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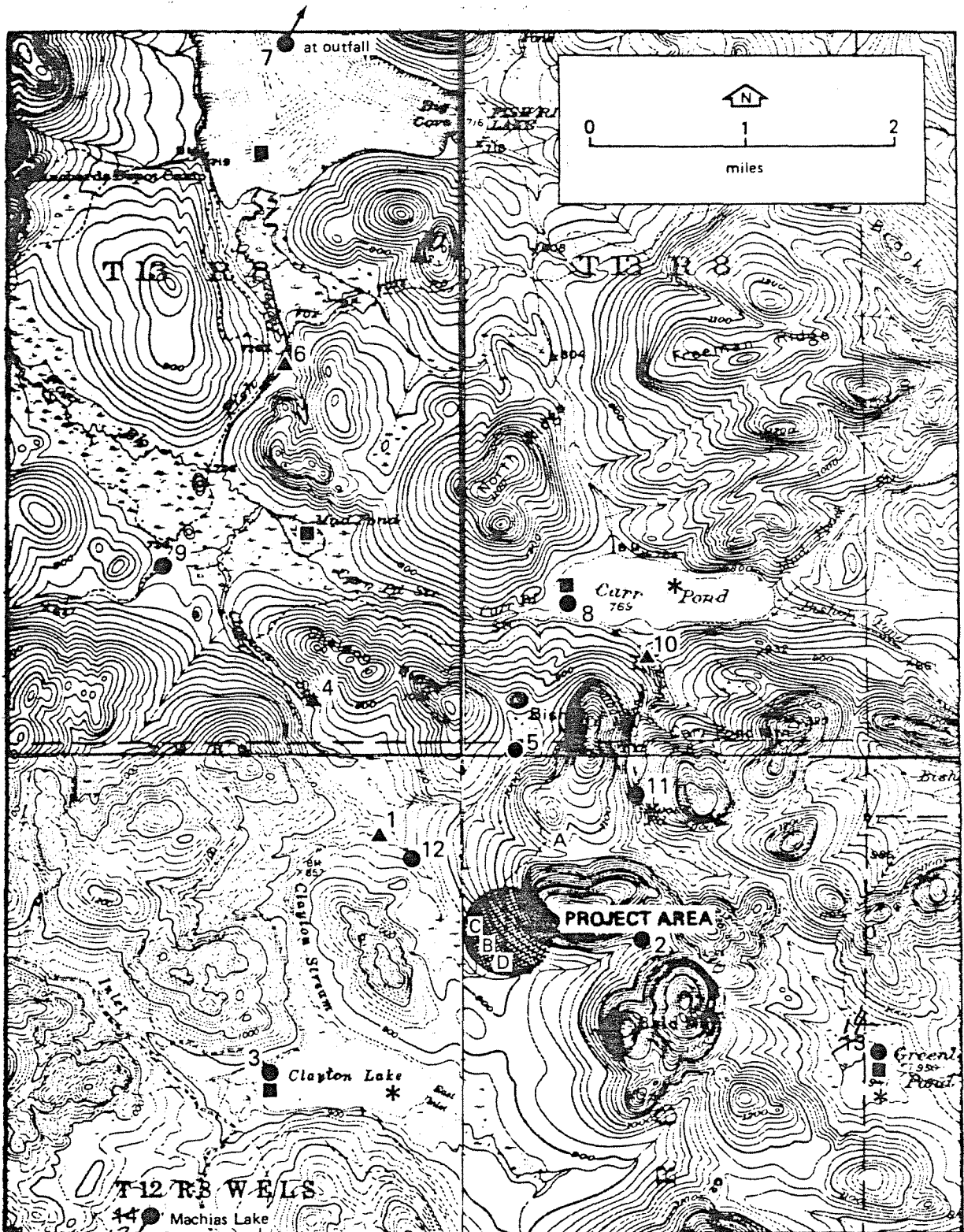
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SUPERIOR MINING
BASELINE WATER QUALITY DATA



LEGEND

- Surface water quality sampling location
- ▲ Stream gage and surface water quality sample location
- Sediment sample location
- * Proposed floc/sediment sampling location
- A Ground water sampling location

Figure 1. LOCATIONS OF STREAM GAGES AND SURFACE WATER QUALITY AND SEDIMENT SAMPLING

Figure 1. LEGEND

Sampling Station	Description of Station Location
Surface Water	
1	Clayton Stream above marsh inflow
2	Stream south of project site
3	Clayton Lake
4	Clayton Stream below marsh inflow
5	Outflow from marsh north of project site
6	Fish River prior to inflow to Fish River Lake
7	Fish River Lake outflow
8	Carr Pond near outflow
9	Inflow into marsh feeding Fish River
10	Moose Pond Stream inflow into Carr Pond
11	Moose Pond outflow
12	Outflow from marsh to west of project site
13	Machias Lake (position to be determined)
Groundwater	
A	Well near core shack <u>BM-6</u>
B	Artesian well west of project site <u>BM-16</u>
C	Artesian well west of project site <u>BM-31</u>
D	Drill hole <u>BM-105</u>

