

REPORT

FINAL

*General Motors Corporation
Saginaw Malleable Iron Plant
Property, and REALM, Inc.
Green Point Landfill and
Drum Remediation Area
Saginaw, Michigan*

*Remedial Investigation Report
Volume V of V*

July 5, 2001

BBL[®]
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

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Appendix D

Surface Water/Groundwater Interaction Study Data

BLASLAND, BOUCK & LEE, INC.,
engineers & scientists

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GENERAL MOTORS CORPORATION
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Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
0	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00
60	0.02	0.00	0.01	-0.01	0.00	0.01	0.00	0.02
120	0.04	-0.01	0.01	-0.02	-0.04	0.02	-0.02	0.02
180	0.05	-0.03	0.01	-0.01	-0.12	0.03	-0.02	0.01
240	0.07	-0.05	0.00	-0.03	-0.18	0.03	-0.03	0.01
300	0.08	-0.06	0.00	-0.05	-0.22	0.04	-0.03	0.01
360	0.09	-0.08	-0.01	-0.05	-0.16	0.05	-0.03	0.01
420	0.11	-0.07	-0.01	-0.06	-0.15	0.06	-0.02	0.01
480	0.12	-0.06	-0.01	-0.07	-0.11	0.06	-0.03	0.01
540	0.13	-0.04	-0.01	-0.08	-0.03	0.07	-0.02	0.01
600	0.15	-0.02	-0.01	-0.09	0.03	0.08	-0.03	0.00
660	0.15	-0.01	-0.01	-0.09	0.07	0.09	-0.02	0.00
720	0.15	-0.01	0.00	-0.11	0.04	0.10	-0.03	-0.01
780	0.13	-0.03	-0.01	-0.11	-0.03	0.10	-0.02	-0.01
840	0.12	-0.04	0.00	-0.13	0.01	0.11	-0.03	-0.01
900	0.11	-0.03	0.00	-0.13	0.06	0.12	-0.03	-0.02
960	0.10	-0.03	-0.01	-0.13	0.04	0.13	-0.04	-0.02
1020	0.09	-0.03	0.00	-0.16	0.09	0.13	-0.04	-0.03
1080	0.10	-0.01	-0.01	-0.16	0.16	0.14	-0.04	-0.03
1140	0.10	0.01	-0.01	-0.16	0.17	0.15	-0.03	-0.04
1200	0.10	0.02	-0.01	-0.18	0.23	0.16	-0.05	-0.04
1260	0.11	0.04	-0.02	-0.19	0.27	0.16	-0.03	-0.04
1320	0.11	0.04	-0.02	-0.21	0.32	0.16	-0.04	-0.05
1380	0.13	0.06	-0.01	-0.22	0.28	0.17	-0.04	-0.05
1440	0.13	0.04	-0.01	-0.23	0.23	0.18	-0.04	-0.05
1500	0.13	0.01	-0.01	-0.23	0.14	0.19	-0.06	-0.07
1560	0.13	-0.03	-0.01	-0.24	0.00	0.19	-0.06	-0.07
1620	0.13	-0.09	-0.02	-0.24	-0.18	0.20	-0.07	-0.08
1680	0.11	-0.15	-0.02	-0.27	-0.29	0.21	-0.05	-0.08
1740	0.09	-0.18	-0.03	-0.27	-0.39	0.21	-0.08	-0.09
1800	0.07	-0.22	-0.04	-0.27	-0.44	0.22	-0.07	-0.09
1860	0.04	-0.23	-0.04	-0.28	-0.43	0.22	-0.08	-0.09
1920	0.03	-0.20	-0.04	-0.29	-0.31	0.23	-0.07	-0.10
1980	0.02	-0.16	-0.04	-0.30	-0.31	0.23	-0.09	-0.10
2040	0.01	-0.17	-0.04	-0.31	-0.24	0.23	-0.07	-0.11
2100	0.00	-0.14	-0.04	-0.32	-0.16	0.24	-0.09	-0.11
2160	0.00	-0.11	-0.04	-0.34	-0.15	0.24	-0.10	-0.12
2220	-0.01	-0.12	-0.04	-0.35	-0.24	0.25	-0.11	-0.13
2280	-0.03	-0.17	-0.05	-0.35	-0.24	0.25	-0.12	-0.13
2340	-0.04	-0.15	-0.05	-0.35	-0.26	0.25	-0.14	-0.14
2400	-0.06	-0.17	-0.06	-0.36	-0.19	0.25	-0.13	-0.15
2460	-0.07	-0.14	-0.06	-0.38	-0.10	0.25	-0.14	-0.15
2520	-0.07	-0.11	-0.07	-0.40	-0.09	0.26	-0.14	-0.16
2580	-0.07	-0.11	-0.08	-0.40	0.01	0.26	-0.13	-0.16
2640	-0.06	-0.08	-0.08	-0.42	0.07	0.26	-0.12	-0.16

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Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
2700	-0.05	-0.07	-0.08	-0.42	0.02	0.27	-0.12	-0.16
2760	-0.05	-0.10	-0.08	-0.42	0.02	0.27	-0.11	-0.17
2820	-0.05	-0.08	-0.07	-0.43	0.06	0.27	-0.11	-0.17
2880	-0.05	-0.10	-0.06	-0.44	-0.05	0.27	-0.12	-0.17
2940	-0.06	-0.12	-0.06	-0.45	-0.05	0.28	-0.11	-0.17
3000	-0.06	-0.12	-0.06	-0.46	-0.11	0.29	-0.10	-0.18
3060	-0.06	-0.15	-0.06	-0.47	-0.15	0.28	-0.10	-0.18
3120	-0.06	-0.17	-0.06	-0.47	-0.27	0.28	-0.11	-0.19
3180	-0.07	-0.20	-0.06	-0.48	-0.25	0.28	-0.10	-0.19
3240	-0.08	-0.20	-0.07	-0.50	-0.35	0.28	-0.10	-0.19
3300	-0.09	-0.24	-0.06	-0.50	-0.33	0.28	-0.09	-0.20
3360	-0.10	-0.22	-0.07	-0.51	-0.32	0.28	-0.09	-0.21
3420	-0.11	-0.20	-0.06	-0.51	-0.29	0.28	-0.08	-0.21
3480	-0.12	-0.19	-0.05	-0.51	-0.29	0.28	-0.08	-0.22
3540	-0.13	-0.20	-0.05	-0.52	-0.29	0.28	-0.08	-0.23
3600	-0.13	-0.20	-0.04	-0.54	-0.45	0.28	-0.09	-0.24
3660	-0.17	-0.27	-0.04	-0.57	-0.51	0.29	-0.08	-0.25
3720	-0.19	-0.25	-0.04	-0.58	-0.54	0.29	-0.09	-0.26
3780	-0.21	-0.27	-0.04	-0.59	-0.51	0.29	-0.09	-0.27
3840	-0.22	-0.25	-0.04	-0.60	-0.46	0.29	-0.09	-0.28
3900	-0.23	-0.24	-0.04	-0.61	-0.48	0.29	-0.08	-0.28
3960	-0.24	-0.23	-0.05	-0.62	-0.39	0.30	-0.09	-0.30
4020	-0.24	-0.20	-0.05	-0.64	-0.34	0.30	-0.08	-0.31
4080	-0.24	-0.17	-0.05	-0.66	-0.20	0.30	-0.08	-0.31
4140	-0.23	-0.12	-0.04	-0.68	-0.13	0.30	-0.08	-0.33
4200	-0.22	-0.11	-0.04	-0.69	-0.12	0.31	-0.09	-0.35
4260	-0.21	-0.11	-0.04	-0.71	-0.12	0.31	-0.08	-0.36
4320	-0.22	-0.12	-0.04	-0.73	-0.15	0.32	-0.10	-0.37
4380	-0.23	-0.15	-0.04	-0.75	-0.25	0.32	-0.09	-0.39
4440	-0.24	-0.17	-0.05	-0.77	-0.30	0.32	-0.12	-0.40
4500	-0.25	-0.19	-0.05	-0.79	-0.37	0.33	-0.11	-0.41
4560	-0.27	-0.23	-0.06	-0.81	-0.40	0.33	-0.13	-0.42
4620	-0.29	-0.24	-0.06	-0.82	-0.43	0.33	-0.14	-0.44
4680	-0.30	-0.25	-0.07	-0.85	-0.44	0.34	-0.15	-0.45
4740	-0.32	-0.27	-0.07	-0.87	-0.53	0.34	-0.16	-0.47
4800	-0.35	-0.30	-0.08	-0.89	-0.55	0.34	-0.15	-0.49
4860	-0.38	-0.31	-0.09	-0.92	-0.59	0.35	-0.17	-0.50
4920	-0.40	-0.34	-0.10	-0.94	-0.64	0.35	-0.17	-0.51
4980	-0.43	-0.36	-0.10	-0.96	-0.70	0.36	-0.18	-0.53
5040	-0.45	-0.36	-0.11	-0.98	-0.74	0.36	-0.19	-0.55
5100	-0.48	-0.39	-0.11	-1.01	-0.75	0.36	-0.20	-0.56
5160	-0.50	-0.37	-0.11	-1.04	-0.67	0.37	-0.20	-0.58
5220	-0.51	-0.34	-0.12	-1.07	-0.65	0.37	-0.22	-0.60
5280	-0.52	-0.32	-0.12	-1.10	-0.53	0.37	-0.21	-0.61
5340	-0.52	-0.29	-0.13	-1.13	-0.40	0.38	-0.21	-0.62

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	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
5400	-0.51	-0.24	-0.13	-1.16	-0.28	0.38	-0.20	-0.64
5460	-0.49	-0.19	-0.13	-1.18	-0.10	0.38	-0.21	-0.65
5520	-0.47	-0.15	-0.13	-1.20	0.03	0.39	-0.21	-0.67
5580	-0.45	-0.11	-0.13	-1.22	0.16	0.39	-0.21	-0.68
5640	-0.42	-0.07	-0.14	-1.25	0.27	0.39	-0.20	-0.70
5700	-0.39	-0.04	-0.13	-1.27	0.40	0.40	-0.20	-0.71
5760	-0.36	-0.01	-0.13	-1.29	0.47	0.40	-0.19	-0.71
5820	-0.32	-0.01	-0.13	-1.31	0.42	0.41	-0.18	-0.72
5880	-0.31	-0.03	-0.13	-1.33	0.46	0.41	-0.17	-0.73
5940	-0.28	-0.01	-0.12	-1.34	0.43	0.42	-0.16	-0.74
6000	-0.26	0.00	-0.12	-1.36	0.63	0.42	-0.15	-0.75
6060	-0.21	0.04	-0.11	-1.37	0.77	0.42	-0.13	-0.75
6120	-0.16	0.08	-0.11	-1.39	0.95	0.43	-0.12	-0.76
6180	-0.11	0.15	-0.10	-1.40	1.18	0.43	-0.10	-0.77
6240	-0.04	0.23	-0.09	-1.41	1.30	0.44	-0.10	-0.77
6300	0.01	0.24	-0.08	-1.41	1.22	0.45	-0.07	-0.78
6360	0.02	0.15	-0.07	-1.42	0.89	0.45	-0.08	-0.79
6420	0.00	0.05	-0.06	-1.43	0.71	0.46	-0.06	-0.79
6480	-0.02	-0.01	-0.05	-1.45	0.47	0.47	-0.06	-0.80
6540	-0.06	-0.10	-0.05	-1.45	0.31	0.47	-0.05	-0.81
6600	-0.10	-0.15	-0.04	-1.46	0.13	0.48	-0.04	-0.81
6660	-0.14	-0.20	-0.04	-1.47	0.00	0.48	-0.04	-0.82
6720	-0.18	-0.23	-0.03	-1.48	-0.13	0.49	-0.04	-0.82
6780	-0.23	-0.29	-0.03	-1.49	-0.33	0.49	-0.03	-0.82
6840	-0.28	-0.33	-0.03	-1.50	-0.44	0.49	-0.03	-0.83
6900	-0.32	-0.35	-0.02	-1.50	-0.47	0.49	-0.01	-0.83
6960	-0.35	-0.35	-0.02	-1.50	-0.51	0.50	-0.02	-0.83
7020	-0.38	-0.34	-0.02	-1.50	-0.47	0.50	-0.01	-0.83
7080	-0.40	-0.30	-0.01	-1.51	-0.36	0.50	-0.01	-0.83
7140	-0.39	-0.24	-0.01	-1.51	-0.22	0.51	-0.02	-0.84
7200	-0.38	-0.19	0.00	-1.51	-0.08	0.51	-0.02	-0.84
7260	-0.35	-0.14	0.00	-1.51	-0.05	0.52	-0.03	-0.84
7320	-0.33	-0.13	0.00	-1.51	-0.06	0.51	-0.04	-0.84
7380	-0.32	-0.15	-0.01	-1.51	-0.16	0.51	-0.04	-0.84
7440	-0.32	-0.19	-0.01	-1.52	-0.27	0.52	-0.05	-0.84
7500	-0.32	-0.23	-0.02	-1.52	-0.38	0.52	-0.05	-0.84
7560	-0.33	-0.28	-0.02	-1.52	-0.54	0.53	-0.06	-0.83
7620	-0.36	-0.32	-0.02	-1.50	-0.54	0.52	-0.04	-0.83
7680	-0.37	-0.31	-0.03	-1.51	-0.48	0.52	-0.05	-0.83
7740	-0.37	-0.27	-0.03	-1.51	-0.36	0.52	-0.05	-0.82
7800	-0.36	-0.22	-0.03	-1.50	-0.18	0.52	-0.05	-0.82
7860	-0.34	-0.16	-0.03	-1.50	-0.06	0.52	-0.05	-0.82
7920	-0.33	-0.12	-0.03	-1.50	0.04	0.51	-0.04	-0.81
7980	-0.31	-0.10	-0.03	-1.49	0.07	0.51	-0.05	-0.81
8040	-0.30	-0.09	-0.03	-1.48	0.06	0.51	-0.06	-0.81

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Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
8100	-0.29	-0.11	-0.03	-1.48	-0.05	0.50	-0.07	-0.81
8160	-0.31	-0.16	-0.03	-1.48	-0.15	0.50	-0.07	-0.80
8220	-0.33	-0.20	-0.03	-1.47	-0.23	0.49	-0.06	-0.79
8280	-0.35	-0.22	-0.04	-1.47	-0.27	0.49	-0.07	-0.79
8340	-0.36	-0.23	-0.04	-1.46	-0.24	0.48	-0.07	-0.78
8400	-0.37	-0.22	-0.04	-1.46	-0.19	0.47	-0.07	-0.78
8460	-0.36	-0.18	-0.04	-1.45	-0.08	0.47	-0.07	-0.80
8520	-0.35	-0.15	-0.04	-1.44	0.03	0.46	-0.06	-0.79
8580	-0.33	-0.11	-0.04	-1.43	0.11	0.45	-0.10	-0.79
8640	-0.31	-0.06	-0.04	-1.43	0.15	0.44	-0.08	-0.77
8700	-0.29	-0.06	-0.05	-1.42	0.13	0.43	-0.07	-0.76
8760	-0.27	-0.08	-0.06	-1.42	0.02	0.43	-0.05	-0.75
8820	-0.25	-0.11	-0.07	-1.42	-0.07	0.42	-0.05	-0.76
8880	-0.25	-0.16	-0.07	-1.41	-0.18	0.41	-0.10	-0.76
8940	-0.25	-0.20	-0.08	-1.40	-0.22	0.39	-0.10	-0.75
9000	-0.26	-0.22	-0.09	-1.40	-0.28	0.38	-0.17	-0.74
9060	-0.26	-0.24	-0.09	-1.39	-0.27	0.37	-0.18	-0.74
9120	-0.26	-0.22	-0.10	-1.39	-0.22	0.36	-0.20	-0.73
9180	-0.25	-0.20	-0.10	-1.38	-0.13	0.35	-0.20	-0.72
9240	-0.24	-0.17	-0.10	-1.37	-0.03	0.34	-0.22	-0.72
9300	-0.23	-0.13	-0.10	-1.38	0.03	0.33	-0.20	-0.72
9360	-0.22	-0.12	-0.10	-1.36	0.05	0.32	-0.19	-0.72
9420	-0.22	-0.11	-0.10	-1.36	0.12	0.30	-0.17	-0.72
9480	-0.21	-0.09	-0.11	-1.37	0.17	0.29	-0.17	-0.73
9540	-0.21	-0.09	-0.11	-1.37	0.18	0.28	-0.16	-0.73
9600	-0.21	-0.08	-0.12	-1.37	0.17	0.27	-0.16	-0.74
9660	-0.21	-0.10	-0.12	-1.38	0.19	0.25	-0.14	-0.75
9720	-0.21	-0.10	-0.12	-1.39	0.17	0.24	-0.16	-0.75
9780	-0.21	-0.11	-0.12	-1.39	0.15	0.23	-0.13	-0.76
9840	-0.22	-0.13	-0.13	-1.40	0.10	0.23	-0.12	-0.76
9900	-0.23	-0.15	-0.13	-1.41	0.06	0.22	-0.06	-0.77
9960	-0.25	-0.16	-0.13	-1.42	0.09	0.22	-0.02	-0.78
10020	-0.25	-0.16	-0.13	-1.43	0.07	0.22	0.06	-0.79
10080	-0.25	-0.15	-0.13	-1.44	0.16	0.22	0.04	-0.79
10140	-0.24	-0.11	-0.13	-1.45	0.19	0.22	0.05	-0.80
10200	-0.21	-0.10	-0.13	-1.47	0.20	0.22	0.03	-0.81
10260	-0.19	-0.09	-0.13	-1.47	0.26	0.22	0.08	-0.81
10320	-0.17	-0.10	-0.14	-1.49	0.26	0.22	0.06	-0.81
10380	-0.15	-0.09	-0.14	-1.48	0.25	0.23	0.01	-0.81
10440	-0.14	-0.12	-0.15	-1.50	0.15	0.23	-0.05	-0.81
10500	-0.13	-0.16	-0.15	-1.49	0.03	0.23	-0.08	-0.81
10560	-0.15	-0.20	-0.15	-1.49	-0.07	0.23	-0.09	-0.81
10620	-0.17	-0.24	-0.15	-1.49	-0.16	0.24	-0.10	-0.81
10680	-0.19	-0.25	-0.15	-1.50	-0.11	0.24	-0.09	-0.81
10740	-0.20	-0.24	-0.15	-1.50	-0.08	0.25	-0.10	-0.81

APPENDIX D

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL,
AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
10800	-0.21	-0.21	-0.15	-1.49	0.06	0.26	-0.09	-0.81
10860	-0.21	-0.17	-0.15	-1.49	0.13	0.26	-0.10	-0.82
10920	-0.20	-0.15	-0.15	-1.50	0.13	0.27	-0.08	-0.82
10980	-0.20	-0.15	-0.15	-1.50	0.21	0.27	-0.10	-0.82
11040	-0.20	-0.13	-0.15	-1.50	0.21	0.28	-0.11	-0.82
11100	-0.20	-0.13	-0.16	-1.50	0.25	0.28	-0.13	-0.81
11160	-0.20	-0.13	-0.17	-1.50	0.20	0.29	-0.13	-0.81
11220	-0.20	-0.15	-0.17	-1.50	0.18	0.30	-0.14	-0.80
11280	-0.21	-0.16	-0.16	-1.50	0.17	0.30	-0.12	-0.80
11340	-0.21	-0.18	-0.16	-1.50	0.13	0.30	-0.08	-0.80
11400	-0.22	-0.18	-0.16	-1.50	0.09	0.31	-0.03	-0.81
11460	-0.23	-0.20	-0.15	-1.50	0.08	0.31	0.02	-0.81
11520	-0.24	-0.19	-0.15	-1.50	0.11	0.32	0.00	-0.81
11580	-0.23	-0.18	-0.15	-1.50	0.15	0.32	0.01	-0.81
11640	-0.21	-0.17	-0.15	-1.50	0.21	0.33	-0.01	-0.81
11700	-0.19	-0.15	-0.15	-1.50	0.25	0.33	-0.01	-0.81
11760	-0.16	-0.13	-0.16	-1.50	0.34	0.33	0.02	-0.80
11820	-0.12	-0.10	-0.16	-1.49	0.55	0.34	-0.03	-0.79
11880	-0.09	-0.08	-0.16	-1.50	0.45	0.34	-0.07	-0.78
11940	-0.06	-0.08	-0.16	-1.50	0.43	0.35	-0.08	-0.78
12000	-0.04	-0.10	-0.16	-1.48	0.44	0.35	-0.14	-0.77
12060	-0.02	-0.10	-0.16	-1.46	0.39	0.36	-0.16	-0.76
12120	-0.02	-0.14	-0.15	-1.46	0.23	0.36	-0.17	-0.75
12180	-0.04	-0.18	-0.15	-1.45	0.15	0.36	-0.18	-0.74
12240	-0.06	-0.23	-0.14	-1.42	0.04	0.36	-0.18	-0.74
12300	-0.09	-0.24	-0.14	-1.41	0.02	0.36	-0.19	-0.73
12360	-0.11	-0.24	-0.13	-1.41	0.03	0.35	-0.20	-0.73
12420	-0.13	-0.24	-0.13	-1.40	0.01	0.35	-0.20	-0.72
12480	-0.15	-0.25	-0.13	-1.39	-0.01	0.35	-0.21	-0.72
12540	-0.16	-0.25	-0.13	-1.39	0.00	0.34	-0.23	-0.71
12600	-0.18	-0.25	-0.13	-1.37	0.01	0.33	-0.23	-0.70
12660	-0.18	-0.24	-0.13	-1.36	0.03	0.33	-0.22	-0.69
12720	-0.19	-0.22	-0.13	-1.35	0.10	0.32	-0.17	-0.68
12780	-0.18	-0.20	-0.12	-1.34	0.13	0.31	-0.09	-0.67
12840	-0.18	-0.19	-0.12	-1.33	0.15	0.30	-0.05	-0.67
12900	-0.17	-0.19	-0.11	-1.32	0.10	0.30	-0.05	-0.66
12960	-0.16	-0.19	-0.11	-1.31	0.04	0.28	-0.05	-0.66
13020	-0.16	-0.22	-0.10	-1.30	0.05	0.27	-0.09	-0.65
13080	-0.15	-0.22	-0.10	-1.29	-0.06	0.26	-0.04	-0.65
13140	-0.14	-0.25	-0.10	-1.29	-0.08	0.24	-0.06	-0.64
13200	-0.13	-0.25	-0.10	-1.28	-0.06	0.23	-0.08	-0.64
13260	-0.12	-0.25	-0.10	-1.27	-0.02	0.22	-0.14	-0.63
13320	-0.10	-0.22	-0.11	-1.27	0.02	0.21	-0.20	-0.62
13380	-0.08	-0.22	-0.10	-1.26	0.06	0.19	-0.24	-0.62
13440	-0.05	-0.18	-0.10	-1.26	0.05	0.16	-0.28	-0.61

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SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL,
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SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
13500	-0.04	-0.20	-0.09	-1.26	0.00	0.14	-0.30	-0.61
13560	-0.05	-0.22	-0.09	-1.23	-0.03	0.12	-0.31	-0.61
13620	-0.07	-0.24	-0.08	-1.23	-0.11	0.09	-0.31	-0.61
13680	-0.10	-0.25	-0.07	-1.23	-0.12	0.07	-0.33	-0.61
13740	-0.12	-0.26	-0.07	-1.21	-0.16	0.04	-0.33	-0.60
13800	-0.15	-0.27	-0.06	-1.22	-0.19	0.02	-0.34	-0.60
13860	-0.17	-0.27	-0.06	-1.20	-0.15	0.00	-0.33	-0.60
13920	-0.19	-0.25	-0.05	-1.20	-0.14	-0.02	-0.35	-0.60
13980	-0.20	-0.24	-0.05	-1.20	-0.16	-0.04	-0.35	-0.59
14040	-0.21	-0.25	-0.05	-1.20	-0.18	-0.06	-0.36	-0.59
14100	-0.23	-0.25	-0.05	-1.20	-0.19	-0.08	-0.34	-0.59
14160	-0.24	-0.25	-0.04	-1.19	-0.23	-0.10	-0.29	-0.59
14220	-0.26	-0.25	-0.04	-1.18	-0.18	-0.12	-0.20	-0.59
14280	-0.27	-0.25	-0.04	-1.17	-0.18	-0.14	-0.15	-0.59
14340	-0.27	-0.24	-0.04	-1.18	-0.15	-0.16	-0.11	-0.60
14400	-0.27	-0.21	-0.03	-1.17	-0.05	-0.18	-0.09	-0.60
14460	-0.25	-0.17	-0.04	-1.17	0.05	-0.20	-0.09	-0.60
14520	-0.22	-0.14	-0.04	-1.18	0.14	-0.22	-0.05	-0.60
14580	-0.19	-0.11	-0.04	-1.17	0.19	-0.25	-0.03	-0.60
14640	-0.15	-0.10	-0.04	-1.18	0.17	-0.27	-0.04	-0.60
14700	-0.13	-0.12	-0.05	-1.18	0.05	-0.28	-0.12	-0.60
14760	-0.12	-0.18	-0.05	-1.16	-0.06	-0.30	-0.18	-0.60
14820	-0.12	-0.22	-0.06	-1.17	-0.16	-0.33	-0.22	-0.59
14880	-0.13	-0.25	-0.06	-1.16	-0.26	-0.34	-0.23	-0.59
14940	-0.14	-0.30	-0.06	-1.16	-0.30	-0.35	-0.23	-0.59
15000	-0.16	-0.29	-0.06	-1.17	-0.22	-0.36	-0.24	-0.58
15060	-0.17	-0.25	-0.05	-1.16	-0.11	-0.38	-0.24	-0.58
15120	-0.16	-0.19	-0.05	-1.17	0.05	-0.39	-0.25	-0.59
15180	-0.15	-0.15	-0.05	-1.16	0.16	-0.40	-0.24	-0.58
15240	-0.13	-0.10	-0.05	-1.15	0.33	-0.42	-0.25	-0.59
15300	-0.11	-0.04	-0.05	-1.16	0.48	-0.43	-0.23	-0.59
15360	-0.08	-0.01	-0.05	-1.16	0.54	-0.44	-0.24	-0.59
15420	-0.06	0.00	-0.05	-1.15	0.57	-0.45	-0.23	-0.58
15480	-0.05	0.00	-0.05	-1.15	0.60	-0.46	-0.25	-0.58
15540	-0.04	0.00	-0.05	-1.15	0.55	-0.47	-0.23	-0.58
15600	-0.04	-0.03	-0.05	-1.16	0.46	-0.48	-0.17	-0.58
15660	-0.05	-0.08	-0.05	-1.16	0.32	-0.49	-0.08	-0.58
15720	-0.07	-0.11	-0.04	-1.15	0.31	-0.50	-0.01	-0.58
15780	-0.09	-0.13	-0.04	-1.15	0.21	-0.52	0.02	-0.59
15840	-0.09	-0.15	-0.04	-1.15	0.15	-0.53	0.03	-0.59
15900	-0.10	-0.16	-0.04	-1.15	0.12	-0.54	0.00	-0.59
15960	-0.10	-0.17	-0.04	-1.16	0.10	-0.55	-0.09	-0.61
16020	-0.08	-0.17	-0.05	-1.15	0.12	-0.56	-0.11	-0.60
16080	-0.06	-0.16	-0.06	-1.15	0.16	-0.57	-0.10	-0.60
16140	-0.04	-0.15	-0.06	-1.16	0.23	-0.57	-0.11	-0.59

APPENDIX D

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SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
16200	-0.02	-0.11	-0.06	-1.14	0.27	-0.58	-0.11	-0.59
16260	0.00	-0.13	-0.07	-1.16	0.21	-0.59	-0.11	-0.59
16320	0.01	-0.14	-0.07	-1.16	0.13	-0.60	-0.12	-0.59
16380	0.00	-0.17	-0.07	-1.16	0.07	-0.61	-0.11	-0.59
16440	-0.02	-0.20	-0.07	-1.14	-0.01	-0.62	-0.12	-0.59
16500	-0.04	-0.23	-0.07	-1.14	-0.01	-0.63	-0.11	-0.59
16560	-0.06	-0.22	-0.07	-1.15	0.05	-0.63	-0.12	-0.60
16620	-0.07	-0.19	-0.07	-1.16	0.14	-0.64	-0.13	-0.59
16680	-0.07	-0.16	-0.07	-1.14	0.24	-0.65	-0.11	-0.59
16740	-0.06	-0.11	-0.08	-1.15	0.36	-0.66	-0.12	-0.59
16800	-0.04	-0.08	-0.08	-1.16	0.43	-0.67	-0.11	-0.58
16860	-0.02	-0.05	-0.08	-1.15	0.47	-0.68	-0.11	-0.57
16920	-0.01	-0.06	-0.07	-1.15	0.46	-0.69	-0.10	-0.57
16980	0.00	-0.07	-0.07	-1.14	0.44	-0.70	-0.08	-0.57
17040	0.01	-0.08	-0.07	-1.13	0.38	-0.71	-0.10	-0.56
17100	0.01	-0.10	-0.07	-1.13	0.35	-0.73	-0.10	-0.56
17160	0.00	-0.11	-0.06	-1.11	0.33	-0.76	-0.11	-0.56
17220	0.00	-0.11	-0.06	-1.11	0.34	-0.79	-0.12	-0.56
17280	0.01	-0.11	-0.06	-1.10	0.37	-0.82	-0.13	-0.56
17340	0.03	-0.10	-0.06	-1.10	0.45	-0.86	-0.14	-0.56
17400	0.05	-0.06	-0.07	-1.11	0.65	-0.90	-0.14	-0.55
17460	0.08	-0.04	-0.07	-1.09	0.60	-0.95	-0.12	-0.54
17520	0.11	-0.02	-0.08	-1.10	0.71	-0.99	-0.15	-0.54
17580	0.15	0.03	-0.09	-1.08	0.68	-1.04	-0.15	-0.53
17640	0.17	-0.01	-0.09	-1.09	0.60	-1.08	-0.14	-0.53
17700	0.17	-0.04	-0.09	-1.07	0.56	-1.12	-0.15	-0.52
17760	0.18	-0.08	-0.09	-1.06	0.40	-1.16	-0.15	-0.51
17820	0.16	-0.15	-0.09	-1.05	0.30	-1.19	-0.15	-0.51
17880	0.14	-0.18	-0.09	-1.05	0.13	-1.23	-0.15	-0.51
17940	0.11	-0.24	-0.09	-1.05	0.11	-1.26	-0.14	-0.50
18000	0.09	-0.22	-0.09	-1.04	0.09	-1.29	-0.15	-0.50
18060	0.07	-0.20	-0.09	-1.03	0.22	-1.32	-0.15	-0.49
18120	0.07	-0.18	-0.09	-1.03	0.29	-1.35	-0.15	-0.49
18180	0.08	-0.13	-0.10	-1.03	0.48	-1.38	-0.17	-0.49
18240	0.10	-0.06	-0.09	-1.02	0.57	-1.41	-0.17	-0.49
18300	0.11	-0.06	-0.09	-1.01	0.53	-1.43	-0.18	-0.49
18360	0.11	-0.07	-0.10	-1.00	0.51	-1.45	-0.19	-0.49
18420	0.10	-0.10	-0.11	-0.99	0.49	-1.48	-0.18	-0.48
18480	0.10	-0.10	-0.12	-0.99	0.47	-1.49	-0.19	-0.48
18540	0.09	-0.11	-0.12	-0.99	0.46	-1.52	-0.20	-0.47
18600	0.09	-0.13	-0.12	-0.99	0.43	-1.53	-0.20	-0.47
18660	0.10	-0.12	-0.13	-0.99	0.44	-1.55	-0.22	-0.47
18720	0.11	-0.10	-0.12	-0.98	0.42	-1.56	-0.20	-0.46
18780	0.13	-0.06	-0.13	-0.97	0.41	-1.57	-0.18	-0.45
18840	0.17	0.00	-0.13	-0.96	0.48	-1.60	-0.17	-0.44

APPENDIX D

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SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
18900	0.21	0.02	-0.14	-0.96	0.55	-1.61	-0.17	-0.43
18960	0.24	0.00	-0.12	-0.96	0.59	-1.62	-0.16	-0.43
19020	0.27	0.08	-0.11	-0.94	0.78	-1.63	-0.15	-0.42
19080	0.32	0.13	-0.10	-0.92	0.95	-1.64	-0.12	-0.41
19140	0.37	0.20	-0.11	-0.92	1.04	-1.65	-0.11	-0.40
19200	0.39	0.18	-0.10	-0.91	1.11	-1.65	-0.10	-0.40
19260	0.39	0.12	-0.09	-0.91	1.16	-1.64	-0.09	-0.40
19320	0.40	0.11	-0.08	-0.90	1.21	-1.63	-0.10	-0.40
19380	0.40	0.10	-0.07	-0.90	1.07	-1.62	-0.10	-0.40
19440	0.37	0.02	-0.06	-0.89	0.91	-1.60	-0.09	-0.40
19500	0.34	-0.03	-0.06	-0.88	0.80	-1.58	-0.09	-0.40
19560	0.31	-0.07	-0.06	-0.87	0.68	-1.56	-0.08	-0.40
19620	0.28	-0.09	-0.06	-0.87	0.62	-1.54	-0.08	-0.40
19680	0.25	-0.11	-0.05	-0.89	0.57	-1.52	-0.07	-0.41
19740	0.23	-0.13	-0.05	-0.89	0.47	-1.50	-0.07	-0.41
19800	0.20	-0.16	-0.05	-0.88	0.38	-1.48	-0.05	-0.41
19860	0.17	-0.18	-0.04	-0.89	0.27	-1.45	-0.06	-0.41
19920	0.13	-0.21	-0.04	-0.88	0.22	-1.43	-0.03	-0.41
19980	0.11	-0.22	-0.04	-0.88	0.13	-1.41	-0.04	-0.42
20040	0.08	-0.24	-0.04	-0.89	0.09	-1.39	-0.03	-0.42
20100	0.05	-0.25	-0.03	-0.90	0.08	-1.37	-0.05	-0.43
20160	0.04	-0.22	-0.03	-0.90	0.12	-1.35	-0.05	-0.43
20220	0.03	-0.20	-0.02	-0.90	0.17	-1.32	-0.05	-0.44
20280	0.03	-0.18	-0.03	-0.90	0.20	-1.30	-0.06	-0.45
20340	0.03	-0.17	-0.03	-0.92	0.20	-1.28	-0.06	-0.45
20400	0.03	-0.18	-0.04	-0.91	0.05	-1.25	-0.05	-0.44
20460	0.02	-0.24	-0.03	-0.93	-0.06	-1.22	-0.04	-0.44
20520	0.01	-0.27	-0.04	-0.92	-0.15	-1.20	-0.04	-0.44
20580	0.00	-0.31	-0.04	-0.94	-0.32	-1.17	-0.03	-0.45
20640	-0.03	-0.36	-0.03	-0.93	-0.44	-1.15	-0.04	-0.45
20700	-0.06	-0.39	-0.02	-0.93	-0.51	-1.13	-0.03	-0.45
20760	-0.10	-0.41	-0.02	-0.94	-0.63	-1.10	-0.04	-0.46
20820	-0.13	-0.43	-0.02	-0.93	-0.65	-1.08	-0.03	-0.46
20880	-0.17	-0.43	-0.02	-0.94	-0.62	-1.05	-0.05	-0.47
20940	-0.19	-0.40	-0.02	-0.95	-0.57	-1.03	-0.04	-0.47
21000	-0.21	-0.36	-0.02	-0.94	-0.49	-1.00	-0.06	-0.48
21060	-0.22	-0.34	-0.03	-0.95	-0.41	-0.98	-0.08	-0.48
21120	-0.23	-0.31	-0.03	-0.96	-0.33	-0.96	-0.08	-0.49
21180	-0.23	-0.27	-0.04	-0.96	-0.20	-0.94	-0.09	-0.49
21240	-0.23	-0.24	-0.04	-0.96	-0.12	-0.92	-0.10	-0.50
21300	-0.22	-0.21	-0.05	-0.96	-0.03	-0.90	-0.09	-0.49
21360	-0.21	-0.19	-0.06	-0.98	-0.05	-0.88	-0.08	-0.49
21420	-0.21	-0.19	-0.06	-0.99	0.00	-0.86	-0.09	-0.49
21480	-0.21	-0.20	-0.06	-1.00	-0.04	-0.85	-0.10	-0.50
21540	-0.21	-0.21	-0.05	-0.99	-0.05	-0.83	-0.13	-0.51

