug/kg	Tier 1																																			
	1,3-Dichloropropene	ug/kg	Tier 2												<10 U																							
	1,4-Dichlorobenzene	ug/kg	Tier 2												<10 U																							
	2-Chloroethyl Vinyl Ether	ug/kg	Tier 1																																			
	2-Chloroethyl Vinyl Ether	ug/kg	Tier 2												<10 U																							
	Benzene	ug/kg	Tier 2												<10 U																							
	Bromodichloromethane	ug/kg	Tier 1																																			
	Bromodichloromethane	ug/kg	Tier 2												<10 U																							
	Bromoform	ug/kg	Tier 1																																			
	Bromoform	ug/kg	Tier 2												<10 U																							
	Bromomethane	ug/kg	Tier 1																																			
	Bromomethane	ug/kg	Tier 2												<10 U																							
	Carbon Tetrachloride	ug/kg	Tier 1																																			
	Carbon Tetrachloride	ug/kg	Tier 2												<10 U																							
	Chlorobenzene	ug/kg	Tier 1																																			
	Chlorobenzene	ug/kg	Tier 2												<10 U																							
	Chlorodibromomethane	ug/kg	Tier 1																																			
	Chlorodibromomethane	ug/kg	Tier 2												<10 U																							
	Chloroethane	ug/kg	Tier 1																																			
	Chloroethane	ug/kg	Tier 2												<10 U																							
	Chloroform	ug/kg	Tier 1																																			
	Chloroform	ug/kg	Tier 2												<10 U																							
	Chloromethane	ug/kg	Tier 1																																			
	Chloromethane	ug/kg	Tier 2												<10 U																							
	Dichlorodifluoromethane	ug/kg	Tier 1																																			
	Dichlorodifluoromethane	ug/kg	Tier 2												<10 U																							
	Ethylbenzene	ug/kg	Tier 2												<10 U																							
	Fluorotrichloromethane	ug/Kg	Tier 1																																			
	Fluorotrichloromethane	ug/Kg	Tier 2												<10 U																							
	Methylene Chloride	ug/kg	Tier 1																																			
	Methylene Chloride	ug/kg	Tier 2												<10 U																							
	t-1,3-Dichloropropene	ug/kg	Tier 1																																			
	t-1,3-Dichloropropene	ug/kg	Tier 2												<10 U																							
	Tetrachloroethene	ug/kg	Tier 1																																			
	Tetrachloroethene	ug/kg	Tier 2												<10 U																							
	Toluene	ug/kg	Tier 2												<10 U																							
	trans-1,2-Dichloroethane	ug/kg	Tier 2												<10 U																							
	trans-1,2-Dichloroethene	ug/kg	Tier 1																																			
	Trichloroethene	ug/kg	Tier 1																																			
	Trichloroethene	ug/kg	Tier 2												<10 U																							
	Vinyl Chloride	ug/kg	Tier 1																																			
	Vinyl Chloride	ug/kg	Tier 2												<10 U																							
	Xylenes	ug/kg	Tier 2												<30 U																							
VOC-PAH																																						
	Acenaphthene	ug/kg	Tier 2												<330 U																							
	Acenaphthylene	ug/kg	Tier 2												<330 U																							
	Anthracene	ug/kg	Tier 2												<330 U																							
	Benzo (a) anthracene	ug/kg	Tier 2												<330 U																							
	Benzo (a) pyrene	ug/kg	Tier 2												<330 U																							
	Benzo (b) Fluoranthene	ug/kg	Tier 2												<330 U																							
	Benzo (g,h,i) perylene	ug/kg	Tier 2												<330 U																							
	Benzo (k) Fluoranthene	ug/kg	Tier 2												<330 U																							
	Chrysene	ug/kg	Tier 2												<330 U																							
	Dibenzo (a,h) anthracene	ug/kg	Tier 2												<330 U																							

Historical Soil Results

Event Date	Parameter	Units	Data Level	10th 75 Ton Pile	11th 75 Ton Pile	12th 75 Ton Pile	13th 75 Ton Pile	14th 75 Ton Pile	9th 75 Ton Pile	Background soils	D_E_	D_W_1	H_O_W_	Humboldt Piles Composite	MW-106	PCB-4	PL-1	PL-10	PL-11	PL-12	PL-2	PL-3	PL-4	PL-5	PL-6	PL-7	PL-8	PL-9	SB-1 SW	SB-1"	SB-1	SB-1'	SB-10"	SB-2"	SB-2	SB-2'	SB-2EW	SB-3"	SB-3
	Fluoranthene	ug/kg	Tier 2												<330 U																								
	Fluorene	ug/kg	Tier 2												<330 U																								
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 2												<330 U																								
	Naphthalene	ug/kg	Tier 2												<330 U																								
	Phenanthrene	ug/kg	Tier 2												<330 U																								
	Pyrene	ug/kg	Tier 2												<330 U																								
10/26/1995	**Metal**																																					
	Arsenic	mg/kg	Tier 3																																			
	Barium	mg/kg	Tier 3																																			
	Cadmium	mg/kg	Tier 3												<0.05 U																								
	Chromium	mg/kg	Tier 3												11																								
	Copper	mg/kg	Tier 3																																			
	Iron	mg/kg	Tier 3																																			
	Lead	mg/kg	Tier 3												3.6																								
	Manganese	mg/kg	Tier 3																																			
	Mercury	mg/kg	Tier 3																																			
	Nickel	mg/kg	Tier 3																																			
	Selenium	mg/kg	Tier 3																																			
	Silver	mg/kg	Tier 3																																			
	Zinc	mg/kg	Tier 3																																			
11/7/1995	**Metal**																																					
	Arsenic	mg/kg	Tier 1																																			
	Barium	mg/kg	Tier 1																																			
	Cadmium	mg/kg	Tier 3																																			
	Chromium	mg/kg	Tier 3																																			
	Copper	mg/kg	Tier 3																																			
	Iron	mg/kg	Tier 1																																			
	Iron	mg/kg	Tier 3																																			
	Lead	mg/kg	Tier 3																																			
	Manganese	mg/kg	Tier 1																																			
	Mercury	mg/kg	Tier 1																																			
	Nickel	mg/kg	Tier 1																																			
	Selenium	mg/kg	Tier 3																																			
	Silver	mg/kg	Tier 1																																			
	Zinc	mg/kg	Tier 1																																			
	PCBs																																					
	Aroclor-1016	ug/kg	Tier 1												<330 U																								
	Aroclor-1221	ug/kg	Tier 1												<330 U																								
	Aroclor-1232	ug/kg	Tier 1												<330 U																								
	Aroclor-1242	ug/kg	Tier 1												<330 U																								
	Aroclor-1248	ug/kg	Tier 1												<330 U																								
	Aroclor-1254	ug/kg	Tier 1												<330 U																								
	Aroclor-1260	ug/kg	Tier 1												<330 U																								
	Aroclor-1262	ug/kg	Tier 1												<330 U																								
	Aroclor-1268	ug/kg	Tier 1												<330 U																								
	Physical Property																																					
	Cyanide, total	mg/kg	Tier 1																																			
	Percent Solids	%	Tier 1												85.1																								
	VOC																																					
	1,1,1-Trichloroethane	ug/kg	Tier 1																																			
	1,1,2,2-Tetrachloroethane	ug/kg	Tier 1																																			
	1,1,2-Trichloroethane	ug/kg	Tier 1																																			
	1,1-Dichloroethene	ug/kg	Tier 1																																			
	1,2-Dichlorobenzene	ug/kg	Tier 1																																			
	1,2-Dichloroethane	ug/kg	Tier 1																																			
	1,2-Dichloropropane	ug/kg	Tier 1																																			
	1,3-Dichlorobenzene	ug/kg	Tier 1																																			
	1,3-Dichloropropene	ug/kg	Tier 1																																			
	1,4-Dichlorobenzene	ug/kg	Tier 1																																			
	2-Chloroethyl Vinyl Ether	ug/kg	Tier 1																																			
	Benzene	ug/kg	Tier 1																																			
	Bromodichloromethane	ug/kg	Tier 1																																			
	Bromoform	ug/kg	Tier 1																																			
	Bromomethane	ug/kg	Tier 1																																			
	Carbon Tetrachloride	ug/kg	Tier 1																																			
	Chlorobenzene	ug/kg	Tier 1																																			
	Chlorodibromomethane	ug/kg	Tier 1																																			
	Chloroethane	ug/kg	Tier 1																																			
	Chloroform	ug/kg	Tier 1																																			

Historical Soil Results

Event Date	Parameter	Units	Data Level	10th 75 Ton Pile	11th 75 Ton Pile	12th 75 Ton Pile	13th 75 Ton Pile	14th 75 Ton Pile	9th 75 Ton Pile	Background soils	D_E_	D_W_1	H_O_W_	Humboldt Piles Composite	MW-106	PCB-4	PL-1	PL-10	PL-11	PL-12	PL-2	PL-3	PL-4	PL-5	PL-6	PL-7	PL-8	PL-9	SB-1 SW	SB-1"	SB-1	SB-1'	SB-10"	SB-2"	SB-2	SB-2'	SB-2EW	SB-3"	SB-3
	Chloromethane	ug/kg	Tier 1																																			
	Dichlorodifluoromethane	ug/kg	Tier 1																																			
	Ethylbenzene	ug/kg	Tier 1																																			
	Fluorotrichloromethane	ug/Kg	Tier 1																																			
	Methylene Chloride	ug/kg	Tier 1																																			
	t-1,3-Dichloropropene	ug/kg	Tier 1																																			
	Tetrachloroethene	ug/kg	Tier 1																																			
	Toluene	ug/kg	Tier 1																																			
	trans-1,2-Dichloroethene	ug/kg	Tier 1																																			
	Trichloroethene	ug/kg	Tier 1																																			
	Vinyl Chloride	ug/kg	Tier 1																																			
	Xylenes	ug/kg	Tier 1																																			
	VOC-PAH																																					
	Acenaphthene	ug/kg	Tier 1																																			
	Acenaphthylene	ug/kg	Tier 1																																			
	Anthracene	ug/kg	Tier 1																																			
	Benzo (a) anthracene	ug/kg	Tier 1																																			
	Benzo (a) pyrene	ug/kg	Tier 1																																			
	Benzo (b) Fluoranthene	ug/kg	Tier 1																																			
	Benzo (g,h,i) perylene	ug/kg	Tier 1																																			
	Benzo (k) Fluoranthene	ug/kg	Tier 1																																			
	Chrysene	ug/kg	Tier 1																																			
	Dibenzo (a,h) anthracene	ug/kg	Tier 1																																			
	Fluoranthene	ug/kg	Tier 1																																			
	Fluorene	ug/kg	Tier 1																																			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 1																																			
	Naphthalene	ug/kg	Tier 1																																			
	Phenanthrene	ug/kg	Tier 1																																			
	Pyrene	ug/kg	Tier 1																																			
8/30/1996	**Metal**																																					
	Arsenic - TCLP	mg/L	Tier 2							<0.001 U				0.01																								
	Barium - TCLP	mg/L	Tier 2							0.11				0.066																								
	Cadmium - TCLP	mg/L	Tier 2							<0.0002 U				0.0049																								
	Chromium, total - TCLP	mg/L	Tier 2							0.017				0.19																								
	Copper - TCLP	mg/L	Tier 2							<0.02 U				1.5																								
	Iron - TCLP	mg/L	Tier 2							0.89				180																								
	Lead - TCLP	mg/L	Tier 2							0.002				0.04																								
	Manganese - TCLP	mg/L	Tier 2							0.06				0.59																								
	Mercury - TCLP	mg/L	Tier 2							<0.0002 U				<0.0002 U																								
	Nickel - TCLP	mg/L	Tier 2							<0.07 U				0.88																								
	Selenium	mg/kg	Tier 2											<0.004 U																								
	Selenium - TCLP	mg/L	Tier 2							<0.004 U																												
	Silver - TCLP	mg/L	Tier 2							<0.0002 U				0.0008																								
	Zinc - TCLP	mg/L	Tier 2							0.07				0.62																								
9/16/1997	**Metal**																																					
	Lead	mg/kg	Tier 3																													3			3			
	VOC																																					
	Benzene	ug/kg	Tier 3																											<5 U				<5 U				<5 U
	Ethylbenzene	ug/kg	Tier 3																											<5 U				<5 U				<5 U
	Toluene	ug/kg	Tier 3																											<5 U				<5 U				<5 U
	TVAH	ug/kg	Tier 3																											ND				ND				ND
	Xylenes	ug/kg	Tier 3																											<5 U				<5 U				<5 U
7/28/1998	**Metal**																																					
	Antimony	mg/kg	Tier 3																										**9**				**21**	4			**4.3**	
	Antimony-SPLP	ug/L	Tier 3																										10				6	3			<2 U	
	Arsenic	mg/kg	Tier 3																										**519**				**435**	**214**			**156**	
	Arsenic - TCLP	mg/L	Tier 3																										0.004				0.005	0.031			<0.002 U	
	Barium	mg/kg	Tier 3																										10.1				897	9.2			6.7	
	Barium - TCLP	mg/L	Tier 3																										0.081				0.083	0.124			0.086	
	Cadmium	mg/kg	Tier 3																										4.03				2.65	1.66			1.46	
	Cadmium - TCLP	mg/L	Tier 3																										0.0074				0.0123	0.0033			0.0075	
	Chromium	mg/kg	Tier 3																										**346**				**1220**	**298**			**210**	
	Chromium - TCLP	mg/L	Tier 3																										<0.005 U				<0.005 U	0.03			<0.005 U	
	Copper	mg/kg	Tier 3																										776				1680	438			378	
	Copper - TCLP	mg/L	Tier 3																										0.011				0.013	1.51			0.005	
	Iron	mg/kg	Tier 3																										**181000**				**178000**	**128000**			**98800**	
	Iron - TCLP	mg/L	Tier 3																										<0.007 U				0.103	48.1			<0.007 U	
	Lead	mg/kg	Tier 3														5.45	3.16	8.44	6.87	1.65	60.9	3.01	15.2	108	3.71	3.46	2.99		**530**			**525**	330			242	
	Lead - TCLP	mg/L	Tier 3																										<0.002 U				0.003	0.011			<0.002 U	

Historical Soil Results

Event Date	Parameter	Units	Data Level	10th 75 Ton Pile	11th 75 Ton Pile	12th 75 Ton Pile	13th 75 Ton Pile	14th 75 Ton Pile	9th 75 Ton Pile	Background soils	D_E_	D_W_1	H_O_W_	Humboldt Piles Composite	MW-106	PCB-4	PL-1	PL-10	PL-11	PL-12	PL-2	PL-3	PL-4	PL-5	PL-6	PL-7	PL-8	PL-9	SB-1 SW	SB-1"	SB-1	SB-1'	SB-10"	SB-2"	SB-2	SB-2'	SB-2EW	SB-3"	SB-3
	Magnesium	mg/kg	Tier 3																											**9190**			**10000**	5800				5040	
	Magnesium - TCLP	mg/L	Tier 3																											18			58.7	6.99				6.77	
	Manganese	mg/kg	Tier 3																											**142**			**1030**	**87.5**				**114**	
	Manganese - TCLP	mg/L	Tier 3																											1			2.7	0.49				0.395	
	Mercury	mg/kg	Tier 3																											0.1			0.1	0.1				0.1	
	Mercury - TCLP	mg/L	Tier 3																											<0.0002 U			<0.0002 U	<0.0002 U				<0.0002 U	
	Nickel	mg/kg	Tier 3																											**780**			**745**	**345**				**330**	
	Nickel - TCLP	mg/L	Tier 3																											0.44			1.11	0.38				0.43	
	Silver	mg/kg	Tier 3																											**41.9**			**904**	**26.7**				**16.1**	
	Silver - TCLP	mg/L	Tier 3																											<0.0005 U			<0.0005 U	0.0006				<0.0005 U	
	Zinc	mg/kg	Tier 3																											140			1050	55				79.6	
	Zinc - TCLP	mg/L	Tier 3																											0.204			0.109	0.608				0.146	
	VOC																																						
	1,2,4-Trimethylbenzene	ug/Kg	Tier 3														<51 U	<55 U	<53 U	<53 U	1800	<54 U	**5600**	<53 U	<57 U	<58 U	<56 U	<58 U											
	1,3,5-Trimethylbenzene	ug/Kg	Tier 3														<51 U	<55 U	<53 U	<53 U	<53 U	<54 U	1300	<53 U	<57 U	<58 U	<56 U	<58 U											
	Benzene	ug/kg	Tier 3														<51 U	<55 U	<53 U	<53 U	<53 U	<54 U	<54 U	<53 U	<57 U	<58 U	<56 U	<58 U											
	Ethylbenzene	ug/kg	Tier 3														<51 U	<55 U	<53 U	<53 U	<53 U	<54 U	80	<53 U	<57 U	<58 U	<56 U	<58 U											
	Methyl T-Butyl ether	ug/kg	Tier 3														<51 U	<55 U	<53 U	<53 U	<53 U	<54 U	<54 U	<53 U	<57 U	<58 U	<56 U	<58 U											
	Toluene	ug/kg	Tier 3														<51 U	<55 U	<53 U	<53 U	<53 U	<54 U	<54 U	<53 U	<57 U	<58 U	<56 U	<58 U											
	TVAH	ug/kg	Tier 3																			0																	
	Xylenes	ug/kg	Tier 3														<51 U	<55 U	<53 U	<53 U	980	<54 U	500	<53 U	<57 U	<58 U	<56 U	<58 U											
	VOC-PAH																																						
	1-Methyl-naphthalene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	4800	<220 U	12000	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	2-Methyl naphthalene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	5900	<220 U	22000	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Acenaphthene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	3900	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Acenaphthylene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Anthracene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	14000	<220 U	**100000**	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Benzo (a) anthracene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	240	5000	<210 U	260	<230 U	<230 U	<230 U	<210 U								<210 U		
	Benzo (a) pyrene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Benzo (b) Fluoranthene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Benzo (g,h,i) perylene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Benzo (k) Fluoranthene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Chrysene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Dibenzo (a,h) anthracene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Fluoranthene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Fluorene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	8800	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Naphthalene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	2900	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		
	Phenanthrene	ug/kg	Tier 3														390	<220 U	<210 U	<210 U	19000	830	**110000**	<210 U	320	<230 U	260	<230 U	<210 U								<210 U		
	Pyrene	ug/kg	Tier 3														<200 U	<220 U	<210 U	<210 U	<2100 U	<220 U	<2200 U	<210 U	<230 U	<230 U	<230 U	<230 U	<210 U								<210 U		

Historical Soil Results

Event Date	Parameter	Units	Data Level	SB-3'	SB-3WW	SB-4"	SB-4	SB-4'	SB-4NW	SB-5"	SB-5	SB-5'	SB-5WF	SB-6"	SB-6	SB-6'	SB-6EF	SB-7"	SB-8"	SB-9"	Scale #1	Stockpile	TP-17	TP-34	WO-100	WO-101	WO-102	WO-104	Drinking Water Protection[1]	Drinking Water Protection Code	SPLP Criteria	TCLP Criteria
1/13/1992	**VOC**																															
	1,2,4-Trimethylbenzene	ug/Kg	Tier 3																										2100			
	1,3,5-Trimethylbenzene	ug/Kg	Tier 3																										1800			
	Benzene	ug/kg	Tier 1				<10 U				<10 U																		100			
	Benzene	ug/kg	Tier 3				<10 U				<10 U																		100			
	Ethylbenzene	ug/kg	Tier 1				<10 U				<10 U																		1500			
	Ethylbenzene	ug/kg	Tier 3				<10 U				<10 U																		1500			
	Methyl T-Butyl ether	ug/kg	Tier 3																										800			
	Toluene	ug/kg	Tier 1				<10 U				<10 U																		16000			
	Toluene	ug/kg	Tier 3				<10 U				<10 U																		16000			
	TVAH	ug/kg	Tier 3																													
	Xylenes	ug/kg	Tier 1				<30 U				<30 U																		5600			
	Xylenes	ug/kg	Tier 3				<30 U				<30 U																		5600			
	PAH																															
	1-Methyl-naphthalene	ug/kg	Tier 3																													
	2-Methyl naphthalene	ug/kg	Tier 3																										57000			
	Acenaphthene	ug/kg	Tier 1				<330 U				<330 U																		300000			
	Acenaphthene	ug/kg	Tier 3				<330 U				<330 U																		300000			
	Acenaphthylene	ug/kg	Tier 1				<330 U				<330 U																		5900			
	Acenaphthylene	ug/kg	Tier 3				<330 U				<330 U																		5900			
	Anthracene	ug/kg	Tier 1				<330 U				<330 U																		41000			
	Anthracene	ug/kg	Tier 3				<330 U				<330 U																		41000			
	Benzo (a) anthracene	ug/kg	Tier 1				<330 U				<330 U																					
	Benzo (a) anthracene	ug/kg	Tier 3				<330 U				<330 U																					
	Benzo (a) pyrene	ug/kg	Tier 1				<330 U				<330 U																					
	Benzo (a) pyrene	ug/kg	Tier 3				<330 U				<330 U																					
	Benzo (b) Fluoranthene	ug/kg	Tier 1				<330 U				<330 U																					
	Benzo (b) Fluoranthene	ug/kg	Tier 3				<330 U				<330 U																					
	Benzo (g,h,i) perylene	ug/kg	Tier 1				<330 U				<330 U																					
	Benzo (g,h,i) perylene	ug/kg	Tier 3				<330 U				<330 U																					
	Benzo (k) Fluoranthene	ug/kg	Tier 1				<330 U				<330 U																					
	Benzo (k) Fluoranthene	ug/kg	Tier 3				<330 U				<330 U																					
	Chrysene	ug/kg	Tier 1				<330 U				<330 U																					
	Chrysene	ug/kg	Tier 3				<330 U				<330 U																					
	Dibenzo (a,h) anthracene	ug/kg	Tier 1				<330 U				<330 U																					
	Dibenzo (a,h) anthracene	ug/kg	Tier 3				<330 U				<330 U																					
	Fluoranthene	ug/kg	Tier 1				<330 U				<330 U																		730000			
	Fluoranthene	ug/kg	Tier 3				<330 U				<330 U																		730000			
	Fluorene	ug/kg	Tier 1				<330 U				<330 U																		390000			
	Fluorene	ug/kg	Tier 3				<330 U				<330 U																		390000			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 1				<330 U				<330 U																					
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 3				<330 U				<330 U																					
	Naphthalene	ug/kg	Tier 1				<330 U				<330 U																		35000			
	Naphthalene	ug/kg	Tier 3				<330 U				<330 U																		35000			
	Phenanthrene	ug/kg	Tier 1				<330 U				<330 U																		56000			
	Phenanthrene	ug/kg	Tier 3				<330 U				<330 U																		56000			
	Pyrene	ug/kg	Tier 1				<330 U				<330 U																		480000			
	Pyrene	ug/kg	Tier 3				<330 U				<330 U																		480000			
3/31/1992	**VOC**																															
	Benzene	ug/kg	Tier 2																										100			
	Ethylbenzene	ug/kg	Tier 2																										1500			
	Toluene	ug/kg	Tier 2																										16000			
	Xylenes	ug/kg	Tier 2																										5600			
	VOC-PAH																															
	Acenaphthene	ug/kg	Tier 2																										300000			
	Acenaphthylene	ug/kg	Tier 2																										5900			
	Anthracene	ug/kg	Tier 2																										41000			
	Benzo (a) anthracene	ug/kg	Tier 2																													
	Benzo (a) pyrene	ug/kg	Tier 2																													
	Benzo (b) Fluoranthene	ug/kg	Tier 2																													
	Benzo (g,h,i) perylene	ug/kg	Tier 2																													
	Benzo (k) Fluoranthene	ug/kg	Tier 2																													
	Chrysene	ug/kg	Tier 2																													
	Dibenzo (a,h) anthracene	ug/kg	Tier 2																													
	Fluoranthene	ug/kg	Tier 2																										730000			
	Fluorene	ug/kg	Tier 2																										390000			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 2																													
	Naphthalene	ug/kg	Tier 2																										35000			
	Phenanthrene	ug/kg	Tier 2																										56000			

Historical Soil Results

Event Date	Parameter	Units	Data Level	SB-3'	SB-3WW	SB-4"	SB-4	SB-4'	SB-4NW	SB-5"	SB-5	SB-5'	SB-5WF	SB-6"	SB-6	SB-6'	SB-6EF	SB-7"	SB-8"	SB-9"	Scale #1	Stockpile	TP-17	TP-34	WO-100	WO-101	WO-102	WO-104	Drinking Water Protection[1]	Drinking Water Protection Code	SPLP Criteria	TCLP Criteria
	Pyrene	ug/kg	Tier 2																										480000			
10/23/1995	**Metal**																															
	Arsenic	mg/kg	Tier 3																										4.6			
	Barium	mg/kg	Tier 3																										1300			
	Cadmium	mg/kg	Tier 1																						<0.05 U				6			
	Cadmium	mg/kg	Tier 3																						<0.05 U	<0.05 U	<0.05 U	0.26	6			
	Chromium	mg/kg	Tier 1																						19.5				30	D		
	Chromium	mg/kg	Tier 3																						19.5	20.6	22.7	15	30	D		
	Copper	mg/kg	Tier 3																										5800			
	Iron	mg/kg	Tier 3																										6			
	Lead	mg/kg	Tier 1																						4				700			
	Lead	mg/kg	Tier 3																						4	9	6	15	700			
	Manganese	mg/kg	Tier 3																										1			
	Mercury	mg/kg	Tier 3																										1.7			
	Nickel	mg/kg	Tier 3																										100			
	Selenium	mg/kg	Tier 3																										4			
	Silver	mg/kg	Tier 3																										4.5			
	Zinc	mg/kg	Tier 3																										2400			
	PCBs																															
	Aroclor-1016	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Aroclor-1221	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Aroclor-1232	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Aroclor-1242	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Aroclor-1248	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Aroclor-1254	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Aroclor-1260	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Aroclor-1262	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Aroclor-1268	ug/kg	Tier 1																						<330 U	<330 U	<330 U					
	Physical Property																															
	Percent Solids	%	Tier 1																						83.2	92.1	86.6					
	VOC																															
	1,1,1-Trichloroethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		4000			
	1,1,2,2-Tetrachloroethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		170			
	1,1,2-Trichloroethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		100			
	1,1-Dichloroethene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		140			
	1,2,4-Trimethylbenzene	ug/Kg	Tier 3																										2100			
	1,2-Dichlorobenzene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		14000			
	1,2-Dichloroethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		100			
	1,2-Dichloropropane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		100			
	1,3,5-Trimethylbenzene	ug/Kg	Tier 3																										1800			
	1,3-Dichlorobenzene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		170			
	1,3-Dichloropropene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		170			
	1,4-Dichlorobenzene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		1700			
	2-Chloroethyl Vinyl Ether	ug/kg	Tier 1																						<10 U	<10 U	<10 U			ID		
	Benzene	ug/kg	Tier 3																						<10 U	<10 U	<10 U	<10 U	100			
	Bromodichloromethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		1600	W		
	Bromoform	ug/kg	Tier 1																						<10 U	<10 U	<10 U		1600	W		
	Bromomethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		200			
	Carbon Tetrachloride	ug/kg	Tier 1																						<10 U	<10 U	<10 U		100			
	Chlorobenzene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		2000			
	Chlorodibromomethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		2000	W		
	Chloroethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		8600			
	Chloroform	ug/kg	Tier 1																						<10 U	<10 U	<10 U		1600	W		
	Chloromethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		5200			
	Dichlorodifluoromethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		95000			
	Ethylbenzene	ug/kg	Tier 1																						440				1500			
	Ethylbenzene	ug/kg	Tier 3																							310	<10 U	27	1500			
	Fluorotrichloromethane	ug/kg	Tier 1																						<10 U	<10 U	<10 U		52000			
	Methyl T-Butyl ether	ug/kg	Tier 3																										800			
	Methylene Chloride	ug/kg	Tier 1																						<10 U	<10 U	<10 U		100			
	t-1,3-Dichloropropene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		170			
	Tetrachloroethene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		100			
	Toluene	ug/kg	Tier 1																						100				16000			
	Toluene	ug/kg	Tier 3																							42	<10 U	<10 U	16000			
	trans-1,2-Dichloroethene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		2000			
	Trichloroethene	ug/kg	Tier 1																						<10 U	<10 U	<10 U		100			
	TVAH	ug/kg	Tier 3																													
	Vinyl Chloride	ug/kg	Tier 1																						<10 U	<10 U	<10 U		40			
	Xylenes	ug/kg	Tier 1																						1500		<10 U		5600			

Historical Soil Results

Event Date	Parameter	Units	Data Level	SB-3'	SB-3WW	SB-4"	SB-4	SB-4'	SB-4NW	SB-5"	SB-5	SB-5'	SB-5WF	SB-6"	SB-6	SB-6'	SB-6EF	SB-7"	SB-8"	SB-9"	Scale #1	Stockpile	TP-17	TP-34	WO-100	WO-101	WO-102	WO-104	Drinking Water Protection[1]	Drinking Water Protection Code	SPLP Criteria	TCLP Criteria
	Xylenes	ug/kg	Tier 3																							1200	<30 U	260	5600			
	VOC-PAH																															
	1-Methyl-naphthalene	ug/kg	Tier 3																													
	2-Methyl naphthalene	ug/kg	Tier 3																										57000			
	Acenaphthene	ug/kg	Tier 3																						<1000 U	<330 U	<1000 U	<330 U	300000			
	Acenaphthylene	ug/kg	Tier 1																						<1000 U				5900			
	Acenaphthylene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U	5900			
	Anthracene	ug/kg	Tier 1																						<1000 U				41000			
	Anthracene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U	41000			
	Benzo (a) anthracene	ug/kg	Tier 3																						<1000 U	<330 U	<1000 U	<330 U				
	Benzo (a) pyrene	ug/kg	Tier 1																						<1000 U							
	Benzo (a) pyrene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U				
	Benzo (b) Fluoranthene	ug/kg	Tier 1																						<1000 U							
	Benzo (b) Fluoranthene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U				
	Benzo (g,h,i) perylene	ug/kg	Tier 1																						<1000 U							
	Benzo (g,h,i) perylene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U				
	Benzo (k) Fluoranthene	ug/kg	Tier 1																						<1000 U							
	Benzo (k) Fluoranthene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U				
	Chrysene	ug/kg	Tier 3																						<1000 U	<330 U	<1000 U	<330 U				
	Dibenzo (a,h) anthracene	ug/kg	Tier 1																						<1000 U							
	Dibenzo (a,h) anthracene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U				
	Fluoranthene	ug/kg	Tier 1																						<1000 U				730000			
	Fluoranthene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U	730000			
	Fluorene	ug/kg	Tier 1																						1100				390000			
	Fluorene	ug/kg	Tier 3																						<1000 U	340	<1000 U	<330 U	390000			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 1																						<1000 U							
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 3																							<330 U	<1000 U	<330 U				
	Naphthalene	ug/kg	Tier 1																						20000				35000			
	Naphthalene	ug/kg	Tier 3																							2600	<1000 U	<330 U	35000			
	Phenanthrene	ug/kg	Tier 1																						<1000 U				56000			
	Phenanthrene	ug/kg	Tier 3																							830	<1000 U	<330 U	56000			
	Pyrene	ug/kg	Tier 3																						<1000 U	<330 U	<1000 U	<330 U	480000			
10/24/1995	**Field**																															
	pH	S.U.	Tier 2																				2.7	2.8	3.2							
	Metal																															
	Arsenic - TCLP	mg/L	Tier 2																				<0.2 U	<0.05 U	<0.3 U							5
	Barium - TCLP	mg/L	Tier 2																				0.091	0.12	0.16							100
	Cadmium	mg/kg	Tier 1																									0.26	6			
	Cadmium	mg/kg	Tier 2																										6			
	Cadmium - TCLP	mg/L	Tier 2																				<0.02 U	<0.006 U	<0.04 U							1
	Chromium	mg/kg	Tier 1																									15	30	D		
	Chromium	mg/kg	Tier 2																										30	D		
	Chromium, total - TCLP	mg/L	Tier 2																				0.22	0.2	<0.06 U							
	Copper - TCLP	mg/L	Tier 2																				0.73	0.35	<0.1 U							
	Iron - TCLP	mg/L	Tier 2																				3.4	2.4	0.14							
	Lead	mg/kg	Tier 1																									15	700			
	Lead	mg/kg	Tier 2																										700			
	Lead - TCLP	mg/L	Tier 2																				<0.04 U	<0.06 U	<0.2 U							5
	Manganese - TCLP	mg/L	Tier 2																				1	0.82	0.13							
	Mercury - TCLP	mg/L	Tier 2																				<0.0002 U	<0.0002 U	<0.0002 U							0.1
	Nickel - TCLP	mg/L	Tier 2																				3.8	1.2	0.65							
	Selenium - TCLP	mg/L	Tier 2																				<0.2 U	<0.1 U	<0.1 U							1
	Silver - TCLP	mg/L	Tier 2																				<0.006 U	<0.006 U	<0.006 U							5
	Zinc - TCLP	mg/L	Tier 2																				1.4	0.7	0.29							
	PCBs																															
	Aroclor-1016	ug/kg	Tier 2																									<330 U				
	Aroclor-1221	ug/kg	Tier 2																									<330 U				
	Aroclor-1232	ug/kg	Tier 2																									<330 U				
	Aroclor-1242	ug/kg	Tier 2																									<330 U				
	Aroclor-1248	ug/kg	Tier 2																									<330 U				
	Aroclor-1254	ug/kg	Tier 2																									<330 U				
	Aroclor-1260	ug/kg	Tier 2																									<330 U				
	Aroclor-1262	ug/kg	Tier 2																									<330 U				
	Aroclor-1268	ug/kg	Tier 2																									<330 U				
	Physical Property																															
	Cyanide, total	mg/kg	Tier 2																				**10.5**	**6.6**	0.9				4			
	Percent Solids	%	Tier 1																									91.4				
	Percent Solids	%	Tier 2																				83.8	85.4	88.7							
	VOC																															

Historical Soil Results

Event Date	Parameter	Units	Data Level	SB-3'	SB-3WW	SB-4"	SB-4	SB-4'	SB-4NW	SB-5"	SB-5	SB-5'	SB-5WF	SB-6"	SB-6	SB-6'	SB-6EF	SB-7"	SB-8"	SB-9"	Scale #1	Stockpile	TP-17	TP-34	WO-100	WO-101	WO-102	WO-104	Drinking Water Protection[1]	Drinking Water Protection Code	SPLP Criteria	TCLP Criteria
	1,1,1-Trichloroethane	ug/kg	Tier 1																									<10 U	4000			
	1,1,1-Trichloroethane	ug/kg	Tier 2																										4000			
	1,1,2,2-Tetrachloroethane	ug/kg	Tier 1																									<10 U	170			
	1,1,2,2-Tetrachloroethane	ug/kg	Tier 2																										170			
	1,1,2-Trichloroethane	ug/kg	Tier 1																									<10 U	100			
	1,1,2-Trichloroethane	ug/kg	Tier 2																										100			
	1,1-Dichloroethane	ug/kg	Tier 2																										18000			
	1,1-Dichloroethene	ug/kg	Tier 1																									<10 U	140			
	1,1-Dichloroethene	ug/kg	Tier 2																										140			
	1,2-Dichlorobenzene	ug/kg	Tier 2																									<10 U	14000			
	1,2-Dichloroethane	ug/kg	Tier 1																									<10 U	100			
	1,2-Dichloroethane	ug/kg	Tier 2																										100			
	1,2-Dichloropropane	ug/kg	Tier 1																									<10 U	100			
	1,2-Dichloropropane	ug/kg	Tier 2																										100			
	1,3-Dichlorobenzene	ug/kg	Tier 2																									<10 U	170			
	1,3-Dichloropropene	ug/kg	Tier 1																									<10 U	170			
	1,3-Dichloropropene	ug/kg	Tier 2																										170			
	1,4-Dichlorobenzene	ug/kg	Tier 2																									<10 U	1700			
	2-Chloroethyl Vinyl Ether	ug/kg	Tier 1																									<10 U		ID		
	2-Chloroethyl Vinyl Ether	ug/kg	Tier 2																											ID		
	Benzene	ug/kg	Tier 2																									<10 U	100			
	Bromodichloromethane	ug/kg	Tier 1																									<10 U	1600	W		
	Bromodichloromethane	ug/kg	Tier 2																										1600	W		
	Bromoform	ug/kg	Tier 1																									<10 U	1600	W		
	Bromoform	ug/kg	Tier 2																										1600	W		
	Bromomethane	ug/kg	Tier 1																									<10 U	200			
	Bromomethane	ug/kg	Tier 2																										200			
	Carbon Tetrachloride	ug/kg	Tier 1																									<10 U	100			
	Carbon Tetrachloride	ug/kg	Tier 2																										100			
	Chlorobenzene	ug/kg	Tier 1																									<10 U	2000			
	Chlorobenzene	ug/kg	Tier 2																										2000			
	Chlorodibromomethane	ug/kg	Tier 1																									<10 U	2000	W		
	Chlorodibromomethane	ug/kg	Tier 2																										2000	W		
	Chloroethane	ug/kg	Tier 1																									<10 U	8600			
	Chloroethane	ug/kg	Tier 2																										8600			
	Chloroform	ug/kg	Tier 1																									<10 U	1600	W		
	Chloroform	ug/kg	Tier 2																										1600	W		
	Chloromethane	ug/kg	Tier 1																									<10 U	5200			
	Chloromethane	ug/kg	Tier 2																										5200			
	Dichlorodifluoromethane	ug/kg	Tier 1																									<10 U	95000			
	Dichlorodifluoromethane	ug/kg	Tier 2																										95000			
	Ethylbenzene	ug/kg	Tier 2																									27	1500			
	Fluorotrichloromethane	ug/Kg	Tier 1																									<10 U	52000			
	Fluorotrichloromethane	ug/Kg	Tier 2																										52000			
	Methylene Chloride	ug/kg	Tier 1																									<10 U	100			
	Methylene Chloride	ug/kg	Tier 2																										100			
	t-1,3-Dichloropropene	ug/kg	Tier 1																									<10 U	170			
	t-1,3-Dichloropropene	ug/kg	Tier 2																										170			
	Tetrachloroethene	ug/kg	Tier 1																									<10 U	100			
	Tetrachloroethene	ug/kg	Tier 2																										100			
	Toluene	ug/kg	Tier 2																									<10 U	16000			
	trans-1,2-Dichloroethane	ug/kg	Tier 2																										2000			
	trans-1,2-Dichloroethene	ug/kg	Tier 1																									<10 U	2000			
	Trichloroethene	ug/kg	Tier 1																									<10 U	100			
	Trichloroethene	ug/kg	Tier 2																										100			
	Vinyl Chloride	ug/kg	Tier 1																									<10 U	40			
	Vinyl Chloride	ug/kg	Tier 2																										40			
	Xylenes	ug/kg	Tier 2																									260	5600			
VOC-PAH																																
	Acenaphthene	ug/kg	Tier 2																									<330 U	300000			
	Acenaphthylene	ug/kg	Tier 2																									<330 U	5900			
	Anthracene	ug/kg	Tier 2																									<330 U	41000			
	Benzo (a) anthracene	ug/kg	Tier 2																									<330 U				
	Benzo (a) pyrene	ug/kg	Tier 2																									<330 U				
	Benzo (b) Fluoranthene	ug/kg	Tier 2																									<330 U				
	Benzo (g,h,i) perylene	ug/kg	Tier 2																									<330 U				
	Benzo (k) Fluoranthene	ug/kg	Tier 2																									<330 U				
	Chrysene	ug/kg	Tier 2																									<330 U				
	Dibenzo (a,h) anthracene	ug/kg	Tier 2																									<330 U				

Historical Soil Results

Event Date	Parameter	Units	Data Level	SB-3'	SB-3WW	SB-4"	SB-4	SB-4'	SB-4NW	SB-5"	SB-5	SB-5'	SB-5WF	SB-6"	SB-6	SB-6'	SB-6EF	SB-7"	SB-8"	SB-9"	Scale #1	Stockpile	TP-17	TP-34	WO-100	WO-101	WO-102	WO-104	Drinking Water Protection[1]	Drinking Water Protection Code	SPLP Criteria	TCLP Criteria
	Fluoranthene	ug/kg	Tier 2																									<330 U	730000			
	Fluorene	ug/kg	Tier 2																									<330 U	390000			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 2																									<330 U				
	Naphthalene	ug/kg	Tier 2																									<330 U	35000			
	Phenanthrene	ug/kg	Tier 2																									<330 U	56000			
	Pyrene	ug/kg	Tier 2																									<330 U	480000			
10/26/1995	**Metal**																															
	Arsenic	mg/kg	Tier 3																										4.6			
	Barium	mg/kg	Tier 3																										1300			
	Cadmium	mg/kg	Tier 3																										6			
	Chromium	mg/kg	Tier 3																										30	D		
	Copper	mg/kg	Tier 3																										5800			
	Iron	mg/kg	Tier 3																										6			
	Lead	mg/kg	Tier 3																										700			
	Manganese	mg/kg	Tier 3																										1			
	Mercury	mg/kg	Tier 3																										1.7			
	Nickel	mg/kg	Tier 3																										100			
	Selenium	mg/kg	Tier 3																										4			
	Silver	mg/kg	Tier 3																										4.5			
	Zinc	mg/kg	Tier 3																										2400			
11/7/1995	**Metal**																															
	Arsenic	mg/kg	Tier 1																		**8**								4.6			
	Barium	mg/kg	Tier 1																		45								1300			
	Cadmium	mg/kg	Tier 3																		1.2								6			
	Chromium	mg/kg	Tier 3																		**100**								30	D		
	Copper	mg/kg	Tier 3																		100								5800			
	Iron	mg/kg	Tier 1																		**46000**								6			
	Iron	mg/kg	Tier 3																		**46000**								6			
	Lead	mg/kg	Tier 3																		31								700			
	Manganese	mg/kg	Tier 1																		**900**								1			
	Mercury	mg/kg	Tier 1																		<0.1 U								1.7			
	Nickel	mg/kg	Tier 1																		**140**								100			
	Selenium	mg/kg	Tier 3																		<0.5 U								4			
	Silver	mg/kg	Tier 1																		2.3								4.5			
	Zinc	mg/kg	Tier 1																		120								2400			
	PCBs																															
	Aroclor-1016	ug/kg	Tier 1																													
	Aroclor-1221	ug/kg	Tier 1																													
	Aroclor-1232	ug/kg	Tier 1																													
	Aroclor-1242	ug/kg	Tier 1																													
	Aroclor-1248	ug/kg	Tier 1																													
	Aroclor-1254	ug/kg	Tier 1																													
	Aroclor-1260	ug/kg	Tier 1																													
	Aroclor-1262	ug/kg	Tier 1																													
	Aroclor-1268	ug/kg	Tier 1																													
	Physical Property																															
	Cyanide, total	mg/kg	Tier 1																		<0.2 U								4			
	Percent Solids	%	Tier 1																		83											
	VOC																															
	1,1,1-Trichloroethane	ug/kg	Tier 1																		<10 U								4000			
	1,1,2,2-Tetrachloroethane	ug/kg	Tier 1																		<10 U								170			
	1,1,2-Trichloroethane	ug/kg	Tier 1																		<10 U								100			
	1,1-Dichloroethene	ug/kg	Tier 1																		<10 U								140			
	1,2-Dichlorobenzene	ug/kg	Tier 1																		<10 U								14000			
	1,2-Dichloroethane	ug/kg	Tier 1																		<10 U								100			
	1,2-Dichloropropane	ug/kg	Tier 1																		<10 U								100			
	1,3-Dichlorobenzene	ug/kg	Tier 1																		<10 U								170			
	1,3-Dichloropropene	ug/kg	Tier 1																		<10 U								170			
	1,4-Dichlorobenzene	ug/kg	Tier 1																		<10 U								1700			
	2-Chloroethyl Vinyl Ether	ug/kg	Tier 1																		<10 U									ID		
	Benzene	ug/kg	Tier 1																		<10 U								100			
	Bromodichloromethane	ug/kg	Tier 1																		<10 U								1600	W		
	Bromoform	ug/kg	Tier 1																		<10 U								1600	W		
	Bromomethane	ug/kg	Tier 1																		<10 U								200			
	Carbon Tetrachloride	ug/kg	Tier 1																		<10 U								100			
	Chlorobenzene	ug/kg	Tier 1																		<10 U								2000			
	Chlorodibromomethane	ug/kg	Tier 1																		<10 U								2000	W		
	Chloroethane	ug/kg	Tier 1																		<10 U								8600			
	Chloroform	ug/kg	Tier 1																		<10 U								1600	W		

Historical Soil Results

Event Date	Parameter	Units	Data Level	SB-3'	SB-3WW	SB-4"	SB-4	SB-4'	SB-4NW	SB-5"	SB-5	SB-5'	SB-5WF	SB-6"	SB-6	SB-6'	SB-6EF	SB-7"	SB-8"	SB-9"	Scale #1	Stockpile	TP-17	TP-34	WO-100	WO-101	WO-102	WO-104	Drinking Water Protection[1]	Drinking Water Protection Code	SPLP Criteria	TCLP Criteria
	Chloromethane	ug/kg	Tier 1																		<10 U								5200			
	Dichlorodifluoromethane	ug/kg	Tier 1																		<10 U								95000			
	Ethylbenzene	ug/kg	Tier 1																		<10 U								1500			
	Fluorotrichloromethane	ug/Kg	Tier 1																		<10 U								52000			
	Methylene Chloride	ug/kg	Tier 1																		<10 U								100			
	t-1,3-Dichloropropene	ug/kg	Tier 1																		<10 U								170			
	Tetrachloroethene	ug/kg	Tier 1																		<10 U								100			
	Toluene	ug/kg	Tier 1																		<10 U								16000			
	trans-1,2-Dichloroethene	ug/kg	Tier 1																		<10 U								2000			
	Trichloroethene	ug/kg	Tier 1																		<10 U								100			
	Vinyl Chloride	ug/kg	Tier 1																		<10 U								40			
	Xylenes	ug/kg	Tier 1																		<30 U								5600			
	VOC-PAH																															
	Acenaphthene	ug/kg	Tier 1																		<330 U								300000			
	Acenaphthylene	ug/kg	Tier 1																		<330 U								5900			
	Anthracene	ug/kg	Tier 1																		<330 U								41000			
	Benzo (a) anthracene	ug/kg	Tier 1																		<330 U											
	Benzo (a) pyrene	ug/kg	Tier 1																		<330 U											
	Benzo (b) Fluoranthene	ug/kg	Tier 1																		<330 U											
	Benzo (g,h,i) perylene	ug/kg	Tier 1																		<330 U											
	Benzo (k) Fluoranthene	ug/kg	Tier 1																		<330 U											
	Chrysene	ug/kg	Tier 1																		<330 U											
	Dibenzo (a,h) anthracene	ug/kg	Tier 1																		<330 U											
	Fluoranthene	ug/kg	Tier 1																		<330 U								730000			
	Fluorene	ug/kg	Tier 1																		<330 U								390000			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 1																		<330 U											
	Naphthalene	ug/kg	Tier 1																		<330 U								35000			
	Phenanthrene	ug/kg	Tier 1																		<330 U								56000			
	Pyrene	ug/kg	Tier 1																		<330 U								480000			
8/30/1996	**Metal**																															
	Arsenic - TCLP	mg/L	Tier 2																													5
	Barium - TCLP	mg/L	Tier 2																													100
	Cadmium - TCLP	mg/L	Tier 2																													1
	Chromium, total - TCLP	mg/L	Tier 2																													
	Copper - TCLP	mg/L	Tier 2																													
	Iron - TCLP	mg/L	Tier 2																													
	Lead - TCLP	mg/L	Tier 2																													5
	Manganese - TCLP	mg/L	Tier 2																													
	Mercury - TCLP	mg/L	Tier 2																													0.1
	Nickel - TCLP	mg/L	Tier 2																													
	Selenium	mg/kg	Tier 2																										4			
	Selenium - TCLP	mg/L	Tier 2																													1
	Silver - TCLP	mg/L	Tier 2																													5
	Zinc - TCLP	mg/L	Tier 2																													
9/16/1997	**Metal**																															
	Lead	mg/kg	Tier 3	3				4					2			6.23													700			
	VOC																															
	Benzene	ug/kg	Tier 3				<5 U				<5 U				<5 U													100			
	Ethylbenzene	ug/kg	Tier 3				<5 U				<5 U				40													1500			
	Toluene	ug/kg	Tier 3				<5 U				<5 U				<5 U													16000			
	TVAH	ug/kg	Tier 3				ND				ND				221																
	Xylenes	ug/kg	Tier 3				<5 U				<5 U				181													5600			
7/28/1998	**Metal**																															
	Antimony	mg/kg	Tier 3			**6.1**				**16.1**				**13.2**				**11.1**	**8.7**	**30.7**									4.3			
	Antimony-SPLP	ug/L	Tier 3			<2 U				10				<2 U				<2 U	<2 U	<2 U												
	Arsenic	mg/kg	Tier 3			**287**				**443**				**339**				**540**	**340**	**563**									4.6			
	Arsenic - TCLP	mg/L	Tier 3			0.015				0.004				0.007				0.147	0.075	0.059												5
	Barium	mg/kg	Tier 3			8.4				6.7				5				7.6	8.4	5									1300			
	Barium - TCLP	mg/L	Tier 3			0.082				0.082				0.072				0.083	0.08	0.04												100
	Cadmium	mg/kg	Tier 3			2.75				1.84				4.44				4.38	2.41	1.12									6			
	Cadmium - TCLP	mg/L	Tier 3			0.0123				0.0092				0.0063				0.005	0.006	0.0807												1
	Chromium	mg/kg	Tier 3			**171**				**402**				**396**				**173**	**245**	**337**									30	D		
	Chromium - TCLP	mg/L	Tier 3			0.007				<0.005 U				<0.005 U				0.018	0.088	0.355												5
	Copper	mg/kg	Tier 3			469				733				669				588	427	864									5800			
	Copper - TCLP	mg/L	Tier 3			1.09				0.006				0.079				0.85	1.29	7.88												
	Iron	mg/kg	Tier 3			**133000**				**175000**				**174000**				**154000**	**143000**	**203000**									6			
	Iron - TCLP	mg/L	Tier 3			10.2				<0.007 U				<0.007 U				56.5	88.1	116												
	Lead	mg/kg	Tier 3			296				**625**				**510**				391	390	**525**									700			
	Lead - TCLP	mg/L	Tier 3			0.036				<0.002 U				<0.002 U				0.011	0.046	2.62												5

Historical Soil Results

Event Date	Parameter	Units	Data Level	SB-3'	SB-3WW	SB-4"	SB-4	SB-4'	SB-4NW	SB-5"	SB-5	SB-5'	SB-5WF	SB-6"	SB-6	SB-6'	SB-6EF	SB-7"	SB-8"	SB-9"	Scale #1	Stockpile	TP-17	TP-34	WO-100	WO-101	WO-102	WO-104	Drinking Water Protection[1]	Drinking Water Protection Code	SPLP Criteria	TCLP Criteria
	Magnesium	mg/kg	Tier 3			6210				**12600**				**11500**				4220	5270	**13400**									8000			
	Magnesium - TCLP	mg/L	Tier 3			23.4				35.3				18.8				4.76	11.6	183												
	Manganese	mg/kg	Tier 3			**92**				**155**				**145**				**58.4**	**93.9**	**194**									1			
	Manganese - TCLP	mg/L	Tier 3			0.972				1.67				0.689				0.322	0.385	4.57												
	Mercury	mg/kg	Tier 3			0.1				0.2				0.1				0.1	0.1	0.1									1.7			
	Mercury - TCLP	mg/L	Tier 3			<0.0002 U				<0.0002 U				<0.0002 U				<0.0002 U	<0.0002 U	<0.0002 U												0.1
	Nickel	mg/kg	Tier 3			**535**				**366**				**695**				**735**	**570**	**443**									100			
	Nickel - TCLP	mg/L	Tier 3			1.18				0.99				0.72				0.75	0.89	8.22												
	Silver	mg/kg	Tier 3			**29.2**				**42.5**				**34.8**				**35.9**	**35.6**	**46.6**									4.5			
	Silver - TCLP	mg/L	Tier 3			<0.0005 U				<0.0005 U				<0.0005 U				<0.0005 U	<0.0005 U	<0.0005 U												5
	Zinc	mg/kg	Tier 3			81.1				183				173				59.5	66.7	156									2400			
	Zinc - TCLP	mg/L	Tier 3			1.02				0.183				0.445				0.583	0.626	2.54												
	VOC																															
	1,2,4-Trimethylbenzene	ug/Kg	Tier 3																										2100			
	1,3,5-Trimethylbenzene	ug/Kg	Tier 3																										1800			
	Benzene	ug/kg	Tier 3																										100			
	Ethylbenzene	ug/kg	Tier 3																										1500			
	Methyl T-Butyl ether	ug/kg	Tier 3																										800			
	Toluene	ug/kg	Tier 3																										16000			
	TVAH	ug/kg	Tier 3																													
	Xylenes	ug/kg	Tier 3																										5600			
	VOC-PAH																															
	1-Methyl-naphthalene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	2-Methyl naphthalene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												57000			
	Acenaphthene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												300000			
	Acenaphthylene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												5900			
	Anthracene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												41000			
	Benzo (a) anthracene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	Benzo (a) pyrene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	Benzo (b) Fluoranthene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	Benzo (g,h,i) perylene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	Benzo (k) Fluoranthene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	Chrysene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	Dibenzo (a,h) anthracene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	Fluoranthene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												730000			
	Fluorene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												390000			
	Indeno (1,2,3 - cd) pyrene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U															
	Naphthalene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												35000			
	Phenanthrene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												56000			
	Pyrene	ug/kg	Tier 3		<210 U				<210 U				<210 U				<210 U												480000			

VOC = Volatile Organic Compound

PAH = Polynuclear Aromatic Hydrocarbon

ug/kg = micrograms/killograms

mg/kg = millograms/killograms

ND = not detected

< = All - The analyte was not detected at or above the reporting limit.

[1] Analytical results compared were compared to the residential/commercial 1 drinking water criteria. Exceedances are highlighted.

B = Inorganic - The anlyte has been detected between the method detection limit and the reporting limit

D = Calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion(ppb).

ID = means insufficient data to develop criterion

M = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.

U = All - The anlyte was not detected at or above the reporting limit.

W = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 ug/L. Concentrations of trihalomethanes in soil shall be added together to determine compliance with the drinking water protection criterion of 1,600 ug/kg.

SPLP = Synthetic precipitate leaching procedure

Drinking water protection criteria source: Michigan Department of Environmental Quality Part 201 clean up criteria and screening levels

ug/L = micrograms/liter

mg/L = milligrams/liter

SU = standard unit

TVAH = total volatile aromatic hydrocarbon

TCLP = total characteristic leaching procedure

PCB = polychlorinated byphenyl

A-2

Historical Groundwater Results

Table A-2

Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	2,4,6-Trichlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	2,4,6-Trichlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	2,4,6-Trichlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	2,4,6-Trichlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	2,4-Dichlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	2,4-Dichlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	2,4-Dichlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	2,4-Dichlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	2,4-Dimethylphenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	2,4-Dimethylphenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	2,4-Dimethylphenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	2,4-Dimethylphenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	2,4-Dinitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	2,4-Dinitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	2,4-Dinitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	2,4-Dinitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	2-Chlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	2-Chlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	2-Chlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	2-Chlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	2-Nitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	2-Nitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	2-Nitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	2-Nitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	4,6-Dinitro-O-Cresol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	4,6-Dinitro-O-Cresol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	4,6-Dinitro-O-Cresol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	4,6-Dinitro-O-Cresol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	4-Nitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	4-Nitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	4-Nitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	4-Nitrophenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Nitrogen, total, Kjeldahl	0.41				mg/l	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Nitrogen, total, Kjeldahl	0.19				mg/l	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Nitrogen, total, Kjeldahl	0.23				mg/l	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Nitrogen, total, Kjeldahl	0.056				mg/l	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	P-Chloro-M-Cresol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	P-Chloro-M-Cresol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	P-Chloro-M-Cresol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	P-Chloro-M-Cresol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Pentachlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Pentachlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Pentachlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Pentachlorophenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Phenol	<10	<			ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Phenol	<10	<			ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Phenol	<10	<			ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Phenol	<10	<			ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Sulfur	62				mg/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Sulfur	111				mg/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Sulfur	105				mg/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Sulfur	89				mg/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	pH	6.9				S.U.	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	pH	5.4				S.U.	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	pH	7.0				S.U.	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	pH	7.1				S.U.	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Specific Conductance	675				umhos/cm @25 degrees C	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Specific Conductance	125				umhos/cm @25 degrees C	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Specific Conductance	445				umhos/cm @25 degrees C	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Specific Conductance	445				umhos/cm @25 degrees C	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Antimony, total	<4	<			ug/L	GW	11/4/1984				6	A
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Antimony, total	<4	<			ug/L	GW	11/4/1984				6	A
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Antimony, total	<4	<			ug/L	GW	11/4/1984				6	A
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Antimony, total	<4	<			ug/L	GW	11/4/1984				6	A
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Arsenic, total	6				ug/L	GW	11/4/1984				10	EPA 2006
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Arsenic, total	<4	<			ug/L	GW	11/4/1984				10	EPA 2006
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Arsenic, total	<4	<			ug/L	GW	11/4/1984				10	EPA 2006
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Arsenic, total	<4	<			ug/L	GW	11/4/1984				10	EPA 2006
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Cadmium, total	<1	<			ug/L	GW	11/4/1984				5	A
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Cadmium, total	<1	<			ug/L	GW	11/4/1984				5	A
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Cadmium, total	<1	<			ug/L	GW	11/4/1984				5	A
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Cadmium, total	1				ug/L	GW	11/4/1984				5	A
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Calcium, total	77000				ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Calcium, total	8600				ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Calcium, total	38000				ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Calcium, total	62000				ug/L	GW	11/4/1984					

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Chromium, total	<20	<			ug/L	GW	11/4/1984				100	A
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Chromium, total	<20	<			ug/L	GW	11/4/1984				100	A
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Chromium, total	<20	<			ug/L	GW	11/4/1984				100	A
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Chromium, total	<20	<			ug/L	GW	11/4/1984				100	A
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Copper, total	<10	<			ug/L	GW	11/4/1984				1000	E
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Copper, total	<10	<			ug/L	GW	11/4/1984				1000	E
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Copper, total	<10	<			ug/L	GW	11/4/1984				1000	E
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Copper, total	<20	<			ug/L	GW	11/4/1984				1000	E
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Iron, total	40000				ug/L	GW	11/4/1984				300	E
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Iron, total	3000				ug/L	GW	11/4/1984				300	E
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Iron, total	<20	<			ug/L	GW	11/4/1984				300	E
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Iron, total	320				ug/L	GW	11/4/1984				300	E
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Lead, total	100				ug/L	GW	11/4/1984				4	L
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Lead, total	<50	<			ug/L	GW	11/4/1984				4	L
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Lead, total	<50	<			ug/L	GW	11/4/1984				4	L
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Lead, total	<50	<			ug/L	GW	11/4/1984				4	L
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Magnesium, total	29000				ug/L	GW	11/4/1984				400000	
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Magnesium, total	4000				ug/L	GW	11/4/1984				400000	
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Magnesium, total	18000				ug/L	GW	11/4/1984				400000	
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Magnesium, total	17000				ug/L	GW	11/4/1984				400000	
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Mercury, total	<0.5	<			ug/L	GW	11/4/1984				2	A
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Mercury, total	<0.5	<			ug/L	GW	11/4/1984				2	A
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Mercury, total	<0.5	<			ug/L	GW	11/4/1984				2	A
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Mercury, total	<0.5	<			ug/L	GW	11/4/1984				2	A
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Nickel, total	<20	<			ug/L	GW	11/4/1984				100	A
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Nickel, total	30				ug/L	GW	11/4/1984				100	A
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Nickel, total	<20	<			ug/L	GW	11/4/1984				100	A
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Nickel, total	<40	<			ug/L	GW	11/4/1984				100	A
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Potassium, total	3600				ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Potassium, total	1600				ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Potassium, total	4500				ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Potassium, total	2300				ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Silver, total	8				ug/L	GW	11/4/1984				34	
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Silver, total	160				ug/L	GW	11/4/1984				34	
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Silver, total	60				ug/L	GW	11/4/1984				34	
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Silver, total	9				ug/L	GW	11/4/1984				34	
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Sodium, total	5800				ug/L	GW	11/4/1984				120000	
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Sodium, total	11000				ug/L	GW	11/4/1984				120000	
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Sodium, total	18000				ug/L	GW	11/4/1984				120000	
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Sodium, total	8400				ug/L	GW	11/4/1984				120000	
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Total Hardness	240000				ug/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Total Hardness	60000				ug/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Total Hardness	250000				ug/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Total Hardness	230000				ug/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Zinc, total	10				ug/L	GW	11/4/1984				2400	
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Zinc, total	<10	<			ug/L	GW	11/4/1984				2400	
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Zinc, total	10				ug/L	GW	11/4/1984				2400	
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Zinc, total	50				ug/L	GW	11/4/1984				2400	
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Alkalinity As CaCO3	260				mg/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Alkalinity As CaCO3	6				mg/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Alkalinity As CaCO3	89				mg/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Alkalinity As CaCO3	140				mg/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Chloride	8				mg/L	GW	11/4/1984				250	E
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Chloride	4				mg/L	GW	11/4/1984				250	E
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Chloride	16				mg/L	GW	11/4/1984				250	E
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Chloride	17				mg/L	GW	11/4/1984				250	E
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	COD	130				mg/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	COD	7				mg/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	COD	20				mg/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	COD	8				mg/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Cyanide, total	<0.001	<			mg/L	GW	11/4/1984				0	A
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Cyanide, total	<0.001	<			mg/L	GW	11/4/1984				0	A
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Cyanide, total	<0.001	<			mg/L	GW	11/4/1984				0	A
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Cyanide, total	<0.001	<			mg/L	GW	11/4/1984				0	A
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Sulfate	100				mg/L	GW	11/4/1984				250	E
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Sulfate	18				mg/L	GW	11/4/1984				250	E
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Sulfate	94				mg/L	GW	11/4/1984				250	E
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Sulfate	72				mg/L	GW	11/4/1984				250	E
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	TOC as NPOC	16				mg/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	TOC as NPOC	<2	<			mg/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	TOC as NPOC	<2	<			mg/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	TOC as NPOC	<2	<			mg/L	GW	11/4/1984					
HW-4	HW-4	11/4/1984	Tier 2	1	4110243	Total Suspended Solids	88.0				mg/L	GW	11/4/1984					
HW-3	HW-3	11/4/1984	Tier 2	1	4110242	Total Suspended Solids	65.0				mg/L	GW	11/4/1984					
HW-2	HW-2	11/4/1984	Tier 2	1	4110241	Total Suspended Solids	4.0				mg/L	GW	11/4/1984					
HW-1	HW-1	11/4/1984	Tier 2	1	4110240	Total Suspended Solids	4.3				mg/L	GW	11/4/1984					

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
HW-1	HW-1	1/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	1/1/1990					
HW-2	HW-2	1/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	1/1/1990					
HW-3	HW-3	1/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	1/1/1990					
HW-4	HW-4	1/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	1/1/1990					
HW-1	HW-1	1/1/1990	Tier 3	1		Copper, total	<10	<			ug/L	GW	1/1/1990				1000	E
HW-2	HW-2	1/1/1990	Tier 3	1		Copper, total	<10	<			ug/L	GW	1/1/1990				1000	E
HW-3	HW-3	1/1/1990	Tier 3	1		Copper, total	430				ug/L	GW	1/1/1990				1000	E
HW-4	HW-4	1/1/1990	Tier 3	1		Copper, total	10				ug/L	GW	1/1/1990				1000	E
HW-4	HW-4	1/1/1990	Tier 3	1		Lead, total	70				ug/L	GW	1/1/1990				4	L
HW-2	HW-2	1/1/1990	Tier 3	1		Lead, total	60				ug/L	GW	1/1/1990				4	L
HW-1	HW-1	1/1/1990	Tier 3	1		Lead, total	40				ug/L	GW	1/1/1990				4	L
HW-3	HW-3	1/1/1990	Tier 3	1		Lead, total	40				ug/L	GW	1/1/1990				4	L
HW-1	HW-1	1/1/1990	Tier 3	1		Mercury, total	<0.2	<			ug/L	GW	1/1/1990				2	A
HW-2	HW-2	1/1/1990	Tier 3	1		Mercury, total	<0.2	<			ug/L	GW	1/1/1990				2	A
HW-3	HW-3	1/1/1990	Tier 3	1		Mercury, total	<0.2	<			ug/L	GW	1/1/1990				2	A
HW-4	HW-4	1/1/1990	Tier 3	1		Mercury, total	<0.2	<			ug/L	GW	1/1/1990				2	A
HW-3	HW-3	1/1/1990	Tier 3	1		Nickel, total	1300				ug/L	GW	1/1/1990				100	A
HW-2	HW-2	1/1/1990	Tier 3	1		Nickel, total	20				ug/L	GW	1/1/1990				100	A
HW-1	HW-1	1/1/1990	Tier 3	1		Nickel, total	<20	<			ug/L	GW	1/1/1990				100	A
HW-4	HW-4	1/1/1990	Tier 3	1		Nickel, total	<20	<			ug/L	GW	1/1/1990				100	A
HW-4	HW-4	1/1/1990	Tier 3	1		Zinc, total	<5	<			ug/L	GW	1/1/1990				2400	
HW-3	HW-3	1/1/1990	Tier 3	1		Zinc, total	1980				ug/L	GW	1/1/1990				2400	
HW-1	HW-1	1/1/1990	Tier 3	1		Zinc, total	30				ug/L	GW	1/1/1990				2400	
HW-2	HW-2	1/1/1990	Tier 3	1		Zinc, total	15				ug/L	GW	1/1/1990				2400	
HW-1	HW-1	2/1/1990	Tier 3	1		A. Cyanide	<0.02	<			mg/L	GW	2/1/1990					
HW-2	HW-2	2/1/1990	Tier 3	1		A. Cyanide	<0.02	<			mg/L	GW	2/1/1990					
HW-3	HW-3	2/1/1990	Tier 3	1		A. Cyanide	<0.02	<			mg/L	GW	2/1/1990					
HW-4	HW-4	2/1/1990	Tier 3	1		A. Cyanide	<0.02	<			mg/L	GW	2/1/1990					
HW-1	HW-1	2/1/1990	Tier 3	1		Copper, total	<20	<			ug/L	GW	2/1/1990				1000	E
HW-2	HW-2	2/1/1990	Tier 3	1		Copper, total	<20	<			ug/L	GW	2/1/1990				1000	E
HW-4	HW-4	2/1/1990	Tier 3	1		Copper, total	<20	<			ug/L	GW	2/1/1990				1000	E
HW-3	HW-3	2/1/1990	Tier 3	1		Copper, total	410				ug/L	GW	2/1/1990				1000	E
HW-1	HW-1	2/1/1990	Tier 3	1		Lead, total	<130	<			ug/L	GW	2/1/1990				4	L
HW-2	HW-2	2/1/1990	Tier 3	1		Lead, total	<130	<			ug/L	GW	2/1/1990				4	L
HW-3	HW-3	2/1/1990	Tier 3	1		Lead, total	<130	<			ug/L	GW	2/1/1990				4	L
HW-4	HW-4	2/1/1990	Tier 3	1		Lead, total	<130	<			ug/L	GW	2/1/1990				4	L
HW-1	HW-1	2/1/1990	Tier 3	1		Mercury, total	<0.5	<			ug/L	GW	2/1/1990				2	A
HW-2	HW-2	2/1/1990	Tier 3	1		Mercury, total	<0.5	<			ug/L	GW	2/1/1990				2	A
HW-3	HW-3	2/1/1990	Tier 3	1		Mercury, total	<0.5	<			ug/L	GW	2/1/1990				2	A
HW-4	HW-4	2/1/1990	Tier 3	1		Mercury, total	<0.5	<			ug/L	GW	2/1/1990				2	A
HW-1	HW-1	2/1/1990	Tier 3	1		Nickel, total	<40	<			ug/L	GW	2/1/1990				100	A
HW-2	HW-2	2/1/1990	Tier 3	1		Nickel, total	<40	<			ug/L	GW	2/1/1990				100	A
HW-4	HW-4	2/1/1990	Tier 3	1		Nickel, total	<40	<			ug/L	GW	2/1/1990				100	A
HW-3	HW-3	2/1/1990	Tier 3	1		Nickel, total	640				ug/L	GW	2/1/1990				100	A
HW-4	HW-4	2/1/1990	Tier 3	1		Zinc, total	<10	<			ug/L	GW	2/1/1990				2400	
HW-3	HW-3	2/1/1990	Tier 3	1		Zinc, total	1800				ug/L	GW	2/1/1990				2400	
HW-1	HW-1	2/1/1990	Tier 3	1		Zinc, total	60				ug/L	GW	2/1/1990				2400	
HW-2	HW-2	2/1/1990	Tier 3	1		Zinc, total	30				ug/L	GW	2/1/1990				2400	
HW-1	HW-1	3/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	3/1/1990					
HW-2	HW-2	3/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	3/1/1990					
HW-3	HW-3	3/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	3/1/1990					
HW-4	HW-4	3/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	3/1/1990					
HW-3	HW-3	3/1/1990	Tier 3	1		Copper, total	11				ug/L	GW	3/1/1990				1000	E
HW-1	HW-1	3/1/1990	Tier 3	1		Copper, total	10				ug/L	GW	3/1/1990				1000	E
HW-2	HW-2	3/1/1990	Tier 3	1		Copper, total	3				ug/L	GW	3/1/1990				1000	E
HW-4	HW-4	3/1/1990	Tier 3	1		Copper, total	1				ug/L	GW	3/1/1990				1000	E
HW-1	HW-1	3/1/1990	Tier 3	1		Lead, total	NA				ug/L	GW	3/1/1990				4	L
HW-2	HW-2	3/1/1990	Tier 3	1		Lead, total	NA				ug/L	GW	3/1/1990				4	L
HW-3	HW-3	3/1/1990	Tier 3	1		Lead, total	NA				ug/L	GW	3/1/1990				4	L
HW-4	HW-4	3/1/1990	Tier 3	1		Lead, total	NA				ug/L	GW	3/1/1990				4	L
HW-1	HW-1	3/1/1990	Tier 3	1		Mercury, total	NA				ug/L	GW	3/1/1990				2	A
HW-2	HW-2	3/1/1990	Tier 3	1		Mercury, total	NA				ug/L	GW	3/1/1990				2	A
HW-3	HW-3	3/1/1990	Tier 3	1		Mercury, total	NA				ug/L	GW	3/1/1990				2	A
HW-4	HW-4	3/1/1990	Tier 3	1		Mercury, total	NA				ug/L	GW	3/1/1990				2	A
HW-3	HW-3	3/1/1990	Tier 3	1		Nickel, total	46				ug/L	GW	3/1/1990				100	A
HW-2	HW-2	3/1/1990	Tier 3	1		Nickel, total	40				ug/L	GW	3/1/1990				100	A
HW-1	HW-1	3/1/1990	Tier 3	1		Nickel, total	29				ug/L	GW	3/1/1990				100	A
HW-4	HW-4	3/1/1990	Tier 3	1		Nickel, total	2				ug/L	GW	3/1/1990				100	A
HW-1	HW-1	3/1/1990	Tier 3	1		Zinc, total	NA				ug/L	GW	3/1/1990				2400	
HW-2	HW-2	3/1/1990	Tier 3	1		Zinc, total	NA				ug/L	GW	3/1/1990				2400	
HW-3	HW-3	3/1/1990	Tier 3	1		Zinc, total	NA				ug/L	GW	3/1/1990				2400	
HW-4	HW-4	3/1/1990	Tier 3	1		Zinc, total	NA				ug/L	GW	3/1/1990				2400	
HW-1A	HW-1A	6/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	6/1/1990					
HW-5	HW-5	6/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	6/1/1990					
HW-5A	HW-5A	6/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	6/1/1990					
HW-6	HW-6	6/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	6/1/1990					

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
HW-1A	HW-1A	6/1/1990	Tier 3	1		Copper, total	ND				ug/L	GW	6/1/1990				1000	E
HW-5	HW-5	6/1/1990	Tier 3	1		Copper, total	ND				ug/L	GW	6/1/1990				1000	E
HW-6	HW-6	6/1/1990	Tier 3	1		Copper, total	ND				ug/L	GW	6/1/1990				1000	E
HW-5A	HW-5A	6/1/1990	Tier 3	1		Copper, total	10				ug/L	GW	6/1/1990				1000	E
HW-1A	HW-1A	6/1/1990	Tier 3	1		Lead, total	ND				ug/L	GW	6/1/1990				4	L
HW-5	HW-5	6/1/1990	Tier 3	1		Lead, total	ND				ug/L	GW	6/1/1990				4	L
HW-5A	HW-5A	6/1/1990	Tier 3	1		Lead, total	ND				ug/L	GW	6/1/1990				4	L
HW-6	HW-6	6/1/1990	Tier 3	1		Lead, total	ND				ug/L	GW	6/1/1990				4	L
HW-1A	HW-1A	6/1/1990	Tier 3	1		Mercury, total	ND				ug/L	GW	6/1/1990				2	A
HW-5	HW-5	6/1/1990	Tier 3	1		Mercury, total	ND				ug/L	GW	6/1/1990				2	A
HW-5A	HW-5A	6/1/1990	Tier 3	1		Mercury, total	ND				ug/L	GW	6/1/1990				2	A
HW-6	HW-6	6/1/1990	Tier 3	1		Mercury, total	ND				ug/L	GW	6/1/1990				2	A
HW-1A	HW-1A	6/1/1990	Tier 3	1		Nickel, total	ND				ug/L	GW	6/1/1990				100	A
HW-5	HW-5	6/1/1990	Tier 3	1		Nickel, total	ND				ug/L	GW	6/1/1990				100	A
HW-5A	HW-5A	6/1/1990	Tier 3	1		Nickel, total	ND				ug/L	GW	6/1/1990				100	A
HW-6	HW-6	6/1/1990	Tier 3	1		Nickel, total	40				ug/L	GW	6/1/1990				100	A
HW-5	HW-5	6/1/1990	Tier 3	1		Zinc, total	ND				ug/L	GW	6/1/1990				2400	
HW-5A	HW-5A	6/1/1990	Tier 3	1		Zinc, total	ND				ug/L	GW	6/1/1990				2400	
HW-6	HW-6	6/1/1990	Tier 3	1		Zinc, total	ND				ug/L	GW	6/1/1990				2400	
HW-1A	HW-1A	6/1/1990	Tier 3	1		Zinc, total	13				ug/L	GW	6/1/1990				2400	
HW-1A	HW-1A	9/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1990					
HW-5	HW-5	9/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1990					
HW-5A	HW-5A	9/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1990					
HW-6	HW-6	9/1/1990	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1990					
HW-1	HW-1	9/1/1990	Tier 3	1		A. Cyanide	<0.02	<			mg/L	GW	9/1/1990					
HW-2	HW-2	9/1/1990	Tier 3	1		A. Cyanide	<0.02	<			mg/L	GW	9/1/1990					
HW-3	HW-3	9/1/1990	Tier 3	1		A. Cyanide	<0.02	<			mg/L	GW	9/1/1990					
HW-4	HW-4	9/1/1990	Tier 3	1		A. Cyanide	<0.02	<			mg/L	GW	9/1/1990					
HW-1A	HW-1A	9/1/1990	Tier 3	1		Copper, total	ND/20				ug/L	GW	9/1/1990				1000	E
HW-5A	HW-5A	9/1/1990	Tier 3	1		Copper, total	ND/20				ug/L	GW	9/1/1990				1000	E
HW-5	HW-5	9/1/1990	Tier 3	1		Copper, total	2\10				ug/L	GW	9/1/1990				1000	E
HW-6	HW-6	9/1/1990	Tier 3	1		Copper, total	1/ND				ug/L	GW	9/1/1990				1000	E
HW-2	HW-2	9/1/1990	Tier 3	1		Copper, total	<10	<			ug/L	GW	9/1/1990				1000	E
HW-4	HW-4	9/1/1990	Tier 3	1		Copper, total	<10	<			ug/L	GW	9/1/1990				1000	E
HW-1	HW-1	9/1/1990	Tier 3	1		Copper, total	20				ug/L	GW	9/1/1990				1000	E
HW-3	HW-3	9/1/1990	Tier 3	1		Copper, total	10				ug/L	GW	9/1/1990				1000	E
HW-1A	HW-1A	9/1/1990	Tier 3	1		Lead, total	ND/ND				ug/L	GW	9/1/1990				4	L
HW-5	HW-5	9/1/1990	Tier 3	1		Lead, total	ND/ND				ug/L	GW	9/1/1990				4	L
HW-5A	HW-5A	9/1/1990	Tier 3	1		Lead, total	ND/ND				ug/L	GW	9/1/1990				4	L
HW-6	HW-6	9/1/1990	Tier 3	1		Lead, total	ND/ND				ug/L	GW	9/1/1990				4	L
HW-1	HW-1	9/1/1990	Tier 3	1		Lead, total	<20	<			ug/L	GW	9/1/1990				4	L
HW-2	HW-2	9/1/1990	Tier 3	1		Lead, total	<20	<			ug/L	GW	9/1/1990				4	L
HW-3	HW-3	9/1/1990	Tier 3	1		Lead, total	<20	<			ug/L	GW	9/1/1990				4	L
HW-4	HW-4	9/1/1990	Tier 3	1		Lead, total	<20	<			ug/L	GW	9/1/1990				4	L
HW-1A	HW-1A	9/1/1990	Tier 3	1		Mercury, total	ND/ND				ug/L	GW	9/1/1990				2	A
HW-5	HW-5	9/1/1990	Tier 3	1		Mercury, total	ND/ND				ug/L	GW	9/1/1990				2	A
HW-5A	HW-5A	9/1/1990	Tier 3	1		Mercury, total	ND/ND				ug/L	GW	9/1/1990				2	A
HW-6	HW-6	9/1/1990	Tier 3	1		Mercury, total	ND/ND				ug/L	GW	9/1/1990				2	A
HW-1	HW-1	9/1/1990	Tier 3	1		Mercury, total	<0.52	<			ug/L	GW	9/1/1990				2	A
HW-2	HW-2	9/1/1990	Tier 3	1		Mercury, total	<0.2	<			ug/L	GW	9/1/1990				2	A
HW-3	HW-3	9/1/1990	Tier 3	1		Mercury, total	<0.2	<			ug/L	GW	9/1/1990				2	A
HW-4	HW-4	9/1/1990	Tier 3	1		Mercury, total	0.4				ug/L	GW	9/1/1990				2	A
HW-5A	HW-5A	9/1/1990	Tier 3	1		Nickel, total	23/ND				ug/L	GW	9/1/1990				100	A
HW-6	HW-6	9/1/1990	Tier 3	1		Nickel, total	14/ND				ug/L	GW	9/1/1990				100	A
HW-1A	HW-1A	9/1/1990	Tier 3	1		Nickel, total	13/ND				ug/L	GW	9/1/1990				100	A
HW-5	HW-5	9/1/1990	Tier 3	1		Nickel, total	13/ND				ug/L	GW	9/1/1990				100	A
HW-1	HW-1	9/1/1990	Tier 3	1		Nickel, total	<20	<			ug/L	GW	9/1/1990				100	A
HW-2	HW-2	9/1/1990	Tier 3	1		Nickel, total	<20	<			ug/L	GW	9/1/1990				100	A
HW-4	HW-4	9/1/1990	Tier 3	1		Nickel, total	<20	<			ug/L	GW	9/1/1990				100	A
HW-3	HW-3	9/1/1990	Tier 3	1		Nickel, total	60				ug/L	GW	9/1/1990				100	A
HW-1A	HW-1A	9/1/1990	Tier 3	1		Zinc, total	ND/ND				ug/L	GW	9/1/1990				2400	
HW-5	HW-5	9/1/1990	Tier 3	1		Zinc, total	ND/ND				ug/L	GW	9/1/1990				2400	
HW-5A	HW-5A	9/1/1990	Tier 3	1		Zinc, total	ND/ND				ug/L	GW	9/1/1990				2400	
HW-6	HW-6	9/1/1990	Tier 3	1		Zinc, total	ND/ND				ug/L	GW	9/1/1990				2400	
HW-2	HW-2	9/1/1990	Tier 3	1		Zinc, total	<5	<			ug/L	GW	9/1/1990				2400	
HW-4	HW-4	9/1/1990	Tier 3	1		Zinc, total	<5	<			ug/L	GW	9/1/1990				2400	
HW-3	HW-3	9/1/1990	Tier 3	1		Zinc, total	13				ug/L	GW	9/1/1990				2400	
HW-1	HW-1	9/1/1990	Tier 3	1		Zinc, total	10				ug/L	GW	9/1/1990				2400	
MW-3		5/8/1991	Tier 1	1		GW Elevation	1579.41				ft msl	GW	5/8/1991					
MW-4		5/8/1991	Tier 1	1		GW Elevation	1579.29				ft msl	GW	5/8/1991					
MW-2		5/8/1991	Tier 1	1		GW Elevation	1580.36				ft msl	GW	5/8/1991					
MW-1		5/8/1991	Tier 1	1		GW Elevation	1579.83				ft msl	GW	5/8/1991					
MW-4	MW-4	7/31/1991	Tier 3	1		Benzene	<1	U			ug/L	GW	7/31/1991				5	A
MW-1	--	7/31/1991	Tier 2	1	--	Benzene	ND				ug/L	GW	7/31/1991		Method 602	1	5	A
MW-2	--	7/31/1991	Tier 2	1	--	Benzene	2				ug/L	GW	7/31/1991		Method 602	1	5	A
MW-3	--	7/31/1991	Tier 2	1	--	Benzene	ND				ug/L	GW	7/31/1991		Method 602	1	5	A

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-4	MW-4	7/31/1991	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	7/31/1991				74	E
MW-1	--	7/31/1991	Tier 2	1	--	Ethylbenzene	ND				ug/l	GW	7/31/1991		Method 602	1	74	E
MW-2	--	7/31/1991	Tier 2	1	--	Ethylbenzene	ND				ug/l	GW	7/31/1991		Method 602	1	74	E
MW-3	--	7/31/1991	Tier 2	1	--	Ethylbenzene	ND				ug/l	GW	7/31/1991		Method 602	1	74	E
MW-4	MW-4	7/31/1991	Tier 3	1		Toluene	<1	U			ug/L	GW	7/31/1991				790	E
MW-1	--	7/31/1991	Tier 2	1	--	Toluene	ND				ug/L	GW	7/31/1991		Method 602	1	790	E
MW-2	--	7/31/1991	Tier 2	1	--	Toluene	1				ug/L	GW	7/31/1991		Method 602	1	790	E
MW-3	--	7/31/1991	Tier 2	1	--	Toluene	3				ug/L	GW	7/31/1991		Method 602	1	790	E
MW-4	MW-4	7/31/1991	Tier 3	1		TVAH					ug/L	GW	7/31/1991					
MW-4	MW-4	7/31/1991	Tier 3	1		Xylenes	<1	U			ug/l	GW	7/31/1991				280	E
MW-1	--	7/31/1991	Tier 2	1	--	Xylenes	ND				ug/l	GW	7/31/1991		Method 602	1	280	E
MW-2	--	7/31/1991	Tier 2	1	--	Xylenes	ND				ug/l	GW	7/31/1991		Method 602	1	280	E
MW-3	--	7/31/1991	Tier 2	1	--	Xylenes	ND				ug/l	GW	7/31/1991		Method 602	1	280	E
MW-2	--	7/31/1991	Tier 2	1	--	Acenaphthene	ND				ug/L	GW	7/31/1991		Method 8310	5	1300	
MW-3	--	7/31/1991	Tier 2	1	--	Acenaphthene	ND				ug/L	GW	7/31/1991		Method 8310	5	1300	
MW-1	--	7/31/1991	Tier 2	1	--	Acenaphthene	ND				ug/L	GW	7/31/1991		Method 8310	5	1300	
MW-3	--	7/31/1991	Tier 2	1	--	Acenaphthylene	ND				ug/L	GW	7/31/1991		Method 8310	5	52	
MW-2	--	7/31/1991	Tier 2	1	--	Acenaphthylene	ND				ug/L	GW	7/31/1991		Method 8310	5	52	
MW-1	--	7/31/1991	Tier 2	1	--	Acenaphthylene	ND				ug/L	GW	7/31/1991		Method 8310	5	52	
MW-3	--	7/31/1991	Tier 2	1	--	Anthracene	ND				ug/L	GW	7/31/1991		Method 8310	5	43	S
MW-2	--	7/31/1991	Tier 2	1	--	Anthracene	ND				ug/L	GW	7/31/1991		Method 8310	5	43	S
MW-1	--	7/31/1991	Tier 2	1	--	Anthracene	ND				ug/L	GW	7/31/1991		Method 8310	5	43	S
MW-1	--	7/31/1991	Tier 2	1	--	Benzo (a) anthracene	ND				ug/L	GW	7/31/1991		Method 8310	5	2	
MW-2	--	7/31/1991	Tier 2	1	--	Benzo (a) anthracene	ND				ug/L	GW	7/31/1991		Method 8310	5	2	
MW-3	--	7/31/1991	Tier 2	1	--	Benzo (a) anthracene	ND				ug/L	GW	7/31/1991		Method 8310	5	2	
MW-1	--	7/31/1991	Tier 2	1	--	Benzo (a) pyrene	ND				ug/L	GW	7/31/1991		Method 8310	5	5	A
MW-2	--	7/31/1991	Tier 2	1	--	Benzo (a) pyrene	ND				ug/L	GW	7/31/1991		Method 8310	5	5	A
MW-3	--	7/31/1991	Tier 2	1	--	Benzo (a) pyrene	ND				ug/L	GW	7/31/1991		Method 8310	5	5	A
MW-1	--	7/31/1991	Tier 2	1	--	Benzo (b) Fluoranthene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.5	S,AA
MW-2	--	7/31/1991	Tier 2	1	--	Benzo (b) Fluoranthene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.5	S,AA
MW-3	--	7/31/1991	Tier 2	1	--	Benzo (b) Fluoranthene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.5	S,AA
MW-1	--	7/31/1991	Tier 2	1	--	Benzo (g,h,i) perylene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.0	M
MW-2	--	7/31/1991	Tier 2	1	--	Benzo (g,h,i) perylene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.0	M
MW-3	--	7/31/1991	Tier 2	1	--	Benzo (g,h,i) perylene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.0	M
MW-1	--	7/31/1991	Tier 2	1	--	Benzo (k) Fluoranthene	ND				ug/l	GW	7/31/1991		Method 8310	5	1.0	M
MW-2	--	7/31/1991	Tier 2	1	--	Benzo (k) Fluoranthene	ND				ug/l	GW	7/31/1991		Method 8310	5	1.0	M
MW-3	--	7/31/1991	Tier 2	1	--	Benzo (k) Fluoranthene	ND				ug/l	GW	7/31/1991		Method 8310	5	1.0	M
MW-2	--	7/31/1991	Tier 2	1	--	Chrysene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.6	S
MW-1	--	7/31/1991	Tier 2	1	--	Chrysene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.6	S
MW-3	--	7/31/1991	Tier 2	1	--	Chrysene	ND				ug/L	GW	7/31/1991		Method 8310	5	1.6	S
MW-1	--	7/31/1991	Tier 2	1	--	Dibenzo (a,h) anthracene	ND				ug/l	GW	7/31/1991		Method 8310	5	2	M
MW-2	--	7/31/1991	Tier 2	1	--	Dibenzo (a,h) anthracene	ND				ug/l	GW	7/31/1991		Method 8310	5	2	M
MW-3	--	7/31/1991	Tier 2	1	--	Dibenzo (a,h) anthracene	ND				ug/l	GW	7/31/1991		Method 8310	5	2	M
MW-1	--	7/31/1991	Tier 2	1	--	Fluoranthene	ND				ug/L	GW	7/31/1991		Method 8310	5	210	S
MW-2	--	7/31/1991	Tier 2	1	--	Fluoranthene	ND				ug/L	GW	7/31/1991		Method 8310	5	210	S
MW-3	--	7/31/1991	Tier 2	1	--	Fluoranthene	ND				ug/L	GW	7/31/1991		Method 8310	5	210	S
MW-2	--	7/31/1991	Tier 2	1	--	Fluorene	ND				ug/L	GW	7/31/1991		Method 8310	5	880	
MW-3	--	7/31/1991	Tier 2	1	--	Fluorene	ND				ug/L	GW	7/31/1991		Method 8310	5	880	
MW-1	--	7/31/1991	Tier 2	1	--	Fluorene	ND				ug/L	GW	7/31/1991		Method 8310	5	880	
MW-1	--	7/31/1991	Tier 2	1	--	Indeno (1,2,3 - cd) pyrene	ND				ug/l	GW	7/31/1991		Method 8310	5	2	M
MW-2	--	7/31/1991	Tier 2	1	--	Indeno (1,2,3 - cd) pyrene	ND				ug/l	GW	7/31/1991		Method 8310	5	2	M
MW-3	--	7/31/1991	Tier 2	1	--	Indeno (1,2,3 - cd) pyrene	ND				ug/l	GW	7/31/1991		Method 8310	5	2	M
MW-3	--	7/31/1991	Tier 2	1	--	Naphthalene	ND				ug/L	GW	7/31/1991		Method 8310	5	520	
MW-2	--	7/31/1991	Tier 2	1	--	Naphthalene	ND				ug/L	GW	7/31/1991		Method 8310	5	520	
MW-1	--	7/31/1991	Tier 2	1	--	Naphthalene	ND				ug/L	GW	7/31/1991		Method 8310	5	520	
MW-3	--	7/31/1991	Tier 2	1	--	Phenanthrene	ND				ug/L	GW	7/31/1991		Method 8310	5	52	
MW-2	--	7/31/1991	Tier 2	1	--	Phenanthrene	ND				ug/L	GW	7/31/1991		Method 8310	5	52	
MW-1	--	7/31/1991	Tier 2	1	--	Phenanthrene	ND				ug/L	GW	7/31/1991		Method 8310	5	52	
MW-1	--	7/31/1991	Tier 2	1	--	Pyrene	ND				ug/L	GW	7/31/1991		Method 8310	5	140	S
MW-2	--	7/31/1991	Tier 2	1	--	Pyrene	ND				ug/L	GW	7/31/1991		Method 8310	5	140	S
MW-3	--	7/31/1991	Tier 2	1	--	Pyrene	ND				ug/L	GW	7/31/1991		Method 8310	5	140	S
MW-4		8/6/1991	Tier 1	1		GW Elevation	1579.29				ft msl	GW	8/6/1991					
MW-2		8/6/1991	Tier 1	1		GW Elevation	1580.36				ft msl	GW	8/6/1991					
MW-3		8/6/1991	Tier 1	1		GW Elevation	1579.41				ft msl	GW	8/6/1991					
MW-1		8/6/1991	Tier 1	1		GW Elevation	1579.83				ft msl	GW	8/6/1991					
MW-5	MW-5	8/16/1991	Tier 1	1	426	Benzene	20				ug/L	GW	8/16/1991		EPA 602	1	5	A
MW-5	MW-5	8/16/1991	Tier 1	1	426	Ethylbenzene	120				ug/l	GW	8/16/1991		EPA 602	1	74	E
MW-5	MW-5	8/16/1991	Tier 1	1	426	Toluene	30				ug/L	GW	8/16/1991		EPA 602	1	790	E
MW-5	MW-5	8/16/1991	Tier 1	1	426	Xylenes	1800				ug/l	GW	8/16/1991		EPA 602	1	280	E
MW-5	MW-5	8/16/1991	Tier 1	1	426	Acenaphthene	ND				ug/L	GW	8/16/1991		EPA 8310	5	1300	
MW-5	MW-5	8/16/1991	Tier 1	1	426	Acenaphthylene	30				ug/L	GW	8/16/1991		EPA 8310	5	52	
MW-5	MW-5	8/16/1991	Tier 1	1	426	Anthracene	ND				ug/L	GW	8/16/1991		EPA 8310	5	43	S
MW-5	MW-5	8/16/1991	Tier 1	1	426	Benzo (a) anthracene	ND				ug/L	GW	8/16/1991		EPA 8310	5	2	
MW-5	MW-5	8/16/1991	Tier 1	1	426	Benzo (a) pyrene	ND				ug/L	GW	8/16/1991		EPA 8310	5	5	A
MW-5	MW-5	8/16/1991	Tier 1	1	426	Benzo (b) Fluoranthene	ND				ug/L	GW	8/16/1991		EPA 8310	5	1.5	S,AA
MW-5	MW-5	8/16/1991	Tier 1	1	426	Benzo (g,h,i) perylene	ND				ug/L	GW	8/16/1991		EPA 8310	5	1.0	M

Prepared by: SVF
Checked by: JSL

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-5	MW-5	8/16/1991	Tier 1	1	426	Benzo (k) Fluoranthene	ND				ug/l	GW	8/16/1991		EPA 8310	5	1.0	M
MW-5	MW-5	8/16/1991	Tier 1	1	426	Chrysene	ND				ug/L	GW	8/16/1991		EPA 8310	5	1.6	S
MW-5	MW-5	8/16/1991	Tier 1	1	426	Dibenzo (a,h) anthracene	ND				ug/l	GW	8/16/1991		EPA 8310	5	2	M
MW-5	MW-5	8/16/1991	Tier 1	1	426	Fluoranthene	ND				ug/L	GW	8/16/1991		EPA 8310	5	210	S
MW-5	MW-5	8/16/1991	Tier 1	1	426	Fluorene	5				ug/L	GW	8/16/1991		EPA 8310	5	880	
MW-5	MW-5	8/16/1991	Tier 1	1	426	Indeno (1,2,3 - cd) pyrene	ND				ug/l	GW	8/16/1991		EPA 8310	5	2	M
MW-5	MW-5	8/16/1991	Tier 1	1	426	Naphthalene	83				ug/L	GW	8/16/1991		EPA 8310	5	520	
MW-5	MW-5	8/16/1991	Tier 1	1	426	Phenanthrene	ND				ug/L	GW	8/16/1991		EPA 8310	5	52	
MW-5	MW-5	8/16/1991	Tier 1	1	426	Pyrene	ND				ug/L	GW	8/16/1991		EPA 8310	5	140	S
MW-5		10/28/1991	Tier 1	1		GW Elevation	1580.49				ft msl	GW	10/28/1991					
MW-2		10/28/1991	Tier 1	1		GW Elevation	1579.11				ft msl	GW	10/28/1991					
MW-4		10/28/1991	Tier 1	1		GW Elevation	1578.22				ft msl	GW	10/28/1991					
MW-3		10/28/1991	Tier 1	1		GW Elevation	1578.03				ft msl	GW	10/28/1991					
MW-1		10/28/1991	Tier 1	1		GW Elevation	1579.24				ft msl	GW	10/28/1991					
MW-2		10/30/1991	Tier 1	1		GW Elevation	1579.21				ft msl	GW	10/30/1991					
MW-3		10/30/1991	Tier 1	1		GW Elevation	1578.29				ft msl	GW	10/30/1991					
MW-4		10/30/1991	Tier 1	1		GW Elevation	1578.37				ft msl	GW	10/30/1991					
MW-5		10/30/1991	Tier 1	1		GW Elevation	1580.33				ft msl	GW	10/30/1991					
MW-1		10/30/1991	Tier 1	1		GW Elevation	1579.49				ft msl	GW	10/30/1991					
MW-6	MW-6	10/30/1991	Tier 1	1	1555	Benzene	2				ug/L	GW	10/30/1991		EPA 602	1	5	A
MW-6	MW-6	10/30/1991	Tier 1	1	1555	Ethylbenzene	ND				ug/l	GW	10/30/1991		EPA 602	1	74	E
MW-6	MW-6	10/30/1991	Tier 1	1	1555	Toluene	130				ug/L	GW	10/30/1991		EPA 602	1	790	E
MW-6	MW-6	10/30/1991	Tier 1	1	1555	Xylenes	ND				ug/l	GW	10/30/1991		EPA 602	1	280	E
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Acenaphthene	ND				ug/L	GW	10/31/1991		EPA 8310	5	1300	
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Acenaphthylene	ND				ug/L	GW	10/31/1991		EPA 8310	5	52	
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Anthracene	ND				ug/L	GW	10/31/1991		EPA 8310	5	43	S
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Benzo (a) anthracene	ND				ug/L	GW	10/31/1991		EPA 8310	5	2	
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Benzo (a) pyrene	ND				ug/L	GW	10/31/1991		EPA 8310	5	5	A
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Benzo (b) Fluoranthene	ND				ug/L	GW	10/31/1991		EPA 8310	5	1.5	S,AA
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Benzo (g,h,i) perylene	ND				ug/L	GW	10/31/1991		EPA 8310	5	1.0	M
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Benzo (k) Fluoranthene	ND				ug/l	GW	10/31/1991		EPA 8310	5	1.0	M
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Chrysene	ND				ug/L	GW	10/31/1991		EPA 8310	5	1.6	S
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Dibenzo (a,h) anthracene	ND				ug/l	GW	10/31/1991		EPA 8310	5	2	M
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Fluoranthene	ND				ug/L	GW	10/31/1991		EPA 8310	5	210	S
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Fluorene	ND				ug/L	GW	10/31/1991		EPA 8310	5	880	
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Indeno (1,2,3 - cd) pyrene	ND				ug/l	GW	10/31/1991		EPA 8310	5	2	M
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Naphthalene	ND				ug/L	GW	10/31/1991		EPA 8310	5	520	
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Phenanthrene	ND				ug/L	GW	10/31/1991		EPA 8310	5	52	
MW-6	MW-6	10/31/1991	Tier 1	1	1556	Pyrene	ND				ug/L	GW	10/31/1991		EPA 8310	5	140	S
MW-4		11/8/1991	Tier 1	1		GW Elevation	1578.78				ft msl	GW	11/8/1991					
MW-5		11/8/1991	Tier 1	1		GW Elevation	1580.41				ft msl	GW	11/8/1991					
MW-6		11/8/1991	Tier 1	1		GW Elevation	1568.72				ft msl	GW	11/8/1991					
MW-2		11/8/1991	Tier 1	1		GW Elevation	1579.82				ft msl	GW	11/8/1991					
MW-3		11/8/1991	Tier 1	1		GW Elevation	1578.85				ft msl	GW	11/8/1991					
MW-1		11/8/1991	Tier 1	1		GW Elevation	1579.51				ft msl	GW	11/8/1991					
MW-6		12/26/1991	Tier 1	1		GW Elevation	1568.77				ft msl	GW	12/26/1991					
MW-4		12/26/1991	Tier 1	1		GW Elevation	1578.84				ft msl	GW	12/26/1991					
MW-5		12/26/1991	Tier 1	1		GW Elevation	1580.43				ft msl	GW	12/26/1991					
MW-2		12/26/1991	Tier 1	1		GW Elevation	1580.12				ft msl	GW	12/26/1991					
MW-3		12/26/1991	Tier 1	1		GW Elevation	1579.12				ft msl	GW	12/26/1991					
MW-1		12/26/1991	Tier 1	1		GW Elevation	1579.68				ft msl	GW	12/26/1991					
MW-5		1/15/1992	Tier 1	1		GW Elevation	1579.72				ft msl	GW	1/15/1992					
MW-6		1/15/1992	Tier 1	1		GW Elevation	1567.69				ft msl	GW	1/15/1992					
MW-7		1/15/1992	Tier 1	1		GW Elevation	1567.19				ft msl	GW	1/15/1992					
MW-1		1/15/1992	Tier 1	1		GW Elevation	1579.21				ft msl	GW	1/15/1992					
MW-4		1/15/1992	Tier 1	1		GW Elevation	1578.21				ft msl	GW	1/15/1992					
MW-9		1/15/1992	Tier 1	1		GW Elevation	1589.54				ft msl	GW	1/15/1992					
MW-2		1/15/1992	Tier 1	1		GW Elevation	1579.35				ft msl	GW	1/15/1992					
MW-3		1/15/1992	Tier 1	1		GW Elevation	1578.10				ft msl	GW	1/15/1992					
MW-2		1/16/1992	Tier 1	1		GW Elevation	1579.31				ft msl	GW	1/16/1992					
MW-3		1/16/1992	Tier 1	1		GW Elevation	1578.08				ft msl	GW	1/16/1992					
MW-9		1/16/1992	Tier 1	1		GW Elevation	1589.61				ft msl	GW	1/16/1992					
MW-1		1/16/1992	Tier 1	1		GW Elevation	1579.19				ft msl	GW	1/16/1992					
MW-4		1/16/1992	Tier 1	1		GW Elevation	1578.16				ft msl	GW	1/16/1992					
MW-6		1/16/1992	Tier 1	1		GW Elevation	1567.64				ft msl	GW	1/16/1992					
MW-5		1/16/1992	Tier 1	1		GW Elevation	1579.89				ft msl	GW	1/16/1992					
MW-7		1/16/1992	Tier 1	1		GW Elevation	1567.24				ft msl	GW	1/16/1992					
MW-1	MW-1-S1	1/16/1992	Tier 1	1	AA03585	Benzene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		5	A
MW-2	MW-2-S1	1/16/1992	Tier 1	1	AA03586	Benzene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		5	A
MW-3	MW-3-S1	1/16/1992	Tier 1	1	AA03587	Benzene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		5	A
MW-4	MW-4-S1	1/16/1992	Tier 1	1	AA03588	Benzene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		5	A
MW-5	MW-5-S1	1/16/1992	Tier 1	1	AA03589	Benzene	3		1		ug/L	GW	1/13/1992		EPA 602		5	A
MW-6	MW-6-S1	1/16/1992	Tier 1	1	AA03590	Benzene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		5	A
MW-7	MW-7-S1	1/16/1992	Tier 1	1	AA03591	Benzene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		5	A
MW-9	MW-9-S1	1/16/1992	Tier 1	1	AA03592	Benzene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		5	A
MW-1	MW-1-S1	1/16/1992	Tier 1	1	AA03585	Ethylbenzene	<1	U	1		ug/l	GW	1/13/1992		EPA 602		74	E

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-2	MW-2-S1	1/16/1992	Tier 1	1	AA03586	Ethylbenzene	<1	U	1		ug/l	GW	1/13/1992		EPA 602		74	E
MW-3	MW-3-S1	1/16/1992	Tier 1	1	AA03587	Ethylbenzene	<1	U	1		ug/l	GW	1/13/1992		EPA 602		74	E
MW-4	MW-4-S1	1/16/1992	Tier 1	1	AA03588	Ethylbenzene	<1	U	1		ug/l	GW	1/13/1992		EPA 602		74	E
MW-5	MW-5-S1	1/16/1992	Tier 1	1	AA03589	Ethylbenzene	20		1		ug/l	GW	1/13/1992		EPA 602		74	E
MW-6	MW-6-S1	1/16/1992	Tier 1	1	AA03590	Ethylbenzene	<1	U	1		ug/l	GW	1/13/1992		EPA 602		74	E
MW-7	MW-7-S1	1/16/1992	Tier 1	1	AA03591	Ethylbenzene	<1	U	1		ug/l	GW	1/13/1992		EPA 602		74	E
MW-9	MW-9-S1	1/16/1992	Tier 1	1	AA03592	Ethylbenzene	<1	U	1		ug/l	GW	1/13/1992		EPA 602		74	E
MW-1	MW-1-S1	1/16/1992	Tier 1	1	AA03585	Toluene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		790	E
MW-2	MW-2-S1	1/16/1992	Tier 1	1	AA03586	Toluene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		790	E
MW-3	MW-3-S1	1/16/1992	Tier 1	1	AA03587	Toluene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		790	E
MW-4	MW-4-S1	1/16/1992	Tier 1	1	AA03588	Toluene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		790	E
MW-5	MW-5-S1	1/16/1992	Tier 1	1	AA03589	Toluene	5		1		ug/L	GW	1/13/1992		EPA 602		790	E
MW-6	MW-6-S1	1/16/1992	Tier 1	1	AA03590	Toluene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		790	E
MW-7	MW-7-S1	1/16/1992	Tier 1	1	AA03591	Toluene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		790	E
MW-9	MW-9-S1	1/16/1992	Tier 1	1	AA03592	Toluene	<1	U	1		ug/L	GW	1/13/1992		EPA 602		790	E
MW-1	MW-1-S1	1/16/1992	Tier 1	1	AA03585	Xylenes	<1	U	1		ug/l	GW	1/13/1992		EPA 602		280	E
MW-2	MW-2-S1	1/16/1992	Tier 1	1	AA03586	Xylenes	<1	U	1		ug/l	GW	1/13/1992		EPA 602		280	E
MW-3	MW-3-S1	1/16/1992	Tier 1	1	AA03587	Xylenes	<1	U	1		ug/l	GW	1/13/1992		EPA 602		280	E
MW-4	MW-4-S1	1/16/1992	Tier 1	1	AA03588	Xylenes	<1	U	1		ug/l	GW	1/13/1992		EPA 602		280	E
MW-5	MW-5-S1	1/16/1992	Tier 1	1	AA03589	Xylenes	320		1		ug/l	GW	1/13/1992		EPA 602		280	E
MW-6	MW-6-S1	1/16/1992	Tier 1	1	AA03590	Xylenes	<1	U	1		ug/l	GW	1/13/1992		EPA 602		280	E
MW-7	MW-7-S1	1/16/1992	Tier 1	1	AA03591	Xylenes	<1	U	1		ug/l	GW	1/13/1992		EPA 602		280	E
MW-9	MW-9-S1	1/16/1992	Tier 1	1	AA03592	Xylenes	<1	U	1		ug/l	GW	1/13/1992		EPA 602		280	E
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Acenaphthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		1300	
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Acenaphthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		1300	
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Acenaphthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		1300	
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Acenaphthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		1300	
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Acenaphthene	300		5		ug/L	GW	1/13/1992		SW-846 8310		1300	
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Acenaphthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		1300	
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Acenaphthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		1300	
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Acenaphthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		1300	
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Acenaphthylene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Acenaphthylene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Acenaphthylene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Acenaphthylene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Acenaphthylene	24		5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Acenaphthylene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Acenaphthylene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Acenaphthylene	10		5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		43	S
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		43	S
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		43	S
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		43	S
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		43	S
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		43	S
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		43	S
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		43	S
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Benzo (a) anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		2	
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Benzo (a) anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		2	
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Benzo (a) anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		2	
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Benzo (a) anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		2	
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Benzo (a) anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		2	
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Benzo (a) anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		2	
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Benzo (a) anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		2	
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Benzo (a) anthracene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		2	
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Benzo (a) pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		5	A
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Benzo (a) pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		5	A
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Benzo (a) pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		5	A
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Benzo (a) pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		5	A
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Benzo (a) pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		5	A
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Benzo (a) pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		5	A
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Benzo (a) pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		5	A
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Benzo (a) pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		5	A
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.5	S,AA
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.5	S,AA
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.5	S,AA
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.5	S,AA
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.5	S,AA
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.5	S,AA
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.5	S,AA
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.5	S,AA
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.0	M
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.0	M
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.0	M
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.0	M
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.0	M

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.0	M
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.0	M
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.0	M
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	1/13/1992		SW-846 8310		1.0	M
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	1/13/1992		SW-846 8310		1.0	M
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	1/13/1992		SW-846 8310		1.0	M
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	1/13/1992		SW-846 8310		1.0	M
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	1/13/1992		SW-846 8310		1.0	M
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	1/13/1992		SW-846 8310		1.0	M
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	1/13/1992		SW-846 8310		1.0	M
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	1/13/1992		SW-846 8310		1.0	M
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Chrysene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.6	S
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Chrysene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.6	S
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Chrysene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.6	S
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Chrysene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.6	S
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Chrysene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.6	S
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Chrysene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.6	S
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Chrysene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.6	S
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Chrysene	<5	P,U	5		ug/L	GW	1/13/1992		SW-846 8310		1.6	S
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Fluoranthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		210	S
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Fluoranthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		210	S
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Fluoranthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		210	S
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Fluoranthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		210	S
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Fluoranthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		210	S
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Fluoranthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		210	S
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Fluoranthene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		210	S
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Fluoranthene	5		5		ug/L	GW	1/13/1992		SW-846 8310		210	S
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Fluorene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		880	
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Fluorene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		880	
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Fluorene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		880	
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Fluorene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		880	
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Fluorene	14		5		ug/L	GW	1/13/1992		SW-846 8310		880	
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Fluorene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		880	
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Fluorene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		880	
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Fluorene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		880	
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	1/13/1992		SW-846 8310		2	M
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Naphthalene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		520	
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Naphthalene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		520	
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Naphthalene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		520	
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Naphthalene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		520	
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Naphthalene	50		5		ug/L	GW	1/13/1992		SW-846 8310		520	
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Naphthalene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		520	
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Naphthalene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		520	
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Naphthalene	8		5		ug/L	GW	1/13/1992		SW-846 8310		520	
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Phenanthrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Phenanthrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Phenanthrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Phenanthrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Phenanthrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Phenanthrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Phenanthrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Phenanthrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		52	
MW-1	MW-1-S2	1/16/1992	Tier 1	1	AA03593	Pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		140	S
MW-2	MW-2-S2	1/16/1992	Tier 1	1	AA03594	Pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		140	S
MW-3	MW-3-S2	1/16/1992	Tier 1	1	AA03595	Pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		140	S
MW-4	MW-4-S2	1/16/1992	Tier 1	1	AA03596	Pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		140	S
MW-5	MW-5-S2	1/16/1992	Tier 1	1	AA03597	Pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		140	S
MW-6	MW-6-S2	1/16/1992	Tier 1	1	AA03598	Pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		140	S
MW-7	MW-7-S2	1/16/1992	Tier 1	1	AA03599	Pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		140	S
MW-9	MW-9-S2	1/16/1992	Tier 1	1	AA03600	Pyrene	<5	U	5		ug/L	GW	1/13/1992		SW-846 8310		140	S
MW-4		1/27/1992	Tier 1	1		GW Elevation	1577.91				ft msl	GW	1/27/1992					

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-3		1/27/1992	Tier 1	1		GW Elevation	1577.64				ft msl	GW	1/27/1992					
MW-1		1/27/1992	Tier 1	1		GW Elevation	1578.93				ft msl	GW	1/27/1992					
MW-6		1/27/1992	Tier 1	1		GW Elevation	1567.24				ft msl	GW	1/27/1992					
MW-5		1/27/1992	Tier 1	1		GW Elevation	1579.30				ft msl	GW	1/27/1992					
MW-7		1/27/1992	Tier 1	1		GW Elevation	1566.57				ft msl	GW	1/27/1992					
MW-9		1/27/1992	Tier 1	1		GW Elevation	1588.91				ft msl	GW	1/27/1992					
MW-2		1/27/1992	Tier 1	1		GW Elevation	1578.88				ft msl	GW	1/27/1992					
HW-6	HW-6	2/1/1992	Tier 3	1		Arsenic, total	ND				ug/L	GW	2/1/1992				10	EPA 2006
HW-6A	HW-6A	2/1/1992	Tier 3	1		Arsenic, total	ND				ug/L	GW	2/1/1992				10	EPA 2006
HW-6A	HW-6A	2/1/1992	Tier 3	1		Copper, total	40				ug/L	GW	2/1/1992				1000	E
HW-6	HW-6	2/1/1992	Tier 3	1		Copper, total	10				ug/L	GW	2/1/1992				1000	E
HW-6	HW-6	2/1/1992	Tier 3	1		Nickel, total	ND				ug/L	GW	2/1/1992				100	A
HW-6A	HW-6A	2/1/1992	Tier 3	1		Nickel, total	ND				ug/L	GW	2/1/1992				100	A
MW-7		2/11/1992	Tier 1	1		GW Elevation					ft msl	GW	2/11/1992					
MW-3		2/11/1992	Tier 1	1		GW Elevation	1577.15				ft msl	GW	2/11/1992					
MW-1		2/11/1992	Tier 1	1		GW Elevation	1578.69				ft msl	GW	2/11/1992					
MW-4		2/11/1992	Tier 1	1		GW Elevation	1577.61				ft msl	GW	2/11/1992					
MW-6		2/11/1992	Tier 1	1		GW Elevation	1567.04				ft msl	GW	2/11/1992					
MW-9		2/11/1992	Tier 1	1		GW Elevation					ft msl	GW	2/11/1992					
MW-5		2/11/1992	Tier 1	1		GW Elevation	1578.65				ft msl	GW	2/11/1992					
MW-2		2/11/1992	Tier 1	1		GW Elevation	1578.45				ft msl	GW	2/11/1992					
MW-5		2/21/1992	Tier 1	1		GW Elevation	1578.52				ft msl	GW	2/21/1992					
MW-3		2/21/1992	Tier 1	1		GW Elevation	1576.95				ft msl	GW	2/21/1992					
MW-1		2/21/1992	Tier 1	1		GW Elevation	1578.63				ft msl	GW	2/21/1992					
MW-4		2/21/1992	Tier 1	1		GW Elevation	1577.64				ft msl	GW	2/21/1992					
MW-9		2/21/1992	Tier 1	1		GW Elevation	1587.57				ft msl	GW	2/21/1992					
MW-7		2/21/1992	Tier 1	1		GW Elevation	1565.25				ft msl	GW	2/21/1992					
MW-2		2/21/1992	Tier 1	1		GW Elevation	1578.30				ft msl	GW	2/21/1992					
MW-1		2/24/1992	Tier 1	1		GW Elevation	1578.63				ft msl	GW	2/24/1992					
MW-9		2/24/1992	Tier 1	1		GW Elevation	1587.66				ft msl	GW	2/24/1992					
MW-2		2/24/1992	Tier 1	1		GW Elevation	1578.29				ft msl	GW	2/24/1992					
MW-3		2/24/1992	Tier 1	1		GW Elevation	1576.91				ft msl	GW	2/24/1992					
MW-4		2/24/1992	Tier 1	1		GW Elevation	1577.57				ft msl	GW	2/24/1992					
MW-5		2/24/1992	Tier 1	1		GW Elevation	1578.62				ft msl	GW	2/24/1992					
MW-7		2/24/1992	Tier 1	1		GW Elevation	1565.13				ft msl	GW	2/24/1992					
MW-9		3/19/1992	Tier 1	1		GW Elevation	1590.33				ft msl	GW	3/19/1992					
MW-10		3/19/1992	Tier 1	1		GW Elevation	1572.03				ft msl	GW	3/19/1992					
MW-2		3/19/1992	Tier 1	1		GW Elevation	1579.68				ft msl	GW	3/19/1992					
MW-3		3/19/1992	Tier 1	1		GW Elevation	1578.52				ft msl	GW	3/19/1992					
MW-4		3/19/1992	Tier 1	1		GW Elevation	1578.61				ft msl	GW	3/19/1992					
MW-5		3/19/1992	Tier 1	1		GW Elevation	1578.31				ft msl	GW	3/19/1992					
MW-1		3/19/1992	Tier 1	1		GW Elevation	1579.54				ft msl	GW	3/19/1992					
MW-7		3/19/1992	Tier 1	1		GW Elevation	1565.29				ft msl	GW	3/19/1992					
MW-10	MW-10	3/19/1992	Tier 3	1		Benzene	<1	U			ug/L	GW	3/19/1992				5	A
00011	00011	3/19/1992	Tier 1	1	AA05164	Benzene	<1	U	1		ug/L	GW	3/19/1992		EPA 602		5	A
MW-10	MW-10	3/19/1992	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/19/1992				74	E
00011	00011	3/19/1992	Tier 1	1	AA05164	Ethylbenzene	<1	U	1		ug/l	GW	3/19/1992		EPA 602		74	E
MW-10	MW-10	3/19/1992	Tier 3	1		Toluene	1				ug/L	GW	3/19/1992				790	E
00011	00011	3/19/1992	Tier 1	1	AA05164	Toluene	1		1		ug/L	GW	3/19/1992		EPA 602		790	E
MW-10	MW-10	3/19/1992	Tier 3	1		TVAH					ug/L	GW	3/19/1992					
MW-10	MW-10	3/19/1992	Tier 3	1		Xylenes	3				ug/l	GW	3/19/1992				280	E
00011	00011	3/19/1992	Tier 1	1	AA05164	Xylenes	3		1		ug/l	GW	3/19/1992		EPA 602		280	E
00011	00011	3/19/1992	Tier 1	1	AA05164	Acenaphthene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		1300	
00011	00011	3/19/1992	Tier 1	1	AA05164	Acenaphthylene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		52	
00011	00011	3/19/1992	Tier 1	1	AA05164	Anthracene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		43	S
00011	00011	3/19/1992	Tier 1	1	AA05164	Benzo (a) anthracene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		2	
00011	00011	3/19/1992	Tier 1	1	AA05164	Benzo (a) pyrene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		5	A
00011	00011	3/19/1992	Tier 1	1	AA05164	Benzo (b) Fluoranthene	<5	P,U	5		ug/L	GW	3/19/1992		SW 846 8310		1.5	S,AA
00011	00011	3/19/1992	Tier 1	1	AA05164	Benzo (g,h,i) perylene	<5	P,U	5		ug/L	GW	3/19/1992		SW 846 8310		1.0	M
00011	00011	3/19/1992	Tier 1	1	AA05164	Benzo (k) Fluoranthene	<5	P,U	5		ug/l	GW	3/19/1992		SW 846 8310		1.0	M
00011	00011	3/19/1992	Tier 1	1	AA05164	Chrysene	<5	P,U	5		ug/L	GW	3/19/1992		SW 846 8310		1.6	S
00011	00011	3/19/1992	Tier 1	1	AA05164	Dibenzo (a,h) anthracene	<5	U	5		ug/l	GW	3/19/1992		SW 846 8310		2	M
00011	00011	3/19/1992	Tier 1	1	AA05164	Fluoranthene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		210	S
00011	00011	3/19/1992	Tier 1	1	AA05164	Fluorene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		880	
00011	00011	3/19/1992	Tier 1	1	AA05164	Indeno (1,2,3 - cd) pyrene	<5	U	5		ug/l	GW	3/19/1992		SW 846 8310		2	M
00011	00011	3/19/1992	Tier 1	1	AA05164	Naphthalene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		520	
00011	00011	3/19/1992	Tier 1	1	AA05164	Phenanthrene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		52	
00011	00011	3/19/1992	Tier 1	1	AA05164	Pyrene	<5	U	5		ug/L	GW	3/19/1992		SW 846 8310		140	S
MW-9		3/31/1992	Tier 1	1		GW Elevation	1591.24				ft msl	GW	3/31/1992					
MW-10		3/31/1992	Tier 1	1		GW Elevation	1572.10				ft msl	GW	3/31/1992					
MW-2		3/31/1992	Tier 1	1		GW Elevation	1580.22				ft msl	GW	3/31/1992					
MW-3		3/31/1992	Tier 1	1		GW Elevation	1579.16				ft msl	GW	3/31/1992					
MW-4		3/31/1992	Tier 1	1		GW Elevation	1579.00				ft msl	GW	3/31/1992					
MW-5		3/31/1992	Tier 1	1		GW Elevation	1578.14				ft msl	GW	3/31/1992					
MW-7		3/31/1992	Tier 1	1		GW Elevation	1565.29				ft msl	GW	3/31/1992					
MW-1		3/31/1992	Tier 1	1		GW Elevation	1579.72				ft msl	GW	3/31/1992					

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
HW-1A	HW-1A	8/1/1992	Tier 3	1		Arsenic, total	4				ug/L	GW	8/1/1992				10	EPA 2006
HYG-1	HYG-1	8/1/1992	Tier 3	1		Arsenic, total	4				ug/L	GW	8/1/1992				10	EPA 2006
HW-1A	HW-1A	8/1/1992	Tier 3	1		Copper, total	<10	<			ug/L	GW	8/1/1992				1000	E
HYG-1	HYG-1	8/1/1992	Tier 3	1		Copper, total	30				ug/L	GW	8/1/1992				1000	E
HW-1A	HW-1A	8/1/1992	Tier 3	1		Nickel, total	<10	<			ug/L	GW	8/1/1992				100	A
HYG-1	HYG-1	8/1/1992	Tier 3	1		Nickel, total	20				ug/L	GW	8/1/1992				100	A
MW-4	MW-4	8/18/1992	Tier 3	1		Arsenic	83				ug/L	GW	8/18/1992				10	EPA 2006
MW-11	MW-11	8/18/1992	Tier 3	1		Arsenic	37				ug/L	GW	8/18/1992				10	EPA 2006
MW-12	MW-12	8/18/1992	Tier 3	1		Arsenic	9				ug/L	GW	8/18/1992				10	EPA 2006
MW-4	MW-4	8/18/1992	Tier 3	1		Barium	300				ug/L	GW	8/18/1992				2000	A
MW-11	MW-11	8/18/1992	Tier 3	1		Barium	540				ug/L	GW	8/18/1992				2000	A
MW-12	MW-12	8/18/1992	Tier 3	1		Barium	100				ug/L	GW	8/18/1992				2000	A
MW-4	MW-4	8/18/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	8/18/1992				5	A
MW-11	MW-11	8/18/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	8/18/1992				5	A
MW-12	MW-12	8/18/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	8/18/1992				5	A
MW-4	MW-4	8/18/1992	Tier 3	1		Calcium					ug/L	GW	8/18/1992					
MW-11	MW-11	8/18/1992	Tier 3	1		Calcium					ug/L	GW	8/18/1992					
MW-12	MW-12	8/18/1992	Tier 3	1		Calcium					ug/L	GW	8/18/1992					
MW-4	MW-4	8/18/1992	Tier 3	1		Chromium, total	<10	U			ug/L	GW	8/18/1992				100	A
MW-11	MW-11	8/18/1992	Tier 3	1		Chromium, total	90				ug/L	GW	8/18/1992				100	A
MW-12	MW-12	8/18/1992	Tier 3	1		Chromium, total	20				ug/L	GW	8/18/1992				100	A
MW-4	MW-4	8/18/1992	Tier 3	1		Copper	180				ug/L	GW	8/18/1992				1000	E
MW-11	MW-11	8/18/1992	Tier 3	1		Copper	110				ug/L	GW	8/18/1992				1000	E
MW-12	MW-12	8/18/1992	Tier 3	1		Copper	20				ug/L	GW	8/18/1992				1000	E
MW-4	MW-4	8/18/1992	Tier 3	1		Iron	170000				ug/L	GW	8/18/1992				300	E
MW-11	MW-11	8/18/1992	Tier 3	1		Iron	300000				ug/L	GW	8/18/1992				300	E
MW-12	MW-12	8/18/1992	Tier 3	1		Iron	7000				ug/L	GW	8/18/1992				300	E
MW-4	MW-4	8/18/1992	Tier 3	1		Lead	<30	U			ug/L	GW	8/18/1992				4	L
MW-11	MW-11	8/18/1992	Tier 3	1		Lead	120				ug/L	GW	8/18/1992				4	L
MW-12	MW-12	8/18/1992	Tier 3	1		Lead	<30	U			ug/L	GW	8/18/1992				4	L
MW-4	MW-4	8/18/1992	Tier 3	1		Magnesium					ug/L	GW	8/18/1992				400000	
MW-11	MW-11	8/18/1992	Tier 3	1		Magnesium					ug/L	GW	8/18/1992				400000	
MW-12	MW-12	8/18/1992	Tier 3	1		Magnesium					ug/L	GW	8/18/1992				400000	
MW-4	MW-4	8/18/1992	Tier 3	1		Manganese	62000				ug/L	GW	8/18/1992				50	E
MW-11	MW-11	8/18/1992	Tier 3	1		Manganese	13000				ug/L	GW	8/18/1992				50	E
MW-12	MW-12	8/18/1992	Tier 3	1		Manganese	1900				ug/L	GW	8/18/1992				50	E
MW-4	MW-4	8/18/1992	Tier 3	1		Mercury	0.2				ug/L	GW	8/18/1992				2	A
MW-11	MW-11	8/18/1992	Tier 3	1		Mercury	<0.2	U			ug/L	GW	8/18/1992				2	A
MW-12	MW-12	8/18/1992	Tier 3	1		Mercury	<0.2	U			ug/L	GW	8/18/1992				2	A
MW-4	MW-4	8/18/1992	Tier 3	1		Nickel	940				ug/L	GW	8/18/1992				100	A
MW-11	MW-11	8/18/1992	Tier 3	1		Nickel	70				ug/L	GW	8/18/1992				100	A
MW-12	MW-12	8/18/1992	Tier 3	1		Nickel	10				ug/L	GW	8/18/1992				100	A
MW-4	MW-4	8/18/1992	Tier 3	1		Potassium					ug/L	GW	8/18/1992					
MW-11	MW-11	8/18/1992	Tier 3	1		Potassium					ug/L	GW	8/18/1992					
MW-12	MW-12	8/18/1992	Tier 3	1		Potassium					ug/L	GW	8/18/1992					
MW-4	MW-4	8/18/1992	Tier 3	1		Selenium	<15	U			ug/L	GW	8/18/1992				50	A
MW-11	MW-11	8/18/1992	Tier 3	1		Selenium	15				ug/L	GW	8/18/1992				50	A
MW-12	MW-12	8/18/1992	Tier 3	1		Selenium	<6	U			ug/L	GW	8/18/1992				50	A
MW-4	MW-4	8/18/1992	Tier 3	1		Silver	<5	U			ug/L	GW	8/18/1992				34	
MW-11	MW-11	8/18/1992	Tier 3	1		Silver	<5	U			ug/L	GW	8/18/1992				34	
MW-12	MW-12	8/18/1992	Tier 3	1		Silver	<5	U			ug/L	GW	8/18/1992				34	
MW-4	MW-4	8/18/1992	Tier 3	1		Sodium					ug/L	GW	8/18/1992				120000	
MW-11	MW-11	8/18/1992	Tier 3	1		Sodium					ug/L	GW	8/18/1992				120000	
MW-12	MW-12	8/18/1992	Tier 3	1		Sodium					ug/L	GW	8/18/1992				120000	
MW-4	MW-4	8/18/1992	Tier 3	1		Zinc	90				ug/L	GW	8/18/1992				2400	
MW-11	MW-11	8/18/1992	Tier 3	1		Zinc	220				ug/L	GW	8/18/1992				2400	
MW-12	MW-12	8/18/1992	Tier 3	1		Zinc	40				ug/L	GW	8/18/1992				2400	
MW-4	MW-4	12/17/1992	Tier 3	1		Arsenic	120				ug/L	GW	12/17/1992				10	EPA 2006
MW-11	MW-11	12/17/1992	Tier 3	1		Arsenic	16				ug/L	GW	12/17/1992				10	EPA 2006
MW-12	MW-12	12/17/1992	Tier 3	1		Arsenic	12				ug/L	GW	12/17/1992				10	EPA 2006
MW-4	MW-4	12/17/1992	Tier 3	1		Barium	220				ug/L	GW	12/17/1992				2000	A
MW-11	MW-11	12/17/1992	Tier 3	1		Barium	190				ug/L	GW	12/17/1992				2000	A
MW-12	MW-12	12/17/1992	Tier 3	1		Barium	40				ug/L	GW	12/17/1992				2000	A
MW-4	MW-4	12/17/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	12/17/1992				5	A
MW-11	MW-11	12/17/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	12/17/1992				5	A
MW-12	MW-12	12/17/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	12/17/1992				5	A
MW-4	MW-4	12/17/1992	Tier 3	1		Calcium					ug/L	GW	12/17/1992					
MW-11	MW-11	12/17/1992	Tier 3	1		Calcium					ug/L	GW	12/17/1992					
MW-12	MW-12	12/17/1992	Tier 3	1		Calcium					ug/L	GW	12/17/1992					
MW-4	MW-4	12/17/1992	Tier 3	1		Chromium, total	<10	U			ug/L	GW	12/17/1992				100	A
MW-11	MW-11	12/17/1992	Tier 3	1		Chromium, total	10				ug/L	GW	12/17/1992				100	A
MW-12	MW-12	12/17/1992	Tier 3	1		Chromium, total	<10	U			ug/L	GW	12/17/1992				100	A
MW-4	MW-4	12/17/1992	Tier 3	1		Copper	90				ug/L	GW	12/17/1992				1000	E
MW-11	MW-11	12/17/1992	Tier 3	1		Copper	30				ug/L	GW	12/17/1992				1000	E
MW-12	MW-12	12/17/1992	Tier 3	1		Copper	20				ug/L	GW	12/17/1992				1000	E
MW-4	MW-4	12/17/1992	Tier 3	1		Iron	170000				ug/L	GW	12/17/1992				300	E

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Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-11	MW-11	12/17/1992	Tier 3	1		Iron	240000				ug/L	GW	12/17/1992				300	E
MW-12	MW-12	12/17/1992	Tier 3	1		Iron	16000				ug/L	GW	12/17/1992				300	E
MW-4	MW-4	12/17/1992	Tier 3	1		Lead	<30	U			ug/L	GW	12/17/1992				4	L
MW-11	MW-11	12/17/1992	Tier 3	1		Lead	50				ug/L	GW	12/17/1992				4	L
MW-12	MW-12	12/17/1992	Tier 3	1		Lead	30				ug/L	GW	12/17/1992				4	L
MW-4	MW-4	12/17/1992	Tier 3	1		Magnesium					ug/L	GW	12/17/1992				400000	
MW-11	MW-11	12/17/1992	Tier 3	1		Magnesium					ug/L	GW	12/17/1992				400000	
MW-12	MW-12	12/17/1992	Tier 3	1		Magnesium					ug/L	GW	12/17/1992				400000	
MW-4	MW-4	12/17/1992	Tier 3	1		Manganese	49000				ug/L	GW	12/17/1992				50	E
MW-11	MW-11	12/17/1992	Tier 3	1		Manganese	9700				ug/L	GW	12/17/1992				50	E
MW-12	MW-12	12/17/1992	Tier 3	1		Manganese	1100				ug/L	GW	12/17/1992				50	E
MW-4	MW-4	12/17/1992	Tier 3	1		Mercury	0.9				ug/L	GW	12/17/1992				2	A
MW-11	MW-11	12/17/1992	Tier 3	1		Mercury	0.6				ug/L	GW	12/17/1992				2	A
MW-12	MW-12	12/17/1992	Tier 3	1		Mercury	<0.2	U			ug/L	GW	12/17/1992				2	A
MW-4	MW-4	12/17/1992	Tier 3	1		Nickel	790				ug/L	GW	12/17/1992				100	A
MW-11	MW-11	12/17/1992	Tier 3	1		Nickel	20				ug/L	GW	12/17/1992				100	A
MW-12	MW-12	12/17/1992	Tier 3	1		Nickel	<10	U			ug/L	GW	12/17/1992				100	A
MW-4	MW-4	12/17/1992	Tier 3	1		Potassium					ug/L	GW	12/17/1992					
MW-11	MW-11	12/17/1992	Tier 3	1		Potassium					ug/L	GW	12/17/1992					
MW-12	MW-12	12/17/1992	Tier 3	1		Potassium					ug/L	GW	12/17/1992					
MW-4	MW-4	12/17/1992	Tier 3	1		Selenium	<2	U			ug/L	GW	12/17/1992				50	A
MW-11	MW-11	12/17/1992	Tier 3	1		Selenium	<2	U			ug/L	GW	12/17/1992				50	A
MW-12	MW-12	12/17/1992	Tier 3	1		Selenium	<2	U			ug/L	GW	12/17/1992				50	A
MW-4	MW-4	12/17/1992	Tier 3	1		Silver	<5	U			ug/L	GW	12/17/1992				34	
MW-11	MW-11	12/17/1992	Tier 3	1		Silver	<5	U			ug/L	GW	12/17/1992				34	
MW-12	MW-12	12/17/1992	Tier 3	1		Silver	<5	U			ug/L	GW	12/17/1992				34	
MW-4	MW-4	12/17/1992	Tier 3	1		Sodium					ug/L	GW	12/17/1992				120000	
MW-11	MW-11	12/17/1992	Tier 3	1		Sodium					ug/L	GW	12/17/1992				120000	
MW-12	MW-12	12/17/1992	Tier 3	1		Sodium					ug/L	GW	12/17/1992				120000	
MW-4	MW-4	12/17/1992	Tier 3	1		Zinc	100				ug/L	GW	12/17/1992				2400	
MW-11	MW-11	12/17/1992	Tier 3	1		Zinc	120				ug/L	GW	12/17/1992				2400	
MW-12	MW-12	12/17/1992	Tier 3	1		Zinc	60				ug/L	GW	12/17/1992				2400	
MW-4	MW-4	12/28/1992	Tier 3	1		Arsenic	<2	U			ug/L	GW	12/28/1992				10	EPA 2006
MW-11	MW-11	12/28/1992	Tier 3	1		Arsenic	6				ug/L	GW	12/28/1992				10	EPA 2006
MW-12	MW-12	12/28/1992	Tier 3	1		Arsenic	5				ug/L	GW	12/28/1992				10	EPA 2006
MW-4	MW-4	12/28/1992	Tier 3	1		Barium	90				ug/L	GW	12/28/1992				2000	A
MW-11	MW-11	12/28/1992	Tier 3	1		Barium	180				ug/L	GW	12/28/1992				2000	A
MW-12	MW-12	12/28/1992	Tier 3	1		Barium	30				ug/L	GW	12/28/1992				2000	A
MW-4	MW-4	12/28/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	12/28/1992				5	A
MW-11	MW-11	12/28/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	12/28/1992				5	A
MW-12	MW-12	12/28/1992	Tier 3	1		Cadmium	<5	U			ug/L	GW	12/28/1992				5	A
MW-4	MW-4	12/28/1992	Tier 3	1		Calcium					ug/L	GW	12/28/1992					
MW-11	MW-11	12/28/1992	Tier 3	1		Calcium					ug/L	GW	12/28/1992					
MW-12	MW-12	12/28/1992	Tier 3	1		Calcium					ug/L	GW	12/28/1992					
MW-4	MW-4	12/28/1992	Tier 3	1		Chromium, total	<10	U			ug/L	GW	12/28/1992				100	A
MW-11	MW-11	12/28/1992	Tier 3	1		Chromium, total	<10	U			ug/L	GW	12/28/1992				100	A
MW-12	MW-12	12/28/1992	Tier 3	1		Chromium, total	<10	U			ug/L	GW	12/28/1992				100	A
MW-4	MW-4	12/28/1992	Tier 3	1		Copper	20				ug/L	GW	12/28/1992				1000	E
MW-11	MW-11	12/28/1992	Tier 3	1		Copper	30				ug/L	GW	12/28/1992				1000	E
MW-12	MW-12	12/28/1992	Tier 3	1		Copper	10				ug/L	GW	12/28/1992				1000	E
MW-4	MW-4	12/28/1992	Tier 3	1		Iron	120000				ug/L	GW	12/28/1992				300	E
MW-11	MW-11	12/28/1992	Tier 3	1		Iron	230000				ug/L	GW	12/28/1992				300	E
MW-12	MW-12	12/28/1992	Tier 3	1		Iron	5100				ug/L	GW	12/28/1992				300	E
MW-4	MW-4	12/28/1992	Tier 3	1		Lead	<30	U			ug/L	GW	12/28/1992				4	L
MW-11	MW-11	12/28/1992	Tier 3	1		Lead	<30	U			ug/L	GW	12/28/1992				4	L
MW-12	MW-12	12/28/1992	Tier 3	1		Lead	<30	U			ug/L	GW	12/28/1992				4	L
MW-4	MW-4	12/28/1992	Tier 3	1		Magnesium					ug/L	GW	12/28/1992				400000	
MW-11	MW-11	12/28/1992	Tier 3	1		Magnesium					ug/L	GW	12/28/1992				400000	
MW-12	MW-12	12/28/1992	Tier 3	1		Magnesium					ug/L	GW	12/28/1992				400000	
MW-4	MW-4	12/28/1992	Tier 3	1		Manganese	47000				ug/L	GW	12/28/1992				50	E
MW-11	MW-11	12/28/1992	Tier 3	1		Manganese	10000				ug/L	GW	12/28/1992				50	E
MW-12	MW-12	12/28/1992	Tier 3	1		Manganese	1000				ug/L	GW	12/28/1992				50	E
MW-4	MW-4	12/28/1992	Tier 3	1		Mercury	<0.2	U			ug/L	GW	12/28/1992				2	A
MW-11	MW-11	12/28/1992	Tier 3	1		Mercury	<0.2	U			ug/L	GW	12/28/1992				2	A
MW-12	MW-12	12/28/1992	Tier 3	1		Mercury	<0.2	U			ug/L	GW	12/28/1992				2	A
MW-4	MW-4	12/28/1992	Tier 3	1		Nickel	780				ug/L	GW	12/28/1992				100	A
MW-11	MW-11	12/28/1992	Tier 3	1		Nickel	20				ug/L	GW	12/28/1992				100	A
MW-12	MW-12	12/28/1992	Tier 3	1		Nickel	10				ug/L	GW	12/28/1992				100	A
MW-4	MW-4	12/28/1992	Tier 3	1		Potassium					ug/L	GW	12/28/1992					
MW-11	MW-11	12/28/1992	Tier 3	1		Potassium					ug/L	GW	12/28/1992					
MW-12	MW-12	12/28/1992	Tier 3	1		Potassium					ug/L	GW	12/28/1992					
MW-4	MW-4	12/28/1992	Tier 3	1		Selenium	<2	U			ug/L	GW	12/28/1992				50	A
MW-11	MW-11	12/28/1992	Tier 3	1		Selenium	<2	U			ug/L	GW	12/28/1992				50	A
MW-12	MW-12	12/28/1992	Tier 3	1		Selenium	<2	U			ug/L	GW	12/28/1992				50	A
MW-4	MW-4	12/28/1992	Tier 3	1		Silver	<5	U			ug/L	GW	12/28/1992				34	
MW-11	MW-11	12/28/1992	Tier 3	1		Silver	<5	U			ug/L	GW	12/28/1992				34	

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-12	MW-12	12/28/1992	Tier 3	1		Silver	<5	U			ug/L	GW	12/28/1992				34	
MW-4	MW-4	12/28/1992	Tier 3	1		Sodium					ug/L	GW	12/28/1992				120000	
MW-11	MW-11	12/28/1992	Tier 3	1		Sodium					ug/L	GW	12/28/1992				120000	
MW-12	MW-12	12/28/1992	Tier 3	1		Sodium					ug/L	GW	12/28/1992				120000	
MW-4	MW-4	12/28/1992	Tier 3	1		Zinc	120				ug/L	GW	12/28/1992				2400	
MW-12	MW-12	12/28/1992	Tier 3	1		Zinc	40				ug/L	GW	12/28/1992				2400	
MW-4	MW-4	8/10/1993	Tier 3	1		Arsenic	180				ug/L	GW	8/10/1993				10	EPA 2006
MW-11	MW-11	8/10/1993	Tier 3	1		Arsenic	10				ug/L	GW	8/10/1993				10	EPA 2006
MW-12	MW-12	8/10/1993	Tier 3	1		Arsenic	14				ug/L	GW	8/10/1993				10	EPA 2006
MW-4	MW-4	8/10/1993	Tier 3	1		Barium					ug/L	GW	8/10/1993				2000	A
MW-11	MW-11	8/10/1993	Tier 3	1		Barium					ug/L	GW	8/10/1993				2000	A
MW-12	MW-12	8/10/1993	Tier 3	1		Barium					ug/L	GW	8/10/1993				2000	A
MW-4	MW-4	8/10/1993	Tier 3	1		Cadmium					ug/L	GW	8/10/1993				5	A
MW-11	MW-11	8/10/1993	Tier 3	1		Cadmium					ug/L	GW	8/10/1993				5	A
MW-12	MW-12	8/10/1993	Tier 3	1		Cadmium					ug/L	GW	8/10/1993				5	A
MW-4	MW-4	8/10/1993	Tier 3	1		Calcium					ug/L	GW	8/10/1993					
MW-11	MW-11	8/10/1993	Tier 3	1		Calcium					ug/L	GW	8/10/1993					
MW-12	MW-12	8/10/1993	Tier 3	1		Calcium					ug/L	GW	8/10/1993					
MW-4	MW-4	8/10/1993	Tier 3	1		Chromium, total					ug/L	GW	8/10/1993				100	A
MW-11	MW-11	8/10/1993	Tier 3	1		Chromium, total					ug/L	GW	8/10/1993				100	A
MW-12	MW-12	8/10/1993	Tier 3	1		Chromium, total					ug/L	GW	8/10/1993				100	A
MW-4	MW-4	8/10/1993	Tier 3	1		Copper	110				ug/L	GW	8/10/1993				1000	E
MW-11	MW-11	8/10/1993	Tier 3	1		Copper	<10	U			ug/L	GW	8/10/1993				1000	E
MW-12	MW-12	8/10/1993	Tier 3	1		Copper	20				ug/L	GW	8/10/1993				1000	E
MW-4	MW-4	8/10/1993	Tier 3	1		Iron	240000				ug/L	GW	8/10/1993				300	E
MW-11	MW-11	8/10/1993	Tier 3	1		Iron	11000				ug/L	GW	8/10/1993				300	E
MW-12	MW-12	8/10/1993	Tier 3	1		Iron	200000				ug/L	GW	8/10/1993				300	E
MW-4	MW-4	8/10/1993	Tier 3	1		Lead	<30	U			ug/L	GW	8/10/1993				4	L
MW-11	MW-11	8/10/1993	Tier 3	1		Lead	<30	U			ug/L	GW	8/10/1993				4	L
MW-12	MW-12	8/10/1993	Tier 3	1		Lead	<30	U			ug/L	GW	8/10/1993				4	L
MW-4	MW-4	8/10/1993	Tier 3	1		Magnesium					ug/L	GW	8/10/1993				400000	
MW-11	MW-11	8/10/1993	Tier 3	1		Magnesium					ug/L	GW	8/10/1993				400000	
MW-12	MW-12	8/10/1993	Tier 3	1		Magnesium					ug/L	GW	8/10/1993				400000	
MW-4	MW-4	8/10/1993	Tier 3	1		Manganese					ug/L	GW	8/10/1993				50	E
MW-11	MW-11	8/10/1993	Tier 3	1		Manganese					ug/L	GW	8/10/1993				50	E
MW-12	MW-12	8/10/1993	Tier 3	1		Manganese					ug/L	GW	8/10/1993				50	E
MW-4	MW-4	8/10/1993	Tier 3	1		Mercury	0.8				ug/L	GW	8/10/1993				2	A
MW-11	MW-11	8/10/1993	Tier 3	1		Mercury	<0.2	U			ug/L	GW	8/10/1993				2	A
MW-12	MW-12	8/10/1993	Tier 3	1		Mercury	<0.2	U			ug/L	GW	8/10/1993				2	A
MW-4	MW-4	8/10/1993	Tier 3	1		Nickel	2200				ug/L	GW	8/10/1993				100	A
MW-11	MW-11	8/10/1993	Tier 3	1		Nickel	<10	U			ug/L	GW	8/10/1993				100	A
MW-12	MW-12	8/10/1993	Tier 3	1		Nickel	<10	U			ug/L	GW	8/10/1993				100	A
MW-4	MW-4	8/10/1993	Tier 3	1		Potassium					ug/L	GW	8/10/1993					
MW-11	MW-11	8/10/1993	Tier 3	1		Potassium					ug/L	GW	8/10/1993					
MW-12	MW-12	8/10/1993	Tier 3	1		Potassium					ug/L	GW	8/10/1993					
MW-4	MW-4	8/10/1993	Tier 3	1		Selenium					ug/L	GW	8/10/1993				50	A
MW-11	MW-11	8/10/1993	Tier 3	1		Selenium					ug/L	GW	8/10/1993				50	A
MW-12	MW-12	8/10/1993	Tier 3	1		Selenium					ug/L	GW	8/10/1993				50	A
MW-4	MW-4	8/10/1993	Tier 3	1		Silver					ug/L	GW	8/10/1993				34	
MW-11	MW-11	8/10/1993	Tier 3	1		Silver					ug/L	GW	8/10/1993				34	
MW-12	MW-12	8/10/1993	Tier 3	1		Silver					ug/L	GW	8/10/1993				34	
MW-4	MW-4	8/10/1993	Tier 3	1		Sodium					ug/L	GW	8/10/1993				120000	
MW-11	MW-11	8/10/1993	Tier 3	1		Sodium					ug/L	GW	8/10/1993				120000	
MW-12	MW-12	8/10/1993	Tier 3	1		Sodium					ug/L	GW	8/10/1993				120000	
MW-4	MW-4	8/10/1993	Tier 3	1		Zinc	20				ug/L	GW	8/10/1993				2400	
MW-11	MW-11	8/10/1993	Tier 3	1		Zinc	120				ug/L	GW	8/10/1993				2400	
MW-11	MW-11	8/10/1993	Tier 3	1		Zinc	10				ug/L	GW	8/10/1993				2400	
MW-12	MW-12	8/10/1993	Tier 3	1		Zinc	60				ug/L	GW	8/10/1993				2400	
MW-7		1/12/1994	Tier 1	1		GW Elevation	1564.64				ft msl	GW	1/12/1994					
MW-1		1/12/1994	Tier 1	1		GW Elevation	1578.45				ft msl	GW	1/12/1994					
MW-2		1/12/1994	Tier 1	1		GW Elevation	1578.02				ft msl	GW	1/12/1994					
MW-3		1/12/1994	Tier 1	1		GW Elevation	1576.57				ft msl	GW	1/12/1994					
MW-4		1/12/1994	Tier 1	1		GW Elevation	1577.32				ft msl	GW	1/12/1994					
MW-5		1/12/1994	Tier 1	1		GW Elevation	1576.71				ft msl	GW	1/12/1994					
MW-10		1/12/1994	Tier 1	1		GW Elevation	1570.97				ft msl	GW	1/12/1994					
MW-9		1/12/1994	Tier 1	1		GW Elevation	1585.75				ft msl	GW	1/12/1994					
MW-1	MW-1	1/20/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	1/20/1994				5	A
MW-2	MW-2	1/20/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	1/20/1994				5	A
MW-3	MW-3	1/20/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	1/20/1994				5	A
MW-4	MW-4	1/20/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	1/20/1994				5	A
MW-5	MW-5	1/20/1994	Tier 3	1		Benzene	<25	U			ug/L	GW	1/20/1994				5	A
MW-7	MW-7	1/20/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	1/20/1994				5	A
MW-9	MW-9	1/20/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	1/20/1994				5	A
MW-10	MW-10	1/20/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	1/20/1994				5	A
MW-1	MW-1	1/20/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	1/20/1994				74	E
MW-2	MW-2	1/20/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	1/20/1994				74	E

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Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-3	MW-3	1/20/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	1/20/1994				74	E
MW-4	MW-4	1/20/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	1/20/1994				74	E
MW-5	MW-5	1/20/1994	Tier 3	1		Ethylbenzene	93				ug/l	GW	1/20/1994				74	E
MW-7	MW-7	1/20/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	1/20/1994				74	E
MW-9	MW-9	1/20/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	1/20/1994				74	E
MW-10	MW-10	1/20/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	1/20/1994				74	E
MW-1	MW-1	1/20/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	1/20/1994				790	E
MW-2	MW-2	1/20/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	1/20/1994				790	E
MW-3	MW-3	1/20/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	1/20/1994				790	E
MW-4	MW-4	1/20/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	1/20/1994				790	E
MW-5	MW-5	1/20/1994	Tier 3	1		Toluene	<25	U			ug/L	GW	1/20/1994				790	E
MW-7	MW-7	1/20/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	1/20/1994				790	E
MW-9	MW-9	1/20/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	1/20/1994				790	E
MW-10	MW-10	1/20/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	1/20/1994				790	E
MW-1	MW-1	1/20/1994	Tier 3	1		TVAH					ug/L	GW	1/20/1994					
MW-2	MW-3	1/20/1994	Tier 3	1		TVAH					ug/L	GW	1/20/1994					
MW-3	MW-3	1/20/1994	Tier 3	1		TVAH					ug/L	GW	1/20/1994					
MW-4	MW-4	1/20/1994	Tier 3	1		TVAH					ug/L	GW	1/20/1994					
MW-5	MW-5	1/20/1994	Tier 3	1		TVAH					ug/L	GW	1/20/1994					
MW-7	MW-7	1/20/1994	Tier 3	1		TVAH					ug/L	GW	1/20/1994					
MW-9	MW-9	1/20/1994	Tier 3	1		TVAH					ug/L	GW	1/20/1994					
MW-10	MW-10	1/20/1994	Tier 3	1		TVAH					ug/L	GW	1/20/1994					
MW-1	MW-1	1/20/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	1/20/1994				280	E
MW-2	MW-2	1/20/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	1/20/1994				280	E
MW-3	MW-3	1/20/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	1/20/1994				280	E
MW-4	MW-4	1/20/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	1/20/1994				280	E
MW-5	MW-5	1/20/1994	Tier 3	1		Xylenes	1700				ug/l	GW	1/20/1994				280	E
MW-7	MW-7	1/20/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	1/20/1994				280	E
MW-9	MW-9	1/20/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	1/20/1994				280	E
MW-10	MW-10	1/20/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	1/20/1994				280	E
MW-4	MW-4	2/2/1994	Tier 3	1		Arsenic	66				ug/L	GW	2/2/1994				10	EPA 2006
MW-11	MW-11	2/2/1994	Tier 3	1		Arsenic	30				ug/L	GW	2/2/1994				10	EPA 2006
MW-12	MW-12	2/2/1994	Tier 3	1		Arsenic	400				ug/L	GW	2/2/1994				10	EPA 2006
MW-4	MW-4	2/2/1994	Tier 3	1		Barium					ug/L	GW	2/2/1994				2000	A
MW-11	MW-11	2/2/1994	Tier 3	1		Barium					ug/L	GW	2/2/1994				2000	A
MW-12	MW-12	2/2/1994	Tier 3	1		Barium					ug/L	GW	2/2/1994				2000	A
MW-4	MW-4	2/2/1994	Tier 3	1		Cadmium					ug/L	GW	2/2/1994				5	A
MW-11	MW-11	2/2/1994	Tier 3	1		Cadmium					ug/L	GW	2/2/1994				5	A
MW-12	MW-12	2/2/1994	Tier 3	1		Cadmium					ug/L	GW	2/2/1994				5	A
MW-4	MW-4	2/2/1994	Tier 3	1		Calcium					ug/L	GW	2/2/1994					
MW-11	MW-11	2/2/1994	Tier 3	1		Calcium					ug/L	GW	2/2/1994					
MW-12	MW-12	2/2/1994	Tier 3	1		Calcium					ug/L	GW	2/2/1994					
MW-4	MW-4	2/2/1994	Tier 3	1		Chromium, total					ug/L	GW	2/2/1994				100	A
MW-11	MW-11	2/2/1994	Tier 3	1		Chromium, total					ug/L	GW	2/2/1994				100	A
MW-12	MW-12	2/2/1994	Tier 3	1		Chromium, total					ug/L	GW	2/2/1994				100	A
MW-4	MW-4	2/2/1994	Tier 3	1		Copper	40				ug/L	GW	2/2/1994				1000	E
MW-11	MW-11	2/2/1994	Tier 3	1		Copper	90				ug/L	GW	2/2/1994				1000	E
MW-12	MW-12	2/2/1994	Tier 3	1		Copper	30				ug/L	GW	2/2/1994				1000	E
MW-4	MW-4	2/2/1994	Tier 3	1		Iron	170000				ug/L	GW	2/2/1994				300	E
MW-11	MW-11	2/2/1994	Tier 3	1		Iron	260000				ug/L	GW	2/2/1994				300	E
MW-12	MW-12	2/2/1994	Tier 3	1		Iron	37000				ug/L	GW	2/2/1994				300	E
MW-4	MW-4	2/2/1994	Tier 3	1		Lead	<30	U			ug/L	GW	2/2/1994				4	L
MW-11	MW-11	2/2/1994	Tier 3	1		Lead	50				ug/L	GW	2/2/1994				4	L
MW-12	MW-12	2/2/1994	Tier 3	1		Lead	<30	U			ug/L	GW	2/2/1994				4	L
MW-4	MW-4	2/2/1994	Tier 3	1		Magnesium					ug/L	GW	2/2/1994				400000	
MW-11	MW-11	2/2/1994	Tier 3	1		Magnesium					ug/L	GW	2/2/1994				400000	
MW-12	MW-12	2/2/1994	Tier 3	1		Magnesium					ug/L	GW	2/2/1994				400000	
MW-4	MW-4	2/2/1994	Tier 3	1		Manganese					ug/L	GW	2/2/1994				50	E
MW-11	MW-11	2/2/1994	Tier 3	1		Manganese					ug/L	GW	2/2/1994				50	E
MW-12	MW-12	2/2/1994	Tier 3	1		Manganese					ug/L	GW	2/2/1994				50	E
MW-4	MW-4	2/2/1994	Tier 3	1		Mercury	<0.1	U			ug/L	GW	2/2/1994				2	A
MW-11	MW-11	2/2/1994	Tier 3	1		Mercury	0.1				ug/L	GW	2/2/1994				2	A
MW-12	MW-12	2/2/1994	Tier 3	1		Mercury	<0.2	U			ug/L	GW	2/2/1994				2	A
MW-4	MW-4	2/2/1994	Tier 3	1		Nickel	1300				ug/L	GW	2/2/1994				100	A
MW-11	MW-11	2/2/1994	Tier 3	1		Nickel	<20	U			ug/L	GW	2/2/1994				100	A
MW-12	MW-12	2/2/1994	Tier 3	1		Nickel	<20	U			ug/L	GW	2/2/1994				100	A
MW-4	MW-4	2/2/1994	Tier 3	1		Potassium					ug/L	GW	2/2/1994					
MW-11	MW-11	2/2/1994	Tier 3	1		Potassium					ug/L	GW	2/2/1994					
MW-12	MW-12	2/2/1994	Tier 3	1		Potassium					ug/L	GW	2/2/1994					
MW-4	MW-4	2/2/1994	Tier 3	1		Selenium					ug/L	GW	2/2/1994				50	A
MW-11	MW-11	2/2/1994	Tier 3	1		Selenium					ug/L	GW	2/2/1994				50	A
MW-12	MW-12	2/2/1994	Tier 3	1		Selenium					ug/L	GW	2/2/1994				50	A
MW-4	MW-4	2/2/1994	Tier 3	1		Silver					ug/L	GW	2/2/1994				34	
MW-11	MW-11	2/2/1994	Tier 3	1		Silver					ug/L	GW	2/2/1994				34	
MW-12	MW-12	2/2/1994	Tier 3	1		Silver					ug/L	GW	2/2/1994				34	
MW-4	MW-4	2/2/1994	Tier 3	1		Sodium					ug/L	GW	2/2/1994				120000	

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MW-11	MW-11	2/2/1994	Tier 3	1		Sodium					ug/L	GW	2/2/1994				120000	
MW-12	MW-12	2/2/1994	Tier 3	1		Sodium					ug/L	GW	2/2/1994				120000	
MW-4	MW-4	2/2/1994	Tier 3	1		Zinc	260				ug/L	GW	2/2/1994				2400	
MW-11	MW-11	2/2/1994	Tier 3	1		Zinc	170				ug/L	GW	2/2/1994				2400	
MW-12	MW-12	2/2/1994	Tier 3	1		Zinc	700				ug/L	GW	2/2/1994				2400	
HW-3	HW-3	3/1/1994	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	3/1/1994				10	EPA 2006
HW-3	HW-3	3/1/1994	Tier 3	1		Copper, total	ND				ug/L	GW	3/1/1994				1000	E
HW-3	HW-3	3/1/1994	Tier 3	1		Nickel, total	80				ug/L	GW	3/1/1994				100	A
MW-9		3/14/1994	Tier 1	1		GW Elevation	1585.45				ft msl	GW	3/14/1994					
MW-1		3/14/1994	Tier 1	1		GW Elevation	1577.54				ft msl	GW	3/14/1994					
MW-10		3/14/1994	Tier 1	1		GW Elevation	1570.19				ft msl	GW	3/14/1994					
MW-2		3/14/1994	Tier 1	1		GW Elevation	1577.64				ft msl	GW	3/14/1994					
MW-3		3/14/1994	Tier 1	1		GW Elevation	1576.57				ft msl	GW	3/14/1994					
MW-4		3/14/1994	Tier 1	1		GW Elevation	1576.43				ft msl	GW	3/14/1994					
MW-7		3/14/1994	Tier 1	1		GW Elevation	1562.56				ft msl	GW	3/14/1994					
MW-1	MW-1	3/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	3/14/1994				5	A
MW-2	MW-2	3/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	3/14/1994				5	A
MW-3	MW-3	3/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	3/14/1994				5	A
MW-4	MW-4	3/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	3/14/1994				5	A
MW-5	MW-5	3/14/1994	Tier 3	1		Benzene	0				ug/L	GW	3/14/1994				5	A
MW-7	MW-7	3/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	3/14/1994				5	A
MW-9	MW-9	3/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	3/14/1994				5	A
MW-10	MW-10	3/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	3/14/1994				5	A
MW-1	MW-1	3/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/14/1994				74	E
MW-2	MW-2	3/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/14/1994				74	E
MW-3	MW-3	3/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/14/1994				74	E
MW-4	MW-4	3/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/14/1994				74	E
MW-5	MW-5	3/14/1994	Tier 3	1		Ethylbenzene	0				ug/l	GW	3/14/1994				74	E
MW-7	MW-7	3/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/14/1994				74	E
MW-9	MW-9	3/14/1994	Tier 3	1		Ethylbenzene	2				ug/l	GW	3/14/1994				74	E
MW-10	MW-10	3/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/14/1994				74	E
MW-1	MW-1	3/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	3/14/1994				790	E
MW-2	MW-2	3/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	3/14/1994				790	E
MW-3	MW-3	3/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	3/14/1994				790	E
MW-4	MW-4	3/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	3/14/1994				790	E
MW-5	MW-5	3/14/1994	Tier 3	1		Toluene	0				ug/L	GW	3/14/1994				790	E
MW-7	MW-7	3/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	3/14/1994				790	E
MW-9	MW-9	3/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	3/14/1994				790	E
MW-10	MW-10	3/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	3/14/1994				790	E
MW-1	MW-1	3/14/1994	Tier 3	1		TVAH					ug/L	GW	3/14/1994					
MW-2	MW-2	3/14/1994	Tier 3	1		TVAH					ug/L	GW	3/14/1994					
MW-3	MW-3	3/14/1994	Tier 3	1		TVAH					ug/L	GW	3/14/1994					
MW-4	MW-4	3/14/1994	Tier 3	1		TVAH					ug/L	GW	3/14/1994					
MW-5	MW-5	3/14/1994	Tier 3	1		TVAH					ug/L	GW	3/14/1994					
MW-7	MW-7	3/14/1994	Tier 3	1		TVAH					ug/L	GW	3/14/1994					
MW-9	MW-9	3/14/1994	Tier 3	1		TVAH					ug/L	GW	3/14/1994					
MW-10	MW-10	3/14/1994	Tier 3	1		TVAH					ug/L	GW	3/14/1994					
MW-1	MW-1	3/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/14/1994				280	E
MW-2	MW-2	3/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/14/1994				280	E
MW-3	MW-3	3/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/14/1994				280	E
MW-4	MW-4	3/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/14/1994				280	E
MW-5	MW-5	3/14/1994	Tier 3	1		Xylenes	0				ug/l	GW	3/14/1994				280	E
MW-7	MW-7	3/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/14/1994				280	E
MW-9	MW-9	3/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/14/1994				280	E
MW-10	MW-10	3/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/14/1994				280	E
HW-3	HW-3	4/1/1994	Tier 3	1		Arsenic, total	ND				ug/L	GW	4/1/1994				10	EPA 2006
HW-4	HW-4	4/1/1994	Tier 3	1		Arsenic, total	ND				ug/L	GW	4/1/1994				10	EPA 2006
HW-4	HW-4	4/1/1994	Tier 3	1		Copper, total	<10	<			ug/L	GW	4/1/1994				1000	E
HW-3	HW-3	4/1/1994	Tier 3	1		Copper, total	10				ug/L	GW	4/1/1994				1000	E
HW-4	HW-4	4/1/1994	Tier 3	1		Nickel, total	<10	<			ug/L	GW	4/1/1994				100	A
HW-3	HW-3	4/1/1994	Tier 3	1		Nickel, total	50				ug/L	GW	4/1/1994				100	A
MW-9		6/2/1994	Tier 1	1		GW Elevation	1590.86				ft msl	GW	6/2/1994					
MW-1		6/2/1994	Tier 1	1		GW Elevation	1580.54				ft msl	GW	6/2/1994					
MW-4		6/2/1994	Tier 1	1		GW Elevation	1580.24				ft msl	GW	6/2/1994					
MW-10		6/2/1994	Tier 1	1		GW Elevation	1574.49				ft msl	GW	6/2/1994					
MW-2		6/2/1994	Tier 1	1		GW Elevation	1581.29				ft msl	GW	6/2/1994					
MW-3		6/2/1994	Tier 1	1		GW Elevation	1580.32				ft msl	GW	6/2/1994					
MW-6		6/2/1994	Tier 1	1		GW Elevation	1568.40				ft msl	GW	6/2/1994					
MW-7		6/2/1994	Tier 1	1		GW Elevation	1567.31				ft msl	GW	6/2/1994					
MW-1	MW-1	6/2/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	6/2/1994				5	A
MW-2	MW-2	6/2/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	6/2/1995				5	A
MW-3	MW-3	6/2/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	6/2/1994				5	A
MW-4	MW-4	6/2/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	6/2/1994				5	A
MW-6	MW-6	6/2/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	6/2/1994				5	A
MW-7	MW-7	6/2/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	6/2/1994				5	A
MW-9	MW-9	6/2/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	6/2/1994				5	A

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-10	MW-10	6/2/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	6/2/1994				5	A
MW-1	MW-1	6/2/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	6/2/1994				74	E
MW-2	MW-2	6/2/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	6/2/1995				74	E
MW-3	MW-3	6/2/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	6/2/1994				74	E
MW-4	MW-4	6/2/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	6/2/1994				74	E
MW-6	MW-6	6/2/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	6/2/1994				74	E
MW-7	MW-7	6/2/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	6/2/1994				74	E
MW-9	MW-9	6/2/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	6/2/1994				74	E
MW-10	MW-10	6/2/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	6/2/1994				74	E
MW-1	MW-1	6/2/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	6/2/1994				790	E
MW-2	MW-2	6/2/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	6/2/1995				790	E
MW-3	MW-3	6/2/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	6/2/1994				790	E
MW-4	MW-4	6/2/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	6/2/1994				790	E
MW-6	MW-6	6/2/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	6/2/1994				790	E
MW-7	MW-7	6/2/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	6/2/1994				790	E
MW-9	MW-9	6/2/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	6/2/1994				790	E
MW-10	MW-10	6/2/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	6/2/1994				790	E
MW-1	MW-1	6/2/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1994					
MW-2	MW-2	6/2/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1995					
MW-3	MW-3	6/2/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1994					
MW-4	MW-4	6/2/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1994					
MW-6	MW-6	6/2/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1994					
MW-7	MW-7	6/2/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1994					
MW-9	MW-9	6/2/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1994					
MW-10	MW-10	6/2/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1994					
MW-1	MW-1	6/2/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	6/2/1994				280	E
MW-2	MW-2	6/2/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	6/2/1995				280	E
MW-3	MW-3	6/2/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	6/2/1994				280	E
MW-4	MW-4	6/2/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	6/2/1994				280	E
MW-6	MW-6	6/2/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	6/2/1994				280	E
MW-7	MW-7	6/2/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	6/2/1994				280	E
MW-9	MW-9	6/2/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	6/2/1994				280	E
MW-10	MW-10	6/2/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	6/2/1994				280	E
MW-9		9/14/1994	Tier 1	1		GW Elevation	1589.24				ft msl	GW	9/14/1994					
MW-10		9/14/1994	Tier 1	1		GW Elevation	1572.02				ft msl	GW	9/14/1994					
MW-1		9/14/1994	Tier 1	1		GW Elevation	1579.57				ft msl	GW	9/14/1994					
MW-2		9/14/1994	Tier 1	1		GW Elevation	1579.32				ft msl	GW	9/14/1994					
MW-3		9/14/1994	Tier 1	1		GW Elevation	1578.54				ft msl	GW	9/14/1994					
MW-4		9/14/1994	Tier 1	1		GW Elevation	1578.41				ft msl	GW	9/14/1994					
MW-5		9/14/1994	Tier 1	1		GW Elevation	1577.79				ft msl	GW	9/14/1994					
MW-6		9/14/1994	Tier 1	1		GW Elevation	1566.71				ft msl	GW	9/14/1994					
MW-7		9/14/1994	Tier 1	1		GW Elevation	1565.22				ft msl	GW	9/14/1994					
MW-1	MW-1	9/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	9/14/1994				5	A
MW-2	MW-2	9/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	9/14/1994				5	A
MW-3	MW-3	9/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	9/14/1994				5	A
MW-4	MW-4	9/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	9/14/1994				5	A
MW-5	MW-5	9/14/1994	Tier 3	1		Benzene	24				ug/L	GW	6/2/1994				5	A
MW-7	MW-7	9/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	9/14/1994				5	A
MW-9	MW-9	9/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	9/14/1994				5	A
MW-10	MW-10	9/14/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	9/14/1994				5	A
MW-1	MW-1	9/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/14/1994				74	E
MW-2	MW-2	9/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/14/1994				74	E
MW-3	MW-3	9/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/14/1994				74	E
MW-4	MW-4	9/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/14/1994				74	E
MW-5	MW-5	9/14/1994	Tier 3	1		Ethylbenzene	120				ug/l	GW	6/2/1994				74	E
MW-7	MW-7	9/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/14/1994				74	E
MW-9	MW-9	9/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/14/1994				74	E
MW-10	MW-10	9/14/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/14/1994				74	E
MW-1	MW-1	9/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	9/14/1994				790	E
MW-2	MW-2	9/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	9/14/1994				790	E
MW-3	MW-3	9/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	9/14/1994				790	E
MW-4	MW-4	9/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	9/14/1994				790	E
MW-5	MW-5	9/14/1994	Tier 3	1		Toluene	18				ug/L	GW	6/2/1994				790	E
MW-7	MW-7	9/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	9/14/1994				790	E
MW-9	MW-9	9/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	9/14/1994				790	E
MW-10	MW-10	9/14/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	9/14/1994				790	E
MW-1	MW-1	9/14/1994	Tier 3	1		TVAH					ug/L	GW	9/14/1994					
MW-2	MW-2	9/14/1994	Tier 3	1		TVAH					ug/L	GW	9/14/1994					
MW-3	MW-3	9/14/1994	Tier 3	1		TVAH					ug/L	GW	9/14/1994					
MW-4	MW-4	9/14/1994	Tier 3	1		TVAH					ug/L	GW	9/14/1994					
MW-5	MW-5	9/14/1994	Tier 3	1		TVAH					ug/L	GW	6/2/1994					
MW-7	MW-7	9/14/1994	Tier 3	1		TVAH					ug/L	GW	9/14/1994					
MW-9	MW-9	9/14/1994	Tier 3	1		TVAH					ug/L	GW	9/14/1994					
MW-10	MW-10	9/14/1994	Tier 3	1		TVAH					ug/L	GW	9/14/1994					
MW-1	MW-1	9/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	9/14/1994				280	E
MW-2	MW-2	9/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	9/14/1994				280	E

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-3	MW-3	9/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	9/14/1994				280	E
MW-4	MW-4	9/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	9/14/1994				280	E
MW-5	MW-5	9/14/1994	Tier 3	1		Xylenes	200				ug/l	GW	6/2/1994				280	E
MW-7	MW-7	9/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	9/14/1994				280	E
MW-9	MW-9	9/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	9/14/1994				280	E
MW-10	MW-10	9/14/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	9/14/1994				280	E
MW-7		12/7/1994	Tier 1	1		GW Elevation	1563.53				ft msl	GW	12/7/1994					
MW-9		12/7/1994	Tier 1	1		GW Elevation	1588.12				ft msl	GW	12/7/1994					
MW-10		12/7/1994	Tier 1	1		GW Elevation	1570.89				ft msl	GW	12/7/1994					
MW-2		12/7/1994	Tier 1	1		GW Elevation	1578.60				ft msl	GW	12/7/1994					
MW-3		12/7/1994	Tier 1	1		GW Elevation	1577.37				ft msl	GW	12/7/1994					
MW-4		12/7/1994	Tier 1	1		GW Elevation	1577.71				ft msl	GW	12/7/1994					
MW-5		12/7/1994	Tier 1	1		GW Elevation	1576.80				ft msl	GW	12/7/1994					
MW-1	MW-1	12/7/1994	Tier 3	1		Benzene		IS			ug/L	GW	12/7/1994				5	A
MW-2	MW-2	12/7/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	12/7/1994				5	A
MW-3	MW-3	12/7/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	12/7/1994				5	A
MW-4	MW-4	12/7/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	12/7/1994				5	A
MW-5	MW-5	12/7/1994	Tier 3	1		Benzene	20				ug/L	GW	9/14/1994				5	A
MW-7	MW-7	12/7/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	12/7/1994				5	A
MW-9	MW-9	12/7/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	12/7/1994				5	A
MW-10	MW-10	12/7/1994	Tier 3	1		Benzene	<1	U			ug/L	GW	12/7/1994				5	A
MW-1	MW-1	12/7/1994	Tier 3	1		Ethylbenzene		IS			ug/l	GW	12/7/1994				74	E
MW-2	MW-2	12/7/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	12/7/1994				74	E
MW-3	MW-3	12/7/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	12/7/1994				74	E
MW-4	MW-4	12/7/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	12/7/1994				74	E
MW-5	MW-5	12/7/1994	Tier 3	1		Ethylbenzene	130				ug/l	GW	9/14/1994				74	E
MW-7	MW-7	12/7/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	12/7/1994				74	E
MW-9	MW-9	12/7/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	12/7/1994				74	E
MW-10	MW-10	12/7/1994	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	12/7/1994				74	E
MW-1	MW-1	12/7/1994	Tier 3	1		Toluene		IS			ug/L	GW	12/7/1994				790	E
MW-2	MW-2	12/7/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	12/7/1994				790	E
MW-3	MW-3	12/7/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	12/7/1994				790	E
MW-4	MW-4	12/7/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	12/7/1994				790	E
MW-5	MW-5	12/7/1994	Tier 3	1		Toluene	10				ug/L	GW	9/14/1994				790	E
MW-7	MW-7	12/7/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	12/7/1994				790	E
MW-9	MW-9	12/7/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	12/7/1994				790	E
MW-10	MW-10	12/7/1994	Tier 3	1		Toluene	<1	U			ug/L	GW	12/7/1994				790	E
MW-1	MW-1	12/7/1994	Tier 3	1		TVAH		IS			ug/L	GW	12/7/1994					
MW-2	MW-2	12/7/1994	Tier 3	1		TVAH					ug/L	GW	12/7/1994					
MW-3	MW-3	12/7/1994	Tier 3	1		TVAH					ug/L	GW	12/7/1994					
MW-4	MW-4	12/7/1994	Tier 3	1		TVAH					ug/L	GW	12/7/1994					
MW-5	MW-5	12/7/1994	Tier 3	1		TVAH					ug/L	GW	9/14/1994					
MW-7	MW-7	12/7/1994	Tier 3	1		TVAH					ug/L	GW	12/7/1994					
MW-9	MW-9	12/7/1994	Tier 3	1		TVAH					ug/L	GW	12/7/1994					
MW-10	MW-10	12/7/1994	Tier 3	1		TVAH					ug/L	GW	12/7/1994					
MW-1	MW-1	12/7/1994	Tier 3	1		Xylenes		IS			ug/l	GW	12/7/1994				280	E
MW-2	MW-2	12/7/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	12/7/1994				280	E
MW-3	MW-3	12/7/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	12/7/1994				280	E
MW-4	MW-4	12/7/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	12/7/1994				280	E
MW-5	MW-5	12/7/1994	Tier 3	1		Xylenes	2000				ug/l	GW	9/14/1994				280	E
MW-7	MW-7	12/7/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	12/7/1994				280	E
MW-9	MW-9	12/7/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	12/7/1994				280	E
MW-10	MW-10	12/7/1994	Tier 3	1		Xylenes	<3	U			ug/l	GW	12/7/1994				280	E
MW-1	MW-1	12/7/1994	Tier 3	1		1-Methyl-naphthalene		IS			ug/L	GW	12/7/1994					
MW-1	MW-1	12/7/1994	Tier 3	1		2-Methyl naphthalene		IS			ug/L	GW	12/7/1994				260	
MW-1	MW-1	12/7/1994	Tier 3	1		Acenaphthene		IS			ug/L	GW	12/7/1994				1300	
MW-1	MW-1	12/7/1994	Tier 3	1		Acenaphthylene		IS			ug/L	GW	12/7/1994				52	
MW-1	MW-1	12/7/1994	Tier 3	1		Anthracene		IS			ug/L	GW	12/7/1994				43	S
MW-1	MW-1	12/7/1994	Tier 3	1		Benzo (a) anthracene		IS			ug/L	GW	12/7/1994				2	
MW-1	MW-1	12/7/1994	Tier 3	1		Benzo (a) pyrene		IS			ug/L	GW	12/7/1994				5	A
MW-1	MW-1	12/7/1994	Tier 3	1		Benzo (b) Fluoranthene		IS			ug/L	GW	12/7/1994				1.5	S,AA
MW-1	MW-1	12/7/1994	Tier 3	1		Benzo (g,h,i) perylene		IS			ug/L	GW	12/7/1994				1.0	M
MW-1	MW-1	12/7/1994	Tier 3	1		Benzo (k) Fluoranthene		IS			ug/l	GW	12/7/1994				1.0	M
MW-1	MW-1	12/7/1994	Tier 3	1		Chrysene		IS			ug/L	GW	12/7/1994				1.6	S
MW-1	MW-1	12/7/1994	Tier 3	1		Dibenzo (a,h) anthracene		IS			ug/l	GW	12/7/1994				2	M
MW-1	MW-1	12/7/1994	Tier 3	1		Fluoranthene		IS			ug/L	GW	12/7/1994				210	S
MW-1	MW-1	12/7/1994	Tier 3	1		Fluorene		IS			ug/L	GW	12/7/1994				880	
MW-1	MW-1	12/7/1994	Tier 3	1		Indeno (1,2,3 - cd) pyrene		IS			ug/l	GW	12/7/1994				2	M
MW-1	MW-1	12/7/1994	Tier 3	1		Naphthalene		IS			ug/L	GW	12/7/1994				520	
MW-1	MW-1	12/7/1994	Tier 3	1		Phenanthrene		IS			ug/L	GW	12/7/1994				52	
MW-1	MW-1	12/7/1994	Tier 3	1		Pyrene		IS			ug/L	GW	12/7/1994				140	S
HW-2	HW-2	3/1/1995	Tier 3	1		A. Cyanide	<0.005				mg/L	GW	3/1/1995					
HW-3	HW-3	3/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	3/1/1995					
HW-4	HW-4	3/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	3/1/1995					
HW-1	HW-1	3/1/1995	Tier 3	1		A. Cyanide	<0.005	<			mg/L	GW	3/1/1995					
HW-6	HW-6	3/1/1995	Tier 3	1		A. Cyanide	<0.005	<			mg/L	GW	3/1/1995					