Table 1. BASELINE WATER QUALITY SAMPLING FIELD DATA
October 9-12, 1978

Sampling Station	Surface Waters												Groundwaters		
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C
<u>Parameter^a</u>															
Air Temperature (°C)	7.0	13.0	11.0	8.0	6.5	4.0	13	5.5	4.0	7.0	12.0	8.0	3.5	6.0	12.0
Water Temperature (°C)	5.5	6.0	7.5	6.5	4.25	5.5	8.8	7.0	4.0	5.0	6.7	4.5	8.0	5.0	7.0
Dissolved Oxygen (mg/l)	11.0	8.2	--	10.8	9.7	11.2	--	--	11.8	--	11.6	--	--	--	--
Specific Conductance (umho/cm)	28	42	29	20	39	40	30	32	33	55	46	40	87	195	90
pH (units)	7.25	7.4	7.35	7.6	7.35	7.65	7.5	6.95	7.35	7.3	7.4	7.1	7.5	6.7	6.4
Redox Potential (mv)	+210	+160	+210	+160	+225	+205	+190	+175	+230	+199	+230	+165	+80	+25	+90

^aAll analyses were done by Woodward-Clyde Consultants

Table 2. BASELINE WATER QUALITY SAMPLING
October 9-12, 1978

Sampling Station Designation ^a	Surface Waters												Groundwaters		
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C
PARAMETER^b															
General Constituents															
pH (units)	7.27	7.00	7.24	7.10	6.96	7.21	7.44	7.18	7.34	7.44	7.44	7.33	7.68	7.42	6.42
Temperature (°C)	6.9	9.9	7.9	6.8	6.8	7.2	8.8	10.2	7.8	10.2	9.8	8.6	14.0	13.0	12.0
Redox potential (mv)	-13	-32	-28	-12	-18	-27	-19	-21	-24	-32	-25	-7	-8	-27	+16
Specific conductance (umho/cm)	40	47	38	50	64	59	50	52	47	71	60	40	150	200	130
Total Solids	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Total dissolved solids	12.5	46.5	18.2	29.0	31.0	29.0	19.0	14.5	14.0	32	19.0	15.0	100	200	86
Total suspended solids	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	79.4	6.4	12.6
Volatile suspended solids	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	5.1	6.0	3.0
Turbidity (NTU)	0.72	1.2	0.58	1.1	1.5	1.0	1.3	0.40	1.1	0.52	1.1	3.0	38	6.8	6.5
Alkalinity (as CaCO ₃)	19.0	35	18	21	28.5	29.5	22	23	28	38	26	30	87	92	26
Total hardness (as CaCO ₃)	50	69	39	58	85	68	50	52	34	85	57	58	185	392	172
Apparent color (units)	50	20	20	10	5	20	30	20	20	50	20	20	150	20	20
True color (units)	30	20	20	<5	<5	20	20	<5	10	20	20	20	<5	<5	<5
Dissolved oxygen	12.1	11.8	12.3	11.8	12.2	11.5	11.8	9.7	11.4	12.1	10.8	12.2	9.0	12.0	11.9
BOD ₅	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	--	--	--
COD	18	<3	<3	5	4	5	3	<2	<2	<2	<2	9	7	9	4
TOC	16	<1	8	7	11	8	8	11	8	1	4	6	4	4	2
Oil and Grease	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MBAS (surfactants)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Chlorine	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Common Ions															
Calcium	3.4	7.5	3.4	4.1	4.8	5.7	5.2	4.7	4.0	10.4	9.4	5.5	24	32	6.3
Magnesium	10.1	12.3	7.6	11.6	17.8	13.1	9.1	9.8	5.8	14.4	8.2	10.8	30.5	76	38
Sodium	6.5	6.5	1.4	1.4	1.9	1.0	1.4	2.2	4.9	4.9	1.7	2.1	3.4	6.4	4.4
Potassium	0.4	0.24	0.31	0.31	0.23	0.31	0.21	0.17	0.33	0.22	0.18	0.29	0.38	0.42	0.34
Manganese	0.0018	0.0016	0.0023	0.0021	0.0025	0.0062	0.0002	0.0002	0.003	0.001	0.0002	0.0015	0.008	0.083	0.058
Iron (total)	0.03	0.19	0.03	0.082	0.095	0.089	0.01	0.01	0.086	0.01	0.01	0.07	10	0.01	0.068
Iron (dissolved)	0.03	0.05	0.03	0.026	0.02	0.024	NP	NP	0.022	NP	NP	0.017	0.21	NP	0.018
Bicarbonate/Carbonate (as CaCO ₃)	14	30	18	19	24	22	22	20	26	29	24	22	68	78	22
Sulfate	3	11	1	2	20	20	14	5	4	19	9	5	40	50	75
Chloride	1	2	2	1	1	3	<1	<1	2	2	2	<1	1	2	2
Fluoride	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Boron	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfite	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nutrients															
Total PO ₄ as P	<0.02	<0.02	<0.02	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.29
Ortho-PO ₄ as P	NP	NP	NP	<0.02	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	<0.23
Soluble ortho-PO ₄	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	<0.04
Ammonia as N	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nitrate as N	<0.01	0.05	<0.01	0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	0.15	0.48	<0.01	<0.01
Organic Nitrogen as N	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Silica (dissolved)	4.4	8.2	3.8	4.4	8.2	4.8	3.6	4.8	6.2	5.6	1.1	7.0	12.8	14.7	16.5

^a See Figure 1 for description and location of sampling sites.

^b Values expressed as mg/l unless otherwise noted. All analyses conducted by Edward Jordan Co., Inc. of Portland, Maine.