APPENDIX D

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL,
AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
21600	-0.21	-0.20	-0.06	-1.00	-0.03	-0.81	-0.16	-0.53
21660	-0.23	-0.24	-0.06	-1.00	-0.14	-0.80	-0.15	-0.54
21720	-0.26	-0.26	-0.07	-1.01	-0.08	-0.78	-0.18	-0.55
21780	-0.27	-0.27	-0.09	-1.03	-0.10	-0.77	-0.17	-0.55
21840	-0.28	-0.25	-0.10	-1.04	-0.10	-0.76	-0.18	-0.56
21900	-0.29	-0.29	-0.11	-1.05	-0.15	-0.74	-0.17	-0.56
21960	-0.29	-0.28	-0.13	-1.08	-0.11	-0.73	-0.19	-0.56
22020	-0.30	-0.29	-0.12	-1.09	-0.12	-0.72	-0.17	-0.57
22080	-0.31	-0.29	-0.13	-1.10	-0.10	-0.70	-0.19	-0.57
22140	-0.31	-0.30	-0.13	-1.12	-0.09	-0.69	-0.18	-0.58
22200	-0.31	-0.27	-0.13	-1.13	0.04	-0.69	-0.19	-0.58
22260	-0.29	-0.24	-0.12	-1.14	0.01	-0.68	-0.18	-0.58
22320	-0.30	-0.24	-0.13	-1.14	0.09	-0.66	-0.18	-0.58
22380	-0.29	-0.22	-0.13	-1.16	0.11	-0.65	-0.18	-0.58
22440	-0.28	-0.22	-0.12	-1.16	0.13	-0.64	-0.17	-0.59
22500	-0.27	-0.20	-0.12	-1.16	0.24	-0.64	-0.18	-0.59
22560	-0.25	-0.18	-0.12	-1.17	0.16	-0.63	-0.16	-0.58
22620	-0.25	-0.20	-0.13	-1.18	0.26	-0.62	-0.16	-0.58
22680	-0.23	-0.16	-0.12	-1.18	0.33	-0.61	-0.14	-0.58
22740	-0.21	-0.13	-0.12	-1.18	0.42	-0.60	-0.13	-0.57
22800	-0.19	-0.11	-0.11	-1.18	0.45	-0.59	-0.11	-0.57
22860	-0.18	-0.13	-0.11	-1.18	0.34	-0.58	-0.11	-0.58
22920	-0.18	-0.13	-0.10	-1.18	0.41	-0.57	-0.11	-0.58
22980	-0.17	-0.14	-0.09	-1.18	0.33	-0.56	-0.11	-0.58
23040	-0.18	-0.17	-0.08	-1.18	0.18	-0.56	-0.11	-0.58
23100	-0.20	-0.21	-0.08	-1.18	0.18	-0.55	-0.11	-0.58
23160	-0.21	-0.21	-0.08	-1.18	0.12	-0.54	-0.11	-0.59
23220	-0.21	-0.22	-0.07	-1.19	0.13	-0.54	-0.10	-0.59
23280	-0.22	-0.22	-0.07	-1.19	0.10	-0.53	-0.11	-0.59
23340	-0.22	-0.22	-0.08	-1.19	0.15	-0.52	-0.09	-0.58
23400	-0.22	-0.20	-0.07	-1.20	0.13	-0.51	-0.09	-0.58
23460	-0.21	-0.19	-0.08	-1.20	0.24	-0.51	-0.08	-0.59
23520	-0.19	-0.17	-0.07	-1.19	0.19	-0.50	-0.10	-0.59
23580	-0.19	-0.18	-0.07	-1.19	0.20	-0.49	-0.09	-0.59
23640	-0.20	-0.19	-0.06	-1.19	0.16	-0.49	-0.09	-0.59
23700	-0.21	-0.20	-0.07	-1.20	0.12	-0.49	-0.10	-0.60
23760	-0.22	-0.22	-0.06	-1.20	0.04	-0.48	-0.10	-0.60
23820	-0.23	-0.24	-0.06	-1.20	0.07	-0.47	-0.10	-0.60
23880	-0.25	-0.24	-0.06	-1.20	-0.02	-0.47	-0.10	-0.61
23940	-0.27	-0.26	-0.07	-1.20	-0.03	-0.47	-0.11	-0.61
24000	-0.28	-0.26	-0.07	-1.21	-0.09	-0.46	-0.11	-0.61
24060	-0.30	-0.29	-0.07	-1.21	-0.14	-0.46	-0.13	-0.61
24120	-0.32	-0.31	-0.07	-1.21	-0.25	-0.45	-0.12	-0.61
24180	-0.35	-0.35	-0.08	-1.22	-0.32	-0.45	-0.14	-0.62
24240	-0.37	-0.37	-0.08	-1.22	-0.42	-0.44	-0.13	-0.62

APPENDIX D

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SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
24300	-0.39	-0.39	-0.09	-1.22	-0.43	-0.44	-0.15	-0.62
24360	-0.41	-0.41	-0.09	-1.23	-0.51	-0.44	-0.17	-0.63
24420	-0.43	-0.40	-0.10	-1.23	-0.42	-0.44	-0.18	-0.63
24480	-0.44	-0.39	-0.10	-1.24	-0.54	-0.43	-0.21	-0.64
24540	-0.47	-0.45	-0.10	-1.24	-0.67	-0.43	-0.21	-0.64
24600	-0.50	-0.49	-0.12	-1.24	-0.83	-0.43	-0.23	-0.65
24660	-0.54	-0.56	-0.13	-1.25	-0.99	-0.43	-0.24	-0.65
24720	-0.58	-0.60	-0.14	-1.25	-1.15	-0.43	-0.25	-0.65
24780	-0.62	-0.66	-0.15	-1.26	-1.28	-0.43	-0.26	-0.65
24840	-0.66	-0.70	-0.16	-1.27	-1.37	-0.43	-0.28	-0.65
24900	-0.71	-0.75	-0.17	-1.27	-1.52	-0.43	-0.30	-0.66
24960	-0.75	-0.80	-0.17	-1.27	-1.62	-0.43	-0.30	-0.67
25020	-0.80	-0.82	-0.19	-1.27	-1.75	-0.43	-0.34	-0.68
25080	-0.86	-0.85	-0.20	-1.28	-1.81	-0.42	-0.32	-0.68
25140	-0.91	-0.89	-0.21	-1.29	-1.90	-0.43	-0.34	-0.69
25200	-0.95	-0.90	-0.22	-1.31	-1.97	-0.42	-0.33	-0.69
25260	-1.00	-0.92	-0.23	-1.32	-1.98	-0.43	-0.36	-0.70
25320	-1.04	-0.89	-0.23	-1.34	-1.90	-0.42	-0.34	-0.70
25380	-1.06	-0.85	-0.24	-1.36	-1.78	-0.43	-0.36	-0.71
25440	-1.07	-0.81	-0.24	-1.38	-1.74	-0.43	-0.37	-0.71
25500	-1.08	-0.78	-0.25	-1.39	-1.65	-0.43	-0.37	-0.72
25560	-1.08	-0.75	-0.24	-1.40	-1.52	-0.43	-0.37	-0.72
25620	-1.06	-0.70	-0.25	-1.41	-1.35	-0.43	-0.37	-0.72
25680	-1.04	-0.62	-0.25	-1.42	-1.18	-0.43	-0.37	-0.72
25740	-1.01	-0.59	-0.25	-1.43	-1.09	-0.43	-0.37	-0.73
25800	-0.98	-0.56	-0.25	-1.43	-1.01	-0.43	-0.38	-0.73
25860	-0.95	-0.53	-0.25	-1.44	-0.85	-0.43	-0.38	-0.74
25920	-0.92	-0.48	-0.25	-1.44	-0.73	-0.42	-0.39	-0.75
25980	-0.89	-0.46	-0.25	-1.45	-0.70	-0.42	-0.41	-0.75
26040	-0.86	-0.45	-0.26	-1.46	-0.57	-0.42	-0.40	-0.76
26100	-0.83	-0.41	-0.27	-1.47	-0.52	-0.42	-0.42	-0.76
26160	-0.80	-0.40	-0.27	-1.47	-0.47	-0.42	-0.39	-0.76
26220	-0.76	-0.39	-0.28	-1.47	-0.34	-0.42	-0.41	-0.76
26280	-0.72	-0.34	-0.28	-1.48	-0.18	-0.42	-0.38	-0.75
26340	-0.68	-0.30	-0.28	-1.49	0.05	-0.42	-0.39	-0.75
26400	-0.61	-0.23	-0.29	-1.49	0.17	-0.41	-0.37	-0.75
26460	-0.56	-0.21	-0.28	-1.49	0.29	-0.41	-0.37	-0.75
26520	-0.51	-0.17	-0.27	-1.48	0.46	-0.41	-0.37	-0.75
26580	-0.46	-0.13	-0.26	-1.48	0.49	-0.41	-0.37	-0.75
26640	-0.44	-0.13	-0.26	-1.48	0.50	-0.41	-0.37	-0.75
26700	-0.41	-0.15	-0.26	-1.48	0.55	-0.41	-0.35	-0.75
26760	-0.38	-0.13	-0.26	-1.47	0.58	-0.41	-0.35	-0.75
26820	-0.36	-0.14	-0.25	-1.47	0.61	-0.41	-0.34	-0.74
26880	-0.33	-0.11	-0.25	-1.47	0.73	-0.42	-0.33	-0.73
26940	-0.30	-0.10	-0.24	-1.47	0.81	-0.42	-0.31	-0.73

APPENDIX D

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SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
27000	-0.27	-0.05	-0.24	-1.46	0.98	-0.43	-0.31	-0.72
27060	-0.22	-0.01	-0.24	-1.46	1.04	-0.43	-0.29	-0.71
27120	-0.19	0.00	-0.23	-1.44	1.21	-0.45	-0.28	-0.70
27180	-0.15	0.04	-0.22	-1.43	1.20	-0.46	-0.26	-0.69
27240	-0.12	0.05	-0.21	-1.42	1.32	-0.48	-0.26	-0.68
27300	-0.08	0.07	-0.20	-1.40	1.28	-0.50	-0.24	-0.67
27360	-0.06	0.04	-0.19	-1.39	1.27	-0.53	-0.24	-0.67
27420	-0.04	0.04	-0.18	-1.37	1.28	-0.56	-0.23	-0.66
27480	-0.03	0.02	-0.17	-1.36	1.07	-0.60	-0.23	-0.65
27540	-0.03	-0.04	-0.17	-1.34	0.96	-0.64	-0.21	-0.64
27600	-0.04	-0.09	-0.17	-1.33	0.86	-0.68	-0.19	-0.63
27660	-0.04	-0.11	-0.16	-1.31	0.76	-0.72	-0.18	-0.62
27720	-0.06	-0.18	-0.16	-1.30	0.62	-0.78	-0.17	-0.61
27780	-0.07	-0.20	-0.14	-1.28	0.49	-0.83	-0.16	-0.60
27840	-0.10	-0.22	-0.14	-1.27	0.46	-0.88	-0.15	-0.60
27900	-0.11	-0.24	-0.13	-1.26	0.36	-0.92	-0.15	-0.59
27960	-0.13	-0.25	-0.12	-1.24	0.37	-0.97	-0.13	-0.58
28020	-0.14	-0.25	-0.12	-1.23	0.36	-1.02	-0.14	-0.58
28080	-0.15	-0.25	-0.11	-1.22	0.34	-1.06	-0.12	-0.57
28140	-0.15	-0.24	-0.11	-1.21	0.32	-1.09	-0.13	-0.56
28200	-0.15	-0.22	-0.10	-1.21	0.38	-1.13	-0.10	-0.56
28260	-0.15	-0.22	-0.10	-1.19	0.36	-1.16	-0.12	-0.55
28320	-0.15	-0.21	-0.10	-1.18	0.29	-1.19	-0.11	-0.54
28380	-0.16	-0.24	-0.10	-1.17	0.27	-1.22	-0.12	-0.54
28440	-0.17	-0.25	-0.09	-1.16	0.16	-1.25	-0.10	-0.53
28500	-0.19	-0.28	-0.09	-1.16	0.17	-1.29	-0.10	-0.52
28560	-0.20	-0.29	-0.09	-1.15	0.07	-1.31	-0.08	-0.52
28620	-0.21	-0.30	-0.09	-1.14	0.12	-1.34	-0.09	-0.51
28680	-0.21	-0.28	-0.08	-1.13	0.14	-1.36	-0.08	-0.50
28740	-0.21	-0.26	-0.07	-1.12	0.16	-1.38	-0.09	-0.50
28800	-0.21	-0.24	-0.07	-1.11	0.17	-1.40	-0.09	-0.50
28860	-0.20	-0.24	-0.07	-1.10	0.16	-1.42	-0.11	-0.50
28920	-0.20	-0.24	-0.07	-1.09	0.09	-1.44	-0.11	-0.50
28980	-0.21	-0.26	-0.07	-1.08	0.04	-1.46	-0.12	-0.49
29040	-0.22	-0.31	-0.08	-1.07	-0.10	-1.47	-0.12	-0.49
29100	-0.24	-0.34	-0.08	-1.07	-0.18	-1.49	-0.13	-0.48
29160	-0.26	-0.36	-0.09	-1.07	-0.20	-1.50	-0.12	-0.48
29220	-0.27	-0.37	-0.09	-1.06	-0.22	-1.51	-0.12	-0.47
29280	-0.28	-0.36	-0.09	-1.06	-0.17	-1.53	-0.12	-0.47
29340	-0.28	-0.33	-0.09	-1.05	-0.05	-1.53	-0.13	-0.47
29400	-0.27	-0.27	-0.09	-1.04	0.06	-1.54	-0.11	-0.46
29460	-0.25	-0.24	-0.10	-1.04	0.15	-1.55	-0.12	-0.46
29520	-0.24	-0.22	-0.10	-1.02	0.17	-1.55	-0.13	-0.46
29580	-0.23	-0.22	-0.10	-1.02	0.15	-1.54	-0.13	-0.46
29640	-0.24	-0.24	-0.10	-1.02	0.05	-1.54	-0.13	-0.46

APPENDIX D

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL,
AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
29700	-0.25	-0.27	-0.10	-1.02	-0.02	-1.53	-0.12	-0.46
29760	-0.27	-0.29	-0.10	-1.02	-0.06	-1.52	-0.14	-0.46
29820	-0.28	-0.31	-0.10	-1.01	-0.07	-1.50	-0.15	-0.47
29880	-0.29	-0.29	-0.10	-1.01	0.01	-1.49	-0.14	-0.46
29940	-0.29	-0.27	-0.11	-1.01	0.11	-1.48	-0.15	-0.47
30000	-0.28	-0.24	-0.11	-1.01	0.18	-1.47	-0.13	-0.47
30060	-0.26	-0.20	-0.11	-1.01	0.29	-1.45	-0.15	-0.47
30120	-0.24	-0.17	-0.11	-1.02	0.38	-1.43	-0.16	-0.48
30180	-0.21	-0.15	-0.11	-1.01	0.38	-1.42	-0.16	-0.48
30240	-0.20	-0.16	-0.11	-1.02	0.38	-1.41	-0.17	-0.49
30300	-0.19	-0.16	-0.11	-1.02	0.36	-1.40	-0.17	-0.50
30360	-0.18	-0.16	-0.12	-1.02	0.33	-1.38	-0.19	-0.50
30420	-0.18	-0.18	-0.12	-1.03	0.25	-1.37	-0.18	-0.50
30480	-0.17	-0.21	-0.13	-1.03	0.22	-1.35	-0.19	-0.50
30540	-0.17	-0.22	-0.13	-1.04	0.21	-1.33	-0.19	-0.50
30600	-0.16	-0.24	-0.14	-1.04	0.11	-1.31	-0.18	-0.50
30660	-0.17	-0.27	-0.14	-1.03	0.08	-1.30	-0.18	-0.50
30720	-0.18	-0.30	-0.13	-1.03	0.00	-1.28	-0.17	-0.50
30780	-0.19	-0.31	-0.13	-1.03	0.00	-1.26	-0.18	-0.50
30840	-0.20	-0.29	-0.13	-1.03	0.07	-1.25	-0.17	-0.50
30900	-0.20	-0.27	-0.13	-1.04	0.15	-1.23	-0.17	-0.50
30960	-0.19	-0.24	-0.13	-1.04	0.25	-1.21	-0.17	-0.51
31020	-0.18	-0.20	-0.13	-1.04	0.37	-1.20	-0.17	-0.51
31080	-0.15	-0.15	-0.13	-1.04	0.48	-1.18	-0.18	-0.51
31140	-0.13	-0.13	-0.13	-1.04	0.51	-1.16	-0.17	-0.52
31200	-0.12	-0.13	-0.13	-1.04	0.54	-1.14	-0.18	-0.52
31260	-0.11	-0.11	-0.13	-1.05	0.54	-1.13	-0.16	-0.52
31320	-0.10	-0.13	-0.13	-1.05	0.52	-1.11	-0.17	-0.52
31380	-0.10	-0.13	-0.13	-1.06	0.49	-1.09	-0.15	-0.52
31440	-0.10	-0.15	-0.13	-1.06	0.47	-1.07	-0.15	-0.52
31500	-0.10	-0.15	-0.13	-1.06	0.49	-1.05	-0.15	-0.52
31560	-0.10	-0.16	-0.12	-1.06	0.42	-1.03	-0.14	-0.52
31620	-0.10	-0.18	-0.12	-1.06	0.43	-1.01	-0.14	-0.52
31680	-0.10	-0.17	-0.11	-1.06	0.48	-0.99	-0.14	-0.53
31740	-0.10	-0.16	-0.11	-1.06	0.46	-0.97	-0.15	-0.54
31800	-0.09	-0.15	-0.11	-1.07	0.50	-0.96	-0.15	-0.54
31860	-0.09	-0.14	-0.11	-1.07	0.49	-0.94	-0.15	-0.54
31920	-0.09	-0.14	-0.11	-1.07	0.49	-0.92	-0.13	-0.54
31980	-0.08	-0.13	-0.11	-1.07	0.50	-0.90	-0.14	-0.54
32040	-0.07	-0.15	-0.11	-1.08	0.45	-0.89		
32100	-0.06	-0.17	-0.11	-1.08	0.43	-0.87		
32160	-0.06	-0.16	-0.10	-1.07	0.45	-0.86		
32220	-0.06	-0.18	-0.10	-1.07	0.33	-0.84		
32280	-0.08	-0.22	-0.10	-1.08	0.23	-0.83		
32340	-0.11	-0.25	-0.10	-1.08	0.15	-0.81		

APPENDIX D

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL,
AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
32400	-0.13	-0.27	-0.09	-1.08	0.11	-0.79		
32460	-0.15	-0.27	-0.09	-1.08	0.11	-0.78		
32520	-0.17	-0.26	-0.09	-1.08	0.12	-0.76		
32580	-0.18	-0.25	-0.09	-1.09	0.16	-0.75		
32640	-0.19	-0.24	-0.09	-1.10	0.23	-0.73		
32700	-0.18	-0.20	-0.09	-1.10	0.26	-0.72		
32760	-0.18	-0.20	-0.09	-1.10	0.29	-0.70		
32820	-0.18	-0.19	-0.09	-1.10	0.29	-0.69		
32880	-0.18	-0.20	-0.09	-1.11	0.27	-0.68		
32940	-0.18	-0.20	-0.09	-1.11	0.27	-0.66		
33000	-0.18	-0.20	-0.09	-1.11	0.27	-0.65		
33060	-0.18	-0.20	-0.09	-1.11	0.29	-0.64		
33120	-0.17	-0.18	-0.08	-1.12	0.35	-0.63		
33180	-0.15	-0.17	-0.08	-1.12	0.37	-0.62		
33240	-0.14	-0.16	-0.09	-1.12	0.41	-0.60		
33300	-0.12	-0.15	-0.09	-1.13	0.44	-0.59		
33360	-0.10	-0.13	-0.10	-1.13	0.48	-0.58		
33420	-0.08	-0.14	-0.11	-1.13	0.51	-0.57		
33480	-0.06	-0.13	-0.11	-1.14	0.45	-0.56		
33540	-0.06	-0.15	-0.11	-1.13	0.47	-0.55		
33600	-0.04	-0.15	-0.11	-1.12	0.44	-0.53		
33660	-0.04	-0.17	-0.11	-1.12	0.40	-0.52		
33720	-0.04	-0.17	-0.11	-1.14	0.44	-0.51		
33780	-0.04	-0.15	-0.11	-1.13	0.43	-0.50		
33840	-0.04	-0.17	-0.11	-1.12	0.36	-0.49		
33900	-0.05	-0.19	-0.10	-1.13	0.32	-0.49		
33960	-0.07	-0.21	-0.11	-1.13	0.27	-0.48		
34020	-0.09	-0.24	-0.11	-1.12	0.21	-0.47		
34080	-0.10	-0.25	-0.10	-1.11	0.16	-0.46		
34140	-0.12	-0.26	-0.11	-1.11	0.16	-0.46		
34200	-0.13	-0.25	-0.11	-1.11	0.18	-0.45		
34260	-0.13	-0.25	-0.10	-1.11	0.20	-0.44		
34320	-0.13	-0.22	-0.10	-1.11	0.33	-0.44		
34380	-0.12	-0.18	-0.10	-1.11	0.36	-0.43		
34440	-0.11	-0.18	-0.10	-1.10	0.36	-0.43		
34500	-0.10	-0.18	-0.10	-1.10	0.36	-0.43		
34560	-0.09	-0.19	-0.10	-1.10	0.29	-0.42		
34620	-0.09	-0.22	-0.10	-1.09	0.20	-0.41		
34680	-0.10	-0.24	-0.10	-1.09	0.22	-0.41		
34740	-0.10	-0.24	-0.11	-1.10	0.22	-0.41		
34800	-0.09	-0.22	-0.11	-1.09	0.26	-0.41		
34860	-0.08	-0.22	-0.12	-1.09	0.24	-0.40		
34920	-0.07	-0.22	-0.12	-1.11	0.30	-0.40		
34980	-0.06	-0.19	-0.13	-1.09	0.36	-0.40		
35040	-0.04	-0.19	-0.13	-1.08	0.39	-0.39		

APPENDIX D

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL,
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SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
35100	-0.04	-0.19	-0.13	-1.08	0.32	-0.39		
35160	-0.05	-0.22	-0.13	-1.09	0.28	-0.39		
35220	-0.06	-0.22	-0.13	-1.09	0.30	-0.39		
35280	-0.07	-0.22	-0.13	-1.07	0.29	-0.38		
35340	-0.07	-0.23	-0.13	-1.08	0.29	-0.38		
35400	-0.08	-0.22	-0.13	-1.08	0.33	-0.38		
35460	-0.07	-0.20	-0.13	-1.07	0.38	-0.38		
35520	-0.07	-0.18	-0.13	-1.08	0.43	-0.38		
35580	-0.07	-0.19	-0.13	-1.08	0.38	-0.37		
35640	-0.07	-0.20	-0.13	-1.08	0.39	-0.37		
35700	-0.07	-0.20	-0.13	-1.08	0.40	-0.37		
35760	-0.07	-0.19	-0.14	-1.08	0.40	-0.37		
35820	-0.07	-0.21	-0.13	-1.08	0.38	-0.37		
35880	-0.07	-0.20	-0.14	-1.08	0.40	-0.36		
35940	-0.06	-0.21	-0.14	-1.07	0.39	-0.36		
36000	-0.06	-0.20	-0.14	-1.07	0.41	-0.36		
36060	-0.05	-0.20	-0.14	-1.08	0.42	-0.36		
36120	-0.04	-0.20	-0.15	-1.09	0.46	-0.36		
36180	-0.03	-0.18	-0.15	-1.09	0.57	-0.36		
36240	-0.01	-0.15	-0.17	-1.10	0.63	-0.36		
36300	0.01	-0.13	-0.17	-1.09	0.68	-0.36		
36360	0.03	-0.14	-0.18	-1.12	0.55	-0.35		
36420	0.03	-0.19	-0.18	-1.10	0.45	-0.35		
36480	0.02	-0.23	-0.18	-1.10	0.29	-0.35		
36540	-0.01	-0.29	-0.18	-1.10	0.15	-0.34		
36600	-0.05	-0.35	-0.18	-1.11	0.03	-0.34		
36660	-0.08	-0.37	-0.18	-1.12	0.03	-0.34		
36720	-0.11	-0.36	-0.18	-1.11	0.10	-0.34		
36780	-0.12	-0.32	-0.19	-1.13	0.23	-0.33		
36840	-0.11	-0.27	-0.20	-1.13	0.34	-0.33		
36900	-0.10	-0.24	-0.20	-1.12	0.44	-0.33		
36960	-0.09	-0.21	-0.21	-1.13	0.48	-0.33		
37020	-0.08	-0.20	-0.22	-1.13	0.56	-0.32		
37080	-0.05	-0.18	-0.22	-1.14	0.55	-0.32		
37140	-0.04	-0.20	-0.22	-1.14	0.46	-0.31		
37200	-0.04	-0.24	-0.21	-1.13	0.41	-0.31		
37260	-0.04	-0.26	-0.20	-1.11	0.36	-0.31		
37320	-0.05	-0.27	-0.21	-1.10	0.40	-0.31		
37380	-0.05	-0.26	-0.20	-1.10	0.44	-0.31		
37440	-0.04	-0.24	-0.20	-1.07	0.52	-0.31		
37500	-0.03	-0.20	-0.20	-1.06	0.69	-0.32		
37560	0.01	-0.14	-0.21	-1.06	0.73	-0.33		
37620	0.03	-0.15	-0.21	-1.04	0.81	-0.34		
37680	0.06	-0.11	-0.21	-1.04	1.03	-0.35		
37740	0.10	-0.04	-0.21	-1.03	1.26	-0.37		

APPENDIX D

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL,
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SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
37800	0.15	0.01	-0.21	-1.01	1.30	-0.38		
37860	0.19	0.03	-0.20	-1.00	1.38	-0.40		
37920	0.22	0.07	-0.19	-0.99	1.52	-0.42		
37980	0.26	0.07	-0.19	-0.98	1.50	-0.44		
38040	0.27	0.05	-0.18	-0.97	1.51	-0.46		
38100	0.28	0.03	-0.19	-0.96	1.29	-0.49		
38160	0.27	-0.04	-0.18	-0.94	1.20	-0.51		
38220	0.26	-0.08	-0.18	-0.94	0.99	-0.54		
38280	0.23	-0.15	-0.18	-0.93	0.89	-0.57		
38340	0.22	-0.17	-0.18	-0.92	0.88	-0.59		
38400	0.21	-0.17	-0.18	-0.92	0.73	-0.61		
38460	0.19	-0.22	-0.16	-0.91	0.68	-0.64		
38520	0.17	-0.22	-0.17	-0.90	0.69	-0.66		
38580	0.17	-0.22	-0.16	-0.89	0.64	-0.68		
38640	0.15	-0.23	-0.16	-0.88	0.67	-0.70		
38700	0.15	-0.22	-0.15	-0.87	0.64	-0.73		
38760	0.14	-0.22	-0.15	-0.86	0.75	-0.74		
38820	0.16	-0.17	-0.14	-0.85	0.84	-0.77		
38880	0.18	-0.13	-0.14	-0.84	0.85	-0.78		
38940	0.19	-0.13	-0.14	-0.83	0.88	-0.81		
39000	0.20	-0.14	-0.13	-0.82	0.75	-0.82		
39060	0.19	-0.20	-0.13	-0.82	0.64	-0.84		
39120	0.16	-0.25	-0.13	-0.81	0.49	-0.86		
39180	0.14	-0.27	-0.13	-0.80	0.37	-0.87		
39240	0.12	-0.30	-0.12	-0.79	0.24	-0.89		
39300	0.09	-0.36	-0.12	-0.78	0.15	-0.90		
39360	0.06	-0.38	-0.11	-0.77	0.10	-0.91		
39420	0.04	-0.36	-0.11	-0.76	0.18	-0.93		
39480	0.03	-0.32	-0.10	-0.75	0.21	-0.94		
39540	0.03	-0.31	-0.10	-0.74	0.24	-0.95		
39600	0.02	-0.32	-0.10	-0.74	0.22	-0.95		
39660	0.01	-0.27	-0.09	-0.73	0.26	-0.95		
39720	0.00	-0.31	-0.10	-0.73	0.26	-0.95		
39780	0.00	-0.27	-0.09	-0.72	0.22	-0.95		
39840	-0.01	-0.29	-0.10	-0.72	0.25	-0.94		
39900	-0.01	-0.29	-0.10	-0.71	0.21	-0.94		
39960	-0.02	-0.30	-0.09	-0.71	0.15	-0.93		
40020	-0.03	-0.30	-0.09	-0.71	0.15	-0.92		
40080	-0.04	-0.29	-0.09	-0.70	0.16	-0.90		
40140	-0.04	-0.29	-0.08	-0.70	0.15	-0.89		
40200	-0.05	-0.29	-0.07	-0.69	0.15	-0.88		
40260	-0.05	-0.29	-0.06	-0.69	0.14	-0.87		
40320	-0.06	-0.29	-0.06	-0.69	0.10	-0.86		
40380	-0.07	-0.31	-0.05	-0.69	0.08	-0.84		
40440	-0.08	-0.31	-0.05	-0.69	0.06	-0.83		

APPENDIX D

GENERAL MOTORS CORPORATION
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SAGINAW, MICHIGAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY
CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
40500	-0.08	-0.28	-0.05	-0.69	0.10	-0.82		
40560	-0.08	-0.28	-0.05	-0.69	0.11	-0.81		
40620	-0.09	-0.29	-0.06	-0.69	0.06	-0.79		
40680	-0.10	-0.31	-0.05	-0.69	0.00	-0.78		
40740	-0.11	-0.32	-0.05	-0.69	-0.09	-0.76		
40800	-0.12	-0.34	-0.04	-0.69	-0.16	-0.75		
40860	-0.13	-0.36	-0.04	-0.69	-0.23	-0.73		
40920	-0.16	-0.38	-0.03	-0.69	-0.29	-0.71		
40980	-0.18	-0.39	-0.02	-0.69	-0.30	-0.69		
41040	-0.19	-0.38	-0.02	-0.69	-0.27	-0.68		
41100	-0.21	-0.36	-0.01	-0.69	-0.16	-0.67		
41160	-0.20	-0.30	-0.01	-0.69	-0.02	-0.65		
41220	-0.19	-0.26	-0.02	-0.70	0.08	-0.63		
41280	-0.18	-0.22	-0.02	-0.70	0.15	-0.62		
41340	-0.17	-0.20	-0.01	-0.71	0.22	-0.60		
41400	-0.15	-0.17	-0.02	-0.71	0.28	-0.59		
41460	-0.14	-0.16	-0.01	-0.72	0.27	-0.57		
41520	-0.13	-0.17	-0.01	-0.72	0.26	-0.56		
41580	-0.14	-0.18	-0.01	-0.73	0.21	-0.55		
41640	-0.14	-0.19	-0.02	-0.74	0.23	-0.53		
41700	-0.14	-0.20	-0.03	-0.75	0.19	-0.51		
41760	-0.15	-0.19	-0.03	-0.75	0.31	-0.50		
41820	-0.13	-0.15	-0.04	-0.77	0.48	-0.49		
41880	-0.11	-0.10	-0.05	-0.78	0.69	-0.48		
41940	-0.07	-0.03	-0.07	-0.79	0.87	-0.47		
42000	-0.02	0.04	-0.08	-0.81	1.09	-0.46		
42060	0.03	0.11	-0.09	-0.81	1.31	-0.44		
42120	0.09	0.17	-0.11	-0.82	1.46	-0.43		
42180	0.14	0.18	-0.11	-0.84	1.56	-0.42		
42240	0.20	0.22	-0.11	-0.85	1.58	-0.41		
42300	0.23	0.15	-0.11	-0.85	1.34	-0.40		
42360	0.22	0.08	-0.12	-0.86	1.16	-0.38		
42420	0.22	0.03	-0.11	-0.86	1.27	-0.37		
42480	0.23	0.06	-0.11	-0.86	1.24	-0.36		
42540	0.23	0.02	-0.10	-0.86	1.01	-0.34		
42600	0.21	-0.06	-0.10	-0.86	0.91	-0.33		
42660	0.20	-0.06	-0.10	-0.86	1.09	-0.32		
42720	0.22	0.00	-0.09	-0.87	1.22	-0.31		
42780	0.24	0.04	-0.09	-0.88	1.20	-0.29		
42840	0.24	0.01	-0.09	-0.88	1.08	-0.28		
42900	0.23	-0.03	-0.08	-0.88	0.88	-0.27		
42960	0.20	-0.12	-0.08	-0.89	0.54	-0.26		
43020	0.15	-0.22	-0.07	-0.89	0.35	-0.25		
43080			-0.06	-0.90	0.18	-0.23		
43140			-0.05	-0.90	-0.03	-0.22		

APPENDIX D

GENERAL MOTORS CORPORATION SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA SAGINAW, MICHIGAN REMEDIAL INVESTIGATION/FEASIBILITY STUDY