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
HW-6A	HW-6A	3/1/1995	Tier 3	1		A. Cyanide	<0.005	<			mg/L	GW	3/1/1995					
HYG-1	HYG-1	3/1/1995	Tier 3	1		A. Cyanide	0.006				mg/L	GW	3/1/1995					
HYG-1	HYG-1	3/1/1995	Tier 3	1		Arsenic, total	<4	<			ug/L	GW	3/1/1995				10	EPA 2006
HW-1	HW-1	3/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	3/1/1995				10	EPA 2006
HW-2	HW-2	3/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	3/1/1995				10	EPA 2006
HW-3	HW-3	3/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	3/1/1995				10	EPA 2006
HW-4	HW-4	3/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	3/1/1995				10	EPA 2006
HW-6	HW-6	3/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	3/1/1995				10	EPA 2006
HW-6A	HW-6A	3/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	3/1/1995				10	EPA 2006
HW-1	HW-1	3/1/1995	Tier 3	1		Copper, total	<10	<			ug/L	GW	3/1/1995				1000	E
HW-2	HW-2	3/1/1995	Tier 3	1		Copper, total	<10	<			ug/L	GW	3/1/1995				1000	E
HW-4	HW-4	3/1/1995	Tier 3	1		Copper, total	<10	<			ug/L	GW	3/1/1995				1000	E
HW-6	HW-6	3/1/1995	Tier 3	1		Copper, total	<10	<			ug/L	GW	3/1/1995				1000	E
HW-6A	HW-6A	3/1/1995	Tier 3	1		Copper, total	<10	<			ug/L	GW	3/1/1995				1000	E
HYG-1	HYG-1	3/1/1995	Tier 3	1		Copper, total	<10	<			ug/L	GW	3/1/1995				1000	E
HW-3	HW-3	3/1/1995	Tier 3	1		Copper, total	10				ug/L	GW	3/1/1995				1000	E
HW-1	HW-1	3/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	3/1/1995				100	A
HW-2	HW-2	3/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	3/1/1995				100	A
HW-4	HW-4	3/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	3/1/1995				100	A
HW-6	HW-6	3/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	3/1/1995				100	A
HW-6A	HW-6A	3/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	3/1/1995				100	A
HYG-1	HYG-1	3/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	3/1/1995				100	A
HW-3	HW-3	3/1/1995	Tier 3	1		Nickel, total	60				ug/L	GW	3/1/1995				100	A
HW-2	HW-2	3/1/1995	Tier 3	1		Cyanide, total	<0.005				mg/L	GW	3/1/1995				0	A
HW-3	HW-3	3/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	3/1/1995				0	A
HW-4	HW-4	3/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	3/1/1995				0	A
HW-1	HW-1	3/1/1995	Tier 3	1		Cyanide, total	<0.005	<			mg/L	GW	3/1/1995				0	A
HW-6	HW-6	3/1/1995	Tier 3	1		Cyanide, total	<0.005	<			mg/L	GW	3/1/1995				0	A
HW-6A	HW-6A	3/1/1995	Tier 3	1		Cyanide, total	<0.005	<			mg/L	GW	3/1/1995				0	A
HYG-1	HYG-1	3/1/1995	Tier 3	1		Cyanide, total	0.011				mg/L	GW	3/1/1995				0	A
MW-9		3/31/1995	Tier 1	1		GW Elevation	1590.08				ft msl	GW	3/31/1995					
MW-10		3/31/1995	Tier 1	1		GW Elevation	1571.26				ft msl	GW	3/31/1995					
MW-1		3/31/1995	Tier 1	1		GW Elevation	1579.85				ft msl	GW	3/31/1995					
MW-2		3/31/1995	Tier 1	1		GW Elevation	1580.08				ft msl	GW	3/31/1995					
MW-3		3/31/1995	Tier 1	1		GW Elevation	1579.15				ft msl	GW	3/31/1995					
MW-4		3/31/1995	Tier 1	1		GW Elevation	1579.29				ft msl	GW	3/31/1995					
MW-5		3/31/1995	Tier 1	1		GW Elevation	1576.45				ft msl	GW	3/31/1995					
MW-1	MW-1	3/31/1995	Tier 3	1		Benzene	<1	U			ug/L	GW	3/31/1995				5	A
MW-2	MW-2	3/31/1995	Tier 3	1		Benzene	<1	U			ug/L	GW	3/31/1995				5	A
MW-3	MW-3	3/31/1995	Tier 3	1		Benzene	<1	U			ug/L	GW	3/31/1995				5	A
MW-4	MW-4	3/31/1995	Tier 3	1		Benzene	<1	U			ug/L	GW	3/31/1995				5	A
MW-5	MW-5	3/31/1995	Tier 3	1		Benzene	19				ug/L	GW	12/7/1994				5	A
MW-9	MW-9	3/31/1995	Tier 3	1		Benzene	<1	U			ug/L	GW	3/31/1995				5	A
MW-10	MW-10	3/31/1995	Tier 3	1		Benzene	<1	U			ug/L	GW	3/31/1995				5	A
MW-1	MW-1	3/31/1995	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/31/1995				74	E
MW-2	MW-2	3/31/1995	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/31/1995				74	E
MW-3	MW-3	3/31/1995	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/31/1995				74	E
MW-4	MW-4	3/31/1995	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/31/1995				74	E
MW-5	MW-5	3/31/1995	Tier 3	1		Ethylbenzene	94				ug/l	GW	12/7/1994				74	E
MW-9	MW-9	3/31/1995	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/31/1995				74	E
MW-10	MW-10	3/31/1995	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	3/31/1995				74	E
MW-1	MW-1	3/31/1995	Tier 3	1		Toluene	<1	U			ug/L	GW	3/31/1995				790	E
MW-2	MW-2	3/31/1995	Tier 3	1		Toluene	<1	U			ug/L	GW	3/31/1995				790	E
MW-3	MW-3	3/31/1995	Tier 3	1		Toluene	<1	U			ug/L	GW	3/31/1995				790	E
MW-4	MW-4	3/31/1995	Tier 3	1		Toluene	<1	U			ug/L	GW	3/31/1995				790	E
MW-5	MW-5	3/31/1995	Tier 3	1		Toluene	11				ug/L	GW	12/7/1994				790	E
MW-9	MW-9	3/31/1995	Tier 3	1		Toluene	<1	U			ug/L	GW	3/31/1995				790	E
MW-10	MW-10	3/31/1995	Tier 3	1		Toluene	<1	U			ug/L	GW	3/31/1995				790	E
MW-1	MW-1	3/31/1995	Tier 3	1		TVAH					ug/L	GW	3/31/1995					
MW-2	MW-2	3/31/1995	Tier 3	1		TVAH					ug/L	GW	3/31/1995					
MW-3	MW-3	3/31/1995	Tier 3	1		TVAH					ug/L	GW	3/31/1995					
MW-4	MW-4	3/31/1995	Tier 3	1		TVAH					ug/L	GW	3/31/1995					
MW-5	MW-5	3/31/1995	Tier 3	1		TVAH					ug/L	GW	12/7/1994					
MW-9	MW-9	3/31/1995	Tier 3	1		TVAH					ug/L	GW	3/31/1995					
MW-10	MW-10	3/31/1995	Tier 3	1		TVAH					ug/L	GW	3/31/1995					
MW-1	MW-1	3/31/1995	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/31/1995				280	E
MW-2	MW-2	3/31/1995	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/31/1995				280	E
MW-3	MW-3	3/31/1995	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/31/1995				280	E
MW-4	MW-4	3/31/1995	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/31/1995				280	E
MW-5	MW-5	3/31/1995	Tier 3	1		Xylenes	1600				ug/l	GW	12/7/1994				280	E
MW-9	MW-9	3/31/1995	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/31/1995				280	E
MW-10	MW-10	3/31/1995	Tier 3	1		Xylenes	<3	U			ug/l	GW	3/31/1995				280	E
Blank-1	Trip Blank	5/25/1995	Tier 2	1	53422-4342	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
Blank-1	Trip Blank	5/25/1995	Tier 2	1	53422-4342	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
Blank-1	Trip Blank	5/25/1995	Tier 2	1	53422-4342	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
Blank-1	Trip Blank	5/25/1995	Tier 2	1	53422-4342	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E

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MW-6		6/2/1995	Tier 1	1		GW Elevation	1569.06				ft msl	GW	6/2/1995					
MW-1		6/2/1995	Tier 1	1		GW Elevation	1580.51				ft msl	GW	6/2/1995					
MW-2		6/2/1995	Tier 1	1		GW Elevation	1579.34				ft msl	GW	6/2/1995					
MW-3		6/2/1995	Tier 1	1		GW Elevation	1577.53				ft msl	GW	6/2/1995					
MW-4		6/2/1995	Tier 1	1		GW Elevation	1581.98				ft msl	GW	6/2/1995					
MW-5		6/2/1995	Tier 1	1		GW Elevation	1579.79				ft msl	GW	6/2/1995					
MW-7		6/2/1995	Tier 1	1		GW Elevation	1567.08				ft msl	GW	6/2/1995					
MW-9		6/2/1995	Tier 1	1		GW Elevation	1590.49				ft msl	GW	6/2/1995					
MW-10		6/2/1995	Tier 1	1		GW Elevation	1575.36				ft msl	GW	6/2/1995					
MW-11		6/2/1995	Tier 1	1		GW Elevation	1588.86				ft msl	GW	6/2/1995					
MW-12		6/2/1995	Tier 1	1		GW Elevation	1585.87				ft msl	GW	6/2/1995					
MW-1	MW-1	6/2/1995	Tier 3	1		Arsenic	7.2				ug/L	GW	6/2/1995				10	EPA 2006
MW-2	MW-2	6/2/1995	Tier 3	1		Arsenic	5.3				ug/L	GW	6/2/1995				10	EPA 2006
MW-3	MW-3	6/2/1995	Tier 3	1		Arsenic	4.8				ug/L	GW	6/2/1995				10	EPA 2006
MW-4	MW-4	6/2/1995	Tier 3	1		Arsenic	18				ug/L	GW	6/2/1995				10	EPA 2006
MW-5	MW-5	6/2/1995	Tier 3	1		Arsenic	74				ug/L	GW	6/2/1995				10	EPA 2006
MW-6	MW-6	6/2/1995	Tier 3	1		Arsenic		dry			ug/L	GW	6/2/1995				10	EPA 2006
MW-7	MW-7	6/2/1995	Tier 3	1		Arsenic	7.7				ug/L	GW	6/2/1995				10	EPA 2006
MW-9	MW-9	6/2/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	6/2/1995				10	EPA 2006
MW-10	MW-10	6/2/1995	Tier 3	1		Arsenic	4.8				ug/L	GW	6/2/1995				10	EPA 2006
MW-11	MW-11	6/2/1995	Tier 3	1		Arsenic	6.4				ug/L	GW	6/2/1995				10	EPA 2006
MW-12	MW-12	6/2/1995	Tier 3	1		Arsenic	6.9				ug/L	GW	6/2/1995				10	EPA 2006
MW-1	MW-1	6/2/1995	Tier 3	1		Barium	52				ug/L	GW	6/2/1995				2000	A
MW-2	MW-2	6/2/1995	Tier 3	1		Barium	49				ug/L	GW	6/2/1995				2000	A
MW-3	MW-3	6/2/1995	Tier 3	1		Barium	95				ug/L	GW	6/2/1995				2000	A
MW-4	MW-4	6/2/1995	Tier 3	1		Barium	64				ug/L	GW	6/2/1995				2000	A
MW-5	MW-5	6/2/1995	Tier 3	1		Barium	260				ug/L	GW	6/2/1995				2000	A
MW-6	MW-6	6/2/1995	Tier 3	1		Barium		dry			ug/L	GW	6/2/1995				2000	A
MW-7	MW-7	6/2/1995	Tier 3	1		Barium	21				ug/L	GW	6/2/1995				2000	A
MW-9	MW-9	6/2/1995	Tier 3	1		Barium	28				ug/L	GW	6/2/1995				2000	A
MW-10	MW-10	6/2/1995	Tier 3	1		Barium	56				ug/L	GW	6/2/1995				2000	A
MW-11	MW-11	6/2/1995	Tier 3	1		Barium	120				ug/L	GW	6/2/1995				2000	A
MW-12	MW-12	6/2/1995	Tier 3	1		Barium	33				ug/L	GW	6/2/1995				2000	A
MW-1	MW-1	6/2/1995	Tier 3	1		Cadmium	<5	U			ug/L	GW	6/2/1995				5	A
MW-2	MW-2	6/2/1995	Tier 3	1		Cadmium	<5	U			ug/L	GW	6/2/1995				5	A
MW-3	MW-3	6/2/1995	Tier 3	1		Cadmium	<5	U			ug/L	GW	6/2/1995				5	A
MW-4	MW-4	6/2/1995	Tier 3	1		Cadmium	26				ug/L	GW	6/2/1995				5	A
MW-5	MW-5	6/2/1995	Tier 3	1		Cadmium	5				ug/L	GW	6/2/1995				5	A
MW-6	MW-6	6/2/1995	Tier 3	1		Cadmium		dry			ug/L	GW	6/2/1995				5	A
MW-7	MW-7	6/2/1995	Tier 3	1		Cadmium	42				ug/L	GW	6/2/1995				5	A
MW-9	MW-9	6/2/1995	Tier 3	1		Cadmium	<5	U			ug/L	GW	6/2/1995				5	A
MW-10	MW-10	6/2/1995	Tier 3	1		Cadmium	<5	U			ug/L	GW	6/2/1995				5	A
MW-11	MW-11	6/2/1995	Tier 3	1		Cadmium	<5	U			ug/L	GW	6/2/1995				5	A
MW-12	MW-12	6/2/1995	Tier 3	1		Cadmium	<5	U			ug/L	GW	6/2/1995				5	A
MW-1	MW-1	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-2	MW-2	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-3	MW-3	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-4	MW-4	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-5	MW-5	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-6	MW-6	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-7	MW-7	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-9	MW-9	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-10	MW-10	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-11	MW-11	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-12	MW-12	6/2/1995	Tier 3	1		Calcium					ug/L	GW	6/2/1995					
MW-1	MW-1	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-2	MW-2	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-3	MW-3	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-4	MW-4	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-5	MW-5	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-6	MW-6	6/2/1995	Tier 3	1		Chromium, total		dry			ug/L	GW	6/2/1995				100	A
MW-7	MW-7	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-9	MW-9	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-10	MW-10	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-11	MW-11	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-12	MW-12	6/2/1995	Tier 3	1		Chromium, total	<10	U			ug/L	GW	6/2/1995				100	A
MW-1	MW-1	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-2	MW-2	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-3	MW-3	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-4	MW-4	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-5	MW-5	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-6	MW-6	6/2/1995	Tier 3	1		Copper		dry			ug/L	GW	6/2/1995				1000	E
MW-7	MW-7	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-9	MW-9	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-10	MW-10	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-11	MW-11	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-12	MW-12	6/2/1995	Tier 3	1		Copper	<10	U			ug/L	GW	6/2/1995				1000	E
MW-1	MW-1	6/2/1995	Tier 3	1		Iron	21000				ug/L	GW	6/2/1995				300	E
MW-2	MW-2	6/2/1995	Tier 3	1		Iron	1600				ug/L	GW	6/2/1995				300	E
MW-3	MW-3	6/2/1995	Tier 3	1		Iron	450				ug/L	GW	6/2/1995				300	E
MW-4	MW-4	6/2/1995	Tier 3	1		Iron	250000				ug/L	GW	6/2/1995				300	E
MW-5	MW-5	6/2/1995	Tier 3	1		Iron	200000				ug/L	GW	6/2/1995				300	E
MW-6	MW-6	6/2/1995	Tier 3	1		Iron		dry			ug/L	GW	6/2/1995				300	E
MW-7	MW-7	6/2/1995	Tier 3	1		Iron	170000				ug/L	GW	6/2/1995				300	E
MW-9	MW-9	6/2/1995	Tier 3	1		Iron	120				ug/L	GW	6/2/1995				300	E
MW-10	MW-10	6/2/1995	Tier 3	1		Iron	18000				ug/L	GW	6/2/1995				300	E
MW-11	MW-11	6/2/1995	Tier 3	1		Iron	140000				ug/L	GW	6/2/1995				300	E
MW-12	MW-12	6/2/1995	Tier 3	1		Iron	7400				ug/L	GW	6/2/1995				300	E
MW-1	MW-1	6/2/1995	Tier 3	1		Lead	23				ug/L	GW	6/2/1995				4	L
MW-2	MW-2	6/2/1995	Tier 3	1		Lead	<1	U			ug/L	GW	6/2/1995				4	L
MW-3	MW-3	6/2/1995	Tier 3	1		Lead	1.2				ug/L	GW	6/2/1995				4	L
MW-4	MW-4	6/2/1995	Tier 3	1		Lead	<1	U			ug/L	GW	6/2/1995				4	L
MW-5	MW-5	6/2/1995	Tier 3	1		Lead	1.2				ug/L	GW	6/2/1995				4	L
MW-6	MW-6	6/2/1995	Tier 3	1		Lead		dry			ug/L	GW	6/2/1995				4	L
MW-7	MW-7	6/2/1995	Tier 3	1		Lead	<2	U			ug/L	GW	6/2/1995				4	L
MW-9	MW-9	6/2/1995	Tier 3	1		Lead	<1	U			ug/L	GW	6/2/1995				4	L
MW-10	MW-10	6/2/1995	Tier 3	1		Lead	<1	U			ug/L	GW	6/2/1995				4	L
MW-11	MW-11	6/2/1995	Tier 3	1		Lead	3.4				ug/L	GW	6/2/1995				4	L
MW-12	MW-12	6/2/1995	Tier 3	1		Lead	<1	U			ug/L	GW	6/2/1995				4	L
MW-1	MW-1	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-2	MW-2	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-3	MW-3	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-4	MW-4	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-5	MW-5	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-6	MW-6	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-7	MW-7	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-9	MW-9	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-10	MW-10	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-11	MW-11	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-12	MW-12	6/2/1995	Tier 3	1		Magnesium					ug/L	GW	6/2/1995				400000	
MW-1	MW-1	6/2/1995	Tier 3	1		Manganese	9400				ug/L	GW	6/2/1995				50	E
MW-2	MW-2	6/2/1995	Tier 3	1		Manganese	6000				ug/L	GW	6/2/1995				50	E
MW-3	MW-3	6/2/1995	Tier 3	1		Manganese	1900				ug/L	GW	6/2/1995				50	E
MW-4	MW-4	6/2/1995	Tier 3	1		Manganese	64000				ug/L	GW	6/2/1995				50	E
MW-5	MW-5	6/2/1995	Tier 3	1		Manganese	6100				ug/L	GW	6/2/1995				50	E
MW-6	MW-6	6/2/1995	Tier 3	1		Manganese		dry			ug/L	GW	6/2/1995				50	E
MW-7	MW-7	6/2/1995	Tier 3	1		Manganese	76000				ug/L	GW	6/2/1995				50	E
MW-9	MW-9	6/2/1995	Tier 3	1		Manganese	210				ug/L	GW	6/2/1995				50	E
MW-10	MW-10	6/2/1995	Tier 3	1		Manganese	23000				ug/L	GW	6/2/1995				50	E
MW-11	MW-11	6/2/1995	Tier 3	1		Manganese	7800				ug/L	GW	6/2/1995				50	E
MW-12	MW-12	6/2/1995	Tier 3	1		Manganese	1000				ug/L	GW	6/2/1995				50	E
MW-1	MW-1	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-2	MW-2	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-3	MW-3	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-4	MW-4	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-5	MW-5	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-6	MW-6	6/2/1995	Tier 3	1		Mercury		dry			ug/L	GW	6/2/1995				2	A
MW-7	MW-7	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-9	MW-9	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-10	MW-10	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-11	MW-11	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-12	MW-12	6/2/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/2/1995				2	A
MW-1	MW-1	6/2/1995	Tier 3	1		Nickel	210				ug/L	GW	6/2/1995				100	A
MW-2	MW-2	6/2/1995	Tier 3	1		Nickel	60				ug/L	GW	6/2/1995				100	A
MW-3	MW-3	6/2/1995	Tier 3	1		Nickel	90				ug/L	GW	6/2/1995				100	A
MW-4	MW-4	6/2/1995	Tier 3	1		Nickel	2200				ug/L	GW	6/2/1995				100	A
MW-5	MW-5	6/2/1995	Tier 3	1		Nickel	30				ug/L	GW	6/2/1995				100	A
MW-6	MW-6	6/2/1995	Tier 3	1		Nickel		dry			ug/L	GW	6/2/1995				100	A
MW-7	MW-7	6/2/1995	Tier 3	1		Nickel	3900				ug/L	GW	6/2/1995				100	A
MW-9	MW-9	6/2/1995	Tier 3	1		Nickel	20				ug/L	GW	6/2/1995				100	A
MW-10	MW-10	6/2/1995	Tier 3	1		Nickel	30				ug/L	GW	6/2/1995				100	A
MW-11	MW-11	6/2/1995	Tier 3	1		Nickel	<10	U			ug/L	GW	6/2/1995				100	A
MW-12	MW-12	6/2/1995	Tier 3	1		Nickel	<10	U			ug/L	GW	6/2/1995				100	A
MW-1	MW-1	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-2	MW-2	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-3	MW-3	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-4	MW-4	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-5	MW-5	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-6	MW-6	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-7	MW-7	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-9	MW-9	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-10	MW-10	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-11	MW-11	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-12	MW-12	6/2/1995	Tier 3	1		Potassium					ug/L	GW	6/2/1995					
MW-1	MW-1	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-2	MW-2	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-3	MW-3	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-4	MW-4	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-5	MW-5	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-6	MW-6	6/2/1995	Tier 3	1		Selenium		dry			ug/L	GW	6/2/1995				50	A
MW-7	MW-7	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-9	MW-9	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-10	MW-10	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-11	MW-11	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-12	MW-12	6/2/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	6/2/1995				50	A
MW-1	MW-1	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-2	MW-2	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-3	MW-3	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-4	MW-4	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-5	MW-5	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-6	MW-6	6/2/1995	Tier 3	1		Silver		dry			ug/L	GW	6/2/1995				34	
MW-7	MW-7	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-9	MW-9	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-10	MW-10	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-11	MW-11	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-12	MW-12	6/2/1995	Tier 3	1		Silver	<5	U			ug/L	GW	6/2/1995				34	
MW-1	MW-1	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-2	MW-2	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-3	MW-3	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-4	MW-4	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-5	MW-5	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-6	MW-6	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-7	MW-7	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-9	MW-9	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-10	MW-10	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-11	MW-11	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-12	MW-12	6/2/1995	Tier 3	1		Sodium					ug/L	GW	6/2/1995				120000	
MW-1	MW-1	6/2/1995	Tier 3	1		Zinc	60				ug/L	GW	6/2/1995				2400	
MW-2	MW-2	6/2/1995	Tier 3	1		Zinc	30				ug/L	GW	6/2/1995				2400	
MW-3	MW-3	6/2/1995	Tier 3	1		Zinc	680				ug/L	GW	6/2/1995				2400	
MW-4	MW-4	6/2/1995	Tier 3	1		Zinc	450				ug/L	GW	6/2/1995				2400	
MW-5	MW-5	6/2/1995	Tier 3	1		Zinc	50				ug/L	GW	6/2/1995				2400	
MW-6	MW-6	6/2/1995	Tier 3	1		Zinc		dry			ug/L	GW	6/2/1995				2400	
MW-7	MW-7	6/2/1995	Tier 3	1		Zinc	1200				ug/L	GW	6/2/1995				2400	
MW-9	MW-9	6/2/1995	Tier 3	1		Zinc	10				ug/L	GW	6/2/1995				2400	
MW-10	MW-10	6/2/1995	Tier 3	1		Zinc	190				ug/L	GW	6/2/1995				2400	
MW-11	MW-11	6/2/1995	Tier 3	1		Zinc	60				ug/L	GW	6/2/1995				2400	
MW-2		6/13/1995	Tier 1	1		GW Elevation	1579.47				ft msl	GW	6/13/1995					
MW-4		6/13/1995	Tier 1	1		GW Elevation	1578.44				ft msl	GW	6/13/1995					
MW-5		6/13/1995	Tier 1	1		GW Elevation	1577.85				ft msl	GW	6/13/1995					
MW-6		6/13/1995	Tier 1	1		GW Elevation	1567.25				ft msl	GW	6/13/1995					
MW-7		6/13/1995	Tier 1	1		GW Elevation	1565.21				ft msl	GW	6/13/1995					
MW-9		6/13/1995	Tier 1	1		GW Elevation	1589.29				ft msl	GW	6/13/1995					
MW-10		6/13/1995	Tier 1	1		GW Elevation	1571.98				ft msl	GW	6/13/1995					
MW-1		6/13/1995	Tier 1	1		GW Elevation	1579.84				ft msl	GW	6/13/1995					
MW-3		6/13/1995	Tier 1	1		GW Elevation	1578.34				ft msl	GW	6/13/1995					
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Benzene	13				ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Benzene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		5	A
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Ethylbenzene	64				ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Ethylbenzene	<1	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		74	E
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Toluene	7				ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Toluene	<1	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8020		790	E
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Xylenes	1100				ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Xylenes	<3	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8020		280	E
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Acenaphthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1300	
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Acenaphthylene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		43	S
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Benzo (a) anthracene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		2	
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Benzo (a) pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		5	A
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		1.0	M
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Chrysene	<5	P,U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		1.6	S
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Fluoranthene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		210	S
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Fluorene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		880	
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	6/13/1995		SW-846 Mtd. 8270A		2	M
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Naphthalene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Naphthalene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Naphthalene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Naphthalene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Naphthalene	15				ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Naphthalene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Naphthalene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Naphthalene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Naphthalene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		520	
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Phenanthrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		52	
MW-1	5282 MW-1	6/13/1995	Tier 2	1	53422-4333	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S
MW-2	5283 MW-2	6/13/1995	Tier 2	1	53422-4334	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S
MW-3	5284 MW-3	6/13/1995	Tier 2	1	53422-4335	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-4	5285 MW-4	6/13/1995	Tier 2	1	53422-4336	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S
MW-5	5286 MW-5	6/13/1995	Tier 2	1	53422-4337	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S
MW-6	5287 MW-6	6/13/1995	Tier 2	1	53422-4338	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S
MW-7	5288 MW-7	6/13/1995	Tier 2	1	53422-4339	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S
MW-9	5289 MW-9	6/13/1995	Tier 2	1	53422-4340	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S
MW-10	5290 MW-10	6/13/1995	Tier 2	1	53422-4341	Pyrene	<5	U			ug/L	GW	6/13/1995		SW-846 Mtd. 8270A		140	S
HW-1	HW-1	7/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	7/1/1995					
HW-1A	HW-1A	7/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	7/1/1995					
HW-2	HW-2	7/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	7/1/1995					
HW-3	HW-3	7/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	7/1/1995					
HW-4	HW-4	7/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	7/1/1995					
HW-6	HW-6	7/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	7/1/1995					
HW-6A	HW-6A	7/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	7/1/1995					
HYG-1	HYG-1	7/1/1995	Tier 3	1		A. Cyanide	0.014				mg/L	GW	7/1/1995					
HW-1	HW-1	7/1/1995	Tier 3	1		Arsenic, total	<4	<			ug/L	GW	7/1/1995				10	EPA 2006
HW-3	HW-3	7/1/1995	Tier 3	1		Arsenic, total	<4	<			ug/L	GW	7/1/1995				10	EPA 2006
HW-1A	HW-1A	7/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	7/1/1995				10	EPA 2006
HW-2	HW-2	7/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	7/1/1995				10	EPA 2006
HW-4	HW-4	7/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	7/1/1995				10	EPA 2006
HW-6	HW-6	7/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	7/1/1995				10	EPA 2006
HW-6A	HW-6A	7/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	7/1/1995				10	EPA 2006
HYG-1	HYG-1	7/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	7/1/1995				10	EPA 2006
HW-1	HW-1	7/1/1995	Tier 3	1		Copper, total	ND				ug/L	GW	7/1/1995				1000	E
HW-1A	HW-1A	7/1/1995	Tier 3	1		Copper, total	ND				ug/L	GW	7/1/1995				1000	E
HW-2	HW-2	7/1/1995	Tier 3	1		Copper, total	ND				ug/L	GW	7/1/1995				1000	E
HW-4	HW-4	7/1/1995	Tier 3	1		Copper, total	ND				ug/L	GW	7/1/1995				1000	E
HW-6	HW-6	7/1/1995	Tier 3	1		Copper, total	ND				ug/L	GW	7/1/1995				1000	E
HW-6A	HW-6A	7/1/1995	Tier 3	1		Copper, total	ND				ug/L	GW	7/1/1995				1000	E
HYG-1	HYG-1	7/1/1995	Tier 3	1		Copper, total	ND				ug/L	GW	7/1/1995				1000	E
HW-3	HW-3	7/1/1995	Tier 3	1		Copper, total	20				ug/L	GW	7/1/1995				1000	E
HW-3	HW-3	7/1/1995	Tier 3	1		Nickel, total	130				ug/L	GW	7/1/1995				100	A
HW-4	HW-4	7/1/1995	Tier 3	1		Nickel, total	20				ug/L	GW	7/1/1995				100	A
HW-1	HW-1	7/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	7/1/1995				100	A
HW-1A	HW-1A	7/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	7/1/1995				100	A
HW-2	HW-2	7/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	7/1/1995				100	A
HW-6	HW-6	7/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	7/1/1995				100	A
HW-6A	HW-6A	7/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	7/1/1995				100	A
HYG-1	HYG-1	7/1/1995	Tier 3	1		Nickel, total	<10	<			ug/L	GW	7/1/1995				100	A
HYG-1	HYG-1	7/1/1995	Tier 3	1		Cyanide, total	0.009				mg/L	GW	7/1/1995				0	A
HW-1	HW-1	7/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	7/1/1995				0	A
HW-1A	HW-1A	7/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	7/1/1995				0	A
HW-2	HW-2	7/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	7/1/1995				0	A
HW-3	HW-3	7/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	7/1/1995				0	A
HW-4	HW-4	7/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	7/1/1995				0	A
HW-6	HW-6	7/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	7/1/1995				0	A
HW-6A	HW-6A	7/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	7/1/1995				0	A
HW-1	HW-1	9/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1995					
HW-1A	HW-1A	9/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1995					
HW-2	HW-2	9/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1995					
HW-3	HW-3	9/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1995					
HW-4	HW-4	9/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1995					
HW-6	HW-6	9/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1995					
HW-6A	HW-6A	9/1/1995	Tier 3	1		A. Cyanide	NA				mg/L	GW	9/1/1995					
HYG-1	HYG-1	9/1/1995	Tier 3	1		A. Cyanide	0				mg/L	GW	9/1/1995					
HW-1	HW-1	9/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	9/1/1995				10	EPA 2006
HW-2	HW-2	9/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	9/1/1995				10	EPA 2006
HW-3	HW-3	9/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	9/1/1995				10	EPA 2006
HW-4	HW-4	9/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	9/1/1995				10	EPA 2006
HW-6	HW-6	9/1/1995	Tier 3	1		Arsenic, total	<2	<			ug/L	GW	9/1/1995				10	EPA 2006
HYG-1	HYG-1	9/1/1995	Tier 3	1		Arsenic, total	3.3				ug/L	GW	9/1/1995				10	EPA 2006
HW-1A	HW-1A	9/1/1995	Tier 3	1		Arsenic, total	2.7				ug/L	GW	9/1/1995				10	EPA 2006
HW-6A	HW-6A	9/1/1995	Tier 3	1		Arsenic, total	2.3				ug/L	GW	9/1/1995				10	EPA 2006
HW-1A	HW-1A	9/1/1995	Tier 3	1		Copper, total	<1	<			ug/L	GW	9/1/1995				1000	E
HW-2	HW-2	9/1/1995	Tier 3	1		Copper, total	<1	<			ug/L	GW	9/1/1995				1000	E
HW-4	HW-4	9/1/1995	Tier 3	1		Copper, total	<1	<			ug/L	GW	9/1/1995				1000	E
HW-6A	HW-6A	9/1/1995	Tier 3	1		Copper, total	<1	<			ug/L	GW	9/1/1995				1000	E
HW-1	HW-1	9/1/1995	Tier 3	1		Copper, total	<0.5	<			ug/L	GW	9/1/1995				1000	E
HW-6	HW-6	9/1/1995	Tier 3	1		Copper, total	<0.5	<			ug/L	GW	9/1/1995				1000	E
HYG-1	HYG-1	9/1/1995	Tier 3	1		Copper, total	12				ug/L	GW	9/1/1995				1000	E
HW-3	HW-3	9/1/1995	Tier 3	1		Copper, total	6.1				ug/L	GW	9/1/1995				1000	E
HW-3	HW-3	9/1/1995	Tier 3	1		Nickel, total	61				ug/L	GW	9/1/1995				100	A
HYG-1	HYG-1	9/1/1995	Tier 3	1		Nickel, total	6.1				ug/L	GW	9/1/1995				100	A
HW-4	HW-4	9/1/1995	Tier 3	1		Nickel, total	2.7				ug/L	GW	9/1/1995				100	A
HW-1A	HW-1A	9/1/1995	Tier 3	1		Nickel, total	2.2				ug/L	GW	9/1/1995				100	A
HW-6	HW-6	9/1/1995	Tier 3	1		Nickel, total	1				ug/L	GW	9/1/1995				100	A
HW-2	HW-2	9/1/1995	Tier 3	1		Nickel, total	0.9				ug/L	GW	9/1/1995				100	A

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
HW-6A	HW-6A	9/1/1995	Tier 3	1		Nickel, total	0.7				ug/L	GW	9/1/1995				100	A
HW-1	HW-1	9/1/1995	Tier 3	1		Nickel, total	<0.5	<			ug/L	GW	9/1/1995				100	A
HW-1	HW-1	9/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	9/1/1995				0	A
HW-1A	HW-1A	9/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	9/1/1995				0	A
HW-2	HW-2	9/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	9/1/1995				0	A
HW-3	HW-3	9/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	9/1/1995				0	A
HW-4	HW-4	9/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	9/1/1995				0	A
HW-6	HW-6	9/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	9/1/1995				0	A
HW-6A	HW-6A	9/1/1995	Tier 3	1		Cyanide, total	NA				mg/L	GW	9/1/1995				0	A
HYG-1	HYG-1	9/1/1995	Tier 3	1		Cyanide, total	0				mg/L	GW	9/1/1995				0	A
MW-1	MW-1	9/18/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	9/18/1995				10	EPA 2006
MW-2	MW-2	9/18/1995	Tier 3	1		Arsenic	2				ug/L	GW	9/18/1995				10	EPA 2006
MW-3	MW-3	9/18/1995	Tier 3	1		Arsenic		dry			ug/L	GW	9/18/1995				10	EPA 2006
MW-4	MW-4	9/18/1995	Tier 3	1		Arsenic	46				ug/L	GW	9/18/1995				10	EPA 2006
MW-5	MW-5	9/18/1995	Tier 3	1		Arsenic	94				ug/L	GW	9/18/1995				10	EPA 2006
MW-6	MW-6	9/18/1995	Tier 3	1		Arsenic		dry			ug/L	GW	9/18/1995				10	EPA 2006
MW-7	MW-7	9/18/1995	Tier 3	1		Arsenic	2				ug/L	GW	9/18/1995				10	EPA 2006
MW-9	MW-9	9/18/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	9/18/1995				10	EPA 2006
MW-10	MW-10	9/18/1995	Tier 3	1		Arsenic	3.6				ug/L	GW	9/18/1995				10	EPA 2006
MW-11	MW-11	9/18/1995	Tier 3	1		Arsenic	6.8				ug/L	GW	9/18/1995				10	EPA 2006
MW-12	MW-12	9/18/1995	Tier 3	1		Arsenic	6.4				ug/L	GW	9/18/1995				10	EPA 2006
MW-1	MW-1	9/18/1995	Tier 3	1		Barium	11				ug/L	GW	9/18/1995				2000	A
MW-2	MW-2	9/18/1995	Tier 3	1		Barium	36				ug/L	GW	9/18/1995				2000	A
MW-3	MW-3	9/18/1995	Tier 3	1		Barium		dry			ug/L	GW	9/18/1995				2000	A
MW-4	MW-4	9/18/1995	Tier 3	1		Barium	57				ug/L	GW	9/18/1995				2000	A
MW-5	MW-5	9/18/1995	Tier 3	1		Barium	220				ug/L	GW	9/18/1995				2000	A
MW-6	MW-6	9/18/1995	Tier 3	1		Barium		dry			ug/L	GW	9/18/1995				2000	A
MW-7	MW-7	9/18/1995	Tier 3	1		Barium	23				ug/L	GW	9/18/1995				2000	A
MW-9	MW-9	9/18/1995	Tier 3	1		Barium	31				ug/L	GW	9/18/1995				2000	A
MW-10	MW-10	9/18/1995	Tier 3	1		Barium	42				ug/L	GW	9/18/1995				2000	A
MW-11	MW-11	9/18/1995	Tier 3	1		Barium	110				ug/L	GW	9/18/1995				2000	A
MW-12	MW-12	9/18/1995	Tier 3	1		Barium	24				ug/L	GW	9/18/1995				2000	A
MW-1	MW-1	9/18/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	9/18/1995				5	A
MW-2	MW-2	9/18/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	9/18/1995				5	A
MW-3	MW-3	9/18/1995	Tier 3	1		Cadmium		dry			ug/L	GW	9/18/1995				5	A
MW-4	MW-4	9/18/1995	Tier 3	1		Cadmium	36				ug/L	GW	9/18/1995				5	A
MW-5	MW-5	9/18/1995	Tier 3	1		Cadmium	22				ug/L	GW	9/18/1995				5	A
MW-6	MW-6	9/18/1995	Tier 3	1		Cadmium		dry			ug/L	GW	9/18/1995				5	A
MW-7	MW-7	9/18/1995	Tier 3	1		Cadmium	26				ug/L	GW	9/18/1995				5	A
MW-9	MW-9	9/18/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	9/18/1995				5	A
MW-10	MW-10	9/18/1995	Tier 3	1		Cadmium	2.5				ug/L	GW	9/18/1995				5	A
MW-11	MW-11	9/18/1995	Tier 3	1		Cadmium	16				ug/L	GW	9/18/1995				5	A
MW-12	MW-12	9/18/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	9/18/1995				5	A
MW-1	MW-1	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-2	MW-2	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-3	MW-3	9/18/1995	Tier 3	1		Calcium		dry			ug/L	GW	9/18/1995					
MW-4	MW-4	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-5	MW-5	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-6	MW-6	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-7	MW-7	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-9	MW-9	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-10	MW-10	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-11	MW-11	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-12	MW-12	9/18/1995	Tier 3	1		Calcium					ug/L	GW	9/18/1995					
MW-1	MW-1	9/18/1995	Tier 3	1		Chromium, total	1.8				ug/L	GW	9/18/1995				100	A
MW-2	MW-2	9/18/1995	Tier 3	1		Chromium, total	2.3				ug/L	GW	9/18/1995				100	A
MW-3	MW-3	9/18/1995	Tier 3	1		Chromium, total		dry			ug/L	GW	9/18/1995				100	A
MW-4	MW-4	9/18/1995	Tier 3	1		Chromium, total	4.8				ug/L	GW	9/18/1995				100	A
MW-5	MW-5	9/18/1995	Tier 3	1		Chromium, total	13				ug/L	GW	9/18/1995				100	A
MW-6	MW-6	9/18/1995	Tier 3	1		Chromium, total		dry			ug/L	GW	9/18/1995				100	A
MW-7	MW-7	9/18/1995	Tier 3	1		Chromium, total	5.1				ug/L	GW	9/18/1995				100	A
MW-9	MW-9	9/18/1995	Tier 3	1		Chromium, total	3				ug/L	GW	9/18/1995				100	A
MW-10	MW-10	9/18/1995	Tier 3	1		Chromium, total	7.6				ug/L	GW	9/18/1995				100	A
MW-11	MW-11	9/18/1995	Tier 3	1		Chromium, total	12				ug/L	GW	9/18/1995				100	A
MW-12	MW-12	9/18/1995	Tier 3	1		Chromium, total	2.7				ug/L	GW	9/18/1995				100	A
MW-1	MW-1	9/18/1995	Tier 3	1		Copper	<1	U			ug/L	GW	9/18/1995				1000	E
MW-2	MW-2	9/18/1995	Tier 3	1		Copper	<1	U			ug/L	GW	9/18/1995				1000	E
MW-3	MW-3	9/18/1995	Tier 3	1		Copper		dry			ug/L	GW	9/18/1995				1000	E
MW-4	MW-4	9/18/1995	Tier 3	1		Copper	<1	U			ug/L	GW	9/18/1995				1000	E
MW-5	MW-5	9/18/1995	Tier 3	1		Copper	<1	U			ug/L	GW	9/18/1995				1000	E
MW-6	MW-6	9/18/1995	Tier 3	1		Copper		dry			ug/L	GW	9/18/1995				1000	E
MW-7	MW-7	9/18/1995	Tier 3	1		Copper	5.9				ug/L	GW	9/18/1995				1000	E
MW-9	MW-9	9/18/1995	Tier 3	1		Copper	2.2				ug/L	GW	9/18/1995				1000	E
MW-10	MW-10	9/18/1995	Tier 3	1		Copper	2.7				ug/L	GW	9/18/1995				1000	E
MW-11	MW-11	9/18/1995	Tier 3	1		Copper	1.1				ug/L	GW	9/18/1995				1000	E
MW-12	MW-12	9/18/1995	Tier 3	1		Copper	1.3				ug/L	GW	9/18/1995				1000	E

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-1	MW-1	9/18/1995	Tier 3	1		Iron	320				ug/L	GW	9/18/1995				300	E
MW-2	MW-2	9/18/1995	Tier 3	1		Iron	260				ug/L	GW	9/18/1995				300	E
MW-3	MW-3	9/18/1995	Tier 3	1		Iron		dry			ug/L	GW	9/18/1995				300	E
MW-4	MW-4	9/18/1995	Tier 3	1		Iron	220000				ug/L	GW	9/18/1995				300	E
MW-5	MW-5	9/18/1995	Tier 3	1		Iron	140000				ug/L	GW	9/18/1995				300	E
MW-6	MW-6	9/18/1995	Tier 3	1		Iron		dry			ug/L	GW	9/18/1995				300	E
MW-7	MW-7	9/18/1995	Tier 3	1		Iron	160000				ug/L	GW	9/18/1995				300	E
MW-9	MW-9	9/18/1995	Tier 3	1		Iron	100				ug/L	GW	9/18/1995				300	E
MW-10	MW-10	9/18/1995	Tier 3	1		Iron	20000				ug/L	GW	9/18/1995				300	E
MW-11	MW-11	9/18/1995	Tier 3	1		Iron	120000				ug/L	GW	9/18/1995				300	E
MW-12	MW-12	9/18/1995	Tier 3	1		Iron	5500				ug/L	GW	9/18/1995				300	E
MW-1	MW-1	9/18/1995	Tier 3	1		Lead	<1	U			ug/L	GW	9/18/1995				4	L
MW-2	MW-2	9/18/1995	Tier 3	1		Lead	<1	U			ug/L	GW	9/18/1995				4	L
MW-3	MW-3	9/18/1995	Tier 3	1		Lead		dry			ug/L	GW	9/18/1995				4	L
MW-4	MW-4	9/18/1995	Tier 3	1		Lead	24				ug/L	GW	9/18/1995				4	L
MW-5	MW-5	9/18/1995	Tier 3	1		Lead	13				ug/L	GW	9/18/1995				4	L
MW-6	MW-6	9/18/1995	Tier 3	1		Lead		dry			ug/L	GW	9/18/1995				4	L
MW-7	MW-7	9/18/1995	Tier 3	1		Lead	18				ug/L	GW	9/18/1995				4	L
MW-9	MW-9	9/18/1995	Tier 3	1		Lead	<1	U			ug/L	GW	9/18/1995				4	L
MW-10	MW-10	9/18/1995	Tier 3	1		Lead	4.8				ug/L	GW	9/18/1995				4	L
MW-11	MW-11	9/18/1995	Tier 3	1		Lead	13				ug/L	GW	9/18/1995				4	L
MW-12	MW-12	9/18/1995	Tier 3	1		Lead	<1	U			ug/L	GW	9/18/1995				4	L
MW-1	MW-1	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-2	MW-2	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-3	MW-3	9/18/1995	Tier 3	1		Magnesium		dry			ug/L	GW	9/18/1995				400000	
MW-4	MW-4	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-5	MW-5	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-6	MW-6	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-7	MW-7	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-9	MW-9	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-10	MW-10	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-11	MW-11	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-12	MW-12	9/18/1995	Tier 3	1		Magnesium					ug/L	GW	9/18/1995				400000	
MW-1	MW-1	9/18/1995	Tier 3	1		Manganese	310				ug/L	GW	9/18/1995				50	E
MW-2	MW-2	9/18/1995	Tier 3	1		Manganese	4400				ug/L	GW	9/18/1995				50	E
MW-3	MW-3	9/18/1995	Tier 3	1		Manganese		dry			ug/L	GW	9/18/1995				50	E
MW-4	MW-4	9/18/1995	Tier 3	1		Manganese	41000				ug/L	GW	9/18/1995				50	E
MW-5	MW-5	9/18/1995	Tier 3	1		Manganese	6100				ug/L	GW	9/18/1995				50	E
MW-6	MW-6	9/18/1995	Tier 3	1		Manganese		dry			ug/L	GW	9/18/1995				50	E
MW-7	MW-7	9/18/1995	Tier 3	1		Manganese	40000				ug/L	GW	9/18/1995				50	E
MW-9	MW-9	9/18/1995	Tier 3	1		Manganese	660				ug/L	GW	9/18/1995				50	E
MW-10	MW-10	9/18/1995	Tier 3	1		Manganese	35000				ug/L	GW	9/18/1995				50	E
MW-11	MW-11	9/18/1995	Tier 3	1		Manganese	6600				ug/L	GW	9/18/1995				50	E
MW-12	MW-12	9/18/1995	Tier 3	1		Manganese	990				ug/L	GW	9/18/1995				50	E
MW-1	MW-1	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-2	MW-2	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-3	MW-3	9/18/1995	Tier 3	1		Mercury		dry			ug/L	GW	9/18/1995				2	A
MW-4	MW-4	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-5	MW-5	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-6	MW-6	9/18/1995	Tier 3	1		Mercury		dry			ug/L	GW	9/18/1995				2	A
MW-7	MW-7	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-9	MW-9	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-10	MW-10	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-11	MW-11	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-12	MW-12	9/18/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	9/18/1995				2	A
MW-1	MW-1	9/18/1995	Tier 3	1		Nickel	9.2				ug/L	GW	9/18/1995				100	A
MW-2	MW-2	9/18/1995	Tier 3	1		Nickel	36				ug/L	GW	9/18/1995				100	A
MW-3	MW-3	9/18/1995	Tier 3	1		Nickel		dry			ug/L	GW	9/18/1995				100	A
MW-4	MW-4	9/18/1995	Tier 3	1		Nickel	1900				ug/L	GW	9/18/1995				100	A
MW-5	MW-5	9/18/1995	Tier 3	1		Nickel	57				ug/L	GW	9/18/1995				100	A
MW-6	MW-6	9/18/1995	Tier 3	1		Nickel		dry			ug/L	GW	9/18/1995				100	A
MW-7	MW-7	9/18/1995	Tier 3	1		Nickel	1700				ug/L	GW	9/18/1995				100	A
MW-9	MW-9	9/18/1995	Tier 3	1		Nickel	25				ug/L	GW	9/18/1995				100	A
MW-10	MW-10	9/18/1995	Tier 3	1		Nickel	49				ug/L	GW	9/18/1995				100	A
MW-11	MW-11	9/18/1995	Tier 3	1		Nickel	12				ug/L	GW	9/18/1995				100	A
MW-12	MW-12	9/18/1995	Tier 3	1		Nickel	1.1				ug/L	GW	9/18/1995				100	A
MW-1	MW-1	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-2	MW-2	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-3	MW-3	9/18/1995	Tier 3	1		Potassium		dry			ug/L	GW	9/18/1995					
MW-4	MW-4	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-5	MW-5	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-6	MW-6	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-7	MW-7	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-9	MW-9	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-10	MW-10	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-11	MW-11	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-12	MW-12	9/18/1995	Tier 3	1		Potassium					ug/L	GW	9/18/1995					
MW-1	MW-1	9/18/1995	Tier 3	1		Selenium	>2				ug/L	GW	9/18/1995				50	A
MW-2	MW-2	9/18/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	9/18/1995				50	A
MW-3	MW-3	9/18/1995	Tier 3	1		Selenium		dry			ug/L	GW	9/18/1995				50	A
MW-4	MW-4	9/18/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	9/18/1995				50	A
MW-5	MW-5	9/18/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	9/18/1995				50	A
MW-6	MW-6	9/18/1995	Tier 3	1		Selenium		dry			ug/L	GW	9/18/1995				50	A
MW-7	MW-7	9/18/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	9/18/1995				50	A
MW-9	MW-9	9/18/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	9/18/1995				50	A
MW-10	MW-10	9/18/1995	Tier 3	1		Selenium	4.7				ug/L	GW	9/18/1995				50	A
MW-11	MW-11	9/18/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	9/18/1995				50	A
MW-12	MW-12	9/18/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	9/18/1995				50	A
MW-1	MW-1	9/18/1995	Tier 3	1		Silver	<1	U			ug/L	GW	9/18/1995				34	
MW-2	MW-2	9/18/1995	Tier 3	1		Silver	<1	U			ug/L	GW	9/18/1995				34	
MW-3	MW-3	9/18/1995	Tier 3	1		Silver		dry			ug/L	GW	9/18/1995				34	
MW-4	MW-4	9/18/1995	Tier 3	1		Silver	2.4				ug/L	GW	9/18/1995				34	
MW-5	MW-5	9/18/1995	Tier 3	1		Silver	<1	U			ug/L	GW	9/18/1995				34	
MW-6	MW-6	9/18/1995	Tier 3	1		Silver		dry			ug/L	GW	9/18/1995				34	
MW-7	MW-7	9/18/1995	Tier 3	1		Silver	1.9				ug/L	GW	9/18/1995				34	
MW-9	MW-9	9/18/1995	Tier 3	1		Silver	<1	U			ug/L	GW	9/18/1995				34	
MW-10	MW-10	9/18/1995	Tier 3	1		Silver	<1	U			ug/L	GW	9/18/1995				34	
MW-11	MW-11	9/18/1995	Tier 3	1		Silver	<1	U			ug/L	GW	9/18/1995				34	
MW-12	MW-12	9/18/1995	Tier 3	1		Silver	<1	U			ug/L	GW	9/18/1995				34	
MW-1	MW-1	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-2	MW-2	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-3	MW-3	9/18/1995	Tier 3	1		Sodium		dry			ug/L	GW	9/18/1995				120000	
MW-4	MW-4	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-5	MW-5	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-6	MW-6	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-7	MW-7	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-9	MW-9	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-10	MW-10	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-11	MW-11	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-12	MW-12	9/18/1995	Tier 3	1		Sodium					ug/L	GW	9/18/1995				120000	
MW-1	MW-1	9/18/1995	Tier 3	1		Zinc	38				ug/L	GW	9/18/1995				2400	
MW-2	MW-2	9/18/1995	Tier 3	1		Zinc	29				ug/L	GW	9/18/1995				2400	
MW-3	MW-3	9/18/1995	Tier 3	1		Zinc		dry			ug/L	GW	9/18/1995				2400	
MW-4	MW-4	9/18/1995	Tier 3	1		Zinc	470				ug/L	GW	9/18/1995				2400	
MW-5	MW-5	9/18/1995	Tier 3	1		Zinc	<1	U			ug/L	GW	9/18/1995				2400	
MW-6	MW-6	9/18/1995	Tier 3	1		Zinc		dry			ug/L	GW	9/18/1995				2400	
MW-7	MW-7	9/18/1995	Tier 3	1		Zinc	700				ug/L	GW	9/18/1995				2400	
MW-9	MW-9	9/18/1995	Tier 3	1		Zinc	33				ug/L	GW	9/18/1995				2400	
MW-10	MW-10	9/18/1995	Tier 3	1		Zinc	60				ug/L	GW	9/18/1995				2400	
MW-11	MW-11	9/18/1995	Tier 3	1		Zinc	<1	U			ug/L	GW	9/18/1995				2400	
MW-12	MW-12	9/18/1995	Tier 3	1		Zinc	10				ug/L	GW	9/18/1995				2400	
MW-12	MW-12	9/18/1995	Tier 3	1		Zinc	31				ug/L	GW	9/18/1995				2400	
MW-5	MW-5	9/18/1995	Tier 2	1	--	Benzene	29				ug/L	GW	9/18/1995		8020W		5	A
MW-5	MW-5	9/18/1995	Tier 2	1	--	Ethylbenzene	900				ug/l	GW	9/18/1995		8020W		74	E
MW-5	MW-5	9/18/1995	Tier 2	1	--	Methy T-Butyl ether	<1.0	U			ug/L	GW	9/18/1995		8020W		40	E
MW-5	MW-5	9/18/1995	Tier 2	1	--	Toluene	9.6				ug/L	GW	9/18/1995		8020W		790	E
MW-5	MW-5	9/18/1995	Tier 2	1	--	Xylenes	5400				ug/l	GW	9/18/1995		8020W		280	E
MW-5	MW-5	9/18/1995	Tier 2	1	--	Acenaphthene					ug/L	GW	9/18/1995		8020W		1300	
MW-5	MW-5	9/18/1995	Tier 2	1	--	Acenaphthylene					ug/L	GW	9/18/1995		8020W		52	
MW-5	MW-5	9/18/1995	Tier 2	1	--	Anthracene					ug/L	GW	9/18/1995		8020W		43	S
MW-5	MW-5	9/18/1995	Tier 2	1	--	Benzo (a) anthracene					ug/L	GW	9/18/1995		8020W		2	
MW-5	MW-5	9/18/1995	Tier 2	1	--	Benzo (a) pyrene					ug/L	GW	9/18/1995		8020W		5	A
MW-5	MW-5	9/18/1995	Tier 2	1	--	Benzo (b) Fluoranthene					ug/L	GW	9/18/1995		8020W		1.5	S,AA
MW-5	MW-5	9/18/1995	Tier 2	1	--	Benzo (g,h,i) perylene					ug/L	GW	9/18/1995		8020W		1.0	M
MW-5	MW-5	9/18/1995	Tier 2	1	--	Benzo (k) Fluoranthene					ug/l	GW	9/18/1995		8020W		1.0	M
MW-5	MW-5	9/18/1995	Tier 2	1	--	Chrysene					ug/L	GW	9/18/1995		8020W		1.6	S
MW-5	MW-5	9/18/1995	Tier 2	1	--	Dibenzo (a,h) anthracene					ug/l	GW	9/18/1995		8020W		2	M
MW-5	MW-5	9/18/1995	Tier 2	1	--	Fluoranthene					ug/L	GW	9/18/1995		8020W		210	S
MW-5	MW-5	9/18/1995	Tier 2	1	--	Fluorene					ug/L	GW	9/18/1995		8020W		880	
MW-5	MW-5	9/18/1995	Tier 2	1	--	Indeno (1,2,3 - cd) pyrene					ug/l	GW	9/18/1995		8020W		2	M
MW-5	MW-5	9/18/1995	Tier 2	1	--	Naphthalene	9.68				ug/L	GW	9/18/1995		8020W		520	
MW-5	MW-5	9/18/1995	Tier 2	1	--	Phenanthrene					ug/L	GW	9/18/1995		8020W		52	
MW-5	MW-5	9/18/1995	Tier 2	1	--	Pyrene					ug/L	GW	9/18/1995		8020W		140	S
MW-102	MW-102	10/26/1995	Tier 3	1		Arsenic	<5	U			ug/L	GW	10/26/1995				10	EPA 2006
MW-104	MW-104	10/26/1995	Tier 3	1		Arsenic	12				ug/L	GW	10/26/1995				10	EPA 2006
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Arsenic	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7060		10	EPA 2006
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Arsenic	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7060		10	EPA 2006
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Arsenic	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7060		10	EPA 2006
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Arsenic	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7060		10	EPA 2006
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Arsenic	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7060		10	EPA 2006
MW-102	MW-102	10/26/1995	Tier 3	1		Barium	<200	U			ug/L	GW	10/26/1995				2000	A
MW-104	MW-104	10/26/1995	Tier 3	1		Barium	200				ug/L	GW	10/26/1995				2000	A

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Barium	<200	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2000	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Barium	<200	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2000	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Barium	<200	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2000	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Barium	<200	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2000	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Barium	<200	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2000	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Barium	<200	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2000	A
MW-102	MW-102	10/26/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	10/26/1995				5	A
MW-104	MW-104	10/26/1995	Tier 3	1		Cadmium	0.5				ug/L	GW	10/26/1995				5	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Cadmium	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7131		5	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Cadmium	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7131		5	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Cadmium	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7131		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Cadmium	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7131		5	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Cadmium	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7131		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Cadmium	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7131		5	A
MW-102	MW-102	10/26/1995	Tier 3	1		Calcium					ug/L	GW	10/26/1995					
MW-104	MW-104	10/26/1995	Tier 3	1		Calcium					ug/L	GW	10/26/1995					
MW-102	MW-102	10/26/1995	Tier 3	1		Chromium, total	<50	U			ug/L	GW	10/26/1995				100	A
MW-104	MW-104	10/26/1995	Tier 3	1		Chromium, total	50				ug/L	GW	10/26/1995				100	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Chromium, total	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Chromium, total	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Chromium, total	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Chromium, total	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Chromium, total	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Chromium, total	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-102	MW-102	10/26/1995	Tier 3	1		Copper	<25	U			ug/L	GW	10/26/1995				1000	E
MW-104	MW-104	10/26/1995	Tier 3	1		Copper	<25	U			ug/L	GW	10/26/1995				1000	E
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Copper	<25	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		1000	E
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Copper	<25	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		1000	E
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Copper	<25	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		1000	E
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Copper	<25	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		1000	E
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Copper	<25	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		1000	E
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Copper	<25	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		1000	E
MW-104	MW-104	10/26/1995	Tier 3	1		Iron	30000				ug/L	GW	10/26/1995				300	E
MW-102	MW-102	10/26/1995	Tier 3	1		Iron	390000				ug/L	GW	10/26/1995				300	E
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Iron	1000				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		300	E
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Iron	34000				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		300	E
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Iron	<100	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		300	E
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Iron	9400				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		300	E
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Iron	2000				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		300	E
MW-102	MW-102	10/26/1995	Tier 3	1		Lead	<3	U			ug/L	GW	10/26/1995				4	L
MW-104	MW-104	10/26/1995	Tier 3	1		Lead	<3	U			ug/L	GW	10/26/1995				4	L
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Lead	<3	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7421		4	L
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Lead	<3	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7421		4	L
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Lead	<3	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7421		4	L
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Lead	<3	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7421		4	L
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Lead	<3	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7421		4	L
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Lead	<3	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7421		4	L
MW-102	MW-102	10/26/1995	Tier 3	1		Magnesium					ug/L	GW	10/26/1995				400000	
MW-104	MW-104	10/26/1995	Tier 3	1		Magnesium					ug/L	GW	10/26/1995				400000	
MW-102	MW-102	10/26/1995	Tier 3	1		Manganese	22000				ug/L	GW	10/26/1995				50	E
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Manganese	3200				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		50	E
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Manganese	5800				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		50	E
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Manganese	3200				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		50	E
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Manganese	1200				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		50	E
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Manganese	7200				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		50	E
MW-102	MW-102	10/26/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	10/26/1995				2	A
MW-104	MW-104	10/26/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	10/26/1995				2	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Mercury	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7470		2	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Mercury	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7470		2	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Mercury	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7470		2	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Mercury	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7470		2	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Mercury	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7470		2	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Mercury	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7470		2	A
MW-104	MW-104	10/26/1995	Tier 3	1		Nickel	50				ug/L	GW	10/26/1995				100	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Nickel	1400				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Nickel	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Nickel	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Nickel	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Nickel	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Nickel	<50	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		100	A
MW-102	MW-102	10/26/1995	Tier 3	1		Potassium					ug/L	GW	10/26/1995					
MW-104	MW-104	10/26/1995	Tier 3	1		Potassium					ug/L	GW	10/26/1995					
MW-102	MW-102	10/26/1995	Tier 3	1		Selenium	<5	U			ug/L	GW	10/26/1995				50	A
MW-104	MW-104	10/26/1995	Tier 3	1		Selenium	<5	U			ug/L	GW	10/26/1995				50	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Selenium	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7740		50	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Selenium	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7740		50	A

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Selenium	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7740		50	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Selenium	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7740		50	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Selenium	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7740		50	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Selenium	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7740		50	A
MW-102	MW-102	10/26/1995	Tier 3	1		Silver	<0.5	U			ug/L	GW	10/26/1995				34	
MW-104	MW-104	10/26/1995	Tier 3	1		Silver	0.5				ug/L	GW	10/26/1995				34	
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Silver	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7761		34	
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Silver	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7761		34	
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Silver	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7761		34	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Silver	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7761		34	
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Silver	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7761		34	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Silver	<0.5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 7761		34	
MW-102	MW-102	10/26/1995	Tier 3	1		Sodium					ug/L	GW	10/26/1995				120000	
MW-104	MW-104	10/26/1995	Tier 3	1		Sodium					ug/L	GW	10/26/1995				120000	
MW-102	MW-102	10/26/1995	Tier 3	1		Zinc	220				ug/L	GW	10/26/1995				2400	
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Zinc	<20	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2400	
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Zinc	20				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2400	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Zinc	20				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2400	
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Zinc	<20	U			ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2400	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Zinc	20				ug/L	GW	10/24/1995		SW-846 Mtd. 6010		2400	
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1016	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1016	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1016	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1016	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1016	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1016	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1221	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1221	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1221	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1221	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1221	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1221	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1232	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1232	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1232	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1232	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1232	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1232	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1242	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1242	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1242	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1242	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1242	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1242	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1248	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1248	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1248	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1248	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1248	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1248	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1254	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1254	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1254	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1254	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1254	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1254	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1260	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1260	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1260	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1260	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1260	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1260	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1262	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1262	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1262	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1262	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1262	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1262	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Aroclor-1268	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Aroclor-1268	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Aroclor-1268	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Aroclor-1268	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Aroclor-1268	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Aroclor-1268	<0.2	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8080		1	A
MW-101	6057 MW-101	10/26/1995	Tier 2	1	56476-1439	Cyanide, total	<0.005	U			mg/L	GW	10/24/1995		SW-846 Mtd. 9010		0	A
MW-102	6058 MW-102	10/26/1995	Tier 2	1	56476-1440	Cyanide, total	0.063				mg/L	GW	10/24/1995		SW-846 Mtd. 9010		0	A

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-103	6059 MW-103	10/26/1995	Tier 2	1	56476-1441	Cyanide, total	0.023				mg/L	GW	10/24/1995		SW-846 Mtd. 9010		0	A
MW-105	6061 MW-105	10/26/1995	Tier 2	1	56476-1443	Cyanide, total	<0.005	U			mg/L	GW	10/24/1995		SW-846 Mtd. 9010A		0	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,1,1-Trichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		200	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,1,1-Trichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		200	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,1,2,2-Tetrachloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		9	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,1,2,2-Tetrachloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		9	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,1,2-Trichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,1,2-Trichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,1-Dichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		880	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,1-Dichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		880	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,1-Dichloroethene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		7	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,1-Dichloroethene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		7	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,2-Dichlorobenzene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		600	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,2-Dichlorobenzene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		600	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,2-Dichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,2-Dichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,2-Dichloropropane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,2-Dichloropropane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,3-Dichlorobenzene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		7	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,3-Dichlorobenzene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		7	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,3-Dichloropropene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		9	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,3-Dichloropropene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		9	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	1,4-Dichlorobenzene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		75	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	1,4-Dichlorobenzene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		75	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	2-Chloroethyl Vinyl Ether	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010			ID
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	2-Chloroethyl Vinyl Ether	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010			ID
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Benzene	27				ug/L	GW	10/24/1995		SW-846 MTD. 8020		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Benzene	<5	U			ug/L	GW	10/24/1995		SW-846 MTD. 8020		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Bromodichloromethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		80	A,W
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Bromodichloromethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		80	A,W
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Bromoform	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		80	A,W
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Bromoform	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		80	A,W
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Bromomethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		10	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Bromomethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		10	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Carbon Tetrachloride	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Carbon Tetrachloride	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Chlorobenzene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		100	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Chlorobenzene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		100	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Chlorodibromomethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		100	A,W
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Chlorodibromomethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		100	A,W
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Chloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		430	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Chloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		430	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Chloroform	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		80	A,W
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Chloroform	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		80	A,W
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Chloromethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		260	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Chloromethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		260	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Dichlorodifluoromethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		1700	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Dichlorodifluoromethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		1700	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Ethylbenzene	48				ug/l	GW	10/24/1995		SW-846 MTD. 8020		74	E
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Ethylbenzene	<1	U			ug/l	GW	10/24/1995		SW-846 MTD. 8020		74	E
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Fluorotrichloromethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		2600	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Fluorotrichloromethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		2600	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Methylene Chloride	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Methylene Chloride	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Tetrachloroethene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Tetrachloroethene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Toluene	94				ug/L	GW	10/24/1995		SW-846 MTD. 8020		790	E
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Toluene	<1	U			ug/L	GW	10/24/1995		SW-846 MTD. 8020		790	E
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	trans-1,2-Dichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		100	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	trans-1,2-Dichloroethane	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		100	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	trans-1,3-Dichloropropene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		9	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	trans-1,3-Dichloropropene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		9	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Trichloroethene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Trichloroethene	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Vinyl Chloride	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		2	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Vinyl Chloride	<1	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8010		2	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Xylenes	500				ug/l	GW	10/24/1995		SW-846 MTD. 8020		280	E
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Xylenes	<3	U			ug/l	GW	10/24/1995		SW-846 MTD. 8020		280	E
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Acenaphthene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		1300	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Acenaphthene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		1300	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Acenaphthylene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		52	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Acenaphthylene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		52	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Anthracene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		43	S
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Anthracene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		43	S
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Benzo (a) anthracene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		2	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Benzo (a) anthracene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		2	

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Benzo (a) pyrene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		5	A
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Benzo (a) pyrene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		5	A
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		1.5	S,AA
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		1.0	M
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		1.0	M
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	10/24/1995		SW-846 Mtd. 8270A		1.0	M
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	10/24/1995		SW-846 Mtd. 8270A		1.0	M
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Chrysene	<5	P,U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		1.6	S
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Chrysene	<5	P,U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		1.6	S
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	10/24/1995		SW-846 Mtd. 8270A		2	M
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Dibenzo (a,h) anthracene	<5	U			ug/l	GW	10/24/1995		SW-846 Mtd. 8270A		2	M
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Fluoranthene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		210	S
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Fluoranthene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		210	S
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Fluorene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		880	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Fluorene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		880	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	10/24/1995		SW-846 Mtd. 8270A		2	M
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	10/24/1995		SW-846 Mtd. 8270A		2	M
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Naphthalene	76				ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		520	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Naphthalene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		520	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Phenanthrene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		52	
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Phenanthrene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		52	
MW-104	6060 MW-104	10/26/1995	Tier 2	1	56476-1442	Pyrene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		140	S
MW-106	6062 MW-106	10/26/1995	Tier 2	1	56476-1444	Pyrene	<5	U			ug/L	GW	10/24/1995		SW-846 Mtd. 8270A		140	S
MW-1	MW-1	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-2	MW-2	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-3	MW-3	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-4	MW-4	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-5	MW-5	11/7/1995	Tier 3	1		Arsenic	140				ug/L	GW	11/7/1995				10	EPA 2006
MW-6	MW-6	11/7/1995	Tier 3	1		Arsenic		dry			ug/L	GW	11/7/1995				10	EPA 2006
MW-7	MW-7	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-9	MW-9	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-10	MW-10	11/7/1995	Tier 3	1		Arsenic	3				ug/L	GW	11/7/1995				10	EPA 2006
MW-11	MW-11	11/7/1995	Tier 3	1		Arsenic	13				ug/L	GW	11/7/1995				10	EPA 2006
MW-12	MW-12	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-101	MW-101	11/7/1995	Tier 3	1		Arsenic	6				ug/L	GW	11/7/1995				10	EPA 2006
MW-102	MW-102	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-103	MW-103	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-104	MW-104	11/7/1995	Tier 3	1		Arsenic	8				ug/L	GW	11/7/1995				10	EPA 2006
MW-105	MW-105	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-106	MW-106	11/7/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/7/1995				10	EPA 2006
MW-1	MW-1	11/7/1995	Tier 3	1		Barium	85				ug/L	GW	11/7/1995				2000	A
MW-2	MW-2	11/7/1995	Tier 3	1		Barium	67				ug/L	GW	11/7/1995				2000	A
MW-3	MW-3	11/7/1995	Tier 3	1		Barium	60				ug/L	GW	11/7/1995				2000	A
MW-4	MW-4	11/7/1995	Tier 3	1		Barium	60				ug/L	GW	11/7/1995				2000	A
MW-5	MW-5	11/7/1995	Tier 3	1		Barium	280				ug/L	GW	11/7/1995				2000	A
MW-6	MW-6	11/7/1995	Tier 3	1		Barium		dry			ug/L	GW	11/7/1995				2000	A
MW-7	MW-7	11/7/1995	Tier 3	1		Barium	18				ug/L	GW	11/7/1995				2000	A
MW-9	MW-9	11/7/1995	Tier 3	1		Barium	37				ug/L	GW	11/7/1995				2000	A
MW-10	MW-10	11/7/1995	Tier 3	1		Barium	49				ug/L	GW	11/7/1995				2000	A
MW-11	MW-11	11/7/1995	Tier 3	1		Barium	110				ug/L	GW	11/7/1995				2000	A
MW-12	MW-12	11/7/1995	Tier 3	1		Barium	30				ug/L	GW	11/7/1995				2000	A
MW-101	MW-101	11/7/1995	Tier 3	1		Barium	56				ug/L	GW	11/7/1995				2000	A
MW-102	MW-102	11/7/1995	Tier 3	1		Barium	36				ug/L	GW	11/7/1995				2000	A
MW-103	MW-103	11/7/1995	Tier 3	1		Barium	60				ug/L	GW	11/7/1995				2000	A
MW-104	MW-104	11/7/1995	Tier 3	1		Barium	210				ug/L	GW	11/7/1995				2000	A
MW-105	MW-105	11/7/1995	Tier 3	1		Barium	38				ug/L	GW	11/7/1995				2000	A
MW-106	MW-106	11/7/1995	Tier 3	1		Barium	63				ug/L	GW	11/7/1995				2000	A
MW-1	MW-1	11/7/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	11/7/1995				5	A
MW-2	MW-2	11/7/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	11/7/1995				5	A
MW-3	MW-3	11/7/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	11/7/1995				5	A
MW-4	MW-4	11/7/1995	Tier 3	1		Cadmium	41				ug/L	GW	11/7/1995				5	A
MW-5	MW-5	11/7/1995	Tier 3	1		Cadmium	30				ug/L	GW	11/7/1995				5	A
MW-6	MW-6	11/7/1995	Tier 3	1		Cadmium		dry			ug/L	GW	11/7/1995				5	A
MW-7	MW-7	11/7/1995	Tier 3	1		Cadmium	20				ug/L	GW	11/7/1995				5	A
MW-9	MW-9	11/7/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	11/7/1995				5	A
MW-10	MW-10	11/7/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	11/7/1995				5	A
MW-11	MW-11	11/7/1995	Tier 3	1		Cadmium	19				ug/L	GW	11/7/1995				5	A
MW-12	MW-12	11/7/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	11/7/1995				5	A
MW-101	MW-101	11/7/1995	Tier 3	1		Cadmium	0.7				ug/L	GW	11/7/1995				5	A
MW-102	MW-102	11/7/1995	Tier 3	1		Cadmium	130				ug/L	GW	11/7/1995				5	A
MW-103	MW-103	11/7/1995	Tier 3	1		Cadmium	0.6				ug/L	GW	11/7/1995				5	A
MW-104	MW-104	11/7/1995	Tier 3	1		Cadmium	6				ug/L	GW	11/7/1995				5	A
MW-105	MW-105	11/7/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	11/7/1995				5	A
MW-106	MW-106	11/7/1995	Tier 3	1		Cadmium	<0.5	U			ug/L	GW	11/7/1995				5	A
MW-1	MW-1	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-2	MW-2	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-3	MW-3	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-4	MW-4	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-5	MW-5	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-6	MW-6	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-7	MW-7	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-9	MW-9	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-10	MW-10	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-11	MW-11	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-12	MW-12	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-101	MW-101	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-102	MW-102	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-103	MW-103	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-104	MW-104	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-105	MW-105	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-106	MW-106	11/7/1995	Tier 3	1		Calcium					ug/L	GW	11/7/1995					
MW-1	MW-1	11/7/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/7/1995				100	A
MW-2	MW-2	11/7/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/7/1995				100	A
MW-3	MW-3	11/7/1995	Tier 3	1		Chromium, total	1				ug/L	GW	11/7/1995				100	A
MW-4	MW-4	11/7/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/7/1995				100	A
MW-5	MW-5	11/7/1995	Tier 3	1		Chromium, total	14				ug/L	GW	11/7/1995				100	A
MW-6	MW-6	11/7/1995	Tier 3	1		Chromium, total		dry			ug/L	GW	11/7/1995				100	A
MW-7	MW-7	11/7/1995	Tier 3	1		Chromium, total	4				ug/L	GW	11/7/1995				100	A
MW-9	MW-9	11/7/1995	Tier 3	1		Chromium, total	<1	U			ug/L	GW	11/7/1995				100	A
MW-10	MW-10	11/7/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/7/1995				100	A
MW-11	MW-11	11/7/1995	Tier 3	1		Chromium, total	13				ug/L	GW	11/7/1995				100	A
MW-12	MW-12	11/7/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/7/1995				100	A
MW-101	MW-101	11/7/1995	Tier 3	1		Chromium, total	3				ug/L	GW	11/7/1995				100	A
MW-102	MW-102	11/7/1995	Tier 3	1		Chromium, total	<1	U			ug/L	GW	11/7/1995				100	A
MW-103	MW-103	11/7/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/7/1995				100	A
MW-104	MW-104	11/7/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/7/1995				100	A
MW-105	MW-105	11/7/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/7/1995				100	A
MW-106	MW-106	11/7/1995	Tier 3	1		Chromium, total	3				ug/L	GW	11/7/1995				100	A
MW-1	MW-1	11/7/1995	Tier 3	1		Copper	3				ug/L	GW	11/7/1995				1000	E
MW-2	MW-2	11/7/1995	Tier 3	1		Copper	4				ug/L	GW	11/7/1995				1000	E
MW-3	MW-3	11/7/1995	Tier 3	1		Copper	8				ug/L	GW	11/7/1995				1000	E
MW-4	MW-4	11/7/1995	Tier 3	1		Copper	4				ug/L	GW	11/7/1995				1000	E
MW-5	MW-5	11/7/1995	Tier 3	1		Copper	<1	U			ug/L	GW	11/7/1995				1000	E
MW-6	MW-6	11/7/1995	Tier 3	1		Copper		dry			ug/L	GW	11/7/1995				1000	E
MW-7	MW-7	11/7/1995	Tier 3	1		Copper	4				ug/L	GW	11/7/1995				1000	E
MW-9	MW-9	11/7/1995	Tier 3	1		Copper	3				ug/L	GW	11/7/1995				1000	E
MW-10	MW-10	11/7/1995	Tier 3	1		Copper	1				ug/L	GW	11/7/1995				1000	E
MW-11	MW-11	11/7/1995	Tier 3	1		Copper	88				ug/L	GW	11/7/1995				1000	E
MW-12	MW-12	11/7/1995	Tier 3	1		Copper	34				ug/L	GW	11/7/1995				1000	E
MW-101	MW-101	11/7/1995	Tier 3	1		Copper					ug/L	GW	11/7/1995				1000	E
MW-102	MW-102	11/7/1995	Tier 3	1		Copper					ug/L	GW	11/7/1995				1000	E
MW-103	MW-103	11/7/1995	Tier 3	1		Copper					ug/L	GW	11/7/1995				1000	E
MW-104	MW-104	11/7/1995	Tier 3	1		Copper					ug/L	GW	11/7/1995				1000	E
MW-105	MW-105	11/7/1995	Tier 3	1		Copper					ug/L	GW	11/7/1995				1000	E
MW-106	MW-106	11/7/1995	Tier 3	1		Copper					ug/L	GW	11/7/1995				1000	E
MW-1	MW-1	11/7/1995	Tier 3	1		Iron	4500				ug/L	GW	11/7/1995				300	E
MW-2	MW-2	11/7/1995	Tier 3	1		Iron	66				ug/L	GW	11/7/1995				300	E
MW-3	MW-3	11/7/1995	Tier 3	1		Iron	170				ug/L	GW	11/7/1995				300	E
MW-4	MW-4	11/7/1995	Tier 3	1		Iron	410000				ug/L	GW	11/7/1995				300	E
MW-5	MW-5	11/7/1995	Tier 3	1		Iron	300000				ug/L	GW	11/7/1995				300	E
MW-6	MW-6	11/7/1995	Tier 3	1		Iron		dry			ug/L	GW	11/7/1995				300	E
MW-7	MW-7	11/7/1995	Tier 3	1		Iron	190000				ug/L	GW	11/7/1995				300	E
MW-9	MW-9	11/7/1995	Tier 3	1		Iron	150				ug/L	GW	11/7/1995				300	E
MW-10	MW-10	11/7/1995	Tier 3	1		Iron	330				ug/L	GW	11/7/1995				300	E
MW-11	MW-11	11/7/1995	Tier 3	1		Iron	190000				ug/L	GW	11/7/1995				300	E
MW-12	MW-12	11/7/1995	Tier 3	1		Iron	1800				ug/L	GW	11/7/1995				300	E
MW-101	MW-101	11/7/1995	Tier 3	1		Iron	5500				ug/L	GW	11/7/1995				300	E
MW-102	MW-102	11/7/1995	Tier 3	1		Iron	440000				ug/L	GW	11/7/1995				300	E
MW-103	MW-103	11/7/1995	Tier 3	1		Iron	2800				ug/L	GW	11/7/1995				300	E
MW-104	MW-104	11/7/1995	Tier 3	1		Iron	41000				ug/L	GW	11/7/1995				300	E
MW-105	MW-105	11/7/1995	Tier 3	1		Iron	2700				ug/L	GW	11/7/1995				300	E
MW-106	MW-106	11/7/1995	Tier 3	1		Iron	520				ug/L	GW	11/7/1995				300	E
MW-1	MW-1	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-2	MW-2	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-3	MW-3	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-4	MW-4	11/7/1995	Tier 3	1		Lead	24				ug/L	GW	11/7/1995				4	L
MW-5	MW-5	11/7/1995	Tier 3	1		Lead	14				ug/L	GW	11/7/1995				4	L
MW-6	MW-6	11/7/1995	Tier 3	1		Lead		dry			ug/L	GW	11/7/1995				4	L
MW-7	MW-7	11/7/1995	Tier 3	1		Lead	11				ug/L	GW	11/7/1995				4	L
MW-9	MW-9	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-10	MW-10	11/7/1995	Tier 3	1		Lead	<1.4	U			ug/L	GW	11/7/1995				4	L

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-11	MW-11	11/7/1995	Tier 3	1		Lead	11				ug/L	GW	11/7/1995				4	L
MW-12	MW-12	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-101	MW-101	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-102	MW-102	11/7/1995	Tier 3	1		Lead	68				ug/L	GW	11/7/1995				4	L
MW-103	MW-103	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-104	MW-104	11/7/1995	Tier 3	1		Lead	4				ug/L	GW	11/7/1995				4	L
MW-105	MW-105	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-106	MW-106	11/7/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/7/1995				4	L
MW-1	MW-1	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-2	MW-2	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-3	MW-3	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-4	MW-4	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-5	MW-5	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-6	MW-6	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-7	MW-7	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-9	MW-9	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-10	MW-10	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-11	MW-11	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-12	MW-12	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-101	MW-101	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-102	MW-102	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-103	MW-103	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-104	MW-104	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-105	MW-105	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-106	MW-106	11/7/1995	Tier 3	1		Magnesium					ug/L	GW	11/7/1995				400000	
MW-1	MW-1	11/7/1995	Tier 3	1		Manganese	7000				ug/L	GW	11/7/1995				50	E
MW-2	MW-2	11/7/1995	Tier 3	1		Manganese	2300				ug/L	GW	11/7/1995				50	E
MW-3	MW-3	11/7/1995	Tier 3	1		Manganese	70				ug/L	GW	11/7/1995				50	E
MW-4	MW-4	11/7/1995	Tier 3	1		Manganese	45000				ug/L	GW	11/7/1995				50	E
MW-5	MW-5	11/7/1995	Tier 3	1		Manganese	6700				ug/L	GW	11/7/1995				50	E
MW-6	MW-6	11/7/1995	Tier 3	1		Manganese		dry			ug/L	GW	11/7/1995				50	E
MW-7	MW-7	11/7/1995	Tier 3	1		Manganese	35000				ug/L	GW	11/7/1995				50	E
MW-9	MW-9	11/7/1995	Tier 3	1		Manganese	220				ug/L	GW	11/7/1995				50	E
MW-10	MW-10	11/7/1995	Tier 3	1		Manganese	30000				ug/L	GW	11/7/1995				50	E
MW-11	MW-11	11/7/1995	Tier 3	1		Manganese	6200				ug/L	GW	11/7/1995				50	E
MW-12	MW-12	11/7/1995	Tier 3	1		Manganese	1500				ug/L	GW	11/7/1995				50	E
MW-101	MW-101	11/7/1995	Tier 3	1		Manganese	8400				ug/L	GW	11/7/1995				50	E
MW-102	MW-102	11/7/1995	Tier 3	1		Manganese	25000				ug/L	GW	11/7/1995				50	E
MW-103	MW-103	11/7/1995	Tier 3	1		Manganese	4200				ug/L	GW	11/7/1995				50	E
MW-104	MW-104	11/7/1995	Tier 3	1		Manganese	5700				ug/L	GW	11/7/1995				50	E
MW-105	MW-105	11/7/1995	Tier 3	1		Manganese	1400				ug/L	GW	11/7/1995				50	E
MW-106	MW-106	11/7/1995	Tier 3	1		Manganese	7600				ug/L	GW	11/7/1995				50	E
MW-1	MW-1	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-2	MW-2	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-3	MW-3	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-4	MW-4	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-5	MW-5	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-6	MW-6	11/7/1995	Tier 3	1		Mercury		dry			ug/L	GW	11/7/1995				2	A
MW-7	MW-7	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-9	MW-9	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-10	MW-10	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-11	MW-11	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-12	MW-12	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-101	MW-101	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-102	MW-102	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-103	MW-103	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-104	MW-104	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-105	MW-105	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-106	MW-106	11/7/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/7/1995				2	A
MW-1	MW-1	11/7/1995	Tier 3	1		Nickel	150				ug/L	GW	11/7/1995				100	A
MW-2	MW-2	11/7/1995	Tier 3	1		Nickel	18				ug/L	GW	11/7/1995				100	A
MW-3	MW-3	11/7/1995	Tier 3	1		Nickel	28				ug/L	GW	11/7/1995				100	A
MW-4	MW-4	11/7/1995	Tier 3	1		Nickel	1500				ug/L	GW	11/7/1995				100	A
MW-5	MW-5	11/7/1995	Tier 3	1		Nickel	60				ug/L	GW	11/7/1995				100	A
MW-6	MW-6	11/7/1995	Tier 3	1		Nickel		dry			ug/L	GW	11/7/1995				100	A
MW-7	MW-7	11/7/1995	Tier 3	1		Nickel	1100				ug/L	GW	11/7/1995				100	A
MW-9	MW-9	11/7/1995	Tier 3	1		Nickel	21				ug/L	GW	11/7/1995				100	A
MW-10	MW-10	11/7/1995	Tier 3	1		Nickel	39				ug/L	GW	11/7/1995				100	A
MW-11	MW-11	11/7/1995	Tier 3	1		Nickel	4				ug/L	GW	11/7/1995				100	A
MW-12	MW-12	11/7/1995	Tier 3	1		Nickel	2				ug/L	GW	11/7/1995				100	A
MW-101	MW-101	11/7/1995	Tier 3	1		Nickel	1				ug/L	GW	11/7/1995				100	A
MW-102	MW-102	11/7/1995	Tier 3	1		Nickel	1600				ug/L	GW	11/7/1995				100	A
MW-103	MW-103	11/7/1995	Tier 3	1		Nickel	2				ug/L	GW	11/7/1995				100	A
MW-104	MW-104	11/7/1995	Tier 3	1		Nickel	22				ug/L	GW	11/7/1995				100	A
MW-105	MW-105	11/7/1995	Tier 3	1		Nickel	4				ug/L	GW	11/7/1995				100	A
MW-106	MW-106	11/7/1995	Tier 3	1		Nickel	11				ug/L	GW	11/7/1995				100	A

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-1	MW-1	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-2	MW-2	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-3	MW-3	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-4	MW-4	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-5	MW-5	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-6	MW-6	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-7	MW-7	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-9	MW-9	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-10	MW-10	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-11	MW-11	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-12	MW-12	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-101	MW-101	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-102	MW-102	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-103	MW-103	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-104	MW-104	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-105	MW-105	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-106	MW-106	11/7/1995	Tier 3	1		Potassium					ug/L	GW	11/7/1995					
MW-1	MW-1	11/7/1995	Tier 3	1		Selenium	2				ug/L	GW	11/7/1995				50	A
MW-2	MW-2	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-3	MW-3	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-4	MW-4	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-5	MW-5	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-6	MW-6	11/7/1995	Tier 3	1		Selenium		dry			ug/L	GW	11/7/1995				50	A
MW-7	MW-7	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-9	MW-9	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-10	MW-10	11/7/1995	Tier 3	1		Selenium	7				ug/L	GW	11/7/1995				50	A
MW-11	MW-11	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-12	MW-12	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-101	MW-101	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-102	MW-102	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-103	MW-103	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-104	MW-104	11/7/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/7/1995				50	A
MW-105	MW-105	11/7/1995	Tier 3	1		Selenium	2				ug/L	GW	11/7/1995				50	A
MW-106	MW-106	11/7/1995	Tier 3	1		Selenium	6				ug/L	GW	11/7/1995				50	A
MW-1	MW-1	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-2	MW-2	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-3	MW-3	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-4	MW-4	11/7/1995	Tier 3	1		Silver	3				ug/L	GW	11/7/1995				34	
MW-5	MW-5	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-6	MW-6	11/7/1995	Tier 3	1		Silver		dry			ug/L	GW	11/7/1995				34	
MW-7	MW-7	11/7/1995	Tier 3	1		Silver	3				ug/L	GW	11/7/1995				34	
MW-9	MW-9	11/7/1995	Tier 3	1		Silver	2				ug/L	GW	11/7/1995				34	
MW-10	MW-10	11/7/1995	Tier 3	1		Silver	2				ug/L	GW	11/7/1995				34	
MW-11	MW-11	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-12	MW-12	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-101	MW-101	11/7/1995	Tier 3	1		Silver	2				ug/L	GW	11/7/1995				34	
MW-102	MW-102	11/7/1995	Tier 3	1		Silver	2				ug/L	GW	11/7/1995				34	
MW-103	MW-103	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-104	MW-104	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-105	MW-105	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-106	MW-106	11/7/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/7/1995				34	
MW-1	MW-1	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-2	MW-2	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-3	MW-3	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-4	MW-4	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-5	MW-5	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-6	MW-6	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-7	MW-7	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-9	MW-9	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-10	MW-10	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-11	MW-11	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-12	MW-12	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-101	MW-101	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-102	MW-102	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-103	MW-103	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-104	MW-104	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-105	MW-105	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-106	MW-106	11/7/1995	Tier 3	1		Sodium					ug/L	GW	11/7/1995				120000	
MW-1	MW-1	11/7/1995	Tier 3	1		Zinc	23				ug/L	GW	11/7/1995				2400	
MW-2	MW-2	11/7/1995	Tier 3	1		Zinc	6				ug/L	GW	11/7/1995				2400	
MW-3	MW-3	11/7/1995	Tier 3	1		Zinc	360				ug/L	GW	11/7/1995				2400	
MW-4	MW-4	11/7/1995	Tier 3	1		Zinc	280				ug/L	GW	11/7/1995				2400	
MW-5	MW-5	11/7/1995	Tier 3	1		Zinc	<1	U			ug/L	GW	11/7/1995				2400	
MW-6	MW-6	11/7/1995	Tier 3	1		Zinc		dry			ug/L	GW	11/7/1995				2400	
MW-7	MW-7	11/7/1995	Tier 3	1		Zinc	250				ug/L	GW	11/7/1995				2400	
MW-9	MW-9	11/7/1995	Tier 3	1		Zinc	7				ug/L	GW	11/7/1995				2400	

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-10	MW-10	11/7/1995	Tier 3	1		Zinc	330				ug/L	GW	11/7/1995				2400	
MW-11	MW-11	11/7/1995	Tier 3	1		Zinc	<1	U			ug/L	GW	11/7/1995				2400	
MW-12	MW-12	11/7/1995	Tier 3	1		Zinc	8				ug/L	GW	11/7/1995				2400	
MW-101	MW-101	11/7/1995	Tier 3	1		Zinc	13				ug/L	GW	11/7/1995				2400	
MW-102	MW-102	11/7/1995	Tier 3	1		Zinc	<1	U			ug/L	GW	11/7/1995				2400	
MW-103	MW-103	11/7/1995	Tier 3	1		Zinc	220				ug/L	GW	11/7/1995				2400	
MW-104	MW-104	11/7/1995	Tier 3	1		Zinc	20				ug/L	GW	11/7/1995				2400	
MW-105	MW-105	11/7/1995	Tier 3	1		Zinc	13				ug/L	GW	11/7/1995				2400	
MW-106	MW-106	11/7/1995	Tier 3	1		Zinc	20				ug/L	GW	11/7/1995				2400	
MW-102	MW-102	11/29/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/29/1995				10	EPA 2006
MW-103	MW-103	11/29/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/29/1995				10	EPA 2006
MW-104	MW-104	11/29/1995	Tier 3	1		Arsenic	8				ug/L	GW	11/29/1995				10	EPA 2006
MW-105	MW-105	11/29/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/29/1995				10	EPA 2006
MW-106	MW-106	11/29/1995	Tier 3	1		Arsenic	<2	U			ug/L	GW	11/29/1995				10	EPA 2006
MW-102	MW-102	11/29/1995	Tier 3	1		Barium	36				ug/L	GW	11/29/1995				2000	A
MW-103	MW-103	11/29/1995	Tier 3	1		Barium	60				ug/L	GW	11/29/1995				2000	A
MW-104	MW-104	11/29/1995	Tier 3	1		Barium	210				ug/L	GW	11/29/1995				2000	A
MW-105	MW-105	11/29/1995	Tier 3	1		Barium	38				ug/L	GW	11/29/1995				2000	A
MW-106	MW-106	11/29/1995	Tier 3	1		Barium	63				ug/L	GW	11/29/1995				2000	A
MW-102	MW-102	11/29/1995	Tier 3	1		Cadmium	130				ug/L	GW	11/29/1995				5	A
MW-103	MW-103	11/29/1995	Tier 3	1		Cadmium	0.6				ug/L	GW	11/29/1995				5	A
MW-104	MW-104	11/29/1995	Tier 3	1		Cadmium	6				ug/L	GW	11/29/1995				5	A
MW-105	MW-105	11/29/1995	Tier 3	1		Cadmium	0.5				ug/L	GW	11/29/1995				5	A
MW-106	MW-106	11/29/1995	Tier 3	1		Cadmium	0.5				ug/L	GW	11/29/1995				5	A
MW-102	MW-102	11/29/1995	Tier 3	1		Calcium					ug/L	GW	11/29/1995					
MW-103	MW-103	11/29/1995	Tier 3	1		Calcium					ug/L	GW	11/29/1995					
MW-104	MW-104	11/29/1995	Tier 3	1		Calcium					ug/L	GW	11/29/1995					
MW-105	MW-105	11/29/1995	Tier 3	1		Calcium					ug/L	GW	11/29/1995					
MW-106	MW-106	11/29/1995	Tier 3	1		Calcium					ug/L	GW	11/29/1995					
MW-102	MW-102	11/29/1995	Tier 3	1		Chromium, total	1				ug/L	GW	11/29/1995				100	A
MW-103	MW-103	11/29/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/29/1995				100	A
MW-104	MW-104	11/29/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/29/1995				100	A
MW-105	MW-105	11/29/1995	Tier 3	1		Chromium, total	2				ug/L	GW	11/29/1995				100	A
MW-106	MW-106	11/29/1995	Tier 3	1		Chromium, total	3				ug/L	GW	11/29/1995				100	A
MW-102	MW-102	11/29/1995	Tier 3	1		Copper					ug/L	GW	11/29/1995				1000	E
MW-103	MW-103	11/29/1995	Tier 3	1		Copper					ug/L	GW	11/29/1995				1000	E
MW-104	MW-104	11/29/1995	Tier 3	1		Copper					ug/L	GW	11/29/1995				1000	E
MW-105	MW-105	11/29/1995	Tier 3	1		Copper					ug/L	GW	11/29/1995				1000	E
MW-106	MW-106	11/29/1995	Tier 3	1		Copper					ug/L	GW	11/29/1995				1000	E
MW-102	MW-102	11/29/1995	Tier 3	1		Iron	440000				ug/L	GW	11/29/1995				300	E
MW-103	MW-103	11/29/1995	Tier 3	1		Iron	2800				ug/L	GW	11/29/1995				300	E
MW-104	MW-104	11/29/1995	Tier 3	1		Iron	41000				ug/L	GW	11/29/1995				300	E
MW-105	MW-105	11/29/1995	Tier 3	1		Iron	2700				ug/L	GW	11/29/1995				300	E
MW-106	MW-106	11/29/1995	Tier 3	1		Iron	52				ug/L	GW	11/29/1995				300	E
MW-102	MW-102	11/29/1995	Tier 3	1		Lead	68				ug/L	GW	11/29/1995				4	L
MW-103	MW-103	11/29/1995	Tier 3	1		Lead	1				ug/L	GW	11/29/1995				4	L
MW-104	MW-104	11/29/1995	Tier 3	1		Lead	4				ug/L	GW	11/29/1995				4	L
MW-105	MW-105	11/29/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/29/1995				4	L
MW-106	MW-106	11/29/1995	Tier 3	1		Lead	<1	U			ug/L	GW	11/29/1995				4	L
MW-102	MW-102	11/29/1995	Tier 3	1		Magnesium					ug/L	GW	11/29/1995				400000	
MW-103	MW-103	11/29/1995	Tier 3	1		Magnesium					ug/L	GW	11/29/1995				400000	
MW-104	MW-104	11/29/1995	Tier 3	1		Magnesium					ug/L	GW	11/29/1995				400000	
MW-105	MW-105	11/29/1995	Tier 3	1		Magnesium					ug/L	GW	11/29/1995				400000	
MW-106	MW-106	11/29/1995	Tier 3	1		Magnesium					ug/L	GW	11/29/1995				400000	
MW-102	MW-102	11/29/1995	Tier 3	1		Manganese	25000				ug/L	GW	11/29/1995				50	E
MW-103	MW-103	11/29/1995	Tier 3	1		Manganese	4200				ug/L	GW	11/29/1995				50	E
MW-104	MW-104	11/29/1995	Tier 3	1		Manganese	5700				ug/L	GW	11/29/1995				50	E
MW-105	MW-105	11/29/1995	Tier 3	1		Manganese	1470				ug/L	GW	11/29/1995				50	E
MW-106	MW-106	11/29/1995	Tier 3	1		Manganese	7600				ug/L	GW	11/29/1995				50	E
MW-102	MW-102	11/29/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/29/1995				2	A
MW-103	MW-103	11/29/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/29/1995				2	A
MW-104	MW-104	11/29/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/29/1995				2	A
MW-105	MW-105	11/29/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/29/1995				2	A
MW-106	MW-106	11/29/1995	Tier 3	1		Mercury	<0.2	U			ug/L	GW	11/29/1995				2	A
MW-102	MW-102	11/29/1995	Tier 3	1		Nickel	1600				ug/L	GW	11/29/1995				100	A
MW-103	MW-103	11/29/1995	Tier 3	1		Nickel	2				ug/L	GW	11/29/1995				100	A
MW-104	MW-104	11/29/1995	Tier 3	1		Nickel	22				ug/L	GW	11/29/1995				100	A
MW-105	MW-105	11/29/1995	Tier 3	1		Nickel	4				ug/L	GW	11/29/1995				100	A
MW-106	MW-106	11/29/1995	Tier 3	1		Nickel	11				ug/L	GW	11/29/1995				100	A
MW-102	MW-102	11/29/1995	Tier 3	1		Potassium					ug/L	GW	11/29/1995					
MW-103	MW-103	11/29/1995	Tier 3	1		Potassium					ug/L	GW	11/29/1995					
MW-104	MW-104	11/29/1995	Tier 3	1		Potassium					ug/L	GW	11/29/1995					
MW-105	MW-105	11/29/1995	Tier 3	1		Potassium					ug/L	GW	11/29/1995					
MW-106	MW-106	11/29/1995	Tier 3	1		Potassium					ug/L	GW	11/29/1995					
MW-102	MW-102	11/29/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/29/1995				50	A
MW-103	MW-103	11/29/1995	Tier 3	1		Selenium	<2	U			ug/L	GW	11/29/1995				50	A

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-104	MW-104	11/29/1995	Tier 3	1		Selenium	2				ug/L	GW	11/29/1995				50	A
MW-105	MW-105	11/29/1995	Tier 3	1		Selenium	2				ug/L	GW	11/29/1995				50	A
MW-106	MW-106	11/29/1995	Tier 3	1		Selenium	6				ug/L	GW	11/29/1995				50	A
MW-102	MW-102	11/29/1995	Tier 3	1		Silver	2				ug/L	GW	11/29/1995				34	
MW-103	MW-103	11/29/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/29/1995				34	
MW-104	MW-104	11/29/1995	Tier 3	1		Silver	1				ug/L	GW	11/29/1995				34	
MW-105	MW-105	11/29/1995	Tier 3	1		Silver	<1	U			ug/L	GW	11/29/1995				34	
MW-106	MW-106	11/29/1995	Tier 3	1		Silver	1				ug/L	GW	11/29/1995				34	
MW-102	MW-102	11/29/1995	Tier 3	1		Sodium					ug/L	GW	11/29/1995				120000	
MW-103	MW-103	11/29/1995	Tier 3	1		Sodium					ug/L	GW	11/29/1995				120000	
MW-104	MW-104	11/29/1995	Tier 3	1		Sodium					ug/L	GW	11/29/1995				120000	
MW-105	MW-105	11/29/1995	Tier 3	1		Sodium					ug/L	GW	11/29/1995				120000	
MW-106	MW-106	11/29/1995	Tier 3	1		Sodium					ug/L	GW	11/29/1995				120000	
MW-102	MW-102	11/29/1995	Tier 3	1		Zinc	1				ug/L	GW	11/29/1995				2400	
MW-103	MW-103	11/29/1995	Tier 3	1		Zinc	1				ug/L	GW	11/29/1995				2400	
MW-105	MW-105	11/29/1995	Tier 3	1		Zinc	13				ug/L	GW	11/29/1995				2400	
MW-106	MW-106	11/29/1995	Tier 3	1		Zinc	20				ug/L	GW	11/29/1995				2400	
MW-104	MW-104	11/29/1995	Tier 3	1		Zinc	25				ug/L	GW	11/29/1995				2400	
MW-1	MW-1	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-2	MW-2	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-3	MW-3	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-4	MW-4	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-5	MW-5	6/5/1996	Tier 3	1		Arsenic	39				ug/L	GW	6/5/1996				10	EPA 2006
MW-6	MW-6	6/5/1996	Tier 3	1		Arsenic		dry			ug/L	GW	6/5/1996				10	EPA 2006
MW-7	MW-7	6/5/1996	Tier 3	1		Arsenic	7				ug/L	GW	6/5/1996				10	EPA 2006
MW-9	MW-9	6/5/1996	Tier 3	1		Arsenic	3				ug/L	GW	6/5/1996				10	EPA 2006
MW-10	MW-10	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-11	MW-11	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-12	MW-12	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-101	MW-101	6/5/1996	Tier 3	1		Arsenic	5				ug/L	GW	6/5/1996				10	EPA 2006
MW-102	MW-102	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-103	MW-103	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-104	MW-104	6/5/1996	Tier 3	1		Arsenic	11				ug/L	GW	6/5/1996				10	EPA 2006
MW-105	MW-105	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-106	MW-106	6/5/1996	Tier 3	1		Arsenic	<3	U			ug/L	GW	6/5/1996				10	EPA 2006
MW-1	MW-1	6/5/1996	Tier 3	1		Barium	35				ug/L	GW	6/5/1996				2000	A
MW-2	MW-2	6/5/1996	Tier 3	1		Barium	33				ug/L	GW	6/5/1996				2000	A
MW-3	MW-3	6/5/1996	Tier 3	1		Barium	88				ug/L	GW	6/5/1996				2000	A
MW-4	MW-4	6/5/1996	Tier 3	1		Barium	34				ug/L	GW	6/5/1996				2000	A
MW-5	MW-5	6/5/1996	Tier 3	1		Barium	180				ug/L	GW	6/5/1996				2000	A
MW-6	MW-6	6/5/1996	Tier 3	1		Barium		dry			ug/L	GW	6/5/1996				2000	A
MW-7	MW-7	6/5/1996	Tier 3	1		Barium	18				ug/L	GW	6/5/1996				2000	A
MW-9	MW-9	6/5/1996	Tier 3	1		Barium	28				ug/L	GW	6/5/1996				2000	A
MW-10	MW-10	6/5/1996	Tier 3	1		Barium	44				ug/L	GW	6/5/1996				2000	A
MW-11	MW-11	6/5/1996	Tier 3	1		Barium	140				ug/L	GW	6/5/1996				2000	A
MW-12	MW-12	6/5/1996	Tier 3	1		Barium	30				ug/L	GW	6/5/1996				2000	A
MW-101	MW-101	6/5/1996	Tier 3	1		Barium	67				ug/L	GW	6/5/1996				2000	A
MW-102	MW-102	6/5/1996	Tier 3	1		Barium	62				ug/L	GW	6/5/1996				2000	A
MW-103	MW-103	6/5/1996	Tier 3	1		Barium	62				ug/L	GW	6/5/1996				2000	A
MW-104	MW-104	6/5/1996	Tier 3	1		Barium	170				ug/L	GW	6/5/1996				2000	A
MW-105	MW-105	6/5/1996	Tier 3	1		Barium	38				ug/L	GW	6/5/1996				2000	A
MW-106	MW-106	6/5/1996	Tier 3	1		Barium	50				ug/L	GW	6/5/1996				2000	A
MW-1	MW-1	6/5/1996	Tier 3	1		Cadmium	0.6				ug/L	GW	6/5/1996				5	A
MW-2	MW-2	6/5/1996	Tier 3	1		Cadmium	0.5				ug/L	GW	6/5/1996				5	A
MW-3	MW-3	6/5/1996	Tier 3	1		Cadmium	1				ug/L	GW	6/5/1996				5	A
MW-4	MW-4	6/5/1996	Tier 3	1		Cadmium	9				ug/L	GW	6/5/1996				5	A
MW-5	MW-5	6/5/1996	Tier 3	1		Cadmium	13				ug/L	GW	6/5/1996				5	A
MW-6	MW-6	6/5/1996	Tier 3	1		Cadmium		dry			ug/L	GW	6/5/1996				5	A
MW-7	MW-7	6/5/1996	Tier 3	1		Cadmium	28				ug/L	GW	6/5/1996				5	A
MW-9	MW-9	6/5/1996	Tier 3	1		Cadmium	0.5				ug/L	GW	6/5/1996				5	A
MW-10	MW-10	6/5/1996	Tier 3	1		Cadmium	6				ug/L	GW	6/5/1996				5	A
MW-11	MW-11	6/5/1996	Tier 3	1		Cadmium	13				ug/L	GW	6/5/1996				5	A
MW-12	MW-12	6/5/1996	Tier 3	1		Cadmium	0.5				ug/L	GW	6/5/1996				5	A
MW-101	MW-101	6/5/1996	Tier 3	1		Cadmium	0.5				ug/L	GW	6/5/1996				5	A
MW-102	MW-102	6/5/1996	Tier 3	1		Cadmium	110				ug/L	GW	6/5/1996				5	A
MW-103	MW-103	6/5/1996	Tier 3	1		Cadmium	2				ug/L	GW	6/5/1996				5	A
MW-104	MW-104	6/5/1996	Tier 3	1		Cadmium	6				ug/L	GW	6/5/1996				5	A
MW-105	MW-105	6/5/1996	Tier 3	1		Cadmium	0.9				ug/L	GW	6/5/1996				5	A
MW-106	MW-106	6/5/1996	Tier 3	1		Cadmium	0.6				ug/L	GW	6/5/1996				5	A
MW-1	MW-1	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-2	MW-2	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-3	MW-3	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-4	MW-4	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-5	MW-5	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-6	MW-6	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-7	MW-7	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-9	MW-9	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-10	MW-10	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-11	MW-11	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-12	MW-12	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-101	MW-101	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-102	MW-102	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-103	MW-103	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-104	MW-104	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-105	MW-105	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-106	MW-106	6/5/1996	Tier 3	1		Calcium					ug/L	GW	6/5/1996					
MW-1	MW-1	6/5/1996	Tier 3	1		Chromium, total	0.8				ug/L	GW	6/5/1996				100	A
MW-2	MW-2	6/5/1996	Tier 3	1		Chromium, total	1				ug/L	GW	6/5/1996				100	A
MW-3	MW-3	6/5/1996	Tier 3	1		Chromium, total	2				ug/L	GW	6/5/1996				100	A
MW-4	MW-4	6/5/1996	Tier 3	1		Chromium, total	5				ug/L	GW	6/5/1996				100	A
MW-5	MW-5	6/5/1996	Tier 3	1		Chromium, total	10				ug/L	GW	6/5/1996				100	A
MW-6	MW-6	6/5/1996	Tier 3	1		Chromium, total		dry			ug/L	GW	6/5/1996				100	A
MW-7	MW-7	6/5/1996	Tier 3	1		Chromium, total	7				ug/L	GW	6/5/1996				100	A
MW-9	MW-9	6/5/1996	Tier 3	1		Chromium, total	1				ug/L	GW	6/5/1996				100	A
MW-10	MW-10	6/5/1996	Tier 3	1		Chromium, total	3				ug/L	GW	6/5/1996				100	A
MW-11	MW-11	6/5/1996	Tier 3	1		Chromium, total	10				ug/L	GW	6/5/1996				100	A
MW-12	MW-12	6/5/1996	Tier 3	1		Chromium, total	1				ug/L	GW	6/5/1996				100	A
MW-101	MW-101	6/5/1996	Tier 3	1		Chromium, total	3				ug/L	GW	6/5/1996				100	A
MW-102	MW-102	6/5/1996	Tier 3	1		Chromium, total	<5	U			ug/L	GW	6/5/1996				100	A
MW-103	MW-103	6/5/1996	Tier 3	1		Chromium, total	2				ug/L	GW	6/5/1996				100	A
MW-104	MW-104	6/5/1996	Tier 3	1		Chromium, total	3				ug/L	GW	6/5/1996				100	A
MW-105	MW-105	6/5/1996	Tier 3	1		Chromium, total	2				ug/L	GW	6/5/1996				100	A
MW-106	MW-106	6/5/1996	Tier 3	1		Chromium, total	1				ug/L	GW	6/5/1996				100	A
MW-1	MW-1	6/5/1996	Tier 3	1		Copper	8				ug/L	GW	6/5/1996				1000	E
MW-2	MW-2	6/5/1996	Tier 3	1		Copper	5				ug/L	GW	6/5/1996				1000	E
MW-3	MW-3	6/5/1996	Tier 3	1		Copper	5				ug/L	GW	6/5/1996				1000	E
MW-4	MW-4	6/5/1996	Tier 3	1		Copper	90				ug/L	GW	6/5/1996				1000	E
MW-5	MW-5	6/5/1996	Tier 3	1		Copper	2				ug/L	GW	6/5/1996				1000	E
MW-6	MW-6	6/5/1996	Tier 3	1		Copper		dry			ug/L	GW	6/5/1996				1000	E
MW-7	MW-7	6/5/1996	Tier 3	1		Copper	22				ug/L	GW	6/5/1996				1000	E
MW-9	MW-9	6/5/1996	Tier 3	1		Copper	2				ug/L	GW	6/5/1996				1000	E
MW-10	MW-10	6/5/1996	Tier 3	1		Copper	9				ug/L	GW	6/5/1996				1000	E
MW-11	MW-11	6/5/1996	Tier 3	1		Copper	4				ug/L	GW	6/5/1996				1000	E
MW-12	MW-12	6/5/1996	Tier 3	1		Copper	9				ug/L	GW	6/5/1996				1000	E
MW-101	MW-101	6/5/1996	Tier 3	1		Copper	9				ug/L	GW	6/5/1996				1000	E
MW-102	MW-102	6/5/1996	Tier 3	1		Copper	<0.8	U			ug/L	GW	6/5/1996				1000	E
MW-103	MW-103	6/5/1996	Tier 3	1		Copper	5				ug/L	GW	6/5/1996				1000	E
MW-104	MW-104	6/5/1996	Tier 3	1		Copper	4				ug/L	GW	6/5/1996				1000	E
MW-105	MW-105	6/5/1996	Tier 3	1		Copper	7				ug/L	GW	6/5/1996				1000	E
MW-106	MW-106	6/5/1996	Tier 3	1		Copper	9				ug/L	GW	6/5/1996				1000	E
MW-1	MW-1	6/5/1996	Tier 3	1		Iron	160				ug/L	GW	6/5/1996				300	E
MW-2	MW-2	6/5/1996	Tier 3	1		Iron	500				ug/L	GW	6/5/1996				300	E
MW-3	MW-3	6/5/1996	Tier 3	1		Iron	250				ug/L	GW	6/5/1996				300	E
MW-4	MW-4	6/5/1996	Tier 3	1		Iron	62000				ug/L	GW	6/5/1996				300	E
MW-5	MW-5	6/5/1996	Tier 3	1		Iron	140000				ug/L	GW	6/5/1996				300	E
MW-6	MW-6	6/5/1996	Tier 3	1		Iron		dry			ug/L	GW	6/5/1996				300	E
MW-7	MW-7	6/5/1996	Tier 3	1		Iron	150000				ug/L	GW	6/5/1996				300	E
MW-9	MW-9	6/5/1996	Tier 3	1		Iron	3300				ug/L	GW	6/5/1996				300	E
MW-10	MW-10	6/5/1996	Tier 3	1		Iron	10000				ug/L	GW	6/5/1996				300	E
MW-11	MW-11	6/5/1996	Tier 3	1		Iron	140000				ug/L	GW	6/5/1996				300	E
MW-12	MW-12	6/5/1996	Tier 3	1		Iron	1900				ug/L	GW	6/5/1996				300	E
MW-101	MW-101	6/5/1996	Tier 3	1		Iron	5200				ug/L	GW	6/5/1996				300	E
MW-102	MW-102	6/5/1996	Tier 3	1		Iron	690000				ug/L	GW	6/5/1996				300	E
MW-103	MW-103	6/5/1996	Tier 3	1		Iron	23000				ug/L	GW	6/5/1996				300	E
MW-104	MW-104	6/5/1996	Tier 3	1		Iron	65000				ug/L	GW	6/5/1996				300	E
MW-105	MW-105	6/5/1996	Tier 3	1		Iron	11000				ug/L	GW	6/5/1996				300	E
MW-106	MW-106	6/5/1996	Tier 3	1		Iron	440				ug/L	GW	6/5/1996				300	E
MW-1	MW-1	6/5/1996	Tier 3	1		Lead	3				ug/L	GW	6/5/1996				4	L
MW-2	MW-2	6/5/1996	Tier 3	1		Lead	<2	U			ug/L	GW	6/5/1996				4	L
MW-3	MW-3	6/5/1996	Tier 3	1		Lead	3				ug/L	GW	6/5/1996				4	L
MW-4	MW-4	6/5/1996	Tier 3	1		Lead	17				ug/L	GW	6/5/1996				4	L
MW-5	MW-5	6/5/1996	Tier 3	1		Lead	13				ug/L	GW	6/5/1996				4	L
MW-6	MW-6	6/5/1996	Tier 3	1		Lead		dry			ug/L	GW	6/5/1996				4	L
MW-7	MW-7	6/5/1996	Tier 3	1		Lead	17				ug/L	GW	6/5/1996				4	L
MW-9	MW-9	6/5/1996	Tier 3	1		Lead	3				ug/L	GW	6/5/1996				4	L
MW-10	MW-10	6/5/1996	Tier 3	1		Lead	7				ug/L	GW	6/5/1996				4	L
MW-11	MW-11	6/5/1996	Tier 3	1		Lead	12				ug/L	GW	6/5/1996				4	L
MW-12	MW-12	6/5/1996	Tier 3	1		Lead	<2	U			ug/L	GW	6/5/1996				4	L
MW-101	MW-101	6/5/1996	Tier 3	1		Lead	4				ug/L	GW	6/5/1996				4	L
MW-102	MW-102	6/5/1996	Tier 3	1		Lead	69				ug/L	GW	6/5/1996				4	L
MW-103	MW-103	6/5/1996	Tier 3	1		Lead	3				ug/L	GW	6/5/1996				4	L
MW-104	MW-104	6/5/1996	Tier 3	1		Lead	7				ug/L	GW	6/5/1996				4	L

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-105	MW-105	6/5/1996	Tier 3	1		Lead	<4	U			ug/L	GW	6/5/1996				4	L
MW-106	MW-106	6/5/1996	Tier 3	1		Lead	<2	U			ug/L	GW	6/5/1996				4	L
MW-1	MW-1	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-2	MW-2	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-3	MW-3	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-4	MW-4	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-5	MW-5	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-6	MW-6	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-7	MW-7	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-9	MW-9	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-10	MW-10	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-11	MW-11	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-12	MW-12	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-101	MW-101	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-102	MW-102	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-103	MW-103	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-104	MW-104	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-105	MW-105	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-106	MW-106	6/5/1996	Tier 3	1		Magnesium					ug/L	GW	6/5/1996				400000	
MW-1	MW-1	6/5/1996	Tier 3	1		Manganese	2300				ug/L	GW	6/5/1996				50	E
MW-2	MW-2	6/5/1996	Tier 3	1		Manganese	5100				ug/L	GW	6/5/1996				50	E
MW-3	MW-3	6/5/1996	Tier 3	1		Manganese	460				ug/L	GW	6/5/1996				50	E
MW-4	MW-4	6/5/1996	Tier 3	1		Manganese	50000				ug/L	GW	6/5/1996				50	E
MW-5	MW-5	6/5/1996	Tier 3	1		Manganese	5600				ug/L	GW	6/5/1996				50	E
MW-6	MW-6	6/5/1996	Tier 3	1		Manganese		dry			ug/L	GW	6/5/1996				50	E
MW-7	MW-7	6/5/1996	Tier 3	1		Manganese	57000				ug/L	GW	6/5/1996				50	E
MW-9	MW-9	6/5/1996	Tier 3	1		Manganese	230				ug/L	GW	6/5/1996				50	E
MW-10	MW-10	6/5/1996	Tier 3	1		Manganese	36000				ug/L	GW	6/5/1996				50	E
MW-11	MW-11	6/5/1996	Tier 3	1		Manganese	8600				ug/L	GW	6/5/1996				50	E
MW-12	MW-12	6/5/1996	Tier 3	1		Manganese	1100				ug/L	GW	6/5/1996				50	E
MW-101	MW-101	6/5/1996	Tier 3	1		Manganese	12000				ug/L	GW	6/5/1996				50	E
MW-102	MW-102	6/5/1996	Tier 3	1		Manganese	27000				ug/L	GW	6/5/1996				50	E
MW-103	MW-103	6/5/1996	Tier 3	1		Manganese	5800				ug/L	GW	6/5/1996				50	E
MW-104	MW-104	6/5/1996	Tier 3	1		Manganese	4600				ug/L	GW	6/5/1996				50	E
MW-105	MW-105	6/5/1996	Tier 3	1		Manganese	1200				ug/L	GW	6/5/1996				50	E
MW-106	MW-106	6/5/1996	Tier 3	1		Manganese	3500				ug/L	GW	6/5/1996				50	E
MW-1	MW-1	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-2	MW-2	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-3	MW-3	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-4	MW-4	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-5	MW-5	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-6	MW-6	6/5/1996	Tier 3	1		Mercury		dry			ug/L	GW	6/5/1996				2	A
MW-7	MW-7	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-9	MW-9	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-10	MW-10	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-11	MW-11	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-12	MW-12	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-101	MW-101	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-102	MW-102	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-103	MW-103	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-104	MW-104	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-105	MW-105	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-106	MW-106	6/5/1996	Tier 3	1		Mercury	<0.2	U			ug/L	GW	6/5/1996				2	A
MW-1	MW-1	6/5/1996	Tier 3	1		Nickel	28				ug/L	GW	6/5/1996				100	A
MW-2	MW-2	6/5/1996	Tier 3	1		Nickel	14				ug/L	GW	6/5/1996				100	A
MW-3	MW-3	6/5/1996	Tier 3	1		Nickel	77				ug/L	GW	6/5/1996				100	A
MW-4	MW-4	6/5/1996	Tier 3	1		Nickel	1800				ug/L	GW	6/5/1996				100	A
MW-5	MW-5	6/5/1996	Tier 3	1		Nickel	20				ug/L	GW	6/5/1996				100	A
MW-6	MW-6	6/5/1996	Tier 3	1		Nickel		dry			ug/L	GW	6/5/1996				100	A
MW-7	MW-7	6/5/1996	Tier 3	1		Nickel	3200				ug/L	GW	6/5/1996				100	A
MW-9	MW-9	6/5/1996	Tier 3	1		Nickel	<0.5	U			ug/L	GW	6/5/1996				100	A
MW-10	MW-10	6/5/1996	Tier 3	1		Nickel	130				ug/L	GW	6/5/1996				100	A
MW-11	MW-11	6/5/1996	Tier 3	1		Nickel	2				ug/L	GW	6/5/1996				100	A
MW-12	MW-12	6/5/1996	Tier 3	1		Nickel	1				ug/L	GW	6/5/1996				100	A
MW-101	MW-101	6/5/1996	Tier 3	1		Nickel	<0.5	U			ug/L	GW	6/5/1996				100	A
MW-102	MW-102	6/5/1996	Tier 3	1		Nickel	2500				ug/L	GW	6/5/1996				100	A
MW-103	MW-103	6/5/1996	Tier 3	1		Nickel	8				ug/L	GW	6/5/1996				100	A
MW-104	MW-104	6/5/1996	Tier 3	1		Nickel	24				ug/L	GW	6/5/1996				100	A
MW-105	MW-105	6/5/1996	Tier 3	1		Nickel	<0.5	U			ug/L	GW	6/5/1996				100	A
MW-106	MW-106	6/5/1996	Tier 3	1		Nickel	14				ug/L	GW	6/5/1996				100	A
MW-1	MW-1	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-2	MW-2	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-3	MW-3	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-4	MW-4	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-5	MW-5	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-6	MW-6	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-7	MW-7	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-9	MW-9	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-10	MW-10	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-11	MW-11	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-12	MW-12	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-101	MW-101	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-102	MW-102	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-103	MW-103	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-104	MW-104	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-105	MW-105	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-106	MW-106	6/5/1996	Tier 3	1		Potassium					ug/L	GW	6/5/1996					
MW-1	MW-1	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-2	MW-2	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-3	MW-3	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-4	MW-4	6/5/1996	Tier 3	1		Selenium	14				ug/L	GW	6/5/1996				50	A
MW-5	MW-5	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-6	MW-6	6/5/1996	Tier 3	1		Selenium		dry			ug/L	GW	6/5/1996				50	A
MW-7	MW-7	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-9	MW-9	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-10	MW-10	6/5/1996	Tier 3	1		Selenium	14				ug/L	GW	6/5/1996				50	A
MW-11	MW-11	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-12	MW-12	6/5/1996	Tier 3	1		Selenium	2				ug/L	GW	6/5/1996				50	A
MW-101	MW-101	6/5/1996	Tier 3	1		Selenium	7				ug/L	GW	6/5/1996				50	A
MW-102	MW-102	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-103	MW-103	6/5/1996	Tier 3	1		Selenium	<8	U			ug/L	GW	6/5/1996				50	A
MW-104	MW-104	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-105	MW-105	6/5/1996	Tier 3	1		Selenium	<2	U			ug/L	GW	6/5/1996				50	A
MW-106	MW-106	6/5/1996	Tier 3	1		Selenium	3				ug/L	GW	6/5/1996				50	A
MW-1	MW-1	6/5/1996	Tier 3	1		Silver	<0.5	U			ug/L	GW	6/5/1996				34	
MW-2	MW-2	6/5/1996	Tier 3	1		Silver	<0.5	U			ug/L	GW	6/5/1996				34	
MW-3	MW-3	6/5/1996	Tier 3	1		Silver	0.6				ug/L	GW	6/5/1996				34	
MW-4	MW-4	6/5/1996	Tier 3	1		Silver	3				ug/L	GW	6/5/1996				34	
MW-5	MW-5	6/5/1996	Tier 3	1		Silver	0.6				ug/L	GW	6/5/1996				34	
MW-6	MW-6	6/5/1996	Tier 3	1		Silver		dry			ug/L	GW	6/5/1996				34	
MW-7	MW-7	6/5/1996	Tier 3	1		Silver	2				ug/L	GW	6/5/1996				34	
MW-9	MW-9	6/5/1996	Tier 3	1		Silver	<0.5	U			ug/L	GW	6/5/1996				34	
MW-10	MW-10	6/5/1996	Tier 3	1		Silver	3				ug/L	GW	6/5/1996				34	
MW-11	MW-11	6/5/1996	Tier 3	1		Silver	0.6				ug/L	GW	6/5/1996				34	
MW-12	MW-12	6/5/1996	Tier 3	1		Silver	<0.5	U			ug/L	GW	6/5/1996				34	
MW-101	MW-101	6/5/1996	Tier 3	1		Silver	1				ug/L	GW	6/5/1996				34	
MW-102	MW-102	6/5/1996	Tier 3	1		Silver	3				ug/L	GW	6/5/1996				34	
MW-103	MW-103	6/5/1996	Tier 3	1		Silver	0.6				ug/L	GW	6/5/1996				34	
MW-104	MW-104	6/5/1996	Tier 3	1		Silver	1				ug/L	GW	6/5/1996				34	
MW-105	MW-105	6/5/1996	Tier 3	1		Silver	<0.5	U			ug/L	GW	6/5/1996				34	
MW-106	MW-106	6/5/1996	Tier 3	1		Silver	<0.5	U			ug/L	GW	6/5/1996				34	
MW-1	MW-1	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-2	MW-2	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-3	MW-3	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-4	MW-4	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-5	MW-5	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-6	MW-6	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-7	MW-7	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-9	MW-9	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-10	MW-10	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-11	MW-11	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-12	MW-12	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-101	MW-101	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-102	MW-102	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-103	MW-103	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-104	MW-104	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-105	MW-105	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-106	MW-106	6/5/1996	Tier 3	1		Sodium					ug/L	GW	6/5/1996				120000	
MW-1	MW-1	6/5/1996	Tier 3	1		Zinc	110				ug/L	GW	6/5/1996				2400	
MW-2	MW-2	6/5/1996	Tier 3	1		Zinc	24				ug/L	GW	6/5/1996				2400	
MW-3	MW-3	6/5/1996	Tier 3	1		Zinc	590				ug/L	GW	6/5/1996				2400	
MW-4	MW-4	6/5/1996	Tier 3	1		Zinc	800				ug/L	GW	6/5/1996				2400	
MW-5	MW-5	6/5/1996	Tier 3	1		Zinc	<9	U			ug/L	GW	6/5/1996				2400	
MW-6	MW-6	6/5/1996	Tier 3	1		Zinc		dry			ug/L	GW	6/5/1996				2400	
MW-7	MW-7	6/5/1996	Tier 3	1		Zinc	1200				ug/L	GW	6/5/1996				2400	
MW-9	MW-9	6/5/1996	Tier 3	1		Zinc	37				ug/L	GW	6/5/1996				2400	
MW-10	MW-10	6/5/1996	Tier 3	1		Zinc	290				ug/L	GW	6/5/1996				2400	
MW-11	MW-11	6/5/1996	Tier 3	1		Zinc	<9	U			ug/L	GW	6/5/1996				2400	
MW-12	MW-12	6/5/1996	Tier 3	1		Zinc	260				ug/L	GW	6/5/1996				2400	
MW-101	MW-101	6/5/1996	Tier 3	1		Zinc	29				ug/L	GW	6/5/1996				2400	
MW-102	MW-102	6/5/1996	Tier 3	1		Zinc	<9	U			ug/L	GW	6/5/1996				2400	
MW-105	MW-105	6/5/1996	Tier 3	1		Zinc	29				ug/L	GW	6/5/1996				2400	

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Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-106	MW-106	6/5/1996	Tier 3	1		Zinc	39				ug/L	GW	6/5/1996				2400	
MW-104	MW-104	6/5/1996	Tier 3	1		Zinc	<9	U			ug/L	GW	6/5/1996				2400	
MW-104	MW-104	11/8/1996	Tier 3	1		Benzene	<1000	U			ug/L	GW	11/8/1996				5	A
MW-104	MW-104	11/8/1996	Tier 3	1		Ethylbenzene	3900				ug/l	GW	11/8/1996				74	E
MW-104	MW-104	11/8/1996	Tier 3	1		Toluene	<1000	U			ug/L	GW	11/8/1996				790	E
MW-104	MW-104	11/8/1996	Tier 3	1		TVAH					ug/L	GW	11/8/1996					
MW-104	MW-104	11/8/1996	Tier 3	1		Xylenes	12000				ug/l	GW	11/8/1996				280	E
MW-104	MW-104	11/8/1996	Tier 3	1		Naphthalene	1700				ug/L	GW	11/8/1996				520	
MW-104	MW-104	11/8/1996	Tier 3	1		Phenanthrene	510				ug/L	GW	11/8/1996				52	
MW-1	MW-1	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
MW-2	MW-2	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
MW-3	MW-3	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
MW-4	MW-4	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
MW-5	MW-5	9/16/1997	Tier 3	1		Benzene	24				ug/L	GW	3/31/1995				5	A
MW-7	MW-7	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
MW-9	MW-9	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
MW-10	MW-10	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
MW-104	MW-104	9/16/1997	Tier 3	1		Benzene	29				ug/L	GW	9/16/1997				5	A
MW-106	MW-106	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
Blank-1	Trip blank09161997	9/16/1997	Tier 3	1		Benzene	<1	U			ug/L	GW	9/16/1997				5	A
MW-1	MW-1	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
MW-2	MW-2	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
MW-3	MW-3	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
MW-4	MW-4	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
MW-5	MW-5	9/16/1997	Tier 3	1		Ethylbenzene	130				ug/l	GW	3/31/1995				74	E
MW-7	MW-7	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
MW-9	MW-9	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
MW-10	MW-10	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
MW-104	MW-104	9/16/1997	Tier 3	1		Ethylbenzene	170				ug/l	GW	9/16/1997				74	E
MW-106	MW-106	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
Blank-1	Trip blank09161997	9/16/1997	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	9/16/1997				74	E
MW-1	MW-1	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
MW-2	MW-2	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
MW-3	MW-3	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
MW-4	MW-4	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
MW-5	MW-5	9/16/1997	Tier 3	1		Toluene	15				ug/L	GW	3/31/1995				790	E
MW-7	MW-7	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
MW-9	MW-9	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
MW-10	MW-10	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
MW-104	MW-104	9/16/1997	Tier 3	1		Toluene	150				ug/L	GW	9/16/1997				790	E
MW-106	MW-106	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
Blank-1	Trip blank09161997	9/16/1997	Tier 3	1		Toluene	<1	U			ug/L	GW	9/16/1997				790	E
MW-1	MW-1	9/16/1997	Tier 3	1		TVAH		U			ug/L	GW	9/16/1997					
MW-2	MW-2	9/16/1997	Tier 3	1		TVAH		U			ug/L	GW	9/16/1997					
MW-3	MW-3	9/16/1997	Tier 3	1		TVAH		U			ug/L	GW	9/16/1997					
MW-4	MW-4	9/16/1997	Tier 3	1		TVAH		U			ug/L	GW	9/16/1997					
MW-5	MW-5	9/16/1997	Tier 3	1		TVAH	2069				ug/L	GW	3/31/1995					
MW-7	MW-7	9/16/1997	Tier 3	1		TVAH		U			ug/L	GW	9/16/1997					
MW-9	MW-9	9/16/1997	Tier 3	1		TVAH		U			ug/L	GW	9/16/1997					
MW-10	MW-10	9/16/1997	Tier 3	1		TVAH		U			ug/L	GW	9/16/1997					
MW-104	MW-104	9/16/1997	Tier 3	1		TVAH	1109				ug/L	GW	9/16/1997					
MW-106	MW-106	9/16/1997	Tier 3	1		TVAH					ug/L	GW	9/16/1997					
Blank-1	Trip blank09161997	9/16/1997	Tier 3	1		TVAH		U			ug/L	GW	9/16/1997					
MW-1	MW-1	9/16/1997	Tier 3	1		Xylenes	<1	U			ug/l	GW	9/16/1997				280	E
MW-2	MW-2	9/16/1997	Tier 3	1		Xylenes	<1	U			ug/l	GW	9/16/1997				280	E
MW-3	MW-3	9/16/1997	Tier 3	1		Xylenes	<1	U			ug/l	GW	9/16/1997				280	E
MW-4	MW-4	9/16/1997	Tier 3	1		Xylenes	<3	U			ug/l	GW	9/16/1997				280	E
MW-5	MW-5	9/16/1997	Tier 3	1		Xylenes	1900				ug/l	GW	3/31/1995				280	E
MW-7	MW-7	9/16/1997	Tier 3	1		Xylenes	<1	U			ug/l	GW	9/16/1997				280	E
MW-9	MW-9	9/16/1997	Tier 3	1		Xylenes	<1	U			ug/l	GW	9/16/1997				280	E
MW-10	MW-10	9/16/1997	Tier 3	1		Xylenes	<1	U			ug/l	GW	9/16/1997				280	E
MW-104	MW-104	9/16/1997	Tier 3	1		Xylenes	780				ug/l	GW	9/16/1997				280	E
MW-106	MW-106	9/16/1997	Tier 3	1		Xylenes	<1	U			ug/l	GW	9/16/1997				280	E
Blank-1	Trip blank09161997	9/16/1997	Tier 3	1		Xylenes	<1	U			ug/l	GW	9/16/1997				280	E
MW-1	MW-1	9/16/1997	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	9/16/1997					
MW-2	MW-2	9/16/1997	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	9/16/1997					
MW-3	MW-3	9/16/1997	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	9/16/1997					
MW-4	MW-4	9/16/1997	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	9/16/1997					
MW-5	MW-5	9/16/1997	Tier 3	1		1-Methyl-naphthalene	900				ug/L	GW	9/16/1997					
MW-7	MW-7	9/16/1997	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	9/16/1997					
MW-9	MW-9	9/16/1997	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	9/16/1997					
MW-10	MW-10	9/16/1997	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	9/16/1997					
MW-104	MW-104	9/16/1997	Tier 3	1		1-Methyl-naphthalene	700				ug/L	GW	9/16/1997					
MW-1	MW-1	9/16/1997	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	9/16/1997				260	
MW-2	MW-2	9/16/1997	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	9/16/1997				260	
MW-3	MW-3	9/16/1997	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	9/16/1997				260	

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Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-4	MW-4	9/16/1997	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	9/16/1997				260	
MW-5	MW-5	9/16/1997	Tier 3	1		2-Methyl naphthalene	650				ug/L	GW	9/16/1997				260	
MW-7	MW-7	9/16/1997	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	9/16/1997				260	
MW-9	MW-9	9/16/1997	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	9/16/1997				260	
MW-10	MW-10	9/16/1997	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	9/16/1997				260	
MW-104	MW-104	9/16/1997	Tier 3	1		2-Methyl naphthalene	670				ug/L	GW	9/16/1997				260	
MW-1	MW-1	9/16/1997	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	9/16/1997				1300	
MW-2	MW-2	9/16/1997	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	9/16/1997				1300	
MW-3	MW-3	9/16/1997	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	9/16/1997				1300	
MW-4	MW-4	9/16/1997	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	9/16/1997				1300	
MW-5	MW-5	9/16/1997	Tier 3	1		Acenaphthene	<100	U			ug/L	GW	9/16/1997				1300	
MW-7	MW-7	9/16/1997	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	9/16/1997				1300	
MW-9	MW-9	9/16/1997	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	9/16/1997				1300	
MW-10	MW-10	9/16/1997	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	9/16/1997				1300	
MW-104	MW-104	9/16/1997	Tier 3	1		Acenaphthene	<100	U			ug/L	GW	9/16/1997				1300	
MW-1	MW-1	9/16/1997	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	9/16/1997				52	
MW-2	MW-2	9/16/1997	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	9/16/1997				52	
MW-3	MW-3	9/16/1997	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	9/16/1997				52	
MW-4	MW-4	9/16/1997	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	9/16/1997				52	
MW-5	MW-5	9/16/1997	Tier 3	1		Acenaphthylene	250				ug/L	GW	9/16/1997				52	
MW-7	MW-7	9/16/1997	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	9/16/1997				52	
MW-9	MW-9	9/16/1997	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	9/16/1997				52	
MW-10	MW-10	9/16/1997	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	9/16/1997				52	
MW-104	MW-104	9/16/1997	Tier 3	1		Acenaphthylene	270				ug/L	GW	9/16/1997				52	
MW-1	MW-1	9/16/1997	Tier 3	1		Anthracene	<5	U			ug/L	GW	9/16/1997				43	S
MW-2	MW-2	9/16/1997	Tier 3	1		Anthracene	<5	U			ug/L	GW	9/16/1997				43	S
MW-3	MW-3	9/16/1997	Tier 3	1		Anthracene	<5	U			ug/L	GW	9/16/1997				43	S
MW-4	MW-4	9/16/1997	Tier 3	1		Anthracene	<5	U			ug/L	GW	9/16/1997				43	S
MW-5	MW-5	9/16/1997	Tier 3	1		Anthracene	<100	U			ug/L	GW	9/16/1997				43	S
MW-7	MW-7	9/16/1997	Tier 3	1		Anthracene	<5	U			ug/L	GW	9/16/1997				43	S
MW-9	MW-9	9/16/1997	Tier 3	1		Anthracene	<5	U			ug/L	GW	9/16/1997				43	S
MW-10	MW-10	9/16/1997	Tier 3	1		Anthracene	<5	U			ug/L	GW	9/16/1997				43	S
MW-104	MW-104	9/16/1997	Tier 3	1		Anthracene	<100	U			ug/L	GW	9/16/1997				43	S
MW-1	MW-1	9/16/1997	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	9/16/1997				2	
MW-2	MW-2	9/16/1997	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	9/16/1997				2	
MW-3	MW-3	9/16/1997	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	9/16/1997				2	
MW-4	MW-4	9/16/1997	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	9/16/1997				2	
MW-5	MW-5	9/16/1997	Tier 3	1		Benzo (a) anthracene	<100	U			ug/L	GW	9/16/1997				2	
MW-7	MW-7	9/16/1997	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	9/16/1997				2	
MW-9	MW-9	9/16/1997	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	9/16/1997				2	
MW-10	MW-10	9/16/1997	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	9/16/1997				2	
MW-104	MW-104	9/16/1997	Tier 3	1		Benzo (a) anthracene	<100	U			ug/L	GW	9/16/1997				2	
MW-1	MW-1	9/16/1997	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	9/16/1997				5	A
MW-2	MW-2	9/16/1997	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	9/16/1997				5	A
MW-3	MW-3	9/16/1997	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	9/16/1997				5	A
MW-4	MW-4	9/16/1997	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	9/16/1997				5	A
MW-5	MW-5	9/16/1997	Tier 3	1		Benzo (a) pyrene	<100	U			ug/L	GW	9/16/1997				5	A
MW-7	MW-7	9/16/1997	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	9/16/1997				5	A
MW-9	MW-9	9/16/1997	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	9/16/1997				5	A
MW-10	MW-10	9/16/1997	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	9/16/1997				5	A
MW-104	MW-104	9/16/1997	Tier 3	1		Benzo (a) pyrene	<100	U			ug/L	GW	9/16/1997				5	A
MW-1	MW-1	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-2	MW-2	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-3	MW-3	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-4	MW-4	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-5	MW-5	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<100	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-7	MW-7	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-9	MW-9	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-10	MW-10	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-104	MW-104	9/16/1997	Tier 3	1		Benzo (b) Fluoranthene	<100	P,U			ug/L	GW	9/16/1997				1.5	S,AA
MW-1	MW-1	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	9/16/1997				1.0	M
MW-2	MW-2	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	9/16/1997				1.0	M
MW-3	MW-3	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	9/16/1997				1.0	M
MW-4	MW-4	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	9/16/1997				1.0	M
MW-5	MW-5	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<100	P,U			ug/L	GW	9/16/1997				1.0	M
MW-7	MW-7	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	9/16/1997				1.0	M
MW-9	MW-9	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	9/16/1997				1.0	M
MW-10	MW-10	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	9/16/1997				1.0	M
MW-104	MW-104	9/16/1997	Tier 3	1		Benzo (g,h,i) perylene	<100	P,U			ug/L	GW	9/16/1997				1.0	M
MW-1	MW-1	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	9/16/1997				1.0	M
MW-2	MW-2	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	9/16/1997				1.0	M
MW-3	MW-3	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	9/16/1997				1.0	M
MW-4	MW-4	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	9/16/1997				1.0	M
MW-5	MW-5	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<100	P,U			ug/l	GW	9/16/1997				1.0	M
MW-7	MW-7	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	9/16/1997				1.0	M
MW-9	MW-9	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	9/16/1997				1.0	M

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Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-10	MW-10	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	9/16/1997				1.0	M
MW-104	MW-104	9/16/1997	Tier 3	1		Benzo (k) Fluoranthene	<100	P,U			ug/l	GW	9/16/1997				1.0	M
MW-1	MW-1	9/16/1997	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	9/16/1997				1.6	S
MW-2	MW-2	9/16/1997	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	9/16/1997				1.6	S
MW-3	MW-3	9/16/1997	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	9/16/1997				1.6	S
MW-4	MW-4	9/16/1997	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	9/16/1997				1.6	S
MW-5	MW-5	9/16/1997	Tier 3	1		Chrysene	<100	P,U			ug/L	GW	9/16/1997				1.6	S
MW-7	MW-7	9/16/1997	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	9/16/1997				1.6	S
MW-9	MW-9	9/16/1997	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	9/16/1997				1.6	S
MW-10	MW-10	9/16/1997	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	9/16/1997				1.6	S
MW-104	MW-104	9/16/1997	Tier 3	1		Chrysene	<100	P,U			ug/L	GW	9/16/1997				1.6	S
MW-1	MW-1	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	9/16/1997				2	M
MW-2	MW-2	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	9/16/1997				2	M
MW-3	MW-3	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	9/16/1997				2	M
MW-4	MW-4	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	9/16/1997				2	M
MW-5	MW-5	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<100	U			ug/l	GW	9/16/1997				2	M
MW-7	MW-7	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	9/16/1997				2	M
MW-9	MW-9	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	9/16/1997				2	M
MW-10	MW-10	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	9/16/1997				2	M
MW-104	MW-104	9/16/1997	Tier 3	1		Dibenzo (a,h) anthracene	<100	U			ug/l	GW	9/16/1997				2	M
MW-1	MW-1	9/16/1997	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	9/16/1997				210	S
MW-2	MW-2	9/16/1997	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	9/16/1997				210	S
MW-3	MW-3	9/16/1997	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	9/16/1997				210	S
MW-4	MW-4	9/16/1997	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	9/16/1997				210	S
MW-5	MW-5	9/16/1997	Tier 3	1		Fluoranthene	<100	U			ug/L	GW	9/16/1997				210	S
MW-7	MW-7	9/16/1997	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	9/16/1997				210	S
MW-9	MW-9	9/16/1997	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	9/16/1997				210	S
MW-10	MW-10	9/16/1997	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	9/16/1997				210	S
MW-104	MW-104	9/16/1997	Tier 3	1		Fluoranthene	<100	U			ug/L	GW	9/16/1997				210	S
MW-1	MW-1	9/16/1997	Tier 3	1		Fluorene	<5	U			ug/L	GW	9/16/1997				880	
MW-2	MW-2	9/16/1997	Tier 3	1		Fluorene	<5	U			ug/L	GW	9/16/1997				880	
MW-3	MW-3	9/16/1997	Tier 3	1		Fluorene	<5	U			ug/L	GW	9/16/1997				880	
MW-4	MW-4	9/16/1997	Tier 3	1		Fluorene	<5	U			ug/L	GW	9/16/1997				880	
MW-5	MW-5	9/16/1997	Tier 3	1		Fluorene	<100	U			ug/L	GW	9/16/1997				880	
MW-7	MW-7	9/16/1997	Tier 3	1		Fluorene	<5	U			ug/L	GW	9/16/1997				880	
MW-9	MW-9	9/16/1997	Tier 3	1		Fluorene	<5	U			ug/L	GW	9/16/1997				880	
MW-10	MW-10	9/16/1997	Tier 3	1		Fluorene	<5	U			ug/L	GW	9/16/1997				880	
MW-104	MW-104	9/16/1997	Tier 3	1		Fluorene	<100	U			ug/L	GW	9/16/1997				880	
MW-1	MW-1	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	9/16/1997				2	M
MW-2	MW-2	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	9/16/1997				2	M
MW-3	MW-3	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	9/16/1997				2	M
MW-4	MW-4	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	9/16/1997				2	M
MW-5	MW-5	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<100	U			ug/l	GW	9/16/1997				2	M
MW-7	MW-7	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	9/16/1997				2	M
MW-9	MW-9	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	9/16/1997				2	M
MW-10	MW-10	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	9/16/1997				2	M
MW-104	MW-104	9/16/1997	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<100	U			ug/l	GW	9/16/1997				2	M
MW-1	MW-1	9/16/1997	Tier 3	1		Naphthalene	<5	U			ug/L	GW	9/16/1997				520	
MW-2	MW-2	9/16/1997	Tier 3	1		Naphthalene	<5	U			ug/L	GW	9/16/1997				520	
MW-3	MW-3	9/16/1997	Tier 3	1		Naphthalene	<5	U			ug/L	GW	9/16/1997				520	
MW-4	MW-4	9/16/1997	Tier 3	1		Naphthalene	<5	U			ug/L	GW	9/16/1997				520	
MW-5	MW-5	9/16/1997	Tier 3	1		Naphthalene	130				ug/L	GW	9/16/1997				520	
MW-7	MW-7	9/16/1997	Tier 3	1		Naphthalene	<5	U			ug/L	GW	9/16/1997				520	
MW-9	MW-9	9/16/1997	Tier 3	1		Naphthalene	<5	U			ug/L	GW	9/16/1997				520	
MW-10	MW-10	9/16/1997	Tier 3	1		Naphthalene	<5	U			ug/L	GW	9/16/1997				520	
MW-104	MW-104	9/16/1997	Tier 3	1		Naphthalene	250				ug/L	GW	9/16/1997				520	
MW-1	MW-1	9/16/1997	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	9/16/1997				52	
MW-2	MW-2	9/16/1997	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	9/16/1997				52	
MW-3	MW-3	9/16/1997	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	9/16/1997				52	
MW-4	MW-4	9/16/1997	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	9/16/1997				52	
MW-5	MW-5	9/16/1997	Tier 3	1		Phenanthrene	<100	U			ug/L	GW	9/16/1997				52	
MW-7	MW-7	9/16/1997	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	9/16/1997				52	
MW-9	MW-9	9/16/1997	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	9/16/1997				52	
MW-10	MW-10	9/16/1997	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	9/16/1997				52	
MW-104	MW-104	9/16/1997	Tier 3	1		Phenanthrene	<100	U			ug/L	GW	9/16/1997				52	
MW-1	MW-1	9/16/1997	Tier 3	1		Pyrene	<5	U			ug/L	GW	9/16/1997				140	S
MW-2	MW-2	9/16/1997	Tier 3	1		Pyrene	<5	U			ug/L	GW	9/16/1997				140	S
MW-3	MW-3	9/16/1997	Tier 3	1		Pyrene	<5	U			ug/L	GW	9/16/1997				140	S
MW-4	MW-4	9/16/1997	Tier 3	1		Pyrene	<5	U			ug/L	GW	9/16/1997				140	S
MW-5	MW-5	9/16/1997	Tier 3	1		Pyrene	<100	U			ug/L	GW	9/16/1997				140	S
MW-7	MW-7	9/16/1997	Tier 3	1		Pyrene	<5	U			ug/L	GW	9/16/1997				140	S
MW-9	MW-9	9/16/1997	Tier 3	1		Pyrene	<5	U			ug/L	GW	9/16/1997				140	S
MW-10	MW-10	9/16/1997	Tier 3	1		Pyrene	<5	U			ug/L	GW	9/16/1997				140	S
MW-104	MW-104	9/16/1997	Tier 3	1		Pyrene	<100	U			ug/L	GW	9/16/1997				140	S
MW-5	MW-5	8/3/1998	Tier 3	1		Benzene	20				ug/L	GW	9/16/1997				5	A
MW-106	MW-106	8/3/1998	Tier 3	1		Benzene	<1	U			ug/L	GW	8/3/1998				5	A

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MW-5	MW-5	8/3/1998	Tier 3	1		Ethylbenzene	110				ug/l	GW	9/16/1997				74	E
MW-106	MW-106	8/3/1998	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	8/3/1998				74	E
MW-5	MW-5	8/3/1998	Tier 3	1		Toluene	11				ug/L	GW	9/16/1997				790	E
MW-106	MW-106	8/3/1998	Tier 3	1		Toluene	<1	U			ug/L	GW	8/3/1998				790	E
MW-5	MW-5	8/3/1998	Tier 3	1		TVAH	1841				ug/L	GW	9/16/1997					
MW-106	MW-106	8/3/1998	Tier 3	1		TVAH		U			ug/L	GW	8/3/1998					
MW-5	MW-5	8/3/1998	Tier 3	1		Xylenes	1700				ug/l	GW	9/16/1997				280	E
MW-106	MW-106	8/3/1998	Tier 3	1		Xylenes	<1	U			ug/l	GW	8/3/1998				280	E
MW-5	MW-5	8/3/1998	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	8/3/1998					
MW-106	MW-106	8/3/1998	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	8/3/1998					
MW-5	MW-5	8/3/1998	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	8/3/1998				260	
MW-106	MW-106	8/3/1998	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	8/3/1998				260	
MW-5	MW-5	8/3/1998	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	8/3/1998				1300	
MW-106	MW-106	8/3/1998	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	8/3/1998				1300	
MW-5	MW-5	8/3/1998	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	8/3/1998				52	
MW-106	MW-106	8/3/1998	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	8/3/1998				52	
MW-5	MW-5	8/3/1998	Tier 3	1		Anthracene	<5	U			ug/L	GW	8/3/1998				43	S
MW-106	MW-106	8/3/1998	Tier 3	1		Anthracene	<5	U			ug/L	GW	8/3/1998				43	S
MW-5	MW-5	8/3/1998	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	8/3/1998				2	
MW-106	MW-106	8/3/1998	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	8/3/1998				2	
MW-5	MW-5	8/3/1998	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	8/3/1998				5	A
MW-106	MW-106	8/3/1998	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	8/3/1998				5	A
MW-5	MW-5	8/3/1998	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	8/3/1998				1.5	S,AA
MW-106	MW-106	8/3/1998	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	8/3/1998				1.5	S,AA
MW-5	MW-5	8/3/1998	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	8/3/1998				1.0	M
MW-106	MW-106	8/3/1998	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	8/3/1998				1.0	M
MW-5	MW-5	8/3/1998	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	8/3/1998				1.0	M
MW-106	MW-106	8/3/1998	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	8/3/1998				1.0	M
MW-5	MW-5	8/3/1998	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	8/3/1998				1.6	S
MW-106	MW-106	8/3/1998	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	8/3/1998				1.6	S
MW-5	MW-5	8/3/1998	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	8/3/1998				2	M
MW-106	MW-106	8/3/1998	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	8/3/1998				2	M
MW-5	MW-5	8/3/1998	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	8/3/1998				210	S
MW-106	MW-106	8/3/1998	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	8/3/1998				210	S
MW-5	MW-5	8/3/1998	Tier 3	1		Fluorene	<5	U			ug/L	GW	8/3/1998				880	
MW-106	MW-106	8/3/1998	Tier 3	1		Fluorene	<5	U			ug/L	GW	8/3/1998				880	
MW-5	MW-5	8/3/1998	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	8/3/1998				2	M
MW-106	MW-106	8/3/1998	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	8/3/1998				2	M
MW-5	MW-5	8/3/1998	Tier 3	1		Naphthalene	<5	U			ug/L	GW	8/3/1998				520	
MW-106	MW-106	8/3/1998	Tier 3	1		Naphthalene	<5	U			ug/L	GW	8/3/1998				520	
MW-5	MW-5	8/3/1998	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	8/3/1998				52	
MW-106	MW-106	8/3/1998	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	8/3/1998				52	
MW-5	MW-5	8/3/1998	Tier 3	1		Pyrene	<5	U			ug/L	GW	8/3/1998				140	S
MW-106	MW-106	8/3/1998	Tier 3	1		Pyrene	<5	U			ug/L	GW	8/3/1998				140	S
MW-107	MW-107	8/27/1998	Tier 3	1		Benzene	<1	U			ug/L	GW	8/27/1998				5	A
MW-107	MW-107	8/27/1998	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	8/27/1998				74	E
MW-107	MW-107	8/27/1998	Tier 3	1		Toluene	<1	U			ug/L	GW	8/27/1998				790	E
MW-107	MW-107	8/27/1998	Tier 3	1		TVAH		U			ug/L	GW	8/27/1998					
MW-107	MW-107	8/27/1998	Tier 3	1		Xylenes	<1	U			ug/l	GW	8/27/1998				280	E
MW-107	MW-107	8/27/1998	Tier 3	1		1-Methyl-naphthalene	<5	U			ug/L	GW	8/27/1998					
MW-107	MW-107	8/27/1998	Tier 3	1		2-Methyl naphthalene	<5	U			ug/L	GW	8/27/1998				260	
MW-107	MW-107	8/27/1998	Tier 3	1		Acenaphthene	<5	U			ug/L	GW	8/27/1998				1300	
MW-107	MW-107	8/27/1998	Tier 3	1		Acenaphthylene	<5	U			ug/L	GW	8/27/1998				52	
MW-107	MW-107	8/27/1998	Tier 3	1		Anthracene	<5	U			ug/L	GW	8/27/1998				43	S
MW-107	MW-107	8/27/1998	Tier 3	1		Benzo (a) anthracene	<5	U			ug/L	GW	8/27/1998				2	
MW-107	MW-107	8/27/1998	Tier 3	1		Benzo (a) pyrene	<5	U			ug/L	GW	8/27/1998				5	A
MW-107	MW-107	8/27/1998	Tier 3	1		Benzo (b) Fluoranthene	<5	P,U			ug/L	GW	8/27/1998				1.5	S,AA
MW-107	MW-107	8/27/1998	Tier 3	1		Benzo (g,h,i) perylene	<5	P,U			ug/L	GW	8/27/1998				1.0	M
MW-107	MW-107	8/27/1998	Tier 3	1		Benzo (k) Fluoranthene	<5	P,U			ug/l	GW	8/27/1998				1.0	M
MW-107	MW-107	8/27/1998	Tier 3	1		Chrysene	<5	P,U			ug/L	GW	8/27/1998				1.6	S
MW-107	MW-107	8/27/1998	Tier 3	1		Dibenzo (a,h) anthracene	<5	U			ug/l	GW	8/27/1998				2	M
MW-107	MW-107	8/27/1998	Tier 3	1		Fluoranthene	<5	U			ug/L	GW	8/27/1998				210	S
MW-107	MW-107	8/27/1998	Tier 3	1		Fluorene	<5	U			ug/L	GW	8/27/1998				880	
MW-107	MW-107	8/27/1998	Tier 3	1		Indeno (1,2,3 - cd) pyrene	<5	U			ug/l	GW	8/27/1998				2	M
MW-107	MW-107	8/27/1998	Tier 3	1		Naphthalene	<5	U			ug/L	GW	8/27/1998				520	
MW-107	MW-107	8/27/1998	Tier 3	1		Phenanthrene	<5	U			ug/L	GW	8/27/1998				52	
MW-107	MW-107	8/27/1998	Tier 3	1		Pyrene	<5	U			ug/L	GW	8/27/1998				140	S
MW-2	MW-2	10/19/1999	Tier 3	1		Conductivity	0.333				mS/cm	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		Conductivity	0.144				mS/cm	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		Conductivity	0.009				mS/cm	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		Conductivity	0.002				mS/cm	GW	10/19/1999					
MW-6	MW-6	10/19/1999	Tier 3	1		Conductivity	1.72				mS/cm	GW	10/19/1999					
MW-9	MW-9	10/19/1999	Tier 3	1		Conductivity	0.253				mS/cm	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		Conductivity	0.003				mS/cm	GW	10/19/1999					
MW-11	MW-11	10/19/1999	Tier 3	1		Conductivity	0.793				mS/cm	GW	10/19/1999					
MW-7	MW-7	10/19/1999	Tier 3	1		Conductivity	0.86				mS/cm	GW	10/19/1999					

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Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-2	MW-2	10/19/1999	Tier 3	1		Dissolved Oxygen	2.6				mg/L	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		Dissolved Oxygen	3.88				mg/L	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		Dissolved Oxygen	1.39				mg/L	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		Dissolved Oxygen	0.35				mg/L	GW	10/19/1999					
MW-6	MW-6	10/19/1999	Tier 3	1		Dissolved Oxygen					mg/L	GW	10/19/1999					
MW-9	MW-9	10/19/1999	Tier 3	1		Dissolved Oxygen	0.86				mg/L	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		Dissolved Oxygen	0.8				mg/L	GW	10/19/1999					
MW-11	MW-11	10/19/1999	Tier 3	1		Dissolved Oxygen	0.39				mg/L	GW	10/19/1999					
MW-7	MW-7	10/19/1999	Tier 3	1		Dissolved Oxygen	0.84				mg/L	GW	10/19/1999					
MW-2	MW-2	10/19/1999	Tier 3	1		ORP	159				mV	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		ORP	148				mV	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		ORP	182				mV	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		ORP	140				mV	GW	10/19/1999					
MW-6	MW-6	10/19/1999	Tier 3	1		ORP	150				mV	GW	10/19/1999					
MW-9	MW-9	10/19/1999	Tier 3	1		ORP	147				mV	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		ORP	145				mV	GW	10/19/1999					
MW-11	MW-11	10/19/1999	Tier 3	1		ORP	147				mV	GW	10/19/1999					
MW-7	MW-7	10/19/1999	Tier 3	1		ORP	197				mV	GW	10/19/1999					
MW-2	MW-2	10/19/1999	Tier 3	1		pH	5.92				S.U.	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		pH	5.73				S.U.	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		pH	4.79				S.U.	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		pH	6.24				S.U.	GW	10/19/1999					
MW-6	MW-6	10/19/1999	Tier 3	1		pH	4.6				S.U.	GW	10/19/1999					
MW-9	MW-9	10/19/1999	Tier 3	1		pH	5.8				S.U.	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		pH	5.85				S.U.	GW	10/19/1999					
MW-11	MW-11	10/19/1999	Tier 3	1		pH	5.9				S.U.	GW	10/19/1999					
MW-7	MW-7	10/19/1999	Tier 3	1		pH	3.93				S.U.	GW	10/19/1999					
MW-2	MW-2	10/19/1999	Tier 3	1		Temperature	10.9				Celcius	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		Temperature	10.4				Celcius	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		Temperature	12.7				Celcius	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		Temperature	12.4				Celcius	GW	10/19/1999					
MW-6	MW-6	10/19/1999	Tier 3	1		Temperature	13.2				Celcius	GW	10/19/1999					
MW-9	MW-9	10/19/1999	Tier 3	1		Temperature	11.1				Celcius	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		Temperature	11.9				Celcius	GW	10/19/1999					
MW-11	MW-11	10/19/1999	Tier 3	1		Temperature	10.4				Celcius	GW	10/19/1999					
MW-7	MW-7	10/19/1999	Tier 3	1		Temperature	10.4				Celcius	GW	10/19/1999					
MW-2	MW-2	10/19/1999	Tier 3	1		Carbon dioxide					mg/L	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		Carbon dioxide					mg/L	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		Carbon dioxide					mg/L	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		Carbon dioxide	751				mg/L	GW	10/19/1999					
MW-7	MW-7	10/19/1999	Tier 3	1		Carbon dioxide					mg/L	GW	10/19/1999					
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Carbon dioxide					mg/L	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		Carbon dioxide					mg/L	GW	10/19/1999					
MW-11	MW-11	10/19/1999	Tier 3	1		Carbon dioxide					mg/L	GW	10/19/1999					
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Carbon dioxide	215				mg/L	GW	10/19/1999		Calc.			
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Carbon dioxide	0				mg/L	GW	10/19/1999		Calc.			
MW-2	MW-2	10/19/1999	Tier 3	1		Arsenic	5				ug/L	GW	10/19/1999				10	EPA 2006
MW-3	MW-3	10/19/1999	Tier 3	1		Arsenic	5				ug/L	GW	10/19/1999				10	EPA 2006
MW-4	MW-4	10/19/1999	Tier 3	1		Arsenic	35				ug/L	GW	10/19/1999				10	EPA 2006
MW-5	MW-5	10/19/1999	Tier 3	1		Arsenic	139				ug/L	GW	10/19/1999				10	EPA 2006
MW-6	MW-6	10/19/1999	Tier 3	1		Arsenic	5				ug/L	GW	10/19/1999				10	EPA 2006
MW-7	MW-7	10/19/1999	Tier 3	1		Arsenic	5				ug/L	GW	10/19/1999				10	EPA 2006
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Arsenic	<5	U			ug/L	GW	10/19/1999				10	EPA 2006
MW-10	MW-10	10/19/1999	Tier 3	1		Arsenic	5				ug/L	GW	10/19/1999				10	EPA 2006
MW-107	MW-107	10/19/1999	Tier 3	1		Arsenic	15				ug/L	GW	10/19/1999				10	EPA 2006
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Arsenic	7				ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-11	MW-11	10/19/1999	Tier 3	1		Arsenic	8				ug/L	GW	10/19/1999				10	EPA 2006
MW-9	MW-9	10/19/1999	Tier 3	1		Arsenic	8				ug/L	GW	10/19/1999				10	EPA 2006
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Arsenic	13				ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Arsenic	9				ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Arsenic	36				ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Arsenic	<5	U			ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-2	MW-2	10/19/1999	Tier 3	1		Barium	100				ug/L	GW	10/19/1999				2000	A
MW-3	MW-3	10/19/1999	Tier 3	1		Barium	100				ug/L	GW	10/19/1999				2000	A
MW-4	MW-4	10/19/1999	Tier 3	1		Barium	100				ug/L	GW	10/19/1999				2000	A
MW-5	MW-5	10/19/1999	Tier 3	1		Barium	200				ug/L	GW	10/19/1999				2000	A
MW-6	MW-6	10/19/1999	Tier 3	1		Barium	100				ug/L	GW	10/19/1999				2000	A
MW-9	MW-9	10/19/1999	Tier 3	1		Barium	100				ug/L	GW	10/19/1999				2000	A
MW-10	MW-10	10/19/1999	Tier 3	1		Barium	100				ug/L	GW	10/19/1999				2000	A
MW-102	MW-102	10/19/1999	Tier 3	1		Barium	100				ug/L	GW	10/19/1999				2000	A
MW-107	MW-107	10/19/1999	Tier 3	1		Barium	200				ug/L	GW	10/19/1999				2000	A
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Barium	200				ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Barium	100				ug/L	GW	10/19/1999				2000	A
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Barium	100				ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A

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Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-2	MW-2	10/19/1999	Tier 3	1		Cadmium	1				ug/L	GW	10/19/1999				5	A
MW-3	MW-3	10/19/1999	Tier 3	1		Cadmium	1				ug/L	GW	10/19/1999				5	A
MW-4	MW-4	10/19/1999	Tier 3	1		Cadmium	4				ug/L	GW	10/19/1999				5	A
MW-5	MW-5	10/19/1999	Tier 3	1		Cadmium	1				ug/L	GW	10/19/1999				5	A
MW-6	MW-6	10/19/1999	Tier 3	1		Cadmium	1				ug/L	GW	10/19/1999				5	A
MW-9	MW-9	10/19/1999	Tier 3	1		Cadmium	1				ug/L	GW	10/19/1999				5	A
MW-10	MW-10	10/19/1999	Tier 3	1		Cadmium	4				ug/L	GW	10/19/1999				5	A
MW-11	MW-11	10/19/1999	Tier 3	1		Cadmium	1				ug/L	GW	10/19/1999				5	A
MW-102	MW-102	10/19/1999	Tier 3	1		Cadmium	10				ug/L	GW	10/19/1999				5	A
MW-107	MW-107	10/19/1999	Tier 3	1		Cadmium	1				ug/L	GW	10/19/1999				5	A
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Cadmium	4				ug/L	GW	10/19/1999				5	A
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Cadmium	5				ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-2	MW-2	10/19/1999	Tier 3	1		Calcium	72000				ug/L	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		Calcium	30000				ug/L	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		Calcium	181000				ug/L	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		Calcium	59000				ug/L	GW	10/19/1999					
MW-6	MW-6	10/19/1999	Tier 3	1		Calcium					ug/L	GW	10/19/1999					
MW-7	MW-7	10/19/1999	Tier 3	1		Calcium	118000				ug/L	GW	10/19/1999					
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Calcium	117000				ug/L	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		Calcium	10000				ug/L	GW	10/19/1999					
MW-107	MW-107	10/19/1999	Tier 3	1		Calcium	99000				ug/L	GW	10/19/1999					
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Calcium	424000				ug/L	GW	10/19/1999		EPA 200.7			
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Calcium	49000				ug/L	GW	10/19/1999		EPA 200.7			
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Calcium	52000				ug/L	GW	10/19/1999		EPA 200.7			
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Calcium	79000				ug/L	GW	10/19/1999		EPA 200.7			
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Calcium	44000				ug/L	GW	10/19/1999		EPA 200.7			
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Calcium	38000				ug/L	GW	10/19/1999		EPA 200.7			
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Chromium	140				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Chromium	10				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-2	MW-2	10/19/1999	Tier 3	1		Chromium, total	10				ug/L	GW	10/19/1999				100	A
MW-3	MW-3	10/19/1999	Tier 3	1		Chromium, total	10				ug/L	GW	10/19/1999				100	A
MW-4	MW-4	10/19/1999	Tier 3	1		Chromium, total	20				ug/L	GW	10/19/1999				100	A
MW-5	MW-5	10/19/1999	Tier 3	1		Chromium, total	20				ug/L	GW	10/19/1999				100	A
MW-6	MW-6	10/19/1999	Tier 3	1		Chromium, total	10				ug/L	GW	10/19/1999				100	A
MW-7	MW-7	10/19/1999	Tier 3	1		Chromium, total	10				ug/L	GW	10/19/1999				100	A
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Chromium, total	<10	U			ug/L	GW	10/19/1999				100	A
MW-9	MW-9	10/19/1999	Tier 3	1		Chromium, total	10				ug/L	GW	10/19/1999				100	A
MW-10	MW-10	10/19/1999	Tier 3	1		Chromium, total	10				ug/L	GW	10/19/1999				100	A
MW-11	MW-11	10/19/1999	Tier 3	1		Chromium, total	10				ug/L	GW	10/19/1999				100	A
MW-102	MW-102	10/19/1999	Tier 3	1		Chromium, total	140				ug/L	GW	10/19/1999				100	A
MW-107	MW-107	10/19/1999	Tier 3	1		Chromium, total	10				ug/L	GW	10/19/1999				100	A
MW-2	MW-2	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-3	MW-3	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-4	MW-4	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-5	MW-5	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-6	MW-6	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-9	MW-9	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-10	MW-10	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-11	MW-11	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-107	MW-107	10/19/1999	Tier 3	1		Copper	10				ug/L	GW	10/19/1999				1000	E
MW-102	MW-102	10/19/1999	Tier 3	1		Copper	410				ug/L	GW	10/19/1999				1000	E
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Copper	120				ug/L	GW	10/19/1999				1000	E
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-2	MW-2	10/19/1999	Tier 3	1		Iron	210				ug/L	GW	10/19/1999				300	E
MW-3	MW-3	10/19/1999	Tier 3	1		Iron	10				ug/L	GW	10/19/1999				300	E
MW-4	MW-4	10/19/1999	Tier 3	1		Iron	305000				ug/L	GW	10/19/1999				300	E
MW-5	MW-5	10/19/1999	Tier 3	1		Iron	166000				ug/L	GW	10/19/1999				300	E