Table 2. (Concluded)
October 9-12, 1978

Sampling Station Designation ^a	Surface Waters												Groundwaters		
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C
Toxic Materials and Trace Metals^b															
Aluminum	0.002	0.007	0.003	0.002	0.002	<0.002	<0.002	<0.002	0.006	0.008	0.005	0.002	0.018	0.002	0.002
Antimony	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.25ppm ^c	0.25 ppm ^c
Barium	0.006	0.009	0.003	0.009	0.006	0.006	0.009	0.003	0.006	0.009	0.008	0.005	<0.002	<0.002	<0.002
Beryllium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	0.003	<0.002
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	0.002	0.002
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Mercury	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Molybdenum	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silver	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.012	0.003	<0.001
Thallium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Titanium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc (Total)	0.002	0.001	0.003	0.002	0.002	0.004	0.002	0.004	0.005	0.004	0.002	0.002	0.49	0.012	0.14
Zinc (Soluble)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Bacteria (MPN/100 ml)															
Fecal coliform	3	0	0	6	0	3	0	0	50	0	160	0	0	0	0
Fecal streptococcus	52	36	0	53	19	16	200	0	3	92	11	0	0	0	0

NP: Not Performed

^a See Figure 1 for description and location of sampling sites.

^b Values expressed as mg/l unless otherwise noted. All analyses conducted by Edward Jordan Co., Inc. of Portland, Maine.

^c Arsenic values were found on rerun after modification of laboratory methods.

Table 3. RESULTS OF WATER QUALITY SAMPLING FOR RADIOLOGICAL ELEMENTS AT SELECTED STATIONS
October 1978

Sampling Station	Surface Waters				Groundwaters	
	3	4	7	12	A	C
<u>PARAMETERS^a</u>						
Total uranium (µg/l)	<0.03	<0.03	<0.03	<0.75	<0.03	0.25
Beryllium-7	<20	<20	<20	<20	<20	<40
Potassium-40	<60	<50	<50	<60	<50	<70
Chromium-50	<20	<20	<20	<20	<20	<40
Manganese-54	<3	<2	<2	<3	<2	<4
Cobalt-58	<2	<2	<2	<2	<2	<3
Iron-59	<6	<5	<6	<6	<6	<9
Cobalt-60	<3	<3	<3	<3	<3	<4
Zinc-65	<6	<5	<5	<6	<6	<11
Zirconium-95	<4	<4	<4	<4	<4	<6
Niobium-95	<2	<2	<2	<2	<2	<4
Ruthenium-103	<2	<2	<2	<2	<2	<4
Ruthenium-106	<30	<20	<20	<30	<30	<40
Iodine-131	<3	<2	<2	<3	<2	<4
Cesium-134	<3	<2	<2	<3	<3	<4
Cesium-137	<3	<2	<2	<3	<2	14+4
Radon-222	<8	24+8	<9	<10	151+11	790+20
Radium-226	<0.09	<0.09	<0.09	<0.10	<0.08	<0.08
Thorium-228	<7	<6	<6	<7	<7	<12
Gross Alpha	<0.2	<0.2	<0.4	<0.5	<0.3	<0.5
Gross Beta	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

NOTE: The gross alpha/beta values reported above are assumed to be incorrect due to analytical error. This assumption is based on the fact that the observed radon-222 concentration in some samples approaches 800 pCi/l and that radon is a significant source of alpha/beta emissions. Thus, the apparent absence of gross alpha and beta (ie., gross alpha <0.5 pCi/l and gross beta <2.0 pCi/l) is not consistent with the levels of radon observed.

^aAll parameters are expressed in pCi/l unless otherwise stated. Analyses were conducted by Interex Corporation of Natick, Mass.

Table 4. RESULTS OF WATER QUALITY SAMPLING FOR PESTICIDES
AT SELECTED SURFACE WATER STATIONS (October 9-12, 1978)

Sampling Station	3	4	7	12
PARAMETER ^a				
Aldrin	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
4,4' - DDT	ND	ND	ND	ND
4,4' - DDE	ND	0.01	0.01	0.01
4,4' - DDD	ND	ND	ND	ND
a-endosulfan-Alpha	ND	ND	ND	ND
b-endosulfan-Beta	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND
a-BHC-Alpha	ND	ND	ND	ND
b-BHC-Beta	ND	ND	ND	ND
r-BHC-Gamma	ND	ND	ND	ND
g-BHC-Delta	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND
PCB-1016	ND	ND	ND	ND
Toxaphene	ND	ND	ND	ND

ND: Not Detected.

^aValues are expressed in parts per billion (ppb). Detection limit for all compounds was 0.03 ppb or less. All analyses were done by Energy Resources Co., Inc., of Cambridge, Massachusetts.