SURFACE WATER/GROUNDWATER INTERACTION STUDY CONTINUOUS WATER LEVEL MEASUREMENTS

Elapsed Time (min)	Water Level Change (feet from static water level)							
	B-7R	B-7S1	MW-116WT	MW-116S1	River	MW-107WT	MW-131WT	MW-131S1
43200			-0.04	-0.90	-0.20	-0.21		
43260					-0.24	-0.20		
43320					-0.27	-0.19		
43380					-0.22	-0.18		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				SEPTEMBER 17, 1995				SUBJECT TO REVISION	
00:15:00	13.24 e	05:15:00	13.76 e	10:15:00	14.33 e	15:15:00	13.79 e	20:15:00	13.97 e
00:30:00	13.19 e	05:30:00	13.79 e	10:30:00	14.31 e	15:30:00	13.77 e	20:30:00	13.95 e
00:45:00	13.20 e	05:45:00	13.89 e	10:45:00	14.18 e	15:45:00	13.78 e	20:45:00	14.00 e
01:00:00	13.15 e	06:00:00	13.98 e	11:00:00	14.11 e	16:00:00	13.81 e	21:00:00	14.02 e
01:15:00	13.19 e	06:15:00	13.93 e	11:15:00	14.07 e	16:15:00	13.82 e	21:15:00	14.01 e
01:30:00	13.25 e	06:30:00	13.91 e	11:30:00	14.05 e	16:30:00	13.85 e	21:30:00	14.02 e
01:45:00	13.41 e	06:45:00	13.94 e	11:45:00	14.01 e	16:45:00	13.88 e	21:45:00	13.97 e
02:00:00	13.56 e	07:00:00	14.03 e	12:00:00	14.02 e	17:00:00	13.93 e	22:00:00	13.97 e
02:15:00	13.54 e	07:15:00	14.02 e	12:15:00	14.07 e	17:15:00	13.93 e	22:15:00	13.95 e
02:30:00	13.21 e	07:30:00	14.09 e	12:30:00	14.08 e	17:30:00	13.89 e	22:30:00	13.92 e
02:45:00	12.92 e	07:45:00	14.15 e	12:45:00	14.00 e	17:45:00	13.89 e	22:45:00	13.92 e
03:00:00	12.93 e	08:00:00	14.18 e	13:00:00	13.94 e	18:00:00	13.92 e	23:00:00	13.90 e
03:15:00	13.07 e	08:15:00	14.23 e	13:15:00	13.97 e	18:15:00	13.99 e	23:15:00	13.90 e
03:30:00	13.21 e	08:30:00	14.22 e	13:30:00	13.98 e	18:30:00	13.91 e	23:30:00	13.93 e
03:45:00	13.35 e	08:45:00	14.21 e	13:45:00	14.03 e	18:45:00	13.91 e	23:45:00	13.92 e
04:00:00	13.38 e	09:00:00	14.25 e	14:00:00	14.06 e	19:00:00	13.95 e	24:00:00	13.91 e
04:15:00	13.42 e	09:15:00	14.31 e	14:15:00	14.04 e	19:15:00	13.97 e		
04:30:00	13.44 e	09:30:00	14.37 e	14:30:00	13.99 e	19:30:00	13.96 e		
04:45:00	13.63 e	09:45:00	14.37 e	14:45:00	13.91 e	19:45:00	14.00 e		
05:00:00	13.75 e	10:00:00	14.33 e	15:00:00	13.84 e	20:00:00	14.05 e		
PROVISIONAL DATA				SEPTEMBER 18, 1995				SUBJECT TO REVISION	
00:15:00	13.93 e	05:15:00	13.74 e	10:15:00	13.47 e	15:15:00	13.55 e	20:15:00	13.52 e
00:30:00	13.93 e	05:30:00	13.75 e	10:30:00	13.44 e	15:30:00	13.53 e	20:30:00	13.53 e
00:45:00	13.96 e	05:45:00	13.76 e	10:45:00	13.42 e	15:45:00	13.56 e	20:45:00	13.51 e
01:00:00	13.97 e	06:00:00	13.76 e	11:00:00	13.41 e	16:00:00	13.55 e	21:00:00	13.50 e
01:15:00	13.96 e	06:15:00	13.75 e	11:15:00	13.41 e	16:15:00	13.59 e	21:15:00	13.46 e
01:30:00	13.94 e	06:30:00	13.73 e	11:30:00	13.40 e	16:30:00	13.57 e	21:30:00	13.42 e
01:45:00	13.93 e	06:45:00	13.70 e	11:45:00	13.39 e	16:45:00	13.57 e	21:45:00	13.40 e
02:00:00	13.91 e	07:00:00	13.64 e	12:00:00	13.40 e	17:00:00	13.59 e	22:00:00	13.38 e
02:15:00	13.89 e	07:15:00	13.64 e	12:15:00	13.43 e	17:15:00	13.60 e	22:15:00	13.38 e
02:30:00	13.88 e	07:30:00	13.60 e	12:30:00	13.42 e	17:30:00	13.61 e	22:30:00	13.37 e
02:45:00	13.86 e	07:45:00	13.62 e	12:45:00	13.42 e	17:45:00	13.62 e	22:45:00	13.37 e
03:00:00	13.85 e	08:00:00	13.58 e	13:00:00	13.43 e	18:00:00	13.62 e	23:00:00	13.37 e
03:15:00	13.83 e	08:15:00	13.56 e	13:15:00	13.42 e	18:15:00	13.58 e	23:15:00	13.35 e
03:30:00	13.83 e	08:30:00	13.54 e	13:30:00	13.41 e	18:30:00	13.57 e	23:30:00	13.34 e
03:45:00	13.83 e	08:45:00	13.52 e	13:45:00	13.43 e	18:45:00	13.56 e	23:45:00	13.35 e
04:00:00	13.80 e	09:00:00	13.53 e	14:00:00	13.43 e	19:00:00	13.56 e	24:00:00	13.35 e
04:15:00	13.80 e	09:15:00	13.51 e	14:15:00	13.45 e	19:15:00	13.55 e		
04:30:00	13.76 e	09:30:00	13.48 e	14:30:00	13.46 e	19:30:00	13.56 e		
04:45:00	13.82 e	09:45:00	13.46 e	14:45:00	13.47 e	19:45:00	13.52 e		
05:00:00	13.79 e	10:00:00	13.46 e	15:00:00	13.51 e	20:00:00	13.55 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145