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-10	MW-10	10/19/1999	Tier 3	1		Iron	280				ug/L	GW	10/19/1999				300	E
MW-107	MW-107	10/19/1999	Tier 3	1		Iron	104000				ug/L	GW	10/19/1999				300	E
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Iron	1680000				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-11	MW-11	10/19/1999	Tier 3	1		Iron	127000				ug/L	GW	10/19/1999				300	E
MW-6	MW-6	10/19/1999	Tier 3	1		Iron	399000				ug/L	GW	10/19/1999				300	E
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Iron	182000				ug/L	GW	10/19/1999				300	E
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Iron	8060				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Iron	74500				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Iron	9450				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Iron	28900				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-2	MW-2	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-3	MW-3	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-4	MW-4	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-5	MW-5	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-7	MW-7	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Lead	<10	U			ug/L	GW	10/19/1999				4	L
MW-9	MW-9	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-10	MW-10	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-11	MW-11	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-102	MW-102	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-107	MW-107	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-6	MW-6	10/19/1999	Tier 3	1		Lead	10				ug/L	GW	10/19/1999				4	L
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-2	MW-2	10/19/1999	Tier 3	1		Magnesium	21000				ug/L	GW	10/19/1999				400000	
MW-3	MW-3	10/19/1999	Tier 3	1		Magnesium	6000				ug/L	GW	10/19/1999				400000	
MW-4	MW-4	10/19/1999	Tier 3	1		Magnesium	110000				ug/L	GW	10/19/1999				400000	
MW-5	MW-5	10/19/1999	Tier 3	1		Magnesium	20000				ug/L	GW	10/19/1999				400000	
MW-6	MW-6	10/19/1999	Tier 3	1		Magnesium					ug/L	GW	10/19/1999				400000	
MW-10	MW-10	10/19/1999	Tier 3	1		Magnesium	2000				ug/L	GW	10/19/1999				400000	
MW-107	MW-107	10/19/1999	Tier 3	1		Magnesium	41000				ug/L	GW	10/19/1999				400000	
MW-102	MW-102	10/19/1999	Tier 3	1		Magnesium	326000				ug/L	GW	10/19/1999				400000	
MW-11	MW-11	10/19/1999	Tier 3	1		Magnesium	16000				ug/L	GW	10/19/1999				400000	
MW-7	MW-7	10/19/1999	Tier 3	1		Magnesium	68000				ug/L	GW	10/19/1999				400000	
MW-9	MW-9	10/19/1999	Tier 3	1		Magnesium	16000				ug/L	GW	10/19/1999				400000	
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Magnesium	28000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Magnesium	15000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Magnesium	13000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-2	MW-2	10/19/1999	Tier 3	1		Manganese	3300				ug/L	GW	10/19/1999				50	E
MW-3	MW-3	10/19/1999	Tier 3	1		Manganese	60				ug/L	GW	10/19/1999				50	E
MW-4	MW-4	10/19/1999	Tier 3	1		Manganese	41800				ug/L	GW	10/19/1999				50	E
MW-5	MW-5	10/19/1999	Tier 3	1		Manganese	4870				ug/L	GW	10/19/1999				50	E
MW-7	MW-7	10/19/1999	Tier 3	1		Manganese	23500				ug/L	GW	10/19/1999				50	E
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Manganese	23400				ug/L	GW	10/19/1999				50	E
MW-10	MW-10	10/19/1999	Tier 3	1		Manganese	540				ug/L	GW	10/19/1999				50	E
MW-107	MW-107	10/19/1999	Tier 3	1		Manganese	37800				ug/L	GW	10/19/1999				50	E
MW-102	MW-102	10/19/1999	Tier 3	1		Manganese	33400				ug/L	GW	10/19/1999				50	E
MW-11	MW-11	10/19/1999	Tier 3	1		Manganese	6490				ug/L	GW	10/19/1999				50	E
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Manganese	24400				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-9	MW-9	10/19/1999	Tier 3	1		Manganese	1170				ug/L	GW	10/19/1999				50	E
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Manganese	7080				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Manganese	1120				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Manganese	10400				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-2	MW-2	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-3	MW-3	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-4	MW-4	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-5	MW-5	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-6	MW-6	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-7	MW-7	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Mercury	<1	U			ug/L	GW	10/19/1999				2	A
MW-9	MW-9	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-10	MW-10	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-11	MW-11	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-102	MW-102	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-107	MW-107	10/19/1999	Tier 3	1		Mercury	1				ug/L	GW	10/19/1999				2	A
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-2	MW-2	10/19/1999	Tier 3	1		Nickel	30				ug/L	GW	10/19/1999				100	A
MW-3	MW-3	10/19/1999	Tier 3	1		Nickel	30				ug/L	GW	10/19/1999				100	A
MW-4	MW-4	10/19/1999	Tier 3	1		Nickel	1460				ug/L	GW	10/19/1999				100	A
MW-5	MW-5	10/19/1999	Tier 3	1		Nickel	50				ug/L	GW	10/19/1999				100	A
MW-7	MW-7	10/19/1999	Tier 3	1		Nickel	590				ug/L	GW	10/19/1999				100	A
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Nickel	640				ug/L	GW	10/19/1999				100	A
MW-10	MW-10	10/19/1999	Tier 3	1		Nickel	20				ug/L	GW	10/19/1999				100	A
MW-11	MW-11	10/19/1999	Tier 3	1		Nickel	10				ug/L	GW	10/19/1999				100	A
MW-107	MW-107	10/19/1999	Tier 3	1		Nickel	10				ug/L	GW	10/19/1999				100	A
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Nickel	3800				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-6	MW-6	10/19/1999	Tier 3	1		Nickel	110				ug/L	GW	10/19/1999				100	A
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Nickel	10				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Nickel	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Nickel	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Nickel	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Nickel	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-2	MW-2	10/19/1999	Tier 3	1		Phosphorus, total	0.06				mg/L	GW	10/19/1999				63	
MW-3	MW-3	10/19/1999	Tier 3	1		Phosphorus, total	0.01				mg/L	GW	10/19/1999				63	
MW-4	MW-4	10/19/1999	Tier 3	1		Phosphorus, total	0.08				mg/L	GW	10/19/1999				63	
MW-5	MW-5	10/19/1999	Tier 3	1		Phosphorus, total	0.27				mg/L	GW	10/19/1999				63	
MW-10	MW-10	10/19/1999	Tier 3	1		Phosphorus, total	0.02				mg/L	GW	10/19/1999				63	
MW-11	MW-11	10/19/1999	Tier 3	1		Phosphorus, total	0.16				mg/L	GW	10/19/1999				63	
MW-7	MW-7	10/19/1999	Tier 3	1		Phosphorus, total	0.07				mg/L	GW	10/19/1999				63	
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Phosphorus, total	0.07				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Phosphorus, total	0.20				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Phosphorus, total	0.13				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Phosphorus, total	0.18				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Phosphorus, total	0.18				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-2	MW-2	10/19/1999	Tier 3	1		Potassium	8000				ug/L	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		Potassium	4000				ug/L	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		Potassium	7000				ug/L	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		Potassium	12000				ug/L	GW	10/19/1999					
MW-6	MW-6	10/19/1999	Tier 3	1		Potassium					ug/L	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		Potassium	1000				ug/L	GW	10/19/1999					
MW-107	MW-107	10/19/1999	Tier 3	1		Potassium	7000				ug/L	GW	10/19/1999					
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Potassium	3000				ug/L	GW	10/19/1999		EPA 200.7			
MW-11	MW-11	10/19/1999	Tier 3	1		Potassium	10000				ug/L	GW	10/19/1999					
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Potassium	11000				ug/L	GW	10/19/1999					
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Potassium	4000				ug/L	GW	10/19/1999		EPA 200.7			
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Potassium	4000				ug/L	GW	10/19/1999		EPA 200.7			
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Potassium	2000				ug/L	GW	10/19/1999		EPA 200.7			
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Potassium	4000				ug/L	GW	10/19/1999		EPA 200.7			
MW-2	MW-2	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-3	MW-3	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-4	MW-4	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-5	MW-5	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-6	MW-6	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-7	MW-7	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Selenium	<5	U			ug/L	GW	10/19/1999				50	A
MW-9	MW-9	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-10	MW-10	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-11	MW-11	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-107	MW-107	10/19/1999	Tier 3	1		Selenium	5				ug/L	GW	10/19/1999				50	A
MW-102	MW-102	10/19/1999	Tier 3	1		Selenium	7				ug/L	GW	10/19/1999				50	A
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-2	MW-2	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-3	MW-3	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-4	MW-4	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-5	MW-5	10/19/1999	Tier 3	1		Silver	5.8				ug/L	GW	10/19/1999				34	
MW-6	MW-6	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-7	MW-7	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Silver	<5	U			ug/L	GW	10/19/1999				34	
MW-9	MW-9	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-10	MW-10	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-11	MW-11	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-102	MW-102	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-107	MW-107	10/19/1999	Tier 3	1		Silver	5				ug/L	GW	10/19/1999				34	
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-2	MW-2	10/19/1999	Tier 3	1		Sodium	14000				ug/L	GW	10/19/1999				120000	
MW-3	MW-3	10/19/1999	Tier 3	1		Sodium	4000				ug/L	GW	10/19/1999				120000	
MW-4	MW-4	10/19/1999	Tier 3	1		Sodium	14000				ug/L	GW	10/19/1999				120000	
MW-5	MW-5	10/19/1999	Tier 3	1		Sodium	112000				ug/L	GW	10/19/1999				120000	
MW-6	MW-6	10/19/1999	Tier 3	1		Sodium					ug/L	GW	10/19/1999				120000	
MW-7	MW-7	10/19/1999	Tier 3	1		Sodium	10000				ug/L	GW	10/19/1999				120000	
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Sodium	9000				ug/L	GW	10/19/1999				120000	
MW-10	MW-10	10/19/1999	Tier 3	1		Sodium	2000				ug/L	GW	10/19/1999				120000	
MW-107	MW-107	10/19/1999	Tier 3	1		Sodium	24000				ug/L	GW	10/19/1999				120000	
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Sodium	14000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-11	MW-11	10/19/1999	Tier 3	1		Sodium	167000				ug/L	GW	10/19/1999				120000	
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Sodium	9000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Sodium	9000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Sodium	5000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Sodium	4000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-2	MW-2	10/19/1999	Tier 3	1		Zinc	20				ug/L	GW	10/19/1999				2400	
MW-3	MW-3	10/19/1999	Tier 3	1		Zinc	150				ug/L	GW	10/19/1999				2400	
MW-4	MW-4	10/19/1999	Tier 3	1		Zinc	890				ug/L	GW	10/19/1999				2400	
MW-5	MW-5	10/19/1999	Tier 3	1		Zinc	30				ug/L	GW	10/19/1999				2400	
MW-10	MW-10	10/19/1999	Tier 3	1		Zinc	820				ug/L	GW	10/19/1999				2400	
MW-107	MW-107	10/19/1999	Tier 3	1		Zinc	30				ug/L	GW	10/19/1999				2400	
MW-102	MW-102	10/19/1999	Tier 3	1		Zinc	2320				ug/L	GW	10/19/1999				2400	
MW-11	MW-11	10/19/1999	Tier 3	1		Zinc	20				ug/L	GW	10/19/1999				2400	
MW-6	MW 6	10/19/1999	Tier 2	1	99-58443-7	Zinc	120				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Zinc	430				ug/L	GW	10/19/1999				2400	
MW-9	MW-9	10/19/1999	Tier 3	1		Zinc	10				ug/L	GW	10/19/1999				2400	
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Zinc	10				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Zinc	<10	U			ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Zinc	10				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Alkalinity As CaCO3	0				mg/L	GW	10/19/1999		EPA 310.1			
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Alkalinity As CaCO3	76				mg/L	GW	10/19/1999		EPA 310.1			
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Alkalinity As CaCO3	188				mg/L	GW	10/19/1999		EPA 310.1			
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Alkalinity As CaCO3	166				mg/L	GW	10/19/1999		EPA 310.1			
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Alkalinity As CaCO3	456				mg/L	GW	10/19/1999		EPA 310.1			
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Alkalinity As CaCO3	114				mg/L	GW	10/19/1999		EPA 310.1			
MW-2	MW-2	10/19/1999	Tier 3	1		Bicarbonate Alkalinity	103				mg/L	GW	10/19/1999					
MW-3	MW-3	10/19/1999	Tier 3	1		Bicarbonate Alkalinity	33				mg/L	GW	10/19/1999					
MW-4	MW-4	10/19/1999	Tier 3	1		Bicarbonate Alkalinity	2.5				mg/L	GW	10/19/1999					
MW-5	MW-5	10/19/1999	Tier 3	1		Bicarbonate Alkalinity	546				mg/L	GW	10/19/1999					
MW-9	MW-9	10/19/1999	Tier 3	1		Bicarbonate Alkalinity	139				mg/L	GW	10/19/1999					
MW-10	MW-10	10/19/1999	Tier 3	1		Bicarbonate Alkalinity	18				mg/L	GW	10/19/1999					
MW-11	MW-11	10/19/1999	Tier 3	1		Bicarbonate Alkalinity	556				mg/L	GW	10/19/1999					
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Bicarbonate Alkalinity	0				mg/L	GW	10/19/1999					
MW-2	MW-2	10/19/1999	Tier 3	1		Chloride	3				mg/L	GW	10/19/1999				250	E
MW-3	MW-3	10/19/1999	Tier 3	1		Chloride	2				mg/L	GW	10/19/1999				250	E
MW-4	MW-4	10/19/1999	Tier 3	1		Chloride	5				mg/L	GW	10/19/1999				250	E
MW-5	MW-5	10/19/1999	Tier 3	1		Chloride	67				mg/L	GW	10/19/1999				250	E
MW-7	MW-7	10/19/1999	Tier 3	1		Chloride	4				mg/L	GW	10/19/1999				250	E
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Chloride	5				mg/L	GW	10/19/1999				250	E
MW-10	MW-10	10/19/1999	Tier 3	1		Chloride	1				mg/L	GW	10/19/1999				250	E
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Chloride	96				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Chloride	4				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Chloride	10				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Chloride	3				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Chloride	1				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Chloride	3				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-2	MW-2	10/19/1999	Tier 3	1		Methane					mg/L	GW	10/19/1999					ID
MW-3	MW-3	10/19/1999	Tier 3	1		Methane					mg/L	GW	10/19/1999					ID
MW-4	MW-4	10/19/1999	Tier 3	1		Methane					mg/L	GW	10/19/1999					ID
MW-5	MW-5	10/19/1999	Tier 3	1		Methane	1.3157				mg/L	GW	10/19/1999					ID
MW-7	MW-7	10/19/1999	Tier 3	1		Methane					mg/L	GW	10/19/1999					ID
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Methane					mg/L	GW	10/19/1999					ID
MW-10	MW-10	10/19/1999	Tier 3	1		Methane					mg/L	GW	10/19/1999					ID
MW-11	MW-11	10/19/1999	Tier 3	1		Methane					mg/L	GW	10/19/1999					ID
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Methane	1.0601				mg/L	GW	10/19/1999		GC FID			ID
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Methane	0.0466				mg/L	GW	10/19/1999		GC FID			ID
MW-2	MW-2	10/19/1999	Tier 3	1		Nitrogen, Ammonia	0.1				mg/L	GW	10/19/1999				10	N
MW-3	MW-3	10/19/1999	Tier 3	1		Nitrogen, Ammonia	0.1				mg/L	GW	10/19/1999				10	N
MW-4	MW-4	10/19/1999	Tier 3	1		Nitrogen, Ammonia	2.8				mg/L	GW	10/19/1999				10	N
MW-5	MW-5	10/19/1999	Tier 3	1		Nitrogen, Ammonia	3.3				mg/L	GW	10/19/1999				10	N
MW-7	MW-7	10/19/1999	Tier 3	1		Nitrogen, Ammonia	2.4				mg/L	GW	10/19/1999				10	N
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Nitrogen, Ammonia	2.5				mg/L	GW	10/19/1999				10	N
MW-10	MW-10	10/19/1999	Tier 3	1		Nitrogen, Ammonia	0.2				mg/L	GW	10/19/1999				10	N

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Nitrogen, Ammonia	12.6				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Nitrogen, Ammonia	0.3				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Nitrogen, Ammonia	3.7				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Nitrogen, Ammonia	1.4				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Nitrogen, Ammonia	0.7				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Nitrogen, Ammonia	1.6				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-2	MW-2	10/19/1999	Tier 3	1		Nitrogen, Nitrate	0.1				mg/L	GW	10/19/1999				10	A,N
MW-3	MW-3	10/19/1999	Tier 3	1		Nitrogen, Nitrate	0.21				mg/L	GW	10/19/1999				10	A,N
MW-4	MW-4	10/19/1999	Tier 3	1		Nitrogen, Nitrate	0.05				mg/L	GW	10/19/1999				10	A,N
MW-5	MW-5	10/19/1999	Tier 3	1		Nitrogen, Nitrate	0.06				mg/L	GW	10/19/1999				10	A,N
MW-7	MW-7	10/19/1999	Tier 3	1		Nitrogen, Nitrate	0.05				mg/L	GW	10/19/1999				10	A,N
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Nitrogen, Nitrate	<.05	U			mg/L	GW	10/19/1999				10	A,N
MW-9	MW-9	10/19/1999	Tier 3	1		Nitrogen, Nitrate	0.2				mg/L	GW	10/19/1999				10	A,N
MW-10	MW-10	10/19/1999	Tier 3	1		Nitrogen, Nitrate	0.86				mg/L	GW	10/19/1999				10	A,N
MW-11	MW-11	10/19/1999	Tier 3	1		Nitrogen, Nitrate	0.37				mg/L	GW	10/19/1999				10	A,N
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Nitrogen, Nitrate	0.06				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Nitrogen, Nitrate	0.07				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Nitrogen, Nitrate	0.08				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Nitrogen, Nitrate	0.20				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-2	MW-2	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	0.1				mg/L	GW	10/19/1999				1	A,N
MW-3	MW-3	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	0.21				mg/L	GW	10/19/1999				1	A,N
MW-4	MW-4	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	0.05				mg/L	GW	10/19/1999				1	A,N
MW-5	MW-5	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	0.06				mg/L	GW	10/19/1999				1	A,N
MW-7	MW-7	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	0.05				mg/L	GW	10/19/1999				1	A,N
MW-7	MW-7-dup	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	<.05	U			mg/L	GW	10/19/1999				1	A,N
MW-9	MW-9	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	0.2				mg/L	GW	10/19/1999				1	A,N
MW-10	MW-10	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	0.86				mg/L	GW	10/19/1999				1	A,N
MW-11	MW-11	10/19/1999	Tier 3	1		Nitrogen, nitrate plus nitrite	0.37				mg/L	GW	10/19/1999				1	A,N
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Nitrogen, nitrate plus nitrite	0.20				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Nitrogen, nitrate plus nitrite	0.06				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Nitrogen, nitrate plus nitrite	0.07				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Nitrogen, nitrate plus nitrite	0.08				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Nitrogen, nitrate plus nitrite	0.20				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-2	MW-2	10/19/1999	Tier 3	1		Sulfate	215				mg/L	GW	10/19/1999				250	E
MW-3	MW-3	10/19/1999	Tier 3	1		Sulfate	91				mg/L	GW	10/19/1999				250	E
MW-4	MW-4	10/19/1999	Tier 3	1		Sulfate	1550				mg/L	GW	10/19/1999				250	E
MW-5	MW-5	10/19/1999	Tier 3	1		Sulfate	1				mg/L	GW	10/19/1999				250	E
MW-10	MW-10	10/19/1999	Tier 3	1		Sulfate	25				mg/L	GW	10/19/1999				250	E
MW-11	MW 11	10/19/1999	Tier 2	1	99-58443-5	Sulfate	25				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-7	MW-7	10/19/1999	Tier 3	1		Sulfate	1070				mg/L	GW	10/19/1999				250	E
MW-9	MW 9	10/19/1999	Tier 2	1	99-58443-6	Sulfate	94				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-102	MW-102	10/19/1999	Tier 2	1	99-58443-1	Sulfate	6490				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-103	MW-103	10/19/1999	Tier 2	1	99-58443-2	Sulfate	260				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-12	MW-12	10/19/1999	Tier 2	1	99-58443-3	Sulfate	5				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-101	MW 101	10/19/1999	Tier 2	1	99-58443-4	Sulfate	16				mg/L	GW	10/19/1999		EPA 300.0		250	E
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,1,1,2-Tetrachloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		77	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,1,1-Trichloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		200	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,1,2,2-Tetrachloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		9	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,1,2-Trichloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,1-Dichloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		880	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,1-Dichloroethene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		7	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,1-Dichloropropane	<1	U			ug/L	GW	10/19/1999		EPA 8260B			
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,2,3-Trichloropropane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		42	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,2-Dichlorobenzene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		600	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,2-Dichloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,2-Dichloropropane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,3-Dichlorobenzene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		7	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,3-Dichloropropane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		9	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	1,4-Dichlorobenzene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		75	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	2,2-Dichloropropane	<1	U			ug/L	GW	10/19/1999		EPA 8260B			
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	2-Chloroethyl Vinyl Ether	<1	U			ug/L	GW	10/19/1999		EPA 8260B			ID
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	2-Chlorotoluene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		150	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	4-Chlorotoluene	<1	U			ug/L	GW	10/19/1999		EPA 8260B			
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Benzene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Bromobenzene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		18	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Bromochloromethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B			
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Bromoform	<1	U			ug/L	GW	10/19/1999		EPA 8260B		80	A,W
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Bromomethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		10	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Carbon Tetrachloride	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Chlorobenzene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		100	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Chlorodibromomethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		100	A,W
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Chloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		430	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Chloroform	<1	U			ug/L	GW	10/19/1999		EPA 8260B		80	A,W
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Chloromethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		260	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	cis-1,2-Dichloroethene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		70	S
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	cis-1,3-Dichloropropene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		9	

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Dichlorodifluoromethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		1700	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Ethylbenzene	<1	U			ug/l	GW	10/19/1999		EPA 8260B		74	E
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Fluorotrichloromethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		2600	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Methel ethyl Ketone	<20	U			ug/L	GW	10/19/1999		EPA 8260B		13000	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Methy T-Butyl ether	<1	U			ug/L	GW	10/19/1999		EPA 8260B		40	E
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Methylene Chloride	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Styrene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		100	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Tetrachloroethene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Toluene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		790	E
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	trans-1,2-Dichloroethene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		100	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	trans-1,3-Dichloropropene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		9	
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Trichloroethene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Vinyl Chloride	<1	U			ug/L	GW	10/19/1999		EPA 8260B		2	A
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	Xylenes, m + p	<1	U			ug/L	GW	10/19/1999		EPA 8260B		280	E
Blank-1	Trip Blank	10/19/1999	Tier 2	1	019-99-58443	xylenes, o	<1	U			ug/L	GW	10/19/1999		EPA 8260B		280	E
MW-104	MW-104 fp	10/19/1999	Tier 3	1		1-Methyl-naphthalene	<6000	U			ug/L	GW	10/19/1999					
MW-104	MW-104 fp	10/19/1999	Tier 3	1		2-Methyl naphthalene	<6000	U			ug/L	GW	10/19/1999				260	
MW-104	MW 104 Free Product	10/19/1999	Tier 2	1	017-99-58443	Acenaphthene	<6000	U			ug/L	GW	10/19/1999	mL X 10	EPA 8270C		1300	
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Acenaphthene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		1300	
MW-104	MW 104 Free Product	10/19/1999	Tier 2	1	017-99-58443	Acenaphthylene	<6000	U			ug/L	GW	10/19/1999	mL X 10	EPA 8270C		52	
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Acenaphthylene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		52	
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Anthracene	<6000	U			ug/L	GW	10/19/1999				43	S
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Anthracene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		43	S
MW-104	MW 104 Free Product	10/19/1999	Tier 2	1	017-99-58443	Benzo (a) anthracene	<6000	1030J			ug/L	GW	10/19/1999	mL X 10	EPA 8270C		2	
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Benzo (a) anthracene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		2	
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Benzo (a) pyrene	<6000	U			ug/L	GW	10/19/1999				5	A
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Benzo (a) pyrene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		5	A
MW-104	MW 104 Free Product	10/19/1999	Tier 2	1	017-99-58443	Benzo (b) Fluoranthene	<6000	1380J,P			ug/L	GW	10/19/1999	mL X 10	EPA 8270C		1.5	S,AA
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Benzo (b) Fluoranthene	<100	P,U			ug/L	GW	10/19/1999	mL	EPA 8270C		1.5	S,AA
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Benzo (g,h,i) perylene	<6000	P,U			ug/L	GW	10/19/1999				1.0	M
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Benzo (g,h,i) perylene	<100	P,U			ug/L	GW	10/19/1999	mL	EPA 8270C		1.0	M
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Benzo (k) Fluoranthene	<6000	P,U			ug/l	GW	10/19/1999				1.0	M
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Benzo (k) Fluoranthene	<100	P,U			ug/l	GW	10/19/1999	mL	EPA 8270C		1.0	M
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Chrysene	<6000	P,U			ug/L	GW	10/19/1999				1.6	S
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Chrysene	<100	P,U			ug/L	GW	10/19/1999	mL	EPA 8270C		1.6	S
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Dibenzo (a,h) anthracene	<6000	U			ug/l	GW	10/19/1999				2	M
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Dibenzo (a,h) anthracene	<100	U			ug/l	GW	10/19/1999	mL	EPA 8270C		2	M
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Fluoranthene	<6000	U			ug/L	GW	10/19/1999				210	S
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Fluoranthene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		210	S
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Fluorene	<6000	U			ug/L	GW	10/19/1999				880	
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Fluorene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		880	
MW-104	MW 104 Free Product	10/19/1999	Tier 2	1	017-99-58443	Indeno (1,2,3 - cd) pyrene	<6000	625J			ug/l	GW	10/19/1999	mL X 10	EPA 8270C		2	M
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Indeno (1,2,3 - cd) pyrene	<100	U			ug/l	GW	10/19/1999	mL	EPA 8270C		2	M
MW-104	MW-104 fp	10/19/1999	Tier 3	1		Naphthalene	19600				ug/L	GW	10/19/1999				520	
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Naphthalene	<100	16J			ug/L	GW	10/19/1999	mL	EPA 8270C		520	
MW-104	MW 104 Free Product	10/19/1999	Tier 2	1	017-99-58443	Phenanthrene	16000				ug/L	GW	10/19/1999	mL X 10	EPA 8270C		52	
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Phenanthrene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		52	
MW-104	MW 104 Free Product	10/19/1999	Tier 2	1	017-99-58443	Pyrene	<6000	4760J			ug/L	GW	10/19/1999	mL X 10	EPA 8270C		140	S
MW-5	MW 5 Free Product	10/19/1999	Tier 2	1	018-99-58443	Pyrene	<100	U			ug/L	GW	10/19/1999	mL	EPA 8270C		140	S
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Carbon dioxide	751				mg/L	GW	10/19/1999		Calc			
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Arsenic	<5	U			ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Arsenic	15				ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Arsenic	35				ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Arsenic	<5	U			ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Arsenic	<5	U			ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Arsenic	<5	U			ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Arsenic	139				ug/L	GW	10/19/1999		EPA 200.8		10	EPA 2006
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Barium	200				ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Barium	<100	U			ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Barium	200				ug/L	GW	10/19/1999		EPA 200.7		2000	A
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Cadmium	4				ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Cadmium	4				ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Cadmium	4				ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Cadmium	<1	U			ug/L	GW	10/19/1999		EPA 200.8		5	A
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Calcium	99000				ug/L	GW	10/19/1999		EPA 200.7			
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Calcium	118000				ug/L	GW	10/19/1999		EPA 200.7			
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Calcium	117000				ug/L	GW	10/19/1999		EPA 200.7			
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Calcium	181000				ug/L	GW	10/19/1999		EPA 200.7			
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Calcium	10000				ug/L	GW	10/19/1999		EPA 200.7			

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Calcium	72000				ug/L	GW	10/19/1999		EPA 200.7			
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Calcium	30000				ug/L	GW	10/19/1999		EPA 200.7			
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Calcium	59000				ug/L	GW	10/19/1999		EPA 200.7			
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Chromium	20				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Chromium	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Chromium	20				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Copper	120				ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Copper	<10	U			ug/L	GW	10/19/1999		EPA 200.7		1000	E
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Iron	182000				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Iron	104000				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Iron	305000				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Iron	280				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Iron	210				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Iron	<30	U			ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Iron	166000				ug/L	GW	10/19/1999		EPA 200.7		300	E
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Lead	10				ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Lead	<10	U			ug/L	GW	10/19/1999		EPA 200.8		4	L
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Magnesium	68000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Magnesium	41000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Magnesium	110000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Magnesium	2000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Magnesium	21000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Magnesium	6000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Magnesium	20000				ug/L	GW	10/19/1999		EPA 200.7		400000	
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Manganese	37800				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Manganese	23500				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Manganese	23400				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Manganese	41800				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Manganese	540				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Manganese	3300				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Manganese	60				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Manganese	4870				ug/L	GW	10/19/1999		EPA 200.7		50	E
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Mercury	<1	U			ug/L	GW	10/19/1999		EPA 200.8		2	A
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Nickel	<10	U			ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Nickel	590				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Nickel	640				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Nickel	1460				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Nickel	20				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Nickel	30				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Nickel	30				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Nickel	50				ug/L	GW	10/19/1999		EPA 200.7		100	A
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Phosphorus, total	0.07				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Phosphorus, total	0.05				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Phosphorus, total	0.08				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Phosphorus, total	0.02				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Phosphorus, total	0.06				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Phosphorus, total	0.01				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Phosphorus, total	0.27				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-104	MW 104	10/20/1999	Tier 2	1	99-58443-16	Phosphorus, total	0.14				mg/L	GW	10/19/1999		EPA 365.1		63	
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Potassium	11000				ug/L	GW	10/19/1999		EPA 200.7			
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Potassium	7000				ug/L	GW	10/19/1999		EPA 200.7			
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Potassium	7000				ug/L	GW	10/19/1999		EPA 200.7			
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Potassium	<1000	U			ug/L	GW	10/19/1999		EPA 200.7			
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Potassium	8000				ug/L	GW	10/19/1999		EPA 200.7			
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Potassium	4000				ug/L	GW	10/19/1999		EPA 200.7			
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Potassium	12000				ug/L	GW	10/19/1999		EPA 200.7			

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Selenium	<50	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Selenium	5				ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Selenium	<5	U			ug/L	GW	10/19/1999		EPA 200.8		50	A
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Silver	<5	U			ug/L	GW	10/19/1999		EPA 200.8		34	
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Sodium	24000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Sodium	10000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Sodium	9000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Sodium	14000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Sodium	2000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Sodium	14000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Sodium	4000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Sodium	112000				ug/L	GW	10/19/1999		EPA 200.7		120000	
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Zinc	430				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Zinc	30				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Zinc	890				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Zinc	820				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Zinc	20				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Zinc	150				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Zinc	30				ug/L	GW	10/19/1999		EPA 200.7		2400	
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Alkalinity As CaCO3	0				mg/L	GW	10/19/1999		EPA 310.1			
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Alkalinity As CaCO3	8				mg/L	GW	10/19/1999		EPA 310.1			
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Alkalinity As CaCO3	2				mg/L	GW	10/19/1999		EPA 310.1			
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Alkalinity As CaCO3	15				mg/L	GW	10/19/1999		EPA 310.1			
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Alkalinity As CaCO3	85				mg/L	GW	10/19/1999		EPA 310.1			
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Alkalinity As CaCO3	27				mg/L	GW	10/19/1999		EPA 310.1			
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Alkalinity As CaCO3	448				mg/L	GW	10/19/1999		EPA 310.1			
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Chloride	5				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Chloride	4				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Chloride	5				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Chloride	5				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Chloride	<1	U			mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Chloride	3				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Chloride	2				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Chloride	67				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Methane	1.3157				mg/L	GW	10/19/1999		GC FID			ID
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Nitrogen, Ammonia	3.5				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Nitrogen, Ammonia	2.4				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Nitrogen, Ammonia	2.5				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Nitrogen, Ammonia	2.8				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Nitrogen, Ammonia	0.2				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Nitrogen, Ammonia	<0.1	U			mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Nitrogen, Ammonia	<0.1	U			mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Nitrogen, Ammonia	3.3				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-104	MW 104	10/20/1999	Tier 2	1	99-58443-16	Nitrogen, Ammonia	2.5				mg/L	GW	10/19/1999		EPA 350.1		10	N
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Nitrogen, Nitrate	0.08				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Nitrogen, Nitrate	0.05				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Nitrogen, Nitrate	<0.05	U			mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Nitrogen, Nitrate	<0.05	U			mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Nitrogen, Nitrate	0.86				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Nitrogen, Nitrate	0.10				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Nitrogen, Nitrate	0.21				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Nitrogen, Nitrate	0.06				mg/L	GW	10/19/1999		EPA 353.2		10	A,N
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Nitrogen, nitrate plus nitrite	0.08				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Nitrogen, nitrate plus nitrite	0.05				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-7	MW 7-dup	10/20/1999	Tier 2	1	99-58443-10	Nitrogen, nitrate plus nitrite	<0.05	U			mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Nitrogen, nitrate plus nitrite	<0.05	U			mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Nitrogen, nitrate plus nitrite	0.86				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Nitrogen, nitrate plus nitrite	0.10				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Nitrogen, nitrate plus nitrite	0.21				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Nitrogen, nitrate plus nitrite	0.06				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-104	MW 104	10/20/1999	Tier 2	1	99-58443-16	Nitrogen, nitrate plus nitrite	0.13				mg/L	GW	10/19/1999		EPA 353.2		1	A,N
MW-7	MW 7	10/20/1999	Tier 2	1	99-58443-9	Sulfate	1070				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-107	MW 107	10/20/1999	Tier 2	1	99-58443-8	Sulfate	660				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-4	MW 4	10/20/1999	Tier 2	1	99-58443-11	Sulfate	1550				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-10	MW 10	10/20/1999	Tier 2	1	99-58443-12	Sulfate	25				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-2	MW 2	10/20/1999	Tier 2	1	99-58443-13	Sulfate	215				mg/L	GW	10/19/1999		EPA 300.0		250	E

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-3	MW 3	10/20/1999	Tier 2	1	99-58443-14	Sulfate	91				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-5	MW 5	10/20/1999	Tier 2	1	99-58443-15	Sulfate	1				mg/L	GW	10/19/1999		EPA 300.0		250	E
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,1,1,2-Tetrachloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		77	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,1,1,2-Tetrachloroethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		77	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,1,1-Trichloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		200	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,1,1-Trichloroethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		200	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,1,2,2-Tetrachloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		9	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,1,2,2-Tetrachloroethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		9	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,1,2-Trichloroethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,1,2-Trichloroethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,1-Dichloroethane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		880	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,1-Dichloroethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		880	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,1-Dichloroethene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		7	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,1-Dichloroethene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		7	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,1-Dichloropropane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B			
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,1-Dichloropropane	<10	U			ug/L	GW	10/19/1999		EPA 8260B			
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,2,3-Trichloropropane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		42	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,2,3-Trichloropropane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		42	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,2-Dichlorobenzene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		600	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,2-Dichlorobenzene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		600	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,2-Dichloroethane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,2-Dichloroethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,2-Dichloropropane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,2-Dichloropropane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,3-Dichlorobenzene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		7	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,3-Dichlorobenzene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		7	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,3-Dichloropropane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		9	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,3-Dichloropropane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		9	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	1,4-Dichlorobenzene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		75	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	1,4-Dichlorobenzene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		75	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	2,2-Dichloropropane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B			
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	2,2-Dichloropropane	<10	U			ug/L	GW	10/19/1999		EPA 8260B			
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	2-Chloroethyl Vinyl Ether	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B			ID
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	2-Chloroethyl Vinyl Ether	<10	U			ug/L	GW	10/19/1999		EPA 8260B			ID
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	2-Chlorotoluene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		150	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	2-Chlorotoluene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		150	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	4-Chlorotoluene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B			
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	4-Chlorotoluene	<10	U			ug/L	GW	10/19/1999		EPA 8260B			
MW-107	MW-107	10/20/1999	Tier 3	1		Benzene	<1	U			ug/L	GW	10/20/1999				5	A
Blank-1	Trip blank10201999	10/20/1999	Tier 3	1		Benzene	<1	U			ug/L	GW	10/20/1999				5	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Benzene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Benzene	18				ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Bromobenzene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		18	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Bromobenzene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		18	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Bromochloromethane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B			
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Bromochloromethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B			
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Bromoform	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		80	A,W
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Bromoform	<10	U			ug/L	GW	10/19/1999		EPA 8260B		80	A,W
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Bromomethane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		10	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Bromomethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		10	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Carbon Tetrachloride	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Carbon Tetrachloride	<10	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Chlorobenzene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		100	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Chlorobenzene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		100	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Chlorodibromomethane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		100	A,W
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Chlorodibromomethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		100	A,W
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Chloroethane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		430	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Chloroethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		430	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Chloroform	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		80	A,W
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Chloroform	<10	U			ug/L	GW	10/19/1999		EPA 8260B		80	A,W
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Chloromethane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		260	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Chloromethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		260	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	cis-1,2-Dichloroethene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		70	S
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	cis-1,2-Dichloroethene	28				ug/L	GW	10/19/1999		EPA 8260B		70	S
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	cis-1,3-Dichloropropene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		9	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	cis-1,3-Dichloropropene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		9	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Dichlorodifluoromethane	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		1700	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Dichlorodifluoromethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		1700	
MW-107	MW-107	10/20/1999	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	10/20/1999				74	E
Blank-1	Trip blank10201999	10/20/1999	Tier 3	1		Ethylbenzene	<1	U			ug/l	GW	10/20/1999				74	E
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Ethylbenzene	<1.0	U			ug/l	GW	10/19/1999		EPA 8260B		74	E
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Ethylbenzene	96				ug/l	GW	10/19/1999		EPA 8260B		74	E
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Fluorotrichloromethane	<1	U			ug/L	GW	10/19/1999		EPA 8260B		2600	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Fluorotrichloromethane	<10	U			ug/L	GW	10/19/1999		EPA 8260B		2600	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Gro as Gasoline	6840				ug/L	GW	10/19/1999					
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Methel ethyl Ketone	<20	U			ug/L	GW	10/19/1999		EPA 8260B		13000	

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Methel ethyl Ketone	<200	U			ug/L	GW	10/19/1999		EPA 8260B		13000	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Methy T-Butyl ether	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		40	E
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Methy T-Butyl ether	<10	U			ug/L	GW	10/19/1999		EPA 8260B		40	E
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Methylene Chloride	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Methylene Chloride	<10	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Styrene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		100	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Styrene	<18	U,M			ug/L	GW	10/19/1999		EPA 8260B		100	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Tetrachloroethene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Tetrachloroethene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
Blank-1	Trip blank10201999	10/20/1999	Tier 3	1		Toluene	<1	U			ug/L	GW	10/20/1999				790	E
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Toluene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		790	E
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Toluene	<10	9.9J			ug/L	GW	10/19/1999		EPA 8260B		790	E
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Total Purgeable Hydrocarbons	8090				ug/L	GW	10/19/1999					
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	trans-1,2-Dichloroethene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		100	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	trans-1,2-Dichloroethene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		100	A
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	trans-1,3-Dichloropropene	<1.0	U			ug/L	GW	10/19/1999		EPA 8260B		9	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	trans-1,3-Dichloropropene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		9	
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Trichloroethene	<1	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Trichloroethene	<10	U			ug/L	GW	10/19/1999		EPA 8260B		5	A
MW-107	MW-107	10/20/1999	Tier 3	1		TVAH					ug/L	GW	10/20/1999					
Blank-1	Trip blank10201999	10/20/1999	Tier 3	1		TVAH					ug/L	GW	10/20/1999					
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Vinyl Chloride	<1	U			ug/L	GW	10/19/1999		EPA 8260B		2	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Vinyl Chloride	<10	U			ug/L	GW	10/19/1999		EPA 8260B		2	A
MW-107	MW-107	10/20/1999	Tier 3	1		Xylenes	<1	U			ug/l	GW	10/20/1999				280	E
Blank-1	Trip blank10201999	10/20/1999	Tier 3	1		Xylenes	<1	U			ug/l	GW	10/20/1999				280	E
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	Xylenes, m + p	<1	U			ug/L	GW	10/19/1999		EPA 8260B		280	E
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Xylenes, m + p	882	D			ug/L	GW	10/19/1999		EPA 8260B		280	E
MW-107	MW 107	10/20/1999	Tier 2	1	008-99-58443	xylenes, o	<1	U			ug/L	GW	10/19/1999		EPA 8260B		280	E
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	xylenes, o	757	D			ug/L	GW	10/19/1999		EPA 8260B		280	E
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Acenaphthene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		1300	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Acenaphthylene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		52	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Anthracene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		43	S
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Benzo (a) anthracene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		2	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Benzo (a) pyrene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		5	A
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Benzo (b) Fluoranthene	<10	P,U			ug/L	GW	10/19/1999	mL	EPA 8270C		1.5	S,AA
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Benzo (g,h,i) perylene	<10	P,U			ug/L	GW	10/19/1999	mL	EPA 8270C		1.0	M
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Benzo (k) Fluoranthene	<10	P,U			ug/l	GW	10/19/1999	mL	EPA 8270C		1.0	M
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Chrysene	<10	P,U			ug/L	GW	10/19/1999	mL	EPA 8270C		1.6	S
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Dibenzo (a,h) anthracene	<10	U			ug/l	GW	10/19/1999	mL	EPA 8270C		2	M
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Fluoranthene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		210	S
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Fluorene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		880	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Indeno (1,2,3 - cd) pyrene	<10	U			ug/l	GW	10/19/1999	mL	EPA 8270C		2	M
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Naphthalene	19				ug/L	GW	10/19/1999	mL	EPA 8270C		520	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Phenanthrene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		52	
MW-5	MW 5	10/20/1999	Tier 2	1	015-99-58443	Pyrene	<10	U			ug/L	GW	10/19/1999	mL	EPA 8270C		140	S

Notes:

cm = centimeter
C = Celsius
ft = foot
ID = insufficient data to develop criterion.
IS = Insufficient data
mg/l = milligram/liter
msl = mean sea level
mV = millivolt
ng/L = nanograms/liter
S.U. = standard unit
ug/L = micrograms/liter
umhos = micromhos
PAH = polynuclear aromatic hydrocarbon
PCB = polychlorinated biphenyls
ORP = oxidation reduction potential

GW = groundwater
mS = millisiemens
NA = not analyzed
ND = not detected
MDL = method detection limit
EQL = estimated quantitation limit
dup = duplicate
M = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit.
TVAH = total volatile aromatic hydrocarbons
calc = calculated
GC FID = gas chromatograph flame inonization detector
mL = milliliter
fp = free product
If dup equals 1, then it is not a duplicate sample
If dup equals 2, then it is a duplicate sample
VOC = volatile organic compound

A = Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.
B = Inorganic - The analyte has been detected between the method detection limit and the reporting limit.
E = Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Nat Res & EPA Act, 1994 PA 451, as amended.
L = Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptic specified in pathway-specified rules.
J = All concentration detected equal to or greater than the method detection limit but less than the reporting limit.
M = Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection lim
N = The concentrations of all potential sources of nitrate-nitrogen (e.g., ammonia-N, nitrite-N, nitrate-N) in groundwater that is used as a source of drinking water shall not, when added together, exceed the nitrate drinking water criterion of 10,000 ug/L. Where leaching to groundwater is a relevant pathway, soil concentrations of all potential sources of nitrate-nitrogen shall not, when added together, exceed the nitrate drinking water protection criterion of 2.0E+5 ug/kg.
P = Analyte not detected above the method detection limit. The detection limit is above the criteria due to sample dilution
S = Criterion defaults to the Hazardous substance-specific water solubility limit.
U = The analyte was not detected at or above the reporting limit.
W = Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 ug/L. Concentrations of trihalomethanes soil shall be added together to determine compliance with the drinking water protection criterion of 1,600 ug/kg.
< = The analyte was not detected at or above the reporting limit
Residential Commercial I drinking water criteria source = MDEQ Part 201 generic cleanup criteria and screening levels

Table A-2
Groundwater Historical Results Summary

Location	Field ID	Collection Date	Data Level	Dup	Lab Sample Number	Parameter	Result	Flag	MDL	EQL	Units	Matrix	Event Date	Preparation Method	Analysis Method	Dilution	Residential Commercial Drinking Water	Residential Commercial Code

Results were compared to the MDEQ res/com I DW criteria. Exceedances are highlighted.

A-3

Historical Surface Water Results

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Weir #2	Weir #2	no	Tier 3		Flow	0.98789				cfs					9/1/1984	SW	9/1/1984
Location A	Location A	no	Tier 3		Oxygen	9.66				mg/L	32.8				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Oxygen	9.01				mg/L	0				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Oxygen	8.81				mg/L	49.2				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Oxygen	8.65				mg/L	65.6				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Oxygen	7.90				mg/L	164				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Oxygen	5.91				mg/L	295.2				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		pH	8.1				S.U.	65.6				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		pH	8.1				S.U.	295.2				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		pH	8.0				S.U.	164				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		pH	7.9				S.U.	0				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		pH	7.9				S.U.	32.8				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		pH	7.9				S.U.	49.2				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Specific Conductance	413				umhos/cm @25 degrees C	49.2				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Specific Conductance	395				umhos/cm @25 degrees C	164				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Specific Conductance	392				umhos/cm @25 degrees C	0				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Specific Conductance	378				umhos/cm @25 degrees C	65.6				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Specific Conductance	358				umhos/cm @25 degrees C	295.2				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Specific Conductance	356				umhos/cm @25 degrees C	32.8				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	5.0				Celcius	65.6				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	4.5				Celcius	82				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	4.0				Celcius	98.4				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	4.0				Celcius	164				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	4				Celcius	295.2				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	15				Celcius	0				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	15				Celcius	16.4				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	15				Celcius	26.2				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	13				Celcius	29.5				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	11				Celcius	32.8				9/21/1984	SW	9/21/1984
Location A	Location A	no	Tier 3		Temperature	6.0				Celcius	49.2				9/21/1984	SW	9/21/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.88308				cfs					9/25/1984	SW	9/25/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.56642				cfs					9/27/1984	SW	9/27/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.56642				cfs					9/29/1984	SW	9/29/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.50844				cfs					10/1/1984	SW	10/1/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.34788				cfs					10/8/1984	SW	10/8/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	2,4,6-Trichlorophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	2,4,6-Trichlorophenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	2,4-Dichlorophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	2,4-Dichlorophenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	2,4-Dimethylphenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	2,4-Dimethylphenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	2,4-Dinitrophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	2,4-Dinitrophenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	2-Chlorophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	2-Chlorophenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	2-Nitrophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	2-Nitrophenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	4,6-Dinitro-O-Cresol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	4,6-Dinitro-O-Cresol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	4-Nitrophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	4-Nitrophenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Alkalinity As CaCO3	90				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Alkalinity As CaCO3	90				mg/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Antimony, total	<2	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Antimony, total	<2	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Arsenic, total	<2	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Arsenic, total	<2	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Cadmium, total	<1	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Cadmium, total	<1	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Calcium, total	54000				ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Calcium, total	53000				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Chloride	15				mg/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Chloride	14				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Chromium, total	<20	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Chromium, total	<20	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	COD	<1	<			mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	COD	<1	<			mg/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Copper, total	50				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Copper, total	50				ug/L	200-ft				10/10/1984	SW	10/10/1984

Prepared By: ECB/SVF
Checked By: JSL

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Cyanide, total	<0.001	<			mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Cyanide, total	<0.001	<			mg/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Iron, total	340				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Iron, total	140				ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Lead, total	<50	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Lead, total	80000				ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Magnesium, total	20000				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Magnesium, total	19000				ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Mercury, total	<0.5	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Mercury, total	<0.5	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Nickel, total	30				ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Nickel, total	140				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Nitrogen, total, Kjeldahl	0.14				mg/l	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Nitrogen, total, Kjeldahl	0.12				mg/l	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	P-Chloro-M-Cresol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	P-Chloro-M-Cresol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Pentachlorophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Pentachlorophenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	pH	7.9				S.U.	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	pH	7.6				S.U.	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Phenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Phenol	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Potassium, total	3700				ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Potassium, total	3600				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Silver, total	<1	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Silver, total	<1	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Sodium, total	8500				ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Sodium, total	8100				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Specific Conductance	455				umhos/cm @25 degrees C	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Specific Conductance	500				umhos/cm @25 degrees C	200				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Sulfate	110				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Sulfate	110				mg/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	TOC as NPOC	3.3				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	TOC as NPOC	2.6				mg/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Total Hardness	210000				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Total Hardness	200000				ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Total Suspended Solids	<1	<			mg/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Total Suspended Solids	1				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100521	Zinc	<10	<			ug/L	200-ft				10/10/1984	SW	10/10/1984
Pit Station #1	Pit Station #1	no	Tier 2	4100520	Zinc	20				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	2,4,6-Trichlorophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	2,4,6-Trichlorophenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	2,4-Dichlorophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	2,4-Dichlorophenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	2,4-Dimethylphenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	2,4-Dimethylphenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	2,4-Dinitrophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	2,4-Dinitrophenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	2-Chlorophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	2-Chlorophenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	2-Nitrophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	2-Nitrophenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	4,6-Dinitro-O-Cresol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	4,6-Dinitro-O-Cresol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	4-Nitrophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	4-Nitrophenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Alkalinity As CaCO3	90				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Alkalinity As CaCO3	90				mg/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Antimony, total	<2	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Antimony, total	<2	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Arsenic, total	<2	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Arsenic, total	<2	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Cadmium, total	<1	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Cadmium, total	<1	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Calcium, total	52000				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Calcium, total	52000				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Chloride	14				mg/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Chloride	12				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Chromium, total	<20	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Chromium, total	<20	<			ug/L	200				10/10/1984	SW	10/10/1984

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Pit Station #2	Pit Station #2	no	Tier 2	4100519	COD	8				mg/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	COD	2				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Copper, total	80				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Copper, total	40				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Cyanide, total	<0.001	<			mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Cyanide, total	<0.001	<			mg/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Iron, total	380				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Iron, total	220				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Lead, total	<50	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Lead, total	<50	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Magnesium, total	19000				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Magnesium, total	19000				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Mercury, total	<0.5	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Mercury, total	<0.5	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Nickel, total	70				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Nickel, total	70				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Nitrogen, total, Kjeldahl	0.14				mg/l	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Nitrogen, total, Kjeldahl	0.12				mg/l	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	P-Chloro-M-Cresol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	P-Chloro-M-Cresol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Pentachlorophenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Pentachlorophenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	pH	8.0				S.U.	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	pH	7.8				S.U.	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Phenol	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Phenol	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Potassium, total	3700				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Potassium, total	3500				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Silver, total	<1	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Silver, total	1.5				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Sodium, total	8600				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Sodium, total	8000				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Specific Conductance	475				umhos/cm @25 degrees C	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Specific Conductance	460				umhos/cm @25 degrees C	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Sulfate	120				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Sulfate	110				mg/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	TOC as NPOC	3.0				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	TOC as NPOC	2.6				mg/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Total Hardness	220000				ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Total Hardness	210000				ug/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Total Suspended Solids	2				mg/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Total Suspended Solids	2				mg/L	200				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100518	Zinc	<10	<			ug/L	0				10/10/1984	SW	10/10/1984
Pit Station #2	Pit Station #2	no	Tier 2	4100519	Zinc	<10	<			ug/L	200				10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	2,4,6-Trichlorophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	2,4-Dichlorophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	2,4-Dimethylphenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	2,4-Dinitrophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	2-Chlorophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	2-Nitrophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	4,6-Dinitro-O-Cresol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	4-Nitrophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Alkalinity As CaCO3	80				mg/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Antimony, total	<2	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Arsenic, total	<2	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Cadmium, total	<1	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Calcium, total	51000				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Chloride	12				mg/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Chromium, total	<20	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	COD	8				mg/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Copper, total	40				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Cyanide, total	0.001				mg/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Iron, total	310				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Lead, total	<50	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Magnesium, total	19000				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Mercury, total	<0.5	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Nickel, total	100				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Nitrogen, total, Kjeldahl	0.30				mg/l					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	P-Chloro-M-Cresol	<10	<			ug/L					10/10/1984	SW	10/10/1984

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Weir #1	Weir #1	no	Tier 2	4100522	Pentachlorophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	pH	7.6				S.U.					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Phenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Potassium, total	3900				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Silver, total	1.7				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Sodium, total	8900				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Specific Conductance	460				umhos/cm @25 degrees C					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Sulfate	110				mg/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	TOC as NPOC	3.8				mg/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Total Hardness	200000				ug/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Total Suspended Solids	1				mg/L					10/10/1984	SW	10/10/1984
Weir #1	Weir #1	no	Tier 2	4100522	Zinc	20				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	2,4,6-Trichlorophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	2,4-Dichlorophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	2,4-Dimethylphenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	2,4-Dinitrophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	2-Chlorophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	2-Nitrophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	4,6-Dinitro-O-Cresol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	4-Nitrophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Alkalinity As CaCO3	90				mg/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Antimony, total	<2	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Arsenic, total	<2	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Cadmium, total	<1	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Calcium, total	52000				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Chloride	12				mg/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Chromium, total	<20	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	COD	2				mg/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Copper, total	30				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Cyanide, total	<0.001	<			mg/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.42593				cfs					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Iron, total	280				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Lead, total	<50	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Magnesium, total	19000				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Mercury, total	<0.5	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Nickel, total	<20	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Nitrogen, total, Kjeldahl	0.22				mg/l					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	P-Chloro-M-Cresol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Pentachlorophenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	pH	7.8				S.U.					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Phenol	<10	<			ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Potassium, total	3800				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Silver, total	1.3				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Sodium, total	8200				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Specific Conductance	480				umhos/cm @25 degrees C					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Sulfate	100				mg/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	TOC as NPOC	3.9				mg/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Total Hardness	200000				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Total Suspended Solids	3				mg/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 2	4100523	Zinc	10				ug/L					10/10/1984	SW	10/10/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.55081				cfs					10/15/1984	SW	10/15/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.98789				cfs					10/18/1984	SW	10/18/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.50844				cfs					10/20/1984	SW	10/20/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.34788				cfs					10/22/1984	SW	10/22/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.34788				cfs					10/24/1984	SW	10/24/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.34788				cfs					10/25/1984	SW	10/25/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.4683				cfs					10/27/1984	SW	10/27/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.78273				cfs					10/28/1984	SW	10/28/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.7359				cfs					10/29/1984	SW	10/29/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.68684				cfs					10/30/1984	SW	10/30/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.59541				cfs					11/4/1984	SW	11/4/1984
Weir #2	Weir #2	no	Tier 3		Flow	0.59541				cfs					11/7/1984	SW	11/7/1984
Outfall	Outfall	no	Tier 3		A. Cyanide	10				mg/L					1/1/1991	SW	1/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					1/1/1991	SW	1/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	60				ug/L					1/1/1991	SW	1/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	30				mg/L					1/1/1991	SW	1/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	620				ug/L					1/1/1991	SW	1/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	50				mg/L					2/1/1991	SW	2/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					2/1/1991	SW	2/1/1991

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 3		Copper, total	120				ug/L					2/1/1991	SW	2/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	50				mg/L					2/1/1991	SW	2/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	830				ug/L					2/1/1991	SW	2/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	40				mg/L					3/1/1991	SW	3/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					3/1/1991	SW	3/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	120				ug/L					3/1/1991	SW	3/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	20				mg/L					3/1/1991	SW	3/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	760				ug/L					3/1/1991	SW	3/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	20				mg/L					4/1/1991	SW	4/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					4/1/1991	SW	4/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	50				ug/L					4/1/1991	SW	4/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	20				mg/L					4/1/1991	SW	4/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	330				ug/L					4/1/1991	SW	4/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	ND				mg/L					5/1/1991	SW	5/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					5/1/1991	SW	5/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	90				ug/L					5/1/1991	SW	5/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	20				mg/L					5/1/1991	SW	5/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	720				ug/L					5/1/1991	SW	5/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	20				mg/L					6/1/1991	SW	6/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					6/1/1991	SW	6/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	60				ug/L					6/1/1991	SW	6/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	20				mg/L					6/1/1991	SW	6/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	700				ug/L					6/1/1991	SW	6/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	NA				mg/L					7/1/1991	SW	7/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					7/1/1991	SW	7/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					7/1/1991	SW	7/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	NA				mg/L					7/1/1991	SW	7/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	620				ug/L					7/1/1991	SW	7/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	ND				mg/L					8/1/1991	SW	8/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					8/1/1991	SW	8/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					8/1/1991	SW	8/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	ND				mg/L					8/1/1991	SW	8/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	520				ug/L					8/1/1991	SW	8/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	ND				mg/L					9/1/1991	SW	9/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					9/1/1991	SW	9/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					9/1/1991	SW	9/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	ND				mg/L					9/1/1991	SW	9/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	520				ug/L					9/1/1991	SW	9/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	ND				mg/L					10/1/1991	SW	10/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					10/1/1991	SW	10/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					10/1/1991	SW	10/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	ND				mg/L					10/1/1991	SW	10/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	560				ug/L					10/1/1991	SW	10/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	ND				mg/L					11/1/1991	SW	11/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					11/1/1991	SW	11/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	40				ug/L					11/1/1991	SW	11/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	ND				mg/L					11/1/1991	SW	11/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	650				ug/L					11/1/1991	SW	11/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	ND				mg/L					12/1/1991	SW	12/1/1991
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					12/1/1991	SW	12/1/1991
Outfall	Outfall	no	Tier 3		Copper, total	50				ug/L					12/1/1991	SW	12/1/1991
Outfall	Outfall	no	Tier 3		Cyanide, total	34				mg/L					12/1/1991	SW	12/1/1991
Outfall	Outfall	no	Tier 3		Nickel, total	640				ug/L					12/1/1991	SW	12/1/1991
Outfall	Outfall	no	Tier 3		A. Cyanide	NA				mg/L					1/1/1992	SW	1/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					1/1/1992	SW	1/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	60				ug/L					1/1/1992	SW	1/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	NA				mg/L					1/1/1992	SW	1/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	720				ug/L					1/1/1992	SW	1/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	<5	<			mg/L					2/1/1992	SW	2/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					2/1/1992	SW	2/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	50				ug/L					2/1/1992	SW	2/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	<5	<			mg/L					2/1/1992	SW	2/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	700				ug/L					2/1/1992	SW	2/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	20				mg/L					3/1/1992	SW	3/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					3/1/1992	SW	3/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	50				ug/L					3/1/1992	SW	3/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	20				mg/L					3/1/1992	SW	3/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	660				ug/L					3/1/1992	SW	3/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	20				mg/L					4/1/1992	SW	4/1/1992

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					4/1/1992	SW	4/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	NA				ug/L					4/1/1992	SW	4/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	20				mg/L					4/1/1992	SW	4/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	NA				ug/L					4/1/1992	SW	4/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	<5	<			mg/L					5/1/1992	SW	5/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					5/1/1992	SW	5/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					5/1/1992	SW	5/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	10				mg/L					5/1/1992	SW	5/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	600				ug/L					5/1/1992	SW	5/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	20				mg/L					6/1/1992	SW	6/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					6/1/1992	SW	6/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					6/1/1992	SW	6/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	20				mg/L					6/1/1992	SW	6/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	650				ug/L					6/1/1992	SW	6/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	8				mg/L					7/1/1992	SW	7/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					7/1/1992	SW	7/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	50				ug/L					7/1/1992	SW	7/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	8				mg/L					7/1/1992	SW	7/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	580				ug/L					7/1/1992	SW	7/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	7				mg/L					9/1/1992	SW	9/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					9/1/1992	SW	9/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					9/1/1992	SW	9/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	7				mg/L					9/1/1992	SW	9/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	500				ug/L					9/1/1992	SW	9/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	12				mg/L					10/1/1992	SW	10/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					10/1/1992	SW	10/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					10/1/1992	SW	10/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	12				mg/L					10/1/1992	SW	10/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	510				ug/L					10/1/1992	SW	10/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	12				mg/L					11/1/1992	SW	11/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					11/1/1992	SW	11/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					11/1/1992	SW	11/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	12				mg/L					11/1/1992	SW	11/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	520				ug/L					11/1/1992	SW	11/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	22				mg/L					12/1/1992	SW	12/1/1992
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					12/1/1992	SW	12/1/1992
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					12/1/1992	SW	12/1/1992
Outfall	Outfall	no	Tier 3		Cyanide, total	22				mg/L					12/1/1992	SW	12/1/1992
Outfall	Outfall	no	Tier 3		Nickel, total	530				ug/L					12/1/1992	SW	12/1/1992
Outfall	Outfall	no	Tier 3		A. Cyanide	110				mg/L					1/1/1993	SW	1/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					1/1/1993	SW	1/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					1/1/1993	SW	1/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	110				mg/L					1/1/1993	SW	1/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	580				ug/L					1/1/1993	SW	1/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	130				mg/L					2/1/1993	SW	2/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					2/1/1993	SW	2/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					2/1/1993	SW	2/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	130				mg/L					2/1/1993	SW	2/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	560				ug/L					2/1/1993	SW	2/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	20				mg/L					3/1/1993	SW	3/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					3/1/1993	SW	3/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					3/1/1993	SW	3/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	20				mg/L					3/1/1993	SW	3/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	520				ug/L					3/1/1993	SW	3/1/1993
Confluence	Confluence	no	Tier 3		A. Cyanide	<5	<			mg/L					4/1/1993	SW	4/1/1993
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					4/1/1993	SW	4/1/1993
Confluence	Confluence	no	Tier 3		Copper, total	10				ug/L					4/1/1993	SW	4/1/1993
Confluence	Confluence	no	Tier 3		Cyanide, total	<5	<			mg/L					4/1/1993	SW	4/1/1993
Confluence	Confluence	no	Tier 3		Nickel, total	200				ug/L					4/1/1993	SW	4/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	4.2				mg/L					4/1/1993	SW	4/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					4/1/1993	SW	4/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					4/1/1993	SW	4/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	11				mg/L					4/1/1993	SW	4/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	440				ug/L					4/1/1993	SW	4/1/1993
Confluence	Confluence	no	Tier 3		A. Cyanide	<5	<			mg/L					5/1/1993	SW	5/1/1993
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					5/1/1993	SW	5/1/1993
Confluence	Confluence	no	Tier 3		Copper, total	10				ug/L					5/1/1993	SW	5/1/1993
Confluence	Confluence	no	Tier 3		Cyanide, total	<5	<			mg/L					5/1/1993	SW	5/1/1993
Confluence	Confluence	no	Tier 3		Nickel, total	140				ug/L					5/1/1993	SW	5/1/1993

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 3		A. Cyanide	<5	<			mg/L					5/1/1993	SW	5/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	2				ug/L					5/1/1993	SW	5/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					5/1/1993	SW	5/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	<5	<			mg/L					5/1/1993	SW	5/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	390				ug/L					5/1/1993	SW	5/1/1993
WLR-1	WLR-1	no	Tier 3		A. Cyanide	<5	<			mg/L					5/1/1993	SW	5/1/1993
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					5/1/1993	SW	5/1/1993
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					5/1/1993	SW	5/1/1993
WLR-1	WLR-1	no	Tier 3		Cyanide, total	<5	<			mg/L					5/1/1993	SW	5/1/1993
WLR-1	WLR-1	no	Tier 3		Nickel, total	150				ug/L					5/1/1993	SW	5/1/1993
Confluence	Confluence	no	Tier 3		A. Cyanide	16				mg/L					6/1/1993	SW	6/1/1993
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					6/1/1993	SW	6/1/1993
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					6/1/1993	SW	6/1/1993
Confluence	Confluence	no	Tier 3		Cyanide, total	16				mg/L					6/1/1993	SW	6/1/1993
Confluence	Confluence	no	Tier 3		Nickel, total	140				ug/L					6/1/1993	SW	6/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	<10	<			mg/L					6/1/1993	SW	6/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	4				ug/L					6/1/1993	SW	6/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	30				ug/L					6/1/1993	SW	6/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	<10	<			mg/L					6/1/1993	SW	6/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	410				ug/L					6/1/1993	SW	6/1/1993
WLR-1	WLR-1	no	Tier 3		A. Cyanide	13				mg/L					6/1/1993	SW	6/1/1993
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					6/1/1993	SW	6/1/1993
WLR-1	WLR-1	no	Tier 3		Copper, total	10				ug/L					6/1/1993	SW	6/1/1993
WLR-1	WLR-1	no	Tier 3		Cyanide, total	13				mg/L					6/1/1993	SW	6/1/1993
WLR-1	WLR-1	no	Tier 3		Nickel, total	150				ug/L					6/1/1993	SW	6/1/1993
Confluence	Confluence	no	Tier 3		A. Cyanide	13				mg/L					7/1/1993	SW	7/1/1993
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					7/1/1993	SW	7/1/1993
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					7/1/1993	SW	7/1/1993
Confluence	Confluence	no	Tier 3		Cyanide, total	13				mg/L					7/1/1993	SW	7/1/1993
Confluence	Confluence	no	Tier 3		Nickel, total	80				ug/L					7/1/1993	SW	7/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	17				mg/L					7/1/1993	SW	7/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	2				ug/L					7/1/1993	SW	7/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					7/1/1993	SW	7/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	17				mg/L					7/1/1993	SW	7/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	340				ug/L					7/1/1993	SW	7/1/1993
WLR-1	WLR-1	no	Tier 3		A. Cyanide	9				mg/L					7/1/1993	SW	7/1/1993
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					7/1/1993	SW	7/1/1993
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					7/1/1993	SW	7/1/1993
WLR-1	WLR-1	no	Tier 3		Cyanide, total	9				mg/L					7/1/1993	SW	7/1/1993
WLR-1	WLR-1	no	Tier 3		Nickel, total	80				ug/L					7/1/1993	SW	7/1/1993
Confluence	Confluence	no	Tier 3		A. Cyanide	6				mg/L					8/1/1993	SW	8/1/1993
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					8/1/1993	SW	8/1/1993
Confluence	Confluence	no	Tier 3		Copper, total	10				ug/L					8/1/1993	SW	8/1/1993
Confluence	Confluence	no	Tier 3		Cyanide, total	6				mg/L					8/1/1993	SW	8/1/1993
Confluence	Confluence	no	Tier 3		Nickel, total	60				ug/L					8/1/1993	SW	8/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	11				mg/L					8/1/1993	SW	8/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	2				ug/L					8/1/1993	SW	8/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					8/1/1993	SW	8/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	11				mg/L					8/1/1993	SW	8/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	130				ug/L					8/1/1993	SW	8/1/1993
WLR-1	WLR-1	no	Tier 3		A. Cyanide	7				mg/L					8/1/1993	SW	8/1/1993
WLR-1	WLR-1	no	Tier 3		Arsenic, total	4				ug/L					8/1/1993	SW	8/1/1993
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					8/1/1993	SW	8/1/1993
WLR-1	WLR-1	no	Tier 3		Cyanide, total	7				mg/L					8/1/1993	SW	8/1/1993
WLR-1	WLR-1	no	Tier 3		Nickel, total	10				ug/L					8/1/1993	SW	8/1/1993
Confluence	Confluence	no	Tier 3		A. Cyanide	<5	<			mg/L					9/1/1993	SW	9/1/1993
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					9/1/1993	SW	9/1/1993
Confluence	Confluence	no	Tier 3		Copper, total	10				ug/L					9/1/1993	SW	9/1/1993
Confluence	Confluence	no	Tier 3		Cyanide, total	<5	<			mg/L					9/1/1993	SW	9/1/1993
Confluence	Confluence	no	Tier 3		Nickel, total	60				ug/L					9/1/1993	SW	9/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	9				mg/L					9/1/1993	SW	9/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	4				ug/L					9/1/1993	SW	9/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					9/1/1993	SW	9/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	9				mg/L					9/1/1993	SW	9/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	150				ug/L					9/1/1993	SW	9/1/1993
WLR-1	WLR-1	no	Tier 3		A. Cyanide	5				mg/L					9/1/1993	SW	9/1/1993
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					9/1/1993	SW	9/1/1993
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					9/1/1993	SW	9/1/1993
WLR-1	WLR-1	no	Tier 3		Cyanide, total	5				mg/L					9/1/1993	SW	9/1/1993

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
WLR-1	WLR-1	no	Tier 3		Nickel, total	60				ug/L					9/1/1993	SW	9/1/1993
Confluence	Confluence	no	Tier 3		A. Cyanide	<5	<			mg/L					10/1/1993	SW	10/1/1993
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					10/1/1993	SW	10/1/1993
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					10/1/1993	SW	10/1/1993
Confluence	Confluence	no	Tier 3		Cyanide, total	<5	<			mg/L					10/1/1993	SW	10/1/1993
Confluence	Confluence	no	Tier 3		Nickel, total	50				ug/L					10/1/1993	SW	10/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	17				mg/L					10/1/1993	SW	10/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					10/1/1993	SW	10/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					10/1/1993	SW	10/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	17				mg/L					10/1/1993	SW	10/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	250				ug/L					10/1/1993	SW	10/1/1993
WLR-1	WLR-1	no	Tier 3		A. Cyanide	6				mg/L					10/1/1993	SW	10/1/1993
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					10/1/1993	SW	10/1/1993
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					10/1/1993	SW	10/1/1993
WLR-1	WLR-1	no	Tier 3		Cyanide, total	6				mg/L					10/1/1993	SW	10/1/1993
WLR-1	WLR-1	no	Tier 3		Nickel, total	50				ug/L					10/1/1993	SW	10/1/1993
Confluence	Confluence	no	Tier 3		A. Cyanide	<5	<			mg/L					11/1/1993	SW	11/1/1993
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					11/1/1993	SW	11/1/1993
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					11/1/1993	SW	11/1/1993
Confluence	Confluence	no	Tier 3		Cyanide, total	12				mg/L					11/1/1993	SW	11/1/1993
Confluence	Confluence	no	Tier 3		Nickel, total	130				ug/L					11/1/1993	SW	11/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	5				mg/L					11/1/1993	SW	11/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					11/1/1993	SW	11/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					11/1/1993	SW	11/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	15				mg/L					11/1/1993	SW	11/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	380				ug/L					11/1/1993	SW	11/1/1993
WLR-1	WLR-1	no	Tier 3		A. Cyanide	6				mg/L					11/1/1993	SW	11/1/1993
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					11/1/1993	SW	11/1/1993
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					11/1/1993	SW	11/1/1993
WLR-1	WLR-1	no	Tier 3		Cyanide, total	6				mg/L					11/1/1993	SW	11/1/1993
WLR-1	WLR-1	no	Tier 3		Nickel, total	130				ug/L					11/1/1993	SW	11/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	10				mg/L					12/1/1993	SW	12/1/1993
Outfall	Outfall	no	Tier 3		Arsenic, total	4				ug/L					12/1/1993	SW	12/1/1993
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					12/1/1993	SW	12/1/1993
Outfall	Outfall	no	Tier 3		Cyanide, total	7				mg/L					12/1/1993	SW	12/1/1993
Outfall	Outfall	no	Tier 3		Nickel, total	380				ug/L					12/1/1993	SW	12/1/1993
Outfall	Outfall	no	Tier 3		A. Cyanide	13				mg/L					1/1/1994	SW	1/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	2				ug/L					1/1/1994	SW	1/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					1/1/1994	SW	1/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	19				mg/L					1/1/1994	SW	1/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	410				ug/L					1/1/1994	SW	1/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	18				mg/L					1/1/1994	SW	1/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					1/1/1994	SW	1/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	10				ug/L					1/1/1994	SW	1/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	18				mg/L					1/1/1994	SW	1/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	370				ug/L					1/1/1994	SW	1/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	14				mg/L					2/1/1994	SW	2/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					2/1/1994	SW	2/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					2/1/1994	SW	2/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	14				mg/L					2/1/1994	SW	2/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	430				ug/L					2/1/1994	SW	2/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	15				mg/L					2/1/1994	SW	2/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					2/1/1994	SW	2/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	10				ug/L					2/1/1994	SW	2/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	15				mg/L					2/1/1994	SW	2/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	360				ug/L					2/1/1994	SW	2/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	9				mg/L					3/1/1994	SW	3/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					3/1/1994	SW	3/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					3/1/1994	SW	3/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	9				mg/L					3/1/1994	SW	3/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	350				ug/L					3/1/1994	SW	3/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	12				mg/L					3/1/1994	SW	3/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					3/1/1994	SW	3/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					3/1/1994	SW	3/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	12				mg/L					3/1/1994	SW	3/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	360				ug/L					3/1/1994	SW	3/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	8				mg/L					4/1/1994	SW	4/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	2				ug/L					4/1/1994	SW	4/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					4/1/1994	SW	4/1/1994

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 3		Cyanide, total	8				mg/L					4/1/1994	SW	4/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	400				ug/L					4/1/1994	SW	4/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	<5	<			mg/L					4/1/1994	SW	4/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	3				ug/L					4/1/1994	SW	4/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					4/1/1994	SW	4/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	<5	<			mg/L					4/1/1994	SW	4/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	280				ug/L					4/1/1994	SW	4/1/1994
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					5/1/1994	SW	5/1/1994
Confluence	Confluence	no	Tier 3		Arsenic, total	3				ug/L					5/1/1994	SW	5/1/1994
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					5/1/1994	SW	5/1/1994
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					5/1/1994	SW	5/1/1994
Confluence	Confluence	no	Tier 3		Nickel, total	80				ug/L					5/1/1994	SW	5/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	10				mg/L					5/1/1994	SW	5/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					5/1/1994	SW	5/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					5/1/1994	SW	5/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	19				mg/L					5/1/1994	SW	5/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	350				ug/L					5/1/1994	SW	5/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					5/1/1994	SW	5/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					5/1/1994	SW	5/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					5/1/1994	SW	5/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					5/1/1994	SW	5/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	90				ug/L					5/1/1994	SW	5/1/1994
Location A	HP-3	no	Tier 3		Copper	70				ug/L	164				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Copper	57				ug/L	131.2				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Copper	32				ug/L	98.4				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Copper	12				ug/L	65.6				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Copper	13				ug/L	32.8				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Copper	11				ug/L	0				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Nickel	1000				ug/L	164				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Nickel	990				ug/L	131.2				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Nickel	910				ug/L	98.4				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Nickel	510				ug/L	65.6				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Nickel	520				ug/L	32.8				5/24/1994	SW	5/24/1994
Location A	HP-3	no	Tier 3		Nickel	460				ug/L	0				5/24/1994	SW	5/24/1994
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					6/1/1994	SW	6/1/1994
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					6/1/1994	SW	6/1/1994
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					6/1/1994	SW	6/1/1994
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					6/1/1994	SW	6/1/1994
Confluence	Confluence	no	Tier 3		Nickel, total	80				ug/L					6/1/1994	SW	6/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	<10	<			mg/L					6/1/1994	SW	6/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	3				ug/L					6/1/1994	SW	6/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					6/1/1994	SW	6/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	<10	<			mg/L					6/1/1994	SW	6/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	230				ug/L					6/1/1994	SW	6/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					6/1/1994	SW	6/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	NA				ug/L					6/1/1994	SW	6/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					6/1/1994	SW	6/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					6/1/1994	SW	6/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	80				ug/L					6/1/1994	SW	6/1/1994
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					7/1/1994	SW	7/1/1994
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					7/1/1994	SW	7/1/1994
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					7/1/1994	SW	7/1/1994
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					7/1/1994	SW	7/1/1994
Confluence	Confluence	no	Tier 3		Nickel, total	80				ug/L					7/1/1994	SW	7/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	7				mg/L					7/1/1994	SW	7/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					7/1/1994	SW	7/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	<10	<			ug/L					7/1/1994	SW	7/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	7				mg/L					7/1/1994	SW	7/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	110				ug/L					7/1/1994	SW	7/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					7/1/1994	SW	7/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	NA				ug/L					7/1/1994	SW	7/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					7/1/1994	SW	7/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					7/1/1994	SW	7/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	90				ug/L					7/1/1994	SW	7/1/1994
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					8/1/1994	SW	8/1/1994
Confluence	Confluence	no	Tier 3		Arsenic, total	<1	<			ug/L					8/1/1994	SW	8/1/1994
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					8/1/1994	SW	8/1/1994
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					8/1/1994	SW	8/1/1994
Confluence	Confluence	no	Tier 3		Nickel, total	<20	<			ug/L					8/1/1994	SW	8/1/1994

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 3		A. Cyanide	<10	<			mg/L					8/1/1994	SW	8/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					8/1/1994	SW	8/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					8/1/1994	SW	8/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	<10	<			mg/L					8/1/1994	SW	8/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	140				ug/L					8/1/1994	SW	8/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					8/1/1994	SW	8/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	NA				ug/L					8/1/1994	SW	8/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					8/1/1994	SW	8/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					8/1/1994	SW	8/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	30				ug/L					8/1/1994	SW	8/1/1994
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					9/1/1994	SW	9/1/1994
Confluence	Confluence	no	Tier 3		Arsenic, total	2				ug/L					9/1/1994	SW	9/1/1994
Confluence	Confluence	no	Tier 3		Copper, total	10				ug/L					9/1/1994	SW	9/1/1994
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					9/1/1994	SW	9/1/1994
Confluence	Confluence	no	Tier 3		Nickel, total	50				ug/L					9/1/1994	SW	9/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	<10	<			mg/L					9/1/1994	SW	9/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	1				ug/L					9/1/1994	SW	9/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					9/1/1994	SW	9/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	<10	<			mg/L					9/1/1994	SW	9/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	120				ug/L					9/1/1994	SW	9/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					9/1/1994	SW	9/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	2				ug/L					9/1/1994	SW	9/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					9/1/1994	SW	9/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					9/1/1994	SW	9/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	50				ug/L					9/1/1994	SW	9/1/1994
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					10/1/1994	SW	10/1/1994
Confluence	Confluence	no	Tier 3		Arsenic, total	<1	<			ug/L					10/1/1994	SW	10/1/1994
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					10/1/1994	SW	10/1/1994
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					10/1/1994	SW	10/1/1994
Confluence	Confluence	no	Tier 3		Nickel, total	60				ug/L					10/1/1994	SW	10/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	10				mg/L					10/1/1994	SW	10/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	<1	<			ug/L					10/1/1994	SW	10/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	<10	<			ug/L					10/1/1994	SW	10/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	<10	<			mg/L					10/1/1994	SW	10/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	160				ug/L					10/1/1994	SW	10/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					10/1/1994	SW	10/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<1	<			ug/L					10/1/1994	SW	10/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					10/1/1994	SW	10/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					10/1/1994	SW	10/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	90				ug/L					10/1/1994	SW	10/1/1994
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					11/1/1994	SW	11/1/1994
Confluence	Confluence	no	Tier 3		Arsenic, total	<1	<			ug/L					11/1/1994	SW	11/1/1994
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					11/1/1994	SW	11/1/1994
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					11/1/1994	SW	11/1/1994
Confluence	Confluence	no	Tier 3		Nickel, total	70				ug/L					11/1/1994	SW	11/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	<10	<			mg/L					11/1/1994	SW	11/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	<1	<			ug/L					11/1/1994	SW	11/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	<10	<			ug/L					11/1/1994	SW	11/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	<10	<			mg/L					11/1/1994	SW	11/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	230				ug/L					11/1/1994	SW	11/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					11/1/1994	SW	11/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<1	<			ug/L					11/1/1994	SW	11/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					11/1/1994	SW	11/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					11/1/1994	SW	11/1/1994
WLR-1	WLR-1	no	Tier 3		Nickel, total	70				ug/L					11/1/1994	SW	11/1/1994
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					12/1/1994	SW	12/1/1994
Confluence	Confluence	no	Tier 3		Arsenic, total	<1	<			ug/L					12/1/1994	SW	12/1/1994
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					12/1/1994	SW	12/1/1994
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					12/1/1994	SW	12/1/1994
Confluence	Confluence	no	Tier 3		Nickel, total	140				ug/L					12/1/1994	SW	12/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	<10	<			mg/L					12/1/1994	SW	12/1/1994
Outfall	Outfall	no	Tier 3		Arsenic, total	<1	<			ug/L					12/1/1994	SW	12/1/1994
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					12/1/1994	SW	12/1/1994
Outfall	Outfall	no	Tier 3		Cyanide, total	<10	<			mg/L					12/1/1994	SW	12/1/1994
Outfall	Outfall	no	Tier 3		Nickel, total	290				ug/L					12/1/1994	SW	12/1/1994
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					12/1/1994	SW	12/1/1994
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<1	<			ug/L					12/1/1994	SW	12/1/1994
WLR-1	WLR-1	no	Tier 3		Copper, total	10				ug/L					12/1/1994	SW	12/1/1994
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					12/1/1994	SW	12/1/1994

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
WLR-1	WLR-1	no	Tier 3		Nickel, total	170				ug/L					12/1/1994	SW	12/1/1994
Outfall	Outfall	no	Tier 3		A. Cyanide	ND				mg/L					1/1/1995	SW	1/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	NA				ug/L					1/1/1995	SW	1/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					1/1/1995	SW	1/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	ND				mg/L					1/1/1995	SW	1/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	160				ug/L					1/1/1995	SW	1/1/1995
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					2/1/1995	SW	2/1/1995
Confluence	Confluence	no	Tier 3		Arsenic, total	ND				ug/L					2/1/1995	SW	2/1/1995
Confluence	Confluence	no	Tier 3		Copper, total	ND				ug/L					2/1/1995	SW	2/1/1995
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					2/1/1995	SW	2/1/1995
Confluence	Confluence	no	Tier 3		Nickel, total	300				ug/L					2/1/1995	SW	2/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	ND				mg/L					2/1/1995	SW	2/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	2				ug/L					2/1/1995	SW	2/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	60				ug/L					2/1/1995	SW	2/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	ND				mg/L					2/1/1995	SW	2/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	280				ug/L					2/1/1995	SW	2/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					2/1/1995	SW	2/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	ND				ug/L					2/1/1995	SW	2/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	ND				ug/L					2/1/1995	SW	2/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					2/1/1995	SW	2/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	310				ug/L					2/1/1995	SW	2/1/1995
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					3/1/1995	SW	3/1/1995
Confluence	Confluence	no	Tier 3		Arsenic, total	5				ug/L					3/1/1995	SW	3/1/1995
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					3/1/1995	SW	3/1/1995
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					3/1/1995	SW	3/1/1995
Confluence	Confluence	no	Tier 3		Nickel, total	220				ug/L					3/1/1995	SW	3/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	6.7				mg/L					3/1/1995	SW	3/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	<5	<			ug/L					3/1/1995	SW	3/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	20				ug/L					3/1/1995	SW	3/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	6.7				mg/L					3/1/1995	SW	3/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	170				ug/L					3/1/1995	SW	3/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					3/1/1995	SW	3/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					3/1/1995	SW	3/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					3/1/1995	SW	3/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					3/1/1995	SW	3/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	290				ug/L					3/1/1995	SW	3/1/1995
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					4/1/1995	SW	4/1/1995
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					4/1/1995	SW	4/1/1995
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					4/1/1995	SW	4/1/1995
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					4/1/1995	SW	4/1/1995
Confluence	Confluence	no	Tier 3		Nickel, total	150				ug/L					4/1/1995	SW	4/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	7				mg/L					4/1/1995	SW	4/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	<5	<			ug/L					4/1/1995	SW	4/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	<10	<			ug/L					4/1/1995	SW	4/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	13				mg/L					4/1/1995	SW	4/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	260				ug/L					4/1/1995	SW	4/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					4/1/1995	SW	4/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					4/1/1995	SW	4/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					4/1/1995	SW	4/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					4/1/1995	SW	4/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	180				ug/L					4/1/1995	SW	4/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	9				mg/L					5/1/1995	SW	5/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					5/1/1995	SW	5/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	80				ug/L					5/1/1995	SW	5/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	14				mg/L					5/1/1995	SW	5/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	270				ug/L					5/1/1995	SW	5/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					5/1/1995	SW	5/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					5/1/1995	SW	5/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					5/1/1995	SW	5/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					5/1/1995	SW	5/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	90				ug/L					5/1/1995	SW	5/1/1995
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					6/1/1995	SW	6/1/1995
Confluence	Confluence	no	Tier 3		Arsenic, total	5.8				ug/L					6/1/1995	SW	6/1/1995
Confluence	Confluence	no	Tier 3		Copper, total	<10	<			ug/L					6/1/1995	SW	6/1/1995
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					6/1/1995	SW	6/1/1995
Confluence	Confluence	no	Tier 3		Nickel, total	90				ug/L					6/1/1995	SW	6/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	15				mg/L					6/1/1995	SW	6/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	3.1				ug/L					6/1/1995	SW	6/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	10				ug/L					6/1/1995	SW	6/1/1995

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 3		Cyanide, total	17				mg/L					6/1/1995	SW	6/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	190				ug/L					6/1/1995	SW	6/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					6/1/1995	SW	6/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	3.4				ug/L					6/1/1995	SW	6/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					6/1/1995	SW	6/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					6/1/1995	SW	6/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	90				ug/L					6/1/1995	SW	6/1/1995
Outfall	Outfall	no	Tier 3		Temperature	22.78				Celcius					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		A. Cyanide	FCN				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Antimony, total	36				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Arsenic, total	1400				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Cadmium, total	<200	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Chloride	20				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Chlorophyll-A	2				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Chromium, total	<1000	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Copper, total	4600				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Cyanide, total	0.01				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Dissolved Oxygen	7.8				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Iron, total	480				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Lead, total	<1000	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Mercury, total	<200	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nickel, total	230000				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nitrogen Kjeldahl	0.48				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nitrogen, Ammonia	<0.1 DL	<			mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nitrogen, Nitrate	6.1				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nitrogen, Nitrite	0.05				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Ortho Phosphate	<0.01	<			mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		pH	7.7				S.U.					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Phosphorus, total	0.01				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Selenium, total	<1000	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Silver, total	<500	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Specific Conductance	613				umhos/cm @25 degrees C					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Sulfate	130				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		TOC as NPOC	4.4				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Total Dissolved Solids	470				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Total Hardness	220000				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Total Suspended Solids	6				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Zinc	8.6				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	FCN				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Antimony, total	34				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	1.4				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Cadmium, total	<0.2	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Chloride	20				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Chlorophyll-A	6				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Chromium, total	<1.0	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Copper, total	4.9				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	0.011				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Dissolved Oxygen	6.4				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Iron, total	270				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Lead, total	<1.0	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Mercury, total	<0.2	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nickel, total	130				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nitrogen Kjeldahl	0.66				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nitrogen, Ammonia	<0.1 DL	<			mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nitrogen, nitrate plus nitrite	6				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nitrogen, Nitrite	<0.01	<			mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Ortho Phosphate	<0.01	<			mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		pH	7.6				S.U.					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Phosphorus, total	0.1				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Selenium, total	<1.0	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Silver, total	<.5	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Specific Conductance	613				umhos/cm @25 degrees C					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Sulfate	140				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		TOC as NPOC	3.9				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Total Dissolved Solids	470				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Total Hardness	215000				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Total Suspended Solids	<4	<			mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Zinc	<4	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		A. Cyanide	FCN				mg/L					6/21/1995	SW	6/21/1995

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Pit	Pit Water	no	Tier 3		Antimony, total	35				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Arsenic, total	1400				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Cadmium, total	<200	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Chloride	20				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Chlorophyll-A	2				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Chromium, total	<1000	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Copper, total	6300				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Cyanide, total	0.012				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Dissolved Oxygen	7				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Iron, total	480				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Lead, total	<1000	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Mercury, total	<200	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nickel, total	230000				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nitrogen Kjeldahl	0.44				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nitrogen, Ammonia	<0.1 DL	<			mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nitrogen, Nitrate	6				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Nitrogen, Nitrite	0.05				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Ortho Phosphate	<0.01	<			mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		pH	7.4				S.U.					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Phosphorus, total	<0.01	<			mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Selenium, total	<1000	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Silver, total	<500	<			ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Specific Conductance	607				umhos/cm @25 degrees C					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Sulfate	130				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		TOC as NPOC	3.2				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Total Dissolved Solids	470				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Total Hardness	220000				ug/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Total Suspended Solids	5				mg/L					6/21/1995	SW	6/21/1995
Pit	Pit Water	no	Tier 3		Zinc	33				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	FCN				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Antimony, total	33				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	1.1				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Cadmium, total	<0.2	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Chloride	18				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Chlorophyll-A	8				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Chromium, total	<1.0	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Copper, total	7.7				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	0.009				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Dissolved Oxygen	7.4				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Iron, total	240				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Lead, total	<1.0	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Mercury, total	<0.2	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nickel, total	90				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nitrogen Kjeldahl	0.76				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nitrogen, Ammonia	<0.1 DL	<			mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nitrogen, nitrate plus nitrite	4.9				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Nitrogen, Nitrite	0.02				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Ortho Phosphate	<0.01	<			mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		pH	7.9				S.U.					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Phosphorus, total	0.02				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Selenium, total	<1.0	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Silver, total	<0.5	<			ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Specific Conductance	564				umhos/cm @25 degrees C					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Sulfate	120				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Temperature	26.67				Celcius					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		TOC as NPOC	5.8				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Total Dissolved Solids	430				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Total Hardness	200000				ug/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Total Suspended Solids	10				mg/L					6/21/1995	SW	6/21/1995
Outfall	Outfall	no	Tier 3		Zinc	7.2				ug/L					6/21/1995	SW	6/21/1995
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					7/1/1995	SW	7/1/1995
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					7/1/1995	SW	7/1/1995
Confluence	Confluence	no	Tier 3		Copper, total	6				ug/L					7/1/1995	SW	7/1/1995
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					7/1/1995	SW	7/1/1995
Confluence	Confluence	no	Tier 3		Nickel, total	50				ug/L					7/1/1995	SW	7/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	<5	<			mg/L					7/1/1995	SW	7/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					7/1/1995	SW	7/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	15				ug/L					7/1/1995	SW	7/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	<5	<			mg/L					7/1/1995	SW	7/1/1995

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 3		Nickel, total	60				ug/L					7/1/1995	SW	7/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					7/1/1995	SW	7/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					7/1/1995	SW	7/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	10				ug/L					7/1/1995	SW	7/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					7/1/1995	SW	7/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	110				ug/L					7/1/1995	SW	7/1/1995
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					8/1/1995	SW	8/1/1995
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					8/1/1995	SW	8/1/1995
Confluence	Confluence	no	Tier 3		Copper, total	2.9				ug/L					8/1/1995	SW	8/1/1995
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					8/1/1995	SW	8/1/1995
Confluence	Confluence	no	Tier 3		Nickel, total	37				ug/L					8/1/1995	SW	8/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	12				mg/L					8/1/1995	SW	8/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					8/1/1995	SW	8/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	3.5				ug/L					8/1/1995	SW	8/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	10				mg/L					8/1/1995	SW	8/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	70				ug/L					8/1/1995	SW	8/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					8/1/1995	SW	8/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					8/1/1995	SW	8/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	2.3				ug/L					8/1/1995	SW	8/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					8/1/1995	SW	8/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	39				ug/L					8/1/1995	SW	8/1/1995
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					9/1/1995	SW	9/1/1995
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					9/1/1995	SW	9/1/1995
Confluence	Confluence	no	Tier 3		Copper, total	76				ug/L					9/1/1995	SW	9/1/1995
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					9/1/1995	SW	9/1/1995
Confluence	Confluence	no	Tier 3		Nickel, total	54				ug/L					9/1/1995	SW	9/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	6.5				mg/L					9/1/1995	SW	9/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					9/1/1995	SW	9/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	3.7				ug/L					9/1/1995	SW	9/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	6.5				mg/L					9/1/1995	SW	9/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	88				ug/L					9/1/1995	SW	9/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					9/1/1995	SW	9/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	2.9				ug/L					9/1/1995	SW	9/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					9/1/1995	SW	9/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					9/1/1995	SW	9/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	63				ug/L					9/1/1995	SW	9/1/1995
Confluence	Confluence	no	Tier 3		A. Cyanide	NA				mg/L					10/1/1995	SW	10/1/1995
Confluence	Confluence	no	Tier 3		Arsenic, total	<2	<			ug/L					10/1/1995	SW	10/1/1995
Confluence	Confluence	no	Tier 3		Copper, total	160				ug/L					10/1/1995	SW	10/1/1995
Confluence	Confluence	no	Tier 3		Cyanide, total	NA				mg/L					10/1/1995	SW	10/1/1995
Confluence	Confluence	no	Tier 3		Nickel, total	76				ug/L					10/1/1995	SW	10/1/1995
Outfall	Outfall	no	Tier 3		A. Cyanide	15				mg/L					10/1/1995	SW	10/1/1995
Outfall	Outfall	no	Tier 3		Arsenic, total	<2	<			ug/L					10/1/1995	SW	10/1/1995
Outfall	Outfall	no	Tier 3		Copper, total	<1	<			ug/L					10/1/1995	SW	10/1/1995
Outfall	Outfall	no	Tier 3		Cyanide, total	11				mg/L					10/1/1995	SW	10/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	130				ug/L					10/1/1995	SW	10/1/1995
WLR-1	WLR-1	no	Tier 3		A. Cyanide	NA				mg/L					10/1/1995	SW	10/1/1995
WLR-1	WLR-1	no	Tier 3		Arsenic, total	<2	<			ug/L					10/1/1995	SW	10/1/1995
WLR-1	WLR-1	no	Tier 3		Copper, total	<10	<			ug/L					10/1/1995	SW	10/1/1995
WLR-1	WLR-1	no	Tier 3		Cyanide, total	NA				mg/L					10/1/1995	SW	10/1/1995
WLR-1	WLR-1	no	Tier 3		Nickel, total	89				ug/L					10/1/1995	SW	10/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	190				ug/L					11/1/1995	SW	11/1/1995
Conv.	6353	no	Tier 1	56857-2899	1,1,1-Trichloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,1,2,2-Tetrachloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,1,2-Trichloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,1-Dichloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,2-Dichlorobenzene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,2-Dichloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,2-Dichloropropane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,3-Dichlorobenzene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,3-Dichloropropene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	1,4-Dichlorobenzene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	2-Chloroethyl Vinyl Ether	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Acenaphthene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Acenaphthylene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Anthracene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1016	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1221	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1232	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995

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Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1242	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1248	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1254	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1260	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1262	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Aroclor-1268	<0.1	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Arsenic	68				ug/L			SW-846 MTD. 7060		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Barium	7				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Benzene	<5	U			ug/L			SW-846 MTD. 8020		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Benzo (a) anthracene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Benzo (a) pyrene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Benzo (b) Fluoranthene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Benzo (g,h,i) perylene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Benzo (k) Fluoranthene	<5	U			ug/l			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Bromodichloromethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Bromoform	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Bromomethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Cadmium	1.5				ug/L			SW-846 MTD. 7131		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Carbon Tetrachloride	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Chlorobenzene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Chlorodibromomethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Chloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Chloroform	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Chloromethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Chromium, total	530				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Chrysene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Copper	2200				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Dibenzo (a,h) anthracene	<5	U			ug/l			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Dichlorodifluoromethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Ethylbenzene	<1	U			ug/l			SW-846 MTD. 8020		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Fluoranthene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Fluorene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Fluorotrichloromethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Iron	380000				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Lead	6				ug/L			SW-846 MTD. 7421		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Manganese	8300				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Mercury	<0.2	U			ug/L			SW-846 MTD. 7470		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Methylene Chloride	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Naphthalene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Nickel	2300				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Phenanthrene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Pyrene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Selenium	<5	U			ug/L			SW-846 MTD. 7740		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Silver	<0.5	U			ug/L			SW-846 MTD. 7761		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Tetrachloroethene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Toluene	<1	U			ug/L			SW-846 MTD. 8020		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	trans-1,2-Dichloroethene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	trans-1,3-Dichloropropene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Trichloroethene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Vinyl Chloride	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Xylenes	<3	U			ug/l			SW-846 MTD. 8020		11/7/1995	SW	11/7/1995
Conv.	6353	no	Tier 1	56857-2899	Zinc	1400				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,1,1-Trichloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,1,2,2-Tetrachloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,1,2-Trichloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,1-Dichloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,2-Dichlorobenzene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,2-Dichloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,2-Dichloropropane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,3-Dichlorobenzene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,3-Dichloropropene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	1,4-Dichlorobenzene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	2-Chloroethyl Vinyl Ether	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Acenaphthene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Acenaphthylene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Anthracene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1016	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1221	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1232	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1242	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1248	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1254	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1260	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1262	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Aroclor-1268	<2	U			ug/L			SW-846 MTD. 8080		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Arsenic	<3	U			ug/L			SW-846 MTD. 7060		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Barium	70				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Benzene	<5	U			ug/L			SW-846 MTD. 8020		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Benzo (a) anthracene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Benzo (a) pyrene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Benzo (b) Fluoranthene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Benzo (g,h,i) perylene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Benzo (k) Fluoranthene	<5	U			ug/l			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Bromodichloromethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Bromoform	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Bromomethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Cadmium	1.1				ug/L			SW-846 MTD. 7131		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Carbon Tetrachloride	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Chlorobenzene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Chlorodibromomethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Chloroethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Chloroform	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Chloromethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Chromium, total	7				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Chrysene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Copper	16				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Dibenzo (a,h) anthracene	<5	U			ug/l			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Dichlorodifluoromethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Ethylbenzene	<1	U			ug/l			SW-846 MTD. 8020		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Fluoranthene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Fluorene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Fluorotrichloromethane	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Indeno (1,2,3 - cd) pyrene	<5	U			ug/l			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Iron	1800				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Lead	3				ug/L			SW-846 MTD. 7421		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Manganese	3100				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Mercury	2.8				ug/L			SW-846 MTD. 7470		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Methylene Chloride	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Naphthalene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Nickel	1300				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Phenanthrene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Pyrene	<5	U			ug/L			SW-846 MTD. 8270A		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Selenium	<5	U			ug/L			SW-846 MTD. 7740		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Silver	<0.5	U			ug/L			SW-846 MTD. 7761		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Tetrachloroethene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Toluene	<1	U			ug/L			SW-846 MTD. 8020		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	trans-1,2-Dichloroethene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	trans-1,3-Dichloropropene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Trichloroethene	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Vinyl Chloride	<1	U			ug/L			SW-846 MTD. 8010		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Xylenes	<3	U			ug/l			SW-846 MTD. 8020		11/7/1995	SW	11/7/1995
Pyrite Pad	6352	no	Tier 1	56857-2898	Zinc	100				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Arsenic	330				ug/L			SW-846 MTD. 7060		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Arsenic	240				ug/L			SW-846 MTD. 7060		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Barium	7				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Barium	<200	U			ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Cadmium	12				ug/L			SW-846 MTD. 7131		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Cadmium	10				ug/L			SW-846 MTD. 7131		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Chromium, total	520				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Chromium, total	440				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Copper	1400				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Copper	1200				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Iron	290000				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Lead	21				ug/L			SW-846 MTD. 7421		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Lead	8				ug/L			SW-846 MTD. 7421		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Manganese	4200				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Manganese	3300				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
SW-1	6354	no	Tier 1	56857-2900	Mercury	<0.2	U			ug/L			SW-846 MTD. 7470		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Nickel	2000				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Nickel	1600				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Selenium	<5	U			ug/L			SW-846 MTD. 7740		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Silver	0.8				ug/L			SW-846 MTD. 7761		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Silver	<0.5	U			ug/L			SW-846 MTD. 7761		11/7/1995	SW	11/7/1995
SW-1	6354	yes	Tier 1	56857-2904	Zinc	3000				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-1	6354	no	Tier 1	56857-2900	Zinc	3500				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Arsenic	200				ug/L			SW-846 MTD. 7060		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Arsenic	250				ug/L			SW-846 MTD. 7060		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Barium	<200	U			ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Barium	5				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Cadmium	7				ug/L			SW-846 MTD. 7131		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Cadmium	4.6				ug/L			SW-846 MTD. 7131		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Chromium, total	260				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Chromium, total	170				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Copper	810				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Copper	480				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Iron	200000				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Iron	120000				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Lead	14				ug/L			SW-846 MTD. 7421		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Lead	4				ug/L			SW-846 MTD. 7421		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Manganese	1600				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Manganese	1100				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Mercury	<0.2	U			ug/L			SW-846 MTD. 7470		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Nickel	1100				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Nickel	660				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Selenium	<5	U			ug/L			SW-846 MTD. 7740		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Silver	<0.5	U			ug/L			SW-846 MTD. 7761		11/7/1995	SW	11/7/1995
SW-2	6355	no	Tier 1	56857-2901	Zinc	1400				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-2	6355	yes	Tier 1	56857-2905	Zinc	990				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Arsenic	19				ug/L			SW-846 MTD. 7060		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Arsenic	62				ug/L			SW-846 MTD. 7060		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Barium	<200	U			ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Barium	8				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Cadmium	3.4				ug/L			SW-846 MTD. 7131		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Cadmium	3.7				ug/L			SW-846 MTD. 7131		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Chromium, total	80				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Chromium, total	76				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Copper	290				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Copper	250				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Iron	54000				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Iron	51000				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Lead	5				ug/L			SW-846 MTD. 7421		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Manganese	670				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Manganese	610				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Mercury	<0.2	U			ug/L			SW-846 MTD. 7470		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Nickel	380				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Nickel	330				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Selenium	<5	U			ug/L			SW-846 MTD. 7740		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Silver	<0.5	U			ug/L			SW-846 MTD. 7761		11/7/1995	SW	11/7/1995
SW-3	6356	no	Tier 1	56857-2902	Zinc	990				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
SW-3	6356	yes	Tier 1	56857-2906	Zinc	840				ug/L			SW-846 MTD. 6010		11/7/1995	SW	11/7/1995
Outfall	Outfall	no	Tier 3		Nickel, total	89				ug/L					12/1/1995	SW	12/1/1995
Outfall	Outfall	no	Tier 3		Nickel, total	200				ug/L					1/1/1996	SW	1/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	340				ug/L					2/1/1996	SW	2/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	180				ug/L					3/1/1996	SW	3/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	170				ug/L					4/1/1996	SW	4/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	52				ug/L					5/1/1996	SW	5/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	290				ug/L					6/1/1996	SW	6/1/1996
Outfall	Outfall	no	Tier 3		Arsenic, total	1.8				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Barium, total	24				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Cadmium, total	<0.2	<			ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Chlorophyll-A	65	nh			mg/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Chromium, total	<1.0	<			ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Cobalt, total	20				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Copper, total	26				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Iron, total	2300				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Lead, total	2				ug/L					6/18/1996	SW	6/18/1996

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 3		Lithium, total	<8	<			ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Manganese, total	1100				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Mercury, total	<200	<			ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Nickel, total	300				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Nitrogen Kjeldahl	0.45				mg/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Nitrogen, Ammonia	<0.1 DL	<			mg/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Nitrogen, nitrate plus nitrite	4.6				mg/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Ortho Phosphate	<0.01	<			mg/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		pH	7.7				S.U.					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Phosphorus, total	0.04				mg/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Selenium, total	<1.0	<			ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Silver, total	<0.5	<			ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Specific Conductance	528				umhos/cm @25 degrees C					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Temperature	17.78				Celcius					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Total Dissolved Solids	420				mg/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Total Hardness	205000				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Total Suspended Solids	46 NH				mg/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Zinc	20				ug/L					6/18/1996	SW	6/18/1996
Outfall	Outfall	no	Tier 3		Nickel, total	120				ug/L					7/1/1996	SW	7/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	60				ug/L					8/1/1996	SW	8/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	70				ug/L					9/1/1996	SW	9/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	72				ug/L					10/1/1996	SW	10/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	103				ug/L					11/1/1996	SW	11/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	136				ug/L					12/1/1996	SW	12/1/1996
Outfall	Outfall	no	Tier 3		Nickel, total	122				ug/L					1/1/1997	SW	1/1/1997
Outfall	Outfall	no	Tier 3		Nickel, total	138				ug/L					2/1/1997	SW	2/1/1997
Outfall	Outfall	no	Tier 3		Nickel, total	132				ug/L					3/1/1997	SW	3/1/1997
Outfall	Outfall	no	Tier 3		Nickel, total	66				ug/L					4/1/1997	SW	4/1/1997
Outfall	Outfall	no	Tier 3		Nickel, total	111				ug/L					5/1/1997	SW	5/1/1997
Outfall	Outfall	no	Tier 2	98-06-200	A. Cyanide	FCN				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	97-06-200	Arsenic, total	1.1				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Barium	13				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Cadmium	0.2	<			ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Calcium	45700				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Chromium, total	<1	<			ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	97-06-200	Copper, total	5.2				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Cyanide	0.007				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Lead	<1.0	<			ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Magnesium	24400				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Mercury	<0.2	<			ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	97-06-200	Nickel	52				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 3		Nickel, total	58				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Nitrogen Kjeldahl	0.65				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Nitrogen, Ammonia	<0.1	<			mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Nitrogen, nitrate plus nitrite	3.5				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Nitrogen, Nitrite	0.03				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Ortho Phosphate	<0.01	<			mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Phosphorus, total	0.02				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Selenium	<1	<			ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Silver	<500	<			ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Specific Conductance	565				umhos/cm @25 degrees C					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	TOC as NPOC	5.4				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Total Dissolved Solids	490				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Total Hardness	215000				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Total Suspended Solids	12				mg/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 2	98-06-200	Zinc	20				ug/L					6/25/1997	SW	6/25/1997
Outfall	Outfall	no	Tier 1	98-06-253	Aluminum	<50	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Antimony	21				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Arsenic, total	1.1				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Barium	14				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Beryllium	<1.0	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Cadmium	1.1				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Calcium	50.8				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Chloride	14				mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Chromium, total	1.1				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Cobalt	<15	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Copper, total	5.3				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Hex Chromium, dissolved	<5.0	<			ug/L					6/24/1998	SW	6/24/1998

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 1	98-06-253	Iron	160				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Lead	20				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Lithium	<8	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Magnesium	23.7				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Manganese	65				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Mercury	<0.2	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Molybdenum	<25	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Nickel	47				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Nitrogen Kjeldahl	0.57				mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Nitrogen, Ammonia	<0.1	<			mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Nitrogen, nitrate plus nitrite	2.9				mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Nitrogen, Nitrite	0.03				mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Ortho Phosphate	<0.01	<			mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Phosphorus, total	0.01				mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Potassium	12.5				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Selenium	<1.0	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Silver	<0.5	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Sodium	19.5				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Specific Conductance	565				umhos/cm @25 degrees C					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Sulfate	134				mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Titanium	<10	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	TOC as NPOC	5.0				mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Total Dissolved Solids	420				mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Total Hardness	225000				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Total Suspended Solids	<4	<			mg/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Vanadium	<10	<			ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	98-06-253	Zinc	10				ug/L					6/24/1998	SW	6/24/1998
Outfall	Outfall	no	Tier 1	99-06-192	Aluminum	<50	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Antimony	17				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Arsenic, total	<1	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Barium	9				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Beryllium	<1	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Boron	110				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Cadmium	<0.2	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Calcium	48.1				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Chloride	14				mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Chromium, total	<1	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Cobalt	<15	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Copper, total	4.9				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Hex Chromium	<5	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Iron	70				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Lead	<1	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Lithium	<8	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Magnesium	24.9				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Manganese	30				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Mercury	<0.2	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Molybdenum	<25	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Nickel	35				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Nitrogen Kjeldahl	0.11				mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Nitrogen, Ammonia	<0.1	<			mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Nitrogen, nitrate plus nitrite	3.4				mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Nitrogen, Nitrite	0.01				mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Oil & Grease - Non Polar	<10	<			mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Ortho Phosphate	<0.01	<			mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Phosphorus, total	0.01				mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Potassium	10.4				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Selenium	<1	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Silver	<0.5	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Sodium	20.3				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Specific Conductance	552				umhos/cm @25 degrees C					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Strontium	210				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Sulfate	121				mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Thallium	<2	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Titanium	<10	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	TOC as NPOC	3.9				mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Total Dissolved Solids	400				mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Total Hardness	225000				ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Total Suspended Solids	<4	<			mg/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	99-06-192	Vanadium	<10	<			ug/L					6/24/1999	SW	6/24/1999

Table A-3

Historical Surface Water Results Summary

Location	FieldID	Duplicate	Data Level	Lab Sample	Parameter	Result	Flag	MDL	EQL	Units	SampleDepth	PrepMethod	AnalysisMethod	Dilution	CollectionDate	Matrix	EventDate
Outfall	Outfall	no	Tier 1	99-06-192	Zinc	<10	<			ug/L					6/24/1999	SW	6/24/1999
Outfall	Outfall	no	Tier 1	1-04-163	Arsenic, total	32				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Barium, total	16				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Cadmium, total	6.2				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Calcium	54900				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Chromium, total	80				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Copper, total	348				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Lead, total	8.3				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Magnesium	6500				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Mercury	<0.2	<			ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Nickel, total	159				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Selenium	<1	<			ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Silver, total	<0.5	<			ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Specific Conductance	705				umhos/cm @25 degrees C					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Total Dissolved Solids	560				mg/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Total Hardness	164000				ug/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Total Suspended Solids	74				mg/L					4/17/2001	SW	4/17/2001
Outfall	Outfall	no	Tier 1	1-04-163	Zinc	1290				ug/L					4/17/2001	SW	4/17/2001

Notes:

ug/L - micrograms/liter
mg/L = milligrams/Liter
umhos = micromohs
cm = centimeter
C = Celcius
U = The analyte was not detected at or above the reporting limit
SW = Surface Water

cfs = cubic feet per second
SU = standard unit
COD = chemical oxygen demand
MDL = method detection limit
EQL = estimated quantitation limit
ft = feet
TOC = total organic carbon
NPOC = non-precursor organic compounds

ND = not detected
NA = not analyzed
< - the analyte was not detected at or above the reporting limit
FCN = free cyanide was not analyzed due to low level of cyanide

A-4

Tier I Historical Data

Preliminary Hydrogeological Investigation, Oct. 1992
Sundberg, Carlson and Associates, Inc.
Brighton Analytical, Inc.
(Groundwater and Soil Results)

ROPES MILLING FACILITY

PRELIMINARY HYDROGEOLOGICAL INVESTIGATION

PREPARED FOR:

CALLAHAN MINING CORPORATION
Ropes Unit
4547 County Road 601
Champion, Michigan 49814-9767

October, 1992

PREPARED BY:

SUNDBERG, CARLSON AND ASSOCIATE, INC.
914 West Baraga Avenue
Marquette, Michigan 49855

SCA Project 90-384

SUNDBERG, CARLSON AND ASSOCIATES, INC.
ENVIRONMENTAL SERVICES DIVISION

SUMMARY OF BRIGHTON ANALYTICAL, INC. SOIL ANALYSES
SCA PROJECT #90-384

POLYNUCLEAR AROMATIC HYDROCARBONS (PNA) EPA METHOD 8270	1/13/92 SB4-S1	SB5-S1							TYPE B CLOSURE CONCENTRATIONS
Acenaphthene	ND	ND							8,000
Acenaphthylene	ND	ND							330
Anthracene	ND	ND							40,000
Benzo (a) anthracene	ND	ND							330
Benzo (b) flouranthene	ND	ND							330
Benzo (k) flouranthene	ND	ND							330
Benzo (a) pyrene	ND	ND							330
Benzo (g,h,i) perylene	ND	ND							330
Chrysene	ND	ND							330
Dibenzo (a,h) anthracene	ND	ND							330
Flouranthene	ND	ND							6,000
Flourene	ND	ND							6,000
Indeno (1,2,3-cd) pyrene	ND	ND							330
Naphthalene	ND	ND							580
Phenanthrene	ND	ND							330
Pyrene	ND	ND							4,000

Notes: Concentrations expessed in parts per billion (ppb)
Type B Closure Concentrations are based on P.A. 307, as revised March 16, 1992.
ND = Non-Detect.

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Preliminary Hydrogeological Investigation Oct/1992

Date: 01-24-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Includes 2 soil samples

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/13/92

BA Project Number: 2244
BA Sample ID:AA03601

Sample ID: SB-4S1

JUN 07 ENTD

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/Kg		SW846 8020	01/22/92
Benzene	Not Det	ug/Kg	10	SW846 8020	01/22/92
Toluene	Not Det	ug/Kg	10	SW846 8020	01/22/92
Ethylbenzene	Not Det	ug/Kg	10	SW846 8020	01/22/92
Xylenes	Not Det	ug/Kg	30	SW846 8020	01/22/92
Polynuclear Aromatics		ug/Kg		SW846 8310	01/20/92
Acenaphthene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Acenaphthylene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Anthracene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(a)anthracene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(b)fluoranthene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(k)fluoranthene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(a)pyrene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(ghi)perylene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Chrysene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Dibenzo(ah)anthracene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Fluoranthene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Fluorene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Indeno(123-cd)pyrene	Not Det	ug/Kg	330	SW846 8310	01/20/92

BA Analytical Inc.

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/13/92

BA Project Number: 2244
BA Sample ID:AA03601

Sample ID: SB-4S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Naphthalene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Phenanthrene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Pyrene	Not Det	ug/Kg	330	SW846 8310	01/20/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: LJTapoSci

Date: 1/28/92

Brighton Analytical, Inc.
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Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-24-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/13/92

BA Project Number: 2244
BA Sample ID:AA03602

Sample ID: SB-5S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/Kg		SW846 8020	01/22/92
Benzene	Not Det	ug/Kg	10	SW846 8020	01/22/92
Toluene	Not Det	ug/Kg	10	SW846 8020	01/22/92
Ethylbenzene	Not Det	ug/Kg	10	SW846 8020	01/22/92
Xylenes	Not Det	ug/Kg	30	SW846 8020	01/22/92
Polynuclear Aromatics		ug/Kg		SW846 8310	01/20/92
Acenaphthene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Acenaphthylene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Anthracene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(a)anthracene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(b)fluoranthene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(k)fluoranthene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(a)pyrene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Benzo(ghi)perylene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Chrysene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Dibenzo(ah)anthracene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Fluoranthene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Fluorene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Indeno(123-cd)pyrene	Not Det	ug/Kg	330	SW846 8310	01/20/92

BA Analytical Inc.

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/13/92

BA Project Number: 2244
BA Sample ID:AA03602

Sample ID: SB-5S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Naphthalene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Phenanthrene	Not Det	ug/Kg	330	SW846 8310	01/20/92
Pyrene	Not Det	ug/Kg	330	SW846 8310	01/20/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

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Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-22-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03585

Sample ID: MW-1-S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	01/21/92
Benzene	Not Det	ug/L	1	EPA 602	01/21/92
Toluene	Not Det	ug/L	1	EPA 602	01/21/92
Ethyl benzene	Not Det	ug/L	1	EPA 602	01/21/92
Xylenes	Not Det	ug/L	1	EPA 602	01/21/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
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Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-20-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03593

Sample ID: MW-1-S2

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Polynuclear Aromatics		ug/L		SW846 8310	01/19/92
Acenaphthene	Not Det	ug/L	5	SW846 8310	01/19/92
Acenaphthylene	Not Det	ug/L	5	SW846 8310	01/19/92
Anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	01/19/92
Chrysene	Not Det	ug/L	5	SW846 8310	01/19/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluorene	Not Det	ug/L	5	SW846 8310	01/19/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Naphthalene	Not Det	ug/L	5	SW846 8310	01/19/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	01/19/92
Pyrene	Not Det	ug/L	5	SW846 8310	01/19/92

Analytical Inc.

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
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Date: 01-24-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03586

Sample ID: MW-2-S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	01/22/92
Benzene	Not Det	ug/L	1	EPA 602	01/22/92
Toluene	Not Det	ug/L	1	EPA 602	01/22/92
Ethyl benzene	Not Det	ug/L	1	EPA 602	01/22/92
Xylenes	Not Det	ug/L	1	EPA 602	01/22/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
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Date: 01-20-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03594

Sample ID: MW-2-S2

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Polynuclear Aromatics		ug/L		SW846 8310	01/19/92
Acenaphthene	Not Det	ug/L	5	SW846 8310	01/19/92
Acenaphthylene	Not Det	ug/L	5	SW846 8310	01/19/92
Anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	01/19/92
Chrysene	Not Det	ug/L	5	SW846 8310	01/19/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluorene	Not Det	ug/L	5	SW846 8310	01/19/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Naphthalene	Not Det	ug/L	5	SW846 8310	01/19/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	01/19/92
Pyrene	Not Det	ug/L	5	SW846 8310	01/19/92

BA Analytical Inc.

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
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Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-22-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03587

Sample ID: MW-3-S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	01/21/92
Benzene	Not Det	ug/L	1	EPA 602	01/21/92
Toluene	Not Det	ug/L	1	EPA 602	01/21/92
Ethyl benzene	Not Det	ug/L	1	EPA 602	01/21/92
Xylenes	Not Det	ug/L	1	EPA 602	01/21/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: Lejkposki

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
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Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-20-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03595

Sample ID: MW-3-S2

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Polynuclear Aromatics		ug/L		SW846 8310	01/19/92
Acenaphthene	Not Det	ug/L	5	SW846 8310	01/19/92
Acenaphthylene	Not Det	ug/L	5	SW846 8310	01/19/92
Anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	01/19/92
Chrysene	Not Det	ug/L	5	SW846 8310	01/19/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluorene	Not Det	ug/L	5	SW846 8310	01/19/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Naphthalene	Not Det	ug/L	5	SW846 8310	01/19/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	01/19/92
Pyrene	Not Det	ug/L	5	SW846 8310	01/19/92

BA Analytical Inc.

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-22-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03588

Sample ID: MW-4-S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	01/21/92
Benzene	Not Det	ug/L	1	EPA 602	01/21/92
Toluene	Not Det	ug/L	1	EPA 602	01/21/92
Ethyl benzene	Not Det	ug/L	1	EPA 602	01/21/92
Xylenes	Not Det	ug/L	1	EPA 602	01/21/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-20-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03596

Sample ID: MW-4-S2

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Polynuclear Aromatics		ug/L		SW846 8310	01/19/92
Acenaphthene	Not Det	ug/L	5	SW846 8310	01/19/92
Acenaphthylene	Not Det	ug/L	5	SW846 8310	01/19/92
Anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	01/19/92
Chrysene	Not Det	ug/L	5	SW846 8310	01/19/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluorene	Not Det	ug/L	5	SW846 8310	01/19/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Naphthalene	Not Det	ug/L	5	SW846 8310	01/19/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	01/19/92
Pyrene	Not Det	ug/L	5	SW846 8310	01/19/92

BA Analytical Inc.

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-28-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03589

Sample ID: MW-5-S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	01/27/92
Benzene	3	ug/L	1	EPA 602	01/27/92
Toluene	5	ug/L	1	EPA 602	01/27/92
Ethyl benzene	20	ug/L	1	EPA 602	01/27/92
Xylenes	320	ug/L	1	EPA 602	01/27/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: MJ Topolski

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-20-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03597

Sample ID: MW-5-S2

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Polynuclear Aromatics		ug/L		SW846 8310	01/19/92
Acenaphthene	300	ug/L	5	SW846 8310	01/19/92
Acenaphthylene	24	ug/L	5	SW846 8310	01/19/92
Anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	01/19/92
Chrysene	Not Det	ug/L	5	SW846 8310	01/19/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluorene	14	ug/L	5	SW846 8310	01/19/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Naphthalene	50	ug/L	5	SW846 8310	01/19/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	01/19/92
Pyrene	Not Det	ug/L	5	SW846 8310	01/19/92

BA Analytical Inc.

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-22-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03590

Sample ID: MW-6-S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	01/21/92
Benzene	Not Det	ug/L	1	EPA 602	01/21/92
Toluene	Not Det	ug/L	1	EPA 602	01/21/92
Ethyl benzene	Not Det	ug/L	1	EPA 602	01/21/92
Xylenes	Not Det	ug/L	1	EPA 602	01/21/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-20-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03598

Sample ID: MW-6-S2

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Polynuclear Aromatics		ug/L		SW846 8310	01/19/92
Acenaphthene	Not Det	ug/L	5	SW846 8310	01/19/92
Acenaphthylene	Not Det	ug/L	5	SW846 8310	01/19/92
Anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	01/19/92
Chrysene	Not Det	ug/L	5	SW846 8310	01/19/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluorene	Not Det	ug/L	5	SW846 8310	01/19/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Naphthalene	Not Det	ug/L	5	SW846 8310	01/19/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	01/19/92
Pyrene	Not Det	ug/L	5	SW846 8310	01/19/92

BA Analytical Inc.

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-22-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03591

Sample ID: MW-7-S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	01/21/92
Benzene	Not Det	ug/L	1	EPA 602	01/21/92
Toluene	Not Det	ug/L	1	EPA 602	01/21/92
Ethyl benzene	Not Det	ug/L	1	EPA 602	01/21/92
Xylenes	Not Det	ug/L	1	EPA 602	01/21/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: LJ Topolski

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-20-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03599

Sample ID: MW-7-S2

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Polynuclear Aromatics		ug/L		SW846 8310	01/19/92
Acenaphthene	Not Det	ug/L	5	SW846 8310	01/19/92
Acenaphthylene	Not Det	ug/L	5	SW846 8310	01/19/92
Anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	01/19/92
Chrysene	Not Det	ug/L	5	SW846 8310	01/19/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluorene	Not Det	ug/L	5	SW846 8310	01/19/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Naphthalene	Not Det	ug/L	5	SW846 8310	01/19/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	01/19/92
Pyrene	Not Det	ug/L	5	SW846 8310	01/19/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-28-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03592

Sample ID: MW-9-S1

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	01/23/92
Benzene	Not Det	ug/L	1	EPA 602	01/23/92
Toluene	Not Det	ug/L	1	EPA 602	01/23/92
Ethyl benzene	Not Det	ug/L	1	EPA 602	01/23/92
Xylenes	Not Det	ug/L	1	EPA 602	01/23/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 01-20-1992

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project ID: #90-384
Date Submitted: 01/17/92
Date Sampled: 01/16/92

BA Project Number: 2244
BA Sample ID:AA03600

Sample ID: MW-9-S2

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Polynuclear Aromatics		ug/L		SW846 8310	01/19/92
Acenaphthene	Not Det	ug/L	5	SW846 8310	01/19/92
Acenaphthylene	10	ug/L	5	SW846 8310	01/19/92
Anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	01/19/92
Chrysene	Not Det	ug/L	5	SW846 8310	01/19/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	01/19/92
Fluoranthene	5	ug/L	5	SW846 8310	01/19/92
Fluorene	Not Det	ug/L	5	SW846 8310	01/19/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	01/19/92
Naphthalene	8	ug/L	5	SW846 8310	01/19/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	01/19/92
Pyrene	Not Det	ug/L	5	SW846 8310	01/19/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: [signature]

Date: 1/28/92

Sundberg, Carlson and Associates, Inc.

CHAIN-OF-CUSTODY RECORD

NTACT PERSON: Grey St-Onge
ONE NO.: 225-2333
OJECT NO.: 90-354
OJECT NE: Callahan

SPECIAL HANDLING REQUEST

☐ RUSH ☒ STD. ☐ OTHER

LABORATORY: Brighton Analytical
CONTACT PERSON:
PHONE NO.: (313) 229-7515
RESULTS DUE: Standard

MPLER'S (SIGNATURE)

MPLE I.D.	DATE	TIME	COMP.	GRAB	NO. OF CONTAINERS	MATRIX	PRESERVATION METHOD	ANALYSIS REQUEST	REMARKS
W-1-51'	16 Jan 92	1410		X	2	Water	refrige	BTEX 3585	Please Return
W-2-51'	"	1345		X	2			3586	Sample jars.
W-3-51'	"	1320		X	2			3587	Cooler (1)
W-4-51'	"	1245		X	2			3588	Ice Pack (1)
W-5-51'	"	1217		X	2			3589	
W-6-51'	"	1620		X	2			3590	
W-7-51'	"	1145		X	2			3591	MDNR Limits
W-9-51'	"	1440		X	2			3592	

INQUISHED BY GNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	REMARKS
	1-16-92					
INQUISHED BY GNATURE) PS	1/17 10:00am		RECEIVED BY (SIGNATURE)	1/17/92	10:00am	
INQUISHED BY GNATURE)			RECEIVED BY (SIGNATURE)			
INQUISHED BY GNATURE)			RECEIVED BY (SIGNATURE)			

LAB ONLY

SHIP CONT. OK? Y N N/A
REC'D REFRIG.? Y N N/A
SEALS OK? Y N N/A
SAMPLES LEAK? Y N N/A
COMMENTS:

Sundberg, Carlson and Associates, Inc.

CHAIN-OF-CUSTODY RECORD

CONTACT PERSON: Greg St.Onge
PHONE NO.: 229-2333
PROJECT NO.: 90-384
PROJECT NAME: Callahan

SPECIAL HANDLING REQUEST

☐ RUSH ☒ STD. ☐ OTHER

LABORATORY: Brighton Analytical
CONTACT PERSON:
PHONE NO.: 313 229-7575
RESULTS DUE: Standard

SAMPLER'S (SIGNATURE)

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	NO. OF CONTAINERS	MATRIX	PRESERVATION METHOD	ANALYSIS REQUEST	REMARKS
w-1-52'	1-16-92	1410		X	1	Water	Refrige	PNA	3593
w-2-52'	1-16-92	1345		X	1				3594
w-3-52'	1-16-92	1320		X	1				3595
w-4-52'	1-16-92	1245		X	1				3596
w-5-52'	1-16-92	1217		X	1				3597 MDNR Limits
w-6-52'	1-16-92	1620		X	1				3598
w-7-52'	1-16-92	1145		X	1				3599
w-9-52'	1-16-92	1440		X	1				3600
B-4 S1'	1-13-92	1436		X	1	Soil		BTEX / PNA	3601
B-5 S1'	1-13-92	1510		X	1	Soil		BTEX / PNA	3602

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	REMARKS
M. P. Kyle	1-16-92					
U.S.	1/17/92		R. Hoffman	1/17	10:00	
RELINQUISHED BY (SIGNATURE)			RECEIVED BY (SIGNATURE)			
RELINQUISHED BY (SIGNATURE)			RECEIVED BY (SIGNATURE)			

LAB ONLY

SHIP CONT. OK? Y N N/A
REC'D REFRIG.? Y N N/A
SEALS OK? Y N N/A
SAMPLES LEAK? Y N N/A
COMMENTS:

Preliminary Hydrogeological Investigation, Oct. 1992
Sundberg, Carlson and Associates, Inc.
Brighton Analytical, Inc.
(Groundwater Results)

Brighton Analytical, Inc.

718 Advance St. Phone (313) 229-7575 Brighton, Michigan 48116

DATA SUMMARY SHEET

DATE: August 28, 1991

PROJECT: Sundberg, Carlson & Associates
Callahan
#90-384

Date Submitted: August 17, 1991

BA Sample ID: 426

METHOD 8310

COMPOUNDS	UNITS	DL	Analysis Date	MW-5 8/16
Naphthalene	ug/l	5	8/23	83
Acenapthylene	ug/l	5	8/23	30
Acenaphthene	ug/l	5	8/23	ND
Fluorene	ug/l	5	8/23	5
Phenanthrene	ug/l	5	8/23	ND
Anthracene	ug/l	5	8/23	ND
Fluoranthene	ug/l	5	8/23	ND
Pyrene	ug/l	5	8/23	ND
Benzo(a) anthracene	ug/l	5	8/23	ND
Chrysene	ug/l	5	8/23	ND
Benzo(b) Fluoranthene	ug/l	5	8/23	ND
Benzo (k) Fluoranthene	ug/l	5	8/23	ND
Benzo(a)pyrene	ug/l	5	8/23	ND
Dibenzo(a,h) anthracene	ug/l	5	8/23	ND
Indeno(1,2,3-cd) pyrene	ug/l	5	8/23	ND
Benzo(g,h,i) perylene	ug/l	5	8/23	ND

METHOD 602

Benzene	ug/l	1	8/25	20
Toluene	ug/l	1	8/25	30
Ethyl Benzene	ug/l	1	8/25	120
Xylenes	ug/l	1	8/25	1800

D.L. = Detection Limit
ND = not detected at or above detection limit

JUN 06 ENT'D

Sundberg, Carlson and Associates, Inc.

CHAIN-OF-CUSTODY RECORD

CONTACT PERSON: MIKE RIPLEY
PHONE NO.: (906) 228-2335
PROJECT NO.: 90-384
PROJECT NAME: CALLAHAN

SPECIAL HANDLING REQUEST

☐ RUSH ☒ STD. ☐ OTHER

LABORATORY: BRIGHTON ANALYTICAL
CONTACT PERSON: GARY WAGNER
PHONE NO.: (313)-229-7575
RESULTS DUE: NORMAL 2-WEEKS

SAMPLER'S (SIGNATURE) Kenneth Kytta

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	NO. OF CONTAINERS	MATRIX	PRESERVATION METHOD	ANALYSIS REQUEST	REMARKS
MW-5	8-16	—		X	12	WATER	FRIDGE	VOA - BTEX	
MW-5	8-16	—		X	1	WATER	FRIDGE	1 lt. - PNA	PLEASE RETURN COOLER, ICE PACKS, & SAME AMOUNT OF SAMPLING JARS.
									BA #0817-426

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	REMARKS
K. Kytta	8-16-91		UPS-REC			
UPS-REC	8-17-91	9:45AM	Gary Wagner			

LAB ONLY

SHIP CONT. OK? (Y) N N/A
REC'D REFRIG.? (Y) N N/A
SEALS OK? (Y) N N/A
SAMPLES LEAK? Y (N) N/A
COMMENTS:

Preliminary Hydrogeological Investigation, Oct. 1992
Sundberg, Carlson and Associates, Inc.
Brighton Analytical, Inc.
(Groundwater Results)

Brighton Analytical, Inc.

718 Advance St. Phone (313) 229-7575 Brighton, Michigan 48116

DATA SUMMARY SHEET

DATE: November 12, 1991

PROJECT: Sundberg, Carlson and Associates
Callahan
#90-384

Date Submitted: November 1, 1991 - Analysis date: November 7, 1991

BA Sample ID: 1555 1556

METHOD 8310

COMPOUNDS	UNITS	DL	MW6 10/30	MW6 10/31
Naphthalene	ug/l	5		ND
Acenapthylene	ug/l	5		ND
Acenaphthene	ug/l	5		ND
Fluorene	ug/l	5		ND
Phenanthrene	ug/l	5		ND
Anthracene	ug/l	5		ND
Fluoranthene	ug/l	5		ND
Pyrene	ug/l	5		ND
Benzo(a) anthracene	ug/l	5		ND
Chrysene	ug/l	5		ND
Benzo(b) Fluoranthene	ug/l	5		ND
Benzo (k) Fluoranthene	ug/l	5		ND
Benzo(a)pyrene	ug/l	5		ND
Dibenzo(a,h) anthracene	ug/l	5		ND
Indeno(1,2,3-cd) pyrene	ug/l	5		ND
Benzo(g,h,i) perylene	ug/l	5		ND

JUN 06 ENT'D

METHOD 602 Analysis Date: November 11, 1991

Benzene	ug/l	1	2
Toluene	ug/l	1	130
Ethyl Benzene	ug/l	1	ND
Xylenes	ug/l	1	ND

D.L. = Detection Limit
ND = not detected at or above detection limit

Sundberg, Carlson and Associates, Inc.

CHAIN-OF-CUSTODY RECORD

CONTACT PERSON: MIKE RIPLEY
PHONE NO.: 906-228-2333
PROJECT NO.: 90-384
PROJECT NAME: CALLAHAN

SPECIAL HANDLING REQUEST

☐ RUSH ☒ STD. ☐ OTHER

LABORATORY: BRIGHTON ANALYTICAL
CONTACT PERSON: GARY WAGNER
PHONE NO.: 313-229-7575
RESULTS DUE: NORMAL TURNAROUND

SAMPLER'S (SIGNATURE) Bob Stanek (SKG)

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	NO. OF CONTAINERS	MATRIX	PRESERVATION METHOD	ANALYSIS REQUEST	REMARKS
MW-6	10-30	10:00		X	1	WATER	FRIDGE	BTEX 1555	
MW-6	10-31	10:00		X	1	WATER	FRIDGE	PNA 1556	COULD YOU SEND US 1-DOZEN VOA'S
									THANK YOU

1869 VOAB W

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	REMARKS
M.P. Ryle	10-31-91					
RELINQUISHED BY (SIGNATURE) UPS	11/1/91		RECEIVED BY (SIGNATURE) K. Hoffner	11/1/91	10:30	
RELINQUISHED BY (SIGNATURE)			RECEIVED BY (SIGNATURE)			
RELINQUISHED BY (SIGNATURE)			RECEIVED BY (SIGNATURE)			

LAB ONLY

SHIP CONT. OK? (Y) N N/A
REC'D REFRIG.? (Y) N N/A
SEALS OK? (Y) N N/A
SAMPLES LEAK? Y (N) N/A
COMMENTS:

Preliminary Hydrogeological Investigation, Oct. 1992
Sundberg, Carlson and Associates, Inc.
Brighton Analytical, Inc.
(Groundwater Results)

Brighton Analytical, Inc.
718 Advance Street
Brighton, MI 48116
Phone: (313)229-7575 FAX: (313)229-8650

Date: 03-27-1992

JUN 06 ENT'D

To: SUNDBERG, CARLSON & ASSOCIATES
914 W. BARAGA
MARQUETTE, MI 49855

Project Name: Callahan
Project Number: #90-384
Date Submitted: 03/20/92
Date Sampled: 03/19/92

BA Project Number: 2526
BA Sample ID:AA05164

Sample ID: Q0011

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
BTEX		ug/L		EPA 602	03/26/92
Benzene	Not Det	ug/L	1	EPA 602	03/26/92
Toluene	1	ug/L	1	EPA 602	03/26/92
Ethyl benzene	Not Det	ug/L	1	EPA 602	03/26/92
Xylenes	3	ug/L	1	EPA 602	03/26/92
Polynuclear Aromatics		ug/L		SW846 8310	03/24/92
Acenaphthene	Not Det	ug/L	5	SW846 8310	03/24/92
Acenaphthylene	Not Det	ug/L	5	SW846 8310	03/24/92
Anthracene	Not Det	ug/L	5	SW846 8310	03/24/92
Benzo(a)anthracene	Not Det	ug/L	5	SW846 8310	03/24/92
Benzo(b)fluoranthene	Not Det	ug/L	5	SW846 8310	03/24/92
Benzo(k)fluoranthene	Not Det	ug/L	5	SW846 8310	03/24/92
Benzo(a)pyrene	Not Det	ug/L	5	SW846 8310	03/24/92
Benzo(ghi)perylene	Not Det	ug/L	5	SW846 8310	03/24/92
Chrysene	Not Det	ug/L	5	SW846 8310	03/24/92
Dibenzo(ah)anthracene	Not Det	ug/L	5	SW846 8310	03/24/92
Fluoranthene	Not Det	ug/L	5	SW846 8310	03/24/92
Fluorene	Not Det	ug/L	5	SW846 8310	03/24/92
Indeno(123-cd)pyrene	Not Det	ug/L	5	SW846 8310	03/24/92

BA Analytical Inc.

Project Name: Callahan
Project Number: #90-384
Date Submitted: 03/20/92
Date Sampled: 03/19/92

BA Project Number: 2526
BA Sample ID:AA05164

Sample ID: 00011

Parameters:	Results	Units	MDL	Method Reference	Analysis Date
Naphthalene	Not Det	ug/L	5	SW846 8310	03/24/92
Phenanthrene	Not Det	ug/L	5	SW846 8310	03/24/92
Pyrene	Not Det	ug/L	5	SW846 8310	03/24/92

MDL: Minimum Detection Level
Not Det: Not detected
nd: Not detected

Released by: _____

Date: _____

Sundberg, Carlson and Associates, Inc.

CHAIN-OF-CUSTODY RECORD

№ 00[illegible]3

SCA/ESD FORM 430 REVISED 3/92

CONTACT PERSON: Mike Ripley
PHONE NO.: (906) 228-2333
PROJECT NO.: 90-384
PROJECT NAME: Callahan

SPECIAL HANDLING REQUEST

☐ RUSH ☐ STD. ☒ OTHER

LABORATORY: Brighton Analytical
CONTACT PERSON: William Topolski
PHONE NO.: (313) 229-7525
RESULTS DUE: 1 week Turn around

SAMPLER'S (SIGNATURE)

SAMPLE I.D.	DATE	TIME	COMP.	GRAB	NO. OF CONTAINERS	MATRIX	PRESERVATION METHOD	ANALYSIS REQUEST	REMARKS
X001@1'	3-19-92	1220		X	2	water	Refridge	BTEX / PNA SIM	Please Provide QA/QC Data For Each Sample.
									Please Return Like Number Of Sample Jars.
									Please Return 1 Ice Packs.
									1 week Turn Around

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	REMARKS
[signature]	3-19-92		[signature]	3/20	10:15 AM	
RELINQUISHED BY (SIGNATURE)			RECEIVED BY (SIGNATURE)			
RELINQUISHED BY (SIGNATURE)			RECEIVED BY (SIGNATURE)			
RELINQUISHED BY (SIGNATURE)			RECEIVED BY (SIGNATURE)			

LAB ONLY

SHIP CONT. OK? Y N N/A
REC'D REFRIG.? Y N N/A
SEALS OK? Y N N/A
SAMPLES LEAK? Y N N/A
COMMENTS:

Distribution: White (To Lab) Yellow (Binder) Pink (Project File)

Brighton Analytical, Inc.

718 Advance St. Phone (313) 229-7575 Brighton, Michigan 48116

VOLATILE ANALYSIS QAQC

DATE: [illegible] INSTRUMENT: [illegible]

ANALYST: [illegible] DETECTOR: P

AROMATICS 5177

PARAMETER	BLK	PRECISION		ACCURACY			
	MG/L	REP 1	REP 2	BKGD	SPK	CONC	% REC
BENZENE	<0.5	9.67	9.64	<0.5	10	9.61	96
TOLUENE	↓	[illegible]	[illegible]	↓	↓	[illegible]	[illegible]
ETHYL BENZENE	↓	[illegible]	[illegible]	↓	↓	[illegible]	[illegible]
XYLENE	↓	26.98	26.76	↓	30	[illegible]	[illegible]

HALOGENATED HYDROCARBONS

PARAMETER	BLK	PRICISION		ACCURACY			
	MG/L	REP 1	REP 2	BKGD	SPK	CONC	% REC
1,1-DICHLOROETHENE							
1,1-DICHLOROETHANE							
TRANS 1,2-DICHLOROEHTENE							
CHLOROFORM							
1,2-DICHLOROETHANE							
1,1,1-TRICHLOROETHANE							
CARBON TETRACHLORIDE							
BROMODICHLOROMETHANE							
TRICHLOROETHENE							
CHLORODIBROMOMETHANE							
ROMOFORM							
TETRACHLOROETHENE							
CHLOROBENZENE							

PRECISION AND ACCURACY QUALITY CONTROL DATA

Extraction Date: 3.20.92
Spike Lab ID: 5156 SPK
Duplicate Lab ID: 5156 SPK Dup

Analysis Date: 3.24.92
Analyst: W.

		METHOD STANDARD			PRECISION			MATRIX SPIKE			INST
Compound	MBLK	CV	Tv	%REC	CV-1	CV-2	% I	TV	BG	%REC	DL
phthalene	ND				92.9	97.3	2.31	98.3	ND	102	2
enaphthalene					75.6	85.2	5.97	88.4		96	4
enaphthene					68.6	88.5	12.7	88.5		99	2
orene					9.49	9.32	0.90	9.82		95	0.4
enanthrene					9.84	9.23	3.19	9.25		99	0.2
thracene					7.70	7.98	1.78	9.53		80	0.2
oranthene					11.7	6.96	25.4	9.75		71	0.4
ene					9.27	7.11	14.2	10.5		68	0.2
z[a]anthracene					11.1	8.53	13.1	9.36		91	0.2
rysene					9.71	7.98	9.77	9.35		85	0.2
z[b]fluoranthene					15.6	15.4	0.65	164		94	0.4
z[k]fluoranthene					—	—	—	—		—	0.2
z[a]pyrene					4.37	7.89	10.7	9.53		83	0.2

Large % RSI due to extraction process.

%REC: Percent Recovery

%RD: Precent Relative deviation

DL: Detection Level

BG: Background

Reviewed By:

Date:

PNA- METHOD 610

PRECISION AND ACCURACY QUALITY CONTROL DATA

Extraction Date: 3.20.92
Spike Lab ID: 5179 SPK
Duplicate Lab ID: 5179 SPK Dup.

Analysis Date: 3.24.92
Analyst: cw

		METHOD STANDARD			PRECISION			MATRIX SPIKE			INST
Compound	MBLK	CV	TV	%REC	CV-1	CV-2	%RD	TV	SC	%REC	DL
phthalene					93.3	89.9	1.85	95.3	ND	94	2
enaphthalene					89.4	79.0	6.17	88.4		89	4
enaphthene					69.1	85.8	10.8	88.8		97	2
orene					9.21	9.07	0.765	9.82		92	0.4
enanthrene					9.39	8.47	5.15	9.25		92	0.2
thracene					7.63	6.92	4.87	9.93		70	0.2
uoranthene					10.4	9.78	3.07	9.75		100	0.4
rene					11.2	10.2	4.67	10.5		97	0.2
nz(a)anthracene					7.95	7.03	6.14	9.36		75	0.2
rysene					8.50	7.65	5.26	9.35		82	0.2
nzo(b)fluoranthene					17.8	15.8	5.95	16.4		96	0.4
nzo(k)fluoranthene					—	—	—	—		—	0.2
nzo(a)pyrene					8.81	6.83	12.6	9.53		72	02

%REC: Percent Recovery

%RD: Precent Relative deviation

DL: Detection Level

BG: Background

Reviewed By:

Date:

EXHIBIT

Baseline Environmental Assessment, January 1996
Sundberg, Carlson and Associates, Inc.
Anatech Laboratories
(Soil and Wipe Samples)

BASELINE ENVIRONMENTAL ASSESSMENT INVESTIGATION REPORT FORMER ROPES MILLING PLANT PROPERTY 4547 COUNTY ROAD 601 CHAMPION, MICHIGAN

Prepared for:

MINERALS PROCESSING CORPORATION
4547 County Road 601
Champion, Michigan 49814

January, 1996

JUN 08 ENT'D

Prepared by:

SCA ENVIRONMENTAL
A Division of Sundberg, Carlson and Associates, Inc.
307 South Front Street
Marquette, Michigan 49855

SCA Project 95-565

0 Conrad Industrial Drive
ngton, Michigan 49431
-843-1877
16-845-9942

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc.

Sample: 56857-2893
Client Sample: Scale #1
COLLECTED: 11/07/1995 :
RECEIVED: 11/13/1995 16:07

Scale #1 DONE

/ Grab

lahan 95-565

Test Description	Result	Unit	Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Arsenic (GFAA)	8	mg/kg	1	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	45	mg/kg	0.1	SW-846 Mtd. 6010	11/15/1995 MC
Cadmium (GFAA)	1.2	mg/kg	0.2	SW-846 Mtd. 7131	11/26/1995 MC
Chromium, Total (ICAP)	100	mg/kg	0.2	SW-846 Mtd. 6010	11/15/1995 MC
Copper (ICAP)	100	mg/kg	0.2	"	11/15/1995 MC
Iron (ICAP)	46,000	mg/kg	20	"	11/29/1995 MC
Lead (GFAA)	31	mg/kg	1	SW-846 Mtd. 7421	11/29/1995 JJB
Manganese (ICAP)	900	mg/kg	0.2	SW-846 Mtd. 6010	11/15/1995 MC
Mercury (Cold Vapor)	ND	mg/kg	0.1	SW-846 Mtd. 7471	11/17/1995 EWL
Nickel (ICAP)	140	mg/kg	2	SW-846 Mtd. 6010	11/15/1995 MC
Selenium (GFAA)	ND	mg/kg	0.5	SW-846 Mtd. 7740	11/22/1995 GCP
Silver (GFAA)	2.3	mg/kg	0.5	SW-846 Mtd. 7761	11/26/1995 MC
Zinc (ICAP)	120	mg/kg	0.2	SW-846 Mtd. 6010	11/15/1995 MC
			Note: Results are reported on a dry weight basis.		
NON-METALLIC INORGANIC ANALYSIS					
Cyanide, Total	ND	mg/kg	0.2	SW-846 Mtd. 9010 A	11/16/1995 LS
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	83.0	%	0.1	Standard Mtd. 2540G	11/27/1995 PL
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/kg	10	SW-846 Mtd. 8010	11/20/1995 OY
Chloromethane	ND	ug/kg	10	"	11/20/1995 OY
Vinyl Chloride	ND	ug/kg	10	"	11/20/1995 OY
Bromomethane	ND	ug/kg	10	"	11/20/1995 OY
Chloroethane	ND	ug/kg	10	"	11/20/1995 OY
Trichlorofluoromethane	ND	ug/kg	10	"	11/20/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/kg	10	"	11/20/1995 OY
1,1-Dichloroethene	ND	ug/kg	10	"	11/20/1995 OY
Methylene Chloride	ND	ug/kg	10	"	11/20/1995 OY
t-1,2-Dichloroethene	ND	ug/kg	10	"	11/20/1995 OY
1,1-Dichloroethane	ND	ug/kg	10	"	11/20/1995 OY
Chloroform	ND	ug/kg	10	"	11/20/1995 OY

ND = Non Detectable

Reported : 12/01/1995

)0 Conrad Industrial Drive
'ington, Michigan 49431
4-843-1877
616-845-9942

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc.

Sundberg, Carlson, & Associates

Sample:	56857-2893	Matrix:	Soil / Grab
Client Sample:	Scale #1	Location:	6347
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
1,1,1-Trichloroethane	ND	ug/kg	10	SW-846 Mtd. 8010	11/20/1995 OY
Carbon Tetrachloride	ND	ug/kg	10	"	11/20/1995 OY
1,2-Dichloroethane	ND	ug/kg	10	"	11/20/1995 OY
c-1,3-Dichloropropene	ND	ug/kg	10	"	11/20/1995 OY
Trichloroethene	ND	ug/kg	10	"	11/20/1995 OY
1,2-Dichloropropane	ND	ug/kg	10	"	11/20/1995 OY
Bromodichloromethane	ND	ug/kg	10	"	11/20/1995 OY
Tetrachloroethene	ND	ug/kg	10	"	11/20/1995 OY
t-1,3-Dichloropropene	ND	ug/kg	10	"	11/20/1995 OY
1,1,2-Trichloroethane	ND	ug/kg	10	"	11/20/1995 OY
Dibromochloromethane	ND	ug/kg	10	"	11/20/1995 OY
Chlorobenzene	ND	ug/kg	10	"	11/20/1995 OY
Bromoform	ND	ug/kg	10	"	11/20/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/kg	10	"	11/20/1995 OY
1,3-Dichlorobenzene	ND	ug/kg	10	"	11/20/1995 OY
1,4-Dichlorobenzene	ND	ug/kg	10	"	11/20/1995 OY
1,2-Dichlorobenzene	ND	ug/kg	10	"	11/20/1995 OY
			Note: Results are reported on a dry weight basis.		
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/kg	10	SW-846 Mtd. 8020	11/20/1995 OY
Toluene	ND	ug/kg	10	"	11/20/1995 OY
Ethylbenzene	ND	ug/kg	10	"	11/20/1995 OY
Xylenes (Total)	ND	ug/kg	30	"	11/20/1995 OY
			Note: Results are reported on a dry weight basis.		
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/12/1995 LJ
Benzo (a) Anthracene	ND	ug/kg	330	"	11/27/1995 LBC
Benzo (a) Pyrene	ND	ug/kg	330	"	11/27/1995 LBC
Benzo (b) Fluoranthene	ND	ug/kg	330	"	11/27/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/kg	330	"	11/27/1995 LBC
Benzo (k) Fluoranthene	ND	ug/kg	330	"	11/27/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/kg	330	"	11/27/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/kg	330	"	11/27/1995 LBC

ND = Non Detectable

Reported : 12/01/1995

0 Conrad Industrial Drive
ngton, Michigan 49431
-843-1877
16-845-9942

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc.

Sundberg, Carlson, & Associates

Sample:	56857-2893	Matrix:	Soil / Grab
Client Sample:	Scale #1	Location:	6347
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYNUCLEAR AROMATIC HYDRO.					
Naphthalene	ND	ug/kg	330	SW-846 Mtd. 8270A	11/27/1995 LBC
Acenaphthene	ND	ug/kg	330	"	11/27/1995 LBC
Acenaphthylene	ND	ug/kg	330	"	11/27/1995 LBC
Fluorene	ND	ug/kg	330	"	11/27/1995 LBC
Phenanthrene	ND	ug/kg	330	"	11/27/1995 LBC
Anthracene	ND	ug/kg	330	"	11/27/1995 LBC
Fluoranthene	ND	ug/kg	330	"	11/27/1995 LBC
Pyrene	ND	ug/kg	330	"	11/27/1995 LBC
Chrysene	ND	ug/kg	330	"	11/27/1995 LBC

Note: Results are reported on a dry weight basis.

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Reported : 12/01/1995

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-843-1877
16-845-9942

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Sundberg, Carlson, & Associates

Sample:	56857-2884	Matrix:	Wipe / Grab
Client Sample:	Mill 1	Location:	6338
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor-1016	ND	ug/100cm2	10	Hexane Ext./8080	11/28/1995 SM
Aroclor-1221	ND	ug/100cm2	10	"	11/28/1995 SM
Aroclor-1232	ND	ug/100cm2	10	"	11/28/1995 SM
Aroclor-1242	ND	ug/100cm2	10	"	11/28/1995 SM
Aroclor-1248	ND	ug/100cm2	10	"	11/28/1995 SM
Aroclor-1254	ND	ug/100cm2	10	"	11/28/1995 SM
Aroclor-1260	920	ug/100cm2	10	"	11/28/1995 SM
Aroclor-1262	ND	ug/100cm2	10	"	11/28/1995 SM
Aroclor-1268	ND	ug/100cm2	10	"	11/28/1995 SM

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 12/04/1995
Revised : 12/08/1995

ad Industrial Drive
Michigan 49431
877
-9942

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Services Inc.

ıle:	56857-2885	Matrix:	Wipe / Grab
ıt Sample:	Mill 2	Location:	6339
LECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
EIVED:	11/13/1995 16:07	Sampled By:	MR

Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
YCHLORINATED BIPHENYLS (PCBs)					
ılor-1016	ND	ug/100cm2	10	Hexane Ext./8080	11/28/1995 SM
ılor-1221	ND	ug/100cm2	10	"	11/28/1995 SM
ılor-1232	ND	ug/100cm2	10	"	11/28/1995 SM
ılor-1242	ND	ug/100cm2	10	"	11/28/1995 SM
ılor-1248	ND	ug/100cm2	10	"	11/28/1995 SM
ılor-1254	ND	ug/100cm2	10	"	11/28/1995 SM
ılor-1260	30	ug/100cm2	10	"	11/28/1995 SM
ılor-1262	ND	ug/100cm2	10	"	11/28/1995 SM
ılor-1268	ND	ug/100cm2	10	"	11/28/1995 SM

Non Detectable

enior Project Manager

Maria G. Bissell

Reported : 12/04/1995
Revised : 12/08/1995

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'ington, Michigan 49431
5-843-1877
'16-845-9942

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Services Inc.

Sundberg, Carlson, & Associates

Sample:	56857-2887	Matrix:	Wipe / Grab
Client Sample:	Mill 4	Location:	6341
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor-1016	ND	ug/100cm2	1	Hexane Ext./8080	11/28/1995 SM
Aroclor-1221	ND	ug/100cm2	1	"	11/28/1995 SM
Aroclor-1232	ND	ug/100cm2	1	"	11/28/1995 SM
Aroclor-1242	ND	ug/100cm2	1	"	11/28/1995 SM
Aroclor-1248	ND	ug/100cm2	1	"	11/28/1995 SM
Aroclor-1254	ND	ug/100cm2	1	"	11/28/1995 SM
Aroclor-1260	15	ug/100cm2	1	"	11/28/1995 SM
Aroclor-1262	ND	ug/100cm2	1	"	11/28/1995 SM
Aroclor-1268	ND	ug/100cm2	1	"	11/28/1995 SM

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Reported : 12/04/1995
Revised : 12/08/1995

onrad Industrial Drive
on, Michigan 49431
3-1877
845-9942

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Services Inc.

ample:	56857-2888	Matrix:	Wipe / Grab
lient Sample:	Mill 5	Location:	6342
OLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
ECEIVED:	11/13/1995 16:07	Sampled By:	MR

est Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
OLYCHLORINATED BIPHENYLS (PCBs)					
roclor-1016	ND	ug/100cm2	1	Hexane Ext./8080	11/28/1995 SM
roclor-1221	ND	ug/100cm2	1	"	11/28/1995 SM
roclor-1232	ND	ug/100cm2	1	"	11/28/1995 SM
roclor-1242	ND	ug/100cm2	1	"	11/28/1995 SM
roclor-1248	ND	ug/100cm2	1	"	11/28/1995 SM
roclor-1254	ND	ug/100cm2	1	"	11/28/1995 SM
roclor-1260	21	ug/100cm2	1	"	11/28/1995 SM
roclor-1262	ND	ug/100cm2	1	"	11/28/1995 SM
roclor-1268	ND	ug/100cm2	1	"	11/28/1995 SM

= Non Detectable

Senior Project Manager

Maria G. Bissell

Reported : 12/04/1995
Revised : 12/08/1995

ustrial Drive
gan 49431

ANATECH Laboratories
Sundberg, Carlson, & Associates

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Services Inc.

9

	56857-2891	Matrix:	Wipe / Grab
ple:	Secondary	Location:	6345
ED:	11/07/1995 :	Project:	MPC-Callahan 95-565
):	11/13/1995 16:07	Sampled By:	MR

ption	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
ORINATED BIPHENYLS (PCBs)					
16	ND	ug/100cm2	1	Hexane Ext./8080	11/28/1995 SM
21	ND	ug/100cm2	1	"	11/28/1995 SM
32	ND	ug/100cm2	1	"	11/28/1995 SM
12	ND	ug/100cm2	1	"	11/28/1995 SM
18	ND	ug/100cm2	1	"	11/28/1995 SM
54	ND	ug/100cm2	1	"	11/28/1995 SM
50	32	ug/100cm2	1	"	11/28/1995 SM
52	ND	ug/100cm2	1	"	11/28/1995 SM
58	ND	ug/100cm2	1	"	11/28/1995 SM

etectable

roject Manager

. Bissell

Reported : 12/04/1995
Revised : 12/08/1995

Chain Custody

ANATECH LABORATORIES - A Division of CT&E Environmental Services

1200 Conrad Industrial Drive
Ludington, MI 49431

Phone: 616-843-1877 FAX: 616-845-9942

Anatech Lab D#: [illegible]

11-21

Page 1 of 3

Results To: SEA ENVIRONMENTAL
107 S FRONT ST
MQT MI 49855

Attention: SCOTT ALGER

Telephone # 906 228 5772

FAX # 906 228 5573

Invoice To:

Telephone #

Project Name: MPC - CALUMET

Project Number: 95-563

State in which samples were collected: MI

FAX Results: (YES) or NO

Required Completion Date:

Sampled by: MR

Work Authorization Signature:

This signature authorizes ANATECH to perform the work requested on this form and acknowledges the terms and conditions of payment which are listed on the reverse side of this form.

Test Methods

Comment / Notes

201 S

$65

2-402 - 1-502

ANATECH Lab ID	Client Sample ID	Sampling Location	Date	Time am / pm	Comp Grab C/G	Sample Matrix	Drinking Water Y/N	Field Filtered Y/N	PCB's	BTEX	PNA	Solvents (SOIL)	Total Cyanide	As, Ba, Cd, Cr, Cu, Fe, Pb	Mn, Ni, Se, Ag, Zn	Mercury	VOC	Glass	O&G	250m Pl	500m Pl	1L Pl	Other	pH Check
D586	6338	MILL 1	11/7/95	1745 P	G	PCB LIPP-			X															
D587	6339	MILL 2	11/7/95	1245 P	G				X															
D588	6340	MILL 3	11/7/95	1245 P	G				X															
D589	6341	MILL 4	11/7/95	1P	G				X															
D590	6342	MILL 5	11/7/95	1P	G				X															
D591	6343	MILL 6	11/7/95	115P	G				X															
D592	6344	MILL 7	11/7/95	115P	G				X															
D593	6345	SECONDARY	11/7/95	130P	G				X															
D594	6346	PYRITE DRY	11/7/95	130P	G	✓			X															
D595	6347	SCALE 1	11/7/95	+	G	SOIL	-	-		X	X	X	X	X	X	X								

Relinquished by: [signature] Date / Time (am / pm): 11/8/95 2

Received by: [signature] Date / Time (am / pm): 11/8/95

Relinquished by: Date / Time (am / pm):

Received by: Date / Time (am / pm): 11-13-95

Relinquished by: Date / Time (am / pm):

Received by: [signature] Date / Time (am / pm): 11/13/95 - 4:30

Cooler Temp: ONLINE

Cooler Temp: [illegible]

Cooler Temp: [illegible]

Pink copy-Client Yellow and White copy-Lab

0 Conrad Industrial Drive
ngton, Michigan 49431
-843-1877
'16-845-9942

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc.

Sundberg, Carlson, & Associates

Sample:	56421-1238	Matrix: Soil	/ Grab
Client Sample:	5571 WO-10 4 ?	Location:	
COLLECTED:	10/24/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/26/1995 16:42	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Cadmium (GFAA)	0.26	mg/kg	0.05	SW-846 Mtd. 7131	11/08/1995 GCP
Chromium, Total (ICAP)	15	mg/kg	2.5	SW-846 Mtd. 6010	11/07/1995 MC
Lead (GFAA)	15	mg/kg	1	SW-846 Mtd. 7421	11/06/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	91.4	%	0.1	Standard Mtd. 2540G	10/27/1995 PL
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/kg	10	SW-846 Mtd. 8010	11/01/1995 OY
hloromethane	ND	ug/kg	10	"	11/01/1995 OY
inyl Chloride	ND	ug/kg	10	"	11/01/1995 OY
Bromomethane	ND	ug/kg	10	"	11/01/1995 OY
Chloroethane	ND	ug/kg	10	"	11/01/1995 OY
Trichlorofluoromethane	ND	ug/kg	10	"	11/01/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/kg	10	"	11/01/1995 OY
1,1-Dichloroethene	ND	ug/kg	10	"	11/01/1995 OY
Methylene Chloride	ND	ug/kg	10	"	11/01/1995 OY
t-1,2-Dichloroethene	ND	ug/kg	10	"	11/01/1995 OY
1,1-Dichloroethane	ND	ug/kg	10	"	11/01/1995 OY
Chloroform	ND	ug/kg	10	"	11/01/1995 OY
1,1,1-Trichloroethane	ND	ug/kg	10	"	11/01/1995 OY
Carbon Tetrachloride	ND	ug/kg	10	"	11/01/1995 OY
1,2-Dichloroethane	ND	ug/kg	10	"	11/01/1995 OY
c-1,3-Dichloropropene	ND	ug/kg	10	"	11/01/1995 OY
Trichloroethene	ND	ug/kg	10	"	11/01/1995 OY
1,2-Dichloropropane	ND	ug/kg	10	"	11/01/1995 OY
Bromodichloromethane	ND	ug/kg	10	"	11/01/1995 OY
Tetrachloroethene	ND	ug/kg	10	"	11/01/1995 OY
t-1,3-Dichloropropene	ND	ug/kg	10	"	11/01/1995 OY
1,1,2-Trichloroethane	ND	ug/kg	10	"	11/01/1995 OY
Dibromochloromethane	ND	ug/kg	10	"	11/01/1995 OY
Chlorobenzene	ND	ug/kg	10	"	11/01/1995 OY
Bromoform	ND	ug/kg	10	"	11/01/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/kg	10	"	11/01/1995 OY

ND = Non Detectable

Reported : 11/16/1995

Chain of Custody

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1200 Conrad Industrial Drive
Ludington, MI 49431
Phone: 616-843-1877 FAX: 616-845-9942

11-9-95

Page of

Anatech Lab Log # 6421

Results To: C&E ENVIRONMENTAL
207 S FRONT ST
MONT MI 49855
Attention: SCOTT FRENCH
Telephone # 616 228 5272
FAX # 616 228 5523
Invoice To:
Telephone #

Project Name: MDC - CALUMET
Project Number: 95-515
State in which samples were collected: MI
FAX Results: YES or NO
Required Completion Date: NORMAL
Sampled by: GDS
Work Authorization Signature:
This signature authorizes ANATECH to perform the work requested on this form and acknowledges the terms and conditions of payment which are listed on the reverse side of this form.

ANATECH Lab ID	Client Sample ID	Sampling Location	Date	Time am / pm	Comp Grab C/G	Sample Matrix	Drinking Water Y/N	Field Filtered Y/N	Test Methods: BTEX	PNA's	RDIO	PCB's	CADMIUM	CHROMIUM (TOTAL)	LEAD	Comment / Notes: VOC	Glass	O&G	250m Pl	500m Pl	1L Pl	Other	pH Check
6236	557	MW-104	10/24/95	PM	G	SOIL			X	X	X	X	X	X	X		1					4	

R07 4°C

Relinquished by: [signature] Date / Time (am / pm): 10/25/95 4:00 PM
Received by: [signature] Date / Time (am / pm): 10/25/95 1700
Relinquished by: Date / Time (am / pm):
Received by: Date / Time (am / pm):
Relinquished by: Date / Time (am / pm):
Received by: Date / Time (am / pm):

Cooler Tamper? Cooler Temp.°C
Cooler Tamper? Cooler Temp.°C
Cooler Tamper? Cooler Temp.°C

P.O. # 11-6-95 Date Rec'd

Pink copy-Client Yellow and White copy-Lab

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·843-1877
16-845-9942

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Sample:	56395-1115	Matrix: Soil	/ Grab
Client Sample:	6055 WO-100 9.5-11.5'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Cadmium (GFAA)	ND	mg/kg	0.05	SW-846 Mtd. 7131	11/09/1995 GCP
Chromium, Total (ICAP)	19.5	mg/kg	2.5	SW-846 Mtd. 6010	10/30/1995 JJB
Lead (GFAA)	4	mg/kg	1	SW-846 Mtd. 7421	11/07/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	83.2	%	0.1	Standard Mtd. 2540G	10/26/1995 PL
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/kg	10	SW-846 Mtd. 8010	10/27/1995 OY
Chloromethane	ND	ug/kg	10	"	10/27/1995 OY
Vinyl Chloride	ND	ug/kg	10	"	10/27/1995 OY
Bromomethane	ND	ug/kg	10	"	10/27/1995 OY
Chloroethane	ND	ug/kg	10	"	10/27/1995 OY
Trichlorofluoromethane	ND	ug/kg	10	"	10/27/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/kg	10	"	10/27/1995 OY
1,1-Dichloroethene	ND	ug/kg	10	"	10/27/1995 OY
Methylene Chloride	ND	ug/kg	10	"	10/27/1995 OY
t-1,2-Dichloroethene	ND	ug/kg	10	"	10/27/1995 OY
1,1-Dichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Chloroform	ND	ug/kg	10	"	10/27/1995 OY
1,1,1-Trichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Carbon Tetrachloride	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichloroethane	ND	ug/kg	10	"	10/27/1995 OY
c-1,3-Dichloropropene	ND	ug/kg	10	"	10/27/1995 OY
Trichloroethene	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichloropropane	ND	ug/kg	10	"	10/27/1995 OY
Bromodichloromethane	ND	ug/kg	10	"	10/27/1995 OY
Tetrachloroethene	ND	ug/kg	10	"	10/27/1995 OY
t-1,3-Dichloropropene	ND	ug/kg	10	"	10/27/1995 OY
1,1,2-Trichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Dibromochloromethane	ND	ug/kg	10	"	10/27/1995 OY
Chlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
Bromoform	ND	ug/kg	10	"	10/27/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/kg	10	"	10/27/1995 OY

ND = Non Detectable

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Sample:	56395-1115	Matrix:	Soil / Grab
Client Sample:	6055 WO-100 9.5-11.5'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
1,3-Dichlorobenzene	ND	ug/kg	10	SW-846 Mtd. 8010	10/27/1995 OY
1,4-Dichlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
			Note: Results are reported on a dry weight basis.		
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/kg	10	SW-846 Mtd. 8020	10/27/1995 OY
Toluene	100	ug/kg	10	"	10/27/1995 OY
Ethylbenzene	440	ug/kg	10	"	10/27/1995 OY
Xylenes (Total)	1500	ug/kg	30	"	10/27/1995 OY
			Note: Results are reported on a dry weight basis.		
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/06/1995 SAJ
Benzo (a) Anthracene	ND	ug/kg	1000	"	11/14/1995 JA
Benzo (a) Pyrene	ND	ug/kg	1000	"	11/14/1995 JA
Benzo (b) Fluoranthene	ND	ug/kg	1000	"	11/14/1995 JA
Benzo (g,h,i) Perylene	ND	ug/kg	1000	"	11/14/1995 JA
Benzo (k) Fluoranthene	ND	ug/kg	1000	"	11/14/1995 JA
Dibenzo (a,h) Anthracene	ND	ug/kg	1000	"	11/14/1995 JA
Indeno (1,2,3-cd) Pyrene	ND	ug/kg	1000	"	11/14/1995 JA
Naphthalene	20,000	ug/kg	1000	"	11/14/1995 JA
Acenaphthene	ND	ug/kg	1000	"	11/14/1995 JA
Acenaphthylene	ND	ug/kg	1000	"	11/14/1995 JA
Fluorene	1100	ug/kg	1000	"	11/14/1995 JA
Phenanthrene	ND	ug/kg	1000	"	11/14/1995 JA
Anthracene	ND	ug/kg	1000	"	11/14/1995 JA
Fluoranthene	ND	ug/kg	1000	"	11/14/1995 JA
Pyrene	ND	ug/kg	1000	"	11/14/1995 JA
Chrysene	ND	ug/kg	1000	"	11/14/1995 JA
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

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Sample:	56395-1115	Matrix:	Soil / Grab
Client Sample:	6055 WO-100 9.5-11.5'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/06/1995 SAJ
Aroclor-1016	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1221	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1232	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1242	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1248	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1254	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1260	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1262	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1268	ND	ug/kg	330	"	11/07/1995 SM

Note: Results are reported on a dry weight basis.

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Reported : 11/16/1995

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Sample:	56395-1114	Matrix: Soil / Grab	
Client Sample:	6054 WO-101 1-3'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Cadmium (GFAA)	ND	mg/kg	0.05	SW-846 Mtd. 7131	11/09/1995 GCP
Chromium, Total (ICAP)	20.6	mg/kg	2.5	SW-846 Mtd. 6010	10/30/1995 JJB
Lead (GFAA)	9	mg/kg	1	SW-846 Mtd. 7421	11/07/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	92.1	%	0.1	Standard Mtd. 2540G --	10/26/1995 PL
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/kg	10	SW-846 Mtd. 8010	10/27/1995 OY
hloromethane	ND	ug/kg	10	"	10/27/1995 OY
Vinyl Chloride	ND	ug/kg	10	"	10/27/1995 OY
Bromomethane	ND	ug/kg	10	"	10/27/1995 OY
Chloroethane	ND	ug/kg	10	"	10/27/1995 OY
Trichlorofluoromethane	ND	ug/kg	10	"	10/27/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/kg	10	"	10/27/1995 OY
1,1-Dichloroethene	ND	ug/kg	10	"	10/27/1995 OY
Methylene Chloride	ND	ug/kg	10	"	10/27/1995 OY
t-1,2-Dichloroethene	ND	ug/kg	10	"	10/27/1995 OY
1,1-Dichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Chloroform	ND	ug/kg	10	"	10/27/1995 OY
1,1,1-Trichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Carbon Tetrachloride	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichloroethane	ND	ug/kg	10	"	10/27/1995 OY
c-1,3-Dichloropropene	ND	ug/kg	10	"	10/27/1995 OY
Trichloroethene	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichloropropane	ND	ug/kg	10	"	10/27/1995 OY
Bromodichloromethane	ND	ug/kg	10	"	10/27/1995 OY
Tetrachloroethene	ND	ug/kg	10	"	10/27/1995 OY
t-1,3-Dichloropropene	ND	ug/kg	10	"	10/27/1995 OY
1,1,2-Trichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Dibromochloromethane	ND	ug/kg	10	"	10/27/1995 OY
Chlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
Bromoform	ND	ug/kg	10	"	10/27/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/kg	10	"	10/27/1995 OY

ND = Non Detectable

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Sample:	56395-1114	Matrix:	Soil / Grab
Client Sample:	6054 WO-101 1-3'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
1,3-Dichlorobenzene	ND	ug/kg	10	SW-846 Mtd. 8010	10/27/1995 OY
1,4-Dichlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
			Note: Results are reported on a dry weight basis.		
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/kg	10	SW-846 Mtd. 8020	10/27/1995 OY
Toluene	42	ug/kg	10	"	10/27/1995 OY
Ethylbenzene	310	ug/kg	10	"	10/27/1995 OY
Xylenes (Total)	1200	ug/kg	30	"	10/27/1995 OY
			Note: Results are reported on a dry weight basis.		
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/06/1995 SAJ
Benzo (a) Anthracene	ND	ug/kg	330	"	11/14/1995 JA
Benzo (a) Pyrene	ND	ug/kg	330	"	11/14/1995 JA
Benzo (b) Fluoranthene	ND	ug/kg	330	"	11/14/1995 JA
Benzo (g,h,i) Perylene	ND	ug/kg	330	"	11/14/1995 JA
Benzo (k) Fluoranthene	ND	ug/kg	330	"	11/14/1995 JA
Dibenzo (a,h) Anthracene	ND	ug/kg	330	"	11/14/1995 JA
Indeno (1,2,3-cd) Pyrene	ND	ug/kg	330	"	11/14/1995 JA
Naphthalene	2600	ug/kg	330	"	11/14/1995 JA
Acenaphthene	ND	ug/kg	330	"	11/14/1995 JA
Acenaphthylene	ND	ug/kg	330	"	11/14/1995 JA
Fluorene	340	ug/kg	330	"	11/14/1995 JA
Phenanthrene	830	ug/kg	330	"	11/14/1995 JA
Anthracene	ND	ug/kg	330	"	11/14/1995 JA
Fluoranthene	ND	ug/kg	330	"	11/14/1995 JA
Pyrene	ND	ug/kg	330	"	11/14/1995 JA
Chrysene	ND	ug/kg	330	"	11/14/1995 JA
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

Reported : 11/16/1995

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Sample:	56395-1114	Matrix: Soil	/ Grab
Client Sample:	6054 WO-101 1-3'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/06/1995 SAJ
Aroclor-1016	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1221	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1232	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1242	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1248	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1254	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1260	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1262	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1268	ND	ug/kg	330	"	11/07/1995 SM

Note: Results are reported on a dry weight basis.

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Reported : 11/16/1995

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Sample:	56395-1116	Matrix: Soil / Grab	
Client Sample:	6056 WO-102 5-7'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Cadmium (GFAA)	ND	mg/kg	0.05	SW-846 Mtd. 7131	11/09/1995 GCP
Chromium, Total (ICAP)	22.7	mg/kg	2.5	SW-846 Mtd. 6010	10/30/1995 JJB
Lead (GFAA)	6	mg/kg	1	SW-846 Mtd. 7421	11/07/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	86.6	%	0.1	Standard Mtd. 2540G	10/26/1995 PL
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/kg	10	SW-846 Mtd. 8010	10/27/1995 OY
Chloromethane	ND	ug/kg	10	"	10/27/1995 OY
Vinyl Chloride	ND	ug/kg	10	"	10/27/1995 OY
Bromomethane	ND	ug/kg	10	"	10/27/1995 OY
Chloroethane	ND	ug/kg	10	"	10/27/1995 OY
Trichlorofluoromethane	ND	ug/kg	10	"	10/27/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/kg	10	"	10/27/1995 OY
1,1-Dichloroethene	ND	ug/kg	10	"	10/27/1995 OY
Methylene Chloride	ND	ug/kg	10	"	10/27/1995 OY
t-1,2-Dichloroethene	ND	ug/kg	10	"	10/27/1995 OY
1,1-Dichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Chloroform	ND	ug/kg	10	"	10/27/1995 OY
1,1,1-Trichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Carbon Tetrachloride	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichloroethane	ND	ug/kg	10	"	10/27/1995 OY
c-1,3-Dichloropropene	ND	ug/kg	10	"	10/27/1995 OY
Trichloroethene	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichloropropane	ND	ug/kg	10	"	10/27/1995 OY
Bromodichloromethane	ND	ug/kg	10	"	10/27/1995 OY
Tetrachloroethene	ND	ug/kg	10	"	10/27/1995 OY
t-1,3-Dichloropropene	ND	ug/kg	10	"	10/27/1995 OY
1,1,2-Trichloroethane	ND	ug/kg	10	"	10/27/1995 OY
Dibromochloromethane	ND	ug/kg	10	"	10/27/1995 OY
Chlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
Bromoform	ND	ug/kg	10	"	10/27/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/kg	10	"	10/27/1995 OY

ND = Non Detectable

Reported : 11/16/1995

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Sample:	56395-1116	Matrix: Soil	/ Grab
Client Sample:	6056 WO-102 5-7'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
1,3-Dichlorobenzene	ND	ug/kg	10	SW-846 Mtd. 8010	10/27/1995 OY
1,4-Dichlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
1,2-Dichlorobenzene	ND	ug/kg	10	"	10/27/1995 OY
			Note: Results are reported on a dry weight basis.		
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/kg	10	SW-846 Mtd. 8020	10/27/1995 OY
Toluene	ND	ug/kg	10	"	10/27/1995 OY
Ethylbenzene	ND	ug/kg	10	"	10/27/1995 OY
Xylenes (Total)	ND	ug/kg	30	"	10/27/1995 OY
			Note: Results are reported on a dry weight basis.		
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/06/1995 SAJ
Benzo (a) Anthracene	ND	ug/kg	1000	"	11/14/1995 JA
Benzo (a) Pyrene	ND	ug/kg	1000	"	11/14/1995 JA
Benzo (b) Fluoranthene	ND	ug/kg	1000	"	11/14/1995 JA
Benzo (g,h,i) Perylene	ND	ug/kg	1000	"	11/14/1995 JA
Benzo (k) Fluoranthene	ND	ug/kg	1000	"	11/14/1995 JA
Dibenzo (a,h) Anthracene	ND	ug/kg	1000	"	11/14/1995 JA
Indeno (1,2,3-cd) Pyrene	ND	ug/kg	1000	"	11/14/1995 JA
Naphthalene	ND	ug/kg	1000	"	11/14/1995 JA
Acenaphthene	ND	ug/kg	1000	"	11/14/1995 JA
Acenaphthylene	ND	ug/kg	1000	"	11/14/1995 JA
Fluorene	ND	ug/kg	1000	"	11/14/1995 JA
Phenanthrene	ND	ug/kg	1000	"	11/14/1995 JA
Anthracene	ND	ug/kg	1000	"	11/14/1995 JA
Fluoranthene	ND	ug/kg	1000	"	11/14/1995 JA
Pyrene	ND	ug/kg	1000	"	11/14/1995 JA
Chrysene	ND	ug/kg	1000	"	11/14/1995 JA
			Note: Results are reported on a dry weight basis. Elevated DL's due to matrix interference.		

ND = Non Detectable

Reported : 11/16/1995

Conrad Industrial Drive
gton, Michigan 49431
843-1877
16-845-9942

ANATECH
Laboratories
Sundberg, Carlson, & Associates

a Division of
CT&E Environmental
Services Inc.

Sample:	56395-1116	Matrix: Soil	/ Grab
Client Sample:	6056 WO-102 5-7'	Location:	
COLLECTED:	10/23/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/25/1995 15:19	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/06/1995 SAJ
Aroclor-1016	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1221	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1232	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1242	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1248	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1254	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1260	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1262	ND	ug/kg	330	"	11/07/1995 SM
Aroclor-1268	ND	ug/kg	330	"	11/07/1995 SM

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 11/16/1995

Chain of Custody

ANATECH LABORATORIES - A Division of CT&E Environmental Services
1200 Conrad Industrial Drive
Ludington, MI 49431
Phone: 616-843-1877 FAX: 616-845-9942

Anatech Lab D#: 6054 6055 6056

11-8-95

Page of

Results To: SEA ENVIRONMENTAL
307 S FRONT STREET
MQT MI 49855

Attention: STRETT FREELIH

Telephone # 906-228-3272

FAX # 906-228-5523

Invoice To:

Telephone #

Project Name: MPC - CALLAHAN

Project Number: 95-565

State in which samples were collected: MI

FAX Results: (YES) or NO

Required Completion Date: NORMAL

Sampled by: GDS

Work Authorization Signature:

This signature authorizes ANATECH to perform the work requested on this form and acknowledges the terms and conditions of payment which are listed on the reverse side of this form.

ANATECH Lab ID	Client Sample ID	Sampling Location	Date	Time am / pm	Comp Grab C/G	Sample Matrix	Drinking Water Y/N	Field Filtered Y/N	Test Methods: BTEX	DNA	8010	PCBs	LEAD	CADMIUM	T. CHROMIUM	Comment / Notes: VOC	Glass	O&G	250m Pl	500m Pl	1L Pl	Other	pH Check
6054	6054	WO-101-1-3'	10/25/95		G	SOIL			X	X	X	X	X	X	X		1						
6055	6055	WO-101-9.5-11.5'	10/25/95		G	SOIL			X	X	X	X	X	X	X		1						
6056	6056	WO-102-5-7'	10/25/95		G	SOIL			X	X	X	X	X	X	X		1						

Relinquished by: [signature] Date / Time (am / pm): 10/26/95 9:50 am

Received by: [signature] Date / Time (am / pm): 11:55 am

Relinquished by: Date / Time (am / pm):

Received by: Date / Time (am / pm):

Relinquished by: Date / Time (am / pm):

Received by: Date / Time (am / pm):

Cooler Temp #1: 20H 1KT 5°C Cooler Temp #2: Cooler Temp #3: Cooler Temp #4:

11.5 [illegible] 3:15 pm

Pink copy-Client Yellow and White copy-Lab

Table 5: PCB Wipe Samples

Wipe Samples	Location	Mill 1	Mill 2	Mill 3	Mill 4	Mill 5	Mill 6	Mill 7	Secondary	Pyrite Dry
	Date	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95
Polychlorinated Biphenyls (PCBs)	Sample No.	6338	6339	6340	6341	6342	6343	6344	6345	6346
Aroclor - 1016 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1221 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1232 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1242 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1248 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1254 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1260 (J)	µg/100cm^2	920	30	**4.1E+05**	(0.1)	(0.1)	0.08	(0.1)	0.32	(0.002)
Aroclor - 1262 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1268 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)

Table 5: PCB Soil Samples

Soil	Location	PCB #1	PCB #2	PCB #3	PCB #4	Generic	Generic
	Date	11/07/95	11/07/95	11/07/95	11/07/95	Residential	Industrial
Polychlorinated Biphenyls (PCBs)	Sample No.	6348	6349	6350	6351	Criteria*	Criteria**
Aroclor - 1016 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1221 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1232 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1242 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1248 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1254 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1260 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1262 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1268 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

(J) "Chemical may be present in several isomer forms. Isomer specific concentrations must be combined for comparison to criteria."
-- MDNR Operational Memoranda Numbers 8 and 14.