Table 1. FIELD DATA
March 1979
(not available)

Table 2. BASELINE WATER QUALITY SAMPLING
March 15-19, 1979

Sampling Station Designation ^a	Surface Waters												Groundwaters			
	1	2	3	4	5*	6	7	8	9	10	11	12	A	B	C	D
PARAMETER^b																
General Constituents																
pH (units)	6.6	6.55	6.25	6.45	--	6.35	6.65	6.45	7.2	7.85	6.45	6.10	7.25	7.2	6.10	6.05
Temperature (°C)	4.2	4.4	2.9	3.1	--	3.7	4.2	4.1	4.3	4.1	3.8	3.6	4.1	4.4	3.9	4.4
Redox potential (mv)	-12	-26	-32	-12	--	-18	-27	-21	-19	-30	-28	-5	-9	-17	+9	-14
Specific conductance (umho/cm)	27	32	28.5	31	--	27	39.5	27.5	75	48.5	36	30	130	220	95	94
Total solids	60	46	35	35	--	47	40	54	76	54	42	44	590	300	130	100
Total dissolved solids	NP	NP	NP	NP	--	NP	NP	NP	NP	NP	NP	NP	310	300	130	100
Total suspended solids	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	<2	280	2	3	<2
Volatile suspended solids	NP	NP	NP	NP	--	NP	NP	NP	NP	NP	NP	NP	21	<2	<3	<2
Turbidity (NTU)	1.8	.67	.8	1.2	--	.7	.6	.85	.26	.23	.4	.75	80	3.4	9.0	.55
Alkalinity (as CaCO ₃)	14	19	10	12	--	16	20	18	44	22	16	13	80	100	27	21
Total hardness (as CaCO ₃)	13.4	21.1	13.3	13.2	--	16.3	19.3	18.2	43.4	18.7	17.7	14.7	88.4	146	50.2	46.0
Apparent color (units)	NP	NP	NP	NP	--	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
True color (units)	<15	25	35	50	--	35	20	20	20	20	30	40	<5	<5	<5	<5
Dissolved oxygen	11.9	10.8	10.6	12.4	--	10.8	10.5	12.2	11.4	10.9	10.6	10.6	10.4	12.4	12.6	11.4
BOD ₅	2	2	2	<2	--	<2	<2	<2	<2	<2	<2	<2	3	<2	<2	<2
COD ₅	26	18	50	38	--	12	18	22	24	38	20	14	12	<2	<2	120
TOC	13	6	12	11	--	9	11	11	16	6	8	10	6	1	7	4
Oil and Grease	<2	<2	<2	<2	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Phenol	<0.01	<0.01	<0.01	<0.01	--	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MBAS (surfactants)	<0.03	<0.03	<0.03	<0.03	--	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Chlorine	<0.05	<0.05	<0.05	<0.05	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Common Ions																
Calcium	3.6	6.6	3.3	3.5	--	4.5	5.4	5.2	13.3	5.6	5.3	4.0	20.0	40.6	9.6	8.0
Magnesium	1.07	1.12	1.22	1.08	--	1.23	1.41	1.26	2.47	1.15	1.09	1.15	6.86	10.7	5.28	5.20
Sodium	1.1	1.0	1.2	1.6	--	1.2	1.4	1.0	1.0	1.9	0.96	1.2	2.6	5.3	3.4	3.2
Potassium	0.45	0.22	0.41	0.40	--	0.27	0.25	0.24	0.32	0.17	0.18	0.46	1.10	0.57	0.40	0.35
Manganese	.005	.006	.008	.005	--	<0.002	.003	.006	.006	<0.002	<0.002	<0.002	1.0	6.8	1.1	0.8
Iron (total)	0.14	0.048	0.120	0.140	--	0.087	0.074	0.061	0.018	0.033	0.044	0.101	4.5	0.68	2.5	2.6
Iron (dissolved)	NP	NP	NP	NP	--	NP	NP	NP	NP	NP	NP	NP	<20	<20	<20	<20
Bicarbonate/Carbonate (as CaCO ₃)	13	18	10	12	--	16	20	18	40	22	16	13	80	92	27	20
Sulfate	7	6	4	5	--	5	5	4	5	7	7	2	36	22	36	38
Chloride	<1	<1	<1	<1	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Boron	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfide	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfite	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromide	<0.1	<0.1	<0.1	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nutrients																
Total PO ₄ as P	<0.2	<0.2	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	.14	.16	.81	.05
Ortho-PO ₄ as P	NP	NP	NP	NP	--	NP	NP	NP	NP	NP	NP	NP	.05	.02	.08	.02
Soluble ortho-PO ₄	NP	NP	NP	NP	--	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Ammonia as N	<0.02	<0.02	<0.02	<0.02	--	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nitrate as N	0.2	0.09	0.13	0.11	--	0.08	0.2	0.11	0.28	0.64	0.66	0.19	0.13	0.05	0.2	0.05
Organic Nitrogen as N	.13	<.04	.28	.20	--	.26	.20	.24	.09	.13	.11	.19	.17	<.04	<.04	<.04
Silica (dissolved)	5.5	5.5	7.0	6.2	--	5.5	4.6	4.5	12.5	8.5	8.5	7.3	17.	15.7	20.0	18.6

^aSee Figure 1 for description and location of sampling sites.

^bValues expressed as mg/l unless otherwise noted. All analyses conducted by Edward Jordan Co., Inc., of Portland, Maine.

NP Not Sampled.

NP is Not Performed.