TIME		GAGE HEIGHT, IN (FEET)		EDITED UNIT VALUES (INSTANTANEOUS)		TIME		VALUE	
TIME		VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME
PROVISIONAL DATA									
SEPTEMBER 19, 1995									
00:15:00	13.36 e	05:15:00	13.33 e	10:15:00	13.10 e	15:15:00	13.56 e	20:15:00	SUBJECT TO REVISION
00:30:00	13.38 e	05:30:00	13.31 e	10:30:00	13.09 e	15:30:00	13.59 e	20:30:00	13.75 e
00:45:00	13.40 e	05:45:00	13.29 e	10:45:00	13.06 e	15:45:00	13.63 e	20:45:00	13.69 e
01:00:00	13.45 e	06:00:00	13.29 e	11:00:00	13.07 e	16:00:00	13.66 e	21:00:00	13.68 e
01:15:00	13.45 e	06:15:00	13.26 e	11:15:00	13.11 e	16:15:00	13.67 e	21:15:00	13.71 e
01:30:00	13.43 e	06:30:00	13.24 e	11:30:00	13.13 e	16:30:00	13.70 e	21:30:00	13.72 e
01:45:00	13.42 e	06:45:00	13.25 e	11:45:00	13.12 e	16:45:00	13.73 e	21:45:00	13.73 e
02:00:00	13.41 e	07:00:00	13.26 e	12:00:00	13.13 e	17:00:00	13.77 e	22:00:00	13.76 e
02:15:00	13.43 e	07:15:00	13.25 e	12:15:00	13.16 e	17:15:00	13.79 e	22:15:00	13.70 e
02:30:00	13.39 e	07:30:00	13.23 e	12:30:00	13.19 e	17:30:00	13.83 e	22:30:00	13.66 e
02:45:00	13.34 e	07:45:00	13.22 e	12:45:00	13.20 e	17:45:00	13.84 e	22:45:00	13.65 e
03:00:00	13.41 e	08:00:00	13.23 e	13:00:00	13.21 e	18:00:00	13.85 e	23:00:00	13.62 e
03:15:00	13.38 e	08:15:00	13.20 e	13:15:00	13.23 e	18:15:00	13.85 e	23:15:00	13.57 e
03:30:00	13.36 e	08:30:00	13.15 e	13:30:00	13.29 e	18:30:00	13.86 e	23:30:00	13.54 e
03:45:00	13.39 e	08:45:00	13.12 e	13:45:00	13.31 e	18:45:00	13.88 e	23:45:00	13.61 e
04:00:00	13.40 e	09:00:00	13.13 e	14:00:00	13.33 e	19:00:00	13.86 e	24:00:00	13.57 e
04:15:00	13.38 e	09:15:00	13.12 e	14:15:00	13.36 e	19:15:00	13.84 e		13.55 e
04:30:00	13.38 e	09:30:00	13.15 e	14:30:00	13.41 e	19:30:00	13.83 e		
04:45:00	13.38 e	09:45:00	13.15 e	14:45:00	13.46 e	19:45:00	13.82 e		
05:00:00	13.36 e	10:00:00	13.12 e	15:00:00	13.52 e	20:00:00	13.80 e		
PROVISIONAL DATA									
SEPTEMBER 20, 1995									
00:15:00	13.55 e	05:15:00	13.52 e	10:15:00	13.40 e	15:15:00	13.56 e	20:15:00	SUBJECT TO REVISION
00:30:00	13.57 e	05:30:00	13.51 e	10:30:00	13.39 e	15:30:00	13.58 e	20:30:00	13.76 e
00:45:00	13.59 e	05:45:00	13.50 e	10:45:00	13.41 e	15:45:00	13.59 e	20:45:00	13.73 e
01:00:00	13.60 e	06:00:00	13.47 e	11:00:00	13.34 e	16:00:00	13.63 e	21:00:00	13.72 e
01:15:00	13.63 e	06:15:00	13.47 e	11:15:00	13.36 e	16:15:00	13.67 e	21:15:00	13.72 e
01:30:00	13.67 e	06:30:00	13.52 e	11:30:00	13.36 e	16:30:00	13.67 e	21:30:00	13.72 e
01:45:00	13.71 e	06:45:00	13.49 e	11:45:00	13.39 e	16:45:00	13.65 e	21:45:00	13.72 e
02:00:00	13.70 e	07:00:00	13.45 e	12:00:00	13.43 e	17:00:00	13.68 e	22:00:00	13.71 e
02:15:00	13.67 e	07:15:00	13.41 e	12:15:00	13.41 e	17:15:00	13.68 e	22:15:00	13.71 e
02:30:00	13.65 e	07:30:00	13.40 e	12:30:00	13.45 e	17:30:00	13.67 e	22:30:00	13.71 e
02:45:00	13.63 e	07:45:00	13.38 e	12:45:00	13.50 e	17:45:00	13.69 e	22:45:00	13.72 e
03:00:00	13.64 e	08:00:00	13.35 e	13:00:00	13.48 e	18:00:00	13.73 e	23:00:00	13.70 e
03:15:00	13.67 e	08:15:00	13.33 e	13:15:00	13.46 e	18:15:00	13.79 e	23:15:00	13.75 e
03:30:00	13.68 e	08:30:00	13.33 e	13:30:00	13.49 e	18:30:00	13.79 e	23:30:00	13.73 e
03:45:00	13.70 e	08:45:00	13.33 e	13:45:00	13.46 e	18:45:00	13.77 e	23:45:00	13.70 e
04:00:00	13.75 e	09:00:00	13.38 e	14:00:00	13.49 e	19:00:00	13.77 e	24:00:00	13.73 e
04:15:00	13.66 e	09:15:00	13.41 e	14:15:00	13.52 e	19:15:00	13.75 e		13.76 e
04:30:00	13.63 e	09:30:00	13.40 e	14:30:00	13.53 e	19:30:00	13.76 e		
04:45:00	13.61 e	09:45:00	13.41 e	14:45:00	13.54 e	19:45:00	13.78 e		
05:00:00	13.55 e	10:00:00	13.41 e	15:00:00	13.57 e	20:00:00	13.77 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				SEPTEMBER 21, 1995				SUBJECT TO REVISION	
00:15:00	13.83 e	05:15:00	13.89 e	10:15:00	13.53 e	15:15:00	13.79 e	20:15:00	13.98 e
00:30:00	13.93 e	05:30:00	13.90 e	10:30:00	13.54 e	15:30:00	13.81 e	20:30:00	13.98 e
00:45:00	13.97 e	05:45:00	13.85 e	10:45:00	13.53 e	15:45:00	13.83 e	20:45:00	13.98 e
01:00:00	13.96 e	06:00:00	13.84 e	11:00:00	13.53 e	16:00:00	13.82 e	21:00:00	13.98 e
01:15:00	13.95 e	06:15:00	13.82 e	11:15:00	13.55 e	16:15:00	13.82 e	21:15:00	13.99 e
01:30:00	13.92 e	06:30:00	13.81 e	11:30:00	13.54 e	16:30:00	13.83 e	21:30:00	14.04 e
01:45:00	13.90 e	06:45:00	13.80 e	11:45:00	13.55 e	16:45:00	13.84 e	21:45:00	14.09 e
02:00:00	13.92 e	07:00:00	13.79 e	12:00:00	13.55 e	17:00:00	13.84 e	22:00:00	14.09 e
02:15:00	13.95 e	07:15:00	13.78 e	12:15:00	13.56 e	17:15:00	13.86 e	22:15:00	14.08 e
02:30:00	13.98 e	07:30:00	13.74 e	12:30:00	13.59 e	17:30:00	13.86 e	22:30:00	14.07 e
02:45:00	13.99 e	07:45:00	13.71 e	12:45:00	13.62 e	17:45:00	13.86 e	22:45:00	14.08 e
03:00:00	13.97 e	08:00:00	13.67 e	13:00:00	13.66 e	18:00:00	13.87 e	23:00:00	14.10 e
03:15:00	13.95 e	08:15:00	13.63 e	13:15:00	13.68 e	18:15:00	13.87 e	23:15:00	14.13 e
03:30:00	13.94 e	08:30:00	13.61 e	13:30:00	13.67 e	18:30:00	13.86 e	23:30:00	14.15 e
03:45:00	13.91 e	08:45:00	13.58 e	13:45:00	13.68 e	18:45:00	13.89 e	23:45:00	14.13 e
04:00:00	13.88 e	09:00:00	13.55 e	14:00:00	13.69 e	19:00:00	13.93 e	24:00:00	14.12 e
04:15:00	13.87 e	09:15:00	13.54 e	14:15:00	13.73 e	19:15:00	13.97 e		
04:30:00	13.87 e	09:30:00	13.56 e	14:30:00	13.72 e	19:30:00	13.96 e		
04:45:00	13.87 e	09:45:00	13.53 e	14:45:00	13.73 e	19:45:00	13.97 e		
05:00:00	13.87 e	10:00:00	13.53 e	15:00:00	13.77 e	20:00:00	13.99 e		
PROVISIONAL DATA				SEPTEMBER 22, 1995				SUBJECT TO REVISION	
00:15:00	14.16 e	05:15:00	13.84 e	10:15:00	13.15 e	15:15:00	12.93 e	20:15:00	12.12 e
00:30:00	14.19 e	05:30:00	13.79 e	10:30:00	13.13 e	15:30:00	12.98 e	20:30:00	12.12 e
00:45:00	14.19 e	05:45:00	13.77 e	10:45:00	13.09 e	15:45:00	12.94 e	20:45:00	12.09 e
01:00:00	14.20 e	06:00:00	13.74 e	11:00:00	13.08 e	16:00:00	13.00 e	21:00:00	12.15 e
01:15:00	14.20 e	06:15:00	13.71 e	11:15:00	13.04 e	16:15:00	12.84 e	21:15:00	12.20 e
01:30:00	14.18 e	06:30:00	13.67 e	11:30:00	12.99 e	16:30:00	12.73 e	21:30:00	12.20 e
01:45:00	14.15 e	06:45:00	13.61 e	11:45:00	12.98 e	16:45:00	12.65 e	21:45:00	12.33 e
02:00:00	14.12 e	07:00:00	13.56 e	12:00:00	12.99 e	17:00:00	12.66 e	22:00:00	12.43 e
02:15:00	14.10 e	07:15:00	13.53 e	12:15:00	12.95 e	17:15:00	12.55 e	22:15:00	12.48 e
02:30:00	14.09 e	07:30:00	13.49 e	12:30:00	12.96 e	17:30:00	12.65 e	22:30:00	12.57 e
02:45:00	14.08 e	07:45:00	13.48 e	12:45:00	12.97 e	17:45:00	12.61 e	22:45:00	12.63 e
03:00:00	14.07 e	08:00:00	13.46 e	13:00:00	12.99 e	18:00:00	12.56 e	23:00:00	12.67 e
03:15:00	14.07 e	08:15:00	13.40 e	13:15:00	13.01 e	18:15:00	12.45 e	23:15:00	12.69 e
03:30:00	14.06 e	08:30:00	13.37 e	13:30:00	12.97 e	18:30:00	12.44 e	23:30:00	12.72 e
03:45:00	14.00 e	08:45:00	13.33 e	13:45:00	12.99 e	18:45:00	12.37 e	23:45:00	12.77 e
04:00:00	13.98 e	09:00:00	13.29 e	14:00:00	13.01 e	19:00:00	12.30 e	24:00:00	12.84 e
04:15:00	13.98 e	09:15:00	13.26 e	14:15:00	12.98 e	19:15:00	12.21 e		
04:30:00	13.91 e	09:30:00	13.23 e	14:30:00	12.93 e	19:30:00	12.11 e		
04:45:00	13.92 e	09:45:00	13.20 e	14:45:00	12.92 e	19:45:00	12.10 e		
05:00:00	13.89 e	10:00:00	13.18 e	15:00:00	12.91 e	20:00:00	12.14 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA									
SEPTEMBER 23, 1995									
00:15:00	12.92 e	05:15:00	13.71 e	10:15:00	13.76 e	15:15:00	13.58 e	20:15:00	13.93 e
00:30:00	12.99 e	05:30:00	13.73 e	10:30:00	13.73 e	15:30:00	13.61 e	20:30:00	13.91 e
00:45:00	13.05 e	05:45:00	13.75 e	10:45:00	13.71 e	15:45:00	13.64 e	20:45:00	13.89 e
01:00:00	13.07 e	06:00:00	13.79 e	11:00:00	13.67 e	16:00:00	13.69 e	21:00:00	13.85 e
01:15:00	13.10 e	06:15:00	13.81 e	11:15:00	13.64 e	16:15:00	13.70 e	21:15:00	13.81 e
01:30:00	13.14 e	06:30:00	13.83 e	11:30:00	13.61 e	16:30:00	13.71 e	21:30:00	13.77 e
01:45:00	13.18 e	06:45:00	13.83 e	11:45:00	13.58 e	16:45:00	13.72 e	21:45:00	13.72 e
02:00:00	13.22 e	07:00:00	13.83 e	12:00:00	13.54 e	17:00:00	13.77 e	22:00:00	13.67 e
02:15:00	13.27 e	07:15:00	13.83 e	12:15:00	13.53 e	17:15:00	13.80 e	22:15:00	13.63 e
02:30:00	13.30 e	07:30:00	13.85 e	12:30:00	13.49 e	17:30:00	13.83 e	22:30:00	13.60 e
02:45:00	13.33 e	07:45:00	13.85 e	12:45:00	13.47 e	17:45:00	13.87 e	22:45:00	13.57 e
03:00:00	13.37 e	08:00:00	13.86 e	13:00:00	13.47 e	18:00:00	13.95 e	23:00:00	13.54 e
03:15:00	13.38 e	08:15:00	13.87 e	13:15:00	13.48 e	18:15:00	13.98 e	23:15:00	13.51 e
03:30:00	13.41 e	08:30:00	13.87 e	13:30:00	13.47 e	18:30:00	13.98 e	23:30:00	13.48 e
03:45:00	13.45 e	08:45:00	13.87 e	13:45:00	13.48 e	18:45:00	13.99 e	23:45:00	13.45 e
04:00:00	13.47 e	09:00:00	13.87 e	14:00:00	13.48 e	19:00:00	13.99 e	24:00:00	13.42 e
04:15:00	13.51 e	09:15:00	13.85 e	14:15:00	13.48 e	19:15:00	13.98 e		
04:30:00	13.55 e	09:30:00	13.83 e	14:30:00	13.51 e	19:30:00	14.01 e		
04:45:00	13.63 e	09:45:00	13.81 e	14:45:00	13.53 e	19:45:00	13.97 e		
05:00:00	13.69 e	10:00:00	13.78 e	15:00:00	13.55 e	20:00:00	13.95 e		
PROVISIONAL DATA									
SEPTEMBER 24, 1995									
00:15:00	13.40 e	05:15:00	13.66 e	10:15:00	13.41 e	15:15:00	13.48 e	20:15:00	13.66 e
00:30:00	13.39 e	05:30:00	13.66 e	10:30:00	13.38 e	15:30:00	13.51 e	20:30:00	13.64 e
00:45:00	13.39 e	05:45:00	13.67 e	10:45:00	13.37 e	15:45:00	13.54 e	20:45:00	13.62 e
01:00:00	13.37 e	06:00:00	13.71 e	11:00:00	13.35 e	16:00:00	13.56 e	21:00:00	13.58 e
01:15:00	13.37 e	06:15:00	13.70 e	11:15:00	13.33 e	16:15:00	13.58 e	21:15:00	13.56 e
01:30:00	13.37 e	06:30:00	13.70 e	11:30:00	13.31 e	16:30:00	13.61 e	21:30:00	13.55 e
01:45:00	13.37 e	06:45:00	13.70 e	11:45:00	13.30 e	16:45:00	13.62 e	21:45:00	13.53 e
02:00:00	13.37 e	07:00:00	13.70 e	12:00:00	13.30 e	17:00:00	13.66 e	22:00:00	13.51 e
02:15:00	13.37 e	07:15:00	13.69 e	12:15:00	13.29 e	17:15:00	13.67 e	22:15:00	13.48 e
02:30:00	13.38 e	07:30:00	13.66 e	12:30:00	13.29 e	17:30:00	13.68 e	22:30:00	13.44 e
02:45:00	13.40 e	07:45:00	13.65 e	12:45:00	13.28 e	17:45:00	13.69 e	22:45:00	13.43 e
03:00:00	13.43 e	08:00:00	13.65 e	13:00:00	13.29 e	18:00:00	13.71 e	23:00:00	13.41 e
03:15:00	13.46 e	08:15:00	13.63 e	13:15:00	13.30 e	18:15:00	13.71 e	23:15:00	13.40 e
03:30:00	13.50 e	08:30:00	13.61 e	13:30:00	13.31 e	18:30:00	13.67 e	23:30:00	13.39 e
03:45:00	13.53 e	08:45:00	13.58 e	13:45:00	13.35 e	18:45:00	13.70 e	23:45:00	13.40 e
04:00:00	13.56 e	09:00:00	13.56 e	14:00:00	13.36 e	19:00:00	13.70 e	24:00:00	13.40 e
04:15:00	13.57 e	09:15:00	13.53 e	14:15:00	13.38 e	19:15:00	13.70 e		
04:30:00	13.58 e	09:30:00	13.49 e	14:30:00	13.42 e	19:30:00	13.70 e		
04:45:00	13.60 e	09:45:00	13.47 e	14:45:00	13.42 e	19:45:00	13.68 e		
05:00:00	13.62 e	10:00:00	13.44 e	15:00:00	13.44 e	20:00:00	13.65 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				SEPTEMBER 25, 1995				SUBJECT TO REVISION	
00:15:00	13.41 e	05:15:00	13.25 e	10:15:00	13.36 e	15:15:00	13.18 e	20:15:00	13.51 e
00:30:00	13.38 e	05:30:00	13.25 e	10:30:00	13.35 e	15:30:00	13.19 e	20:30:00	13.52 e
00:45:00	13.37 e	05:45:00	13.26 e	10:45:00	13.39 e	15:45:00	13.19 e	20:45:00	13.52 e
01:00:00	13.34 e	06:00:00	13.29 e	11:00:00	13.38 e	16:00:00	13.18 e	21:00:00	13.55 e
01:15:00	13.32 e	06:15:00	13.24 e	11:15:00	13.36 e	16:15:00	13.18 e	21:15:00	13.55 e
01:30:00	13.29 e	06:30:00	13.24 e	11:30:00	13.35 e	16:30:00	13.15 e	21:30:00	13.57 e
01:45:00	13.27 e	06:45:00	13.27 e	11:45:00	13.36 e	16:45:00	13.15 e	21:45:00	13.58 e
02:00:00	13.26 e	07:00:00	13.27 e	12:00:00	13.33 e	17:00:00	13.16 e	22:00:00	13.58 e
02:15:00	13.25 e	07:15:00	13.27 e	12:15:00	13.29 e	17:15:00	13.18 e	22:15:00	13.55 e
02:30:00	13.26 e	07:30:00	13.28 e	12:30:00	13.26 e	17:30:00	13.21 e	22:30:00	13.53 e
02:45:00	13.26 e	07:45:00	13.29 e	12:45:00	13.25 e	17:45:00	13.24 e	22:45:00	13.53 e
03:00:00	13.26 e	08:00:00	13.29 e	13:00:00	13.24 e	18:00:00	13.27 e	23:00:00	13.52 e
03:15:00	13.25 e	08:15:00	13.31 e	13:15:00	13.25 e	18:15:00	13.26 e	23:15:00	13.51 e
03:30:00	13.24 e	08:30:00	13.34 e	13:30:00	13.21 e	18:30:00	13.31 e	23:30:00	13.50 e
03:45:00	13.23 e	08:45:00	13.37 e	13:45:00	13.21 e	18:45:00	13.31 e	23:45:00	13.46 e
04:00:00	13.24 e	09:00:00	13.36 e	14:00:00	13.20 e	19:00:00	13.36 e	24:00:00	13.42 e
04:15:00	13.26 e	09:15:00	13.36 e	14:15:00	13.22 e	19:15:00	13.39 e		
04:30:00	13.26 e	09:30:00	13.37 e	14:30:00	13.17 e	19:30:00	13.40 e		
04:45:00	13.26 e	09:45:00	13.37 e	14:45:00	13.17 e	19:45:00	13.44 e		
05:00:00	13.24 e	10:00:00	13.36 e	15:00:00	13.15 e	20:00:00	13.46 e		
PROVISIONAL DATA				SEPTEMBER 26, 1995				SUBJECT TO REVISION	
00:15:00	13.38 e	05:15:00	13.15 e	10:15:00	13.30 e	15:15:00	13.17 e	20:15:00	12.99 e
00:30:00	13.35 e	05:30:00	13.16 e	10:30:00	13.33 e	15:30:00	13.15 e	20:30:00	12.99 e
00:45:00	13.33 e	05:45:00	13.18 e	10:45:00	13.32 e	15:45:00	13.14 e	20:45:00	12.97 e
01:00:00	13.30 e	06:00:00	13.19 e	11:00:00	13.31 e	16:00:00	13.11 e	21:00:00	12.96 e
01:15:00	13.28 e	06:15:00	13.21 e	11:15:00	13.31 e	16:15:00	13.09 e	21:15:00	13.02 e
01:30:00	13.28 e	06:30:00	13.21 e	11:30:00	13.31 e	16:30:00	13.08 e	21:30:00	13.06 e
01:45:00	13.28 e	06:45:00	13.20 e	11:45:00	13.28 e	16:45:00	13.06 e	21:45:00	13.12 e
02:00:00	13.28 e	07:00:00	13.23 e	12:00:00	13.31 e	17:00:00	13.03 e	22:00:00	13.13 e
02:15:00	13.28 e	07:15:00	13.23 e	12:15:00	13.29 e	17:15:00	12.99 e	22:15:00	13.16 e
02:30:00	13.28 e	07:30:00	13.22 e	12:30:00	13.28 e	17:30:00	12.97 e	22:30:00	13.20 e
02:45:00	13.25 o	07:45:00	13.22 e	12:45:00	13.27 e	17:45:00	12.97 e	22:45:00	13.25 e
03:00:00	13.21 e	08:00:00	13.22 e	13:00:00	13.26 e	18:00:00	12.91 e	23:00:00	13.23 e
03:15:00	13.21 e	08:15:00	13.22 e	13:15:00	13.25 e	18:15:00	12.97 e	23:15:00	13.25 e
03:30:00	13.22 e	08:30:00	13.24 e	13:30:00	13.25 e	18:30:00	12.97 e	23:30:00	13.29 e
03:45:00	13.20 e	08:45:00	13.25 e	13:45:00	13.23 e	18:45:00	12.96 e	23:45:00	13.34 e
04:00:00	13.21 e	09:00:00	13.26 e	14:00:00	13.23 e	19:00:00	12.96 e	24:00:00	13.37 e
04:15:00	13.21 e	09:15:00	13.26 e	14:15:00	13.22 e	19:15:00	12.97 e		
04:30:00	13.20 e	09:30:00	13.27 e	14:30:00	13.21 e	19:30:00	12.99 e		
04:45:00	13.16 e	09:45:00	13.27 e	14:45:00	13.19 e	19:45:00	13.00 e		
05:00:00	13.16 e	10:00:00	13.28 e	15:00:00	13.18 e	20:00:00	13.00 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				SEPTEMBER 27, 1995				SUBJECT TO REVISION	
00:15:00	13.37 e	05:15:00	13.43 e	10:15:00	13.27 e	15:15:00	13.50 e	20:15:00	13.35 e
00:30:00	13.37 e	05:30:00	13.43 e	10:30:00	13.28 e	15:30:00	13.49 e	20:30:00	13.36 e
00:45:00	13.39 e	05:45:00	13.43 e	10:45:00	13.29 e	15:45:00	13.49 e	20:45:00	13.37 e
01:00:00	13.40 e	06:00:00	13.41 e	11:00:00	13.31 e	16:00:00	13.49 e	21:00:00	13.38 e
01:15:00	13.40 e	06:15:00	13.40 e	11:15:00	13.32 e	16:15:00	13.48 e	21:15:00	13.40 e
01:30:00	13.37 e	06:30:00	13.42 e	11:30:00	13.32 e	16:30:00	13.48 e	21:30:00	13.43 e
01:45:00	13.36 e	06:45:00	13.40 e	11:45:00	13.31 e	16:45:00	13.48 e	21:45:00	13.42 e
02:00:00	13.36 e	07:00:00	13.40 e	12:00:00	13.34 e	17:00:00	13.49 e	22:00:00	13.43 e
02:15:00	13.37 e	07:15:00	13.39 e	12:15:00	13.38 e	17:15:00	13.44 e	22:15:00	13.45 e
02:30:00	13.38 e	07:30:00	13.39 e	12:30:00	13.38 e	17:30:00	13.42 e	22:30:00	13.46 e
02:45:00	13.39 e	07:45:00	13.38 e	12:45:00	13.38 e	17:45:00	13.39 e	22:45:00	13.49 e
03:00:00	13.40 e	08:00:00	13.36 e	13:00:00	13.39 e	18:00:00	13.41 e	23:00:00	13.51 e
03:15:00	13.41 e	08:15:00	13.33 e	13:15:00	13.37 e	18:15:00	13.39 e	23:15:00	13.51 e
03:30:00	13.43 e	08:30:00	13.32 e	13:30:00	13.37 e	18:30:00	13.39 e	23:30:00	13.54 e
03:45:00	13.43 e	08:45:00	13.30 e	13:45:00	13.39 e	18:45:00	13.37 e	23:45:00	13.53 e
04:00:00	13.42 e	09:00:00	13.29 e	14:00:00	13.44 e	19:00:00	13.38 e	24:00:00	13.53 e
04:15:00	13.43 e	09:15:00	13.30 e	14:15:00	13.47 e	19:15:00	13.37 e		
04:30:00	13.44 e	09:30:00	13.30 e	14:30:00	13.49 e	19:30:00	13.34 e		
04:45:00	13.44 e	09:45:00	13.31 e	14:45:00	13.52 e	19:45:00	13.35 e		
05:00:00	13.44 e	10:00:00	13.28 e	15:00:00	13.50 e	20:00:00	13.34 e		
PROVISIONAL DATA				SEPTEMBER 28, 1995				SUBJECT TO REVISION	
00:15:00	13.54 e	05:15:00	13.59 e	10:15:00	13.63 e	15:15:00	13.23 e	20:15:00	13.72 e
00:30:00	13.56 e	05:30:00	13.59 e	10:30:00	13.61 e	15:30:00	13.23 e	20:30:00	13.71 e
00:45:00	13.57 e	05:45:00	13.59 e	10:45:00	13.60 e	15:45:00	13.22 e	20:45:00	13.71 e
01:00:00	13.58 e	06:00:00	13.59 e	11:00:00	13.58 e	16:00:00	13.22 e	21:00:00	13.72 e
01:15:00	13.58 e	06:15:00	13.59 e	11:15:00	13.58 e	16:15:00	13.24 e	21:15:00	13.74 e
01:30:00	13.58 e	06:30:00	13.62 e	11:30:00	13.53 e	16:30:00	13.25 e	21:30:00	13.72 e
01:45:00	13.60 e	06:45:00	13.60 e	11:45:00	13.51 e	16:45:00	13.24 e	21:45:00	13.72 e
02:00:00	13.61 e	07:00:00	13.61 e	12:00:00	13.51 e	17:00:00	13.32 e	22:00:00	13.69 e
02:15:00	13.61 e	07:15:00	13.62 e	12:15:00	13.49 e	17:15:00	13.37 e	22:15:00	13.65 e
02:30:00	13.62 e	07:30:00	13.61 e	12:30:00	13.46 e	17:30:00	13.38 e	22:30:00	13.62 e
02:45:00	13.61 e	07:45:00	13.61 e	12:45:00	13.43 e	17:45:00	13.43 e	22:45:00	13.60 e
03:00:00	13.61 e	08:00:00	13.64 e	13:00:00	13.41 e	18:00:00	13.45 e	23:00:00	13.57 e
03:15:00	13.58 e	08:15:00	13.69 e	13:15:00	13.38 e	18:15:00	13.46 e	23:15:00	13.54 e
03:30:00	13.57 e	08:30:00	13.61 e	13:30:00	13.36 e	18:30:00	13.49 e	23:30:00	13.51 e
03:45:00	13.57 e	08:45:00	13.63 e	13:45:00	13.33 e	18:45:00	13.50 e	23:45:00	13.44 e
04:00:00	13.57 e	09:00:00	13.62 e	14:00:00	13.31 e	19:00:00	13.53 e	24:00:00	13.42 e
04:15:00	13.57 e	09:15:00	13.61 e	14:15:00	13.29 e	19:15:00	13.54 e		
04:30:00	13.56 e	09:30:00	13.62 e	14:30:00	13.27 e	19:30:00	13.56 e		
04:45:00	13.56 e	09:45:00	13.61 e	14:45:00	13.26 e	19:45:00	13.53 e		
05:00:00	13.57 e	10:00:00	13.64 e	15:00:00	13.24 e	20:00:00	13.63 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				SEPTEMBER 29, 1995				SUBJECT TO REVISION	
00:15:00	13.37 e	05:15:00	12.83 e	10:15:00	13.09 e	15:15:00	13.31 e	20:15:00	13.21 e
00:30:00	13.35 e	05:30:00	12.83 e	10:30:00	13.18 e	15:30:00	13.29 e	20:30:00	13.23 e
00:45:00	13.31 e	05:45:00	12.82 e	10:45:00	13.18 e	15:45:00	13.27 e	20:45:00	13.30 e
01:00:00	13.28 e	06:00:00	12.81 e	11:00:00	13.19 e	16:00:00	13.28 e	21:00:00	13.30 e
01:15:00	13.25 e	06:15:00	12.80 e	11:15:00	13.20 e	16:15:00	13.27 e	21:15:00	13.34 e
01:30:00	13.22 e	06:30:00	12.81 e	11:30:00	13.22 e	16:30:00	13.27 e	21:30:00	13.36 e
01:45:00	13.18 e	06:45:00	12.82 e	11:45:00	13.21 e	16:45:00	13.21 e	21:45:00	13.39 e
02:00:00	13.14 e	07:00:00	12.84 e	12:00:00	13.22 e	17:00:00	13.23 e	22:00:00	13.42 e
02:15:00	13.09 e	07:15:00	12.85 e	12:15:00	13.25 e	17:15:00	13.20 e	22:15:00	13.42 e
02:30:00	13.06 e	07:30:00	12.85 e	12:30:00	13.28 e	17:30:00	13.17 e	22:30:00	13.40 e
02:45:00	13.01 e	07:45:00	12.88 e	12:45:00	13.28 e	17:45:00	13.15 e	22:45:00	13.44 e
03:00:00	12.97 e	08:00:00	12.93 e	13:00:00	13.28 e	18:00:00	13.14 e	23:00:00	13.43 e
03:15:00	12.93 e	08:15:00	12.92 e	13:15:00	13.29 e	18:15:00	13.10 e	23:15:00	13.42 e
03:30:00	12.91 e	08:30:00	12.98 e	13:30:00	13.30 e	18:30:00	13.14 e	23:30:00	13.41 e
03:45:00	12.89 e	08:45:00	13.03 e	13:45:00	13.31 e	18:45:00	13.05 e	23:45:00	13.41 e
04:00:00	12.87 e	09:00:00	13.07 e	14:00:00	13.31 e	19:00:00	13.18 e	24:00:00	13.40 e
04:15:00	12.86 e	09:15:00	13.06 e	14:15:00	13.34 e	19:15:00	13.19 e		
04:30:00	12.85 e	09:30:00	13.07 e	14:30:00	13.31 e	19:30:00	13.21 e		
04:45:00	12.85 e	09:45:00	13.15 e	14:45:00	13.31 e	19:45:00	13.26 e		
05:00:00	12.84 e	10:00:00	13.08 e	15:00:00	13.31 e	20:00:00	13.26 e		
PROVISIONAL DATA				SEPTEMBER 30, 1995				SUBJECT TO REVISION	
00:15:00	13.38 e	05:15:00	12.93 e	10:15:00	13.07 e	15:15:00	12.82 e	20:15:00	13.01 e
00:30:00	13.34 e	05:30:00	12.94 e	10:30:00	13.08 e	15:30:00	12.81 e	20:30:00	13.03 e
00:45:00	13.34 e	05:45:00	12.95 e	10:45:00	13.09 e	15:45:00	12.75 e	20:45:00	13.07 e
01:00:00	13.33 e	06:00:00	12.95 e	11:00:00	13.09 e	16:00:00	12.71 e	21:00:00	13.08 e
01:15:00	13.29 e	06:15:00	12.95 e	11:15:00	13.09 e	16:15:00	12.67 e	21:15:00	13.12 e
01:30:00	13.28 e	06:30:00	12.95 e	11:30:00	13.08 e	16:30:00	12.73 e	21:30:00	13.13 e
01:45:00	13.24 e	06:45:00	12.95 e	11:45:00	13.07 e	16:45:00	12.67 e	21:45:00	13.14 e
02:00:00	13.21 e	07:00:00	12.97 e	12:00:00	13.09 e	17:00:00	12.63 e	22:00:00	13.19 e
02:15:00	13.19 e	07:15:00	12.97 e	12:15:00	13.07 e	17:15:00	12.58 e	22:15:00	13.25 e
02:30:00	13.15 e	07:30:00	12.97 e	12:30:00	13.03 e	17:30:00	12.68 e	22:30:00	13.29 e
02:45:00	13.11 e	07:45:00	12.98 e	12:45:00	12.99 e	17:45:00	12.80 e	22:45:00	13.33 e
03:00:00	13.08 e	08:00:00	13.01 e	13:00:00	12.98 e	18:00:00	12.83 e	23:00:00	13.32 e
03:15:00	13.06 e	08:15:00	13.02 e	13:15:00	12.99 e	18:15:00	12.73 e	23:15:00	13.29 e
03:30:00	13.03 e	08:30:00	13.04 e	13:30:00	12.94 e	18:30:00	12.81 e	23:30:00	13.29 e
03:45:00	13.03 e	08:45:00	13.04 e	13:45:00	12.91 e	18:45:00	12.79 e	23:45:00	13.30 e
04:00:00	13.01 e	09:00:00	13.05 e	14:00:00	12.88 e	19:00:00	12.81 e	24:00:00	13.29 e
04:15:00	12.99 e	09:15:00	13.07 e	14:15:00	12.78 e	19:15:00	12.82 e		
04:30:00	12.97 e	09:30:00	13.07 e	14:30:00	12.84 e	19:30:00	12.86 e		
04:45:00	12.93 e	09:45:00	13.07 e	14:45:00	12.70 e	19:45:00	12.81 e		
05:00:00	12.92 e	10:00:00	13.07 e	15:00:00	12.66 e	20:00:00	12.93 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA									
OCTOBER 01, 1995									
00:15:00	13.32 e	05:15:00	12.86 e	10:15:00	12.95 e	15:15:00	12.43 e	20:15:00	12.06 e
00:30:00	13.30 e	05:30:00	12.88 e	10:30:00	12.96 e	15:30:00	12.44 e	20:30:00	12.09 e
00:45:00	13.26 e	05:45:00	12.85 e	10:45:00	12.95 e	15:45:00	12.47 e	20:45:00	12.11 e
01:00:00	13.26 e	06:00:00	12.87 e	11:00:00	12.93 e	16:00:00	12.49 e	21:00:00	12.12 e
01:15:00	13.22 e	06:15:00	12.88 e	11:15:00	12.94 e	16:15:00	12.46 e	21:15:00	12.13 e
01:30:00	13.20 e	06:30:00	12.89 e	11:30:00	12.91 e	16:30:00	12.36 e	21:30:00	12.12 e
01:45:00	13.18 e	06:45:00	12.88 e	11:45:00	12.87 e	16:45:00	12.28 e	21:45:00	12.13 e
02:00:00	13.16 e	07:00:00	12.92 e	12:00:00	12.83 e	17:00:00	12.19 e	22:00:00	12.15 e
02:15:00	13.12 e	07:15:00	12.92 e	12:15:00	12.81 e	17:15:00	12.17 e	22:15:00	12.16 e
02:30:00	13.11 e	07:30:00	12.92 e	12:30:00	12.79 e	17:30:00	12.19 e	22:30:00	12.18 e
02:45:00	13.07 e	07:45:00	12.92 e	12:45:00	12.73 e	17:45:00	12.10 e	22:45:00	12.18 e
03:00:00	13.02 e	08:00:00	12.93 e	13:00:00	12.67 e	18:00:00	11.99 e	23:00:00	12.24 e
03:15:00	12.95 e	08:15:00	12.93 e	13:15:00	12.59 e	18:15:00	11.95 e	23:15:00	12.31 e
03:30:00	12.90 e	08:30:00	12.94 e	13:30:00	12.59 e	18:30:00	11.95 e	23:30:00	12.34 e
03:45:00	12.85 e	08:45:00	12.95 e	13:45:00	12.45 e	18:45:00	11.90 e	23:45:00	12.40 e
04:00:00	12.84 e	09:00:00	12.94 e	14:00:00	12.51 e	19:00:00	11.86 e	24:00:00	12.47 e
04:15:00	12.83 e	09:15:00	12.93 e	14:15:00	12.51 e	19:15:00	11.92 e		
04:30:00	12.81 e	09:30:00	12.93 e	14:30:00	12.48 e	19:30:00	11.97 e		
04:45:00	12.81 e	09:45:00	12.95 e	14:45:00	12.47 e	19:45:00	11.94 e		
05:00:00	12.85 e	10:00:00	12.95 e	15:00:00	12.43 e	20:00:00	12.00 e		
PROVISIONAL DATA									
OCTOBER 02, 1995									
00:15:00	12.49 e	05:15:00	12.93 e	10:15:00	13.35 e	15:15:00	13.19 e	20:15:00	13.84 e
00:30:00	12.49 e	05:30:00	12.96 e	10:30:00	13.32 e	15:30:00	13.21 e	20:30:00	13.88 e
00:45:00	12.51 e	05:45:00	12.99 e	10:45:00	13.33 e	15:45:00	13.27 e	20:45:00	13.90 e
01:00:00	12.56 e	06:00:00	13.01 e	11:00:00	13.34 e	16:00:00	13.32 e	21:00:00	13.91 e
01:15:00	12.59 e	06:15:00	13.02 e	11:15:00	13.34 e	16:15:00	13.33 e	21:15:00	13.93 e
01:30:00	12.62 e	06:30:00	13.03 e	11:30:00	13.33 e	16:30:00	13.38 e	21:30:00	13.93 e
01:45:00	12.66 e	06:45:00	13.05 e	11:45:00	13.27 e	16:45:00	13.40 e	21:45:00	13.97 e
02:00:00	12.70 e	07:00:00	13.09 e	12:00:00	13.30 e	17:00:00	13.42 e	22:00:00	14.04 e
02:15:00	12.72 e	07:15:00	13.13 e	12:15:00	13.28 e	17:15:00	13.44 e	22:15:00	14.07 e
02:30:00	12.71 e	07:30:00	13.16 e	12:30:00	13.30 e	17:30:00	13.51 e	22:30:00	14.07 e
02:45:00	12.72 e	07:45:00	13.19 e	12:45:00	13.27 e	17:45:00	13.53 e	22:45:00	14.07 e
03:00:00	12.74 e	08:00:00	13.19 e	13:00:00	13.26 e	18:00:00	13.54 e	23:00:00	14.07 e
03:15:00	12.77 e	08:15:00	13.20 e	13:15:00	13.26 e	18:15:00	13.57 e	23:15:00	14.07 e
03:30:00	12.80 e	08:30:00	13.18 e	13:30:00	13.24 e	18:30:00	13.58 e	23:30:00	14.07 e
03:45:00	12.82 e	08:45:00	13.19 e	13:45:00	13.22 e	18:45:00	13.65 e	23:45:00	14.08 e
04:00:00	12.83 e	09:00:00	13.23 e	14:00:00	13.23 e	19:00:00	13.69 e	24:00:00	14.06 e
04:15:00	12.84 e	09:15:00	13.27 e	14:15:00	13.23 e	19:15:00	13.71 e		
04:30:00	12.84 e	09:30:00	13.30 e	14:30:00	13.21 e	19:30:00	13.76 e		
04:45:00	12.87 e	09:45:00	13.33 e	14:45:00	13.21 e	19:45:00	13.79 e		
05:00:00	12.90 e	10:00:00	13.35 e	15:00:00	13.20 e	20:00:00	13.81 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				OCTOBER 03, 1995				SUBJECT TO REVISION	
00:15:00	14.05 e	05:15:00	13.64 e	10:15:00	13.47 e	15:15:00	13.52 e	20:15:00	13.52 e
00:30:00	14.04 e	05:30:00	13.60 e	10:30:00	13.46 e	15:30:00	13.51 e	20:30:00	13.55 e
00:45:00	14.01 e	05:45:00	13.59 e	10:45:00	13.47 e	15:45:00	13.47 e	20:45:00	13.58 e
01:00:00	14.01 e	06:00:00	13.57 e	11:00:00	13.47 e	16:00:00	13.45 e	21:00:00	13.58 e
01:15:00	13.99 e	06:15:00	13.55 e	11:15:00	13.47 e	16:15:00	13.49 e	21:15:00	13.54 e
01:30:00	13.97 e	06:30:00	13.52 e	11:30:00	13.46 e	16:30:00	13.54 e	21:30:00	13.50 e
01:45:00	13.94 e	06:45:00	13.51 e	11:45:00	13.45 e	16:45:00	13.57 e	21:45:00	13.45 e
02:00:00	13.90 e	07:00:00	13.48 e	12:00:00	13.45 e	17:00:00	13.61 e	22:00:00	13.42 e
02:15:00	13.91 e	07:15:00	13.46 e	12:15:00	13.44 e	17:15:00	13.59 e	22:15:00	13.39 e
02:30:00	13.91 e	07:30:00	13.44 e	12:30:00	13.45 e	17:30:00	13.53 e	22:30:00	13.36 e
02:45:00	13.87 e	07:45:00	13.44 e	12:45:00	13.49 e	17:45:00	13.51 e	22:45:00	13.37 e
03:00:00	13.87 e	08:00:00	13.44 e	13:00:00	13.53 e	18:00:00	13.52 e	23:00:00	13.40 e
03:15:00	13.84 e	08:15:00	13.46 e	13:15:00	13.55 e	18:15:00	13.52 e	23:15:00	13.42 e
03:30:00	13.83 e	08:30:00	13.46 e	13:30:00	13.58 e	18:30:00	13.55 e	23:30:00	13.42 e
03:45:00	13.81 e	08:45:00	13.44 e	13:45:00	13.54 e	18:45:00	13.57 e	23:45:00	13.40 e
04:00:00	13.79 e	09:00:00	13.44 e	14:00:00	13.50 e	19:00:00	13.54 e	24:00:00	13.38 e
04:15:00	13.76 e	09:15:00	13.43 e	14:15:00	13.50 e	19:15:00	13.54 e		
04:30:00	13.74 e	09:30:00	13.41 e	14:30:00	13.51 e	19:30:00	13.54 e		
04:45:00	13.71 e	09:45:00	13.44 e	14:45:00	13.51 e	19:45:00	13.53 e		
05:00:00	13.67 e	10:00:00	13.46 e	15:00:00	13.53 e	20:00:00	13.51 e		
PROVISIONAL DATA				OCTOBER 04, 1995				SUBJECT TO REVISION	
00:15:00	13.34 e	05:15:00	13.17 e	10:15:00	13.01 e	15:15:00	13.29 e	20:15:00	13.23 e
00:30:00	13.31 e	05:30:00	13.14 e	10:30:00	13.07 e	15:30:00	13.30 e	20:30:00	13.24 e
00:45:00	13.31 e	05:45:00	13.10 e	10:45:00	13.10 e	15:45:00	13.33 e	20:45:00	13.24 e
01:00:00	13.30 e	06:00:00	13.08 e	11:00:00	13.11 e	16:00:00	13.34 e	21:00:00	13.25 e
01:15:00	13.31 e	06:15:00	13.09 e	11:15:00	13.11 e	16:15:00	13.33 e	21:15:00	13.25 e
01:30:00	13.31 e	06:30:00	13.08 e	11:30:00	13.11 e	16:30:00	13.34 e	21:30:00	13.23 e
01:45:00	13.32 e	06:45:00	13.05 e	11:45:00	13.15 e	16:45:00	13.33 e	21:45:00	13.25 e
02:00:00	13.33 e	07:00:00	13.02 e	12:00:00	13.20 e	17:00:00	13.31 e	22:00:00	13.26 e
02:15:00	13.32 e	07:15:00	13.00 e	12:15:00	13.23 e	17:15:00	13.29 e	22:15:00	13.27 e
02:30:00	13.27 e	07:30:00	12.99 e	12:30:00	13.23 e	17:30:00	13.28 e	22:30:00	13.26 e
02:45:00	13.24 e	07:45:00	12.96 e	12:45:00	13.25 e	17:45:00	13.27 e	22:45:00	13.27 e
03:00:00	13.21 e	08:00:00	12.96 e	13:00:00	13.25 e	18:00:00	13.29 e	23:00:00	13.30 e
03:15:00	13.18 e	08:15:00	12.97 e	13:15:00	13.24 e	18:15:00	13.31 e	23:15:00	13.27 e
03:30:00	13.17 e	08:30:00	12.99 e	13:30:00	13.24 e	18:30:00	13.28 e	23:30:00	13.33 e
03:45:00	13.17 e	08:45:00	13.04 e	13:45:00	13.26 e	18:45:00	13.26 e	23:45:00	13.35 e
04:00:00	13.18 e	09:00:00	13.07 e	14:00:00	13.29 e	19:00:00	13.23 e	24:00:00	13.36 e
04:15:00	13.24 e	09:15:00	13.08 e	14:15:00	13.30 e	19:15:00	13.20 e		
04:30:00	13.26 e	09:30:00	13.04 e	14:30:00	13.30 e	19:30:00	13.18 e		
04:45:00	13.23 e	09:45:00	13.02 e	14:45:00	13.29 e	19:45:00	13.18 e		
05:00:00	13.21 e	10:00:00	13.01 e	15:00:00	13.29 e	20:00:00	13.20 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				OCTOBER 05, 1995				SUBJECT TO REVISION	
00:15:00	13.36 e	05:15:00	13.57 e	10:15:00	13.91 e	15:15:00	14.43 e	20:15:00	15.07 e
00:30:00	13.41 e	05:30:00	13.59 e	10:30:00	13.94 e	15:30:00	14.45 e	20:30:00	15.07 e
00:45:00	13.40 e	05:45:00	13.63 e	10:45:00	13.89 e	15:45:00	14.47 e	20:45:00	15.11 e
01:00:00	13.38 e	06:00:00	13.65 e	11:00:00	13.85 e	16:00:00	14.52 e	21:00:00	15.11 e
01:15:00	13.36 e	06:15:00	13.66 e	11:15:00	13.85 e	16:15:00	14.57 e	21:15:00	15.18 e
01:30:00	13.36 e	06:30:00	13.69 e	11:30:00	13.86 e	16:30:00	14.59 e	21:30:00	15.19 e
01:45:00	13.40 e	06:45:00	13.73 e	11:45:00	13.90 e	16:45:00	14.64 e	21:45:00	15.21 e
02:00:00	13.43 e	07:00:00	13.74 e	12:00:00	13.94 e	17:00:00	14.69 e	22:00:00	15.23 e
02:15:00	13.43 e	07:15:00	13.75 e	12:15:00	13.98 e	17:15:00	14.71 e	22:15:00	15.25 e
02:30:00	13.46 e	07:30:00	13.77 e	12:30:00	14.01 e	17:30:00	14.73 e	22:30:00	15.29 e
02:45:00	13.47 e	07:45:00	13.78 e	12:45:00	14.04 e	17:45:00	14.74 e	22:45:00	15.29 e
03:00:00	13.47 e	08:00:00	13.82 e	13:00:00	14.07 e	18:00:00	14.77 e	23:00:00	15.34 e
03:15:00	13.48 e	08:15:00	13.85 e	13:15:00	14.06 e	18:15:00	14.81 e	23:15:00	15.33 e
03:30:00	13.46 e	08:30:00	13.87 e	13:30:00	14.12 e	18:30:00	14.86 e	23:30:00	15.36 e
03:45:00	13.46 e	08:45:00	13.87 e	13:45:00	14.16 e	18:45:00	14.89 e	23:45:00	15.37 e
04:00:00	13.49 e	09:00:00	13.87 e	14:00:00	14.21 e	19:00:00	14.93 e	24:00:00	15.38 e
04:15:00	13.49 e	09:15:00	13.87 e	14:15:00	14.25 e	19:15:00	14.97 e		
04:30:00	13.55 e	09:30:00	13.87 e	14:30:00	14.31 e	19:30:00	14.98 e		
04:45:00	13.56 e	09:45:00	13.91 e	14:45:00	14.36 e	19:45:00	15.01 e		
05:00:00	13.57 e	10:00:00	13.92 e	15:00:00	14.39 e	20:00:00	15.04 e		
PROVISIONAL DATA				OCTOBER 06, 1995				SUBJECT TO REVISION	
00:15:00	15.42 e	05:15:00	15.11 e	10:15:00	14.47 e	15:15:00	13.96 e	20:15:00	13.25 e
00:30:00	15.41 e	05:30:00	15.08 e	10:30:00	14.43 e	15:30:00	13.94 e	20:30:00	13.23 e
00:45:00	15.43 e	05:45:00	15.06 e	10:45:00	14.39 e	15:45:00	13.91 e	20:45:00	13.21 e
01:00:00	15.42 e	06:00:00	15.02 e	11:00:00	14.36 e	16:00:00	13.90 e	21:00:00	13.18 e
01:15:00	15.44 e	06:15:00	14.97 e	11:15:00	14.31 e	16:15:00	13.89 e	21:15:00	13.15 e
01:30:00	15.43 e	06:30:00	14.94 e	11:30:00	14.25 e	16:30:00	13.89 e	21:30:00	13.11 e
01:45:00	15.37 e	06:45:00	14.91 e	11:45:00	14.22 e	16:45:00	13.86 e	21:45:00	13.06 e
02:00:00	15.37 e	07:00:00	14.86 e	12:00:00	14.19 e	17:00:00	13.83 e	22:00:00	13.01 e
02:15:00	15.35 e	07:15:00	14.80 e	12:15:00	14.16 e	17:15:00	13.78 e	22:15:00	12.97 e
02:30:00	15.31 e	07:30:00	14.76 e	12:30:00	14.15 e	17:30:00	13.74 e	22:30:00	12.93 e
02:45:00	15.28 e	07:45:00	14.70 e	12:45:00	14.15 e	17:45:00	13.70 e	22:45:00	12.91 e
03:00:00	15.27 e	08:00:00	14.65 e	13:00:00	14.15 e	18:00:00	13.67 e	23:00:00	12.91 e
03:15:00	15.24 e	08:15:00	14.63 e	13:15:00	14.15 e	18:15:00	13.62 e	23:15:00	12.91 e
03:30:00	15.21 e	08:30:00	14.61 e	13:30:00	14.13 e	18:30:00	13.57 e	23:30:00	12.93 e
03:45:00	15.21 e	08:45:00	14.60 e	13:45:00	14.10 e	18:45:00	13.53 e	23:45:00	12.93 e
04:00:00	15.23 e	09:00:00	14.55 e	14:00:00	14.05 e	19:00:00	13.45 e	24:00:00	12.93 e
04:15:00	15.19 e	09:15:00	14.53 e	14:15:00	14.02 e	19:15:00	13.39 e		
04:30:00	15.13 e	09:30:00	14.50 e	14:30:00	13.99 e	19:30:00	13.34 e		
04:45:00	15.12 e	09:45:00	14.50 e	14:45:00	13.97 e	19:45:00	13.30 e		
05:00:00	15.13 e	10:00:00	14.49 e	15:00:00	13.96 e	20:00:00	13.27 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA									
OCTOBER 07, 1995									
00:15:00	12.99 e	05:15:00	12.62 e	10:15:00	12.08 e	15:15:00	12.43 e	20:15:00	12.96 e
00:30:00	12.98 e	05:30:00	12.57 e	10:30:00	12.08 e	15:30:00	12.32 e	20:30:00	13.01 e
00:45:00	12.94 e	05:45:00	12.53 e	10:45:00	12.06 e	15:45:00	12.48 e	20:45:00	13.00 e
01:00:00	12.90 e	06:00:00	12.48 e	11:00:00	12.07 e	16:00:00	12.53 e	21:00:00	13.02 e
01:15:00	12.86 e	06:15:00	12.44 e	11:15:00	12.10 e	16:15:00	12.55 e	21:15:00	13.07 e
01:30:00	12.85 e	06:30:00	12.42 e	11:30:00	12.19 e	16:30:00	12.60 e	21:30:00	13.09 e
01:45:00	12.83 e	06:45:00	12.39 e	11:45:00	12.17 e	16:45:00	12.59 e	21:45:00	13.10 e
02:00:00	12.83 e	07:00:00	12.37 e	12:00:00	12.17 e	17:00:00	12.61 e	22:00:00	13.07 e
02:15:00	12.85 e	07:15:00	12.36 e	12:15:00	12.15 e	17:15:00	12.66 e	22:15:00	13.07 e
02:30:00	12.85 e	07:30:00	12.35 e	12:30:00	12.17 e	17:30:00	12.69 e	22:30:00	13.07 e
02:45:00	12.85 e	07:45:00	12.33 e	12:45:00	12.14 e	17:45:00	12.81 e	22:45:00	13.08 e
03:00:00	12.84 e	08:00:00	12.32 e	13:00:00	12.13 e	18:00:00	12.84 e	23:00:00	13.09 e
03:15:00	12.82 e	08:15:00	12.25 e	13:15:00	12.14 e	18:15:00	12.81 e	23:15:00	13.08 e
03:30:00	12.79 e	08:30:00	12.22 e	13:30:00	12.13 e	18:30:00	12.80 e	23:30:00	13.09 e
03:45:00	12.76 e	08:45:00	12.17 e	13:45:00	12.15 e	18:45:00	12.86 e	23:45:00	13.11 e
04:00:00	12.72 e	09:00:00	12.18 e	14:00:00	12.23 e	19:00:00	12.92 e	24:00:00	13.11 e
04:15:00	12.68 e	09:15:00	12.17 e	14:15:00	12.30 e	19:15:00	12.95 e		
04:30:00	12.66 e	09:30:00	12.17 e	14:30:00	12.36 e	19:30:00	12.92 e		
04:45:00	12.65 e	09:45:00	12.13 e	14:45:00	12.38 e	19:45:00	12.95 e		
05:00:00	12.65 e	10:00:00	12.13 e	15:00:00	12.44 e	20:00:00	12.96 e		
PROVISIONAL DATA									
OCTOBER 08, 1995									
00:15:00	13.08 e	05:15:00	13.16 e	10:15:00	13.31 e	15:15:00	13.38 e	20:15:00	13.62 e
00:30:00	13.08 e	05:30:00	13.17 e	10:30:00	13.30 e	15:30:00	13.43 e	20:30:00	13.60 e
00:45:00	13.07 e	05:45:00	13.18 e	10:45:00	13.28 e	15:45:00	13.45 e	20:45:00	13.58 e
01:00:00	13.10 e	06:00:00	13.21 e	11:00:00	13.30 e	16:00:00	13.52 e	21:00:00	13.56 e
01:15:00	13.09 e	06:15:00	13.27 e	11:15:00	13.30 e	16:15:00	13.54 e	21:15:00	13.51 e
01:30:00	13.08 e	06:30:00	13.27 e	11:30:00	13.28 e	16:30:00	13.56 e	21:30:00	13.47 e
01:45:00	13.06 e	06:45:00	13.27 e	11:45:00	13.27 e	16:45:00	13.57 e	21:45:00	13.43 e
02:00:00	13.05 e	07:00:00	13.25 e	12:00:00	13.27 e	17:00:00	13.59 e	22:00:00	13.41 e
02:15:00	13.06 e	07:15:00	13.25 e	12:15:00	13.27 e	17:15:00	13.61 e	22:15:00	13.39 e
02:30:00	13.07 e	07:30:00	13.27 e	12:30:00	13.27 e	17:30:00	13.62 e	22:30:00	13.36 e
02:45:00	13.08 e	07:45:00	13.30 e	12:45:00	13.26 e	17:45:00	13.65 e	22:45:00	13.34 e
03:00:00	13.08 e	08:00:00	13.31 e	13:00:00	13.26 e	18:00:00	13.65 e	23:00:00	13.32 e
03:15:00	13.10 e	08:15:00	13.32 e	13:15:00	13.28 e	18:15:00	13.64 e	23:15:00	13.31 e
03:30:00	13.08 e	08:30:00	13.34 e	13:30:00	13.28 e	18:30:00	13.64 e	23:30:00	13.29 e
03:45:00	13.07 e	08:45:00	13.33 e	13:45:00	13.29 e	18:45:00	13.65 e	23:45:00	13.27 e
04:00:00	13.09 e	09:00:00	13.32 e	14:00:00	13.30 e	19:00:00	13.67 e	24:00:00	13.27 e
04:15:00	13.13 e	09:15:00	13.34 e	14:15:00	13.33 e	19:15:00	13.67 e		
04:30:00	13.16 e	09:30:00	13.33 e	14:30:00	13.36 e	19:30:00	13.67 e		
04:45:00	13.16 e	09:45:00	13.33 e	14:45:00	13.37 e	19:45:00	13.66 e		
05:00:00	13.16 e	10:00:00	13.30 e	15:00:00	13.37 e	20:00:00	13.64 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				OCTOBER 09, 1995				SUBJECT TO REVISION	
00:15:00	13.27 e	05:15:00	13.55 e	10:15:00	13.07 e	15:15:00	13.15 e	20:15:00	13.43 e
00:30:00	13.27 e	05:30:00	13.44 e	10:30:00	13.06 e	15:30:00	13.15 e	20:30:00	13.43 e
00:45:00	13.27 e	05:45:00	13.46 e	10:45:00	13.06 e	15:45:00	13.17 e	20:45:00	13.43 e
01:00:00	13.29 e	06:00:00	13.46 e	11:00:00	13.06 e	16:00:00	13.22 e	21:00:00	13.45 e
01:15:00	13.30 e	06:15:00	13.45 e	11:15:00	13.06 e	16:15:00	13.19 e	21:15:00	13.43 e
01:30:00	13.32 e	06:30:00	13.42 e	11:30:00	13.06 e	16:30:00	13.24 e	21:30:00	13.43 e
01:45:00	13.34 e	06:45:00	13.40 e	11:45:00	13.07 e	16:45:00	13.21 e	21:45:00	13.41 e
02:00:00	13.35 e	07:00:00	13.38 e	12:00:00	13.08 e	17:00:00	13.21 e	22:00:00	13.40 e
02:15:00	13.38 e	07:15:00	13.35 e	12:15:00	13.07 e	17:15:00	13.19 e	22:15:00	13.38 e
02:30:00	13.39 e	07:30:00	13.32 e	12:30:00	13.06 e	17:30:00	13.21 e	22:30:00	13.35 e
02:45:00	13.42 e	07:45:00	13.30 e	12:45:00	13.07 e	17:45:00	13.23 e	22:45:00	13.34 e
03:00:00	13.44 e	08:00:00	13.29 e	13:00:00	13.12 e	18:00:00	13.28 e	23:00:00	13.31 e
03:15:00	13.45 e	08:15:00	13.27 e	13:15:00	13.09 e	18:15:00	13.33 e	23:15:00	13.29 e
03:30:00	13.48 e	08:30:00	13.25 e	13:30:00	13.07 e	18:30:00	13.33 e	23:30:00	13.29 e
03:45:00	13.48 e	08:45:00	13.22 e	13:45:00	13.09 e	18:45:00	13.34 e	23:45:00	13.24 e
04:00:00	13.49 e	09:00:00	13.20 e	14:00:00	13.10 e	19:00:00	13.35 e	24:00:00	13.23 e
04:15:00	13.50 e	09:15:00	13.17 e	14:15:00	13.10 e	19:15:00	13.34 e		
04:30:00	13.51 e	09:30:00	13.14 e	14:30:00	13.11 e	19:30:00	13.38 e		
04:45:00	13.53 e	09:45:00	13.11 e	14:45:00	13.11 e	19:45:00	13.42 e		
05:00:00	13.53 e	10:00:00	13.09 e	15:00:00	13.15 e	20:00:00	13.41 e		
PROVISIONAL DATA				OCTOBER 10, 1995				SUBJECT TO REVISION	
00:15:00	13.21 e	05:15:00	12.88 e	10:15:00	12.99 e	15:15:00	12.95 e	20:15:00	13.00 e
00:30:00	13.17 e	05:30:00	12.89 e	10:30:00	13.02 e	15:30:00	12.95 e	20:30:00	12.98 e
00:45:00	13.14 e	05:45:00	12.90 e	10:45:00	13.03 e	15:45:00	12.94 e	20:45:00	13.02 e
01:00:00	13.10 e	06:00:00	12.91 e	11:00:00	13.01 e	16:00:00	12.95 e	21:00:00	13.05 e
01:15:00	13.07 e	06:15:00	12.91 e	11:15:00	13.00 e	16:15:00	12.91 e	21:15:00	13.09 e
01:30:00	13.03 e	06:30:00	12.91 e	11:30:00	13.00 e	16:30:00	12.92 e	21:30:00	13.12 e
01:45:00	13.01 e	06:45:00	12.91 e	11:45:00	12.97 e	16:45:00	12.90 e	21:45:00	13.14 e
02:00:00	12.99 e	07:00:00	12.93 e	12:00:00	12.97 e	17:00:00	12.92 e	22:00:00	13.16 e
02:15:00	12.97 e	07:15:00	12.94 e	12:15:00	12.96 e	17:15:00	12.95 e	22:15:00	13.19 e
02:30:00	12.96 e	07:30:00	12.95 e	12:30:00	12.97 e	17:30:00	12.95 e	22:30:00	13.21 e
02:45:00	12.94 e	07:45:00	12.97 e	12:45:00	12.98 e	17:45:00	12.97 e	22:45:00	13.23 e
03:00:00	12.93 e	08:00:00	12.97 e	13:00:00	12.98 e	18:00:00	12.96 e	23:00:00	13.25 e
03:15:00	12.92 e	08:15:00	12.97 e	13:15:00	12.98 e	18:15:00	12.97 e	23:15:00	13.28 e
03:30:00	12.91 e	08:30:00	12.97 e	13:30:00	12.97 e	18:30:00	12.98 e	23:30:00	13.30 e
03:45:00	12.91 e	08:45:00	12.96 e	13:45:00	12.95 e	18:45:00	12.99 e	23:45:00	13.31 e
04:00:00	12.92 e	09:00:00	12.96 e	14:00:00	12.94 e	19:00:00	12.99 e	24:00:00	13.31 e
04:15:00	12.90 e	09:15:00	12.96 e	14:15:00	12.93 e	19:15:00	13.00 e		
04:30:00	12.89 e	09:30:00	12.95 e	14:30:00	12.93 e	19:30:00	13.00 e		
04:45:00	12.88 e	09:45:00	12.95 e	14:45:00	12.94 e	19:45:00	12.99 e		
05:00:00	12.87 e	10:00:00	12.97 e	15:00:00	12.97 e	20:00:00	12.97 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				OCTOBER 11, 1995				SUBJECT TO REVISION	
00:15:00	13.32 e	05:00:00	13.17 e	09:45:00	13.16 e	14:30:00	13.01 e	19:30:00	12.97 e
00:30:00	13.33 e	05:15:00	13.18 e	10:00:00	13.18 e	14:45:00	13.00 e	19:45:00	12.98 e
00:45:00	13.33 e	05:30:00	13.18 e	10:15:00	13.16 e	15:00:00	13.01 e	20:00:00	12.99 e
01:00:00	13.32 e	05:45:00	13.17 e	10:30:00	13.18 e	15:15:00	13.00 e	20:15:00	12.99 e
01:15:00	13.33 e	06:00:00	13.17 e	10:45:00	13.19 e	15:45:00	13.02 e	20:30:00	12.99 e
01:30:00	13.33 e	06:15:00	13.16 e	11:00:00	13.19 e	16:00:00	13.00 e	20:45:00	13.00 e
01:45:00	13.33 e	06:30:00	13.15 e	11:15:00	13.17 e	16:15:00	12.98 e	21:00:00	13.01 e
02:00:00	13.32 e	06:45:00	13.15 e	11:30:00	13.14 e	16:30:00	12.98 e	21:15:00	13.04 e
02:15:00	13.33 e	07:00:00	13.16 e	11:45:00	13.13 e	16:45:00	12.97 e	21:30:00	13.04 e
02:30:00	13.33 e	07:15:00	13.15 e	12:00:00	13.11 e	17:00:00	12.97 e	21:45:00	13.03 e
02:45:00	13.32 e	07:30:00	13.17 e	12:15:00	13.10 e	17:15:00	12.96 e	22:00:00	13.01 e
03:00:00	13.31 e	07:45:00	13.14 e	12:30:00	13.09 e	17:30:00	12.96 e	22:15:00	13.00 e
03:15:00	13.28 e	08:00:00	13.14 e	12:45:00	13.09 e	17:45:00	12.98 e	22:30:00	13.00 e
03:30:00	13.28 e	08:15:00	13.17 e	13:00:00	13.09 e	18:00:00	13.03 e	22:45:00	12.97 e
03:45:00	13.25 e	08:30:00	13.14 e	13:15:00	13.07 e	18:15:00	13.00 e	23:00:00	12.98 e
04:00:00	13.23 e	08:45:00	13.19 e	13:30:00	13.09 e	18:30:00	12.99 e	23:15:00	13.00 e
04:15:00	13.22 e	09:00:00	13.19 e	13:45:00	13.08 e	18:45:00	13.03 e	23:30:00	13.01 e
04:30:00	13.20 e	09:15:00	13.16 e	14:00:00	13.05 e	19:00:00	13.00 e	23:45:00	13.02 e
04:45:00	13.18 e	09:30:00	13.16 e	14:15:00	13.02 e	19:15:00	12.94 e	24:00:00	13.02 e
PROVISIONAL DATA				OCTOBER 12, 1995				SUBJECT TO REVISION	
00:15:00	13.04 e	05:15:00	13.30 e	10:15:00	13.07 e	15:15:00	13.23 e	20:15:00	13.05 e
00:30:00	13.07 e	05:30:00	13.28 e	10:30:00	13.08 e	15:30:00	13.22 e	20:30:00	13.06 e
00:45:00	13.08 e	05:45:00	13.26 e	10:45:00	13.08 e	15:45:00	13.21 e	20:45:00	13.08 e
01:00:00	13.07 e	06:00:00	13.26 e	11:00:00	13.08 e	16:00:00	13.20 e	21:00:00	13.10 e
01:15:00	13.09 e	06:15:00	13.26 e	11:15:00	13.08 e	16:15:00	13.19 e	21:15:00	13.11 e
01:30:00	13.12 e	06:30:00	13.26 e	11:30:00	13.09 e	16:30:00	13.20 e	21:30:00	13.13 e
01:45:00	13.13 e	06:45:00	13.26 e	11:45:00	13.11 e	16:45:00	13.20 e	21:45:00	13.13 e
02:00:00	13.12 e	07:00:00	13.26 e	12:00:00	13.12 e	17:00:00	13.20 e	22:00:00	13.12 e
02:15:00	13.16 e	07:15:00	13.27 e	12:15:00	13.14 e	17:15:00	13.28 e	22:15:00	13.14 e
02:30:00	13.20 e	07:30:00	13.25 e	12:30:00	13.15 e	17:30:00	13.15 e	22:30:00	13.15 e
02:45:00	13.23 e	07:45:00	13.21 e	12:45:00	13.19 e	17:45:00	13.19 e	22:45:00	13.15 e
03:00:00	13.26 e	08:00:00	13.17 e	13:00:00	13.20 e	18:00:00	13.25 e	23:00:00	13.16 e
03:15:00	13.26 e	08:15:00	13.13 e	13:15:00	13.24 e	18:15:00	13.13 e	23:15:00	13.15 e
03:30:00	13.23 e	08:30:00	13.10 e	13:30:00	13.25 e	18:30:00	13.13 e	23:30:00	13.14 e
03:45:00	13.22 e	08:45:00	13.10 e	13:45:00	13.26 e	18:45:00	13.10 e	23:45:00	13.14 e
04:00:00	13.26 e	09:00:00	13.08 e	14:00:00	13.24 e	19:00:00	13.10 e	24:00:00	13.13 e
04:15:00	13.27 e	09:15:00	13.09 e	14:15:00	13.23 e	19:15:00	13.04 e		
04:30:00	13.29 e	09:30:00	13.09 e	14:30:00	13.24 e	19:30:00	13.06 e		
04:45:00	13.30 e	09:45:00	13.09 e	14:45:00	13.24 e	19:45:00	12.98 e		
05:00:00	13.31 e	10:00:00	13.08 e	15:00:00	13.24 e	20:00:00	13.08 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA				OCTOBER 13, 1995				SUBJECT TO REVISION	
00:15:00	13.14 e	05:15:00	13.04 e	10:15:00	13.06 e	15:15:00	12.88 e	20:15:00	13.10 e
00:30:00	13.16 e	05:30:00	13.05 e	10:30:00	13.04 e	15:30:00	12.86 e	20:30:00	13.13 e
00:45:00	13.17 e	05:45:00	13.05 e	10:45:00	13.07 e	15:45:00	12.85 e	20:45:00	13.18 e
01:00:00	13.16 e	06:00:00	13.05 e	11:00:00	13.02 e	16:00:00	12.83 e	21:00:00	13.23 e
01:15:00	13.16 e	06:15:00	13.05 e	11:15:00	13.03 e	16:15:00	12.81 e	21:15:00	13.26 e
01:30:00	13.14 e	06:30:00	13.05 e	11:30:00	13.05 e	16:30:00	12.81 e	21:30:00	13.31 e
01:45:00	13.14 e	06:45:00	13.04 e	11:45:00	13.03 e	16:45:00	12.79 e	21:45:00	13.34 e
02:00:00	13.14 e	07:00:00	13.02 e	12:00:00	13.03 e	17:00:00	12.78 e	22:00:00	13.36 e
02:15:00	13.13 e	07:15:00	13.05 e	12:15:00	13.03 e	17:15:00	12.77 e	22:15:00	13.39 e
02:30:00	13.09 e	07:30:00	13.03 e	12:30:00	13.02 e	17:30:00	12.77 e	22:30:00	13.39 e
02:45:00	13.09 e	07:45:00	13.03 e	12:45:00	13.03 e	17:45:00	12.80 e	22:45:00	13.40 e
03:00:00	13.09 e	08:00:00	13.03 e	13:00:00	13.02 e	18:00:00	12.80 e	23:00:00	13.42 e
03:15:00	13.08 e	08:15:00	13.01 e	13:15:00	13.03 e	18:15:00	12.68 e	23:15:00	13.42 e
03:30:00	13.07 e	08:30:00	13.03 e	13:30:00	13.03 e	18:30:00	12.90 e	23:30:00	13.42 e
03:45:00	13.06 e	08:45:00	13.04 e	13:45:00	13.01 e	18:45:00	12.92 e	23:45:00	13.38 e
04:00:00	13.03 e	09:00:00	13.02 e	14:00:00	13.00 e	19:00:00	12.97 e	24:00:00	13.39 e
04:15:00	13.02 e	09:15:00	13.07 e	14:15:00	12.99 e	19:15:00	12.93 e		
04:30:00	13.01 e	09:30:00	13.07 e	14:30:00	12.96 e	19:30:00	12.97 e		
04:45:00	13.03 e	09:45:00	13.04 e	14:45:00	12.94 e	19:45:00	13.00 e		
05:00:00	13.03 e	10:00:00	13.04 e	15:00:00	12.91 e	20:00:00	13.06 e		
PROVISIONAL DATA				OCTOBER 14, 1995				SUBJECT TO REVISION	
00:15:00	13.35 e	05:15:00	12.88 e	10:15:00	13.07 e	15:15:00	12.63 e	20:15:00	11.93 e
00:30:00	13.35 e	05:30:00	12.87 e	10:30:00	13.02 e	15:30:00	12.61 e	20:30:00	11.90 e
00:45:00	13.31 e	05:45:00	12.87 e	10:45:00	13.03 e	15:45:00	12.58 e	20:45:00	11.92 e
01:00:00	13.27 e	06:00:00	12.86 e	11:00:00	13.02 e	16:00:00	12.53 e	21:00:00	11.95 e
01:15:00	13.24 e	06:15:00	12.86 e	11:15:00	12.99 e	16:15:00	12.44 e	21:15:00	11.94 e
01:30:00	13.21 e	06:30:00	12.88 e	11:30:00	12.98 e	16:30:00	12.38 e	21:30:00	11.96 e
01:45:00	13.15 e	06:45:00	12.90 e	11:45:00	12.98 e	16:45:00	12.35 e	21:45:00	11.94 e
02:00:00	13.12 e	07:00:00	12.91 e	12:00:00	12.97 e	17:00:00	12.23 e	22:00:00	11.90 e
02:15:00	13.10 e	07:15:00	12.97 e	12:15:00	12.94 e	17:15:00	12.16 e	22:15:00	11.92 e
02:30:00	13.08 e	07:30:00	12.98 e	12:30:00	12.90 e	17:30:00	12.15 e	22:30:00	11.94 e
02:45:00	13.05 e	07:45:00	12.99 e	12:45:00	12.85 e	17:45:00	12.15 e	22:45:00	12.01 e
03:00:00	13.02 e	08:00:00	13.00 e	13:00:00	12.80 e	18:00:00	12.14 e	23:00:00	12.07 e
03:15:00	13.00 e	08:15:00	13.01 e	13:15:00	12.77 e	18:15:00	12.10 e	23:15:00	12.12 e
03:30:00	13.00 e	08:30:00	13.04 e	13:30:00	12.73 e	18:30:00	12.16 e	23:30:00	12.17 e
03:45:00	12.99 e	08:45:00	13.06 e	13:45:00	12.71 e	18:45:00	12.10 e	23:45:00	12.22 e
04:00:00	12.97 e	09:00:00	13.05 e	14:00:00	12.67 e	19:00:00	12.03 e	24:00:00	12.24 e
04:15:00	12.96 e	09:15:00	13.05 e	14:15:00	12.70 e	19:15:00	12.06 e		
04:30:00	12.94 e	09:30:00	13.10 e	14:30:00	12.65 e	19:30:00	12.00 e		
04:45:00	12.92 e	09:45:00	13.10 e	14:45:00	12.65 e	19:45:00	11.91 e		
05:00:00	12.90 e	10:00:00	13.09 e	15:00:00	12.64 e	20:00:00	11.91 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA									
OCTOBER 15, 1995									
00:15:00	12.25 e	05:15:00	12.75 e	10:15:00	12.70 e	15:15:00	12.82 e	20:15:00	SUBJECT TO REVISION
00:30:00	12.22 e	05:30:00	12.74 e	10:30:00	12.68 e	15:30:00	12.84 e	20:30:00	13.35 e
00:45:00	12.24 e	05:45:00	12.73 e	10:45:00	12.65 e	15:45:00	12.91 e	20:45:00	13.34 e
01:00:00	12.34 e	06:00:00	12.71 e	11:00:00	12.62 e	16:00:00	12.91 e	21:00:00	13.34 e
01:15:00	12.41 e	06:15:00	12.75 e	11:15:00	12.61 e	16:15:00	12.98 e	21:15:00	13.33 e
01:30:00	12.44 e	06:30:00	12.73 e	11:30:00	12.56 e	16:30:00	12.96 e	21:30:00	13.29 e
01:45:00	12.49 e	06:45:00	12.75 e	11:45:00	12.57 e	16:45:00	12.99 e	21:45:00	13.26 e
02:00:00	12.52 e	07:00:00	12.77 e	12:00:00	12.59 e	17:00:00	13.07 e	22:00:00	13.25 e
02:15:00	12.53 e	07:15:00	12.79 e	12:15:00	12.56 e	17:15:00	13.06 e	22:15:00	13.25 e
02:30:00	12.54 e	07:30:00	12.80 e	12:30:00	12.53 e	17:30:00	13.05 e	22:30:00	13.27 e
02:45:00	12.54 e	07:45:00	12.78 e	12:45:00	12.52 e	17:45:00	13.06 e	22:45:00	13.20 e
03:00:00	12.51 e	08:00:00	12.77 e	13:00:00	12.51 e	18:00:00	13.08 e	23:00:00	13.20 e
03:15:00	12.51 e	08:15:00	12.77 e	13:15:00	12.54 e	18:15:00	13.11 e	23:15:00	13.25 e
03:30:00	12.56 e	08:30:00	12.79 e	13:30:00	12.56 e	18:30:00	13.28 e	23:30:00	13.24 e
03:45:00	12.60 e	08:45:00	12.79 e	13:45:00	12.58 e	18:45:00	13.36 e	23:45:00	13.22 e
04:00:00	12.65 e	09:00:00	12.82 e	14:00:00	12.63 e	19:00:00	13.29 e	24:00:00	13.29 e
04:15:00	12.70 e	09:15:00	12.82 e	14:15:00	12.66 e	19:15:00	13.25 e		13.30 e
04:30:00	12.72 e	09:30:00	12.78 e	14:30:00	12.73 e	19:30:00	13.32 e		
04:45:00	12.77 e	09:45:00	12.78 e	14:45:00	12.74 e	19:45:00	13.35 e		
05:00:00	12.76 e	10:00:00	12.76 e	15:00:00	12.78 e	20:00:00	13.36 e		
PROVISIONAL DATA									
OCTOBER 16, 1995									
00:15:00	13.23 e	05:15:00	13.25 e	10:15:00	13.32 e	15:15:00	13.34 e	20:15:00	SUBJECT TO REVISION
00:30:00	13.22 e	05:30:00	13.26 e	10:30:00	13.31 e	15:30:00	13.37 e	20:30:00	13.62 e
00:45:00	13.14 e	05:45:00	13.28 e	10:45:00	13.33 e	15:45:00	13.41 e	20:45:00	13.64 e
01:00:00	13.12 e	06:00:00	13.31 e	11:00:00	13.35 e	16:00:00	13.35 e	21:00:00	13.65 e
01:15:00	13.18 e	06:15:00	13.31 e	11:15:00	13.32 e	16:15:00	13.40 e	21:15:00	13.68 e
01:30:00	13.22 e	06:30:00	13.31 e	11:30:00	13.32 e	16:30:00	13.38 e	21:30:00	13.69 e
01:45:00	13.25 e	06:45:00	13.31 e	11:45:00	13.32 e	16:45:00	13.40 e	21:45:00	13.71 e
02:00:00	13.27 e	07:00:00	13.31 e	12:00:00	13.34 e	17:00:00	13.39 e	22:00:00	13.73 e
02:15:00	13.21 e	07:15:00	13.31 e	12:15:00	13.35 e	17:15:00	13.38 e	22:15:00	13.74 e
02:30:00	13.20 e	07:30:00	13.31 e	12:30:00	13.40 e	17:30:00	13.42 e	22:30:00	13.77 e
02:45:00	13.21 e	07:45:00	13.28 e	12:45:00	13.38 e	17:45:00	13.48 e	22:45:00	13.77 e
03:00:00	13.18 e	08:00:00	13.28 e	13:00:00	13.38 e	18:00:00	13.48 e	23:00:00	13.77 e
03:15:00	13.23 e	08:15:00	13.31 e	13:15:00	13.36 e	18:15:00	13.47 e	23:15:00	13.77 e
03:30:00	13.24 e	08:30:00	13.32 e	13:30:00	13.40 e	18:30:00	13.51 e	23:30:00	13.77 e
03:45:00	13.27 e	08:45:00	13.33 e	13:45:00	13.42 e	18:45:00	13.52 e	23:45:00	13.77 e
04:00:00	13.26 e	09:00:00	13.33 e	14:00:00	13.42 e	19:00:00	13.52 e	24:00:00	13.78 e
04:15:00	13.23 e	09:15:00	13.32 e	14:15:00	13.41 e	19:15:00	13.55 e		
04:30:00	13.22 e	09:30:00	13.32 e	14:30:00	13.38 e	19:30:00	13.57 e		
04:45:00	13.23 e	09:45:00	13.31 e	14:45:00	13.34 e	19:45:00	13.58 e		
05:00:00	13.25 e	10:00:00	13.32 e	15:00:00	13.35 e	20:00:00	13.58 e		