Table 2: West Shop Area

Page 2

Soil

Location	MW-106	WO-100	WO-101	WO-102	WO-104	Soil	
Date	10/26/95	10/23/95	10/23/95	10/23/95	10/23/95		
Sample No.	6066	6055	6054	6056	5571		
Metals / Depth	1-3'	9.5-11.5'	1-3'	5-7'		Generic Residential Criteria*	Generic Industrial Criteria**
Cadmium (GFAA) mg/kg	(0.05)	(0.05)	(0.05)	(0.05)	0.26	1	2,300
Chromium (Total) (ICAP) mg/kg	11	19.5	20.6	22.7	15	18	22,000
Lead (GFAA) mg/kg	3.6	4	9	6	15	21	400
Volatile Aromatic Hydrocarbons							
Benzene µg/kg	(10.00)	(10.00)	(10.00)	(10.00)	(10.00)	100	8.5E+05
Toluene µg/kg	(10.00)	100	42	(10.00)	(10.00)	16,000	1.6E+08
Ethylbenzene µg/kg	(10.00)	440	310	(10.00)	27	1,500	7.2E+07
Xylenes µg/kg	(30.00)	1500	1200	(30.00)	260	5,600	1.0E+09
Polynuclear Aromatic Hydrocarbons							
Benzo (a) anthracene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	14,000	2.1E+05
Benzo (a) pyrene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1,400	2.1E+04
Benzo (b) fluoranthene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	14,000	2.1E+05
Benzo (g,h,i) perylene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1.5E+06	1.6E+07
Benzo (k) fluoranthene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1.4E+05	2.1E+06
Dibenzo (a,h) anthracene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1,400	2.1E+04
Indeno (1,2,3-cd) pyrene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	14,000	2.5E+05
Naphthalene µg/kg	(330.00)	20000	2600	(1,000.00)	(330.00)	5,200	1.6E+08
Acenaphthene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	26,000	8.1E+08
Acenaphthylene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	520	1.6E+07
Fluorene µg/kg	(330.00)	1100	340	(1,000.00)	(330.00)	18,000	5.4E+08
Phenanthrene µg/kg	(330.00)	(1,000.00)	330	(1,000.00)	(330.00)	520	1.6E+07
Anthracene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1.5E+05	1.0E+09
Fluoranthene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	18,000	5.4E+08
Pyrene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	11000	3.4E+08
Chrysene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1.4E+06	2.1E+07

Bold type denotes concentrations exceeding residential clean up criteria

Soil

Location	MW-106	WO-100	WO-101	WO-102	WO-104	Soil	
Date	10/26/95	10/23/95	10/23/95	10/23/95	10/23/95		
Sample No.	6066	6055	6054	6056	5571		
Purgeable Halocarbons / Depth	1-3'	9.5-11.5'	1-3'	5-7'		Generic Residential Criteria*	Generic Industrial Criteria**
Dichlordifluoromethane µg/kg	(10)	(10)	(10)	(10)	(10)	34,000	1.7E+08
Chloromethane µg/kg	(10)	(10)	(10)	(10)	(10)	1,300	1.9E+05
Vinyl Chloride µg/kg	(10)	(10)	(10)	(10)	(10)	40	11,000
Bromomethane µg/kg	(10)	(10)	(10)	(10)	(10)	200	1.0E+06
Chloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	4,400	6.5E+07
Trichlorofluoromethane µg/kg	(10)	(10)	(10)	(10)	(10)	52,000	2.6E+08
2-Chloroethyl Vinyl Ether µg/kg	(10)	(10)	(10)	(10)	(10)	ID	ID
1,1-Dichloroethene µg/kg	(10)	(10)	(10)	(10)	(10)	140	7.4E+05
Methylene Chloride (S) µg/kg	(10)	(10)	(10)	(10)	(10)	100	3.3E+06
trans-1,2-Dichloroethene µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	1.3E+07
1,1-Dichloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	18,000	8.9E+07
Chloroform µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	4.1E+06
1,1,1-Trichloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	4,000	2.1E+07
Carbon tetrachloride µg/kg	(10)	(10)	(10)	(10)	(10)	100	1.9E+05
1,2-Dichloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	100	2.7E+05
cis-1,3-Dichloropropene (J) µg/kg	(10)	(10)	(10)	(10)	(10)	96	1.4E+05
Trichloroethene µg/kg	(10)	(10)	(10)	(10)	(10)	100	1.6E+06
1,2-Dichloropropane µg/kg	(10)	(10)	(10)	(10)	(10)	100	3.6E+05
Bromodichloromethane (S) µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	4.0E+05
Tetrachloroethene µg/kg	(10)	(10)	(10)	(10)	(10)	100	4.9E+05
trans-1,3-Dichloropropene (J) µg/kg	(10)	(10)	(10)	(10)	(10)	96	1.4E+05
1,1,2-Trichloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	100	4.4E+05
Dibromochloromethane (S) µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	3.0E+05
Chlorobenzene (S) µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	1.4E+07
Bromoform (S) µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	3.1E+06
1,1,2,2-Tetrachloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	86	1.2E+05
1,3-Dichlorobenzene µg/kg	(10)	(10)	(10)	(10)	(10)	12,000	6.4E+07
1,4-Dichlorobenzene µg/kg	(10)	(10)	(10)	(10)	(10)	1,500	1.0E+06
1,2-Dichlorobenzene µg/kg	(10)	(10)	(10)	(10)	(10)	12,000	6.4E+07
Polychlorinated Biphenyls (PCBs)							
Aroclor - 1016 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1221 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1232 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1242 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1248 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1254 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1260 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1262 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1268 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

NA = Not applicable

* Generic Residential Criteria are twenty (20) times the drinking water values from MDNR Operational Memorandum No. 8, Revision 4, dated June 5, 1995, except for nonleachable PNAs, PCBs and metals. The values for nonleachable PNAs and PCBs are the direct contact values from that source. The values for metals are the default background criteria from MDNR Operational Memorandum No. 15, dated September 30, 1993. No criterion for 2-chloroethyl vinyl ether has been developed by the MDNR due to inadequate data.

**Generic Industrial Criteria are direct contact values from MDNR Operational Memorandum No. 14, dated June 6, 1995. No industrial direct contact criteria for chloride or 2-chloroethyl vinyl ether have been developed by the MDNR due to inadequate data.

(J) "Chemical may be present in several isomer forms. Isomer specific concentrations must be combined for comparison to criteria." -- MDNR Operational Memoranda Numbers 8 and 14.

(S) "Concentrations of trihalomethanes in groundwater must be combined to determine compliance with the health-based drinking water value of 100 ppb." -- MDNR Operational Memoranda Numbers 8 and 14.

Table 1
Analytical Parameters

Sample Number	Sample Location	Sample Matrix	BTEX	PNAs	Solvents	PCBs	Cyanide (Total)	Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Zinc	pH
6055	WO-100	Soil																			
6054	WO-101	Soil																			
6056	WO-102	Soil																			
5571	WO-104	Soil																			
6066	MW-106	Soil																			
6057	MW-101	Water																			
6058	MW-102	Water																			
6059	MW-103	Water																			
6060	MW-104	Water																			
6061	MW-105	Water																			
6062	MW-106	Water																			
6063	Test Pit 17	Soil																			
6064	Test Pit 34	Soil										TCLP analyses									
6065	Stockpile	Soil																			
6347	Scale #1	Soil																			
6352	Pyrite Pad	Surface																			
6353	Conveyor	Surface																			
6354	SW-1	Surface																			
6355	SW-2	Surface										Total and dissolved metals									
6356	SW-3	Surface																			

Baseline Environmental Assessment, January 1996
Sundberg, Carlson and Associates, Inc.
Anatech Laboratories
(Groundwater and Soil Results)

BASELINE ENVIRONMENTAL ASSESSMENT INVESTIGATION REPORT FORMER ROPES MILLING PLANT PROPERTY 4547 COUNTY ROAD 601 CHAMPION, MICHIGAN

Prepared for:

MINERALS PROCESSING CORPORATION
4547 County Road 601
Champion, Michigan 49814

January, 1996

JUN 07 ENTD

Prepared by:

SCA ENVIRONMENTAL
A Division of Sundberg, Carlson and Associates, Inc.
307 South Front Street
Marquette, Michigan 49855

SCA Project 95-565

Table 1
Analytical Parameters

Sample Number	Sample Location	Sample Matrix	BTEX	PNAs	Solvents	PCBs	Cyanide (Total)	Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Zinc	pH
6055	WO-100	Soil																			
6054	WO-101	Soil																			
6056	WO-102	Soil																			
5571	WO-104	Soil																			
6066	MW-106	Soil																			
6057	MW-101	Water																			
6058	MW-102	Water																			
6059	MW-103	Water																			
6060	MW-104	Water																			
6061	MW-105	Water																			
6062	MW-106	Water																			
6063	Test Pit 17	Soil																			
6064	Test Pit 34	Soil										TCLP analyses									
6065	Stockpile	Soil																			
6347	Scale #1	Soil																			
6352	Pyrite Pad	Surface																			
6353	Conveyor	Surface																			
6354	SW-1	Surface																			
6355	SW-2	Surface										Total and dissolved metals									
6356	SW-3	Surface																			

Table 3: Monitoring Wells - Dissolved Metals Analyses

Page 1

Groundwater

Dissolved Metals Analyses	Sample No.	Location	MW-101	MW-101	MW-102	MW-102	MW-103	MW-103	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
		Date	10/26/95	11/29/95	10/26/95	11/29/95	10/26/95	11/29/95		
			6057		6058		6059			
Arsenic (GFAA)	mg/L		(0.005)	0.006	(0.005)	(0.002)	(0.005)	(0.002)	0.05	0.05
Barium (ICAP)	mg/L		(0.2)	0.056	(0.2)	0.036	(0.2)	0.060	2	2
Cadmium (GFAA)	mg/L		(0.0005)	0.0007	(0.0005)	0.1300	(0.0005)	0.0006	0.005	0.005
Chromium (Total) (ICAP)	mg/L		(0.05)	0.003	(0.05)	(0.001)	(0.05)	0.002	0.1	0.1
Copper (ICAP)	mg/L		(0.025)	Not Analyzed	(0.025)	Not Analyzed	(0.025)	Not Analyzed	1	1
Iron (ICAP)	mg/L		1.0	5.5	390	440	34	2.8	ID	ID
Lead (GFAA)	mg/L		(0.003)	(0.001)	(0.003)	0.058	(0.003)	(0.001)	0.004	0.004
Manganese (ICAP)	mg/L		**5.8**	**8.4**	**22**	**25**	**3.2**	**4.2**	0.05	0.05
Mercury (Cold Vapor)	mg/L		(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)	mg/L		(0.05)	0.001	**1.4**	**1.600**	(0.05)	0.002	0.1	0.1
Selenium (GFAA)	mg/L		(0.005)	(0.002)	(0.005)	(0.002)	(0.005)	(0.002)	0.05	0.05
Silver (GFAA)	mg/L		(0.0005)	0.002	(0.0005)	0.002	(0.0005)	(0.001)	0.034	0.098
Zinc (ICAP)	mg/L		(0.02)	0.013	0.22	(0.001)	0.02	(0.001)	2.4	5

Bold type denotes concentrations exceeding residential clean up criteria

Groundwater

Dissolved Metals Analyses	Sample No.	Location	MW-104	MW-104	MW-105	MW-105	MW-106	MW-106	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
		Date	10/26/95	11/29/95	10/26/95	11/29/95	10/26/95	11/29/95		
			6060		6061		6062			
Arsenic (GFAA)	mg/L		0.012	0.008	(0.005)	(0.002)	(0.005)	(0.002)	0.050	0.050
Barium (ICAP)	mg/L		(0.2)	0.210	(0.2)	0.038	(0.2)	0.063	2.000	2.000
Cadmium (GFAA)	mg/L		(0.0005)	0.0060	(0.0005)	(0.0005)	(0.0005)	(0.0005)	0.005	0.005
Chromium (Total) (ICAP)	mg/L		(0.05)	0.002	(0.05)	0.002	(0.05)	0.003	0.100	0.100
Copper (ICAP)	mg/L		(0.025)	Not Analyzed	(0.025)	Not Analyzed	(0.025)	Not Analyzed	1.000	1.000
Iron (ICAP)	mg/L		30	41	9.4	2.7	2.0	0.052	ID	ID
Lead (GFAA)	mg/L		(0.003)	0.004	(0.003)	(0.001)	(0.003)	(0.001)	0.004	0.004
Manganese (ICAP)	mg/L		**3.2**	**5.7**	**1.2**	**1.4**	**7.2**	**7.6**	0.050	0.050
Mercury (Cold Vapor)	mg/L		(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)	mg/L		(0.05)	0.022	(0.05)	0.004	(0.05)	0.011	0.100	0.100
Selenium (GFAA)	mg/L		(0.005)	(0.002)	(0.005)	0.002	(0.005)	0.006	0.050	0.050
Silver (GFAA)	mg/L		(0.0005)	(0.001)	(0.0005)	(0.001)	(0.0005)	0.001	0.034	0.098
Zinc (ICAP)	mg/L		0.02	0.025	(0.02)	0.013	0.02	0.020	2.400	5.000

Bold type denotes concentrations exceeding residential clean up criteria

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995. Health based values are shown except for copper, and manganese, for which aesthetic values are given.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995. See note for Residential Values. In addition, the aesthetic value is shown for zinc.

Table 3: Monitoring Wells - Dissolved Metals Analyses

Page 2

Groundwater

Location		MW-1	MW-2	MW-2	MW-3	MW-3	MW-4	MW-4	MW-5	MW-5	Residential	Industrial
Date		11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	Drinking H2O Criteria*	Drinking H2O Criteria**
Dissolved Metals Analyses												
Arsenic (GFAA)	mg/L	(0.002)	0.0053	(0.002)	0.0048	(0.002)	0.018	(0.002)	0.074	0.14	0.050	0.050
Barium (ICAP)	mg/L	0.085	0.049	0.067	0.095	0.06	0.064	0.06	0.26	0.28	2.000	2.000
Cadmium (GFAA)	mg/L	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	**0.028**	**0.041**	0.005	0.03	0.005	0.005
Chromium (Total) (ICAP)	mg/L	0.002	(0.01)	0.002	(0.01)	0.001	(0.01)	0.002	(0.01)	0.014	0.100	0.100
Copper (ICAP)	mg/L	0.003	(0.01)	0.004	(0.01)	0.008	(0.01)	0.004	(0.01)	(0.01)	1.000	1.000
Iron (ICAP)	mg/L	4.5	1.6	0.066	0.45	0.17	250	41	200	300	ID	ID
Lead (GFAA)	mg/L	(0.001)	(0.001)	(0.001)	**0.012**	(0.001)	(0.001)	**0.024**	(0.001)	**0.014**	0.004	0.004
Manganese (ICAP)	mg/L	7	6	2.3	1.9	0.007	64	45	6.1	6.7	0.050	0.050
Mercury (Cold Vapor)	mg/L	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)	mg/L	0.015	0.06	0.018	0.009	0.028	**2.2**	**1.5**	0.03	0.06	0.100	0.100
Selenium (GFAA)	mg/L	0.002	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	0.050	0.050
Silver (GFAA)	mg/L	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	0.003	(0.005)	(0.005)	0.034	0.098
Zinc (ICAP)	mg/L	0.023	0.03	0.006	0.68	0.36	0.45	0.28	0.05	(0.01)	2.400	5.000

Bold type denotes concentrations exceeding residential clean up criteria

Groundwater

		MW-7	MW-7	MW-9	MW-9	MW-10	MW-10	MW-11	MW-11	MW-12	MW-12	Residential	Industrial
		06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	Drinking H2O Criteria*	Drinking H2O Criteria**
Dissolved Metals Analyses													
Arsenic (GFAA)	mg/L	0.0077	(0.002)	(0.002)	(0.002)	0.0048	0.003	0.0064	0.013	0.069	(0.00)	0.050	0.050
Barium (ICAP)	mg/L	0.021	0.018	0.028	0.037	0.056	0.043	0.12	0.11	0.033	0.03	2.000	2.000
Cadmium (GFAA)	mg/L	0.042	0.02	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	0.019	(0.005)	(0.005)	0.005	0.005
Chromium (Total) (ICAP)	mg/L	(0.01)	0.004	0.037	(0.01)	(0.01)	0.002	(0.01)	0.013	(0.01)	0.002	0.100	0.100
Copper (ICAP)	mg/L	(0.01)	0.004	0.056	0.003	(0.01)	0.001	0.033	0.088	(0.01)	0.034	1.000	1.000
Iron (ICAP)	mg/L	170	190	0.12	0.15	18	0.33	140	190	7.4	1.8	ID	ID
Lead (GFAA)	mg/L	(0.001)	0.011	(0.001)	(0.001)	(0.001)	(0.001)	0.0034	**0.011**	(0.001)	(0.001)	0.004	0.004
Manganese (ICAP)	mg/L	76	35	0.21	0.22	23	30	7.8	6.2	1	1.5	0.050	0.050
Mercury (Cold Vapor)	mg/L	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)	mg/L	**3.9**	**1.1**	0.02	0.021	0.03	0.039	(0.01)	0.004	(0.01)	0.002	0.100	0.100
Selenium (GFAA)	mg/L	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	0.007	(0.001)	(0.001)	(0.001)	(0.001)	0.050	0.050
Silver (GFAA)	mg/L	(0.005)	0.003	(0.005)	0.002	(0.005)	0.002	(0.005)	(0.005)	(0.005)	(0.005)	0.034	0.098
Zinc (ICAP)	mg/L	1.2	0.25	0.01	0.007	0.19	0.33	0.06	(0.01)	0.01	0.008	2.400	5.000

Bold type denotes concentrations exceeding residential clean up criteria

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995. Health based values are shown except for copper, and manganese, for which aesthetic values are given.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995. See note for Residential Values. In addition, the aesthetic value is shown for zinc.

Table 2: West Shop Area

Page 1

Groundwater

Dissolved Metals	Location / Date / Sample No.	Unit	MW-104 10/26/95 6060	MW-106 10/26/95 6062	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
Arsenic (GFAA)		mg/L	0.012	(0.005)	0.050	0.050
Barium (ICAP)		mg/L	(0.2)	(0.2)	2.0	2.0
Cadmium (GFAA)		mg/L	(0.0005)	(0.0005)	0.005	0.005
Chromium (Total) (ICAP)		mg/L	(0.05)	(0.05)	0.10	0.10
Copper (ICAP)		mg/L	(0.025)	(0.025)	1.0	1.0
Iron (ICAP)		mg/L	30	2.0	ID	ID
Lead (GFAA)		mg/L	(0.003)	(0.003)	0.004	0.004
Manganese (ICAP)		mg/L	3.2	7.2	0.050	0.050
Mercury (Cold Vapor)		mg/L	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)		mg/L	(0.05)	(0.05)	0.10	0.10
Selenium (GFAA)		mg/L	(0.005)	(0.005)	0.050	0.050
Silver (GFAA)		mg/L	(0.0005)	(0.0005)	0.034	0.098
Zinc (ICAP)		mg/L	0.02	0.02	2.4	5.0
Volatile Aromatic Hydrocarbons						
Benzene		µg/L	27	(5.00)	5	5
Toluene		µg/L	94	(1.00)	790	790
Ethylbenzene		µg/L	48	(1.00)	74	74
Xylenes		µg/L	500	(3.00)	280	280
Polynuclear Aromatic Hydrocarbons						
Benzo (a) anthracene		µg/L	(5.00)	(5.00)	*5*	*5*
Benzo (a) pyrene		µg/L	(5.00)	(5.00)	*5*	*5*
Benzo (b) fluoranthene		µg/L	(5.00)	(5.00)	*5*	*5*
Benzo (g,h,i) perylene		µg/L	(5.00)	(5.00)	28	75
Benzo (k) fluoranthene		µg/L	(5.00)	(5.00)	12	48
Dibenzo (a,h) anthracene		µg/L	(5.00)	(5.00)	*5*	*5*
Indeno (1,2,3-cd) pyrene		µg/L	(5.00)	(5.00)	*5*	*5*
Naphthalene		µg/L	75	(5.00)	280	750
Acenaphthene		µg/L	(5.00)	(5.00)	1,300	3,800
Acenaphthylene		µg/L	(5.00)	(5.00)	28	75
Fluorene		µg/L	(5.00)	(5.00)	880	2,500
Phenanthrene		µg/L	(5.00)	(5.00)	28	75
Anthracene		µg/L	(5.00)	(5.00)	7,300	21,000
Fluoranthene		µg/L	(5.00)	(5.00)	880	2,500
Pyrene		µg/L	(5.00)	(5.00)	550	1,600
Chrysene		µg/L	(5.00)	(5.00)	120	480

Bold type denotes concentrations exceeding residential clean up criteria

Groundwater

Purgeable Halocarbons	Location / Date / Sample No.	Unit	MW-104 10/26/95 6060	MW-106 10/26/95 6062	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
Dichlordifluoromethane		µg/L	(1)	(1)	1,700	4,600
Chloromethane		µg/L	(1)	(1)	66	270
Vinyl Chloride		µg/L	(1)	(1)	2	2
Bromomethane		µg/L	(1)	(1)	10	29
Chloroethane		µg/L	(1)	(1)	220	910
Trichlorofluoromethane		µg/L	(1)	(1)	2,600	7,300
2-Chloroethyl Vinyl Ether		µg/L	(1)	(1)	ID	ID
1,1-Dichloroethene		µg/L	(1)	(1)	7	7
Methylene Chloride		µg/L	(1)	(1)	5	5
trans-1,2-Dichloroethene		µg/L	(1)	(1)	100	100
1,1-Dichloroethane		µg/L	(1)	(1)	880	2,500
Chloroform (S)		µg/L	(1)	(1)	100	100
1,1,1-Trichloroethane		µg/L	(1)	(1)	200	200
Carbon tetrachloride		µg/L	(1)	(1)	5	5
1,2-Dichloroethane		µg/L	(1)	(1)	5	5
cis-1,3-Dichloropropene (J)		µg/L	(1)	(1)	4.7	19
Trichloroethene		µg/L	(1)	(1)	5	5
1,2-Dichloropropane		µg/L	(1)	(1)	5	5
Bromodichloromethane (S)		µg/L	(1)	(1)	100	100
Tetrachloroethene		µg/L	(1)	(1)	5	5
trans-1,3-Dichloropropene (J)		µg/L	(1)	(1)	4.7	19
1,1,2-Trichloroethane		µg/L	(1)	(1)	5	5
Dibromochloromethane (S)		µg/L	(1)	(1)	100	100
Chlorobenzene (S)		µg/L	(1)	(1)	100	100
Bromoform (S)		µg/L	(1)	(1)	100	100
1,1,2,2-Tetrachloroethane		µg/L	(1)	(1)	4.3	17
1,3-Dichlorobenzene		µg/L	(1)	(1)	600	600
1,4-Dichlorobenzene		µg/L	(1)	(1)	75	75
1,2-Dichlorobenzene		µg/L	(1)	(1)	600	600
Polychlorinated Biphenyls (PCBs)						
Aroclor - 1016 (J)		µg/L	(0.2)	(0.2)	0.5	0.5
Aroclor - 1221 (J)		µg/L	(0.2)	(0.2)	0.5	0.5
Aroclor - 1232 (J)		µg/L	(0.2)	(0.2)	0.5	0.5
Aroclor - 1242 (J)		µg/L	(0.2)	(0.2)	0.5	0.5
Aroclor - 1248 (J)		µg/L	(0.2)	(0.2)	0.5	0.5
Aroclor - 1254 (J)		µg/L	(0.2)	(0.2)	0.5	0.5
Aroclor - 1260 (J)		µg/L	(0.2)	(0.2)	0.5	0.5
Aroclor - 1262 (J)		µg/L	(0.2)	(0.2)	0.5	0.5
Aroclor - 1268 (J)		µg/L	(0.2)	(0.2)	0.5	0.5

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)
NA = Not applicable
ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995. Health based values are shown except for copper, manganese, toluene, xylenes, for which the aesthetic value is given. The drinking water criteria are less than the Target Method Detection Limits (TMDLs) for certain PNAs. The criteria default to the TMDLs, shown in italics, in those cases.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995. See note for Residential Values. In addition, the aesthetic value is shown for zinc.

(J) "Chemical may be present in several isomer forms. Isomer specific concentrations must be combined for comparison to criteria." -- MDNR Operational Memoranda Numbers 8 and 14.

(S) "Concentrations of trihalomethanes in groundwater must be combined to determine compliance with the health-based drinking water value of 100 ppb." -- MDNR Operational Memoranda Numbers 8 and 14.

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ANATECH Laboratories

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CT&E Environmental
Services Inc.

Sundberg, Carlson, & Associates

Sample:	56857-2898	Matrix:	Water / Grab
Client Sample:	Pyrite Padlr	Location:	6352
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

JUN 07 1996

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	ND	mg/L	0.003	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	0.070	mg/L	0.002	SW-846 Mtd. 6010	11/21/1995 MC
Cadmium (GFAA)	0.0011	mg/L	0.0005	SW-846 Mtd. 7131	11/25/1995 MC
Chromium, Total (ICAP)	0.007	mg/L	0.004	SW-846 Mtd. 6010	11/21/1995 MC
Copper (ICAP)	0.016	mg/L	0.004	"	11/21/1995 MC
Iron (ICAP)	1.8	mg/L	0.01	"	11/21/1995 MC
Lead (GFAA)	0.003	mg/L	0.003	SW-846 Mtd. 7421	11/29/1995 GCP
Manganese (ICAP)	3.1	mg/L	0.003	SW-846 Mtd. 6010	11/21/1995 MC
Mercury (Cold Vapor)	0.0028	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	1.3	mg/L	0.04	SW-846 Mtd. 6010	11/21/1995 MC
:lenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/29/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/25/1995 MC
Zinc (ICAP)	0.10	mg/L	0.007	SW-846 Mtd. 6010	11/21/1995 MC
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/L	1	SW-846 Mtd. 8010	11/17/1995 OY
Chloromethane	ND	ug/L	1	"	11/17/1995 OY
Vinyl Chloride	ND	ug/L	1	"	11/17/1995 OY
Bromomethane	ND	ug/L	1	"	11/17/1995 OY
Chloroethane	ND	ug/L	1	"	11/17/1995 OY
Trichlorofluoromethane	ND	ug/L	1	"	11/17/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/L	1	"	11/17/1995 OY
1,1-Dichloroethene	ND	ug/L	1	"	11/17/1995 OY
Methylene Chloride	ND	ug/L	1	"	11/17/1995 OY
t-1,2-Dichloroethene	ND	ug/L	1	"	11/17/1995 OY
1,1-Dichloroethane	ND	ug/L	1	"	11/17/1995 OY
Chloroform	ND	ug/L	1	"	11/17/1995 OY
1,1,1-Trichloroethane	ND	ug/L	1	"	11/17/1995 OY
Carbon Tetrachloride	ND	ug/L	1	"	11/17/1995 OY
1,2-Dichloroethane	ND	ug/L	1	"	11/17/1995 OY
c-1,3-Dichloropropene	ND	ug/L	1	"	11/17/1995 OY
Trichloroethene	ND	ug/L	1	"	11/17/1995 OY
1,2-Dichloropropane	ND	ug/L	1	"	11/17/1995 OY
Bromodichloromethane	ND	ug/L	1	"	11/17/1995 OY
Tetrachloroethene	ND	ug/L	1	"	11/17/1995 OY

ND = Non Detectable

Reported : 12/01/1995

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ngton, Michigan 49431
-843-1877
16-845-9942

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CT&E Environmental
Services Inc

Sundberg, Carlson, & Associates

Sample:	56857-2898	Matrix:	Water / Grab
Client Sample:	Pyrite Padlr	Location:	6352
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
t-1,3-Dichloropropene	ND	ug/L	1	SW-846 Mtd. 8010	11/17/1995 OY
1,1,2-Trichloroethane	ND	ug/L	1	"	11/17/1995 OY
Dibromochloromethane	ND	ug/L	1	"	11/17/1995 OY
Chlorobenzene	ND	ug/L	1	"	11/17/1995 OY
Bromoform	ND	ug/L	1	"	11/17/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/L	1	"	11/17/1995 OY
1,3-Dichlorobenzene	ND	ug/L	1	"	11/17/1995 OY
1,4-Dichlorobenzene	ND	ug/L	1	"	11/17/1995 OY
1,2-Dichlorobenzene	ND	ug/L	1	"	11/17/1995 OY
/OLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	11/17/1995 OY
Toluene	ND	ug/L	1	"	11/17/1995 OY
Ethylbenzene	ND	ug/L	1	"	11/17/1995 OY
Xylenes (Total)	ND	ug/L	3	"	11/17/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/14/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	11/27/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	11/27/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	11/27/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	11/27/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	11/27/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	11/27/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	11/27/1995 LBC
Naphthalene	ND	ug/L	5	"	11/27/1995 LBC
Acenaphthene	ND	ug/L	5	"	11/27/1995 LBC
Acenaphthylene	ND	ug/L	5	"	11/27/1995 LBC
Fluorene	ND	ug/L	5	"	11/27/1995 LBC
Phenanthrene	ND	ug/L	5	"	11/27/1995 LBC
Anthracene	ND	ug/L	5	"	11/27/1995 LBC
Fluoranthene	ND	ug/L	5	"	11/27/1995 LBC
Pyrene	ND	ug/L	5	"	11/27/1995 LBC
Chrysene	ND	ug/L	5	"	11/27/1995 LBC

ND = Non Detectable

Reported : 12/01/1995

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Services Inc

Sundberg, Carlson, & Associates

Sample:	56857-2898	Matrix:	Water / Grab
Client Sample:	Pyrite Padlr	Location:	6352
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mul. 8080	11/14/1995 LI
Aroclor-1016	ND	ug/L	2	"	11/28/1995 SM
Aroclor-1221	ND	ug/L	2	"	11/28/1995 SM
Aroclor-1232	ND	ug/L	2	"	11/28/1995 SM
Aroclor-1242	ND	ug/L	2	"	11/28/1995 SM
Aroclor-1248	ND	ug/L	2	"	11/28/1995 SM
Aroclor-1254	ND	ug/L	2	"	11/28/1995 SM
Aroclor-1260	ND	ug/L	2	"	11/28/1995 SM
Aroclor-1262	ND	ug/L	2	"	11/28/1995 SM
Aroclor-1268	ND	ug/L	2	"	11/28/1995 SM

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 12/01/1995

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Services Inc.

Sundberg, Carlson, & Associates

Sample:	56857-2899	Matrix:	Water / Grab
Client Sample:	Conv.	Location:	6353
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	0.068	mg/L	0.004	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	0.007	mg/L	0.002	SW-846 Mtd. 6010	11/21/1995 MC
Cadmium (GFAA)	0.015	mg/L	0.0005	SW-846 Mtd. 7131	11/26/1995 MC
Chromium, Total (ICAP)	0.53	mg/L	0.004	SW-846 Mtd. 6010	11/21/1995 MC
Copper (ICAP)	2.2	mg/L	0.004	"	11/21/1995 MC
Iron (ICAP)	380	mg/L	0.5	"	11/29/1995 MC
Lead (GFAA)	0.006	mg/L	0.003	SW-846 Mtd. 7421	11/29/1995 GCP
Manganese (ICAP)	8.3	mg/L	0.003	SW-846 Mtd. 6010	11/21/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	2.3	mg/L	0.04	SW-846 Mtd. 6010	11/21/1995 MC
Selenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/29/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/25/1995 MC
Zinc (ICAP)	1.4	mg/L	0.007	SW-846 Mtd. 6010	11/21/1995 MC
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/L	1	SW-846 Mtd. 8010	11/17/1995 OY
Chloromethane	ND	ug/L	1	"	11/17/1995 OY
Vinyl Chloride	ND	ug/L	1	"	11/17/1995 OY
Bromomethane	ND	ug/L	1	"	11/17/1995 OY
Chloroethane	ND	ug/L	1	"	11/17/1995 OY
Trichlorofluoromethane	ND	ug/L	1	"	11/17/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/L	1	"	11/17/1995 OY
1,1-Dichloroethene	ND	ug/L	1	"	11/17/1995 OY
Methylene Chloride	ND	ug/L	1	"	11/17/1995 OY
t-1,2-Dichloroethene	ND	ug/L	1	"	11/17/1995 OY
1,1-Dichloroethane	ND	ug/L	1	"	11/17/1995 OY
Chloroform	ND	ug/L	1	"	11/17/1995 OY
1,1,1-Trichloroethane	ND	ug/L	1	"	11/17/1995 OY
Carbon Tetrachloride	ND	ug/L	1	"	11/17/1995 OY
1,2-Dichloroethane	ND	ug/L	1	"	11/17/1995 OY
c-1,3-Dichloropropene	ND	ug/L	1	"	11/17/1995 OY
Trichloroethene	ND	ug/L	1	"	11/17/1995 OY
1,2-Dichloropropane	ND	ug/L	1	"	11/17/1995 OY
Bromodichloromethane	ND	ug/L	1	"	11/17/1995 OY
Tetrachloroethene	ND	ug/L	1	"	11/17/1995 OY

ND = Non Detectable

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Sample:	56857-2899	Matrix:	Water / Grab
Client Sample:	Conv.	Location:	6353
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
t-1,3-Dichloropropene	ND	ug/L	1	SW-846 Mtd. 8010	11/17/1995 OY
1,1,2-Trichloroethane	ND	ug/L	1	"	11/17/1995 OY
Dibromochloromethane	ND	ug/L	1	"	11/17/1995 OY
Chlorobenzene	ND	ug/L	1	"	11/17/1995 OY
Bromoform	ND	ug/L	1	"	11/17/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/L	1	"	11/17/1995 OY
1,3-Dichlorobenzene	ND	ug/L	1	"	11/17/1995 OY
1,4-Dichlorobenzene	ND	ug/L	1	"	11/17/1995 OY
1,2-Dichlorobenzene	ND	ug/L	1	"	11/17/1995 OY
'OLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	11/17/1995 OY
Toluene	ND	ug/L	1	"	11/17/1995 OY
Ethylbenzene	ND	ug/L	1	"	11/17/1995 OY
Xylenes (Total)	ND	ug/L	3	"	11/17/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/14/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	11/27/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	11/27/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	11/27/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	11/27/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	11/27/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	11/27/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	11/27/1995 LBC
Naphthalene	ND	ug/L	5	"	11/27/1995 LBC
Acenaphthene	ND	ug/L	5	"	11/27/1995 LBC
Acenaphthylene	ND	ug/L	5	"	11/27/1995 LBC
Fluorene	ND	ug/L	5	"	11/27/1995 LBC
Phenanthrene	ND	ug/L	5	"	11/27/1995 LBC
Anthracene	ND	ug/L	5	"	11/27/1995 LBC
Fluoranthene	ND	ug/L	5	"	11/27/1995 LBC
Pyrene	ND	ug/L	5	"	11/27/1995 LBC
Chrysene	ND	ug/L	5	"	11/27/1995 LBC

'ID = Non Detectable

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Sample:	56857-2899	Matrix:	Water / Grab
Client Sample:	Conv.	Location:	6353
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	0.068	mg/L	0.004	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	0.007	mg/L	0.002	SW-846 Mtd. 6010	11/21/1995 MC
Cadmium (GFAA)	0.015	mg/L	0.0005	SW-846 Mtd. 7131	11/26/1995 MC
Chromium, Total (ICAP)	0.53	mg/L	0.004	SW-846 Mtd. 6010	11/21/1995 MC
Copper (ICAP)	2.2	mg/L	0.004	"	11/21/1995 MC
Iron (ICAP)	380	mg/L	0.5	"	11/29/1995 MC
Lead (GFAA)	0.006	mg/L	0.003	SW-846 Mtd. 7421	11/29/1995 GCP
Manganese (ICAP)	8.3	mg/L	0.003	SW-846 Mtd. 6010	11/21/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	2.3	mg/L	0.04	SW-846 Mtd. 6010	11/21/1995 MC
Selenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/29/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/25/1995 MC
Zinc (ICAP)	1.4	mg/L	0.007	SW-846 Mtd. 6010	11/21/1995 MC
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/L	1	SW-846 Mtd. 8010	11/17/1995 OY
Chloromethane	ND	ug/L	1	"	11/17/1995 OY
Vinyl Chloride	ND	ug/L	1	"	11/17/1995 OY
Bromomethane	ND	ug/L	1	"	11/17/1995 OY
Chloroethane	ND	ug/L	1	"	11/17/1995 OY
Trichlorofluoromethane	ND	ug/L	1	"	11/17/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/L	1	"	11/17/1995 OY
1,1-Dichloroethene	ND	ug/L	1	"	11/17/1995 OY
Methylene Chloride	ND	ug/L	1	"	11/17/1995 OY
t-1,2-Dichloroethene	ND	ug/L	1	"	11/17/1995 OY
1,1-Dichloroethane	ND	ug/L	1	"	11/17/1995 OY
Chloroform	ND	ug/L	1	"	11/17/1995 OY
1,1,1-Trichloroethane	ND	ug/L	1	"	11/17/1995 OY
Carbon Tetrachloride	ND	ug/L	1	"	11/17/1995 OY
1,2-Dichloroethane	ND	ug/L	1	"	11/17/1995 OY
c-1,3-Dichloropropene	ND	ug/L	1	"	11/17/1995 OY
Trichloroethene	ND	ug/L	1	"	11/17/1995 OY
1,2-Dichloropropane	ND	ug/L	1	"	11/17/1995 OY
Bromodichloromethane	ND	ug/L	1	"	11/17/1995 OY
Tetrachloroethene	ND	ug/L	1	"	11/17/1995 OY

ND = Non Detectable

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Sample:	56857-2899	Matrix:	Water / Grab
Client Sample:	Conv.	Location:	6353
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/14/1995 LJ
Aroclor-1016	ND	ug/L	0.1	"	11/28/1995 SM
Aroclor-1221	ND	ug/L	0.1	"	11/28/1995 SM
Aroclor-1232	ND	ug/L	0.1	"	11/28/1995 SM
Aroclor-1242	ND	ug/L	0.1	"	11/28/1995 SM
Aroclor-1248	ND	ug/L	0.1	"	11/28/1995 SM
Aroclor-1254	ND	ug/L	0.1	"	11/28/1995 SM
Aroclor-1260	ND	ug/L	0.1	"	11/28/1995 SM
Aroclor-1262	ND	ug/L	0.1	"	11/28/1995 SM
Aroclor-1268	ND	ug/L	0.1	"	11/28/1995 SM

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Senior Project Manager

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Sample:	56857-2900	Matrix:	Water / Grab
Client Sample:	SW-1	Location:	6354
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	0.24	mg/L	0.01	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/16/1995 MC
Cadmium (GFAA)	0.010	mg/L	0.002	SW-846 Mtd. 7131	11/27/1995 JJB
Chromium, Total (ICAP)	0.44	mg/L	0.05	SW-846 Mtd. 6010	11/16/1995 MC
Copper (ICAP)	1.2	mg/L	0.025	"	11/16/1995 MC
Iron (ICAP)	290	mg/L	0.5	"	11/17/1995 MC
Lead (GFAA)	0.008	mg/L	0.003	SW-846 Mtd. 7421	11/29/1995 GCP
Manganese (ICAP)	3.3	mg/L	0.02	SW-846 Mtd. 6010	11/16/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	1.6	mg/L	0.05	SW-846 Mtd. 6010	11/16/1995 MC
Selenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/22/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/26/1995 MC
Zinc (ICAP)	3.5	mg/L	0.02	SW-846 Mtd. 6010	11/16/1995 MC

ND = Non Detectable

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Sample:	56857-2904	Matrix:	Water / Grab
Client Sample:	SW-1	Location:	6354
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/14/1995 13:23	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Arsenic (GFAA)	0.33	mg/L	0.01	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	0.007	mg/L	0.002	SW-846 Mtd. 6010	11/16/1995 MC
Cadmium (GFAA)	0.012	mg/L	0.002	SW-846 Mtd. 7131	11/27/1995 MC
Chromium, Total (ICAP)	0.52	mg/L	0.004	SW-846 Mtd. 6010	11/16/1995 MC
Copper (ICAP)	1.4	mg/L	0.004	"	11/16/1995 MC
Iron (ICAP)	290	mg/L	0.01	"	11/16/1995 MC
Lead (GFAA)	0.021	mg/L	0.003	SW-846 Mtd. 7421	11/29/1995 GCP
Manganese (ICAP)	4.2	mg/L	0.003	SW-846 Mtd. 6010	11/16/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	2.0	mg/L	0.05	SW-846 Mtd. 6010	11/16/1995 MC
lenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/22/1995 GCP
ilver (GFAA)	0.0008	mg/L	0.0005	SW-846 Mtd. 7761	11/26/1995 MC
Zinc (ICAP)	3.0	mg/L	0.004	SW-846 Mtd. 6010	11/16/1995 MC

D = Non Detectable

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Sample:	56857-2900	Matrix:	Water / Grab
Client Sample:	SW-1	Location:	6354
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	0.24	mg/L	0.01	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/16/1995 MC
Cadmium (GFAA)	0.010	mg/L	0.002	SW-846 Mtd. 7131	11/27/1995 JJB
Chromium, Total (ICAP)	0.44	mg/L	0.05	SW-846 Mtd. 6010	11/16/1995 MC
Copper (ICAP)	1.2	mg/L	0.025	"	11/16/1995 MC
Iron (ICAP)	290	mg/L	0.5	"	11/17/1995 MC
Lead (GFAA)	0.008	mg/L	0.003	SW-846 Mtd. 7421	11/29/1995 GCP
Manganese (ICAP)	3.3	mg/L	0.02	SW-846 Mtd. 6010	11/16/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	1.6	mg/L	0.05	SW-846 Mtd. 6010	11/16/1995 MC
Selenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/22/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/26/1995 MC
Zinc (ICAP)	3.5	mg/L	0.02	SW-846 Mtd. 6010	11/16/1995 MC

ND = Non Detectable

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Sample:	56857-2901	Matrix:	Water / Grab
Client Sample:	SW-2	Location:	6355
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	0.20	mg/L	0.01	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/16/1995 MC
Cadmium (GFAA)	0.007	mg/L	0.002	SW-846 Mtd. 7131	11/27/1995 JJB
Chromium, Total (ICAP)	0.26	mg/L	0.05	SW-846 Mtd. 6010	11/16/1995 MC
Copper (ICAP)	0.81	mg/L	0.025	"	11/16/1995 MC
Iron (ICAP)	200	mg/L	0.5	"	11/17/1995 MC
Lead (GFAA)	0.014	mg/L	0.003	SW-846 Mtd. 7421	11/29/1995 GCP
Manganese (ICAP)	1.6	mg/L	0.02	SW-846 Mtd. 6010	11/16/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	1.1	mg/L	0.05	SW-846 Mtd. 6010	11/16/1995 MC
lenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/22/1995 GCP
ilver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/26/1995 MC
Zinc (ICAP)	1.4	mg/L	0.02	SW-846 Mtd. 6010	11/16/1995 MC

ND = Non Detectable

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Sample:	56857-2905	Matrix:	Water / Grab
Client Sample:	SW-2	Location:	6355
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/14/1995 13:23	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Arsenic (GFAA)	0.25	mg/L	0.01	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	0.005	mg/L	0.002	SW-846 Mtd. 6010	11/16/1995 MC
Cadmium (GFAA)	0.0046	mg/L	0.0008	SW-846 Mtd. 7131	11/26/1995 MC
Chromium, Total (ICAP)	0.17	mg/L	0.004	SW-846 Mtd. 6010	11/16/1995 MC
Copper (ICAP)	0.48	mg/L	0.004	"	11/16/1995 MC
Iron (ICAP)	120	mg/L	0.01	"	11/16/1995 MC
Lead (GFAA)	0.004	mg/L	0.003	SW-846 Mtd. 7421	-- 11/29/1995 GCP
Manganese (ICAP)	1.1	mg/L	0.003	SW-846 Mtd. 6010	11/16/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	0.66	mg/L	0.05	SW-846 Mtd. 6010	11/16/1995 MC
Selenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/22/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/26/1995 MC
Zinc (ICAP)	0.99	mg/L	0.004	SW-846 Mtd. 6010	11/16/1995 MC

ND = Non Detectable

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Sample:	56857-2902	Matrix:	Water / Grab
Client Sample:	SW-3	Location:	6356
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method		Date/Analyst
DISSOLVED METALS ANALYSIS						
Arsenic (GFAA)	0.019	mg/L	0.005	SW-846 Mtd. 7060		11/18/1995 MC
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010		11/16/1995 MC
Cadmium (GFAA)	0.0034	mg/L	0.0008	SW-846 Mtd. 7131		11/26/1995 MC
Chromium, Total (ICAP)	0.08	mg/L	0.05	SW-846 Mtd. 6010		11/16/1995 MC
Copper (ICAP)	0.29	mg/L	0.025	"		11/16/1995 MC
Iron (ICAP)	54	mg/L	0.1	"		11/16/1995 MC
Lead (GFAA)	0.005	mg/L	0.003	SW-846 Mtd. 7421	--	11/29/1995 GCP
Manganese (ICAP)	0.67	mg/L	0.02	SW-846 Mtd. 6010		11/16/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470		11/17/1995 EWL
Nickel (ICAP)	0.38	mg/L	0.05	SW-846 Mtd. 6010		11/16/1995 MC
Selenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740		11/22/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761		11/26/1995 MC
Zinc (ICAP)	0.99	mg/L	0.02	SW-846 Mtd. 6010		11/16/1995 MC

ND = Non Detectable

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Sample:	56857-2906	Matrix:	Water / Grab
Client Sample:	SW-3	Location:	6356
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/14/1995 13:23	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Arsenic (GFAA)	0.062	mg/L	0.004	SW-846 Mtd. 7060	11/28/1995 JJB
Barium (ICAP)	0.008	mg/L	0.002	SW-846 Mtd. 6010	11/16/1995 MC
Cadmium (GFAA)	0.0037	mg/L	0.0008	SW-846 Mtd. 7131	11/26/1995 MC
Chromium, Total (ICAP)	0.076	mg/L	0.004	SW-846 Mtd. 6010	11/16/1995 MC
Copper (ICAP)	0.25	mg/L	0.004	"	11/16/1995 MC
Iron (ICAP)	51	mg/L	0.01	"	11/16/1995 MC
Lead (GFAA)	0.005	mg/L	0.003	SW-846 Mtd. 7421	11/29/1995 GCP
Manganese (ICAP)	0.61	mg/L	0.003	SW-846 Mtd. 6010	11/16/1995 MC
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/17/1995 EWL
Nickel (ICAP)	0.33	mg/L	0.04	SW-846 Mtd. 6010	11/16/1995 MC
elenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/28/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/26/1995 MC
Zinc (ICAP)	0.84	mg/L	0.004	SW-846 Mtd. 6010	11/16/1995 MC

ND = Non Detectable

Senior Project Manager

Maria G. Bissett

Reported : 12/01/1995

0 Conrad Industrial Drive
ington, Michigan 49431
-843-1877
(16-845-9942

ANATECH
Laboratories
Sundberg, Carlson, & Associates

a Division of
CT&E Environmental
Services Inc

Sample:	56857-2897	Matrix:	Soil / Grab
Client Sample:	PCB#4	Location:	6351
COLLECTED:	11/07/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	11/13/1995 16:07	Sampled By:	MR

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PHYSICAL PROPERTY ANALYSIS					
% Solids	85.1	%	0.1	Standard Mtd. 2540G	11/22/1995 PL
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/17/1995 LJ
Aroclor-1016	ND	ug/kg	330	"	11/21/1995 SM
Aroclor-1221	ND	ug/kg	330	"	11/21/1995 SM
Aroclor-1232	ND	ug/kg	330	"	11/21/1995 SM
Aroclor-1242	ND	ug/kg	330	"	11/21/1995 SM
Aroclor-1248	ND	ug/kg	330	"	11/21/1995 SM
Aroclor-1254	ND	ug/kg	330	"	11/21/1995 SM
\roclor-1260	ND	ug/kg	330	"	11/21/1995 SM
Aroclor-1262	ND	ug/kg	330	"	11/21/1995 SM
Aroclor-1268	ND	ug/kg	330	"	11/21/1995 SM

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Reported : 12/01/1995

Chain Custody

ANATECH LABORATORIES - A Division of CT&E Environmental Services
1200 Conrad Industrial Drive
Ludington, MI 49431

Phone: 616-843-1877 FAX: 616-845-9948

Anatech Lab D#: 6356

11-24

Page 2 of 2

Results To: GA ENVIRONMENTAL
307 S. FRONT ST
MQT MI 49455

Attention: SCOTT JAGGER

Telephone # 906 775 3772

FAX # 906 778 5523

Invoice To:

Telephone #

Project Name: MTC - CALUMET

Project Number: 95-565

State in which samples were collected: MI

FAX Results: YES or NO

Required Completion Date:

Sampled by: MR

Work Authorization Signature:

This signature authorizes ANATECH to perform the work requested on this form and acknowledges the terms and conditions of payment which are listed on the reverse side of this form.

Test Methods

Comment / Notes

PLEASE FILTER 6352 AND 6353 FOR DISSOLVED METALS

* 6354, 6355, AND 6356 ARE 1 FILTERED + PRESERVED AND 1 NOT FILTERED BUT PRESERVED

ANATECH Lab ID	Client Sample ID	Sampling Location	Date	Time am / pm	Comp Grab C/G	Sample Matrix	Drinking Water Y/N	Field Filtered Y/N	PCB's	TCLP	TCLP	Sulfide-Reactivity	Acid/Base/Neutral Fp	Mn, Ni, Sb, Sn, Ag, Zr	Mercury (Hg)	TOTAL METALS (SAME AS 5)	VOC	Glass	O&G	250m Pl	500m Pl	1L Pl	Other	pH Check
6348	6348	PCB1	11/7/24	11:12	G	Soil		-	Y															
6349	6349	PCB2	11/7/24	10:32	G	Soil		-	Y															
6350	6350	PCB3	11/7/24	10:40	G	Soil		-	X															
6351	6351	PCB4	11/7/24	10:44	G	Soil	-	-	X															
6352	6352	PYRITE HADLER	11/7/24	11:54	G	H_2O	N	N	X	X	X	X	X	X	X	X							2	
6353	6353	CONV.	11/7/24	11:45	G	H_2O	N	N	X	X	X	X	X	X	X	X							2	
6354	6354	SW-1	11/7/24	2P	G	H_2O	N	Y/N*					X	X	X	X								
6355	6355	SW-2	11/7/24	2P	G	H_2O	N	Y/N*					X	X	X	X								
6356	6356	SW-3	11/7/24	2P	G	H_2O	N	Y/N*					X	X	X	X								
6357	TRIP BLANK		11/6/24	-						X														

Relinquished by: Date / Time (am / pm): 11/7/24

Received by: Date / Time (am / pm):

Relinquished by: Date / Time (am / pm):

Received by: Date / Time (am / pm): 11-12-24

Relinquished by: Date / Time (am / pm):

Received by: Date / Time (am / pm):

Cooler Temp #1: OUT 6358 Cooler Temp #2: Cooler Temp #3: Cooler Temp #4:

Pink copy-Client Yellow and White copy-Lab

A-5

Tier 2 Historical Data

Preliminary Hydrogeological Investigation, Oct. 1992
Sundberg, Carlson and Associates, Inc.
Brighton Analytical, Inc.
(Groundwater Results)

JUN 14 ENTD

ROPES MILLING FACILITY

PRELIMINARY HYDROGEOLOGICAL INVESTIGATION

PREPARED FOR:

CALLAHAN MINING CORPORATION
Ropes Unit
4547 County Road 601
Champion, Michigan 49814-9767

October, 1992

PREPARED BY:

SUNDBERG, CARLSON AND ASSOCIATE, INC.
914 West Baraga Avenue
Marquette, Michigan 49855

SCA Project 90-384

Brighton Analytical, Inc.
718 Advance St. Phone (313) 229-7575 Brighton, Michigan 48116

DATA SUMMARY SHEET

DATE: August 12, 1991

PROJECT: Sundberg, Carlson & Associates
Callahan
#90-384

METHOD 8310

COMPOUNDS	UNITS	DL	MW-1 7/31	MW-2 7/31	MW-3C 7/31	MW-4 7/31
Naphthalene	ug/l	5	ND	ND	ND	ND
Acenapthylene	ug/l	5	ND	ND	ND	ND
Acenaphthene	ug/l	5	ND	ND	ND	ND
Fluorene	ug/l	5	ND	ND	ND	ND
Phenanthrene	ug/l	5	ND	ND	ND	ND
Anthracene	ug/l	5	ND	ND	ND	ND
Fluoranthene	ug/l	5	ND	ND	ND	ND
rene	ug/l	5	ND	ND	ND	ND
Benzo(a) anthracene	ug/l	5	ND	ND	ND	ND
Chrysene	ug/l	5	ND	ND	ND	ND
Benzo(b) Fluoranthene	ug/l	5	ND	ND	ND	ND
Benzo (k) Fluoranthene	ug/l	5	ND	ND	ND	ND
Benzo(a)pyrene	ug/l	5	ND	ND	ND	ND
Dibenzo(a,h) anthracene	ug/l	5	ND	ND	ND	ND
Indeno(1,2,3-cd) pyrene	ug/l	5	ND	ND	ND	ND
Benzo(g,h,i) perylene	ug/l	5	ND	ND	ND	ND

METHOD 602

Benzene	ug/l	1	ND	2	ND	ND
Toluene	ug/l	1	ND	1	3	ND
Ethyl Benzene	ug/l	1	ND	ND	ND	ND
Xylenes	ug/l	1	ND	ND	ND	ND

D.L. = Detection Limit
= not detected at or above detection limit

Preliminary Hydrogeological Investigation, Oct. 1992
Sundberg, Carlson and Associates, Inc.
Brighton Analytical, Inc.
(Soil Results)

ROPES MILLING FACILITY

PRELIMINARY HYDROGEOLOGICAL INVESTIGATION

PREPARED FOR:

CALLAHAN MINING CORPORATION
Ropes Unit
4547 County Road 601
Champion, Michigan 49814-9767

October, 1992

JUN 14 ENT'D

PREPARED BY:

SUNDBERG, CARLSON AND ASSOCIATE, INC.
914 West Baraga Avenue
Marquette, Michigan 49855

SCA Project 90-384

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920306-1	SAMPLE NO:	Stockpile 9 9th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	03/31/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/09/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8270 POLYNUCLEAR AROMATIC HYDROCARBONS

	CONCENTRATION UNITS = ug/Kg (PPB)	LIMIT OF DETECTION UNITS = ug/Kg (PPB)
ACENAPHTHENE	ND	330
ACENAPHTHYLENE	ND	330
ANTHRACENE	ND	330
BENZO(a)ANTHRACENE	ND	330
BENZO(b)FLUORANTHENE	ND	330
BENZO(k)FLUORANTHENE	ND	330
BENZO(a)PYRENE	ND	330
BENZO(g,h,i)PERYLENE	ND	330
CHRYSENE	ND	330
DIBENZO(a,h)ANTHRACENE	ND	330
FLOURANTHENE	ND	330
FLUORENE	ND	330
INDENO(1,2,3-cd)PYRENE	ND	330
NAPHTHALENE	ND	330
PHENANTHRENE	ND	330
PYRENE	ND	330

ND = NOT DETECTED

Kirk L. Chase

Kirk L. Chase Chemist/Lab Director

417 S. Maple Street • P.O. Box 1149 • Kalkaska, MI 49646-1149 • 616/258-3423

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-1	SAMPLE NO:	Stockpile 9 9th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	03/31/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/08/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8020 PURGEABLE AROMATICS

PARAMETER:	CONCENTRATION: UNITS = ug/Kg (PPB)	LIMIT OF DETECTION: UNITS = ug/Kg (PPB)
Benzene	ND	10
Toluene	ND	10
Ethylbenzene	ND	10
Xylene (Total)	ND	30

ND = NOT DETECTED

Kirk L. Chase Chemist/Lab Director

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Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-2	SAMPLE NO:	Stockpile :0 :0th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/02/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/09/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8270 POLYNUCLEAR AROMATIC HYDROCARBONS

	CONCENTRATION UNITS = ug/Kg (PPB)	LIMIT OF DETECTION UNITS = ug/Kg (PPB)
ACENAPHTHENE	ND	330
ACENAPHTHYLENE	ND	330
ANTHRACENE	ND	330
BENZO(a)ANTHRACENE	ND	330
BENZO(b)FLUORANTHENE	ND	330
BENZO(k)FLUORANTHENE	ND	330
BENZO(a)PYRENE	ND	330
BENZO(g,h,i)PERYLENE	ND	330
CHRYSENE	ND	330
DIBENZO(a,h)ANTHRACENE	ND	330
FLOURANTHENE	ND	330
FLUORENE	ND	330
INDENO(1,2,3-cd)PYRENE	ND	330
NAPHTHALENE	ND	330
PHENANTHRENE	ND	330
PYRENE	ND	330

ND = NOT DETECTED

Kirk L. Chase Chemist/Lab Director

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-2	SAMPLE NO:	Stockpile 10 10th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/02/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/08/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8020 PURGEABLE AROMATICS

PARAMETER:	CONCENTRATION: UNITS = ug/Kg (PPB)	LIMIT OF DETECTION: UNITS = ug/Kg (PPB)
Benzene	ND	10
Toluene	ND	10
Ethylbenzene	ND	10
Xylene (Total)	ND	30

ND = NOT DETECTED

Kirk L. Chase

Kirk L. Chase Chemist/Lab Director

617 E. Main Street • P.O. Box 1149 • Kalkaska, MI 49646-1149 • 616/258-3477

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-3	SAMPLE NO:	Stockpile 1: 11th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/03/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/09/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8270 POLYNUCLEAR AROMATIC HYDROCARBONS

	CONCENTRATION UNITS = ug/Kg (PPB)	LIMIT OF DETECTION UNITS = ug/Kg (PPB)
ACENAPHTHENE	ND	330
ACENAPHTHYLENE	ND	330
ANTHRACENE	ND	330
BENZO(a)ANTHRACENE	ND	330
BENZO(b)FLUORANTHENE	ND	330
BENZO(k)FLUORANTHENE	ND	330
BENZO(a)PYRENE	ND	330
BENZO(g,h,i)PERYLENE	ND	330
CHRYSENE	ND	330
DIBENZO(a,h)ANTHRACENE	ND	330
FLOURANTHENE	ND	330
FLUORENE	ND	330
INDENO(1,2,3-cd)PYRENE	ND	330
NAPHTHALENE	ND	330
PHENANTHRENE	ND	330
PYRENE	ND	330

ND = NOT DETECTED

Kirk L. Chase Chemist/Lab Director

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-3	SAMPLE NO:	Stockpile 11 11th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/03/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/08/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8020 PURGEABLE AROMATICS

PARAMETER:	CONCENTRATION: UNITS = ug/Kg (PPB)	LIMIT OF DETECTION: UNITS = ug/Kg (PPB)
Benzene	ND	10
Toluene	ND	10
Ethylbenzene	ND	10
Xylene (Total)	ND	30

ND = NOT DETECTED

Kirk L. Chase Chemist/Lab Director

417 E. Maple Street • P.O. Box 1149 • Kalkaska, MI 49646-1149 • 616/258-3423

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-4	SAMPLE NO:	Stockpile 12 12th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/04/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/09/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8270 POLYNUCLEAR AROMATIC HYDROCARBONS

	CONCENTRATION UNITS = ug/Kg (PPB)	LIMIT OF DETECTION UNITS = ug/Kg (PPB)
ACENAPHTHENE	ND	330
ACENAPHTHYLENE	ND	330
ANTHRACENE	ND	330
BENZO(a)ANTHRACENE	ND	330
BENZO(b)FLUORANTHENE	ND	330
BENZO(k)FLUORANTHENE	ND	330
BENZO(a)PYRENE	ND	330
BENZO(g,h,i)PERYLENE	ND	330
CHRYSENE	ND	330
DIBENZO(a,h)ANTHRACENE	ND	330
FLOURANTHENE	ND	330
FLUORENE	ND	330
INDENO(1,2,3-cd)PYRENE	ND	330
NAPHTHALENE	ND	330
PHENANTHRENE	ND	330
PYRENE	ND	330

ND = NOT DETECTED

Kirk L. Chase

Kirk L. Chase Chemist/Lab Director

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-4	SAMPLE NO:	Stockpile 12 12th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/04/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/08/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8020 PURGEABLE AROMATICS

PARAMETER:	CONCENTRATION: UNITS = ug/Kg (PPB)	LIMIT OF DETECTION. UNITS = ug/Kg (PPB)
Benzene	ND	10
Toluene	ND	10
Ethylbenzene	ND	10
Xylene (Total)	ND	30

ND = NOT DETECTED

Kirk L. Chase Chemist/Lab Director

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-6	SAMPLE NO:	Stockpile 13 13th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/04/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/09/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8270 POLYNUCLEAR AROMATIC HYDROCARBONS

	CONCENTRATION UNITS = ug/Kg (PPB)	LIMIT OF DETECTION UNITS = ug/Kg (PPB)
ACENAPHTHENE	ND	330
ACENAPHTHYLENE	ND	330
ANTHRACENE	ND	330
BENZO(a)ANTHRACENE	ND	330
BENZO(b)FLUORANTHENE	ND	330
BENZO(k)FLUORANTHENE	ND	330
BENZO(a)PYRENE	ND	330
BENZO(g,h,i)PERYLENE	ND	330
CHRYSENE	ND	330
DIBENZO(a,h)ANTHRACENE	ND	330
FLOURANTHENE	ND	330
FLUORENE	ND	330
INDENO(1,2,3-cd)PYRENE	ND	330
NAPHTHALENE	ND	330
PHENANTHRENE	ND	330
PYRENE	ND	330

ND = NOT DETECTED

Kirk L. Chase

Kirk L. Chase Chemist/Lab Director

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Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920308-6	SAMPLE NO:	Stockpile 13 13th 75 Ton Pile
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/04/92	DATE SUBMITTED:	04/07/92
SAMPLED BY:	David Schoenemann	ANALYSIS COMPLETE:	04/08/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8020 PURGEABLE AROMATICS

PARAMETER:	CONCENTRATION: UNITS = ug/Kg (PPB)	LIMIT OF DETECTION: UNITS = ug/Kg (PPB)
Benzene	ND	10
Toluene	ND	10
Ethylbenzene	ND	10
Xylene (Total)	ND	30

ND = NOT DETECTED

Kirk L. Chase Chemist/Lab Director

Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920335	SAMPLE NO:	Stockpile 14
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/07/92	DATE SUBMITTED:	04/08/92
SAMPLED BY:	Justin Straksis	ANALYSIS COMPLETE:	04/08/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8270 POLYNUCLEAR AROMATIC HYDROCARBONS

	CONCENTRATION UNITS = ug/Kg (PPB)	LIMIT OF DETECTION UNITS = ug/Kg (PPB)
ACENAPHTHENE	ND	330
ACENAPHTHYLENE	ND	330
ANTHRACENE	ND	330
BENZO(a)ANTHRACENE	ND	330
BENZO(b)FLUORANTHENE	ND	330
BENZO(k)FLUORANTHENE	ND	330
BENZO(a)PYRENE	ND	330
BENZO(g,h,i)PERYLENE	ND	330
CHRYSENE	ND	330
DIBENZO(a,h)ANTHRACENE	ND	330
FLOURANTHENE	ND	330
FLUORENE	ND	330
INDENO(1,2,3-cd)PYRENE	ND	330
NAPHTHALENE	ND	330
PHENANTHRENE	ND	330
PYRENE	ND	330

ND = NOT DETECTED

Kirk L. Chase

Kirk L. Chase Chemist/Lab Director

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Enviro Lab

SOIL & WATER ANALYSIS

COMPANY:	Kal Con	PROJECT NO:	Not Reported
ANALYSIS NO:	920335	SAMPLE NO:	Stockpile 14
LOCATION:	Marquette Co. Landfill - Kal Con		
DATE SAMPLED:	04/07/92	DATE SUBMITTED:	04/08/92
SAMPLED BY:	Justin Straksis	ANALYSIS COMPLETE:	04/08/92
ANALYSIS BY:	KC	SAMPLE TYPE:	Soil

EPA 8020 PURGEABLE AROMATICS

PARAMETER:	CONCENTRATION: UNITS = ug/Kg (PPB)	LIMIT OF DETECTION: UNITS = ug/Kg (PPB)
Benzene	ND	10
Toluene	ND	10
Ethylbenzene	ND	10
Xylene (Total)	ND	30

ND = NOT DETECTED

Kirk L. Chase Chemist/Lab Director

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20906
3-25-1992/Time in/out /13:39

01
Vehicle HUM006Z000
Badge ID
Account 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

Src	Description	%	tons	Price	Src	Description	%	tons	Price
12	CONTAMINATED SOIL	100	37.690	1978.73					
01	CALLAHAN MINE								

117840 scale 1
42460
75380 37.69 tons

Credit Total Price 1978.73
STORED TARE
Vehicle Capacity 00

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20912
3-25-1992/Time in/out /14:54

01
Vehicle HUM002Z000
Badge ID
Account 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

Src	Description	%	tons	Price	Src	Description	%	tons	Price
12	CONTAMINATED SOIL	100	37.090	1947.23					
	CALLAHAN MINE								

114580 scale 1
40400
74180 37.09 tons

Credit Total Price 1947.23
STORED TARE
Vehicle Capacity 45

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20904
3-25-1992/Time in/out /13:09

[illegible] 01
Vehicle HUM002Z000
Badge ID
Account 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE Dean L. Kramer

Rate ($/ton) 52.50

Src	Description	%	tons	Price	Src	Description	%	tons	Price
12	CONTAMINATED SOIL	100	36.820	1933.05					
01	CALLAHAN MINE								

[illegible] 114040 scale 1
[illegible] 40400
[illegible] 73640 36.82 tons

Credit Total Price 1933.05
STORED TARE
Vehicle Capacity 00

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20905
3-25-1992/Time in/out /13:35

[illegible]MASTER 01
Vehicle HUM008Z000
Badge ID
Account 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE John L. Kramer

Rate ($/ton) 52.50

Src	Description	%	tons	Price	Src	Description	%	tons	Price
	CONTAMINATED SOIL	100	38.690	2031.23					
	CALLAHAN MINE								

121720 scale 1
44340

Credit Total Price 2031.23
STORED TARE

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20914
3-25-1992/Time in/out /15:21

01
Vehicle HUM006Z000
Badge ID
Account 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

Src	Description	%	tons	Price	Src	Description	%	tons	Price
12	CONTAMINATED SOIL	100	32.110	1685.78					
01	CALLAHAN MINE								

106680 scale 1
42460
64220 32.11 tons

Credit Total Price 1685.78
STORED TARE
Vehicle Capacity 35

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20913
3-25-1992/Time in/out /15:13

01
Vehicle HUM008Z000
Badge ID
Account 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

Src	Description	%	tons	Price	Src	Description	%	tons	Price
	CONTAMINATED SOIL	100	29.410	1544.03					
	CALLAHAN MINE								

103160 scale 1
44340

Credit Total Price 1544.03
STORED TARE
Vehicle Capacity 00

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

cket no. 20948
-26-1992/Time in/out 12:27/12:54

01
hicle HUM012Z000
dge ID
count 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

c	Description	%	tons	Price	Src	Description	%	tons	Price
	CONTAMINATED SOIL CALLAHAN MINE	100	28.350	1488.38					

	101660	scale 1	Credit	Total Price 1488.38
	44960	scale 1	COMPUTED NET	
	56700	28.35 tons	Vehicle Capacity	35

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

icket no. 20945
3-26-1992/Time in/out /12:42

01
ehicle HUM002Z000
adge ID
ccount 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

rc	Description	%	tons	Price	Src	Description	%	tons	Price
	CONTAMINATED SOIL CALLAHAN MINE	100	13.760	722.40					

	67920	scale 1	Credit	Total Price 722.40
	40400		STORED TARE	

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

icket no. 20937
3-26-1992/Time in/out /10:59

01
ehicle HUM006Z000
adge ID
ccount 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

rc	Description	%	tons	Price	Src	Description	%	tons	Price
2	CONTAMINATED SOIL	100	39.510	2074.28					
1	CALLAHAN MINE								

121480 scale 1
42460
79020 39.51 tons

Credit Total Price 2074.28
STORED TARE
Vehicle Capacity 00

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

icket no. 20928
3-26-1992/Time in/out /09:47

01
ehicle HUM002Z000
adge ID
ccount 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

rc	Description	%	tons	Price	Src	Description	%	tons	Price
	CONTAMINATED SOIL	100	33.650	1766.63					
	CALLAHAN MINE								

107700 scale 1
40400

Credit Total Price 1766.63
STORED TARE

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

cket no. 20925
-26-1992/Time in/out /09:11

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

01
hicle HUM006Z000
dge ID
count 12180000000
HUMBOLDT TOWNSHIP

Rate ($/ton) 52.50

c	Description	%	tons	Price	Src	Description	%	tons	Price
	CONTAMINATED SOIL	100	33.770	1772.93					
	CALLAHAN MINE								

	110000	scale 1	Credit	Total Price 1772.93
	42460		STORED TARE	
	67540	33.77 tons	Vehicle Capacity	35

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20897
3-25-1992/Time in/out 10:46/11:02

01
Vehicle HUM002Z000
Badge ID
Account 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

Src	Description	%	tons	Price	Src	Description	%	tons	Price
12	CONTAMINATED SOIL	100	38.220	2006.55					
01	CALLAHAN MINE								

116840	scale 1	Credit	Total Price 2006.55
40400	scale 1	COMPUTED NET	
76440	38.22 tons	Vehicle Capacity	00

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20900
3-25-1992/Time in/out /11:48

01
Vehicle HUM006Z000
Badge ID
Account 1218000000
HUMBOLDT TOWNSHIP

Waste Type 12
CONTAMINATED SOILS

SIGNATURE

Rate ($/ton) 52.50

Src	Description	%	tons	Price	Src	Description	%	tons	Price
	CONTAMINATED SOIL	100	39.510	2074.28					
	CALLAHAN MINE								

121480	scale 1	Credit	Total Price 2074.28
42460		STORED TARE	

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

icket no. 20891 Waste Type 12
3-25-1992/Time in/out /10:05 CONTAMINATED SOILS

SIGNATURE _____

01
ehicle HUM006Z000
adge ID
ccount 12180000000 Rate ($/ton) 52.50
HUMBOLDT TOWNSHIP

rc	Description	%	tons	Price	Src	Description	%	tons	Price
2	CONTAMINATED SOIL	100	34.810	1827.53					
1	OBERSTAR TRUCKING								

Callahan Mine

112080 scale 1 Credit Total Price 1827.53
42460 STORED TARE
69620 34.81 tons Vehicle Capacity 00

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

icket no. 20895 Waste Type 12
3-25-1992/Time in/out /10:41 CONTAMINATED SOILS

SIGNATURE

01
ehicle HUM008Z000
adge ID
ccount 12180000000 Rate ($/ton) 52.50
HUMBOLDT TOWNSHIP

	Description	%	tons	Price	Src	Description	%	tons	Price
	CONTAMINATED SOIL	100	39.640	2081.10					
	CALLAHAN MINE								

123,460
44,180

0 scale 1 Credit Total Price 2081.10
0 MANUAL ENTRY

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20946
3-26-1992/Time in/out /12:49

Vehicle 01
Badge ID HUM006Z000
Account 12180000000
HUMBOLDT TOWNSHIP

Waste Type 02
HOUSEHOLD WASTE

SIGNATURE

Rate ($/ton) 34.35

Src	Description	%	tons	Price	Src	Description	%	tons	Price
02	HOUSEHOLD WASTE	100	1.430	49.12					
05	CAR TIRES								
01	CALLAHAN MINE								

45320 scale 1
42460
2860 1.43 tons

Credit Total Price 49.12
STORED TARE
Vehicle Capacity 00

MARQUETTE COUNTY LANDFILL
600 COUNTY ROAD NP
MARQUETTE, MI. 49855

Ticket no. 20947
3-26-1992/Time in/out /12:50

Vehicle 01
Badge ID HUM006Z000
Account 12180000000
HUMBOLDT TOWNSHIP

Waste Type 05
TIRES

SIGNATURE

Rate ($/ITEM) 1.00

Src	Description	%	tons	Price	Src	Description	%	tons	Price
05	CAR TIRES	100							
01	CALLAHAN MINE								

0 scale 1
0

Credit Total Price 55.00
SPECIAL TRANSACTION

Characterization and Remedial Alternatives for
Groundwater, Humboldt Mill Facilities, January 1996
Callahan Mining Corporation
CT&E Environmental Services, Inc.
(Soil Results)

CHARACTERIZATION and REMEDIAL ALTERNATIVES for GROUND WATER HUMBOLDT MILL FACILITIES



CALLAHAN MINING CORPORATION

JUN 14 ENTD

January 12, 1996

CT&E Environmental Services Inc.

Page 1 of 1

Buried Leach Residue

Callahan Mining Corp.

Sample:	65120-8196	Matrix:	Solid / Grab
Client Sample:	~~Callahan Soils~~	Location:	
COLLECTED:	08/30/1996 :	Project:	Callahan-Soils
RECEIVED:	09/24/1996 14:32	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Arsenic (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	09/26/1996 DD
Barium (ICAP)	0.062	mg/L	0.002	"	09/26/1996 DD
Cadmium (ICAP)	0.040	mg/L	0.008	"	09/26/1996 DD
Chromium, Total (ICAP)	0.17	mg/L	0.004	"	09/26/1996 DD
Copper (ICAP)	2.9 ✓	mg/L	0.02	"	09/26/1996 DD
Iron (ICAP)	98 ✓	mg/L	0.02	"	09/26/1996 DD
Lead (ICAP)	ND	mg/L	0.06	"	09/26/1996 DD
Manganese (ICAP)	4.6 ✓	mg/L	0.003	"	09/26/1996 DD
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7471	09/27/1996 JC
Nickel (ICAP)	10 ✓	mg/L	0.04	SW-846 Mtd. 6010	09/26/1996 DD
Selenium (ICAP)	ND	mg/L	0.2	"	09/26/1996 DD
Silver (ICAP)	ND	mg/L	0.006	"	09/26/1996 DD
Zinc (ICAP)	3.5 ✓	mg/L	0.02	"	09/26/1996 DD
			Analysed on SPLP leachate.		
PHYSICAL PROPERTY ANALYSIS					
pH (laboratory)	3.5	s.u.	0.1	SW-846 Mtd. 9045C	09/30/1996 RD

ND = Non Detectable

Project Manager

Jacob Bialik

Reported : 09/30/1996

CT&E Environmental Services Inc.

Callahan Mining Corp.

Sample:	65224-8492	Matrix:	Soil
Client Sample:	Humboldt Piles Composite	Location:	
COLLECTED:	09/26/1996 :	Project:	Callahan-Soils
RECEIVED:	09/27/1996 :	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Arsenic (GFAA)	0.010	mg/L	0.001	SW-846 Mtd. 7060	10/04/1996 SMM
Barium (ICAP)	0.066	mg/L	0.007	SW-846 Mtd. 6010	10/03/1996 DD
Cadmium (GFAA)	0.0049	mg/L	0.0002	SW-846 Mtd. 7131	10/04/1996 SMM
Chromium, Total (ICAP)	0.19	mg/L	0.004	SW-846 Mtd. 6010	10/03/1996 DD
Copper (ICAP)	1.5	mg/L	0.02	"	10/03/1996 DD
Iron (ICAP)	180	mg/L	0.5	"	10/04/1996 DD
Lead (GFAA)	0.040	mg/L	0.002	SW-846 Mtd. 7421	10/04/1996 SMM
Manganese (ICAP)	0.59	mg/L	0.04	SW-846 Mtd. 6010	10/03/1996 DD
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7471	10/03/1996 JC
Nickel (ICAP)	0.88	mg/L	0.04	SW-846 Mtd. 6010	10/03/1996 DD
Selenium (GFAA)	ND	mg/kg	0.004	SW-846 Mtd. 7740	10/05/1996 MC
Silver (GFAA)	0.0008	mg/L	0.0002	SW-846 Mtd. 7761	10/07/1996 SRO
Zinc (ICAP)	0.62	mg/L	0.02	SW-846 Mtd. 6010	10/03/1996 DD

Analysed on SPLP leachate.

ND = Non Detectable

Project Manager

Jacob Bialik

Reported : 10/08/1996

CT&E Environmental Services Inc.

Callahan Mining Corp.

Sample:	65224-8491	Matrix:	Soil
Client Sample:	Background Soils	Location:	
COLLECTED:	09/26/1996 :	Project:	Callahan-Soils
RECEIVED:	09/27/1996 :	Sampled By:	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Arsenic (GFAA)	ND	mg/L	0.001	SW-846 Mtd. 7060	10/04/1996 SMM
Barium (ICAP)	0.11	mg/L	0.007	SW-846 Mtd. 6010	10/03/1996 DD
Cadmium (GFAA)	ND	mg/L	0.0002	SW-846 Mtd. 7131	10/04/1996 SMM
Chromium, Total (ICAP)	0.017	mg/L	0.004	SW-846 Mtd. 6010	10/03/1996 DD
Copper (ICAP)	ND	mg/L	0.02	"	10/03/1996 DD
Iron (ICAP)	0.89	mg/L	0.05	"	10/03/1996 DD
Lead (GFAA)	0.002	mg/L	0.002	SW-846 Mtd. 7421	10/03/1996 DD
Manganese (ICAP)	0.06	mg/L	0.04	SW-846 Mtd. 6010	10/03/1996 DD
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7471	10/03/1996 JC
Nickel (ICAP)	ND	mg/L	0.07	SW-846 Mtd. 6010	10/03/1996 DD
Selenium (GFAA)	ND	mg/L	0.004	SW-846 Mtd. 7740	10/05/1996 MC
Silver (GFAA)	ND	mg/L	0.0002	SW-846 Mtd. 7761	10/08/1996 SMM
Zinc (ICAP)	0.07	mg/L	0.02	SW-846 Mtd. 6010	10/03/1996 DD

Analysed on SPLP leachate.

ND = Non Detectable

Project Manager

Jacob Bialik

Reported : 10/08/1996

Leaking Underground Storage Tank Closure Report,
Former Ropes Milling Plant, September 1996
Sundberg, Carlson and Associates, Inc.
Thermo Analytical, Inc. Anatech Laboratories
(Groundwater Results)

LEAKING UNDERGROUND STORAGE TANK
CLOSURE REPORT
FORMER ROPES MILLING PLANT

Prepared for:

CALLAHAN MINING CORPORATION
505 Front Avenue, P. O. Box 1
Coeur d'Alene, Idaho 83816-0316

JUN 15 ENT'D

September 20, 1996

Prepared by:

SUNDBERG, CARLSON AND ASSOCIATES, INC.
Environmental Services Division
307 South Front Street
Marquette, Michigan 49855
(906) 228-3272

SCA Project 90-384

Order # ES-09-101
10/05/95 11:09

Thermo Analytical, Inc.
TEST RESULTS BY SAMPLE

Sample Description: MW-5
Test Description: PURGEABLE HALOCARBONS
Collected: 09/18/95

Lab No: 04C
Method:

Test Code: 8020_W

PARAMETER	RESULT
Benzene	29
Toluene	9.6
Ethylbenzene	900
Xylene	5400
MTBE	<1.0

Notes and Definitions for this Report:

DATE RUN 09/26/95
ANALYST DB
UNITS UG/L

Thermo Analytical

This report is rendered upon all of the following conditions: Thermo Analytical retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted before the analysis. Client will be responsible for Thermo Analytical costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Product endorsement is neither inferred nor implied. Thermo Analytical will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

387 Airport Industrial Drive, Ypsilanti, MI 48198-7812

OCT-11-95 WED 12:45
P.03

Thermo Analytical, Inc.
TEST RESULTS BY SAMPLE

Sample Description: MW-5
Test Description: PNA IN WATER
Collected: 09/18/95

Lab No: 04D
Method: 8310

Test Code: 8310_W

PARAMETER	RESULT
INDENO(123-cd)PYRENE	N/A
ACENAPHTHYLENE	N/A
ACENAPHTHENE	N/A
ANTHRACENE	N/A
BENZO(a)ANTHRACENE	N/A
BENZO(b)FLUORANTHENE	N/A
BENZO(ghi)PERYLENE	N/A
BENZO(k)FLUORANTHENE	N/A
CHRYSENE	N/A
DIBENZO(a,h)ANTHRACENE	N/A
FLUORENE	N/A
FLUORANTHENE	N/A
NAPHTHALENE	9.68
PHENATHRENE	N/A
BENZO(a)PYRENE	N/A
PYRENE	N/A

Notes and Definitions for this Report:

EXTRACTED 09/21/95
DATE RUN 09/21/95
ANALYST SLJ
UNITS UG/L

Thermo Analytical

This report is rendered upon all of the following conditions: Thermo Analytical retains ownership of this report until associated submitted invoice is satisfied. Expert witness services shall be available in conjunction with this report only if prior notification of this potential requirement was made and accepted before the analysis. Client will be responsible for Thermo Analytical costs and consulting fees if our services are required by subpoena or otherwise in legal proceedings. Total liability is limited to the invoice amount. The results listed refer only to tested samples and applicable parameters. Product endorsement is neither inferred nor implied. Thermo Analytical will exercise due diligence but will not be responsible for lost or destroyed samples or evidence unless client makes appropriate insurance coverage arrangements. Samples are held for thirty days following issuance of report. Samples will be stored at client's expense, if authorized in writing.

387 Airport Industrial Drive, Ypsilanti, MI 48198-7812

OCT-11-95 WED 12:45
P.04

LEAKING UNDERGROUND STORAGE TANK
CLOSURE REPORT
FORMER ROPES MILLING PLANT

Prepared for:

CALLAHAN MINING CORPORATION
505 Front Avenue, P. O. Box 1
Coeur d'Alene, Idaho 83816-0316

September 20, 1996

JUN 15 ENT'D

Prepared by:

SUNDBERG, CARLSON AND ASSOCIATES, INC.
Environmental Services Division
307 South Front Street
Marquette, Michigan 49855
(906) 228-3272

SCA Project 90-384

'00 Conrad Industrial Drive
dingto ı, Michigan 49431
6-843-1877
x· 61ɔ-845-9942

ANATECH
Laboratories

a Division of
SCA Environmental
Services Inc

Analytical Report

Lab I.D. :	53422
Report Date :	06/23/1995
Project :	Callahan #90-384
Client :	SCA Environmental, Inc.
	307 South Front Street
	Marquette, MI 49855
Attention :	Mr. Brett French

11 pages including cover sheet

200 Conrad Industrial Drive
:dington, Michigan 49431
16-843-1877
AX: 616-845-9942

ANATECH Laboratories

a Division of
SCA Environmental
Services Inc.

SCA Environmental, Inc.

Sample:	53422-4333	Matrix: Water	/ Grab
Client Sample:	5282 MW-1	Location:	
COLLECTED:	06/13/1995 :	Project: Callahan	#90-384
RECEIVED:	06/14/1995 08:40	Sampled By: BS	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 06/23/1995

00 Conrad Industrial Drive
lington, Michigan 49431
6-843-1877
X: 616-845-9942

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc

SCA Environmental, Inc.

Sample:	53422-4334	Matrix:	Water / Grab
Client Sample:	5283 MW-2	Location:	
COLLECTED:	06/13/1995 :	Project:	Callahan #90-384
RECEIVED:	06/14/1995 08:40	Sampled By:	BS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 06/23/1995

200 Conrad Industrial Drive
idington, Michigan 49431
16-843-1877
AX: 616-845-9942

ANATECH Laboratories

a Division of
CTech Environmental
Services Inc.

SCA Environmental, Inc.

Sample:	53422-4335	Matrix: Water	/ Grab
Client Sample:	5284 MW-3	Location:	
COLLECTED:	06/13/1995 :	Project:	Callahan #90-384
RECEIVED:	06/14/1995 08:40	Sampled By:	BS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 06/23/1995

00 Conrad Industrial Drive
lington, Michigan 49431
6-843-1877
X· 616-845-9942

ANATECH
Laboratories

SCA Environmental, Inc.

Sample:	53422-4336	Matrix:	Water / Grab
Client Sample:	5285 MW-4	Location:	
COLLECTED:	06/13/1995 :	Project:	Callahan #90-384
RECEIVED:	06/14/1995 08:40	Sampled By:	BS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 06/23/1995

200 Conrad Industrial Drive
idington, Michigan 49431
16-843-1877
AX: 616-845-9942

ANATECH
Laboratories

SCA Environmental, Inc.

Sample:	53422-4337	Matrix:	Water / Grab
Client Sample:	5286 MW-5	Location:	
COLLECTED:	06/13/1995 :	Project:	Callahan #90-384
RECEIVED:	06/14/1995 08:40	Sampled By:	BS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	13	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	7	ug/L	5	"	06/20/1995 OY
Ethylbenzene	64	ug/L	5	"	06/20/1995 OY
Xylenes (Total)	1100	ug/L	15	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	15	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 06/23/1995

'00 Conrad Industrial Drive
dington, Michigan 49431
6-843-1877
X: 616-845-9942

ANATECH
Laboratories

...a Division of
Great Lakes Environmental
Services Inc

SCA Environmental, Inc.

Sample:	53422-4338	Matrix:	Water / Grab
Client Sample:	5287 MW-6	Location:	
COLLECTED:	06/13/1995 :	Project:	Callahan #90-384
RECEIVED:	06/14/1995 08:40	Sampled By:	BS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 06/23/1995

200 Conrad Industrial Drive
dington, Michigan 49431
16-843-1877
AX: 616-845-9942

ANATECH
Laboratories

a Division of
Clean Environmental
Services Inc

SCA Environmental, Inc.

Sample:	53422-4339	Matrix:	Water / Grab
Client Sample:	5288-MW-7	Location:	
COLLECTED:	06/13/1995 :	Project:	Callahan #90-384
RECEIVED:	06/14/1995 08:40	Sampled By:	BS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 06/23/1995

00 Conrad Industrial Drive
lington, Michigan 49431
6-845-1877
Y 616-845-9942

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc

SCA Environmental, Inc.

Sample:	53422-4340	Matrix:	Water	/ Grab	
Client Sample:	5289 MW-9	Location:			
COLLECTED:	06/13/1995 :	Project:	Callahan	#90-384	
RECEIVED:	06/14/1995 08:40	Sampled By:	BS		

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 06/23/1995

00 Conrad Industrial Drive
lington, Michigan 49431
6-843-1877
v 616-845-9942

ANATECH
Laboratories

a Division of
Clad Environmental
Services Inc

SCA Environmental, Inc.

Sample:	53422-4341	Matrix: Water	/ Grab
Client Sample:	5290 MW-10	Location:	
COLLECTED:	06/13/1995 :	Project:	Callahan #90-384
RECEIVED:	06/14/1995 08:40	Sampled By:	BS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	06/17/1995 LJ
Benzo (a) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	06/20/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Naphthalene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthene	ND	ug/L	5	"	06/20/1995 LBC
Acenaphthylene	ND	ug/L	5	"	06/20/1995 LBC
Fluorene	ND	ug/L	5	"	06/20/1995 LBC
Phenanthrene	ND	ug/L	5	"	06/20/1995 LBC
Anthracene	ND	ug/L	5	"	06/20/1995 LBC
Fluoranthene	ND	ug/L	5	"	06/20/1995 LBC
Pyrene	ND	ug/L	5	"	06/20/1995 LBC
Chrysene	ND	ug/L	5	"	06/20/1995 LBC

ND = Non Detectable

Project Manager

Maria G. Bissell

Reported : 06/23/1995

200 Conrad Industrial Drive
idington, Michigan 49431
16-843-1877
AX: 616-845-9942

ANATECH
Laboratories

SCA Environmental, Inc.

Sample:	53422-4342	Matrix:	Water
Client Sample:	Trip Blank	Location:	
COLLECTED:	05/25/1995 :	Project:	Callahan #90-384
RECEIVED:	06/14/1995 08:40	Sampled By:	Lab prepped

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	06/20/1995 OY
Toluene	ND	ug/L	1	"	06/20/1995 OY
Ethylbenzene	ND	ug/L	1	"	06/20/1995 OY
Xylenes (Total)	ND	ug/L	3	"	06/20/1995 OY

ND = Non Detectable

Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 06/23/1995

ANATECH ANALYTICAL LABORATORIES

Chain of Custody Record / Work Authorization
1200 Conrad Industrial Drive, Ludington, MI 49431
Phone # 800-733-8715

Laboratory Reference # _____ Page 1 of 1

Name & Address — Note: Please use permanent ink pen — (If same leave blank)

Results To: SCA ENGINEERING — Invoice To: DAVE RIPLEY

Telephone # _____ FAX # _____ Telephone # _____

Fax results: yes / no

Project Name _____ Project # _____ State _____ (State in which samples were collected) Work Authorization * DAVE RIPLEY

Sample Containers: (QTY./Size/Type/pH) (Lab use only)

VOA:	/ / / /	O&G HCL:	/ / /
Amber:	/ / / /	Bacti:	/ / /
HNO3	/ / /		/ / /
None:	/ / /		/ / /
H2SO4:	/ / /		/ / /

Test Methods

*Authorizes Anatech to perform the work requested on this form and acknowledges the terms and conditions of payment, which are listed on the reverse side of this form.

Required Completion Date: Standard

Sampled By (name): _____

Notes / Special Request: ASAP

Lab I.D.	Client Sample ID	Sampling Location	Collection Date	Collection Time am/pm	Method comp. or grab	Drinking Water Sample Matrix	Drinking Water Y/N

Relinquished by: (signature)	Date	Time am/pm	Received by: (signature)	Relinquished by: (signature)	Date	Time am/pm	Received by: (signature)	Cooler Temp. / Cooler #
	/ /				/ /			
Relinquished by: (signature)	Date	Time am/pm	Received by: (signature)	Relinquished by: (signature)	Date	Time am/pm	Received for Lab by:	Date / Time am/pm
	/ /				/ /			/ /

Pink copy - client Yellow copy - Managers White copy - Lab

COMPARISON TABLE FOR SOIL VERIFICATION

FACILITY NAME Former Ropes Milling Plant

FACILITY NUMBER 7803

Contaminant	Number of Samples Taken	Range of Detected Concentrations [Min- Max] (ug/kg)	Maximum Detected (ug/kg)	Applicable RBSL or SSTL Criterion *[Specify Tier Level](ug/kg)*		
				Residential Tier 1 Leaching to GW	☐ Commercial III ☐ Commercial IV	Industrial (included for referenc
VOLATILES						
☒ Benzene	5	ND	ND	100	NA	100
☒ Toluene	5	ND	ND	16,000	NA	16,000
☒ Ethylbenzene	5	ND	ND	4,700	NA	4,700
☒ Total Xylenes	5	ND	ND	74,000	NA	74,000
☐ MTBE						
POLYNUCLEAR AROMATICS (PNAs)						
☒ Acenaphthene	2	ND	ND	120,000	NA	120,000
☒ Acenaphthylene	2	ND	ND	1,400	NA	1,400
☒ Anthracene	2	ND	ND	150,000	NA	150,000
☒ Benzo(a)anthracene	2	ND	ND	14,000	NA	14,000
☒ Benzo(a)pyrene	2	ND	ND	1,400	NA	3,700
☒ Benzo(b)fluoranthene	2	ND	ND	14,000	NA	14,000
☒ Benzo(g,h,i)perylene	2	ND	ND	1,500,000	NA	1,500,000
☒ Benzo(k)fluoranthene	2	ND	ND	140,000	NA	140,000
☒ Chrysene	2	ND	ND	1,400,000	NA	1,400,000
☒ Dibenzo(a,h)anthracene	2	ND	ND	1,400	NA	4,200
☒ Fluoranthene	2	ND	ND	68,000	NA	68,000
☒ Fluorene	2	ND	ND	89,000	NA	89,000
☒ Indeno(1,2,3-cd)pyrene	2	ND	ND	14,000	NA	14,000
☒ Naphthalene	2	ND	ND	5,500	NA	5,500
☒ Phenanthrene	2	ND	ND	7,400	NA	7,400
☒ Pyrene	2	ND	ND	56,000	NA	56,000

ND = Non-Detect, NA = Not Analyzed/Not Applicable

Baseline Environmental Assessment
Investigation Report, January 1996
Sundberg, Carlson and Associates, Inc.
Anatech Laboratories
(Groundwater and Soil Results)

BASELINE ENVIRONMENTAL ASSESSMENT INVESTIGATION REPORT FORMER ROPES MILLING PLANT PROPERTY 4547 COUNTY ROAD 601 CHAMPION, MICHIGAN

Prepared for:

MINERALS PROCESSING CORPORATION
4547 County Road 601
Champion, Michigan 49814

January, 1996

Prepared by:

SCA ENVIRONMENTAL
A Division of Sundberg, Carlson and Associates, Inc.
307 South Front Street
Marquette, Michigan 49855

SCA Project 95-565

Chain of Custody

ANATECH LABORATORIES - A Division of CT&E Environmental Services
1200 Conrad Industrial Drive
Ludington, MI 49431
Phone: 616-843-1877 FAX: 616-845-9942

Anatech Lab Ref: 5G856

3 Page of 3

Results To: SCA Environmental

Attention:

Telephone #

FAX #

Invoice To:

Telephone #

Project Name: MPC - Callaham

Project Number: 95-563

State in which samples were collected: MI

FAX Results: YES or NO

Required Completion Date: 11-21-95

Sampled by: MR

Work Authorization Signature:

This signature authorizes ANATECH to perform the work requested on this form and acknowledges the terms and conditions of payment which are listed on the reverse side of this form.

Test Methods: As, Ba, Cd, Cr, Pb, Hg, Se, Ag, TCLP Pb, TCLP Cr

Comment / Notes: low level

ANATECH Lab ID	Client Sample ID	Sampling Location	Date	Time am / pm	Comp Grab C/G	Sample Matrix	Drinking Water Y/N	Field Filtered Y/N	VOC	Glass	O&G	250m Pl	500m Pl	1L Pl	Other	pH Check
5G856	SW-1	6354	11/7		G	Water	N	Y								
5G857	SW-2	6355	11/7		G	Water	N	Y								
5G858	SW-3	6356	11/7		G	Water	N	Y								

Relinquished by | Date / Time (am / pm)

Received by | Date / Time (am / pm)

Relinquished by | Date / Time (am / pm)

Received by | Date / Time (am / pm) 11-17-95

Relinquished by | Date / Time (am / pm)

Received by | Date / Time (am / pm)

Cooler Temp#1 | Cooler Temp#2 | Cooler Temp#3 | Cooler Temp#4

Pink copy-Client Yellow and White copy-Lab

) Conrad Industrial Drive
ngton, Michigan 49431
·843-1877
'6-845-9942

ANATECH Laboratories

a Division of
CT&E Environmental
Services Inc.

Sundberg, Carlson, & Associates

Sample:	56421-1238	Matrix:	Soil / Grab
Client Sample:	5571 WO-10	Location:	
COLLECTED:	10/24/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/26/1995 16:42	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
1,3-Dichlorobenzene	ND	ug/kg	10	SW-846 Mtd. 8010	11/01/1995 OY
1,4-Dichlorobenzene	ND	ug/kg	10	"	11/01/1995 OY
1,2-Dichlorobenzene	ND	ug/kg	10	"	11/01/1995 OY
			Note: Results are reported on a dry weight basis.		
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/kg	10	SW-846 Mtd. 8020	11/01/1995 OY
Toluene	ND	ug/kg	10	"	11/01/1995 OY
Ethylbenzene	27	ug/kg	10	"	11/01/1995 OY
Xylenes (Total)	260	ug/kg	30	"	11/01/1995 OY
			Note: Results are reported on a dry weight basis.		
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/07/1995 LJ
Benzo (a) Anthracene	ND	ug/kg	330	"	11/14/1995 LBC
Benzo (a) Pyrene	ND	ug/kg	330	"	11/14/1995 LBC
Benzo (b) Fluoranthene	ND	ug/kg	330	"	11/14/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/kg	330	"	11/14/1995 LBC
Benzo (k) Fluoranthene	ND	ug/kg	330	"	11/14/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/kg	330	"	11/14/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/kg	330	"	11/14/1995 LBC
Naphthalene	ND	ug/kg	330	"	11/14/1995 LBC
Acenaphthene	ND	ug/kg	330	"	11/14/1995 LBC
Acenaphthylene	ND	ug/kg	330	"	11/14/1995 LBC
Fluorene	ND	ug/kg	330	"	11/14/1995 LBC
Phenanthrene	ND	ug/kg	330	"	11/14/1995 LBC
Anthracene	ND	ug/kg	330	"	11/14/1995 LBC
Fluoranthene	ND	ug/kg	330	"	11/14/1995 LBC
Pyrene	ND	ug/kg	330	"	11/14/1995 LBC
Chrysene	ND	ug/kg	330	"	11/14/1995 LBC
			Note: Results are reported on a dry weight basis.		

ND = Non Detectable

Reported : 11/16/1995

) Conrad Industrial Drive
ngton, Michigan 49431
·843-1877
'16-845-9942

ANATECH
Laboratories

a Division of
CT&E Environmental
Services Inc.

Sundberg, Carlson, & Associates

Sample:	56421-1238	Matrix:	Soil / Grab
Client Sample:	5571 WO-10	Location:	
COLLECTED:	10/24/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/26/1995 16:42	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/07/1995 SAJ
Aroclor-1016	ND	ug/kg	330	"	11/08/1995 SM
Aroclor-1221	ND	ug/kg	330	"	11/08/1995 SM
Aroclor-1232	ND	ug/kg	330	"	11/08/1995 SM
Aroclor-1242	ND	ug/kg	330	"	11/08/1995 SM
Aroclor-1248	ND	ug/kg	330	"	11/08/1995 SM
Aroclor-1254	ND	ug/kg	330	"	11/08/1995 SM
Aroclor-1260	ND	ug/kg	330	"	11/08/1995 SM
Aroclor-1262	ND	ug/kg	330	"	11/08/1995 SM
Aroclor-1268	ND	ug/kg	330	"	11/08/1995 SM

'D = Non Detectable

Senior Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 11/16/1995

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6-845-9942

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Sample:	56476-1448	Matrix:	Soil / Grab
Client Sample:	6066 MW-106 1-3'	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
TOTAL METALS ANALYSIS					
Cadmium (GFAA)	ND	mg/kg	0.05	SW-846 Mtd. 7131	11/08/1995 JJB
Chromium, Total (ICAP)	11	mg/kg	0.2	SW-846 Mtd. 6010	11/06/1995 MC
Lead (GFAA)	3.6	mg/kg	0.1	SW-846 Mtd. 7421	11/06/1995 GCP
			Note: Results are reported on a dry weight basis.		
PHYSICAL PROPERTY ANALYSIS					
% Solids	92.9	%	0.1	Standard Mtd. 2540G	10/31/1995 PL
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/kg	10	SW-846 Mtd. 8010	11/03/1995 OY
hloromethane	ND	ug/kg	10	"	11/03/1995 OY
Vinyl Chloride	ND	ug/kg	10	"	11/03/1995 OY
Bromomethane	ND	ug/kg	10	"	11/03/1995 OY
Chloroethane	ND	ug/kg	10	"	11/03/1995 OY
Trichlorofluoromethane	ND	ug/kg	10	"	11/03/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/kg	10	"	11/03/1995 OY
1,1-Dichloroethene	ND	ug/kg	10	"	11/03/1995 OY
Methylene Chloride	ND	ug/kg	10	"	11/03/1995 OY
t-1,2-Dichloroethene	ND	ug/kg	10	"	11/03/1995 OY
1,1-Dichloroethane	ND	ug/kg	10	"	11/03/1995 OY
Chloroform	ND	ug/kg	10	"	11/03/1995 OY
1,1,1-Trichloroethane	ND	ug/kg	10	"	11/03/1995 OY
Carbon Tetrachloride	ND	ug/kg	10	"	11/03/1995 OY
1,2-Dichloroethane	ND	ug/kg	10	"	11/03/1995 OY
c-1,3-Dichloropropene	ND	ug/kg	10	"	11/03/1995 OY
Trichloroethene	ND	ug/kg	10	"	11/03/1995 OY
1,2-Dichloropropane	ND	ug/kg	10	"	11/03/1995 OY
Bromodichloromethane	ND	ug/kg	10	"	11/03/1995 OY
Tetrachloroethene	ND	ug/kg	10	"	11/03/1995 OY
t-1,3-Dichloropropene	ND	ug/kg	10	"	11/03/1995 OY
1,1,2-Trichloroethane	ND	ug/kg	10	"	11/03/1995 OY
Dibromochloromethane	ND	ug/kg	10	"	11/03/1995 OY
Chlorobenzene	ND	ug/kg	10	"	11/03/1995 OY
Bromoform	ND	ug/kg	10	"	11/03/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/kg	10	"	11/03/1995 OY

ND = Non Detectable

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Sample:	56476-1448	Matrix:	Soil / Grab
Client Sample:	6066 MW-106 1-3'	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
1,3-Dichlorobenzene	ND	ug/kg	10	SW-846 Mtd. 8010	11/03/1995 OY
1,4-Dichlorobenzene	ND	ug/kg	10	"	11/03/1995 OY
1,2-Dichlorobenzene	ND	ug/kg	10	"	11/03/1995 OY
			Note: Results are reported on a dry weight basis.		
VOLATILE AROMATIC HYDRO.					
Benzene	ND	ug/kg	10	SW-846 Mtd. 8020	11/03/1995 OY
Toluene	ND	ug/kg	10	"	11/03/1995 OY
Ethylbenzene	ND	ug/kg	10	"	11/03/1995 OY
Xylenes (Total)	ND	ug/kg	30	"	11/03/1995 OY
			Note: Results are reported on a dry weight basis.		
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/06/1995 SAJ
Benzo (a) Anthracene	ND	ug/kg	330	"	11/06/1995 LBC
Benzo (a) Pyrene	ND	ug/kg	330	"	11/06/1995 LBC
Benzo (b) Fluoranthene	ND	ug/kg	330	"	11/06/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/kg	330	"	11/06/1995 LBC
Benzo (k) Fluoranthene	ND	ug/kg	330	"	11/06/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/kg	330	"	11/06/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/kg	330	"	11/06/1995 LBC
Naphthalene	ND	ug/kg	330	"	11/06/1995 LBC
Acenaphthene	ND	ug/kg	330	"	11/06/1995 LBC
Acenaphthylene	ND	ug/kg	330	"	11/06/1995 LBC
Fluorene	ND	ug/kg	330	"	11/06/1995 LBC
Phenanthrene	ND	ug/kg	330	"	11/06/1995 LBC
Anthracene	ND	ug/kg	330	"	11/06/1995 LBC
Fluoranthene	ND	ug/kg	330	"	11/06/1995 LBC
Pyrene	ND	ug/kg	330	"	11/06/1995 LBC
Chrysene	ND	ug/kg	330	"	11/06/1995 LBC
			Note: Results are reported on a dry weight basis.		

"D = Non Detectable

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Sample:	56476-1448	Matrix:	Soil / Grab
Client Sample:	6066 MW-106 1-3'	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/06/1995 SAJ
Aroclor-1016	ND	ug/kg	330	"	11/06/1995 SM
Aroclor-1221	ND	ug/kg	330	"	11/06/1995 SM
Aroclor-1232	ND	ug/kg	330	"	11/06/1995 SM
Aroclor-1242	ND	ug/kg	330	"	11/06/1995 SM
Aroclor-1248	ND	ug/kg	330	"	11/06/1995 SM
Aroclor-1254	ND	ug/kg	330	"	11/06/1995 SM
Aroclor-1260	ND	ug/kg	330	"	11/06/1995 SM
Aroclor-1262	ND	ug/kg	330	"	11/06/1995 SM
Aroclor-1268	ND	ug/kg	330	"	11/06/1995 SM

Note: Results are reported on a dry weight basis.

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

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Sample:	56476-1439	Matrix:	Water / Grab
Client Sample:	6057 MW-101	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7060	11/03/1995 GCP
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/02/1995 JJB
Cadmium (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7131	11/08/1995 JJB
Chromium, Total (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
Copper (ICAP)	ND	mg/L	0.025	"	11/02/1995 JJB
Iron (ICAP)	1.0	mg/L	0.1	"	11/02/1995 JJB
Lead (GFAA)	ND	mg/L	0.003	SW-846 Mtd. 7421	11/03/1995 GCP
Manganese (ICAP)	5.8	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/01/1995 EWL
Nickel (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
Selenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/14/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/08/1995 GCP
Zinc (ICAP)	ND	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
NON-METALLIC INORGANIC ANALYSIS					
Cyanide, Total	ND	mg/L	0.005	SW-846 Mtd. 9010 A	11/02/1995 LS
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/02/1995 LJ
Aroclor-1016	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1221	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1232	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1242	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1248	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1254	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1260	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1262	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1268	ND	ug/L	0.2	"	11/06/1995 SM

) = Non Detectable

Senior Project Manager

Maria G. Bissell

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Sample:	56476-1440	Matrix:	Water / Grab
Client Sample:	6058 MW-102	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7060	11/03/1995 GCP
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/02/1995 JJB
Cadmium (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7131	11/08/1995 JJB
Chromium, Total (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
Copper (ICAP)	ND	mg/L	0.025	"	11/02/1995 JJB
Iron (ICAP)	390	mg/L	0.1	"	11/02/1995 JJB
Lead (GFAA)	ND	mg/L	0.003	SW-846 Mtd. 7421	11/02/1995 GCP
Manganese (ICAP)	22	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/01/1995 EWL
Nickel (ICAP)	1.4	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
Selenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/14/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/08/1995 GCP
Zinc (ICAP)	0.22	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
NON-METALLIC INORGANIC ANALYSIS					
Cyanide, Total	0.063	mg/L	0.005	SW-846 Mtd. 9010 A	11/02/1995 LS
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/02/1995 LJ
Aroclor-1016	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1221	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1232	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1242	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1248	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1254	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1260	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1262	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1268	ND	ug/L	0.2	"	11/06/1995 SM

ND = Non Detectable

Senior Project Manager

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Sample:	56476-1441	Matrix: Water / Grab	
Client Sample:	6059 MW-103	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7060	11/03/1995 GCP
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/02/1995 JJB
Cadmium (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7131	11/08/1995 JJB
Chromium, Total (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
Copper (ICAP)	ND	mg/L	0.025	"	11/02/1995 JJB
Iron (ICAP)	34	mg/L	0.1	"	11/02/1995 JJB
Lead (GFAA)	ND	mg/L	0.003	SW-846 Mtd. 7421	11/02/1995 GCP
Manganese (ICAP)	3.2	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/01/1995 EWL
Nickel (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
elenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/14/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/08/1995 GCP
Zinc (ICAP)	0.02	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
NON-METALLIC INORGANIC ANALYSIS					
Cyanide, Total	0.023	mg/L	0.005	SW-846 Mtd. 9010 A	11/02/1995 LS
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/02/1995 LJ
Aroclor-1016	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1221	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1232	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1242	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1248	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1254	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1260	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1262	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1268	ND	ug/L	0.2	"	11/06/1995 SM

ND = Non Detectable

Senior Project Manager

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Sample:	56476-1442	Matrix: Water	/ Grab
Client Sample:	6060 MW-104	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	0.012	mg/L	0.005	SW-846 Mtd. 7060	11/03/1995 GCP
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/02/1995 JJB
Cadmium (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7131	11/08/1995 JJB
Chromium, Total (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
Copper (ICAP)	ND	mg/L	0.025	"	11/02/1995 JJB
Iron (ICAP)	30	mg/L	0.1	"	11/02/1995 JJB
Lead (GFAA)	ND	mg/L	0.003	SW-846 Mtd. 7421	11/02/1995 GCP
Manganese (ICAP)	3.2	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/01/1995 EWL
Nickel (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
elenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/14/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/08/1995 GCP
Zinc (ICAP)	0.02	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/L	1	SW-846 Mtd. 8010	11/04/1995 OY
Chloromethane	ND	ug/L	1	"	11/04/1995 OY
Vinyl Chloride	ND	ug/L	1	"	11/04/1995 OY
Bromomethane	ND	ug/L	1	"	11/04/1995 OY
Chloroethane	ND	ug/L	1	"	11/04/1995 OY
Trichlorofluoromethane	ND	ug/L	1	"	11/04/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/L	1	"	11/04/1995 OY
1,1-Dichloroethene	ND	ug/L	1	"	11/04/1995 OY
Methylene Chloride	ND	ug/L	1	"	11/04/1995 OY
t-1,2-Dichloroethene	ND	ug/L	1	"	11/04/1995 OY
1,1-Dichloroethane	ND	ug/L	1	"	11/04/1995 OY
Chloroform	ND	ug/L	1	"	11/04/1995 OY
1,1,1-Trichloroethane	ND	ug/L	1	"	11/04/1995 OY
Carbon Tetrachloride	ND	ug/L	1	"	11/04/1995 OY
1,2-Dichloroethane	ND	ug/L	1	"	11/04/1995 OY
c-1,3-Dichloropropene	ND	ug/L	1	"	11/04/1995 OY
Trichloroethene	ND	ug/L	1	"	11/04/1995 OY
1,2-Dichloropropane	ND	ug/L	1	"	11/04/1995 OY
Bromodichloromethane	ND	ug/L	1	"	11/04/1995 OY
Tetrachloroethene	ND	ug/L	1	"	11/04/1995 OY

ND = Non Detectable

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Sample:	56476-1442	Matrix:	Water / Grab
Client Sample:	6060 MW-104	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
t-1,3-Dichloropropene	ND	ug/L	1	SW-846 Mtd. 8010	11/04/1995 OY
1,1,2-Trichloroethane	ND	ug/L	1	"	11/04/1995 OY
Dibromochloromethane	ND	ug/L	1	"	11/04/1995 OY
Chlorobenzene	ND	ug/L	1	"	11/04/1995 OY
Bromoform	ND	ug/L	1	"	11/04/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/L	1	"	11/04/1995 OY
1,3-Dichlorobenzene	ND	ug/L	1	"	11/04/1995 OY
1,4-Dichlorobenzene	ND	ug/L	1	"	11/04/1995 OY
1,2-Dichlorobenzene	ND	ug/L	1	"	11/04/1995 OY
OLATILE AROMATIC HYDRO.					
Benzene	27	ug/L	5	SW-846 Mtd. 8020	11/04/1995 OY
Toluene	94	ug/L	1	"	11/04/1995 OY
Ethylbenzene	48	ug/L	1	"	11/04/1995 OY
Xylenes (Total)	500	ug/L	15	"	11/04/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/02/1995 SJ
Benzo (a) Anthracene	ND	ug/L	5	"	11/07/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	11/07/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	11/07/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	11/07/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	11/07/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	11/07/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	11/07/1995 LBC
Naphthalene	76	ug/L	5	"	11/07/1995 LBC
Acenaphthene	ND	ug/L	5	"	11/07/1995 LBC
Acenaphthylene	ND	ug/L	5	"	11/07/1995 LBC
Fluorene	ND	ug/L	5	"	11/07/1995 LBC
Phenanthrene	ND	ug/L	5	"	11/07/1995 LBC
Anthracene	ND	ug/L	5	"	11/07/1995 LBC
Fluoranthene	ND	ug/L	5	"	11/07/1995 LBC
Pyrene	ND	ug/L	5	"	11/07/1995 LBC
Chrysene	ND	ug/L	5	"	11/07/1995 LBC

ND = Non Detectable

Reported : 11/15/1995

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6-845-9942

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Sample:	56476-1442	Matrix:	Water / Grab
Client Sample:	6060 MW-104	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/02/1995 LJ
Aroclor-1016	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1221	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1232	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1242	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1248	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1254	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1260	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1262	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1268	ND	ug/L	0.2	"	11/06/1995 SM

'D = Non Detectable

Senior Project Manager

Maria G. Bissell

Reported : 11/15/1995

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16-845-9942

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Sample:	56476-1443	Matrix: Water / Grab	
Client Sample:	6061 MW-105	Location:	
COLLECTED:	10/26/1995 :	Project: MPC-Callahan 95-565	
RECEIVED:	10/28/1995 :	Sampled By: GDS	

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7060	11/03/1995 GCP
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/02/1995 JJB
Cadmium (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7131	11/08/1995 JJB
Chromium, Total (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
Copper (ICAP)	ND	mg/L	0.025	"	11/02/1995 JJB
Iron (ICAP)	9.4	mg/L	0.1	"	11/02/1995 JJB
Lead (GFAA)	ND	mg/L	0.003	SW-846 Mtd. 7421	11/02/1995 GCP
Manganese (ICAP)	1.2	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/01/1995 EWL
Nickel (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
elenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/14/1995 GCP
Silver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/08/1995 GCP
Zinc (ICAP)	ND	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
NON-METALLIC INORGANIC ANALYSIS					
Cyanide, Total	ND	mg/L	0.005	SW-846 Mtd. 9010 A	11/02/1995 LS
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/02/1995 LJ
Aroclor-1016	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1221	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1232	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1242	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1248	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1254	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1260	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1262	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1268	ND	ug/L	0.2	"	11/06/1995 SM

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

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Sample:	56476-1444	Matrix:	Water / Grab
Client Sample:	6062 MW-106	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
DISSOLVED METALS ANALYSIS					
Arsenic (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7060	11/03/1995 GCP
Barium (ICAP)	ND	mg/L	0.2	SW-846 Mtd. 6010	11/02/1995 JJB
Cadmium (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7131	11/08/1995 JJB
Chromium, Total (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
Copper (ICAP)	ND	mg/L	0.025	"	11/02/1995 JJB
Iron (ICAP)	2.0	mg/L	0.1	"	11/02/1995 JJB
Lead (GFAA)	ND	mg/L	0.003	SW-846 Mtd. 7421	11/02/1995 GCP
Manganese (ICAP)	7.2	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
Mercury (Cold Vapor)	ND	mg/L	0.0002	SW-846 Mtd. 7470	11/01/1995 EWL
Nickel (ICAP)	ND	mg/L	0.05	SW-846 Mtd. 6010	11/02/1995 JJB
lenium (GFAA)	ND	mg/L	0.005	SW-846 Mtd. 7740	11/14/1995 GCP
ilver (GFAA)	ND	mg/L	0.0005	SW-846 Mtd. 7761	11/08/1995 GCP
Zinc (ICAP)	0.02	mg/L	0.02	SW-846 Mtd. 6010	11/02/1995 JJB
PURGEABLE HALOCARBONS					
Dichlorodifluoromethane	ND	ug/L	1	SW-846 Mtd. 8010	11/04/1995 OY
Chloromethane	ND	ug/L	1	"	11/04/1995 OY
Vinyl Chloride	ND	ug/L	1	"	11/04/1995 OY
Bromomethane	ND	ug/L	1	"	11/04/1995 OY
Chloroethane	ND	ug/L	1	"	11/04/1995 OY
Trichlorofluoromethane	ND	ug/L	1	"	11/04/1995 OY
2-Chloroethyl Vinyl Ether	ND	ug/L	1	"	11/04/1995 OY
1,1-Dichloroethene	ND	ug/L	1	"	11/04/1995 OY
Methylene Chloride	ND	ug/L	1	"	11/04/1995 OY
t-1,2-Dichloroethene	ND	ug/L	1	"	11/04/1995 OY
1,1-Dichloroethane	ND	ug/L	1	"	11/04/1995 OY
Chloroform	ND	ug/L	1	"	11/04/1995 OY
1,1,1-Trichloroethane	ND	ug/L	1	"	11/04/1995 OY
Carbon Tetrachloride	ND	ug/L	1	"	11/04/1995 OY
1,2-Dichloroethane	ND	ug/L	1	"	11/04/1995 OY
c-1,3-Dichloropropene	ND	ug/L	1	"	11/04/1995 OY
Trichloroethene	ND	ug/L	1	"	11/04/1995 OY
1,2-Dichloropropane	ND	ug/L	1	"	11/04/1995 OY
Bromodichloromethane	ND	ug/L	1	"	11/04/1995 OY
Tetrachloroethene	ND	ug/L	1	"	11/04/1995 OY

"D = Non Detectable

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Sundberg, Carlson, & Associates

Sample:	56476-1444	Matrix:	Water / Grab
Client Sample:	6062 MW-106	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
PURGEABLE HALOCARBONS					
t-1,3-Dichloropropene	ND	ug/L	1	SW-846 Mtd. 8010	11/04/1995 OY
1,1,2-Trichloroethane	ND	ug/L	1	"	11/04/1995 OY
Dibromochloromethane	ND	ug/L	1	"	11/04/1995 OY
Chlorobenzene	ND	ug/L	1	"	11/04/1995 OY
Bromoform	ND	ug/L	1	"	11/04/1995 OY
1,1,2,2-Tetrachloroethane	ND	ug/L	1	"	11/04/1995 OY
1,3-Dichlorobenzene	ND	ug/L	1	"	11/04/1995 OY
1,4-Dichlorobenzene	ND	ug/L	1	"	11/04/1995 OY
1,2-Dichlorobenzene	ND	ug/L	1	"	11/04/1995 OY
'OLATILE AROMATIC HYDRO.					
Benzene	ND	ug/L	5	SW-846 Mtd. 8020	11/04/1995 OY
Toluene	ND	ug/L	1	"	11/04/1995 OY
Ethylbenzene	ND	ug/L	1	"	11/04/1995 OY
Xylenes (Total)	ND	ug/L	3	"	11/04/1995 OY
POLYNUCLEAR AROMATIC HYDRO.					
Semi Volatile Extraction	-	-	-	SW-846 Mtd. 8270A	11/02/1995 SJ
Benzo (a) Anthracene	ND	ug/L	5	"	11/06/1995 LBC
Benzo (a) Pyrene	ND	ug/L	5	"	11/06/1995 LBC
Benzo (b) Fluoranthene	ND	ug/L	5	"	11/06/1995 LBC
Benzo (g,h,i) Perylene	ND	ug/L	5	"	11/06/1995 LBC
Benzo (k) Fluoranthene	ND	ug/L	5	"	11/06/1995 LBC
Dibenzo (a,h) Anthracene	ND	ug/L	5	"	11/06/1995 LBC
Indeno (1,2,3-cd) Pyrene	ND	ug/L	5	"	11/06/1995 LBC
Naphthalene	ND	ug/L	5	"	11/06/1995 LBC
Acenaphthene	ND	ug/L	5	"	11/06/1995 LBC
Acenaphthylene	ND	ug/L	5	"	11/06/1995 LBC
Fluorene	ND	ug/L	5	"	11/06/1995 LBC
Phenanthrene	ND	ug/L	5	"	11/06/1995 LBC
Anthracene	ND	ug/L	5	"	11/06/1995 LBC
Fluoranthene	ND	ug/L	5	"	11/06/1995 LBC
Pyrene	ND	ug/L	5	"	11/06/1995 LBC
Chrysene	ND	ug/L	5	"	11/06/1995 LBC

ND = Non Detectable

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Sample:	56476-1444	Matrix:	Water / Grab
Client Sample:	6062 MW-106	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
POLYCHLORINATED BIPHENYLS (PCBs)					
Aroclor Extraction	-	-	-	SW-846 Mtd. 8080	11/02/1995 LJ
Aroclor-1016	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1221	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1232	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1242	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1248	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1254	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1260	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1262	ND	ug/L	0.2	"	11/06/1995 SM
Aroclor-1268	ND	ug/L	0.2	"	11/06/1995 SM

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Reported : 11/15/1995

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843-1877
16-845-9942

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Sundberg, Carlson, & Associates

Sample:	56476-1445	Matrix: Soil	/ Grab
Client Sample:	6063 Test Pit 17	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
NON-METALLIC INORGANIC ANALYSIS					
Cyanide, Total	6.6	mg/kg	0.3	SW-846 Mtd. 9010 A	11/02/1995 LS
PHYSICAL PROPERTY ANALYSIS					
pH (laboratory)	2.8	s.u.	0.1	EPA 150.1	11/02/1995 PL
% Solids	85.4	%	0.1	Standard Mtd. 2540G	10/31/1995 PL

ND = Non Detectable

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Sample:	56476-1445	Matrix:	Soil	/ Grab
Client Sample:	6063 Test Pit 17	Location:		
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565	
RECEIVED:	10/28/1995 :	Sampled By:	GDS	

Test Description	Result	Unit	Spike Recovery	Regulatory Limit	Reporting Detection Limit	Method	Date/ Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
TCLP ACT 64 Metals	-	-			-	TCLP Extraction	11/01/95 WD
ICAP Preparation TCLP Metals	-	-			-	TCLP ICAP Prep.	11/03/95 WD
Arsenic (ICAP)	ND	mg/L	105	5	0.05	SW-846 Mtd. 6010	11/03/95 JJB
Barium (ICAP)	0.12	mg/L	106	100	0.002	"	11/03/95 JJB
Cadmium (ICAP)	ND	mg/L	106	1	0.006	"	11/03/95 JJB
Chromium, Total (ICAP)	0.20	mg/L	114	5	0.01	"	11/03/95 JJB
Copper (ICAP)	0.35	mg/L	113	100	0.02	"	11/03/95 JJB
Iron (ICAP)	2.4	mg/L	111	-	0.04	SW-846 Mtd. 6010	11/03/95 JJB
Lead (ICAP)	ND	mg/L	105	5	0.06	SW-846 Mtd. 6010	11/03/95 JJB
Manganese (ICAP)	0.82	mg/L	114	-	0.003	"	11/03/95 JJB
Mercury (Cold Vapor)	ND	mg/L	103	0.2	0.0002	SW-846 Mtd. 7471	11/03/95 EWL
Nickel (ICAP)	1.2	mg/L	110	-	0.04	SW-846 Mtd. 6010	11/03/95 JJB
Selenium (ICAP)	ND	mg/L	106	1	0.1	SW-846 Mtd. 6010	11/03/95 JJB
Silver (ICAP)	ND	mg/L	91	5	0.006	"	11/03/95 JJB
Zinc (ICAP)	0.70	mg/L	106	500	0.004	"	11/03/95 JJB

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

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'6-845-9942

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Sundberg, Carlson, & Associates

Sample:	56476-1446	Matrix:	Soil / Grab
Client Sample:	6064 Test Pit 34	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
NON-METALLIC INORGANIC ANALYSIS					
Cyanide, Total	0.9	mg/kg	0.3	SW-846 Mtd. 9010 A	11/02/1995 LS
PHYSICAL PROPERTY ANALYSIS					
pH (laboratory)	3.2	s.u.	0.1	EPA 150.1	11/02/1995 PL
% Solids	88.7	%	0.1	Standard Mtd. 2540G	10/31/1995 PL

ND = Non Detectable

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Sundberg, Carlson, & Associates

Sample:	56476-1446	Matrix:	Soil / Grab
Client Sample:	6064 Test Pit 34	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Spike Recovery	Regulatory Limit	Reporting Detection Limit	Method	Date/ Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
TCLP ACT 64 Metals	-	-			-	TCLP Extraction	11/01/95 WD
ICAP Preparation TCLP Metals	-	-			-	TCLP ICAP Prep.	11/03/95 WD
Arsenic (ICAP)	ND	mg/L	105	5	0.3	SW-846 Mtd. 6010	11/03/95 JJB
Barium (ICAP)	0.16	mg/L	106	100	0.002	"	11/03/95 JJB
Cadmium (ICAP)	ND	mg/L	106	1	0.04	"	11/03/95 JJB
Chromium, Total (ICAP)	ND	mg/L	114	5	0.06	"	11/03/95 JJB
Copper (ICAP)	ND	mg/L	113	100	0.1	"	11/03/95 JJB
Iron (ICAP)	0.14	mg/L	111	-	0.04	SW-846 Mtd. 6010	11/03/95 JJB
Lead (ICAP)	ND	mg/L	105	5	0.2	SW-846 Mtd. 6010	11/03/95 JJB
Manganese (ICAP)	0.13	mg/L	114	-	0.003	"	11/03/95 JJB
Mercury (Cold Vapor)	ND	mg/L	103	0.2	0.0002	SW-846 Mtd. 7471	11/03/95 EWL
Nickel (ICAP)	0.65	mg/L	110	-	0.04	SW-846 Mtd. 6010	11/03/95 JJB
Selenium (ICAP)	ND	mg/L	106	1	0.1	SW-846 Mtd. 6010	11/03/95 JJB
Silver (ICAP)	ND	mg/L	91	5	0.006	"	11/03/95 JJB
Zinc (ICAP)	0.29	mg/L	106	500	0.004	"	11/03/95 JJB

ND = Non Detectable

Senior Project Manager

Maria G. Bissell

Maria G. Bissell

Reported : 11/15/1995

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43-1877
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Sundberg, Carlson, & Associates

Sample:	56476-1447	Matrix:	Soil / Grab
Client Sample:	6065 Stock Pile	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Reporting Detection Limit	Method	Date/Analyst
NON-METALLIC INORGANIC ANALYSIS					
Cyanide, Total	10.5	mg/kg	0.3	SW-846 Mtd. 9010 A	11/02/1995 LS
PHYSICAL PROPERTY ANALYSIS					
pH (laboratory)	2.7	s.u.	0.1	EPA 150.1	11/02/1995 PL
% Solids	83.8	%	0.1	Standard Mtd. 2540G	10/31/1995 PL

ND = Non Detectable

Reported : 11/15/1995

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Sample:	56476-1447	Matrix:	Soil / Grab
Client Sample:	6065 Stock Pile	Location:	
COLLECTED:	10/26/1995 :	Project:	MPC-Callahan 95-565
RECEIVED:	10/28/1995 :	Sampled By:	GDS

Test Description	Result	Unit	Spike Recovery	Regulatory Limit	Reporting Detection Limit	Method	Date/ Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
TCLP ACT 64 Metals	-	-			-	TCLP Extraction	11/01/95 WD
ICAP Preparation TCLP Metals	-	-			-	TCLP ICAP Prep.	11/03/95 WD
Arsenic (ICAP)	ND	mg/L	105	5	0.2	SW-846 Mtd. 6010	11/03/95 JJB
Barium (ICAP)	0.091	mg/L	106	100	0.002	"	11/03/95 JJB
Cadmium (ICAP)	ND	mg/L	106	1	0.02	"	11/03/95 JJB
Chromium, Total (ICAP)	0.22	mg/L	114	5	0.01	"	11/03/95 JJB
Copper (ICAP)	0.73	mg/L	113	100	0.02	"	11/03/95 JJB
Iron (ICAP)	3.4	mg/L	111	-	0.04	SW-846 Mtd. 6010	11/03/95 JJB
Lead (ICAP)	ND	mg/L	105	5	0.04	SW-846 Mtd. 6010	11/03/95 JJB
Manganese (ICAP)	1.0	mg/L	114	-	0.003	"	11/03/95 JJB
Mercury (Cold Vapor)	ND	mg/L	103	0.2	0.0002	SW-846 Mtd. 7471	11/03/95 EWL
Nickel (ICAP)	3.8	mg/L	110	-	0.04	SW-846 Mtd. 6010	11/03/95 JJB
Selenium (ICAP)	ND	mg/L	106	1	0.2	SW-846 Mtd. 6010	11/03/95 JJB
Silver (ICAP)	ND	mg/L	91	5	0.006	"	11/03/95 JJB
Zinc (ICAP)	1.4	mg/L	106	500	0.004	"	11/03/95 JJB

ND = Non Detectable

Senior Project Manager

ria S. Bissell

Reported : 11/15/1995

Qualifications of the Humboldt Millsite, Michigan
for Closure Under Part 201, November 1999
Maxim Technologies, Inc.
Energy Laboratories
(Groundwater Results)

QUALIFICATIONS OF THE HUMBOLDT MILLSITE, MICHIGAN FOR CLOSURE UNDER PART 201

Project No. 9851474-200

Prepared for:

Callahan Mining Co.
505 Front St., P.O. Box I
Coeur d'Alene, ID 83816-0316

Prepared by:

Maxim Technologies, Inc.®
111 E. Magnesium Rd., Suite A
Spokane, Washington 99208

November 1999

ENERGY LABORATORIES, INC.
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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 102
Laboratory ID: 99-58443-1
Sample Matrix: Water
Sample Date: 19-Oct-99 1300
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	424	mg/l		1		EPA 200.7	29-Oct-99 1834	RLH
Magnesium	326	mg/l		1		EPA 200.7	29-Oct-99 1834	RLH
Potassium	3	mg/l		1		EPA 200.7	29-Oct-99 1834	RLH
Sodium	14	mg/l		1		EPA 200.7	29-Oct-99 1834	RLH
Chloride	10	mg/l		1		EPA 300.0	29-Oct-99 1649	RLH
Sulfate	6490	mg/l		1		EPA 300.0	29-Oct-99 1649	RLH
Alkalinity as CaCO3	0	mg/l		1		EPA 310.1	03-Nov-99 1026	LDV
Nitrogen, Ammonia	3.7	mg/l		0.1		EPA 350.1	02-Nov-99 1606	BAS
Nitrogen, Nitrate	0.12	mg/l		0.05		EPA 353.2	29-Oct-99 1646	BAS
Nitrogen, Nitrate plus Nitrite	0.20	mg/l		0.05		EPA 353.2	02-Nov-99 1606	BAS
Phosphorus, Total	0.20	mg/l		0.01		EPA 365.1	29-Oct-99 1525	BAS
Carbon Dioxide	0.00					Calc.		
Methane	0.0466	mg/l		0.0002		GC FID	29-Oct-99 0844	BW
Arsenic, Dissolved	0.007	mg/l		0.005		EPA 200.8	01-Nov-99 1834	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1834	RLH
Cadmium, Dissolved	0.005	mg/l		0.001		EPA 200.8	01-Nov-99 1834	LAB
Chromium, Dissolved	0.14	mg/l		0.01		EPA 200.7	29-Oct-99 1834	RLH
Copper, Dissolved	0.41	mg/l		0.01		EPA 200.7	29-Oct-99 1834	RLH
Iron, Dissolved	1680	mg/l		0.03		EPA 200.7	29-Oct-99 1834	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1834	LAB
Manganese, Dissolved	33.4	mg/l		0.01		EPA 200.7	29-Oct-99 1834	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1834	LAB
Nickel, Dissolved	3.8	mg/l		0.01		EPA 200.7	29-Oct-99 1834	RLH
Selenium, Dissolved	0.007	mg/l		0.005		EPA 200.8	01-Nov-99 1834	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1834	LAB
Zinc, Dissolved	2.32	mg/l		0.01		EPA 200.7	29-Oct-99 1834	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 103
Laboratory ID: 99-58443-2
Sample Matrix: Water
Sample Date: 19-Oct-99 1430
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	79	mg/l		1		EPA 200.7	29-Oct-99 1836	RLH
Magnesium	28	mg/l		1		EPA 200.7	29-Oct-99 1836	RLH
Potassium	4	mg/l		1		EPA 200.7	29-Oct-99 1836	RLH
Sodium	9	mg/l		1		EPA 200.7	29-Oct-99 1836	RLH
Chloride	3	mg/l		1		EPA 300.0	29-Oct-99 1659	RLH
Sulfate	260	mg/l		1		EPA 300.0	29-Oct-99 1659	RLH
Alkalinity as CaCO3	76	mg/l		1		EPA 310.1	29-Oct-99 0956	LDV
Nitrogen, Ammonia	1.4	mg/l		0.1		EPA 350.1	02-Nov-99 1607	BAS
Nitrogen, Nitrate	0.06	mg/l		0.05		EPA 353.2	29-Oct-99 1647	BAS
Nitrogen, Nitrate plus Nitrite	0.06	mg/l		0.05		EPA 353.2	02-Nov-99 1607	BAS
Phosphorus, Total	0.13	mg/l		0.01		EPA 365.1	29-Oct-99 1526	BAS
Arsenic, Dissolved	0.013	mg/l		0.005		EPA 200.8	01-Nov-99 1840	LAB
Barium, Dissolved	0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1836	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1840	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1836	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1836	RLH
Iron, Dissolved	74.5	mg/l		0.03		EPA 200.7	29-Oct-99 1836	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1840	LAB
Manganese, Dissolved	7.08	mg/l		0.01		EPA 200.7	29-Oct-99 1836	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1840	LAB
Nickel, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1840	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1840	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1840	LAB
Zinc, Dissolved	0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1836	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 12
Laboratory ID: 99-58443-3
Sample Matrix: Water
Sample Date: 19-Oct-99 1630
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	44	mg/l		1		EPA 200.7	29-Oct-99 1838	RLH
Magnesium	15	mg/l		1		EPA 200.7	29-Oct-99 1838	RLH
Potassium	2	mg/l		1		EPA 200.7	29-Oct-99 1838	RLH
Sodium	5	mg/l		1		EPA 200.7	29-Oct-99 1838	RLH
Chloride	1	mg/l		1		EPA 300.0	29-Oct-99 1738	RLH
Sulfate	5	mg/l		1		EPA 300.0	29-Oct-99 1738	RLH
Alkalinity as CaCO3	188	mg/l		1		EPA 310.1	29-Oct-99 1005	LDV
Nitrogen, Ammonia	0.7	mg/l		0.1		EPA 350.1	02-Nov-99 1607	BAS
Nitrogen, Nitrate	0.07	mg/l		0.05		EPA 353.2	29-Oct-99 1648	BAS
Nitrogen, Nitrate plus Nitrite	0.07	mg/l		0.05		EPA 353.2	02-Nov-99 1607	BAS
Phosphorus, Total	0.18	mg/l		0.01		EPA 365.1	29-Oct-99 1526	BAS
Arsenic, Dissolved	0.009	mg/l		0.005		EPA 200.8	01-Nov-99 1845	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1838	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1845	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1838	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1838	RLH
Iron, Dissolved	9.45	mg/l		0.03		EPA 200.7	29-Oct-99 1838	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1845	LAB
Manganese, Dissolved	1.12	mg/l		0.01		EPA 200.7	29-Oct-99 1838	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1845	LAB
Nickel, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1845	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1845	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1845	LAB
Zinc, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1838	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 101
Laboratory ID: 99-58443-4
Sample Matrix: Water
Sample Date: 19-Oct-99 1400
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	38	mg/l		1		EPA 200.7	29-Oct-99 1839	RLH
Magnesium	13	mg/l		1		EPA 200.7	29-Oct-99 1839	RLH
Potassium	4	mg/l		1		EPA 200.7	29-Oct-99 1839	RLH
Sodium	4	mg/l		1		EPA 200.7	29-Oct-99 1839	RLH
Chloride	3	mg/l		1		EPA 300.0	29-Oct-99 1757	RLH
Sulfate	16	mg/l		1		EPA 300.0	29-Oct-99 1757	RLH
Alkalinity as CaCO3	166	mg/l		1		EPA 310.1	29-Oct-99 1010	LDV
Nitrogen, Ammonia	1.6	mg/l		0.1		EPA 350.1	02-Nov-99 1609	BAS
Nitrogen, Nitrate	0.08	mg/l		0.05		EPA 353.2	29-Oct-99 1649	BAS
Nitrogen, Nitrate plus Nitrite	0.08	mg/l		0.05		EPA 353.2	02-Nov-99 1609	BAS
Phosphorus, Total	0.18	mg/l		0.01		EPA 365.1	29-Oct-99 1527	BAS
Arsenic, Dissolved	0.036	mg/l		0.005		EPA 200.8	01-Nov-99 1850	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1839	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1850	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1839	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1839	RLH
Iron, Dissolved	28.9	mg/l		0.03		EPA 200.7	29-Oct-99 1839	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1850	LAB
Manganese, Dissolved	10.4	mg/l		0.01		EPA 200.7	29-Oct-99 1839	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1850	LAB
Nickel, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1850	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1850	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1850	LAB
Zinc, Dissolved	0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1839	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies	Project ID:	ROPES MILLS, HUMBOLDT, MICHIGAN	
Bob Lambeth	Sample ID:	MW 11	
P.O. Box 28930	Laboratory ID:	99-58443-5	
Spokane, WA 99218	Sample Matrix:	Water	
	Sample Date:	19-Oct-99 1630	
	Received at lab:	27-Oct-99	Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	49	mg/l		1		EPA 200.7	01-Nov-99 1955	RLH
Magnesium	16	mg/l		1		EPA 200.7	01-Nov-99 1955	RLH
Potassium	10	mg/l		1		EPA 200.7	01-Nov-99 1955	RLH
Sodium	167	mg/l		1		EPA 200.7	01-Nov-99 1955	RLH
Chloride	96	mg/l		1		EPA 300.0	29-Oct-99 1807	RLH
Sulfate	25	mg/l		1		EPA 300.0	29-Oct-99 1807	RLH
Alkalinity as CaCO3	456	mg/l		1		EPA 310.1	29-Oct-99 1016	LDV
Nitrogen, Ammonia	12.6	mg/l		0.1		EPA 350.1	02-Nov-99 1611	BAS
Nitrogen, Nitrate	0.37	mg/l		0.05		EPA 353.2	29-Oct-99 1649	BAS
Nitrogen, Nitrate plus Nitrite	0.37	mg/l		0.05		EPA 353.2	02-Nov-99 1611	BAS
Phosphorus, Total	0.16	mg/l		0.01		EPA 365.1	29-Oct-99 1528	BAS
Arsenic, Dissolved	0.008	mg/l		0.005		EPA 200.8	01-Nov-99 1918	LAB
Barium, Dissolved	0.2	mg/l		0.1		EPA 200.7	29-Oct-99 1841	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1918	LAB
Chromium, Dissolved	0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1841	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1841	RLH
Iron, Dissolved	127	mg/l		0.03		EPA 200.7	29-Oct-99 1841	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1918	LAB
Manganese, Dissolved	6.49	mg/l		0.01		EPA 200.7	29-Oct-99 1841	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1918	LAB
Nickel, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1918	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1918	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1918	LAB
Zinc, Dissolved	0.02	mg/l		0.01		EPA 200.7	29-Oct-99 1841	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 9
Laboratory ID: 99-58443-6
Sample Matrix: Water
Sample Date: 19-Oct-99 1530
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	52	mg/l		1		EPA 200.7	29-Oct-99 1843	RLH
Magnesium	16	mg/l		1		EPA 200.7	29-Oct-99 1843	RLH
Potassium	4	mg/l		1		EPA 200.7	29-Oct-99 1843	RLH
Sodium	9	mg/l		1		EPA 200.7	29-Oct-99 1843	RLH
Chloride	4	mg/l		1		EPA 300.0	29-Oct-99 1817	RLH
Sulfate	94	mg/l		1		EPA 300.0	29-Oct-99 1817	RLH
Alkalinity as CaCO3	114	mg/l		1		EPA 310.1	29-Oct-99 1022	LDV
Nitrogen, Ammonia	0.3	mg/l		0.1		EPA 350.1	02-Nov-99 1612	BAS
Nitrogen, Nitrate	0.20	mg/l		0.05		EPA 353.2	29-Oct-99 1650	BAS
Nitrogen, Nitrate plus Nitrite	0.20	mg/l		0.05		EPA 353.2	02-Nov-99 1612	BAS
Phosphorus, Total	0.07	mg/l		0.01		EPA 365.1	29-Oct-99 1530	BAS
Carbon Dioxide	215					Calc.		
Methane	1.0601	mg/l		0.0002		GC FID	29-Oct-99 0848	BW
Arsenic, Dissolved	0.008	mg/l		0.005		EPA 200.8	01-Nov-99 1923	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1843	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1923	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1843	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1843	RLH
Iron, Dissolved	8.06	mg/l		0.03		EPA 200.7	29-Oct-99 1843	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1923	LAB
Manganese, Dissolved	1.17	mg/l		0.01		EPA 200.7	29-Oct-99 1843	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1923	LAB
Nickel, Dissolved	0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1923	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1923	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1923	LAB
Zinc, Dissolved	0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1843	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 6
Laboratory ID: 99-58443-7
Sample Matrix: Water
Sample Date: 19-Oct-99 1400
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Arsenic, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1928	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1845	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1928	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1845	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1845	RLH
Iron, Dissolved	399	mg/l		0.03		EPA 200.7	29-Oct-99 1845	RLH
Lead, Dissolved	0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1928	LAB
Manganese, Dissolved	24.4	mg/l		0.01		EPA 200.7	29-Oct-99 1845	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1928	LAB
Nickel, Dissolved	0.11	mg/l		0.01		EPA 200.8	01-Nov-99 1928	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1928	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1928	LAB
Zinc, Dissolved	0.12	mg/l		0.01		EPA 200.7	29-Oct-99 1845	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 107
Laboratory ID: 99-58443-8
Sample Matrix: Water
Sample Date: 20-Oct-99 1630
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
						8260		
Calcium	99	mg/l		1		EPA 200.7	29-Oct-99 1850	RLH
Magnesium	41	mg/l		1		EPA 200.7	29-Oct-99 1850	RLH
Potassium	7	mg/l		1		EPA 200.7	29-Oct-99 1850	RLH
Sodium	24	mg/l		1		EPA 200.7	29-Oct-99 1850	RLH
Chloride	5	mg/l		1		EPA 300.0	29-Oct-99 1826	RLH
Sulfate	660	mg/l		1		EPA 300.0	29-Oct-99 1826	RLH
Alkalinity as CaCO3	8	mg/l		1		EPA 310.1	2-Nov-99 1325	LDV
Nitrogen, Ammonia	3.5	mg/l		0.1		EPA 350.1	02-Nov-99 1613	BAS
Nitrogen, Nitrate	0.08	mg/l		0.05		EPA 353.2	29-Oct-99 1651	BAS
Nitrogen, Nitrate plus Nitrite	0.08	mg/l		0.05		EPA 353.2	02-Nov-99 1613	BAS
Phosphorus, Total	0.05	mg/l		0.01		EPA 365.1	29-Oct-99 1532	BAS
Arsenic, Dissolved	0.015	mg/l		0.005		EPA 200.8	01-Nov-99 1939	LAB
Barium, Dissolved	0.2	mg/l		0.1		EPA 200.7	29-Oct-99 1850	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1939	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1850	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1850	RLH
Iron, Dissolved	104	mg/l		0.03		EPA 200.7	29-Oct-99 1850	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1939	LAB
Manganese, Dissolved	37.8	mg/l		0.01		EPA 200.7	29-Oct-99 1850	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1939	LAB
Nickel, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1939	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1939	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1939	LAB
Zinc, Dissolved	0.03	mg/l		0.01		EPA 200.7	29-Oct-99 1850	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 7
Laboratory ID: 99-58443-9
Sample Matrix: Water
Sample Date: 20-Oct-99 1430
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	118	mg/l		1		EPA 200.7	29-Oct-99 1852	RLH
Magnesium	68	mg/l		1		EPA 200.7	29-Oct-99 1852	RLH
Potassium	11	mg/l		1		EPA 200.7	29-Oct-99 1852	RLH
Sodium	10	mg/l		1		EPA 200.7	29-Oct-99 1852	RLH
Chloride	4	mg/l		1		EPA 300.0	29-Oct-99 1836	RLH
Sulfate	1070	mg/l		1		EPA 300.0	29-Oct-99 1836	RLH
Alkalinity as CaCO3	0	mg/l		1		EPA 310.1	02-Nov-99 1435	LDV
Nitrogen, Ammonia	2.4	mg/l		0.1		EPA 350.1	02-Nov-99 1614	BAS
Nitrogen, Nitrate	0.05	mg/l		0.05		EPA 353.2	29-Oct-99 1652	BAS
Nitrogen, Nitrate plus Nitrite	0.05	mg/l		0.05		EPA 353.2	02-Nov-99 1614	BAS
Phosphorus, Total	0.07	mg/l		0.01		EPA 365.1	29-Oct-99 1535	BAS
Arsenic, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1954	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1852	RLH
Cadmium, Dissolved	0.004	mg/l		0.001		EPA 200.8	01-Nov-99 1954	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1852	RLH
Copper, Dissolved	0.12	mg/l		0.01		EPA 200.7	29-Oct-99 1852	RLH
Iron, Dissolved	182	mg/l		0.03		EPA 200.7	29-Oct-99 1852	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 1954	LAB
Manganese, Dissolved	23.5	mg/l		0.01		EPA 200.7	29-Oct-99 1852	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 1954	LAB
Nickel, Dissolved	0.59	mg/l		0.01		EPA 200.7	29-Oct-99 1852	RLH
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1954	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 1954	LAB
Zinc, Dissolved	0.43	mg/l		0.01		EPA 200.7	29-Oct-99 1852	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies	Project ID:	ROPES MILLS, HUMBOLDT, MICHIGAN	
Bob Lambeth	Sample ID:	MW 7-DUP	
P.O. Box 28930	Laboratory ID:	99-58443-10	
Spokane, WA 99218	Sample Matrix:	Water	
	Sample Date:	20-Oct-99 1430	
	Received at lab:	27-Oct-99	Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	117	mg/l		1		EPA 200.7	29-Oct-99 1856	RLH
Magnesium	68	mg/l		1		EPA 200.7	29-Oct-99 1856	RLH
Potassium	11	mg/l		1		EPA 200.7	29-Oct-99 1856	RLH
Sodium	9	mg/l		1		EPA 200.7	29-Oct-99 1856	RLH
Chloride	5	mg/l		1		EPA 300.0	29-Oct-99 1846	RLH
Sulfate	1070	mg/l		1		EPA 300.0	29-Oct-99 1846	RLH
Alkalinity as CaCO3	0	mg/l		1		EPA 310.1	02-Nov-99 1439	LDV
Nitrogen, Ammonia	2.5	mg/l		0.1		EPA 350.1	02-Nov-99 1614	BAS
Nitrogen, Nitrate	<0.05	mg/l		0.05		EPA 353.2	29-Oct-99 1653	BAS
Nitrogen, Nitrate plus Nitrite	<0.05	mg/l		0.05		EPA 353.2	02-Nov-99 1614	BAS
Phosphorus, Total	0.07	mg/l		0.01		EPA 365.1	29-Oct-99 1536	BAS
Arsenic, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2015	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1856	RLH
Cadmium, Dissolved	0.004	mg/l		0.001		EPA 200.8	01-Nov-99 2015	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1856	RLH
Copper, Dissolved	0.12	mg/l		0.01		EPA 200.7	29-Oct-99 1856	RLH
Iron, Dissolved	182	mg/l		0.03		EPA 200.7	29-Oct-99 1856	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 2015	LAB
Manganese, Dissolved	23.4	mg/l		0.01		EPA 200.7	29-Oct-99 1856	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2015	LAB
Nickel, Dissolved	0.64	mg/l		0.01		EPA 200.7	29-Oct-99 1856	RLH
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2015	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2015	LAB
Zinc, Dissolved	0.43	mg/l		0.01		EPA 200.7	29-Oct-99 1856	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 4
Laboratory ID: 99-58443-11
Sample Matrix: Water
Sample Date: 20-Oct-99 1445
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	181	mg/l		1		EPA 200.7	29-Oct-99 1900	RLH
Magnesium	110	mg/l		1		EPA 200.7	29-Oct-99 1900	RLH
Potassium	7	mg/l		1		EPA 200.7	29-Oct-99 1900	RLH
Sodium	14	mg/l		1		EPA 200.7	29-Oct-99 1900	RLH
Chloride	5	mg/l		1		EPA 300.0	04-Nov-99 1126	RLH
Sulfate	1550	mg/l		1		EPA 300.0	04-Nov-99 1126	RLH
Alkalinity as CaCO3	2	mg/l		1		EPA 310.1	29-Oct-99 1029	LDV
Nitrogen, Ammonia	2.8	mg/l		0.1		EPA 350.1	02-Nov-99 1615	BAS
Nitrogen, Nitrate	<0.05	mg/l		0.05		EPA 353.2	29-Oct-99 1654	BAS
Nitrogen, Nitrate plus Nitrite	<0.05	mg/l		0.05		EPA 353.2	02-Nov-99 1615	BAS
Phosphorus, Total	0.08	mg/l		0.01		EPA 365.1	29-Oct-99 1537	BAS
Arsenic, Dissolved	0.035	mg/l		0.005		EPA 200.8	01-Nov-99 2020	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1900	RLH
Cadmium, Dissolved	0.004	mg/l		0.001		EPA 200.8	01-Nov-99 2020	LAB
Chromium, Dissolved	0.02	mg/l		0.01		EPA 200.8	09-Nov-99 1926	LAB
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1900	RLH
Iron, Dissolved	305	mg/l		0.03		EPA 200.7	29-Oct-99 1900	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 2020	LAB
Manganese, Dissolved	41.8	mg/l		0.01		EPA 200.7	29-Oct-99 1900	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2020	LAB
Nickel, Dissolved	1.46	mg/l		0.01		EPA 200.7	29-Oct-99 1900	RLH
Selenium, Dissolved	0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2020	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2020	LAB
Zinc, Dissolved	0.89	mg/l		0.01		EPA 200.7	29-Oct-99 1900	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 10
Laboratory ID: 99-58443-12
Sample Matrix: Water
Sample Date: 20-Oct-99 1515
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	10	mg/l		1		EPA 200.7	29-Oct-99 1902	RLH
Magnesium	2	mg/l		1		EPA 200.7	29-Oct-99 1902	RLH
Potassium	<1	mg/l		1		EPA 200.7	29-Oct-99 1902	RLH
Sodium	2	mg/l		1		EPA 200.7	29-Oct-99 1902	RLH
Chloride	<1	mg/l		1		EPA 300.0	29-Oct-99 1905	RLH
Sulfate	25	mg/l		1		EPA 300.0	29-Oct-99 1905	RLH
Alkalinity as CaCO3	15	mg/l		1		EPA 310.1	29-Oct-99 1032	LDV
Nitrogen, Ammonia	0.2	mg/l		0.1		EPA 350.1	02-Nov-99 1616	BAS
Nitrogen, Nitrate	0.86	mg/l		0.05		EPA 353.2	29-Oct-99 1654	BAS
Nitrogen, Nitrate plus Nitrite	0.86	mg/l		0.05		EPA 353.2	02-Nov-99 1616	BAS
Phosphorus, Total	0.02	mg/l		0.01		EPA 365.1	29-Oct-99 1538	BAS
Arsenic, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2025	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1902	RLH
Cadmium, Dissolved	0.004	mg/l		0.001		EPA 200.8	01-Nov-99 2025	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1902	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1902	RLH
Iron, Dissolved	0.28	mg/l		0.03		EPA 200.7	29-Oct-99 1902	RLH
Lead, Dissolved	0.01	mg/l		0.01		EPA 200.8	01-Nov-99 2025	LAB
Manganese, Dissolved	0.54	mg/l		0.01		EPA 200.7	29-Oct-99 1902	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2025	LAB
Nickel, Dissolved	0.02	mg/l		0.01		EPA 200.8	01-Nov-99 2025	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2025	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2025	LAB
Zinc, Dissolved	0.82	mg/l		0.01		EPA 200.7	29-Oct-99 1902	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 2
Laboratory ID: 99-58443-13
Sample Matrix: Water
Sample Date: 20-Oct-99 1300
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	72	mg/l		1		EPA 200.7	29-Oct-99 1903	RLH
Magnesium	21	mg/l		1		EPA 200.7	29-Oct-99 1903	RLH
Potassium	8	mg/l		1		EPA 200.7	29-Oct-99 1903	RLH
Sodium	14	mg/l		1		EPA 200.7	29-Oct-99 1903	RLH
Chloride	3	mg/l		1		EPA 300.0	29-Oct-99 1934	RLH
Sulfate	215	mg/l		1		EPA 300.0	29-Oct-99 1934	RLH
Alkalinity as CaCO3	85	mg/l		1		EPA 310.1	29-Oct-99 1035	LDV
Nitrogen, Ammonia	<0.1	mg/l		0.1		EPA 350.1	02-Nov-99 1616	BAS
Nitrogen, Nitrate	0.10	mg/l		0.05		EPA 353.2	29-Oct-99 1655	BAS
Nitrogen, Nitrate plus Nitrite	0.10	mg/l		0.05		EPA 353.2	02-Nov-99 1616	BAS
Phosphorus, Total	0.06	mg/l		0.01		EPA 365.1	29-Oct-99 1539	BAS
Arsenic, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2031	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1903	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2031	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1903	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1903	RLH
Iron, Dissolved	0.21	mg/l		0.03		EPA 200.7	29-Oct-99 1903	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 2031	LAB
Manganese, Dissolved	3.30	mg/l		0.01		EPA 200.7	29-Oct-99 1903	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2031	LAB
Nickel, Dissolved	0.03	mg/l		0.01		EPA 200.8	01-Nov-99 2031	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2031	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2031	LAB
Zinc, Dissolved	0.02	mg/l		0.01		EPA 200.7	29-Oct-99 1903	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies	Project ID:	ROPES MILLS, HUMBOLDT, MICHIGAN	
Bob Lambeth	Sample ID:	MW 3	
P.O. Box 28930	Laboratory ID:	99-58443-14	
Spokane, WA 99218	Sample Matrix:	Water	
	Sample Date:	20-Oct-99 1330	
	Received at lab:	27-Oct-99	Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	30	mg/l		1		EPA 200.7	29-Oct-99 1905	RLH
Magnesium	6	mg/l		1		EPA 200.7	29-Oct-99 1905	RLH
Potassium	4	mg/l		1		EPA 200.7	29-Oct-99 1905	RLH
Sodium	4	mg/l		1		EPA 200.7	29-Oct-99 1905	RLH
Chloride	2	mg/l		1		EPA 300.0	29-Oct-99 1954	RLH
Sulfate	91	mg/l		1		EPA 300.0	29-Oct-99 1954	RLH
Alkalinity as CaCO3	27	mg/l		1		EPA 310.1	29-Oct-99 1039	LDV
Nitrogen, Ammonia	<0.1	mg/l		0.1		EPA 350.1	02-Nov-99 1617	BAS
Nitrogen, Nitrate	0.21	mg/l		0.05		EPA 353.2	29-Oct-99 1656	BAS
Nitrogen, Nitrate plus Nitrite	0.21	mg/l		0.05		EPA 353.2	02-Nov-99 1617	BAS
Phosphorus, Total	0.01	mg/l		0.01		EPA 365.1	29-Oct-99 1539	BAS
Arsenic, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2036	LAB
Barium, Dissolved	<0.1	mg/l		0.1		EPA 200.7	29-Oct-99 1905	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2036	LAB
Chromium, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1905	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1905	RLH
Iron, Dissolved	<0.03	mg/l		0.03		EPA 200.7	29-Oct-99 1905	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 2036	LAB
Manganese, Dissolved	0.06	mg/l		0.01		EPA 200.7	29-Oct-99 1905	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2036	LAB
Nickel, Dissolved	0.03	mg/l		0.01		EPA 200.8	01-Nov-99 2036	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2036	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2036	LAB
Zinc, Dissolved	0.15	mg/l		0.01		EPA 200.7	29-Oct-99 1905	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 5
Laboratory ID: 99-58443-15
Sample Matrix: Water
Sample Date: 20-Oct-99 1600
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Calcium	59	mg/l		1		EPA 200.7	29-Oct-99 1907	RLH
Magnesium	20	mg/l		1		EPA 200.7	29-Oct-99 1907	RLH
Potassium	12	mg/l		1		EPA 200.7	29-Oct-99 1907	RLH
Sodium	112	mg/l		1		EPA 200.7	29-Oct-99 1907	RLH
Chloride	67	mg/l		1		EPA 300.0	03-Nov-99 1302	RLH
Sulfate	1	mg/l		1		EPA 300.0	03-Nov-99 1302	RLH
Alkalinity as CaCO3	448	mg/l		1		EPA 310.1	02-Nov-99 1328	LDV
Nitrogen, Ammonia	3.3	mg/l		0.1		EPA 350.1	02-Nov-99 1618	BAS
Nitrogen, Nitrate	0.06	mg/l		0.05		EPA 353.2	29-Oct-99 1656	BAS
Nitrogen, Nitrate plus Nitrite	0.06	mg/l		0.05		EPA 353.2	02-Nov-99 1618	BAS
Phosphorus, Total	0.27	mg/l		0.01		EPA 365.1	29-Oct-99 1540	BAS
Carbon Dioxide	751					Calc.		
Methane	1.3157	mg/l		0.0002		GC FID	29-Oct-99 0857	BW
Arsenic, Dissolved	0.139	mg/l		0.005		EPA 200.8	01-Nov-99 2041	LAB
Barium, Dissolved	0.2	mg/l		0.1		EPA 200.7	29-Oct-99 1907	RLH
Cadmium, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2041	LAB
Chromium, Dissolved	0.02	mg/l		0.01		EPA 200.7	29-Oct-99 1907	RLH
Copper, Dissolved	<0.01	mg/l		0.01		EPA 200.7	29-Oct-99 1907	RLH
Iron, Dissolved	166	mg/l		0.03		EPA 200.7	29-Oct-99 1907	RLH
Lead, Dissolved	<0.01	mg/l		0.01		EPA 200.8	01-Nov-99 2041	LAB
Manganese, Dissolved	4.87	mg/l		0.01		EPA 200.7	29-Oct-99 1907	RLH
Mercury, Dissolved	<0.001	mg/l		0.001		EPA 200.8	01-Nov-99 2041	LAB
Nickel, Dissolved	0.05	mg/l		0.01		EPA 200.8	01-Nov-99 2041	LAB
Selenium, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2041	LAB
Silver, Dissolved	<0.005	mg/l		0.005		EPA 200.8	01-Nov-99 2041	LAB
Zinc, Dissolved	0.03	mg/l		0.01		EPA 200.7	29-Oct-99 1907	RLH

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LABORATORY ANALYSIS REPORT

Maxim Technologies
Bob Lambeth
P.O. Box 28930
Spokane, WA 99218

Project ID: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample ID: MW 104
Laboratory ID: 99-58443-16
Sample Matrix: Water
Sample Date: 20-Oct-99 1730
Received at lab: 27-Oct-99 Reported: 12-Nov-99

	Results	Units	Qual	Reporting Limit	Regulatory Limit	Method	Analyzed	
Nitrogen, Ammonia	2.5	mg/l		0.1		EPA 350.1	02-Nov-99 1619	BAS
Nitrogen, Nitrate plus Nitrite	0.13	mg/l		0.05		EPA 353.2	02-Nov-99 1619	BAS
Phosphorus, Total	0.14	mg/l		0.01		EPA 365.1	29-Oct-99 1542	BAS

Lab Nos. 99-58443-1-9

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

	Duplicate Analysis, -------mg/l (ppm)-------		Spiked Analysis, %	Blank	-----Calibration Verification----- Sample	Acceptance	
Constituents	Original	Duplicate	Recovery	Analysis, mg/l (ppm)	Analysis, mg/l (ppm)	Range, mg/l (ppm)	Date Analyzed
Calcium	118	118	96	<1	50	45-55	10/29/99
Magnesium	68	68	99	<1	49	45-55	10/29/99
Potassium	11	11	96	<1	47	45-55	10/29/99
Sodium	10	9	96	<1	47	45-55	10/29/99
Chloride	3	4	96	<1	13	11-14	10/29/99
Sulfate	260	261	105	<1	51	45-55	10/29/99
Total Alkalinity	447	447	97	1	104	85-115	10/29/99
Ammonia as N	<0.1	<0.1	83	<0.1	2.0	1.6-2.2	11/02/99
Nitrate + Nitrite as N	0.23	0.24	91	<0.05	2.34	2.04-2.56	11/02/99
Total Phosphorus	0.16	0.16	99	<0.01	0.27	0.22-0.29	10/29/99
Methane	N/A	N/A	N/A	<0.0002	0.0028	0.0026-0.0030	10/29/99
Dissolved Metals							
Arsenic	<0.005	<0.005	100	<0.005	0.049	0.045-0.055	11/01/99
Barium	<0.1	<0.1	93	<0.1	0.9	0.9-1.1	10/29/99
Cadmium	<0.001	<0.001	99	<0.001	0.050	0.045-0.055	11/01/99
Chromium	<0.01	0.01	96	<0.01	0.97	0.90-1.10	10/29/99
Copper	0.12	0.11	94	<0.01	0.93	0.90-1.10	10/29/99
Iron	182	183	107	<0.03	4.77	4.50-5.50	10/29/99
Lead	0.01	0.01	102	<0.01	0.05	0.04-0.06	11/01/99
Manganese	23.5	23.5	85	<0.01	4.67	4.50-5.50	10/29/99
Mercury	<0.001	<0.001	98	<0.001	0.005	0.004-0.006	11/01/99
Nickel	0.10	0.10	91	<0.01	0.05	0.04-0.06	11/01/99
Selenium	<0.005	<0.005	104	<0.005	0.049	0.045-0.055	11/01/99
Silver	<0.005	<0.005	110	<0.005	0.021	0.018-0.022	11/01/99
Zinc	0.43	0.43	95	<0.01	0.96	0.90-1.10	10/29/99

Lab Nos. 99-58443-10-19

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

	Duplicate Analysis -------mg/l (ppm)-------		Spiked Analysis, %	Blank	-----Calibration Verification-----		
Constituents	Original	Duplicate	Recovery	Analysis, mg/l (ppm)	Sample Analysis, mg/l (ppm)	Acceptance Range, mg/l (ppm)	Date Analyzed
Calcium	59	58	111	<1	51	45-55	10/29/99
Magnesium	16	16	114	<1	50	45-55	10/29/99
Potassium	7	7	110	<1	48	45-55	10/29/99
Sodium	8	8	110	<1	49	45-55	10/29/99
Chloride	3	3	107	<1	13	11-14	10/29/99
Sulfate	215	212	105	<1	50	45-55	10/29/99
Total Alkalinity	447	447	97	1	104	85-115	10/29/99
Ammonia as N	1.6	1.6	97	<0.1	2.0	1.6-2.2	11/02/99
Nitrate + Nitrite as N	0.08	0.09	80	<0.05	2.34	2.04-2.56	11/02/99
Total Phosphorus	0.27	0.26	99	<0.01	0.27	0.22-0.29	10/29/99
Methane	N/A	N/A	N/A	<0.0002	0.0028	0.0026-0.0030	10/29/99
Dissolved Metals							
Arsenic	0.009	0.009	104	<0.005	0.049	0.045-0.055	11/01/99
Barium	<0.1	<0.1	105	<0.1	0.9	0.9-1.1	10/29/99
Cadmium	<0.001	<0.001	102	<0.001	0.050	0.045-0.055	11/01/99
Chromium	<0.01	<0.01	108	<0.01	0.99	0.90-1.10	10/29/99
Copper	<0.01	<0.01	107	<0.01	0.96	0.90-1.10	10/29/99
Iron	<0.03	<0.03	107	<0.03	4.85	4.50-5.50	10/29/99
Lead	<0.01	<0.01	101	<0.01	0.05	0.04-0.06	11/01/99
Manganese	0.01	0.01	106	<0.01	4.77	4.50-5.50	10/29/99
Mercury	<0.001	<0.001	105	<0.001	0.005	0.004-0.006	11/01/99
Nickel	<0.01	<0.01	85	<0.01	0.05	0.04-0.06	11/01/99
Selenium	<0.005	<0.005	106	<0.005	0.048	0.045-0.055	11/01/99
Silver	<0.005	<0.005	106	<0.005	0.021	0.018-0.022	11/01/99
Zinc	<0.01	<0.01	111	<0.01	0.98	0.90-1.10	10/29/99

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Client: Maxim Technologies
Date Sampled: 20-OCT-99 16:30
Date Received: 27-OCT-99
Analysis Date: 02-NOV-1999 16:59
Project Info: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample Info: MW 107

Lab No.: 008-99-58443
Report Date: 11/17/99 11:45
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
2-Chloroethylvinyl ether	110-75-8	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
2-Chlorotoluene	95-49-8	<1.0	U
4-Chlorotoluene	106-43-4	<1.0	U
Chlorodibromomethane	124-48-1	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
1,3-Dichloropropane	142-28-9	<1.0	U
2,2-Dichloropropane	594-20-7	<1.0	U
1,1-Dichloropropene	563-58-6	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethylbenzene	100-41-4	<1.0	U
Methyl-t-butyl ether	1634-04-4	<1.0	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U

(report continued on page 2)

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.9	109	75--120
Toluene d8	10.0	9.76	98	80--120
p-Bromofluorobenzene	10.0	9.02	90	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/09nov02.d

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Client: Maxim Technologies
Date Sampled: 20-OCT-99 16:00
Date Received: 27-OCT-99
Analysis Date: 02-NOV-1999 20:10
Project Info: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample Info: MW 5

Lab No.: 015-99-58443
Report Date: 11/17/99 11:46
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	18	
Bromobenzene	108-86-1	<10	U
Bromochloromethane	74-97-5	<10	U
Bromodichloromethane	75-27-4	<10	U
Bromoform	75-25-2	<10	U
Bromomethane	74-83-9	<10	U
Carbon tetrachloride	56-23-5	<10	U
Chlorobenzene	108-90-7	<10	U
Chloroethane	75-00-3	<10	U
2-Chloroethylvinyl ether	110-75-8	<10	U
Chloroform	67-66-3	<10	U
Chloromethane	74-87-3	<10	U
2-Chlorotoluene	95-49-8	<10	U
4-Chlorotoluene	106-43-4	<10	U
Chlorodibromomethane	124-48-1	<10	U
1,2-Dibromoethane	106-93-4	<10	U
Dibromomethane	74-95-3	<10	U
1,2-Dichlorobenzene	95-50-1	<10	U
1,3-Dichlorobenzene	541-73-1	<10	U
1,4-Dichlorobenzene	106-46-7	<10	U
Dichlorodifluoromethane	75-71-8	<10	U
1,1-Dichloroethane	75-34-3	<10	U
1,2-Dichloroethane	107-06-2	<10	U
1,1-Dichloroethene	75-35-4	<10	U
cis-1,2-Dichloroethene	156-59-2	28	
trans-1,2-Dichloroethene	156-60-5	<10	U
1,2-Dichloropropane	78-87-5	<10	U
1,3-Dichloropropane	142-28-9	<10	U
2,2-Dichloropropane	594-20-7	<10	U
1,1-Dichloropropene	563-58-6	<10	U
cis-1,3-Dichloropropene	10061-01-5	<10	U
trans-1,3-Dichloropropene	10061-02-6	<10	U
Ethylbenzene	100-41-4	96	
Methyl-t-butyl ether	1634-04-4	<10	U
Methylene chloride	75-09-2	<10	U
Methyl ethyl ketone	78-93-3	<200	U
Styrene	100-42-5	<18	U,M
1,1,1,2-Tetrachloroethane	630-20-6	<10	U
1,1,2,2-Tetrachloroethane	79-34-5	<10	U
Tetrachloroethene	127-18-4	<10	U
Toluene	108-88-3	<10	9.9J
1,1,1-Trichloroethane	71-55-6	<10	U
1,1,2-Trichloroethane	79-00-5	<10	U
Trichloroethene	79-01-6	<10	U
Trichlorofluoromethane	75-69-4	<10	U
1,2,3-Trichloropropane	96-18-4	<10	U

(report continued on page 2)

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Vinyl chloride	75-01-4	<10	U
m+p-Xylenes	108383/106423	882	D
o-Xylene	95-47-6	757	D

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	100	97.2	97	75--120
Toluene d8	100	98.3	98	80--120
p-Bromofluorobenzene	100	97.4	97	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

D= Value derived from a 50 times dilution of the sample extract.

J= Estimated value. Present, but less than the limit of quantitation.

M= The quantitation limit for Styrene was increased due to the high amount of o-Xylene. The two compounds co-elute.

REPORT COMMENTS: Practical quantitation limit reflects a 10 times dilution. The sample was diluted due to non-target compound sample matrix interference.

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/13nov02.d

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Client: Maxim Technologies
Date Sampled: 19-OCT-99 15:00
Date Received: 27-OCT-99
Analysis Date: 02-NOV-1999 18:40
Project Info: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample Info: MW 104 FREE PRODUCT

Lab No.: 017-99-58443
Report Date: 11/17/99 11:46
Extraction Method: EPA 5030
Sample Matrix: WASTE

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/g (ppm)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	<100	U
Bromobenzene	108-86-1	<100	U
Bromochloromethane	74-97-5	<100	U
Bromodichloromethane	75-27-4	<100	U
Bromoform	75-25-2	<100	U
Bromomethane	74-83-9	<100	U
Carbon tetrachloride	56-23-5	<100	U
Chlorobenzene	108-90-7	<100	U
Chloroethane	75-00-3	<100	U
2-Chloroethylvinyl ether	110-75-8	<100	U
Chloroform	67-66-3	<100	U
Chloromethane	74-87-3	<100	U
2-Chlorotoluene	95-49-8	<100	U
4-Chlorotoluene	106-43-4	<100	U
Chlorodibromomethane	124-48-1	<100	U
1,2-Dibromoethane	106-93-4	<100	U
Dibromomethane	74-95-3	<100	U
1,2-Dichlorobenzene	95-50-1	<100	U
1,3-Dichlorobenzene	541-73-1	<100	U
1,4-Dichlorobenzene	106-46-7	<100	U
Dichlorodifluoromethane	75-71-8	<100	U
1,1-Dichloroethane	75-34-3	<100	U
1,2-Dichloroethane	107-06-2	<100	U
1,1-Dichloroethene	75-35-4	<100	U
cis-1,2-Dichloroethene	156-59-2	<100	U
trans-1,2-Dichloroethene	156-60-5	<100	U
1,2-Dichloropropane	78-87-5	<100	U
1,3-Dichloropropane	142-28-9	<100	U
2,2-Dichloropropane	594-20-7	<100	U
1,1-Dichloropropene	563-58-6	<100	U
cis-1,3-Dichloropropene	10061-01-5	<100	U
trans-1,3-Dichloropropene	10061-02-6	<100	U
Ethylbenzene	100-41-4	<100	U
Methyl-t-butyl ether	1634-04-4	<100	U
Methylene chloride	75-09-2	<100	U
Methyl ethyl ketone	78-93-3	<2000	U
Styrene	100-42-5	<100	U
1,1,1,2-Tetrachloroethane	630-20-6	<100	U
1,1,2,2-Tetrachloroethane	79-34-5	<100	U
Tetrachloroethene	127-18-4	<100	U
Toluene	108-88-3	<100	U
1,1,1-Trichloroethane	71-55-6	<100	U
1,1,2-Trichloroethane	79-00-5	<100	U
Trichloroethene	79-01-6	<100	U
Trichlorofluoromethane	75-69-4	<100	U
1,2,3-Trichloropropane	96-18-4	<100	U

(report continued on page 2)

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/g (ppm)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Vinyl chloride	75-01-4	<100	U
m+p-Xylenes	108383/106423	<100	71J
o-Xylene	95-47-6	115	

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/g	Measured-ug/g	%Rec	QC Limits
1,2-Dichloroethane d4	1000	888	89	66--130
Toluene d8	1000	957	96	69--128
p-Bromofluorobenzene	1000	883	88	64--143

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: Practical quantitation limit reflects a 500 times dilution. The sample was diluted due to non-target compound sample matrix interference.

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/11nov02.d

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Client: Maxim Technologies
Date Sampled: 19-OCT-99 15:40
Date Received: 27-OCT-99
Analysis Date: 02-NOV-1999 19:26
Project Info: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample Info: MW 5 FREE PRODUCT

Lab No.: 018-99-58443
Report Date: 11/17/99 11:46
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= 7

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	15	
Bromobenzene	108-86-1	<10	U
Bromochloromethane	74-97-5	<10	U
Bromodichloromethane	75-27-4	<10	U
Bromoform	75-25-2	<10	U
Bromomethane	74-83-9	<10	U
Carbon tetrachloride	56-23-5	<10	U
Chlorobenzene	108-90-7	<10	U
Chloroethane	75-00-3	<10	U
2-Chloroethylvinyl ether	110-75-8	<10	U
Chloroform	67-66-3	<10	U
Chloromethane	74-87-3	<10	U
2-Chlorotoluene	95-49-8	<10	U
4-Chlorotoluene	106-43-4	<10	U
Chlorodibromomethane	124-48-1	<10	U
1,2-Dibromoethane	106-93-4	<10	U
Dibromomethane	74-95-3	<10	U
1,2-Dichlorobenzene	95-50-1	<10	U
1,3-Dichlorobenzene	541-73-1	<10	U
1,4-Dichlorobenzene	106-46-7	<10	U
Dichlorodifluoromethane	75-71-8	<10	U
1,1-Dichloroethane	75-34-3	<10	U
1,2-Dichloroethane	107-06-2	<10	U
1,1-Dichloroethene	75-35-4	<10	U
cis-1,2-Dichloroethene	156-59-2	24	
trans-1,2-Dichloroethene	156-60-5	<10	U
1,2-Dichloropropane	78-87-5	<10	U
1,3-Dichloropropane	142-28-9	<10	U
2,2-Dichloropropane	594-20-7	<10	U
1,1-Dichloropropene	563-58-6	<10	U
cis-1,3-Dichloropropene	10061-01-5	<10	U
trans-1,3-Dichloropropene	10061-02-6	<10	U
Ethylbenzene	100-41-4	23	
Methyl-t-butyl ether	1634-04-4	<10	U
Methylene chloride	75-09-2	<10	U
Methyl ethyl ketone	78-93-3	<200	U
Styrene	100-42-5	<15	U,M
1,1,1,2-Tetrachloroethane	630-20-6	<10	U
1,1,2,2-Tetrachloroethane	79-34-5	<10	U
Tetrachloroethene	127-18-4	<10	U
Toluene	108-88-3	<10	7.0J
1,1,1-Trichloroethane	71-55-6	<10	U
1,1,2-Trichloroethane	79-00-5	<10	U
Trichloroethene	79-01-6	<10	U
Trichlorofluoromethane	75-69-4	<10	U
1,2,3-Trichloropropane	96-18-4	<10	U

(report continued on page 2)

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Vinyl chloride	75-01-4	<10	U
m+p-Xylenes	108383/106423	606	D
o-Xylene	95-47-6	583	D

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	100	96.8	97	75--120
Toluene d8	100	98.6	99	80--120
p-Bromofluorobenzene	100	105	105	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

Note: The sample was not properly acidified to a pH <2. The sample pH as received was 7.