Table 2. (Concluded)
March 15-19, 1979

Sampling Station Designation ^a	Surface Waters												Groundwaters		
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C
<u>Toxic Materials and Trace Metals^b</u>															
Aluminum	0.086	0.044	0.11	0.075	0.083	0.021	0.066	0.012	0.016	0.018	0.036	0.60	0.18	0.068	0.057
Antimony	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.013	0.32	0.31	0.111
Barium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beryllium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.011	<0.005	<0.005	<0.005
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.009	<0.002	<0.002
Cobalt	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.003	<0.002	<0.002	<0.002
Copper	0.003	0.002	0.003	<0.002	<0.002	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	0.078	0.003	<0.002	0.002
Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.004	<0.002	0.003	0.003	<0.002	<0.002	<0.002	<0.002
Mercury	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Molybdenum	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.008	<0.002	<0.002	<0.002
Selenium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	<0.002	<0.002
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005
Thallium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Titanium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc (Total)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.012	0.005	<0.011	0.009	0.006	1.47	0.018	0.065	0.11
Zinc (Soluble)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	120	NP	NP	NP
<u>Bacteria (MPN/100 ml)</u>															
Fecal coliform	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0
Fecal streptococcus	5	1	20	9	10	10	2	2	7	1	2	1	0	0	0

NP: Not Performed.

^aSee Figure 1 for description and location of sampling sites.

^bValues expressed as mg/l unless otherwise noted. All analyses conducted by Edward Jordon Co., Inc., of Portland, Maine.

Table 3. RADIOLOGICAL ELEMENTS
March 1979
(not available)

Table 4. PESTICIDES
March 1979
(not available)

Table 1. BASELINE WATER QUALITY SAMPLING FIELD DATA
May 2-3, 1979

Sampling Station	Surface Waters												Groundwaters		
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C
<u>Parameter^a</u>															
Air Temperature (°C)	9.0	7.0	8.0	9.5	5.0	5.0	5.0	7.8	12.0	16.0	8.0	9.0	12.0	9.0	10.0
Water Temperature (°C)	4.2	4.0	4.0	4.0	1.0	5.0	5.0	3.5	5.0	5.5	6.5	3.0	6.5	6.0	7.0
Dissolved Oxygen (mg/l)	11.8	14.3	11.4	11.7	12.4	14.5	14.8	11.9	12.2	11.7	8.0	13.2	6.4	3.2	4.0
Specific Conductance (umho/cm)	19	25	21	22	18	21	25	21	20	22	32	20	130	175	90
pH (units)	7.5	7.8	6.7	7.2	7.4	7.65	7.6	7.8	7.4	7.4	7.1	7.3	8.1	7.7	7.6
Redox Potential (mv)	+110	+50	+145	+175	+120	+125	+120	+140	+120	+130	+120	+130	+110	+30	+30

^aAll analyses were done by Woodward-Clyde Consultants

Table 2. BASELINE WATER QUALITY SAMPLING
May 3-6, 1979

Sampling Station Designation ^a	Surface Waters												Groundwaters			
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C	D
PARAMETER^b																
General Constituents																
pH (units)	7.1	6.5	6.3	6.6	6.1	6.6	6.7	6.55	6.8	6.95	6.4	6.3	7.60	6.21	7.22	6.15
Temperature (°C)	14.0	14.0	13.2	10.9	14.6	15	15	15	17	16.5	15.8	14.5	16	20	14.5	15
Redox potential (mv)	+4.5	-10	-1	-17	+8	-14	-4.5	-8.5	-11	-38	-9	-1	-8	-112	-46.5	+48
Specific conductance (umho/cm)	20	27	26	26	20	25	27.5	25.5	20	26	27	20.5	164	113	221	100
Total Solids	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Total dissolved solids	31.9	30.4	34.6	43.3	40.5	31.7	36.7	35.0	28.7	32.9	30.4	33.3	300	130	160	97
Total suspended solids	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	920	25	41	<2
Volatile suspended solids	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	55	7	3	NP
Turbidity (NTU)	1.6	0.36	1.4	.86	.33	.44	1.5	.49	0.47	0.38	0.26	0.49	32	5.5	5.8	1.0
Alkalinity (as CaCO ₃)	13	11	12	11	8	11	14	14	9.5	12.5	11	7	87	29	107	7
Total hardness (as CaCO ₃)	7.5	11.4	10.6	10.4	8.9	9.0	11.9	11.9	10.1	11.1	10.5	8.0	67.9	180	286	35.1
Apparent color (units)	55	30	45	45	65	45	35	45	35	30	30	50	<5	25	5	10
True color (units)	50	25	40	45	60	42	32	40	35	25	30	50	40	20	5	5
Dissolved oxygen	11.2	10.8	10.6	11.4	11.2	11.8	10.4	11.6	11.9	10.6	11.2	11.6	2.35	2.0	2.2	<0.5
BOD ₅	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2	NP	NP	NP	NP
COD	24	12	24	32	20	18	12	14	14	4	<2	8	<2	<2	<2	6
TOC	12	8	10	10	11	12	11	12	11	9	8	10	<2	<2	<2	<2
Oil and Grease	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MBAS (surfactants)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Chlorine	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Common Ions																
Calcium	2.0	3.4	3.1	2.7	2.4	2.6	3.3	3.6	1.6	3.3	3.2	2.2	10.4	26	72	6.0
Magnesium	0.6	0.7	0.7	0.9	0.7	0.6	0.9	0.7	0.8	0.7	0.6	0.6	10.2	28	26	4.9
Sodium	0.69	0.52	0.75	1.2	0.82	0.67	0.57	0.70	0.71	0.57	0.63	0.57	3.8	29	15	3.6
Potassium	0.26	0.15	0.32	0.38	0.26	0.22	0.16	0.14	0.23	0.12	0.11	0.36	1.3	2.2	1.1	0.27
Manganese	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.26	1.29	1.52	0.14
Iron (total)	0.04	0.05	0.09	0.09	0.05	0.05	0.05	0.03	0.04	0.02	0.03	0.06	29	3.05	1.18	7.70
Iron (dissolved)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Bicarbonate/Carbonate (as CaCO ₃)	12	11	10	11	8	10	14	14	8	12	10	7	68	26	72	5
Sulfate	5	5	5	9	5	4.5	5	5	4	5	5	5	35	45	45	40
Chloride	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Boron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sulfide	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfite	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromide	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nutrients																
Total PO ₄ as P	0.05	0.03	0.44	0.17	<0.02	<0.02	0.04	0.02	0.04	0.03	<0.02	<0.02	0.02	0.4	0.1	0.15
Ortho-PO ₄ as P	NP	NP	0.43	0.11	NP	NP	NP	NP	NP	NP	NP	NP	<0.02	0.03	0.03	<0.02
Soluble ortho-PO ₄	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Ammonia as N	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nitrate as N	0.07	0.09	0.04	0.05	0.05	0.09	0.1	0.05	0.1	0.04	0.07	0.10	0.05	0.03	<0.02	0.09
Organic Nitrogen as N	0.2	0.13	0.13	0.18	0.14	0.06	0.21	0.36	0.07	0.28	0.61	0.24	0.11	<0.05	<0.05	NP
Silica (dissolved)	5.5	6.5	5.2	6.2	6	4.5	5	4.5	6	4.0	7.3	5.5	14.8	17.4	15.4	16.2