STATION NUMBER 04157000 SAGINAW RIVER AT SAGINAW, MICH. STREAM SOURCE AGENCY USGS
 LATITUDE 432446 LONGITUDE 0835747 DRAINAGE AREA 6060.00 DATUM 565.11 STATE 26 COUNTY 145
 GAGE HEIGHT, IN (FEET) EDITED UNIT VALUES (INSTANTANEOUS)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
PROVISIONAL DATA									
OCTOBER 17, 1995									
00:15:00	13.78 e	05:15:00	13.28 e	10:15:00	13.24 e	15:15:00	12.65 e	20:15:00	11.86 e
00:30:00	13.76 e	05:30:00	13.25 e	10:30:00	13.25 e	15:30:00	12.57 e	20:30:00	11.95 e
00:45:00	13.74 e	05:45:00	13.25 e	10:45:00	13.27 e	15:45:00	12.48 e	20:45:00	11.98 e
01:00:00	13.68 e	06:00:00	13.21 e	11:00:00	13.29 e	16:00:00	12.44 e	21:00:00	12.03 e
01:15:00	13.66 e	06:15:00	13.21 e	11:15:00	13.31 e	16:15:00	12.40 e	21:15:00	12.09 e
01:30:00	13.62 e	06:30:00	13.20 e	11:30:00	13.30 e	16:30:00	12.35 e	21:30:00	12.11 e
01:45:00	13.59 e	06:45:00	13.19 e	11:45:00	13.27 e	16:45:00	12.24 e	21:45:00	12.16 e
02:00:00	13.55 e	07:00:00	13.19 e	12:00:00	13.23 e	17:00:00	12.21 e	22:00:00	12.24 e
02:15:00	13.52 e	07:15:00	13.19 e	12:15:00	13.20 e	17:15:00	12.16 e	22:15:00	12.28 e
02:30:00	13.48 e	07:30:00	13.17 e	12:30:00	13.18 e	17:30:00	12.10 e	22:30:00	12.31 e
02:45:00	13.48 e	07:45:00	13.18 e	12:45:00	13.14 e	17:45:00	12.04 e	22:45:00	12.28 e
03:00:00	13.45 e	08:00:00	13.22 e	13:00:00	13.10 e	18:00:00	11.99 e	23:00:00	12.23 e
03:15:00	13.42 e	08:15:00	13.22 e	13:15:00	13.01 e	18:15:00	11.99 e	23:15:00	12.19 e
03:30:00	13.39 e	08:30:00	13.23 e	13:30:00	12.98 e	18:30:00	12.03 e	23:30:00	12.19 e
03:45:00	13.35 e	08:45:00	13.25 e	13:45:00	12.92 e	18:45:00	11.98 e	23:45:00	12.18 e
04:00:00	13.35 e	09:00:00	13.26 e	14:00:00	12.88 e	19:00:00	11.93 e	24:00:00	12.19 e
04:15:00	13.34 e	09:15:00	13.29 e	14:15:00	12.84 e	19:15:00	11.92 e		
04:30:00	13.33 e	09:30:00	13.28 e	14:30:00	12.78 e	19:30:00	11.83 e		
04:45:00	13.32 e	09:45:00	13.25 e	14:45:00	12.72 e	19:45:00	11.81 e		
05:00:00	13.31 e	10:00:00	13.24 e	15:00:00	12.71 e	20:00:00	11.82 e		
PROVISIONAL DATA									
OCTOBER 18, 1995									
00:15:00	12.21 e	05:15:00	12.26 e	10:15:00	13.26 e	15:15:00	13.71 e	20:15:00	13.22 e
00:30:00	12.25 e	05:30:00	12.28 e	10:30:00	13.30 e	15:30:00	13.68 e	20:30:00	13.27 e
00:45:00	12.31 e	05:45:00	12.31 e	10:45:00	13.37 e	15:45:00	13.66 e	20:45:00	13.28 e
01:00:00	12.36 e	06:00:00	12.34 e	11:00:00	13.41 e	16:00:00	13.62 e	21:00:00	13.32 e
01:15:00	12.44 e	06:15:00	12.36 e	11:15:00	13.47 e	16:15:00	13.59 e	21:15:00	13.38 e
01:30:00	12.49 e	06:30:00	12.39 e	11:30:00	13.52 e	16:30:00	13.56 e	21:30:00	13.49 e
01:45:00	12.53 e	06:45:00	12.42 e	11:45:00	13.56 e	16:45:00	13.54 e	21:45:00	13.57 e
02:00:00	12.58 e	07:00:00	12.48 e	12:00:00	13.62 e	17:00:00	13.52 e	22:00:00	13.62 e
02:15:00	12.56 e	07:15:00	12.58 e	12:15:00	13.66 e	17:15:00	13.41 e	22:15:00	13.64 e
02:30:00	12.54 e	07:30:00	12.61 e	12:30:00	13.68 e	17:30:00	13.45 e	22:30:00	13.65 e
02:45:00	12.51 e	07:45:00	12.70 e	12:45:00	13.71 e	17:45:00	13.40 e	22:45:00	13.69 e
03:00:00	12.45 e	08:00:00	12.80 e	13:00:00	13.71 e	18:00:00	13.35 e	23:00:00	13.70 e
03:15:00	12.40 e	08:15:00	12.89 e	13:15:00	13.71 e	18:15:00	13.33 e	23:15:00	13.73 e
03:30:00	12.35 e	08:30:00	12.94 e	13:30:00	13.73 e	18:30:00	13.30 e	23:30:00	13.73 e
03:45:00	12.32 e	08:45:00	13.00 e	13:45:00	13.74 e	18:45:00	13.28 e	23:45:00	13.80 e
04:00:00	12.29 e	09:00:00	13.05 e	14:00:00	13.74 e	19:00:00	13.25 e	24:00:00	13.80 e
04:15:00	12.25 e	09:15:00	13.10 e	14:15:00	13.75 e	19:15:00	13.26 e		
04:30:00	12.24 e	09:30:00	13.13 e	14:30:00	13.75 e	19:30:00	13.24 e		
04:45:00	12.24 e	09:45:00	13.16 e	14:45:00	13.74 e	19:45:00	13.23 e		
05:00:00	12.24 e	10:00:00	13.20 e	15:00:00	13.73 e	20:00:00	13.22 e		

Appendix E

Sediment Evaluation Data

BLASLAND, BOUCK & LEE, INC.
e n g i n e e r s & s c i e n t i s t s

Appendix E - Tables

95% UCL FOR MANGANESE IN GROUNDWATER
DOWNGRAIENT OF THE SECONDARY SETTLING POND

SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION

Location	Date	Units	Analytical Result	Rank	
MW-111S4	7/2/99	ug/L	3 U	1	outlier
B-7CAUG	7/17/95	ug/L	20 U	2	
B-7CAUG	6/11/96	ug/L	20 U	3	
MW-111S3	7/13/95	ug/L	20 U	4	
MW-111S3	6/10/96	ug/L	20 U	5	
MW-111S4	7/14/95	ug/L	20 U	6	
MW-111S4	6/10/96	ug/L	20 U	7	
MW-111S4	9/2/99	ug/L	20 U	8	
MW-114S4	7/17/95	ug/L	20 U	9	
MW-114S4	6/7/96	ug/L	54.6	10	
MW-116S2	6/7/96	ug/L	63.7	11	
MW-116S2	7/15/95	ug/L	81	12	
MW-131S2	7/27/95	ug/L	148	13	
MW-131S2	7/27/95	ug/L	152	14	
MW-131S1	7/27/95	ug/L	153	15	
MW-115S3	7/15/95	ug/L	177	16	
MW-115S3	6/7/96	ug/L	181	17	
MW-114S1	6/7/96	ug/L	182	18	
MW-114S3	6/7/96	ug/L	186	19	
MW-115S2	6/7/96	ug/L	208	20	
MW-114S3	7/17/95	ug/L	214	21	
MW-115S2	7/15/95	ug/L	220	22	
MW-114S1	7/17/95	ug/L	226	23	
B-7R	6/13/96	ug/L	234	24	
B-7R	6/13/96	ug/L	267	25	
B-7BAUG	6/11/96	ug/L	314	26	
MW-111S2	7/13/95	ug/L	316	27	
B-7R	9/2/99	ug/L	320	28	
B-7BAUG	7/17/95	ug/L	332	29	
MW-111S2	7/13/95	ug/L	340	30	
MW-114S2	6/7/96	ug/L	382	31	
MW-111S2	6/10/96	ug/L	404 J	32	
MW-116S1	6/7/96	ug/L	413	33	
MW-114S2	7/17/95	ug/L	436	34	
MW-116S1	7/15/95	ug/L	437	35	
MW-115S1	6/7/96	ug/L	495	36	
MW-131WT	7/27/95	ug/L	518	37	
MW-114WT	5/22/00	ug/L	518	38	
MW-115S1	7/15/95	ug/L	550	39	
MW-113WT	7/17/95	ug/L	571	40	
MW-111S1	6/12/96	ug/L	597	41	
MW-113WT	6/13/96	ug/L	823	42	
MW-112WT	6/12/96	ug/L	1,020	43	
MW-115WT	7/15/95	ug/L	1,060	44	
MW-115WT	6/7/96	ug/L	1,270	45	
MW-112WT	9/2/99	ug/L	1,300	46	
MW-112WT	7/17/95	ug/L	1,410	47	
MW-116WT	7/15/95	ug/L	1,500	48	
MW-116WT	6/7/96	ug/L	1,520	49	
MW-114WT	6/8/96	ug/L	1,620	50	
MW-111WT	7/14/95	ug/L	1,800	51	
MW-150WT	6/13/96	ug/L	1,850	52	
MW-111S1	7/14/95	ug/L	1,900	53	
MW-150WT	6/13/96	ug/L	1,930	54	
MW-112WT	6/30/99	ug/L	2,000	55	
MW-112WT	5/20/00	ug/L	2,080	56	
MW-111WT	9/2/99	ug/L	2,200	57	
MW-111WT	5/19/00	ug/L	2,340	58	
MW-111WT	6/12/96	ug/L	3,910	59	outlier
n:	57		D'Agostino's Y:	-1.599	
min:	20		D'Agostino's D:	0.276	
max:	2,340		D'Agostino Critical:	0.986	
median:	340			normal	
mean:	657.4		D'Agostino Critical:	-2.179	
standard deviation:	694.4			normal	
			t:	1.671	
			95% UCL:	811	
			Groundwater Criteria:	2,100	

Note: Criteria is for industrial, residential, and GSI scenarios.
Outliers were excluded from calculations.

**95% UCL FOR IRON IN GROUNDWATER
DOWNGRADIENT OF THE SECONDARY SETTLING POND**

**SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION**

Location	Date	Units	Analytical	Log Transformed	Rank
			Result	Result	
MW-111S4	9/2/99	ug/L	20	1.301 U	1
B-7CAUG	6/11/96	ug/L	100	2.000 U	2
MW-111S3	7/13/95	ug/L	100	2.000 U	3
MW-111S4	7/14/95	ug/L	100	2.000 U	4
MW-111S4	6/10/96	ug/L	100	2.000 U	5
MW-114S4	6/7/96	ug/L	100	2.000 U	6
MW-114WT	5/22/00	ug/L	100	2.000 U	7
MW-114WT	6/8/96	ug/L	117	2.068	8
MW-131WT	7/27/95	ug/L	120	2.079	9
MW-111S3	6/10/96	ug/L	179	2.253	10
B-7R	6/13/96	ug/L	186	2.270 J	11
B-7R	6/13/96	ug/L	202	2.305 J	12
MW-114S4	7/17/95	ug/L	294	2.468	13
MW-114S1	6/7/96	ug/L	318	2.502 U	14
MW-113WT	7/17/95	ug/L	330	2.519	15
MW-112WT	7/17/95	ug/L	400	2.602 J	16
MW-114S3	7/17/95	ug/L	463	2.666	17
B-7BAUG	6/11/96	ug/L	487	2.688	18
MW-114S3	6/7/96	ug/L	488	2.688 U	19
B-7R	9/2/99	ug/L	530	2.724	20
MW-114S1	7/17/95	ug/L	606	2.782	21
B-7CAUG	7/17/95	ug/L	628	2.798 J	22
MW-113WT	6/13/96	ug/L	648	2.812 J	23
B-7BAUG	7/17/95	ug/L	786	2.895 J	24
MW-114S2	6/7/96	ug/L	1,260	3.100 U	25
MW-115WT	7/15/95	ug/L	1,260	3.100 J	26
MW-114S2	7/17/95	ug/L	1,360	3.134	27
MW-115S3	6/7/96	ug/L	1,390	3.143	28
MW-115S2	7/15/95	ug/L	1,460	3.164 J	29
MW-115S3	7/15/95	ug/L	1,560	3.193 J	30
MW-115S2	6/7/96	ug/L	1,630	3.212	31
MW-115WT	6/7/96	ug/L	2,560	3.408	32
MW-115S1	6/7/96	ug/L	2,860	3.456	33
MW-115S1	7/15/95	ug/L	2,870	3.458 J	34
MW-111S2	7/13/95	ug/L	3,070	3.487	35
MW-111S2	7/13/95	ug/L	3,240	3.511	36
MW-112WT	6/12/96	ug/L	3,310	3.520 J	37
MW-111S1	6/12/96	ug/L	3,610	3.558 J	38
MW-111S2	6/10/96	ug/L	4,390	3.642 J	39
MW-116S2	7/15/95	ug/L	4,420	3.645 J	40
MW-112WT	9/2/99	ug/L	4,500	3.653	41
MW-131S2	7/27/95	ug/L	4,510	3.654	42
MW-131S2	7/27/95	ug/L	4,520	3.655	43
MW-116S2	6/7/96	ug/L	5,520	3.742	44
MW-112WT	6/30/99	ug/L	5,900	3.771	45
MW-150WT	6/13/96	ug/L	6,010	3.779 J	46
MW-131S1	7/27/95	ug/L	6,040	3.781	47
MW-112WT	5/20/00	ug/L	6,580	3.818	48
MW-150WT	6/13/96	ug/L	6,850	3.836 J	49
MW-116WT	6/7/96	ug/L	9,000	3.954	50
MW-116WT	7/15/95	ug/L	9,520	3.979 J	51
MW-111WT	7/14/95	ug/L	10,700	4.029	52
MW-116S1	6/7/96	ug/L	10,900	4.037	53
MW-116S1	7/15/95	ug/L	11,100	4.045 J	54
MW-111S1	7/14/95	ug/L	11,500	4.061	55
MW-111WT	5/19/00	ug/L	14,400	4.158	56
MW-111WT	9/2/99	ug/L	16,000	4.204	57
MW-111WT	6/12/96	ug/L	21,400	4.330 J	58

n:	58	D'Agostino's Y:	0.081
min:	1.3	D'Agostino's D:	0.282
max:	4.3	D'Agostino Critical:	0.986
median:	3.2		normal
mean:	3.1	D'Agostino Critical:	-2.179
standard deviation:	0.7		normal
		t:	1.671
		95% UCL (Log):	3.28
		Groundwater Criteria (Log):	4.11

Note: Criteria is for industrial and residential scenarios.

95% UCL FOR IRON IN GROUNDWATER
DOWNGRADIENT OF THE SOUTHERN DRAINAGE CHANNELS

SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION

Location	Date	Units	Analytical Result	Rank
MW-124WT	7/19/95	ug/L	100 U	1
MW-125WT	7/19/95	ug/L	100 U	2
MW-125WT	6/4/96	ug/L	100 UJ	3
X-15BR	7/19/95	ug/L	100 U	4
MW-124WT	6/3/96	ug/L	100 J	5
X-15AR	7/19/95	ug/L	114	6
MW-124S1	6/3/96	ug/L	1,340 J	7
MW-124S1	7/19/95	ug/L	1,770	8
MW-120S2	6/11/96	ug/L	3,890	9
MW-121S2	7/18/95	ug/L	4,090	10
MW-121S2	6/13/96	ug/L	4,200 J	11
MW-119S2	7/17/95	ug/L	4,580	12
MW-120S2	7/18/95	ug/L	4,900	13
MW-120S2	7/18/95	ug/L	4,980	14
MW-119S2	6/10/96	ug/L	6,510 J	15
MW-120S1	6/11/96	ug/L	7,140	16
MW-120S1	6/11/96	ug/L	7,160	17
MW-123S1	7/18/95	ug/L	7,340	18
MW-120S1	7/18/95	ug/L	7,840	19
X-14CAUG	7/18/95	ug/L	8,390	20
MW-119S1	6/10/96	ug/L	9,200 J	21
MW-121S1	6/13/96	ug/L	9,460 J	22
MW-119S1	7/17/95	ug/L	9,740	23
MW-122S2	6/4/96	ug/L	9,830 J	24
MW-123WT	7/18/95	ug/L	9,880	25
MW-3A	7/27/95	ug/L	10,200	26
MW-121S1	7/18/95	ug/L	10,500	27
MW-122S2	7/18/95	ug/L	10,800	28
X-14A	7/18/95	ug/L	11,800	29
X-14B	7/18/95	ug/L	13,400	30
MW-119WT	7/17/95	ug/L	13,700	31
MW-3B	7/27/95	ug/L	14,000	32
MW-122S1	6/4/96	ug/L	14,300 J	33
MW-122S1	7/18/95	ug/L	14,600	34
MW-119WT	6/10/96	ug/L	14,600 J	35
MW-119WT	6/10/96	ug/L	14,700 J	36
MW-120WT	6/11/96	ug/L	15,500	37
MW-122WT	7/18/95	ug/L	16,600	38
MW-120WT	7/18/95	ug/L	17,300	39
MW-128WT	5/19/00	ug/L	20,100	40
MW-121WT	6/4/96	ug/L	20,200 J	41
MW-128S1	5/19/00	ug/L	22,000	42
MW-121WT	7/18/95	ug/L	22,700	43
MW-128WT	7/26/95	ug/L	24,500	44
MW-128S1	7/26/95	ug/L	31,900	45

n:	45	Shapiro-Wilk Critical:	0.945
min:	100	Shapiro-Wilk:	1.081
max:	31,900		Normal
median:	9,740	t:	1.68
mean:	10,139	95% UCL:	11,995
standard deviation:	7,411	Groundwater Criteria:	13,000

Note: Criteria is for both industrial and residential scenarios.

95% UCL FOR MANGANESE IN GROUNDWATER
DOWNGRADIENT OF THE SOUTHERN DRAINAGE CHANNELS

SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIATION INVESTIGATION

Location	Date	Units	Log		Rank
			Analytical Result	Transformed Result	
MW-121S2	6/13/96	ug/L	51	1.708	1
MW-124WT	6/3/96	ug/L	56.9	1.755	2
MW-121S2	7/18/95	ug/L	69	1.839	3
X-15AR	7/19/95	ug/L	71	1.851	4
MW-120S2	6/11/96	ug/L	78.1	1.893	5
MW-119S2	6/10/96	ug/L	98.5	1.993 J	6
MW-120S1	6/11/96	ug/L	112	2.049	7
MW-120S1	6/11/96	ug/L	113	2.053	8
MW-120S2	7/18/95	ug/L	114	2.057	9
MW-119S2	7/17/95	ug/L	117	2.068	10
MW-120S2	7/18/95	ug/L	120	2.079	11
MW-120S1	7/18/95	ug/L	131	2.117	12
MW-121S1	6/13/96	ug/L	155	2.190	13
X-14CAUG	7/18/95	ug/L	156	2.193	14
MW-125WT	6/4/96	ug/L	167	2.223	15
MW-121S1	7/18/95	ug/L	181	2.258	16
X-15BR	7/19/95	ug/L	181	2.258	17
MW-124S1	6/3/96	ug/L	241	2.382	18
MW-3B	7/27/95	ug/L	242	2.384	19
MW-119S1	6/10/96	ug/L	266	2.425 J	20
MW-119S1	7/17/95	ug/L	297	2.473	21
MW-124S1	7/19/95	ug/L	330	2.519	22
MW-128S1	5/19/00	ug/L	339	2.530	23
X-14B	7/18/95	ug/L	347	2.540	24
MW-122S2	6/4/96	ug/L	352	2.547	25
MW-123S1	7/18/95	ug/L	361	2.558	26
MW-123WT	7/18/95	ug/L	361	2.558	27
MW-3A	7/27/95	ug/L	391	2.592	28
MW-128S1	7/26/95	ug/L	437	2.640	29
MW-124WT	7/19/95	ug/L	438	2.641	30
MW-125WT	7/19/95	ug/L	463	2.666	31
X-14A	7/18/95	ug/L	583	2.766	32
MW-120WT	6/11/96	ug/L	741	2.870	33
MW-122S1	6/4/96	ug/L	766	2.884	34
MW-121WT	6/4/96	ug/L	840	2.924	35
MW-120WT	7/18/95	ug/L	856	2.932	36
MW-122S1	7/18/95	ug/L	860	2.934	37
MW-128WT	7/26/95	ug/L	918	2.963	38
MW-122S2	7/18/95	ug/L	939	2.973	39
MW-122WT	7/18/95	ug/L	939	2.973	40
MW-119WT	7/17/95	ug/L	1000	3.000	41
MW-119WT	6/10/96	ug/L	1010	3.004 J	42
MW-121WT	7/18/95	ug/L	1120	3.049	43
MW-128WT	5/19/00	ug/L	2170	3.336	44

n:	44	Shapiro-Wilk Critical:	0.844
min:	1.708	Shapiro-Wilk:	0.938
max:	3.336	Normal	
median:	2.524	t:	1.680
mean:	2.469	95% UCL:	2.574
standard deviation:	0.413	Groundwater Criteria:	3.322

Note: Criteria is for industrial, residential, and GSI scenarios.