U= Indicates compound was analyzed for but not detected.

D= Value derived from a 50 times dilution of the sample extract.

J= Estimated value. Present, but less than the limit of quantitation.

M= The quantitation limit for Styrene was increased due to the high amount of o-Xylene. The two compounds co-elute.

REPORT COMMENTS: Practical quantitation limit reflects a 10 times dilution. The sample was diluted due to non-target compound sample matrix interference.

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/12nov02.d

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Client: Maxim Technologies
Date Sampled:
Date Received: 27-OCT-99
Analysis Date: 02-NOV-1999 13:31
Project Info: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample Info: TRIP BLANK

Lab No.: 019-99-58443
Report Date: 11/17/99 11:45
Extraction Method: EPA 5030
Sample Matrix: WATER; pH= < 2

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
2-Chloroethylvinyl ether	110-75-8	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
2-Chlorotoluene	95-49-8	<1.0	U
4-Chlorotoluene	106-43-4	<1.0	U
Chlorodibromomethane	124-48-1	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
1,3-Dichloropropane	142-28-9	<1.0	U
2,2-Dichloropropane	594-20-7	<1.0	U
1,1-Dichloropropene	563-58-6	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethylbenzene	100-41-4	<1.0	U
Methyl-t-butyl ether	1634-04-4	<1.0	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U

(report continued on page 2)

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.3	103	75--120
Toluene d8	10.0	9.73	97	80--120
p-Bromofluorobenzene	10.0	10.8	108	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/05nov02.d

EPA METHOD 8260B: QUALITY ASSURANCE MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 02-NOV-1999 20:54
Lab No.: 015-99-58443
Report Date: 11/17/99 11:46
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /IONTRAP1.i/vb110299.b/14nov02.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Benzene	50.0	18.0	68.2	100	60--140
Chlorobenzene	50.0	<10.0	51.9	104	60--140
1,1-Dichloroethene	50.0	<10.0	51.7	103	60--140
Toluene	50.0	<10.0	63.4	127	60--140
Trichloroethene	50.0	<10.0	55.7	111	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	100	101	101	75--120
Toluene d8	100	101	101	80--120
p-Bromofluorobenzene	100	100	100	80--120

EPA METHOD 8260B: QUALITY ASSURANCE MATRIX SPIKE DUPLICATE REPORT

Quality Control Sample: Matrix Spike Duplicate Analysis 02-NOV-1999 21:36
Lab No.: 015-99-58443
File: /IONTRAP1.i/vb110299.b/15nov02.d
Remarks: These compounds were again spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD %Rec	%RPD	---QC Limits-- RPD	Rec
Benzene	50.0	68.8	102	1	11	60--140
Chlorobenzene	50.0	51.5	103	1	13	60--140
1,1-Dichloroethene	50.0	52.5	105	2	14	60--140
Toluene	50.0	63.2	126	0	13	60--140
Trichloroethene	50.0	52.7	105	6	14	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	100	101	101	75--120
Toluene d8	100	100	100	80--120
p-Bromofluorobenzene	100	98.7	99	80--120

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

Quality Control Sample: Laboratory Reagent Blank 02-NOV-1999 17:54
Report Date: 11/17/99 11:45
Extraction Method: EPA 5030
Sample Matrix: WASTE
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/g (ppm)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	<0.20	U
Bromobenzene	108-86-1	<0.20	U
Bromochloromethane	74-97-5	<0.20	U
Bromodichloromethane	75-27-4	<0.20	U
Bromoform	75-25-2	<0.20	U
Bromomethane	74-83-9	<0.20	U
Carbon tetrachloride	56-23-5	<0.20	U
Chlorobenzene	108-90-7	<0.20	U
Chloroethane	75-00-3	<0.20	U
2-Chloroethylvinyl ether	110-75-8	<0.20	U
Chloroform	67-66-3	<0.20	U
Chloromethane	74-87-3	<0.20	U
2-Chlorotoluene	95-49-8	<0.20	U
4-Chlorotoluene	106-43-4	<0.20	U
Chlorodibromomethane	124-48-1	<0.20	U
1,2-Dibromoethane	106-93-4	<0.20	U
Dibromomethane	74-95-3	<0.20	U
1,2-Dichlorobenzene	95-50-1	<0.20	U
1,3-Dichlorobenzene	541-73-1	<0.20	U
1,4-Dichlorobenzene	106-46-7	<0.20	U
Dichlorodifluoromethane	75-71-8	<0.20	U
1,1-Dichloroethane	75-34-3	<0.20	U
1,2-Dichloroethane	107-06-2	<0.20	U
1,1-Dichloroethene	75-35-4	<0.20	U
cis-1,2-Dichloroethene	156-59-2	<0.20	U
trans-1,2-Dichloroethene	156-60-5	<0.20	U
1,2-Dichloropropane	78-87-5	<0.20	U
1,3-Dichloropropane	142-28-9	<0.20	U
2,2-Dichloropropane	594-20-7	<0.20	U
1,1-Dichloropropene	563-58-6	<0.20	U
cis-1,3-Dichloropropene	10061-01-5	<0.20	U
trans-1,3-Dichloropropene	10061-02-6	<0.20	U
Ethylbenzene	100-41-4	<0.20	U
Methyl-t-butyl ether	1634-04-4	<0.20	U
Methylene chloride	75-09-2	<0.20	U
Methyl ethyl ketone	78-93-3	<4.0	U
Styrene	100-42-5	<0.20	U
1,1,1,2-Tetrachloroethane	630-20-6	<0.20	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.20	U
Tetrachloroethene	127-18-4	<0.20	U
Toluene	108-88-3	<0.20	U
1,1,1-Trichloroethane	71-55-6	<0.20	U
1,1,2-Trichloroethane	79-00-5	<0.20	U
Trichloroethene	79-01-6	<0.20	U
Trichlorofluoromethane	75-69-4	<0.20	U
1,2,3-Trichloropropane	96-18-4	<0.20	U

(report continued on page 2)

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/g (ppm)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Vinyl chloride	75-01-4	<0.20	U
m+p-Xylenes	108383/106423	<0.20	U
o-Xylene	95-47-6	<0.20	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/g	Measured-ug/g	%Rec	QC Limits
1,2-Dichloroethane d4	2.00	1.95	98	66--130
Toluene d8	2.00	2.17	108	69--128
p-Bromofluorobenzene	2.00	2.34	117	64--143

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/10nov02.d

Quality Control Sample: Laboratory Reagent Blank 02-NOV-1999 12:06
Report Date: 11/17/99 11:45
Extraction Method: EPA 5030
Sample Matrix: WATER
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
2-Chloroethylvinyl ether	110-75-8	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
2-Chlorotoluene	95-49-8	<1.0	U
4-Chlorotoluene	106-43-4	<1.0	U
Chlorodibromomethane	124-48-1	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
1,3-Dichloropropane	142-28-9	<1.0	U
2,2-Dichloropropane	594-20-7	<1.0	U
1,1-Dichloropropene	563-58-6	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethylbenzene	100-41-4	<1.0	U
Methyl-t-butyl ether	1634-04-4	<1.0	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U

(report continued on page 2)

Report Date: 11/17/99 11:45

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.71	97	75--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/04nov02.d

EPA METHOD 8260B: QUALITY ASSURANCE BLANK MATRIX SPIKE REPORT

Quality Control Sample: Reference Sample Analysis 22-OCT-1999 18:17
Report Date: 11/17/99 11:48
Extraction Method: EPA 5030
Sample Matrix: WASTE
File: /IONTRAP1.i/vb102299.b/04oct22.d
Remarks: This reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

	CONCENTRATION UNITS = ug/g (ppm)			
Spike Compound	Added	Measured	%Rec	QC Limits
Benzene	1.00	0.874	87	60--140
Bromobenzene	1.00	1.04	104	60--140
Bromochloromethane	1.00	0.901	90	60--140
Bromodichloromethane	1.00	0.995	100	60--140
Bromoform	1.00	1.03	103	60--140
Bromomethane	1.00	0.541	54	30--140
Carbon tetrachloride	1.00	0.955	96	60--140
Chlorobenzene	1.00	1.07	107	60--140
Chloroethane	1.00	0.889	89	30--140
2-Chloroethylvinyl ether	1.00	0.985	98	60--140
Chloroform	1.00	0.906	91	60--140
Chloromethane	1.00	0.890	89	30--140
2-Chlorotoluene	1.00	1.10	110	60--140
4-Chlorotoluene	1.00	1.02	102	60--140
1,2-Dibromoethane	1.00	1.04	104	60--140
Dibromomethane	1.00	1.11	111	60--140
1,2-Dichlorobenzene	1.00	1.04	104	60--140
1,3-Dichlorobenzene	1.00	1.02	102	60--140
1,4-Dichlorobenzene	1.00	1.03	103	60--140
Dichlorodifluoromethane	1.00	0.808	81	30--140
1,1-Dichloroethane	1.00	0.948	95	60--140
1,2-Dichloroethane	1.00	0.913	91	60--140
1,1-Dichloroethene	1.00	0.902	90	60--140
cis-1,2-Dichloroethene	1.00	0.879	88	60--140
trans-1,2-Dichloroethene	1.00	0.934	93	60--140
1,2-Dichloropropane	1.00	1.01	101	60--140
1,3-Dichloropropane	1.00	1.02	102	60--140
2,2-Dichloropropane	1.00	0.857	86	60--140
1,1-Dichloropropene	1.00	0.846	85	60--140
cis-1,3-Dichloropropene	1.06	1.05	99	60--140
trans-1,3-Dichloropropene	0.940	0.957	102	60--140
Methyl-t-butyl ether	1.00	0.922	92	60--140
Methylene chloride	1.00	0.840	84	60--140
Methyl ethyl ketone	10.0	9.32	93	60--140
Styrene	1.00	1.01	101	60--140
1,1,1,2-Tetrachloroethane	1.00	1.05	105	60--140
1,1,2,2-Tetrachloroethane	1.00	1.02	102	60--140
Tetrachloroethene	1.00	1.12	112	60--140
Toluene	1.00	1.06	106	60--140
1,1,1-Trichloroethane	1.00	0.962	96	60--140
1,1,2-Trichloroethane	1.00	1.09	109	60--140
Trichloroethene	1.00	1.09	109	60--140
Trichlorofluoromethane	1.00	0.877	88	30--140
1,2,3-Trichloropropane	1.00	0.937	94	60--140
Vinyl chloride	1.00	0.813	81	30--140
m+p-Xylenes	2.00	2.05	102	60--140

(report continued on page 2)

Sample Info:

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/g (ppm)

Spike Compound	Added	Measured	%Rec	QC Limits
o-Xylene	1.00	0.982	98	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/g	Measured-ug/g	%Rec	QC Limits
1,2-Dichloroethane d4	2.00	2.07	103	66--130
Toluene d8	2.00	2.45	123	69--128
p-Bromofluorobenzene	2.00	2.65	132	64--143

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

EPA METHOD 8260B: QUALITY ASSURANCE BLANK MATRIX SPIKE REPORT

Quality Control Sample: Reference Sample Analysis 02-NOV-99 11:25
Report Date: 11/17/99 13:40
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /IONTRAP1.i/vb110299.b/03nov02.d
Remarks: This reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

	CONCENTRATION UNITS = ug/L (ppb)			
Spike Compound	Added	Measured	%Rec	QC Limits
Benzene	5.00	4.87	97	60--140
Bromobenzene	5.00	5.05	101	60--140
Bromochloromethane	5.00	4.84	97	60--140
Bromodichloromethane	5.00	4.63	93	60--140
Bromoform	5.00	4.50	90	60--140
Bromomethane	5.00	4.48	90	60--140
Carbon tetrachloride	5.00	4.95	99	60--140
Chlorobenzene	5.00	4.83	97	60--140
Chloroethane	5.00	4.23	85	60--140
2-Chloroethylvinyl ether	5.00	4.51	90	60--140
Chloroform	5.00	4.60	92	60--140
Chloromethane	5.00	4.52	90	60--140
2-Chlorotoluene	5.00	4.88	98	60--140
4-Chlorotoluene	5.00	5.44	109	60--140
1,2-Dibromoethane	5.00	4.25	85	60--140
Dibromomethane	5.00	4.51	90	60--140
1,2-Dichlorobenzene	5.00	4.99	100	60--140
1,3-Dichlorobenzene	5.00	4.91	98	60--140
1,4-Dichlorobenzene	5.00	4.94	99	60--140
Dichlorodifluoromethane	5.00	5.10	102	60--140
1,1-Dichloroethane	5.00	4.90	98	60--140
1,2-Dichloroethane	5.00	4.69	94	60--140
1,1-Dichloroethene	5.00	4.97	99	60--140
cis-1,2-Dichloroethene	5.00	4.71	94	60--140
trans-1,2-Dichloroethene	5.00	4.97	99	60--140
1,2-Dichloropropane	5.00	4.15	83	60--140
1,3-Dichloropropane	5.00	4.66	93	60--140
2,2-Dichloropropane	5.00	4.95	99	60--140
1,1-Dichloropropene	5.00	4.56	91	60--140
cis-1,3-Dichloropropene	5.30	4.88	92	60--140
trans-1,3-Dichloropropene	4.70	4.34	92	60--140
Methyl-t-butyl ether	5.00	4.27	85	60--140
Methylene chloride	5.00	4.58	92	60--140
Methyl ethyl ketone	50.0	44.3	89	60--140
Styrene	5.00	4.76	95	60--140
1,1,1,2-Tetrachloroethane	5.00	4.85	97	60--140
1,1,2,2-Tetrachloroethane	5.00	4.54	91	60--140
Tetrachloroethene	5.00	5.13	103	60--140
Toluene	5.00	4.92	98	60--140
1,1,1-Trichloroethane	5.00	4.90	98	60--140
1,1,2-Trichloroethane	5.00	4.32	86	60--140
Trichloroethene	5.00	4.98	100	60--140
Trichlorofluoromethane	5.00	4.32	86	60--140
1,2,3-Trichloropropane	5.00	4.69	94	60--140
Vinyl chloride	5.00	4.80	96	60--140
m+p-Xylenes	10.0	10.3	103	60--140

(report continued on page 2)

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
o-Xylene	5.00	4.96	99	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.45	94	75--120
Toluene d8	10.0	9.87	99	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

EPA METHOD 8260B: QUALITY ASSURANCE MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 02-NOV-1999 20:54
Lab No.: 015-99-58443
Report Date: 11/04/99 10:50
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /IONTRAP1.i/vb110299.b/14nov02.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Benzene	50.0	18.0	68.2	100	60--140
Chlorobenzene	50.0	<10.0	51.9	104	60--140
1,1-Dichloroethene	50.0	<10.0	51.7	103	60--140
Toluene	50.0	9.9(J)	63.4	107	60--140
Trichloroethene	50.0	<10.0	55.7	111	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	100	101	101	75--120
Toluene d8	100	101	101	80--120
p-Bromofluorobenzene	100	100	100	80--120

EPA METHOD 8260B: QUALITY ASSURANCE MATRIX SPIKE DUPLICATE REPORT

Quality Control Sample: Matrix Spike Duplicate Analysis 02-NOV-1999 21:36
Lab No.: 015-99-58443
File: /IONTRAP1.i/vb110299.b/15nov02.d
Remarks: These compounds were again spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy and precision of the methodology.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Spike Added	Matrix Spike Dup. Conc.	MSD %Rec	%RPD	---QC Limits-- RPD	Rec
Benzene	50.0	68.8	102	1	11	60--140
Chlorobenzene	50.0	51.5	103	1	13	60--140
1,1-Dichloroethene	50.0	52.5	105	2	14	60--140
Toluene	50.0	63.2	107	0	13	60--140
Trichloroethene	50.0	52.7	105	6	14	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	100	101	101	75--120
Toluene d8	100	100	100	80--120
p-Bromofluorobenzene	100	98.7	99	80--120

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

EPA METHOD 8260B: QUALITY ASSURANCE BLANK MATRIX SPIKE REPORT
Quality Control Sample: Reference Sample Analysis 02-NOV-1999 11:25
Report Date: 11/04/99 10:29
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /IONTRAP1.i/vb110299.b/03nov02.d
Remarks: This reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Benzene	5.00	4.86	97	60--140
Bromobenzene	5.00	5.04	101	60--140
Bromochloromethane	5.00	4.86	97	60--140
Bromodichloromethane	5.00	4.63	93	60--140
Bromoform	5.00	4.49	90	60--140
Bromomethane	5.00	4.48	90	60--140
Carbon tetrachloride	5.00	4.95	99	60--140
Chlorobenzene	5.00	4.83	97	60--140
Chloroethane	5.00	4.23	85	60--140
2-Chloroethylvinyl ether	5.00	4.50	90	60--140
Chloroform	5.00	4.59	92	60--140
Chloromethane	5.00	4.52	90	60--140
2-Chlorotoluene	5.00	4.87	97	60--140
4-Chlorotoluene	5.00	5.44	109	60--140
1,2-Dibromoethane	5.00	4.25	85	60--140
Dibromomethane	5.00	4.51	90	60--140
1,2-Dichlorobenzene	5.00	4.98	100	60--140
1,3-Dichlorobenzene	5.00	4.90	98	60--140
1,4-Dichlorobenzene	5.00	4.94	99	60--140
Dichlorodifluoromethane	5.00	5.10	102	60--140
1,1-Dichloroethane	5.00	4.89	98	60--140
1,2-Dichloroethane	5.00	4.68	94	60--140
1,1-Dichloroethene	5.00	4.96	99	60--140
cis-1,2-Dichloroethene	5.00	4.71	94	60--140
trans-1,2-Dichloroethene	5.00	4.96	99	60--140
1,2-Dichloropropane	5.00	4.15	83	60--140
1,3-Dichloropropane	5.00	4.66	93	60--140
2,2-Dichloropropane	5.00	4.95	99	60--140
1,1-Dichloropropene	5.00	4.55	91	60--140
cis-1,3-Dichloropropene	5.30	4.88	92	60--140
trans-1,3-Dichloropropene	4.70	4.34	92	60--140
Methyl-t-butyl ether	5.00	4.27	85	60--140
Methylene chloride	5.00	4.58	92	60--140
Methyl ethyl ketone	50.0	44.2	88	60--140
Styrene	5.00	4.76	95	60--140
1,1,1,2-Tetrachloroethane	5.00	4.85	97	60--140
1,1,2,2-Tetrachloroethane	5.00	4.53	91	60--140
Tetrachloroethene	5.00	5.13	103	60--140
Toluene	5.00	4.92	98	60--140
1,1,1-Trichloroethane	5.00	4.90	98	60--140
1,1,2-Trichloroethane	5.00	4.32	86	60--140
Trichloroethene	5.00	4.98	100	60--140
Trichlorofluoromethane	5.00	4.32	86	60--140
1,2,3-Trichloropropane	5.00	4.68	94	60--140
Vinyl chloride	5.00	4.80	96	60--140
m+p-Xylenes	10.0	10.3	103	60--140
o-Xylene	5.00	4.96	99	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.44	94	75--120
Toluene d8	10.0	9.87	99	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

Quality Control Sample: Laboratory Reagent Blank 02-NOV-1999 12:06
Report Date: 11/04/99 10:39
Extraction Method: EPA 5030
Sample Matrix: WATER
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	<1.0	U
Bromobenzene	108-86-1	<1.0	U
Bromochloromethane	74-97-5	<1.0	U
Bromodichloromethane	75-27-4	<1.0	U
Bromoform	75-25-2	<1.0	U
Bromomethane	74-83-9	<1.0	U
Carbon tetrachloride	56-23-5	<1.0	U
Chlorobenzene	108-90-7	<1.0	U
Chloroethane	75-00-3	<1.0	U
2-Chloroethylvinyl ether	110-75-8	<1.0	U
Chloroform	67-66-3	<1.0	U
Chloromethane	74-87-3	<1.0	U
2-Chlorotoluene	95-49-8	<1.0	U
4-Chlorotoluene	106-43-4	<1.0	U
Chlorodibromomethane	124-48-1	<1.0	U
1,2-Dibromoethane	106-93-4	<1.0	U
Dibromomethane	74-95-3	<1.0	U
1,2-Dichlorobenzene	95-50-1	<1.0	U
1,3-Dichlorobenzene	541-73-1	<1.0	U
1,4-Dichlorobenzene	106-46-7	<1.0	U
Dichlorodifluoromethane	75-71-8	<1.0	U
1,1-Dichloroethane	75-34-3	<1.0	U
1,2-Dichloroethane	107-06-2	<1.0	U
1,1-Dichloroethene	75-35-4	<1.0	U
cis-1,2-Dichloroethene	156-59-2	<1.0	U
trans-1,2-Dichloroethene	156-60-5	<1.0	U
1,2-Dichloropropane	78-87-5	<1.0	U
1,3-Dichloropropane	142-28-9	<1.0	U
2,2-Dichloropropane	594-20-7	<1.0	U
1,1-Dichloropropene	563-58-6	<1.0	U
cis-1,3-Dichloropropene	10061-01-5	<1.0	U
trans-1,3-Dichloropropene	10061-02-6	<1.0	U
Ethylbenzene	100-41-4	<1.0	U
Methyl-t-butyl ether	1634-04-4	<1.0	U
Methylene chloride	75-09-2	<1.0	U
Methyl ethyl ketone	78-93-3	<20	U
Styrene	100-42-5	<1.0	U
1,1,1,2-Tetrachloroethane	630-20-6	<1.0	U
1,1,2,2-Tetrachloroethane	79-34-5	<1.0	U
Tetrachloroethene	127-18-4	<1.0	U
Toluene	108-88-3	<1.0	U
1,1,1-Trichloroethane	71-55-6	<1.0	U
1,1,2-Trichloroethane	79-00-5	<1.0	U
Trichloroethene	79-01-6	<1.0	U
Trichlorofluoromethane	75-69-4	<1.0	U
1,2,3-Trichloropropane	96-18-4	<1.0	U
Vinyl chloride	75-01-4	<1.0	U
m+p-Xylenes	108383/106423	<1.0	U
o-Xylene	95-47-6	<1.0	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.71	97	75--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/04nov02.d

Quality Control Sample: Laboratory Reagent Blank 02-NOV-1999 17:54
Report Date: 11/04/99 10:30
Extraction Method: EPA 5030
Sample Matrix: WASTE
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8260B: VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/g (ppm)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Benzene	71-43-2	<0.20	U
Bromobenzene	108-86-1	<0.20	U
Bromochloromethane	74-97-5	<0.20	U
Bromodichloromethane	75-27-4	<0.20	U
Bromoform	75-25-2	<0.20	U
Bromomethane	74-83-9	<0.20	U
Carbon tetrachloride	56-23-5	<0.20	U
Chlorobenzene	108-90-7	<0.20	U
Chloroethane	75-00-3	<0.20	U
2-Chloroethylvinyl ether	110-75-8	<0.20	U
Chloroform	67-66-3	<0.20	U
Chloromethane	74-87-3	<0.20	U
2-Chlorotoluene	95-49-8	<0.20	U
4-Chlorotoluene	106-43-4	<0.20	U
Chlorodibromomethane	124-48-1	<0.20	U
1,2-Dibromoethane	106-93-4	<0.20	U
Dibromomethane	74-95-3	<0.20	U
1,2-Dichlorobenzene	95-50-1	<0.20	U
1,3-Dichlorobenzene	541-73-1	<0.20	U
1,4-Dichlorobenzene	106-46-7	<0.20	U
Dichlorodifluoromethane	75-71-8	<0.20	U
1,1-Dichloroethane	75-34-3	<0.20	U
1,2-Dichloroethane	107-06-2	<0.20	U
1,1-Dichloroethene	75-35-4	<0.20	U
cis-1,2-Dichloroethene	156-59-2	<0.20	U
trans-1,2-Dichloroethene	156-60-5	<0.20	U
1,2-Dichloropropane	78-87-5	<0.20	U
1,3-Dichloropropane	142-28-9	<0.20	U
2,2-Dichloropropane	594-20-7	<0.20	U
1,1-Dichloropropene	563-58-6	<0.20	U
cis-1,3-Dichloropropene	10061-01-5	<0.20	U
trans-1,3-Dichloropropene	10061-02-6	<0.20	U
Ethylbenzene	100-41-4	<0.20	U
Methyl-t-butyl ether	1634-04-4	<0.20	U
Methylene chloride	75-09-2	<0.20	U
Methyl ethyl ketone	78-93-3	<4.0	U
Styrene	100-42-5	<0.20	U
1,1,1,2-Tetrachloroethane	630-20-6	<0.20	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.20	U
Tetrachloroethene	127-18-4	<0.20	U
Toluene	108-88-3	<0.20	U
1,1,1-Trichloroethane	71-55-6	<0.20	U
1,1,2-Trichloroethane	79-00-5	<0.20	U
Trichloroethene	79-01-6	<0.20	U
Trichlorofluoromethane	75-69-4	<0.20	U
1,2,3-Trichloropropane	96-18-4	<0.20	U
Vinyl chloride	75-01-4	<0.20	U
m+p-Xylenes	108383/106423	<0.20	U
o-Xylene	95-47-6	<0.20	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/g	Measured-ug/g	%Rec	QC Limits
1,2-Dichloroethane d4	2.00	1.95	98	66--130
Toluene d8	2.00	2.17	108	69--128
p-Bromofluorobenzene	2.00	2.34	117	64--143

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /IONTRAP1.i/vb110299.b/10nov02.d

EPA METHOD 8260B: QUALITY ASSURANCE BLANK MATRIX SPIKE REPORT

Quality Control Sample: Reference Sample Analysis 22-OCT-1999 18:17
Report Date: 11/04/99 15:18
Extraction Method: EPA 5030
Sample Matrix: WASTE
File: /IONTRAP1.i/vb102299.b/04oct22.d
Remarks: This reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/g (ppm)

Spike Compound	Added	Measured	%Rec	QC Limits
Benzene	1.00	0.874	87	60--140
Bromobenzene	1.00	1.04	104	60--140
Bromochloromethane	1.00	0.901	90	60--140
Bromodichloromethane	1.00	0.995	100	60--140
Bromoform	1.00	1.03	103	60--140
Bromomethane	1.00	0.541	54	30--140
Carbon tetrachloride	1.00	0.955	96	60--140
Chlorobenzene	1.00	1.07	107	60--140
Chloroethane	1.00	0.889	89	30--140
2-Chloroethylvinyl ether	1.00	0.985	98	60--140
Chloroform	1.00	0.906	91	60--140
Chloromethane	1.00	0.890	89	30--140
2-Chlorotoluene	1.00	1.10	110	60--140
4-Chlorotoluene	1.00	1.02	102	60--140
1,2-Dibromoethane	1.00	1.04	104	60--140
Dibromomethane	1.00	1.11	111	60--140
1,2-Dichlorobenzene	1.00	1.04	104	60--140
1,3-Dichlorobenzene	1.00	1.02	102	60--140
1,4-Dichlorobenzene	1.00	1.03	103	60--140
Dichlorodifluoromethane	1.00	0.808	81	30--140
1,1-Dichloroethane	1.00	0.948	95	60--140
1,2-Dichloroethane	1.00	0.913	91	60--140
1,1-Dichloroethene	1.00	0.902	90	60--140
cis-1,2-Dichloroethene	1.00	0.879	88	60--140
trans-1,2-Dichloroethene	1.00	0.934	93	60--140
1,2-Dichloropropane	1.00	1.01	101	60--140
1,3-Dichloropropane	1.00	1.02	102	60--140
2,2-Dichloropropane	1.00	0.857	86	60--140
1,1-Dichloropropene	1.00	0.846	85	60--140
cis-1,3-Dichloropropene	1.06	1.05	99	60--140
trans-1,3-Dichloropropene	0.940	0.957	102	60--140
Methyl-t-butyl ether	1.00	0.922	92	60--140
Methylene chloride	1.00	0.840	84	60--140
Methyl ethyl ketone	10.0	9.32	93	60--140
Styrene	1.00	1.01	101	60--140
1,1,1,2-Tetrachloroethane	1.00	1.05	105	60--140
1,1,2,2-Tetrachloroethane	1.00	1.02	102	60--140
Tetrachloroethene	1.00	1.12	112	60--140
Toluene	1.00	1.06	106	60--140
1,1,1-Trichloroethane	1.00	0.962	96	60--140
1,1,2-Trichloroethane	1.00	1.09	109	60--140
Trichloroethene	1.00	1.09	109	60--140
Trichlorofluoromethane	1.00	0.877	88	30--140
1,2,3-Trichloropropane	1.00	0.937	94	60--140
Vinyl chloride	1.00	0.813	81	30--140
m+p-Xylenes	2.00	2.05	102	60--140
o-Xylene	1.00	0.982	98	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/g	Measured-ug/g	%Rec	QC Limits
1,2-Dichloroethane d4	2.00	2.07	103	66--130
Toluene d8	2.00	2.45	123	69--128
p-Bromofluorobenzene	2.00	2.65	132	64--143

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489 • E-MAIL eli@energylab.com

Client: Maxim Technologies
Date Sampled: 19-OCT-99 15:00
Date Received: 27-OCT-99
Extraction Date: 02-NOV-1999
Analysis Date: 10-NOV-1999 04:36
Project Info: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample Info: MW 104 FREE PRODUCT

Lab No.: 017-99-58443
Report Date: 11/16/99 09:22
Sample Matrix: WATER
Extraction Method: EPA 3510
Prep Info: 100ml to 6ml x10

EPA METHOD 8270C: SEMI-VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acenaphthene	83-32-9	<6000	U
Acenaphthylene	208-96-8	<6000	U
Anthracene	120-12-7	<6000	U
Benzo(a)Anthracene	56-55-3	<6000	1030J
Benzo(b)fluoranthene	205-99-2	<6000	1380J
Benzo(k)fluoranthene	207-08-9	<6000	U
Benzo(g,h,i)perylene	191-24-2	<6000	674J
Benzo(a)pyrene	50-32-8	<6000	903J
Chrysene	218-01-9	<6000	1530J
Dibenzo(a,h)anthracene	53-70-3	<6000	U
Fluoranthene	206-44-0	<6000	3650J
Fluorene	86-73-7	<6000	U
Indeno(1,2,3-c,d)pyrene	193-39-5	<6000	625J
Naphthalene	91-20-3	19600	
Phenanthrene	85-01-8	16000	
Pyrene	129-00-0	<6000	4760J

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
Nitrobenzene-d5	1000	Diluted Out		35--114
2-Fluorobiphenyl	1000	Diluted Out		43--116
Terphenyl-d14	1000	Diluted Out		33--141

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: Because of the high amount of organics in the sample, 100 mls of sample were extracted as opposed to a normal 1000 mls. The sample extract would not concentrate to 1 ml and was brought to a 6 ml final volume. The sample extract was diluted an additional 10 times at analysis because of the high level of organics. The Practical Quantitation Limit reflects the initial sample volume, the sample extract final volume and the additional dilution.

Analyst: _____ Reviewing Supervisor: _____ /disk3/SV5972.i/sb110999.b/09nov1701017.d

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Client: Maxim Technologies
Date Sampled: 19-OCT-99 15:40
Date Received: 27-OCT-99
Extraction Date: 02-NOV-1999
Analysis Date: 10-NOV-1999 05:17
Project Info: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample Info: MW 5 FREE PRODUCT

Lab No.: 018-99-58443
Report Date: 11/10/99 12:17
Sample Matrix: WASTE
Extraction Method: EPA 3510
Prep Info: 100ml to 1ml

EPA METHOD 8270C: SEMI-VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acenaphthene	83-32-9	<100	U
Acenaphthylene	208-96-8	<100	U
Anthracene	120-12-7	<100	U
Benzo(a)Anthracene	56-55-3	<100	U
Benzo(b)fluoranthene	205-99-2	<100	U
Benzo(k)fluoranthene	207-08-9	<100	U
Benzo(g,h,i)perylene	191-24-2	<100	U
Benzo(a)pyrene	50-32-8	<100	U
Chrysene	218-01-9	<100	U
Dibenzo(a,h)anthracene	53-70-3	<100	U
Fluoranthene	206-44-0	<100	U
Fluorene	86-73-7	<100	U
Indeno(1,2,3-c,d)pyrene	193-39-5	<100	U
Naphthalene	91-20-3	<100	16J
Phenanthrene	85-01-8	<100	U
Pyrene	129-00-0	<100	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
Nitrobenzene-d5	1000	497	50	35--114
2-Fluorobiphenyl	1000	661	66	43--116
Terphenyl-d14	1000	762	76	33--141

QUALIFIER CODE EXPLANATIONS AND NOTES:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: Because of the high amount of organics in the sample, 100 mls of sample were extracted as opposed to a normal 1000 mls. The Practical Quantitation Limit reflects the initial sample volume.

Analyst: SA/WG Reviewing Supervisor: WM /disk3/SV5972.i/sb110999.b/09nov1801018.d

EPA METHOD 8270C: QUALITY ASSURANCE BLANK MATRIX SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 09-NOV-99 19:33
Report Date: 11/10/99 14:45
Extraction Method: EPA 3510
Extraction Date: 02-NOV-1999 00:00
Sample Matrix: WATER
File: /disk3/SV5972.i/sb110999.b/09nov0401004.d
Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Acenaphthene	100	72.9	73	53--101
Acenaphthylene	96.0	66.4	69	50-- 94
Anthracene	100	78.1	78	52--109
Benzo(a)Anthracene	100	81.1	81	57--115
Benzo(b)fluoranthene	100	80.3	80	54--120
Benzo(k)fluoranthene	100	76.0	76	48--118
Benzo(g,h,i)perylene	100	81.7	82	43--121
Benzo(a)pyrene	100	78.5	78	44--122
Chrysene	100	81.9	82	54--122
Dibenzo(a,h)anthracene	100	85.2	85	39--120
Fluoranthene	100	80.8	81	50--121
Fluorene	100	73.2	73	54--101
Indeno(1,2,3-c,d)pyrene	100	93.8	94	43--125
Naphthalene	100	47.6	48	43-- 93
Phenanthrene	100	78.9	79	52--108
Pyrene	99.0	78.8	80	56--116

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
Nitrobenzene-d5	100	62.6	63	35--114
2-Fluorobiphenyl	100	70.1	70	43--116
Terphenyl-d14	100	89.1	89	33--141

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____

Quality Control Sample: Laboratory Reagent Blank 09-NOV-1999 18:51
Report Date: 11/10/99 14:44
Extraction Method: EPA 3510
Extraction Date: 13-OCT-1999 00:00
Sample Matrix: WATER
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 8270C: SEMI-VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acenaphthene	83-32-9	<10	U
Acenaphthylene	208-96-8	<10	U
Anthracene	120-12-7	<10	U
Benzo(a)Anthracene	56-55-3	<10	U
Benzo(b)fluoranthene	205-99-2	<10	U
Benzo(k)fluoranthene	207-08-9	<10	U
Benzo(g,h,i)perylene	191-24-2	<10	U
Benzo(a)pyrene	50-32-8	<10	U
Chrysene	218-01-9	<10	U
Dibenzo(a,h)anthracene	53-70-3	<10	U
Fluoranthene	206-44-0	<10	U
Fluorene	86-73-7	<10	U
Indeno(1,2,3-c,d)pyrene	193-39-5	<10	U
Naphthalene	91-20-3	<10	U
Phenanthrene	85-01-8	<10	U
Pyrene	129-00-0	<10	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
Nitrobenzene-d5	100	62.4	62	35--114
2-Fluorobiphenyl	100	68.7	69	43--116
Terphenyl-d14	100	88.7	89	33--141

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /disk3/SV5972.i/sb110999.b/09nov0301003.d

ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489 • E-MAIL eli@energylab.com

Client: Maxim Technologies

Login No.: 99-58443
Date: 04-Nov-99

GASOLINE RANGE ORGANICS LABORATORY ANALYSIS REPORT

ROPES MILLS, HUMBOLDT, MICHIGAN
Received:27-Oct-99

Lab No./Sample Information	Gasoline Range Organics(GRO)	GRO as Gasoline	Total Purgeable Hydrocarbons	Units	Q	Date/Time Analyzed	Surrogate %Rec.	pH
015-99-58443	6840	6840	8090	µg/L(ppb)		02-Nov-99 17:55	98	<2
MW 5								
20-Oct-99 16:00						Seq. I.D.:G11029Q1		Analyst:bjm

Qualifiers(Q) and Notes

NOTE1: Gasoline Range Organics(GRO) are defined as all hydrocarbons eluting between 2-Methylpentane and 1,2,4-Trimethylbenzene.

NOTE2: Gasoline Range Organics(GRO) as Gasoline are defined by the analyst as the portion of the GRO range that resembles gasoline.

NOTE3: Total Purgeable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time. This value is equivalent to EPA 8015M as Gasoline.

Date: 04-Nov-99

GASOLINE RANGE ORGANICS QUALITY ASSURANCE REPORT

QC Sample I.D.	Gasoline Range Organics(GRO)	GRO as Gasoline	Total Purgeable Hydrocarbons	Units	Q	Date/Time Analyzed	Sequence I.D	Surrogate %Rec
Method Blank	< 20	< 20	< 20	µg/L(ppb)		11/2/99 16:40	G11029Q1	90

LABORATORY CONTROL SAMPLE ANALYSIS RESULTS

Date Analyzed: 02-Nov-99 16:04:00

Sequence I.D.: G11029Q1

Unleaded Gasoline	SPIKE ADDED µg/L(ppb)	MS CONC. µg/L(ppb)	MS %Rec.	QC Limit %Rec.	Surrogate %Rec.
as Gasoline Range	200	124	62	50-100	107
as Total Purgeable	200	154	77	50-100	

GASOLINE RANGE ORGANICS CONTINUING CALIBRATION REPORT

This continuing calibration report applies to the following analysis runs:
015-99-58443

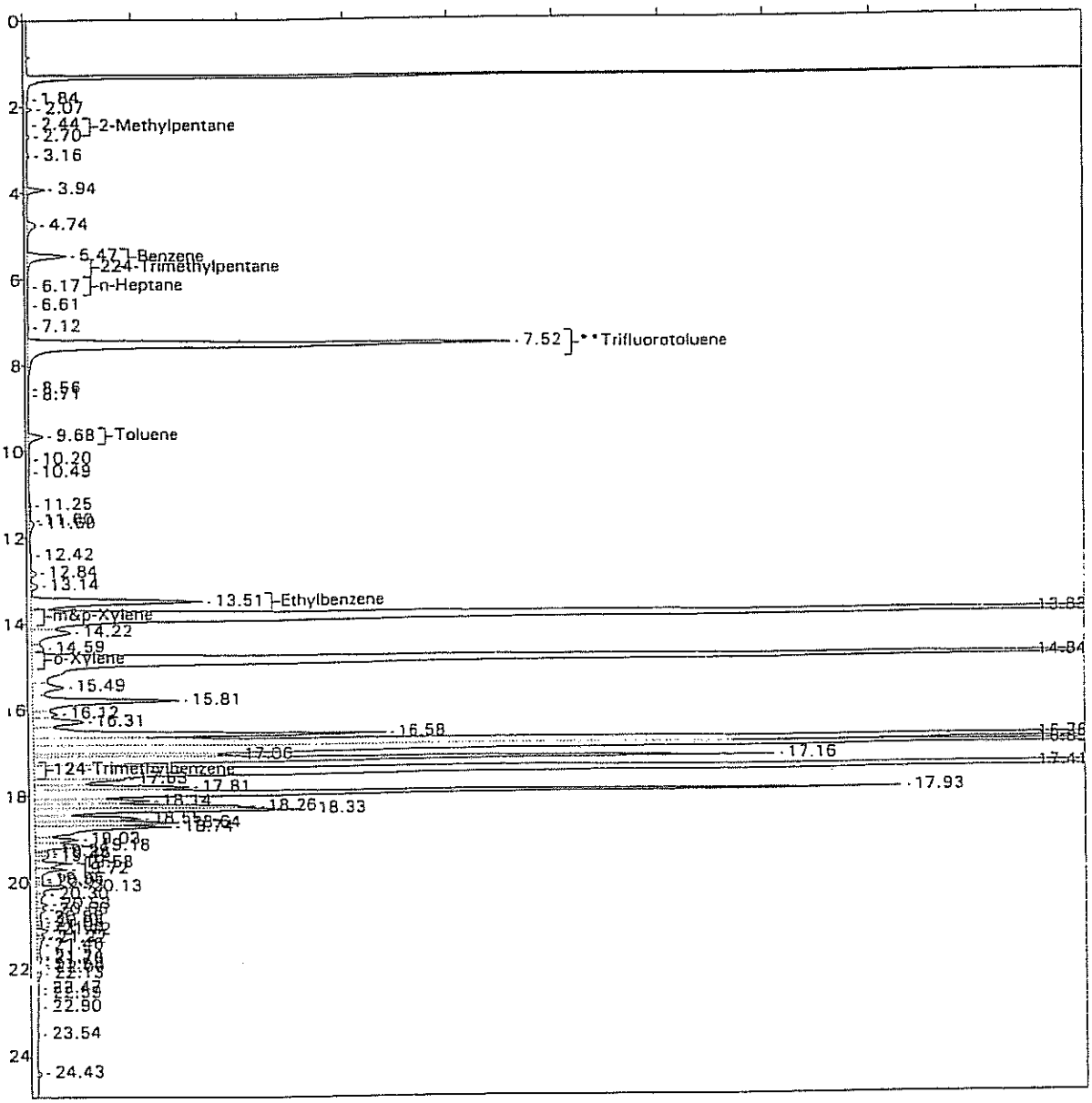
Sample Name: cc1 GRO Continuing Cal :G11029Q1
Area File: G:\ORG\PE2\1102QE2B.10A
Date & Time Collected: Nov 2, 1999 15:27:52
Method File: G:\ORG\PE2\52P299B.MET
Calibration File: G:\ORG\PE2\52P299B.CAL

COMPOUND	*ACTUAL*	*MEASURED*	*%RECOVERY*	*%RECOVERY LIMITS*
2-Methylpentane	150	151	101	75-125
Benzene	50	45	90	75-125
224-Trimethylpentane	150	143	95	75-125
n-Heptane	50	50	99	75-125
Toluene	150	140	93	75-125
Ethylbenzene	50	46	92	75-125
m&p-Xylene	200	188	94	75-125
o-Xylene	100	92	92	75-125
124-Trimethylbenzene	100	89	89	75-125
TOTAL GRO	1000	938	94	75-125
**Trifluorotoluene	250	250	100	75-125

File=G:\ORG\PE2\1102QE2B.14R Date printed=11-02-1999 Time= 17:56:03

Sample Name=015-99-58443 ;99-58443 GRO Water :G11029Q1

0 to 25.0 min. Low Y=5.237 High Y=155.237 mv Span=150.0



GASOLINE RANGE ORGANICS CHROMATOGRAM

Sample Name: 015-99-58443 ;99-58443 GRO Water :G11029Q1

Area File: G:\ORG\PE2\1102QE2B.14A

Date & Time Collected: Nov 2, 1999 17:55:35

Method File: G:\ORG\PE2\52P299B.MET

Calibration File: G:\ORG\PE2\52P299B.CAL

Sample Weight: 5 Dilution: 10 S.A.: 1

Peaks subtracted from Total:

Compound Name	RT	Area	Amount	%Recovery
Trifluorotoluene	7.5	552,277	48.9	98

GRO Area 10,623,535 Quant: 6,835.1

TPH Area 12,576,906 Quant: 8,091.9

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Client: Maxim Technologies
Date Sampled: 20-OCT-99 16:00
Date Received: 27-OCT-99
Extraction Date: 02-NOV-1999
Analysis Date: 10-NOV-1999 03:54
Project Info: ROPES MILLS, HUMBOLDT, MICHIGAN
Sample Info: MW 5

Lab No.: 015-99-58443
Report Date: 11/10/99 12:16
Sample Matrix: WATER
Extraction Method: EPA 3510
Prep Info: 1000ml to 1ml

EPA METHOD 8270C: SEMI-VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Acenaphthene	83-32-9	<10	U
Acenaphthylene	208-96-8	<10	U
Anthracene	120-12-7	<10	U
Benzo(a)Anthracene	56-55-3	<10	U
Benzo(b)fluoranthene	205-99-2	<10	U
Benzo(k)fluoranthene	207-08-9	<10	U
Benzo(g,h,i)perylene	191-24-2	<10	U
Benzo(a)pyrene	50-32-8	<10	U
Chrysene	218-01-9	<10	U
Dibenzo(a,h)anthracene	53-70-3	<10	U
Fluoranthene	206-44-0	<10	U
Fluorene	86-73-7	<10	U
Indeno(1,2,3-c,d)pyrene	193-39-5	<10	U
Naphthalene	91-20-3	19	
Phenanthrene	85-01-8	<10	U
Pyrene	129-00-0	<10	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added-ug/L	Measured-ug/L	%Rec	QC Limits
Nitrobenzene-d5	100	57.9	58	35--114
2-Fluorobiphenyl	100	71.8	72	43--116
Terphenyl-d14	100	86.6	87	33--141

QUALIFIER CODE EXPLANATIONS AND NOTES:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: _____ Reviewing Supervisor: _____ /disk3/SV5972.i/sb110999.b/09nov1601016.d

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1120 SOUTH 27TH STREET • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489 • E-MAIL eli@energylab.com

Client: Maxim Technologies

Login No.: 99-58443
Date: 16-Nov-99

DIESEL RANGE ORGANICS LABORATORY ANALYSIS REPORT

ROPES MILLS, HUMBOLDT, MICHIGAN
Received:27-Oct-99

Lab No./Sample Information	Diesel Range Organics	Diesel Range Organics as Diesel	Total Extractable Hydrocarbons	Units	Q	Date/Time Analyzed	Date Extracted	Surrogate %Rec.
001-99-58443	< 0.53	< 0.53	< 0.53	mg/L(ppm)		12-Nov-99 20:06	01-Nov-99	85
MW 102								
19-Oct-99 13:00						Batch I.D.:DROW102899A		Analyst:pf/cv
011-99-58443	< 0.51	< 0.51	< 0.51	mg/L(ppm)		12-Nov-99 20:58	01-Nov-99	88
MW 4								
20-Oct-99 14:45						Batch I.D.:DROW102899A		Analyst:pf/cv
013-99-58443	0.68	0.68	1.1	mg/L(ppm)	1	12-Nov-99 21:50	01-Nov-99	83
MW 2								
20-Oct-99 13:00						Batch I.D.:DROW102899A		Analyst:pf/cv
014-99-58443	< 0.53J	< 0.53	0.76	mg/L(ppm)	1	12-Nov-99 22:41	01-Nov-99	59
MW 3								
20-Oct-99 13:30						Batch I.D.:DROW102899A		Analyst:pf/cv
015-99-58443	31	31	40	mg/L(ppm)	2	12-Nov-99 23:31	01-Nov-99	69
MW 5								
20-Oct-99 16:00						Batch I.D.:DROW102899A		Analyst:pf/cv
016-99-58443	2980	2980	3410	mg/L(ppm)	3	13-Nov-99 00:20	01-Nov-99	D
MW 104								
20-Oct-99 17:30						Batch I.D.:DROW102899A		Analyst:pf/cv

Qualifiers(Q) and Notes

(1)The mean boiling point of the hydrocarbons was higher than would be expected from #2 Diesel fuel.

(2)The hydrocarbon profile resembles a mixture of gasoline and other miscellaneous heavier hydrocarbons.

(3)The hydrocarbon profile resembles a mixture of #1 diesel fuel or kerosine and waste oil.

(J)Present but less than the practical quantitation limit.

(D)The surrogate was diluted out.

NOTE1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.

NOTE2: Diesel Range Organics as Diesel Fuel are defined by the analyst as that portion of the chromatogram between C10 and C28 that resembles diesel fuel.

NOTE3: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time. This value is equivalent to EPA 8015M as Diesel.

Batch: DROW102899A
Date: 11-Nov-99

DIESEL RANGE ORGANICS BATCH QUALITY ASSURANCE REPORT

QC Sample I.D.	Diesel Range Organics	Diesel Range Organics as Diesel	Total Extractable Hydrocarbons	Units	Q	Date/Time Analyzed	Date Extracted	Surrogate %Rec.
Method Blank	< 0.50	< 0.50	< 0.50	mg/L(ppm)		08-Nov-99 00:00	01-Nov-99	81

LABORATORY CONTROL SAMPLE REPORT

Date Analyzed: 08-Nov-99 00:51:00
Date Extracted: 01-Nov-99

CONSTITUENT	SPIKE ADDED mg/L(ppm)	MS CONC. mg/L(ppm)	MS % Rec.	QC Limits % Rec.	Surrogate %Rec.
#2 Diesel Fuel	15	12	80	60 to 140	77

LABORATORY CONTROL SAMPLE REPORT

Date Analyzed: 08-Nov-99 01:42:00
Date Extracted: 01-Nov-99

CONSTITUENT	Spike Added mg/L(ppm)	MS Conc. mg/L(ppm)	MS % Rec.	QC Limits % Rec.	Surrogate %Rec.
#2 Diesel Fuel	15	13	87	60 to 140	80

*MATRIX SPIKE/MATRIX SPIKE DUPLICATE REPORT

MATRIX SPIKE
Laboratory Number: 015-99-58443
Date Analyzed: 09-Nov-99 17:08:00
Date Extracted: 01-Nov-99

CONSTITUENT	Spike Added mg/L(ppm)	Sample Conc. mg/L(ppm)	MS Conc. mg/L(ppm)	MS % Rec.	QC Limits %Rec.	Surrogate %Rec.
#2 Diesel Fuel	300	30	323	98	60 to 140	76

* There was inadequate sample volume submitted for matrix spike duplicates for this extraction batch.

Analyst: pf

DIESEL RANGE ORGANICS CONTINUING CALIBRATION REPORT

This continuing calibration report applies to the following analysis runs:
001-99-58443,011-99-58443,013-99-58443,014-99-58443,015-99-58443,016-99-58443

Sample Name: cc3 DRO Continuing Cal :1111DROF.cc3
Area File: G:\ORG\FIS\1111DROF.30A
Date & Time Collected: Nov 12, 1999 18:19:44
Method File: G:\ORG\FIS\DROFA.MET
Calibration File: G:\ORG\FIS\DRF1025A.CAL

COMPOUND	ACTUAL(UG/ML)	MEASURED(UG/ML)	%RECOVERY	%RECOVERY LIMITS
n-Decane	200	205	103	75-125
n-Dodecane	200	202	101	75-125
n-Tetradecane	200	204	102	75-125
n-Hexadecane	200	205	102	75-125
n-Octadecane	200	210	105	75-125
n-Eicosane	200	212	106	75-125
n-Docosane	200	211	106	75-125
n-Tetracosane	200	216	108	75-125
n-Hexacosane	200	217	109	75-125
n-Octacosane	200	216	108	75-125
TOTAL DRO	2000	2097	105	75-125
* o-Terphenyl	200	191	95	75-125
*1-Chloro-octade	200	197	98	75-125

MDEQ FOIA Request
1991 through 2001 Tier 2

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Surface Water Quality Div.
350 Ottawa NW
6th Floor
Grand Rapids, MI 49503
Attn: CHRIS LITTLE
Total: $573.62

Outfall

Lab Work Order # 9906192
Work Site ID: CALLAHAN MINE
Matrix: Water
Received: 6/25/1999
Client: SWQ_GR

Reported: 8/13/1999
Number of Samples: 1

TEST UNITS	CM 001			
Alkalinity of Water mg CaCO3/L	101			
Aluminum in Water ug/L	K 50			
Ammonia mg N/L	K 0.1 DL			
Antimony in Water ug/L	17			
Arsenic by Furnace ug/L	K 1.0			
Barium in Water ug/L	9			
Beryllium in Water ug/L	K 1			
Boron in Water ug/L	110			
Cadmium by Furnace ug/L	K 0.2			
Calcium in Water mg/L	48.1			
Chloride in Water mg/L	14			
Chromium by Furnace ug/L	K 1.0			
Cobalt in Water ug/L	K 15			
Conductivity of Water umho/cm	552			
Copper by Furnace ug/L	4.9			
Hardness - Calculated mg/L	225			
Hex Chromium in Water ug/L	K 5			

RECEIVED
AUG 17 1999
SURFACE WATER QUALITY DIV.
GRAND RAPIDS

TEST UNITS	CM 001			
Iron in Water ug/L	70			
Lead by Furnace ug/L	K 1.0			
Lithium in Water ug/L	K 8			
Magnesium in Water mg/L	24.9			
Manganese in Water ug/L	30			
Mercury in Water ug/L	K .2			
Molybdenum in Water ug/L	K 25			
Nickel by Furnace ug/L	35			
Nitrate + Nitrite mg N/L	3.4			
Nitrite mg N/L	.01			
Nitrogen - Kjeldahl mg N/L	.11			
Oil & Grease-Water - Low Level mg/L	K 10			
Ortho Phosphate mg P/L	K .01			
Phosphorus - Total mg P/L	.01			
Potassium in Water mg/L	10.4			
Selenium in Water ug/L	K 1.0			
Silver by Furnace ug/L	K 0.5			
Sodium in Water mg/L	20.3			
Solids - Suspended mg/L	K 4			
Solids - Total Dissolved mg/L	400			
Strontium in Water ug/L	210			

TEST UNITS	CM 001			
Sulfate in Water mg/L	121			
Thallium by Furnace ug/L	K 2.0			
Titanium in Water ug/L	K 10			
TOC mg/L	3.9			
Vanadium in Water ug/L	K 10			
Zinc in Water ug/L	K 10			

This is an original report: _____ Date: _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	**ENVIRONMENTAL LABORATORY PROCEDURE**	*NO: PD-13* *DATE: Rev. 10/9/95*

Subject: ***Laboratory Result Remark Codes***

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e. substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	Q. C. indicated possible low recovery. Actual level may be higher.
LL	Q. C. indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exists.
RB	Reagent Blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	Improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by: _____ 10/17/95
George Su, Lab Section Chief / Date

DEQ

bha:File R:\Worddocs\Codes.doc

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
LABORATORY ANALYSIS REQUEST SHEET

**** SAFETY WARNING ****
YES / (NO) INFO ON BACK

MATRIX = WATER

LAB ORDER # 990619.2 PRIORITY T RECEIVED AT LAB BY JH DATE TIME 6/25/99 8:10 (AM) PM

SUBMITTER DIVISION SWQD DISTRICT OR OFFICE GRAND RAPIDS CONTACT PERSON FOR QUESTIONS JOE HEY CHRIS LITTLE PHONE (616) - 246-1350

LOCATION SAMPLED Callahan Mine COLLECTED BY HEY/LITTLE DELIVERED BY Flower

ACCEPT "HT" CODE YES / NO SEND RESULTS TO ATTENTION OF CHRIS LITTLE AT ADDRESS SAME AS ABOVE (If different than above office)

INDEX 37100 PCA 40505 PROJECT 480043 PH

OVERFLOW CONTRACT LAB:

RECEIVED BY: SIGNATURE AND DATE:

SAMPLE REMARKS:

SAMPLE NUMBER	FIELD ID OR DESCRIPTION	SAMPLE COLLECTED YY/MM/DD	SAMPLE COLLECTED HH:MM	SAMPLE INFORMATION
01	C.M 001	990624	1300	N.O Cl2
02				
03				
04				
05				

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5

(GN) NO_2, o-Phos (1) 2 3 4 5
Residue SS (1) 2 3 4 5
Residue TDS (1) 2 3 4 5
Conductivity 1 2 3 4 5
BOD Tot 5 day 1 2 3 4 5
BOD Carb 5 day 1 2 3 4 5
_____ 1 2 3 4 5

S Sulfide 1 2 3 4 5

(GA) COD 1 2 3 4 5
TOC (1) 2 3 4 5
$NO_3 + NO_2$, NH_3 (1) 2 3 4 5
KJEL N, Tot P (1) 2 3 4 5
_____ 1 2 3 4 5

GP Phenolics (NPDES) 1 2 3 4 5

GB Total CN 1 2 3 4 5
Amenable CN 1 2 3 4 5

ORGANIC

VOLATILES

POV BTEX/MTBE only 1 2 3 4 5
624/8260 1 2 3 4 5

PEST/PCB/SC3

ON 8081/8121(Sc 3) 1 2 3 4 5
8082 PCB only 1 2 3 4 5
608/612 (Sc3-NPDES) 1 2 3 4 5
PCB only (NPDES) 1 2 3 4 5

BASE NEUTRALS

OB 625 (BN) 1 2 3 4 5
PNA only 1 2 3 4 5

PHENOLS

OA 625 (SC 8) 1 2 3 4 5

SPECIAL REQUESTS

Library Search (Qualitative)
Volatiles 1 2 3 4 5
Base Neutrals 1 2 3 4 5
Finger Print (Qualitative)
Base Neutrals 1 2 3 4 5
_____ 1 2 3 4 5

INORGANIC

(MA) Total Metals (1) 2 3 4 5
MAD Diss-Field Filtered 1 2 3 4 5
MD Diss-Lab Filtered 1 2 3 4 5

Detection Limit Low
Ni (1) 2 3 4 5
Fe Co Li Mn (1) 2 3 4 5
Al Ba Be Mo Ti V (1) 2 3 4 5
B Sr (1) 2 3 4 5
MICH TEN (1) 2 3 4 5
(Ag, As, Ba, Cd, Cr, Cu, Hg, Pb, Se, Zn)
As - Arsenic 1 2 3 4 5
Ag - Silver 1 2 3 4 5
Hg - Mercury 1 2 3 4 5
Se - Selenium 1 2 3 4 5
Sb - Antimony (1) 2 3 4 5
Tl - Thallium (1) 2 3 4 5
Ca Mg Na K (1) 2 3 4 5
Hardness (1) 2 3 4 5
% Percent Solids 1 2 3 4 5

(MN) Conductance (1) 2 3 4 5
Cl, SO_4, Total Alk (1) 2 3 4 5
HCO_3 - CO_3 1 2 3 4 5
Cr^{+6} (1) 2 3 4 5

(OG) Oil & Grease (Low) (1) 2 3 4 5

COMPLIANCE MONITORING FIELD SHEET

Facility Name: Callahan Mine

Contact: Ed Kirwan

Address: _____

Phone: (208) 667-3511

Permit # MI R30M030

Outfall #: CM001

Description: Mine Drainage

Split Parameters: _____

Special Instructions:

RECEIVED
APR 09 1999
SURFACE WATER QUALITY DIV.
GRAND RAPIDS

~~COMPOSITE~~ GRAB ONLY

GN
O-P, NO2, SS, DS
~~BOD5~~
-500

~~GP~~
~~Phenolics~~

~~GB~~
~~Cyanide~~

~~S~~
~~Sulfide~~

~~GP~~
~~Chlorine~~

~~GB~~
~~Fluoride~~

~~GP~~
~~Phosphorus~~

~~GB~~
~~Aluminum~~

~~GP~~
~~Color~~

~~GB~~
~~Turbidity~~

GA
~~TOC~~
NO2=NO3, NH3
KJEL N, Tot P

MN
Conductivity
Alkalinity, Cl, SO4
Hexavalent Cr

MA *(low level)*
Mich Ten:
(Ag,As,Ba,Cd,Cr, Cu, Hg, Pb,Se, Zn) + Ni

Fe, Co, Li, Mn
Al, Ba, Be, Mo, Ti, V
Sb,Tl,B,Sr
Ca,Mg,Na,K
~~Solids~~
Hardness

Grabs	1/24 Thurs.	2/24	3/24	Comments
Sample #				
Date	✓ 6-24-99			
Time	✓ 1300			RECEIVED
Temperature	✓ 7.7			
pH	✓ 7.4			SEP 02 1999
~~Chlorine~~				
Dissolved Oxygen	✓ 5.4			Surface Water Quality Div.
GN See Above	✓ ✓			
GA See Above	✓			
~~GP~~				
~~GB~~				
~~Phenolics~~				
~~Fluoride~~				
~~GN~~				
~~GB~~				
~~GB~~				
Oil & Grease	✓ ✓			
~~S~~				
MA See Above	✓ ✓			
MN See Above	✓ ✓			
~~Total Coliform~~				

Totalizer 2 nd. Reading _____ Date & Time _____
1 st. Reading _____ Date & Time _____

Flow _____ Factor ____ _____ **MGD**

Composite start time: _____ **Sample Method:** _____

Sampling Locations: Composite: _____ Grabs: Sump

Field Notes: _____

Outfall

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

REPORT Surface Water Quality Div.
TO 350 Ottawa NW
6th Floor
Grand Rapids, MI 49503
ATTEN JOE HEY/ CHRIS LITTLE

LABORATORY WORK ORDER # 98-06-253
WORK ID CALLAHAN MINING
P.O. # ** COST $ 495.50
RECEIVED 06/25/98 CLIENT SWQ GR
REPORTED _____ NUMBER OF SAMPLES 1
LAB CONTACT GC IN MATRIX WATER

TEST / UNITS	CM 001
Silver by Furnace ug/l	K 0.5
Aluminium in Water ug/l	K 50
Alkalinity of Water mg CaCO3/l	114
Arsenic by Furnace ug/l	1.1
Barium in Water ug/l	14
Beryllium in Water ug/l	K 1
Calcium in Water mg/l	50.8
Cadmium by Furnace ug/l	1.1
Chloride in Water mg/l	14
Cobalt in Water ug/l	K 15
Conductivity of Water umho/cm	565
Hex Chromium in Water ug/l	K 5
Chromium by Furnace ug/l	1.1
Copper by Furnace ug/l	5.3
Iron in Water ug/l	160
Hardness mg/l	225
Mercury in Water ug/l	K .2
Potassium in Water mg/l	12.5
Lithium in Water ug/l	K 8.0

RECEIVED
SEP 24 1998
SURFACE WATER QUALITY DIV.
GRAND RAPIDS

RECEIVED
OCT 5 1998
Surface Water Quality Div.

TEST UNITS	CM 001
Magnesium in Water mg/l	23.7
Manganese in Water ug/l	65
Molybdenum in Water ug/l	K 25
Sodium in Water mg/l	19.5
Nickel by Furnace ug/l	47
Nitrite mg N/l	.03
Nitrate + Nitrite mg N/l	2.9
Ammonia mg N/l	K 0.1 DL
Kjeldahl Nitrogen mg N/l	.57
Lead by Furnace ug/l	20
Ortho Phosphate mg P/l	K .01
Total Phosphorus mg P/l	.01
Suspended Solids mg/l	K 4
Total Dissolved Solids mg/l	420
Antimony in Water ug/l	21
Selenium in Water ug/l	K 1.0
Sulfate in Water mg/l	134
Titanium in Water ug/l	K 10
TOC mg/l	5.0
Vanadium in Water ug/l	K 10
Zinc in Water ug/l	10

Report prepared By: Lauri C. Utes 9/23/98

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	ENVIRONMENTAL LABORATORY PROCEDURE	NO: PD-13 DATE: Rev. 10/9/95

Subject: *Laboratory Result Remark Codes*

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e. substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	Q. C. indicated possible low recovery. Actual level may be higher.
LL	Q. C. indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exists.
RB	Reagent Blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by: George Su, Lab Section Chief 10/17/95 Date

DEQ

bha:File R:\Worddocs\Codes.doc

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
LABORATORY ANALYSIS REQUEST SHEET

[redacted] NO - INFO ON BACK

MATRIX = WATER

LAB ORDER # 98-06-253 PRIORITY II RECEIVED AT LAB BY APS DATE TIME 6/25/98 11:10 AM PM

SUBMITTER DIVISION SWQD DISTRICT OR OFFICE GRAND RAPIDS CONTACT PERSON FOR QUESTIONS JOE HEY / CHRIS LITTLE PHONE (616) - 246-1350

LOCATION SAMPLED CALLAHAN MINING COLLECTED BY HEY/LITTLE DELIVERED BY D.Butler

ACCEPT "HT" CODE YES / NO SEND RESULTS TO ATTENTION OF CHRIS LITTLE AT ADDRESS (if different than above office) SAME AS ABOVE

INDEX 37100 PCA 40505 PROJECT 480043 PH

SAMPLE REMARKS:

SAMPLE NUMBER	FIELD ID OR DESCRIPTION	SAMPLE COLLECTED YY/MM/DD	SAMPLE COLLECTED HH:MM	SAMPLE INFORMATION
01	CM001	980624	1520	No Cl2
02				
03				
04				
05				

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5

GN NO_2, o-Phos (1) 2 3 4 5
Residue SS (1) 2 3 4 5
Residue TDS (1) 2 3 4 5
Conductivity 1 2 3 4 5
BOD Tot 5 day 1 2 3 4 5
BOD Carb 5 day 1 2 3 4 5
_____ 1 2 3 4 5

S Sulfide 1 2 3 4 5

GA COD 1 2 3 4 5
TOC (1) 2 3 4 5
$NO_3 + NO_2$, NH_3 (1) 2 3 4 5
KJEL N, Tot P (1) 2 3 4 5
_____ 1 2 3 4 5

GG Phenolics 1 2 3 4 5
GP Phenolics(NPDES) 1 2 3 4 5

GB Total CN 1 2 3 4 5
Free CN 1 2 3 4 5

ORGANIC

VOLATILES

POV (BTEX only) 1 2 3 4 5
624/8260 1 2 3 4 5
624/8260 plus 1 2 3 4 5
(Library Search) 1 2 3 4 5

PEST & PCB

ON 608/612 (Sc 3) 1 2 3 4 5
PCB (only) 1 2 3 4 5

BASE NEUTRALS

OB 625 (BN) 1 2 3 4 5
(Lib. Search) 1 2 3 4 5

PHENOLS

OA 625 (SC 8) 1 2 3 4 5

SPECIAL REQUESTS

_____ 1 2 3 4 5
_____ 1 2 3 4 5

INORGANIC

MA Total Metals (1) 2 3 4 5
MAD Diss-Field Filtered 1 2 3 4 5
MD Diss-Lab Filtered 1 2 3 4 5

Detection Limit High (Low)

[redacted] (1) 2 3 4 5
Fe Co Li Mn (1) 2 3 4 5
Al Ba Be Mo V Tl (1) 2 3 4 5
% Percent Solids 1 2 3 4 5
MICH TEN (1) 2 3 4 5
(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
Hardness (1) 2 3 4 5
Ca Mg Na K 1 2 3 4 5
As - Arsenic 1 2 3 4 5
Ag - Silver 1 2 3 4 5
Hg - Mercury 1 2 3 4 5
Se - Selenium 1 2 3 4 5
Sb - Antimony (1) 2 3 4 5
Tl - Thallium 1 2 3 4 5

MN Conductance (1) 2 3 4 5
Cl, SO_4, Total Alk (1) 2 3 4 5
HCO_3 - CO_3 1 2 3 4 5
Cr^{+6} (1) 2 3 4 5

OG Oil & Grease (LL) 1 2 3 4 5

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY (517) 335-9800

P.O. Box 30270
Lansing, MI 48909

Report To: Surface Water Quality Div.
1900 US 41 South
P.O. Box 190
Marquette, MI 49855
Attn: RICH CORNER
Total: $597.81

Lab Work Order # 0104163
Work Site ID: ROPES MILL FACTORY
Matrix: Water
Received: 4/19/2001 **Reported:** 5/30/2001
Client: SWQ_MARQ **Number of Samples:** 3

enter

57

RECEIVED
JUN - 4 2001
Surface Water Quality Div.

TEST / UNITS	HUMBOLT 1-CCI OUTFALL	HUMBOLT 2-CCI IMPC	3 WASTE PILE
Calcium in Water mg/L	54.9	51.6	19.3
Chromium by Furnace ug/L	80 111 / 1709	53 118 / 1819	180 66 / 1017
Conductivity of Water umho/cm	705 FCV FAV	602	1307
Hardness - Calculated mg/L	164	177	87
Magnesium in Water mg/L	6.5 No Limit	11.7 No Limit	9.3 No Limit
Mercury in Water ug/L	K .2 HT .77 / 2.8	K .2 HT .77 / 2.8	K .2 HT .77 / 2.8
Selenium by Furnace ug/L	K 1.0 5 / 120	1.3 5 / 120	K 1.0 5 / 120
Solids - Suspended mg/L	74	58	62
Solids - Total Dissolved mg/L	560	460	730
Arsenic - Total ug/L	32 150 / 680	17 150 / 680	65 150 / 680
Barium - Total ug/L	16 740 / 4226	13 803 / 4584	K 5.0 378 / 2154
Cadmium - Total ug/L	6.2 3.22 / 14.57	3.4 3.4 / 15.829	0.9 2.2 / 7.33
Copper - Total ug/L	348 13.67 / 42.84	235 14.58 / 46	248 8 / 24
Lead - Total ug/L	8.3 18 / 313	8.8 19 / 339	12 9 / 157
Nickel - Total ug/L	159 79.03 / 1423	165 84 / 1518	330 46 / 832
Silver - Total ug/L	K 0.5 0.06 / 1.1	K 0.5 0.06 / 1.1	0.8 0.06 / 1.1
Zinc - Total ug/L	1290 DL 179.65 / 356	1090 DL 192 / 38	129 105 / 208

FCV / FAV

This is an original report: D. Hartley Date: _____

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	LABORATORY SERVICES SECTION PROCEDURE	NO: SOP 106 Ver. 3 DATE REV.: 05/01

SUBJECT: Laboratory Result Remark Codes

EFFECTIVE DATE: May 2001

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e., substance, if present, is below Reporting Limit (RL).
L	actual value is known to be greater than the value given.
T	value reported is less than Reporting Limit (RL).
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	QC indicated possible low recovery. Actual level may be higher.
LL	QC indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exist.
RB	reagent blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by:

Bob Avery 5/03/2001

Bob Avery, Laboratory Services Section Chief Date

01-04-163

DEQ

MICHIGAN DEPT. OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY
ANALYSIS REQUEST SHEET

RECEIVED
APR 23 2001

White

LAB ORDER #

MATRIX=WATER

SUBMITTER DIVISION	DISTRICT OR OFFICE	MDEQ PROJECT MANAGER & PHONE				ACCEPT HT CODES?
~~DEQ~~ SWQD	MARQUETTE	RICH CORNER	Surface Water Quality Div.	37761	41401	42004 01 YES / NO

LOCATION SAMPLED / SITE ID NUMBER	INDEX	PCA	PROJECT	PH
Ropes Mill Factory ~~906-226-1353~~				

COLLECTED BY	PHONE	ADDITIONAL REPORT
RICH CORNER	906-226-1353	TO ATTENTION OF
		AT (ADDRESS) (If different than above office)

OVERFLOW CONTRACT LAB (Required for ERD & CMI)
1ST CHOICE: 2ND CHOICE:

PRIMARY CONTACT & PHONE:
CORNER 906-226-1353

**** SAFETY INFORMATION REQUIRED ****
SEE BACK OF FORM

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	COMMENTS
1	Humbolt 1: CCI on FALL	4-17-01	~~9:41~~	9:41
2	Humbolt 2: CCI IMPC MIX	4-17-01	~~9:54~~	9:54
3	3 WASTE PILE	4-17-01	10:40	NOT small covered pile just large pile to South
4				
5				
6				
7				
8				
9				
10				

ORGANIC

VOA VOLATILES (624/8260)
Full List 1 2 3 4 5 6 7 8 9 10
BTEX/MTBE only 1 2 3 4 5 6 7 8 9 10

ON PESTICIDES/PCBS (608/8081/8082)
Pesticides & PCBs 1 2 3 4 5 6 7 8 9 10
Pesticides only 1 2 3 4 5 6 7 8 9 10
PCBs only 1 2 3 4 5 6 7 8 9 10
****** NPDES ONLY******
Scan 3 (NPDES Only) 1 2 3 4 5 6 7 8 9 10

BNA BASE NEUTRAL & ACIDS (625/8270)
BNAs 1 2 3 4 5 6 7 8 9 10
PNAs only 1 2 3 4 5 6 7 8 9 10
BNs only 1 2 3 4 5 6 7 8 9 10
ACIDs only 1 2 3 4 5 6 7 8 9 10

SPECIAL REQUESTS
Library Search (Qualitative)
Volatiles 1 2 3 4 5 6 7 8 9 10
Semivolatiles 1 2 3 4 5 6 7 8 9 10

GENERAL CHEMISTRY

DO Diss Oxygen 1 2 3 4 5 6 7 8 9 10

GN NO_3, o-Phos 1 2 3 4 5 6 7 8 9 10
Residue SS 1 2 3 4 5 6 7 8 9 10
Residue TDS 1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
BOD Tot 5 day 1 2 3 4 5 6 7 8 9 10
BOD Carb 5 day 1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10

CA Chlorophyll 1 2 3 4 5 6 7 8 9 10

GA COD 1 2 3 4 5 6 7 8 9 10
TOC 1 2 3 4 5 6 7 8 9 10
NO3 + NO2, NH3 1 2 3 4 5 6 7 8 9 10
KJEL N, Tot P 1 2 3 4 5 6 7 8 9 10

S Sulfide 1 2 3 4 5 6 7 8 9 10

GG Phenolics 1 2 3 4 5 6 7 8 9 10
GP Phenolics (prcps) 1 2 3 4 5 6 7 8 9 10

GB Total CN 1 2 3 4 5 6 7 8 9 10
Amenable CN 1 2 3 4 5 6 7 8 9 10

INORGANIC

MA Total Metals (1) (2) (3) 4 5 6 7 8 9 10
MAD Diss-Field Filtered 1 2 3 4 5 6 7 8 9 10
MD Diss-Lab Filtered 1 2 3 4 5 6 7 8 9 10

MICH TEN METALS (1) (2) (3) 4 5 6 7 8 9 10
(As, Ba, Cd, Cr, Cu, Pb, Hg, Se, Ag, Zn)
Fe Co Li Mn 1 2 3 4 5 6 7 8 9 10
Al Be Mo Tl V 1 2 3 4 5 6 7 8 9 10
B Sr 1 2 3 4 5 6 7 8 9 10
Ni - Nickel (1) (2) (3) 4 5 6 7 8 9 10
Sb - Antimony 1 2 3 4 5 6 7 8 9 10
Tl - Thallium 1 2 3 4 5 6 7 8 9 10
Ca Mg Na K 1 2 3 4 5 6 7 8 9 10
Hardness (1) (2) (3) 4 5 6 7 8 9 10

MN pH, Conductance 1 2 3 4 5 6 7 8 9 10
Cl, SO_4, Total Alk 1 2 3 4 5 6 7 8 9 10
HCO_3/CO_3 1 2 3 4 5 6 7 8 9 10
Cr^{+6} 1 2 3 4 5 6 7 8 9 10

OG Oil & Grease 1 2 3 4 5 6 7 8 9 10

Chain-of-Custody

RELEASED BY / AFFILIATION	RECEIVED BY / AFFILIATION	DATE & TIME
Print Name & Affiliation: FEDEX	Print Name & Affiliation: Kenneth L Morris	Date: 04/19/01
Signature:	Signature: Kenneth L Morris	Time: 12 30
Print Name & Affiliation:	Print Name & Affiliation:	Date:
Signature:	Signature:	Time:

See Safety Section "Back of Form"

Revised February 2001

A-6

Tier 3 Historical Data

Preliminary Hydrogeologic Investigation, October 1992
Sundberg, Carlson and Associates, Inc.
(Groundwater Results)

ROPES MILLING FACILITY

PRELIMINARY HYDROGEOLOGICAL INVESTIGATION

PREPARED FOR:

CALLAHAN MINING CORPORATION
Ropes Unit
4547 County Road 601
Champion, Michigan 49814-9767

October, 1992

PREPARED BY:

SUNDBERG, CARLSON AND ASSOCIATE, INC.
914 West Baraga Avenue
Marquette, Michigan 49855

SCA Project 90-384

SUNDBERG, CARLSON AND ASSOCIATES, INC.
ENVIRONMENTAL SERVICES DIVISION

SUMMARY OF BRIGHTON ANALYTICAL, INC. GROUNDWATER ANALYSES
SCA PROJECT #90-384

BTEX, EPA METHOD 602	7/31/92 MW-1	MW-2	MW-3	MW-4	8/16/91 MW-5	10/31/91 MW-6	1/16/92 MW-1-S1	MW-2-S1	TYPE B CLOSURE CONCENTRATIONS
Benzene	ND	2	ND	ND	20	2	ND	ND	1
Toluene	ND	1	3	ND	30	130	ND	ND	800
Ethylbenzene	ND	ND	ND	ND	120	ND	ND	ND	70
Xylenes	ND	ND	ND	ND	1800	ND	ND	ND	300

Notes: Concentrations expressed in parts per billion (ppb).
Type B Closure Concentrations are based on P.A. 307, as revised March 16, 1992.
ND = Non-Detect.

SUNDBERG, CARLSON AND ASSOCIATES, INC.
ENVIRONMENTAL SERVICES DIVISION

SUMMARY OF BRIGHTON ANALYTICAL, INC. GROUNDWATER ANALYSES
SCA PROJECT #90-384

	1/16/92						3/19/92		
BTEX, EPA METHOD 602	MW-3-S1	MW-4-S1	MW-5-S1	MW-6-S1	MW-7-S1	MW-9-S1	00011 MW-10		TYPE B CLOSURE CONCENTRATIONS
Benzene	ND	ND	3	ND	ND	ND	ND		1
Toluene	ND	ND	5	ND	ND	ND	1		800
Ethylbenzene	ND	ND	20	ND	ND	ND	ND		70
Xylenes	ND	ND	320	ND	ND	ND	3		300

Notes: Concentrations expressed in parts per billion (ppb).
Type B Closure Concentrations are based on P.A. 307, as revised March 16, 1992.
ND = Non-Detect.

SUNDBERG, CARLSON AND ASSOCIATES, INC.
ENVIRONMENTAL SERVICES DIVISION

SUMMARY OF BRIGHTON ANALYTICAL, INC. GROUNDWATER ANALYSES
SCA PROJECT #90-384

POLYNUCLEAR AROMATIC HYDROCARBONS (PNA) EPA METHOD 8310	7/31/91				8/16/91	10/31/91	1/16/92		TYPE B CLOSURE CONCENTRATIONS
	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-1-S2	MW-2-S2	
Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	400
Acenaphthylene	ND	ND	ND	ND	30	ND	ND	ND	5
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	2,000
Benzo (a) anthracene	ND	ND	ND	ND	ND	ND	ND	ND	5
Benzo (b) flouranthene	ND	ND	ND	ND	ND	ND	ND	ND	5
Benzo (k) flouranthene	ND	ND	ND	ND	ND	ND	ND	ND	5
Benzo (a) pyrene	ND	ND	ND	ND	ND	ND	ND	ND	5
Benzo (g,h,i) perylene	ND	ND	ND	ND	ND	ND	ND	ND	5
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	5
Dibenzo (a,h) anthracene	ND	ND	ND	ND	ND	ND	ND	ND	300
Flouranthene	ND	ND	ND	ND	5	ND	ND	ND	300
Flourene	ND	ND	ND	ND	ND	ND	ND	ND	5
Indeno (1,2,3-cd) pyrene	ND	ND	ND	ND	83	ND	ND	ND	29
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	5
Phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND	200
Pyrene									

Notes: Concentrations expessed in parts per billion (ppb)
Type B Closure Concentrations are based on P.A. 307, as revised March 16, 1992.
ND = Non-Detect.

SUNDBERG, CARLSON AND ASSOCIATES, INC.
ENVIRONMENTAL SERVICES DIVISION

SUMMARY OF BRIGHTON ANALYTICAL, INC. GROUNDWATER ANALYSES
SCA PROJECT #90-384

POLYNUCLEAR AROMATIC HYDROCARBONS (PNA) EPA METHOD 8310	1/16/92						3/19/92		TYPE B CLOSURE CONCENTRATIONS
	MW-3-S2	MW-4-S2	MW-5-S2	MW-6-S2	MW-7-S2	MW-9-S2	00011 MW-10		
Acenaphthene	ND	ND	300	ND	ND	ND	ND		400
Acenaphthylene	ND	ND	24	ND	ND	10	ND		5
Anthracene	ND	ND	ND	ND	ND	ND	ND		2,000
Benzo (a) anthracene	ND	ND	ND	ND	ND	ND	ND		5
Benzo (b) flouranthene	ND	ND	ND	ND	ND	ND	ND		5
Benzo (k) flouranthene	ND	ND	ND	ND	ND	ND	ND		5
Benzo (a) pyrene	ND	ND	ND	ND	ND	ND	ND		5
Benzo (g,h,i) perylene	ND	ND	ND	ND	ND	ND	ND		5
Chrysene	ND	ND	ND	ND	ND	ND	ND		5
Dibenzo (a,h) anthracene	ND	ND	ND	ND	ND	ND	ND		5
Flouranthene	ND	ND	ND	ND	ND	5	ND		300
Flourene	ND	ND	14	ND	ND	ND	ND		300
Indeno (1,2,3-cd) pyrene	ND	ND	ND	ND	ND	ND	ND		5
Naphthalene	ND	ND	50	ND	ND	8	ND		29
Phenanthrene	ND	ND	ND	ND	ND	ND	ND		5
Pyrene	ND	ND	ND	ND	ND	ND	ND		200

Notes: Concentrations expessed in parts per billion (ppb)
Type B Closure Concentrations are based on P.A. 307, as revised March 16, 1992.
ND = Non-Detect.

Ropes Closure Document
Leach Residue and Fe Ore Stockpile TCLP, November 1995
Callahan Mining Corporation

ROPES CLOSURE DOCUMENT

Prepared by
Callahan Mining Corporation

Submitted to
Michigan Department of Natural Resources

November 3, 1995

TABLE 1

HUMBOLDT MILL
LEACH RESIDUE AND IRON ORE STOCKPILE
TCLP CRITERIA (mg/l)*

PARAMETER	LEACH RESIDUE	IRON ORE STOCKPILE	TCLP CRITERIA
Arsenic	0.013	0.105	5.0
Barium	<0.10	0.16	100.0
Cadmium	0.032	0.027	1.0
Chromium	<0.10	0.10	5.0
Lead	0.21	<0.10	5.0
Mercury	<0.0005	<0.0005	0.2
Selenium	<0.010	<0.005	1.0
Silver	0.019	<0.005	5.0

* All data results are represented as mg/l.

Characterization and Remedial Alternatives for Groundwater, January 1996 Callahan Mining Corporation (Groundwater Results)

CHARACTERIZATION and REMEDIAL ALTERNATIVES for GROUND WATER HUMBOLDT MILL FACILITIES



CALLAHAN MINING CORPORATION

January 12, 1996

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-1

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As ↓	0.0072	<0.002	<0.002	<0.003	0.05	0.05
Ba	0.052	0.011	0.085	0.035	2.0	2.0
Cd	<0.005	<0.0005	<0.0005	0.0006	0.005	0.005
Cr	<0.01	0.0018	0.002	0.0008	0.1	0.1
Cu	<0.01	<0.001	0.003	0.008	4.0	1.0
Fe ↓	21	0.32	4.5	0.16	ID	0.3
Pb ↓	0.023	<0.001	<0.001	0.003	0.004	0.05
Mn ↓	9.4	0.31	7.0	2.3	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni ↓	0.21	0.0092	0.15	0.028	0.1	0.1
Se	<0.002	<0.002	0.002	<0.002	0.05	0.05
Ag	<0.005	<0.001	<0.001	<0.0005	0.098	0.1
Na	16	2.1	19	7.7	--	--
Zn	0.06	0.038	0.023	0.11	6.9	5.0

MW-2

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As ↓	0.0053	0.002	<0.002	<0.003	0.05	0.05
Ba	0.049	0.036	0.067	0.033	2.0	2.0
Cd	<0.005	<0.0005	<0.0005	0.0005	0.005	0.005
Cr	<0.01	0.0023	0.002	0.001	0.1	0.1
Cu	<0.01	<0.001	0.004	0.005	4.0	1.0
Fe ↓	1.6	0.26	0.066	0.5	ID	0.3
Pb	<0.001	<0.001	<0.001	<0.002	0.004	0.05
Mn	6.0	4.4	2.3	5.1	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni ↓	0.06	0.036	0.018	0.014	0.1	0.1
Se	<0.002	<0.002	<0.002	<0.002	0.05	0.05
Ag	<0.005	<0.001	<0.001	<0.0005	0.098	0.1
Na	27	16	39	13	--	--
Zn	0.03	0.029	0.006	0.024	6.9	5.0

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-3

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	0.0048	dry	<0.002	<0.003	0.05	0.05
Ba	0.095	dry	0.06	0.088	2.0	2.0
Cd	<0.005	dry	<0.0005	0.001	0.005	0.005
Cr	<0.01	dry	0.001	0.002	0.1	0.1
Cu	<0.01	dry	0.008	0.005	4.0	1.0
Fe	0.45	dry	0.17	0.25	ID	0.3
Pb	0.012	dry	<0.001	0.003	0.004	0.05
Mn	1.9	dry	0.07	0.46	0.5	0.05
Hg	<0.0002	dry	<0.0002	<0.0002	0.002	0.002
Ni	0.09	dry	0.028	0.077	0.1	0.1
Se	<0.002	dry	<0.002	<0.002	0.05	0.05
Ag	<0.005	dry	<0.001	0.0006	0.098	0.1
Na	5.5	dry	3.1	4.8	--	--
Zn	0.68	dry	0.36	0.59	6.9	5.0

MW-4

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	0.018	0.046	<0.002	<0.003	0.05	0.05
Ba	0.064	0.057	0.06	0.034	2.0	2.0
Cd	0.026	0.036	0.041	0.009	0.005	0.005
Cr	<0.01	0.0048	0.002	0.005	0.1	0.1
Cu	<0.01	<0.001	0.004	0.09	4.0	1.0
Fe	250	220	410	62	ID	0.3
Pb	<0.001	0.024	0.024	0.017	0.004	0.05
Mn	64	41	45	50	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni	2.2	1.9	1.5	1.8	0.1	0.1
Se	<0.002	<0.002	<0.002	0.014	0.05	0.05
Ag	<0.005	0.0024	0.003	0.003	0.098	0.1
Na	33	30	39	31	--	--
Zn	0.45	0.47	0.28	0.80	6.9	5.0

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-5

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	0.074	0.094	0.14	0.039	0.05	0.05
Ba	0.26	0.22	0.28	0.18	2.0	2.0
Cd	0.005	0.022	0.03	0.013	0.005	0.005
Cr	<0.01	0.013	0.014	0.01	0.1	0.1
Cu	<0.01	<0.001	<0.001	0.002	4.0	1.0
Fe	200	140	300	140	ID	0.3
Pb	0.0012	0.013	0.014	0.013	0.004	0.05
Mn	6.1	6.1	6.7	5.6	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni	0.03	0.057	0.06	0.02	0.1	0.1
Se	<0.002	<0.002	<0.002	<0.002	0.05	0.05
Ag	<0.005	<0.001	<0.001	0.0006	0.098	0.1
Na	120	100	140	110	--	--
Zn	0.05	<0.001	<0.001	<0.009	6.9	5.0

MW-6

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	dry	dry	dry	<0.003	0.05	0.05
Ba	dry	dry	dry	0.048	2.0	2.0
Cd	dry	dry	dry	0.021	0.005	0.005
Cr	dry	dry	dry	0.005	0.1	0.1
Cu	dry	dry	dry	0.22	4.0	1.0
Fe	dry	dry	dry	210	ID	0.3
Pb	dry	dry	dry	0.017	0.004	0.05
Mn	dry	dry	dry	24	0.5	0.05
Hg	dry	dry	dry	<0.0002	0.002	0.002
Ni	dry	dry	dry	0.34	0.1	0.1
Se	dry	dry	dry	<0.002	0.05	0.05
Ag	dry	dry	dry	0.001	0.098	0.1
Na	dry	dry	dry	61	--	--
Zn	dry	dry	dry	0.22	6.9	5.0

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-7

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	0.0077	0.002	<0.002	0.007	0.05	0.05
Ba	0.021	0.023	0.018	0.018	2.0	2.0
Cd	0.042	0.026	0.020	0.028	0.005	0.005
Cr	<0.01	0.0051	0.004	0.007	0.1	0.1
Cu	<0.01	0.0059	0.004	0.022	4.0	1.0
Fe	170	160	190	150	ID	0.3
Pb	<0.002	0.018	0.011	0.017	0.004	0.05
Mn	76	40	35	57	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni	3.9	1.7	1.1	3.2	0.1	0.1
Se	<0.002	<0.002	<0.002	<0.002	0.05	0.05
Ag	<0.005	0.0019	0.003	0.002	0.098	0.1
Na	14	22	21	13	--	--
Zn	1.2	0.70	0.25	1.2	6.9	5.0

MW-9

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	<0.002	<0.002	<0.002	0.003	0.05	0.05
Ba	0.028	0.031	0.037	0.028	2.0	2.0
Cd	<0.005	<0.0005	<0.0005	0.0005	0.005	0.005
Cr	<0.01	0.0030	<0.001	0.001	0.1	0.1
Cu	<0.01	0.0022	0.003	0.002	4.0	1.0
Fe	0.12	0.10	0.15	3.3	ID	0.3
Pb	<0.001	<0.001	<0.001	0.003	0.004	0.05
Mn	0.21	0.66	0.22	0.23	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni	0.02	0.025	0.021	<0.0005	0.1	0.1
Se	<0.002	<0.002	<0.002	<0.002	0.05	0.05
Ag	<0.005	<0.001	0.002	<0.0005	0.098	0.1
Na	25	20	29	2.0	--	--
Zn	0.01	0.033	0.007	0.037	6.9	5.0

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-10

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	0.0048	0.0036	0.003	<0.003	0.05	0.05
Ba	0.056	0.042	0.043	0.044	2.0	2.0
Cd	<0.005	0.0025	<0.0005	0.006	0.005	0.005
Cr	<0.01	0.0076	0.002	0.003	0.1	0.1
Cu	<0.01	0.0027	0.001	0.009	4.0	1.0
Fe	18	20	0.33	10	ID	0.3
Pb	<0.001	0.0048	<0.001	0.007	0.004	0.05
Mn	23	35	30	36	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni	0.03	0.049	0.039	0.13	0.1	0.1
Se	<0.002	0.0047	0.007	0.014	0.05	0.05
Ag	<0.005	<0.001	0.002	0.003	0.098	0.1
Na	24	26	27	31	--	--
Zn	0.19	0.060	0.33	0.29	6.9	5.0

MW-11

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	0.0064	0.0068	0.013	<0.003	0.05	0.05
Ba	0.12	0.11	0.11	0.14	2.0	2.0
Cd	<0.005	0.016	0.019	0.013	0.005	0.005
Cr	<0.01	0.012	0.013	0.010	0.1	0.1
Cu	<0.01	0.0011	0.088	0.004	4.0	1.0
Fe	140	120	190	140	ID	0.3
Pb	0.0034	0.013	0.011	0.012	0.004	0.05
Mn	7.8	6.6	6.2	8.6	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni	<0.01	0.012	0.004	0.002	0.1	0.1
Se	<0.002	<0.002	<0.002	<0.002	0.05	0.05
Ag	<0.005	<0.001	<0.001	0.0008	0.098	0.1
Na	210	180	2.0	160	--	--
Zn	0.06	<0.001	<0.001	<0.009	6.9	5.0

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-12

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	0.0069	0.0064	<0.002	<0.003	0.05	0.05
Ba	0.033	0.024	0.030	0.030	2.0	2.0
Cd	<0.005	<0.0005	<0.0005	0.0005	0.005	0.005
Cr	<0.01	0.0027	0.002	0.001	0.1	0.1
Cu	<0.01	0.0013	0.034	0.009	4.0	1.0
Fe	7.4	5.5	1.8	1.9	ID	0.3
Pb	<0.001	<0.001	<0.001	<0.002	0.004	0.05
Mn	1.0	0.99	1.5	1.1	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni	<0.01	0.0011	0.002	0.001	0.1	0.1
Se	<0.002	<0.002	<0.002	0.002	0.05	0.05
Ag	<0.005	<0.001	<0.001	<0.0005	0.098	0.1
Na	5.7	4.8	5.5	5.8	--	--
Zn	0.01	0.031	0.008	0.026	6.9	5.0

Potable

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As	0.0026	0.002	<0.002	<0.003	0.05	0.05
Ba	0.018	0.011	0.018	0.027	2.0	2.0
Cd	<0.005	<0.0005	<0.0005	0.0009	0.005	0.005
Cr	<0.01	0.0021	<0.001	0.002	0.1	0.1
Cu	<0.01	0.078	0.003	0.011	4.0	1.0
Fe	0.27	0.038	0.15	0.48	ID	0.3
Pb	0.0024	<0.001	<0.001	0.004	0.004	0.05
Mn	3.8	0.25	4.3	3.3	0.5	0.05
Hg	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.002
Ni	0.01	<0.0005	0.003	0.004	0.1	0.1
Se	<0.002	<0.002	<0.002	<0.002	0.05	0.05
Ag	<0.005	<0.001	<0.001	<0.0005	0.098	0.1
Na	5.1	19	4.5	3.9	--	--
Zn	0.02	0.023	0.028	0.064	6.9	5.0

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-101

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As			0.006	0.005	0.05	0.05
Ba			0.056	0.067	2.0	2.0
Cd			0.0007	0.0005	0.005	0.005
Cr			0.003	0.003	0.1	0.1
Cu				0.009	4.0	1.0
Fe			5.5	5.2	ID	0.3
Pb			<0.001	0.004	0.004	0.05
Mn			8.4	12	0.5	0.05
Hg			<0.0002	<0.0002	0.002	0.002
Ni			0.001	<0.0005	0.1	0.1
Se			<0.002	0.007	0.05	0.05
Ag			0.002	0.001	0.098	0.1
Na			3.6	3.4	--	--
Zn			0.013	0.029	6.9	5.0

MW-102

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As			<0.002	<0.003	0.05	0.05
Ba			0.036	0.062	2.0	2.0
Cd			0.13	0.11	0.005	0.005
Cr			<0.001	<0.0005	0.1	0.1
Cu				<0.0008	4.0	1.0
Fe			440	690	ID	0.3
Pb			0.068	0.069	0.004	0.05
Mn			25	27	0.5	0.05
Hg			<0.0002	<0.0002	0.002	0.002
Ni			1.6	2.5	0.1	0.1
Se			<0.002	<0.002	0.05	0.05
Ag			0.002	0.003	0.098	0.1
Na			220	190	--	--
Zn			<0.001	<0.009	6.9	5.0

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-103

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As			<0.002	<0.003	0.05	0.05
Ba			0.060	0.062	2.0	2.0
Cd			0.0006	0.002	0.005	0.005
Cr			0.002	0.002	0.1	0.1
Cu				0.005	4.0	1.0
Fe			2.8	23	ID	0.3
Pb			<0.001	0.003	0.004	0.05
Mn			4.2	5.8	0.5	0.05
Hg			<0.0002	<0.0002	0.002	0.002
Ni			0.002	0.008	0.1	0.1
Se			<0.002	<0.008	0.05	0.05
Ag			<0.001	0.0006	0.098	0.1
Na			18	13	--	--
Zn			0.22	<0.009	6.9	5.0

MW-104

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As			0.008	0.011	0.05	0.05
Ba			0.21	0.17	2.0	2.0
Cd			0.006	0.006	0.005	0.005
Cr			0.002	0.003	0.1	0.1
Cu				0.004	4.0	1.0
Fe			41	65	ID	0.3
Pb			0.004	0.007	0.004	0.05
Mn			5.7	4.6	0.5	0.05
Hg			<0.0002	<0.0002	0.002	0.002
Ni			0.022	0.024	0.1	0.1
Se			<0.002	<0.002	0.05	0.05
Ag			<0.001	0.001	0.098	0.1
Na			14	19	--	--
Zn			0.025	<0.009	6.9	5.0

Humboldt Mill Facility - Ropes Project

Groundwater Sampling Data

Dissolved Concentrations as mg/l (ppm)

MW-105

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As			<0.002	<0.003	0.05	0.05
Ba			0.038	0.038	2.0	2.0
Cd			<0.0005	0.0009	0.005	0.005
Cr			0.002	0.002	0.1	0.1
Cu				0.007	4.0	1.0
Fe			2.7	11	ID	0.3
Pb			<0.001	0.004	0.004	0.05
Mn			1.4	1.2	0.5	0.05
Hg			<0.0002	<0.0002	0.002	0.002
Ni			0.004	<0.0005	0.1	0.1
Se			0.002	<0.002	0.05	0.05
Ag			<0.001	<0.0005	0.098	0.1
Na			7.8	5.4	--	--
Zn			0.013	0.029	6.9	5.0

MW-106

Parameter	6/2/95	9/18/95	11/7/95	6/5/96	Tier I	EPA
As			<0.002	<0.003	0.05	0.05
Ba			0.063	0.050	2.0	2.0
Cd			<0.0005	0.0006	0.005	0.005
Cr			0.003	0.001	0.1	0.1
Cu				0.009	4.0	1.0
Fe			0.52	0.44	ID	0.3
Pb			<0.001	<0.002	0.004	0.05
Mn			7.6	3.5	0.5	0.05
Hg			<0.0002	<0.0002	0.002	0.002
Ni			0.011	0.014	0.1	0.1
Se			0.006	0.003	0.05	0.05
Ag			0.001	<0.0005	0.098	0.1
Na			21	9.2	--	--
Zn			0.020	0.039	6.9	5.0

June 6, 1996 Sampling Event
Dissolved Concentrations as mg/l

Parameter	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-9	MW-10	MW-11	MW-12	MW-101	MW-102	MW-103	MW-104	MW-105	MW-106
As	<0.003	<0.003	<0.003	<0.003	0.039	<0.003	0.007	0.003	<0.003	<0.003	<0.003	0.005	<0.003	<0.003	*0.011*	<0.003	<0.003
Ba	0.035	0.033	0.088	0.034	0.18	0.048	0.018	0.028	0.044	0.14	0.030	0.067	0.062	0.062	*0.17*	0.038	0.050
Cd	0.0006	0.0005	0.001	0.009	0.013	*0.021*	0.028	0.0005	0.006	0.013	0.0005	0.0005	0.11	0.002	0.006	0.0009	0.0006
Cr	0.0008	0.001	0.002	0.005	0.01	0.005	*0.007*	0.001	0.003	0.010	0.001	0.003	<0.0005	0.002	0.003	0.002	0.001
Cu	0.008	0.005	0.005	*0.09*	0.002	0.22	0.022	0.002	0.009	0.004	0.009	0.009	<0.0008	0.005	0.004	0.007	0.009
Fe	0.16	0.5	0.25	62	140	*210*	150	3.3	10	140	1.9	5.2	690	23	65	11	0.44
Pb	0.003	<0.002	0.003	*0.017*	0.013	0.017	*0.017*	0.003	0.007	0.012	<0.002	0.004	0.069	0.003	0.007	0.004	<0.002
Mn	2.3	5.1	0.46	*50*	5.6	24	57	0.23	36	8.6	1.1	12	27	5.8	4.6	1.2	3.5
Hg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Ni	0.028	0.014	0.077	1.8	0.02	0.34	3.2	<0.0005	0.13	0.002	0.001	<0.0005	*2.5*	0.008	0.024	<0.0005	0.014
Se	<0.002	<0.002	<0.002	0.014	<0.002	<0.002	<0.002	<0.002	0.014	<0.002	0.002	*0.007*	<0.002	<0.008	<0.002	<0.002	0.003
Ag	<0.0005	<0.0005	0.0006	0.003	0.0006	0.001	0.002	<0.0005	0.003	0.0008	<0.0005	0.001	0.003	0.0006	0.001	<0.0005	<0.0005
Na	7.7	13	4.8	31	110	61	13	2.0	31	*160*	5.8	3.4	190	13	19	5.4	9.2
Zn	0.11	0.024	*0.59*	0.80	<0.009	0.22	1.2	0.037	0.29	<0.009	0.026	0.029	<0.009	<0.009	<0.009	0.029	0.039

Baseline Environmental Assessment
Investigation Report, January 1996
Sundberg, Carlson and Associates, Inc.
(Groundwater, Soil and TCLP Results)

BASELINE ENVIRONMENTAL ASSESSMENT INVESTIGATION REPORT FORMER ROPES MILLING PLANT PROPERTY 4547 COUNTY ROAD 601 CHAMPION, MICHIGAN

Prepared for:

MINERALS PROCESSING CORPORATION
4547 County Road 601
Champion, Michigan 49814

January, 1996

Prepared by:

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A Division of Sundberg, Carlson and Associates, Inc.
307 South Front Street
Marquette, Michigan 49855

SCA Project 95-565

Table 7: Former Scale Area

Soil	Location	Scale #1	Generic	Generic
	Date	11/07/95	Residential	Industrial
	Sample No.	6347	Criteria*	Criteria**
Arsenic	mg/kg	8	1	83
Barium	mg/kg	46	40	3.2E+05
Cadmium	mg/kg	1.2	0.1	2,300
Chromium	mg/kg	100	2	22,000
Copper	mg/kg	100	20	1.7E+05
Iron	mg/kg	46000	6	ID
Lead	mg/kg	31	0.08	400
Manganese	mg/kg	900	1000	22,000
Mercury	mg/kg	(0.1)	0.04	1,400
Nickel	mg/kg	140	2	3.4E+05
Selenium	mg/kg	(0.5)	1	23,000
Silver	mg/kg	2.3	0.68	21,000
Zinc	mg/kg	120	48	1.0E+06

Bold type denotes concentrations exceeding residential clean up criteria

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

ID = No criterion developed due to inadequate data

* Generic Residential Criteria for soil are twenty (20) times the drinking water values from MDNR Operational Memorandum No. 8, Revision 4, dated June 5, 1995.

**Generic Industrial Criteria for soil are direct contact values from MDNR Operational Memorandum No. 14, dated June 6, 1995.

Table 6: Process Area

Test Pit TCLP

TCLP Metals Analyses	Location / Date / Sample No.	Test Pit 17 10/26/95 6063	Test Pit 34 10/26/95 6064	Stock Pile 10/26/95 6065	Regulatory Limit for Leachate
Arsenic (GFAA)	mg/L	(0.05)	(0.05)	(0.05)	5
Barium (ICAP)	mg/L	0.12	0.16	0.091	100
Cadmium (GFAA)	mg/L	(0.005)	(0.005)	(0.005)	1
Chromium (Total) (ICAP)	mg/L	0.2	(0.05)	0.22	5
Copper (ICAP)	mg/L	0.35	(0.1)	0.73	100
Iron (ICAP)	mg/L	2.4	0.14	3.4	NA
Lead (GFAA)	mg/L	(0.05)	(0.05)	(0.05)	5
Manganese (ICAP)	mg/L	0.62	0.13	1.0	NA
Mercury (Cold Vapor)	mg/L	(0.0002)	(0.0002)	(0.0002)	0.2
Nickel (ICAP)	mg/L	1.2	0.65	3.8	NA
Selenium (GFAA)	mg/L	(0.1)	(0.1)	(0.1)	1
Silver (GFAA)	mg/L	(0.005)	(0.005)	(0.005)	5
Zinc (ICAP)	mg/L	0.7	0.16	1.4	500
pH (Laboratory)		2.8	3.2	2.7	NA

Test Pit Soil

Non-metallic Inorganic Analysis	Location / Date / Sample No.	Test Pit 17 10/26/95 6063	Test Pit 34 10/26/95 6064	Stock Pile 10/26/95 6065	Residential Soil Criteria***	Industrial Soil Criteria****
Cyanide, Total	mg/kg	6.6	0.9	10.5	4	99,000

Bold type denotes concentrations exceeding residential clean up criteria

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)
NA = Not applicable
ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995. Health based values are shown except for copper, and manganese, for which aesthetic values are given.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995. See note for Residential Values. In addition, the aesthetic value is shown for zinc.

Groundwater

Dissolved Metals Analyses	Location / Date / Sample No.	MW-101 10/26/95 6057	MW-102 10/26/95 6058	MW-103 10/26/95 6059	MW-105 10/26/95 6061	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
Arsenic (GFAA)	mg/L	(0.005)	(0.005)	(0.005)	(0.005)	0.05	0.05
Barium (ICAP)	mg/L	(0.2)	(0.2)	(0.2)	(0.2)	2	2
Cadmium (GFAA)	mg/L	(0.0005)	(0.0005)	(0.0005)	(0.0005)	0.005	0.005
Chromium (Total) (ICAP)	mg/L	(0.05)	(0.05)	(0.05)	(0.05)	0.1	0.1
Copper (ICAP)	mg/L	(0.025)	(0.025)	(0.025)	(0.025)	1	1
Iron (ICAP)	mg/L	1.0	390	34	9.4	ID	ID
Lead (GFAA)	mg/L	(0.003)	(0.003)	(0.003)	(0.003)	0.004	0.004
Manganese (ICAP)	mg/L	5.8	22	3.2	1.2	0.05	0.05
Mercury (Cold Vapor)	mg/L	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)	mg/L	(0.05)	1.4	(0.05)	(0.05)	0.1	0.1
Selenium (GFAA)	mg/L	(0.005)	(0.005)	(0.005)	(0.005)	0.05	0.05
Silver (GFAA)	mg/L	(0.0005)	(0.0005)	(0.0005)	(0.0005)	0.034	0.098
Zinc (ICAP)	mg/L	(0.02)	0.22	0.02	(0.02)	2.4	5
Non-metallic Inorganic Analysis							
Cyanide, Total	mg/L	(0.005)	0.083	0.023	(0.005)	0.200	0.200
Polychlorinated Biphenyls (PCBs)							
Aroclor - 1016 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5
Aroclor - 1221 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5
Aroclor - 1232 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5
Aroclor - 1242 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5
Aroclor - 1248 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5
Aroclor - 1254 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5
Aroclor - 1260 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5
Aroclor - 1262 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5
Aroclor - 1268 (J)	µg/l	(0.2)	(0.2)	(0.2)	(0.2)	0.5	0.5

Bold type denotes concentrations exceeding residential clean up criteria

Baseline Environmental Assessment Investigation Report
Sundberg, Carlson and Associates, Inc.
(Surface Water Results)

BASELINE ENVIRONMENTAL ASSESSMENT
INVESTIGATION REPORT
FORMER ROPES MILLING PLANT PROPERTY
4547 COUNTY ROAD 601
CHAMPION, MICHIGAN

Prepared for:

MINERALS PROCESSING CORPORATION
4547 County Road 601
Champion, Michigan 49814

January, 1996

Prepared by:

SCA ENVIRONMENTAL
A Division of Sundberg, Carlson and Associates, Inc.
307 South Front Street
Marquette, Michigan 49855

SCA Project 95-565

Table 4: Surface Water - Hydrocarbon and PCB Analyses

Surface Water	Location	Pyrite Pad	Conv.
	Date	11/07/95	11/07/95
Purgeable Halocarbons	Sample No.	6352	6353
Dichlordifluoromethane	µg/L	(1)	(1)
Chloromethane	µg/L	(1)	(1)
Vinyl Chloride	µg/L	(1)	(1)
Bromomethane	µg/L	(1)	(1)
Chloroethane	µg/L	(1)	(1)
Trichlorofluoromethane	µg/L	(1)	(1)
2-Chloroethyl Vinyl Ether	µg/L	(1)	(1)
1,1-Dichloroethene	µg/L	(1)	(1)
Methylene Chloride (S)	µg/L	(1)	(1)
trans-1,2-Dichloroethene	µg/L	(1)	(1)
1,1-Dichloroethane	µg/L	(1)	(1)
Chloroform	µg/L	(1)	(1)
1,1,1-Trichloroethane	µg/L	(1)	(1)
Carbon tetrachloride	µg/L	(1)	(1)
1,2-Dichloroethane	µg/L	(1)	(1)
cis-1,3-Dichloropropene (J)	µg/L	(1)	(1)
Trichloroethene	µg/L	(1)	(1)
1,2-Dichloropropane	µg/L	(1)	(1)
Bromodichloromethane (S)	µg/L	(1)	(1)
Tetrachloroethene	µg/L	(1)	(1)
trans-1,3-Dichloropropene (J)	µg/L	(1)	(1)
1,1,2-Trichloroethane	µg/L	(1)	(1)
Dibromochloromethane (S)	µg/L	(1)	(1)
Chlorobenzene (S)	µg/L	(1)	(1)
Bromoform (S)	µg/L	(1)	(1)
1,1,2,2-Tetrachloroethane	µg/L	(1)	(1)
1,3-Dichlorobenzene	µg/L	(1)	(1)
1,4-Dichlorobenzene	µg/L	(1)	(1)
1,2-Dichlorobenzene	µg/L	(1)	(1)

Surface Water	Location	Pyrite Pad	Conv.
	Date	11/07/95	11/07/95
Volatile Aromatics	Sample No.	6352	6353
Benzene	µg/L	ND	ND
Toluene	µg/L	ND	ND
Ethylbenzene	µg/L	ND	ND
Xylenes	µg/L	ND	ND
Polynuclear Aromatic Hydrocarbons			
Benzo (a) anthracene	µg/L	ND	ND
Benzo (a) pyrene	µg/L	ND	ND
Benzo (b) fluoranthene	µg/L	ND	ND
Benzo (g,h,i) perylene	µg/L	ND	ND
Benzo (k) fluoranthene	µg/L	ND	ND
Dibenzo (a,h) anthracene	µg/L	ND	ND
Indeno (1,2,3-cd) pyrene	µg/L	ND	ND
Naphthalene	µg/L	ND	ND
Acenaphthene	µg/L	ND	ND
Acenaphthylene	µg/L	ND	ND
Fluorene	µg/L	ND	ND
Phenanthrene	µg/L	ND	ND
Anthracene	µg/L	ND	ND
Fluoranthene	µg/L	ND	ND
Pyrene	µg/L	ND	ND
Chrysene	µg/L	ND	ND
Polychlorinated Biphenyls (PCBs)			
Aroclor - 1016 (J)	µg/L	(2)	(0.1)
Aroclor - 1221 (J)	µg/L	(2)	(0.1)
Aroclor - 1232 (J)	µg/L	(2)	(0.1)
Aroclor - 1242 (J)	µg/L	(2)	(0.1)
Aroclor - 1248 (J)	µg/L	(2)	(0.1)
Aroclor - 1254 (J)	µg/L	(2)	(0.1)
Aroclor - 1260 (J)	µg/L	(2)	(0.1)
Aroclor - 1262 (J)	µg/L	(2)	(0.1)
Aroclor - 1268 (J)	µg/L	(2)	(0.1)

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

ID = No criterion developed due to inadequate data

Table 4: Surface Water - Metals Analyses

Surface Water	Location	Pyrite Pad	Conv.
	Date	11/07/95	11/07/95
Dissolved Metals Analyses	Sample No.	6352	6353
Arsenic (GFAA)	mg/l	(0.003)	0.066
Barium (ICAP)	mg/l	0.07	0.007
Cadmium (Total)	mg/l	0.0011	0.015
Chromium (Total) (ICAP)	mg/l	0.007	0.53
Copper (ICAP)	mg/l	0.016	2.2
Iron (ICAP)	mg/l	1.8	380
Lead (GFAA)	mg/l	0.003	0.006
Manganese (ICAP)	mg/l	3.1	8.3
Mercury (Cold Vapor)	mg/l	0.0028	(0.0002)
Nickel (ICAP)	mg/l	1.3	2.3
Selenium (GFAA)	mg/l	(0.005)	(0.005)
Silver (GFAA)	mg/l	(0.0005)	(0.0005)
Zinc (ICAP)	mg/l	0.1	1.4

Intermittent Stream	Location	SW-1	SW-2	SW-3
	Date	11/07/95	11/07/95	11/07/95
Dissolved Metals Analyses	Sample No.	6354	6355	6356
Arsenic (GFAA)	mg/l	0.24	0.2	0.019
Barium (ICAP)	mg/l	ND	ND	ND
Cadmium (Total)	mg/l	0.01	0.007	0.0034
Chromium (Total) (ICAP)	mg/l	0.44	0.26	0.008
Copper (ICAP)	mg/l	1.2	0.21	0.29
Iron (ICAP)	mg/l	290	200	54
Lead (GFAA)	mg/l	0.008	0.014	0.005
Manganese (ICAP)	mg/l	3.3	1.6	0.67
Mercury (Cold Vapor)	mg/l	ND	ND	ND
Nickel (ICAP)	mg/l	1.6	1.1	0.38
Selenium (GFAA)	mg/l	ND	ND	ND
Silver (GFAA)	mg/l	ND	ND	ND
Zinc (ICAP)	mg/l	3.5	1.4	0.99
Total Metals Analyses				
Arsenic (GFAA)		0.33	0.25	0.062
Barium (ICAP)		0.007	0.005	0.008
Cadmium (Total)		0.012	0.0046	0.0037
Chromium (Total) (ICAP)		0.52	0.17	0.076
Copper (ICAP)		1.4	0.48	0.25
Iron (ICAP)		290	120	51
Lead (GFAA)		0.021	0.004	0.005
Manganese (ICAP)		4.2	1.1	0.61
Mercury (Cold Vapor)		ND	ND	ND
Nickel (ICAP)		2	0.66	0.33
Selenium (GFAA)		ND	ND	ND
Silver (GFAA)		0.0008	ND	ND
Zinc (ICAP)		3	0.99	0.84

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

Table 1
Analytical Parameters

Sample Number	Sample Location	Sample Matrix	BTEX	PNAs	Solvents	PCBs	Cyanide (Total)	Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Nickel	Selenium	Silver	Zinc	pH
6055	WO-100	Soil																			
6054	WO-101	Soil																			
6056	WO-102	Soil																			
5571	WO-104	Soil																			
6066	MW-106	Soil																			
6057	MW-101	Water																			
6058	MW-102	Water																			
6059	MW-103	Water																			
6060	MW-104	Water																			
6061	MW-105	Water																			
6062	MW-106	Water																			
6063	Test Pit 17	Soil																			
6064	Test Pit 34	Soil										TCLP analyses									
6065	Stockpile	Soil																			
6347	Scale #1	Soil																			
6352	Pyrite Pad	Surface																			
6353	Conveyor	Surface																			
6354	SW-1	Surface																			
6355	SW-2	Surface										Total and dissolved metals									
6356	SW-3	Surface																			

Baseline Environmental Assessment Investigation Report
Sundberg, Carlson and Associates, Inc., January 1996
(Soil, Groundwater, PCBs)

BASELINE ENVIRONMENTAL ASSESSMENT

Conducted Pursuant to Section 20126(1)(c)
of 1994 PA 451, Part 201, as amended

Volume 1 of 3

FORMER ROPES MILLING PLANT PROPERTY
4547 COUNTY ROAD 601
CHAMPION, MICHIGAN

Prepared for:

MINERALS PROCESSING CORPORATION
4547 County Road 601
Champion, Michigan 49814

January, 1996

Prepared by:

SCA ENVIRONMENTAL
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307 South Front Street
Marquette, Michigan 49855

SCA Project 95-565

Table 1: Summary of Analytical Results: Metals

Page 1

Test Pit TCLP	Location	Test Pit 17	Test Pit 34	Stock Pile	Regulatory
	Date	10/26/95	10/26/95	10/26/95	Limit
TCLP Metals Analyses	Sample No.	6063	6064	6065	for Leachate
Arsenic (GFAA)	mg/L	(0.05)	(0.05)	(0.05)	5
Barium (ICAP)	mg/L	0.12	0.16	0.091	100
Cadmium (GFAA)	mg/L	(0.006)	(0.006)	(0.006)	1
Chromium (Total) (ICAP)	mg/L	0.2	(0.06)	0.22	5
Copper (ICAP)	mg/L	0.35	(0.1)	0.73	100
Iron (ICAP)	mg/L	2.4	0.14	3.4	NA
Lead (GFAA)	mg/L	(0.06)	(0.06)	(0.06)	5
Manganese (ICAP)	mg/L	0.82	0.13	1.0	NA
Mercury (Cold Vapor)	mg/L	(0.0002)	(0.0002)	(0.0002)	0.2
Nickel (ICAP)	mg/L	1.2	0.65	3.8	NA
Selenium (GFAA)	mg/L	(0.1)	(0.1)	(0.1)	1
Silver (GFAA)	mg/L	(0.006)	(0.006)	(0.006)	5
Zinc (ICAP)	mg/L	0.7	0.16	1.4	500
pH (Laboratory)		2.6	3.2	2.7	NA

Pyrite Concentrate

	Location	Test Pit 17	Test Pit 34	Stock Pile	Residential	Industrial
Non-metallic	Date	10/26/95	10/26/95	10/26/95	Soil	Soil
Inorganic Analysis	Sample No.	6063	6064	6065	Criteria***	Criteria****
Cyanide, Total	mg/kg	6.6	0.9	10.5	4	99,000

Bold type denotes concentrations exceeding residential clean up criteria

Soil	Location	MW-106	WO-100	WO-101	WO-102	WO-104	Soil	
	Date	10/26/95	10/23/95	10/23/95	10/23/95	10/23/95	Generic	Generic
	Sample No.	6066	6055	6054	6056	5571	Residential	Industrial
Metals	Depth	1-3'	9.5-11.5'	1-3'	5-7'		Criteria*	Criteria**
Cadmium (GFAA)	mg/kg	(0.05)	(0.05)	(0.05)	(0.05)	0.26	1	2,300
Chromium (Total) (ICAP)	mg/kg	11	19.5	20.6	22.7	15	18	22,000
Lead (GFAA)	mg/kg	3.6	4	9	6	15	21	400

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)
NA = Not applicable
ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995.

*** Generic Residential Criteria for soil are twenty (20) times the drinking water values from MDNR Operational Memorandum No. 8, Revision 4, dated June 5, 1995, except for PCBs. The values for PCBs are the direct contact values

***Generic Industrial Criteria for soil are direct contact values from MDNR Operational Memorandum No. 14, dated June 6, 1995.

Table 1: Summary of Analytical Results: Metals

Page 2

Soil	Location	Scale #1	Generic	Generic
	Date	11/07/95	Residential	Industrial
	Sample No.	6347	Criteria*	Criteria**
Arsenic	mg/kg	8	1	83
Barium	mg/kg	45	40	3.2E+05
Cadmium	mg/kg	1.2	0.1	2,300
Chromium	mg/kg	100	2	22,000
Copper	mg/kg	100	20	1.7E+05
Iron	mg/kg	46000	6	ID
Lead	mg/kg	31	0.08	400
Manganese	mg/kg	900	1000	22,000
Mercury	mg/kg	(0.1)	0.04	1,400
Nickel	mg/kg	140	2	3.4E+05
Selenium	mg/kg	(0.5)	1	23,000
Silver	mg/kg	2.3	0.68	21,000
Zinc	mg/kg	120	48	1.0E+06

Bold type denotes concentrations exceeding residential clean up criteria

Surface Water	Location	Pyrite Pad	Conv.	SWPY-1
	Date	11/07/95	11/07/95	10/10/95
Dissolved Metals Analyses	Sample No.	6352	6353	05A
Arsenic (GFAA)	mg/l	(0.003)	0.068	1.3
Barium (ICAP)	mg/l	0.07	0.007	not analyzed
Cadmium (Total)	mg/l	0.0011	0.015	0.1
Chromium (Total) (ICAP)	mg/l	0.007	0.53	not analyzed
Copper (ICAP)	mg/l	0.016	2.2	4.7
Iron (ICAP)	mg/l	1.8	380	410
Lead (GFAA)	mg/l	0.003	0.006	0.018
Manganese (ICAP)	mg/l	3.1	8.3	4
Mercury (Cold Vapor)	mg/l	0.0028	(0.0002)	(0.0002)
Nickel (ICAP)	mg/l	1.3	2.3	5.8
Selenium (GFAA)	mg/l	(0.005)	(0.005)	not analyzed
Silver (GFAA)	mg/l	(0.0005)	(0.0005)	not analyzed
Zinc (ICAP)	mg/l	0.1	1.4	2.1

Intermittent Stream	Location	SW-1	SW-2	SW-3
	Date	11/07/95	11/07/95	11/07/95
Dissolved Metals Analyses	Sample No.	6354	6355	6356
Arsenic (GFAA)	mg/l	0.24	0.2	0.019
Barium (ICAP)	mg/l	ND	ND	ND
Cadmium (Total)	mg/l	0.01	0.007	0.0034
Chromium (Total) (ICAP)	mg/l	0.44	0.26	0.008
Copper (ICAP)	mg/l	1.2	0.21	0.29
Iron (ICAP)	mg/l	290	200	54
Lead (GFAA)	mg/l	0.008	0.014	0.005
Manganese (ICAP)	mg/l	3.3	1.6	0.67
Mercury (Cold Vapor)	mg/l	ND	ND	ND
Nickel (ICAP)	mg/l	1.6	1.1	0.38
Selenium (GFAA)	mg/l	ND	ND	ND
Silver (GFAA)	mg/l	ND	ND	ND
Zinc (ICAP)	mg/l	3.5	1.4	0.99
Total Metals Analyses				
Arsenic (GFAA)		0.33	0.25	0.062
Barium (ICAP)		0.007	0.005	0.008
Cadmium (Total)		0.012	0.0046	0.0037
Chromium (Total) (ICAP)		0.52	0.17	0.076
Copper (ICAP)		1.4	0.48	0.25
Iron (ICAP)		290	120	51
Lead (GFAA)		0.021	0.004	0.005
Manganese (ICAP)		4.2	1.1	0.61
Mercury (Cold Vapor)		ND	ND	ND
Nickel (ICAP)		2	0.66	0.33
Selenium (GFAA)		ND	ND	ND
Silver (GFAA)		0.0008	ND	ND
Zinc (ICAP)		3	0.99	0.84

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)
NA = Not applicable
ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995.

*** Generic Residential Criteria for soil are twenty (20) times the drinking water values from MDNR Operational Memorandum No. 8,

Table 1: Summary of Analytical Results: Metals

Page 3

Groundwater

Dissolved Metals Analyses	Location / Date / Sample No.	Units	MW-101 10/26/95 6057	MW-101 11/29/95	MW-102 10/26/95 6058	MW-102 11/29/95	MW-103 10/26/95 6059	MW-103 11/29/95	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
Arsenic (GFAA)		mg/L	(0.005)	0.006	(0.005)	(0.002)	(0.005)	(0.002)	0.05	0.05
Barium (ICAP)		mg/L	(0.2)	0.056	(0.2)	0.036	(0.2)	0.050	2	2
Cadmium (GFAA)		mg/L	(0.0005)	0.0007	(0.0005)	0.1300	(0.0005)	0.0006	0.005	0.005
Chromium (Total) (ICAP)		mg/L	(0.05)	0.003	(0.05)	(0.001)	(0.05)	0.002	0.1	0.1
Copper (ICAP)		mg/L	(0.025)	Not Analyzed	(0.025)	Not Analyzed	(0.025)	Not Analyzed	1	1
Iron (ICAP)		mg/L	1.0	5.5	390	440	34	2.6	ID	ID
Lead (GFAA)		mg/L	(0.003)	(0.001)	(0.003)	0.068	(0.003)	(0.001)	0.004	0.004
Manganese (ICAP)		mg/L	5.8	8.4	22	25	3.2	4.2	0.05	0.05
Mercury (Cold Vapor)		mg/L	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)		mg/L	(0.05)	0.001	1.4	1.600	(0.05)	0.002	0.1	0.1
Selenium (GFAA)		mg/L	(0.005)	(0.002)	(0.005)	(0.002)	(0.005)	(0.002)	0.05	0.05
Silver (GFAA)		mg/L	(0.0005)	0.002	(0.0005)	0.002	(0.0005)	(0.001)	0.034	0.098
Zinc (ICAP)		mg/L	(0.02)	0.013	0.22	(0.001)	0.02	(0.001)	2.4	5

Bold type denotes concentrations exceeding residential clean up criteria

Groundwater

Dissolved Metals Analyses	Location / Date / Sample No.	Units	MW-104 10/26/95 6060	MW-104 11/29/95	MW-105 10/26/95 6061	MW-105 11/29/95	MW-106 10/26/95 6062	MW-106 11/29/95	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
Arsenic (GFAA)		mg/L	0.012	0.006	(0.005)	(0.002)	(0.005)	(0.002)	0.050	0.050
Barium (ICAP)		mg/L	(0.2)	0.210	(0.2)	0.038	(0.2)	0.063	2.000	2.000
Cadmium (GFAA)		mg/L	(0.0005)	0.0060	(0.0005)	(0.0005)	(0.0005)	(0.0005)	0.005	0.005
Chromium (Total) (ICAP)		mg/L	(0.05)	0.002	(0.05)	0.002	(0.05)	0.003	0.100	0.100
Copper (ICAP)		mg/L	(0.025)	Not Analyzed	(0.025)	Not Analyzed	(0.025)	Not Analyzed	1.000	1.000
Iron (ICAP)		mg/L	30	41	9.4	2.7	2.0	0.052	ID	ID
Lead (GFAA)		mg/L	(0.003)	0.004	(0.003)	(0.001)	(0.003)	(0.001)	0.004	0.004
Manganese (ICAP)		mg/L	3.2	5.7	1.2	1.4	7.2	7.6	0.050	0.050
Mercury (Cold Vapor)		mg/L	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)		mg/L	(0.05)	0.022	(0.05)	0.004	(0.05)	0.011	0.100	0.100
Selenium (GFAA)		mg/L	(0.005)	(0.002)	(0.005)	0.002	(0.005)	0.006	0.050	0.050
Silver (GFAA)		mg/L	(0.0005)	(0.001)	(0.0005)	(0.001)	(0.0005)	0.001	0.034	0.098
Zinc (ICAP)		mg/L	0.02	0.025	(0.02)	0.013	0.02	0.020	2.400	5.000

Bold type denotes concentrations exceeding residential clean up criteria

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995. Health based values are shown except for copper, and manganese, for which aesthetic values are given.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995. See note for Residential Values. In addition, the aesthetic value is shown for zinc.

Table 1: Summary of Analytical Results: Metals

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Groundwater

Location		MW-1	MW-2	MW-2	MW-3	MW-3	MW-4	MW-4	MW-5	MW-5	Residential	Industrial
Date		11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	Drinking H2O Criteria*	Drinking H2O Criteria**
Dissolved Metals Analyses												
Arsenic (GFAA)	mg/L	(0.002)	0.0053	(0.002)	0.0048	(0.002)	0.018	(0.002)	0.074	0.14	0.050	0.050
Barium (ICAP)	mg/L	0.085	0.049	0.067	0.095	0.06	0.064	0.06	0.25	0.28	2.000	2.000
Cadmium (GFAA)	mg/L	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	0.026	0.041	0.005	0.03	0.005	0.005
Chromium (Total) (ICAP)	mg/L	0.002	(0.01)	0.002	(0.01)	0.001	(0.01)	0.002	(0.01)	0.014	0.100	0.100
Copper (ICAP)	mg/L	0.003	(0.01)	0.004	(0.01)	0.008	(0.01)	0.004	(0.01)	(0.01)	1.000	1.000
Iron (ICAP)	mg/L	4.5	1.6	0.066	0.45	0.17	250	41	200	300	ID	ID
Lead (GFAA)	mg/L	(0.001)	(0.001)	(0.001)	0.012	(0.001)	(0.001)	0.024	(0.001)	0.014	0.004	0.004
Manganese (ICAP)	mg/L	7	6	2.3	1.9	0.007	84	45	6.1	6.7	0.050	0.050
Mercury (Cold Vapor)	mg/L	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)	mg/L	0.015	0.06	0.018	0.009	0.028	2.2	1.6	0.03	0.06	0.100	0.100
Selenium (GFAA)	mg/L	0.002	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	0.050	0.050
Silver (GFAA)	mg/L	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	0.003	(0.005)	(0.005)	0.034	0.098
Zinc (ICAP)	mg/L	0.023	0.03	0.006	0.68	0.36	0.45	0.28	0.05	(0.01)	2.400	5.000

Bold type denotes concentrations exceeding residential clean up criteria

Groundwater

		MW-7	MW-7	MW-9	MW-9	MW-10	MW-10	MW-11	MW-11	MW-12	MW-12	Residential	Industrial
		06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	06/12/95	11/07/95	Drinking H2O Criteria*	Drinking H2O Criteria**
Dissolved Metals Analyses													
Arsenic (GFAA)	mg/L	0.0077	(0.002)	(0.002)	(0.002)	0.0048	0.003	0.0064	0.013	0.069	(0.00)	0.050	0.050
Barium (ICAP)	mg/L	0.021	0.018	0.028	0.037	0.056	0.043	0.12	0.11	0.033	0.03	2.000	2.000
Cadmium (GFAA)	mg/L	0.042	0.02	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	0.019	(0.005)	(0.005)	0.005	0.005
Chromium (Total) (ICAP)	mg/L	(0.01)	0.004	0.037	(0.01)	(0.01)	0.002	(0.01)	0.013	(0.01)	0.002	0.100	0.100
Copper (ICAP)	mg/L	(0.01)	0.004	0.056	0.003	(0.01)	0.001	0.033	0.088	(0.01)	0.034	1.000	1.000
Iron (ICAP)	mg/L	170	190	0.12	0.15	18	0.33	140	190	7.4	1.8	ID	ID
Lead (GFAA)	mg/L	(0.001)	0.011	(0.001)	(0.001)	(0.001)	(0.001)	0.0034	0.011	(0.001)	(0.001)	0.004	0.004
Manganese (ICAP)	mg/L	78	35	0.21	0.22	23	30	7.8	6.2	1	1.5	0.050	0.050
Mercury (Cold Vapor)	mg/L	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	0.002	0.002
Nickel (ICAP)	mg/L	3.9	1.1	0.02	0.021	0.03	0.039	(0.01)	0.004	(0.01)	0.002	0.100	0.100
Selenium (GFAA)	mg/L	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	0.007	(0.001)	(0.001)	(0.001)	(0.001)	0.050	0.050
Silver (GFAA)	mg/L	(0.005)	0.003	(0.005)	0.002	(0.005)	0.002	(0.005)	(0.005)	(0.005)	(0.005)	0.034	0.098
Zinc (ICAP)	mg/L	1.2	0.25	0.01	0.007	0.19	0.33	0.05	(0.01)	0.01	0.008	2.400	5.000

Bold type denotes concentrations exceeding residential clean up criteria

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995. Health based values are shown except for copper, and manganese, for which aesthetic values are given.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995. See note for Residential Values. In addition, the aesthetic value is shown for zinc.

Table 2: Summary of Analytical Results: Hydrocarbons

Page 1

Groundwater

Volatile Aromatic Hydrocarbon	Location / Date / Sample No.	MW-104 10/26/95 6060	MW-106 10/26/95 6062	MW-5 03/31/95 5207	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
Benzene	µg/L	27	(5.00)	19	5	5
Toluene	µg/L	94	(1.00)	11	790	790
Ethylbenzene	µg/L	48	(1.00)	94	74	74
Xylenes	µg/L	500	(3.00)	1600	280	280
Polynuclear Aromatic Hydrocarbons						
Benzo (a) anthracene	µg/L	(5.00)	(5.00)	(5.00)	5	5
Benzo (a) pyrene	µg/L	(5.00)	(5.00)	(5.00)	5	5
Benzo (b) fluoranthene	µg/L	(5.00)	(5.00)	(5.00)	5	5
Benzo (g,h,i) perylene	µg/L	(5.00)	(5.00)	(5.00)	26	75
Benzo (k) fluoranthene	µg/L	(6.00)	(6.00)	(5.00)	12	48
Dibenzo (a,h) anthracene	µg/L	(5.00)	(5.00)	(5.00)	5	5
Indeno (1,2,3-cd) pyrene	µg/L	(5.00)	(5.00)	(5.00)	5	5
Naphthalene	µg/L	76	(5.00)	35	260	750
Acenaphthene	µg/L	(5.00)	(5.00)	(5.00)	1,300	3,800
Acenaphthylene	µg/L	(5.00)	(5.00)	(6.00)	26	75
Fluorene	µg/L	(5.00)	(5.00)	(5.00)	880	2,500
Phenanthrene	µg/L	(5.00)	(5.00)	(5.00)	26	75
Anthracene	µg/L	(5.00)	(5.00)	(5.00)	7,300	21,000
Fluoranthene	µg/L	(5.00)	(5.00)	(5.00)	880	2,500
Pyrene	µg/L	(5.00)	(5.00)	(5.00)	550	1,600
Chrysene	µg/L	(5.00)	(5.00)	(5.00)	120	480

Bold type denotes concentrations exceeding residential clean up criteria

Groundwater

Purgeable Halocarbons	Location / Date / Sample No.	MW-104 10/26/95 6060	MW-106 10/26/95 6062	Residential Drinking H2O Criteria*	Industrial Drinking H2O Criteria**
Dichlordifluoromethane	µg/L	(1)	(1)	1,700	4,600
Chloromethane	µg/L	(1)	(1)	66	270
Vinyl Chloride	µg/L	(1)	(1)	2	2
Bromomethane	µg/L	(1)	(1)	10	29
Chloroethane	µg/L	(1)	(1)	220	910
Trichlorofluoromethane	µg/L	(1)	(1)	2,600	7,300
2-Chloroethyl Vinyl Ether	µg/L	(1)	(1)	ID	ID
1,1-Dichloroethene	µg/L	(1)	(1)	7	7
Methylene Chloride	µg/L	(1)	(1)	5	5
trans-1,2-Dichloroethene	µg/L	(1)	(1)	100	100
1,1-Dichloroethane	µg/L	(1)	(1)	880	2,500
Chloroform (S)	µg/L	(1)	(1)	100	100
1,1,1-Trichloroethane	µg/L	(1)	(1)	200	200
Carbon tetrachloride	µg/L	(1)	(1)	5	5
1,2-Dichloroethane	µg/L	(1)	(1)	5	5
cis-1,3-Dichloropropene (J)	µg/L	(1)	(1)	4.7	19
Trichloroethene	µg/L	(1)	(1)	5	5
1,2-Dichloropropane	µg/L	(1)	(1)	5	5
Bromodichloromethane (S)	µg/L	(1)	(1)	100	100
Tetrachloroethene	µg/L	(1)	(1)	5	5
trans-1,3-Dichloropropene (J)	µg/L	(1)	(1)	4.7	19
1,1,2-Trichloroethane	µg/L	(1)	(1)	5	5
Dibromochloromethane (S)	µg/L	(1)	(1)	100	100
Chlorobenzene (S)	µg/L	(1)	(1)	100	100
Bromoform (S)	µg/L	(1)	(1)	100	100
1,1,2,2-Tetrachloroethane	µg/L	(1)	(1)	4.3	17
1,3-Dichlorobenzene	µg/L	(1)	(1)	600	600
1,4-Dichlorobenzene	µg/L	(1)	(1)	75	75
1,2-Dichlorobenzene	µg/L	(1)	(1)	600	600

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)
NA = Not applicable
ID = No criterion developed due to inadequate data

*Residential Drinking Water Values from MDNR Operational Memorandum No. 8, Revision 4, June 5, 1995. Health based values are shown except for copper, manganese, toluene, xylenes, for which the aesthetic value is given. The drinking water criteria are less than the Target Method Detection Limits (TMDLs) for certain PNAs. The criteria default to the TMDLs, shown in italics, in those cases.

**Industrial Drinking Water Values from MDNR Operational Memorandum No. 14, Revision 2, June 6, 1995. See note for Residential Values. In addition, the aesthetic value is shown for zinc.

(J) "Chemical may be present in several isomer forms. Isomer specific concentrations must be combined for comparison to criteria." -- MDNR Operational Memoranda Numbers 8 and 14.

(S) "Concentrations of trihalomethanes in groundwater must be combined to determine compliance with the health-based drinking water value of 100 ppb." -- MDNR Operational Memoranda Numbers 8 and 14.

Table 2: Summary of Analytical Results: Hydrocarbons

Page 2

Soil

Location	MW-106	WO-100	WO-101	WO-102	WO-104	Soil	
Date	10/26/95	10/23/95	10/23/95	10/23/95	10/23/95	Generic	Generic
Sample No.	6066	6055	6054	6056	5571	Residential	Industrial
Volatile Aromatic Hydrocarbons Depth	1-3'	9.5-11.5'	1-3'	5-7'		Criteria*	Criteria**
Benzene µg/kg	(10.00)	(10.00)	(10.00)	(10.00)	(10.00)	100	8.5E+05
Toluene µg/kg	(10.00)	100	42	(10.00)	(10.00)	16,000	1.6E+08
Ethylbenzene µg/kg	(10.00)	440	310	(10.00)	27	1,500	7.2E+07
Xylenes µg/kg	(30.00)	1500	1200	(30.00)	260	5,600	1.0E+09
Polynuclear Aromatic Hydrocarbons							
Benzo (a) anthracene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	14,000	2.1E+05
Benzo (a) pyrene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1,400	2.1E+04
Benzo (b) fluoranthene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	14,000	2.1E+05
Benzo (g,h,i) perylene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1.5E+06	1.6E+07
Benzo (k) fluoranthene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1.4E+05	2.1E+06
Dibenzo (a,h) anthracene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1,400	2.1E+04
Indeno (1,2,3-cd) pyrene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	14,000	2.5E+05
Naphthalene µg/kg	(330.00)	20000	2600	(1,000.00)	(330.00)	5,200	1.6E+08
Acenaphthene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	26,000	8.1E+08
Acenaphthylene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	520	1.6E+07
Fluorene µg/kg	(330.00)	1100	340	(1,000.00)	(330.00)	18,000	5.4E+08
Phenanthrene µg/kg	(330.00)	(1,000.00)	830	(1,000.00)	(330.00)	520	1.6E+07
Anthracene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1.5E+05	1.0E+09
Fluoranthene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	18,000	5.4E+08
Pyrene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	11000	3.4E+08
Chrysene µg/kg	(330.00)	(1,000.00)	(330.00)	(1,000.00)	(330.00)	1.4E+06	2.1E+07

Bold type denotes concentrations exceeding residential clean up criteria

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

NA = Not applicable

Soil

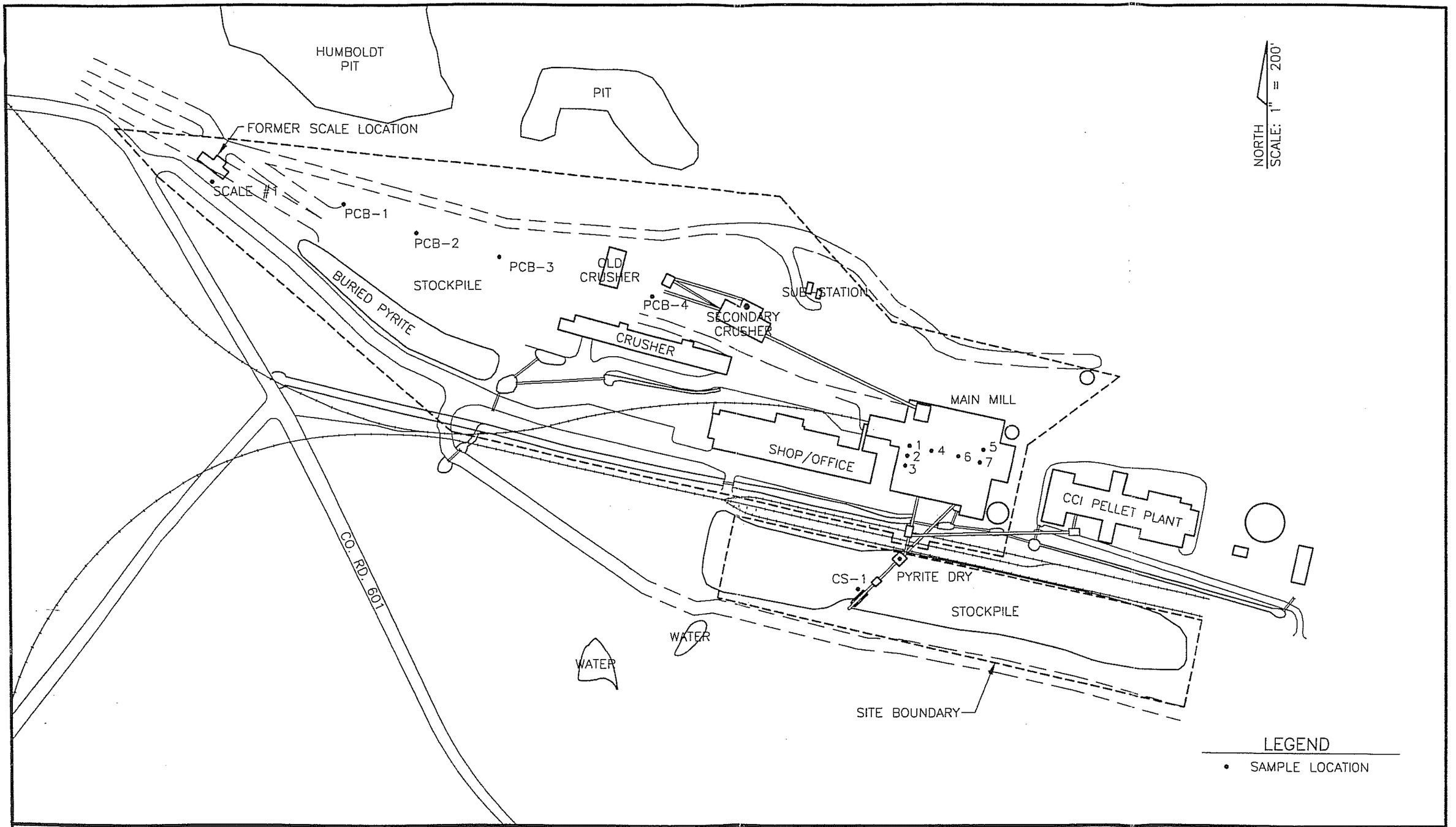
Location	MW-106	WO-100	WO-101	WO-102	WO-104	Soil	
Date	10/26/95	10/23/95	10/23/95	10/23/95	10/23/95	Generic	Generic
Sample No.	6066	6055	6054	6056	5571	Residential	Industrial
Purgeable Halocarbons Depth	1-3'	9.5-11.5'	1-3'	5-7'		Criteria*	Criteria**
Dichlordifluoromethane µg/kg	(10)	(10)	(10)	(10)	(10)	34,000	1.7E+08
Chloromethane µg/kg	(10)	(10)	(10)	(10)	(10)	1,300	1.9E+06
Vinyl Chloride µg/kg	(10)	(10)	(10)	(10)	(10)	40	11,000
Bromomethane µg/kg	(10)	(10)	(10)	(10)	(10)	200	1.0E+06
Chloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	4,400	6.5E+07
Trichlorofluoromethane µg/kg	(10)	(10)	(10)	(10)	(10)	52,000	2.6E+08
2-Chloroethyl Vinyl Ether µg/kg	(10)	(10)	(10)	(10)	(10)	ID	ID
1,1-Dichloroethene µg/kg	(10)	(10)	(10)	(10)	(10)	140	7.4E+05
Methylene Chloride (S) µg/kg	(10)	(10)	(10)	(10)	(10)	100	3.3E+06
trans-1,2-Dichloroethene µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	1.3E+07
1,1-Dichloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	18,000	8.9E+07
Chloroform µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	4.1E+06
1,1,1-Trichloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	4,000	2.1E+07
Carbon tetrachloride µg/kg	(10)	(10)	(10)	(10)	(10)	100	1.9E+05
1,2-Dichloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	100	2.7E+05
cis-1,3-Dichloropropene (J) µg/kg	(10)	(10)	(10)	(10)	(10)	96	1.4E+05
Trichloroethene µg/kg	(10)	(10)	(10)	(10)	(10)	100	1.6E+06
1,2-Dichloropropane µg/kg	(10)	(10)	(10)	(10)	(10)	100	3.6E+05
Bromodichloromethane (S) µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	4.0E+05
Tetrachloroethene µg/kg	(10)	(10)	(10)	(10)	(10)	100	4.9E+05
trans-1,3-Dichloropropene (J) µg/kg	(10)	(10)	(10)	(10)	(10)	96	1.4E+05
1,1,2-Trichloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	100	4.4E+05
Dibromochloromethane (S) µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	3.0E+05
Chlorobenzene (S) µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	1.4E+07
Bromoform (S) µg/kg	(10)	(10)	(10)	(10)	(10)	2,000	3.1E+06
1,1,2,2-Tetrachloroethane µg/kg	(10)	(10)	(10)	(10)	(10)	86	1.2E+05
1,3-Dichlorobenzene µg/kg	(10)	(10)	(10)	(10)	(10)	12,000	6.4E+07
1,4-Dichlorobenzene µg/kg	(10)	(10)	(10)	(10)	(10)	1,500	1.0E+06
1,2-Dichlorobenzene µg/kg	(10)	(10)	(10)	(10)	(10)	12,000	6.4E+07
Polychlorinated Biphenyls (PCBs)							
Aroclor - 1016 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1221 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1232 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1242 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1248 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1254 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1260 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1262 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000
Aroclor - 1268 (J) µg/kg	(330)	(330)	(330)	(330)	(330)	2300	21,000

* Generic Residential Criteria are twenty (20) times the drinking water values from MDNR Operational Memorandum No. 8, Revision 4, dated June 5, 1995, except for nonleachable PNAs, PCBs and metals. The values for nonleachable PNAs and PCBs are the direct contact values from that source. The values for metals are the default background criteria from MDNR Operational Memorandum No. 15, dated September 30, 1993. No criterion for 2-chloroethyl vinyl ether has been developed by the MDNR due to inadequate data.

**Generic Industrial Criteria are direct contact values from MDNR Operational Memorandum No. 14, dated June 6, 1995. No industrial direct contact criteria for chloride or 2-chloroethyl vinyl ether have been developed by the MDNR due to inadequate data.

(J) "Chemical may be present in several isomer forms. Isomer specific concentrations must be combined for comparison to criteria."
-- MDNR Operational Memoranda Numbers 8 and 14.

(S) "Concentrations of trihalomethanes in groundwater must be combined to determine compliance with the health-based drinking water value of 100 ppb."
-- MDNR Operational Memoranda Numbers 8 and 14.



SCA ENVIRONMENTAL
A Division of Sundberg, Carlson and Associates, Inc.

CLIENT: MINERALS PROCESSING CORPORATION

TITLE: PCB INVESTIGATION

DATE: 1/10/96	CHECKED BY:
DRAWN BY: RCG	APPROVED BY:

PROJECT: 95-565

FIGURE: 7

Table 3: Summary of Analytical Results: PCBs

Wipe Samples	Location	Mill 1	Mill 2	Mill 3	Mill 4	Mill 5	Mill 6	Mill 7	Secondary	Pyrite Dry
	Date	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95	11/07/95
Polychlorinated Biphenyls (PCBs)	Sample No.	6338	6339	6340	6341	6342	6343	6344	6345	6346
Aroclor - 1016 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1221 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1232 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1242 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1248 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1254 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1260 (J)	µg/100cm^2	920	30	**4.1E+05**	(0.1)	(0.1)	0.08	(0.1)	0.32	(0.002)
Aroclor - 1262 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)
Aroclor - 1268 (J)	µg/100cm^2	(10)	(10)	10,000	(0.1)	(0.1)	(0.01)	(0.1)	(0.01)	(0.002)

Soil	Location	PCB #1	PCB #2	PCB #3	PCB #4	Generic	Generic
	Date	11/07/95	11/07/95	11/07/95	11/07/95	Residential	Industrial
Polychlorinated Biphenyls (PCBs)	Sample No.	6348	6349	6350	6351	Criteria*	Criteria**
Aroclor - 1016 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1221 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1232 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1242 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1248 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1254 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1260 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1262 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000
Aroclor - 1268 (J)	µg/kg	(330)	(330)	(330)	(330)	2300	21000

(50) = No Concentration Detected (Reporting Detection Limit in parentheses)

(J) "Chemical may be present in several isomer forms. Isomer specific concentrations must be combined for comparison to criteria."
-- MDNR Operational Memoranda Numbers 8 and 14.

Ropes Millsite Closure Phase II, April 1997
Historical Inorganic Groundwater and Soil Results
Titan Environmental Corporation

DRAFT

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PRELIMINARY COPY FOR CLIENT REVIEW

ROPES MILLSITE CLOSURE
PHASE II

Prepared for:

COEUR d'ALENE MINES CORPORATION
COEUR d'ALENE, IDAHO

April 1997

Prepared by:

TITAN Environmental Corporation
123 East Indiana Avenue, Suite 103
Spokane, Washington 99207

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TABLE 1
INORGANIC GROUND WATER ANALYSIS SUMMARY - 1992 Through 1996
ROPES MILL CLOSURE, MI

Well ID	Sample Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Zinc (mg/L)
MW-1	6/2/95	0.0072	0.052	<0.005	<0.01	<0.01	21	0.023	9.4	<0.0002	0.21	<0.002	<0.005	0.06
MW-1	9/18/95	<0.002	0.011	<0.0005	0.0018	<0.001	0.32	<0.001	0.31	<0.0002	0.0092	<0.002	<0.001	0.038
MW-1	11/7/95	<0.002	0.085	<0.0005	0.002	0.003	4.5	<0.001	7.0	<0.0002	0.15	0.002	<0.001	0.023
MW-1	6/5/96	<0.003	0.035	0.0006	0.0008	0.008	0.16	0.003	2.3	<0.0002	0.028	<0.002	<0.0005	0.11
MW-2	6/2/95	0.0053	0.049	<0.005	<0.01	<0.01	1.6	<0.001	6.0	<0.0002	0.06	<0.002	<0.005	0.03
MW-2	9/18/95	0.002	0.036	<0.0005	0.0023	<0.001	0.26	<0.001	4.4	<0.0002	0.036	<0.002	<0.001	0.029
MW-2	11/7/95	<0.002	0.067	<0.0005	0.002	0.004	0.066	<0.001	2.3	<0.0002	0.018	<0.002	<0.001	0.006
MW-2	6/5/96	<0.003	0.033	0.0005	0.001	0.005	0.5	<0.002	5.1	<0.0002	0.014	<0.002	<0.0005	0.024
MW-3	6/2/95	0.0048	0.095	<0.005	<0.01	<0.01	0.45	0.012	1.9	<0.0002	0.09	<0.002	<0.005	0.68
MW-3	9/18/95	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
MW-3	11/7/95	<0.002	0.06	<0.0005	0.001	0.008	0.17	<0.001	0.07	<0.0002	0.028	<0.002	<0.001	0.36
MW-3	6/5/96	<0.003	0.088	0.001	0.002	0.005	0.25	0.003	0.46	<0.0002	0.077	<0.002	0.0006	0.59
MW-4	8/18/92	0.083	0.30	<0.005	<0.01	0.18	170	<0.03	62	0.0002	0.94	<0.015	<0.005	0.09
MW-4	12/17/92	0.12	0.22	<0.005	<0.01	0.09	170	<0.03	49	0.0009	0.79	<0.002	<0.005	0.10
MW-4	12/28/92	<0.002	0.09	<0.005	<0.01	0.02	120	<0.03	47	<0.0002	0.78	<0.002	<0.005	0.12
MW-4	8/10/93	0.18	NA	NA	NA	0.11	240	<0.03	NA	0.0008	2.2	NA	NA	0.02
MW-4	2/2/94	0.066	NA	NA	NA	0.04	170	<0.03	NA	<0.0001	1.3	NA	NA	0.26
MW-4	6/2/95	0.018	0.064	0.026	<0.01	<0.01	250	<0.001	64	<0.0002	2.2	<0.002	<0.005	0.45
MW-4	9/18/95	0.046	0.057	0.036	0.0048	<0.001	220	0.024	41	<0.0002	1.9	<0.002	0.0024	0.47
MW-4	11/7/95	<0.002	0.06	0.041	0.002	0.004	410	0.024	45	<0.0002	1.5	<0.002	0.003	0.28
MW-4	6/5/96	<0.003	0.034	0.009	0.005	0.09	62	0.017	50	<0.0002	1.8	0.014	0.003	0.80
MW-5	6/2/95	0.074	0.26	0.005	<0.01	<0.01	200	0.0012	6.1	<0.0002	0.03	<0.002	<0.005	0.05
MW-5	9/18/95	0.094	0.22	0.022	0.013	<0.001	140	0.013	6.1	<0.0002	0.057	<0.002	<0.001	<0.001
MW-5	11/7/95	0.14	0.28	0.03	0.014	<0.001	300	0.014	6.7	<0.0002	0.06	<0.002	<0.001	<0.001
MW-5	6/5/96	0.039	0.18	0.013	0.01	0.002	140	0.013	5.6	<0.0002	0.02	<0.002	0.0006	<0.009
MW-6	6/2/95	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
MW-6	9/18/95	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
MW-6	11/7/95	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
MW-6	6/5/96	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry
MW-7	6/2/95	0.0077	0.021	0.042	<0.01	<0.01	170	<0.002	76	<0.0002	3.9	<0.002	<0.005	1.2
MW-7	9/18/95	0.002	0.023	0.026	0.0051	0.0059	160	0.018	40	<0.0002	1.7	<0.002	0.0019	0.70

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ROPES MILL CLOSURE, MI

Well ID	Sample Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Zinc (mg/L)
MW-7	11/7/95	<0.002	0.018	0.020	0.004	0.004	190	0.011	35	<0.0002	1.1	<0.002	0.003	0.25
MW-7	6/5/96	0.007	0.018	0.028	0.007	0.022	150	0.017	57	<0.0002	3.2	<0.002	0.002	1.2
MW-9	6/2/95	<0.002	0.028	<0.005	<0.01	<0.01	0.12	<0.001	0.21	<0.0002	0.02	<0.002	<0.005	0.01
MW-9	9/18/95	<0.002	0.031	<0.0005	0.0030	0.0022	0.10	<0.001	0.66	<0.0002	0.025	<0.002	<0.001	0.033
MW-9	11/7/95	<0.002	0.037	<0.0005	<0.001	0.003	0.15	<0.001	0.22	<0.0002	0.021	<0.002	0.002	0.007
MW-9	6/5/96	0.003	0.028	0.0005	0.001	0.002	3.3	0.003	0.23	<0.0002	<0.0005	<0.002	<0.0005	0.037
MW-10	6/2/95	0.0048	0.056	<0.005	<0.01	<0.01	18	<0.001	23	<0.0002	0.03	<0.002	<0.005	0.19
MW-10	9/18/95	0.0036	0.042	0.0025	0.0076	0.0027	20	0.0048	35	<0.0002	0.049	0.0047	<0.001	0.060
MW-10	11/7/95	0.003	0.049	<0.0005	0.002	0.001	0.33	<0.001	30	<0.0002	0.039	0.007	0.002	0.33
MW-10	6/5/96	<0.003	0.044	0.006	0.003	0.009	10	0.007	36	<0.0002	0.13	0.014	0.003	0.29
MW-11	8/18/92	0.037	0.54	<0.005	0.09	0.11	300	0.12	13	<0.0002	0.07	<0.015	<0.005	0.22
MW-11	12/17/92	0.016	0.19	<0.005	0.01	0.03	240	0.05	9.7	0.0006	0.02	<0.002	<0.005	0.12
MW-11	12/28/92	0.006	0.18	<0.005	<0.01	0.03	230	<0.03	10	<0.0002	0.02	<0.002	<0.005	0.12
MW-11	8/10/93	0.01	NA	NA	NA	<0.01	11	<0.03	NA	<0.0002	<0.01	NA	NA	0.01
MW-11	2/2/94	0.03	NA	NA	NA	0.09	260	0.05	NA	0.0001	<0.02	NA	NA	0.17
MW-11	6/2/95	0.0064	0.12	<0.005	<0.01	<0.01	140	0.0034	7.8	<0.0002	<0.01	<0.002	<0.005	0.06
MW-11	9/18/95	0.0068	0.11	0.016	0.012	0.0011	120	0.013	6.6	<0.0002	0.012	<0.002	<0.001	<0.001
MW-11	11/7/95	0.013	0.11	0.019	0.013	0.088	190	0.011	6.2	<0.0002	0.004	<0.002	<0.001	<0.001
MW-11	6/5/96	<0.003	0.14	0.013	0.010	0.004	140	0.012	8.6	<0.0002	0.002	<0.002	0.0008	<0.009
MW-12	8/18/92	0.009	0.10	<0.005	0.02	0.02	7.0	<0.03	1.9	<0.0002	0.01	<0.006	<0.005	0.04
MW-12	12/17/92	0.012	0.04	<0.005	<0.01	0.02	16	0.03	1.1	<0.0002	<0.01	<0.002	<0.005	0.06
MW-12	12/28/92	0.005	0.03	<0.005	<0.01	0.01	5.1	<0.03	1.0	<0.0002	0.01	<0.002	<0.005	0.04
MW-12	8/10/93	0.014	NA	NA	NA	0.02	200	<0.03	NA	<0.0002	<0.01	NA	NA	0.06
MW-12	2/2/94	0.40	NA	NA	NA	0.03	37	<0.03	NA	<0.0002	<0.02	NA	NA	0.7
MW-12	6/2/95	0.0069	0.033	<0.005	<0.01	<0.01	7.4	<0.001	1.0	<0.0002	<0.01	<0.002	<0.005	0.01
MW-12	9/18/95	0.0064	0.024	<0.0005	0.0027	0.0013	5.5	<0.001	0.99	<0.0002	0.0011	<0.002	<0.001	0.031
MW-12	11/7/95	<0.002	0.030	<0.0005	0.002	0.034	1.8	<0.001	1.5	<0.0002	0.002	<0.002	<0.001	0.008
MW-12	6/5/96	<0.003	0.030	0.0005	0.001	0.009	1.9	<0.002	1.1	<0.0002	0.001	0.002	<0.0005	0.26
MW-101	10/26/95	0.005	0.2	0.0005	0.05	<0.025	1	0.003	5.8	0.0002	0.05	0.005	0.0005	0.02
MW-101	11/7/95	0.006	0.056	0.0007	0.003	NA	5.5	<0.001	8.4	<0.0002	0.001	<0.002	0.002	0.013
MW-101	6/5/96	0.005	0.067	0.0005	0.003	0.009	5.2	0.004	12	<0.0002	<0.0005	0.007	0.001	0.029

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Well ID	Sample Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Zinc (mg/L)
MW-102	10/26/95	<0.005	0.2	0.0005	0.05	0.025	390	0.003	22	<0.0002	1.4	0.005	0.0005	0.22
MW-102	11/7/95	<0.002	0.036	0.13	<0.001	NA	440	0.068	25	<0.0002	1.6	<0.002	0.002	<0.001
MW-102	11/29/95	<0.002	0.036	0.13	0.001	NA	440	0.068	25	<0.0002	1.6	<0.002	0.002	0.001
MW-102	6/5/96	<0.003	0.062	0.11	<0.005	<0.0008	690	0.069	27	<0.0002	2.5	<0.002	0.003	<0.009
MW-103	10/26/95	<0.005	0.2	0.0005	0.05	<0.025	34	<0.003	3.2	<0.0002	0.05	<0.005	<0.0005	0.02
MW-103	11/7/95	<0.002	0.060	0.0006	0.002	NA	2.8	<0.001	4.2	<0.0002	0.002	<0.002	<0.001	0.22
MW-103	11/29/95	<0.002	0.06	0.0006	0.002	NA	2.8	0.001	4.2	<0.0002	0.002	<0.002	<0.001	0.001
MW-103	6/5/96	<0.003	0.062	0.002	0.002	0.005	23	0.003	5.8	<0.0002	0.008	<0.008	0.0006	<0.009
MW-104	10/26/95	0.012	0.2	0.0005	0.05	<0.025	30	<0.003	3.2	<0.0002	0.05	<0.005	0.0005	0.02
MW-104	11/7/95	0.008	0.21	0.006	0.002	NA	41	0.004	5.7	<0.0002	0.022	<0.002	<0.001	0.025
MW-104	11/29/95	0.008	0.21	0.006	0.002	NA	41	0.004	5.7	<0.0002	0.022	0.002	0.001	0.025
MW-104	6/5/96	0.011	0.17	0.006	0.003	0.004	65	0.007	4.6	<0.0002	0.024	<0.002	0.001	<0.009
MW-105	10/26/95	<0.005	0.2	0.0005	0.05	0.025	9.4	0.003	1.2	<0.0002	0.05	<0.005	0.0005	0.02
MW-105	11/7/95	<0.002	0.038	<0.0005	0.002	NA	2.7	<0.001	1.4	<0.0002	0.004	0.002	<0.001	0.013
MW-105	11/29/95	<0.002	0.038	0.0005	0.002	NA	2.7	<0.001	1.4	<0.0002	0.004	0.002	<0.001	0.013
MW-105	6/5/96	<0.003	0.038	0.0009	0.002	0.007	11	<0.004	1.2	<0.0002	<0.0005	<0.002	<0.0005	0.029
MW-106	10/26/95	<0.005	0.2	0.0005	0.05	<0.025	2	<0.003	7.2	<0.0002	0.05	<0.005	<0.0005	0.02
MW-106	11/7/95	<0.002	0.063	<0.0005	0.003	NA	0.52	<0.001	7.6	<0.0002	0.011	0.006	<0.001	0.020
MW-106	11/29/95	<0.002	0.063	0.0005	0.003	NA	0.052	<0.001	7.6	<0.0002	0.011	0.006	0.001	0.02
MW-106	6/5/96	<0.003	0.050	0.0006	0.001	0.009	0.44	<0.002	3.5	<0.0002	0.014	0.003	<0.0005	0.039
MDEQ Residential Criteria (1)		0.05	2.0	0.005	0.1	1.0	NA	0.004	0.05	0.002	0.1	0.05	0.034	2.4
MDEQ Industrial Criteria (1)		0.05	2.0	0.005	0.1	1.0	NA	0.004	0.05	0.002	0.1	0.05	0.098	5.0
GSI Value (2)		0.011	0.630	6.40E-4	0.0073	0.018	NA	0.0066	NA	1.30E-6	0.057	0.005	1.00E-04	0.081
GCC Value (3)		4.7	1.5E+4	110	1,000	8,100	NA	NA	1,000	Solubility	1.6E+5	1,100	1,700	1.2E+5
Number of Samples		77	71	71	71	55	77	77	71	77	77	71	71	77
Frequency of Detection		48/77	65/71	33/71	45/71	33/55	77/77	46/77	71/71	5/77	70/77	6/50	18/71	63/77
Percent Detected		62	92	47	63	69	100	60	100	7	91	17	25	82
No. Exceeding GCC		0	0	0	0	0	0	0	0	0	0	0	0	0
No. Exceeding Ind. DW Criteria		8	0	21	0	0	0	24	72	0	20	0	0	0

TITAN Environmental

TAB. 1

INORGANIC GROUND WATER ANALYSIS SUMMARY - 1992 Through 1996

ROPES MILL CLOSURE, MI

Well ID	Sample Date	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Zinc (mg/L)
Maximum Concentration		0.4	0.54	0.13	0.09	0.18	690	0.12	76	0.0009	3.9	0.014	0.003	1.2

NOTES:

Shaded values indicate analyte not detected; reporting limit presented.

Bold type denotes concentrations exceeding drinking water industrial criteria.

For purposes of calculating statistical values, one half the detection limit was used for non-detects.

NA = Not Applicable/Aailable.

(1) MDEQ Health-Based Drinking Water Value, Operational Memorandums 8 and 14.

(2) GSI = Groundwater Surface Water Interface, MDEQ Operational Memorandums 8 and 14.

(3) GCC = Groundwater Contact Criteria per MDEQ Part 201 Generic Groundwater Contact Criteria; Technical Support Document (1996).

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TAB. 2
INORGANIC SOIL ANALYSIS - 1995
ROPES MILL CLOSURE, MI

Well ID	Sample Date	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)
MW-106	10/26/95	0.05	11.0	3.6
WO-100	10/23/95	0.05	19.5	4
WO-101	10/23/95	0.05	20.6	9
WO-102	10/23/95	0.05	22.7	6
WO-104	10/23/95	0.26	15.0	15
Residential 20xDW (1)		1.0	18	21
Industrial Direct Contact (2)		2,300	22,000	400
Residential Direct Contact (2)		210	2,000	400

Number of Samples	5	5	5
Frequency of Detection	1/5	5/5	5/5
Percent Detected	20	100	100
No. Exceeding Ind. Criteria	0	0	0
Percent Exceeding Ind. Criteria	0	0	0
Maximum Concentration	0.26	22.7	15
Average Concentration	0.072	17.7	7.5

NOTES:

Shaded values indicate analyte was not detected; value presented is the reporting limit.

For statistical purposes, one half the detection limit was assumed for non-detects.

(1) MDEQ Residential soil criteria protective of drinking water.

(2) MDEQ Residential and industrial criteria for direct contact.

TITAN Environmental

Conceptual Remedial Action Plan and Workplan
for Closure of the Humboldt Millsite (Michigan) Under Part 201
Analytical Results Summary Tables, May 2000
Maxim Technologies
(Groundwater and Soil Results)

CONCEPTUAL REMEDIAL ACTION PLAN AND WORK PLAN FOR CLOSURE OF THE HUMBOLDT MILLSITE, (MICHIGAN) UNDER PART 201

Project No. 9851474-400

Prepared for:

Callahan Mining Corporation
505 Front St.
Coeur d'Alene, ID 99801

Prepared by:

Maxim Technologies, Inc.®
111 E. Magnesium Rd., Suite A
Spokane, Washington 99208

May 2000

Table 1. Soil Sample Analyses - Hydrocarbons.
Humboldt Millsite, Michigan

Sample No.	Sample No.	Boring No.	Depth Interval (ft)	BTEX					PAH																			
				Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)	TVAH (µg/kg)	Acenaphthene (µg/kg)	Acenaphthylene (µg/kg)	Anthracene (µg/kg)	Benzo (a) anthracene (µg/kg)	Benzo (b) fluoranthene (µg/kg)	Benzo (k) fluoranthene (µg/kg)	Benzo (g,h,i) perylene (µg/kg)	Benzo (a) pyrene (µg/kg)	Chrysene (µg/kg)	Dibenzo (a,h) anthracene (µg/kg)	Fluoranthene (µg/kg)	Fluorene (µg/kg)	Indeno (1,2,3-cd) pyrene (µg/kg)	Methyl T-Butyl ether (µg/kg)	1-Methylnaphthalene (µg/kg)	2-Methylnaphthalene (µg/kg)	Naphthalene (µg/kg)	Phenanthrene (µg/kg)	Pyrene (µg/kg)	1,2,4 Trimethylbenzene (µg/kg)	1,3,5 Trimethylbenzene (µg/kg)
Initial Verification Samples:																												
D.E.	12/05/90	D.E.	15	<5	<5	<5	<10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
D.W.1	12/05/90	D.W.1	15	<5	<5	<5	<10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H.O.W.	12/05/90	H.O.W.	15	<5	<5	<5	<10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1992 Soil Samples:																												
SB-4	01/13/92	SB-4	15.5-17.0	<10	<10	<10	<30	–	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	–	–	–	<330	<330	<330	–	–
SB-5	01/13/92	SB-5	15.5-17.0	<10	<10	<10	<30	–	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	–	–	–	<330	<330	<330	–	–
1995 Soil Samples:																												
MW-106*	10/26/95	MW-106	1-3	<10	<10	<10	<30	–	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	–	–	–	<330	<330	<330	–	–
WO-100*	10/23/95	WO-100	9.5-11.5	<10	100	440	1,500	–	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	1,100	<1,000	–	–	–	–	20,000	<1,000	<1,000	–	–
WO-101*	10/23/95	WO-101	1-3	<10	42	310	1,200	–	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	340	<330	–	–	–	–	2,600	830	<330	–	–
WO-102*	10/23/95	WO-102	5-7	<10	<10	<10	<30	–	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	–	–	–	–	<1,000	<1,000	<1,000	–	–
WO-104*	10/23/95	WO-104	NR	<10	<10	27	260	–	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	–	–	–	–	<330	<330	<330	–	–
6347*	11/07/95	Scale #1		<10	<10	<10	<30	–	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330	–				<330	<330	<330	–	–
1997 Gas Verification Samples																												
666	09/16/97	SB-1'	9.5-10	<5	<5	<5	<5	ND	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
667	09/16/97	SB-2'	9.5-10	<5	<5	<5	<5	ND	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
668	09/16/97	SB-3'	4.5-5	<5	<5	<5	<5	ND	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
669	09/16/97	SB-4'	4.5-5	<5	<5	<5	<5	ND	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
670	09/16/97	SB-5'	4.5-5	<5	<5	<5	<5	ND	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
671	09/16/97	SB-6'	4.5-5	<5	<5	40	181	221	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1998 Diesel Verification Samples:																												
1256	07/28/98	SB-1 SW	4-4.5	–	–	–	–	–	210	210	210	210	210	210	210	210	210	210	210	210	210	–	210	210	210	210	210	–	–
1257	07/28/98	SB-2 EW	4-4.5	–	–	–	–	–	210	210	210	210	210	210	210	210	210	210	210	210	210	–	210	210	210	210	210	–	–
1258	07/28/98	SB-3 WW	4-4.5	–	–	–	–	–	210	210	210	210	210	210	210	210	210	210	210	210	210	–	210	210	210	210	210	–	–
1259	07/28/98	SB-4 NW	4-4.5	–	–	–	–	–	210	210	210	210	210	210	210	210	210	210	210	210	210	–	210	210	210	210	210	–	–
1260	07/28/98	SB-5 WF	9.5-10	–	–	–	–	–	210	210	210	210	210	210	210	210	210	210	210	210	210	–	210	210	210	210	210	–	–
1261	07/28/98	SB-6 EF	9.5-10	–	–	–	–	–	210	210	210	210	210	210	210	210	210	210	210	210	210	–	210	210	210	210	210	–	–
1998 Distribution Line Samples:																												
1262	07/28/98	PL-1	3-3.5	<51	<51	<51	<51	–	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<51	<200	<200	<200	390	<200	<51	<51
1263	07/28/98	PL-2	3-3.5	<53	<53	<53	980	–	3,900	<2,100	14,000	<2,100	<2,100	<2,100	<2,100	<2,100	<2,100	<2,100	<2,100	<2,100	<2,100	<53	4,800	5,900	<2,100	19,000	<2,100	1,800	<53
1264	07/28/98	PL-3	3-3.5	<54	<54	<54	<54	–	<220	<220	<220	240	<220	<220	<220	<220	<220	<220	<220	<220	<220	<54	<220	<220	<220	830	<220	<54	<54
1265	07/28/98	PL-4	3-3.5	<54	<54	80	500	–	<2,200	<2,200	100,000	5,000	<2,200	<2,200	<2,200	<2,200	<2,200	<2,200	8,800	<2,200	<2,200	<54	12,000	22,000	2,900	110,000	<2,200	5,600	1,300
1266	07/28/98	PL-5	3-3.5	<53	<53	<53	<53	–	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<53	<210	<210	<210	<210	<210	<53	<53
1267	07/28/98	PL-6	3-3.5	<57	<57	<57	<57	–	<230	<230	<230	260	<230	<230	<230	<230	<230	<230	<230	<230	<230	<57	<230	<230	<230	320	<230	<57	<57
1268	07/28/98	PL-7	3-3.5	<58	<58	<58	<58	–	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<58	<230	<230	<230	<230	<230	<58	<58
1269	07/28/98	PL-8	3-3.5	<56	<56	<56	<56	–	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<56	<230	<230	<230	260	<230	<56	<56
1270	07/28/98	PL-9	3-3.5	<58	<58	<58	<58	–	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<230	<58	<230	<230	<230	<230	<230	<58	<58
1271	07/28/98	PL-10	3-3.5	<55	<55	<55	<55	–	<220	<220	<220	<220	<220	<220	<220	<220	<220	<220	<220	<220	<220	<55	<220	<220	<220	<220	<220	<55	<55
1272	07/28/98	PL-11	3-3.5	<53	<53	<53	<53	–	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<53	<210	<210	<210	<210	<210	<53	<53
1273	07/28/98	PL-12	3-3.5	<53	<53	<53	<53	–	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<210	<53	<210	<210	<210	<210	<210	<53	<53
CRITERIA:																												
Industrial/Commercial Drinking Water Protection Criteria				100	16,000	1,500	5,600	NL	8.70E+05	8,500	41,000	NLL	NLL	NLL	NLL	NLL	NLL	NLL	720,000	890,000	NLL	800	NL	170,000	50,000	34,000	470,000	2,100	1,800
Ground/Surface Water Protection Criteria				4,000 (X)	2,800	360	700	NL	4,300	ID	ID	NLL	NLL	NLL	NLL	NLL	NLL	NLL	5,500	2,400	NLL	15,000 (X)	NL	ID	850	2,300	ID	ID	ID
Groundwater Contact Protection Criteria				190,000	2.5E+5 (C)	1.4E+5 (C)	1.5E+5 (C)	NL	960,000	440,000	41,000	NLL	NLL	NLL	NLL	NLL	NLL	NLL	720,000	890,000	NLL	6.0E+6 (C)	NL	7.10E+06	2.0E+06	450,000	4.7E+05	1.1E+5 (C)	94,000 (C)
Direct Contact Criteria - Industrial				400,000	2.5E+5 (C)	1.4E+5 (C)	1.5E+5 (C)	NL	8.1E+08	1.6E+07	1.0E+9 (D)	210,000	210,000	2.1E+06	1.6E+07	21,000	2.1E+07	21,000	5.4E+08	5.4E+08	2.1E+05	6.0E+6 (C)	NL	1.60E+08	1.6E+08	1.6E+08	1.6E+07	3.4E+08	1.1E+5 (C)	94,000 (C)
Comments:				I	I	I	I	NL	None	None	None	Q	Q	Q	None	Q	Q	Q	None	None	Q	None	NL	None	None	None	None	None	I	I

NOTES:

– = Not Analyzed.