^a See Figure 1 for description and location of sampling sites.

^b Values expressed as mg/l unless otherwise noted. All analyses conducted by Edward Jordan Co., Inc., of Portland, Maine.
NP is Not Performed.

Table 2. (Concluded)
May 3-6, 1979

Sampling Station Designation ^a	Surface Waters												Groundwaters			
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C	D
Toxic Materials and Trace Metals^b																
Aluminum	0.14	0.11	0.10	0.12	0.08	0.14	0.11	0.07	0.19	0.14	0.13	0.19	0.42	0.15	0.38	0.045
Antimony	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.013	0.45	0.21	0.015
Barium	<0.005	0.009	0.01	0.009	0.008	0.01	0.006	0.012	0.009	0.009	0.006	0.007	0.012	0.012	0.009	<0.005
Beryllium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.033	0.004	0.004	<0.002
Cobalt	0.003	0.006	0.006	0.008	0.006	0.005	0.007	0.009	0.010	0.008	0.006	0.009	0.052	0.012	0.013	0.012
Copper	0.012	0.015	0.012	0.011	0.017	0.006	0.008	0.015	0.004	0.005	0.006	0.007	0.15	0.04	0.06	0.013
Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.008	<0.002	0.007	<0.002
Mercury	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Molybdenum	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.012	<0.005
Nickel	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.03	0.02	0.02	<0.01
Selenium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.004	<0.002
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.11	0.04	0.06	<0.01
Thallium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.027	<0.005	0.021	<0.005
Titanium	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Zinc (Total)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.128	0.350	0.050	0.120
Zinc (Soluble)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Bacteria (MPN/100 ml)																
Fecal coliform	0	0	0	0	0	5	2	1	5	5	0	0	0	0	0	0
Fecal streptococcus	1	2	2	2	0	0	2	1	1	2	6	1	0	0	0	0

NP: Not Performed.

^aSee Figure 1 for description and location of sampling sites.

^bValues expressed as mg/l unless otherwise noted. All analyses conducted by Edward Jordan Co., Inc., of Portland, Maine.

Table 3. RADIOLOGICAL ELEMENTS
May 1979
(not available)

Table 4. PESTICIDES
May 1979
(not available)

Table 1. BASELINE WATER QUALITY SAMPLING FIELD DATA
August 1-2, 1979

Sampling Station	Surface Waters													Groundwaters			
	1	2	3	4	5	6	7	8	9	10	11	12	13	A	B	C	D
<u>Parameter^a</u>																	
Air Temperature (°C)	24.0	28.0	25.0	24.0	21.0	29.0	23.0	25.0	25.0	18.0	25.0	27.0	25.0	23.0	30.0	26.0	28.0
Water Temperature (°C)	22.0	15.0	24.0	20.0	18.0	23.5	24.0	20.0	15.9	15.0	22.0	17.5	25.0	7.0	8.0	14.0	8.0
Dissolved Oxygen (mg/l)	8.0	9.1	8.1	8.7	5.2	8.7	7.3	8.8	9.5	9.25	7.8	9.7	8.2	3.8	5.6	10.9	6.4
Specific Conductance (umho/cm)	35	50	35	40	60	58	40	50	100	59	50	55	40	142	170	100	90
pH (units)	7.0	7.0	6.8	7.0	6.6	7.0	6.85	7.0	7.0	7.0	6.9	7.0	7.0	7.3	7.2	6.5	6.7
Redox Potential (mv)	+100	+140	+130	+120	+140	+90	+125	+120	+120	+160	+120	+105	+110	+110	-50	+60	-30