95% UCL FOR SODIUM IN GROUNDWATER
DOWNGRADIENT OF THE SOUTHERN DRAINAGE CHANNELS

SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION

Location	Date	Units	Analytical	Log Transformed	Rank
			Results	Results	
MW-124WT	7/19/95	ug/L	5,000	3.699 U	1
MW-124WT	6/3/96	ug/L	5,000	3.699 U	2
MW-125WT	6/4/96	ug/L	16,800	4.225	3
X-15AR	7/19/95	ug/L	22,900	4.360	4
MW-125WT	7/19/95	ug/L	24,900	4.396	5
MW-123WT	7/18/95	ug/L	25,200	4.401	6
MW-124S1	7/19/95	ug/L	27,400	4.438	7
MW-124S1	6/3/96	ug/L	30,200	4.480	8
MW-121WT	6/4/96	ug/L	34,900	4.543	9
MW-123S1	7/18/95	ug/L	36,000	4.556	10
MW-122WT	7/18/95	ug/L	38,900	4.590	11
MW-121WT	7/18/95	ug/L	45,300	4.656	12
MW-120WT	6/11/96	ug/L	55,500	4.744	13
MW-120WT	7/18/95	ug/L	65,300	4.815	14
MW-119WT	7/17/95	ug/L	77,000	4.886	15
MW-119WT	6/10/96	ug/L	80,000	4.903	16
MW-119WT	6/10/96	ug/L	80,600	4.906	17
X-14A	7/18/95	ug/L	81,900	4.913	18
MW-121S1	6/13/96	ug/L	89,000	4.949	19
MW-122S1	6/4/96	ug/L	91,100	4.960	20
MW-119S1	6/10/96	ug/L	91,300	4.960	21
MW-119S1	7/17/95	ug/L	95,700	4.981	22
MW-121S1	7/18/95	ug/L	98,100	4.992	23
MW-120S1	6/11/96	ug/L	99,200	4.997	24
MW-120S1	6/11/96	ug/L	99,800	4.999	25
X-14B	7/18/95	ug/L	100,000	5.000	26
MW-122S2	6/4/96	ug/L	100,000	5.000	27
MW-3A	7/27/95	ug/L	107,000	5.029	28
MW-122S1	7/18/95	ug/L	115,000	5.061	29
MW-120S1	7/18/95	ug/L	116,000	5.064	30
MW-122S2	7/18/95	ug/L	117,000	5.068	31
X-15BR	7/19/95	ug/L	120,000	5.079	32
MW-3B	7/27/95	ug/L	127,000	5.104	33
X-14CAUG	7/18/95	ug/L	131,000	5.117	34
MW-121S2	7/18/95	ug/L	152,000	5.182	35
MW-121S2	6/13/96	ug/L	171,000	5.233	36
MW-120S2	7/18/95	ug/L	174,000	5.241	37
MW-120S2	7/18/95	ug/L	182,000	5.260	38
MW-119S2	7/17/95	ug/L	187,000	5.272	39
MW-119S2	6/10/96	ug/L	213,000	5.328	40
MW-128WT	5/19/00	ug/L	331,000	5.520	41
MW-128S1	5/19/00	ug/L	515,000	5.712	42
MW-120S2	6/11/96	ug/L	554,000	5.744	43
MW-128S1	7/26/95	ug/L	582,000	5.765	44
MW-128WT	7/26/95	ug/L	720,000	5.857	45

n:	45	Shapiro-Wilk Critical:	0.945
min:	3.699	Shapiro-Wilk:	1.000
max:	5.857		Normal
median:	4.992	t:	1.68
mean:	4.926	95% UCL:	5.04
standard deviation:	0.462	Res Groundwater Criteria:	5.08
		Ind Groundwater Criteria:	5.54

Groundwater

Aluminum

Stormwater Channels

Location	Date	Analytical Result		Rank
MW-124S1	06/03/96	100	U	
MW-124WT	07/19/95	100	U	
MW-124WT	06/03/96	100	U	
MW-124S1	07/19/95	100	U	
MW-122WT	07/18/95	100	U	
MW-123S1	07/18/95	100	U	
MW-123WT	07/18/95	100	U	
MW-125WT	07/19/95	100	U	
X-14CAUG	07/18/95	100	U	
X-15AR	07/19/95	100	U	
X-15BR	07/19/95	100	U	
X-14B	07/18/95	100	U	
MW-125WT	06/04/96	100	U	
MW-3A	07/27/95	100	U	
X-14A	07/18/95	100	U	
MW-120S1	07/18/95	100	U	
MW-120S2	07/18/95	100	U	
MW-120S2	07/18/95	100	U	
MW-119S1	07/17/95	100	U	
MW-119S2	07/17/95	100	U	
MW-119WT	07/17/95	100	U	
MW-121WT	07/18/95	100	U	
MW-122S1	07/18/95	100	U	
MW-122S2	07/18/95	100	U	
MW-120WT	07/18/95	100	U	
MW-121S1	07/18/95	100	U	
MW-121S2	07/18/95	100	U	
MW-3B	07/27/95	114	=	1
MW-128WT	07/26/95	448	=	2
MW-128S1	07/26/95	502	=	3

Summation

1,064

n :	3.00
min:	114.00
max:	502.00
median:	448.00
mean:	354.67
standard deviation:	171.60

A :	274.35
A^2:	75,270.56
sum (xi - mean)^2:	88,338.67
Shapiro Wilk:	0.85
Critical Value:	0.77
Result:	Normal

95% Upper C.I. : 113.44
Groundwater Criteria: 240.00

Groundwater

Aluminum

Former WRS Channels

Location	Date	Analytical Result	Log Transformed Analytical Result		Rank
MW-105WT	07/12/95	100	2	U	
MW-106S1	07/12/95	100	2	U	
MW-106S2	07/12/95	100	2	U	
MW-106WT	07/12/95	100	2	U	
MW-107S1	06/07/96	134	2.1271	U	
MW-107S1	07/12/95	100	2	U	
MW-107S2	07/12/95	100	2	U	
MW-107S2	06/07/96	100	2	U	
MW-107WT	06/07/96	100	2	U	
MW-108S1	06/08/96	100	2	U	
MW-108S2	07/13/95	100	2	U	
MW-108WT	06/08/96	100	2	U	
MW-108WT	07/13/95	100	2	U	
MW-109WT	06/12/96	100	2	U	
MW-109WT	07/13/95	100	2	U	
MW-110WT	06/12/96	100	2	U	
MW-149WT	06/12/96	100	2	U	
MW-5A	07/13/95	100	2	U	
MW-5A	06/08/96	100	2	U	
MW-5B	07/13/95	100	2	U	
MW-5B	06/08/96	100	2	U	
MW-6A	06/09/96	100	2	U	
MW-6B	06/09/96	100	2	U	
MW-107WT	07/12/95	110	2.0414		1
MW-108S1	07/13/95	187	2.2718		2
MW-108S2	06/08/96	225	2.3522		3
MW-6B	07/13/95	2190	3.3404		4

Summation

10.0059

n :	4
min:	110
max:	2190
median:	2.312012062324
mean:	2.50
standard deviation:	0.50

A :	0.91
A^2:	0.82
sum (xi - mean)^2:	0.99
Shapiro Wilk:	0.829
Critical Value:	0.748
Result:	Normal

95% Upper C.I. (log transformed): 1.4106

95% Upper C.I. (untransformed): 25.74

GSI Groundwater Criteria: 240.00

Groundwater

Arsenic

Former WRS Channels

Location	Date	Analytical Result	Log Transformed Analytical Result		Rank
MW-107S1	06/07/96	5	0.6990	U	
MW-107S2	06/07/96	5	0.6990	U	
MW-107WT	06/07/96	5	0.6990	U	
MW-108S1	06/08/96	5	0.6990	U	
MW-108S2	07/13/95	1	0.0000	U	
MW-108S2	06/08/96	5	0.6990	U	
MW-108WT	06/08/96	5	0.6990	U	
MW-108WT	07/13/95	1	0.0000	U	
MW-109WT	06/12/96	5	0.6990	U	
MW-5A	06/08/96	5	0.6990	U	
MW-5A	07/13/95	1	0.0000	U	
MW-5B	07/13/95	1	0.0000	U	
MW-5B	06/08/96	5	0.6990	U	
MW-6A	06/09/96	5	0.6990	U	
MW-6B	07/13/95	1	0.0000	U	
MW-6B	06/09/96	5	0.6990	U	
MW-107S2	07/12/95	1	0.0000	U	
MW-107S1	07/12/95	1.1	0.0414		1
MW-106S1	07/12/95	1.2	0.0792		2
MW-107WT	07/12/95	1.6	0.2041		3
MW-105WT	07/12/95	2.3	0.3617		4
MW-106S2	07/12/95	2.5	0.3979		5
MW-6A	07/13/95	4.5	0.6532		6
MW-110WT	06/12/96	5.6	0.7482		7
MW-108S1	07/13/95	11.4	1.0569		8
MW-109WT	07/13/95	16.9	1.2279		9
MW-106WT	07/12/95	30.6	1.4857		10
MW-149WT	06/12/96	230	2.3617		11

Summation

8.6180

n :	11
min:	1.1
max:	230
median:	0.65321251378
mean:	0.78
standard deviation:	0.67

A :	2.12
A^2:	4.50
sum (xi - mean)^2:	4.98
Shapiro Wilk:	0.903
Critical Value:	0.85
Result:	Normal

95% Upper C.I. (log transformed): 0.6120

95% Upper C.I. (untransformed): 4.09

GSI Groundwater Criteria: 150.00

Groundwater

Iron

Stormwater Channels

Location	Date	Analytical Result	Rank
MW-125WT	06/04/96	100.00	UJ
X-15BR	07/19/95	100.00	U
MW-125WT	07/19/95	100.00	U
MW-124WT	07/19/95	100.00	U
MW-124WT	06/03/96	100.00	J
X-15AR	07/19/95	114.00	=
MW-124S1	06/03/96	1,340.00	J
MW-124S1	07/19/95	1,770.00	=
MW-120S2	06/11/96	3,890.00	=
MW-121S2	07/18/95	4,090.00	=
MW-121S2	06/13/96	4,200.00	J
MW-119S2	07/17/95	4,580.00	=
MW-120S2	07/18/95	4,900.00	=
MW-120S2	07/18/95	4,980.00	=
MW-119S2	06/10/96	6,510.00	J
MW-120S1	06/11/96	7,140.00	=
MW-120S1	06/11/96	7,160.00	=
MW-123S1	07/18/95	7,340.00	=
MW-120S1	07/18/95	7,840.00	=
X-14CAUG	07/18/95	8,390.00	=
MW-119S1	06/10/96	9,200.00	J
MW-121S1	06/13/96	9,460.00	J
MW-119S1	07/17/95	9,740.00	=
MW-122S2	06/04/96	9,830.00	J
MW-123WT	07/18/95	9,880.00	=
MW-3A	07/27/95	10,200.00	=
MW-121S1	07/18/95	10,500.00	=
MW-122S2	07/18/95	10,800.00	=
X-14A	07/18/95	11,800.00	=
X-14B	07/18/95	13,400.00	=
MW-119WT	07/17/95	13,700.00	=
MW-3B	07/27/95	14,000.00	=
MW-122S1	06/04/96	14,300.00	J
MW-122S1	07/18/95	14,600.00	=
MW-119WT	06/10/96	14,600.00	J
MW-119WT	06/10/96	14,700.00	J
MW-120WT	06/11/96	15,500.00	=
MW-122WT	07/18/95	16,600.00	=
MW-120WT	07/18/95	17,300.00	=
MW-121WT	06/04/96	20,200.00	J
MW-121WT	07/18/95	22,700.00	=
MW-128WT	07/26/95	24,500.00	=
MW-128S1	07/26/95	31,900.00	=

Summation

413,754.00

n:	39
min:	100
max:	31,900
median:	9,830
mean:	10,885.63
standard deviation:	6,727.10

A : 40,887.41
A^2: 1,671,780,296.51
sum (xi - mean)^2: 1,767,884,399.40

Shapiro Wilk:	0.946
Critical Value:	0.939
Result:	Normal

95% Upper C.I. : 11,438.23
Groundwater Criteria: 13,000.00

Note: Criteria is for both industrial and residential scenarios

Attachment I RI/FS Work Plan Data Tables and Select Figures

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e n g i n e e r s & s c i e n t i s t s

Work Plan

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4-11	Priority Pollutant Analytical Results, August 1980
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4-13	Summary of Volatile Organic Compound Groundwater Analytical Results, April 1988
4-14	Summary of Groundwater PCB Analytical Results, 1987 to 1992
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4-18	Summary of Surface Water Analytical Data, 1987 and 1988 Sampling Events
4-19	Summary of Surface Water PCB Analytical Data, 1980 to 1995
4-20	Water Recirculation System and Saginaw River Analytical Results, 1990 to 1995
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4-22	Summary Statistics of Potentiometric Surface Elevation Data, 1979 to 1994

TABLE 2-1
CLIMATIC DATA FOR EAST-CENTRAL REGION OF MICHIGAN¹

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameter	Value ²
Average Temperature (Summer)	68.7°F
Average Daily Minimum/Maximum Temperature (Summer)	58.1/79.3°F
Extreme Minimum/Maximum Temperature (Summer)	33/111°F
Average Temperature (Winter)	23.1°F
Average Daily Minimum/Maximum Temperature (Winter)	16.6/29/6°F
Extreme Minimum/Maximum Temperature (Winter)	-23/67°F
Total Annual Precipitation	30.41 inches
Heaviest 24-Hour Rainfall	5.51 inches
Average Seasonal Snowfall	40.7 inches
Average Relative Humidity ³	71%
Direction of Prevailing Winds ³	Southwest
Maximum Average Monthly Wind Speed ³	9.8 mph

Notes:

¹Reference: Midwest Climate Center, 1993.

²Data gathered at the Saginaw Airport in Saginaw, Michigan, except where noted.

³Data gathered in Flint, Michigan

TABLE 2-2

SOIL BORING INVENTORY AND DATA SUMMARY

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Location Number	Date Installed	Grade Elevation (feet, MSL)	Boring Depth (feet)	Boring Penetrates Fill (yes or no)	Fill Thickness (feet)
B-1-69	1969	NA	40	yes	13
B-2-69	1969	NA	46	yes	17
B-3-69	1969	NA	50	yes	17
B-4-69	1969	NA	30	yes	6.5
B-5-69	1969	NA	50	yes	10
B-6-69	1969	NA	50	yes	3
B-3-73	02/24-02/27/73	NA	40	no	0
B-4-73	02/24-02/26/73	NA	40	no	0
B-5-73	02/27/73	NA	40	no	0
B-6-73	02/27/73	NA	40	yes	3
B-101-75	01/16/75	582.5 *	10	yes	5
B-101A-75	02/13/75	581.7 *	6	no	0
B-102-75	01/16/75	583.0 *	12	yes	7.5
B-102A-75	02/13/75	581.8 *	7.5	no	0
B-103-75	01/16/75	596.5 *	18	yes	12.5
B-103A-75	02/14/75	586 *	8	no	0
B-104-75	01/16/75	596.5 *	16	no	16
B-104A-75	02/14/75	586 *	9	no	0
B-105-75	01/16/75	597.5 *	20	no	20
B-105A-75	02/14/75	581.8 *	9	no	0
B-1-77	12/09/77	NA	25	yes	8
B-2-77	12/09/77	NA	25	yes	9
B-3-77	12/09/77	NA	25	no	0
B-4-77	12/14/77	NA	25	yes	3
B-5-77	12/14/77	NA	25	yes	3.5
B-6-77	12/08/77	NA	25	yes	8
B-7-77	12/08/77	NA	25	yes	6
B-8-77	12/08/77	NA	25	yes	3
B2-B33	09/05/90	592.5	6	no	6
B-1-91	06/13-06/14/91	NA	85	yes	12
B-2-91	06/14-06/17/91	NA	85	yes	13
N-1	11/08/77	583.5	10	no	0
N-2	11/08/77	583.7	20	no	0
N-3	11/09/77	583.7	25	no	0
N-4	11/10/77	581.9	20	no	0
N-5	11/09/77	583.8	20	no	0
N-6	11/09/77	583.8	20	no	0
N-7	11/09/77	582.9	20	no	0
N-8	11/09/77	583.0	20	no	0
N-9	11/09/77	583.4	15	no	0
N-10	11/10/77	583.8	6.5	no	0
N-11	11/10/77	582.8	20	no	0
N-12	11/10/77	583.5	20	no	0
N-13	11/10/77	583.3	23	no	0

TABLE 2-2

SOIL BORING INVENTORY AND DATA SUMMARY

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Location Number	Date Installed	Grade Elevation (feet, MSL)	Boring Depth (feet)	Boring Penetrates Fill (yes or no)	Fill Thickness (feet)
N-14	11/10/77	581.5	20	no	0
N-15	11/10/77	582.5	20	no	0
N-16	11/10/77	583.1	20	no	0
N-17	11/10/77	NA	20	no	0
N-18	11/10/77	582.1	20	no	0
N-19	11/10/77	581.4	20	no	0
N-20	11/10/77	581.4	20	no	0
N-21	11/10/77	581.5	20	no	0
P1-B42	09/07/90	593	6	no	6
P1-B43	09/07/90	593	6	no	6
P1-B44	09/07/90	593	6	no	6
P1-B45	09/07/90	593	6	no	6
P1-B46	09/07/90	593	7	no	7
P2-B28	09/04/90	591	6	yes	5
P2-B29	09/04/90	592.5	6	no	6
P2-B30	09/05/90	590.5	6	no	6
P2-B31	09/05/90	592	6	yes	5
P2-B32	09/05/90	592	6	no	6
P3-B13	08/30/90	595.5	6	yes	5
P3-B14	08/30/90	595.5	6	yes	1.2
P3-B15	08/30/90	595.5	6	no	0
SH-1	06/04/90	589	35	no	0
SH-2	06/04/90	595	15	no	0
SH-3	06/04/90	593	50	no	0
SH-4	06/01/90	593	60	no	0
SH-5	06/01/90	593	55	no	0
SH-6	05/31/90	593	65	no	0
SH-7	06/08/90	585	20	no	0
SH-8	06/05/90	584	55	no	0
SH-9	06/05/90	585	50	no	0
SH-10	06/07/90	589	55	no	0
SH-11	06/06-06/07/90	589	45	no	0
SH-12	06/06/90	590	35	no	0
SH-13	06/06/90	590	35	yes	1.5
SH-14	06/04/90	593	35	no	0
T1-B5	08/28/90	594	13	yes	12
T1-B6	08/28/90	594	13	no	13
T1-B7	08/29/90	594	13	no	13
T1-B8	08/29/90	594	13	no	13
T1-B9	08/29/90	595	12	yes	11.5
T2-B1	08/28/90	594.5	10	no	10
T2-B2	08/28/90	594.5	10	no	10
T2-B3	08/28/90	594.5	10	no	10
T2-B4	08/28/90	594.5	10	no	10

TABLE 2-2

SOIL BORING INVENTORY AND DATA SUMMARY

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Location Number	Date Installed	Grade Elevation (feet, MSL)	Boring Depth (feet)	Boring Penetrates Fill (yes or no)	Fill Thickness (feet)
T2-B47	09/07/90	594.5	10	no	10
T2-B48	09/07/90	594.5	10	no	10
T2-B57	09/11/90	594.5	10	no	10
T3-B24	08/31/90	593.5	18	yes	14
T3-B25	09/04/90	593.5	9.5	no	9.5
T3-B49	09/09-09/10/90	593.5	14	no	14
T3-B50	09/10/90	593.5	15	no	15
T3-B51	09/10/90	593.5	15	no	15
T4-B26	09/04/90	593.5	9.5	no	9.5
T4-B27	09/04/90	593.5	16	no	16
T4-B103	07/10/92	NA	15	no	0
T4-B104	07/10/92	NA	20	no	0
T4-B105	07/10/92	NA	20	no	0
T4-B106	07/10/92	NA	15	no	0
T4-B107	07/13/92	NA	15	no	0
T4-B108	06/13/92	NA	11	no	0
T5-B22	08/31/90	593.5	9	yes	4
T5-B23	08/31/90	593.5	9	yes	3
T5-B52	09/10/90	593.5	14	no	14
T5-B53	09/10/90	593.5	14	no	14
T5-B54	09/11/90	593.5	14	no	14
T5-B60	10/03/90	593.5	14	no	14
T5-B61	10/03/90	593	16	yes	15
T6-B10	08/29/90	601	17	yes	5.5
T6-B11	08/29/90	601	16	yes	12.5
T6-B12	08/30/90	601	15	no	0
T6-B58	10/03/90	601	16	yes	1.5
T6-B59	10/03/90	601	16	yes	1.5
T7-B36	09/05/90	593	15	yes	10
T7-B37	09/05/90	593	15	yes	8.5
T7-B38	09/05/90	593	15	yes	11.5
T7-B39	09/06/90	593	15	yes	14
T7-B40	09/06/90	593	15	yes	2.5
T7-B41	09/06/90	593	15	yes	8.5
T7-B55	09/11/90	593	15	no	15
T7-B56	09/11/90	593	15	no	15
T7-B62	10/03/90	593	16	no	16
T7-B63	10/04/90	592.5	15	yes	14
T7-B109	07/13/92	NA	15	no	0
T7-B110	07/13/92	NA	15	no	0
T7-B111	07/13/92	NA	15	no	0
T7-B112	07/13/92	NA	15	no	0

TABLE 2-2

SOIL BORING INVENTORY AND DATA SUMMARY

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Location Number	Date Installed	Grade Elevation (feet, MSL)	Boring Depth (feet)	Boring Penetrates Fill (yes or no)	Fill Thickness (feet)
T8-B16	08/30/90	595	10	yes	7
T8-B17	08/30/90	594.5	10	no	0
T9-B18	08/30/90	594.5	10	yes	5
T9-B19	08/30/90	594.5	10	yes	5
T9-B20	08/30/90	595	16	yes	5.5
T9-B21	08/31/90	595.5	16	yes	8
T10-B34	09/05/90	592.5	10	yes	6
T10-B35	09/05/90	592.5	11	no	0
TB-1	03/25-03/26/68	NA	81	yes	5
TB-2	03/27-03/28/68	NA	80.6	yes	8
TB-3	04/01-04/03/68	NA	90.3	yes	4
TB-4	03/31-04/01/68	NA	51.5	yes	3
TB-5	04/03-04/04/68	NA	86	yes	4
TB-6	04/05-04/06/68	NA	85.3	yes	4
TB-7	04/06-04/07/68	NA	80	yes	3.5
TB-8	03/30/68	NA	81	yes	7.5
TB-9	04/01-04/02/68	NA	80.5	yes	4.0
TB-10	03/30/68	NA	96	yes	2.5
TB-11	03/27/68	NA	56.5	yes	4.8
TB-12	03/29-04/09/68	NA	81.3	yes	5.0
TH-1	1963	NA	50	yes	17
TH-2	1963	NA	50	yes	18.8
TH-3	1963	NA	85	yes	18.3
TH-4	1963	NA	50	yes	14
TH-5	1963	NA	84	yes	19.6
TH-6	1963	NA	50	yes	17
TH-7	1963	NA	50	yes	19
TH-8	1963	NA	50	yes	16.5
TH-9	1963	NA	50	yes	17.3
TH-10	1963	NA	50	yes	14
TH-11	1963	NA	85	yes	18.8
TW-1	09/07/89	NA	15	yes	14
TW-2	09/07/89	NA	15	yes	13
TW-3	09/07/89	NA	15	yes	14.5
TW-4	09/07/89	NA	15	yes	14.5
TW-1A	09/05/89	NA	16	yes	15
TW-1B	09/05/89	NA	16	yes	15
TW-1C	09/05/89	NA	16	yes	14.5
TW-1D	09/05/89	NA	19	yes	17
TW-1E	09/06/89	NA	16	yes	15
TW-2A	09/06/89	NA	20	yes	17
TW-2B	09/06/89	NA	20	yes	17
TW-2C	09/06/89	NA	16.5	yes	15.5
TW-2D	09/06/89	NA	13.5	no	13.5

TABLE 2-2

SOIL BORING INVENTORY AND DATA SUMMARY

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Location Number	Date Installed	Grade Elevation (feet, MSL)	Boring Depth (feet)	Boring Penetrates Fill (yes or no)	Fill Thickness (feet)
UST-3B1	08/31/90	593.5	18	yes	14
UST-3B2	09/04/90	593.5	9.5	yes	9
UST-4B3	09/04/90	593.5	10	yes	9.5
UST-4B4	09/04/90	593.5	16	no	16
UST-5B5	08/31/90	593.5	9	yes	4
UST-5B6	08/31/90	593.5	9	yes	3
UST-3B7	09/09-09/10/90	593.5	14	no	14
UST-3B8	09/10/90	593.5	15	no	15
UST-3B9	09/10/90	593.5	15	no	15
UST-5B10	09/10/90	593.5	14	no	14
UST-5B11	09/10/90	593.5	14	no	14
UST-5B12	09/11/90	593.5	14	no	14
UST-5B13	10/03/90	593.5	14	no	14
UST-5B14	10/03/90	593.5	16	yes	15
UST-7B15	09/05/90	593.0	15	yes	10
UST-7B16	09/05/90	593.0	15	yes	8.5
UST-7B17	09/05/90	593.0	15	yes	11.5
UST-7B18	09/06/09	593.0	14	no	14
UST-7B19	09/06/09	593.0	15	yes	2.5
UST-7B20	09/06/09	593.0	15	yes	8.5
UST-7B21	09/11/90	593.0	15	no	15
UST-7B22	09/11/90	593.0	15	no	15
UST-7B23	10/03/90	593.0	16	no	16
UST-7B24	10/04/90	592.5	15	yes	14
UST-8B25	08/30/90	595	10	yes	7
UST-8B26	08/29/90	595	12	yes	11.5
UST-8B27	08/30/90	595	16	yes	5.5
UST-8B28	08/31/90	595.5	16	yes	3
P-1 **	11/24/75	NA	6.0	yes	1
P-2 **	11/24/75	NA	4.5	no	0
P-3 **	11/24/75	NA	8.0	no	0
P-4 **	11/24/75	NA	12.5	no	0
P-5 **	11/24/75	NA	12	no	0
P-6 **	11/24/75	NA	6	no	0
P-7 **	11/24/75	NA	8	no	0
P-8 **	11/24/75	NA	9	no	0
P-9 **	11/24/75	NA	12	no	0
P-10 **	11/24/75	NA	10	no	0
P-11 **	11/24/75	NA	10	no	0
P-12 **	11/24/75	NA	10	yes	2

Notes:

MSL - Mean sea level.

NA - Not available.

* - Value is approximate.

** - Indicates test pit.

TABLE 2-3

MONITORING WELL INVENTORY AND DATA SUMMARY

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Location Number	Date Installed	Well Construction	Grade Elevation (feet, MSL)	Top of Casing Elevation (feet)	Boring Depth (feet)	Well Depth (feet)	Screen Interval (feet)	Screened Formation	Well Penetrates Fill (yes or no)	Fill Thickness (feet)
B-1	11/27/79	1.25" PVC	NA	595.49	25	10	5-10	Fill and rubble to silt	yes	8
B-2	11/28/79	1.25" PVC	NA	596.61	30	11	6-11	Fill and rubble to fine sand	yes	7
B-3	11/28/79	1.25" PVC	NA	608.82	30	14	9-14	Fill to fine black sand to silt	yes	11
B-4A	11/27/79	1.25" PVC	NA	608.21	30	30	25-30	Fine silt	yes	18
B-4B	11/27/79	1.25" PVC	NA	609.40	41	41	36-41	Fine to medium sand	yes	18
B-5	NA	1.25" PVC	NA	595.56	30	15	10-15	Soft black clay	yes	10
B-6	11/26/79	1.25" PVC	NA	596.53	35	14	9-14	Fill and rubble to black fine sand	yes	13
B-7	11/28/79	1.25" PVC	NA	593.35	30	14	9-14	Fine sand and silt to fine to medium sand	yes	7
MW-1A	03/23/88	2" PVC	584.3	586.85	35	15	5-15	Clayey silt to fine sand	no	0
MW-1B	03/23/88	2" PVC	584.3	586.70	35	25	20-25	Gray silt to clayey silt	no	0
MW-2A	04/28/88	2" PVC	NA	586.37	47	14	4-14	Silt, some sand to silt to sand	no	0
MW-2B	03/23/88	2" PVC	584.0 *	586.40	47	46	36-46	Sand, some gravel to clay	no	0
MW-3A	03/24/88	2" PVC	583.1	586.24	30	12.5	2.5-12.5	Silty clay to fine sand	yes	1
MW-3B	03/24/88	2" PVC	583.1	586.31	30	28	23-28	Fine sand	yes	1
MW-4	03/29/88	2" PVC	597.1	598.98	13.5	12	2-12	Silt and fine sand to clay, trace silt	yes	4
MW-5A	03/23/88	2" PVC	590.4	592.72	35	15	5-15	Foundry sand to silt, oily sheen	yes	7
MW-5B	03/23/88	2" PVC	590.4	592.94	35	30	25-30	Fine to medium sand	yes	7
MW-6A	03/22/88	2" PVC	590.0	592.61	40	16	6-16	Foundry sand to silt to sand	yes	6.5
MW-6B	03/22/88	2" PVC	590.0	597.47	40	32.5	27.5-32.5	Medium sand, trace fine gravel	yes	6.5
W-1***	05/10/78	Wellpoint	588.6	NA	20	11	NA	Silty clay	yes	6
W-2***	05/10/78	Wellpoint	588.2	NA	15	7	NA	Clayey sandy silt	no	0
W-3***	05/10/78	Wellpoint	581.9	NA	20	10	NA	Layered clayey silt and fine sand	no	0
W-4***	05/10/78	Wellpoint	582.9	NA	12	10	NA	NA	unknown	0
W-5***	05/11/78	Wellpoint	581.0	NA	50	9	NA	Clayey silt, trace fine sand	no	0
W-6***	05/10/78	Wellpoint	583.3	NA	20	11	NA	Silty clay, trace sand and gravel	no	0
W-7***	05/09/78	Wellpoint	582.9	NA	20	11	NA	Clayey silt, some fine sand	no	0
W-8***	05/10/78	Wellpoint	581.6	NA	20	7	NA	Silty clay with sand seams	no	0
W-9***	05/10/78	Wellpoint	582.2	NA	20	7	NA	Layers silty clay and sand	no	0
W-10***	05/09/78	Wellpoint	582.2	NA	50	9	NA	Layered clayey silt and fine sand	no	0
X-1A	06/02/80	2" PVC	590.7 *	592.52	50	12.7	9.7-12.7	Fill	no	14.5
X-1B	06/02/80	2" PVC	590.7 *	592.82	50	23.7	20.7-23.7	Silty clay, trace sand and gravel	yes	14.5
X-1C	06/02/80	2" PVC	590.7 *	592.88	50	48.7	45.7-48.7	Silty clay, trace sand and gravel	yes	14.5
X-2A	06/02/80	2" PVC	592.1 *	594.24	50	11.6	8.6-11.6	Fill to silty sand and clay	yes	12
X-2B	06/02/80	2" PVC	592.1 *	594.21	50	25.1	22.1-25.1	Fine sand, trace silt	yes	12
X-2C	06/02/80	2" PVC	592.1 *	594.25	50	46.1	43.1-46.1	Fine to coarse sand and silty clay	yes	12
X-3A	06/03/80	2" PVC	594.0 *	594.89	50	20.0	17-20	Fill to silty clay, trace sand	yes	18
X-3B	06/03/80	2" PVC	594.0 *	595.12	50	37.0	34-37	Fine to medium sand, trace silt	yes	18

TABLE 2-3

MONITORING WELL INVENTORY AND DATA SUMMARY

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Location Number	Date Installed	Well Construction	Grade Elevation (feet, MSL)	Top of Casing Elevation (feet)	Boring Depth (feet)	Well Depth (feet)	Screen Interval (feet)	Screened Formation	Well Penetrates Fill (yes or no)	Fill Thickness (feet)
X-4A	06/04/80	2" PVC	584.2 *	584.12	40	9.2	6.2-9.2	Fine sand, some silt to trace silt	no	0
X-4B	06/04/80	2" PVC	584.2 *	584.59	40.2	40.2	37.2-40.2	Silty clay, trace sand	no	0
X-5A	06/03/80	2" PVC	595.9 *	597.68	45	11.9	8.9-11.9	Fill	no	17
X-5B	06/03/80	2" PVC	595.9 *	597.20	45	18.4	15.4-18.4	Fill to sand, trace silt	yes	17
X-5C	06/03/80	2" PVC	595.9 *	597.48	45	44.4	41.4-44.4	Silty clay, trace sand and gravel	yes	17
X-6	** 07/30/85	2" PVC	645.9 *	NA	80	80.0	5-80	Fill to organic silty clay	yes	72
X-7A	06/10/80	2" PVC	594.6 *	595.89	40	18.6	15.6-18.6	Silty clay, trace sand	yes	12
X-7B	06/10/80	2" PVC	594.6 *	595.95	40	35.6	32.6-35.6	Fine sand, trace silt	yes	12
X-8A	*** 06/04/80	2" PVC	581.9 *	584.02	50	8.9	5.9-8.9	Silty clay, trace sand to fine sand	no	0
X-8B	*** 06/04/80	2" PVC	581.9 *	583.45	50	28.9	25.9-28.9	Fine sand, trace silt	no	0
X-8C	*** 06/04/80	2" PVC	581.9 *	583.02	50	48.9	45.9-48.9	Silty clay	no	0
X-9A	06/03/80	2" PVC	585.1 *	585.81	40	12.1	9.1-12.1	Fine sand, trace silt	no	0
X-9B	06/03/80	2" PVC	585.1 *	587.15	40	39.1	36.1-39.1	Silty clay, trace sand	no	0
X-10A	06/06/80	2" PVC	581.7 *	583.18	50	10.7	7.7-10.7	Silty clay to fine to medium sand, trace silt	no	0
X-10B	06/06/80	2" PVC	581.7 *	583.37	50	28.7	25.7-28.7	Fine to medium sand, trace silt	no	0
X-10C	06/06/80	2" PVC	581.7 *	582.65	50	48.7	45.7-48.7	Silty clay	no	0
X-11A	06/05/80	2" PVC	584.8 *	585.05	40	4.8	1.8-4.8	Clayey topsoil to fine sand	no	0
X-11B	06/05/80	2" PVC	584.8 *	585.89	40	43.8	40.8-43.8	No description	no	0
X-12A	06/04/80	2" PVC	582.7 *	584.06	50	4.7	1.7-4.7	Sandy topsoil to fine sand	no	0
X-12B	06/04/80	2" PVC	582.7 *	585.74	50	44.7	41.7-44.7	Silty clay, trace sand	no	0
X-13A	06/05/80	2" PVC	581.9 *	583.08	40	8.8	5.8-8.8	Fine sand, trace silt with clay lenses	no	0
X-13B	06/05/80	2" PVC	581.9 *	583.10	40	22.9	19.9-22.9	Fine sand, trace silt	no	0
X-14A	06/05/80	2" PVC	582.3 *	583.68	50	5.8	2.8-5.8	Clayey topsoil to fine sand	no	0
X-14B	06/05/80	2" PVC	582.3 *	583.72	50	24.3	21.3-24.3	Fine to medium sand, trace silt and clay	no	0
X-15A	06/05/80	2" PVC	583.8 *	585.79	40	8.8	5.8-8.8	Fine to medium sand, to silty clay	no	0
X-15B	06/05/80	2" PVC	583.8 *	585.86	40	38.8	35.8-38.8	Silty clay	no	0
X-16A	02/20/79	2" PVC	585.8 *	589.61	25	8.8	5.8-8.8	Fine sand, trace silt	no	0
X-16B	02/20/79	2" PVC	585.8 *	588.83	25	23.4	20.4-23.4	Silty clay, some sand	no	0
X-17	02/20/79	2" PVC	585.8 *	589.20	25	7.6	4.6-7.6	Silty clay, some sand	no	0
X-18	02/20/79	2" PVC	586.2 *	590.12	25	7.2	4.2-7.2	Sandy clay, some silt, occasional gravel	no	0
X-19A	02/21/79	2" PVC	586.7 *	588.58	25	9.2	6.2-9.2	Silty clay, trace to some sand	no	0
X-19B	02/21/79	2" PVC	586.7 *	589.88	25	23.7	20.7-23.7	Silty clay, trace to some sand	no	0
X-20	02/21/79	2" PVC	586.4 *	590.48	25	7.7	4.7-7.7	Fine sand, trace silt, trace clay	no	0

TABLE 2-3

MONITORING WELL INVENTORY AND DATA SUMMARY

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Location Number	Date Installed	Well Construction	Grade Elevation (feet, MSL)	Top of Casing Elevation (feet)	Boring Depth (feet)	Well Depth (feet)	Screen Interval (feet)	Screened Formation	Well Penetrates Fill (yes or no)	Fill Thickness (feet)
MW-UST4-1	06/01/94	2" PVC	97.10 ¹	97.62 ¹	16	14.5	9.5-14.5	Fine sand	yes	1
MW-UST4-2	06/07/94	2" PVC	96.20 ¹	96.72 ¹	15	15.0	10.0-15.0	Fine to medium sand	yes	5
MW-UST4-3	06/02/94	2" PVC	96.80 ¹	97.13 ¹	16	15.3	10.3-15.3	Fine to medium sand, trace gravel	no	0
MW-UST4-4	06/02/94	2" PVC	97.05 ¹	97.36 ¹	16	15.3	10.3-15.3	Fine to medium sand	yes	10
MW-UST7-1	06/03/94	2" PVC	96.09 ²	96.39 ²	10	10.0	5.0-10.0	Fine to medium sand	no	0
MW-UST7-2	06/03/94	2" PVC	96.32 ²	96.62 ²	10.5	10.3	5.3-10.3	Sand and clay, layered	yes	10
MW-UST7-3	06/07/94	2" PVC	96.08 ²	96.58 ²	12	12.0	7.0-12.0	Fine to medium sand	no	0
MW-UST7-4	06/07/94	2" PVC	95.44 ²	95.94 ²	12	12.0	7.0-12.0	Fill	yes	12
MW-UST7-5	06/07/94	2" PVC	95.36 ²	95.86 ²	12	12.0	7.0-12.0	Fill, then fine sand	yes	7
MW-UST7-6	06/07/94	2" PVC	95.26 ²	95.77 ²	12	12.0	7.0-12.0	Medium sand, some gravel	yes	5
MW-UST8-1	05/25/94	2" PVC	97.46 ³	97.17 ³	8	6.2	1.2-6.2	Fine sand	yes	0.5
MW-UST8-2	05/25/94	2" PVC	97.82 ³	97.52 ³	7	6.1	1.1-6.1	Fine sand	yes	4
MW-UST8-3	05/31/94	2" PVC	97.53 ³	97.03 ³	6	6.0	1.0-6.0	Sand and clay, layered	no	0
MW-UST8-5	07/06/94	2" PVC	97.48 ³	97.25 ³	16	11.0	6.0-11.0	Fine sand, clay layer at 10'	no	0

Notes:

MSL - Mean sea level.

NA - Not available.

* - Value is approximate.

** - Piezometer originally installed 6/10/80 to depth of 80 feet.

*** - X-8 A, B, C removed between 1980 and 1987; wellpoints W-1 through W-10 removed.

¹ Arbitrary elevation relative to other Former Tank #4 Area wells.² Arbitrary elevation relative to other Former Tank #7 Area wells.³ Arbitrary elevation relative to other Former Tank #8 Area wells.