< = Indicates nondetect, value presented is the detection limit.

C = Csat value which can be exceeded, if no free phase is present.

D = Criterion exceeds 100%; evaluate free phase, aesthetics, impacts, and toxicity.

I = May be Ignitable.

Q = Cumulate all relative toxicity values as 2,3,7,8-tetrachlorodibenzo-p-dioxin and compare to its toxicological criteria.

X = Criteria unless constituent will effect surface drinking watersupply.

ID = Inadequate Data to develop criterion.

NL = Not Listed.

NLL = Not Likely to Leach.

* purgeable halocarbons below detection limit

BOLD = PQL

Yellow shading indicates exceedance of Industrial/Commercial Drinking Water Protection Criteria.

Blue shading indicates exceedance of Ground/Surface Water Interface Protection Criteria.

Underlining indicates exceedence of Groundwater Contact Protection Criteria.

Red font indicates exceedence of Direct Contact Criteria - Industrial.

Table 2. Soil Sample Analyses - Inorganics.
Humboldt Millsite, Michigan

Well ID	Sample Date	Boring No.	Depth Interval (ft.)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickle (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
1995 Soil Samples:																
MW-106	10/26/95	MW-106	1-3	–	–	<0.05	11.00	–	–	3.6	–	–	–	–	–	–
WO-100	10/23/95	WO-100	11-11.5	–	–	<0.05	19.50	–	–	4.0	–	–	–	–	–	–
WO-101	10/23/95	WO-101	1-3	–	–	<0.05	20.60	–	–	9.0	–	–	–	–	–	–
WO-102	10/23/95	WO-102	5-7	–	–	<0.05	22.70	–	–	6.0	–	–	–	–	–	–
WO-104	10/23/95	WO-104	11-11.5	–	–	0.26	15.00	–	–	15	–	–	–	–	–	–
6347	11/07/95	Scale 1	Unknown	8	45	1.2	100	100	46,000	31	900	<0.1	140	<0.5	23	120
1997 Gas Verification Samples:																
666	09/16/97	SB-1'	9.5-10	–	–	–	–	–	–	3	–	–	–	–	–	–
667	09/16/97	SB-2'	9.5-10	–	–	–	–	–	–	3	–	–	–	–	–	–
668	09/16/97	SB-3'	4.5-5	–	–	–	–	–	–	3	–	–	–	–	–	–
669	09/16/97	SB-4'	4.5-5	–	–	–	–	–	–	4	–	–	–	–	–	–
670	09/16/97	SB-5'	4.5-5	–	–	–	–	–	–	2	–	–	–	–	–	–
671	09/16/97	SB-6'	4.5-5	–	–	–	–	–	–	6.23	–	–	–	–	–	–
1998 Diesel Verification Samples:																
1256	07/28/98	SB-1 SW	4-4.5	–	–	–	–	–	–	–	–	–	–	–	–	–
1257	07/28/98	SB-2 EW	4-4.5	–	–	–	–	–	–	–	–	–	–	–	–	–
1258	07/28/98	SB-3 WW	4-4.5	–	–	–	–	–	–	–	–	–	–	–	–	–
1259	07/28/98	SB-4 NW	4-4.5	–	–	–	–	–	–	–	–	–	–	–	–	–
1260	07/28/98	SB-5 WF	9.5-10	–	–	–	–	–	–	–	–	–	–	–	–	–
1261	07/28/98	SB-6 EF	9.5-10	–	–	–	–	–	–	–	–	–	–	–	–	–
1998 Distribution Line Samples:																
1262	07/28/98	PL-1	3-3.5	–	–	–	–	–	–	5.45	–	–	–	–	–	–
1263	07/28/98	PL-2	3-3.5	–	–	–	–	–	–	1.65	–	–	–	–	–	–
1264	07/28/98	PL-3	3-3.5	–	–	–	–	–	–	60.90	–	–	–	–	–	–
1265	07/28/98	PL-4	3-3.5	–	–	–	–	–	–	3.01	–	–	–	–	–	–
1266	07/28/98	PL-5	3-3.5	–	–	–	–	–	–	15.2	–	–	–	–	–	–
1267	07/28/98	PL-6	3-3.5	–	–	–	–	–	–	108	–	–	–	–	–	–
1268	07/28/98	PL-7	3-3.5	–	–	–	–	–	–	3.71	–	–	–	–	–	–
1269	07/28/98	PL-8	3-3.5	–	–	–	–	–	–	3.46	–	–	–	–	–	–
1270	07/28/98	PL-9	3-3.5	–	–	–	–	–	–	2.99	–	–	–	–	–	–
1271	07/28/98	PL-10	3-3.5	–	–	–	–	–	–	3.16	–	–	–	–	–	–
1272	07/28/98	PL-11	3-3.5	–	–	–	–	–	–	8.44	–	–	–	–	–	–
1273	07/28/98	PL-12	3-3.5	–	–	–	–	–	–	6.87	–	–	–	–	–	–
CRITERIA																
Industrial/Commercial Drinking Water Protection Criteria				23	1,300	6	1.0E+6 (D)	160,000	6,000	1 (M, 3)	2 (M, 2)	1.7	100	4	13	5,000
Ground/Surface Water Protection Criteria				70	130	(G,X)	(G,X)	(G)	NA	(G,M,X)	(G,X)	0.17	(G)	0.40	0.5 (M, 0.5)	(G)
Groundwater Contact Protection Criteria				2,200	1.0E+6 (D)	250,000	1.0E+6 (D)	1.0E+6 (D)	ID	ID	200,000	47	1.0E+6 (D)	88,000	230,000	1.0E+6 (D)
Direct Contact Criteria - Industrial				100	320,000	4,500	1.0E+6 (D)	170,000	ID	900	210,000	1,400	340,000	23,000	21,000	1.0E+6 (D)
Comments:				B	B	B	B,H	B	B	B	B	B	B	B	B	B
Statewide Default Background				5.8	75	1.2	18	32	12,000	21	440	0.13	20	0.41	1	47

NOTES:

– = Not Analyzed.
< = Indicates nondetect, value presented is the detection limit.
B = Use Statewide Default Background, if greater than criterion.
C = Csat value which can be exceeded, if no free phase is present.
D = Criterion exceeds 100%; evaluate free phase, aesthetics, impacts, and toxicity.
G = pH/Hardness dependent.
M = Criterion below Target Detction Limit (TDL) - Use TDL.
X = Criteria unless constituent will effect surface drinking watersupply.
ID = Inadequate Data to develop criterion.
NA = Criterion Not Available.
Yellow shading indicates exceedance of Industrial/Commercial Drinking Water Protection Criteria.
Blue shading indicates exceedance of Ground/Surface Water Interface Protection Criteria.
Underlining indicates exceedence of Groundwater Contact Protection Criteria.
Red font indicates exceedence of Direct Contact Criteria - Industrial.

Table 3a. Buried Pyrite Trench Analyses.
Humboldt Millsite, Michigan

Soil Boring ID	Sample Date	Boring No.	Depth Interval (ft.)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Magnesium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
1274	07/28/98	SB-1"	3-3.5	9.0	216	10.1	4.03	346	776	181,000	530	142	0.1	780	9,190	41.9	140
1275	07/28/98	SB-2"	2.75-3	4.0	111	9.2	1.66	298	438	128,000	330	87.5	0.1	345	5,800	20.7	55
1276	07/28/98	SB-3"	3-3.5	4.3	151	6.7	1.46	210	378	98,800	242	114	0.1	330	5,040	16.1	79.6
1277	07/28/98	SB-4"	4-4.5	6.1	201	8.4	2.75	171	469	133,000	296	92	0.1	535	6,210	24.8	81.1
1278	07/28/98	SB-5"	2.75-3	16.1	104	6.7	1.84	402	733	175,000	625	155	0.2	366	12,600	12.5	183
1279	07/28/98	SB-6"	3-3.5	13.2	268	5	4.44	396	669	174,000	510	145	0.1	695	11,500	51.8	173
1280	07/28/98	SB-7"	2-2.5	11.1	249	7.6	4.38	173	588	154,000	391	58.4	0.1	735	4,220	25.8	59.5
1281	07/28/98	SB-8"	4-4.5	8.7	150	8.4	2.41	245	427	143,000	390	93.9	0.1	570	5,270	35.6	66.7
1282	07/28/98	SB-9"	2.5-3	30.7	555	5	1.12	337	864	203,000	525	194	0.1	443	13,400	19.8	156
1283	07/28/98	SB-10"	4-4.5	21.0	455	687	2.65	1,220	1,680	178,000	525	1,030	0.1	745	10,000	59.4	1,050
CRITERIA																	
Industrial/Commercial Drinking Water Protection Criteria				4.3	23	1,300	6	1.0E+6 (D)	160,000	6,000	1 (M, 3)	2 (M, 2)	1.7	100	24,000	13	5,000
Ground/Surface Water Protection Criteria				ID	70	130	(G,X)	(G,X)	(G)	NA	(G,M,X)	(G,X)	0.17	(G)	NA	0.5 (M, 0.5)	(G)
Groundwater Contact Protection Criteria				54,000	2,200	1.0E+6 (D)	250,000	1.0E+6 (D)	1.0E+6 (D)	ID	ID	200,000	47	1.0E+6 (D)	1.0E+6 (D)	230,000	1.0E+6 (D)
Direct Contact Criteria - Industrial				1,600	100	320,000	4,500	1.0E+6 (D)	170,000	ID	900	210,000	1,400	340,000	1.0E+6 (D)	21,000	1.0E+6 (D)
Comments:				B	B	B	B	B,H	B	B	B	B	B	B	B	B	B
Statewide Default Background				NA	5.8	75	1.2	18	32	12,000	21	440	0.13	20	NA	1	47

NOTES:

-- = Not Analyzed.

< = Indicates nondetect, value presented is the detection limit.

B = Use Statewide Default Background, if greater than criterion.

C = Csat value which can be exceeded, if no free phase is present.

D = Criterion exceeds 100%; evaluate free phase, aesthetics, impacts, and toxicity.

G = pH/Hardness dependent.

M = Criterion below Target Detction Limit (TDL) - Use TDL.

X = Criteria unless constituent will effect surface drinking water supply.

ID = Inadequate Data to develop criterion.

NA = Critierion Not Available.

Yellow shading indicates exceedance of Industrial/Commercial Drinking Water Protection Criteria.

Blue shading indicates exceedence of Ground/Surface Water Interface Protection Criteria.

Underlining indicates exceedences of Groundwater Contact Protection Criteria.

Red font indicates exceedence of Direct Contact Criteria - Industrial

Table 3b. Buried Pyrite Trench SPLP Analyses.
Humboldt Millsite, Michigan

Soil Boring ID	Sample Date	Boring No.	Depth Interval (ft.)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Magnesium (mg/L)	Silver (mg/L)	Zinc (mg/L)
1274	07/28/98	SB-1"	3-3.5	0.01	0.004	0.081	0.0074	<0.005	0.011	<0.007	<0.002	1	<0.0002	0.44	18	<0.0005	0.204
1275	07/28/98	SB-2"	2.75-3	0.003	0.031	0.124	0.0033	0.03	1.51	48.1	0.011	0.49	<0.0002	0.38	6.99	0.0006	0.608
1276	07/28/98	SB-3"	3-3.5	<0.002	<0.002	0.086	0.0075	<0.005	0.005	<0.007	<0.002	0.395	<0.0002	0.43	6.77	<0.0005	0.146
1277	07/28/98	SB-4"	4-4.5	<0.002	0.015	0.082	0.0123	0.007	1.09	10.2	0.036	0.972	<0.0002	1.18	23.4	<0.0005	1.02
1278	07/28/98	SB-5"	2.75-3	0.01	0.004	0.082	0.0092	<0.005	0.006	<0.007	<0.002	1.67	<0.0002	0.99	35.3	<0.0005	0.183
1279	07/28/98	SB-6"	3-3.5	<0.002	0.007	0.072	0.0063	<0.005	0.079	<0.007	<0.002	0.689	<0.0002	0.72	18.8	<0.0005	0.445
1280	07/28/98	SB-7"	2-2.5	<0.002	0.147	0.083	0.005	0.018	0.85	56.5	0.011	0.322	<0.0002	0.75	4.76	<0.0005	0.583
1281	07/28/98	SB-8"	4-4.5	<0.002	0.075	0.08	0.006	0.088	1.29	88.1	0.046	0.385	<0.0002	0.89	11.6	<0.0005	0.626
1282	07/28/98	SB-9"	2.5-3	<0.002	0.059	0.04	0.0807	0.355	7.88	116	2.62	4.57	<0.0002	8.22	183	<0.0005	2.54
1283	07/28/98	SB-10"	4-4.5	0.006	0.005	0.083	0.0123	<0.005	0.013	0.103	0.003	2.7	<0.0002	1.11	58.7	<0.0005	0.109
CRITERIA																	
TCLP/SPLP				NL	5.0	NL	1.0	5.0	NL	NL	5.0	NL	0.2	NL	NL	5.0	NL

NOTES:

-- = Not Analyzed.

< = Indicates nondetect, value presented is the detection limit.

Red Font indicates exceedednce of Criteria

Table 4. Ground Water Analyses - Hydrocarbons.
Humboldt Millsite, Michigan

Well ID	Sample Date	BTEX					PAH																
		Benzene (µg/L)	Toluene (µg/L)	Ehtylbenzene (µg/L)	Xylenes (µg/L)	TVAH (µg/L)	Acenaph-thene (µg/L)	Acenaph-thylene (µg/L)	Anthra-cene (µg/L)	Benzo(a) anthra-cene (µg/L)	Benzo(b) fluoran-thene (µg/L)	Benzo(k) fluoran-thene (µg/L)	Benzo(g, h,i) pery-lene (µg/L)	Benzo(a) pyrene (µg/L)	Chrysene (µg/L)	Dibenzo (a,h) an-thracene (µg/L)	Fluor-anthene (µg/L)	Fluorene (µg/L)	Indeno (1,2,3-cd) pyrene (µg/L)	1-Methyl-napthalene (µg/L)	2-Methyl-napthalene (µg/L)	Naph-thalene (µg/L)	Phenan-threne (µg/L)	Pyrene (µg/L)
MW-1	07/31/91	<1	<1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-1	01/16/92	<1	<1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-1	01/20/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-1	03/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-1	06/02/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-1	09/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-1	12/07/94	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS	IS
MW-1	03/31/95	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-1	06/13/95	<5	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-1	09/16/97	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-2	07/31/91	2	1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	01/16/92	<1	<1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	01/20/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	03/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	06/02/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	09/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	12/07/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	03/31/95	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	06/13/95	<5	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-2	09/16/97	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-3	07/31/91	<1	3	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-3	01/16/92	<1	<1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-3	01/20/94	<1	<1	<1	<3	–																		
MW-3	03/14/94	<1	<1	<1	<3	–																		
MW-3	06/02/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-3	09/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-3	12/07/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-3	03/31/95	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-3	06/13/95	?	?	?	?	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-3	09/16/97	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-4	07/31/91	<1	<1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	01/16/92	<1	<1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	01/20/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	03/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	06/02/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	09/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	12/07/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	03/31/95	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	06/13/95	<5	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-4	09/16/97	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-5	08/16/91	20	30	190	1,800	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	83	–	–
MW-5	01/16/92	3	5	20	120	–	300	24	–	–	–	–	–	–	–	–	–	14	50			–	–	–
MW-5	01/20/94	<25	<25	59	1,700	–	–	–	–	–	–	–	–	–	–	–	–	5	–			51	–	–
MW-5	03/14/94					–																		
MW-5	06/02/94	14	11	16	960	–	–	–	–	–	–	–	–	–	–	–	–	–	–			16	–	–
MW-5	09/14/94	24	18	120	290	–	–	–	–	–	–	–	–	–	–	–	–	–	–			19	–	–
MW-5	12/07/94	20	10	130	2,400	–	–	–	–	–	–	–	–	–	–	–	–	–	–			26	–	–
MW-5	03/31/95	19	11	90	1,950	–	–	–	–	–	–	–	–	–	–	–	–	–	–			35	–	–
MW-5	06/13/95	13	17	64	1,000	–	–	–	–	–	–	–	–	–	–	–	–	–	–			15	–	–
MW-5	09/18/95	29	9.6	505	3,100		–	–	–	–	–	–	–	–	–	–	–	–	–			10	–	–
MW-5	09/16/97	24	15.0	130	1,900	2,069	<100	250	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	900	650	130	<100	<100
MW-5	08/03/98	20	11.0	110	1,700	1,841	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-5	10/20/99	18	<10	95	1699	–	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10			19	<10	<10
MW-5 fp	10/19/99	15	<10	73	1,666	–	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100			<100	<100	<100

Well ID	Sample Date	BTEX					PAH																
		Benzene (µg/L)	Toluene (µg/L)	Ehtylbenzene (µg/L)	Xylenes (µg/L)	TVAH (µg/L)	Acenaph-thene (µg/L)	Acenaph-thylene (µg/L)	Anthra-cene (µg/L)	Benzo(a) anthra-cene (µg/L)	Benzo(b) fluoran-thene (µg/L)	Benzo(k) fluoran-thene (µg/L)	Benzo(g, h,i) pery-lene (µg/L)	Benzo(a) pyrene (µg/L)	Chrysene (µg/L)	Dibenzo (a,h) an-thracene (µg/L)	Fluor-anthene (µg/L)	Fluorene (µg/L)	Indeno (1,2,3-cd) pyrene (µg/L)	1-Methyl-napthalene (µg/L)	2-Methyl-napthalene (µg/L)	Naph-thalene (µg/L)	Phenan-threne (µg/L)	Pyrene (µg/L)
MW-6	10/31/91	2	130	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-6	01/16/92	<1	<1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-6	01/20/94					–																		
MW-6	03/14/94					–																		
MW-6	06/02/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-6	09/14/94					–																		
MW-6	12/07/94					–																		
MW-6	03/31/95					–																		
MW-6	06/13/95	5	<1	<1	<3	ND	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-7	01/16/92	<1	<1	<1	<1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-7	01/20/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-7	03/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-7	06/02/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-7	09/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-7	12/07/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-7	03/31/95					–																		
MW-7	06/13/95	<5	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-7	09/16/97	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-9	01/16/92	<1	<1	<1	<1	–	10	–	–	–	–	–	–	–	–	–	–	6	–	–	–	–	8	–	–
MW-9	01/20/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-9	03/14/94	<1	<1	2	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-9	06/02/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-9	09/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-9	12/07/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-9	03/31/95	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-9	06/13/95	<5	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-9	09/16/97	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-10	03/19/92	<1	1	<1	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-10	01/20/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-10	03/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-10	06/02/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-10	09/14/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-10	12/07/94	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-10	03/31/95	<1	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-10	06/13/95	<5	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–			–	–	–
MW-10	09/16/97	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-104	10/26/95	27	94	48	530	–	–	–	–	–	–	–	–	–	–	–	–	–	–			76	–	–
MW-104	11/08/96	<1,000	<1,000	3,900	12,000	–	–	–	–	–	–	–	–	–	–	–	–	–	–			1700	510	–
MW-104	09/16/97	29	150	170	760	1,109	<100	270	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	700	670	250	<100	<100
MW-104 fp	10/19/99	<100	<100	<100	715		<6,000	<6,000	<6,000	<6,000	<6,000	<6,000	<6,000	<6,000	<6,000	<6,000	<6,000	<6,000	<6,000			15,600	10,000	<6,000
MW-106	10/26/95	<5	<1	<1	<3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-106	09/16/97	<1	<1	<1	<1	–																		
MW-106	08/03/98	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MW-107	08/27/98	<1	<1	<1	<1	ND	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5			
MW-107	10/20/99	<1.0	<1.0	<1.0	<1.0	–																		
Trip Blank	09/16/97	<1	<1	<1	<1	ND														–	–			
Trip Blank	10/20/99	<1.0	<1.0	<1.0	<1.0	–														–	–			
CRITERIA																								
Industrial/Commercial II,III, IVDrinking Water Criteria Criteria		5 (A)	790 (E)	74 (E)	280 (E)	NL	3,800	75	43 (S)	5.0 (M)	5.0 (M)	48	75	5.0 (M)	480	5.0 (M)	210 (S)	2,000 (S)	5.0 (M)	NL	750.0	750	75	140 (S)
Ground/Surface Water Interface Criteria		200 (X)	140	18	35	NL	19	ID	ID	NA	ID	NA	NA	ID	ID	ID	1.6	12	ID	NL	ID	13	5.0 (M)	ID
Ground Water Contact Criteria		9,400	5.3E+5 (S)	1.7E+5 (S)	1.9E+5 (S)	NL	4,200 (S)	3,900 (S)	43 (S)	2.E+07	5.0 (M)	21	5.0 (M)	5.0 (M)	5.0 (M)	5.0 (M)	210 (S)	2,000 (S)	5.0 (M)	NL	32,000	31,000 (S)	1,000 (S)	140 (S)
Comments:		I	I	I	I	NL	None	None	None	Q	Q	Q	None	Q	Q	Q	None	None	Q	None	None	None	None	None

NOTES:

– = Not Analyzed.

< = Indicates nondetect, value presented is the detection limit.

A = Criterion established in Safe Drinking Water Act.

E = Criterion is aesthetic value.

M = Criterion below Target Detction Limit (TDL) - Use TDL.

S = Criterion defaults to water solubility limit.

X = Criteria unless constituent will effect surface drinking watersupply.

ID = Inadequate Data to develop criterion.

NA = Criterion Not Available.

IS = Insufficient Sample.

Yellow shading indicates exceedance of Industrial/Commercial II,III, IV Drinking Water Criteria.

Blue shading indicates exceedance of Ground/Surface Water Interface Criteria.

Red font indicates exceedences of Ground Water Contact Criteria

BOLD = PQL

Table 5. Ground Water Analyses - Inorganics.
Humboldt Millsite, Michigan

Well ID	Sample Date	pH (su)	ORP (mV)	D.O. (mg/L)	T (°C)	E.C. (mS/cm)	CO_2 (mg/L)	CH_4 (mg/L)	HCO_3^- (mg/L)	Cl^- (mg/L)	$N\text{-}NH_4^+$ (mg/L)	$N\text{-}NO_3^-$ (mg/L)	N-ate+ite (mg/L)	P-Total (mg/L)	SO_4^{2-} (mg/L)	As (mg/L)	Ba (mg/L)	Cd (mg/L)	Ca (mg/L)	Cr (mg/L)	Cu (mg/L)	Fe (mg/L)	Pb (mg/L)	Mg (mg/L)	Mn (mg/L)	Hg (mg/L)	Ni (mg/L)	K (mg/L)	Se (mg/L)	Ag (mg/L)	Na (mg/L)	Zn (mg/L)
MW-1	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0072	0.052	< 0.005	–	< 0.01	< 0.01	21	0.023	–	9.4	< 0.0002	0.21	–	< 0.002	< 0.005	–	0.06
MW-1	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.011	< 0.0005	–	0.0018	< 0.001	0.32	< 0.001	–	0.31	< 0.0002	0.0092	–	< 0.002	< 0.001	–	0.038
MW-1	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.065	< 0.0005	–	0.002	0.003	4.5	< 0.001	–	7.0	< 0.0002	0.15	–	0.002	< 0.001	–	0.023
MW-1	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.035	0.0006	–	0.0008	0.008	0.16	0.003	–	2.3	< 0.0002	0.028	–	< 0.002	< 0.0005	–	0.11
MW-2	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0053	0.049	< 0.005	–	< 0.01	< 0.01	1.6	< 0.001	–	6.0	< 0.0002	0.06	–	< 0.002	< 0.005	–	0.03
MW-2	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.002	0.035	< 0.0005	–	0.0023	< 0.001	0.26	< 0.001	–	4.4	< 0.0002	0.036	–	< 0.002	< 0.001	–	0.029
MW-2	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.067	< 0.0005	–	0.002	0.004	0.066	< 0.001	–	2.3	< 0.0002	0.018	–	< 0.002	< 0.001	–	0.006
MW-2	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.033	0.0005	–	0.001	0.005	0.5	< 0.002	–	5.1	< 0.0002	0.014	–	< 0.002	< 0.0005	–	0.024
MW-2	10/19/99	5.92*	159	2.6	10.9	0.333	–	–	103	3	0.1	0.10	0.10	0.06	215	0.005	0.1	0.001	72	0.01	0.01	0.21	0.01	21	3.3	0.001	0.03	8	0.005	0.005	14	0.02
MW-3	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0048	0.095	< 0.005	–	< 0.01	< 0.01	0.45	0.012	–	1.9	< 0.0002	0.09	–	< 0.002	< 0.005	–	0.68
MW-3	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	dry	dry	dry	–	dry	dry	dry	dry	–	dry	dry	dry	–	dry	dry	–	dry
MW-3	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.06	< 0.0005	–	0.001	0.008	0.17	< 0.001	–	0.07	< 0.0002	0.028	–	< 0.002	< 0.001	–	0.36
MW-3	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.068	0.001	–	0.002	0.005	0.25	0.003	–	0.46	< 0.0002	0.077	–	< 0.002	0.0006	–	0.59
MW-3	10/19/99	5.73	148	3.88	10.4	0.144	–	–	33	2	0.1	0.21	0.21	0.01	91	0.005	0.1	0.001	30	0.01	0.01	0.03	0.01	6	0.06	0.001	0.03	4	0.005	0.005	4	0.15
MW-4	08/18/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.083	0.30	< 0.005	–	< 0.01	0.18	170	< 0.03	–	62	0.0002	0.94	–	< 0.015	< 0.005	–	0.09
MW-4	12/17/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.12	0.22	< 0.005	–	< 0.01	0.09	170	< 0.03	–	49	0.0009	0.79	–	< 0.002	< 0.005	–	0.10
MW-4	12/28/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.09	< 0.005	–	< 0.01	0.02	120	< 0.03	–	47	< 0.0002	0.78	–	< 0.002	< 0.005	–	0.12
MW-4	08/10/93	–	–	–	–	–	–	–	–	–	–	–	–	–	–	[illegible]	–	–	–	–	0.11	240	< 0.03	–	–	0.0008	2.2	–	–	–	–	0.02
MW-4	02/02/94	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.066	–	–	–	–	0.04	170	< 0.03	–	–	< 0.0001	1.3	–	–	–	–	0.26
MW-4	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.018	0.064	0.026	–	< 0.01	< 0.01	250	< 0.001	–	64	< 0.0002	2.2	–	< 0.002	< 0.005	–	0.45
MW-4	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.046	0.057	0.036	–	0.0048	< 0.001	220	0.024	–	41	< 0.0002	1.9	–	< 0.002	0.0024	–	0.47
MW-4	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.06	0.041	–	0.002	0.004	410	0.024	–	45	< 0.0002	1.5	–	< 0.002	0.003	–	0.28
MW-4	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.034	0.009	–	0.005	0.09	62	0.017	–	50	< 0.0002	1.8	–	0.014	0.003	–	0.80
MW-4	10/19/99	4.79	182	1.39	12.7	0.009	–	–	2.5	5	2.8	0.05	0.05	0.08	1,550	0.035	0.1	0.004	181	0.02	0.01	305	0.01	110	41.8	0.001	1.46	7	0.005	0.005	14	0.89
MW-5	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.074	0.25	0.005	–	< 0.01	< 0.01	200	0.0012	–	6.1	< 0.0002	0.03	–	< 0.002	< 0.005	–	0.05
MW-5	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.094	0.22	0.022	–	0.013	< 0.001	140	0.013	–	6.1	< 0.0002	0.057	–	< 0.002	< 0.001	–	< 0.001
MW-5	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.14	0.26	0.03	–	0.014	< 0.001	300	0.014	–	6.7	< 0.0002	0.06	–	< 0.002	< 0.001	–	< 0.001
MW-5	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.039	0.18	0.013	–	0.01	0.002	140	0.013	–	5.6	< 0.0002	0.02	–	< 0.002	0.0008	–	< 0.009
MW-5	10/19/99	6.24	140	0.35	12.4	0.002	751	1.3157	546	67	3.3	0.06	0.06	0.27	1	0.139	0.2	0.001	59	0.02	0.01	166	0.01	20	4.87	0.001	0.05	12	0.005	0.005	112	0.03
MW-6	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	dry	dry	dry	–	dry	dry	dry	dry	–	dry	dry	dry	–	dry	dry	–	dry
MW-6	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	dry	dry	dry	–	dry	dry	dry	dry	–	dry	dry	dry	–	dry	dry	–	dry
MW-6	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	dry	dry	dry	–	dry	dry	dry	dry	–	dry	dry	dry	–	dry	dry	–	dry
MW-6	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	dry	dry	dry	–	dry	dry	dry	dry	–	dry	dry	dry	–	dry	dry	–	dry
MW-6	10/19/99	4.6	150	N/A	13.2	1.72	–	–	–	–	–	–	–	–	–	0.005	0.1	0.001	–	0.01	0.01	399	0.01	–	24.4	0.001	0.11	–	0.005	0.005	–	0.12
MW-7	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0077	0.021	0.042	–	< 0.01	< 0.01	170	< 0.002	–	76	< 0.0002	3.9	–	< 0.002	< 0.005	–	1.2
MW-7	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.002	0.023	0.026	–	0.0051	0.0059	160	0.018	–	40	< 0.0002	1.7	–	< 0.002	0.0019	–	0.70
MW-7	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.018	0.020	–	0.004	0.004	190	0.011	–	35	< 0.0002	1.1	–	< 0.002	0.003	–	0.25
MW-7	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.007	0.018	0.028	–	0.007	0.022	150	0.017	–	57	< 0.0002	3.2	–	< 0.002	0.002	–	1.2
MW-7	10/19/99	3.93	197	0.84	10.4	0.86	–	–	0	4	2.4	0.05	0.05	0.07	1,070	0.005	0.1	0.004	118	0.01	0.12	182	0.01	68	23.5	0.001	0.59	11	0.005	0.005	10	0.43
MW-7 Dup.	10/19/99	3.93	197	0.84	10.4	0.86	–	–	0	5	2.5	<0.05	<0.05	0.07	1,070	< 0.005	0.1	0.004	117	< 0.01	0.12	182	< 0.01	68	23.4	< 0.001	0.64	11	< 0.005	< 0.005	9	0.43
MW-9	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.028	< 0.005	–	< 0.01	< 0.01	0.12	< 0.001	–	0.21	< 0.0002	0.02	–	< 0.002	< 0.005	–	0.01
MW-9	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.031	< 0.0005	–	0.0030	0.0022	0.10	< 0.001	–	0.65	< 0.0002	0.025	–	< 0.002	< 0.001	–	0.033
MW-9	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.037	< 0.0005	–	< 0.001	0.003	0.15	< 0.001	–	0.22	< 0.0002	0.021	–	< 0.002	0.002	–	0.007
MW-9	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.003	0.028	0.0005	–	0.001	0.002	3.3	0.003	–	0.23	< 0.0002	< 0.0005	–	< 0.002	< 0.0005	–	0.037
MW-9	10/19/99	5.8	147	0.86	11.1	0.253	215	1.0601	139	4	0.3	0.20	0.20	0.07	94	0.008	0.1	0.001	52	0.01	0.01	8.06	0.01	16	1.17	0.001	0.01	4	0.005	0.005	9	0.01
MW-10	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0048	0.056	< 0.005	–	< 0.01	< 0.01	18	< 0.001	–	23	< 0.0002	0.03	–	< 0.002	< 0.005	–	0.19
MW-10	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0036	0.042	0.0025	–	0.0076	0.0027	20	0.0048	–	35	< 0.0002	0.049	–	0.0047	< 0.001	–	0.060
MW-10	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.003	0.049	< 0.0005	–	0.002	0.001	0.33	< 0.001	–	30	< 0.0002	0.039	–	0.007	0.002	–	0.33
MW-10	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.044	0.005	–	0.003	0.009	10	0.007	–	36	< 0.0002	0.13	–	0.014	0.003	–	0.29
MW-10	10/19/99	5.85	145	0.8	11.9	0.003	–	–	18	1	0.2	0.86	0.86	0.02	25	0.005	0.1	0.004	10	0.01	0.01	0.28	0.01	2	0.54	0.001	0.02	1	0.005	0.005	2	0.82
MW-11	08/18/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.037	0.54	< 0.005	–	0.09	0.11	300	0.12	–	13	< 0.0002	0.07	–	0.015	< 0.005	–	0.22
MW-11	12/17/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.016	0.19	< 0.005	–	0.01	0.03	240	0.05	–	9.7	0.0018	0.02	–	< 0.002	< 0.005	–	0.12
MW-11	12/28/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.006	0.18	< 0.005	–	< 0.01	0.03	230	< 0.03	–	10	< 0.0002	0.02	–	< 0.002	< 0.005	–	0.12
MW-11	08/10/93	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.01	–	–	–	–	< 0.01	11	< 0.03	–	–	< 0.0002	< 0.01	–	–	–	–	0.01
MW-11	02/02/94	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.03	–	–	–	–	0.09	260	0.05	–	–	0.0001	< 0.02	–	–	–	–	0.17
MW-11	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0064	0.12	< 0.005	–	< 0.01	< 0.01	140	0.0034	–	7.8	< 0.0002	< 0.01	–	< 0.002	< 0.005	–	0.06
MW-11	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0068	0.11	0.016	–	0.012	0.0011	120	0.013	–	6.6	< 0.0002	0.012	–	< 0.002	< 0.001	–	< 0.001
MW-11	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.013	0.11	0.019	–	0.013	0.088	190	0.011	–	6.2	< 0.0002	0.004	–	< 0.002	< 0.001	–	< 0.001
MW-11	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.14	0.013	–	0.010	0.004	140	0.012	–	8.6	< 0.0002	0.002	–	< 0.002	0.0008	–	< 0.009
MW-11	10/19/99	5.9	147	0.39	10.4	0.793	–	–	556	96	12.6	0.37	0.37	0.16	25	0.008	0.2	0.001	49	0.010	0.01	127	0.01	16	6.49	0.001	0.01	10	0.005	0.005	167	0.02

Well ID	Sample Date	pH (su)	ORP (mV)	D.O. (mg/L)	T (°C)	E.C. (mS/cm)	CO_2 (mg/L)	CH_4 (mg/L)	HCO_3^- (mg/L)	Cl^- (mg/L)	$N\text{-}NH_4^+$ (mg/L)	$N\text{-}NO_3^-$ (mg/L)	N-ate+ite (mg/L)	P-Total (mg/L)	SO_4^{2-} (mg/L)	As (mg/L)	Ba (mg/L)	Cd (mg/L)	Ca (mg/L)	Cr (mg/L)	Cu (mg/L)	Fe (mg/L)	Pb (mg/L)	Mg (mg/L)	Mn (mg/L)	Hg (mg/L)	Ni (mg/L)	K (mg/L)	Se (mg/L)	Ag (mg/L)	Na (mg/L)	Zn (mg/L)
MW-12	08/18/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.009	0.10	< 0.005	–	0.02	0.02	7.0	< 0.03	–	1.9	< 0.0002	0.01	–	< 0.006	< 0.005	–	0.04
MW-12	12/17/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.012	0.04	< 0.005	–	< 0.01	0.02	16	0.03	–	1.1	< 0.0002	< 0.01	–	< 0.002	< 0.005	–	0.05
MW-12	12/28/92	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.005	0.03	< 0.005	–	< 0.01	0.01	5.1	< 0.03	–	1.0	< 0.0002	0.01	–	< 0.002	< 0.005	–	0.04
MW-12	08/10/93	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.014	–	–	–	–	0.02	200	< 0.03	–	–	< 0.0002	< 0.01	–	–	–	–	0.06
MW-12	02/02/94	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.49	–	–	–	–	0.03	37	< 0.03	–	–	< 0.0002	< 0.02	–	–	–	–	0.7
MW-12	06/02/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0069	0.033	< 0.005	–	< 0.01	< 0.01	7.4	< 0.001	–	1.0	< 0.0002	< 0.01	–	< 0.002	< 0.005	–	0.01
MW-12	09/18/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.0064	0.024	< 0.0005	–	0.0027	0.0013	5.5	< 0.001	–	0.99	< 0.0002	0.0011	–	< 0.002	< 0.001	–	0.031
MW-12	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.030	< 0.0005	–	0.002	0.034	1.8	< 0.001	–	1.5	< 0.0002	0.002	–	< 0.002	< 0.001	–	0.008
MW-12	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.030	0.0005	–	0.001	0.009	1.9	< 0.002	–	1.1	< 0.0002	0.001	–	0.002	< 0.0005	–	0.26
MW-12	10/19/99	6	146	0.66	9.8	0.199			229	1	0.7	0.07	0.07	0.18	5	0.009	0.100	0.001	44	0.01	0.01	9.45	0.01	15	1.1	0.001	0.01	2	0.005	0.005	5	0.01
MW-101	10/26/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.005	<0.2	< 0.0005	–	< 0.05	< 0.025	1	< 0.003	–	5.8	< 0.0002	< 0.05	–	< 0.005	< 0.0005	–	< 0.02
MW-101	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.006	0.056	0.0007	–	0.003	–	5.5	< 0.001	–	8.4	< 0.0002	0.001	–	< 0.002	0.002	–	0.013
MW-101	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.005	0.067	0.0005	–	0.003	0.009	5.2	0.004	–	12	< 0.0002	< 0.0005	–	0.007	0.001	–	0.029
MW-101	10/19/99	6.05	160	0.61	11.5	0.226	–	–	202	3	1.6	0.08	0.08	0.18	16	0.036	0.1	0.001	38	0.01	0.01	28.9	0.01	13	10.4	0.001	0.01	4	0.005	0.005	4	0.01
MW-102	10/26/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.005	<0.2	< 0.0005	–	< 0.05	< 0.025	390	< 0.003	–	22	< 0.0002	1.4	–	< 0.005	< 0.0005	–	0.22
MW-102	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.036	0.13	–	< 0.001	–	440	0.068	–	25	< 0.0002	1.6	–	< 0.002	0.002	–	< 0.001
MW-102	11/29/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.036	0.13	–	0.001	–	440	0.068	–	25	< 0.0002	1.6	–	< 0.002	0.002	–	0.001
MW-102	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.062	0.11	–	< 0.005	< 0.0008	690	0.069	–	27	< 0.0002	2.5	–	< 0.002	0.003	–	< 0.009
MW-102	10/19/99	2.99	319	4.87	12.2	3.56	0.00	0.0466	0	10	3.7	0.12	0.20	0.20	6,490	0.007	0.1	0.01	424	0.14	0.41	1,680	0.01	326	33.4	0.001	3.8	3	0.007	0.005	14	2.32
MW-103	10/26/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.005	<0.2	<0.0005	–	<0.05	< 0.025	34	< 0.003	–	3.2	< 0.0002	0.05	–	< 0.005	< 0.0005	–	0.02
MW-103	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.060	0.0006	–	0.002	–	2.8	< 0.001	–	4.2	< 0.0002	0.002	–	< 0.002	< 0.001	–	0.22
MW-103	11/29/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.06	0.0006	–	0.002	–	2.8	0.001	–	4.2	< 0.0002	0.002	–	< 0.002	< 0.001	–	0.001
MW-103	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.062	0.002	–	0.002	0.005	23	0.003	–	5.8	< 0.0002	0.008	–	< 0.008	0.0006	–	< 0.009
MW-103	10/19/99	6	110	0.37	12.2	0.44	–	–	93	3	1.4	0.06	0.05	0.13	260	0.013	0.100	0.001	79	0.01	0.01	74.5	0.01	28	7.08	0.001	0.01	4	0.005	0.005	9	0.01
MW-104	10/26/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.012	0.2	0.0005	–	0.05	< 0.025	30	< 0.003	–	3.2	< 0.0002	0.05	–	< 0.005	0.0005	–	0.02
MW-104	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.008	0.21	0.005	–	0.002	–	41	0.004	–	5.7	< 0.0002	0.022	–	< 0.002	< 0.001	–	0.025
MW-104	11/29/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.008	0.21	0.005	–	0.002	–	41	0.004	–	5.7	< 0.0002	0.022	–	0.002	0.001	–	0.025
MW-104	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.011	0.17	0.005	–	0.003	0.004	65	0.007	–	4.6	< 0.0002	0.024	–	< 0.002	0.001	–	< 0.009
MW-104	10/19/99	–	–	–	–	–	–	–	–	–	2.5	–	0.13	0.14	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
MW-105	10/26/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.005	0.2	0.0005	–	0.05	0.025	9.4	0.003	–	1.2	< 0.0002	0.05	–	< 0.005	0.0005	–	0.02
MW-105	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.038	< 0.0005	–	0.002	–	2.7	< 0.001	–	1.4	< 0.0002	0.004	–	0.002	< 0.001	–	0.013
MW-105	11/29/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.038	0.0005	–	0.002	–	2.7	< 0.001	–	1.4	< 0.0002	0.004	–	0.002	< 0.001	–	0.013
MW-105	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.038	0.0009	–	0.002	0.007	11	< 0.004	–	1.2	< 0.0002	< 0.0005	–	< 0.002	< 0.0005	–	0.029
MW-106	10/26/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.005	0.2	0.0005	–	0.05	< 0.025	2	< 0.003	–	7.2	< 0.0002	0.05	–	< 0.005	< 0.0005	–	0.02
MW-106	11/07/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.063	< 0.0005	–	0.003	–	0.52	< 0.001	–	7.6	< 0.0002	0.011	–	0.006	< 0.001	–	0.020
MW-106	11/29/95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.002	0.063	0.0005	–	0.003	–	0.052	< 0.001	–	7.6	< 0.0002	0.011	–	0.006	0.001	–	0.02
MW-106	06/05/96	–	–	–	–	–	–	–	–	–	–	–	–	–	–	< 0.003	0.050	0.0006	–	0.001	0.009	0.44	< 0.002	–	3.5	< 0.0002	0.014	–	0.003	< 0.0005	–	0.039
MW-107	10/19/99	6.03	110	0.88	12.1	0.645	–	–	9.8	5	3.5	0.08	0.08	0.05	660	0.015	0.2	0.001	99	0.01	0.01	104	0.01	41	37.8	0.001	0.01	7	0.005	0.005	24	0.030
CRITERIA																																
Industrial/Commercial II,III, IV Drinking Water Criteria		ID	NL	250 (E)	ID (N)	10 (A,N)	NL	240	250 (E)	0.05 (A)	2 (A)	0.005 (A)	NL	0.1 (A)	1 (E)	0.3 (E)	0.004 (L)	1,200	0.05 (E)	0.002 (A)	0.1 (A)	NL	0.05 (A)	0.098	450	5 (E)						
Ground/Surface Water Interface Criteria		ID	NL	NA	(AC)	NA	NL	NA	NA	0.15 (X)	0.190	(G,X)	NL	(G,X)	(G)	NA	(G,X)	NA	(G,X)	0.0002 (M)	(G)	NL	0.005	0.0002 (M)	NA	(G)						
Ground Water Contact Criteria		ID	NL	ID	530,000	340,000	NL	ID	ID	4.70	15,000	210	NL	320,000	8,100	ID	ID	1.0E+6 (D)	10,000	0.056 (S)	16,000	NL	1,100	1,000	1.0E+6 (D)	70,000						
Comments:		None	None	B	None	B,N	None	None	None	B	B	B	None	B,H	B	B	B	B	B	B	B	None	B	B	B	ID						

NOTES:

– = Not Analyzed.

< = Indicates nondetect, value presented is the detection limit.

* = Criteria not shown by MDEQ; EPA Drinking Water is 6.5-8.5.

BOLD = PQL

A = Criterion established in Safe Drinking Water Act.

B = Use Statewide Default Background or local background, if greater than criterion.

C = Csat value which can be exceeded, if no free phase is present.

D = Criterion exceeds 100%; evaluate free phase, aesthetics, impacts, and toxicity.

E = Criterion is aesthetic value.

G = pH/Hardness dependent.

L = Criterion can be increased to 0.015 mg/L, if soil is less than 400 mg/kg.

M = Criterion below Target Detction Limit (TDL) - Use TDL.

N = Ammonia+nitrate+nitrite values must cumulated and compared to nitrate standard.

S = Criterion defaults to water solubility limit.

X = Criteria unless constituent will effect surface drinking watersupply.

AC = GSI criteria are 0.029 mg/L for coldwater streams and 0.053 mg/L for warmwater streams.

ID = Inadequate Data to develop criterion.

NA = Criterion Not Available.

NL = Not Listed.

Yellow shading indicates exceedance of Industrial/Commercial II,III, IV Drinking Water Criteria

Blue shading indicates exceedance of Ground/Surface Water Interface Criteria

Red font indicates exceedence of Ground Water Contact Criteria

Traverse Engineering
1984 Tier 3

estimated coordinates
Wier #2 2602191S.0, 625433.0

TABLE VI

U.S. 41 CULVERT FLOW DATA

Date	Weir #1 (gpm)	Weir #2 (gpm)	Wier #3 (gpm)	Pit Elev.	Rainfall
9/15/84				1536.83	
9/22/84	NO WEIR INSTALLED		12		
9/25/84		396	62		1.3"
9/27/84		254	47		
9/29/84		254	47		
10/1/84		228	17		
10/8/84		156	34		0.75"
10/10/84		191	17	1536.79	
10/15/84	-0-	247	22		
10/17/84 AM	-0-	443	62	1536.87	
10/17/84 PM	-0-	443	34		
10/18/84	-0-	443	8		Trace
10/20/84	-0-	228	28		0.4"
10/22/84	-0-	156	22		
10/24/84	-0-	156	22	1536.82	
10/25/84	-0-	156	22		
10/27/84	-0-	210	34		0.2"
10/28/84	-0-	351	78		0.9"
10/29/84	-0-	330	62	1536.91	
10/30/84	-0-	308	55		
10/31/84	-0-				
11/1/84	-0-				
11/4/84	-0-	267	55		
11/7/84	-0-	267	62	1536.88	

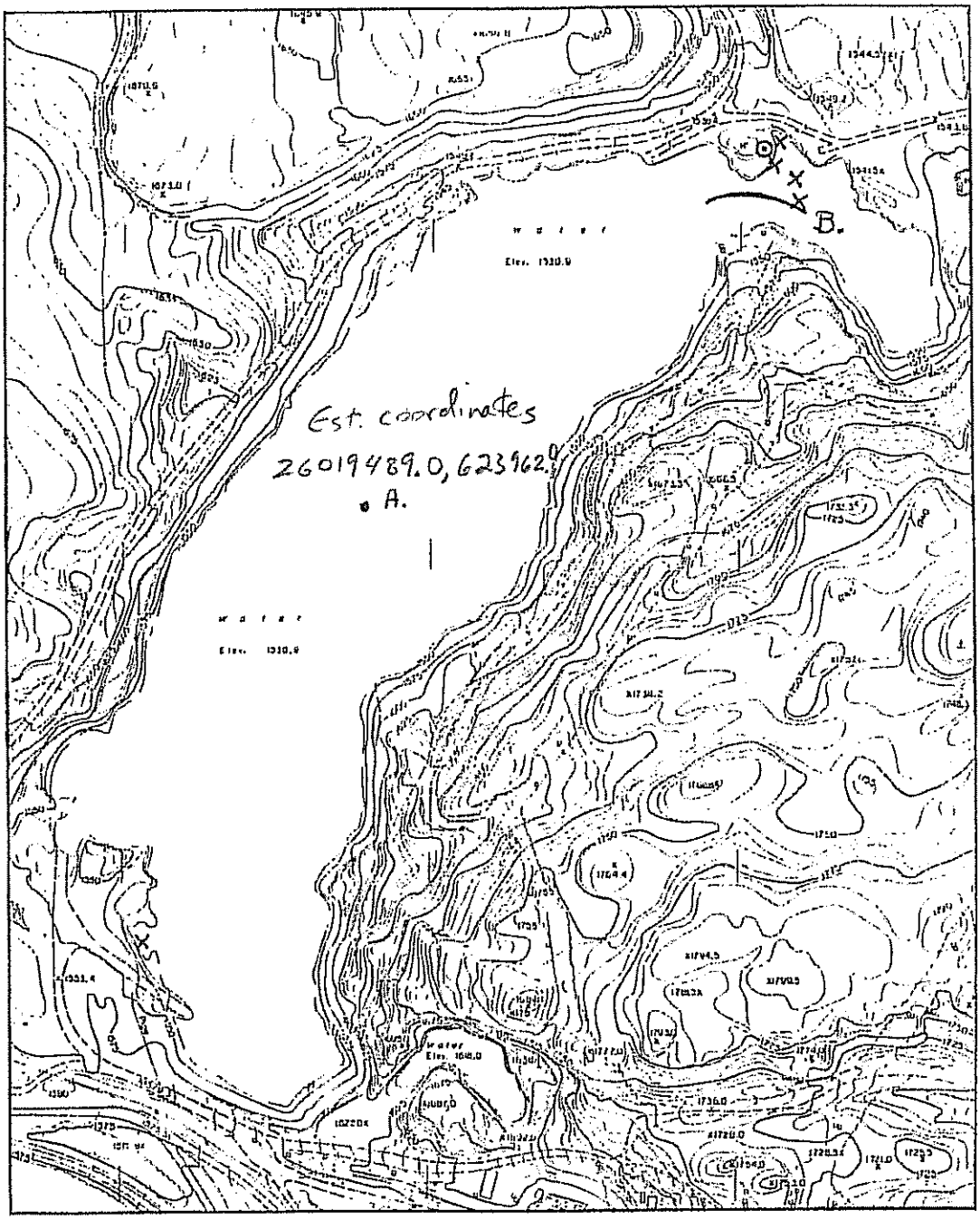


FIGURE 3

Map of the Humboldt Mine pit showing sampling sites. Water samples and temperature profile was collected at A. Gill net was set at B. Bottom samples were taken at sites marked X. Algal mat was found at site marked 0.

TABLE VII

Limnological Characteristics of the Humboldt Mine Pit

September 21, 1984

Location A

Depth (m)	Temp. (§C)	O_2 (mg/l)	pH	Conductivity (umohs/cm)
surface ft	15	9.01	7.9	392
~~8~~ 16.4	15			
8 26.2	15			
9 29.5	13			
10 32.8	11	9.66	7.9	356
15 49.2	6	8.81	7.9	413
20 65.6	5	8.65	8.1	378
25 82	4.5			
30 98.4	4			
50 164	4	7.90	8.0	395
90 295.2	4	5.91	8.1	358

CAL
Canton Analytical Laboratory, Inc.
ENVIRONMENTAL ANALYSIS

November 12, 1984

Mr. Richard Supina, P.E.
TRAVERSE ENGINEERING SERVICE, P.C.
P.O. Box 655
Hancock, MI 49930

Dear Mr. Supina:

The samples submitted to us on October 11, 1984, have been analyzed as requested. The results are compiled on the enclosed tables.

It is a pleasure to be of assistance to you. Please contact us if you have questions concerning any aspects of this report.

Very truly yours,

CANTON ANALYTICAL LABORATORY

Fred Hoitash

Fred Hoitash
Laboratory Manager

FH:sd

Sample event 10/10/1984

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 10/11/84

Approx coordinates

LAB# 4100518	TES1-1 10-10-84	Pit Station #2, Surface Sample 26019811.0, 624047.0
LAB# 4100519	TES 1-2 10-10-84	Pit Station #2, 200' Depth Sample same
LAB# 4100520	TES 2-1 10-10-84	Pit Station #1, Surface Sample 26019168.0; 623270
LAB# 4100521	TES 2-2 10-10-84	Pit Station #1, 200' Depth Sample same
LAB# 4100522	TES #3 10-10-84	U.S. 41 Culvert, Weir #1 26020943.0, 625805.0
LAB# 4100523	TES #4	U.S. 41 Culvert, Weir #2 26021915.0, 625433.0

LAB# / UNITS	4100518 MG/L	4100519 MG/L	4100520 MG/L	4100521 MG/L	4100522 MG/L	4100523 MG/L
CONDUCTANCE, UMHOS/CM 25C	475	460	455	500	460	480
CHLORIDES, as Cl	12	14	14	15	12	12
SULFATES, as SO4	120	110	110	110	110	100
ALKALINITY, TOTAL, AS CACO3	90	90	90	90	80	90
CHEMICAL OXYGEN DEMAND	2	8	<1	<1	8	2
SOLIDS, SUSPENDED	2	2	1	<1	1	3
PH, S.U.	8.0	7.8	7.9	7.6	7.6	7.8
CYANIDE, TOTAL	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
HARDNESS, TOTAL, AS CACO3	220	210	210	200	200	200
NITROGEN, TOT. KJELDAHL AS N	0.14	0.12	0.14	0.12	0.30	0.22
CALCIUM, TOTAL	52	52	53	54	51	52
SODIUM, TOTAL	8.0	8.6	8.1	8.5	8.9	8.2
MAGNESIUM, TOTAL	19	19	20	19	19	19

NO COC

Lab report by Canton Analytical Lab

CAL

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 10/11/84

LAB#	4100518	4100519	4100520	4100521	4100522	4100523
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
IRON, TOTAL	0.38	0.22	0.34	0.14	0.31	0.28
CADMIUM, TOTAL	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
COPPER, TOTAL	0.08	0.04	0.05	0.05	0.04	0.03
ZINC, TOTAL	<0.01	<0.01	0.02	<0.01	0.02	0.01
LEAD, TOTAL	<0.05	<0.05	<0.05	0.08	<0.05	<0.05
MERCURY, TOTAL	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SILVER, TOTAL	<0.0010	0.0015	<0.0010	<0.0010	0.0017	0.0013
CHROMIUM, TOTAL	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
NICKEL, TOTAL	0.07	0.07	0.14	0.03	0.10	<0.02
POTASSIUM, TOTAL	3.5	3.7	3.6	3.7	3.9	3.8
ARSENIC, TOTAL	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
ANTIMONY, TOTAL	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
TOTAL ORGANIC CARBON	3.0	2.6	3.3	2.6	3.8	3.9
ACID EXTRACTS-11 CPDS, GC						
PHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-NITROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-NITROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-DINITROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

CAL

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 10/11/84

LAB#	4100518	4100519	4100520	4100521	4100522	4100523
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
4,6-DINITRO-O-CRESOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PENTACHLOROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P-CHLORO-M-CRESOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-CHLOROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-DICHLOROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,6-TRICHLOROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-DIMETHYLPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

CAL

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 10/11/84

LAB# 4100524 TES #5 10-10-84 U.S. 41 Culvert, Weir #3

LAB#	4100524
UNITS	MG/L
CONDUCTANCE, UMHOS/CM 25C	120
CHLORIDES, as Cl	4
SULFATES, as SO4	2
ALKALINITY, TOTAL, AS CACO3	40
CHEMICAL OXYGEN DEMAND	11
SOLIDS, SUSPENDED	4
PH, S.U.	7.3
CYANIDE, TOTAL	0.001
HARDNESS, TOTAL, AS CACO3	40
NITROGEN, TOT. KJELDAHL AS N	0.26
CALCIUM, TOTAL	11
SODIUM, TOTAL	<0.1
MAGNESIUM, TOTAL	3.2
IRON, TOTAL	0.65
CADMIUM, TOTAL	<0.0010
COPPER, TOTAL	0.04

CAL

SAMPLES RECEIVED 10/11/84

LAB#	4100524
UNITS	MG/L
ZINC, TOTAL	0.02
LEAD, TOTAL	<0.05
MERCURY, TOTAL	<0.0005
SILVER, TOTAL	<0.0010
CHROMIUM, TOTAL	<0.02
NICKEL, TOTAL	0.08
POTASSIUM, TOTAL	1.4
ARSENIC, TOTAL	<0.002
ANTIMONY, TOTAL	<0.002
TOTAL ORGANIC CARBON	4.3
ACID EXTRACTS-11 CPDS, GC	
PHENOL	<0.01
2-NITROPHENOL	<0.01
4-NITROPHENOL	<0.01
2,4-DINITROPHENOL	<0.01
4,6-DINITRO-O-CRESOL	<0.01
PENTACHLOROPHENOL	<0.01
P-CHLORO-M-CRESOL	<0.01

CAL

SAMPLES RECEIVED 10/11/84

LAB#	4100524
UNITS	MG/L
2-CHLOROPHENOL	<0.01
2,4-DICHLOROPHENOL	<0.01
2,4,6-TRICHLOROPHENOL	<0.01
2,4-DIMETHYLPHENOL	<0.01

CAL

TRAVERSE ENGINEERING SER. INC.

LAB#		HW-1 WELL	HW-2 WELL	HW-3 WELL	HW-4 WELL
UNITS	mg/L	#1	#2	#3	#4
CONDUCTANCE, UMHOS/CM 25C		445	445	125	675
CHLORIDES, as Cl		17	16	4	8
SULFATES, as SO4		72	94	18	100
ALKALINITY, TOTAL, AS CACO3		140	89	6	260
CHEMICAL OXYGEN DEMAND		8	20	7	130
SOLIDS, SUSPENDED		43	4	65	88
PH, S.U.		7.1	7.0	5.4	6.9
CYANIDE, TOTAL		< 0.001	< 0.001	< 0.001	< 0.001
HARDNESS, TOTAL, AS CACO3		230	250	60	240
NITROGEN, TOT. KJELDAHL AS N		0.056	0.23	0.19	0.41
CALCIUM, TOTAL		62	38	8.6	77
SODIUM, TOTAL		8.4	18	11	5.8
MAGNESIUM, TOTAL		17	18	4	29
IRON, TOTAL		0.32	< 0.02	3.0	40
CADMIUM, TOTAL		0.001	< 0.001	< 0.001	< 0.001
COPPER, TOTAL		< 0.02	< 0.01	< 0.01	< 0.01

TRAVERSE ENGINEERING SER. INC.

LAB# / UNITS	WELL #1	WELL #2	WELL #3	WELL #4
ZINC, TOTAL	0.05	0.01	< 0.01	0.01
LEAD, TOTAL	< 0.05	< 0.05	< 0.05	0.10
MERCURY, TOTAL	< 0.0001	< 0.0001	< 0.0001	< 0.0001
SILVER, TOTAL	0.0009	0.06	0.16	0.0008
CHROMIUM, TOTAL	< 0.02	< 0.02	< 0.02	< 0.02
NICKEL, TOTAL	< 0.04	< 0.02	0.03	< 0.02
POTASSIUM, TOTAL	2.3	4.5	1.6	3.6
ARSENIC, TOTAL	< 0.004	< 0.004	< 0.004	0.006
ANTIMONY, TOTAL	< 0.004	< 0.004	< 0.004	< 0.004
TOTAL ORGANIC CARBON	< 2	< 2	< 2	16
ACID EXTRACTS-11 CPDS, GC				
PHENOL	< 0.01	< 0.01	< 0.01	< 0.01
2-NITROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
4-NITROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
2,4-DINITROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
4,6-DINITRO-O-CRESOL	< 0.01	< 0.01	< 0.01	< 0.01
PENTACHLOROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
P-CHLORO-M-CRESOL	< 0.01	< 0.01	< 0.01	< 0.01

TRAVERSE ENGINEERING SER. INC.

LAB# / UNITS	WELL #1	WELL #2	WELL #3	WELL #4
2-CHLOROPHENOL	< 0.01	< 0.01	< 0,01	< 0,01
2,4-DICHLOROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-TRICHLOROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
2,4-DIMETHYLPHENOL	< 0.01	< 0.01	< 0.01	< 0.01

CAL
Canton Analytical Laboratory, Inc.
ENVIRONMENTAL ANALYSIS

December 12, 1984

Mr. Richard Supina
TRAVERSE ENGINEERING SERVICES
100 Quincy Street
Hancock, MI 49930

Dear Mr. Supina:

The samples delivered to us on November 9, 1984, have been analyzed as requested. The results are compiled on the enclosed tables. Please note that our detection limit for TOC analysis is 2.0 mg/l.

It is a pleasure to be of assistance to you. Please contact us if you have questions concerning any aspects of this report.

Very truly yours,

CANTON ANALYTICAL LABORATORY

Fred Hoitash

Fred Hoitash
Laboratory Manager

FH:lh

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 11/09/84

sample event 11/4/1984

LAB# 4110240 WELL #1 Hw-1
LAB# 4110241 WELL#2 Hw-2
LAB# 4110242 WELL #3 Hw-3
LAB# 4110243 WELL #4 Hw-4

NO GO-C

LAB# / UNITS	4110240 MG/L	4110241 MG/L	4110242 MG/L	4110243 MG/L
ALKALINITY, TOTAL, AS CACO3	140	89	6	260
CHLORIDES, as Cl	17	16	4	8
CHEMICAL OXYGEN DEMAND	8	20	7	130
CYANIDE, TOTAL	<0.001	<0.001	<0.001	<0.001
HARDNESS, TOTAL, AS CACO3	230	250	60	240
NITROGEN, TOT. KJELDAHL AS N	0.056	0.23	0.19	0.41
PH, S.U.	7.1	7.0	5.4	6.9
SOLIDS, SUSPENDED	4.3	4.0	65	88
CONDUCTANCE, UMHOS/CM 25C	445	445	125	675
SULFATES, as SO4	72	94	18	100
ANTIMONY, TOTAL	<0.004	<0.004	<0.004	<0.004
ARSENIC, TOTAL	<0.004	<0.004	<0.004	0.006
CADMIUM, TOTAL	0.001	<0.001	<0.001	<0.001
CALCIUM, TOTAL	62	38	8.6	77

CAL

LAB#	4110240	4110241	4110242	4110243
UNITS	MG/L	MG/L	MG/L	MG/L
CHROMIUM, TOTAL	<0.02	<0.02	<0.02	<0.02
COPPER, TOTAL	<0.02	<0.01	<0.01	<0.01
IRON, TOTAL	0.32	<0.02	3.0	40
LEAD, TOTAL	<0.05	<0.05	<0.05	0.10
MAGNESIUM, TOTAL	17	18	4.0	29
MERCURY, TOTAL	<0.0005	<0.0005	<0.0005	<0.0005
NICKEL, TOTAL	<0.04	<0.02	0.03	<0.02
POTASSIUM, TOTAL	2.3	4.5	1.6	3.6
SILVER, TOTAL	0.009	0.06	0.16	0.008
SODIUM, TOTAL	8.4	18	11	5.8
ZINC, TOTAL	0.05	0.01	<0.01	0.01
TOTAL ORGANIC CARBON	<2.0	<2.0	<2.0	16
SULFUR, TOTAL	89	105	111	62
ACID EXTRACTS-11 CPDS, GC				
PHENOL	<0.01	<0.01	<0.01	<0.01
2-NITROPHENOL	<0.01	<0.01	<0.01	<0.01
4-NITROPHENOL	<0.01	<0.01	<0.01	<0.01
2,4-DINITROPHENOL	<0.01	<0.01	<0.01	<0.01

CAL

LAB#	4110240	4110241	4110242	4110243
UNITS	MG/L	MG/L	MG/L	MG/L
4,6-DINITRO-O-CRESOL	<0.01	<0.01	<0.01	<0.01
PENTACHLOROPHENOL	<0.01	<0.01	<0.01	<0.01
P-CHLORO-M-CRESOL	<0.01	<0.01	<0.01	<0.01
2-CHLOROPHENOL	<0.01	<0.01	<0.01	<0.01
2,4-DICHLOROPHENOL	<0.01	<0.01	<0.01	<0.01
2,4,6-TRICHLOROPHENOL	<0.01	<0.01	<0.01	<0.01
2,4-DIMETHYLPHENOL	<0.01	<0.01	<0.01	<0.01

CAL

MDEQ FOIA Request
1991 through 2001 Tier 3

ID WLR-1 Estimated coordinates 2602284 3.0, 625546.0

Water Quality Data, Wolf Lake Road				1993-1995		(units as ug/l)			NA=Not Available		ND=Non Detectable	
1993												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	NA	NA	NA	NA	<2	<2	<2	4	<2	<2	<2	NA
copper	NA	NA	NA	NA	<10	10	<10	<10	<10	<10	<10	NA
nickel	NA	NA	NA	NA	150	150	80	10	60	50	130	NA
anemable CN	NA	NA	NA	NA	<5	13	9	7	5	6	6	NA
total CN	NA	NA	NA	NA	<5	13	9	7	5	6	6	NA
1994												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	<2	<2	<2	3	<2	NA	NA	NA	2	<1	<1	<1
copper	10	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	10
nickel	370	360	360	280	90	80	90	30	50	90	70	170
anemable CN	18	15	12	<5	NA	NA	NA	NA	NA	NA	NA	NA
total CN	18	15	12	<5	NA	NA	NA	NA	NA	NA	NA	NA
1995												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	NA	ND	<2	<2	<2	3.4	<2	<2	2.9	<2		
copper	NA	ND	<10	<10	<10	<10	10	2.3	<10	<10		
nickel	NA	310	290	180	90	90	110	39	63	89		
anemable CN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
total CN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

ID confluence

Estimated coordinates
2602396 3.0, 626481.0

Water Quality Data, Confluence				1993-1995		(units as ug/l)			NA=Not Avaibable		ND=Non Detectable	
1993												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	NA	NA	NA	<2	<2	<2	<2	<2	<2	<2	<2	NA
copper	NA	NA	NA	10	10	<10	<10	10	10	<10	<10	NA
nickel	NA	NA	NA	200	140	140	80	60	60	50	130	NA
anemable CN	NA	NA	NA	<5	<5	16	13	6	<5	<5	<5	NA
total CN	NA	NA	NA	<5	<5	16	13	6	<5	<5	12	NA
1994												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	NA	NA	NA	NA	3	<2	<2	<1	2	<1	<1	<1
copper	NA	NA	NA	NA	<10	<10	<10	<10	10	<10	<10	<10
nickel	NA	NA	NA	NA	80	80	80	<20	50	60	70	140
anemable CN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
total CN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1995												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	NA	ND	5	<2	NA	5.8	<2	<2	<2	<2		
copper	NA	ND	<10	<10	NA	<10	6	2.9	76	160		
nickel	NA	300	220	150	NA	90	50	37	54	76		
anemable CN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
total CN	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

ID Outfall Outfall → estimated coordinates 2602083.7; 625278.0

Water Quality Data, Pit Discharge				1991-1995		(units as ug/l)			NA=Not Available		ND=Non Detectable	
1991												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
copper	60	120	120	50	90	60	20	20	20	30	40	50
nickel	620	830	760	330	720	700	620	520	520	560	650	640
amenable CN	10	50	40	20	ND	20	NA	ND	ND	ND	ND	ND
total CN	30	50	20	20	20	20	NA	ND	ND	ND	ND	34
1992												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
copper	60	50	50	NA	30	30	50	NA	20	30	30	30
nickel	720	700	660	NA	600	650	580	NA	500	510	520	530
amenable CN	NA	<5	20	20	<5	20	8	NA	7	12	12	22
total CN	NA	<5	20	20	10	20	8	NA	7	12	12	22
1993												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	NA	NA	NA	NA	2	4	2	2	4	<2	<2	4
copper	30	30	30	30	30	30	10	10	10	20	20	10
nickel	560	560	520	440	390	410	340	130	150	250	380	380
amenable CN	110	130	20	4.2	<5	<10	17	11	9	17	5	10
total CN	110	130	20	11	<5	<10	17	11	9	17	15	7
1994												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	2	<2	<2	2	<2	3	<2	<2	1	<1	<1	<1
copper	20	10	20	10	10	10	<10	10	10	<10	<10	20
nickel	410	430	350	400	350	230	110	140	120	160	230	290
amenable CN	13	14	9	8	10	<10	7	<10	<10	10	<10	<10
total CN	19	14	9	8	19	<10	7	<10	<10	<10	<10	<10
1995												
parameter	January	February	March	April	May	June	July	August	September	October	November	December
arsenic	ND	2	<5	<5	<2	3.1	<2	<2	<2	<2		
copper	10	60	20	<10	80	10	15	3.5	3.7	<1		
nickel	160	280	170	260	270	190	60	70	88	130		
amenable CN	ND	ND	6.7	7	9	15	<5	12	6.5	15		
total CN	ND	ND	6.7	13	14	17	<5	10	6.5	11		

Humbolt Pit Discharge
Ropes Project
Callahan Mining Corporation

Pit Discharge Nickel Concentrations (ug/l)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1991	620	830	760	330	720	700	620	520	520	560	650	640
1992	720	700	660		600	650	580		500	510	520	530
1993	580	560	520	440	390	410	340	130	150	250	380	380
1994	410	430	350	400	350	230	110	140	120	160	230	290
1995	160	280	170	260	270	190	60	70	88	130	190	89
1996	200	340	180	170	52	290	120	60	70	72	103	136
1997	122	138	132	66	111	58						
Closure Criteria	190	190	190	190	190	190	190	190	190	190	190	190

**Sample taken inside containment area

Average			
1991	623		
1992	597	4.17%	4.17%
1993	378	39.3%	36.70%
1994	268	57.0%	29.10%
1995	163	72.6%	39.20%
1996	149	76.10%	8.60%

"MW" Wells renamed "HW" except HYG-1

Ground Water Monitoring - Humboldt Pit				(units as ug/l)			NA=Not Available ND=Non Detectable			
Date: October 1984										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
A. Cyanide	<1	NA	NA	<20	<20	NA	NA	NA	NA	NA
Copper	<20	NA	<10	<10	<10	NA	NA	NA	NA	NA
Nickel	<40	NA	<20	30	<20	NA	NA	NA	NA	NA
Lead	<50	NA	<50	<50	100	NA	NA	NA	NA	NA
Mercury	<0.1	NA	<0.1	<0.1	<0.1	NA	NA	NA	NA	NA
Zinc	50	NA	10	10	10	NA	NA	NA	NA	NA
Date: January 1990										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
A. Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	<10	NA	<10	430	10	NA	NA	NA	NA	NA
Nickel	<20	NA	20	1300	<20	NA	NA	NA	NA	NA
Lead	40	NA	60	40	70	NA	NA	NA	NA	NA
Mercury	<0.2	NA	<0.2	<0.2	<0.2	NA	NA	NA	NA	NA
Zinc	30	NA	15	1980	<5	NA	NA	NA	NA	NA
Date: February 1990										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
A. Cyanide	<20	NA	<20	<20	<20	NA	NA	NA	NA	NA
Copper	<20	NA	<20	410	<20	NA	NA	NA	NA	NA
Nickel	<40	NA	<40	640	<40	NA	NA	NA	NA	NA
Lead	<130	NA	<130	<130	<130	NA	NA	NA	NA	NA
Mercury	<0.5	NA	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
Zinc	60	NA	30	1800	<10	NA	NA	NA	NA	NA

Ground Water Monitoring - Humboldt Pit				(units as ug/l)			NA=Not Available ND=Non Detectable			
Date: March 1990										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
A. Cyanide	ND	NA	ND	ND	ND	NA	NA	NA	NA	NA
Copper	10	NA	3	11	1	NA	NA	NA	NA	NA
Nickel	29	NA	40	46	2	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Date: June 1990										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
A. Cyanide	NA	ND	NA	NA	NA	ND	ND	ND	NA	NA
Copper	NA	ND	NA	NA	NA	ND	10	ND	NA	NA
Nickel	NA	ND	NA	NA	NA	ND	ND	40	NA	NA
Lead	NA	ND	NA	NA	NA	ND	ND	ND	NA	NA
Mercury	NA	ND	NA	NA	NA	ND	ND	ND	NA	NA
Zinc	NA	13	NA	NA	NA	ND	ND	ND	NA	NA
Date: September 1990										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
A. Cyanide	<20	ND/ND	<20	<20	<20	ND/ND	ND/ND	ND/ND	NA	NA
Copper	20	ND/20	<10	10	<10	2\10	ND/20	1/ND	NA	NA
Nickel	<20	13/ND	<20	60	<20	13/ND	23/ND	14/ND	NA	NA
Lead	<20	ND/ND	<20	<20	<20	ND/ND	ND/ND	ND/ND	NA	NA
Mercury	<0.52	ND/ND	<0.2	<0.2	0.4	ND/ND	ND/ND	ND/ND	NA	NA
Zinc	10	ND/ND	<5	13	<5	ND/ND	ND/ND	ND/ND	NA	NA
Date: February 1992										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
Copper	NA	NA	NA	NA	NA	NA	NA	10	40	NA
Nickel	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA
Arsenic	NA	NA	NA	NA	NA	NA	NA	ND	ND	NA

Ground Water Monitoring - Humboldt Pit				(units as ug/l)			NA=Not Available ND=Non Detectable			
Date: August 1992										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
Copper	NA	<10	NA	NA	NA	NA	NA	NA	NA	30
Nickel	NA	<10	NA	NA	NA	NA	NA	NA	NA	20
Arsenic	NA	4	NA	NA	NA	NA	NA	NA	NA	4
Date: March 1994										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
Copper	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	80	NA	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	<2	NA	NA	NA	NA	NA	NA
Date: April 1994										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
Copper	NA	NA	NA	10	<10	NA	NA	NA	NA	NA
Nickel	NA	NA	NA	50	<10	NA	NA	NA	NA	NA
Arsenic	NA	NA	NA	ND	ND	NA	NA	NA	NA	NA
Date: March 1995										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
Arsenic	<2	NA	<2	<2	<2	NA	NA	<2	<2	<4
Nickel	<10	NA	<10	60	<10	NA	NA	<10	<10	<10
Copper	<10	NA	<10	10	<10	NA	NA	<10	<10	<10
A. Cyanide	<5	NA	<5	NA	NA	NA	NA	<5	<5	6
T. Cyanide	<5	NA	<5	NA	NA	NA	NA	<5	<5	11
Date: July 1995										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
Arsenic	<4	<2	<2	<4	<2	NA	NA	<2	<2	<2
Nickel	<10	<10	<10	130	20	NA	NA	<10	<10	<10
Copper	ND	ND	ND	20	ND	NA	NA	ND	ND	ND
A. Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
T. Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	9

Ground Water Monitoring - Humboldt Pit				(units as ug/l)			NA=Not Available ND=Non Detectable			
Date: September 1995										
(Dissolved)										
Parameter	HP-MW1	HP-MW1A	HP-MW2	HP-MW3	HP-MW4	HP-MW5	HP-MW5A	HP-MW6	HP-MW6A	HP-HYG1
Arsenic	<2	2.7	<2	<2	<2	NA	NA	<2	2.3	3.3
Nickel	<0.5	2.2	0.9	61	2.7	NA	NA	1	0.7	6.1
Copper	<0.5	<1	<1	6.1	<1	NA	NA	<0.5	<1	12
A. Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
T. Cyanide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
SURFACE WATER QUALITY DIVISION
POINT SOURCE MONITORING

Report of an
Industrial Waste Water Survey
Conducted at
Callahan Mining Corporation
All Outfalls No. 520235
NPDES No. MI0044393
Marquette County
Humboldt Township
06/21/95

RECEIVED
AUG 2 1 1995
Surface Water Quality Div.

SURVEY SUMMARY

Wastewater monitoring was performed on Wednesday, June 21, 1995.

The results of the physical and chemical analyses are presented in Table 2.

Samples were preserved according to Table 7. Letter codes for laboratory results are defined in Table 7.

SURVEY PROCEDURE

The samples were obtained as follows:

Sample Description	Sampling Methods
(001) - Outfall Samples collected near pipe in drainage area.	Individual grab samples.
Pit Samples collected from bank.	Individual grab samples.

An individual grab sample is a single instantaneous sample.

Samples were analyzed by the MDNR Environmental Laboratory located in Lansing.

Callahan

TABLE 2 - Analyses of Grab Samples

Outfall	520235 (001)	520235 (001)
Matrix	water	water
Date Collected	06/21/95	06/21/95
Time Collected	1025	2120
Temperature (F)	73	80
pH (S.U.)	7.6	7.9
Dissolved Oxygen (mg/l)	6.4	7.4
Suspended Solids (mg/l)	<4	10
Dissolved Solids (mg/l)	470	430
TOC (mg/l)	3.9	5.8
NO2 (mg/l)	<.01	.02
NO3 + NO2 (mg/l)	6	4.9
NH3 (mg/l)	<.1 DL	<.1 DL
Kjeldahl Nitrogen (mg/l)	.66	.76
Total Phosphorus (mg/l)	.01	.02
Ortho Phosphate (mg/l)	<.01	<.01
Total Cyanide (mg/l)	.011	.009
Amenable Cyanide (mg/l)	FCN	FCN
Alkalinity (as CaCO3)	107	104
Conductivity (umho/cm)	613	564
Hardness (as CaCO3)	215	200
Chloride (mg/l)	20	18
Sulfate (mg/l)	140	120
Chlorophyll-A (mg/l)	6	8
	ug/l	ug/l
Total Cadmium (Cd)	<.2	<.2
Total Chromium (Cr)	<1	<1
Total Copper (Cu)	4.9	7.7
Total Lead (Pb)	<1	<1
Total Nickel (Ni)	130	90
Total Zinc (Zn)	<4	7.2
Total Mercury (Hg)	<.2	<.2
Total Silver (Ag)	<.5	<.5
Total Selenium (Se)	<1	<1
Total Arsenic (As)	1.4	1.1
Total Antimony (Sb)	34	33
Total Iron (Fe)	270	240

Callahan

TABLE 2 - Analyses of Grab Samples

Approx coord 2602068 7.0, 625123.0

Outfall	Pit	Pit
Matrix	water	water
Date Collected	06/21/95	06/21/95
Time Collected	1015	2100
Temperature (F)	76	81
pH (S.U.)	7.7	7.4
Dissolved Oxygen (mg/l)	7.8	7
Suspended Solids (mg/l)	6	5
Dissolved Solids (mg/l)	470	470
TOC (mg/l)	4.4	3.2
NO2 (mg/l)	.05	.05
NO3 + NO2 (mg/l)	6.1	6
NH3 (mg/l)	<.1 DL	<.1 DL
Kjeldahl Nitrogen (mg/l)	.48	.44
Total Phosphorus (mg/l)	.01	<.01
Ortho Phosphate (mg/l)	<.01	<.01
Total Cyanide (mg/l)	.01	.012
Amenable Cyanide (mg/l)	FCN	FCN
Alkalinity (as CaCO3)	110	107
Conductivity (umho/cm)	613	607
Hardness (as CaCO3)	220	220
Chloride (mg/l)	20	20
Sulfate (mg/l)	130	130
Chlorophyll-A (mg/l)	2	2
	ug/l	ug/l
Total Cadmium (Cd)	<.2	<.2
Total Chromium (Cr)	<1	<1
Total Copper (Cu)	4.6	6.3
Total Lead (Pb)	<1	<1
Total Nickel (Ni)	230	230
Total Zinc (Zn)	8.6	33
Total Mercury (Hg)	<.2	<.2
Total Silver (Ag)	<.5	<.5
Total Selenium (Se)	<1	<1
Total Arsenic (As)	1.4	1.4
Total Antimony (Sb)	36	35
Total Iron (Fe)	480	480

Table 7 - Sample Preservation

arameter	Preservative
OD/TOC/Phenol/Nutrients Chlorine Absent)	5 drops conc. H2SO4/250 ml (to pH <2)
yanide/Thiocyanates	Dechlorinate if needed with ascorbic acid (0.6 g/l, 10 drops 10 N NaOH (to pH >12)/250 ml.
otal Metals	2 ml 1:1 HNO3/250 ml (to pH <2).
hlorophyll-A	1% MgCO3, 5 drops/250 ml

amples preserved as required, cooled to 4 degrees Centigrade with hain of custody maintained.

ab Letter Codes

L Sample was not analyzed using an optimum dilution (sample diluted to reduce possible matrix interference, or high sample dilution required to bring into analytical working range, or sample diluted due to other high values on multi-channel analytical systems, etc.)

CN Free cyanide was not analyzed due to low level of total cyanide found. By definition, the free cyanide would be less than or equal to the total cyanide.

Survey by: Chris C. Little, Water Quality Technician
Joseph W. Hey, Water Quality Technician

Laboratory Analyses by: MDNR Environmental Laboratory

Report by: Joseph W. Hey
Grand Rapids District Office
Surface Water Quality Division
Michigan Department of Natural Resources

Date Published: August 17, 1995

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL LABORATORY

outfall

REPORT Surface Water Quality Div.
TO 350 Ottawa NW
6th Floor
Grand Rapids, MI 49503
ATTEN CHRIS LITTLE

LABORATORY WORK ORDER # 97-06-200
WORK ID CALLAHAN MINE
P.O. # ** COST $ 397.50
RECEIVED 06/25/97 CLIENT SWQ GR
REPORTED _____ NUMBER OF SAMPLES 1
LAB CONTACT GC IN MATRIX WATER

TEST UNITS	CM001
Silver by Furnace ug/l	K 0.5
Arsenic by Furnace ug/l	1.1
Barium in Water ug/l	13
Calcium in Water mg/l	45.7
Cadmium by Furnace ug/l	K 0.2
Cyanide mg/l	.007
Amenable Cyanide mg/l	FCN
Conductivity of Water umho/cm	565
Chromium by Furnace ug/l	K 1.0
Copper by Furnace ug/l	5.2
Hardness mg/l	215
Mercury in Water ug/l	K .2
Magnesium in Water mg/l	24.4
Nickel by Furnace ug/l	52
Nitrite mg N/l	.03
Nitrate + Nitrite mg N/l	3.5
Ammonia mg N/l	K 0.1 DL
Kjeldahl Nitrogen mg N/l	.65
Lead by Furnace ug/l	K 1.0

DEQ Laboratory REPORT
07/24/97 16:28:36

Work Order # 97-06-200
Continued From Above

TEST UNITS	CM001
Ortho Phosphate mg P/l	K .01
Total Phosphorus mg P/l	.02
Suspended Solids mg/l	12
Total Dissolved Solids mg/l	490
Selenium in Water ug/l	K 1.0
TOC mg/l	5.4
Zinc in Water ug/l	20

Report prepared By: Oberlig 7-25-97

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY	ENVIRONMENTAL LABORATORY PROCEDURE	NO: PD-13 DATE: Rev. 10/9/95

Subject: ***Laboratory Result Remark Codes***

A	value reported is the mean of two or more determinations.
C	value calculated from other independent parameters.
J	estimated value or value not accurate.
K	actual value is known to be less than the value given, i.e. substance, if present, is below detection limit.
L	actual value is known to be greater than the value given.
T	value reported is less than criteria of detection.
W	value observed is less than lowest value reportable under "T" code.
DL	sample analyzed using a dilution(s).
DM	dilution required due to matrix problems.
HT	recommended laboratory holding time was exceeded before analysis.
LH	Q. C. indicated possible low recovery. Actual level may be higher.
LL	Q. C. indicated possible high recovery. Actual level may be lower.
MM	analytical method or matrix is not within SOP of this laboratory.
NC	no confirmation by a second technique.
NH	non-homogeneous sample made analysis of a representative sample questionable.
PI	possible interference may have affected the accuracy of the laboratory result.
QC	quality control problems exists.
RB	Reagent Blank. The level of reagent blank contamination is reported in the comment column and may be subtracted from the analyte value by the user.
ST	recommended sample collection/preservation technique not used.
ACC	laboratory accident resulted in no obtainable value.
FCN	free cyanide was not analyzed due to low level of total cyanide.
INT	interference encountered during analysis resulted in no obtainable value.
IST	Improper sample collection/preservation. Sample not suitable for analysis.
NAV	requested analysis not available.
QNS	quantity not sufficient to perform requested analysis.
STR	settleable residue was not analyzed due to low suspended solids.

Approved by: George Su, Lab Section Chief 10/17/95 Date

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
SURFACE WATER QUALITY DIVISION
POINT SOURCE MONITORING

Report of an
Industrial Waste Water Survey
Conducted at
Callahan Mining Corporation
All Outfalls No. 520235
NPDES No. MI0044393
Marquette County
Humboldt Township
06/18/96

RECEIVED
AUG 26 1996
Surface Water Quality Div.

SURVEY SUMMARY

Wastewater monitoring was performed on Tuesday, June 18, 1996.

The results of the physical and chemical analyses are presented in Table 2.

Samples were preserved according to Table 7. Letter codes for laboratory results are defined in Table 7.

SURVEY PROCEDURE

The samples were obtained as follows:

Sample Description	Sampling Methods
(001) Outfall Samples collected near pipe in drainage area.	Individual grab samples.

An individual grab sample is a single instantaneous sample.

Samples were analyzed by the MDEQ Environmental Laboratory located in Lansing.

Callahan

TABLE 2 - Analyses of Grab Samples

Outfall	520235 (001)	
Matrix	water	
Date Collected	06/18/96	
Time Collected	1230	
Temperature (F)	64	
pH (S.U.)	7.7	
Suspended Solids (mg/l)	46	NH
Dissolved Solids (mg/l)	420	
Ortho Phosphate (mg/l)	<.01	
NO3 + NO2 (mg/l)	4.6	
NH3 (mg/l)	<.1	DL
Kjeldahl Nitrogen (mg/l)	.45	
Total Phosphorus (mg/l)	.04	
Conductivity (umho/cm)	528	
Hardness (as CaCO3)	205	
Chlorophyll-A (mg/l)	65	NH
	ug/l	
Total Cadmium (Cd)	<.2	
Total Chromium (Cr)	<1	
Total Copper (Cu)	26	
Total Lead (Pb)	2	
Total Nickel (Ni)	300	
Total Zinc (Zn)	20	
Total Mercury (Hg)	<.2	
Total Silver (Ag)	<.5	
Total Selenium (Se)	<1	
Total Arsenic (As)	1.8	
Total Barium (Ba)	24	
Total Iron (Fe)	2300	
Total Cobalt (Co)	20	
Total Lithium (Li)	<8	
Total Manganese (Mn)	1100	

Table 7 - Sample Preservation

arameter	Preservative
OD/TOC/Phenol/Nutrients Chlorine Absent)	5 drops conc. H2SO4/250 ml (to pH <2)
otal Metals	2 ml 1:1 HNO3/250 ml (to pH <2).
hlorophyll-A	1% MgCO3, 5 drops/250 ml

amples preserved as required, cooled to 4 degrees Centigrade with hain of custody maintained.

ab Letter Codes

L Sample was not analyzed using an optimum dilution (sample diluted to reduce possible matrix interference, or high sample dilution required to bring into analytical working range, or sample diluted due to other high values on multi-channel analytical systems, etc.)

H Nonhomogenous sample made analysis of a representative aliquot questionable.

Survey by: Chris C. Little, Water Quality Technician
Joseph W. Hey, Water Quality Technician

Laboratory Analyses by: MDEQ Environmental Laboratory

Report by: Joseph W. Hey
Grand Rapids District Office
Surface Water Quality Division
Michigan Department of Environmental Quality

Date Published: August 22, 1996

MONTGOMERY WATSON

May 24, 1994

Mr. Edward Cryer
Montgomery Watson
161 Mallard Drive
Boise, ID 83706-3974

Re: Water Samples Analyzed by our Laboratory:
Ropes Mine Project
Metals Profile
Project Number: 1389.0100
Sample Date: May 4, 1994

Dear Mr. Cryer:

The above referenced samples have been analyzed with the results as follows:

Site HP-1: Surface Sample ID: 053-118	**Results**
Secchi, ft	5.0
Temperature, °C	not reported
Total Phosphorus, mg/l	0.06
$NO_2 + NO_3$, mg/l	7.0
TKN, mg/l	1.2
Total Nitrogen, mg/l	8.2
Total Copper, µg/l	15
Dissolved Copper, µg/l	10
Total Nickel, µg/l	450
Dissolved Nickel, µg/l	440

Site HP-3: Surface Sample ID: 053-119	**Results**
Secchi, ft	5.0
Temperature, °C	4.5
Total Phosphorus, mg/l	0.06
$NO_2 + NO_3$, mg/l	6.9
TKN, mg/l	1.2
Total Nitrogen, mg/l	8.1
Total Copper, µg/l	11
Dissolved Copper, µg/l	10
Total Nickel, µg/l	460
Dissolved Nickel, µg/l	450

545 Indian Mound
Wayzata, Minnesota
55391

Tel: 612 473 4224
Fax: 612 473 2512

Site HP-6: Surface Sample ID: 053-120	**Results**
Secchi, ft	6.5
Temperature, °C	5.0
Total Phosphorus, mg/l	0.06
$NO_2 + NO_3$, mg/l	6.9
TKN, mg/l	1.1
Total Nitrogen, mg/l	8.0
Total Copper, µg/l	12
Dissolved Copper, µg/l	10
Total Nickel, µg/l	440
Dissolved Nickel, µg/l	440

Site HP-3 Metals Profile:

HP-3 10 meters Sample ID: 053-121	**Results**
Total Copper, µg/l	13
Total Nickel, µg/l	520
HP-3 20 meters Sample ID: 053-122	
Total Copper, µg/l	12
Total Nickel, µg/l	510
HP-3 30 meters Sample ID: 053-123	
Total Copper, µg/l	32
Total Nickel, µg/l	910
HP-3 40 meters Sample ID: 053-124	
Total Copper, µg/l	57
Total Nickel, µg/l	990

HP-3 50 meters Sample ID: 053-125	**Results**
Total Copper, µg/l	70
Total Nickel, µg/l	1000

In addition to the above analyses, algal identification and enumeration was performed on the three surface samples. Only one algal taxon was observed in the three samples and could be identified only as a small, green coccoid. Cell count estimates for the sites are as follows:

Site HP-1 - 9470 cells/ml
Site HP-3 - 11400 cells/ml
Site HP-6 - 13300 cells/ml

Montgomery Watson Water Quality Laboratory appreciates the opportunity to provide you with this analytical service. If you have any questions, please do not hesitate to contact us.

Sincerely,

MONTGOMERY WATSON
Water Quality Laboratory

Frank De Steno,
Laboratory Manager

Copy: Bill Scarffe

A-7

Historical Boring Logs

Preliminary Hydrogeological Investigation
Sundberg, Carlson and Associates, Inc., October 1992

ROPES MILLING FACILITY

PRELIMINARY HYDROGEOLOGICAL INVESTIGATION

PREPARED FOR:

CALLAHAN MINING CORPORATION
Ropes Unit
4547 County Road 601
Champion, Michigan 49814-9767

October, 1992

PREPARED BY:

SUNDBERG, CARLSON AND ASSOCIATE, INC.
914 West Baraga Avenue
Marquette, Michigan 49855

SCA Project 90-384

SERVICES DIV. ...N

SOIL BORING LOG

Job Number:90 - 384 Drillers:COLEMAN/DAVE

Job Name:CALLAHAN Date:10/28/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sample Description
	0	10	HS								DRY BLACK SANDY FILL
S - 1	10	11.5	SS	15	10	7		4"	0		DRY BLACK FINE GRAINED SAND,
											TRACE OF GRAVEL; FILL
	10	12	HS								WOOD/ORGANICS/PEAT
S - 2	12	12.5	SS	6	5	6		3"	0		SAA
	12	15	HS								
S - 3	15	16.5	SS	1	3	1		12"	0		BLACK PEAT, MOIST
	15	18	HS								
S - 4	18	19.5	SS	3	3	2		6"	3		SAA
	18	20	HS								
S - 5	20	21.5	SS	1	3	2		2"	0		FINE TO MEDIUM SAND, TRACE SILT
	20	22	HS								GRAY-BLACK SAND, TRACE OF CLAY,
											TILL; WET
S - 6	22	23.5	SS	2	2	1		6"	0		SAA
EOB											

Sketch

WATER LEVEL DATA
WL: 20' WS OR WD
WL: 16' ACR
WL: AFTER HOURS

SURVEY DATA
TOP OF CASING
SURFACE ELEVATION
BENCHMARK

ABBREVIATIONS
SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SERVICES DIV ...N

Job Number:90 - 384 Drillers:COLEMAN/DAVE

SOIL BORING LOG

Job Name:CALLAHAN Date:10/28/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description	WATER LEVEL DATA
	0	18	HS								FIRST HOLE ABONDONED AT 8'	WL: 19.5' WS OR WD
S - 1	18	19.5	SS	25	40	32		4"	143		BLACK FINE TO MEDIUM, TRACE	WL: BCR
											OF GRAVEL, LITTLE SILT, FILL	WL: AFTER HOURS
	18	20	HS									SURVEY DATA
S - 2	20	21.5	SS	10	9	15		18"	376		SAA, TILL; WET	TOP OF CASING
EOB												SURFACE ELEVATION
												BENCHMARK
												ABBREVIATIONS
												SS - SPLIT SPOON
												SS* - 3" SPLIT SPOON
												ST - SHELBY TUBE
												PA - POWER AUGER
												HS - HOLLOW STEM
												RB - ROCK BIT (ROTARY)
												SAA - SAME AS ABOVE
												EOB - END OF BORING

SERVICES DIV. N

SOIL BORING LOG

Job Number:90 - 384 Drillers:COLEMAN/DAVE/TONY

Job Name:CALLAHAN Date:10/29/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6" 6" 6" 6"	Length Recovered	PID	Strata Change	Sketch / Sample Description	WATER LEVEL DATA
								FIRST HOLE ABONDONED AT 5'	
	0	20	PA					BLACK FILL SOME GRAVEL	WL: WS OR WD
									WL: BCR
S - 1	20	21.5	SS			0		RED-BROWN, FINE SAND, TRACE OF	WL: AFTER HOURS
								SILT, LITTLE GRAVEL, MOIST TO WET	
S - 2	20	21.5	SS			0		BROWN-GRAY FINE TO MEDIUM SAND,	SURVEY DATA
								LITTLE GRAVEL, TILL; SATURATED	TOP OF CASING
EOB									SURFACE ELEVATION
									BENCHMARK
									ABBREVIATIONS
									SS - SPLIT SPOON
									SS* - 3" SPLIT SPOON
									ST - SHELBY TUBE
									PA - POWER AUGER
									HS - HOLLOW STEM
									RB - ROCK BIT (ROTARY)
									SAA - SAME AS ABOVE
									EOB - END OF BORING

SERVICES DI\ N

Job Number:90 - 384 Drillers:STS

SOIL BORING LOG

Job Name:CALLAHAN Date:1/13/92 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description	WATER LEVEL DATA
	0	9.5	PA								FINE TO MEDIUM BROWN SAND, LITTLE	WL: WS OR WD
											GRAVEL, FILL	WL: BCR
											REFUSAL, MOVED 3' WEST	WL: AFTER HOURS
												SURVEY DATA
	0	15.5	PA									TOP OF CASING
1	15.5	17	SS	8	13	14	-	18"	0		MEDIUM TO COARSE BROWN SAND,	SURFACE ELEVATION
											TRACE OF SILT; TILL; SATURATED	BENCHMARK
EOB												
												ABBREVIATIONS
												SS - SPLIT SPOON
												SS* - 3" SPLIT SPOON
												ST - SHELBY TUBE
												PA - POWER AUGER
												HS - HOLLOW STEM
												RB - ROCK BIT (ROTARY)
												SAA - SAME AS ABOVE
												EOB - END OF BORING

SCA ENVIRON
SERVICES DIV.. ..ON

Job Number:90 - 384 Drillers:STS

SOIL BORING LOG

Job Name:CALLAHAN Date:1/13/92 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
	0	15.5	PA								FINE TO MEDIUM SAND, TRACE OF
											SILT, TRACE OF GRAVEL
1	15.5	17	SS	12	17	19		18"	0		SAA
EOB											

WATER LEVEL DATA

WL: 14' WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SERVICES DI ON

Job Number:90 - 384 Drillers:BS, KK

SOIL BORING LOG

Job Name:CALLAHAN Date:7/3/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6" 6" 6" 6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
1	0	0.5	HA			0		BROWN, FINE TO MEDIUM SAND,
								GRAVEL, MOIST, NO ODOR, FILL
	0	5	PA					
2	5	6.5	HA			0		SAA
	5	10	PA					
3	10	11.5	HA			0		SAA
	10	15	PA					HIT COBBLES ABOUT 12', PID = 4.0
4	15	16.5	HA			32		BROWN, FINE TO MEDIUM SAND, TRACE
								COBBLES AND GRAVEL, CLAY/SILT,
								TILL, STRONG HYDROCARBON ODOR;
								WATER AT ABOUT 12', STAINED GRAY
								IN PLACES.
EOB								SEE WELL DIARGAM FOR MW - 1

WATER LEVEL DATA

WL: 12.0' WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

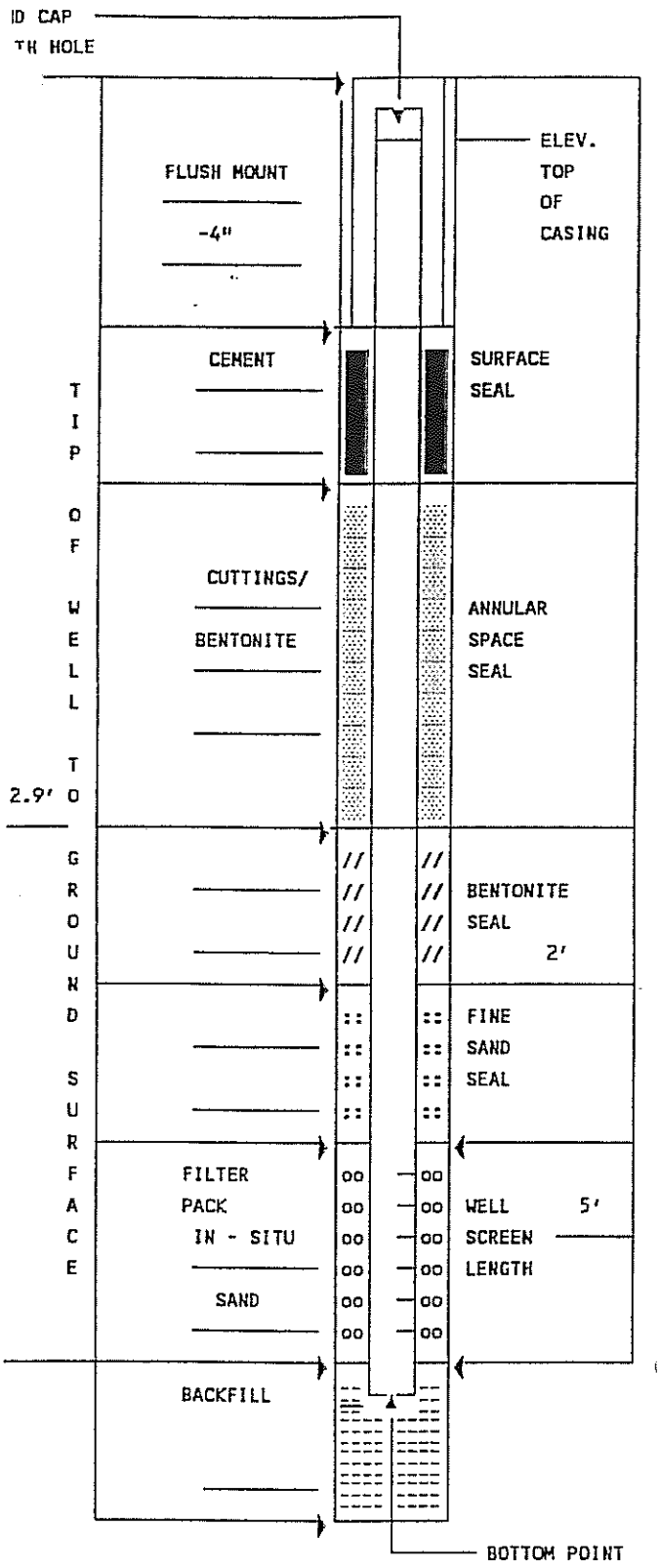
BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
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PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

:A ENVIRONMENTAL SERVICES DIVISIONS

FLUSH MOUNT WELL INSTALLATION DIAGRAM



1.) TYPE OF PIPE: SCHED. 40 (if pvc used)

[PVC,] GALVANIZED, STAINLESS, OTHER

2.) TYPE OF JOINTS:

[THREADED,] OTHER

3.) TYPE OF WELL SCREEN:

[PVC,] GALVANIZED, STAINLESS, OTHER

4.) SCREEN SIZE: # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK:

[YES] NO

6.) WAS DRILLING MUD USED:

YES [NO]

7.) DEPTH OF WELL FROM TOP OF PVC: 12.9' FT

8.) TYPE OF AUGER USED:

[SOLID,] HOLLOW STEM, OTHER

9.) FILTER PACK: NO. OF BAGS IN-SITU

10.) FINE SAND SEAL: NO. OF BAGS

11.) BENTONITE SEAL: NO. OF [BAGS] OR PAILS 3/4 BAG

12.) ANNULAR SPACE SEAL: NO. OF [BAGS] OR PAILS

13.) SURFACE SEAL: NO. OF BAGS

14.) WATER LEVEL FROM TOC: 10.31 FT 1/15/92 DATE

10.33 FT 1/16/92 DATE

10.83 FT 2/11/92 DATE

MW - 1 7/3/91 DIGR

:LL ID. DATE INSTALLED DRILL RIG

B.S. KK/HPR

:ILLER DRILL CREW

CALLAHAN 90 - 384

.IENT SCA JOB #

SCA/ESD FORM 427

SCA ENVIRON[illegible]L
SERVICES DIVISION

SOIL BORING LOG

Boring Number:MW - 2 Techn[illegible]

Job Number:90 - 384 Drillers:COLEMAN/ PAT/DAVE

Job Name:CALLAHAN Date:7/29/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
S - 1	0	1.5	SS	2	46	27		8"	0		BITUMINOUS PAVEMENT, COARSE SAND
	0	5	HS								
S - 2	5	6.5	SS	11	7	9		8"	0		BROWN, FINE TO MEDIUM SAND, TRACE
											OF GRAVEL AND SILT, FILL
	5	10	HS								
S - 3	10	11.5	SS	11	12	9		5"	0		BROWN, MOSTLY CLAY/SILT, LITTLE
											GRAVEL, TILL
	10	15	HS								
S - 4	15	16.5	SS	8	11	12		8"	0		SAA
EOB											WELL SET AT 13'
											SEE WELL DIAGRAM MW - 2

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

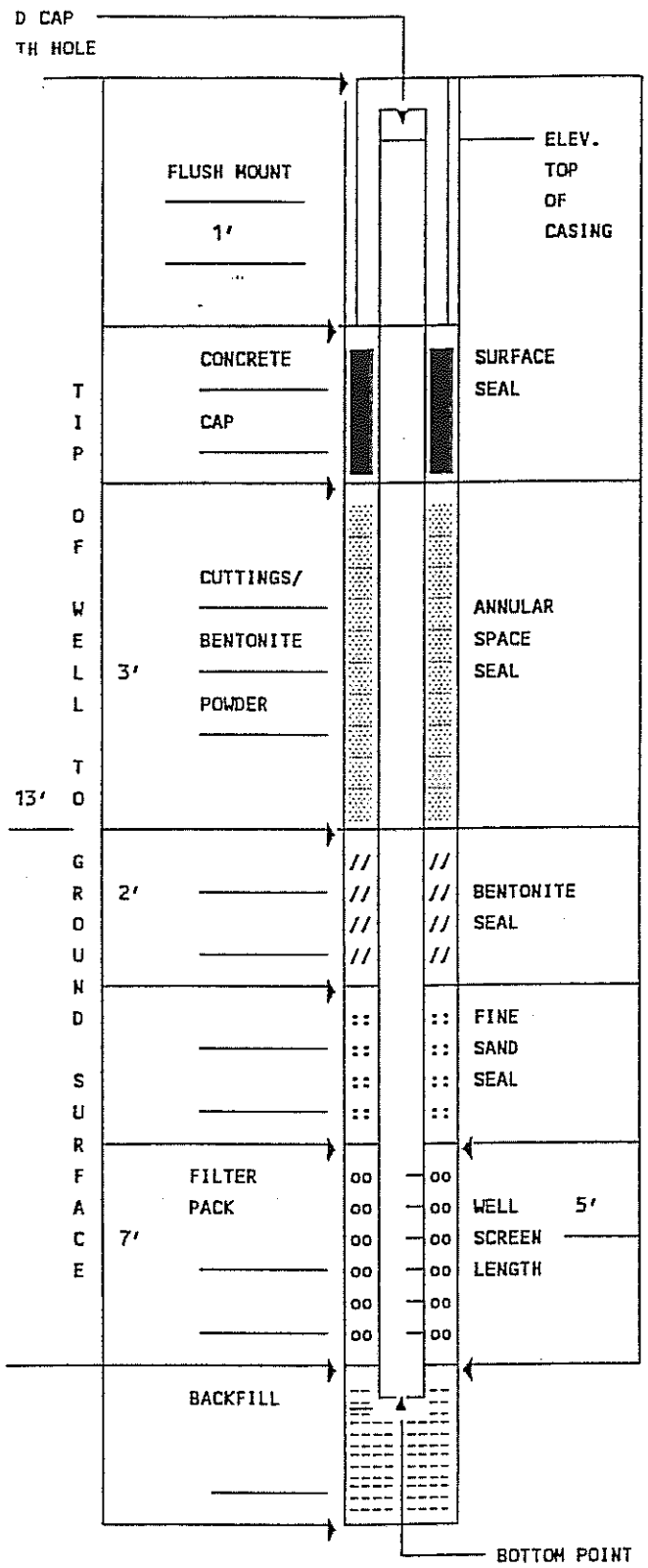
BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

A ENVIRONMENTAL SERVICES DIVISIONS

FLUSH MOUNT WELL INSTALLATION DIAGRAM



1.) TYPE OF PIPE: SCHED. 40 (if pvc used)

[PVC], GALVANIZED, STAINLESS, OTHER

2.) TYPE OF JOINTS:

[THREADED], OTHER

3.) TYPE OF WELL SCREEN:

[PVC], GALVANIZED, STAINLESS, OTHER

4.) SCREEN SIZE: # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK:

YES [NO]

6.) WAS DRILLING MUD USED:

YES [NO]

7.) DEPTH OF WELL FROM TOP OF PVC: 13' FT

8.) TYPE OF AUGER USED: 3/4"

SOLID, [HOLLOW STEM], OTHER

9.) FILTER PACK: NO. OF BAGS 1

10.) FINE SAND SEAL: NO. OF BAGS 0

11.) BENTONITE SEAL: NO. OF [BAGS] OR PAILS 1

12.) ANNULAR SPACE SEAL: NO. OF [BAGS] OR PAILS

13.) SURFACE SEAL: NO. OF BAGS

14.) WATER LEVEL FROM TOC: 8.60 FT 7/31/91 DATE

10.36 FT 1/16/92 DATE

11.22 FT 2/11/92 DATE

WELL ID. MW - 2 DATE INSTALLED 7/29/91 DRILL RIG

DRILLER DAVE DRILL CREW PAT (COLEMAN ENGINEERING)

CLIENT CALLAHAN SCA JOB # 90 - 384

SCA/ESD FORM 427

SERVICES DI\ i

Job Number:90 - 384 Drillers:COLEMAN/DAVE/PAT

SOIL BORING LOG

Job Name:CALLAHAN Date:7/29/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
S - 1	0	1.5	SS	6	12	16		12"	0		MEDIUM SAND, LITTLE GRAVEL, AND
											BITUMINOUS PAVEMENT.
	0	5	HS								
S - 2	5	6.5	SS	5	3	4		11"	0		FINE TO MEDIUM SAND, MOIST; FILL
	5	10	HS								
S - 3	10	11.5	SS	38	50	/		12"	0		VERY FINE SAND-CLAY, LITTLE
											GRAVEL, TILL
REFUSAL											ROCK ENCOUNTERED AT 12'
	0	15	HS								
S - 1	15	16.5	SS	12	12	11		4"	0		MOIST CLAY, TRACE OF GRAVEL, TILL
EOB											WELL SET AT 13.5'
											SEE WELL DIARGAM FOR MW - 3C

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

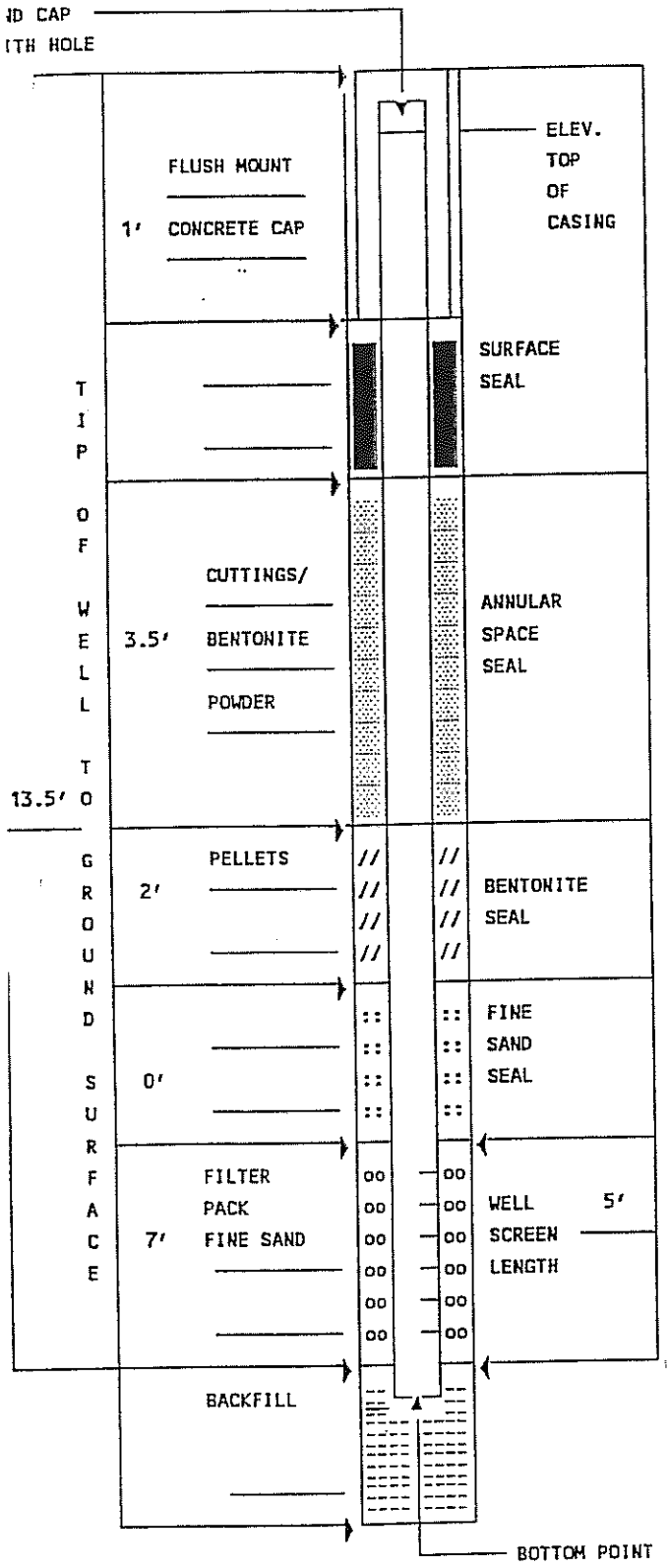
SURFACE ELEVATION

BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

FLUSH MOUNT WELL INSTALLATION DIAGRAM



1.) TYPE OF PIPE: SCHED. 40 (if pvc used)

[PVC], GALVANIZED, STAINLESS, OTHER

2.) TYPE OF JOINTS:

[THREADED], OTHER

3.) TYPE OF WELL SCREEN:

[PVC], GALVANIZED, STAINLESS, OTHER _____

4.) SCREEN SIZE: # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK:

YES [NO]

6.) WAS DRILLING MUD USED:

YES [NO]

7.) DEPTH OF WELL FROM TOP OF PVC: 13.5' FT

8.) TYPE OF AUGER USED: 3/4"

SOLID, [HOLLOW STEM], OTHER _____

9.) FILTER PACK: NO. OF BAGS 1

10.) FINE SAND SEAL: NO. OF BAGS 0

11.) BENTONITE SEAL: NO. OF [BAGS] OR PAILS 1

12.) ANNULAR SPACE SEAL: NO. OF [BAGS] OR PAILS _____

13.) SURFACE SEAL: NO. OF BAGS _____

14.) WATER LEVEL FROM TOC: 9.53 FT 7/31/91 DATE

11.01 FT 1/15/92 DATE

11.96 FT 2/11/92 DATE

WELL ID. MW - 3C DATE INSTALLED 7/30/91 DRILL RIG _____

DRILLER DAVE DRILL CREW PAT (COLEMAN ENGINEERING)

CLIENT CALLAHAN SCA JOB # 90 - 384

SCA/ESD FORM 427

SERVICES DIV

Job Number:90 - 384 Drillers:COLEMAN/DAVE/PAT

SOIL BORING LOG

Job Name:CALLAHAN Date:7/30/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
	0	.4	HS								
S - 1	.4	1.9	SS	8	16	15		8"			FINE BROWN SAND, TRACE OF GRAVEL
											FILL.
	.4	5	HS								
S - 2	5	6.5	SS	11	9	8		10"			VERY FINE SAND-CLAY, BROWN, TRACE
											OF GRAVEL; FILL
	5	10	HS								
S - 3	10	11.5	SS	9	19	21		12"			SAA
	10	15	HS								
S - 4	15	16.5	SS	2	11	23		8"			FINE SAND, SOME GRAVEL, MOIST;
											TILL
EOB											SEE WELL DIAGRAM FOR MW - 4

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

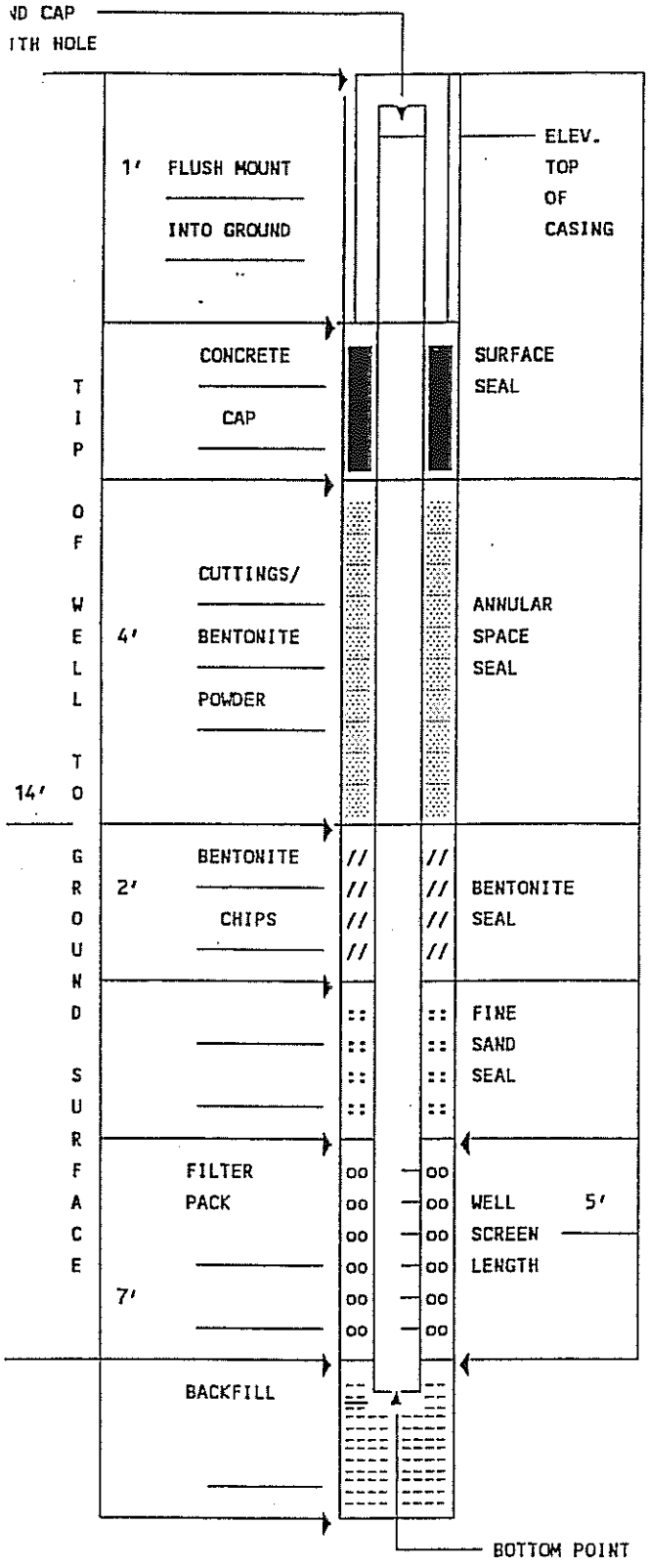
TOP OF CASING

SURFACE ELEVATION

BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING



1.) TYPE OF PIPE: SCHED. 40 (if pvc used)

[PVC], GALVANIZED, STAINLESS, OTHER

2.) TYPE OF JOINTS:

[THREADED], OTHER

3.) TYPE OF WELL SCREEN:

[PVC], GALVANIZED, STAINLESS, OTHER

4.) SCREEN SIZE: # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK:

YES [NO]

6.) WAS DRILLING MUD USED:

YES [NO]

7.) DEPTH OF WELL FROM TOP OF PVC: 14' FT

8.) TYPE OF AUGER USED: 3/4"

SOLID, [HOLLOW STEM] OTHER

9.) FILTER PACK: NO. OF BAGS 1

10.) FINE SAND SEAL: NO. OF BAGS 0

11.) BENTONITE SEAL: NO. OF [BAGS] OR PAILS 1

12.) ANNULAR SPACE SEAL: NO. OF [BAGS] OR PAILS

13.) SURFACE SEAL: NO. OF BAGS

14.) WATER LEVEL FROM TOC: 9.79 FT 7/31/91 DATE

11.15 FT 1/16/92 DATE

11.70 FT 2/11/92 DATE

MW - 4 7/30/91

ELL ID. DATE INSTALLED DRILL RIG

DAVE PAT (COLEMAN ENGINEERING)

RILLER DRILL CREW

CALLAHAN 90 - 384

LIENT SCA JOB #

SCA ENVIRON

SERVICES DIVI..ON

SOIL BORING LOG

Job Number:90 - 384 Drillers:COLEMAN/DAN/ROY

Job Name:CALLAHAN Date:8/15/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
	0	.5	HS								BITUMINOUS PAVEMENT
S - 1	.5	2	SS	/	/	/		8"	20		LARGE GRAVELY SAND, WELL SORTED,
											FILL.
	.5	5	HS								SAA
S - 2	5	6.5	SS	9	6	4		8"	114		MOSTLY CLAY, LITTLE GRAVEL, WELL
											GRADED, TILL; ODOROUS.
	5	10	HS								
S - 3	10	11.5	SS	5	6	4		10"	2		SAA, VERY MOIST
	10	15	HS								
S - 4	15	16.5	SS	3	6	7		14"	49		MOSTLY SILT/CLAY, SOME FINE SAND,
											ORGANICS, PEAT, ODOROUS, WET.
EOB											WELL SET AT 15.5'
											SEE WELL DIAGRAM FOR MW - 5

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

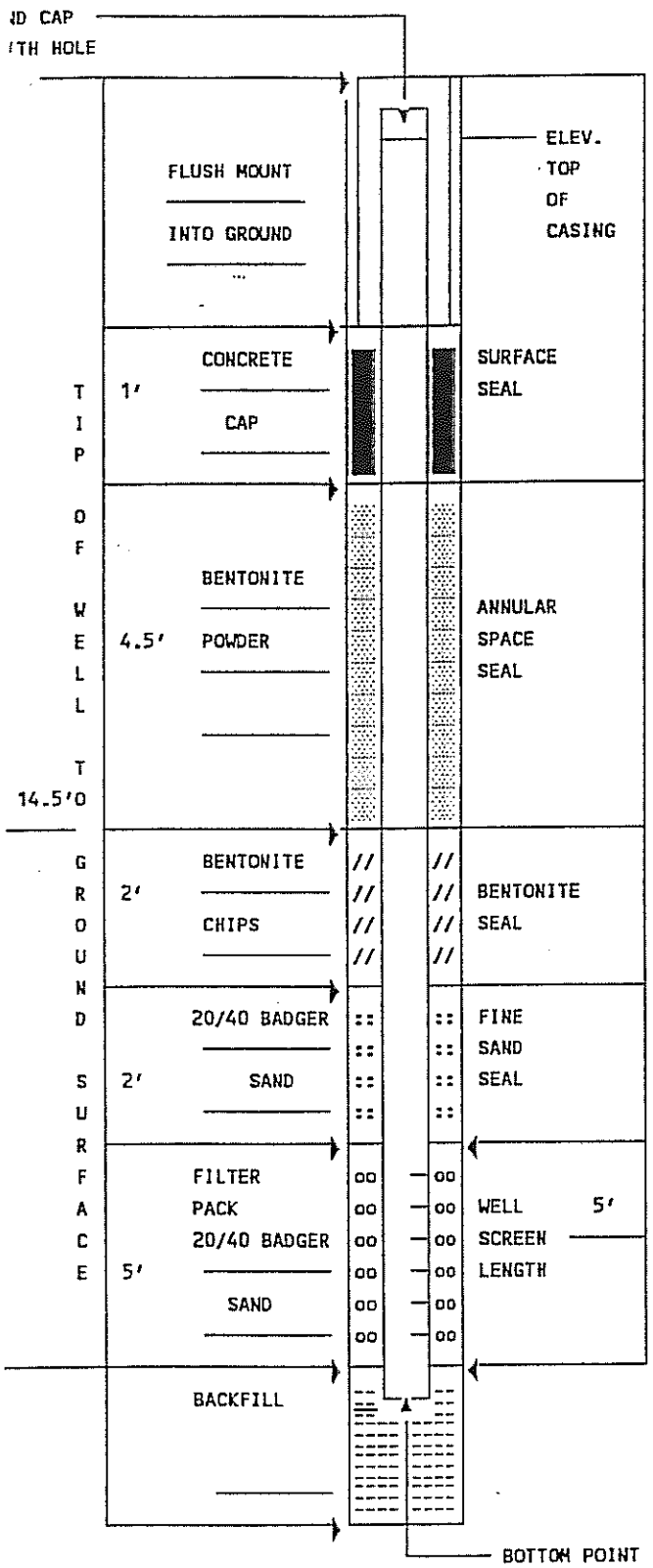
BENCHMARK

ABBREVIATIONS

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SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

CA ENVIRONMENTAL SERVICES DIVISIONS

FLUSH MOUNT WELL INSTALLATION DIAGRAM



1.) TYPE OF PIPE: SCHED. 40 (if pvc used)

[PVC], GALVANIZED, STAINLESS, OTHER

2.) TYPE OF JOINTS:

[THREADED], OTHER

3.) TYPE OF WELL SCREEN:

[PVC], GALVANIZED, STAINLESS, OTHER _____

4.) SCREEN SIZE: # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK:

YES [NO]

6.) WAS DRILLING MUD USED:

YES [NO]

7.) DEPTH OF WELL FROM TOP OF PVC: 14.5' FT

8.) TYPE OF AUGER USED: 3/4"

SOLID, [HOLLOW STEM], OTHER _____

9.) FILTER PACK: NO. OF BAGS 1

10.) FINE SAND SEAL: NO. OF BAGS _____

11.) BENTONITE SEAL: NO. OF [BAGS] OR PAILS 3

12.) ANNULAR SPACE SEAL: NO. OF [BAGS] OR PAILS _____

13.) SURFACE SEAL: NO. OF BAGS _____

14.) WATER LEVEL FROM TOC: 6.89' FT 8/16/91 DATE

9.24 FT 1/15/92 DATE

10.31 FT 2/11/92 DATE

WELL ID. MW - 5 DATE INSTALLED 8/16/91 DRILL RIG _____

DRILLER DAN DRILL CREW ROY (COLEMAN ENGINEERING)

CLIENT CALLAHAN SCA JOB # 90 - 384

SCA/ESD FORM 427

SERVICES DI JN

Job Number:90 - 384 Drillers:COLEMAN/DAVE/TONY

SOIL BORING LOG

Job Name:CALLAHAN Date:10/29/91 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
SS - 1	0	1.5	SS	5	6	17		.8"	3		BROWN, FINE TO MEDIUM SILTY SAND,
											LITTLE GRAVEL, FILL.
	0	5	HS								TAILINGS
SS - 2	5	6.5	SS	8	7	5		1'	2		SAA
	5	10	HS								
SS - 3	10	11.5	SS	2	4	8		.3'	6		SAA
	10	15	HS								
SS - 4	15	16.5	SS					.2'	2.3		SAA
	15	20	HS							17'	PEAT IN CUTTINGS
SS - 5	20	21.5	SS					.5'	3.2		FINE TO MEDIUM SAND WITH WOOD
											FRAGMENTS/GRAVEL.
EOB											SEE WELL DIAGRAM FOR MW - 6

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

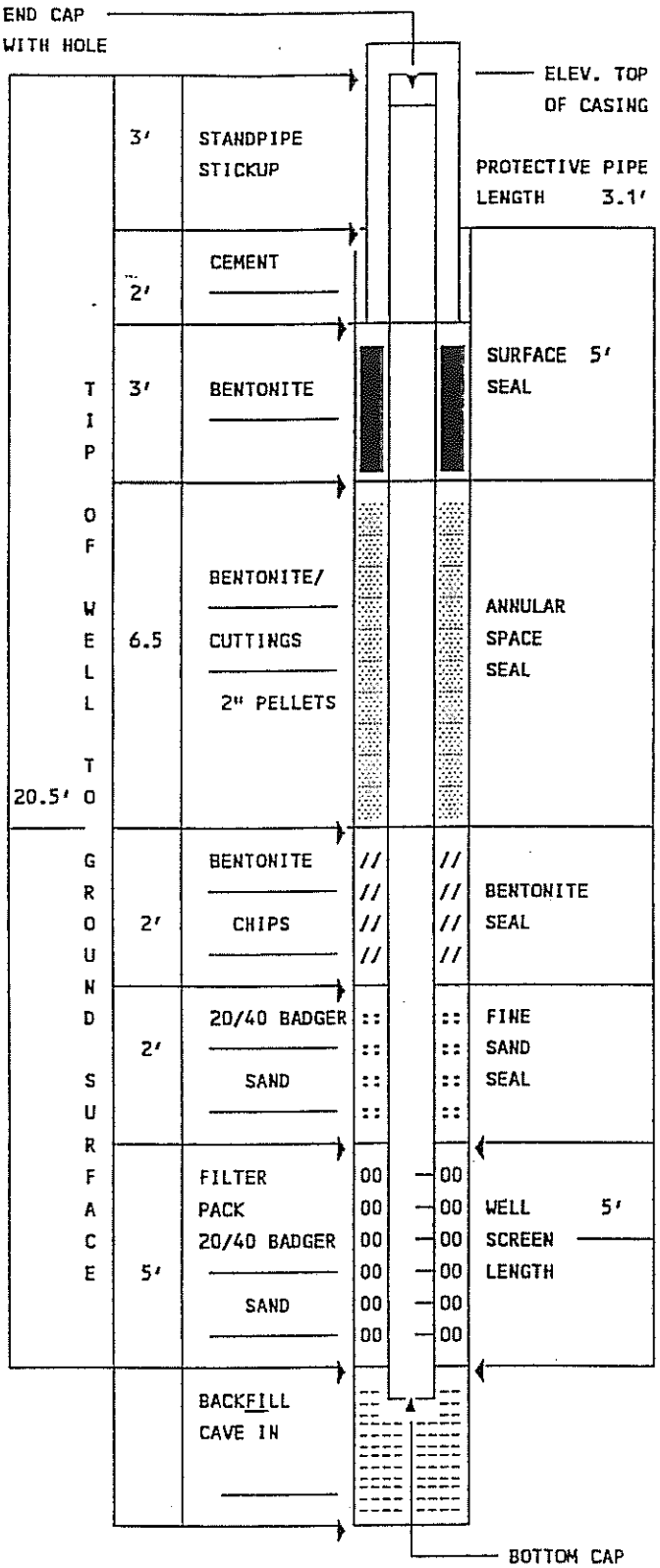
BENCHMARK

ABBREVIATIONS

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SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SCA ENVIRONMENTAL SERVICES DIVISIONS

STICKUP WELL INSTALLATION DIAGRAM



1.) TYPE OF PIPE SCH. 40 (if pvc used)

[PVC] GALVANIZED, STAINLESS, OTHER ———

2.) TYPE OF JOINTS

[THREADED] OTHER ———

3.) TYPE OF WELL SCREEN

[PVC] GALVANIZED, STAINLESS, OTHER ———

4.) SCREEN SIZE # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK

[YES] NO

6.) WAS DRILLING MUD USED

YES [NO]

7.) DEPTH OF WELL FROM TOP OF PVC 23.5' FT

8.) TYPE OF AUGER USED: 3/4"

SOLID, [HOLLOW STEM,] OTHER ———

9.) FILTER PACK: NO. OF BAGS 2

10.) FINE SAND SEAL: NO. OF BAGS 1

11.) BENTONITE SEAL: NO. OF [BAGS] OR PAILS 1

12.) ANNULAR SPACE SEAL: NO. OF [BAGS] OR PAILS 1

13.) SURFACE SEAL: NO. OF BAGS .5

14.) WATER LEVEL FROM TOC 19.6' FT 10/20/91 DATE
22.94 FT 1/15/92 DATE
23.59 FT 2/11/92 DATE

WELL ID. MW - 6 DATE INSTALLED 10/29/91 DRILL RIG COLEMAN

DRILLER COLEMAN DRILL CREW TOM

CLIENT CALLAHAN SCA JOB NO. 90 - 384

SCA/ESD FORM 426

SCA ENVIRO. IE
SERVICES DIVISION

SOIL BORING LOG

Job Number:90 - 384 Drillers:STS

Job Name:CALLAHAN Date:1/13/92 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
1	0	1.5	SS	7	14	14		12"	0		FINE SAND, MINE TAILINGS, FILL
	1.5	5	PA								
2	5	6.5	SS	8	13	13		10"	0		FINE BROWN SAND, TRACE GRAVEL
	6.5	10	PA								
3	10	11.5	SS	7	6	7		12"	0		MOIST TO WET BROWN PEAT
	11.5	15	PA								
4	15	16.5	SS	5	7	10		14"	0		FINE BROWN SAND, TRACE GRAVEL,
											TILL
											REFUSAL AT 17'
	0	20	HS								
5	20	21.5	SS	7	6	9		13"	0		FINE TO MEDIUM SAND, TRACE OF
											SILT, SATURATED
EOB											SEE WELL DIAGRAM FOR MW - 7

WATER LEVEL DATA

WL:~20' WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

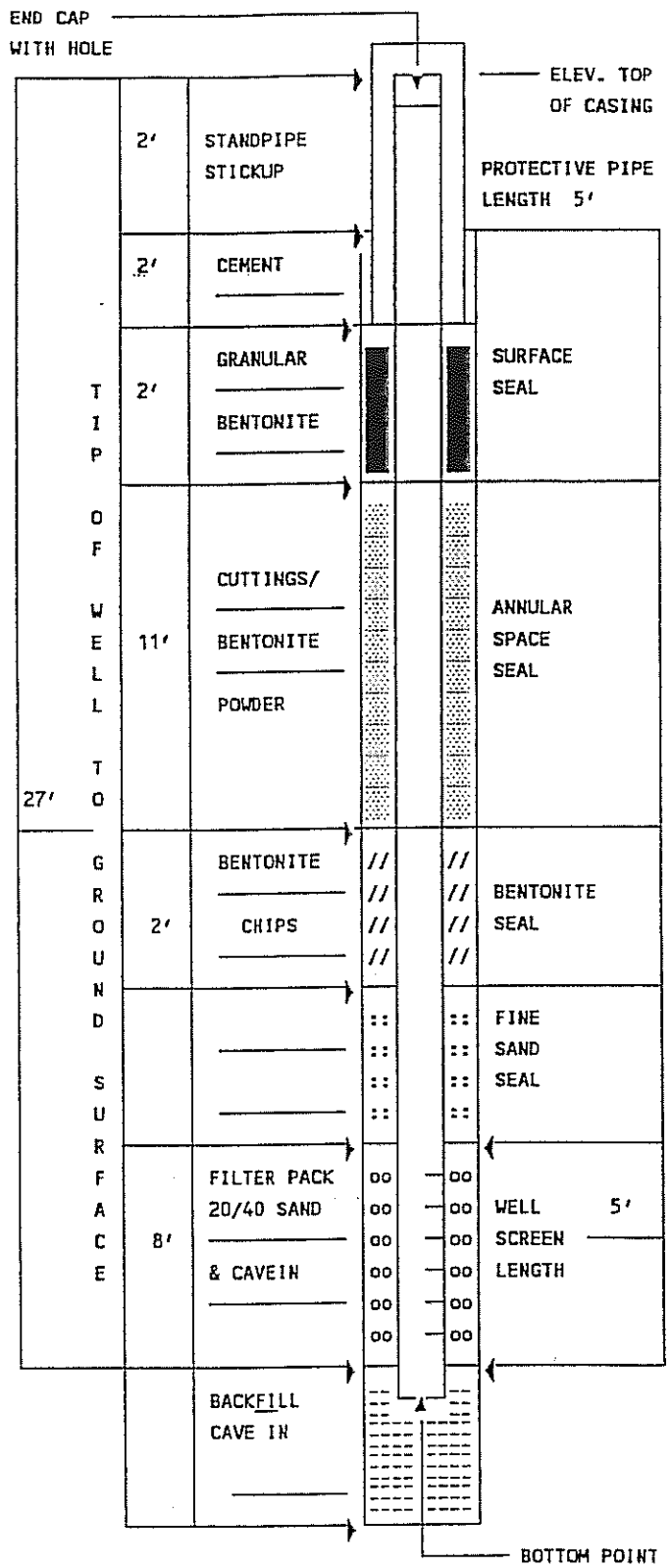
BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SCA ENVIRONMENTAL SERVICES DIVISIONS

STICKUP WELL INSTALLATION DIAGRAM



1.) TYPE OF PIPE SCH. 40 (if pvc used)

[PVC] GALVANIZED, STAINLESS, OTHER ———

2.) TYPE OF JOINTS

[THREADED] OTHER ———

3.) TYPE OF WELL SCREEN

[PVC] GALVANIZED, STAINLESS, OTHER ———

4.) SCREEN SIZE # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK

[YES] NO

6.) WAS DRILLING MUD USED

YES [NO]

7.) DEPTH OF WELL FROM TOP OF PVC 27' FT

8.) TYPE OF AUGER USED: 3/4"

SOLID, [HOLLOW STEM,] OTHER ———

9.) FILTER PACK: NO. OF BAGS 1

10.) FINE SAND SEAL: NO. OF BAGS ———

11.) BENTONITE SEAL: NO. OF [BAGS] OR PAILS 1

12.) ANNULAR SPACE SEAL: NO. OF BAGS OR PAILS 1

13.) SURFACE SEAL: NO. OF BAGS 1

14.) WATER LEVEL FROM TOC

21.88 FT 1/15/92 DATE

21.84 FT 1/16/92 DATE

23.79 FT 3/19/92 DATE

WELL ID. MW - 7 DATE INSTALLED 1/13/92 DRILL RIG CME - 45

DRILLER STS DRILL CREW JIM & JOHN

CLIENT CALLAHAN SCA JOB NO. 90 - 384

SCA/ESD FORM 426

SCA ENVIRL L
SERVICES DIV JN

Job Number:90 - 384 Drillers:STS

SOIL BORING LOG

Job Name:CALLAHAN Date:1/13/92 PAGE 1 OF 1

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
	0	1.5	SS	12	14	21		18"			FINE SAND, LITTLE GRAVEL, FILL
	1.5	5	HS								
	5	6.5	SS	3	3	6		12"			FINE TO VERY FINE SAND, LITTLE
											SILT.
	6.5	8	HS								REFUSAL AT 8'
											MOVED 4' SOUTH
	0	8	HS								REFUSAL AT 8'
EOB											NO WELL MW - 8 SET

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
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RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SCA ENVIRO[illegible] L
SERVICES DIV[illegible]ON

SOIL BORING LOG

Job Number:90 - 384 Drillers:STS

Job Name:CALLAHAN Date:1/14/92 PAGE 1 OF 2

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
1	0	1.5	SS	11	5	5		7"	1.1		FINE TO MEDIUM SAND, TRACE OF
											GRAVEL, ANGULAR, FILL
	1.5	5	HS								
2	5	6.5	SS	5	4	5		10"	1.9		FINE TO MEDIUM BROWN SAND, TRACE
											OF SILT, FILL
	6.5	10	HS								
3	10	11.5	SS	3	6	4		12"	1.1		SAA
	11.5	15	HS								
	15	16.5	SS	5	4	4					GRAVEL IN TIP - RESAMPLED
4	15	16.5	SS					6"	1.1		MEDIUM TO COARSE SAND, LITTLE
											GRAVEL; TILL
	16.5	20	HS								
5	20	21.5	SS	23	4	14		6"	0		SAA
	21.5	22	HS								REFUSAL AT 22', MOVED 3' EAST
	0	25	HS								WET WHILE DRILLING - 23'

WATER LEVEL DATA

WL: 23' WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

BENCHMARK

ABBREVIATIONS

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ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SCA ENVIRO[illegible]
SERVICES DIV[illegible]ION

Boring Number: [illegible]

Job Number:90 - 384

Drillers:STS

SOIL BORING LOG

Job Name:CALLAHAN

Date:1/14/92

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
6	25	26.5	SS	10	17	10		10"	46		SMALL GRAVEL, SATURATED
	26.5	28	HS								
7	28	28.5	SS	50				10"	48		SAA
EOB											SEE WELL DIAGRAM FOR MW - 9

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

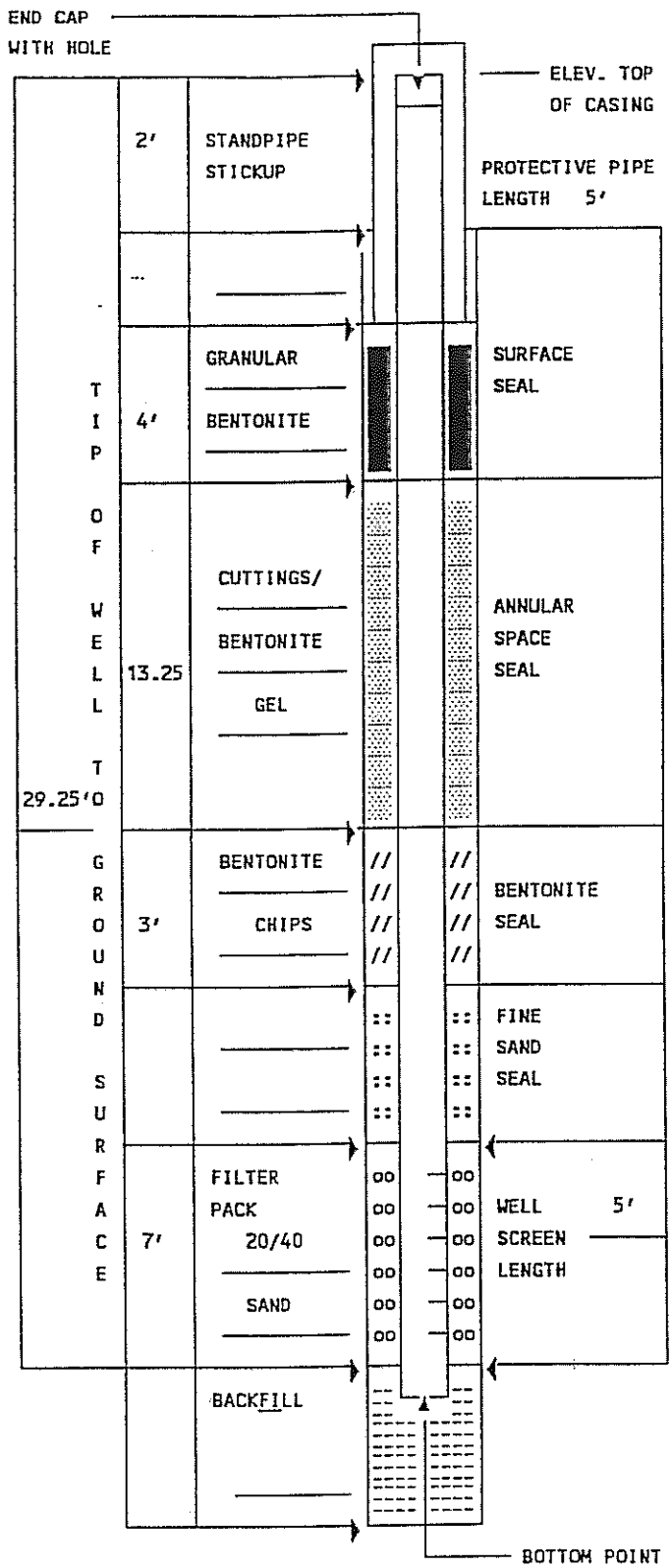
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RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SCA ENVIRONMENTAL SERVICES DIVISIONS

STICKUP WELL INSTALLATION DIAGRAM



1.) TYPE OF PIPE SCH. 40 (if pvc used)

[PVC] GALVANIZED, STAINLESS, OTHER ———

2.) TYPE OF JOINTS

[THREADED] OTHER ———

3.) TYPE OF WELL SCREEN

[PVC] GALVANIZED, STAINLESS, OTHER ———

4.) SCREEN SIZE # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK

[YES] NO

6.) WAS DRILLING MUD USED

YES [NO]

7.) DEPTH OF WELL FROM TOP OF PVC 29.25 FT

8.) TYPE OF AUGER USED: 3/4"

[SOLID,] HOLLOW STEM, OTHER ———

9.) FILTER PACK: NO. OF BAGS 2

10.) FINE SAND SEAL: NO. OF BAGS 1

11.) BENTONITE SEAL: NO. OF BAGS OR PAILS 2

12.) ANNULAR SPACE SEAL: NO. OF BAGS OR PAILS 3

13.) SURFACE SEAL: NO. OF BAGS 1

14.) WATER LEVEL FROM TOC 23.89 FT 1/14/92 DATE
24.39 FT 1/16/92 DATE
23.66 FT 2/11/92 DATE

WELL ID. MW - 9 DATE INSTALLED 1/14/92 DRILL RIG CME - 45

DRILLER STS DRILL CREW JIM & JOHN

CLIENT CALLAHAN SCA JOB NO. 90 - 384

SCA/ESD FORM 426

SERVICES DI JN

SOIL BORING LOG

Job Number:90 - 384 Drillers:STS

Job Name:CALLAHAN Date:3/12/92

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
	0	10	PA								MINE TAILINGS (SET CASING)
	0	10	RB								MINE TAILINGS
	10	15	RB								PEAT
	15	20	RB								FINE TO MEDIUM BROWN SAND, LITTLE
SS - 1	20	21.5	SS	19	19	44		0"	/		ROCK IN END OF SS - NO SAMPLE
	21.5	25	RB								TILL
SS - 2	25	26.5	SS	5	25	35		4"	5		LIGHT BROWN SAND, SMALL ANGULAR
											MAGNETITE MIX, TILL
	26.5	30	RB								SAA
SS - 3	30	31.5	SS	22	23	29		8"	3		LIGHT BROWN MEDIUM TO COARSE SAND
											TRACE OF GRAVEL, (ANGULAR)
	31.5	35	HP								NO SAMPLE IN HYDROPUNCH
	30	35	RB								ANGULAR FINE GRAINED VOLCANIC
											ROCK; TILL
SS - 4	35	36.5	SS	24	34	/		4"	3		SAA
	36.5	40	RB							39'	SAA

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SERVICES D: ION

Job Number:90 - 384 Drillers:STS

SOIL BORING LOG

Job Name:CALLAHAN Date:3/12/92

Sample Number	Depth or Elevation From	To	Sampling Method	Blow Count 6"	6"	6"	6"	Length Recovered	PID	Strata Change	Sketch / Sample Description
SS - 5	40	41.5	SS	16	12	8		8"	2		FINE TO MEDIUM SAND
WS - 1	41.5	45	HP								HYDROPUNCH SAMPLE TAKEN FROM
											43 - 44'
	40	45	RB								FINE TO MEDIUM SAND
SS - 6	45	46.5	SS	60	/	/		0"	/		45.5' BEDROCK ENCOUNTERED
	45.5	49.5	RB								BEDROCK
EOB											SEE WELL DIAGRAM FOR MW - 10
											WELL SET AT 43.5'

WATER LEVEL DATA

WL: WS OR WD

WL: BCR

WL: AFTER HOURS

SURVEY DATA

TOP OF CASING

SURFACE ELEVATION

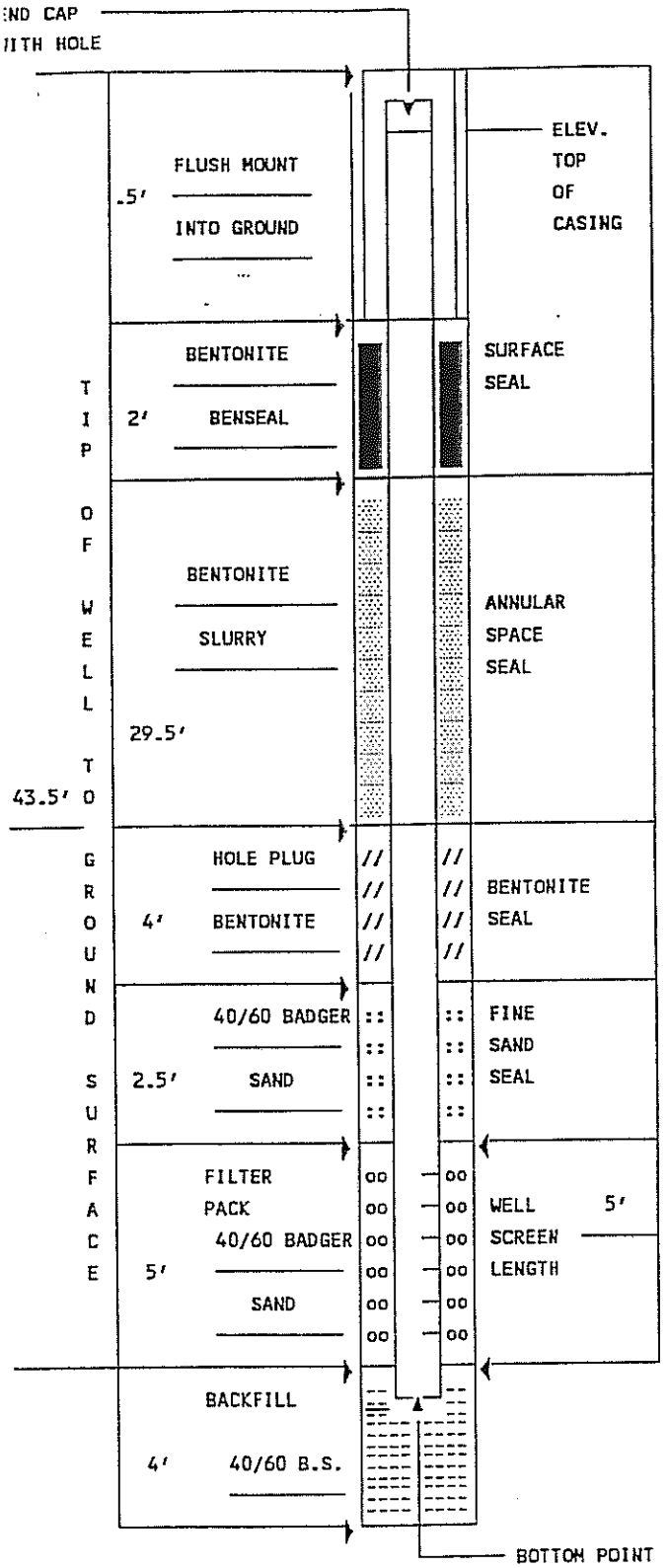
BENCHMARK

ABBREVIATIONS

SS - SPLIT SPOON
SS* - 3" SPLIT SPOON
ST - SHELBY TUBE
PA - POWER AUGER
HS - HOLLOW STEM
RB - ROCK BIT (ROTARY)
SAA - SAME AS ABOVE
EOB - END OF BORING

SCA ENVIRONMENTAL SERVICES DIVISIONS

FLUSH MOUNT WELL INSTALLATION DIAGRAM



1.) TYPE OF PIPE: SCH. 40 (if pvc used)

[PVC], GALVANIZED, STAINLESS, OTHER

2.) TYPE OF JOINTS:

[THREADED], OTHER

3.) TYPE OF WELL SCREEN:

[PVC], GALVANIZED, STAINLESS, OTHER

4.) SCREEN SIZE: # 10

5.) INSTALLED PROTECTOR PIPE WITH LOCK:

YES [NO]

6.) WAS DRILLING MUD USED:

[YES] NO

7.) DEPTH OF WELL FROM TOP OF PVC: 43.5 FT

8.) TYPE OF AUGER USED: 3/4"

SOLID, [HOLLOW STEM], OTHER

9.) FILTER PACK: NO. OF BAGS 2

10.) FINE SAND SEAL: NO. OF BAGS 5

11.) BENTONITE SEAL: NO. OF [BAGS] OR PAILS 1

12.) ANNULAR SPACE SEAL: NO. OF [BAGS] OR PAILS 1

13.) SURFACE SEAL: NO. OF BAGS 1

14.) WATER LEVEL FROM TOC: 16.75 FT 3/19/92 DATE

16.68 FT 3/31/92 DATE

FT DATE

WELL ID. MW - 10 DATE INSTALLED 3/13/92 DRILL RIG MOBILE DRILL B - 61

DRILLER STS DRILL CREW TOM & JOHN

CLIENT CALLAHAN SCA JOB # 90 - 384

SCA/ESD FORM 427

Baseline Environmental Assessment
Sundberg, Carlson and Associates, Inc., January 1996

BASELINE ENVIRONMENTAL ASSESSMENT INVESTIGATION REPORT FORMER ROPES MILLING PLANT PROPERTY 4547 COUNTY ROAD 601 CHAMPION, MICHIGAN

Prepared for:

MINERALS PROCESSING CORPORATION
4547 County Road 601
Champion, Michigan 49814

January, 1996

Prepared by:

SCA ENVIRONMENTAL
A Division of Sundberg, Carlson and Associates, Inc.
307 South Front Street
Marquette, Michigan 49855

SCA Project 95-565

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack	Boring Number: MW-101
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Pete R.K. - SCA	Drilling Method:
	Project Number: 95-565 / Groundwater Depth/Elevation: 12 feet / Ground Elevation / Borehole Diameter:	
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Well Name: / Local Grid Location (If applicable): ___ N ___ E, S Feet W	
	Start Date: 10-17-95 / Completion Date: 10-17-95 / Comments:	

SAMPLE DATA								SOIL PROPERTIES			
NUMBER	LENGTH RECOVERED (ft)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	STANDARD PENETRATION (ft)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
			0	Course material(pellets, gravel, etc.)	GP						
			1	Brown fine sand with silt and cobbles	SM						
			2	Dark brown silt (sepcular hemitite tailings) Some angular gravel, cobbles, and boulders.	ML						
			3								
			4								
			5								
	9"	9	6	Dark brown, silty fine strained sand.	SM						
		16									
		66	7	Dark brown, silty fine strained sand.							
	12"	12									
		15									
		16	8	Dark brown, silty fine strained sand, with hemitite particles. Peat and Hemitite part.	PT						
			9	Dry brown silt.	ML						
				Dry brown silt	ML						
			10								
	5"	12		Dark black organic peat.	PT						
		15	11								
14		7									
			12								
				Dark brown course sand trace of medium gravel.	SP						
	9"	10	13								
		9									
		19	14	Dark brown course sand with trace of medium gravel.	SP						
			15								
			16								
			17								
			18								
			19								5-10?
				End of Boring							
			20								
			21								

Printed Name of Person Completing Soil Boring Log

Signature of Person Completing Soil Boring Log

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

MONITORING WELL CONSTRUCTION DIAGRAM

Facility/Project Name Callahan	**Facility Location/ Address** Former Ropes Milling Plant Humboldt, Michigan	**Client Name** Minerals Processing Corporation
Well Name MW-101	**Section Location of Well** __ 1/4 of __ 1/4 of Sec __, T __ N, R __ E/W	**Date Well Installed** 10-18-95
SCA Project Number 95-565		**Drill Crew** Drilling and Engineering Company
Type of Well	**Location of Well**	**Geologist/Technician** Greg St. Onge
Water Table Observation Well X Piezometer ___ Other ___	___ Upgradient ___ Sidegradient ___ Downgradient ___ Not Known	

A. Protective Pipe, top elevation _____ ft.

B. Well casing, top elevation _____ ft.

C. Land surface elevaton _____ ft.

D. Surface seal, bottom _____ ft.

12. USCS classification of soil near screen:

GP ___	GM ___	GC ___	GW ___
SW ___	SP ___	SM ___	SC ___
ML ___	MH ___	CL ___	CH ___
PT ___	BEDROCK ___		

13. Sieve analysis attached? ___ yes X no

14. Drilling method used: Rotary ___ H. Stem Auger X Other ___

15. Drilling fluid used: Water ___ Air ___ Drilling Mud ___ None X

16. Drilling additives used? ___ yes X no

Describe _____

E. Bentonite seal, top 8 ft.

F. Fine sand, top – ft.

G. Filter pack, top 9 ft.

H. Screen joint, top 11.5 ft.

I. Well bottom 19 ft.

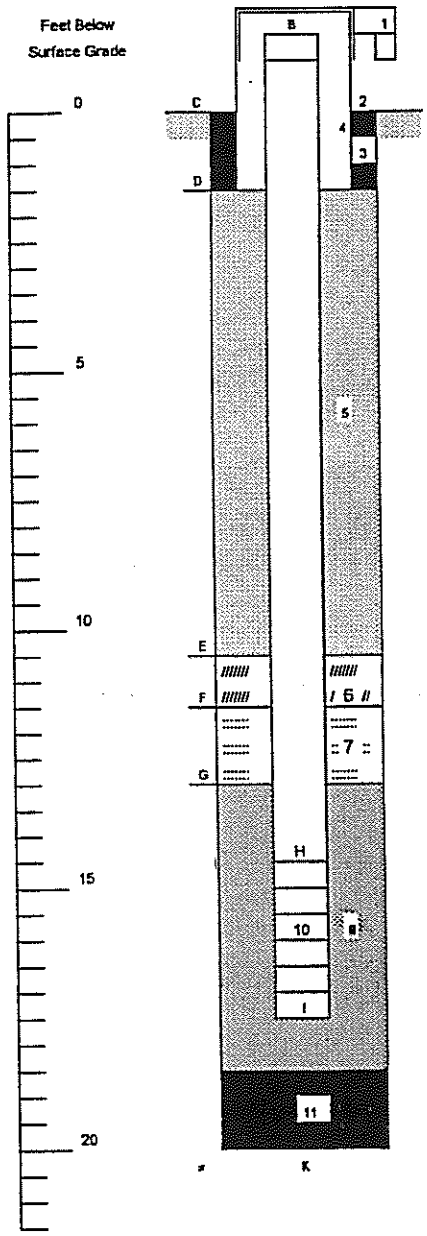
J. Filter pack, bottom 19 ft.

K. Borehole, bottom 19 ft.

L. Borehole, diameter 8.25 in.

M. O.D. well casing 2.375 in.

N. I.D. well casing 2.067 in.



1. Cap and Lock? X Yes ___ No

2. Protective cover pipe: X Yes ___ No
   a. Length: 5 ft.
   b. Material: Steel X Other ___
   c. Additional protection? ___ Yes X No
   If yes, describe _____

3. Surface seal: Bentonite ___ Concrete ___ None Other X

4. Material between well casing and protective pipe: Bentonite ___ Annular Space Seal X Other ___

5. Annular space seal:
   a. Bentonite Chips ___
   b. Bentonite/Cuttings Mixture X
   c. Other ___

   How installed: Tremie ___ Gravity X

6. Bentonite seal: a. Bentonite Chips X
   b. ___ 1/4in. ___ 3/8in Bent. Pellets ___
   c. _____ Other ___

7. Fine sand material: Manufacturer, product name and mesh size
   ___

8. Filter pack material: Manufacturer, product name and mesh size
   Natural cave-in

9. Well casing: Flush threaded PVC schedule 40 X
   Stainless Steel ___
   _____ Other ___

10. Screen material: PVC
    a. Screen type: Factory cut X
    _____ Other ___
    b. Slot size: 0.010 in.
    c. Slotted length: 5 ft.

11. Backfill Material (below filter pack): None X
    _____ Other ___

Printed Name of Person Completing Form	Signature

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering Jack		Boring Number: MW-102
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Greg S. - SCA		Drilling Method:
	Project Number: 95-565	Groundwater Depth/Elevation: 4 feet	Ground Elevation: / Borehole Diameter:
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Well Name:	Local Grid Location (If applicable): ___ N / S Feet ___ E / W	
	Start Date: 10-18-95	Completion Date: 10-18-95	Comments:

SAMPLE DATA: Number	Length Recovered (ft)	Blow Count	Depth (feet)	Soil/Rock Description and Geologic Origin for Each Major Unit	USCS	PID	Well Diagram	Soil Properties: Standard Penetration (N)	Soil Properties: Moisture Content	Soil Properties: Graphic Log	Remarks
			0	Dark brown medium sand trace of gravel.	HS						
			1	Pirite float concentrate.	HS						
			2	Hemitite concentrate trace of sand.	HS						
			3								
			4								
			5								
	17"	17	6	Hemitite concentrate trace of sand.	HS						
		17									
		16	7	Hemitite concentrate trace of sand. Dark brown fine sand trace of hemitite concentrate.	HS						
			8								
			9								
			10	End of Boring							
			11								
			12								
			13								
			14								
			15								
			16								
			17								
			18								
			19	End of Boring							S-T @ ?
			20								
			21								

Printed Name of Person Completing Soil Boring Log

Signature of Person Completing Soil Boring Log

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack		Boring Number: MW-103
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Pete R. K. - SCA		Drilling Method:
	Project Number: 95-565	Groundwater Depth/Elevation: 11 feet	Ground Elevation:	Borehole Diameter:
	Well Name:	Local Grid Location (if applicable): ___ N ___ S Feet ___ E ___ W		
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Start Date: 10-20-95	Completion Date: 10-20-95	Comments:	

SAMPLE DATA								SOIL PROPERTIES			
NUMBER	LENGTH RECOVERED (ft)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	STANDARD PENETRATION (ft)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
			0	Light brown fine sand, trace of silt, gravel, and cobbles.							
			1	Iron ore concentrate							
			2								
			3								
			4								
			5								
			6								
			7								
			8								
			9	Brown silt, trace gravel, and organic.	ML						
			10								
	16"	7	11	Brown silt, trace of gravel, and organic.							
		12									
		8	12	Brown silt, trace of gravel, and organic.							
			13								
			14								
			15	Peat							
	18"	13		Peat, light brown silt.							
		11	16	Fine sand and gravel.							
		15									
			17	Fine sand and gravel.							
			18								
			19								
			20	Large cobbles, or weathered bedrock.							
			21	End of Boring							Auger refusal, bedrock. Well set at 19.5'

Printed Name of Person Completing Soil Boring Log	Signature of Person Completing Soil Boring Log

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

lity/Project Name: lahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack	Boring Number: MW-104
Address/Location: mer Ropes Milling Company nboldt, Michigan	Technician/Geologist: Greg S. - SCA	Drilling Method:
	Project Number: 95-565	Groundwater Depth/Elevation: 5 feet
	Ground Elevation:	Borehole Diameter:
	Well Name:	Local Grid Location (If applicable): ___ N ___ S Feet ___ E ___ W
Owner (If Different From Above): mas Quigley erals Processing Corporation	Start Date: 10-24-95	Completion Date: 10-24-95
	Comments:	

SAMPLE DATA: NUMBER	LENGTH RECOVERED (IN)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	SOIL PROPERTIES: STANDARD PENETRATION (N)	SOIL PROPERTIES: MOISTURE CONTENT	SOIL PROPERTIES: GRAPHIC LOG	REMARKS
			0	Dark brown fine sand >20% gravel.	HS						
			1	Dark grey sand loamy and gravel.	HS						
			2	Hemitite gravel trace of loamy sand.	HS						
			3	Grey fine sand and large gravel.	HS						
			4								
			5								
		34	6	Dark brown loamy sand trace lg. hemitite gravel.	SS						
		28									
		R		Dark brown loamy sand trace lg. hemitite gravel.	HS						
			7								
			8								
			9								
			10								
			11								
			12	End of Boring							Well set at 12.5'
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								
			21								

d Name of Person Completing Soil Boring Log

Signature of Person Completing Soil Boring Log

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack	Boring Number: MW-105
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Greg S. - SCA	Drilling Method:
	Project Number: 95-565 / Groundwater Depth/Elevation: 26.5 feet / Ground Elevation / Borehole Diameter:	
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Well Name: / Local Grid Location (if applicable): ___ N ___ E, S Feet W	
	Start Date: 10-25-95 / Completion Date: 10-25-95 / Comments:	

SAMPLE DATA NUMBER	LENGTH RECOVERED (ft)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	SOIL PROPERTIES: STANDARD PENETRATION (ft)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
			0	Loamy sand and gravel.	HS						
			1								
			2								
			3								
			4								
			5								
		7	6	Fine loamy sand and gravel.	SS						
		7									
		4	7	Fine loamy sand and gravel.	HS						
			8								
			9								
			10								
		11		Very fine sand , grey.	SS						
		10	11								
		12									
		12	12								
				Sand some gravel, red.	HS						
			13								
				Dark black organic peat.	HS						
			14								
			15								
		19		Fine sand, Red.	SS						
		21	16								
		24									
		27	17								
				Fine sand grey, moist.							
			18								
			19								
			20								
		20		Fine sand grey, moist.							
		21	21								
		22									

Printed Name of Person Completing Soil Boring Log

Signature of Person Completing Soil Boring Log

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name:	Project Number:	Date:	Boring Number:

SAMPLE DATA								Soil Properties			
NUMBER	LENGTH RECOVERED (IN)	BLOW COUNT	DEPTH IN FEET	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	STANDARD PENETRATION (N)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
		23	22								
			23								
			24								
			25								
	▽	17	26	Fine sand red, moist.							
		20									
		21	27	Fine sand, red, moist.							
			28								
			29								
			30								
		14		Redish grey, fine, sand.							
		17	31								
		14		End of Boring							
			32								
			33								
			34								
			35								
			36								
			37								
			38								
			39								
			40								
			41								
			42								
			43								
			44								
			45								
			46								
			47								

Printed Name of Person Completing Soil Boring Log	Signature of Person Completing Soil Boring Log

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack	Boring Number: MW-106
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Greg S. - SCA	Drilling Method:
	Project Number: 95-565 / Groundwater Depth/Elevation: 26.5 feet / Ground Elevation / Borehole Diameter:	
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Well Name: / Local Grid Location (If applicable): ___ N S Feet ___ E W	
	Start Date: 10-26-95 / Completion Date: 10-26-95 / Comments:	

SAMPLE DATA: Number	Length Recovered (ft)	Blow Count	Depth (feet)	Soil/Rock Description and Geologic Origin for Each Major Unit	USCS	PID	Well Diagram	Soil Properties: Standard Penetration (ft)	Moisture Content	Graphic Log	Remarks
			0	Brown fine loamy sand with trace gravel.	HS						
			1								
			2	Dark brown loamy sand, trace of ore concentrate.	HS						
			3								
			4		HS						
			5								
		1	6	Refusal	SS						
			7	End of Boring							
			8								
			9								
			10								
			11								
			12								
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								
			21								

Printed Name of Person Completing Soil Boring Log

Signature of Person Completing Soil Boring Log

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack	Boring Number: WC-100
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Greg S. - SCA	Drilling Method:
	Project Number: 95-565 / Groundwater Depth/Elevation / Ground Elevation / Borehole Diameter:	
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Well Name: / Local Grid Location (If applicable): ___ N ___ E, S Feet W	
	Start Date: 10-2-95 / Completion Date: 10-2-95 / Comments:	

SAMPLE DATA: NUMBER	LENGTH RECOVERED (ft)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	SOIL PROPERTIES: STANDARD PENETRATION (N)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
			0	Dark black fine sand to large gravel.	HS						
			1	Refusal	SS	338					
			2	Dark brown sandy, trace of large gravel.	HS						
			3								
			4	Dark brown sandy, trace of large gravel.	HS						
			5								
	1"	55		Dark brown sand and large gravel.	SS	408					
		34	6								
		21									
		20	7								
				Dark brown sand and large gravel.	HS						
			8								
			9								
	17"	2	10	Dark brown sand and large gravel.		892					
		4									
		8	11								
		5									
			12	End of Boring							
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								
			21								

Printed Name of Person Completing Soil Boring Log: _____

Signature of Person Completing Soil Boring Log: _____

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack		Boring Number: WO-101
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Greg S. - SCA		Drilling Method:
	Project Number: 95-565	Groundwater Depth/Elevation: 10 feet	Ground Elevation:	Borehole Diameter:
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Well Name:	Local Grid Location (If applicable): ___ N / S ___ Feet ___ E / W		
	Start Date: 10-23-95	Completion Date: 10-23-95	Comments:	

SAMPLE DATA								SOIL PROPERTIES			
NUMBER	LENGTH RECOVERED (ft)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	STANDARD PENETRATION (N)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
			0	Brown fine sand trace course gravel.	HS						
			1	Dark grey stain fine sandy, large gravel.	HS						
			2	Dark grey stain fine sandy, large gravel.	HS						
			3			425					
			4	Dark grey stain fine sandy, large gravel.	HS						
			5								
	12"	31	6	Brown loamy sand trace of course gravel.	SS	502					
		10									
		4									
		7	7								
			8	Brown loamy sand trace of course gravel.	HS						
			9								
	17"	2	10	Brown loamy sand trace of course gravel.		175					
		2									
		1	11								
		2									
			12	End of Boring							
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								
			21								

Printed Name of Person Completing Soil Boring Log: _____

Signature of Person Completing Soil Boring Log: _____

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack		Boring Number: WO-102
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Greg S. - SCA		Drilling Method:
	Project Number: 95-565	Groundwater Depth/Elevation: 10 feet	Ground Elevation: / Borehole Diameter:
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Well Name:	Local Grid Location (If applicable): ___ N / S, ___ E / W, Feet	
	Start Date: 10-23-95	Completion Date: 10-23-95	Comments:

SAMPLE DATA							SOIL PROPERTIES				
NUMBER	LENGTH RECOVERED (ft)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	STANDARD PENETRATION (N)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
			0	Brown fine sand >20% course gravel.	HS						
			1	Grey loamy sand and course gravel.	HS						
			2	Grey loamy sand and course gravel.	HS	123					
			3								
			4	Brown loamy sand and course gravel.	HS						
			5								
		36	6	Brown loamy sand and course gravel,	SS	8					
		24									
		21									
		19	7								
			8	Brown loamy sand and course gravel.	HS						
			9								
	V										
		2	10	Brown fine sand trace of gravel.	SS						
		2									
		4	11								
		4									
			12	End of Boring							
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								
			21								

Printed Name of Person Completing Soil Boring Log: _____

Signature of Person Completing Soil Boring Log: _____

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack	Boring Number: WO-103
Site Address/Location: Former Ropes Milling Company Humboldt, Michigan	Technician/Geologist: Greg S. - SCA	Drilling Method:
	Project Number: 95-565 / Groundwater Depth/Elevation / Ground Elevation / Borehole Diameter:	
	Well Name: / Local Grid Location (if applicable): ___ N ___ E, S, Feet, W	
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Start Date: 10-24-95 / Completion Date: 10-24-95 / Comments:	

SAMPLE DATA								SOIL PROPERTIES			
NUMBER	LENGTH RECOVERED (ft)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	STANDARD PENETRATION (N)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
			0	Brown fine loamy sand trace of c. gravel.	HS						
			1	Grey fine loamy sand >20% gravel.							
			2								
			3								
			4								
			5								
			6								
			7								
			8								
			9								
		2	10	Brown fine sand trace of gravel.	SS						
		2									
		4	11								
		4									
			12	End of Boring							
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								
			21								

Printed Name of Person Completing Soil Boring Log: _____

Signature of Person Completing Soil Boring Log: _____

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

Facility/Project Name: Callahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack	Boring Number: WO-104
Site Address/Location: Former Ropes Milling Company, Humboldt, Michigan	Technician/Geologist: Greg S. - SCA	Drilling Method:
	Project Number: 95-565 / Groundwater Depth/Elevation: 5 feet / Ground Elevation: / Borehole Diameter:	
Site Owner (If Different From Above): Thomas Quigley, Minerals Processing Corporation	Well Name: / Local Grid Location (If applicable): ___ N ___ E, S Feet W	
	Start Date: 10-24-95 / Completion Date: 10-24-95 / Comments:	

SAMPLE DATA NUMBER	LENGTH RECOVERED (IN)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	SOIL PROPERTIES: STANDARD PENETRATION (N)	SOIL PROPERTIES: MOISTURE CONTENT	SOIL PROPERTIES: GRAPHIC LOG	REMARKS
			0	Brown medium sand and large gravel.	HS						
			1	Dark brown sand, loamy and large gravel.	HS	82					
			2								
			3								
			4	Dark brown sand, loamy and large gravel.	HS						
			5								
	12"	12	6	Grey stained fine sand.	SS	465					
		6									
		7									
		24	7	End of Boring							
			8								
			9								
		2	10	Brown fine sand trace of gravel.	SS						
		2									
		4	11								
		4									
			12	End of Boring							
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								
			21								

Printed Name of Person Completing Soil Boring Log

Signature of Person Completing Soil Boring Log

SCA ENVIRONMENTAL

A Division of Sundberg, Carlson and Associates, Inc.

SOIL BORING LOG

ility/Project Name: llahan BEA	Drillers, Drill Rig: Drilling and Engineering, Jack		Boring Number: WO-105
Address/Location: rmer Ropes Milling Company mboldt, Michigan	Technician/Geologist: Greg S. - SCA		Drilling Method:
	Project Number: 95-565	Groundwater Depth/Elevation: 5 feet	Ground Elevation:	Borehole Diameter:
Owner (If Different From Above): omas Quigley erals Processing Corporation	Well Name:	Local Grid Location (If applicable): ___ N ___ S Feet ___ E ___ W		
	Start Date: 10-24-95	Completion Date: 10-24-95	Comments:	

SAMPLE DATA: NUMBER	LENGTH RECOVERED (IN)	BLOW COUNT	DEPTH (feet)	SOIL/ROCK DESCRIPTION AND GEOLOGIC ORIGIN FOR EACH MAJOR UNIT	USCS	PID	WELL DIAGRAM	SOIL PROPERTIES: STANDARD PENETRATION (N)	MOISTURE CONTENT	GRAPHIC LOG	REMARKS
			0	Dark brown fine sand >20% gravel.	HS						
			1	Dark grey sand loamy and gravel.	HS						
			2	Hemitite gravel trace of loamy sand.	HS						--
			3	Grey fine sand and large gravel.	HS						
			4								
		X	5								
		34		Dark brown loamy sand trace lg. hemitite gravel.	SS						
		28	6								
		R		Dark brown loamy sand trace lg. hemitite gravel.	HS						
			7								
			8								
			9								
			10								
			11								
			12								
				End of Boring							Well set at 12.5'
			13								
			14								
			15								
			16								
			17								
			18								
			19								
			20								
			21								

Printed Name of Person Completing Soil Boring Log	Signature of Person Completing Soil Boring Log

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

ring Number: T-1, 2, and 3 MPC Pyrite Site

Date Started 12/4/95 Date Completed

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST ROCKY		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

where?!

oring Number: T-4 and T-5 MPC Pyrite Site

Date Started 12/4/95 Date Completed

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
0.5	PYRITE GRAY MOIST (Not ox.) 1.5'		
1.5	LOAMY GRAVEL BROWN MOIST		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

Boring Number: T-6 Thru T-9 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0 0.5	LOAMY GRAVEL BROWN MOIST		
	PYRITE GRAY MOIST		
	3.5'		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

Boring Number: T-10 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
0.5	PYRITE GRAY MOIST I.D		
1.5	LOAMY GRAVEL BROWN MOIST		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

Boring Number: T-11 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

ıring Number: T-12 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
3.0	PYRITE GRAY MOIST SAMPLED 11.5'		
4.5 15.0	LOAMY GRAVEL BROWN MOIST REFUSAL AT 15 FEET		

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

oring Number: T-13 and T-14 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

ring Number: T-15 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0 0.5	LOAMY GRAVEL BROWN MOIST		
	PYRITE GRAY MOIST 1.0		
1.5	GRAVEL BROWN MOIST		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

ring Number: T-16 MPC Pyrite Site

Date Started 12/4/95 Date Completed

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
1.1	PYRITE GRAY MOIST SAMPLED		
	10.9'		
12.0	REFUSAL		

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

ring Number: T-17 MPC Pyrite Site

Date Started 12/4/95 Date Completed

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
1.0	PYRITE GRAY MOIST 3		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

ring Number: T-18 MPC Pyrite Site

Date Started 12/4/95 Date Completed

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
1.0	PYRITE GRAY MOIST 2'		
3.0	LOAMY SAND BROWN MOIST		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

Boring Number: T-19 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

ring Number: T-20 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
0.5	PYRITE GRAY MOIST SAMPLED		
	7.5'		
8.0	REFUSAL		

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

oring Number: T-21 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
4.0			

Drilling & Engineering Co.