^aAll analyses were done by Woodward-Clyde Consultants

Table 2. BASELINE WATER QUALITY SAMPLING
August 1-2, 1979

Sampling Station Designation ^a	Surface Waters													Groundwaters			
	1	2	3	4	5	6	7	8	9	10	11	12	13	A	B	C	D
PARAMETER^b																	
General Constituents																	
pH (units)	7.3	7.0	7.2	7.5	7.2	7.5	7.1	7.7	8.0	8.1	7.8	7.6	7.7	7.6	7.8	6.4	6.4
Temperature (°C)	ice	ice	ice	ice	ice	ice	ice	ice	ice	ice	ice	ice	ice	ice	ice	ice	ice
Redox potential (mv)	-30	-41	-23	-24	-23	-40	-28	-23	-46	-34	-19	-24	-27	-45	-52	-17	+10
Specific conductance (umho/cm)	42	68	3.7	46	77	66	49	56	134	82	68	74	47	227	293	146	145
Total solids	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	603	NP	NP	NP
Total dissolved solids	41	66	42	50	84	57	41	42	82	56	56	65	47	150	188	103	101
Total suspended solids	<2	2	<2	<2	46	<2	<2	<2	<2	<2	<2	<2	2	483	<2	<2	<2
Volatile suspended solids	NP	NP	NP	NP	26	NP	NP	NP	NP	NP	NP	NP	NP	26	NP	NP	NP
Turbidity (NTU)	0.6	0.5	0.8	0.8	1.5	0.9	0.6	0.4	0.2	0.3	0.8	0.6	0.9	200	1.8	1.9	1.1
Alkalinity (as CaCO ₃)	16	27	16	19	40	26	18	25	68	36	28	19	18	82	99	27	28
Total hardness (as CaCO ₃)	22.5	26.8	19.5	22.7	52.0	29.0	24.9	29.0	90.0	30.1	33.1	29.4	21.4	150	189	133	40.1
Apparent color (units)	58	65	58	65	100	45	25	35	32	25	45	63	35	NP	<5	<5	<5
True color (units)	55	62	55	62	100	40	25	35	30	22	40	60	35	<5	<5	<5	<5
Dissolved oxygen	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	3.7	4.8	9.2	10.2
BOD ₅	<2	<2	2	<2	4	2	<2	<2	<2	<2	<2	<2	<2	NP	NP	NP	NP
COD	22	22	20	16	55	10	8	16	12	12	12	20	20	12	<2	<2	16
TOC	10	8	11	10	21	8	6	8	5	3	8	10	9	<2	5	3	2
Oil and Grease	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<10	<10	<10	<10	<10	<10	<10	<10
MBAS (surfactants)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<30	<30	<30	<30	<30	<30	<30	<30
Chlorine	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Common Ions																	
Calcium	4.9	7.1	4.2	5.5	13.9	7.7	6.3	8.0	2.8	8.5	8.8	8.3	5.1	25.1	46.2	35.0	3.6
Magnesium	2.5	2.2	2.2	2.2	4.2	2.5	2.0	2.2	4.9	2.4	2.7	2.1	2.4	22	18	11	7.8
Sodium	1.9	1.5	1.9	1.9	2.1	2.2	1.3	1.5	2.4	1.6	1.6	2.1	2.2	4.7	6.5	5.0	4.2
Potassium	650	530	620	620	600	610	270	240	680	740	1120	1030	620	1210	1070	1160	1740
Manganese	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.04	5.2	0.85	0.22	0.12
Iron (total)	0.40	0.28	0.28	0.05	2.43	0.49	0.15	0.18	0.13	0.24	0.13	0.53	0.21	27	0.34	0.90	0.88
Iron (dissolved)	NP	NP	NP	NP	0.04	NP	NP	NP	NP	NP	NP	NP	NP	0.04	<0.03	<0.03	0.16
Bicarbonate/Carbonate (as CaCO ₃)	15	26	15	20	36	21	18	22	67	32	26	17	18	61	91	26	27
Sulfate	6	9	6	6	1	6	6	6	7	9	12	5	6	40	58	55	52
Chloride	2	<2	3	<2	2	<2	2	3	<2	2	<2	<2	<2	4	4	6	4
Fluoride	0.47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Boron	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfide	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfite	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromide	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nutrients																	
Total PO ₄ as P	0.03	0.03	0.05	0.05	0.14	0.06	0.03	0.02	0.02	0.03	0.02	<0.02	0.02	0.05	0.2	0.2	0.38
Ortho-PO ₄ as P	NP	NP	NP	NP	<0.02	NP	NP	NP	NP	NP	NP	NP	NP	NP	<0.02	<0.02	<0.02
Soluble ortho-PO ₄	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Ammonia as N	<0.035	<0.035	<0.035	<0.035	0.07	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035
Nitrate as N	0.04	0.08	0.10	0.08	0.14	0.02	0.04	0.07	0.13	0.15	0.03	0.11	0.04	0.03	<0.01	0.02	0.05
Organic Nitrogen as N	0.16	0.08	0.6	<0.02	0.14	0.13	0.28	0.16	0.24	0.27	0.13	0.14	0.06	0.11	0.07	<0.01	<0.01
Silica (dissolved)	4	7	7	4	4.5	4.5	4	4	6	7	4	6	3	20	14	20	24

^a See Figure 1 for description and location of sampling sites.