TABLE 3-1

CHEMICAL CHARACTERIZATION OF
PRIMARY SETTLING POND DREDGED MATERIAL
SAMPLED NOVEMBER 30, 1992

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameters															
Inorganics (mg/kg)	PDFS #22	PDFN #1	PDFN #7	PDFN #11	PDFN #20	PDBS #5	PDBS #6	PDBN #19	PDBN #27	PDBS #19	PDBS #27	PDBN #29	PDBN #30	Detection Limit	
Arsenic Total	2.2	1.2	0.97	1.5	2.3	1.9	2.4	2.5	2.6	1.2	1.2	2.1	2.4	0.2	
Barium Total	38	13	11	20	34	26	30	44	34	10	13	38	41	0.5	
Cadmium Total	0.4	0.07	0.065	0.13	0.31	0.24	0.25	0.6	0.11	0.07	0.07	0.48	0.49	0.025	
Calcium Total	330	1,100	1,200	1,800	2,800	2,200	2,400	3,500	2,500	1,200	1,300	2,600	2,800	10	
Chromium Total	12	10	7	10	12	10	10	15	14	8	9	13	14	1	
Cobalt Total	2	1	--	1	2	2	2	3	2	1	1	2	2	1	
Copper Total	19	10	6	11	15	14	13	17	13	8	6	15	17	1	
Cyanide Total	0.7	--	--	--	0.9	0.9	3.6	1.2	--	--	--	0.5	0.6	0.5	
Ignitability	>95	>95	>95	>95	>95	>95	>95	>95	>95	>95	>95	>95	>95	NA	
Lead Total	20	3.8	7.7	8	20	10	20	30	8	4.2	4.2	30	30	5	
Lithium Total	--	--	--	--	--	--	--	--	--	--	--	--	--	5	
Magnesium Total	1,700	570	480	860	1,700	1,100	1,200	2,000	1,500	520	740	1,400	1,500	25	
Manganese Total	350	160	130	210	330	280	280	350	270	310	170	320	330	0.5	
Mercury Total	--	--	--	--	--	--	--	--	--	--	--	--	--	0.25	
Molybdenum Total	--	--	--	--	--	5	10	--	--	--	--	--	--	5	
Nickel Total	9	7	5	7	9	7	8	10	10	6	7	8	10	2	
Percent Solids	66	91	89	84	70	75	67	67	77	88	92	70	65	1	
Phosphorus Total	--	--	--	7.8	--	--	--	--	--	--	--	--	--	2.5	
Potassium Total	500	200	200	300	400	300	300	500	400	200	200	400	400	50	
Reactivity, cyanide	--	--	--	--	--	--	--	--	--	--	--	--	--	10	
Reactivity, sulfide	--	--	--	--	--	--	--	--	--	--	--	--	--	100	
Selenium Total	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2	
Silver Total	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2	
Sodium Total	360	100	100	200	340	200	270	400	260	100	200	320	330	25	
Zinc Total	530	31	31	86	520	370	230	490	62	52	44	400	450	0.5	
ASTM Leachate Analyses (mg/L)	PDFS #22	PDFN #1	PDFN #7	PDFN #11	PDFN #20	PDBS #5	PDBS #6	PDBN #19	PDBN #27	PDBS #19	PDBS #27	PDBN #29	PDBN #30	Detection Limit	
Ammonia	--	--	--	--	--	--	0.3	--	--	--	--	--	--	0.1	
Biochemical Oxygen Demand (BOD)	6	3	4	4	3	3	--	--	9	3	7	--	--	3	
Chloride	--	--	--	--	--	--	--	--	--	--	--	--	--	2	
Chromium, Hexavalent	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05	
Fluoride	0.5	0.2	0.3	0.3	0.4	0.4	0.4	0.3	0.5	0.2	0.3	0.4	0.3	0.1	
Hypochlorite	0.5	0.4	0.2	0.2	0.2	0.2	--	0.2	0.2	0.2	0.5	0.3	0.3	0.2	
Nitrate	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05	
Orthophosphate	0.18	--	0.10	--	0.2	0.21	--	--	0.32	--	--	--	--	0.05	
Miscellaneous Analyses	PDFS #22	PDFN #1	PDFN #7	PDFN #11	PDFN #20	PDBS #5	PDBS #6	PDBN #19	PDBN #27	PDBS #19	PDBS #27	PDBN #29	PDBN #30	Detection Limit	
Asbestos *	--	--	--	--	--	--	--	--	--	--	--	--	--	NR	
Corrosivity (ph)	6.829	6.923	7.455	7.154	6.399	7.296	7.971	7.594	7.121	7.529	6.44	6.919	7.011	NR	

TABLE 3-1

CHEMICAL CHARACTERIZATION OF
PRIMARY SETTLING POND DREDGED MATERIAL
SAMPLED NOVEMBER 30, 1992

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameters														
Volatiles Organic Compounds (ug/kg)	PDFS #22	PDFN #1	PDFN #7	PDFN #11	PDFN #20	PDBS #5	PDBS #6	PDBN #19	PDBN #27	PDBS #19	PDBS #27	PDBN #29	PDBN #30	Detection Limit
Benzene	18	---	---	---	---	---	120 E	5 E	---	---	---	---	7 E	5
Bromodichloromethane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Bromoform	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Bromomethane	---	---	---	---	---	---	---	---	---	---	---	---	---	10
Carbon tetrachloride	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Chlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Chloroethane	---	---	---	---	---	---	---	---	---	---	---	---	---	10
2-Chloroethylvinyl ether	---	---	---	---	---	---	---	---	---	---	---	---	---	10
Chloroform	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Chloromethane	---	---	---	---	---	---	---	---	---	---	---	---	---	10
Dibromochloromethane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Dichlorodifluoromethane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
1,1-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
1,2-Dichloroethane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
1,1-Dichloroethene	---	---	---	---	---	---	---	---	---	---	---	---	---	5
trans-1,2-Dichloroethene	---	---	---	---	---	---	---	---	---	---	---	---	---	5
1,2-Dichloropropane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
cis-1,3-Dichloropropene	---	---	---	---	---	---	---	---	---	---	---	---	---	5
trans-1,3-Dichloropropene	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Ethyl benzene	---	---	---	---	---	---	11 E	---	---	---	---	---	---	5
Methylene chloride	23	23 E	32	13	11 E	18 E	---	38 E	26 E	24 E	22 E	22 E	47 E	5
1,1,2,2-Tetrachloroethane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Tetrachloroethene	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Trichlorofluoromethane	---	---	---	---	---	---	---	---	---	---	---	---	---	10
Trichloroethene	---	---	---	---	---	---	---	---	---	---	---	---	---	5
1,1,1-Trichloroethane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
1,1,2-Trichloroethane	---	---	---	---	---	---	---	---	---	---	---	---	---	5
Toluene	12 E	---	---	---	---	---	110 E	---	---	---	---	---	---	5
Vinyl chloride	---	---	---	---	---	---	---	---	---	---	---	---	---	10
Xylenes, total	6 E	---	---	---	---	---	96 E	---	---	---	---	---	---	5
Urethane	---	---	---	---	---	---	---	---	---	---	---	---	---	NR

TABLE 3-1

CHEMICAL CHARACTERIZATION OF
PRIMARY SETTLING POND DREDGED MATERIAL
SAMPLED NOVEMBER 30, 1992

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameters															
Semivolatile Organic Compounds (ug/kg)	PDFS #22	PDFN #1	PDFN #7	PDFN #11	PDFN #20	PDBS #5	PDBS #6	PDBN #19	PDBN #27	PDBS #19	PDBS #27	PDBN #29	PDBN #30	Detection Limit	
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---	160	
1,4-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---	160	
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---	160	
4-Chloro-3-methylphenol	---	---	---	---	---	---	---	---	---	---	---	---	---	160	
2-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	---	---	160	
2,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	---	---	160	
2,4-Dimethylphenol	280	---	---	---	730	460	2,300	580	---	---	---	---	1200	160	
2,4-Dinitrophenol	---	---	---	---	---	---	---	---	---	---	---	---	---	825	
2-Methyl-4,6-dinitrophenol	---	---	---	---	---	---	---	---	---	---	---	---	---	825	
2-Nitrophenol	---	---	---	---	---	---	---	---	---	---	---	---	---	160	
4-Nitrophenol	---	---	---	---	---	---	---	---	---	---	---	---	---	825	
Pentachlorophenol	---	---	---	---	---	---	---	---	---	---	---	---	---	825	
Phenol	4,000	---	---	540	1,400	1,700	8,500	1,200	260	1,500	320	1,100	1,500	160	
2,4,6-Trichlorophenol	---	---	---	---	---	---	---	---	---	---	---	---	---	160	
Bis(2-ethylhexyl)phthalate	---	---	800	1,600	---	---	---	---	760	---	---	---	730	660	
Triaryl phosphate esters	---	---	---	---	---	---	---	---	---	---	---	---	---	NR	
TCLP - Metals and Formaldehyde (mg/L)	PDFS #22	PDFN #1	PDFN #7	PDFN #11	PDFN #20	PDBS #5	PDBS #6	PDBN #19	PDBN #27	PDBS #19	PDBS #27	PDBN #29	PDBN #30	Detection Limit	
Barium	---	---	---	---	---	---	---	---	---	---	---	---	---	1	
Cadmium	---	---	---	---	---	---	---	---	---	---	---	---	---	0.1	
Chromium	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	
Lead	---	---	---	---	---	---	---	---	---	---	---	---	---	1	
Selenium	---	<0.04	<0.04	<0.04	0.07	0.07	0.07	0.08	0.08	0.08	0.07	0.07	<0.04	0.2	
Copper	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	
Zinc	9.1	---	0.4	0.6	6.6	2.8	5.7	2.4	0.2	1.3	0.1	3.6	4.5	0.1	
Formaldehyde *	1.3	---	---	0.04	1.6	0.28	1.3	---	---	1.6	0.06	0.22	1.2	0.02	
Polychlorinated Biphenyls (ug/kg)	PDFS #22	PDFN #1	PDFN #7	PDFN #11	PDFN #20	PDBS #5	PDBS #6	PDBN #19	PDBN #27	PDBS #19	PDBS #27	PDBN #29	PDBN #30	Detection Limit	
Aroclor-1016	---	---	---	---	---	---	---	---	---	---	---	---	---	33	
Aroclor-1221	---	---	---	---	---	---	---	---	---	---	---	---	---	33	
Aroclor-1232	---	---	---	---	---	---	---	---	---	---	---	---	---	33	
Aroclor-1242	---	---	---	---	---	---	---	---	---	---	---	---	---	33	
Aroclor-1248	---	---	---	---	---	---	---	---	---	---	---	---	---	33	
Aroclor-1254	---	---	---	---	---	---	---	---	---	---	---	---	---	33	
Aroclor-1260	---	---	---	---	---	---	---	---	---	---	---	---	---	33	

Notes:

All analyses were performed by Kemron Environmental Services except where noted by *.

* = Analysis performed by Clayton Environmental Consultants.

ND = Not Detected.

E = Estimated concentrations due to sample matrix interference with internal standard.

< = Less than.

> = Greater than.

-- = Below detection limits.

NA = Not applicable.

NR = Not reported.

PDFS = Pond Dredgings, Front Pile, South Side

PDFN = Pond Dredgings, Front Pile, North Side

PDBS = Pond Dredgings, Back Pile, South Side

PDBN = Pond Dredgings, Back Pile, North Side

TABLE 3-2

CHEMICAL CHARACTERIZATION OF
SMALL POND DREDGED MATERIAL
APRIL 23, 1993

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameters	SSPD #4	SSPD #5	SSPD #7	SSPD #12	SSPD #15	SSPD #17	SSPD #20	Detection Limits
Cyanide (mg/kg)	--	--	--	--	--	--	--	1.0
Corrosivity (ph)	7.5	8.0	8.0	8.0	7.4	8.3	8.1	1 to 14 SU
Ignitability (flash point -- degrees F)	>200	>200	>200	>200	>200	>200	>200	200 degrees F
Reactive Sulfide (mg/kg)	--	--	--	--	--	--	--	2.0 mg/kg
PCBs (mg/kg) (Aroclors are listed in notes)	--	--	--	--	--	--	--	1.0
Volatile Organic Compounds--TCLP (mg/L)								
Benzene	--	--	--	--	--	--	--	0.20
Carbon tetrachloride	--	--	--	--	--	--	--	0.20
Chlorobenzene	--	--	--	--	--	--	--	0.20
Chloroform	--	--	--	--	--	--	--	0.20
1,4-Dichlorobenzene	--	--	--	--	--	--	--	0.20
1,2-Dichloroethane	--	--	--	--	--	--	--	0.20
1,1-Dichloroethene	--	--	--	--	--	--	--	0.20
Methyl ethyl ketone	--	--	--	--	--	--	--	0.20
Tetrachloroethene	--	--	--	--	--	--	--	0.20
Trichloroethene	--	--	--	--	--	--	--	0.20
Vinyl chloride	--	--	--	--	--	--	--	0.20
Base Neutral Compounds--TCLP (mg/L)								
2,4-Dinitrotoluene	--	--	--	--	--	--	--	0.10
Hexachlorobenzene	--	--	--	--	--	--	--	0.10
Hexachlorobutadiene	--	--	--	--	--	--	--	0.10
Hexachloroethane	--	--	--	--	--	--	--	0.10
Nitrobenzene	--	--	--	--	--	--	--	0.10
Pryridine	--	--	--	--	--	--	--	0.10

TABLE 3-2

CHEMICAL CHARACTERIZATION OF
SMALL POND DREDGED MATERIAL
APRIL 23, 1993

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameters	SSPD #4	SSPD #5	SSPD #7	SSPD #12	SSPD #15	SSPD #17	SSPD #20	Detection Limits
Acid Extractable Compounds—TCLP (mg/L)								
3-Cresol	---	---	---	---	---	---	---	0.10
2-Cresol	---	---	---	---	---	---	---	0.10
4-Cresol	---	---	---	---	---	---	---	0.10
Cresol	---	---	---	---	---	---	---	0.10
Pentachlorophenol	---	---	---	---	---	---	---	0.10
2,4,5-Trichlorophenol	---	---	---	---	---	---	---	0.10
2,4,6-Trichlorophenol	---	---	---	---	---	---	---	0.10
Metals – TCLP (mg/L)								
Arsenic	---	---	---	---	---	---	---	0.2
Barium	0.39	0.41	0.38	0.33	0.27	0.36	0.33	
Cadmium	0.02	0.02	0.03	0.02	0.01	0.04	0.02	
Chromium	0.03	---	---	---	---	0.03	---	0.02
Copper	0.06	0.04	0.03	0.03	0.10	0.03	0.05	
Lead	---	---	---	---	---	---	---	0.05
Mercury	---	---	---	---	---	---	---	0.0005
Nickel	0.11	0.13	0.14	0.10	0.07	0.12	0.09	
Selenium	---	---	---	---	---	---	---	0.5
Silver	---	---	---	---	---	---	---	0.02
Zinc	0.62	4.2	7.9	5.2	3.7	5.9	6.3	

Notes:

Samples Collected and analyzed by National Environmental Testing, Inc.

--- = Not detected above detection limits.

TCLP = Toxicity Characteristic Leaching Procedure

PCBs include Aroclor 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	B-1	B-2	B-3	B-4A
1979	29-Nov-79	WQP2*,ME2	WQP2*,ME2	WQP2*,ME2	WQP2*,ME2
1980	04-Feb-80	WQP2*,ME2	WQP2*,ME2	WQP2*,ME2	WQP2*,ME2
	25-Jun-80		WQP2*	WQP2*	
	06-Aug-80	WQP2*	WQP2*	WQP2*	
1981	22-Jul-81				WQP2,ME2
1982	13-Jan-82				WQP2,ME2
	08-Jun-82				WQP2,ME2
	01-Sep-82				
1983	20-Jan-83				WQP2,ME2
	26-Aug-83	WQP2,ME1	WQP2,ME2	WQP2,ME2	WQP2,ME2
1984	23-May-84	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1985	07-Jan-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	25-Apr-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	08-Jul-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	07-Oct-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	
1986	24-Feb-86	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	19-May-86	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	18-Aug-86	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	17-Nov-86	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1987	17-Feb-87	WQP2,ME2	WQP2,ME2,O/G	WQP2,ME2	WQP2,ME2
	18-Feb-87	Scan1**,Scan2,Scan3, (MDNR) Scan8,BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**
	17-Jun-87	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1988	23-Feb-88	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	12-Apr-88 (GM)	VOA4	VOA4	VOA4	VOA4
	5-May-88 (MDNR)	Scan1, Scan2, Scan3, Scan8, BN**,I+WQP,O/G	Scan1, Scan2, Scan3, Scan8, BN**,I+WQP,O/G	Scan1, Scan2, Scan3, Scan8, BN**,I+WQP	Scan1, Scan2, Scan3, Scan8, BN**,I+WQP
	5-May-88 (GM)	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOCs, Pest/PCBs, Inorgs
1989	09-Jan-89	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	10-Apr-89	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	12-Jul-89	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	09-Oct-89	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1990	18-Jan-90	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	23-May-90	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	17-Jul-90	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	26-Nov-90	WQP2,ME2	WQP2,ME2,O/G	WQP2,ME2	WQP2,ME2
1991	10-Mar-91	WQP2,ME2	WQP2,O/G,ME2	WQP2,ME2	WQP2,ME2
	13-Jun-91	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	01-Aug-91	WQP2,ME2	WQP2,ME2,O/G	WQP2,ME2	WQP2,ME2
	10-Oct-91	NSA	NSA		
1992	26-Jan-92	WQP2,ME2,Pb	WQP2,ME2,Pb,O/G,USTPNAH	WQP2,ME2,Pb	WQP2,ME2,Pb
	09-Feb-92		PCBs	PCBs	
	28-May-92		PCBs	PCBs	
	04-Apr-92	WQP2,ME2,Pb	WQP2,ME2,Pb,USTPNAH	WQP2,ME2,Pb	NSA
	15-Jul-92	WQP2,ME2,Pb	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	08-Nov-92	WQP2,ME2,Pb	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
1993	20-Jan-93	WQP2,ME2,Pb	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	20-Apr-93	WQP2,ME2,Pb	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	28-Jul-93	WQP2,ME2,Pb	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	13-Oct-93	WQP2,ME2,Pb	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
1994	12-Jan-94	WQP2,ME2,Pb	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	13-Apr-94	WQP2,ME2,Pb	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	13-Jul-94	WQP2+TEMP,ME2,Pb	WQP2+TEMP,ME2,Pb,O&G	WQP2+TEMP,ME2,Pb	NSA
	23-Oct-94	WQP2+TEMP,ME2,Pb	WQP2+TEMP,ME2,Pb,O&G	WQP2+TEMP,ME2,Pb	NSA
1995	15-Jan-95	WQP2,ME2,Pb	WQP2+TEMP,ME2,Pb,O&G	WQP2,ME2,Pb	NSA
	28-Apr-95				NSA

(Notes are included on page 13)

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	B-4B	B-5	B-6	B-7
1979	29-Nov-79	WQP2*,ME2	WQP2*,ME2	WQP2*,ME2	WQP2*,ME2
1980	04-Feb-80	WQP2*,ME2	WQP2*,ME2	WQP2*,ME2	WQP2*,ME2
	25-Jun-80				
	06-Aug-80				
1981	22-Jul-81	WQP2,ME2	WQP2,ME2		WQP2,ME2
1982	13-Jan-82	WQP2,ME2	WQP2,ME2		WQP2,ME2
	08-Jun-82	WQP2,ME2	WQP2,ME2		WQP2,ME2
	01-Sep-82				
1983	20-Jan-83	WQP2,ME2	WQP2,ME2		WQP2,ME2
	26-Aug-83	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1984	23-May-84	WQP2,ME2	WQP2,ME2	WQP2*,ME2	WQP2,ME2
1985	07-Jan-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	25-Apr-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	06-Jul-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	07-Oct-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	24-Feb-86	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1986	19-May-86	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	18-Aug-86	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	17-Nov-86	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	17-Feb-87	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1987	18-Feb-87	Scan1**,Scan2,Scan3, (MDNR) Scan8,BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**
	17-Jun-87	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1988	23-Feb-88	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	12-Apr-88 (GM)	VOA4	VOA4	VOA4	VOA4
	5-May-88 (MDNR)	Scan1, Scan2, Scan3, Scan8, BN**,I+WQP	Scan1, Scan2, Scan3, Scan8, BN**,I+WQP,O/G	Scan1, Scan2, Scan3, Scan8, BN**,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP
	5-May-88 (GM)	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOC, Pest/PCBs, Inorgs
1989	09-Jan-89	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	10-Apr-89	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	12-Jul-89	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	09-Oct-89	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1990	18-Jan-90	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	23-May-90	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	17-Jul-90	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	26-Nov-90	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1991	10-Mar-91	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	13-Jun-91	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	01-Aug-91	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	10-Oct-91	NSA	NSA	NSA	NSA
1992	26-Jan-92	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	09-Feb-92				
	28-May-92				
	04-Apr-92	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	15-Jul-92	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	08-Nov-92	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
1993	20-Jan-93	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	20-Apr-93	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	28-Jul-93	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	13-Oct-93	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
1994	12-Jan-94	NSA	WQP2,ME2,Pb	WQP2,ME2,Pb	NSA
	13-Apr-94	NSA	WQP2,ME2,Pb	NSA	NSA
	13-Jul-94	NSA	WQP2+TEMP,ME2,Pb	NSA	NSA
	23-Oct-94	NSA	WQP2+TEMP,ME2,Pb	NSA	NSA
1995	15-Jan-95	NSA	WQP2,ME2,Pb	NSA	NSA
	26-Apr-95	NSA		NSA	NSA

(Notes are included on page 13)

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	MW-1A	MW-1B	MW-2A	MW-2B
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80				
	08-Aug-80				
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82				
1983	20-Jan-83				
	26-Aug-83				
1984	23-May-84				
1985	07-Jan-85				
	25-Apr-85				
	08-Jul-85				
	07-Oct-85				
1986	24-Feb-86				
	19-May-86				
	18-Aug-86				
	17-Nov-86				
1987	17-Feb-87				
	18-Feb-87 (MDNR)				
	17-Jun-87				
1988	23-Feb-88				
	12-Apr-88 (GM)	Scan1, Scan2, Scan3,	Scan1, Scan2, Scan3,	Scan1, Scan2, Scan3,	Scan1, Scan2, Scan3,
	5-May-88 (MDNR)	Scan8, BN, I + WQP GM: VOCs, SVOCs,	Scan8, BN, I + WQP GM: VOCs, SVOCs,	Scan8, BN, I + WQP GM: VOCs, SVOCs,	Scan8, BN, I + WQP GM: VOCs, SVOCs,
	5-May-88 (GM)	Pest/PCBs, Inorgs	Pest/PCBs, Inorgs	Pest/PCBs, Inorgs	Pest/PCBs, Inorgs
1989	09-Jan-89				
	10-Apr-89				
	12-Jul-89				
	09-Oct-89				
1990	18-Jan-90				
	23-May-90				
	17-Jul-90				
	28-Nov-90				
1991	10-Mar-91				
	13-Jun-91				
	01-Aug-91				
	10-Oct-91				
1992	26-Jan-92				
	09-Feb-92				
	28-May-92				
	04-Apr-92				
	15-Jul-92				
	08-Nov-92				
1993	20-Jan-93				
	20-Apr-93				
	28-Jul-93				
	13-Oct-93				
1994	12-Jan-94				
	13-Apr-94				
	13-Jul-94				
	23-Oct-94				
1995	15-Jan-95				
	26-Apr-95				

(Notes are included on page 13)

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	MW-3A	MW-3B	MW-4	MW-5A
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80				
	06-Aug-80				
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82				
1983	20-Jan-83				
	28-Aug-83				
1984	23-May-84				
1985	07-Jan-85				
	25-Apr-85				
	08-Jul-85				
	07-Oct-85				
1986	24-Feb-86				
	19-May-86				
	18-Aug-86				
	17-Nov-86				
1987	17-Feb-87				
	18-Feb-87 (MDNR)				
	17-Jun-87				
1988	23-Feb-88				
	12-Apr-88 (GM)	Scan1,Scan2,Scan3,	Scan1,Scan2,Scan3,	Scan1,Scan2,Scan3,	Scan1,Scan2,Scan3,
	5-May-88 (MDNR)	Scan8,BN,I+WQP GM: VOCs,SVOCs,	Scan8,BN,I+WQP GM: VOCs,SVOCs,	Scan8,BN,I+WQP GM: VOCs,SVOCs,	Scan8,BN,I+WQP GM: VOCs,SVOCs,
	5-May-88 (GM)	Pest/PCBs,Inorgs	Pest/PCBs,Inorgs	Pest/PCBs,Inorgs	Pest/PCBs,Inorgs
1989	09-Jan-89				
	10-Apr-89				
	12-Jul-89				
	09-Oct-89				
1990	18-Jan-90				
	23-May-90				
	17-Jul-90				
	26-Nov-90				
1991	10-Mar-91				
	13-Jun-91				
	01-Aug-91				
	10-Oct-91				
1992	26-Jan-92				NSA
	09-Feb-92				PCBs
	28-May-92				PCBs
	04-Apr-92				
	15-Jul-92			NSA	NSA
1993	08-Nov-92				
	20-Jan-93				
	20-Apr-93				
	28-Jul-93				
1994	13-Oct-93				
	12-Jan-94				
	13-Apr-94				
	13-Jul-94				
1995	23-Oct-94				
	15-Jan-95				
	26-Apr-95				

(Notes are included on page 13)

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	MW-5B	MW-6A	MW-6B
1979	29-Nov-79			
1980	04-Feb-80			
	25-Jun-80			
	06-Aug-80			
1981	22-Jul-81			
1982	13-Jan-82			
	08-Jun-82			
	01-Sep-82			
1983	20-Jan-83			
	26-Aug-83			
1984	23-May-84			
1985	07-Jan-85			
	25-Apr-85			
	08-Jul-85			
	07-Oct-85			
1986	24-Feb-86			
	19-May-86			
	18-Aug-86			
	17-Nov-86			
1987	17-Feb-87			
	18-Feb-87 (MDNR)			
	17-Jun-87			
1988	23-Feb-88			
	12-Apr-88 (GM)	Scan1,Scan2,Scan3,	Scan1,Scan2,Scan3,	Scan1,Scan2,Scan3,
	5-May-88 (MDNR)	Scan8,BN,I+WQP GM: VOCs,SVOCs,	Scan8,BN,I+WQP GM: VOCs,SVOCs,	Scan8,BN,I+WQP GM: VOCs,SVOCs,
	5-May-88 (GM)	Pest/PCBs,Inorgs	Pest/PCBs,Inorgs	Pest/PCBs,Inorgs
1989	09-Jan-89			
	10-Apr-89			
	12-Jul-89			
	09-Oct-89			
1990	18-Jan-90			
	23-May-90			
	17-Jul-90			
1991	26-Nov-90			
	10-Mar-91			
	13-Jun-91			
	01-Aug-91			
1992	10-Oct-91			
	26-Jan-92			
	09-Feb-92		PCBs	PCBs
	28-May-92		PCBs	PCBs
	04-Apr-92			
	15-Jul-92			
1993	08-Nov-92			
	20-Jan-93			
	20-Apr-93			
	28-Jul-93			
1994	13-Oct-93			
	12-Jan-94			
	13-Apr-94			
	13-Jul-94			
1995	23-Oct-94			
	15-Jan-95			
	26-Apr-95			

(Notes are included on page 13).

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 - 1995GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	X-1A	X-1B	X-1C	X-2A
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80	WQP2*	WQP2*	WQP2*	WQP2*
	06-Aug-80	WQP2*	WQP2*	WQP2*	WQP2*
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82				
1983	20-Jan-83				
	26-Aug-83	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1984	23-May-84	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
1985	07-Jan-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	25-Apr-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	08-Jul-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	07-Oct-85	WQP2,ME2	WQP2,ME2	WQP2,ME2	WQP2,ME2
	24-Feb-86	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	WQP2,TOC,ME2
1986	19-May-86	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	WQP2,TOC,ME2
	18-Aug-86	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	17-Nov-86	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	17-Feb-87	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
1987	18-Feb-87	Scan1**,Scan2,Scan3, (MDNR) Scan8, BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8, BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8, BN**,I+WQP**	
	17-Jun-87	WQP2, TOC, ME2	WQP2,TOC,ME2	WQP2,ME2	
	23-Feb-88	WQP2, TOC, ME2	WQP2,TOC,ME2	WQP2,ME2	
1988	12-Apr-88 (GM)				
	5-May-88 (MDNR)	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP
	5-May-88 (GM)	GM: VOCs,SVOC, Pest/PCBs,Inorgs	GM: VOCs,SVOC, Pest/PCBs,Inorgs	GM: VOCs,SVOC, Pest/PCBs,Inorgs	GM: VOCs,SVOC, Pest/PCBs,Inorgs
1989	09-Jan-89	Pest/PCBs,Inorgs	WQP2,TOC,ME2	WQP2,ME2	
	10-Apr-89	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	WQP2,TOC,ME2
	12-Jul-89	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	09-Oct-89	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	18-Jan-90	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
1990	23-May-90	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	17-Jul-90	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	26-Nov-90	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	10-Mar-91	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	WQP2,TOC,ME2
1991	13-Jun-91	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	01-Aug-91	WQP2,TOC,ME2	WQP2,TOC,ME2	WQP2,ME2	
	10-Oct-91	WQP2,ME2	WQP2,TOC,ME2		NSA
	26-Jan-92	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,ME2,Pb	NSA
1992	09-Feb-92	PCBs	PCBs		PCBs
	28-May-92	PCBs	PCBs		PCBs
	04-Apr-92	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
	15-Jul-92	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
	08-Nov-92	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
1993	20-Jan-93	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
	20-Apr-93	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
	28-Jul-93	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
	13-Oct-93	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
	12-Jan-94	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
1994	13-Apr-94	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
	13-Jul-94	WQP2+TEMP,TOC,ME2,Pb	WQP2+TEMP,TOC,ME2,Pb	WQP2+TEMP,TOC,ME2,Pb	NSA
	23-Oct-94	WQP2+TEMP,TOC,ME2,Pb	WQP2+TEMP,TOC,ME2,Pb	WQP2+TEMP,TOC,ME2,Pb	NSA
	15-Jan-95	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb	NSA
1995	26-Apr-95				NSA

(Notes are included on page 13).

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1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	X-2B	X-2C	X-3A	X-3B
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80	WQP2*	WQP2*		
	06-Aug-80	WQP2*	WQP2*		
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82				
1983	20-Jan-83				
	26-Aug-83	WQP2,ME2	WQP2,ME2		
1984	23-May-84	WQP2,ME2	WQP2,ME2		
1985	07-Jan-85	WQP2,ME2	WQP2,ME2		
	25-Apr-85	WQP2,ME2	WQP2,ME2		
	08-Jul-85	WQP2,ME2	WQP2,ME2		
	07-Oct-85	WQP2,ME2	WQP2,ME2		
1986	24-Feb-86	WQP2,TOC,ME2	WQP2,TOC,ME2		
	19-May-86	WQP2,TOC,ME2	WQP2,TOC,ME2		
	18-Aug-86	WQP2,TOC,ME2	WQP2,TOC,ME2		
	17-Nov-86	WQP2,TOC,ME2	WQP2,TOC,ME2		
1987	17-Feb-87	WQP2,ME2	WQP2,TOC,ME2		
	18-Feb-87	Scan1**,Scan2,Scan3, (MDNR) Scan8,BN**,I+WQP**	Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**		
	17-Jun-87	WQP2,TOC,ME2	WQP2,TOC,ME2		
1988	23-Feb-88	WQP2,TOC,ME2	WQP2,TOC,ME2		
	12-Apr-88 (GM)				
	5-May-88 (MDNR)		Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP
	5-May-88 (GM)	GM: VOCs,SVOC, Pest/PCBs,I,norgs	GM: VOCs,SVOC, Pest/PCBs,I,norgs	GM: VOCs,SVOCs, Pest/PCBs,I,norgs	GM: VOCs,SVOCs, Pest/PCBs,I,norgs
1989	09-Jan-89	WQP2,TOC,ME2	WQP2,TOC,ME2		
	10-Apr-89	WQP2,TOC,ME2	WQP2,TOC,ME2		
	12-Jul-89	WQP2,TOC,ME2	WQP2,TOC,ME2		
	09-Oct-89	WQP2,TOC,ME2	WQP2,TOC,ME2		
1990	18-Jan-90	WQP2,TOC,ME2	WQP2,TOC,ME2		
	23-May-90	WQP2,TOC,ME2	WQP2,TOC,ME2		
	17-Jul-90	WQP2,TOC,ME2	WQP2,TOC,ME2		
	26-Nov-90	WQP2,TOC,ME2	WQP2,TOC,ME2		
1991	10-Mar-91	WQP2,TOC,ME2	WQP2,TOC,ME2		
	13-Jun-91	WQP2,TOC,ME2	WQP2,TOC,ME2		
	01-Aug-91	WQP2,TOC,ME2	WQP2,TOC,ME2		
	10-Oct-91	WQP2,TOC,ME2	WQP2,TOC,ME2		
1992	26-Jan-92	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	09-Feb-92				
	28-May-92				
	04-Apr-92	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	15-Jul-92	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
1993	08-Nov-92	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	20-Jan-93	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	20-Apr-93	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	28-Jul-93	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
1994	13-Oct-93	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	12-Jan-94	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	13-Apr-94	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	13-Jul-94	WQP2+TEMP,TOC,ME2,Pb	WQP2+TEMP,TOC,ME2,Pb		
1995	23-Oct-94	WQP2+TEMP,TOC,ME2,Pb	WQP2+TEMP,TOC,ME2,Pb		
	15-Jan-95	WQP2,TOC,ME2,Pb	WQP2,TOC,ME2,Pb		
	26-Apr-95				

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GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	X-4A	X-4B	X-5A	X-5B
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80				
	06-Aug-80				
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82				
1983	20-Jan-83				
	26-Aug-83				
1984	23-May-84				
1985	07-Jan-85				
	25-Apr-85				
	08-Jul-85				
	07-Oct-85				
1986	24-Feb-86				
	19-May-86				
	18-Aug-86				
	17-Nov-86				
1987	17-Feb-87				
	18-Feb-87 (MDNR)				
	17-Jun-87				
1988	23-Feb-88				
	12-Apr-88 (GM)				
	5-May-88 (MDNR)	Scan1, Scan2, Scan3, Scan8, BN, I + WQP	Scan1, Scan2, Scan3, Scan8, BN, I + WQP	Scan1, Scan2, Scan3, Scan8, BN, I + WQP	Scan1, Scan2, Scan3, Scan8, BN, I + WQP
	5-May-88 (GM)	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOCs, SVOCs, Pest/PCBs, Inorgs
1989	09-Jan-89				
	10-Apr-89				
	12-Jul-89				
	09-Oct-89				
1990	18-Jan-90				
	23-May-90				
	17-Jul-90				
	26-Nov-90				
1991	10-Mar-91				
	13-Jun-91				
	01-Aug-91				
	10-Oct-91				
1992	26-Jan-92				
	09-Feb-92				
	28-May-92				
	04-Apr-92				
	15-Jul-92				
1993	08-Nov-92				
	20-Jan-93				
	20-Apr-93				
	28-Jul-93				
1994	13-Oct-93				
	12-Jan-94				
	13-Apr-94				
	13-Jul-94				
1995	23-Oct-94				
	15-Jan-95				
	26-Apr-95				

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CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	X-5C	X-6	X-7A	X-7B
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80		WQP2*,ME1*	WQP2*,TOC,ME1*	
	06-Aug-80		WQP2*,TOC,ME1*,BN1	WQP2*,ME1*,VOA3	
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82		WQP2*,ME2*,TOC	WQP2,TOC,ME2*	
1983	20-Jan-83				
	26-Aug-83		WQP1,ME1,F	WQP1,ME1,F	
1984	23-May-84		WQP1,ME1,F	WQP1,ME1,F	
1985	07-Jan-85		NSA	WQP1,ME1*,F	
	25-Apr-85		NSA	WQP1,ME1,F	
	08-Jul-85		NSA	WQP1,ME1,F	
	07-Oct-85		WQP1,F,ME1	WQP1,ME1,F,VOA3,BN2	
1986	24-Feb-86		WQP1,F,ME1	WQP1,F,ME1,VOA3,BN2	
	19-May-86			WQP1,F,ME1,VOA3,BN2	
	18-Aug-86			WQP1,F,ME1,VOA3,BN2	
	17-Nov-86			WQP1,F,ME1,VOA3,BN2	
1987	17-Feb-87			WQP1,F,ME1,VOA3,BN2	
	18-Feb-87 (MDNR)			Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**	
	17-Jun-87			WQP1,F,ME1,VOA3,BN2	
1988	23-Feb-88			WQP1,ME1,VOA1,BN1	
	12-Apr-88 (GM)				
	5-May-88 (MDNR)	Scan1,Scan2,Scan3, Scan8,BN,I+WQP		Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP
	5-May-88 (GM)	GM: VOCs,SVOC, Pest/PCBs,Inorgs		GM: VOCs,SVOC, Pest/PCBs,Inorgs	GM: VOCs,SVOCs, Pest/PCBs,Inorgs
1989	09-Jan-89			WQP1,ME1,VOA1,BN1	
	10-Apr-89			WQP1,ME1,VOA1,BN1	
	12-Jul-89			WQP1,ME1,VOA1,BN1	
	09-Oct-89			WQP1,ME1,VOA1,BN1	
1990	18-Jan-90			WQP1,ME1,VOA1,BN1	
	23-May-90			WQP1,ME1,VOA1,BN1	
	17-Jul-90			WQP1,ME1,VOA1,BN1	
	26-Nov-90			WQP1,ME1,VOA1,BN1	
1991	10-Mar-91			WQP1,ME1,VOA1,BN1	
	13-Jun-91			WQP1,ME1,VOA1,BN1	
	01-Aug-91			WQP1,ME1,VOA1,BN1	
	10-Oct-91		NSA	WQP1,ME1,VOA1,BN1	
1992	26-Jan-92	VOA2	NSA	WQP1,ME1,VOA1,BN1	
	09-Feb-92				
	28-May-92				
	04-Apr-92			WQP1,ME1,VOA1,BN1	
	15-Jul-92		NSA	WQP1,ME1,VOA1,BN1	
	08-Nov-92			WQP1,ME1,VOA1,BN1	
1993	20-Jan-93			WQP1,ME1,VOA1,BN1	
	20-Apr-93			NSA	
	28-Jul-93			WQP1,ME1,VOA1,BN1	
	13-Oct-93			WQP1,ME1,VOA1,BN1	
1994	12-Jan-94			WQP1,ME1,VOA1,BN1	
	13-Apr-94		NSA	WQP1,ME1,VOA1,BN1	
	13-Jul-94		NSA	WQP1,ME1,VOA1,BN1	
	23-Oct-94		NSA	WQP1+TEMP,ME1,VOA1,BN1	
1995	15-Jan-95		NSA	WQP1+TEMP,ME1,VOA1,BN1	
	26-Apr-95		NSA	WQP1,ME1,VOA1,BN1	

(Notes are included on page 13).