J. R. McConaha, Registered Engineer

oring Number: T-22 MPC Pyrite Site

Date Started 12/4/95 Date Completed _____

Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
0.4	PYRITE GRAY MOIST		
	1.6		
2.0	LOAMY GRAVEL BROWN MOIST		
4.0			

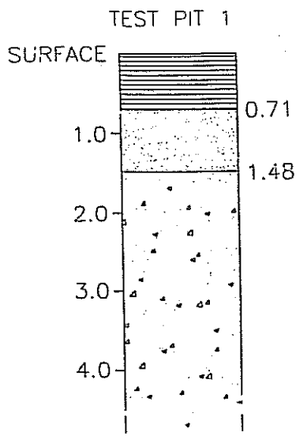
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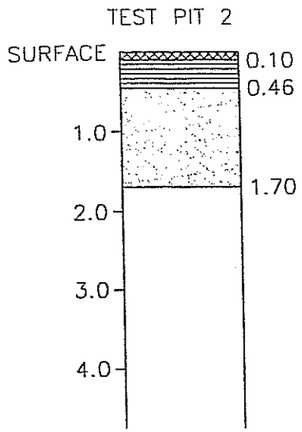
J. R. McConaha, Registered Engineer

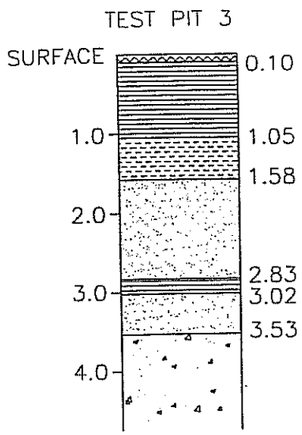
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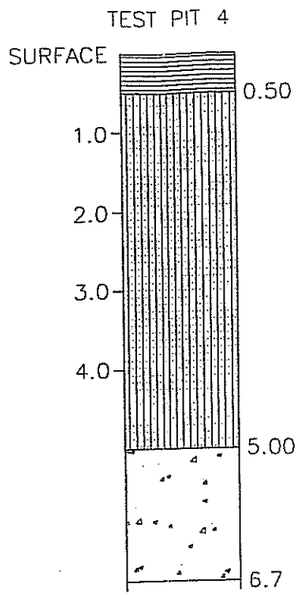
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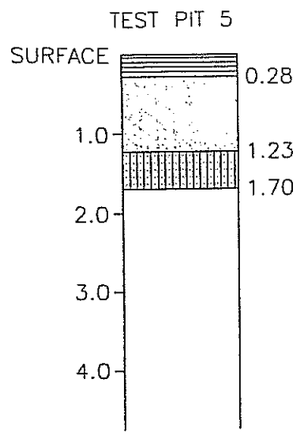
Depth	Graphic Log	Blows Per Foot	Lab Tests
0.0	LOAMY GRAVEL BROWN MOIST		
0.4	PYRITE GRAY MOIST		
	7.1		
7.5			
8.0	LOAMY SAND RED MOIST		
	REFUSAL		

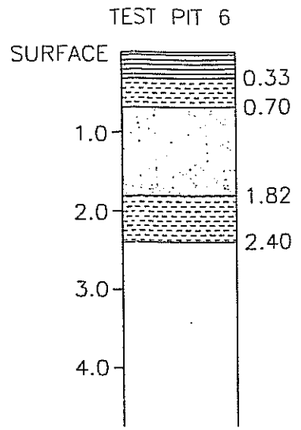


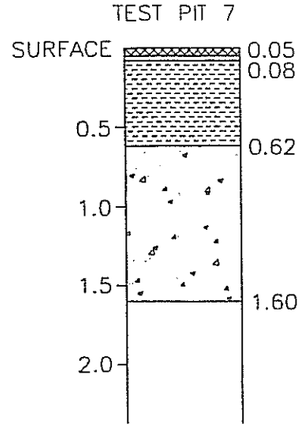


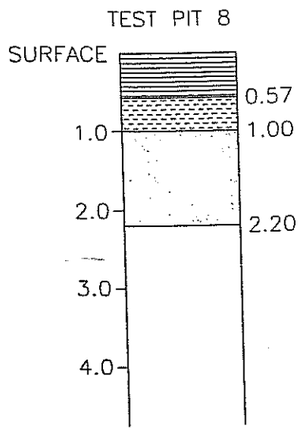


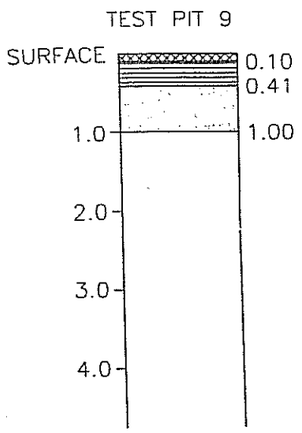


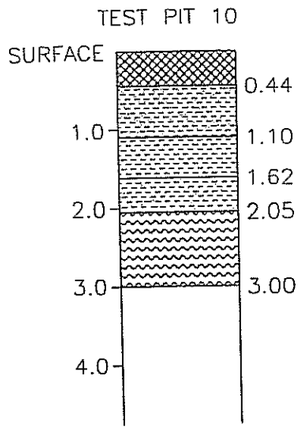


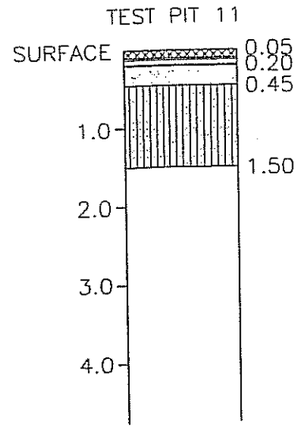


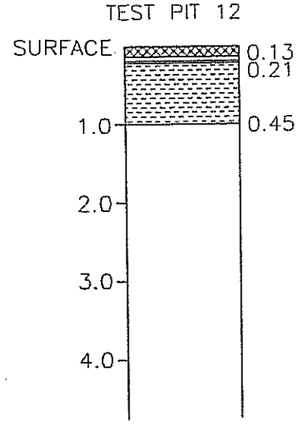












LEGEND

- FINE SAND
- MEDIUM SAND/GRAVEL
- BROWN SILT W/ GRAVEL & COBBLE
- ORGANICS
- COBBLES
- IRON ORE MATERIAL
- WASTE IRON MATERIAL
- PYRITE CONCENTRATE

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CLIENT: MINERALS PROCESSING CORPORATION

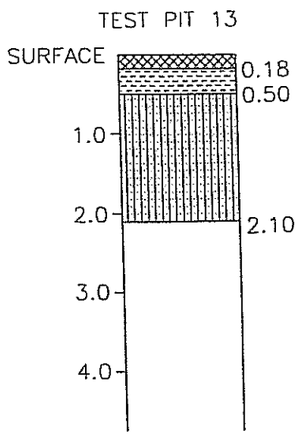
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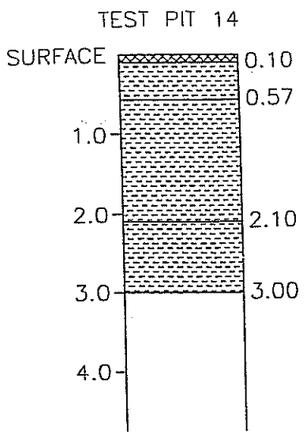
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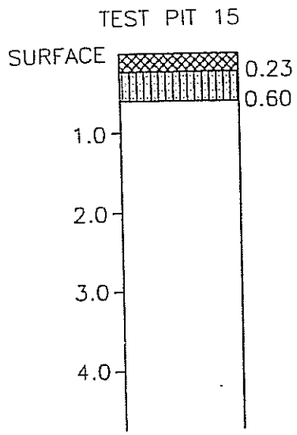
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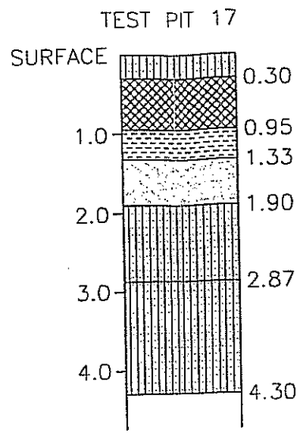
PROJECT: 95-565

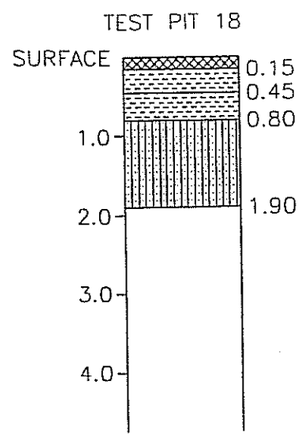
FIGURE: PLATE 1

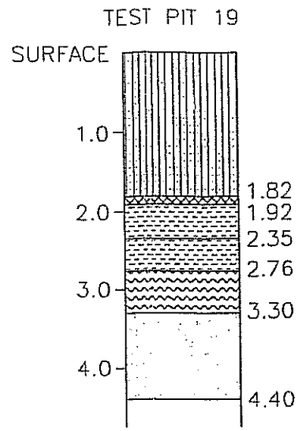


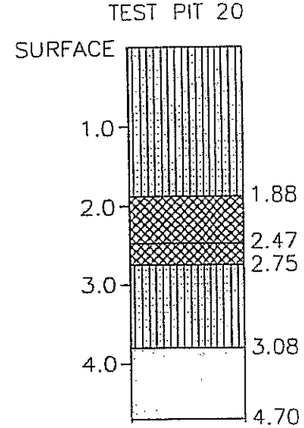


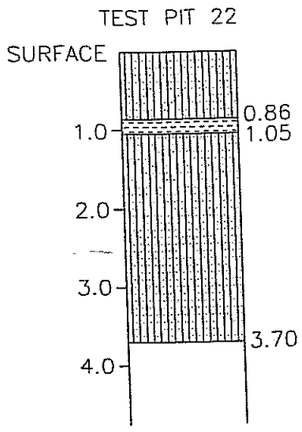


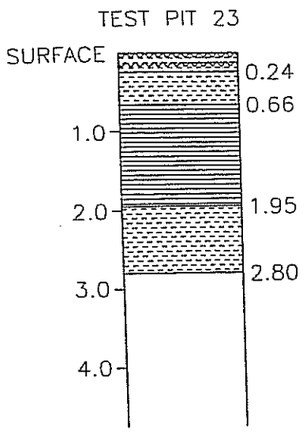


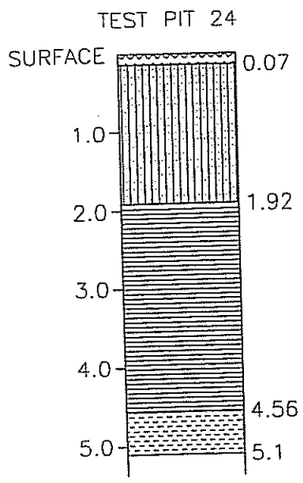


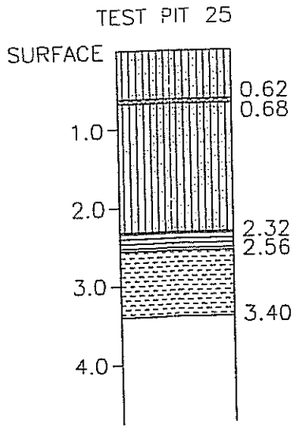


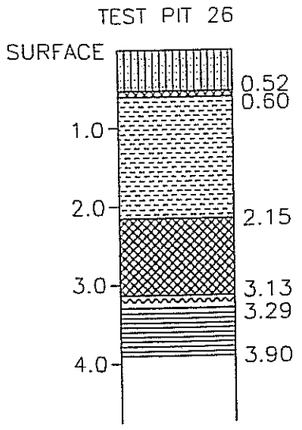












LEGEND

- FINE SAND
- MEDIUM SAND/GRAVEL
- BROWN SILT W/ GRAVEL & COBBLE
- ORGANICS
- COBBLES
- IRON ORE MATERIAL
- WASTE IRON MATERIAL
- PYRITE CONCENTRATE

SCA ENVIRONMENTAL
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CLIENT: MINERALS PROCESSING CORPORATION

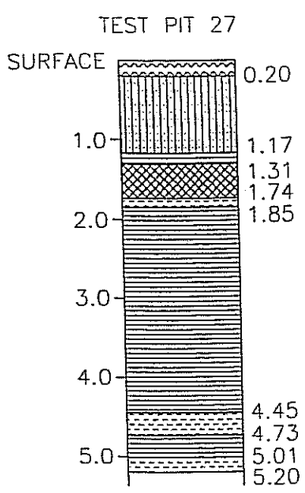
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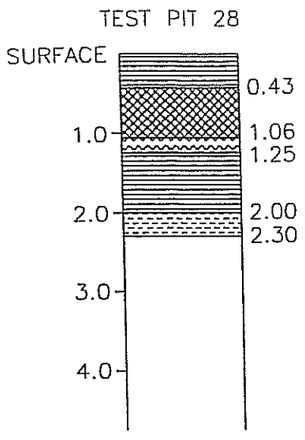
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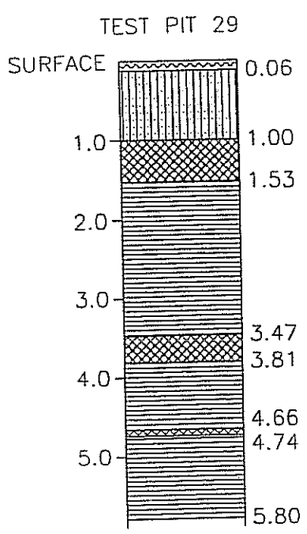
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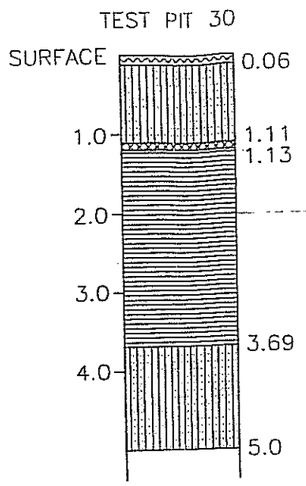
PROJECT: 95-565

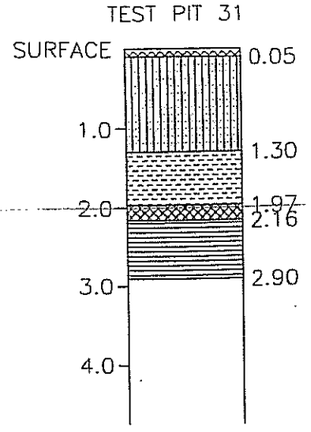
FIGURE: PLATE 2

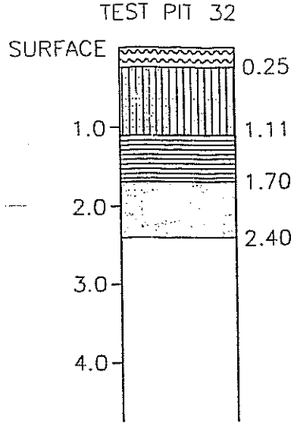


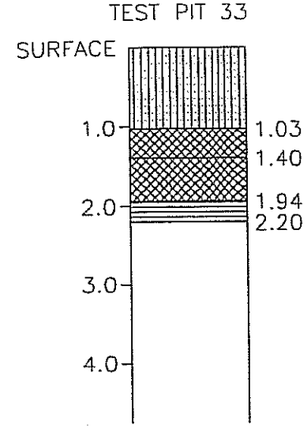


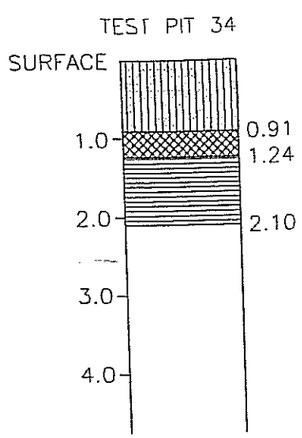


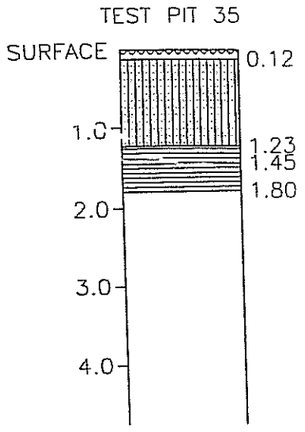


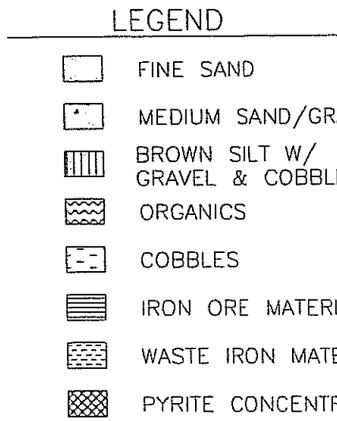












SCA ENVIRONMENTAL
A Division of Sundberg, Carlson and Associates, Inc.

CLIENT: MINERALS PROCESSING CORPORATION

TITLE: TEST PIT

DATE: 1/10/96 | CHECKED BY:

DRAWN BY: RCG | APPROVED BY:

PROJECT: 95-565

FIGURE: PLATE 3

Characterization and Remedial Alternatives for Groundwater
Callahan Mining Corporation, January 1996

CHARACTERIZATION and REMEDIAL ALTERNATIVES for GROUND WATER HUMBOLDT MILL FACILITIES



CALLAHAN MINING CORPORATION

January 12, 1996

Additional Wells
Humboldt Region

Location 2?

GEOLOGICAL SURVEY NO. [ ]

WATER WELL AND PUMP RECORD

PERMIT NUMBER [ ][ ][ ][0][1][0][ ][ ][ ][ ][ ][ ]

LOCATION OF WELL					
County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLT	S½ SE¼ SW¼	3	47 N/S	29 E/W

Distance And Direction From Road Intersection

Received

JAN 18 1989

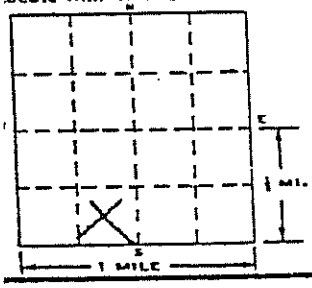
3 OWNER OF WELL: EARL D JOHNSON

Address: P.O. BOX 187 ISHPEMING

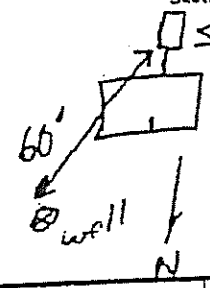
Address Same As Well Location? ☐ Yes ☒ No

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map: Show Location



4 WELL DEPTH: 243 FT. | Date Completed: MO. 8 DAY 26 YEAR 88 | ☒ New Well ☐ Replacement Well

5 ☐ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☒ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☐ _____

7 CASING: Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded

6" in. to 26 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

8 in. to 25 ft. depth

_____ in. to _____ ft. depth

Height Above/Below Surface 1 ft.

Weight 9.5# lbs./ft.

Drive Shoe ☒ Yes ☐ No

8 SCREEN: ☒ Not Installed

Type _____ Diameter _____

Slot/Gauze _____ Length _____

Set between _____ ft. and _____ ft.

FITTINGS: ☐ K-Packer ☐ Lead Packer ☐ Bremer Check ☐ Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL: 10 ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface

_____ ft. after _____ hrs. pumping at _____ G.P.M.

_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☐ Pitless adapter ☐ 12" above grade ☐ Basement offset ☐ Approved pit

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND & Boulders	10	10
CLAY SAND	5	15
GRANITE Black with Red Layers	75	90
Granite Red light	59	143
Granite Red dark	87	230
Granite Black & Dolmite	13	243

GEOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

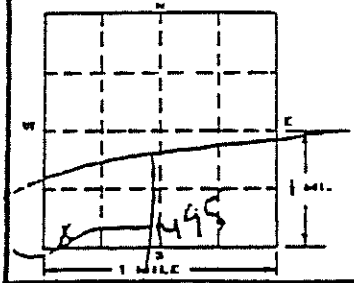
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ SW¼ SW¼	3	47 N/S	25 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:



½ Mi. W of M95

U.S. 41

3 OWNER OF WELL: Ellen Kantio

Address RFD Champion, Mich.

4 WELL DEPTH: (completed) 90½ ft. Date of Completion Nov 1971

5 [X] Cable tool [ ] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Jetted [ ] Bored [ ]

6 USE: [X] Domestic [ ] Public Supply [ ] Industry [ ] Irrigation [ ] Air Conditioning [ ] Commercial [ ] Test Well [ ]

7 CASING: Threaded [X] Welded [ ] Height: Above/Below Surface 1 ft.
Diam. 6 in. to 87 ft. Depth; ___ in. to ___ ft. Depth
Weight 17 lbs./ft. Drive Shoe? Yes [X] No [ ]

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand & Gravel	7	7
Fine, Clay - Boulders	18	25
Packed Gravel - Clay - Boulders	56	81
Silt, Gravel - Rock Clay	6	87

USE A 2ND SHEET IF NEEDED

8 SCREEN: Type: Johnson Stainless Dia.: 6
Slot/Gauge .035 Length 3'
Set between 87 ft. and 90 ft.
Fittings: Slip-Lock Formation

9 STATIC WATER LEVEL 42 ft. below land surface

10 PUMPING LEVEL below land surface
80 ft. after 1 hrs. pumping 10 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million: Faint S
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___ Other ___

12 WELL HEAD COMPLETION: [ ] In Approved Pit
506 [X] Pitless Adapter [ ] 12" Above Grade

13 Well Grouted? [ ] Yes [X] No
[ ] Neat Cement [ ] Bentonite [ ] ___
Depth: From ___ ft. to ___ ft.

14 Nearest Source of possible contamination
60' feet E Direction Septic Type
Well disinfected upon completion [X] Yes [ ] No

15 PUMP: [ ] Not installed
Manufacturer's Name Johnson Home
Model Number 4C 50UR HP ½ Volts 230 V
Length of Drop Pipe 69 ft. capacity 8 G.P.M.
Type: [X] Submersible [ ] Jet [ ] Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
HARRIS WELL DRILLING 0206
REGISTERED BUSINESS NAME — REGISTRATION NO.
Address Negaunee Mich
[signature illegible] 3/12/72

GEOLOGICAL SURVEY NO. [ ]

WATER WELL AND PUMP RECORD

MAR 19 1987 PERMIT NUMBER 87 0020

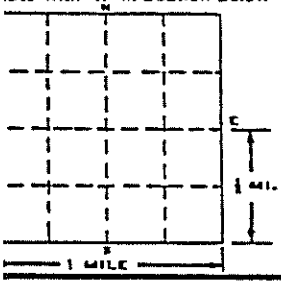
LOCATION OF WELL

Township Name	Fraction	Section Number	Health Number	Range Number
Marquette Humboldt	NE¼ SW¼ SE¼	3 MCHD	47 N/S	29 E/W

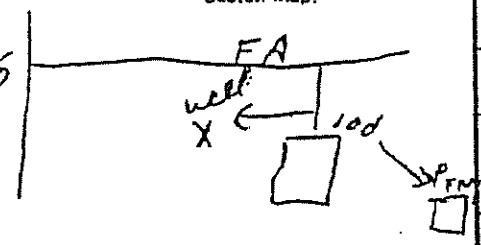
Distance And Direction From Road Intersection: 4mi E on FA

Street Address & City of Well Location:

Locate with "X" in Section Below



Sketch Map:



3 OWNER OF WELL: Julia Krski
Address: Route 1, Box 272, Champion, Michigan 49814
Address Same As Well Location? ☒ Yes ☐ No

4 WELL DEPTH: (completed) 142 ft. Date of Completion 2-27-87

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☒ Domestic ☐ Type I Public ☐ Type II Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☐ _____

7 CASING: Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded
6 in. to 27.5 ft. depth
_____ in. to _____ ft. depth
Grouted Drill Hole Diameter
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface 1.5 ft.
Weight 18.97 lbs./ft.
Drive Shoe ☒ Yes ☐ No

8 SCREEN: ☒ Not Installed
Type _____ Diameter _____
Slot/Gauze _____ Length _____
Set between _____ ft. and _____ ft.
FITTINGS: ☐ K-Packer ☐ Lead Packer ☐ Bremer Check ☐ Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL: 10 ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface
135 ft. after 2 hrs. pumping at 2 G.P.M.
_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☒ Pitless adapter ☐ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED? ☒ No ☐ Yes From _____ to _____ ft.
☐ Neat cement ☐ Bentonite ☐ Other _____
No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination
Type Septic Distance 100 ft. Direction E
Well disinfected upon completion? ☒ Yes ☐ No

14 PUMP: ☐ Not Installed ☐ Pump Installation Only
Manufacturer's name McDonald
Model number 18030J2 HP ⅓ Volts 230
Length of Drop Pipe 137 ft. capacity 5 G.P.M.
TYPE: ☒ Submersible ☐ Jet _____
PRESSURE TANK:
Manufacturer's name Baker
Model number T42G Capacity 42 Gallons

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand + boulders	15	15
Boulders + hardpan	11	26
Soft Redish Rock	39	65
Black Granite	45	110
Granite white + Black	32	142
Well was Hydrofractured		
by 20+ GPM		

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Kleiman Pump & Well Drlg, Inc. 052
REGISTERED BUSINESS NAME REGISTRATION NO.
Address P.O. Box 704, Iron Mountain
[signature] Date 3-10-87
AUTHORIZED REPRESENTATIVE

4

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation

57d 2/84

GEOLOGICAL SURVEY NO.

WATER WELL AND PUMP RECORD

PERMIT NUMBER 87 0011 1

LOCATION OF WELL

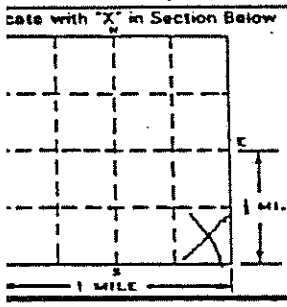
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	NE 1/4 SE 1/4 SE 1/4	3	47 N/S	29 E/W

Received FEB 18 1987 Env. Health

Distance And Direction From Road Intersection: 2 Mi East on Rd FA

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map: FA; 75' septic; well

3 OWNER OF WELL: John Wisuri
Address: Humboldt Township, Champion, Michigan
Address Same As Well Location? [X] Yes [ ] No 4/1/94

4 WELL DEPTH: (completed) 143 ft. | Date of Completion 2-6-87

5 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ]

6 USE: [X] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [ ] Heat pump [ ] Test Well [ ] Type IIb Public [ ]

7 CASING: Diameter [X] Steel [ ] Threaded [ ] Plastic [ ] Welded
6 in. to 143 ft. depth
___ in. to ___ ft. depth
Grouted Drill Hole Diameter
8 in. to 28 ft. depth
___ in. to ___ ft. depth
Height: Above/Below Surface 9 ft.
Weight 18.97 lbs./ft.
Drive Shoe [ ] Yes [X] No

8 SCREEN: [X] Not Installed
Type ___ Diameter ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
FITTINGS: [ ] K-Packer [ ] Lead Packer [ ] Bremer Check [ ] Blank above screen ___ ft. Other ___

9 STATIC WATER LEVEL: 11 ft. below land surface [ ] Flow

10 PUMPING LEVEL: below land surface
80 ft. after 2 hrs. pumping at 6 G.P.M.
___ ft. after ___ hrs. pumping at ___ G.P.M.

11 WELL HEAD COMPLETION: [X] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [ ] No [X] Yes From 0 to 28 ft.
[X] Neat cement [ ] Bentonite [ ] Other ___
No. of bags of cement 4 Additives Lime

13 Nearest source of possible contamination
Type Septic Distance 75 ft. Direction W
Well disinfected upon completion? [X] Yes [ ] No

14 PUMP: [X] Not Installed [ ] Pump Installation Only
Manufacturer's name ___
Model number ___ HP ___ Volts ___
Length of Drop Pipe ___ ft. Capacity ___ G.P.M.
TYPE: [ ] Submersible [ ] Jet ___
PRESSURE TANK:
Manufacturer's name ___
Model number ___ Capacity ___ Gallons

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
boulders gravel	17	17
soft red rock	11	28
reddish brown rock	82	110
hard dk. grey rock	33	143
well was hydrofractured		
drilled by 20-04		

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Kleiman Pump & Well Drlg., Inc. 052
REGISTERED BUSINESS NAME REGISTRATION NO.
Address P.O. Box 704, Iron Mountain
AUTHORIZED REPRESENTATIVE Date 2-16-87

5

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation

M67d 2/84

GEOLOGICAL SURVEY NO.

WATER WELL AND PUMP RECORD

PERMIT NUMBER

LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humbolt	S ½ SE ¼ SW ¼	3	47 N/S	29 E/W

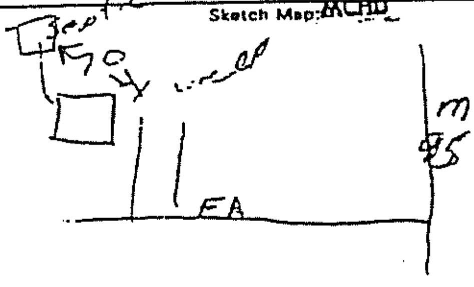
Distance And Direction From Road Intersection: , mi West of 95 on F A

Received FEB 18 1987 Env. Health MCHD

Street Address & City of Well Location

Locate with "X" in Section Below — 1 MILE

Sketch Map:



3 OWNER OF WELL: Matt Mackey, Jr.

Address: Humbolt Champion MI 49814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH: (completed) 43 ft. Date of Completion 2-10-87

5 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ]

6 USE: [X] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [ ] Heat pump [ ] Test Well [ ] Type IIb Public [ ]

7 CASING: Diameter [X] Steel [ ] Threaded [ ] Plastic [X] Welded

6 in. to 29-61 ft. depth; ___ in. to ___ ft. depth

Height: Above/Below Surface 1 ft. Weight 18.97 lbs./ft.

Grouted Drill Hole Diameter 8 in. to 28 ft. depth; ___ in. to ___ ft. depth

Drive Shoe [X] Yes [ ] No

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Clay Sand	16	16
soft red Rock	27	43
drilled by [illegible] Lee		

USE A 2ND SHEET IF NEEDED

8 SCREEN: [X] Not Installed

Type ___ Diameter ___ Slot/Gauze ___ Length ___ Set between ___ ft. and ___ ft.

FITTINGS: [ ] K-Packer [ ] Lead Packer [ ] Bremer Check [ ] Blank above screen ___ ft. Other ___

9 STATIC WATER LEVEL: 6 ft. below land surface [ ] Flow

10 PUMPING LEVEL: below land surface

40 ft. after ½ hrs. pumping at 15 G.P.M.

___ ft. after ___ hrs. pumping at ___ G.P.M.

11 WELL HEAD COMPLETION: [X] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [ ] No [X] Yes From 0 to 28 ft.

[X] Neat cement [ ] Bentonite [ ] Other ___

No. of bags of cement 4 Additives trimix [illegible]

13 Nearest source of possible contamination

Type Septic Distance 70 ft. Direction NW

Well disinfected upon completion? [X] Yes [ ] No

14 PUMP: [X] Not Installed [ ] Pump Installation Only

Manufacturer's name ___

Model number ___ HP ___ Volts ___

Length of Drop Pipe ___ ft. capacity ___ G.P.M

TYPE: [ ] Submersible [ ] Jet ___

PRESSURE TANK: Manufacturer's name ___

Model number ___ Capacity ___ Gallons

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleiman Pump & Well Drlg., Inc. 05[illegible]

REGISTERED BUSINESS NAME — REGISTRATION NO.

Address P.O. Box 704, Iron Mountain

[signature] Date 2-10-87

AUTHORIZED REPRESENTATIVE

D67d 2/84

6

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a misdemeanor

LOCAL HEALTH DEPT. COPY

WATER WELL AND PUMP RECORD

PERMIT NUMBER

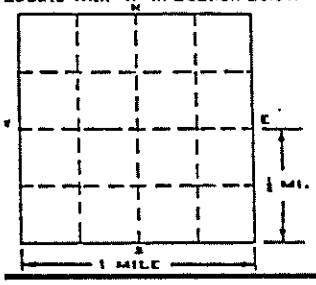
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	[illegible]	SE 1/4 of SW 1/4	3	47 N/S	29 E/W

Distance And Direction From Road Intersection

Street Address & City of Well Location

Locate with "X" in Section Below — Sketch Map:



3 OWNER OF WELL: [illegible]

Address [illegible] Mich 49855

Address Same As Well Location? ☒ Yes ☐ No

4 WELL DEPTH: (completed) 25 ft. — **Date of Completion** [illegible]

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☐ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☒ Type IIb Public ☐ _____

7 CASING: Diameter ☐ Steel ☒ Threaded ☐ Plastic ☐ Welded

6 in. to 24 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height: Above/Below Surface 2 ft.

Weight 17 lbs./ft.

Drive Shoe ☒ Yes ☐ No

2 FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand - Gravel	15	15
Sand - Hard	7	22
Fine sand	6	28
Bedrock	—	26

8 SCREEN: ☐ Not Installed

Type Johnson Stainless Diameter 6"

Slot/Gauze .040 Length 5'

Set between 20' ft. and 25' ft.

FITTINGS: ☐ K-Packer ☒ Lead Packer ☐ Bremer Check ☐ Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL: 13 ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface 12-15

_____ ft. after _____ hrs. pumping at _____ G.P.M.

_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☒ Pitless adapter ☐ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED? ☒ No ☐ Yes From _____ to _____ ft.

☐ Neat cement ☐ Bentonite ☐ Other _____

No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type Septic Distance 75' ft. Direction W

Well disinfected upon completion? ☒ Yes ☐ No

14 PUMP: ☐ Not Installed ☐ Pump Installation Only

Manufacturer's name Franklin Electric

Model number 75-1 HP 3/4 Volts 230

Length of Drop Pipe 15 ft. capacity 12-15 G.P.M.

TYPE: ☒ Submersible ☐ Jet _____

PRESSURE TANK: Manufacturer's name [illegible] 20 gal

Model number _____ Capacity _____ Gallons

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[illegible] 0266

REGISTERED BUSINESS NAME — REGISTRATION NO.

Address [illegible]

[illegible] Date 1/5/84

AUTHORIZED REPRESENTATIVE

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a misdemeanor.

D67d 2/84

LOCAL HEALTH DEPT. COPY

PART 127 ACT 368, P.A. 1978

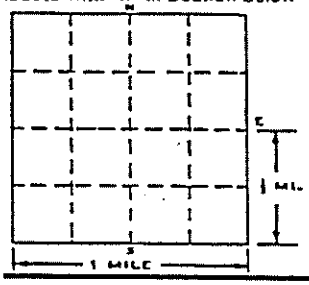
LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ NW¼ SE¼	3	47 N/S	29 E/W

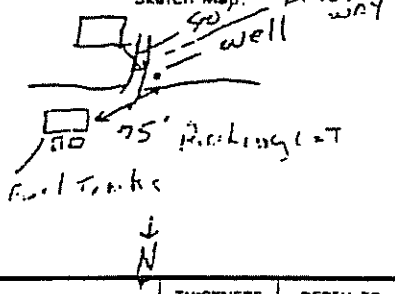
Distance And Direction From Road Intersection

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map:



3 OWNER OF WELL: EDNA Koski

Address: BOX 295 A, Champion, MI 49814

Address Same As Well Location? ☒ Yes ☐ No

4 WELL DEPTH: (completed) 103 ft. **Date of Completion** July 6, 1983

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☒ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☐ _____

7 CASING: Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded

6 in. to 24.05 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height: Above/Below Surface 1.8 ft.

Weight 18.97 lbs./ft.

Drive Shoe ☒ Yes ☐ No

8 SCREEN: ☒ Not Installed

Type _____ Diameter _____

Slot/Gauze _____ Length _____

Set between _____ ft. and _____ ft.

FITTINGS: ☐ K-Packer ☐ Lead Packer ☐ Bremer Check ☐ Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL: 15 ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface

100 ft. after ½ hrs. pumping at 1 G.P.M

_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☐ Pitless adapter ☒ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED? ☒ No ☐ Yes From _____ to _____ ft

☐ Neat cement ☐ Bentonite ☐ Other _____

No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type Fuel Distance 75 ft. Direction N/E

Well disinfected upon completion? ☒ Yes ☐ No

14 PUMP: ☐ Not installed ☐ Pump Installation Only

Manufacturer's name Grundfos

Model number SP1-12 HP ½ Volts 230

Length of Drop Pipe 42 ft. capacity 5 G.P.M.

TYPE: ☒ Submersible ☐ Jet _____

PRESSURE TANK:

Manufacturer's name well-x-trol

Model number WX202 Capacity 42 Gallons

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
COURSE GRAVEL & HARD PAN	0	20
MEDIUM & COURSE SAND	20	26
HARD PAN	26	29
Rock, Granite	74 ~~29~~	103

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleiman Pump & Well Drlg. Inc. 05
REGISTERED BUSINESS NAME — REGISTRATION NO.

Address P.O. Box 704 Iron Mountain

8 _____ Date 7-8-83
AUTHORIZED REPRESENTATIVE

D67d (Rev. 10-80)

LOCAL HEALTH DEPT COPY

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

LOCATION OF WELL

nty	Twp.	Fraction	Section No.	Town	Range
Marquette	Humboldt	SW¼ SE¼ SW¼	3	41 N/S.	29 E/W.

Hence And Direction from Road Intersections

OWNER No.

3 OWNER OF WELL: Wm Kaitila
Gte 1
Address
Champion, Mich.

t address & City of Well Location Champion-Turk

4 WELL DEPTH: (completed) 26 ft. Date of Completion 3-5-67

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Red brown clay & boulders	10	10
Red sandy gravel, sand & rock	7	17
Red brown boulders		
Broken ledge	5	22
Red & gray ledge	4	26

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ ___

7 CASING: Diam. Threaded ☒ Welded ☐
5 in. to 22 ft. Depth
___ in. to ___ ft. Depth
Height: Above/Below surface ___ ft.
Weight ___ lbs/ft.
Drive Shoe? Yes ☒ No ☐

8 SCREEN:
Type: ___ Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
___ ft. below land surface

10 PUMPING LEVEL below land surface
___ ft. after ___ hrs. pumping ___ g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) 0.3 Chlorides (Cl) 0.0
Hardness 50

12 WELL HEAD COMPLETION: ☐ In Approved Pit
☐ Pitless Adapter ☐ 12" Above Grade

13 GROUTING:
Well Grouted? ☐ Yes ☒ No
Material: ☐ Neat Cement ☐ ___
Depth: From ___ ft. to ___ ft.

14 SANITARY:
Nearest Source of possible contamination
___ feet ___ Direction ___ Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:
Manufacturer's Name ___
Model Number ___ HP ___
Length of Drop Pipe ___ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ ___
☐ Jet ☐ Reciprocating

5 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Wesley Swanson 0035
REGISTERED BUSINESS NAME REGISTRATION NO.
Wesley Swanson
Address Crystal Falls Mich.
9 Wesley Swanson Date ___
AUTHORIZED REPRESENTATIVE

067D 100M 6-66

LOCAL HEALTH DEPT. COPY

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

LOCATION OF WELL

City	Twp.	Fraction	Section No.	Town	Range
Marquette	Humboldt	SW¼SE¼SW¼	3	47 N/S.	29 E/W.

Distance And Direction from Road Intersections

OWNER No.

Humboldt, Mich.
Exact address & City of Well Location

3 OWNER OF WELL:
[illegible]
Address
Champion, Mich.

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Loamy topsoil and clay-silty, sand	10	10
Sand & fine gravel and clay-gravel and broken ledge	13	23
	2	25

4 WELL DEPTH: (completed) 25 ft. Date of Completion 4-14-67

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Diam. 5 in. to 25 ft. Depth; Threaded ☒ Welded ☐; Height: Above/Below surface 6 ft.; Weight ___ lbs/ft.; ___ in. to ___ ft. Depth; Drive Shoe? Yes ☒ No ☐

8 SCREEN:
Type: ___ Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
6'6" ft. below land surface

10 PUMPING LEVEL below land surface
10'6" ft. after 5 hrs. pumping 300 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) 0.0 Chlorides (Cl) 22
Hardness 60

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☐ 12" Above Grade

13 GROUTING:
Well Grouted? ☐ Yes ☒ No
Material: ☐ Neat Cement ☐ ___
Depth: From ___ ft. to ___ ft.

14 SANITARY:
Nearest Source of possible contamination
75 feet E Direction SEPTIC Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:
Manufacturer's Name ___
Model Number ___ HP ___
Length of Drop Pipe ___ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ ___ ☐ Jet ☐ Reciprocating

Remarks, (elevation, source of data, etc.)

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Woodhouse
REGISTERED BUSINESS NAME
0035
REGISTRATION NO.

Address Bagley Falls, Mich.

10 [illegible]
AUTHORIZED REPRESENTATIVE
Date 4-25-67

67D 100M 6-66

LOCAL HEALTH DEPT. COPY

ACT 294 PA 1965

OF PUBLIC HEALTH

LOCATION OF WELL

mty	Twp.	Fraction	Section No.	Town	Range
MARQUETTE	Humboldt	SW ¼ of W ½ SE ¼	3	47 N/S.	29 E/W.

tence And Direction from Road Intersections

500' E. of M-95 & U.S. 41 Junction

OWNER No. —

, address & City of Well Location

3 OWNER OF WELL: [illegible]

Address ET #1 Channing, Michigan

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
[illegible]	[illegible]	[illegible]

4 WELL DEPTH: (completed) 25 ft. Date of Completion 5/13/66

5 ☐ Cable tool ☐ Rotary ☒ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Threaded ☒ Welded ☐

Diam. 1¼ in. to 25 ft. Depth

3 in. to 10 ft. Depth

Height: Above/Below surface 1/2 ft.

Weight ___ lbs/ft.

Drive Shoe? Yes ☒ No ☐

8 SCREEN:

Type: ___ Dia.: ___

Slot/Gauge ___ Length ___

Set between ___ ft. and ___ ft.

Fittings:

9 STATIC WATER LEVEL

— ft. below land surface

10 PUMPING LEVEL below land surface

___ ft. after ___ hrs. pumping ___ g.p.m.

___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ___ Chlorides (Cl) ___

Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☐ No

Material: ☐ Neat Cement ☐ ___

Depth: From ___ ft. to ___ ft.

14 SANITARY:

Nearest Source of possible contamination

50 feet W Direction Septic Tank Type

Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:

Manufacturer's Name [illegible]

Model Number SBN 24213A HP ½

Length of Drop Pipe 25 ft. capacity ___ G.P.M.

Type: ☐ Submersible ☐ Shallow Well ☒ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME ___ REGISTRATION NO. ___

X Address [illegible]

X [illegible] Date 8/14/66

AUTHORIZED REPRESENTATIVE

D67D 100M 6-66

LOCAL HEALTH DEPT. COPY

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

LOCATION OF WELL

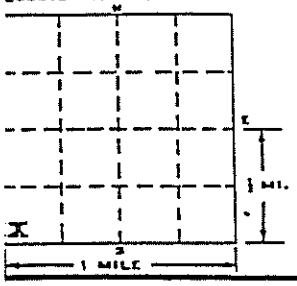
nty	Township Name	Fraction	Section Number	Town Number	Range Number
arquette	Humboldt	SW¼SW ¼SW ¼	3	47 N/S	28 E/W.

nce And Direction from Road Intersections

et address & City of Well Location

Locate with "X" in section below

Sketch Map:



3 OWNER OF WELL:
Ron Mamari
Address US 41
Ishpeming, Mich.

4 WELL DEPTH: (completed) Date of Completion
ft.

5 ☐ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☒ DTHT

6 USE: ☐ Domestic ☒ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐

7 CASING: Threaded ☐ Welded ☒ Diam.
6 in. to 25 ft. Depth
___ in. to ___ ft. Depth
Height: Above/Below Surface 1 ft.
Weight 19.46 lbs./ft.
Drive Shoe? Yes ☒ No ☐

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand	10	10
Gravel with large boulders	15	25
Slate	37	62

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: ___ Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
15 ft. below land surface

10 PUMPING LEVEL below land surface
60 ft. after 1 hrs. pumping 35 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___ Other ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ___
Depth: From ___ ft. to ___ ft.

14 Nearest Source of possible contamination
80 feet W Direction Septic Type
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☒ Not Installed
Manufacturer's Name ___
Model Number ___ HP ___ Volts ___
Length of Drop Pipe ___ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Kleiman Pump & Well Drilling 0575
REGISTERED BUSINESS NAME REGISTRATION NO.
Address PO Box 704, Iron Mountain, Mich.
H P Klein
AUTHORIZED REPRESENTATIVE Date 10-13-70

12

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
Alger	Hiawatha	SW ¼ SW ¼ ¼	3	47 N.	25 E.

Distance And Direction from Road Intersections: ¼ mile South ~~North~~ ed/ of US 41

Street address & City of Well Location: on old US #41

OWNER No.

3 OWNER OF WELL: Leonard Cornette

Address: Box 16 Hiawatha, Mich.

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
0'-2' Top soil	2	2
2'-20' Sand fine	18	20
20'-60' Med. Sand	40	60
60'-66' Fine Sand	6	66
Gravel	T.D	66'
		66'

4 WELL DEPTH: (completed) 66 ft. **Date of Completion** 3/15/65

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ D.
☐ Hollow rod ☐ Jetted ☐ Bored ☐ _____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ _____

7 CASING: Threaded ☒ Welded ☐ Height: Above/Below surface 66 ft.
Diam. 6 in. to 66 ft. Depth Weight 28 lbs/ft.
_____ in. to _____ ft. Depth Drive Shoe? Yes ☒ No

8 SCREEN:
Type: _____ Dia.: _____
Slot/Gauze _____ Length _____
Set between _____ ft. and _____ ft.
Fittings:

9 STATIC WATER LEVEL
20' ft. below land surface

10 PUMPING LEVEL below land surface
_____ ft. after 3 hrs. pumping 6 G.P.M.
_____ ft. after _____ hrs. pumping _____ G.P.M.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) _____ Chlorides (Cl) _____
Hardness _____

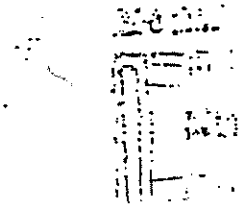
12 WELL HEAD COMPLETION: ☐ In Approved Pit
☒ Pitless Adapter ☒ 12" Above Grade

13 GROUTING:
Well Grouted? ☐ Yes ☒ No
Material: ☐ Neat Cement ☐ _____
Depth: From _____ ft. to _____ ft.

14 SANITARY:
Nearest Source of possible contamination
60' feet N Direction Septic Tank Type
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP:
Manufacturer's Name _____
Model Number _____ HP _____
Length of Drop Pipe _____ ft. capacity 6 G.P.M.
Type: ☐ Submersible ☐ _____
☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.



17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Lost Well Drillers — REGISTERED BUSINESS NAME
_____ — REGISTRATION NO.

Address Box 16 Hiawatha Mich.

Signed Henry Tenth — AUTHORIZED REPRESENTATIVE — Date 3/26/65

GEOLOGICAL SURVEY SAMPLE No. [ ] JAN 0? 1982 [ ][ ][ ][ ][ ][ ][ ][ ][ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

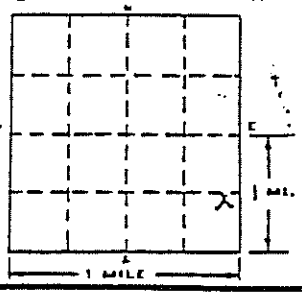
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLT	NE¼ SE¼ SE¼	3	47 N/S.	29 E/W

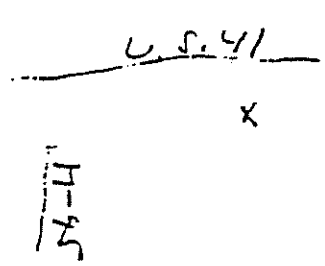
Distance And Direction from Road Intersections
½ MILE EAST NTH ½ MILE SOUTH OF INTERSECT OF U.S. 41 + M-95

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:



3 OWNER OF WELL: GLEN CHAPMAN
Address: CHAMPION, MI 49814

4 WELL DEPTH: (completed) 61 ft. Date of Completion 12 DEC 81

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Threaded ☐ Welded ☒ Height: Above/~~Below~~ Surface 1 ft.
Diam. 6 in. to 28 ft. Depth; Weight 19.4 lbs./ft.
___ in. to ___ ft. Depth; Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND, CLAYEY	3	3
SAND	11	14
GRAVEL, CLAYEY	8	22
CLAY	6	28
ROCK	33	61
USE A 2ND SHEET IF NEEDED		

8 SCREEN:
Type: ___ Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
6 ft. below land surface

10 PUMPING LEVEL below land surface
35 ft. after ___ hrs. pumping 12 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___ Other ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ___
Depth: From ___ ft. to ___ ft.

14 Nearest Source of possible contamination
75 feet NW Direction SEPTIC Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☐ Not installed
Manufacturer's Name MYERS
Model Number SH 4 211 HP ½ Volts 230
Length of Drop Pipe 42 ft. capacity 11 G.P.M.
Type: ☒ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[signature] [illegible] WE 0 - 7
REGISTERED BUSINESS NAME REGISTRATION NO.

Address [illegible] MI.

Signed [signature] Date [illegible]
AUTHORIZED REPRESENTATIVE

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

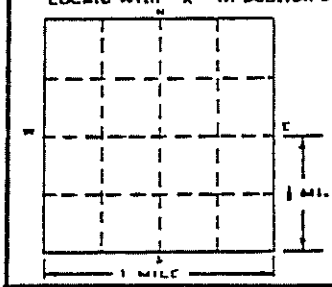
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	NW NW NW	15	47 N.S.	27 E.

Distance And Direction from Road Intersections:

Street address & City of Well Location:

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Bernhardt Maki

Address: Route 1 Box 87 Champion Michigan 49

4 WELL DEPTH: (completed) 27 ft. — Date of Completion: 3-2-79

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Di
☐ Hollow rod ☐ Jetted ☐ Bored ☐ _

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ _____

7 CASING: Threaded ☐ Welded ☒ — Diam. 6 in. to 24 ft. Depth; ___ in. to ___ ft. Depth
Height: Above/Below Surface 7 ft. — Weight 4.97 lbs./ft. — Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Gravel & boulders	27	27

8 SCREEN: Type: #304 SS WW Dia.: 6" — Slot/Gauze 20 Length 3' — Set between 24 ft. and 27 ft. — Fittings: Fy K Pkr Bail Both.

9 STATIC WATER LEVEL 13 ft. below land surface

10 PUMPING LEVEL below land surface: 20 ft. after 1 hrs. pumping 5 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ___ Chlorides (Cl) ___ Hardness ___ Other ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No — ☐ Neat Cement ☐ Bentonite ☐ ___ — Depth: From ___ ft. to ___ ft.

14 Nearest Source of possible contamination: ___ feet ___ Direction ___ Ty
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☒ Not installed
Manufacturer's Name Reda
Model Number 40SP031 HP 1/2 Volts 230
Length of Drop Pipe 200 ft. capacity 5 G.P.M.
Type: ☒ Submersible ☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleman Pump & Well Drlg. Inc. 05
REGISTERED BUSINESS NAME — REGISTRATION NO.

Address P.O. Box 704, Iron Mountain

Signed K. P. N. — AUTHORIZED REPRESENTATIVE — Date 3-6-79

D67d 100M (Rev. 12-68)

15

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

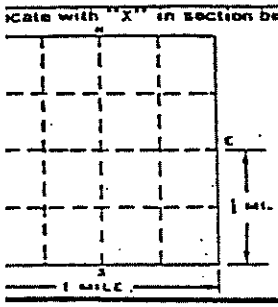
LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW.SW.SW.	10	47 (N) S.	29 (E/W)

And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Paul Anderson
Address: Rural 1 Humboldt, Michigan

4 WELL DEPTH: (completed) 303 ft. Date of Completion 10-3-75

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☐ Welded ☒ Height: Above / Below Surface 1 ft.
Diam. 6 in. to 26.39' ft. Depth; Weight 18.97 lbs./ft.
____ in. to ____ ft. Depth; Drive Shoe? Yes ☒ No ☐

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
clay & boulders	10	10
black granite	243	303

8 SCREEN:
Type: ____ Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
10 ft. below land surface

10 PUMPING LEVEL below land surface
303 ft. after 3 hrs. pumping 1/20 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☒ Yes ☐ No
☒ Neat Cement ☐ Bentonite ☐ ____
Depth: From 0 ft. to 25 ft.

14 Nearest Source of possible contamination
____ feet ____ Direction North Type
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☒ Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.
2 bags of cement
well was thoroughly blasted

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Kleiman Pump & Well Drlg. Inc 0575
REGISTERED BUSINESS NAME — REGISTRATION NO.
Address P.O. Box 704, Iron Mountain
H. P. Kleiman Date 10-10-75
AUTHORIZED REPRESENTATIVE

47d 100M (Rev. 12-68)

17

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

16

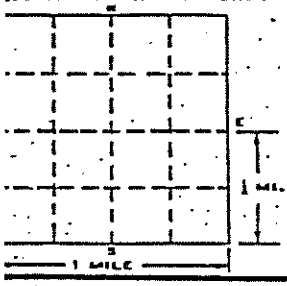
LOCATION OF WELL

nty	Township Name	Fraction	Section Number	Town Number	Range Number
[illegible]	Hamilton	SW¼ SW¼	10	4N N/S.	2W E/W.

s And Direction from Road Intersections

at address & City of Well Location

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Joseph Helwig

Address [illegible] Hamilton Mich.

4 WELL DEPTH: (completed) 179 ft. Date of Completion Feb '77

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☐ Welded ☒ Height: Above/Below Surface 1 ft.

Diam. 6 in. to 96-7 ft. Depth Weight [illegible] lbs./ft.

____ in. to ____ ft. Depth Drive Shoe? Yes ☒ No ☐

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Clay, sand, gravel	13	13
Gravel	166	179

8 SCREEN:

Type: ____ Dia.: ____

Slot/Gauze ____ Length ____

Set between ____ ft. and ____ ft.

Fittings: ____

9 STATIC WATER LEVEL

____ ft. below land surface

10 PUMPING LEVEL below land surface

____ ft. after ____ hrs. pumping ____ g.p.m.

____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ____ Chlorides (Cl) ____

Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☒ Yes ☐ No

☒ Neat Cement ☐ Bentonite ☐ ____

Depth: From 0 ft. to 6 ft.

14 Nearest Source of possible contamination

[illegible] feet [illegible] Direction [illegible] Type

Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☒ Not installed

Manufacturer's Name ____

Model Number ____ HP ____ Volts ____

Length of Drop Pipe ____ ft. capacity ____ G.P.M.

Type: ☐ Submersible ☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

[illegible]

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[illegible] REGISTERED BUSINESS NAME [illegible] REGISTRATION NO.

Address [illegible]

[illegible] AUTHORIZED REPRESENTATIVE Date 4/22/77

18

GEOLOGICAL SURVEY NO. [ ]

WATER WELL AND PUMP RECORD

PART 127 ACT 368, P A 1978

PERMIT NUMBER 19

LOCATION OF WELL

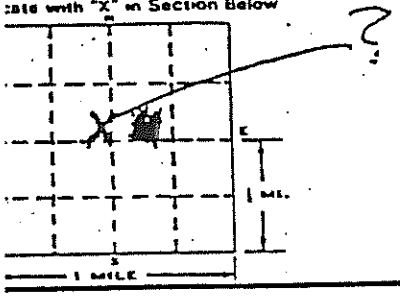
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ SW¼ SW¼ NW	10	47 N/S	29 E/W

Miles And Direction From Road Intersection: East end of County Road FNO

Nearest Address & City of Well Location:

Locate with "X" in Section Below

Sketch Map:



3 OWNER OF WELL: Michael Jarvi

Address: RR1 Box 83 Champion MI 49814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH: (completed) ft. 22 | Date of Completion: Nov 82

5 [ ] Cable tool [ ] Rotary [X] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ]

6 USE: [X] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [ ] Heat pump [ ] Test Well [ ] Type IIb Public [ ]

7 CASING Diameter: [ ] Steel [ ] Threaded [ ] Plastic [ ] Welded

1¼ in. to 20 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height: Above/Below

Surface _____ ft.

Weight _____ lbs./ft.

Drive Shoe [ ] Yes [ ] No

8 SCREEN [ ] Not Installed

Type Co | Diameter 1¼"

Slot/Gauze _____ | Length _____

Set between _____ ft. and _____ ft

FITTINGS [ ] K-Packer [ ] Lead Packer [ ] Bremer Check

[ ] Blank above screen _____ ft | Other _____

9 STATIC WATER LEVEL

15' ft. below land surface [ ] Flow

10 PUMPING LEVEL below land surface

_____ ft. after _____ hrs. pumping at _____ G P M

_____ ft after _____ hrs. pumping at _____ G P M

11 WELL HEAD COMPLETION: [ ] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [ ] No [ ] Yes From _____ to _____ ft

[ ] Neat cement [ ] Bentonite [ ] Other _____

No of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type Septic tank field | Distance 60 ft. Direction N

Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP [ ] Not Installed [ ] Pump Installation Only

Manufacturer's name Everready Hiton

Model number _____ HP ½ Volts 110

Length of Drop Pipe 20' ft. capacity _____ G P M.

TYPE [ ] Submersible [ ] Jet Hiton

PRESSURE TANK:

Manufacturer's name Montgomery Ward

Model number _____ Capacity 20 Gallons

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand top soil	3	3
Field stone and Grave	2	5
clay	1	6
Gravel	1	7
Clay	1	8
Gravel	1	9
Big Stones and Gravel	3	12
Felt Like Gravel and Rok	10	22

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

After 22' could not Drive Point any more

16. WATER WELL CONTRACTOR'S CERTIFICATION

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME _____ REGISTRATION NO. _____

Address _____ Date Dec 9 82

AUTHORIZED REPRESENTATIVE

D67d (Rev. 10-80)

OLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

-2

LOCATION OF WELL

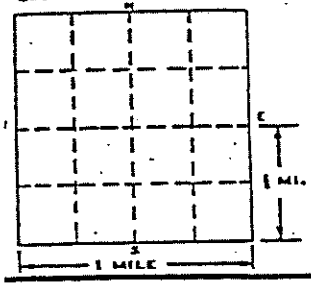
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	NE ¼ NE ¼ NW ¼	2	47 N/S. X	29 E/W. X

Ace And Direction from Road Intersections

reet address & City of Wall Location

Locate with "X" in section below

Sketch Map:



3 OWNER OF WELL:
Cent Mqt Water & Sewer Auth
Address 100 E Division
Ishpeming, Michigan 49849

4 WELL DEPTH: (completed) Date of Completion
150 ft. 11/79

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☐ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☒ Test Well ☐ ____

7 CASING: Threaded ☒ Welded ☐ Height: Above/Below
Diam. Surface 2 ft.
5 in. to 150 ft. Depth Weight 15 lbs./ft.
____ in. to ____ ft. Depth Drive Shoe? Yes ☒ No ☐

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Fine sand	10	10
Fine to coarse sand	5	15
Gray clay & fine sand	5	20
Mixed sand and gravel	10	30
Coarses sand	5	35
* Dk brown sand & gravel	10	45
Fine dark sand	20	65
Grey clay & fine sand	60	125
Grey sandy clay	15	140
Grey clay	8	148
Coarse dirty gravel	2	150
Broken ledge		150

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: None Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
7 ft. below land surface

10 PUMPING LEVEL below land surface Not developed
____ ft. after ____ hrs. pumping ____ g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit
☐ Pitless Adapter ☒ 12" Above Grade Capped

13 Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination NA
____ feet ____ Direction ____ Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☒ Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: ☐ Submersible
☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.
* Swampy smell to water

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Hakala Well & Pump Service 0206
REGISTERED BUSINESS NAME REGISTRATION NO.
Address Negaunee, Michigan 49866
20 AUTHORIZED REPRESENTATIVE Date 12/11/79

D67d 100M - (Rev. 12-68)

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

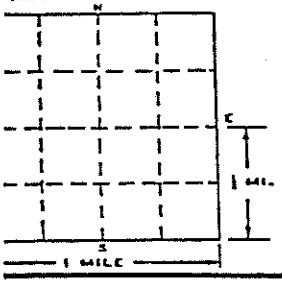
LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	¼ NE¼ ¼	2	47 N/S.	29 E/W.

And Direction from Road Intersections

Address & City of Well Location

Indicate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Central Marquette Water & Sewer Authority
Address 100 E. Division St. Ishpeming Mi. 49849

4 WELL DEPTH: (completed) 95 ft. Date of Completion 11-14-78

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☐ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ EXPLORATORY

7 CASING: Threaded ☐ Welded ☒ Height: Above/Below Surface ____ ft.
Diam. 4 in. to 85 ft. Depth Weight ____ lbs./ft.
____ in. to ____ ft. Depth Drive Shoe? Yes ☐ No ☐

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Top Soil	1	1
Gravel & sand	29	30
Coarse sand	8	38
Clay & sand	12	50
Gravel	39	89
Slate soft fractured	5	94
Slate black	1	95

USE A 2ND SHEET IF NEEDED

8 SCREEN: Type: Johnson Dia.: 3½
Slot/Gauze 12 Length 10 ft.
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL 9 ft. below land surface

10 PUMPING LEVEL below land surface
80 ft. after 2 hrs. pumping 9 G.P.M.
____ ft. after ____ hrs. pumping ____ G.P.M.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) TEST Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination: NOT APPLICABLE Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☒ Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
ABC Well Drilling — REGISTERED BUSINESS NAME — 0953 REGISTRATION NO.
Address P.O. Box 229 Manistique Mi.

21 William F. Cole — AUTHORIZED REPRESENTATIVE — Date 12-1-78

100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY NO

MICHIGAN DEPARTMENT OF PUBLIC HEALTH
WATER WELL AND PUMP RECORD

PART 127 ACT 368, P A 1978

PERMIT NUMBER

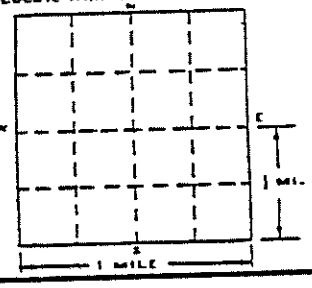
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SE 1/4 NE 1/4 SE 1/4	3	47 N/S	29 E

Distance And Direction From Road Intersection

Street Address & City of Well Location

Locate with "X" in Section Below — Sketch Map



3 OWNER OF WELL Richard Stetson

Address Humboldt Location Humboldt Mich.

Address Same As Well Location? ☒ Yes ☐ No

4 WELL DEPTH: (completed) 63 ft. — **Date of Completion** 8-28-81

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐

6 USE: ☒ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☐

7 CASING Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded

6 in. to 36.5 ft. depth

___ in. to ___ ft. depth

Grouted Drill Hole Diameter

___ in. to ___ ft. depth

___ in. to ___ ft. depth

Height Above/Below Surface 1 ft

Weight 18.97 lbs./ft

Drive Shoe ☒ Yes ☐ No

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Gravel & Clay hardpan	30	30
Fractured Granite	3	33
Granite	30	63

USE A 2ND SHEET IF NEEDED

8 SCREEN ☒ Not installed

Type ___ Diameter ___

Slot/Gauze ___ Length ___

Set between ___ ft. and ___ ft.

FITTINGS ☐ K Packer ☐ Lead Packer ☐ Bremer Check ☐ Blank above screen ___ ft. Other ___

9 STATIC WATER LEVEL 24 ft. below land surface ☐ Flow

10 PUMPING LEVEL below land surface

60 ft. after 2 hrs. pumping at 10 GPM

___ ft. after ___ hrs. pumping at ___ GPM

11 WELL HEAD COMPLETION ☐ Pitless adapter ☒ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED: ☒ No ☐ Yes From ___ to ___

☐ Neat cement ☐ Bentonite ☐ Other ___

No. of bags of cement ___ Additives ___

13 Nearest source of possible contamination None

Type ___ Distance ___ ft. Direction ___

Well disinfected upon completion? ☒ Yes ☐ No

14 PUMP: ☒ Not installed ☐ Pump installation Only

Manufacturer's name ___

Model number ___ HP ___ Volts ___

Length of Drop Pipe ___ ft. Capacity ___

TYPE ☐ Submersible ☐ Jet ___

PRESSURE TANK

Manufacturer's name ___

Model number ___ Capacity ___

15. Remarks, elevation, source of data, etc.

16 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleman Pump & Well Drlg., Inc. — REGISTERED BUSINESS NAME — REGISTRATION NO.

Address P.O. Box 704 Iron Mou

Signed ___ AUTHORIZED REPRESENTATIVE — Date 9-2-8

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

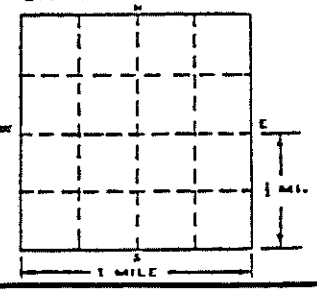
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ NE¼ NW¼	2	47 N/S.	29 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Cent Mgt Water & Sewer Auth
Address 100 E. Division
Ishpeming, Michigan

4 WELL DEPTH: (completed) 126 ft. **Date of Completion** 9/19/9

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ D
☐ Hollow rod ☐ Jetted ☐ Bored ☐ _

6 USE: ☐ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☒ Test Well ☐

7 CASING: Threaded ☐ Welded ☐ Diam.
5 in. to Removed Depth
___ in. to ___ ft. Depth
Height: Above/Below Surface ___ ft.
Weight ___ lbs./ft.
Drive Shoe? Yes ☐ No ☐

2 FORMATION

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand	2	2
Coarse sand and gravel	8	10
Coarse sand	10	20
Fine-medium sand	10	30
Fine sand Dk brown	10	40
Mixed sand and gravel	7	47
Med - coarse sand (swampy water)	5	52
Fine muddy sand	6	58
Fine grey sand & clay	7	65
Fine to coarse sand	5	70
Hardpan with rocks to 1½" D	20	90
Large gravel	2	92
Hardpan (packed gravel & clay	18	110
Weathered slate or shale rock	16	126

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: X Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
___ ft. below land surface

10 PUMPING LEVEL below land surface
___ ft. after ___ hrs. pumping ___ g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___ Other ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit
☐ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☐ ___
Depth: From ___ ft. to ___ ft.

14 Nearest Source of possible contamination
___ feet ___ Direction ___
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☒ Not Installed
Manufacturer's Name ___
Model Number ___ HP ___ Volts ___
Length of Drop Pipe ___ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ Jet ☒ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Hakala Well & Pump Service 0206
REGISTERED BUSINESS NAME — REGISTRATION NO.

Address Negaunee, Michigan

Signed ___ Date 9/27/79
AUTHORIZED REPRESENTATIVE

D474 100M (Rev. 12-68)

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GEOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

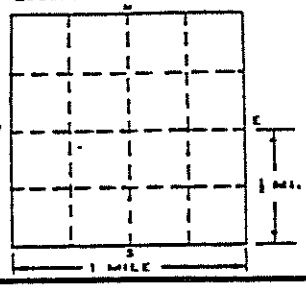
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Livingston	Unadilla	NW¼ NE¼ SE¼	23	2 N	5 E

Distance And Direction from Road Intersections: W NW SE

Street address & City of Well Location:

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Ralph Pinta

Address: Rt. 1 Box 407 Brighton Mich.

4 WELL DEPTH: (completed) 105 ft. **Date of Completion:** 12-22-76

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐

7 CASING: Threaded ☐ Welded ☒ Diam. 6 in. to 27 ft. Depth; ____ in. to ____ ft. Depth. Height: Above / Below Surface ____ ft. Weight 20 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sandy soil & clay	15	15
Red gravel (packed)	11	26
Fine brown sand	45	71
Limestone	34	105

8 SCREEN: Type: ____ Dia.: ____ Slot/Gauze ____ Length ____ Set between ____ ft. and ____ ft. Fittings: ____

9 STATIC WATER LEVEL 19 ft. below land surface

10 PUMPING LEVEL below land surface: 75 ft. after ____ hrs. pumping 4 G.P.M.; ____ ft. after ____ hrs. pumping ____ G.P.M.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ____ Chlorides (Cl) ____ Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☒ Bentonite ☐ ____ Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination: 75 feet NE Direction Septic Tank; Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed. Manufacturer's Name ____ Model Number ____ HP ____ Volts ____ Length of Drop Pipe ____ ft. capacity ____ G.P.M. Type: ☐ Submersible ☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

6 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME ____ REGISTRATION NO. 0910

Address 1570 N. Latson Howell

Signed ____ (AUTHORIZED REPRESENTATIVE) Date 12-27-76

EOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
MARQUETTE	HUMBOLT	¼ NE¼ SE¼	2	41 N/S.	29 E/W.

Distance And Direction from Road Intersections

OWNER No.

3 OWNER OF WELL: JERRY PLATTENBURG

Address: CHAMPION, MICH

Street address & City of Well Location

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND	20	20
HARD PAN	5	25
ROCK	1	26

4 WELL DEPTH: (completed) 26 ft. Date of Completion 8/75

5 [X] Cable tool [ ] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Jetted [ ] Bored [ ]

6 USE: [X] Domestic [ ] Public Supply [ ] Industry [ ] Irrigation [ ] Air Conditioning [ ] Commercial [ ] Test Well [ ]

7 CASING: Threaded [ ] Welded [X] Height: Above/Below surface ____ ft.
Diam. 6 in. to 26 ft. Depth
Weight ____ lbs/ft.
____ in. to ____ ft. Depth
Drive Shoe? Yes [ ] No [ ]

8 SCREEN: NONE
Type: ____ Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
6 ft. below land surface

10 PUMPING LEVEL below land surface
25 ft. after 2 hrs. pumping 3 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____

12 WELL HEAD COMPLETION: [ ] In Approved Pit [X] Pitless Adapter [X] 12" Above Grade

13 GROUTING:
Well Grouted? [ ] Yes [X] No
Material: [ ] Neat Cement [ ] ____
Depth: From ____ ft. to ____ ft.

14 SANITARY:
Nearest Source of possible contamination
100 feet SE Direction SEPIC Type
Well disinfected upon completion [ ] Yes [X] No

15 PUMP:
Manufacturer's Name ____
Model Number ____ HP ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: [ ] Submersible [ ] ____ [ ] Jet [ ] Reciprocating

Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

DAVID JENT WELL DRILLING 1269
REGISTERED BUSINESS NAME REGISTRATION NO.

Address: MICHIGAMME, MICH

Signed ____ Date 8/75

GEOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

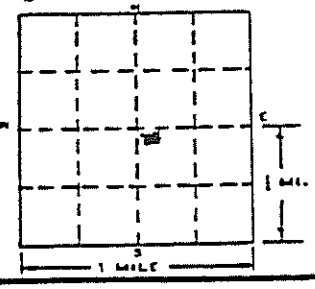
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLT	NW¼SE¼ ¼	3	47 N/S.	29 E/W

Distance And Direction from Road Intersections
E 100' & W. 200' of NW 1/4 of SE 1/4 lying South of present Hwy US41

Street Address & City of Wall Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL: DONALD STRONGMA.
Address BOX 595 RTE 1 ISHPEMING, MICH.

4 WELL DEPTH: (completed) Date of Completion
70 ft.

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ ___

7 CASING: Threaded ☒ Welded ☐
Diam. 5 in. to 63 ft. Depth
___ in. to ___ ft. Depth
Height: Above/Below Surface 1 ft.
Weight 16 lbs./ft.
Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Top Soil	2	2
Gravel & Sand	20	22
Hard pan	40	62
Black Shale	8	70

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: ___ Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
11 ft. below land surface

10 PUMPING LEVEL below land surface
45 ft. after 1 hrs. pumping 15 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___ Other ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit
☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ___
Depth: From ___ ft. to ___ ft.

14 Nearest Source of possible contamination
75 feet W Direction SEPTIC Ty
Well disinfected upon completion ☐ Yes ☒ No

15 PUMP: ☒ Not installed
Manufacturer's Name ___
Model Number ___ HP ___ Volts ___
Length of Drop Pipe ___ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

6 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
DAVID LENTZ DRILLING 1216
REGISTERED BUSINESS NAME REGISTRATION NO.
Address MICHIGAMME, MICH 49861
Signed ___ AUTHORIZED REPRESENTATIVE Date 12/5/73

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
Iosco	Humboldt	¼ NW¼ SE¼	2	24 N/S	29 E/W

Distance And Direction from Road Intersections — OWNER No.

Same as owner

Street address & City of Well Location

3 OWNER OF WELL: Donald Hawkins

Address: Humboldt

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand	1	2
Sand	29	31
Gravel	31	33

4 WELL DEPTH: (completed) 33 ft. Date of Completion

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Threaded ☒ Welded ☐ Height: Above/Below surface 1 ft.
7 in. to 33 ft. Depth Weight ___ lbs/ft.
___ in. to ___ ft. Depth Drive Shoe? Yes ☒ No ☐

8 SCREEN: Type: None Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
6 ft. below land surface

10 PUMPING LEVEL below land surface
30 ft. after 2 hrs. pumping 5 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 GROUTING:
Well Grouted? ☐ Yes ☐ No
Material: ☐ Neat Cement ☐ ___
Depth: From ___ ft. to ___ ft.

14 SANITARY:
Nearest Source of possible contamination
50 feet E Direction Septic Type
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP:
Manufacturer's Name ___
Model Number ___ HP ___
Length of Drop Pipe ___ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ ___ ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

J. T. Wells Drilling — REGISTERED BUSINESS NAME
0800 — REGISTRATION NO.
Address: East Michigan Ave. Mich
Signed: Larry Scott — AUTHORIZED REPRESENTATIVE
Date: 5/16/69

RECEIVED MAY 19 1969

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

LOCATION OF WELL

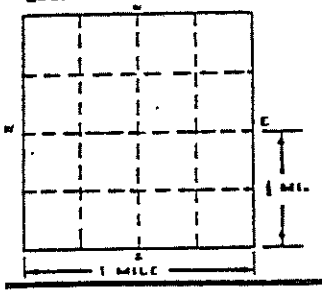
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humbolt	NW ¼ NW ¼ SW ¼	1	47 N/S.	29 E/W.

Distance And Direction from Road Intersections: Parcel Sub Lot # 1

Street Address & City of Well Location

Locate with "X" in section below

Sketch Map:



3 OWNER OF WELL: Lawrence Terlicki
Address: P.O. Box 772, Escanaba, MI

4 WELL DEPTH: (completed) 40 ft. Date of Completion 6/5/79

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☐ Welded ☒ Height: Above/Below Surface 1½ ft.
Diam. 4 in. to 36 ft. Depth; Weight 10.79 lbs./ft.
____ in. to ____ ft. Depth; Drive Shoe? Yes ☒ No ☐

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Top Soil	1	1
Course Gravel	9	10
Sand	30	40

8 SCREEN:
Type: 304 Stainless Dia.: 4 inch
Slot/Gauze 10 slot Length 4 ft.
Set between 36 ft. and 40 ft.
Fittings: X Packer

9 STATIC WATER LEVEL
12 ft. below land surface

10 PUMPING LEVEL below land surface
12 ft. after 2 hrs. pumping 15 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
____ feet ____ Direction ____ Type
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed
Manufacturer's Name ~~Webtrol~~
Model Number ~~10GS58~~ HP ½ Volts ~~230~~
Length of Drop Pipe ____ ft. capacity ~~10~~ G.P.M.
Type: ☒ Submersible ☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

~~Hardenbrook Wells Drilling~~ REGISTRATION NO. ~~1696~~

Address ~~Star Route Box 338 Quinn, MI~~

Signed ____ AUTHORIZED REPRESENTATIVE Date 6/25/17

D472 100M (Rev. 12-68)

ACT 294 PA 1965

OF PUBLIC HEALTH

LOCATION OF WELL

unty	Twp.	Fraction	Section No.	Town	Range
MARQUETTE	HUMBOLDT	NW¼ SW¼ ¼	1	T47N N/S.	29W E/W.

stance And Direction from Road Intersections

OWNER No.

eet address & City of Well Location HUMBOLDT

3 OWNER OF WELL: OLIVE E. STONE

Address RFD 1 Box 110-A Champion Mich

4 WELL DEPTH (completed) 20 ft. Date of Completion 6-7-74

5 ☐ Cable tool ☐ Rotary ☑ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☑ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Diam. Threaded ☑ Welded ☐

4 in. to 4 ft. Depth

___ in. to ___ ft. Depth

Height: Above/Below surface 4 ft.

Weight ___ lbs/ft.

Drive Shoe? Yes ☑ No ☐

8 SCREEN:

Type: POINT Dia.: 1¼"

Slot/Gauze 90 Length 4'

Set between 15 ft. and 20 ft.

Fittings: COPPER ABOVE CASING

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
DRIVEN POINT		

9 STATIC WATER LEVEL

12 ft. below land surface

10 PUMPING LEVEL below land surface

___ ft. after ___ hrs. pumping ___ G.P.M.

___ ft. after ___ hrs. pumping ___ G.P.M.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ___ Chlorides (Cl) ___

Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☐ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☐ No

Material: ☐ Neat Cement ☐ ___

Depth: From ___ ft. to ___ ft.

14 SANITARY:

Nearest Source of possible contamination

75 feet E Direction DISPOSAL FIELD Type

Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:

Manufacturer's Name McDONALD

Model Number 140 SAL 1408 HP ½

Length of Drop Pipe ___ ft. capacity ___ G.P.M.

Type: ☐ Submersible ☐ SHALLOW WELL ☐ Jet ☐ Reciprocating

Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME ___ REGISTRATION NO. ___

Address ___

Signed ___ Date ___

AUTHORIZED REPRESENTATIVE

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
Marquette	Humboldt	NW¼ of ¼ SW¼	1	47 N/S.	28 E/W.

Distance And Direction from Road Intersection: Driven point inside of House

OWNER No.

R.F.D. Box 120 CHAMPION MICH.

Street address & City of Well Location

3 OWNER OF WELL:

Address: NESTOR NORKOLI

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
	–	

4 WELL DEPTH: (completed) ft. Date of Completion

5 ☐ Cable tool ☐ Rotary ☒ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐

7 CASING: Threaded ☐ Welded ☐ Diam. 1¼ in. to 12 ft. Depth; in. to ft. Depth. Height: Above/Below surface 1 ft. Weight lbs/ft. Drive Shoe? Yes ☐ No ☐

8 SCREEN: Type: 80 Dia.: 1¼" Slot/Gauze Length 3 ft. Set between 22 ft. and 25 ft. Fittings:

9 STATIC WATER LEVEL 8' ft. below land surface

10 PUMPING LEVEL below land surface
ft. after hrs. pumping g.p.m.
ft. after hrs. pumping g.p.m.

11 WATER QUALITY in Parts Per Million: Iron (Fe) Chlorides (Cl) Hardness TESTED SAFE

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☐ 12" Above Grade

13 GROUTING: Well Grouted? ☐ Yes ☐ No. Material: ☐ Neat Cement ☐ Depth: From ft. to ft.

14 SANITARY: Nearest Source of possible contamination 300 feet EAST Direction Type. Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: Manufacturer's Name Mc. Donald Mfg Co. Model Number 1H050111LO6 HP ⅓. Length of Drop Pipe 20 ft. capacity G.P.M. Type: ☐ Submersible ☐ ☒ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME — REGISTRATION NO.

Address

Signed — AUTHORIZED REPRESENTATIVE — Date 3/4/71

30

WATER WELL RECORD
ACT 294 PA 1965

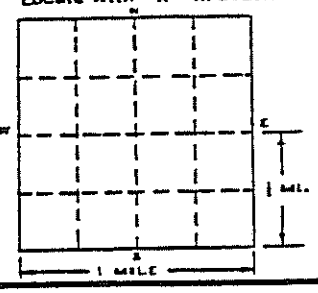
MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL					
County: Marquette	Township Name: Humboldt	Fraction: ¼ NW ¼ NW ¼	Section Number: 15	Town Number: 47 (N/S.)	Range Number: 29 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Ed Heikkila
Address: Republic, Mich.

4 WELL DEPTH: (completed) 250 ft. Date of Completion 3-23-73

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Du
☐ Hollow rod ☐ Jetted ☐ Bored ☐

6 USE: ☑ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐

7 CASING: Threaded ☐ Welded ☒ Height: Above/Below
Diam. 6 in. to 24'5" ft. Depth — Surface 1 ft.
in. to ft. Depth — Weight 18.97 lbs./ft.
Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Fill	15	15
Granite	235	250

8 SCREEN:
Type: Dia.:
Slot/Gauze Length
Set between ft. and ft.
Fittings:

9 STATIC WATER LEVEL
17 ft. below land surface

10 PUMPING LEVEL below land surface
250 ft. after 1 hrs. pumping 4 g.p.m.
ft. after hrs. pumping g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) Chlorides (Cl)
Hardness Other

12 WELL HEAD COMPLETION: ☐ In Approved Pit
☒ Pitless Adapter ☑ 12" Above Grade

13 Well Grouted? ☑ Yes ☐ No
☒ Neat Cement ☐ Bentonite ☐
Depth: From 0 ft. to 25 ft.

14 Nearest Source of possible contamination
75 feet S Direction Septic T
Well disinfected upon completion ☑ Yes ☐ No

15 PUMP: ☐ Not installed
Manufacturer's Name E.J.
Model Number 17D5IC71 HP ½ Volts 230
Length of Drop Pipe 220 ft. capacity 5 G.P.M.
Type: ☒ Submersible
☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Keeman Pump & Well Drlg Inc 057
REGISTERED BUSINESS NAME — REGISTRATION NO.
Address PO Box 107 Iron Mtn
Signed [signature] AUTHORIZED REPRESENTATIVE Date 2-3-76

100M (Rev. 12-68)

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GEOLOGICAL SURVEY SAMPLE NO. _____

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

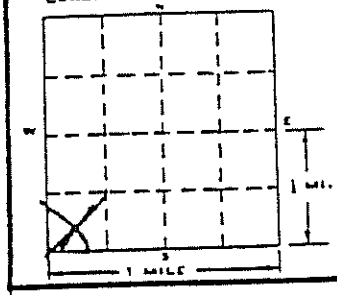
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLT	¼ SW ¼ SW ¼	3	47 N.	29 E/W

Distance And Direction from Road Intersections: HALF WAY ROAD

Street address & City of Well Location:

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL: MARVIN MACKEY

Address: RT BOX 92A, CHAMPION, MICH

4 WELL DEPTH: (completed) 82 ft. Date of Completion 12/4/74

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☒ Welded ☒ Diam. 5 in. to 82 ft. Depth; ____ in. to ____ ft. Depth. Height: Above/Below Surface 1 ft. Weight 15 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Top Soil	1	1
COARSE SAND	19	20
FINE TO COARSE SAND & CLAY	7	27
FINE SAND & CLAY	51	78
COARSE SAND & FINE TO COARSE GRAVEL	4	82

USE A 2ND SHEET IF NEEDED

8 SCREEN: Type: NONE Dia.: ____ Slot/Gauze ____ Length ____ Set between ____ ft. and ____ ft. Fittings: ____

9 STATIC WATER LEVEL 28 ft. below land surface

10 PUMPING LEVEL below land surface 25 ft. after 2 hrs. pumping 20 g.p.m. ____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ____ Chlorides (Cl) ____ Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ____ Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination 60 feet E Direction SEPTIC TANK Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☒ Not installed Manufacturer's Name ____ Model Number ____ HP ____ Volts ____ Length of Drop Pipe ____ ft. capacity ____ G.P.M. Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

DAVID LENTZ DRILLING (REGISTERED BUSINESS NAME) 1269 (REGISTRATION NO.)

Address: MICHIGAMME, MICH

Signed: David J Lentz (AUTHORIZED REPRESENTATIVE) Date: 12/6/

GEOLOGICAL SURVEY SAMPLE NO. [ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

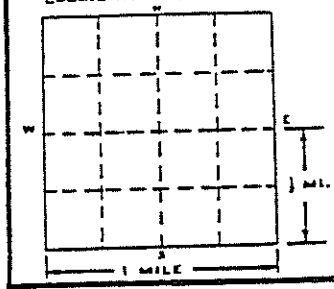
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ SW¼ SW¼	3	47 N/S.	24 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: James DeLorchim
Address Route 1, Box 3-B Channing Michigan

4 WELL DEPTH: (completed) 76 ft. Date of Completion 1-4-75

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well

7 CASING: Threaded ☐ Welded ☒ Height: Above/Below Surface 1 ft.
Diam. 6 in. to 75 ft. Depth Weight 8.67 lbs./ft.
___ in. to ___ ft. Depth Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Gravel, Sand	38	38
Sand	38	76

8 SCREEN:
Type: #304 Stainless Dia.: 6"
Slot/Gauze 14 Length 3'
Set between 73 ft. and 76 ft.
Fittings: Std

9 STATIC WATER LEVEL
50 ft. below land surface

10 PUMPING LEVEL below land surface
67 ft. after 2 hrs. pumping 8 G.P.M.
___ ft. after ___ hrs. pumping ___ G.P.M.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ___ Chlorides (Cl) ___
Hardness ___ Other ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ___
Depth: From ___ ft. to ___ ft.

14 Nearest Source of possible contamination
___ feet ___ Direction ___
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed
Manufacturer's Name Bode
Model Number 7D9D031 HP 1/2 Volts 230
Length of Drop Pipe 65 ft. capacity 7 G.P.M.
Type: ☒ Submersible ☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Kleiman Pump & Well Drlg, Inc 457
REGISTERED BUSINESS NAME, REGISTRATION NO.
Address PO Box 704 Iron Mountain
Signed N.P. [signature] AUTHORIZED REPRESENTATIVE Date 1-5-75

GEOLOGICAL SURVEY SAMPLE NO.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

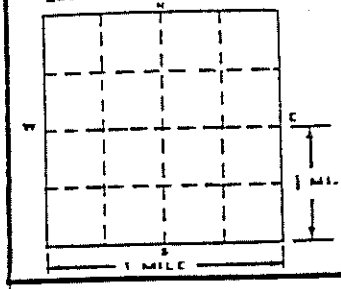
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
[illegible]	[illegible]	SW¼ SW¼ SW¼	3	17 N S.	27 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Lucido Digirolamo

Address R4 Chassell, Mich.

4 WELL DEPTH: (completed) 64 ft. **Date of Completion** 3-23-77

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☒ Welded ☐ Diam. 6 in. to 36 ft. Depth; ____ in. to ____ ft. Depth

Height: (Above) Below Surface 1 ft. Weight 20 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
gravel	12	12
fine sand	21	33
fine sand & gravel	3	36
clay & stone	11	47
blue limestone rock	5	52
limestone	12	64

USE A 2ND SHEET IF NEEDED

8 SCREEN: Type: ____ Dia.: ____ Slot/Gauze ____ Length ____ Set between ____ ft. and ____ ft. Fittings:

9 STATIC WATER LEVEL 20 ft. below land surface

10 PUMPING LEVEL below land surface 58 ft. after 24 hrs. pumping 4 g.p.m.

____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ____ Chlorides (Cl) ____ Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ____ Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination 25 feet S Direction Septic Tank

Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed

Manufacturer's Name ____

Model Number ____ HP ____ Volts ____

Length of Drop Pipe ____ ft. capacity ____ G.P.M.

Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Tom's Well Drilling & Pump Service — REGISTERED BUSINESS NAME — REGISTRATION NO. 0800

Address 920 7th St. E. Tawas City, Mich.

Signed [signature] — AUTHORIZED REPRESENTATIVE — Date 3-24-77

32

GEOLOGICAL SURVEY SAMPLE No. _____

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

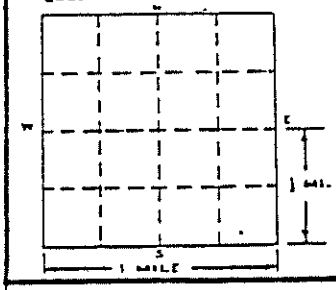
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW ¼ SW ¼ SW ¼	3	47 N/S.	29 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:



3 OWNER OF WELL: Bruno Pighetti
Address Humboldt

4 WELL DEPTH: (completed) Date of Completion
63 ft. 4-4-77

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ ____

7 CASING: Threaded ☒ Welded ☐ Height: (Above) / Below
Diam. 6 in. to 32 ft. Depth — Surface 1 ft.
____ in. to ____ ft. Depth — Weight 30 lbs./ft.
Drive Shoe? Yes ☒ No ☐

8 SCREEN:
Type: NONE Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
15 ft. below land surface

10 PUMPING LEVEL below land surface
40 ft. after 1 hrs. pumping 5 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit
☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
80 feet N Direction Septic Typ
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☐ Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Clay Loam	12	12
Sand - Gravel	6	18
Sand Loose Gravel	14	32
Medium Sand Gravel	31	63

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Glen Well Drilling Inc. — REGISTERED BUSINESS NAME — REGISTRATION NO.
Address 230 Mac Marquette
Signed _____ (AUTHORIZED REPRESENTATIVE) Date 4-9-77

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GEOLOGICAL SURVEY SAMPLE NO. _____

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

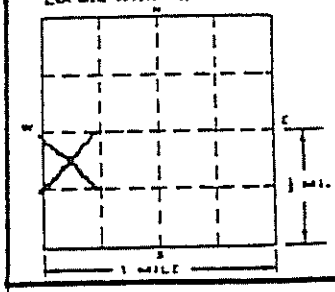
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLDT	¼ NW¼ SW¼	3	47 N.	29 W.

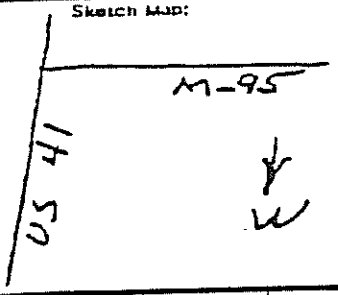
Distance And Direction from Road Intersections: ⅛ MILE W. OF US 41 + M95

Street address & City of Well Location:

Locate with "X" in section below



Sketch Map:



3 OWNER OF WELL: DAVID LAITALA

Address: HUMBOLDT LOC. CHAMPION MICH.

4 WELL DEPTH: (completed) 78 ft. Date of Completion 3/7/74

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐

7 CASING: Threaded ☒ Welded ☐ Diam. 5 in. to 76 ft. Depth; ____ in. to ____ ft. Depth

Height: Above/Below Surface 2 ft. Weight 15 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND, GRAVEL, CLAY	22	22
SAND, FINE GRAVEL	18	40
CLAY		
COARSE SAND &		
FINE GRAVEL	38	78

USE A 2ND SHEET IF NEEDED

8 SCREEN: Type: EVER-FLO Dia.: 5

Slot/Gauze 12 Length 5'6"

Set between 74 ft. and 78 ft.

Fittings: K-PACKER

9 STATIC WATER LEVEL ____ ft. below land surface

10 PUMPING LEVEL below land surface: 36 ft. after 1 hrs. pumping 20 G.P.M.

____ ft. after ____ hrs. pumping ____ G.P.M.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ____ Chlorides (Cl) ____ Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ____

Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination: 70 feet W/W Direction SEPTIC Type

Well disinfected upon completion ☐ Yes ☒ No

15 PUMP: ☒ Not installed

Manufacturer's Name VALLEY

Model Number S3052 HP ½ Volts 230

Length of Drop Pipe 50 ft. capacity 12 G.P.M.

Type: ☒ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

DAVID LENTZ DRILLING 126
REGISTERED BUSINESS NAME REGISTRATION NO.

Address MICHIGAMME, MICH.

Signed David J Lentz (AUTHORIZED REPRESENTATIVE) Date 4/30/74

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WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

LOCATION OF WELL

County: Marquette | Twp.: Humboldt | Fraction: S½ NW¼ SW¼ | Section No.: 3 | Town: 47 N/S. | Range: 29 E/W

Direction from Road Intersections: 1 So. US 41

OWNER No.

Or RR Champion Mill Co. Humboldt Mill Loc.

Street address & City of Well Location

3 OWNER OF WELL: James Mitchell

Address: Box 191 Champion, Mich

4 WELL DEPTH: (completed) 26' ft. Date of Completion 10-26-71

5 ☐ Cable tool ☐ Rotary ☒ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ —

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ —

7 CASING: Diam. 2 in. to 21" ft. Depth; Threaded ☒ Welded ☐; Height: Above/Below surface 6 ft.; Weight ___ lbs/ft.; Drive Shoe? Yes ☐ No ☐

___ in. to ___ ft. Depth

8 SCREEN: Type: Sand Dia.: 2" Slot/Gauze 90 Length 30" Set between ___ ft. and ___ ft. Fittings:

9 STATIC WATER LEVEL 18 ft. below land surface

10 PUMPING LEVEL below land surface ___ ft. after ___ hrs. pumping ___ G.P.M. ___ ft. after ___ hrs. pumping ___ G.P.M.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ___ Chlorides (Cl) ___ Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☐ 12" Above Grade

13 GROUTING: Well Grouted? ☐ Yes ☒ No Material: ☐ Neat Cement ☐ ___ Depth: From ___ ft. to ___ ft.

14 SANITARY: Nearest Source of possible contamination: 75 feet S Direction Septic Type. Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: Manufacturer's Name Montgomery Ward Model Number BTS 100 Pumpkin Pitless Length of Drop Pipe ___ ft. capacity ___ G.P.M. Type: ☐ Submersible ☐ ___ ☒ Jet ☐ Reciprocating

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand	26+	26+

Remarks, elevation, source of data, etc.

26+' for well depth needed I will be adding about 6" of Top soil this Summer & it will then be 32' deep new

17 WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME ___ REGISTRATION NO. ___

Address ___

Signed ___ Date ___

AUTHORIZED REPRESENTATIVE

Characterization and Remedial Alternatives for Groundwater
Callahan Mining Corporation, January 1996
(Water Well Inventory)

4

CHARACTERIZATION and REMEDIAL ALTERNATIVES for GROUND WATER HUMBOLDT MILL FACILITIES



CALLAHAN MINING CORPORATION

January 12, 1996

TABLE 1

SUMMARY OF DOMESTIC WATER WELL INSTALLATIONS
HUMBOLDT MILL REGION

Owner	Date Installed	Installed By	Location	Total Depth (feet)	Bedrock (feet)	Open or Screen Interval	Screen Interval Lithology
R. Stetson	8/28/81	Kleiman	SE NE SE Sec 3, 47N, 29W	63	30	39.59 - 63.0	Granite
R. Stetson	8/13/68	Stetson	SW NW SE Sec 3, 47N, 29W (500' E of Jct. M 95 & US 41)	25	- -	10 - 25?	- -
R. Pesrla	10/27/76	Lentz	W NW SE Sec 3, 47N, 29W	105	26	27 - 105	Slate & Granite
J. Plattenburg	8/75	Lentz	NE SE Sec 3, 47N, 29W	26	25	25 - 26	Bedrock
D. Strongman	12/5/73	Lentz	NW NW SE Sec 3, 47N, 29W	70	62	63 - 70	Black Shale
J. Hammansen	4/14/67	W. Terminer	SW SE SW Sec 3, 47N, 29W	25	23	25 -	Broken Bedrock
W. Lahtela	3/8/67	W. Terminer	SW SE SW Sec 3, 47N, 29W	26	22	23 - 26	Red & Gray Bedrock
D. Lahtela	3/7/74	Lentz	NW SW Sec 3, 47N, 29W	78	- -	74 - 78	Fine Gravel
J. Mitchell	10/28/74	Mitchell	SW NW SW Sec 3, 47N, 29W	26	- -	22 - 26	Sand
M. Mackey	12/4/74	Lentz	SW SW Sec 3, 47N, 29W	82	- -	76	Gravel
J. DeLongchamp	1/4/78	Kleiman	SW SW SW Sec 3, 47N, 29W	76	- -	73 - 76	Sand
G. Pizioli	3/23/77	Lentz	SW SW SW Sec 3, 47N, 29W	64	36	36 - 64	Greenstone/Slate Granite
G. Pizioli	4/4/77	Lentz	SW SW SW Sec 3, 47N, 29W	63	32	32 - 63	Granite
E. Rantio	11/71	Hakala	SW SW SW Sec 3, 47N, 29W	90	- -	87 - 90	Silty Gravel
R. Mamari	10/13/70	Kleiman	SW SW SW Sec 3, 47N, 29W	62	25	25 - 62	Slate
D. Caraicye	3/15/65	Lentz	SW SW Sec 3, 47N, 29W	66	- -	66 -	Gravel

TABLE 1

SUMMARY OF DOMESTIC WATER WELL INSTALLATIONS
HUMBOLDT MILL REGION

Owner	Date Installed	Installed By	Location	Total Depth (feet)	Bedrock (feet)	Open or Screen Interval	Screen Interval Lithology
G. Chapman	12/12/81	--	NE SE SE Sec 3, 47N, 29W	61	28	28 - 61	Bedrock
P. Anderson	10/3/78	Kleiman	SW SW SW Sec 10, 47N, 29W	303	10	26 - 303	Black Granite
J. Helwig	2/77	Lentz	SW SW SW Sec 10, 47N, 29W	199	13	26 - 199	Granite
M. Jaryl	11/82	--	SW SW NW Sec 10, 47N, 29W	22	22?	22 -	Gravel & Rock?
B. Maki	3/2/79	Kleiman	NW NW NW Sec 15, 47N, 29W	27	--	24 - 27	Gravel & Boulders
E. Heikkila	3/23/73	Kleiman	NW NW Sec 15, 47N, 29W	250	15	26 - 250	Granite
C. Marquette Water & Sewer	11/79	Hakala	NE NE NW Sec 2, 47N, 29W	150	150	--	Bedrock
C. Marquette Water & Sewer	9/19/79	Hakala	SW NE NW Sec 2, 47N, 29W	126	110	--	Slate
C. Marquette Water & Sewer	11/14/78	ABC	NE Sec 2, 47N, 29W	95	89	85 - 95	Slate & Gravel
D. Hawkins	5/69	Lentz	NW SE Sec 2, 47N, 29W	33	--	33 -	Gravel
L. Terlicki	6/5/79	MacDonald	NW NW SW Sec 1, 47N, 29W	40	--	36 - 40	Sand
O. Stone	6/7/74	Stone	NW SW Sec 1, 47N, 29W	20	--	15 - 20	--
N. Norkoli	2/71 ?	Norkoli ?	NW SW Sec 1, 47N, 29W	25	--	22 - 25	--
Crosscut Cafe	9/19/90	Kleiman	SE NE SW Sec 3, 47N, 29W	38	--	35 - 38	Sand & Gravel
E. Johnson	8/26/88	--	S½ SE SW Sec 3, 47N, 29W	243	15	25 - 243	Granite
J. Koski	2/27/87	Kleiman	NE SW SE Sec 3, 47N, 29W	142	26	27 - 142	Red Rock & Granite

TABLE 1

SUMMARY OF DOMESTIC WATER WELL INSTALLATIONS
HUMBOLDT MILL REGION

Owner	Date Installed	Installed By	Location	Total Depth (feet)	Bedrock (feet)	Open or Screen Interval	Screen Interval Lithology
I. Wisuri	2/6/87	Kleiman	NE SE SE Sec 3, 47N, 29W	143	17	28 - 143	Red Rock
M. Mackey	2/10/87	Kleiman	S½ SE SW Sec 3, 47N, 29W	43	16	29 - 43	Red Rock
Nitiled ?	? 85	- -	SE NE SW Sec 3, 47N, 29W	26	22 ?	24 - 26	Red Rock
E. Koski	7/6/83	Kleiman	SW NW SE Sec 3, 47N, 29W	103	29	29 - 103	Granite

Hydrogeological Investigation
Traverse Engineering

GEOLOGICAL SURVEY NO. [ ]

WATER WELL AND PUMP RECORD

PERMIT NUMBER [ ]

1 LOCATION OF WELL

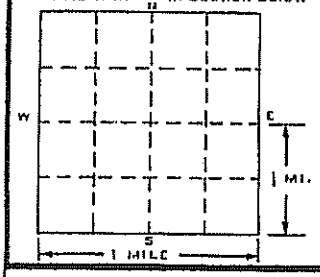
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ SE ¼ SW ¼	2	47 N/S	19 E/W

Distance And Direction From Road Intersection

At Humboldt Pit North End

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map

Monitor Well #1

3 OWNER OF WELL:

Callahan Mining Corp.
Address Rte 1, Box 300
Champion, Mich. 49814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH: (completed) 76.5 ft. | Date of Completion 2NOV84

5 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ] _____

6 USE: [ ] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [ ] Heat pump [ ] Test Well [ ] Type IIb Public [X] monitor

7 CASING: Diameter [X] Steel [ ] Threaded [ ] Plastic [X] Welded
6 in. to 73 ft. depth
_____ in. to _____ ft. depth
Grouted Drill Hole Diameter
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth

Height: Above/Below Surface 1 ft.
Weight 18.97 lbs./ft.
Drive Shoe [X] Yes [ ] No

8 SCREEN: Johnson [ ] Not Installed
Type telescope Diameter 6"
Slot/Gauze .015 Length 4'
Set between 76.5 ft. and 72.5 ft
FITTINGS: [ ] K-Packer [X] Lead Packer [ ] Bremer Check
[ ] Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL:
14 ft. below land surface [ ] Flow

10 PUMPING LEVEL: below land surface
76 ft. after 1 hrs. pumping at 45 G.P.M.
_____ ft. after _____ hrs. pumping at _____ G.P.M

11 WELL HEAD COMPLETION: [ ] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [X] No [ ] Yes From _____ to _____ ft
[ ] Neat cement [ ] Bentonite [ ] Other _____
No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination
Type _____ Distance _____ ft. Direction _____
Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP: [X] Not Installed [ ] Pump Installation Only
Manufacturer's name _____
Model number _____ HP _____ Volts _____
Length of Drop Pipe _____ ft. capacity _____ G.P.M
TYPE: [ ] Submersible [ ] Jet _____
PRESSURE TANK
Manufacturer's name _____
Model number _____ Capacity _____ Gallons

2 FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
sAnd & poor rock-clayey	15	15
gravel	5	20
sand-clean, water bearing	33	53
sand-muddy, clayey	17	70
sand&gravel	7	77
sand & gravel-clayey	2	79
bedrock encountered at 79'		

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling, Inc. 16777
REGISTERED BUSINESS NAME REGISTRATION NO.
Address Rte 1, Box 386C, Hancock, Mich.
Signed _____ Date 10NOV84
AUTHORIZED REPRESENTATIVE

D67d 2/84

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a

GEOLOGICAL SURVEY COPY

GEOLOGICAL SURVEY NO

WATER WELL AND PUMP RECORD

PART 127 ACT 368, P A 1978

PERMIT NUMBER

1 LOCATION OF WELL

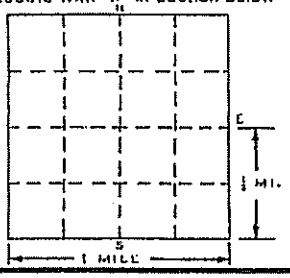
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW ¼ SE ¼ SE ¼	2	47 N/S	19 E/W

Distance And Direction From Road Intersection

At Humboldt Pit North End

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map

Monitor Well #2

3 OWNER OF WELL

Callahan Mining Corp.

Address Rtel, Box 300
Champion, Michigan 48814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH (completed) 30 ft

Date of Completion 02NOV84

5 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug
[ ] Hollow rod [ ] Auger [ ] Jetted [ ]

6 USE [ ] Domestic [ ] Type I Public [ ] Type III Public
[ ] Irrigation [ ] Type IIa Public [ ] Heat pump
[ ] Test Well [ ] Type IIb Public [X] monitor

7 CASING Diameter [X] Steel [ ] Threaded [ ] Plastic [X] Welded
6" in. to 26.5 ft. depth
___ in. to ___ ft. depth
Grouted Drill Hole Diameter
___ in. to ___ ft. depth
___ in. to ___ ft. depth

Height Above/Below Surface 1'[illegible]
Weight 18.97 lbs/ft
Drive Shoe [X] Yes [ ] No

8 SCREEN Johnson [ ] Not Installed
Type telescope Diameter 6"
Slot/Gauze .010 Length 4'
Set between 26 ft and 30 ft
FITTINGS [ ] K-Packer [X] Lead Packer [ ] Bremer Check
[ ] Blank above screen ___ ft Other ___

9 STATIC WATER LEVEL
___ ft. below land surface [ ] Flow

10 PUMPING LEVEL below land surface
30 ft. after 1 hrs pumping at 25 G P M
___ ft after ___ hrs pumping at ___ G P M

11 WELL HEAD COMPLETION [ ] Pitless adapter [X] 12" above grade
[ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [X] No [ ] Yes From ___ to ___ ft
[ ] Neat cement [ ] Bentonite [ ] Other ___
No of bags of cement ___ Additives ___

13 Nearest source of possible contamination
Type ___ Distance ___ ft. Direction ___
Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP [X] Not Installed [ ] Pump Installation Only
Manufacturer's name ___
Model number ___ HP ___ Volts ___
Length of Drop Pipe ___ ft capacity ___ G P M
TYPE [ ] Submersible [ ] Jet ___
PRESSURE TANK
Manufacturer's name ___
Model number ___ Capacity ___ Gallons

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
sand, gravel, poorrock-clayey	20	20
sand - clean, course	11	31
clayey silt	2	33
bedrock	1.5	34.5

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

Siirtola Well Drilling, Inc. 1677
REGISTERED BUSINESS NAME REGISTRATION NO

Address Rte 1, Box 386C, Hancock, Mich.

Signed [signature] Date 10NOV84
AUTHORIZED REPRESENTATIVE

D67d (Rev 10-80)

GEOLOGICAL SURVEY NO.

WATER WELL AND PUMP RECORD

PERMIT NUMBER

1 LOCATION OF WELL

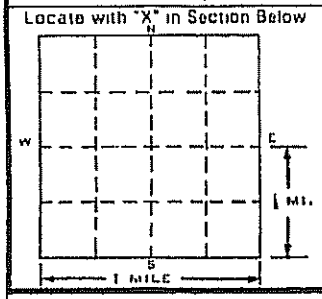
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW ¼ SW ¼ NW ¼	11	47 N/S	19 W

Distance And Direction From Road Intersection

At Humboldt Pit South End

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map

Monitor Well #3

3 OWNER OF WELL:

Address Callahan Mining Corp.
Rte 1, Box 300
Champion, Mich. 49814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH: (completed) 45 ft.

Date of Completion 2NOV84

6 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ] _____

6 USE: [ ] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [X] Heat pump [ ] Test Well [ ] Type IIb Public [X] monitor

7 CASING: Diameter [X] Steel [ ] Threaded [ ] Plastic [X] Welded
6 in. to 41 ft. depth
_____ in. to _____ ft. depth
Grouted Drill Hole Diameter
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth

Height: Above/Below Surface 1 ft.
Weight 18.97 lbs./ft.
Drive Shoe [X] Yes [ ] No

8 SCREEN: Johnson [ ] Not Installed
Type telescope Diameter 6"
Slot/Gauze .015 Length 4'
Set between 41 ft. and 45 ft
FITTINGS: [ ] K-Packer [X] Lead Packer [ ] Bremer Check
[ ] Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL:
29 ft. below land surface [ ] Flow

10 PUMPING LEVEL: below land surface
45 ft. after 1 hrs. pumping at 10 G.P.M.
_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: [ ] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [X] No [ ] Yes From _____ to _____ ft.
[ ] Neat cement [ ] Bentonite [ ] Other _____
No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination
Type _____ Distance _____ ft. Direction _____
Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP: [X] Not Installed [ ] Pump Installation Only
Manufacturer's name _____
Model number _____ HP _____ Volts _____
Length of Drop Pipe _____ ft. capacity _____ G.P.M
TYPE: [ ] Submersible [ ] Jet _____
PRESSURE TANK:
Manufacturer's name _____
Model number _____ Capacity _____ Gallons

2 FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
sand & poor rock	25	25
sand - fine, clean	5	30
sand & gravel	15	45
bedrock encountered at 45'		

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling, Inc. 1677
REGISTERED BUSINESS NAME REGISTRATION NO.

Address Rte 1, Box 386C, Hancock, Mich.

Signed _____ Date 10November84
AUTHORIZED REPRESENTATIVE

D67d 2/84

GEOLOGICAL SURVEY COPY

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a

GEOLOGICAL SURVEY NO.

WATER WELL AND PUMP RECORD

PERMIT NUMBER

1 LOCATION OF WELL

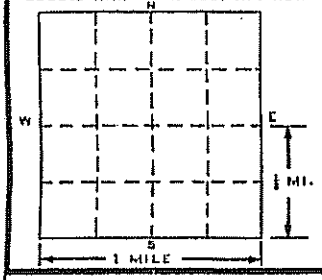
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW ¼ SW ¼ NW ¼	11	47 N/S	19 E/W

Distance And Direction From Road Intersection

At Humboldt Pit South End

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map:

Monitor Well #4

3 OWNER OF WELL:

Address: Callahan Mining Corp,
Rte 1, Box 300
Champion, Mich. 49814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH: (completed) 75 ft. | **Date of Completion** 2NOV84

5 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ] _____

6 USE: [ ] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [ ] Heat pump [ ] Test Well [ ] Type IIb Public [X] monitor

7 CASING: Diameter [X] Steel [ ] Threaded [ ] Plastic [X] Welded

6 in. to 71.5 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height: Above/Below Surface 1 ft

Weight 18.97 lbs/ft

Drive Shoe [X] Yes [ ] No

8 SCREEN Johnson [ ] Not Installed

Type telescope Diameter 6"

Slot/Gauze .006 Length 4'

Set between 75 ft. and 71 ft.

FITTINGS: [ ] K-Packer [X] Lead Packer [ ] Bremer Check

[ ] Blank above screen _____ ft Other _____

9 STATIC WATER LEVEL:

_____ ft. below land surface [ ] Flow

10 PUMPING LEVEL: below land surface

75 ft. after 1 hrs. pumping at 17 G.P.M.

_____ ft after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION. [ ] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [X] No [ ] Yes From _____ to _____ ft

[ ] Neat cement [ ] Bentonite [ ] Other _____

No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type _____ Distance _____ ft Direction _____

Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP: [X] Not Installed [ ] Pump Installation Only

Manufacturer's name _____

Model number _____ HP _____ Volts _____

Length of Drop Pipe _____ ft. capacity _____ G.P.M.

TYPE: [ ] Submersible [ ] Jet _____

PRESSURE TANK:

Manufacturer's name _____

Model number _____ Capacity _____ Gallons

2 FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
sand & gravel	25	25
sand - clayey	30	55
sand - clean	20	75
sand & gravel - clayey	21	96
bedrock encountered at 96'		

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

,well was drilled to 96' then well casing was pulled back and screened from 71' - 75'.

16. WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling, Inc. 1677
REGISTERED BUSINESS NAME REGISTRATION NO.

Address Rte 1, Box 386C, Hancock, Mich.

Signed _____ Date 10November84
AUTHORIZED REPRESENTATIVE

D67d 2/84

GEOLOGICAL SURVEY COPY

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a misdemeanor

GEOLOGICAL SURVEY NO. [ ]

MICHIGAN DEPARTMENT OF PUBLIC HEALTH
WATER WELL AND PUMP RECORD

PERMIT NUMBER [ ][ ][ ][ ][ ][ ][ ][ ][ ]

1 LOCATION OF WELL

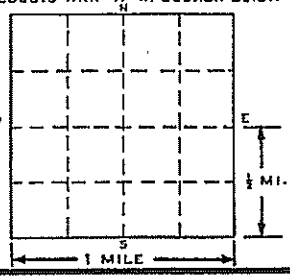
County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLDT	se ¼ SE ¼ SW ¼	2	47 N/S	29 E/W

Distance And Direction From Road Intersection

North end of the Humboldt Pit

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map:

Well # 5

3 OWNER OF WELL:

Callahan Mining Company
Address Rt #1 Box 300
Champion, MI 49814
Address Same As Well Location? ☐ Yes ☒ No

4 WELL DEPTH: 69 FT. | Date Completed MO. 07 DAY 10 YEAR 90 | ☒ New Well ☐ Replacement Well

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☐ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☒ Monitor

7 CASING: Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded
6 in. to 65 ft. depth
_____ in. to _____ ft. depth
Grouted Drill Hole Diameter
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface 1.5 ft.
Weight 18.97 lbs./ft.
Drive Shoe ☒ Yes ☐ No

8 SCREEN: ☐ Not Installed
Type Johnson Stainless Diameter 6"
Slot/Gauze .015 Length 4'
Set between 65 ft. and 69 ft.
FITTINGS: ☒ K-Packer ☐ Lead Packer ☐ Bremer Check
☐ Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL:
4.5 ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface
69 ft. after 1 hrs. pumping at 5 G.P.M.
_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☐ Pitless adapter ☒ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED? ☒ No ☐ Yes From _____ to _____ ft.
☐ Neat cement ☐ Bentonite ☐ Other _____
No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination
Type _____ Distance _____ ft. Direction _____
Well disinfected upon completion? ☐ Yes ☐ No
Was old well plugged? ☐ Yes ☐ No

14 PUMP: ☒ Not Installed ☐ Pump Installation Only
Manufacturer's name _____
Model number _____ HP _____ Volts _____
Length of Drop Pipe _____ ft. capacity _____ G.P.M.
TYPE: ☐ Submersible ☐ Jet _____
PRESSURE TANK:
Manufacturer's name _____
Model number _____ Capacity _____ Gallons

2 FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Large Rocks	4'	4'
Sand, Clayey	10'	14'
Sand, Clean	16'	30'
Sand, Clayey	12'	42'
Sand & Gravel, Clayey	6'	48'
Sand, Clayey	5'	53'
Sand & Gravel Clayey	16'	69'

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling 1677
REGISTERED BUSINESS NAME REGISTRATION NO.
Address Rte 1, Bx 386C, Hancock, Mi. 49930
Signed _____ Date July 20, 1990
AUTHORIZED REPRESENTATIVE

17. Rig Operator's Name:
Paul Ziemnick

D67d 2/89

IMPORTANT: File with deed.

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a

GEOLOGICAL SURVEY NO.

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

WATER WELL AND PUMP RECORD

PERMIT NUMBER

1 LOCATION OF WELL

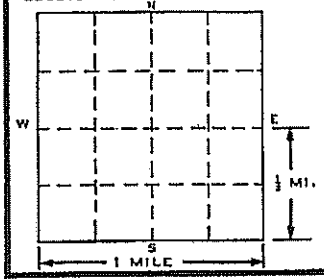
County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLDT	SE ¼ SE ¼ SW ¼	2	47 N/S	29 E/W

Distance And Direction From Road Intersection

At the north end of the Humboldt Pit

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map:

Well # 5A

3 OWNER OF WELL:

Callahan Mining Company

Address Rt#1 Box 300

Champion, MI 49814

Address Same As Well Location? ☐ Yes ☒ No

4 WELL DEPTH: 29 FT.

Date Completed MO. 07 DAY 10 YEAR 90

☒ New Well ☐ Replacement Well

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☐ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☒ Monitor

7 CASING: Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded

6 in. to 25 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height: Above/Below Surface 1.5 ft.

Weight 18.97 lbs./ft.

Drive Shoe ☒ Yes ☐ No

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand, Dark Brown	16'	16'
Sand, Clean	13'	29'

USE A 2ND SHEET IF NEEDED

8 SCREEN: ☐ Not Installed

Type Johnson Stainless Diameter 6"

Slot/Gauze .012 Length 4'

Set between 25 ft. and 29 ft.

FITTINGS: ☒ K-Packer ☐ Lead Packer ☐ Bremer Check

☐ Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL:

4.5 ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface

29 ft. after 1 hrs. pumping at 50 G.P.M.

_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☐ Pitless adapter ☒ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED? ☒ No ☐ Yes From _____ to _____ ft.

☐ Neat cement ☐ Bentonite ☐ Other _____

No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type _____ Distance _____ ft. Direction _____

Well disinfected upon completion? ☐ Yes ☐ No

Was old well plugged? ☐ Yes ☐ No

14 PUMP: ☒ Not Installed ☐ Pump Installation Only

Manufacturer's name _____

Model number _____ HP _____ Volts _____

Length of Drop Pipe _____ ft. capacity _____ G.P.M.

TYPE: ☐ Submersible ☐ Jet _____

PRESSURE TANK:

Manufacturer's name _____

Model number _____ Capacity _____ Gallons

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling 1677

REGISTERED BUSINESS NAME REGISTRATION NO.

Address Rte 1, Box 386C, Hancock, Mi. 49930

Signed _____ Date July 20, 1990

AUTHORIZED REPRESENTATIVE

17. Rig Operator's Name:

Paul Ziemnick

D67d 2/89

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a

IMPORTANT: File with deed.

GEOLOGICAL SURVEY NO. [ ]

WATER WELL AND PUMP RECORD

PERMIT NUMBER [ ]

1 LOCATION OF WELL

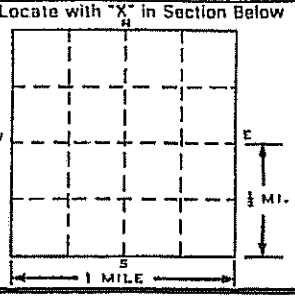
County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLDT	SE ¼ SE ¼ SW ¼	2	47 N/S	29 E/W

Distance And Direction From Road Intersection

At the north end of the Humboldt Pit

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map:

Well # 6

3 OWNER OF WELL:

Callahan Mining Company

Address Rt #1 Box 300
Champion, MI 49814

Address Same As Well Location? ☐ Yes ☒ No

4 WELL DEPTH: 69 FT. Date Completed MO. 07 DAY 10 YEAR 90 ☒ New Well ☐ Replacement Well

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☐ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☒ Monitor

7 CASING: Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height: Above/Below Surface 1.5 ft.

Weight 18.97 lbs./ft.

Drive Shoe ☒ Yes ☐ No

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Black Muck	7'	7'
Sand - Clayey	11'	18'
Sand - Clean	20'	38'
Sand - Clayey	8'	46'
Gravel	23'	69'
Bedrock		
USE A 2ND SHEET IF NEEDED		

8 SCREEN: ☐ Not Installed

Type Johnson Stainless Diameter 6"

Slot/Gauze .015 Length 4'

Set between 65 ft. and 69 ft.

FITTINGS: ☒ K-Packer ☐ Lead Packer ☐ Bremer Check

☐ Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL:

2 ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface

69 ft. after 1 hrs. pumping at 30 G.P.M.

_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☐ Pitless adapter ☒ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED? ☒ No ☐ Yes From _____ to _____ ft.

☐ Neat cement ☐ Bentonite ☐ Other _____

No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type _____ Distance _____ ft. Direction _____

Well disinfected upon completion? ☐ Yes ☐ No

Was old well plugged? ☐ Yes ☐ No

14 PUMP: ☒ Not Installed ☐ Pump Installation Only

Manufacturer's name _____

Model number _____ HP _____ Volts _____

Length of Drop Pipe _____ ft. capacity _____ G.P.M.

TYPE: ☐ Submersible ☐ Jet _____

PRESSURE TANK:

Manufacturer's name _____

Model number _____ Capacity _____ Gallons

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling 1677
REGISTERED BUSINESS NAME REGISTRATION NO.

Address Rte 1, Box 386C, Hancock, Mi. 49930

Signed [signature] Date July 20, 1990
AUTHORIZED REPRESENTATIVE

17. Rig Operator's Name:

Paul Ziemnick

D67d 2/89

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a misdemeanor.

IMPORTANT: File with deed.

WELL OWNER COPY

GEOLOGICAL SURVEY NO. [ ]

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

WATER WELL AND PUMP RECORD

PERMIT NUMBER [ ][ ][ ][ ][ ][ ][ ][ ]

1 LOCATION OF WELL

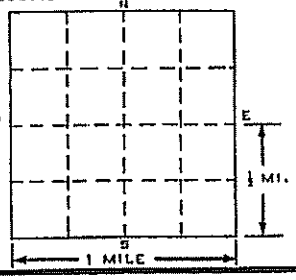
County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLDT	SE ¼ SE ¼ SW ¼	2	47 N/S	29 E/W

Distance And Direction From Road Intersection

At the north end of the Humboldt Pit

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map:

Well # 6A

3 OWNER OF WELL:

Callahan Mining Company

Address Rt #1 Box 300

Champion, MI 49814

Address Same As Well Location? ☐ Yes ☒ No

4 WELL DEPTH: 26 FT. Date Completed MO. 07 DAY 10 YEAR 90 ☒ New Well ☐ Replacement Well

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☐ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☒ Monitor

7 CASING: Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded

6 in. to 22 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height: Above/Below Surface 1.5 ft.

Weight 18.97 lbs./ft.

Drive Shoe ☒ Yes ☐ No

8 SCREEN: Johnson ☐ Not Installed

Type Stainless Diameter 6"

Slot/Gauze .012 Length 4'

Set between 22 ft. and 26 ft.

FITTINGS: ☒ K-Packer ☐ Lead Packer ☐ Bremer Check

☐ Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL:

_____ ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface

26 ft. after 1 hrs. pumping at 15 G.P.M.

_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☐ Pitless adapter ☒ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED? ☒ No ☐ Yes From _____ to _____ ft.

☐ Neat cement ☐ Bentonite ☐ Other _____

No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type _____ Distance _____ ft. Direction _____

Well disinfected upon completion? ☐ Yes ☐ No

Was old well plugged? ☐ Yes ☐ No

14 PUMP: ☒ Not Installed ☐ Pump Installation Only

Manufacturer's name _____

Model number _____ HP _____ Volts _____

Length of Drop Pipe _____ ft. capacity _____ G.P.M.

TYPE: ☐ Submersible ☐ Jet _____

PRESSURE TANK:

Manufacturer's name _____

Model number _____ Capacity _____ Gallons

2 FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Black Muck	10'	10'
Sand - Clayey	5'	15'
Sand	11'	26'

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

Paul Ziemnick

17. Rig Operator's Name:

16. WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling 1677

REGISTERED BUSINESS NAME REGISTRATION NO.

Address Rte 1, Box 386C, Hancock, Mi. 49930

Signed _____ Date July 20, 1990

AUTHORIZED REPRESENTATIVE

D67d 2/89

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a

IMPORTANT: File with deed

WELL OWNER COPY

A-8

Historical Documents

STATE OF MICHIGAN

JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: http://www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

MARQUETTE DISTRICT OFFICE
1990 US HIGHWAY 41 S
MARQUETTE MI 49855

November 1, 1996

Mr. Luke J. Russell, Director
Environmental/Regulatory Affairs
Coeur d'Alene Mines Corporation
505 Front Avenue - P.O. Box I
Coeur d'Alene, Idaho 83816-0316

Dear Luke:

As promised during our November 1 inspection of the Ropes Mine site, I am responding to your October 31 letter to me and your October 17 letter to Jim Rice. I'll address the issues in the order which you raised them.

1. Surface Water Monitoring - Ropes Mine

There are two issues which surface water monitoring need address: a) possible venting of mine water to the surface water via the sand fill and b) contamination of surface water runoff from mining wastes (primarily waste rock). These issues can be covered by adding a monitoring location downstream of SW-2, just upstream of this drainage's confluence with Deer Lake. Please provide us with a revised sampling plan, including this site.

As we discussed, historical data shows arsenic at SW-2 and SW-3 somewhat above the current surface water standard for arsenic (50 ug/l). Since this standard is in the process of being revised by USEPA, we are not requiring immediate corrective action. If additional sampling shows violations of water quality standards, remedial action will be required. Quarterly sampling of these surface waters should continue until consistent compliance with water quality standards has been achieved. Since surface water in the vicinity of the mine is contaminated and revegetation isn't complete, it is inappropriate to terminate the storm water discharge permit at this time. Improved revegetation is needed to reduce percolation of water through the waste rock and reduce soil erosion. Revegetation work, including hydroseeding, was part of the $50,000 of environmentally beneficial projects which Callahan agreed to conduct as part of the 1992 Administrative Consent Order.

2. Humboldt Pit Nickel Concentrations

Adjustment of previously collected total nickel data based on a regression model is inappropriate. The variation in the relationship between total and dissolved nickel concentrations could easily be caused by algae blooms or other natural phenomena. I again suggest that you collect multiple samples during months when high nickel concentrations are expected. You should also save a preserved split sample for analysis in the event of questionable results.

We stand behind our agreement (as spelled out in my June 20, 1996 letter to you) for termination of the National Pollutant Discharge Elimination System (NPDES) permit after the nickel concentration in the pit discharge has been below 190 ug/l for 12 consecutive months.

3. Pyrite Residue and Buried Pyrite Residue

These issues must be resolved with the landowners and MDEQ's Waste Management and Environmental Response Divisions.

Please provide us with the results of your recent surface water samples at the Ropes Mine when they are available.

Sincerely,

Steve Casey, P.E.
Environmental Engineer
Surface Water Quality Division
906-228-6561

dmk

c: Mr. Bill Scarffe, Callahan Mining Corporation
bc: Jack Rydquist/Jim Rice - SWQD
Rob Schmeling, WMD
Frank Woodward - ERD
Tom Rohrer - SWQD
Gary Boersen - SWQD
William Taft - SWQD

Luke J. Russell
Director of Environmental/
Governmental Affairs

RECEIVED
JUL 21 1997
Surface Water Quality Div.

COEUR
THE PRECIOUS METALS COMPANY

July 16, 1997

Coeur d'Alene Mines Corporation
505 Front Avenue, P.O. Box I
Coeur d'Alene, Idaho 83816-0316
Telephone 208.667.3511
Facsimile 208.667.3617

Mr. Steve Casey, P.E.
Environmental Engineer
DEQ - Surface Water Quality Division
Marquette District
1990 U.S. Highway 41 South
Marquette, MI 49855

Re: NPDES Permit - Humboldt Pit

Dear Steve:

During our meeting of June 1996, we discussed compliance issues associated with the discharge from the Humboldt Pit, in particular, the compliance concentration for nickel. Subsequent to that meeting, the Department of Environmental Quality sent Coeur a letter indicating that, "The NPDES Permit for the Humboldt Pit may be terminated any time after the pit discharge Ni concentration has been less that 190 ug/l (as a monthly average) for 12 consecutive months."

Enclosed, for your review, are results of water quality monitoring for nickel in the Humboldt Pit discharge, since January 1991. These results indicate that, for the 12 month period of, July 1996 through June 1997, the discharge has been in compliance with this requirement. The monthly average during this period was 99 ug/l. There has been no one sample that exceeded 190 ug/l.

By this letter, we request that the Michigan Department of Environmental Quality initiate actions to de-activate the NPDES Permit for the Humboldt Pit, pursuant to your letter of June 1996 (enclosed). We also intend to stop monthly sampling, as the discharge has met compliance.

Please feel free to call me should you have any questions in this regard, or if you feel a site visit would be necessary to initiate these actions.

Thank you for your consideration and cooperation.

Sincerely,

Luke J. Russell

LJR/jl

Enclosures

cc: Bill Boyd
Bill Scarffe

From: DNRDC(CASEYS)
To: DEQ-UP.DEQ-Marquette(CASEYS)
Date: Fri, Dec 5, 1997 2:10 pm
Subject: Callahan Humboldt MillMI 0044393

From:
Subject: (u)
*** Forwarded from CASEYS --DNRDC 09/05/97 15:20:26 ***
To: RAISANER--DNRDC

From: Steve
Subject: Callahan Humboldt MillMI 0044393

Please terminate this permit, per the July 16 request from Luke Russell. The company has met the requirements for termination spelled out in my June 20, 1996 letter to Luke Russell. Our own sample in June of this year confirms the low nickel levels in the pit documented by Callahan. This permit needs to be terminated by the end of the FY, as it is one of our 22 . . .

Thanks, Steve

cc: DRULLIND--GW DRULLINGER, DAVID

Appendix B

Historical Reports and Memoranda

B-1

Traverse Engineering Services, November, 1984
Humboldt Pit Hydrogeological Report

CALLAHAN MINING CORPORATION

CHAMPION, MICHIGAN

HUMBOLDT PIT HYDROGEOLOGICAL REPORT

HUMBOLDT TOWNSHIP,
MARQUETTE COUNTY, MICHIGAN

NOVEMBER 1984

TRAVERSE ENGINEERING SERVICES, P.C.
100 QUINCY STREET - P.O. BOX 655
HANCOCK, MICHIGAN 49930

CALLAHAN MINING CORPORATION

CHAMPION, MICHIGAN

HUMBOLDT PIT HYDROGEOLOGICAL REPORT

HUMBOLDT TOWNSHIP, MARQUETTE COUNTY, MICHIGAN

November 1984

TRAVERSE ENGINEERING SERVICES, P.C.
100 Quincy Street - P. O. Box 655
Hancock, Michigan 49930

TES Traverse Engineering Services, P.C.

ENGINEERS / SURVEYORS / GEOLOGISTS

100 QUINCY STREET • P.O. BOX 655 • HANCOCK, MICHIGAN 49930

906/482-6696

November 30, 1984

Callahan Mining Corporation
Route 1, Box 300
Champion, MI 49814

Attn: Mr. Ross Wayment
Unit Manager

Re: Humboldt Pit Hydrogeological Report

Ref: TES File No. 153

Dear Mr. Wayment:

In accordance with our agreement dated September 10, 1984, we are pleased to submit this hydrogeologic report for the Humboldt Pit Area located in Sections 2 and 11, T 47 N, R 19 W.

Very truly yours,

TRAVERSE ENGINEERING SERVICES, P.C.

Richard D. Supina

Richard D. Supina, P.E., R.L.S.
President

RDS:cs

Enclosure

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SUMMARY

The following report presents findings of various investigations of the Humboldt Pit area. The investigations were undertaken as part of the process of securing permits for storage of mill tailings in the pit. Three separate investigations were undertaken during September, October and early November of 1984.

A study was undertaken to determine the hydrogeologic situation at the pit and immediate area. An analysis of precipitation and runoff data, using previously published information and data collected during September and October, was made to estimate inflow and discharge rates for the pit. Monitor wells were installed and shallow refraction seismic surveys were conducted to supplement available subsurface information. Water samples were collected from the pit, monitor wells and surface drainage features and analyzed for a variety of parameters to provide background water quality data and to verify ground water flow postulations.

A biological reconnaissance of the pit was conducted by Stephen H. Bowen, PHD. Data was collected from the pit to determine thermal stratification, water quality and fish population. Bottom samples were collected for determination of benthic organisms and an investigation of flora found in the pit was conducted.

INTRODUCTION

Callahan Mining Corporation is presently in the process of converting the idled Humboldt Mill in Humboldt Township, Marquette County, to process gold bearing ore from the Ropes Gold Mine. Ore from the Ropes Mine will be transported by truck from the mine to the Humboldt Mill property, a distance of 12 miles. Ore will be crushed, milled and then leached in a cyanidation process. Flotation and concentrate tailings will be pumped in slurry form to the bottom of the abandoned Humboldt Pit.

After cessation of mining in the pit in about 1968, dewatering pumps were shut off and the pit was allowed to fill. Water depth in the pit is about 350 feet at its deepest and pit water surface elevation has apparently stabilized at the existing level. Tailings will be deposited near the bottom below the 100 foot level.

Callahan Mining Corporation engaged Traverse Engineering Services to define site hydrology and hydrogeology, to determine the fate of the tailings after deposition, to prepare a limnological report on the pit, establish baseline water quality and to prepare an abbreviated environmental assessment of the effects of tailings storage in Humboldt Pit.

PROPOSED OPERATION

Callahan Mining Corporation will convert the idled Humboldt Mill, an iron ore processing plant, to extract small amounts of gold and silver from the Kitchi Schist; the principal ore body at the Ropes Gold Mine. (See Table I for mineralogical composition of the ore zone). A conventional flotation/leaching operation will be utilized to process about 600,000 tons of ore per year. The plant is designed to process up to 2,000 tons per day and design of the tailings transportation and storage is based on that rate.

TABLE I

APPROXIMATE MINERALOGIC COMPOSITION OF

ROPES MINE ORE ZONE

	Kitchi Greenstone	Kitchi B
Quartz	30%-50%	10%-60%
Chlorite	20%-50%	10%-20%
Sericite	10%-50%	10%-30%
Carbonates (Ca, Mg, Fe)	0%-20%	10%-50%
Feldspar (Various)	tr	tr
Iron Oxides	tr	tr
Talc		tr-10%
Pyrite	tr-10%	tr
Galena-Tetrahedrite	tr	tr
Chalcopyrite	tr	tr
Sphalerite	tr	tr
Gold (Native)	present	present
Silver (Native)	tr	tr
Scheelite	tr	tr
Molybdenite	tr	tr
Graphite	tr	

The total metallic sulfide content of the ore is estimated to average five percent.

The process operations consist of crushing, grinding in ball mills, flotation concentration, cyanide leaching of a sulfide concentrate and gold/silver recovery using zinc precipitation. Approximately 800 gpm of water will be withdrawn from the Humboldt Pit for use in processing. The water will be returned to the pit in the tailings slurry. The plant is designed to extract gold and silver contained in iron, copper, lead and zinc sulfides.

After grinding in ball mills until 80% of the ore passes the 200 mesh sieve, the slurry is mixed with Xanthate 350, a flotation agent, and polypropylene glycol and passed through flotation cells. The flotation concentrate contains 95% of the precious metals and sulfide minerals, and represents about 5% of the raw ore by weight. The remaining 95% of the raw ore is considered waste and will be thickened and deposited as tailings on the bottom of the Humboldt Pit.

The flotation concentrate will be subjected to additional grinding and leaching by dissolution with a high alkaline-weak cyanide solution. The concentrate is ground until about 80% passes a 400 mesh sieve.

Gold and silver are taken into solutions as cyanide complexes in a leaching circuit consisting of mechanically agitated tanks in series. The leaching circuit discharges to a thickener where the pregnant solution is separated from the leached waste solids. Additional pregnant solution is removed from the leached solids by a two-stage rinsing and drum filtration. The solids remaining after rinsing and filtration, contain the majority of the base metals extracted by the flotation process. These solids are combined with the flotation tailings and will be deposited in the Humboldt Pit.

The pregnant solution is filtered and deaired. Zinc dust is added to precipitate gold from the solution. The gold precipitate, containing some silver, is then filtered and refined. Barren solutions from this circuit are reused for washing concentrate tailings and for repulping concentrates prior to the leaching circuit.

Cyanide remaining in solution is destroyed by the addition of hypochlorite.

Reagents used in processing the ore and their estimated quantities are as follows:

Xanthate 350	150,000 lbs./yr.
Aerofroth 65	12,000 lbs./yr.
Sodium Cyanide	213,000 lbs./yr.
Hydrated Lime	45,000 lbs./yr.
Zinc Dust	6,000 lbs./yr.
Hypochlorite	16,800 lbs./yr.
Diatomacious Earth (Filter Pre-coat)	
Silica (Flux Materials) > Borax & Sodium Carbonate	10,000 lbs./yr.

Gold precipitates will be dried, fluxed and refined in a furnace then cast into dore' bars. At this time it is planned that slag produced will be returned to the grinding circuit.

TAILINGS DISPOSAL/PIT GEOMETRY

The Humboldt Mine was worked as an open pit for about fourteen years between 1954 and 1968. Prior to the mid-1950's mining was mostly underground in three mines. About 1.4 million tons of ore was shipped from the underground mines. In the mid-1950's a concentration plant was constructed near the site and the mining was consolidated into one large open pit. About 9.4 million tons of iron pellets were shipped from the area between 1954 and 1972.

The Humboldt Pit is developed near the nose of a west plunging anticline. The pit essentially straddles the contact between the Negaunee Iron Formation and the overlying Goodrich Quartzite. The resulting pit is arcuate in shape with a length to width ratio of about 4.6. Area of the water surface is about 64 acres. Maximum depth is on the order of 350 feet.

Pit volume, calculated from cross-sections provided by Cleveland Cliffs, is about 8,200 acre feet. Average depth is on the order of 130 feet. The pit has two access ramps, on the north and south ends, and consists of a series of benches to the bottom.

Pit volume below the 100-foot depth is about 4.6 million cubic yards. Using 100 lbs./ft.^{3} as density of the tailings the pit has the capacity to store approximately 6.2 million tons of tailings below the 100-foot depth.

Thickened tailings will be pumped from the mill at a rate of about 800 gpm. Specific gravity of the slurry will be 1.22. Tailings will be deposited on the pit floor by submerged pipeline with deposition at approximately 100 feet below the surface. A representative particle size distribution for the flotation tailing is given in Table II. This distribution represents an average of 95% of the plant feed. The remaining 5%, the concentrate tailing, will be ground to about 80% passing the 400 mesh sieve.

The objective of the tailings deposition plan will be to discharge the tailings on the bottom on the edge of a bench. A density current will be caused by the discharge resulting in the flow of the tailings to the bottom of the pit. If the plant is operating at 2,000 tons per day, deposition of the tailings will increase the water outflow from the pit by 117 gpm.

TABLE II

Process Plant Flotation Tailing -- Typical Particle Size Distribution

95% of plant feed tonnage is flotation tailing

Flotation tailing size distribution:

Mesh	Weight %
+10	
+14	
+20	
+28	
+35	
+48	0.0
+65	0.1
+100	1.0
+150	4.4
+200	10.2
+325	15.2
-325	69.1
	100.0%

Rough Tails
Sp. Gr. = 2.8

The sulfide tailings (remaining 5% of plant feed) will all be ground to -325 mesh.

Sp. Gr. = 3.5

O.A. Sp. Gr. = 2.84

SITE DESCRIPTION

The Humboldt Pit is situated in the NW ¼ of Section 11 and the SW ¼ of Section 2 of T 47 N, R 19 W in Humboldt Township, Marquette County, Michigan. See Exhibit A and Figure 1. The site is located about 3 miles east of Champion and 11 miles west of Ishpeming.

The pit is located near the end of a northwest-southeast trending ridge line. Local relief of the ridge line is approximately 200 feet. The mine pit site is located in a relic erosional channel in the bedrock. The pit was mined to a depth of 300 to 350 feet below the pre-existing bedrock surface near the center of the pit.

The ridge line is thinly mantled by glacial till and areas of outcrop are extensive. Adjacent highlands presently support mixed hardwoods with occasional conifers. Wetland areas north and south of the pit are populated by tag alders and other growth typical of lowlands.

Two large stock piles of waste rock are located northwest and southwest of the site. Two filled tailings ponds, from iron ore processing, are located southwest and southeast of the site. See Exhibit A.

Surface drainage in the mined out vicinity of the site had been altered during iron mining operations to divert runoff away from the pit. At the present time ground water seeps into the pit on the south side. Little or no seepage is evident on the east and west sides of the pit (bedrock is exposed over the greater percentage of the pit boundary). Water is discharged from the pit by seepage through the embankment on the north end. Pit water level is about 3.6 feet above the water in the swamp between the pit and U.S. 41. Drainage from the pit is ultimately discharged into the Escanaba River after passing through about one mile of swamp.

Land ownership and zoning classifications in the vicinity of the site are shown on Exhibit A.

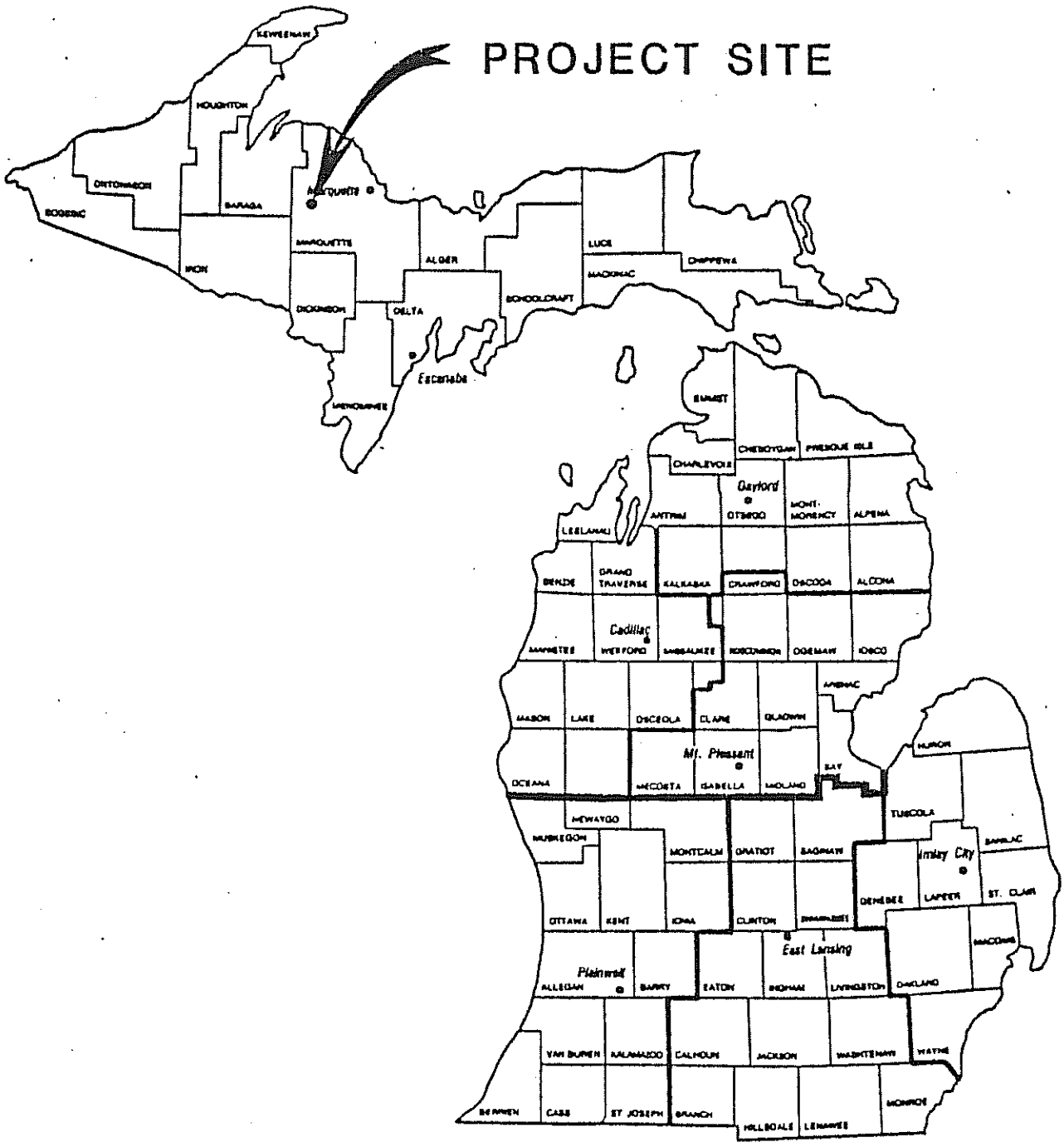


FIGURE 1

SITE LOCATION

SITE ACCESS

Access to the site is via Marquette County Road 601 from State Highway M-95. County Road 601 intersects M-95 about one mile south of the U.S. 41 and M-95 intersection (Koski Korners).

No new access roads will be required to transport and deposit tailings in the pit. The present roadway along the western edge of the pit may be upgraded to permit ore haulage trucks to use the road as the primary route to the mill from U.S. 41.

CLIMATE

Weather conditions in the vicinity of the Humboldt Pit are monitored at a weather station located at Van Riper State Park near Champion and about 4.5 miles northwest of the pit. Data is collected and summarized by the U. S. Department of Commerce, National Oceanic and Atmospheric Administration, Environmental Data Service in cooperation with the Michigan Weather Services. Continuous records are available from 1952 to present.

Temperature data summarized for the period 1952 to 1969 indicate an annual average temperature of 39.1^{o} F. A high of 97° F. was recorded in June 1963, the low of -40° F. was recorded in February 1967. On the average, 3 days per summer exceed 90° F. and 45 days per winter experience temperatures of zero or below.

Precipitation is well distributed throughout the year, with the May to October period receiving about 65% of the average annual total. September is the wettest month, averaging about 4 inches and February is the driest at about 1.25 inches. The average annual precipitation for the period 1952 to 1983 is 33.61 inches. Average monthly precipitation for the period is listed on Table III.

TABLE III

1952-1983 AVERAGE PRECIPITATION AT CHAMPION

January	1.54
February	1.31
March	2.07
April	2.49
May	3.53
June	3.70
July	3.69
August	3.49
September	4.22
October	3.08
November	2.54
December	1.95

The average snowfall for the Champion Station for the period 1952 to 1983 is 137.7 inches. Champion averages 135 days per season with one inch or more snow on the ground.

Evaporation rates for the Upper Peninsula are based on the Class "A" pan data collected at Seney, approximately 90 miles east of Humboldt. Evaporation is estimated to average 25.0 inches per year. The average potential moisture evaporation during the summer season exceeds the average precipitation by 17%. According to data published in Water Supply Paper 1842 the average annual lake evaporation is 31 inches per year.

BEDROCK GEOLOGY

The bedrock geology of the Republic Quadrangle, which contains the Humboldt Pit and Mill, was mapped by W. F. Cannon in 1975. In general, bedrock formations in the Humboldt Pit area are igneous and metamorphic rocks ranging in age from Middle to Upper Precambrian Age.

The bedrock in most of the Republic Quadrangle is Lower Precambrian gneissic rocks of the so-called Southern Complex. These rocks are underlain unconformably by Precambrian stratified rocks of the Marquette Range Supergroup. In the Republic Quadrangle these rocks are present only in the Marquette Synclinorium at the Humboldt Mine and in the Republic Syncline at the Republic Mine.

The Humboldt Mine area is underlain by a complexly deformed mass of the Negaunee Iron Formation. The Goodrich Quartzite overlies the Negaunee Iron Formation at the Humboldt Pit. In general, the east face of the pit is the Negaunee Iron Formation and the Goodrich Quartzite is on the west face. Mining operations removed iron rich rocks at the contact between the Goodrich Quartzite and the Negaunee Iron Formation.

Bedrock Geology is shown on Exhibit B.

The bedrock is poorly jointed and fractured at the Humboldt Pit. Visual inspection of pit walls will confirm the observation. Some fracturing is evident near faults and folding, but even this is considered minor.

Very little water is conducted through the bedrock to the pit. Pit walls were inspected after a 1.3 inch rainfall and on several other occasions. Several wet spots were seen but no areas of appreciable seepage through the bedrock were noted.

SURFICIAL GEOLOGY

During the Pleistocene Period the region experienced several advances and retreats of the ice sheet. The glaciers generally moved in a southwesterly direction as evidenced by glacial striae. As the glaciers retreated, material carried by the glaciers was deposited in two ways. The first method is by direct glacial action. The material is dropped in place with no sorting or washing of the materials. The result is a jumble of all types and sizes of materials known as till. The majority of the study area is covered by till. The till is generally very thin and areas of outcrop are abundant in those areas mapped as till.

The second method of deposition is by glacial meltwater streams. As the glaciers advanced they followed, to some extent, channels previously cut into bedrock by streams. The effect was to widen and deepen the channels. The magnitute of the effect was dependent on the resistance of the rock. The more resistant granites, gneisses and metabasalts were eroded very little, while the less resistant slates experienced severe erosion. The low areas thus eroded provided routes for glacial meltwater streams. As the glaciers melted, fines were carried away by the meltwater streams to be deposited as clays and silts. The coarser material, sands and gravels, remained and are deposited as outwash.

Maps showing survicial geology in the vicinity of the Humboldt Pit were prepared on at least two previous occasions. (References 1 and 2). Reproductions of the data given in these reports is given on Figure 2 and Exhibit D.

In general, the highlands around the pit are mapped as till, while the valleys in the bedrock are mapped as outwash. This was confirmed by the monitor wells installed as part of this investigation.

Stuart, Brown and Rhodehamel conducted fairly extensive sampling of till and outwash in the Marquette Iron Range as part of their 1954 study. The coefficient of permeability was determined on samples from the Morris Mine, Humboldt and West Ishpeming. Values ranged from 60 to 6,000 gpd/ft^2 (3×10^{-3} to 3.0 cm/sec). Values of the coefficient of permeability were also determined for till samples. Values range from 0.1 to 400 gpd/ft^2.

Outwash in the vicinity of the Humboldt Pit was drilled as part of the Central Marquette Water and Sewer Authority Study. Three wells were installed in the NE ¼ of Section 2. Outwash materials are quite similar between the wells installed for this investigation and the Central Marquette Water and Sewer Authority report. In general, the outwash is fine to very fine sand with silt. We therefore estimate that the coefficient of permeability of the outwash in the vicinity of the Humboldt Pit is near the lower end of the range determined by Stuart, Brown and Rhodehamel. For purposes of this study we will use a coefficient of permeability of 200 gpd/ft^2.

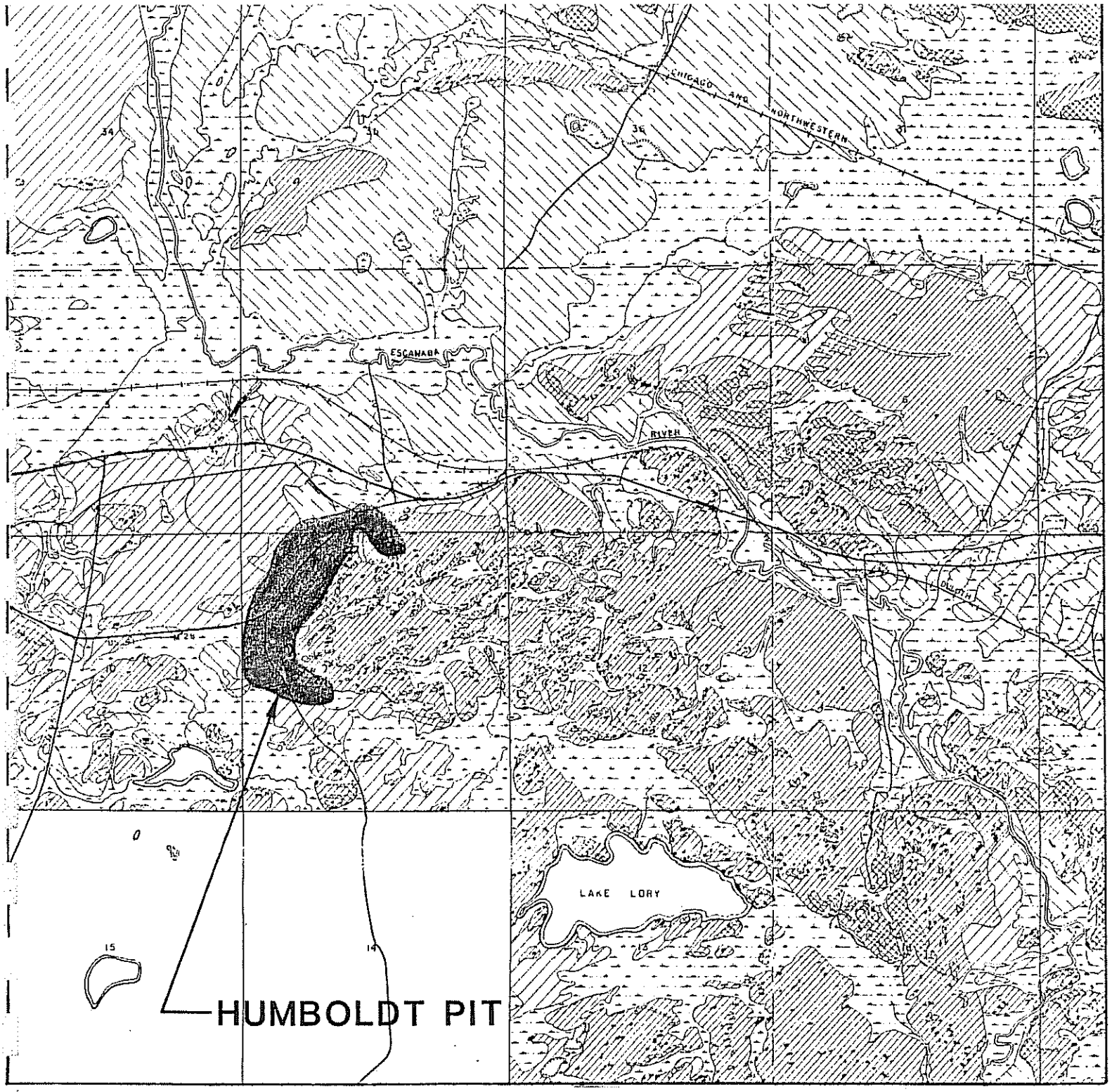


FIGURE 2

MARQUETTE DISTRICT

MAP SHOWING

SURFICIAL GEOLOGY

From Stuart, Brown & Rhodehamel, 1954.

EXPLANATION

- Bedrock outcrop (large)
- Bedrock outcrop (small)
- Unmodified till (surface does not resemble bedrock topography)
- Rock controlled till (surface resembles bedrock topography)
- Outwash
- Swamp
- Pit
- Swamp in outwash
- Terrace
- Lacustrine deposit

Scale 0 1000 2000 3000 4000 5000 Feet
0 1 Mile

BEDROCK TOPOGRAPHY

The surface of the bedrock was mapped as part of the Stuart, Brown and Rhodehamel report of 1954. Bedrock surface contours from that report are shown on Exhibit C. Bedrock contours have been modified to reflect data from a shallow refraction seismic study conducted by Traverse Engineering Services and from the monitor wells installed to provide baseline data.

Shallow refraction seismology was conducted at the eleven stations shown on Exhibit C. Reliable data (reasonable interpretation possible) was received at Stations 1, 4, 8, 9, 10 and 11. The seismic data, with well depths, is sufficient to provide reasonable bedrock surface contours.

Prior to open pit mining at the Humboldt site, the two bedrock valleys shown on Exhibit C headed near the center of the pit. Drainage following the bedrock surface would flow north and south from the present pit area.

On the east and west sides of the pit, the general topography of the bedrock surface is similar to the existing topography. The drainage basin outlined on Exhibit D therefore defines both surface and sub-surface drainage basins along the east and west sides of the pit.

BACKGROUND WATER QUALITY

Eleven sets of water samples were collected from two locations in the pit, from the three culverts carrying drainage from the pit area under U.S. 41 and from the four wells installed for this report. Additional samples were collected from the pit as part of the limnological study. Sample locations are shown on Exhibit D.

Pit samples for the chemical and elemental determinations were taken from the 25 foot depth and from the 200 foot depth. Sample locations are marked #1 and #2 on the Exhibit. Bottom depth at sample point #1 is 247 feet, at point #2 the depth is 225 feet.

The eleven samples were anlayzed for the 37 parameters listed in Table IV. The list represents the combination of suspected compounds or elements that may be in the water, the list of hydrocarbons from the DNR Acid Extract list as required by the NPDES permit, reagents added for ore processing and elements that have been known to occur with the minerals identified in the ore type.

All eleven samples were analyzed by Canton Analytical Laboratory in Ypsilanti, Michigan. Test results are tabulated in Appendix A.

As part of the limnological study, water samples were collected at various depths and analyzed for dissolved oxygen, pH, temperature and conductivity. These results are tabulated on Table VII, page 29.

Temperature measurements were taken in October at various depths at sample point #2 in an effort to determine the degree of mixing during the fall period of instability. Temperature measurements are listed on Table V. Based on the temperature data, we conclude that the maximum depth of mixing is in the range of 75 to 100 feet below the surface.

Water quality data confirm the conclusion that the pit surface discharge (seepage through the embankment) passes through the westerly two culverts, #1 and #2 on Exhibit D, and that the culvert at location #3 is not influenced by the pit. Tested values for conductance, chlorides, sulfates, alkalinity, hardness, calcium, sodium and others show marked differences between the pit, weir #1, and weir #2 and the sample taken from weir #3 location.

Water quality data also confirm the conclusion that water is discharged from the pit through the drift in bedrock trough north of the pit. The samples from wells #1 and #2 show elevations in average concentration of specific conductance, hardness, calcium and an increase in pH as compared to samples from wells #3 and #4.

TABLE IV

WATER QUALITY PARAMETERS - DETECTION LIMITS

1.	Specific Conductance	_____	19.	2,4-Dichlorophenol	10 ppb
2.	Calcium	1 ppm	20.	2,4-Dimethylphenol	10 ppb
3.	Sodium	1 ppm	21.	4,6-Dinitro-O-Cresol	10 ppb
4.	Magnesium	1 ppm	22.	2,4-Dinitrophenol	10 ppb
5.	Chloride	1 ppm	23.	2-Nitrophenol	10 ppb
6.	Sulfate	1 ppm	24.	4-Nitrophenol	10 ppb
7.	Alkalinity	1 ppm	25.	P-Chloro-M-Cresol	10 ppb
8.	Iron	50 ppb	26.	Pentachlorophenol	10 ppb
9.	Chemical Oxygen Demand	_____	27.	Phenol	10 ppb
10.	Total Suspended Solids	_____	28.	2,4,6-Trichlorophenol	10 ppb
11.	Cadmium	1 ppb	29.	Potassium	1 ppm
12.	Copper	20 ppb	30.	Total Organic Carbon	1 ppm
13.	Zinc	50 ppb	31.	Total Nitrogen	6 ppb
14.	Lead	50 ppb	32.	Arsenic	4 ppb
15.	Mercury	0.5 ppb	33.	Antimony	4 ppb
16.	pH	_____	34.	Silver	1 ppb
17.	Cyanide	1 ppb	35.	Chromium	20 ppb
18.	2-Chlorophenol	10 ppb	36.	Nickel	100 ppb
			37.	Hardness	1 ppm

TABLE V

HUMBOLDT PIT WATER TEMPERATURES - SAMPLE LOCATION #2

Surface Depth	°F/°C (9/22/84)	°F/°C (10/24/84)	°F/°C (10/29/84)
Surface	59/15	49/9	46/8
5'		49/9	
10'			
15'	59/15 (5m)		48/9
25'	59/15 (8m)	49/9	48/9
30'	55/13 (9m)	49/9	48/9
35'	52/11 (10m)	48/9	48/9
40'		47/8	48/9
45'	43/6 (15m)	46/8	48/9
50'		42/6	44/7
55'		43/6	
60'	41/5 (20m)	42/6	42/6
65'		42/6	
70'		42/6	41.5/5
75'	40/4.5 (25m)	42/6	41/5
80'			40.5/5
85'			40.5/5
90'	39/4 (30m)		
100'		39.5/4	40.5/5
125'		39.5/4	
150'	40/4.5 (50m)	40/4	40/4
270'	39/4 (90m)		

WELL LOGS

The Marquette County Health Department has 29 well logs on file within the immediate study area. Inferred well log locations are shown on Exhibit A. All wells are domestic with exception of the three installed in the north part of Section 2 as part of the Central Marquette County Water and Sewer Authority Study. Well logs are reproduced in Appendix B.

Four exploratory/monitor wells were installed as part of this investigation. The wells were installed to verify depth to bedrock, to determine drift stratigraphy, to determine elevation of the ground water table and to provide water samples for background water quality testing. Logs of these wells are also provided in Appendix B.

SURFACE WATER

Average annual precipitation at the Humboldt Pit area is 33.6 inches per year. According to the climatological summary for the Champion Station, 65% of the total or 21.7 inches occurs as rainfall during May through October. The remainder falls as snowfall with the area averaging 137.7 inches. Precipitation and snowfall averages are for the years 1952 through 1983. Monthly precipitation averages are given in Table III.

The surface water drainage basin is outlined on Exhibit D. The drainage limits are based on an inspection of the site contour map and a site reconnaissance. The boundary shown reflects grading in the immediate pit vicinity that directs surface runoff away from the site. The pit surface drainage basin covers 217 acres, the pit water surface area is 64 acres or 29.5% of the drainage basin.

The rate of filling of the pit since cessation of mining is unknown. It is known that the pit level has risen about six feet since the aerial photography for mapping was taken in 1975. It appears that the level has stabilized, with discharge equal to recharge, but the date at which this occurred is unknown.

All surface drainage from the pit drains north across U.S. 41 eventually to the Escanaba River about one mile north of the pit. The U.S.G.S. has established a gaging station at the Wolf Lake Road crossing of the river. According to data published by the U.S.G.S., the average discharge for the 17 year period from 1960 to 1972 is 60.9 cfs or 17.6 inches per year. Maximum discharge recorded for the period was 1,640 cfs, the minimum discharge was 4.0 cfs. With precipitation at an average of 33.4 inches per year, 54% of the precipitation occurs as runoff, the remainder is lost by evapotranspiration.

According to data published in Water Supply Paper 1842, 45% of the precipitation falling on the area runs off. The estimate is based on records for the gaging station on the Middle Branch of the Escanaba River about 9 miles southeast of the site. Curves published in Water Supply Paper 1842 indicate that for the 1963 water year, runoff for the Humboldt Pit should be 9 inches or 42% of the rainfall for that year. This data was taken during a several year drought period, so runoff could be expected to be lower than a long term average. Because of the large amount of outcrop and shallow drift on the pit drainage basin, we have assumed that 55% of the average precipitation will runoff.

The only visible discharge from the pit is through the dike/embankment on the north end of the pit. Three areas of seepage were found. They are indicated on Exhibit D.

In an effort to measure the discharge from the Humboldt Pit, flat crested weirs were installed in the three cross culverts under U.S. 41 near the pit. See Exhibit D. The weir installed in the west culvert was installed high enough to block flow in order to divert all flow to Weir #2. Culvert size at Weir #1 is 24 inches, at Weir #2 is 30 inches and at Weir #3 is 30 inches. Subsequent investigations and flow measurements indicate that Weir #3 does not receive drainage from the pit. Refer to water quality data.

A rain gauge was installed at Weir Location #2 to monitor precipitation. Readings taken during September, October and November are given in Table VI. The data are plotted on Exhibit F.

Culverts at Weir Locations #1 and #2 are outside the drainage basin of the pit. The total drainage basin area for Culverts #1 and #2 is 302 acres. The drainage basin for Culvert #3 is outside the limits of the pit and the two westerly culverts.

Based on the limited amount of flow data available it is estimated that the base flow from the pit area is 156 gpm while the average flow for October was about 250 gpm. Flow data and precipitation are tabulated on Table VI and are plotted on Exhibit F.

The large pit area with respect to the drainage basin will tend to dampen out fluctuations in discharge resulting from non-uniform rainfall distribution. Using 54% as runoff fraction for land area and 31 inches per year lake evaporation rate, the average annual discharge can be calculated as follows:

$$\frac{33.5 \times .54 \times 153 \times 326{,}000}{12 \times 365 \times 1{,}440} + \frac{(33.5 - 31) \times 64 \times 326{,}000}{12 \times 365 \times 1{,}440} = 151 \text{ gpm}$$

The only visible discharge from the pit is seepage through the embankment on the north end of the pit. Locations of the seepage are shown on Exhibit D. No other points of discharge were located.

Flow through the embankment was estimated by a flow net analysis. Permeability is estimated to be 200 gpd/ft^2 (10^{-2} cm/sec) based on well logs and published data for fine silty sands. The bedrock trough at the north end of the pit is estimated to be 1,500 feet wide. Seepage flow calculated is 160 gpm.

A visual inspection of the discharge conditions at the embankment indicated that a substantial portion of basin discharge occurs through coarse materials near the surface. A culvert located midway between Well #1 and #2 conducts water across the haul road. See profile on Exhibit E. At this point the discharge through the embankment is estimated to be 75 to 100 gpm.

TABLE VI

U.S. 41 CULVERT FLOW DATA

Date	Weir #1 (gpm)	Weir #2 (gpm)	Wier #3 (gpm)	Pit Elev.	Rainfall
9/15/84				1536.83	
9/22/84	NO WEIR INSTALLED		12		
9/25/84		396	62		1.3"
9/27/84		254	47		
9/29/84		254	47		
10/1/84		228	17		
10/8/84		156	34		0.75"
10/10/84		191	17	1536.79	
10/15/84	-0-	247	22		
10/17/84 AM	-0-	443	62	1536.87	
10/17/84 PM	-0-	443	34		
10/18/84	-0-	443	8		Trace
10/20/84	-0-	228	28		0.4"
10/22/84	-0-	156	22		
10/24/84	-0-	156	22	1536.82	
10/25/84	-0-	156	22		
10/27/84	-0-	210	34		0.2"
10/28/84	-0-	351	78		0.9"
10/29/84	-0-	330	62	1536.91	
10/30/84	-0-	308	55		
10/31/84	-0-				
11/1/84	-0-				
11/4/84	-0-	267	55		
11/7/84	-0-	267	62	1536.88	

GROUND WATER

Ground water in the vicinity of the Humboldt Pit occurs exclusively in the buried bedrock troughs on the north and south ends of the pit. Monitor wells were installed on each end of the pit to determine static water levels and stratigraphy. Ground water flow directions were determined on the basis of water levels in the wells and either the elevation of the pit water surface (south end) or the elevation of water surface at seepage points (north end). Ground water flow directions are shown on Exhibit D.

The monitor well depths and shallow refraction surveys indicate the presence of a bowl or trough in the bedrock surface south of the pit. The depression is saturated and ground water is spilling over the rim and is discharging into the pit. Slope of the water table in the area from the south edge of the pit to approximately 1,500 feet south of the pit is about 73 feet per mile.

Inspection of the site topography would infer that ground water would ordinarily flow in a southerly direction. The pit has a local affect on the water, in essence draining a portion of the saturated drift south of the pit. The estimated limits of zone of influence of the pit are outlined on Exhibit D. The pit has likely moved the ground water divide about 1,000 feet south from pre-mining conditions.

A volume of ground water discharge enters the pit near the south pit access road. See Exhibit D. Water flow was diverted and a weir was installed to measure flow. Flow ranged from 20 to 78 gpm, with flow increasing through the month of October. Flows were measured from October 17th to November 7th.

According to the Stuart, Brown and Rhodehamel report, 28% of the precipitation falling on areas of outwash reaches the ground water reservoir as recharge. The ground water recharge area outlined on Exhibit D covers about 250 acres. Assuming that, for this particular site the aquifer discharge into the pit is equal to recharge, the rate of ground water flow into the pit on the south end is calculated as follows:

$$\frac{33.6 \times 250 \times 326{,}000 \times .28}{12 \times 365 \times 1{,}440} = 122 \text{ gpm}$$

If the flow is determined by Darcy Law using the previous permeability coefficient of 200 gpd/ft^2, hydraulic gradient of 73 feet per mile, an average saturated thickness of 45 feet, and a valley width of 1,600 feet, the discharge is calculated to be:

$$\frac{200 \times 73 \times 1{,}600 \times 68}{5{,}280 \times 1{,}440} = 209 \text{ gpm}$$

The ground water flow into the pit from the south is therefore calculated to be approximately 165 gpm.

At the north end of the pit, water is discharged through the embankment carrying the roadway around the pit. In the previous section ground water discharge was calculated by flow net analysis through the embankment. Ground water discharge was calculated to be 160 gpm. An additional 100 to 150 gpm of surface water was estimated as flowing through upper porous sections of the embankment.

According to field data and calculations, the pit receives water on an average annual basis as follows: 150 gpm precipitation and runoff from its surface area of influence, and; 165 gpm ground water discharge from the south end; for a total of 315 gpm average.

On an annual average basis, surface water discharge based on a base flow estimation from weir data at U.S. 41 is about 160 gpm. The remainder of the discharge or 155 gpm is discharged by ground water flow through the glacial drift filling the bedrock trough running north from the end of the pit. This is confirmed by the flow net analysis using water table gradient determinators from monitor wells and surface water elevations.

Permeability of the bedrock in Marquette Iron Range was investigated by Stuart, Brown and Rhodehamel in their 1954 report. According to their report, the permeability of the iron formation is dependent on capillary fracture and joint systems. Permeability determinations

were made on rock cores from the Humboldt Mine. Values ranged from 0.7 to 1.6 x 10^{-6} gpd/ft^2. These values are undoubtedly lower than values in place since fractures and joints are not represented in the sample. In general, the permeability of the bedrock overall is very much lower than the overlying drift. Because water makes preferential use of those formations with a higher permeability, the greater portion of the discharge from the pit will be through the overlying drift. We therefore conclude that discharge through the bedrock is negligible in relation to total pit discharge.

BIOLOGICAL RECONNAISSANCE

The Humboldt Mine Pit, Marquette County, Michigan, was surveyed on September 22 and 23. The objective was to determine the extent to which the water filled pit, since mining operations ceased, has been colonized by aquatic organisms and to determine the physical structure of the littoral and limnetic zones as may bear on future colonization. Both emergent and submerged vascular aquatic plants have become well established in the north and south parts of the water body near the shoreline. Benthos are few in number and low in diversity by comparison to natural waters at this latitude. Fish are rare, and only two species were collected. The limnetic zone was thermally stratified with the thermocline centered at 10 m depth. Slight oxygen depletion was noted in the hypolimnion. Soft sediment was accumulated to depths greater than 10 cm, but organic debris normally found in the sediment of natural waters was scarce.

A. Physical Characteristics of the Habitat

1. Limnetic Zone

The limnetic zone was sampled at a point in the center of the pit corresponding roughly to the maximum depth (Figure 3). Temperatures were taken with a YSI brand telethermometer lowered to depth from the surface to 30 m, and with the same instrument put in a VanDorn sampler for samples raised from 50 m to 90 m. A VanDorn sampler was used to collect water samples for determination of the following: Oxygen concentration by the Winkler technique, pH using a portable glass electrode pH meter calibrated against a buffer in the field prior to use, and conductivity using a YSI Model 31 conductivity bridge corrected for temperature effects. See Table VII.

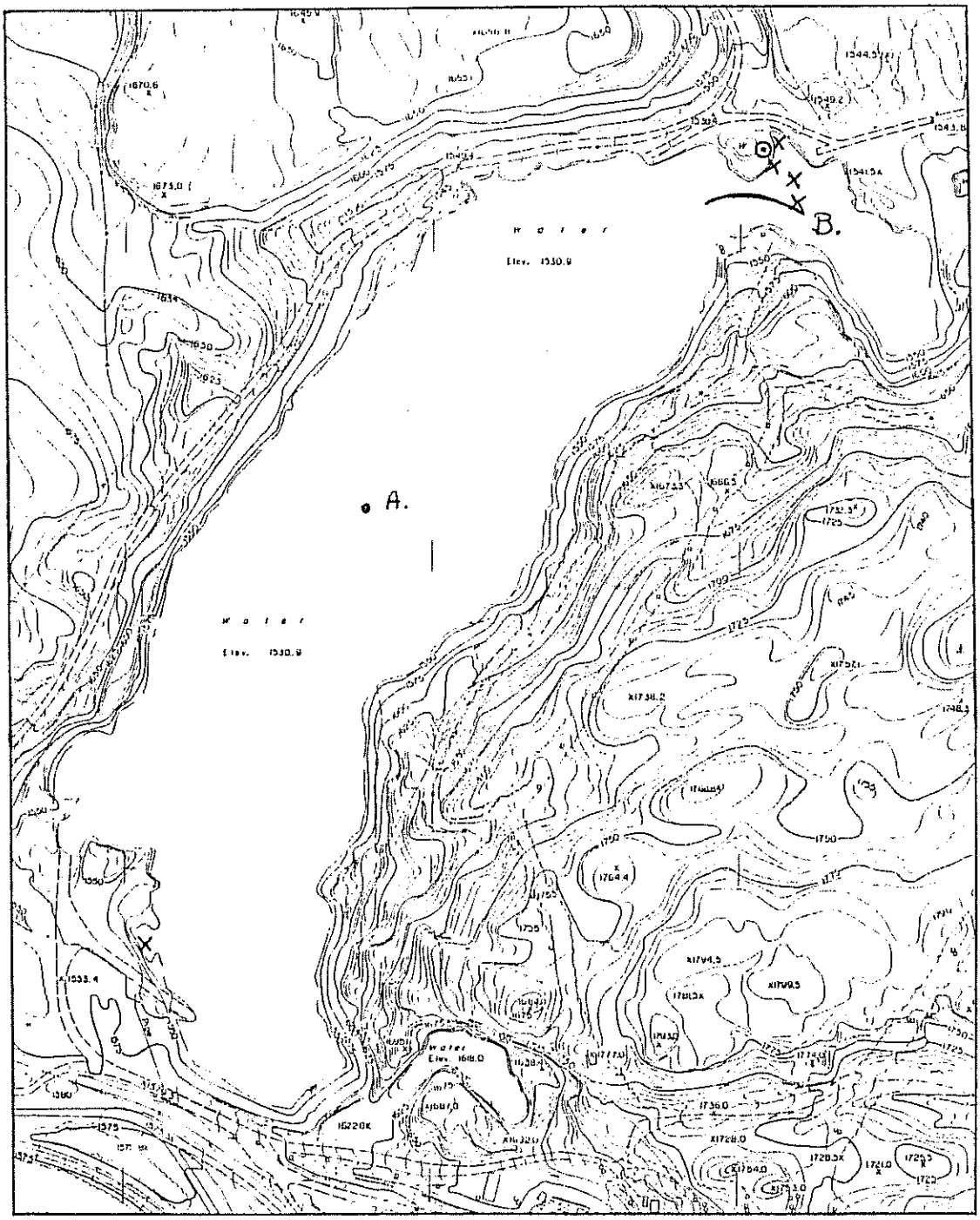


FIGURE 3

Map of the Humboldt Mine pit showing sampling sites. Water samples and temperature profile was collected at A. Gill net was set at B. Bottom samples were taken at sites marked X. Algal mat was found at site marked 0.

TABLE VII

Limnological Characteristics of the Humboldt Mine Pit

September 21, 1984

Depth (m)	Temp. (§C)	O_2 (mg/l)	pH	Conductivity (umohs/cm)
surface	15	9.01	7.9	392
5	15			
8	15			
9	13			
10	11	9.66	7.9	356
15	6	8.81	7.9	413
20	5	8.65	8.1	378
25	4.5			
30	4			
50	4	7.90	8.0	395
90	4	5.91	8.1	358

2. Littoral Zone

The littoral zone was examined from a boat and during a 45 minute SCUBA dive in the north end of the pit to a depth of 10 m. Notes were made on development of the sediments and on the distribution of aquatic organisms.

Soft sediments have accumulated to a depth greater than 10 cm in most areas where the slope of the bottom is gradual enough to retain them. The organic layer that is evident on similar sediments in natural waters was absent. Gravel was found close to shore. Exposed rock was not seen to the depth examined (10 m). Vascular plant debris was found only in the immediate vicinity of macrophyte beds. Evidence of fish feeding activity normally seen as depressions in the sediments of natural waters were rare.