^b Values expressed as mg/l unless otherwise noted. All analyses conducted by Edward Jordan Co., Inc.,

Table 2. (Concluded)
August 1-2, 1979

Sampling Station Designation ^a	Surface Waters													Groundwaters			
	1	2	3	4	5	6	7	8	9	10	11	12	13	A	B	C	D
Toxic Materials and Trace Metals^b																	
Aluminum	0.51	0.25	0.28	0.33	0.72	0.32	0.18	0.33	0.87	0.48	0.18	0.33	0.20	1.1	0.35	0.35	0.38
Antimony	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic	0.006	0.008	0.010	0.010	0.021	0.002	0.009	0.008	0.008	0.012	0.006	0.006	0.006	0.083	0.26	0.22	0.14
Barium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Beryllium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.004	<0.002	<0.002	<0.002
Chromium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cobalt	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	22	12	9	16	17	22	9	9	21	9	6	43	11	230	8	12	37
Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	0.015	0.018	0.009	0.020	0.014	0.012	0.007	0.007	0.005	0.007	0.004	0.009	0.005	0.018	0.009	0.004	0.009
Mercury	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Molybdenum	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Nickel	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.012	<0.002	<0.002	<0.002
Thallium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tin	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Titanium	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Zinc (Total)	0.008	0.012	0.009	0.017	0.017	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	0.016	0.009	0.95	0.012	0.041	0.065
Zinc (Soluble)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	0.035	NP	NP	NP
Bacteria (MPN/100 ml)																	
Fecal coliform	5	16	7	13	1	15	2	0	1	3	6	8	0	0	0	0	0
Fecal streptococcus	42	73	18	40	3	1	0	7	43	84	1	55	1	128	0	0	0

NP: Not Performed.

^aSee Figure 1 for description and location of sampling sites.

^bValues expressed as mg/l unless otherwise noted. All analyses conducted by Edward Jordan Co., Inc., of Portland, Maine.

Table 3. RADIOLOGICAL ELEMENTS
August 1979
(not available)

Table 4. RESULTS OF WATER QUALITY SAMPLING FOR PESTICIDES
AT SELECTED SURFACE WATER STATIONS (August 3-5, 1979)

Sampling Station (Flood Gage)	2	3	4	5	10
PARAMETER ^a					
Aldrin	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND	ND
4,4' - DDT	ND	ND	ND	ND	ND
4,4' - DDE	ND	ND	ND	ND	ND
4,4' - DDD	ND	ND	ND	ND	ND
a-endosulfan-Alpha	ND	ND	ND	ND	ND
b-endosulfan-Beta	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND
Heptachlor epoxide	ND	ND	ND	ND	ND
a-BHC-Alpha	ND	ND	ND	ND	ND
b-BHC-Beta	ND	ND	ND	ND	ND
r-BHC-Gamma	ND	ND	ND	ND	ND
g-BHC-Delta	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND	ND
PCB-1016	ND	ND	ND	ND	ND
Toxaphene	NP	NP	NP	NP	NP

ND: Not Detected.

^aValues are expressed in parts per billion (ppb). Detection limit for all compounds was 0.03 ppb or less. All analyses were done by Energy Resources Co., Inc., of Cambridge, Massachusetts.

NP: Not Performed.

NEW FILE
IF NECESSARY

SUPERIOR OIL
FILE

November 1, 1978

WORKING OUTLINE

I. Zoning Petition

1. Orientation
 - a. Type of zone sought D-CI
 - b. Area to be zoned
 - i. LURC map exhibit

II. Area

1. Geographic location
 - a. map
2. Ownership
 - a. Owners
 - b. Lessees
 - i. description of Superior and L L & E
 1. mining and experience
 - a. representative list of activities
 2. size and assets
 - a. annual reports
 - c. Area under lease
 - d. Relationship of Superior Mining to lessees
3. Physical characteristics
 - a. location vis a vis Portage
 - b. location of roads
 - c. geographic features
 - i. topographic map
 - ii. seismic map
4. Activities to date
 - a. preliminary exploratory activity
 - b. exploratory drilling
 - i. scientific testing
 - ii. purpose
 - c. technical assistance
 - i. engineering
 - ii. environmental consultants
 - iii. legal counsel
 - iv. metallurgy consultants

III. Proposed Development

1. Type and method of mining
 - a. type of minerals
 - b. location of ore body
 - c. description of mining process

2. Mine facilities
 - a. structures
 - i. size
 - ii. location
 - iii. suitability of soil for construction
 - b. roads
 - c. other facilities

IV. Legal justification for approach

1. Section 10.14 A. c. of Permanent District and Standards
 - a. mining consistent with purposes of D-CI zone
 - b. suitable as measured against standards of 12 M.R.S.A. § 685-B(4)
2. Project conforms to Comprehensive Plan
3. Limited scope of project
 - a. purpose
 - b. scope of facilities

V. Anticipated Environmental Impact

1. Air pollution
 - a. Anticipated discharges
 - b. proposed solutions
 - c. anticipated permits
2. Water pollution
 - a. anticipated discharges
 - b. proposed solutions
 - c. anticipated permits
3. Solid waste disposal
 - a. waste rock
 - b. tailings
 - c. sewage disposal
4. Control of odor
5. Water supply
6. Development
 - a. compliance with Site Location and LURC permit requirements
7. Transportation
 - a. transportation of ore
 - b. transportation of people
 - c. transportation of concentrate
8. Topography and soil analysis
 - a. general discussion of soil and slope conditions
 - b. road construction
9. Sensitivity to environment
 - a. historic research
 - b. reclamation