B. Aquatic Organisms

1. Aquatic Plants

Five vascular aquatic plants were locally abundant: Cattails (Typha sp.), Water millfoil (Myriophyllum sp.), Vallisneria americana, Elodea sp., and a thin leaved submergent Potomegeton sp. These were well established in gradually sloped areas with some degree of protection from waves generated along the main axis of the pit. Both sediment accumulation and protection from mechanical disturbances are likely to contribute to aquatic plant growth at these sites.

Algae was not seen in the littoral zone, but from about 3 to 5 m depth a glue-green algal mat was found which covered the bottom for an area of several 10's of meters squared. See Figure 3 and Exhibit C for location.

The water column was stratified with a thermocline centered at 10 m depth (Table VII). The location of the thermocline at only 10% of the maximum depth shows that the pit water is only slightly mixed by winds during the warmer months of the year. Oxygen depletion is evident below the thermocline as is expected as a result of decomposition of organic compounds produced by photosynthesis in the epilimnion. Conductivity values show that the waters are relatively soft, as is typical for most ground water in Marquette County. The slightly elevated conductivity at 15 m probably reflects accumulation of carbonate minerals at the top of the hypolimnion as is frequently seen in lakes. The pH values are again typical of values found for other ground waters in the area. The slightly lower pH value at 15 m may reflect the generation of CO_2 as settling plankton accumulate and decompose at this depth.

The steep slopes of the pit appear to protect the water from the sort of mixing that would be expected in a natural water body of similar dimension not so protected. The condition of the water column at the time of sampling indicates that there is nothing to prevent the water from a complete turnover, but turnover would require consistently strong winds along the north-south axis of the pit during the approximately 60 day period of thermal instability in the spring and fall.

2. Benthic Aquatic Invertebrates

Benthic invertebrates were collected at five sites with a 234 cm^2 Ekman Dredge. See Figure 3 and Exhibit C. Invertebrates retained on a U.S. Standard No. 30 sieve (mesh size = 0.59 mm) were preserved in a solution of 95% isopropynol with 1% Rose Bengal dye to aid in separating invertebrates from organic debris.

Types and abundances of benthic invertebrates are shown in Table VIII. The species found and the diversity of species at each site are similar to other water bodies in the region. In general, the numbers of individuals appear to be less in the pit than in natural water bodies.

3. Fish

Fish were sought by two means: SONAR which gives a relative indication of the abundance of different sizes of fish over a broad range of habitats and depths, and by gill netting which collects individual specimens for study. During nearly four hours of SONAR survey work, only one target that was likely to be a fish was identified (Figure 4). This target was seen at 30 foot depth, and thus the gill net was set on the bottom along a gradual gradient that ranged from about 20 to 40 foot depth. The net was 125 feet long and consisted of 1, 2, 3 and 4 inch stretch measure graded multifilament mesh. It was set at 6:00 PM on September 21 and lifted at 11:00 AM on September 22. Only two fish were collected. One was a brook trout (Salvelinus fontinalis) which measured 13.2 cm standard length. The scales of this specimen bore only 13 circuli with no indication of any annulus formation. Thus it appears that this fish had been growing very rapidly. The second fish collected

TABLE VIII

Benthic invertebrates collected from the Humboldt Mine pit, September 21 and 22, 1984. Figures give numbers of individuals in each taxon at each site.

	Site Depth (m)				
	0.25	0.75	1.5	5	7
Gammaridae					
Gammarus	1	2	–	–	–
Ephemeridae					
Hexagenia	9	33	–	–	–
Ceratapogonidae					
Culiculoides	–	2	–	–	–
Lymnaedae					
Lymnaea	6	39	–	–	–
Planorbidae					
Helisoma	–	4	12	–	–
Caenidae					
Caenis	10	–	–	–	–
Chironomidae	–	–	34	–	–
Oligochaeta	–	–	1	160	150
Gomphidae					
Lanthus	2	–	1	–	–
TOTAL	18	91	48	160	150

was a creek chub (Semotilus acromaculatus) of 15.0 cm standard length. Small minnows that may have been the young of creek chubs were seen in small schools while diving among the macrophyte beds.

These observations lead to the conclusions that (1) the environment is fully adequate to support the reproduction and growth of some fish, but (2) fish have not, as yet, made much progress in colonizing this water body. Because there are no permanent streams entering the pit and because human access to the pit is very limited, it is not surprising that a large fish population has not yet developed.

Fishes in the small stream between the north end of the pit and U.S. Highway 41 were collected using an electric shocker. The three species collected ((brook stickleback (Culaea inconstans), fine scale dace (Chrosomus neogaeus), central mud minnow (Umbra limi)) are all typical of small bogwater streams like the one sampled.

In conclusion, the biological community in the water that have filled the Humboldt Mine pit in Marquette County, Michigan is typical of communities that develop in the earliest stages of colonization of a new aquatic habitat. Current status of the environment and the organisms present suggest that the community would normally be expected to continue to develop. At present, however, the water body does not contain any population of organisms that is considered to have value as a recreational, commercial, aesthetic or germplasm resource.

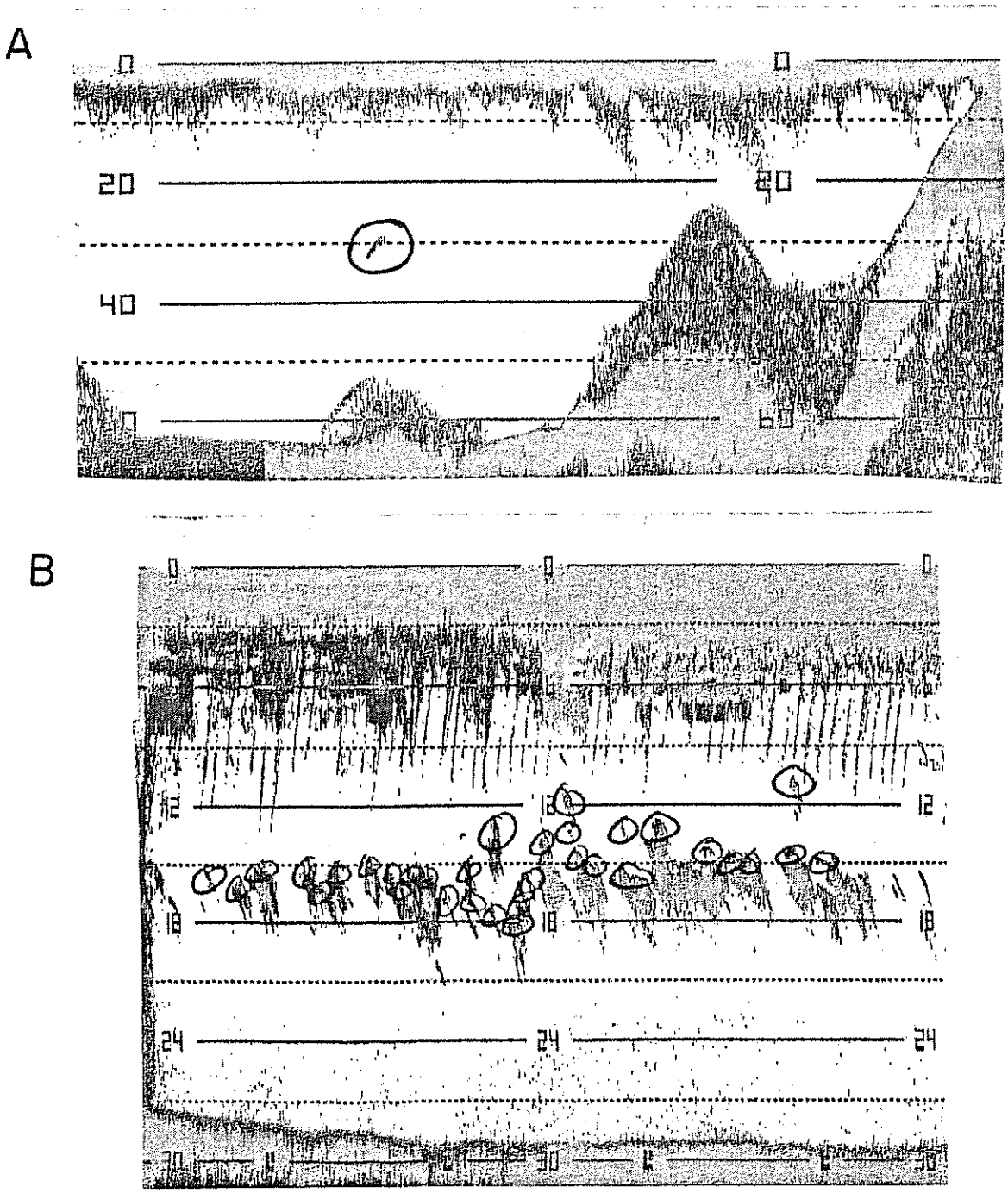


FIGURE 4

SONAR traces that show the presence of fish. (A) The only echo target likely to be a fish that was found in the Humboldt Mine pit. (B) Typical SONAR echos that indicate individual fish in a natural lake.

ENVIRONMENTAL ASSESSMENT

A. Summary - A Brief Description of the Activity and its Objectives

1. Type of Proposed Project

The type of project proposed for this site is tailings storage. The site is projected to operate in excess of ten years.

2. Nature of Material to be Stored

The nature of the material to be stored at this site is mill tailings from ore processing. The source of the tailings will be from the Ropes Gold Mine. The rock to be processed is predominantly the Kitchi Greenstone with minor amounts of Kitchi "B". Approximate mineralogy of the rocks is on Table I, page 3.

3. Site Capacity

The pit volume below existing water level is approximately 13,200,000 CYD. Tailings will be deposited at a rate of 835 CYD/day. The average depth of the pit is 130 feet. It is proposed to store the tailings below the 100 foot depth. Volume below the 100 foot depth is 4.6×10^6 CYD. At the proposed production of 600,000 tons/year, site life will be about 10 years with tailings deposited below the 100 foot depth at a density of 100 lbs./ft.^{3}.

4. Transportation of Tailings

Tailings will be transported from the mill by pipeline in slurry form. Tailings will be discharged on the bottom at approximately the 100 foot depth.

5. Interrelationship with Other Projects and Objectives

The site will be used exclusively for storage of tailings from the Ropes Mine ore processing. Process water will be drawn from the pit and will be returned with the tailings. There are no interrelationships with other projects or objectives.

B. Description of the Existing Environment

1. Natural Environment

a. Physiography:

The Humboldt Pit is located in the NW ¼ of Section 11 and in the SW ¼ of Section 2, T 47 N, R 29 W, Humboldt Township, Marquette County, Michigan. The nearest towns are Champion located 3.5 miles west and Ishpeming 11 miles east. Humboldt Location is about 0.5 miles northeast and Clarksburg Location is about 2.1 miles east of the site.

The pit bisects a northwest-southeast trending ridge near the northwest terminous of the ridge line. The pit site is the location of the termination of two bedrock valleys - one sloping north and the other south from the boundaries of the present pit. Drainage from the pit drainage basin is north to the Escanaba River. Local relief is about 200 feet above the water level. The proposed site does not lie within any flood plains. The nearest open water downstream from the site is the Escanaba River (½ mile northeast).

The pit is the site of the abandoned workings of the Humboldt Mine. Ore and waste rock were excavated to a depth of approximately 350 feet below the present water surface.

The site has been mapped by the U.S.G.S for the preparation of a bedrock geology map, the preparation of Water Supply Paper 1842 and the preparation of the 1954 Ground Water Investigation of the Marquette Iron Mining District. Copies of these maps are included herein as Exhibit B and Figure 2.

b. Climate:

Climatological data are collected at a Michigan Weather Service Station located one mile northwest of Champion. (4.5 miles northwest of the site). Climatological data from 1952 to 1969 shows the following temperature information:

January Average Temperature	11.9° F.
January Daily Minimum Average	1.9° F.
July Average Temperature	64.4° F.
July Daily Maximum Average	78.3° F.
Record High Temperature (1963)	97.0° F.
Record Low Temperature (1967)	-40.0° F.

Thirty year temperature summaries are not available.

The average yearly rainfall from 1952 to 1983 is 33.37 inches. The average snowfall depth is 137.69 inches per year.

The influence of Lake Superior on the local climate is minimized by the distance of the station from the lake and by the sheltering effects of the Keweenaw Ridge west of the Huron Mountains north of the site. The most noticeable effect is the increased cloudiness and the modification of temperatures during cold air outbreaks in the fall and early winter months. Percent of possible sunshine measured at the Marquette County Airport about 15 miles east of the iste, moves from 77% in July to 17% in November, with an annual average of 46%.

c. Terrestrial Systems:

The wildlife at the site is typical of lightly forested upland, and include white tailed deer, woodcock, partridge and perhaps rabbit and squirrel. Beaver cuttings were noted in the pit. Migrating ducks were also seen on the pit during two site visits. No consistent sightings of water fowl were reported.

d. Aquatic Systems:

See limnological report included herein.

e. Environmental Quality:

Air - Air Quality in the vicinity of the site is high. The nearest source of industrial air pollution will be the Ropes Mill about ¼ mile from the pit. Callahan Mining is currently in the process of obtaining air quality permits for the mill. Storage of tailings in the pit are not expected to affect air quality.

Noise - The principal sources of noise pollution in the area are Highway U.S. 41 and the mill (after start-up). Storage of the tailings in the pit is not expected to affect noise pollution.

Water - The abandoned pit was excavated at the location of a buried bedrock valley. During mining activities ground water seeped into the pit through the drift on the north and south ends of the pit. Seepage was subsequently pumped into the Black River watershed. After cessation of dewatering activities the pit filled to the approximate level of the swamp north of the pit. Water entering the pit from surface water and ground water discharge on the south side of the pit flows through the dike on the north side thence through the swamp to the Escanaba River. The buried bedrock valleys contain aquifers of sufficient capacity for domestic use, however, the majority of the land in the immediate vicinity of the pit is owned by mining companies, so residential development is precluded. Studies of the bedrock channel aquifer north of the site were undertaken as part of the Central Marquette County Water and Sewer Authority Water Study. The conclusion at that time, based on drilling near the center of the valley, was that there was insufficient water and of poor quality for a municipal supply.

Land - The land around the site is zoned as a mineral Resource District. Principal uses include mining activities, agriculture and timber production. Property ownerships and zoning boundaries are shown on Exhibit A.

f. Environmentally Sensitive Areas:

The proposed site does not contain any wetland areas and does not lie within a designated flood plain. Likewise, the site does not contain any prime agricultural land, high risk erosion areas (Act 245, P.A. 1970), sand dune areas (Act 241, P.A. 1972 or natural river areas (Act 251, P.A. 1972). This site does not lie within a historic district (Act 169, P.A. 1964). The pit discharge provides a portion of the recharge for the aquifer lying north of the site. See discussion elsewhere.

2. Social Environment

a. Land and Water Use:

The land on and around the pit site is used for forestry purposes. A few domestic dwellings are found within ½ mile of the site. Ground water use is limited to domestic wells northeast of the site. Surface water entering the Escanaba River flows to the Greenwood Reservoir where a portion is used for ore processing at the Tilden Mine.

b. Archeological and Historical Resources and Sites:

There are no known historical or archeological sites contained on or near the proposed site.

c. Aesthetics:

The area around the proposed site is characterized by rolling terrain with varying forest growth and tree density. Large hills of waste rock from the Humboldt Mine are present northwest and south of the pit. There are no unique or outstanding natural features on the site with exception of sheer rock faces of exposed pit walls resulting from previous mining activities.

d. Economy:

The economy of Marquette County is primarily mining related with scattered forestry/agricultrual, residential, commercial and light industry areas. The area within one mile of the site is a combination of forestry/agricultural and mining oriented with scattered residential areas.

e. Demographics;

The 1980 population for Marquette County was about 74,100. The 1980 population of Humboldt Township was 577.

f. Transportation:

Access to the pit is via Co. Rd. 601 from State Highway M-95, U.S. Highway 41 is located about 1/8 mile north of the Humboldt Pit.

g. Health and Safety:

This site will be protected by a locked gate at the entrance and posted "No Trespassing" signs. A health and safety operations plan is being prepared by Callahan Mining Corp. for employees associated with the storage operations.

C. Anticipated Environmental Impacts of the Proposed Action

The implementation of the proposed tailing storage facility in Humboldt Township, Marquette County, Michigan will have the following anticipated environmental impacts.

1. Natural Environment

a. Physiography:

No change in topography, soils or geology is anticipated. Pit depth will be decreased.

The soils will not be impacted both in the long term and short term operation of facility.

The geology of the site will not be impacted.

The site hydrology should not be affected in the long term. In the short term pit discharge will be increased about 117 gpm as a result of water displacement by the tailings.

b. Climate:

No effect.

c. Terrestrial Systems:

No disturbance of the surrounding flora is expected. Construction required to transport the tailings to the pit will be on existing abandoned roadways.

No impacts on wildlife in the area are expected as a result of storage of tailings in the pit.

d. Aquatic Systems:

Benthic organisms will be obliterated in those areas that will be covered by tailings in excess of 20 inches in thickness. No other effects on aquatic systems are foreseen at this time.

e. Environmental Quality:

Air - Present air quality on the site will not be impacted to any significant degree by storage of tailings. Tailings will be deposited at depth and will not surface. Refer to sedimentation analyses included herein.

Water - Surface water will be impacted in the short term by the increase in flow from the pit resulting from the displacement of water in storage by the tailings. Upland flow will not be impacted. The site was configured, during previous mining operations, to divert surface flow away from the pit. No changes in surface runoff are projected.

Land - Tailings storage will have no effect on land resources in the area.

f. Environmentally Sensitive Areas:

Wetlands - Not Applicable
Floodplains - Not Applicable
Prime Agricultural Land - Not Applicable
Sand Dune Areas - Not Applicable
High Risk Erosion Areas - Not Applicable
Historic District - Not Applicable
Designated Wilderness Areas - Not Applicable
Natural Rivers Areas - Not Applicable
Recharge Zone for Sole Source Aquifer - Not Applicable

2. Social Environment

a. Land and Water Use:

Tailings storage will not have a significant effect on land use. No changes in water use will result from the operation.

b. Archeological and Historical Resources and Sites:

The affected area does not include prime archeological or historical resources.

c. Aesthetics:

Tailings storage under water on the bottom of the pit will not affect short term or long term aesthetics of the site.

d. Economy:

The overall project including mining and ore benefaction will result in the employment of 70 to 80 people with an annual operating budget between 15 and 18 million dollars. Capital cost of the project is estimated at almost 15 million dollars. Construction employment is expected to be 100 to 150 people.

e. Demographics:

No effect.

f. Transportation:

Tailing storage in the pit will not affect area transportation.

g. Health and Safety:

No effect on the general population.

MONITORING PROGRAM

Water quality monitoring should be undertaken at a pit outlet facility and at the two monitor wells on the north end of the pit during tailings deposition. Because of the time lag for water to reach the monitor wells, water quality analyses at the wells may be at intervals less frequent than those at the pit outlet. The pit water quality samples will provide adequate warning for potential changes in the ground water quality.

The surface discharge of the pit should be monitored for the following parameters at the frequency noted:

Flow	Daily
Total Suspended Solids	Weekly
Cyanide	Weekly
pH	Weekly
Alkalinity	Quarterly
Chemical Oxygen Demand	Quarterly
Sulfates	Quarterly
Silver	Annually
Zinc	Annually
Mercury	Annually

All four monitor wells should be analyzed on an annual basis for the following parameters:

Alkalinity	Sulfates
pH	Chemical Oxygen Demand
Conductance	Cyanide
Zinc	Calcium
Hardness	Mercury

In addition to the above, precipitation should be monitored near the pit and water levels should be measured in the wells on a monthly basis.

The parameters listed above were selected as indicators of potential changes in water quality that might be expected as a result of tailings storage in the pit. With the exception of mercury, the parameters listed could possibly be affected by either reagents or minerals in the ore body.

CONCLUSIONS

The average annual water quality entering the Humboldt Pit, a combination of surface runoff and ground water discharge, was determined to be 315 gpm. Water is discharged from the pit by a combination of ground water flow through a glacial drift filled bedrock trough and by seepage through the dike at the north end of the pit. Discharge is split approximately half occurring as surface discharge and with half as ground water flow north from the pit.

The biological community in the pit water is typical of communities that develop in the earliest stages of colonization of a new aquatic habitat. The water body does not contain any population of organisms that is considered to have value as a recreational, commercial, aesthetic or germplasm resource.

SELECTED REFERENCES & RESOURCE DOCUMENTS

1. Stuart, W. T., Brown, E. A. and Rhodehamel, E. C., 1954, Ground Water Investigations of the Marquette Iron Mining District: Michigan Department of Conservation, Geological Survey Division Technical Report 3.

2. Wiitala, E. G., Newport, T. C. and Skinner, E. L., 1967, Water Resources of the Marquette Iron Range Area, Michigan: U. S. Geological Survey Water Supply Paper 1842.

3. Grannemann, N. G., 1979, Water Resources of the Marquette Iron Range Area, Marquette County, MIchigan: U. S. Geological Survey Open File Report 79-1339.

4. Evans, J. B., Ellis, D. V. and Pelletier, C. A., The Establishment and Implementation of a Monitoring Program for Underwater Tailing Disposal in Rupert Inlet, Vancouver Island, British Columbia, in Tailings Disposal Today, Proceedings of the First International Tailings Symposium, 1972.

CONTRIBUTING INVESTIGATORS

1. The biological reconnaissance was conducted by Stephen H. Bowen, PHD, Associate Professor of Biological Sciences at Michigan Technological University in Houghton, Michigan.

APPENDIX A

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 10/11/84

LAB# 4100518	TES1-1 10-10-84	Pit Station #2, Surface Sample
LAB# 4100519	TES 1-2 10-10-84	Pit Station #2, 200' Depth Sample
LAB# 4100520	TES 2-1 10-10-84	Pit Station #1, Surface Sample
LAB# 4100521	TES 2-2 10-10-84	Pit Station #1, 200' Depth Sample
LAB# 4100522	TES #3 10-10-84	U.S. 41 Culvert, Weir #1
LAB# 4100523	TES #4	U.S. 41 Culvert, Weir #2

LAB#	4100518	4100519	4100520	4100521	4100522	4100523
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
CONDUCTANCE, UMHOS/CM 25C	475	460	455	500	460	480
CHLORIDES, as Cl	12	14	14	15	12	12
SULFATES, as SO4	120	110	110	110	110	100
ALKALINITY, TOTAL, AS CACO3	90	90	90	90	80	90
CHEMICAL OXYGEN DEMAND	2	8	<1	<1	8	2
SOLIDS, SUSPENDED	2	2	1	<1	1	3
PH, S.U.	8.0	7.8	7.9	7.6	7.6	7.8
CYANIDE, TOTAL	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
HARDNESS, TOTAL, AS CACO3	220	210	210	200	200	200
NITROGEN, TOT. KJELDAHL AS N	0.14	0.12	0.14	0.12	0.30	0.22
CALCIUM, TOTAL	52	52	53	54	51	52
SODIUM, TOTAL	8.0	8.6	8.1	8.5	8.9	8.2
MAGNESIUM, TOTAL	19	19	20	19	19	19

CAL

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 10/11/84

LAB#	4100518	4100519	4100520	4100521	4100522	4100523
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
IRON, TOTAL	0.38	0.22	0.34	0.14	0.31	0.28
CADMIUM, TOTAL	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
COPPER, TOTAL	0.08	0.04	0.05	0.05	0.04	0.03
ZINC, TOTAL	<0.01	<0.01	0.02	<0.01	0.02	0.01
LEAD, TOTAL	<0.05	<0.05	<0.05	0.08	<0.05	<0.05
MERCURY, TOTAL	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SILVER, TOTAL	<0.0010	0.0015	<0.0010	<0.0010	0.0017	0.0013
CHROMIUM, TOTAL	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
NICKEL, TOTAL	0.07	0.07	0.14	0.03	0.10	<0.02
POTASSIUM, TOTAL	3.5	3.7	3.6	3.7	3.9	3.8
ARSENIC, TOTAL	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
ANTIMONY, TOTAL	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
TOTAL ORGANIC CARBON	3.0	2.6	3.3	2.6	3.8	3.9
ACID EXTRACTS-11 CPDS, GC						
PHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-NITROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-NITROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-DINITROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

CAL

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 10/11/84

LAB#	4100518	4100519	4100520	4100521	4100522	4100523
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
4,6-DINITRO-O-CRESOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PENTACHLOROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
P-CHLORO-M-CRESOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2-CHLOROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-DICHLOROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,6-TRICHLOROPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4-DIMETHYLPHENOL	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

CAL

TRAVERSE ENGINEERING SER. INC.

SAMPLES RECEIVED 10/11/84

LAB# 4100524 TES #5 10-10-84 U.S. 41 Culvert, Weir #3

LAB#	4100524
UNITS	MG/L
CONDUCTANCE, UMHOS/CM 25C	120
CHLORIDES, as Cl	4
SULFATES, as SO4	2
ALKALINITY, TOTAL, AS CACO3	40
CHEMICAL OXYGEN DEMAND	11
SOLIDS, SUSPENDED	4
PH, S.U.	7.3
CYANIDE, TOTAL	0.001
HARDNESS, TOTAL, AS CACO3	40
NITROGEN, TOT. KJELDAHL AS N	0.26
CALCIUM, TOTAL	11
SODIUM, TOTAL	<0.1
MAGNESIUM, TOTAL	3.2
IRON, TOTAL	0.65
CADMIUM, TOTAL	<0.0010
COPPER, TOTAL	0.04

CAL

SAMPLES RECEIVED 10/11/84

LAB#	4100524
UNITS	MG/L
ZINC, TOTAL	0.02
LEAD, TOTAL	<0.05
MERCURY, TOTAL	<0.0005
SILVER, TOTAL	<0.0010
CHROMIUM, TOTAL	<0.02
NICKEL, TOTAL	0.08
POTASSIUM, TOTAL	1.4
ARSENIC, TOTAL	<0.002
ANTIMONY, TOTAL	<0.002
TOTAL ORGANIC CARBON	4.3
ACID EXTRACTS-11 CPDS, GC	
PHENOL	<0.01
2-NITROPHENOL	<0.01
4-NITROPHENOL	<0.01
2,4-DINITROPHENOL	<0.01
4,6-DINITRO-O-CRESOL	<0.01
PENTACHLOROPHENOL	<0.01
P-CHLORO-M-CRESOL	<0.01

CAL

LAB#	4100524
UNITS	MG/L
2-CHLOROPHENOL	<0.01
2,4-DICHLOROPHENOL	<0.01
2,4,6-TRICHLOROPHENOL	<0.01
2,4-DIMETHYLPHENOL	<0.01

CAL

TRAVERSE ENGINEERING SER. INC.

LAB# UNITS	WELL #1	WELL #2	WELL #3	WELL #4
CONDUCTANCE, UMHOS/CM 25C	445	445	125	675
CHLORIDES, as Cl	17	16	4	8
SULFATES, as SO4	72	94	18	100
ALKALINITY, TOTAL, AS CACO3	140	89	6	260
CHEMICAL OXYGEN DEMAND	8	20	7	130
SOLIDS, SUSPENDED	43	4	65	88
PH, S.U.	7.1	7.0	5.4	6.9
CYANIDE, TOTAL	< 0.001	< 0.001	< 0.001	< 0.001
HARDNESS, TOTAL, AS CACO3	230	250	60	240
NITROGEN, TOT. KJELDAHL AS N	0.056	0.23	0.19	0.41
CALCIUM, TOTAL	62	38	8.6	77
SODIUM, TOTAL	8.4	18	11	5.8
MAGNESIUM, TOTAL	17	18	4	29
IRON, TOTAL	0.32	< 0.02	3.0	40
CADMIUM, TOTAL	0.001	< 0.001	< 0.001	< 0.001
COPPER, TOTAL	< 0.02	< 0.01	< 0.01	< 0.01

TRAVERSE ENGINEERING SER. INC.

LAB# UNITS	WELL #1	WELL #2	WELL #3	WELL #4
ZINC, TOTAL	0.05	0.01	< 0.01	0.01
LEAD, TOTAL	< 0.05	< 0.05	< 0.05	0.10
MERCURY, TOTAL	< 0.0001	< 0.0001	< 0.0001	< 0.0001
SILVER, TOTAL	0.0009	0.06	0.16	0.0008
CHROMIUM, TOTAL	< 0.02	< 0.02	< 0.02	< 0.02
NICKEL, TOTAL	< 0.04	< 0.02	0.03	< 0.02
POTASSIUM, TOTAL	2.3	4.5	1.6	3.6
ARSENIC, TOTAL	< 0.004	< 0.004	< 0.004	0.006
ANTIMONY, TOTAL	< 0.004	< 0.004	< 0.004	< 0.004
TOTAL ORGANIC CARBON	< 2	< 2	< 2	16
ACID EXTRACTS-11 CPDS, GC				
PHENOL	< 0.01	< 0.01	< 0.01	< 0.01
2-NITROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
4-NITROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
2,4-DINITROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
4,6-DINITRO-O-CRESOL	< 0.01	< 0.01	< 0.01	< 0.01
PENTACHLOROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
P-CHLORO-M-CRESOL	< 0.01	< 0.01	< 0.01	< 0.01

TRAVERSE ENGINEERING SER. INC.

LAB# UNITS	WELL #1	WELL #2	WELL #3	WELL #4
2-CHLOROPHENOL	< 0.01	< 0.01	< 0,01	< 0,01
2,4-DICHLOROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
2,4,6-TRICHLOROPHENOL	< 0.01	< 0.01	< 0.01	< 0.01
2,4-DIMETHYLPHENOL	< 0.01	< 0.01	< 0.01	< 0.01

APPENDIX B

GEOLOGICAL SURVEY NO.

WATER WELL AND PUMP RECORD

PERMIT NUMBER

1 LOCATION OF WELL

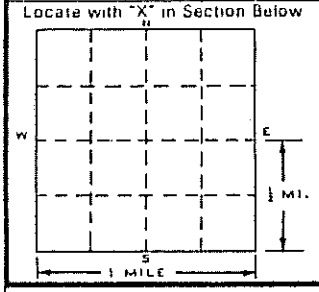
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ SE ¼ SW ¼	2	47 N/S	19 E/W

Distance And Direction From Road Intersection

At Humboldt Pit North End

Street Address & City of Well Location

Locate with "X" in Section Below — Sketch Map



Monitor Well #1

3 OWNER OF WELL: Callahan Mining Corp.
Address Rte 1, Box 300
Champion, Mich. 49814
Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH: (completed) 76.5 ft. **Date of Completion** 2NOV84

5 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ] ____

6 USE: [ ] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [ ] Heat pump [ ] Test Well [ ] Type IIb Public [X] monitor

7 CASING Diameter [X] Steel [ ] Threaded [ ] Plastic [X] Welded
6 in. to 73 ft. depth
____ in. to ____ ft. depth
Grouted Drill Hole Diameter
____ in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Above/Below Surface 1 ft
Weight 18.97 lbs /ft.
Drive Shoe [X] Yes [ ] No

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
sand & poor rock-clayey	15	15
gravel	5	20
sand-clean, water bearing	33	53
sand-muddy, clayey	17	70
sand&gravel	7	77
sand & gravel-clayey	2	79
bedrock encountered at 79'		

8 SCREEN: Johnson [ ] Not Installed
Type telescope Diameter 6"
Slot/Gauze .015 Length 4'
Set between 76.5 ft. and 72.5 ft
FITTINGS: [ ] K-Packer [X] Lead Packer [ ] Bremer Check
[ ] Blank above screen ____ ft. Other ____

9 STATIC WATER LEVEL
14 ft. below land surface [ ] Flow

10 PUMPING LEVEL: below land surface
76 ft. after 1 hrs. pumping at 45 G.P.M.
____ ft. after ____ hrs. pumping at ____ G.P.M.

11 WELL HEAD COMPLETION [ ] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [X] No [ ] Yes From ____ to ____ ft
[ ] Neat cement [ ] Bentonite [ ] Other ____
No. of bags of cement ____ Additives ____

13 Nearest source of possible contamination
Type ____ Distance ____ ft. Direction ____
Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP [X] Not Installed [ ] Pump Installation Only
Manufacturer's name ____
Model number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
TYPE: [ ] Submersible [ ] Jet ____
PRESSURE TANK
Manufacturer's name ____
Model number ____ Capacity ____ Gallons

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling, Inc. 16777
REGISTERED BUSINESS NAME REGISTRATION NO.
Address Rte 1, Box 386C, Hancock, Mich.
Signed ____ Date 10NOV84
AUTHORIZED REPRESENTATIVE

D67d 2/84

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a misdemeanor.

GEOLOGICAL SURVEY COPY

GEOLOGICAL SURVEY NO

WATER WELL AND PUMP RECORD

PART 127 ACT 368, P A 1978

PERMIT NUMBER

1 LOCATION OF WELL

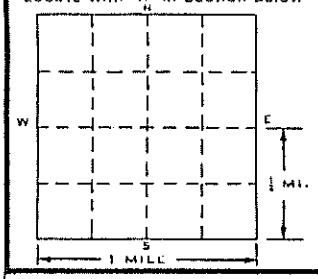
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW ¼ SE ¼ SE ¼	2	47 N/S	19 E/W

Distance And Direction From Road Intersection

At Humboldt Pit North End

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map

Monitor Well #2

3 OWNER OF WELL

Callahan Mining Corp.

Address Rtel, Box 300

Champion, Michigan 48814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH (completed)

30 ft

Date of Completion: 02NOV84

5

[ ] Cable tool [X] Rotary [ ] Driven [ ] Dug

[ ] Hollow rod [ ] Auger [ ] Jetted [ ] _____

6 USE

[ ] Domestic [ ] Type I Public [ ] Type III Public

[ ] Irrigation [ ] Type IIa Public [ ] Heat pump

[ ] Test Well [ ] Type IIb Public [X] monitor

7 CASING

Diameter [X] Steel [ ] Threaded

[ ] Plastic [X] Welded

6" in. to 26.5 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height Above/Below Surface 1' ±

Weight 18.97 #/ft

Drive Shoe [X] Yes [ ] No

2 FORMATION DESCRIPTION

FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
sand, gravel, poorrock-clayey	20	20
sand - clean, course	11	31
clayey silt	2	33
bedrock	1.5	34.5

USE A 2ND SHEET IF NEEDED

8 SCREEN

Johnson [ ] Not Installed

Type telescope Diameter 6"

Slot/Gauze .010 Length 4'

Set between 26 ft and 30 ft.

FITTINGS [ ] K-Packer [X] Lead Packer [ ] Bremer Check

[ ] Blank above screen _____ ft Other _____

9 STATIC WATER LEVEL

_____ ft. below land surface [ ] Flow

10 PUMPING LEVEL below land surface

30 ft. after 1 hrs. pumping at 25 G P M

_____ ft. after _____ hrs. pumping at _____ G P M

11 WELL HEAD COMPLETION

[ ] Pitless adapter [X] 12" above grade

[ ] Basement offset [ ] Approved pit

12 WELL GROUTED?

[X] No [ ] Yes From _____ to _____ ft

[ ] Neat cement [ ] Bentonite [ ] Other _____

No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type _____ Distance _____ ft Direction _____

Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP

[X] Not Installed [ ] Pump Installation Only

Manufacturer's name _____

Model number _____ HP _____ Volts _____

Length of Drop Pipe _____ ft capacity _____ G P M

TYPE [ ] Submersible [ ] Jet _____

PRESSURE TANK

Manufacturer's name _____

Model number _____ Capacity _____ Gallons

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

Siirtola Well Drilling, Inc. 1677

REGISTERED BUSINESS NAME REGISTRATION NO

Address Rte 1, Box 306C, Hancock, Mich.

Signed _____ Date 10NOV84

AUTHORIZED REPRESENTATIVE

D67d (Rev 10-80)

GEOLOGICAL SURVEY COPY

GEOLOGICAL SURVEY NO. [ ]

WATER WELL AND PUMP RECORD

PERMIT NUMBER [ ][ ][ ][ ][ ][ ][ ][ ]

1 LOCATION OF WELL

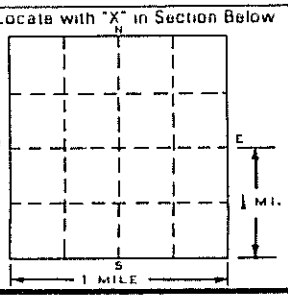
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW ¼ SW ¼ NW ¼	11	47 N	19 W

Distance And Direction From Road Intersection

At Humboldt Pit South End

Street Address & City of Well Location

Locate with "X" in Section Below — Sketch Map



Monitor Well #3

3 OWNER OF WELL:

Address Callahan Mining Corp.
Rte 1, Box 300
Champion, Mich. 49814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH: (completed) 45 ft. — **Date of Completion** 2NOV84

5 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ] _____

6 USE: [ ] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [X] Heat pump monitor [ ] Test Well [ ] Type IIb Public

7 CASING: Diameter [X] Steel [ ] Threaded [ ] Plastic [X] Welded
6 in. to 41.5 ft. depth
_____ in. to _____ ft. depth
Grouted Drill Hole Diameter
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth
Height: Above/Below Surface 1 ft
Weight 18.97 lbs./ft.
Drive Shoe [X] Yes [ ] No

8 SCREEN: Johnson [ ] Not Installed
Type telescope Diameter 6"
Slot/Gauze .015 Length 4'
Set between 41 ft. and 45 ft.
FITTINGS: [ ] K-Packer [X] Lead Packer [ ] Bremer Check
[ ] Blank above screen _____ ft. Other _____

9 STATIC WATER LEVEL:
29 ft. below land surface [ ] Flow

10 PUMPING LEVEL: below land surface
45 ft. after 1 hrs. pumping at 10 G.P.M.
_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: [ ] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [X] No [ ] Yes From _____ to _____ ft.
[ ] Neat cement [ ] Bentonite [ ] Other _____
No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination
Type _____ Distance _____ ft. Direction _____
Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP: [X] Not Installed [ ] Pump Installation Only
Manufacturer's name _____
Model number _____ HP _____ Volts _____
Length of Drop Pipe _____ ft. capacity _____ G.P.M
TYPE: [ ] Submersible [ ] Jet _____
PRESSURE TANK:
Manufacturer's name _____
Model number _____ Capacity _____ Gallons

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
sand & poor rock	25	25
sand - fine, clean	5	30
sand & gravel	15	45
bedrock encountered at 45'		

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling, Inc. 1677
REGISTERED BUSINESS NAME — REGISTRATION NO.

Address Rte 1, Box 386C, Hancock, Mich.

Signed _____ Date 10November84
AUTHORIZED REPRESENTATIVE

D67d 2/84

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a misdemeanor.

GEOLOGICAL SURVEY COPY

GEOLOGICAL SURVEY NO.

WATER WELL AND PUMP RECORD

PERMIT NUMBER

1 LOCATION OF WELL

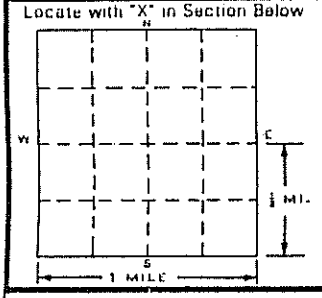
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW ¼ SW ¼ NW ¼	11	47 N/S	19 E/W

Distance And Direction From Road Intersection

At Humboldt Pit South End

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map:

Monitor Well #4

3 OWNER OF WELL:

Callahan Mining Corp.
Address Rte 1, Box 300
Champion, Mich. 49814

Address Same As Well Location? ☒ Yes ☐ No

4 WELL DEPTH: (completed) 75 ft. | **Date of Completion** 2NOV84

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Auger ☐ Jetted ☐ _____

6 USE: ☐ Domestic ☐ Type I Public ☐ Type III Public ☐ Irrigation ☐ Type IIa Public ☐ Heat pump ☐ Test Well ☐ Type IIb Public ☒ monitor

7 CASING: Diameter ☒ Steel ☐ Threaded ☐ Plastic ☒ Welded

6 in. to 71.5 ft. depth
_____ in. to _____ ft. depth
Grouted Drill Hole Diameter
_____ in. to _____ ft. depth
_____ in. to _____ ft. depth

Height: Above/Below
Surface 1 ft
Weight 18.97 lbs/ft
Drive Shoe ☒ Yes ☐ No

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
sand & gravel	25	25
sand - clayey	30	55
sand - clean	20	75
sand & gravel - clayey	21	96
bedrock encountered at 96'		

USE A 2ND SHEET IF NEEDED

8 SCREEN Johnson ☐ Not Installed
Type telescope Diameter 6"
Slot/Gauze .006 Length 4'
Set between 75 ft. and 71 ft.
FITTINGS: ☐ K-Packer ☒ Lead Packer ☐ Bremer Check
☐ Blank above screen _____ ft Other _____

9 STATIC WATER LEVEL:
_____ ft. below land surface ☐ Flow

10 PUMPING LEVEL: below land surface
75 ft. after 1 hrs. pumping at 17 G.P.M.
_____ ft. after _____ hrs. pumping at _____ G.P.M.

11 WELL HEAD COMPLETION: ☐ Pitless adapter ☒ 12" above grade ☐ Basement offset ☐ Approved pit

12 WELL GROUTED? ☒ No ☐ Yes From _____ to _____ ft
☐ Neat cement ☐ Bentonite ☐ Other _____
No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination
Type _____ Distance _____ ft. Direction _____
Well disinfected upon completion? ☐ Yes ☐ No

14 PUMP: ☒ Not Installed ☐ Pump Installation Only
Manufacturer's name _____
Model number _____ HP _____ Volts _____
Length of Drop Pipe _____ ft. capacity _____ G.P.M.
TYPE: ☐ Submersible ☐ Jet _____
PRESSURE TANK
Manufacturer's name _____
Model number _____ Capacity _____ Gallons

15. Remarks, elevation, source of data, etc.

,well was drilled to 96' then well casing was pulled back and screened from 71' - 75'.

16. WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Siirtola Well Drilling, Inc. 1677
REGISTERED BUSINESS NAME REGISTRATION NO.
Address Rte 1, Box 386C, Hancock, Mich.
Signed _____ Date 10November84
AUTHORIZED REPRESENTATIVE

D67d 2/84

Authority: Act 368 PA 1978
Completion: Required
Penalty: Conviction of a violation of any provision is a misdemeanor.

GEOLOGICAL SURVEY COPY

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

GEOLOGICAL SURVEY NO

WATER WELL AND PUMP RECORD

PART 127 ACT 368 P A 1978

PERMIT NUMBER

1 LOCATION OF WELL

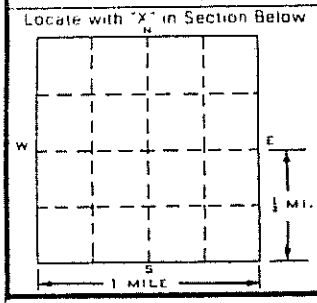
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SE 1/4 NE 1/4 SE 1/4	3	47 N/S	29 E/W

Distance And Direction From Road Intersection

Street Address & City of Well Location

Locate with "X" in Section Below

Sketch Map



3 OWNER OF WELL: Richard Stetson

Address: Humboldt Location Humboldt Michigan

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH (completed): 63 ft. Date of Completion: 8-28-81

5 [ ] Cable tool [X] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ] ____

6 USE: [X] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [ ] Heat pump [ ] Test Well [ ] Type IIb Public [ ] ____

7 CASING Diameter: [X] Steel [ ] Threaded [ ] Plastic [X] Welded

6 in. to 34.5 ft. depth

____ in. to ____ ft. depth

Grouted Drill Hole Diameter

____ in. to ____ ft. depth

____ in. to ____ ft. depth

Height Above/Below Surface 1 ft

Weight 18.97 lbs /ft

Drive Shoe [X] Yes [ ] No

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Gravel & Clay hardpan	30	30
Fractured Granite	3	33
Granite	30	63

8 SCREEN [X] Not Installed

Type ____ Diameter ____

Slot/Gauze ____ Length ____

Set between ____ ft. and ____ ft.

FITTINGS [ ] K Packer [ ] Lead Packer [ ] Bremer Check

[ ] Blank above screen ____ ft. Other ____

9 STATIC WATER LEVEL

24 ft. below land surface [ ] Flow

10 PUMPING LEVEL below land surface

60 ft. after 2 hrs. pumping at 10 G P M

____ ft. after ____ hrs. pumping at ____ G P M

11 WELL HEAD COMPLETION [ ] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [X] No [ ] Yes From ____ to ____ ft

[ ] Neat cement [ ] Bentonite [ ] Other ____

No. of bags of cement ____ Additives ____

13 Nearest source of possible contamination None

Type ____ Distance ____ ft. Direction ____

Well disinfected upon completion? [X] Yes [ ] No

14 PUMP [X] Not Installed [ ] Pump Installation Only

Manufacturer's name ____

Model number ____ HP ____ Volts ____

Length of Drop Pipe ____ ft. capacity ____ G P M

TYPE [ ] Submersible [ ] Jet ____

PRESSURE TANK

Manufacturer's name ____

Model number ____ Capacity ____ Gallons

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc.

16. WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleman Pumpwell Drlg., Inc. 0575

REGISTERED BUSINESS NAME REGISTRATION NO.

Address P.O. Box 704, Iron Mountain

Signed V.P.R. Date 9-2-81

AUTHORIZED REPRESENTATIVE

D67d (Rev. 10-80)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 A

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
MARQUETTE	HUMBOLT	SW ¼ NW ¼ SE ¼	3	47 N/S.	29 E/W.

Distance And Direction from Road Intersections: 500' E. OF M-95 & U.41 JUNCTION

OWNER No. —

Street address & City of Well Location

3 OWNER OF WELL: MR. RICHARD F. SETSON

Address ET #1 CHAMPION, MICHIGAN

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM

4 WELL DEPTH: (completed) 25 ft. Date of Completion 7/8/68

5 ☐ Cable tool ☐ Rotary ☒ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Threaded ☒ Welded ☐

1¼ in. to 25 ft. Depth — Height: Above/Below surface 1/2 ft.

3 in. to 10 ft. Depth — Weight ___ lbs/ft. Drive Shoe? Yes ☒ No ☐

8 SCREEN:

Type: ___ Dia.: ___

Slot/Gauze ___ Length ___

Set between ___ ft. and ___ ft.

Fittings:

9 STATIC WATER LEVEL 15 ft. below land surface

10 PUMPING LEVEL below land surface

___ ft. after ___ hrs. pumping ___ g.p.m.

___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ___ Chlorides (Cl) ___

Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☐ No

Material: ☐ Neat Cement ☐ ___

Depth: From ___ ft. to ___ ft.

14 SANITARY:

Nearest Source of possible contamination

50 feet W Direction Tile Field Type

Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: Submersible

Manufacturer's Name Myers

Model Number SBN 24213A HP ½

Length of Drop Pipe 25 ft. capacity ___ G.P.M.

Type: ☐ Submersible ☐ Shallow Well ☒ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME ___ REGISTRATION NO. ___

Address Champion, Mich.

Signed ___ Date 8/14/68

AUTHORIZED REPRESENTATIVE

D67D 100M 6-66

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

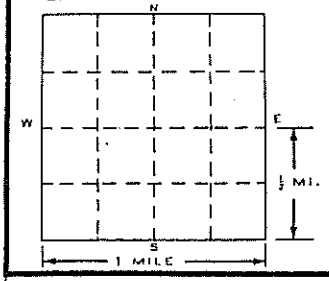
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Allegan	Leighton	NW¼ SE¼	2	5 N.	13 E. W.

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL:
Address Rudd Kuiper Rt. 1 Box 107 Fennville, Mich.

4 WELL DEPTH: (completed) Date of Completion
105 ft. 10-27-76

5
☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE:
☑ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ ____

7 CASING:
Threaded ☐ Welded ☑
Height: Above / Below Surface ____ ft.
Diam. 6 in. to 27 ft. Depth
____ in. to ____ ft. Depth
Weight 26 lbs./ft.
Drive Shoe? Yes ☑ No ☐

8 SCREEN:
Type: ____ Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
18 ft. below land surface

10 PUMPING LEVEL below land surface
65 ft. after ___ hrs. pumping 4 g.p.m.
____ ft. after ___ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION:
☐ In Approved Pit
☑ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted?
☐ Yes ☒ No
☐ Neat Cement ☑ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
75 feet NE Direction Septic Type
Well disinfected upon completion ☑ Yes ☐ No

15 PUMP:
☐ Not installed
Manufacturer's Name ____
Model Number ____ HP ___ Volts ____
Length of Drop Pipe ____ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

2 FORMATION

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sandy soil & clay	15	15
Sand gravel & boulders	11	26
Blue clay & hardpan	45	71
Limestone	34	105

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Tri-State Drilling 0510
REGISTERED BUSINESS NAME REGISTRATION NO.

Address 2520 M 89 E Three Rivers

Signed [signature] Date 11-3-76
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No. _____

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
MARQUETTE	HUMBOLT	¼ NE ¼ SE ¼	3	47 N/S	29 E/W

Distance And Direction from Road Intersections

OWNER No. _____

Street address & City of Well Location

3 OWNER OF WELL: JERRY PLATTENBURG

Address: CHAMPION, MICH

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND	20	20
HARD PAN	5	25
ROCK	1	26

4 WELL DEPTH: (completed) 26 ft. Date of Completion 8/75

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ _____

7 CASING: Threaded ☐ Welded ☒

Diam. 6 in. to 26 ft. Depth

___ in. to ___ ft. Depth

Height: Above/Below surface _____ ft.

Weight _____ lbs/ft.

Drive Shoe? Yes ☐ No ☐

8 SCREEN: NONE

Type: _____ Dia.: _____

Slot/Gauze _____ Length _____

Set between _____ ft. and _____ ft.

Fittings:

9 STATIC WATER LEVEL

6 ft. below land surface

10 PUMPING LEVEL below land surface

25 ft. after 2 hrs. pumping 3 g.p.m.

_____ ft. after _____ hrs. pumping _____ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) _____ Chlorides (Cl) _____

Hardness _____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☒ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☒ No

Material: ☐ Neat Cement ☐ _____

Depth: From _____ ft. to _____ ft.

14 SANITARY:

Nearest Source of possible contamination

100 feet SE Direction SEPIC Type

Well disinfected upon completion ☐ Yes ☒ No

15 PUMP:

Manufacturer's Name _____

Model Number _____ HP _____

Length of Drop Pipe _____ ft. capacity _____ G.P.M.

Type: ☐ Submersible ☐ _____ ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

DAVID JENT WELL DRILLING 1269

REGISTERED BUSINESS NAME REGISTRATION NO.

Address MICHIGAMME, MICH

Signed _____ Date 8/75

AUTHORIZED REPRESENTATIVE

D67D 100M 6-66

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

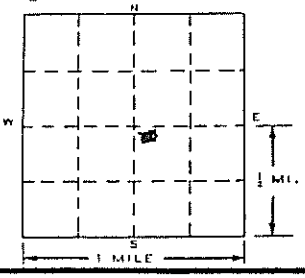
County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLT	PARCEL IN NW¼ SE¼ ¼	3	47 N/S.	29 E/W.

Distance And Direction from Road Intersections
2 100' of W. 200' of NW 1/4 of SE 1/4
lying South of present Hwy US41

Street address & City of Well Location

Locate with "X" in section below

Sketch Map:



3 OWNER OF WELL:
DONALD STRONGMAN

Address BOX 595 RTE 1
ISHPEMING, MICH.

4 WELL DEPTH: (completed) Date of Completion
70 ft.

5
☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE:
☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ ____

7 CASING:
Threaded ☒ Welded ☐
Diam. 5 in. to 63 ft. Depth
____ in. to ____ ft. Depth
Height: Above/Below Surface 1 ft.
Weight 15 lbs./ft.
Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Top Soil	2	2
Gravel & Sand	20	22
Hard pand	40	62
Black Shale	8	70

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: ____ Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
11 ft. below land surface

10 PUMPING LEVEL below land surface
45 ft. after 1 hrs. pumping 15 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION:
☐ In Approved Pit
☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted?
☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
75 feet N Direction SEPTIC Type
Well disinfected upon completion ☐ Yes ☒ No

15 PUMP:
☒ Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

DAVID LENTZ DRILLING 1216
REGISTERED BUSINESS NAME REGISTRATION NO.

Address MICHIGAMME, MICH 49861

Signed ____ Date 12/5/73
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

5

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
Marquette	Humboldt	SW¼SE¼SW¼	3	47 N/S.	29 E/W.

Distance And Direction from Road Intersections

OWNER No. [ ]

Humboldt, Mich.
Street address & City of Well Location

3 OWNER OF WELL:
[illegible]
Address
Champion, Mich.

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
loose, loose sand	10	10
gray - silt, sand & gravel	13	23
gray - gravel and boulder ledge	2	25

4 WELL DEPTH: (completed) 25 ft. **Date of Completion** 4-14-67

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Diam. 5 in. to 25 ft. Depth; Threaded ☒ Welded ☐; ___ in. to ___ ft. Depth
Height: Above/Below surface 1 ft.
Weight ___ lbs/ft.
Drive Shoe? Yes ☒ No ☐

8 SCREEN:
Type: ___ Dia.: ___
Slot/Gauze ___ Length ___
Set between ___ ft. and ___ ft.
Fittings:

9 STATIC WATER LEVEL
16'6" ft. below land surface

10 PUMPING LEVEL below land surface
10'6" ft. after 5 hrs. pumping 300 g.p.m.
___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) 0.0 Chlorides (Cl) 22
Hardness 60

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☐ 12" Above Grade

13 GROUTING:
Well Grouted? ☐ Yes ☒ No
Material: ☐ Neat Cement ☐ ___
Depth: From ___ ft. to ___ ft.

14 SANITARY:
Nearest Source of possible contamination
75 feet E Direction SEPTIC Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:
Manufacturer's Name ___
Model Number ___ HP ___
Length of Drop Pipe ___ ft. capacity ___ G.P.M.
Type: ☐ Submersible ☐ ___ ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[illegible] REGISTERED BUSINESS NAME — 0035 REGISTRATION NO.
Address [illegible]
Signed [illegible] AUTHORIZED REPRESENTATIVE Date 4-25-67

D67D 100M 6-66

LOCAL HEALTH DEPT COPY

GEOLOGICAL SURVEY SAMPLE NO.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
Marquette	Humboldt	SW¼ SE¼ SW¼	3	41 N/S.	29 E/W.

Distance And Direction from Road Intersections

OWNER No.

Street address & City of Well Location Champion-Bruh.

3 OWNER OF WELL: Wm Kaitila

Address Rt 1 Champion, Mich.

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
red brown clay & boulders	10	10
red dry gravel, sand & silt	7	17
red brown boulders & broken ledge	5	22
red & gray ledge	4	26

4 WELL DEPTH: (completed) 26 ft. Date of Completion 3-5-67

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Diam. 5 in. to 23 ft. Depth; Threaded ☒ Welded ☐; ___ in. to ___ ft. Depth

Height: Above/Below surface ___ ft.; Weight ___ lbs/ft.; Drive Shoe? Yes ☒ No ☐

8 SCREEN:

Type: ___ Dia.: ___

Slot/Gauze ___ Length ___

Set between ___ ft. and ___ ft.

Fittings:

9 STATIC WATER LEVEL

___ ft. below land surface

10 PUMPING LEVEL below land surface

___ ft. after ___ hrs. pumping ___ g.p.m.

___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) 0.3 Chlorides (Cl) 0.0

Hardness 50

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☐ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☒ No

Material: ☐ Neat Cement ☐ ___

Depth: From ___ ft. to ___ ft.

14 SANITARY:

Nearest Source of possible contamination

___ feet ___ Direction ___ Type

Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:

Manufacturer's Name ___

Model Number ___ HP ___

Length of Drop Pipe ___ ft. capacity ___ G.P.M.

Type: ☐ Submersible ☐ ___ ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Wesley Swanson — REGISTERED BUSINESS NAME

0035 — REGISTRATION NO.

Wesley Swanson

Address Crystal Falls Mich.

Signed Wesley Swanson — AUTHORIZED REPRESENTATIVE Date ___

D67D 100M 6-66

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

7

1 LOCATION OF WELL

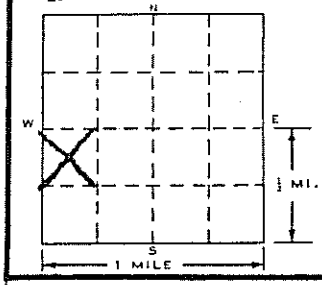
County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLDT	¼ NW¼ SW¼	3	47 N.	29 W.

Distance And Direction from Road Intersections

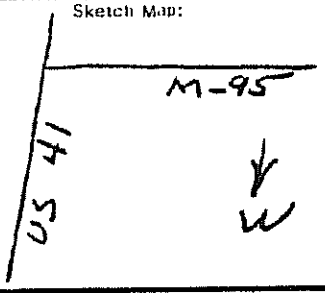
⅛ MILE W. OF US 41 & M-95

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:



3 OWNER OF WELL:

DAVID LAITALA

Address HUMBOLDT LOC. CHAMPION MICH.

4 WELL DEPTH: (completed) 78 ft. Date of Completion 3/7/74

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☒ Welded ☐ Diam. 5 in. to 76 ft. Depth; ____ in. to ____ ft. Depth

Height: Above/~~Below~~ Surface 2 ft. Weight 15 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND, GRAVEL, CLAY	22	22
SAND, FINE GRAVEL, CLAY	18	40
COARSE SAND & FINE GRAVEL	38	78

USE A 2ND SHEET IF NEEDED

8 SCREEN:

Type: EVER-FLO Dia.: 5

Slot/Gauze 12 Length 5'6"

Set between 74 ft. and 78 ft.

Fittings: K-PACKER

9 STATIC WATER LEVEL

____ ft. below land surface

10 PUMPING LEVEL below land surface

36 ft. after 1 hrs. pumping 20 g.p.m.

____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ____ Chlorides (Cl) ____

Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ____

Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination

70 feet N/W Direction SEPTIC Type

Well disinfected upon completion ☐ Yes ☒ No

15 PUMP: ☒ Not installed

Manufacturer's Name VALLEY

Model Number S3052 HP ½ Volts 230

Length of Drop Pipe 50 ft. capacity 12 G.P.M.

Type: ☒ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

DAVID LENTZ DRILLING 1269

REGISTERED BUSINESS NAME REGISTRATION NO.

Address MICHIGAMME, MICH.

Signed David J. Lentz Date 4/30/74

AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
MARQUETTE	HUMBOLDT	SW¼ NW¼ SW¼	3	47 N/S.	29 E/W.

Distance And Direction from Road Intersections: 175' So. US 41

OWNER No.

Box 194 Championship Humboldt Loc.
Street address & City of Well Location

3 OWNER OF WELL: JAMES MITCHELL

Address: Box 194 CHAMPION, MICH

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND	26+	26+

4 WELL DEPTH: (completed) 26+ ft. Date of Completion: 10-28-71

5 ☐ Cable tool ☐ Rotary ☒ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Diam. 2 in. to 26+ ft. Depth; Threaded ☒ Welded ☐

Height: Above/Below surface 6 ft.; Weight ___ lbs/ft.; Drive Shoe? Yes ☐ No ☐

___ in. to ___ ft. Depth

8 SCREEN: Type: SAND Dia.: 2"

Slot/Gauze 90 Length 30"

Set between ___ ft. and ___ ft.

Fittings:

9 STATIC WATER LEVEL 18 ft. below land surface

10 PUMPING LEVEL below land surface

___ ft. after ___ hrs. pumping ___ g.p.m.

___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ___ Chlorides (Cl) ___

Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☐ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☒ No

Material: ☐ Neat Cement ☐ ___

Depth: From ___ ft. to ___ ft.

14 SANITARY:

Nearest Source of possible contamination

75 feet S Direction Septic Type

Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:

Manufacturer's Name: Montgomery Ward

Model Number: BTS [illegible] HP [illegible]

Length of Drop Pipe ___ ft. capacity ___ G.P.M.

Type: ☐ Submersible ☐ ___ ☒ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

26+' for well depth means I will be adding about 6" of Top soil this Summer & it is a little over 26' deep now

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME ___ REGISTRATION NO. ___

Address ___

Signed ___ Date ___

AUTHORIZED REPRESENTATIVE

D67D 100M 6-66

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

9

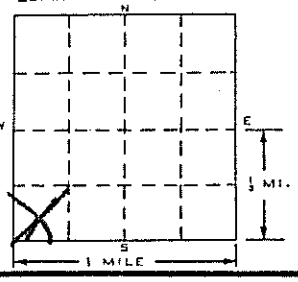
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLT	¼ SW ¼ SE ¼	3	47 N/S.	29 E/W.

Distance And Direction from Road Intersections: HALF WAY ROAD

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL: MARVIN MACKEY
Address Rt Box 92 A.
CHAMPION, MICH

4 WELL DEPTH: (completed) 82' ft. Date of Completion 12/4/74

5 [X] Cable tool [ ] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Jetted [ ] Bored [ ] ____

6 USE: [X] Domestic [ ] Public Supply [ ] Industry [ ] Irrigation [ ] Air Conditioning [ ] Commercial [ ] Test Well [ ] ____

7 CASING: Threaded [X] Welded [X]
Diam. 5 in. to 83 ft. Depth
____ in. to ____ ft. Depth
Height: Above/~~Below~~ Surface 1 ft.
Weight 15 lbs./ft.
Drive Shoe? Yes [X] No [ ]

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
TOP SOIL	1	1
COARSE SAND	19	20
FINE TO COARSE SAND & CLAY	7	27
FINE SAND & CLAY	51	78
COARSE SAND & FINE TO COARSE GRAVEL	4	82

USE A 2ND SHEET IF NEEDED

8 SCREEN: Type: NONE Dia.: ____ Slot/Gauze ____ Length ____ Set between ____ ft. and ____ ft. Fittings:

9 STATIC WATER LEVEL 28 ft. below land surface

10 PUMPING LEVEL below land surface
25 ft. after 2 hrs. pumping 20 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: [ ] In Approved Pit [ ] Pitless Adapter [X] 12" Above Grade

13 Well Grouted? [ ] Yes [X] No [ ] Neat Cement [ ] Bentonite [ ] ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
60 feet E Direction SEPTIC TANK type
Well disinfected upon completion [X] Yes [ ] No

15 PUMP: [X] Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: [ ] Submersible [ ] Jet [ ] Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
DAVID LENTZ DRILLING (REGISTERED BUSINESS NAME) 1269 (REGISTRATION NO.)
Address MICHIGAMME, MICH.
Signed David J Lentz (AUTHORIZED REPRESENTATIVE) Date 12/6/74

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

60

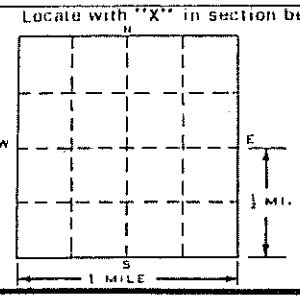
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ NW¼ SW¼	3	47 N/S.	24 E/W.

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL:
Address: James Delongchamp, Route 1, Box 88B, Champion Michigan

4 WELL DEPTH: (completed) Date of Completion
76 ft. 1-4-78

5
☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE:
☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ ____

7 CASING:
Threaded ☐ Welded ☒ Height: Above/Below Surface 1 ft.
Diam. 6 in. to 75 ft. Depth Weight 8.97 lbs./ft.
____ in. to ____ ft. Depth Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Gravel, Sand	38	38
Sand	38	76

8 SCREEN:
Type: #304 SS WW Dia.: 6"
Slot/Gauze 14 Length 3'
Set between 73 ft. and 76 ft.
Fittings: SD

9 STATIC WATER LEVEL
50 ft. below land surface

10 PUMPING LEVEL below land surface
64 ft. after 2 hrs. pumping 8 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION:
☐ In Approved Pit
☒ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
____ feet ____ Direction ____ Type
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP:
☐ Not installed
Manufacturer's Name Goulds
Model Number 7J9P03L HP 1½ Volts 230
Length of Drop Pipe 65 ft. capacity 7 G.P.M.
Type: ☒ Submersible ☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleiman Pump & Well Drlg, Inc 6575
REGISTERED BUSINESS NAME, REGISTRATION NO.

Address PO Box 704, Iron Mountain

Signed N.P. Kleiman Date 1-5-78
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

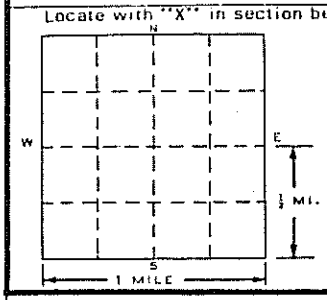
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Wayne	Hamtramck	E½ SW¼ SW¼	3	1S	9E (W)

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL: Guido Pizzoli

Address RR 4 Livonia, Mich.

4 WELL DEPTH: (completed) 64 ft. **Date of Completion** 3-23-77

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☒ Welded ☐ Diam. 6 in. to 36 ft. Depth; ____ in. to ____ ft. Depth

Height: (Above) / Below Surface 1 ft. Weight 20 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Open pit	12	12
fine sand	21	33
fine sand & gravel	3	36
Clay stone	11	47
Weathered Slate	5	52
Slate	12	64
USE A 2ND SHEET IF NEEDED		

8 SCREEN: Type: ____ Dia.: ____ Slot/Gauze ____ Length ____ Set between ____ ft. and ____ ft. Fittings: ____

9 STATIC WATER LEVEL 20 ft. below land surface

10 PUMPING LEVEL below land surface: 58 ft. after 24 hrs. pumping 4 g.p.m.; ____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ____ Chlorides (Cl) ____ Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ____ Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination: 25 feet S Direction Septic Type

Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed

Manufacturer's Name ____

Model Number ____ HP ____ Volts ____

Length of Drop Pipe ____ ft. capacity ____ G.P.M.

Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Gent Well Drilling Co. — REGISTERED BUSINESS NAME — 0800 — REGISTRATION NO.

Address 8870 Middle Belt

Signed Henry Gent — AUTHORIZED REPRESENTATIVE — Date 3-24-77

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

12

1 LOCATION OF WELL

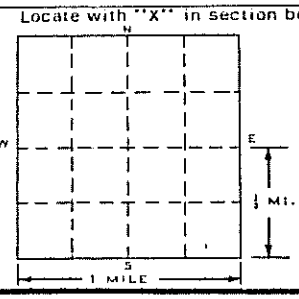
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW ¼ SW ¼ SW ¼	3	47 N/S.	29 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below

Sketch Map:



3 OWNER OF WELL:
Lucio Pigozzi

Address Humboldt

4 WELL DEPTH: (completed) Date of Completion
63 ft. 7-4-77

5
☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE:
☒ Domestic ☐ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ ____

7 CASING:
Threaded ☒ Welded ☐
Diam. 6 in. to 32 ft. Depth
____ in. to ____ ft. Depth
Height (Above) Below Surface 1 ft.
Weight 20 lbs./ft.
Drive Shoe? Yes ☒ No ☐

8 SCREEN:
Type: NONE Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
1.5 ft. below land surface

10 PUMPING LEVEL below land surface
40 ft. after 1 hrs. pumping 5 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION:
☐ In Approved Pit
☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted?
☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
80 feet N Direction Septic Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:
☐ Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

2 FORMATION

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Clay & Silt	12	12
Sand & gravel	6	18
Sand, some clay	14	32
Medium sand	31	63

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name Well Mfg. Inc.
REGISTERED BUSINESS NAME REGISTRATION NO.

Address 2830 Mac Arthur Dr. Marquette

Signed [signature] Date 9-9-77
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

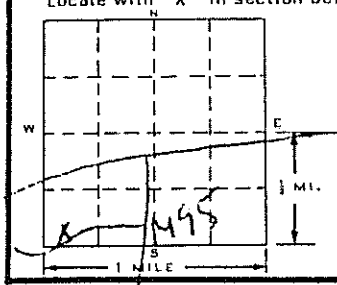
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ SW¼ SW¼	3	47 N/S	29 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

½ Mile W of M95

45.41

3 OWNER OF WELL:

Elden Kantola

Address RFD

Champion, Mich.

4 WELL DEPTH: (completed) Date of Completion

90½ ft. Nov 1971

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☒ Welded ☐

Diam. 6 in. to 87 ft. Depth

____ in. to ____ ft. Depth

Height: Above/~~Below~~ Surface 1 ft.

Weight 17 lbs./ft.

Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand & Gravel	7	7
Sandy Clay - Boulders	18	25
Packed Gravel - Clay - Boulders	56	81
Silty Gravel - Stone Clay	6	87

USE A 2ND SHEET IF NEEDED

8 SCREEN:

Type: Johnson Stainless Dia.: 6

Slot/Gauge .035 Length 3'

Set between 87 ft. and 90 ft.

Fittings: Sld-Lens Footer

9 STATIC WATER LEVEL

42 ft. below land surface

10 PUMPING LEVEL below land surface

80 ft. after 1 hrs. pumping 10 g.p.m.

____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million: Fe 1.2

Iron (Fe) ____ Chlorides (Cl) ____

Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit Spla ☒ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ____

Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination

60' feet E Direction Septic Type

Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed

Manufacturer's Name Jacuzzi Bros

Model Number 4C 500R HP ½ Volts 230 V

Length of Drop Pipe 69 ft. capacity 8 G.P.M.

Type: ☒ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Hanna Well Pump 0206

REGISTERED BUSINESS NAME REGISTRATION NO.

Address Negaunee Mich

Signed ____ Date 3/13/72

AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

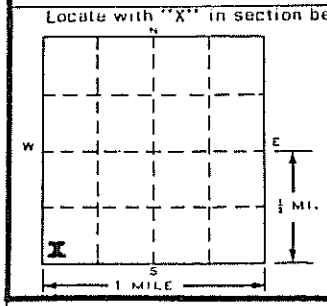
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼SW ¼ SW ¼	3	47 N/X	29X E/W.

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL:
Ron Mamari
Address US 41
Ishpeming, Mich.

4 WELL DEPTH: (completed) Date of Completion
ft.

5
☐ Cable tool ☐ Rotary ☐ Driven ☐ Dug
☐ Hollow rod ☐ Jetted ☐ Bored ☒ DTHT

6 USE:
☐ Domestic ☒ Public Supply ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☐ _____

7 CASING:
Threaded ☐ Welded ☒
Height: Above/Below Surface 1 ft.
6 in. to 25 ft. Depth
Weight 19.45 lbs./ft.
____ in. to ____ ft. Depth
Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand	10	10
Gravel with large boulders	15	25
Slate	37	62

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: _____ Dia.: _____
Slot/Gauze _____ Length _____
Set between _____ ft. and _____ ft.
Fittings:

9 STATIC WATER LEVEL
15 ft. below land surface

10 PUMPING LEVEL below land surface
60 ft. after 1 hrs. pumping 35 g.p.m.
_____ ft. after ___ hrs. pumping _____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) _____ Chlorides (Cl) _____
Hardness _____ Other _____

12 WELL HEAD COMPLETION:
☐ In Approved Pit
☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No
☐ Neat Cement ☐ Bentonite ☐ _____
Depth: From _____ ft. to _____ ft.

14 Nearest Source of possible contamination
80 feet W Direction Septic Type
Well disinfected upon completion ☒ Yes ☐ No

15 PUMP:
☒ Not installed
Manufacturer's Name _____
Model Number _____ HP ___ Volts _____
Length of Drop Pipe _____ ft. capacity ____ G.P.M.
Type: ☐ Submersible
☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleiman Pump & Well Drilling 0575
REGISTERED BUSINESS NAME REGISTRATION NO.

Address PO Box 704, Iron Mountain, Mich.

Signed W. P. Kleiman Date 10-13-70
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
Mackinac	Hudson Dold +	SW ¼ SW ¼ ¼	3	47 N.	2 E/W.

Distance And Direction from Road Intersections: ¼ Mile North of US 41

OWNER No.

Street address & City of Well Location: on old US 41

3 OWNER OF WELL: Harrison J Christie

Address: Box 16 Naubinway, Mich.

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
0'-2' Top soil	2	2
2'-20' Sand Clay	18	20
20'-60' Blue Sand	40	60
60'-66' Blue Sand & Gravel	6	66
T.D.		66'

4 WELL DEPTH: (completed) 66 ft. Date of Completion 3/15/65

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Diam. 7 in. to 66 ft. Depth; Threaded ☐ Welded ☒; ___ in. to ___ ft. Depth

Height: Above/Below surface 66 ft.; Weight 24 lbs/ft.; Drive Shoe? Yes ☒ No ☐

8 SCREEN:

Type: ___ Dia.: ___

Slot/Gauze ___ Length ___

Set between ___ ft. and ___ ft.

Fittings:

9 STATIC WATER LEVEL 40' ft. below land surface

10 PUMPING LEVEL below land surface

___ ft. after 2½ hrs. pumping 6 g.p.m.

___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ___ Chlorides (Cl) ___

Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☒ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☒ No

Material: ☐ Neat Cement ☐ ___

Depth: From ___ ft. to ___ ft.

14 SANITARY:

Nearest Source of possible contamination

60' feet N Direction Septic Tank Type

Well disinfected upon completion ☒ Yes ☐ No

15 PUMP:

Manufacturer's Name ___

Model Number ___ HP ___

Length of Drop Pipe ___ ft. capacity 6 G.P.M.

Type: ☐ Submersible ☐ ___ ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Lost Well Drillers — REGISTERED BUSINESS NAME — REGISTRATION NO.

Address Box 16 Naubinway Mich

Signed Henry Tenbo — AUTHORIZED REPRESENTATIVE — Date 3/20/65

D67D 100M 6-66

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No. [ ]

JAN 5 1982 [ ][ ] [ ][ ] [ ] [ ][ ][ ][ ] [ ][ ] [ ][ ][ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

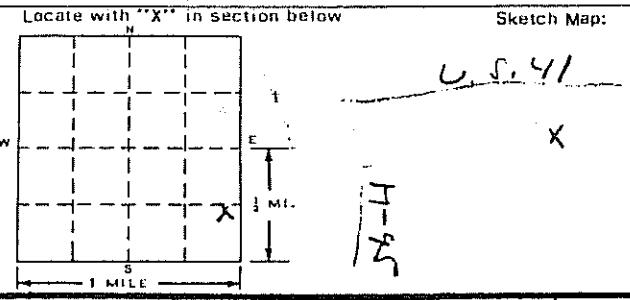
County	Township Name	Fraction	Section Number	Town Number	Range Number
MARQUETTE	HUMBOLT	NE¼ SE¼ SE¼	3	47 N/S.	29 E/W.

Distance And Direction from Road Intersections
½ MILE EAST AND ⅛ MILE SOUTH OF INTERSECT OF U.S. 41 & M-95

Street address & City of Well Location

Locate with "X" in section below

Sketch Map:



3 OWNER OF WELL: ELEN CHAPMAN
Address CHAMPION, MI 49814

4 WELL DEPTH: (completed) 61 ft. Date of Completion 12 DEC 81

5 ☐ Cable tool ☑ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☑ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☐ Welded ☑ Height: Above/Below Surface 1 ft.
Diam. 6 in. to 28 ft. Depth; Weight 19.41 lbs./ft.
____ in. to ____ ft. Depth; Drive Shoe? Yes ☑ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
SAND, CLAYEY	3	3
SAND	11	14
GRAVEL, CLAYEY	8	22
CLAY	6	28
ROCK	33	61

8 SCREEN:
Type: ____ Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
6 ft. below land surface

10 PUMPING LEVEL below land surface
25 ft. after ____ hrs. pumping 12 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☑ Pitless Adapter ☐ 12" Above Grade

13 Well Grouted? ☐ Yes ☑ No ☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
75 feet NW Direction SEPTIC Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☐ Not installed
Manufacturer's Name MYERS
Model Number SH5 211 HP ½ Volts 230
Length of Drop Pipe 42 ft. capacity 11 G.P.M.
Type: ☑ Submersible ☐ Jet ☐ Reciprocating

USE A 2ND SHEET IF NEEDED

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
[redacted] WELL [redacted]
REGISTERED BUSINESS NAME REGISTRATION NO.
Address [redacted] MI.
Signed [redacted] Date [redacted]
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

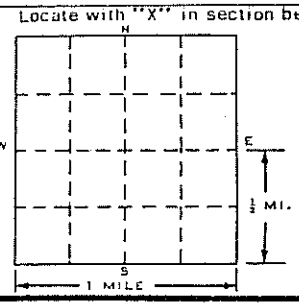
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW. SW. SW.	10	47 (N) S.	29 (E) W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL: Paul Anderson

Address Route 1 Gwinn, Mich.

4 WELL DEPTH: (completed) 303 ft. **Date of Completion** 10-3-75

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐

7 CASING: Threaded ☐ Welded ☒ Diam. 6 in. to 26.39' ft. Depth; ____ in. to ____ ft. Depth

Height: ~~Above~~/Below Surface 1 ft. Weight 18.97 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Clay & boulders	10	10
Black granite	293	303

USE A 2ND SHEET IF NEEDED

8 SCREEN:

Type: ____ Dia.: ____

Slot/Gauze ____ Length ____

Set between ____ ft. and ____ ft.

Fittings:

9 STATIC WATER LEVEL

10 ft. below land surface

10 PUMPING LEVEL below land surface

303 ft. after 3 hrs. pumping 420 g.p.m.

____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ____ Chlorides (Cl) ____

Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☒ Yes ☐ No ☒ Neat Cement ☐ Bentonite ☐ ____

Depth: From 0 ft. to 25 ft.

14 Nearest Source of possible contamination

____ feet ____ Direction None Type

Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☒ Not installed

Manufacturer's Name ____

Model Number ____ HP ____ Volts ____

Length of Drop Pipe ____ ft. capacity ____ G.P.M.

Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

3 bags of cement
well was thoroughly blasted

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleiman Pump & Well Drlg. Inc 0575
REGISTERED BUSINESS NAME REGISTRATION NO.

Address P.O. Box 704, Iron Mountain

Signed H. P. Kleiman Date 10-10-75
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

16

1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
[illegible]	Humbolt	[illegible]	10	47 N/S.	29 E/W.

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:

N, W, E, S — 1 MI. — 1 MILE

3 OWNER OF WELL: Joseph Helwig

Address [illegible] Humbolt Mich.

4 WELL DEPTH: (completed) 179 ft. Date of Completion Feb '77

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☐ Welded ☒ Height: Above/~~Below~~
Diam. 6 in. to 26.3 ft. Depth Surface 1 ft.
____ in. to ____ ft. Depth Weight [illegible] lbs./ft.
Drive Shoe? Yes ☒ No ☐

2

FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Clay and gravel	13	13
gravel	126	179

USE A 2ND SHEET IF NEEDED

8 SCREEN: (crossed out)
Type: ____ Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
____ ft. below land surface

10 PUMPING LEVEL below land surface
____ ft. after ____ hrs. pumping ____ g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million: (crossed out)
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☒ Yes ☐ No
☒ Neat Cement ☐ Bentonite ☐ ____
Depth: From 0 ft. to 26 ft.

14 Nearest Source of possible contamination
75 feet S Direction Septic Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☒ Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Lentz [illegible] Drilling Co.
REGISTERED BUSINESS NAME — REGISTRATION NO.

Address [illegible]

Signed Harry Lentz Date 4/22/77
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY NO

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

WATER WELL AND PUMP RECORD

PART 127 ACT 368, P A 1978

PERMIT NUMBER

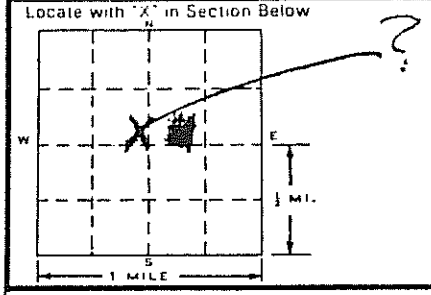
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ SW¼ NW¼	10	47 N/S	29 E/W

Distance And Direction From Road Intersection: East end of County Road FNO

Street Address & City of Well Location

Locate with "X" in Section Below



Sketch Map

3 OWNER OF WELL: Michael Janvi

Address: Rt 1 Box 83 Champion MI 49814

Address Same As Well Location? [X] Yes [ ] No

4 WELL DEPTH (completed): ft. 22 | Date of Completion: Nov 82

5 [ ] Cable tool [ ] Rotary [X] Driven [ ] Dug [ ] Hollow rod [ ] Auger [ ] Jetted [ ] _____

6 USE [X] Domestic [ ] Type I Public [ ] Type III Public [ ] Irrigation [ ] Type IIa Public [ ] Heat pump [ ] Test Well [ ] Type IIb Public [ ] _____

7 CASING Diameter [ ] Steel [ ] Threaded [ ] Plastic [ ] Welded

1¼ in. to 22 ft. depth

_____ in. to _____ ft. depth

Grouted Drill Hole Diameter

_____ in. to _____ ft. depth

_____ in. to _____ ft. depth

Height Above/Below Surface _____ ft.

Weight _____ lbs /ft

Drive Shoe [ ] Yes [ ] No

8 SCREEN [ ] Not Installed

Type Co | Diameter 1¼"

Slot/Gauze _____ | Length _____

Set between _____ ft and _____ ft

FITTINGS [ ] K-Packer [ ] Lead Packer [ ] Bremer Check

[ ] Blank above screen _____ ft | Other _____

9 STATIC WATER LEVEL: 15' ft. below land surface [ ] Flow

10 PUMPING LEVEL below land surface

_____ ft after _____ hrs pumping at _____ G P M

_____ ft after _____ hrs pumping at _____ G P M

11 WELL HEAD COMPLETION [ ] Pitless adapter [X] 12" above grade [ ] Basement offset [ ] Approved pit

12 WELL GROUTED? [ ] No [ ] Yes From _____ to _____ ft

[ ] Neat cement [ ] Bentonite [ ] Other _____

No. of bags of cement _____ Additives _____

13 Nearest source of possible contamination

Type Septic tank field | Distance 60 ft. | Direction N

Well disinfected upon completion? [ ] Yes [ ] No

14 PUMP [ ] Not Installed [ ] Pump Installation Only

Manufacturer's name Everready Briton

Model number _____ HP ½ Volts 110

Length of Drop Pipe 20' ft. capacity _____ G P M

TYPE [ ] Submersible [ ] Jet Briton

PRESSURE TANK

Manufacturer's name Montgomery Ward

Model number _____ Capacity 30 Gallons

2 FORMATION DESCRIPTION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand top soil	3	3
field stone and Grave	2	5
clay	1	6
Gravel	1	7
Clay	1	8
Gravel	1	9
Big Stones and Gravel	3	12
felt Like Gravel and Rock	10	22

Back Hoe Cut

USE A 2ND SHEET IF NEEDED

15. Remarks, elevation, source of data, etc

After 22' could not Drive Point any more

16. WATER WELL CONTRACTOR'S CERTIFICATION

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME _____ REGISTRATION NO. _____

Address _____

Signed _____ AUTHORIZED REPRESENTATIVE Date Dec 9 82

D67d (Rev. 10-80)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	NW NW NW	15	47 N/S.	27 E/W

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:

N / W / E / S — ½ MI. — 1 MILE

3 OWNER OF WELL: Bernhardt Maki

Address: Route 1 Box 87, Champion Michigan 49814

4 WELL DEPTH: (completed) 27 ft. Date of Completion 3-2-79

5 Cable tool ☐ Rotary ☒ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☐ Welded ☒

Diam. 6 in. to 24 ft. Depth; ____ in. to ____ ft. Depth

Height: Above/Below Surface 1' ft. Weight 18.97 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Gravel & boulders	27	27
USE A 2ND SHEET IF NEEDED		

8 SCREEN:

Type: #304 SSWW Dia.: 6"

Slot/Gauze 20 Length 3'

Set between 24 ft. and 27 ft.

Fittings: Fyk Pke Bail Bott.

9 STATIC WATER LEVEL

13 ft. below land surface

10 PUMPING LEVEL below land surface

20 ft. after 1 hrs. pumping 5 g.p.m.

____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ____ Chlorides (Cl) ____

Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No

☐ Neat Cement ☐ Bentonite ☐ ____

Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination

____ feet ____ Direction ____ Type

Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☒ Not installed

Manufacturer's Name Reda

Model Number 9D5P031 HP 1/3 Volts 230

Length of Drop Pipe 22 ft. capacity 5 G.P.M.

Type: ☒ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Kleiman Pump & Well Drlg Inc. 0575

REGISTERED BUSINESS NAME — REGISTRATION NO.

Address P.O. Box 704, Iron Mountain

Signed H. P. Kl[illegible] — AUTHORIZED REPRESENTATIVE — Date 3-6-79

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	¼ NW ¼ NW¼	15	47 (N)/S.	29 E/(W)

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below — Sketch Map:

N / W / E / S — ½ MI. — 1 MILE

3 OWNER OF WELL: Ed Heikkila

Address: Republic, Mich.

4 WELL DEPTH: (completed) 250 ft. Date of Completion 3-23-73

5 ☐ Cable tool ☒ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ____

7 CASING: Threaded ☐ Welded ☒ Diam. 6 in. to 24'5" ft. Depth ____ in. to ____ ft. Depth

Height: Above/Below Surface 1 ft. Weight 18.97 lbs./ft. Drive Shoe? Yes ☒ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
till	15	15
Granite	235	250

USE A 2ND SHEET IF NEEDED

8 SCREEN: Type: ____ Dia.: ____ Slot/Gauze ____ Length ____ Set between ____ ft. and ____ ft. Fittings:

9 STATIC WATER LEVEL 17 ft. below land surface

10 PUMPING LEVEL below land surface 250 ft. after 1 hrs. pumping 14 g.p.m. ____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million: Iron (Fe) ____ Chlorides (Cl) ____ Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☒ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☒ Yes ☐ No ☒ Neat Cement ☐ Bentonite ☐ ____ Depth: From 0 ft. to 25 ft.

14 Nearest Source of possible contamination 75 feet S Direction Septic Type

Well disinfected upon completion ☒ Yes ☐ No

15 PUMP: ☐ Not installed

Manufacturer's Name Reda

Model Number 17D5/071 HP ½ Volts 230

Length of Drop Pipe 240 ft. capacity 5 G.P.M.

Type: ☒ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Neiman Pump & Well Drlg Inc — 0574

REGISTERED BUSINESS NAME — REGISTRATION NO.

Address PO Box 704, Iron Mtn

Signed [signature] Date 2-3-76

AUTHORIZED REPRESENTATIVE

100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

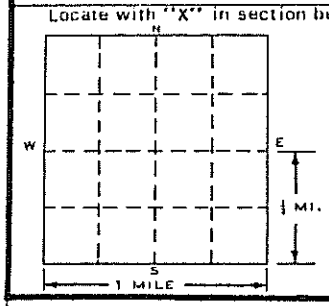
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	NE ¼ NE ¼ NW ¼	2	47 N/S. X	29 E/W. X

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL:
Cent Mqt Water & Sewer Auth
Address 100 E Division
Ishpeming, Michigan 49849

4 WELL DEPTH: (completed) Date of Completion
150 ft. 11/79

5 [X] Cable tool [ ] Rotary [ ] Driven [ ] Dug
[ ] Hollow rod [ ] Jetted [ ] Bored [ ] ____

6 USE: [ ] Domestic [ ] Public Supply [ ] Industry
[ ] Irrigation [ ] Air Conditioning [ ] Commercial
[X] Test Well [ ] ____

7 CASING: Threaded [X] Welded [ ]
Diam. 5 in. to 150 ft. Depth
____ in. to ____ ft. Depth
Height: Above/Below Surface 2 ft.
Weight 15 lbs./ft.
Drive Shoe? Yes [X] No [ ]

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Fine sand	10	10
Fine to coarse sand	5	15
Gray clay & fine sand	5	20
Mixed sand and gravel	10	30
* Coarses sand	5	35
* Dk brown sand & gravel	10	45
Fine dark sand	20	65
Gray clay & fine sand	60	125
Gray sandy clay	15	140
Gray clay	8	148
Coarse dirty gravel	2	150
Broken ledge		150

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: None Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
7 ft. below land surface

10 PUMPING LEVEL below land surface Not developed
____ ft. after ____ hrs. pumping ____ g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: [ ] In Approved Pit
[ ] Pitless Adapter [X] 12" Above Grade Capped

13 Well Grouted? [ ] Yes [X] No
[ ] Neat Cement [ ] Bentonite [ ] ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination NA
____ feet ____ Direction ____ Type
Well disinfected upon completion [ ] Yes [ ] No

15 PUMP: [X] Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: [ ] Submersible
[ ] Jet [ ] Reciprocating

16 Remarks, elevation, source of data, etc.
* Swampy smell to water

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Hakala Well & Pump Service 0206
REGISTERED BUSINESS NAME REGISTRATION NO.

Address Negaunee, Michigan 49866

Signed Edwin Hakala Date 12/11/79
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

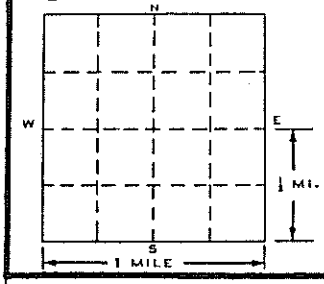
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	SW¼ NE¼ NW¼	2	47 N/S. X	29 X E/W.

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below

Sketch Map:



3 OWNER OF WELL:
Cent Mqt Water & Sewer Auth
Address 100 E. Division
Ishpeming, Michigan

4 WELL DEPTH: (completed) 126 ft. Date of Completion 9/19/9

5 [X] Cable tool [ ] Rotary [ ] Driven [ ] Dug
[ ] Hollow rod [ ] Jetted [ ] Bored [ ] ____

6 USE: [ ] Domestic [ ] Public Supply [ ] Industry
[ ] Irrigation [ ] Air Conditioning [ ] Commercial
[X] Test Well [ ] ____

7 CASING: Threaded [ ] Welded [ ] Height: Above/Below
Diam. 5 in. to Remodeled Depth Surface ____ ft.
____ in. to ____ ft. Depth Weight ____ lbs./ft.
Drive Shoe? Yes [ ] No [ ]

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand	2	2
Coarse sand and gravel	8	10
Coarse sand	10	20
Fine-medium sand	10	30
Fine sand Dk brown	10	40
Mixed sand and gravel	7	47
Med - coarse sand (swampy water)	5	52
Fine muddy sand	6	58
Fine gray sand & clay	7	65
Fine to coarse sand	5	70
Hardpan with rocks to 1½" D	20	90
Large gravel	2	92
Hardpan (packed gravel & clay	18	110
Weathered slate or shale rock	16	126

USE A 2ND SHEET IF NEEDED

8 SCREEN:
Type: X Dia.: ____
Slot/Gauze ____ Length ____
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL
____ ft. below land surface

10 PUMPING LEVEL below land surface
____ ft. after ____ hrs. pumping ____ g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (Fe) ____ Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: [ ] In Approved Pit
[ ] Pitless Adapter [ ] 12" Above Grade

13 Well Grouted? [ ] Yes [ ] No
[ ] Neat Cement [ ] Bentonite [ ] ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
____ feet ____ Direction ____ Type
Well disinfected upon completion [ ] Yes [ ] No

15 PUMP: [X] Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: [ ] Submersible
[ ] Jet [X] Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Hakala Well & Pump Service 0206
REGISTERED BUSINESS NAME REGISTRATION NO.

Address Negaunee, Michigan

Signed ____ Date 9/27/79
AUTHORIZED REPRESENTATIVE

D67d 100M (Rev. 12-68)

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No. [ ]

WATER WELL RECORD
ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

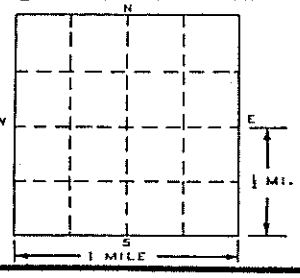
1 LOCATION OF WELL

County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humboldt	¼ NE¼ ¼	2	47 N/S.	29 E/W.

Distance And Direction from Road Intersections

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL: Central Marquette Water & Sewer Authority
Address 100 E. Division St. Ishpeming Mi. 49849

4 WELL DEPTH: (completed) 95 ft. **Date of Completion** 11-14-78

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☐ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ EXPLORATORY

7 CASING: Threaded ☐ Welded ☒ Diam. 4 in. to 85 ft. Depth; ____ in. to ____ ft. Depth
Height: Above/Below Surface ____ ft. Weight ____ lbs./ft. Drive Shoe? Yes ☐ No ☐

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Top Soil	1	1
Gravel & sand	29	30
Coarse sand	8	38
Clay & sand	12	50
Gravel	39	89
Slate soft fractured	5	94
Slate black	1	95

USE A 2ND SHEET IF NEEDED

8 SCREEN: Type: Johnson Dia.: 3½ Slot/Gauze 12 Length 10 ft.
Set between ____ ft. and ____ ft.
Fittings:

9 STATIC WATER LEVEL 9 ft. below land surface

10 PUMPING LEVEL below land surface
80 ft. after 2 hrs. pumping 9 g.p.m.
____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:
Iron (FE) NO TEST Chlorides (Cl) ____
Hardness ____ Other ____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 Well Grouted? ☐ Yes ☒ No ☐ Neat Cement ☐ Bentonite ☐ ____
Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination
NOT APPLICABLE Type
Well disinfected upon completion ☐ Yes ☐ No

15 PUMP: ☒ Not installed
Manufacturer's Name ____
Model Number ____ HP ____ Volts ____
Length of Drop Pipe ____ ft. capacity ____ G.P.M.
Type: ☐ Submersible ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
ABC Well Drilling (REGISTERED BUSINESS NAME) 0953 (REGISTRATION NO.)
Address P.O.Box 229 Manistique Mi.
Signed William F. Cole (AUTHORIZED REPRESENTATIVE) Date 12-1-78

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GEOLOGICAL SURVEY SAMPLE No. _____

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
Wayne Co.	Humbolt	¼NW¼ SE¼	2	4 7 N/S	2 9 E/W.

Distance And Direction from Road Intersections

OWNER No. _____

Street address & City of Well Location: Same as owner

3 OWNER OF WELL: Donald Hawkins

Address: Humbolt

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Sand	1	2
Sand	29	31
Gravel	31	33

4 WELL DEPTH: (completed) 33 ft. Date of Completion

5 ☒ Cable tool ☐ Rotary ☐ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ____

6 USE: ☒ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ _____

7 CASING: Diam. 7 in. to 33 ft. Depth; Threaded ☒ Welded ☐; Height: Above/Below surface 1 ft.; Weight _____ lbs/ft.; ____ in. to ____ ft. Depth; Drive Shoe? Yes ☒ No ☐

8 SCREEN: Type: None Dia.: _____

Slot/Gauze _____ Length _____

Set between _____ ft. and _____ ft.

Fittings:

9 STATIC WATER LEVEL 6 ft. below land surface

10 PUMPING LEVEL below land surface

30 ft. after 1/2 hrs. pumping 5 g.p.m.

_____ ft. after _____ hrs. pumping _____ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) _____ Chlorides (Cl) _____

Hardness _____

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☒ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☐ No

Material: ☐ Neat Cement ☐ _____

Depth: From _____ ft. to _____ ft.

14 SANITARY:

Nearest Source of possible contamination

50 feet E Direction Septic Type

Well disinfected upon completion ☒ Yes ☐ No

15 PUMP:

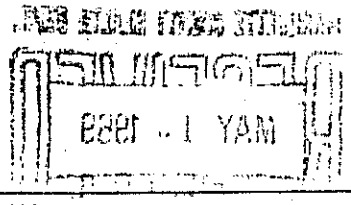
Manufacturer's Name _____

Model Number _____ HP _____

Length of Drop Pipe _____ ft. capacity _____ G.P.M.

Type: ☐ Submersible ☐ _____ ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.



17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Fort Well Drilling — REGISTERED BUSINESS NAME — 0800 — REGISTRATION NO.

Address 3154 Michigamme Mich

Signed _____ (AUTHORIZED REPRESENTATIVE) Date 5/16/69

D67D 100M 6-66

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GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

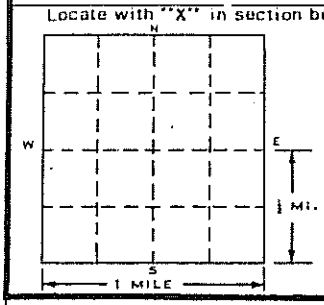
County	Township Name	Fraction	Section Number	Town Number	Range Number
Marquette	Humbolt	nw ¼ nw ¼ sw ¼	1	47 N.	29 W.

Distance And Direction from Road Intersections

Parcel Sub Lot # 1

Street address & City of Well Location

Locate with "X" in section below



Sketch Map:

3 OWNER OF WELL: Lawrence Terlicki

Address P.O. Box 772, Escanaba, MI

4 WELL DEPTH: (completed) 40 ft. Date of Completion 6/5/79

5 [X] Cable tool [ ] Rotary [ ] Driven [ ] Dug [ ] Hollow rod [ ] Jetted [ ] Bored [ ] ____

6 USE: [X] Domestic [ ] Public Supply [ ] Industry [ ] Irrigation [ ] Air Conditioning [ ] Commercial [ ] Test Well [ ]

7 CASING: Threaded [ ] Welded [X]

4 in. to 36 ft. Depth

____ in. to ____ ft. Depth

Height: Above/Below Surface 1½ ft.

Weight 10.79 lbs./ft.

Drive Shoe? Yes [X] No [ ]

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
Top Soil	1	1
Course Gravel	9	10
Sand	30	40

USE A 2ND SHEET IF NEEDED

8 SCREEN:

Type: 304 Stainless Dia.: 4 inch

Slot/Gauze 10 slot Length 4 ft.

Set between 36 ft. and 40 ft.

Fittings: K- Packer

9 STATIC WATER LEVEL

12 ft. below land surface

10 PUMPING LEVEL below land surface

12 ft. after 2 hrs. pumping 15 g.p.m.

____ ft. after ____ hrs. pumping ____ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ____ Chlorides (Cl) ____

Hardness ____ Other ____

12 WELL HEAD COMPLETION: [ ] In Approved Pit [X] Pitless Adapter [ ] 12" Above Grade

13 Well Grouted? [ ] Yes [X] No [ ] Neat Cement [ ] Bentonite [ ] ____

Depth: From ____ ft. to ____ ft.

14 Nearest Source of possible contamination

____ feet ____ Direction ____ Type

Well disinfected upon completion [X] Yes [ ] No

15 PUMP: [ ] Not installed

Manufacturer's Name ~~Webtrol~~

Model Number ~~10C58~~ HP ½ Volts ~~230~~

Length of Drop Pipe ____ ft. capacity ~~10~~ G.P.M.

Type: [X] Submersible [ ] Jet [ ] Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

~~MacDonald Well Drilling~~ RECORDED BUSINESS NAME REGISTRATION NO. 1676

Address ~~Star Route Box 338~~ ~~Quinn, MI~~

Signed ____ AUTHORIZED REPRESENTATIVE Date 6/25/79

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GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
MARQUETTE	HUMBOLDT	NW¼ SW¼ ¼	1	T47N N/S.	29W E/W.

Distance And Direction from Road Intersections

OWNER No.

Street address & City of Well Location HUMBOLDT

3 OWNER OF WELL: OLIVE E. STONE

Address RT #1 Box 120-A CHAMPION MICH.

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM
DRIVEN POINT		

4 WELL DEPTH (completed) 20 ft. **Date of Completion** 6-7-74

5 ☐ Cable tool ☐ Rotary ☑ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☑ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Diam. Threaded ☑ Welded ☐

1¼ in. to 9 ft. Depth

___ in. to ___ ft. Depth

Height: ~~Above~~/Below surface 1½ ft.

Weight ___ lbs/ft.

Drive Shoe? Yes ☐ No ☑

8 SCREEN:

Type: POINT Dia.: 1¼"

Slot/Gauze 80 Length 4'

Set between 15 ft. and 20 ft.

Fittings: COPPER ABOVE CASING

9 STATIC WATER LEVEL

12 ft. below land surface

10 PUMPING LEVEL below land surface

___ ft. after ___ hrs. pumping ___ g.p.m.

___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ___ Chlorides (Cl) ___

Hardness ___

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☐ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☐ No

Material: ☐ Neat Cement ☐ ___

Depth: From ___ ft. to ___ ft.

14 SANITARY:

Nearest Source of possible contamination

75 feet E Direction DISPOSAL FIELD Type

Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:

Manufacturer's Name McDONALD

Model Number 140801208 HP ⅓

Length of Drop Pipe ___ ft. capacity ___ G.P.M.

Type: ☐ Submersible ☐ SHALLOW WELL ☐ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME ___ REGISTRATION NO. ___

Address ___

Signed ___ Date ___

AUTHORIZED REPRESENTATIVE

D67D 100M 6-66

LOCAL HEALTH DEPT. COPY

GEOLOGICAL SURVEY SAMPLE No.

WATER WELL RECORD

ACT 294 PA 1965

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

1 LOCATION OF WELL

County	Twp.	Fraction	Section No.	Town	Range
Marquette	Humboldt	NW¼ of ¼ SW¼	1	47 N/S.	28 E/W.

Distance And Direction from Road Intersections: Driven point inside of house

OWNER No.

R.F.D. Box 120 Champion Mich.

Street address & City of Well Location

3 OWNER OF WELL:

Address: Nestor Norkoli

2 FORMATION	THICKNESS OF STRATUM	DEPTH TO BOTTOM OF STRATUM

4 WELL DEPTH: (completed) Date of Completion

ft.

5 ☐ Cable tool ☐ Rotary ☑ Driven ☐ Dug ☐ Hollow rod ☐ Jetted ☐ Bored ☐ ___

6 USE: ☑ Domestic ☐ Public Supply ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☐ ___

7 CASING: Diam. Threaded ☐ Welded ☐

4 in. to 12 ft. Depth

Height: Above/Below surface 1 ft.

Weight ___ lbs/ft.

___ in. to ___ ft. Depth

Drive Shoe? Yes ☐ No ☐

8 SCREEN:

Type: 80 Dia.: 1¼"

Slot/Gauze ___ Length 3ft

Set between 22 ft. and 25 ft.

Fittings:

9 STATIC WATER LEVEL

8' ft. below land surface

10 PUMPING LEVEL below land surface

___ ft. after ___ hrs. pumping ___ g.p.m.

___ ft. after ___ hrs. pumping ___ g.p.m.

11 WATER QUALITY in Parts Per Million:

Iron (Fe) ___ Chlorides (Cl) ___

Hardness Tested Safe

12 WELL HEAD COMPLETION: ☐ In Approved Pit ☐ Pitless Adapter ☐ 12" Above Grade

13 GROUTING:

Well Grouted? ☐ Yes ☐ No

Material: ☐ Neat Cement ☐ ___

Depth: From ___ ft. to ___ ft.

14 SANITARY:

Nearest Source of possible contamination

300 feet East Direction ___ Type

Well disinfected upon completion ☐ Yes ☐ No

15 PUMP:

Manufacturer's Name Mc. Donald Mfg. Co

Model Number 140S41140 8 HP ½

Length of Drop Pipe 20 ft. capacity ___ G.P.M.

Type: ☐ Submersible ☐ ___ ☑ Jet ☐ Reciprocating

16 Remarks, elevation, source of data, etc.

17 WATER WELL CONTRACTOR'S CERTIFICATION:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

REGISTERED BUSINESS NAME ___ REGISTRATION NO. ___

Address ___

Signed ___ Date 8/4/71

AUTHORIZED REPRESENTATIVE

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WELL LOGS - CCI

Well 1W - Section 2, T 47 N, R 39 W

Ground Elevation 1532.5, Static 10'

0-20	Sand and Gravel
20-40	Sand
40-67	Quicksand
67-73	Clay
73-92	Sand and Gravel
92-109	Sand, Clay and Gravel
109-114	Ledge, Gray Slate

Well 2W - Section 2, T 47 N, R 39 W

Ground Elevation 1526.7, Static 1'

0-5	Sand and Gravel
5-52	Sand
52-65	Quicksand
65-80	Clay
80-95	Fine Sand and Clay
95-112	Sand, Clay and Boulders
112-117	Ledge, Gray Slate

Well 3W - Section 2, T 47 N, R 39 W

Ground Elevation 1540.7, Static 8'

0-55	Sand
55-63.5	Sand, Clay and Boulders
63.5	Ledge

Well 4W - Section 2, T 47 N, R 39 W

Ground Elevation 1541.3, Static 8'

0-58	Sand
58-68	Sand, Clay and Boulders

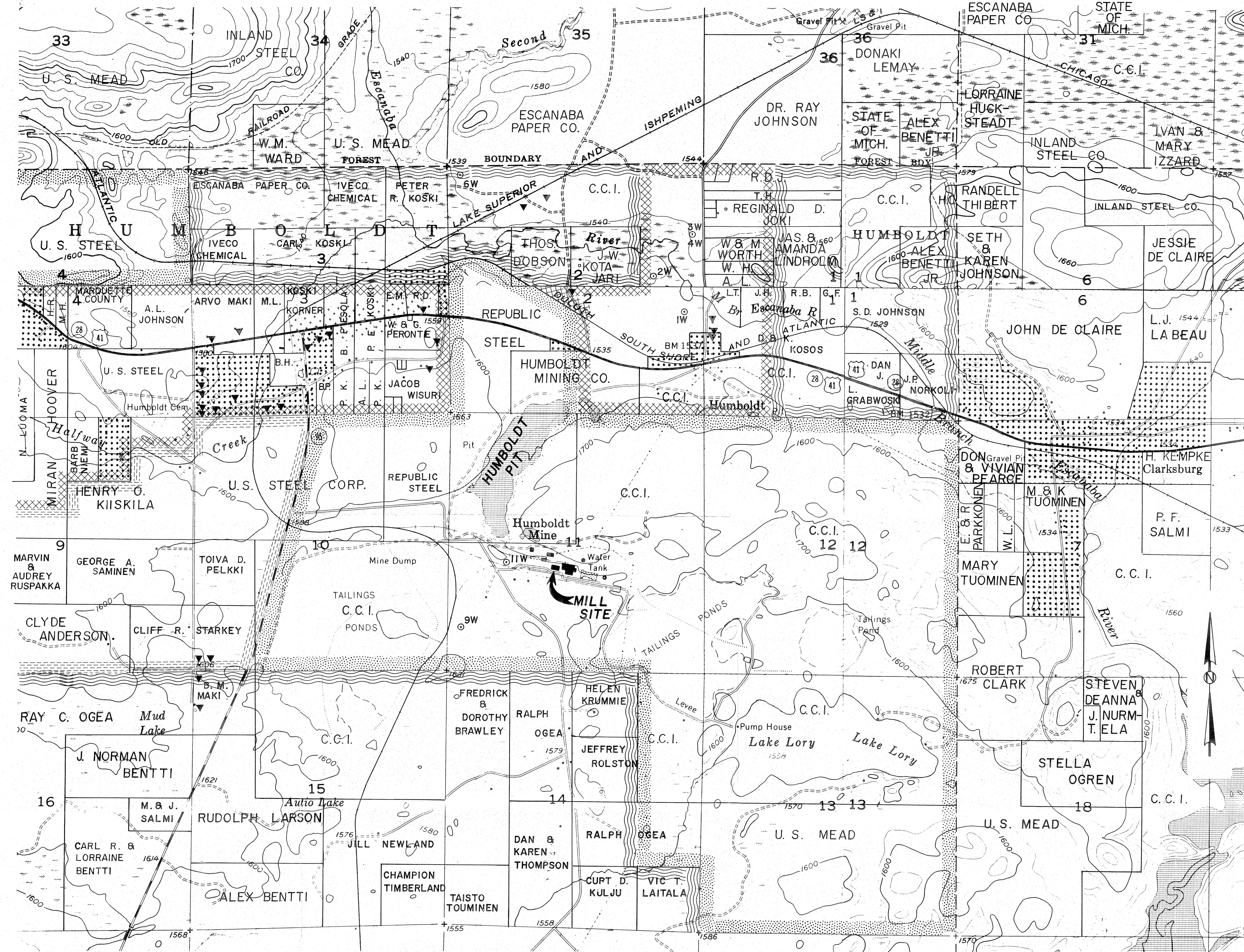
Well 6W - Section 2, T 47 N, R 39 W

Ground Elevation 1537.5

0-9	Topsoil, Sand and Gravel
9-15	Coarse Gravel
15-40	Gravel
40-60	Sand
60-68	Fine Sand
68-100	Clay
100-110	Sandy Clay
110-120	Clay and Gravel

Well 11W - Section 11, T 47 N, R 29 W

0-5	Topsoil
5-15	Gravel and Sand
15-55	Dirty Sand and Clay
55-70	Dirty Sand
70-79	Clay and Sand
79	Ledge



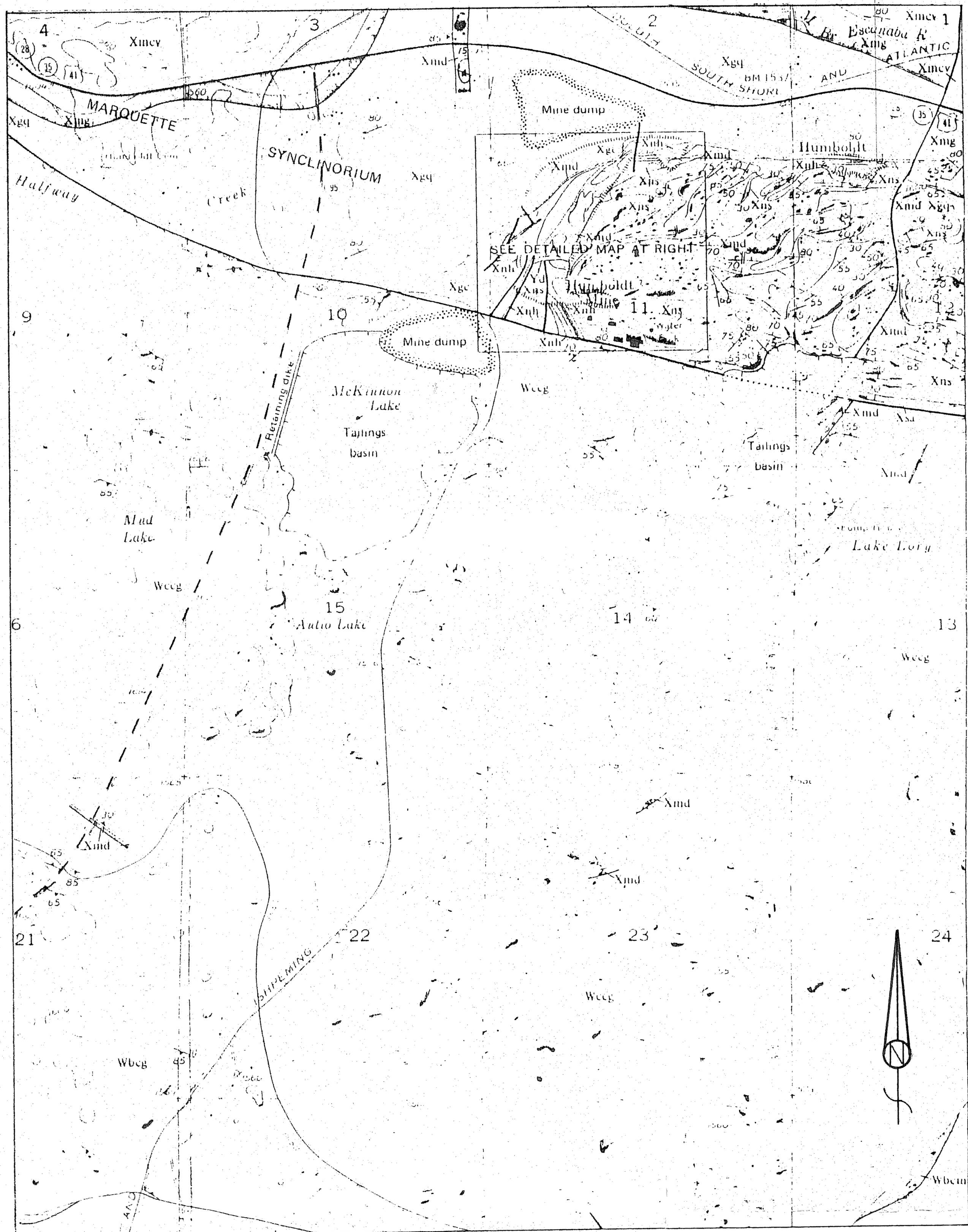
LEGEND

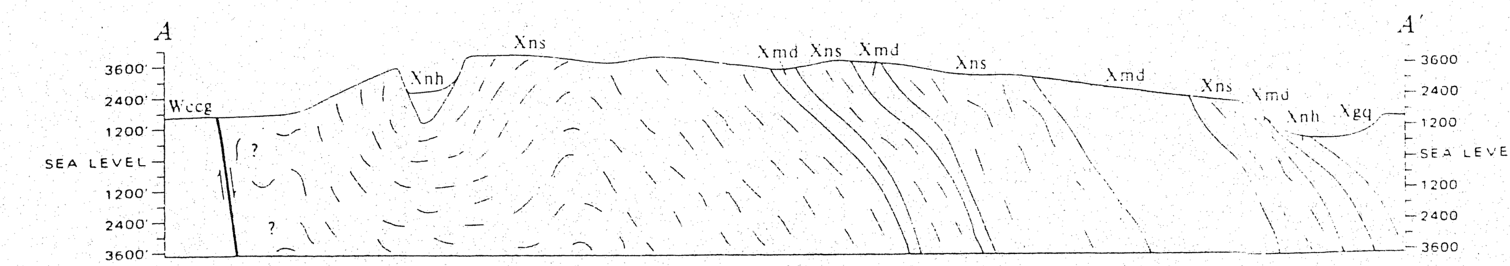
- ▼ DOMESTIC WELLS
- SMALL TRACTS
- RESIDENTIAL DISTRICT
- MINERAL RESOURCE DISTRICT
- RESOURCE PRODUCTION DISTRICT
- RURAL RESIDENTIAL DISTRICT
- COMMERCIAL DISTRICT
- ⊙ C.C.I. WELLS

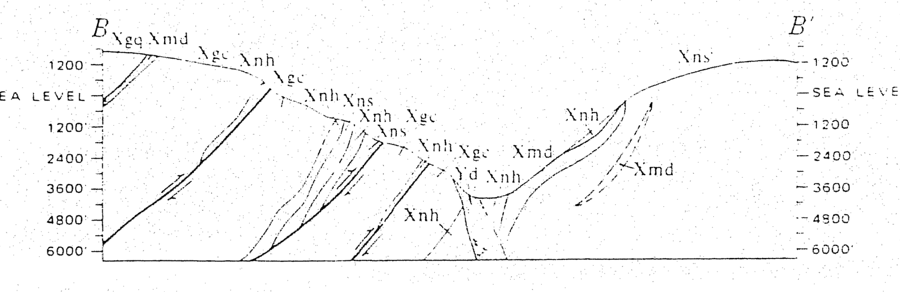
EXHIBIT A

SCALE: 1" = 1000'

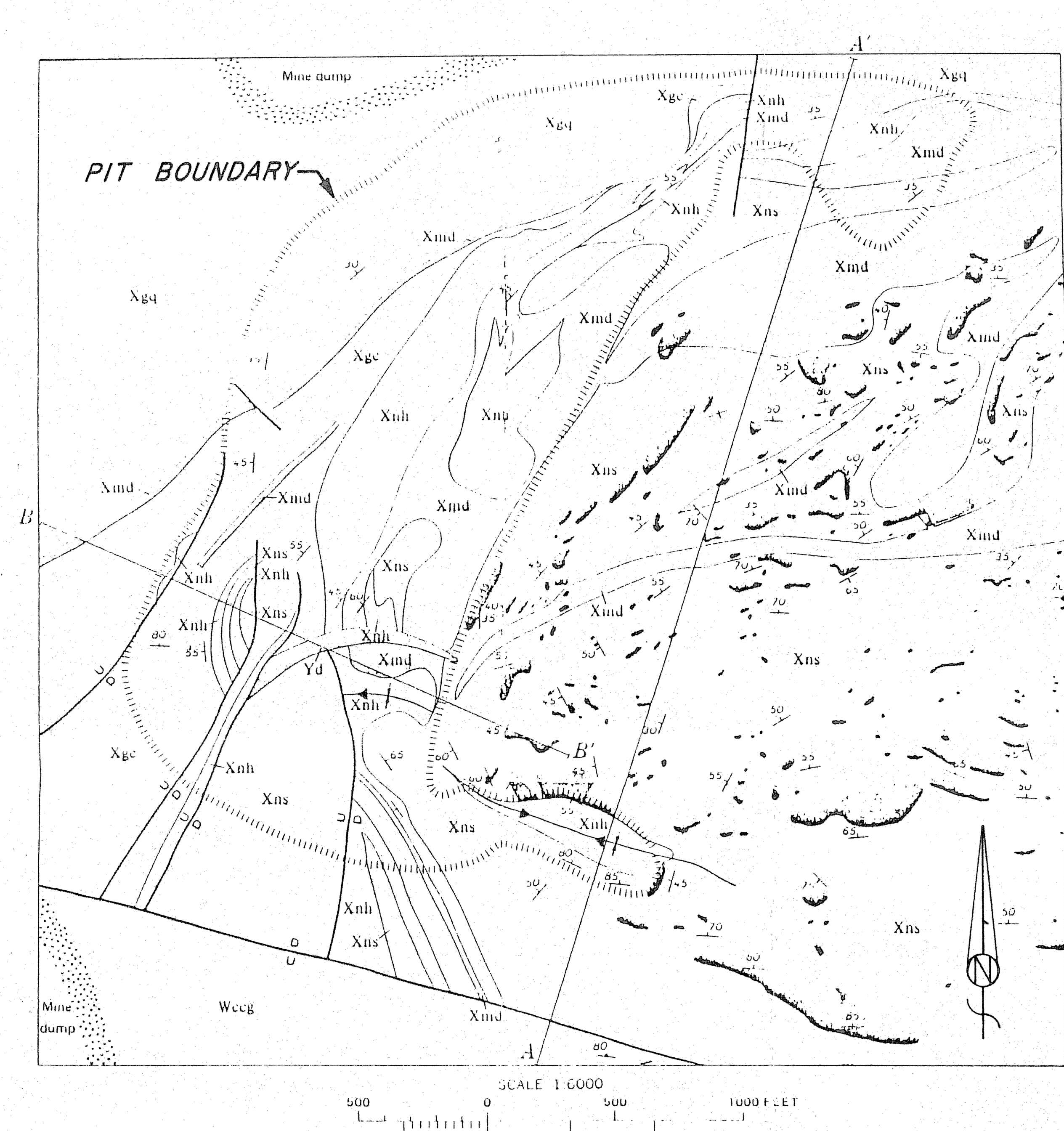
TRAVERSE ENGINEERING SERVICES, P.C. ENGINEERS - SURVEYORS - GEOLOGISTS HANCOCK, MICHIGAN	HYDROGEOLOGICAL/HYDROGEOLOGICAL STUDY TAILING STORAGE FACILITY	CALLAHAN MINING CORP. CHAMPION, MICHIGAN	PROPERTY OWNERSHIP & ZONING	JOB NO. 153 11-30-84 SHEET 1 OF €







DETAILED GEOLOGIC MAP AND SECTIONS OF THE HUMBOLDT MINE AREA



DESCRIPTION OF MAP UNITS

Yd DIABASE (PRECAMBRIAN Y) — Medium- to fine-grained diabase composed of plagioclase, clinopyroxene, rarely olivine, and magnetite. Varies from fresh to moderately altered with clinopyroxene and olivine altered to serpentine, chlorite, or biotite. Occurs as nearly vertical dikes, mostly west trending, that cut all Precambrian W and X units. Has reversed magnetic polarity and larger dikes produce linear negative anomalies on aeromagnetic maps (Case and Gair, 1965)

Xmd METADIABASE (PRECAMBRIAN X) — Black to dark-green, coarse- to medium-grained metamorphosed diabase. Occurs as dikes as much as a few hundred feet wide in Precambrian W rocks and as sills, podiform or laccolithic masses, subconcordant sheets, and rarely dikes in Precambrian X rocks. Mostly plagioclase-hornblende quartz amphibolite but with widely varying mineralogy including garnet-rich and epidote-rich varieties. Textures vary from massive, with local preservation of diabasic texture, particularly in larger masses, to highly schistose in smaller masses or near margins of larger masses. Most is probably equivalent to Clarksburg Volcanics Member of the Michigamme Formation but younger and older rocks of similar lithology probably also present. A distinctive porphyritic metadiabase with plagioclase phenocrysts as long as about 3 cm forms northwest-trending dikes common in Precambrian W rocks but has not been found cutting Precambrian X rocks. These dikes may be of late Precambrian W age rather than related to the Precambrian X Clarksburg Volcanics Member. Rarely, undeformed metadiabase dikes cut folded Precambrian X rocks including metadiabase sills and these are clearly younger than the Clarksburg Volcanics Member

Xmcv Clarksburg Volcanics Member — Single outcrop in the quadrangle is sheared agglomerate with mostly mafic pyroclastic fragments and subordinate chert fragments. The presence of the member across much of the northern edge of the quadrangle is inferred by tracing the underlying Greenwood Iron-formation Member, largely by magnetic measurement. More extensive outcrops of the Clarksburg Volcanics Member are found immediately east of the quadrangle and have been described by Cannon (1974)

Xmg Greenwood Iron-formation Member — Banded silicate-magnetite iron-formation. Typically 10-15 percent magnetite with grunerite, hornblende, and biotite most common iron silicate minerals. Quartz forms fine-grained groundmass around iron minerals and varies greatly in abundance, but beds of pure chert, typical of most iron-formations, are absent. Muscovite is commonly disseminated throughout quartz matrix. Outcrops restricted to northeast corner of quadrangle but unit was traced westward magnetically. Decrease in magnetic intensity to the west of outcrop area suggests the unit thins to the west or grades laterally into more argillaceous rock

Xgq GOODRICH QUARTZITE (PRECAMBRIAN X) — Fining-upward clastic sequence with thin, discontinuous unit of oligomictic iron-formation pebble conglomerate at base grading up into thickly bedded, coarse- to medium-grained, vitreous to feldspathic quartzite which in turn grades up into more argillaceous rock. Fragments in conglomerate are mostly angular to subrounded and as much as about 1 foot in longest dimension. Quartzite is nonfeldspathic in the lower 200 feet but contains some highly feldspathic beds in upper part of unit. More argillaceous beds commonly contain abundant biotite, garnet, or chloritoid

Xgc Thick lenses of basal conglomerate — Best exposed in Humboldt and Republic open pit mines. Marked lateral changes in thickness; as much as several hundred feet thick in places. Polymictic conglomerate with pebble- to cobble-size angular to subrounded clasts of iron-formation and layered to massive sedimentary rocks, and well rounded pebbles and cobbles of vein quartz. Large clasts are surrounded by matrix containing quartz, muscovite, hematite, and magnetite but little or no feldspar. Much is very iron rich and is mined for concentrating grade iron ore at Republic open pit

Xnh NEGAUNEE IRON-FORMATION (PRECAMBRIAN X) — Hematite-rich oxide facies iron-formation — Typically contains 30-35 percent Fe and is the major iron-producing unit in the quadrangle. Locally contains masses of high-grade hard hematite and magnetite ore near upper contact. In Republic syncline is mostly wavy bedded jaspilite with red and maroon jasper, partly oolitic, interlayered with specular hematite in one-inch layers. Variable amounts of magnetite are disseminated in hematite layers. Magnetite is commonly converted to martite in varying degrees. Biotite, muscovite, chlorite, hornblende, and garnet are common accessory minerals. Near Humboldt mine it is similar to that in Republic syncline but is more even bedded and nonoolitic, and gray chert is predominant over jasper

Xns Iron silicate-rich iron-formation — Mostly banded grunerite magnetite iron-formation consisting of layers of coarse-grained grunerite with large to nil magnetite content, interlayered with gray chert, or locally chert free. Grunerite is typically randomly oriented or in sheaves of acicular grains or rarely oriented parallel to cleavage. Pinhead-size garnet is commonly disseminated throughout grunerite layers and biotite and actinolite are common accessory minerals. At Republic, clinopyroxene and epidote are locally common. In higher parts of the unit at Republic, magnetite content may be sufficient for concentrating grade magnetite ore but in general, unit has only 10-15 percent magnetite

Xsa SIAMO SLATE AND AJIBIK QUARTZITE, UNDIFFERENTIATED (PRECAMBRIAN X) — Poorly exposed unit containing schist similar to Siamo Slate and vitreous quartzite similar to Ajibik Quartzite elsewhere in the Marquette area. Single outcrop in Marquette synclinorium is biotite-garnet schist with garnet porphyroblasts up to nearly 1 inch diameter in highly schistose biotite quartz matrix. Near Republic, most outcrops are vitreous quartzite which varies from massive to thickly bedded and locally can be seen underlying ferruginous biotite-garnet-grunerite schist which grades upward into Negaunee Iron-formation

Wccg COMPEAU CREEK GNEISS (PRECAMBRIAN W) — Granitic gneiss — Massive to prominently foliated medium-grained granitic rocks. Largely tonalite with lesser amounts of more potassic phases. Commonly has irregular pegmatitic patches, biotitic schlieren and, in places, abundant xenoliths of metasedimentary rocks and amphibolite. Described more fully by Cannon and Simmons (1973)

Wbcg Granitic gneiss — Coarse-grained porphyritic rock, mostly adamellite with strongly aligned microcline megacrysts (as much as about 5 cm in size) which form about 1/3 of rock. Groundmass is largely 3-5 mm grains of quartz, plagioclase, mostly oligoclase, and microcline in roughly equal amounts. Biotite is generally present in small amounts, rarely forms as much as 10 percent of rock, and chlorite, zircon, and apatite are common accessory minerals. Cryptic layering occurs in some outcrops as variations in megacryst abundance. Unit also contains [illegible] granitic rocks and quartz-mica schist

Wbcm Mafic gneiss — Dark-colored, massive to prominently banded plagioclase hornblende ± clinopyroxene gneiss generally with medium-grained granoblastic texture. Locally contains lenses of highly metamorphosed silicate (grunerite and/or orthopyroxene) magnetite iron-formation. All such lenses are too small to map but localities where they crop out are indicated by an [illegible]

MAP SYMBOLS

The geology shown in the Republic and Humboldt mine areas does not conform to base map features because of post-1955 mining activities. Outcrops are as of 1971

Area of bedrock outcrop

Contact — Most are concealed except in open pit. Accuracy of location can be inferred from distribution of outcrops. Dotted in water

Fault — Dotted in water. U, upthrown side; D, downthrown side

Syncline — Showing trace of axial plane and direction of plunge

Strike and dip of bedding
- Inclined
- Vertical
- Overturned

Strike and dip of foliation or cleavage — Value given where known
- Inclined
- Vertical

Strike of foliation — Dip not measured

Bearing and plunge of fold axis

Troughline of negative magnetic anomaly

Margin of open pit

Margin of tailings basin

Margin of stripping dump

Note — Topographic contours do not conform to the surface within open pits; these pits post-date the base map. Steeply dipping pit walls in places distort the map view of the geology. In particular, the thickness of units underlying the ore zone is commonly exaggerated, especially in the Humboldt pit, because the pit footwall is commonly nearly parallel to bedding. Ruled pattern shows area of tailings basins in 1971

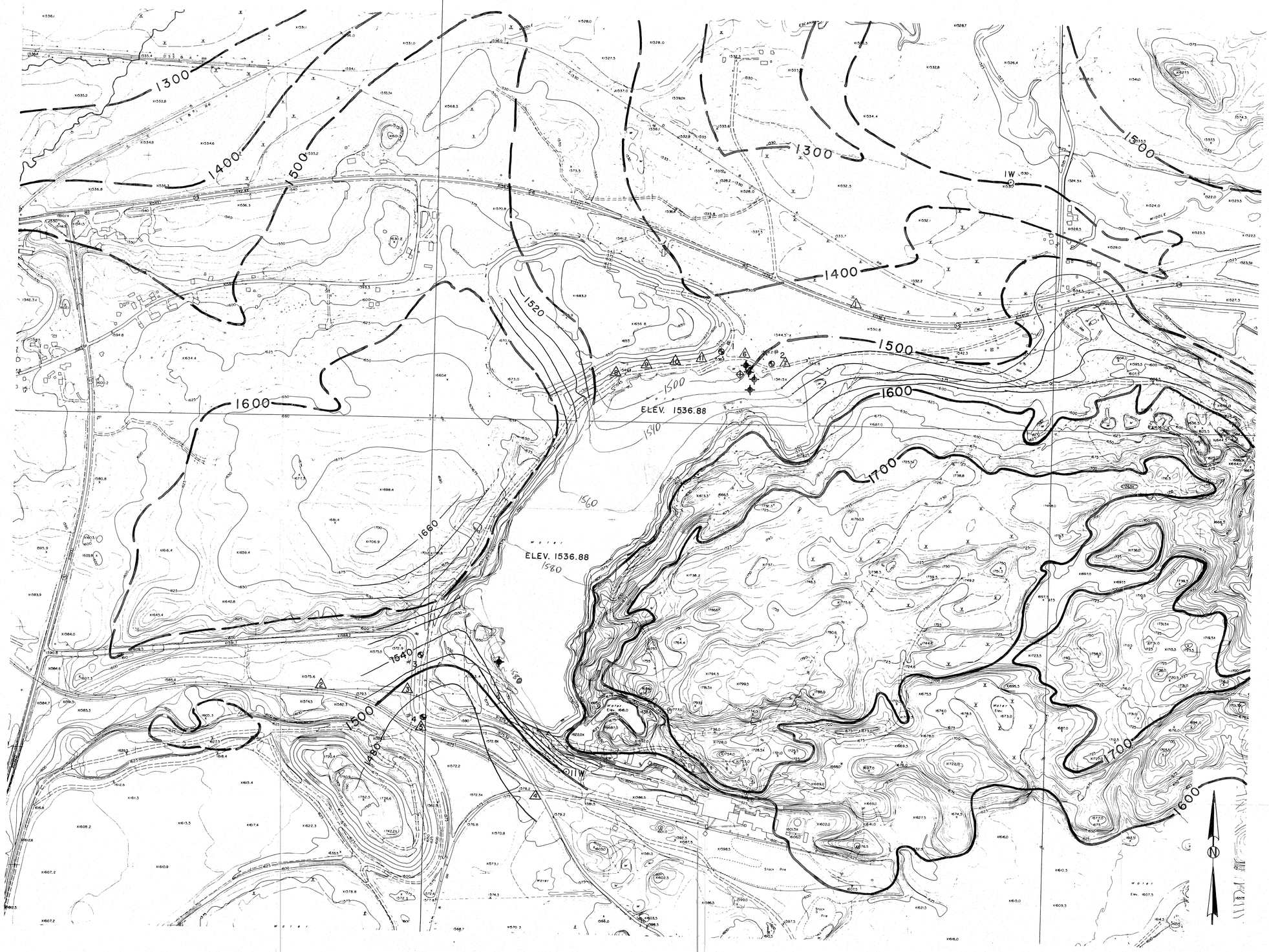
NOTE:

PREPARED FROM: BEDROCK GEOLOGICAL MAP OF REPUBLIC QUADRANGLE MARQUETTE COUNTY, MICHIGAN BY W. F. CANNON 1975

EXHIBIT B

SCALE: AS NOTED

TRAVERSE ENGINEERING SERVICES, P.C. ENGINEERS - SURVEYORS - GEOLOGISTS HANCOCK, MICHIGAN	HYDROGEOLOGICAL / HYDROGEOLOGICAL STUDY TAILING STORAGE FACILITY	CALLAHAN MINING CORP. CHAMPION, MICHIGAN	BEDROCK GEOLOGY	JOB NO. 153 11-30-84 SHEET 2 OF 6

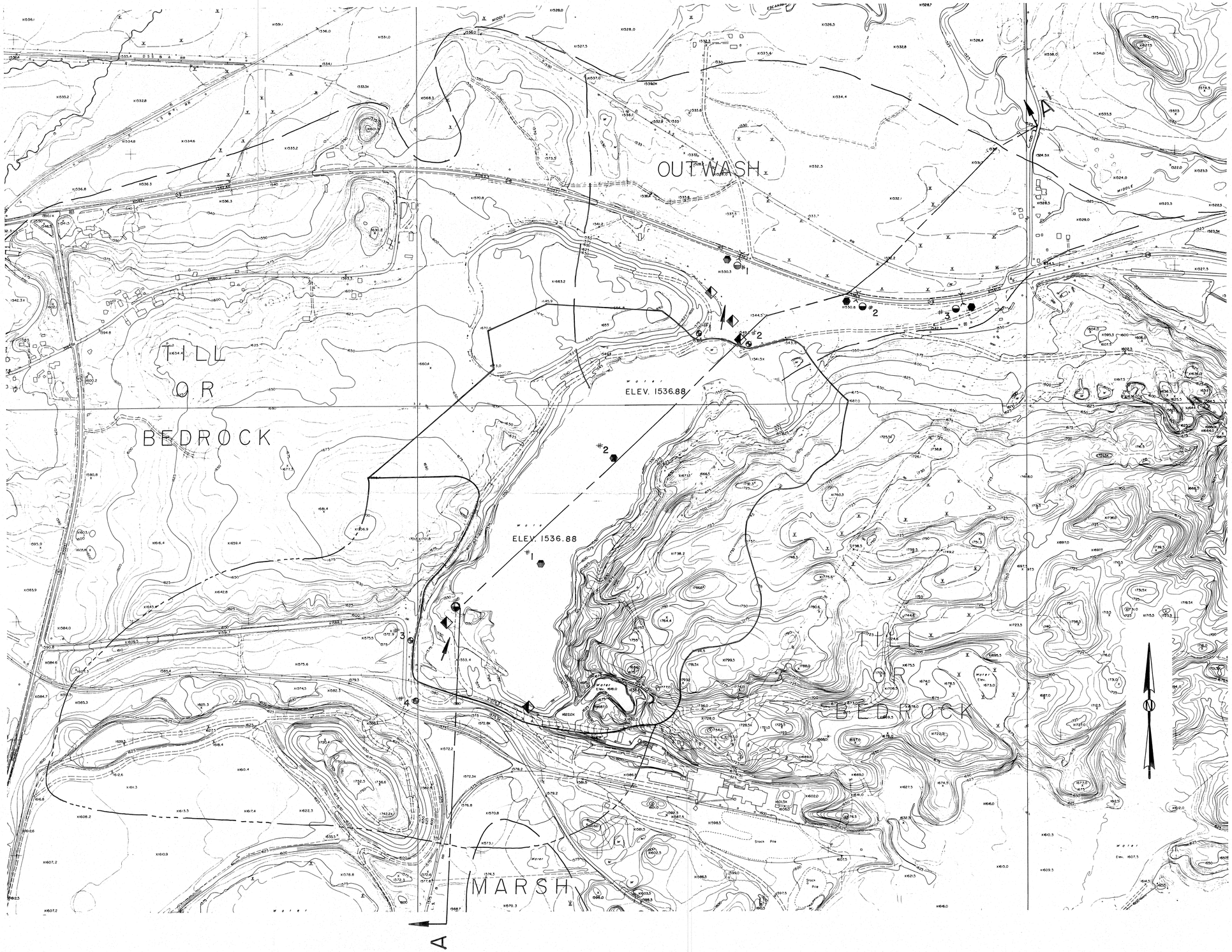


LEGEND

- MONITOR WELLS
- C.C.I. WELLS
- SEISMIC STATIONS
- BENTNIC SAMPLE LOCATION
- ALGAL MAT.

EXHIBIT C

TRAVERSE ENGINEERING SERVICES, P.C. ENGINEERS - SURVEYORS - GEOLOGISTS HANCOCK, MICHIGAN	HYDROGEOLOGICAL / HYDROGEOLOGICAL STUDY TAILING STORAGE FACILITY	CALLAHAN MINING CORP. CHAMPION, MICHIGAN	BEDROCK TOPOGRAPHY	SCALE: 1"=400' JOB NO. 153 11-30-84 SHEET 3 OF 6



NOTES:

1. PIT WATER SURFACE AREA 64 ACRES
2. DRAINAGE BASIN AREA 217 ACRES

STATIC WATER LEVELS

WELL	1	1535.24
"	2	1535.93
"	3	1548.71
"	4	1552.52

LEGEND

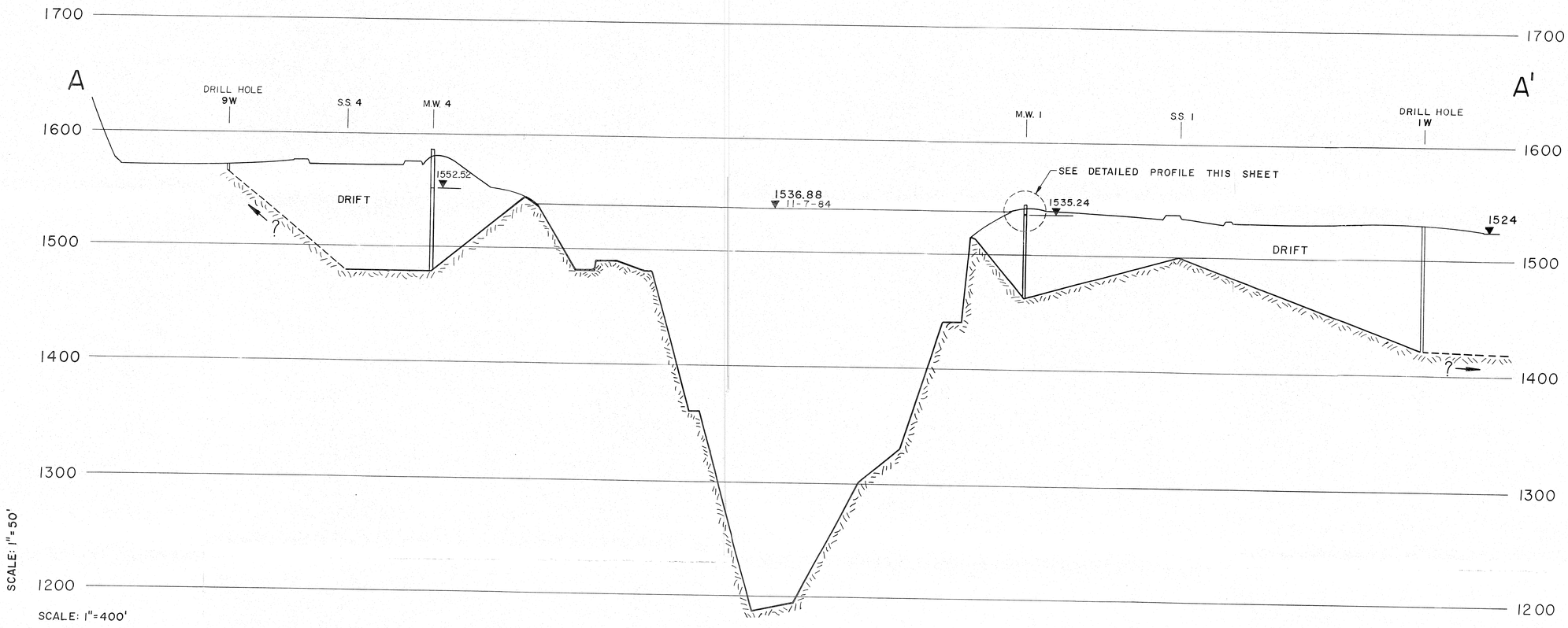
- MONITOR WELLS
- WEIRS
- SURFACE WATER SAMPLE LOCATION
- DRAINAGE* DISTRICT BOUNDRY
- SURFICIAL GEOLOGIC CONTACT
- SEEPAGE
- GROUND WATER FLOW
- GROUND WATER DRAINAGE BASIN

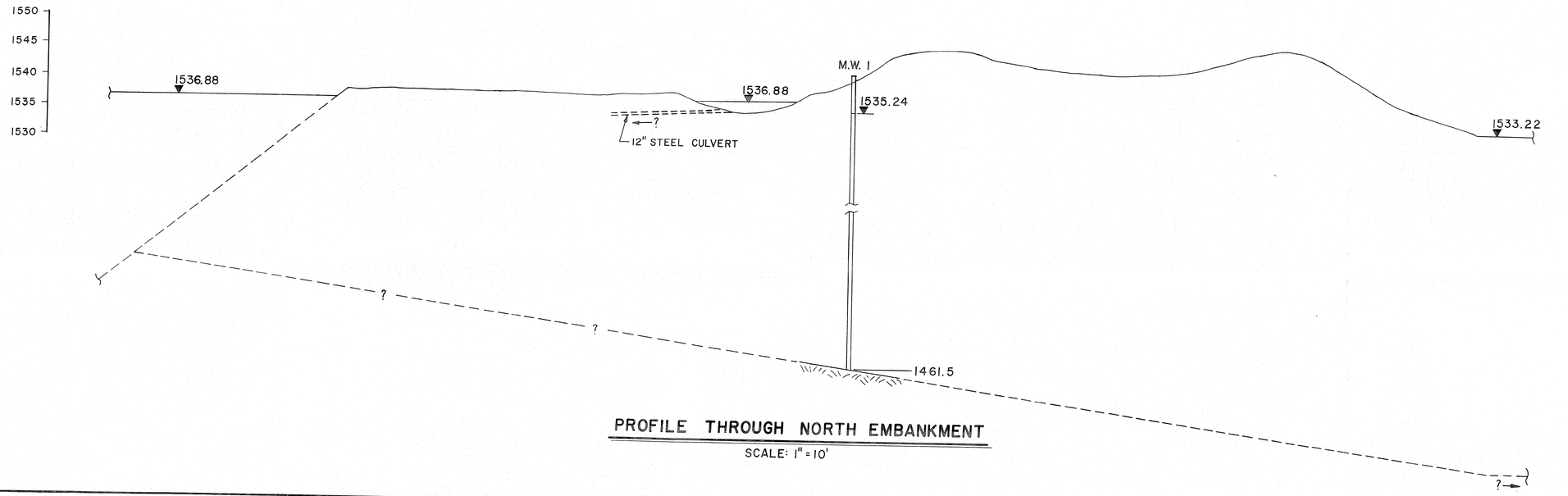
*DENOTES BOTH SURFACE & GROUND WATER BOUNDARIES ON EAST & WEST SIDES OF THE PIT.

EXHIBIT D

SCALE: 1" = 400'

TRAVERSE ENGINEERING SERVICES, P.C. ENGINEERS - SURVEYORS - GEOLOGISTS HANCOCK, MICHIGAN	HYDROGEOLOGICAL / HYDROGEOLOGICAL STUDY TAILING STORAGE FACILITY	CALLAHAN MINING CORP. CHAMPION, MICHIGAN	SURFICIAL GEOLOGY	JOB NO. 153 11-30-84 SHEET 4 OF 6



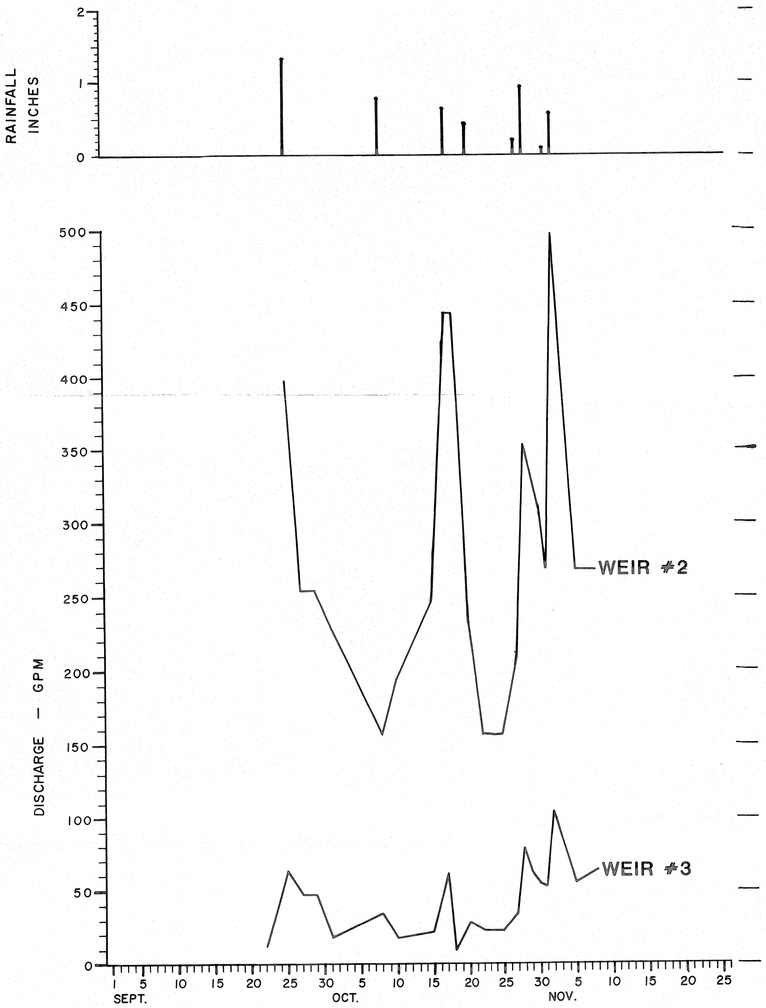


PROFILE THROUGH NORTH EMBANKMENT

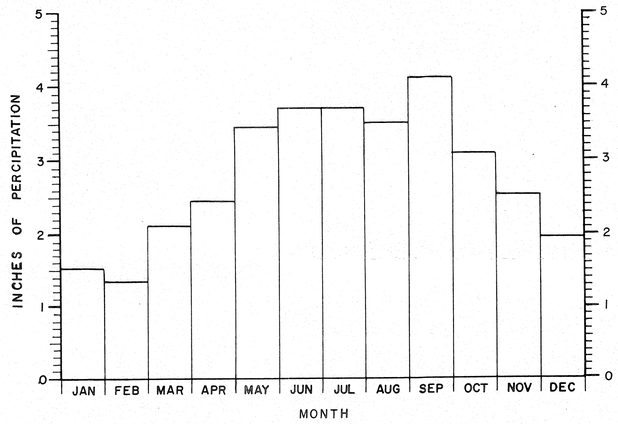
SCALE: 1" = 10'

EXHIBIT E

TRAVERSE ENGINEERING SERVICES, P.C. ENGINEERS - SURVEYORS - GEOLOGISTS HANCOCK, MICHIGAN	HYDROGEOLOGICAL / HYDROGEOLOGICAL STUDY TAILING STORAGE FACILITY	CALLAHAN MINING CORP. CHAMPION, MICHIGAN	SECTION A-A'	SCALE: AS NOTED JOB NO. 153 11-30-84 SHEET 5 OF 6



WEIR DISCHARGE & RAINFALL
FALL 1984



AVERAGE MONTHLY PERCIPITATION

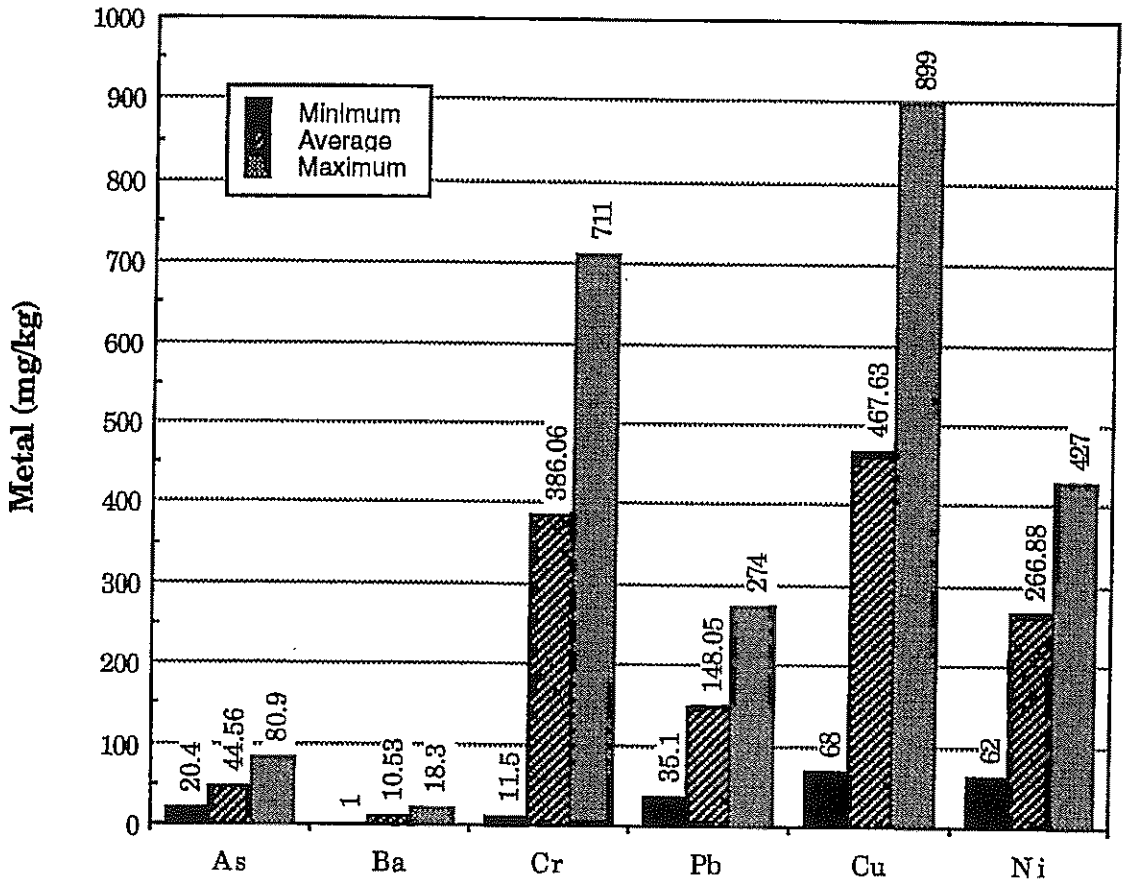
EXHIBIT F

SCALE: AS NOTED

TRAVERSE ENGINEERING SERVICES P.C. ENGINEERS - SURVEYORS - GEOLOGISTS HANCOCK, MICHIGAN	HYDROGEOLOGICAL/HYDROGEOLOGICAL STUDY TAILING STORAGE FACILITY	CALLAHAN MINING CORP. CHAMPION, MICHIGAN	JOB NO. 153 11-30-84 SHEET 6 OF 6

B-2

Montgomery Watson, January 20, 1993
Memorandum: Humboldt Mill Tailing Pond
Sediments Characterization and Evaluation
of Metal Leachate Potential
(As obtained from MDEQ through FOIA)



HUMBOLDT PIT
SUMMARY OF TAILINGS METAL CONTENTS

FIGURE 9

TABLE 4

METAL INPUT IN THE HUMBOLDT PIT

Metal	Average Metal Level in Sediments (mg/kg)	Average Percentage of Solids in Sediments	Average Metal Level in Dry Sediment (mg/kg - dry)	Total Metal Amount[a] (ton)	Metal Amount in Noncemented Tailings (ton)
Nickel	467.6	70.2	666.0	1,215	6.6 - 20.0
Copper	267.0	70.2	380.0	694	3.8 - 11.4

[a] 1.824 million tons of tailings were discharged in the Humboldt Pit.

Table 5 presents an estimate of metals output from the Humboldt Pit by water seepage through the north embankment into the marsh and water seepage into the shallow groundwater system. Based upon data reported in Tables 4 and 5, the amount of nickel and copper residual in the sediment were evaluated. Estimated metals residuals in the entire volume of tailings and in the fraction of tailings not yet cemented are reported in Table 6.

TABLE 5

METAL OUTPUT FROM THE HUMBOLDT PIT SEDIMENTS

	Pit Water Outflow		Current Pit Water		
Metal	Estimated Average Metal Concentration (mg/l)	Total Metal Amount[a] (ton)	Average Metal Concentration (mg/l0	Total Metal Amount[b] (ton)	Total Leached Metal Amount
Nickel	0.80	2.50	0.665	6.78	9.28
Copper	0.10	0.31	0.042	0.43	0.74

[a] 315 gpm of water leaving the pit through seepage over 5 years (1987 to 1992).
[b] Pit water volume estimated at 10.2×10^6 m^3.

TABLE 6

METAL RESIDUAL IN HUMBOLDT PIT SEDIMENTS

Metal	Residual in Total Sediments		Residual in Estimated Noncemented Tailings[a]	
	Metal Amount (ton)	Percentage from Initial Metal Amount	Metal Amount (ton)	Percentage from Initial Metal Amount
Nickel	1,205.7	99.2%	10.72	53%
Copper	693.2	99.8%	10.66	93%

[a] The higher range of 30,000 tons was used for calculation.

Copper and nickel mass balance data show that only a very small fraction (<1%) of the metals contained in the tailings disposed in the pit have leached. Such a low percentage is essentially explained by the cementation and conglomeration of the majority of the tailings which are no longer in contact with the pit water. The same mass balance was conducted for the estimated fraction of tailings not yet cemented, and still potentially releasing metals through leaching and diffusion phenomena. Table 6 shows that about 50 percent of nickel has already been leached from the noncemented tailings. On the other hand, only 7 percent of copper has been leached under similar conditions. It should be noted that these estimations are not precise. Only a thorough evaluation of the amount of noncemented tailings, as well as a comparison of metal composition of both cemented and noncemented tailings will provide a more precise metal mass balance. Moreover, it should be noted that total metal assay using tailings and digestion do not represent the availability of metal for leaching in the pit water.

CONCLUSION

Total metal assays showed that although 1,215 tons of nickel and 694 of copper are estimated to be present in the Humboldt Pit sediments, only an insignificant amount of metals have leached in the pit water. Metals were prevented from leaching by the compaction, conglomeration and cementation of the majority of the tailings. Moreover, it is very unlikely that the total amount of metals present in the noncemented tailings will leach, due to mild leaching conditions, continuous tailings cementation process and poor metal accessibility in relatively coarse tailings granules. Previous leachability tests showed that only 101 milligrams of the 380 milligrams of copper remaining per kilograms of noncemented tailings were leachable. Similarly, 23.5 mg of the 666 milligrams of nickel remaining in average per kilograms of tailings could potentially be further leached.

/db

MEMORANDUM

MONTGOMERY WATSON

To:	Rick Morh, Callahan Mining	**Date:**	April 2, 1993
	Ed Cryer, MW-Boise	**Reference:**	1389.0170
From:	Gil Crozes		
Subject:	Addendum to Memorandum Dated Jan. 20, 1993		

Humboldt Mill Tailing Pond Sediments Characterization and Evaluation of Metal Leachate Potential

INTRODUCTION

This addendum memorandum presents additional data for Humboldt Pit sediments characterization. As requested by the Michigan Department of Natural Resources, a total assay of metals was performed on sediment samples collected as described in a previous memorandum dated January 20, 1993. In comparison to previous experiments, which evaluated metals leachability from sediments under various pH and dissolved oxygen conditions, the analytical procedure used in the present tests consisted of a complete digestion of the sediment sample by nitric acid, followed by metals concentration analyses. The final results are expressed in milligrams of a given metal per kilogram of raw sediment.

RESULTS AND DISCUSSION

All metals listed in Table 1 were analyzed using the atomic adsorption technique. However, the analysis for Cd, Hg, Se, and Ag indicated that the level of these metals was very low in the tailings sediments. Data for low level metals are reported in Table 3.

TABLE 3

LOW LEVEL METALS TOTAL ASSAY
IN HUMBOLDT PIT SEDIMENTS

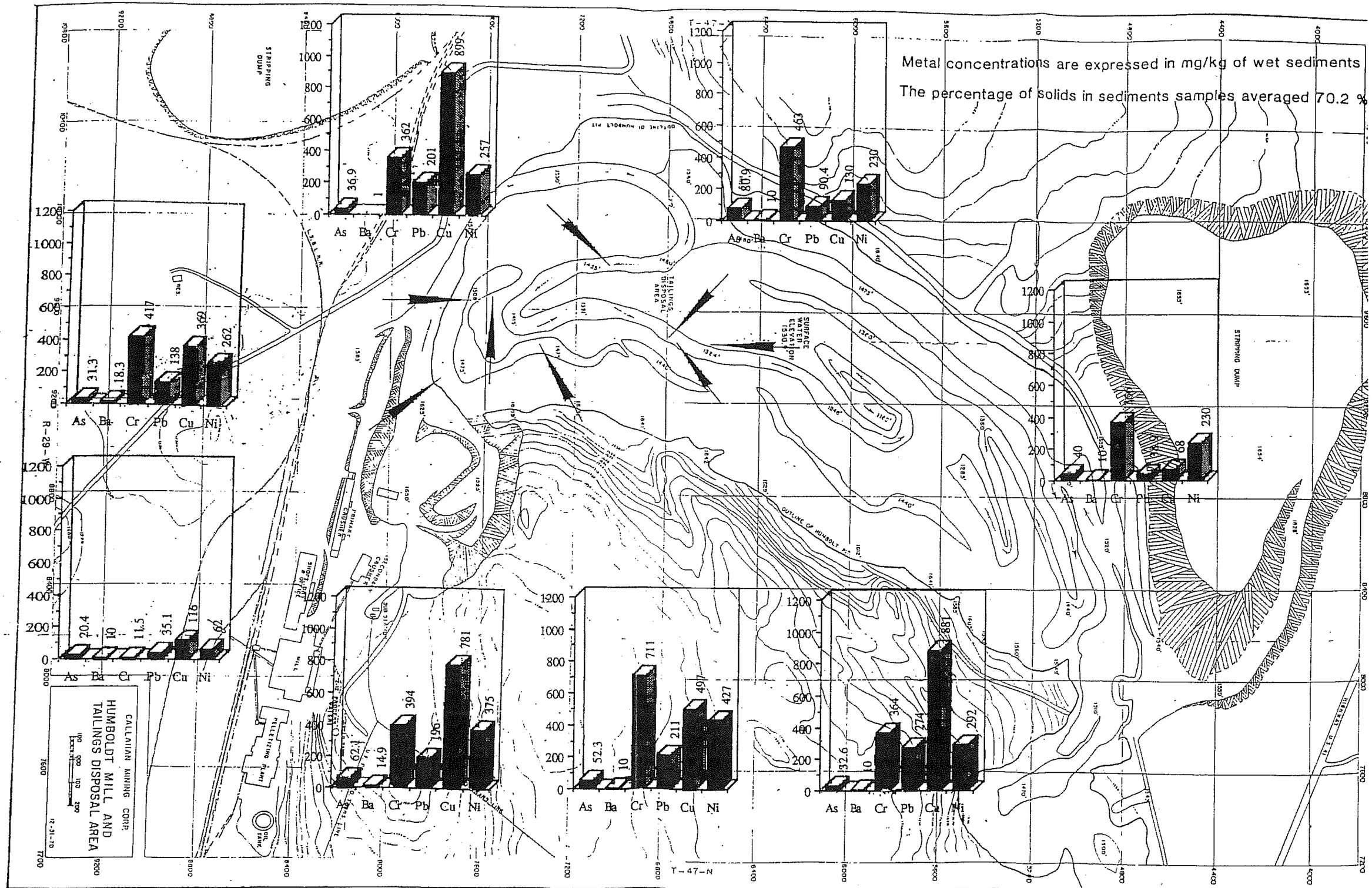
Metal	Minimum (mg/kg)	Average (mg/kg)	Maximum (mg/kg)
Cd	0.94	2.29	6.75
Hg	0.22	0.35	0.47
Se	NA	NA	<1.00
Ag	1.47	3.32	6.60

The results for metals exhibiting an average level in sediments exceeding 5 mg/kg are presented in Figure 8. All results are expressed in milligrams of metal per kilogram of wet sediment. To complete the data interpretation, total solids in sediments were evaluated. The average total solid level was found to average 70.2 percent in the 8 Humboldt Pit sediment samples. Figure 8 shows that the distribution of metals in the sediments is not homogenous. Metals levels as well as their relative composition greatly varied with the sampling location throughout the Humboldt Pit. Figure 9 presents a summary of metals levels in the sediments and provides an average, a minimum and a maximum value for each metal contents. The standard deviation is as high as 365 mg/kg for nickel and 831 mg/kg for copper. Since metal composition in the sediments is far from being homogenous, rigorous quantitative data analysis is difficult. However, average values of the sediment concentrations in metals of concern (copper and nickel) were used to establish a mass balance of these metals in the Humboldt Pit.

Between the year 1984, when Callahan Mining Corporation acquired the Ropes Mine, and December 31, 1988, date at which production was stopped, a total of 1.92 million tons of ore was processed. Milling tailings which represent 95 percent of the ore, were discharged in the Humboldt Pit. Thus, 1.82 million tons is the estimated amount of tailings present in the pit. However, it was found during sediment sampling that only the top 6 inches of the tailings were not yet cemented or conglomerated. This observation, coupled with conservative assumptions, led to the conclusion that only 21,728 tons of tailings remain in contact with the pit water. The confidence level on this number does not exceed 50 percent and it is prudent to consider that the estimated amount of nonconglomerated tailings is within the range of 10,000 to 30,000 tons. Table 4 describes the Humboldt Pit metals input through the disposal of the Humboldt mill tailings during the Ropes Mine operation by Callahan Mining Corporation.

Metal concentrations are expressed in mg/kg of wet sediments

The percentage of solids in sediments samples averaged 70.2 %



HUMBOLDT PIT SEDIMENTS TOTAL METALS ASSAY

B-3

Montgomery Watson, August 25, 1995
Comparison of Total Phosphorus and
Algal Enumeration after Phosphorus Application
to Humboldt Pit
(As obtained from MDEQ through FOIA)

MONTGOMERY WATSON

August 25, 1995

Mr. Bill Scarffe
Callahan Mining Corporation
PO Box 508
Negaunee, MI 49866

SUBJECT: Comparison of Total Phosphorous and Algal Enumeration after phosphorous application to Humbolt Pit.

Dear Mr. Scarffe:

In July and September of 1993, and again in April of 1994, phosphorous was applied to the Humbolt Pit in an effort to see if increased phosphorus concentrations in the photic zone could increase algae growth, and thereby reduce the nickel and copper concentrations of the pit water by metal-algae sorption.

Pit water quality samples that were collected on October 19, 1993 (see attached report), approximately one month after the second phosphorous application, show an average total phosphorous concentration of 0.04 mg/l. The algal enumeration average was 1,650,000 cells/ml.

Pit water quality samples were also collected on May 4, 1994 (see attached report), one week after ice out, phosphorous had previously been applied on top of ice. Results show an average of 0.06 mg/l for total phosphorous and an average algal enumeration concentration of 11,390 cell/ml.

Pit water quality samples were also collected on June 9, 1995 (see attached report). More than one year after any phosphorous application. The total phosphorous concentrations average was 0.03 mg/l, the algal enumeration concentration was 20,354 cells/ml.

These three water quality sampling events show that the total phosphorous concentrations are within 0.03 mg/l of each other. This suggests that the phosphorous application may increase the total phosphorous concentration of the pit water immediately, but that the concentration drops down to "normal" levels shortly after application.

545 Indian Mound
Wayzata, Minnesota
55391

Tel: 612 473 4224
Fax: 612 473 2512

The algal enumeration concentrations are similar for the May 4, 1994 and June 9, 1995 samples. An explanation for a slightly higher concentration in the June sample may be due to warmer water temperatures and one additional month of algae accumulation. The October 19, 1993 sample had much higher algal enumeration concentrations. This again may be explained by warmer water temperatures and several months of algae accumulation over the summer months. It may have also been collected during an autumn bloom of algae. However, the nickel concentrations of the October 19, 1993 sample had elevated to near the pretreatment concentration levels of the pit water.

It should also be pointed out that the data are inconclusive as to whether the algae did or did not "take up" (sorb) any significant amount of the nickel or copper of the pit water. It may have been that the temporary reduction of nickel concentrations were a result of precipitation when the phosphorous was applied (chemical bonding or localized increased pH levels).

Please do not hesitate to contact Steve Kloiber or myself should you have any questions regarding this report. Montgomery Watson appreciates the opportunity to provide you with this service.

Sincerely,

Mark Allen
Environmental Scientist

MA:jn

cc: Steve Kloiber

MONTGOMERY WATSON

November 2, 1993

Mr. Edward Cryer
Montgomery Watson
161 Mallard Drive
Boise, ID 83706-3974

Re: Water Samples Analyzed by our Laboratory:
Ropes Mine Project
Project Number: 1389.0170
Sample Dates: October 19, 1993

Dear Mr. Cryer:

The above referenced samples have been analyzed with the results as follows:

Site HP-1	Oct. 19
Total Phosphorus, mg/l	0.04
Temperature, °F	46
Secchi Depth, feet	2.0
NO_2 + NO_3, mg/l	6.4
Total Kjeldahl N., mg/l	1.5
Total Nitrogen, mg/l	7.9
Total Nickel, ug/l	350
Dissolved Nickel, ug/l	330

Site HP-2	Oct. 19
Total Phosphorus, mg/l	0.04
Temperature, °F	46
Secchi Depth, feet	2.0
NO_2 + NO_3, mg/l	6.4
Total Kjeldahl N., mg/l	1.7
Total Nitrogen, mg/l	8.1
Total Nickel, ug/l	360
Dissolved Nickel, ug/l	330

Site HP-3	Oct. 19
Total Phosphorus, mg/l	0.05
Temperature, °F	46
Secchi Depth, feet	2.0
NO_2 + NO_3, mg/l	6.4
Total Kjeldahl N., mg/l	1.7
Total Nitrogen, mg/l	8.1
Total Nickel, ug/l	350
Dissolved Nickel, ug/l	340

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55391

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Site HP-4	Oct. 19
Total Phosphorus, mg/l	0.04
Temperature, °F	46
Secchi Depth, feet	1.8
NO_2 + NO_3, mg/l	6.4
Total Kjeldahl N., mg/l	1.2
Total Nitrogen, mg/l	7.6
Total Nickel, ug/l	360
Dissolved Nickel, ug/l	320

Site HP-5	Oct. 19
Total Phosphorus, mg/l	0.05
Temperature, °F	46
Secchi Depth, feet	1.8
NO_2 + NO_3, mg/l	6.4
Total Kjeldahl N., mg/l	2.1
Total Nitrogen, mg/l	8.5
Total Nickel, ug/l	360
Dissolved Nickel, ug/l	330

Site HP-6	Oct. 19
Total Phosphorus, mg/l	0.04
Temperature, °F	46.5
Secchi Depth, feet	2.0
NO_2 + NO_3, mg/l	6.4
Total Kjeldahl N., mg/l	2.0
Total Nitrogen, mg/l	8.4
Total Nickel, ug/l	370
Dissolved Nickel, ug/l	350

Travel Blank	Oct. 19
Total Nickel, ug/l	<2
Dissolved Nickel, ug/l	<2

Phytoplankton enumeration for those sites specified in the work plan for these dates accompany this report package. Cell count estimates for the sites are as follows:

Site HP-1 Surface:	1710000 cells/ml
Site HP-1 2m Composite	1680000 cells/ml
Site HP-3 Surface	1780000 cells/ml
Site HP-3 2m Composite	1680000 cells/ml
Site HP-6 Surface	1490000 cells/ml
Site HP-6 2m Composite	1560000 cells/ml

Montgomery Watson Water Quality Laboratory appreciates the opportunity to provide you with this analytical service. If you have any questions, please do not hesitate to contact us.

Sincerely,

MONTGOMERY WATSON

Frank De Steno,
Laboratory Manager

enclosures

MONTGOMERY WATSON

May 24, 1994

Mr. Edward Cryer
Montgomery Watson
161 Mallard Drive
Boise, ID 83706-3974

Re: Water Samples Analyzed by our Laboratory:
Ropes Mine Project
Metals Profile
Project Number: 1389.0100
Sample Date: May 4, 1994

Dear Mr. Cryer:

The above referenced samples have been analyzed with the results as follows:

Site HP-1: Surface Sample ID: 053-118	**Results**
Secchi, ft	5.0
Temperature, °C	not reported
Total Phosphorus, mg/l	0.06
$NO_2 + NO_3$, mg/l	7.0
TKN, mg/l	1.2
Total Nitrogen, mg/l	8.2
Total Copper, µg/l	15
Dissolved Copper, µg/l	10
Total Nickel, µg/l	450
Dissolved Nickel, µg/l	440

Site HP-3: Surface Sample ID: 053-119	**Results**
Secchi, ft	5.0
Temperature, °C	4.5
Total Phosphorus, mg/l	0.06
$NO_2 + NO_3$, mg/l	6.9
TKN, mg/l	1.2
Total Nitrogen, mg/l	8.1
Total Copper, µg/l	11
Dissolved Copper, µg/l	10
Total Nickel, µg/l	460
Dissolved Nickel, µg/l	450

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Site HP-6: Surface Sample ID: 053-120	**Results**
Secchi, ft	6.5
Temperature, °C	5.0
Total Phosphorus, mg/l	0.06
$NO_2 + NO_3$, mg/l	6.9
TKN, mg/l	1.1
Total Nitrogen, mg/l	8.0
Total Copper, µg/l	12
Dissolved Copper, µg/l	10
Total Nickel, µg/l	440
Dissolved Nickel, µg/l	440

Site HP-3 Metals Profile:

HP-3 10 meters Sample ID: 053-121	**Results**
Total Copper, µg/l	13
Total Nickel, µg/l	520
HP-3 20 meters Sample ID: 053-122	
Total Copper, µg/l	12
Total Nickel, µg/l	510
HP-3 30 meters Sample ID: 053-123	
Total Copper, µg/l	32
Total Nickel, µg/l	910
HP-3 40 meters Sample ID: 053-124	
Total Copper, µg/l	57
Total Nickel, µg/l	990

HP-3 50 meters Sample ID: 053-125	**Results**
Total Copper, µg/l	70
Total Nickel, µg/l	1000

In addition to the above analyses, algal identification and enumeration was performed on the three surface samples. Only one algal taxon was observed in the three samples and could be identified only as a small, green coccoid. Cell count estimates for the sites are as follows:

Site HP-1 - 9470 cells/ml
Site HP-3 - 11400 cells/ml
Site HP-6 - 13300 cells/ml

Montgomery Watson Water Quality Laboratory appreciates the opportunity to provide you with this analytical service. If you have any questions, please do not hesitate to contact us.

Sincerely,

MONTGOMERY WATSON
Water Quality Laboratory

Frank De Steno,
Laboratory Manager

Copy: Bill Scarffe

MONTGOMERY WATSON

July 5, 1995

Mr. Bill Scarffe
Callahan Mining Corporation
4547 County Road 601
Champion, MI 49814

Re: Analysis of water samples: Pit Mine
Sample Date: June 9, 1995
Sample ID: 092-205; 092-206; 092-207

Dear Mr. Scarffe:

The above referenced samples have been analyzed with the results as follows:

PARAMETER	RESULT Pit North 092-205	RESULT Pit Center 092-206	RESULT Pit South 092-207
Total Phosphorus, mg/L	0.03	0.03	0.03
Sol. Reactive Phosphorus, mg/L	0.01	0.01	0.01
Ortho Phosphorus, mg/L	0.01	0.01	0.01
Corrected Chlorophyll-a, µg/L	-----	4	-----
Corrected Pheophytin-a, µg/L	-----	2	-----
Algal Enumeration	-----	See Attached Report	-----

Please do not hesitate to contact me should you have any questions regarding this report. Montgomery Watson appreciates the opportunity to provide you with this service.

Sincerely,

MONTGOMERY WATSON
Laboratory and Field Services

Frank De Steno,
Laboratory Manager

Copy: Steve Kloiber, Montgomery Watson

545 Indian Mound
Wayzata, Minnesota
55391

Tel: 612 473 4224
Fax: 612 473 2512

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PHYTOPLANKTON ENUMERATION

Sample Date: June 8, 1995 **Station:** Humboldt Pit **Sample Number:** 092-206

Center - 2 meter composite

Organism	Total cells/ml	Cell Volume, cc		Cell Volume cc/L
Fragilaria	923	9.00E-15		8.31E-09
Nitzchia	415	4.59E-11		1.91E-05
Euglena	385	3.53E-11		1.36E-05
green coccoids	17923	1.41E-11		2.53E-04
microflagellates	708	3.53E-11		2.50E-05

	% by Biovolume	% by Number
Diatoms	6.1	6.6
Blue-Green Algae	0	0
Green Algae	81.5	88.1
Dinoflagellates	0	0
Euglenoids	4.4	1.9
Other	8.0	3.5
Total	**100**	**100**

Total cells/ml **20354**

Total Biovolume, cc/L **3.11E-04**

Seen in sample but not counted: Trachelomonas
Closteriopsis
Gymnodinium

MONTGOMERY WATSON

July 5, 1995

Rec'd 7/19 @ mill site.

Mr. Bill Scarffe
Callahan Mining Corporation
4547 County Road 601
Champion, MI 49814

Re: Analysis of water samples: Pit Mine
Sample Date: June 9, 1995
Sample ID: 092-205; 092-206; 092-207

Dear Mr. Scarffe:

The above referenced samples have been analyzed with the results as follows:

PARAMETER	RESULT Pit North 092-205	RESULT Pit Center 092-206	RESULT Pit South 092-207
Total Phosphorus, mg/L	0.03	0.03	0.03
Sol. Reactive Phosphorus, mg/L	0.01	0.01	0.01
Ortho Phosphorus, mg/L	0.01	0.01	0.01
Corrected Chlorophyll-a, µg/L	-----	4	-----
Corrected Pheophytin-a, µg/L	-----	2	-----
Algal Enumeration	-----	See Attached Report	-----

Please do not hesitate to contact me should you have any questions regarding this report. Montgomery Watson appreciates the opportunity to provide you with this service.

Sincerely,

MONTGOMERY WATSON
Laboratory and Field Services

Frank De Steno,
Laboratory Manager

Copy: Steve Kloiber, Montgomery Watson

545 Indian Mound
Wayzata, Minnesota
55391

Tel: 612 473 4224
Fax: 612 473 2512

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