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GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	X-8A	X-9B	X-10B	X-10C
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80				
	06-Aug-80			BNA2*	
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82				
1983	20-Jan-83				
	26-Aug-83			WQP1,F,ME1	
1984	23-May-84			WQP1,F,ME1	
1985	07-Jan-85			WQP1,F,ME1	
	25-Apr-85			WQP1,F,ME1	
	08-Jul-85			WQP1,F,ME1	
	07-Oct-85		WQP1,ME1,F,VOA3,BN2	WQP1,ME1,F,VOA3,BN2	
1986	24-Feb-86		WQP1,F,ME1,VOA3,BN2	WQP1,F,ME1,VOA3,BN2	
	19-May-86		WQP1,F,ME1,VOA3,BN2	WQP1,F,ME1,VOA3,BN2	
	18-Aug-86		WQP1,F,ME1,VOA3,BN2	WQP1,F,ME1,VOA3,BN2	
	17-Nov-86		WQP1,F,ME1,VOA3,BN2	WQP1,F,ME1,VOA3,BN2	
	17-Feb-87		WQP1,F,ME1,VOA3,BN2	WQP1,F,ME1,VOA3,BN2	
1987	18-Feb-87 (MDNR)		Scan1**,Scan2,Scan3, Scan8,BN**,I+WQP**		
	17-Jun-87		WQP1,F,ME1,VOA3,BN2	WQP1,F,ME1,VOA3,BN2	
	23-Feb-88		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
1988	12-Apr-88 (GM)			VOA4	VOA4
	5-May-88 (MDNR)	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP
	5-May-88 (GM)	GM: VOCs,SVOCs, Pest/PCBs,Inorgs	GM: VOCs,SVOCs, Pest/PCBs,Inorgs	GM: VOCs,SVOCs, Pest/PCBs,Inorgs	GM: VOCs,SVOCs, Pest/PCBs,Inorgs
1989	09-Jan-89		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	10-Apr-89		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	12-Jul-89		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	09-Oct-89		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
1990	18-Jan-90		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	23-May-90		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	17-Jul-90		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	26-Nov-90		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
1991	10-Mar-91		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	13-Jun-91		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	01-Aug-91		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	10-Oct-91		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
1992	26-Jan-92		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	09-Feb-92				
	28-May-92				
	04-Apr-92		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	15-Jul-92		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	08-Nov-92		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
1993	20-Jan-93		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	20-Apr-93		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	28-Jul-93		WQP1,ME1,VOA1,BN1	NSA	
	13-Oct-93		WQP1,ME1,VOA1,BN1	NSA	
1994	12-Jan-94		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	13-Apr-94		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	13-Jul-94		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	
	23-Oct-94		WQP1+TEMP,ME1,VOA1,BN1	WQP1+TEMP,ME1,VOA1,BN1	
1995	15-Jan-95		WQP1+TEMP,ME1,VOA1,BN1	WQP1+TEMP,ME1,VOA1,BN1	
	26-Apr-95		WQP1,ME1,VOA1,BN1	WQP1,ME1,VOA1,BN1	

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1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	X-13B	X-14B	X-15B	X-16A
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80				
	06-Aug-80				
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82				
1983	20-Jan-83				
	26-Aug-83	WQP1,F,ME1	WQP1,F,ME1	WQP1,F,ME1	
1984	23-May-84	WQP1,F,ME1	WQP1,F,ME1	WQP1,F,ME1	
1985	07-Jan-85	WQP1,F,ME1	WQP1,F,ME1	WQP1,F,ME1	
	25-Apr-85	NSA	NSA	NSA	
	08-Jul-85	WQP1,F,ME1	WQP1,F,ME1	WQP1,F,ME1,VOA3,BN2	
	07-Oct-85	NSA	NSA	WQP1,F,ME1,VOA3,BN2	
1986	24-Feb-86	NSA	NSA	NSA	
	19-May-86	NSA	NSA	NSA	
	18-Aug-86	NSA	NSA	NSA	
	17-Nov-86	NSA	NSA	NSA	
1987	17-Feb-87	NSA	NSA	NSA	
	18-Feb-87 (MDNR)				
	17-Jun-87	WQP1,F,ME1,VOA3,BN2	WQP1,F,ME1	WQP1,F,ME1	
1988	23-Feb-88	NSA	NSA	NSA	
	12-Apr-88 (GM)				
	5-May-88 (MDNR)				Scan1,Scan2,Scan3, Scan8,BN,I+WQP
	5-May-88 (GM)				GM: VOCs,SVOCs, Pest/PCBs,Inorgs
1989	09-Jan-89	NSA	NSA	WQP1,ME1	
	10-Apr-89	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
	12-Jul-89	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
	09-Oct-89	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
1990	18-Jan-90	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
	23-May-90	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
	17-Jul-90	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
	26-Nov-90	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
1991	10-Mar-91	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
	13-Jun-91	NSA	NSA	NSA	
	01-Aug-91	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
	10-Oct-91	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
1992	28-Jan-92	NSA	NSA	NSA	
	09-Feb-92				
	28-May-92				
	04-Apr-92	NSA			
	15-Jul-92	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
1993	08-Nov-92	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
	20-Jan-93	NSA	NSA	WQP1,ME1	
	20-Apr-93	NSA	NSA	NSA	
	28-Jul-93	NSA	WQP1,ME1	WQP1,ME1	
	13-Oct-93	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	
1994	12-Jan-94	NSA	NSA	WQP1,ME1	
	13-Apr-94	NSA	NSA	WQP1,ME1	
	13-Jul-94	NSA	WQP1,ME1	WQP1,ME1	
	23-Oct-94	WQP1+TEMP,ME1,VOA1,BN1	WQP1+TEMP,ME1	WQP1+TEMP,ME1	
1995	15-Jan-95	WQP1+TEMP,ME1,VOA1,BN1	WQP1+TEMP,ME1	WQP1+TEMP,ME1	
	26-Apr-95	WQP1,ME1,VOA1,BN1	WQP1,ME1	WQP1,ME1	

(Notes are included on page 13).

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 - 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

YEAR	DATE	X-16B	X-19A	X-19B	X-20
1979	29-Nov-79				
1980	04-Feb-80				
	25-Jun-80				
	06-Aug-80				
1981	22-Jul-81				
1982	13-Jan-82				
	08-Jun-82				
	01-Sep-82				
1983	20-Jan-83				
	26-Aug-83				
1984	23-May-84				
1985	07-Jan-85				
	25-Apr-85				
	08-Jul-85				
	07-Oct-85				
1986	24-Feb-86				
	19-May-86				
	18-Aug-86				
	17-Nov-86				
1987	17-Feb-87				
	18-Feb-87 (MDNR)				
	17-Jun-87				
1988	23-Feb-88				
	12-Apr-88 (GM)				
	5-May-88 (MDNR)	Scan1, Scan2, Scan3, Scan8, BN, I + WQP			Scan1, Scan2, Scan3, Scan8, BN, I + WQP
	5-May-88 (GM)	GM: VOCs, SVOCs, Pest/PCBs, Inorgs	GM: VOC, INORGS	GM: VOC	GM: VOCs, SVOCs, Pest/PCBs, Inorgs
1989	09-Jan-89				
	10-Apr-89				
	12-Jul-89				
	09-Oct-89				
1990	18-Jan-90				
	23-May-90				
	17-Jul-90				
	26-Nov-90				
1991	10-Mar-91				
	13-Jun-91				
	01-Aug-91				
	10-Oct-91				
1992	26-Jan-92				
	09-Feb-92				
	26-May-92				
	04-Apr-92				
	15-Jul-92				
1993	08-Nov-92				
	20-Jan-93				
	20-Apr-93				
	28-Jul-93				
1994	13-Oct-93				
	12-Jan-94				
	13-Apr-94				
	13-Jul-94				
1995	23-Oct-94				
	15-Jan-95				
	26-Apr-95				

(Notes are included on page 13).

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Notes:

- * – Incomplete List.
 - ** – MDNR 1987 sampling event did not analyze for the following:
Scan 1 – Vinyl Chloride, Bromomethane, Chloroethane, Trichlorofluoromethane;
Base Neutrals – 3-Phenylpropionic Acid;
Inorganics & Water Quality Parameters – COD, Aluminum, Beryllium, Mercury, Lithium, Molybdenum,
Titanium, Vanadium, Nitrate & Nitrite, Ammonia, Kjeldahl Nitrogen, Total Phosphorus.
 - (d) – Indicates dissolved.
 - (t) – Indicates total.
- The absence of a qualifier next to an inorganic scan denotes analysis for total concentrations (t).
NSA – Sample collection attempted but no sample obtained.

ORGANICS:

BN – Base Neutrals (MDNR list includes):

Acenaphthene	4-Chlorophenyl-phenylether	Hexachlorobenzene
Acenaphthylene	Chrysene	Hexachlorobutadiene
Anthracene	Dibenzo(a,h)Anthracene	Hexachlorocyclopentadiene
Benidine	1,2-Dichlorobenzene	Hexachloroethane
Benzo(a)Anthracene	1,3-Dichlorobenzene	Indeno(1,2,3-cd)pyrene
Benzo(a)Pyrene	1,4-Dichlorobenzene	Isophorone
Benzo(b)Fluoranthene	3,3'-Dichlorobenzidine	Naphthalene
Benzo(g,h,i)Perylene	Diethylphthalate	Nitrobenzene
Benzo(k)Fluoranthene	Dimethylphthalate	N-Nitroso-Di-n-propylamine
Bis(2-Chloroethoxy)Methane	Di-n-Butylphthalate	N-Nitrosodiphenylamine
Bis(2-Chloroethyl)Ether	2,4-Dinitrotoluene	Phenanthrene
Bis(2-Chloroisopropyl)Ether	2,6-Dinitrotoluene	3-Phenylpropionic Acid
Bis(2-Ethylhexyl)Phthalate	Di-n-Octylphthalate	Pyrene
4-Bromophenyl-phenylether	1,2-Diphenylhydrazine	1,2,4-Trichlorobenzene
Butylbenzylphthalate	Fluoranthene	2,4,5-Trichlorophenol
2-Chloronaphthalene	Fluorene	2,4,6-Trichlorophenol

BN1 – Base Neutrals (List 1)

Di-n-Octylphthalate and Di-n-Butylphthalate

BN2 – Base Neutrals (List 2)

Di-n-Octylphthalate, Di-n-Butylphthalate, and 2,4-Dimethylphenol

PCBs – Polychlorinated Biphenyls

Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, and
Aroclor 1260

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Pest/PCBs – Pesticides/Polychlorinated Biphenyls (GM list includes):

alpha-BHC	Endrin	Aroclor-1016
beta-BHC	Endosulfan II	Aroclor-1221
delta-BHC	4,4'-DDD	Aroclor-1232
gamma-BHC (Lindane)	Endosulfan Sulfate	Aroclor-1242
Heptachlor	4,4'-DDT	Aroclor-1248
Aldrin	Methoxychlor	Aroclor-1254
Heptachlor Epoxide	Endrin Ketone	Aroclor-1260
Endosulfan I	alpha-Chlordane	Endrin Aldehyde
Dieldrin	gamma-Chlordane	Technical Chlordane
4,4'-DDE	Toxaphene	

SCAN 1 – Purgeable Halocarbons (MDNR list includes):

Bromodichloromethane	1,1-Dichloroethane	Methylene Chloride
Bromoform	1,2-Dichloroethane	1,1,2,2-Tetrachloroethane
Bromomethane	1,1-Dichloroethene	Tetrachloroethane
Carbon Tetrachloride	cis-1,2-Dichloroethene	1,1,1-Trichloroethane
Chlorobenzene	trans-1,2-Dichloroethene	1,1,2-Trichloroethane
Chloroethane	1,2-Dichloropropane	Trichloroethene
Chloroform	cis-1,3-Dichloropropene	Trichlorofluoromethane
Dibromochloromethane	trans-1,3-Dichloropropene	Vinyl Chloride

SCAN 2 Purgeable Aromatic Hydrocarbons (MDNR list includes):

Benzene, Ethylbenzene, Toluene, and Xylene Isomers (o, m, and p)

SCAN 3 – Chlorinated Hydrocarbons, PCBs, and Organochlorine Pesticides (MDNR list includes):

Aldrin	alpha-Chlordane	Hexabromobenzene
Aroclor-1016	gamma-Chlordane	Hexachlorobenzene
Aroclor-1221	2-Chloronaphthalene	Hexachlorobutadiene
Aroclor-1232	4,4-DDD	Hexachlorocyclopentadiene
Aroclor-1242	4,4-DDE	Hexachloroethane
Aroclor-1248	1,4-DDT	Methoxychlor
Aroclor-1254	4,4-DDT	Mirex
Aroclor-1260	1,2-Dichlorobenzene	Pentachlorobenzene
Aroclor-1262	1,3-Dichlorobenzene	Pentachloronitrobenzene
Aroclor-1268	1,4-Dichlorobenzene	1,2,3,4-Tetrachlorobenzene
alpha-BHC	Dieldrin	1,2,4,5-Tetrachlorobenzene
beta-BHC	Endosulfan I	Toxaphene
delta-BHC	Endrin	1,2,3-Trichlorobenzene
gamma-BHC (Lindane)	Heptachlor	1,2,4-Trichlorobenzene
BP-6 (PBB)	Heptachlor Epoxide	1,3,5-Trichlorobenzene

SCAN 8 – Phenols (MDNR list includes):

4-Chloro-3-Methylphenol	2,4-Dinitrophenol	4-Nitrophenol
2-Chlorophenol	2-Methyl-4,6-dinitrophenol	Pentachlorophenol
2,4-Dichlorophenol	2-Nitrophenol	Phenol
2,4-Dimethylphenol		

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SVOCs – Semivolatile Organic Compounds (GM list includes):

Benzidine	2,4,6-Trichlorophenol	4-Chloro-3-Methylphenol
1,2-Diphenylhydrazine	Hexachlorocyclopentadiene	Pentachlorophenol
N-Nitrosodimethylamine	2-Chloronaphthalene	Phenanthrene
Phenol	Dimethyl Phthalate	Anthracene
Bis(2-Chloroethyl) Ether	Acenaphthalene	Di-n-Butylphthalate
2-Chlorophenol	2,6-Dinitrotoluene	Fluoranthene
1,2-Dichlorobenzene	3-Nitroaniline	Pyrene
1,3-Dichlorobenzene	Acenaphthalene	Butylbenzylphthalate
1,4-Dichlorobenzene	2,4-Dinitrophenol	3,3'-Dichlorobenzidine
Bis(2-Chloroisopropyl) Ether	4-Nitrophenol	Benzo(a)Anthracene
N-Nitroso-Di-n-propylamine	2,4-Dinitrotoluene	Chrysene
Hexachloroethane	Diethylphthalate	Bis(2-Ethylhexyl)Phthalate
Nitrobenzene	4-Chlorophenyl-phenylether	Di-n-Octylphthalate
Isophorone	Fluorene	Benzo(b)Fluoranthene
2-Nitrophenol	4,6-Dinitro-2-Methylphenol	Benzo(k)Fluoranthene
2,4-Dichlorophenol	N-Nitrosodiphenylamine	Benzo(a)Pyrene
1,2,4-Trichlorobenzene	4-Bromophenyl-phenylether	Indeno(1,2,3-cd)Pyrene
Naphthalene	Hexachlorobenzene	Dibenz(a,h)Anthracene
Hexachlorobutadiene	Bis(2-Chloroethoxy)Methane	Benzo(g,h,i)Perylene
2,4-Dimethylphenol		

UST PNAHs – Underground Storage Tank Polynuclear Aromatic Hydrocarbons

Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(b)Fluoranthene, Benzo(k)Fluoranthene, Benzo(a)Pyrene, Benzo(g,h,i)Perylene, Chrysene, Dibenzo (a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)Pyrene, Naphthalene, Phenanthrene, Pyrene

VOA1 – Volatile Organic Analyses (List 1)

Methylene Chloride

VOA2 – Volatile Organic Analyses (List 2)

cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, and Vinyl Chloride

VOA3 – Volatile Organic Analyses (List 3)

Methylene Chloride and 1,1-Dichloroethene

VOA4 – Volatile Organic Analyses (List 4)

Benzene, Chloroform, Toluene, 1,2-Dichloroethene, and Xylenes

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

VOCs – Volatile Organic Compounds (GM list includes):

Acrolein	Chloroethane	Chloromethane
Acrylonitrile	2-Chloroethylvinyl	Bromomethane
Benzene	Chloroform	Bromoform
Carbon Tetrachloride	1,1-Dichloroethene	Bromodichloromethane
Chlorobenzene	1,2-Dichloroethene (total)	Chlorodibromomethane
1,2-Dichloroethane	1,2-Dichloropropane	Tetrachloroethene
1,1,1-Trichloroethane	cis-1,3-Dichloropropene	Toluene
1,1-Dichloroethane	trans-1,3-Dichloropropene	Trichloroethene
1,1,2-Trichloroethane	Ethylbenzene	Vinyl Chloride
1,1,2,2-Tetrachloroethane	Methylene Chloride	

INORGANICS:

F – Fluoride

Inorgs – Inorganic Compounds (GM list includes):

Antimony	Copper	Selenium
Arsenic	Cyanide	Silver
Beryllium	Lead	Sodium
Cadmium	Magnesium	Sulfate
Calcium	Mercury	Thalium
Chloride	Nickel	Zinc
Chromium (total)	Potassium	

I & WQP – Inorganics & Water Quality Parameters (MDNR list includes):

Alkalinity	Beryllium	Manganese
Bicarbonate Alkalinity	Calcium	Mercury
Carbonate Alkalinity	Cadmium	Molybdenum
Total Organic Carbon	Chromium	Nickel
Chemical Oxygen Demand	Hexavalent Chromium	Nitrate
Chloride	Cobalt	Nitrite
Conductivity	Copper	Selenium
pH	Iron	Sodium
Sulfate	Kjedahl Nitrogen	Titanium
Aluminum	Lead	Total Phosphorus
Ammonia	Lithium	Vanadium
Arsenic	Potassium	Zinc
Barium	Magnesium	

ME1 – Inorganic Parameters (List 1)

Arsenic, Silver, Barium, Calcium, Cadmium, Chromium, Iron (d) and Iron (t), Lead, Magnesium, Manganese (d), Mercury, Potassium, Selenium, Sodium (d)

ME2 – Inorganic Parameters (List 2)

Iron (d), Manganese (d), Sodium (d)

Pb – Lead

TABLE 3-3

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
1979 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

OTHER:

O/G – Oil and Grease

WQP1 – Water Quality Parameters (List 1)

pH, Conductivity, Alkalinity, Chloride, Chemical Oxygen Demand (COD), Hardness,
Nitrate/Nitrite, Sulfate, Total Organic Carbon (TOC), Cyanide (t), and Phenols

WQP2 – Water Quality Parameters (List 2)

pH, Conductivity, Chloride, COD, and Phenols

TABLE 3-4

CATALOG OF HISTORICAL SURFACE-WATER ANALYSES
1979-1995GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW MICHIGAN

Year	Date	G-1	G-2	G-3	G-4
1979					
1980	April 1980				
1981	April 1981	INORG2, MET4, VOA4, PCB2	INORG2, MET4, VOA4, PCB2	INORG2, MET4, VOA4, PCB2	INORG2, MET4, VOA4, PCB2
1982	June 1982	INORG2, VOA4, PCB2, RAD, FEC, MET5	INORG2, VOA4, PCB2, RAD, FEC, MET5	INORG2, VOA4, PCB2, RAD FEC, MET5	INORG2, VOA4, PCB2, RAD FEC, MET5
1983	August 1983	INORG3, MET6, VOA5 BNA1, PCB3	INORG3, MET6, VOA5 BNA1, PCB3	INORG3, MET6, VOA5 BNA1, PCB3	INORG3, MET6, VOA5 BNA1, PCB3
1984	September 1984	INORG4, MET7, VOA6 BNA2, FEC, PCB4	INORG4, MET7, VOA6 BNA2, FEC, PCB4	INORG4, MET7, VOA6, BNA2, FEC, PCB4	INORG4, MET7, VOA6, BNA2, FEC, PCB4
1985	October 1985	INORG5, MET8, SCAN2 M, SCAN8, BN, ASB, RAD	INORG5, MET8, SCAN2 M, SCAN2, SCAN8, BN, ASB, RAD	INORG5, MET8, SCAN1 M, SCAN2, SCAN8, BN, RAD	INORG5, MET8, SCAN1 M, SCAN2, SCAN8, BN, RAD
1986	October 1986	INORG3, MET9, VOA7, BNA3, PEST1, PCB6, DIOXIN, ASB	INORG3, MET9, VOA7, BNA3, PEST1, PCB6, DIOXIN, ASB	INORG3, MET9, VOA7, BNA3, PEST1, PCB6 ASB	INORG3, MET9, VOA7, BNA3, PEST1, PCB6 ASB
1987	June 1987	INORG3, MET9, VOA8, BNA3, PEST1, PCB6 ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6 ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB
	November 1987	INORG3, MET9, VOA8 BNA3, PEST1, PCB6 ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6 ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB
1988	March 1988	INORG3, MET9 (t) VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9 (t) VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB
	October 1988	INORG3, MET9 (t) VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9 (t) VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB
	April 1989	INORG3, MET9 (t) VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9 (t) VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB
1989	October 1989	INORG3, MET9 (t), VOA8, BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8, BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB
1990	May 1990	INORG3, MET9 (t), VOA8, BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8, BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB
	July 1990	INORG3, MET9 (d), SCAN1 SCAN2, SCAN3, SCAN4, SCAN8, PEST1, PCB6, 8250	INORG3, MET9 (d), SCAN1 SCAN2, SCAN3, SCAN4, SCAN8, PEST1, PCB6, 8250		
	November 1990	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB
1991	May 1991	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB
	October 1991	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB
1992	May 1992	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB
1993	April 1993	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB
	October 1993	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB
1994	April 1994	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB
	October 1994	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB
1995	April 1995	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB
	October 1995	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB

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GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW MICHIGAN

Year	Date	G-5	G-6	G-7	G-8
1979					
1980	April 1980				
1981	April 1981	INORG2, MET4, VOA4, PCB2	INORG2, MET4, VOA4, PCB2		
1982	June 1982	INORG2, VOA4, PCB2, RAD FEC, MET5	INORG2, VOA4, PCB2, RAD FEC, MET5		
1983	August 1983	INORG3, MET6, VOA5 BNA1, PCB3	INORG3, MET6, VOA5 BNA1, PCB3		
1984	September 1984	INORG4, MET7, VOA6, BNA2, FEC, PCB4	INORG4, MET7, VOA6, BNA2, FEC, PCB4	INORG4, MET7, VOA6, BNA2, FEC, PCB4	INORG4, MET7, VOA6, BNA2, FEC, PCB4
1985	October 1985	INORG5, MET8, SCAN1 M, SCAN2, SCAN8, BN, RAD	INORG5, MET8, SCAN1 M, SCAN2, SCAN8, BN, RAD	INORG5, MET8, SCAN1 M, SCAN2, SCAN8, BN, RAD	INORG5, MET8, SCAN1 M, SCAN2, SCAN8, BN, RAD
1986	October 1986	INORG3, MET9, VOA7, BNA3, PEST1, PCB6 ASB			
1987	June 1987	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB			
	November 1987	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB			
1988	March 1988	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB			
	October 1988	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB			
	April 1989	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB			
1989	October 1989	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB			
1990	May 1990	INORG3, MET9 (t), VOA8 BNA3, PEST1, PCB6 ASB			
	July 1990				
	November 1990	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB			
1991	May 1991	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB			
	October 1991	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASB			
1992	May 1992	INORG3, MET9, VOA8, BNA3, PEST1, PCB6, ASBS			
1993	April 1993	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB			
	October 1993	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB			
1994	April 1994	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB			
	October 1994	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB			
1995	April 1995	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB			
	October 1995	INORG3, MET9, VOA8 BNA3, PEST1, PCB6, ASB			

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SAGINAW MICHIGAN

Year	Date	SW-1	SW-2	SW-3	SW-4
1979	November 1979				
1980	February 1980	WQP2*,ME2			
	April 1980				
	June 1980	WQP2*,ME1			
	August 1980	WQP2*,TOC,ME1			
1981	July 1981				
1982	January 1982				
	June 1982	WQP2,TOC,ME2,			
	September 1982				
1983	January 1983				
	August 1983	WQP2,ME1			
1984	May 1984	WQP1,ME1			
1985	January 1985	WQP1,F,ME1			
	April 1985	WQP1,F,ME1			
	July 1985	WQP1,F,ME1			
	October 1985	WQP1,F,ME1			
1986	February 1986	WQP1,F,ME1			
	May 1986	WQP1,F,ME1			
	August 1986	WQP1,F,ME1			
	November 1986	WQP1,F,ME1			
1987	February 1987	WQP1,F,ME1			
	February 1987 (MDNR)				
	June 1987	WQP1,F,ME1			
1988	February 1988	WQP1,ME1			
	April 1988 (GM)				
	May 1988 (MDNR)	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP	Scan1,Scan2,Scan3, Scan8,BN,I+WQP
	May 1988 (GM)	GM: VOCs,SVOCs, Pest/PCBs,Inorgs	GM: VOCs,SVOCs, Pest/PCBs,Inorgs	GM: VOCs,SVOCs, Pest/PCBs,Inorgs	GM: VOCs,SVOCs, Pest/PCBs,Inorgs
1989	January 1989	WQP1,ME1			
	April 1989	WQP1,ME1			
	July 1989	WQP1,ME1			
	October 1989	WQP1,ME1			
1990	January 1990	WQP1,ME1			
	May 1990	WQP1,ME1			
	July 1990	WQP1,ME1			
	November 1990	WQP1,ME1			
1991	March 1991	WQP1,ME1			
	June 1991	WQP1,ME1			
	August 1991	WQP1,ME1			
	October 1991	WQP1,ME1			
1992	January 1992	WQP1,ME1			
	April 1992	WQP1,ME1			
	July 1992	WQP1,ME1			
	November 1992	WQP1,ME1			
1993	January 1993	NSA			
	April 1993	WQP1,ME1			
	July 1993	WQP1,ME1			
	October 1993	WQP1,ME1			
1994	January 1994	WQP1,ME1			

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Year	Date	SW-5	SW-6	Weir	River
1979	November 1979	WQP2*,ME2			
1980	February 1980				
	April 1980			INORG, MET3, PCB2	INORG, MET3, PCB2
	June 1980				
	August 1980	WQP2*,ME2			
1981	July 1981	WQP2,ME2			
1982	January 1982	WQP2,ME2			
	June 1982				
	September 1982	WQP2,ME2			
1983	January 1983	WQP2,ME2			
	August 1983	WQP2,ME2			
1984	May 1984	WQP2,ME2			
1985	January 1985	WQP2,ME2			
	April 1985	WQP2,ME2			
	July 1985	WQP2,ME2			
	October 1985	WQP2,ME2			
1986	February 1986	WQP2,ME2			
	May 1986	WQP2,ME2			
	August 1986	WQP2,ME2			
	November 1986	WQP2,ME2			
1987	February 1987				
	February 1987 (MDNR)	WQP2,ME2			
	June 1987	WQP2,ME2			
1988	February 1988				
	April 1988 (GM)	Scan1,Scan2,Scan3,	Scan1,Scan2,Scan3,		
	May 1988 (MDNR)	Scan8,BN,I+WQP GM: VOCs,SVOCs,	Scan8,BN,I+WQP GM: VOCs,SVOCs,		
	May 1988 (GM)	Pest/PCBs,Inorgs WQP2,ME2	Pest/PCBs,Inorgs		
1989	January 1989	WQP2,ME2			
	April 1989	WQP2,ME2			
	July 1989	WQP2,ME2			
	October 1989	WQP2,ME2			
1990	January 1990	WQP2,ME2			
	May 1990	WQP2,ME2			
	July 1990	WQP2,ME2			
	November 1990	WQP2,ME2			
1991	March 1991	WQP2,ME2			
	June 1991	WQP2,ME2			
	August 1991				
	October 1991	WQP2,ME2,Pb			
1992	January 1992	WQP2,ME2,Pb			
	April 1992	WQP2,ME2,Pb			
	July 1992	WQP2,ME2,Pb			
	November 1992	WQP2,ME2,Pb			
1993	January 1993	WQP2,ME2,Pb			
	April 1993	WQP2,ME2,Pb			
	July 1993	WQP2,ME2,Pb			
	October 1993	WQP2,ME2,Pb			
1994	January 1994	WQP2,ME2,Pb			

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Notes:

* - Incomplete List.

(d) - Indicates dissolved.

(t) - Indicates total.

The absence of a qualifier next to an inorganic scan denotes analysis for total concentrations (t).

MDNR 1987 sampling event did not analyze for the following:

Scan 1 - Vinyl Chloride, BromoMETHane, Chlorethane, TrichlorofluoroMETHane;

Base Neutrals - 3-Phenylpropionic Acid;

Inorganics & Water Quality ParaMETers - COD, Aluminum, Beryllium, Mercury, Lithium, Molybdenum,
Titanium, Vanadium, Nitrate & Nitrite, Ammonia, Kjeldahl Nitrogen, Total Phosphorus.

NSA - Sample collection attempted but no sample obtained.

ORGANICS:

BN - Base Neutrals (MDNR list includes):

Acenaphthene	4-Chlorophenyl-phenylether	Hexachlorobenzene
Acenaphthylene	Chrysene	Hexachlorobutadiene
Anthracene	Dibenzo(a,h)Anthracene	Hexachlorocyclopentadiene
Benidine	1,2-Dichlorobenzene	Hexachloroethane
Benzo(a)Anthracene	1,3-Dichlorobenzene	Indeno(1,2,3-cd)pyrene
Benzo(a)Pyrene	1,4-Dichlorobenzene	Isophorone
Benzo(b)Fluoranthene	3,3'-Dichlorobenzidine	Naphthalene
Benzo(g,h,i)Perylene	Diethylphthalate	Nitrobenzene
Benzo(k)Fluoranthene	DiMethylphthalate	N-Nitroso-Di-n-propylamine
Bis(2-Chloroethoxy)METHane	Di-n-Butylphthalate	N-Nitrosodiphenylamine
Bis(2-Chloroethyl)Ether	2,4-Dinitrotoluene	Phenanthrene
Bis(2-Chloroisopropyl)Ether	2,6-Dinitrotoluene	3-Phenylpropionic Acid
Bis(2-Ethylhexyl)Phthalate	Di-n-Octylphthalate	Pyrene
4-Bromophenyl-phenylether	1,2-Diphenylhydrazine	1,2,4-Trichlorobenzene
Butylbenzylphthalate	Fluoranthene	2,4,5-Trichlorophenol
2-Chloronaphthalene	Fluorene	2,4,6-Trichlorophenol

BNA1 - Base Neutral/Acid Extractables (List 1 includes):

Phenol	Pentachlorophenol	Bis(2-Ethylhexyl)Phthalate
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BNA2 - Base Neutral/Acid Extractables (List 2 includes):

Phenol	Pentachlorophenol	Bis(2-Ethylhexyl)Phthalate
o,m,p-Dichlorobenzenes	Tetrachlorobenzenes	Hexachlorobenzenes
Trichlorobenzenes	Pentachlorobenzenes	

BNA3 - Base Neutral/Acid Extractables (List 3 includes):

Priority Pollutant BNAs

PCB2 - Polychlorinated Biphenyls (List 2 includes):

Aroclor-1242	Aroclor-1254	Aroclor-1260
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PCB3 - Polychlorinated Biphenyls (List 3 includes):

Aroclor-1242	Aroclor-1254	Aroclor-1260
Aroclor-1248		

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PCB4 - Polychlorinated Biphenyls (List 4 includes):

Aroclor-1242	Aroclor-1260	Total PCBs
Aroclor-1254		

PCB6 - Polychlorinated Biphenyls (List 6 includes):

Priority Pollutant PCBs

PEST1 - Pesticides (List 1 includes):

Priority Pollutant Pesticides

Pest/PCBs - Pesticides/Polychlorinated Biphenyls (GM list includes):

alpha-BHC	Endrin	Aroclor-1016
beta-BHC	Endosulfan II	Aroclor-1221
delta-BHC	4,4'-DDD	Aroclor-1232
gamma-BHC (Lindane)	Endosulfan Sulfate	Aroclor-1242
Heptachlor	4,4'-DDT	Aroclor-1248
Aldrin	METHoxychlor	Aroclor-1254
Heptachlor Epoxide	Endrin Ketone	Aroclor-1260
Endosulfan I	alpha-Chlordane	Endrin Aldehyde
Dieldrin	gamma-Chlordane	Technical Chlordane
4,4'-DDE	Toxaphene	

SCAN 1 - Purgeable Halocarbons (MDNR list includes):

BromodichloroMETHane	1,1-Dichloroethane	1,1,2,2-Tetrachloroethane
Bromoform	1,2-Dichloroethane	Tetrachloroethane
BromoMETHane	1,1-Dichloroethene	1,1,1-Trichloroethane
Carbon Tetrachloride	cis-1,2-Dichloroethene	1,1,2-Trichloroethane
Chlorobenzene	trans-1,2-Dichloroethene	Trichloroethene
Chloroethane	1,2-Dichloropropane	TrichlorofluoroMETHane
Chloroform	cis-1,3-Dichloropropene	Vinyl Chloride
DibromochloroMETHane	trans-1,3-Dichloropropene	

SCAN 1M - Purgeable Halocarbons (List includes):

BromodichloroMETHane	1,1-Dichloroethane	1,1,2,2-Tetrachloroethane
Bromoform	1,2-Dichloroethane	Tetrachloroethane
BromoMETHane	1,1-Dichloroethene	1,1,1-Trichloroethane
Carbon Tetrachloride	cis-1,2-Dichloroethene	1,1,2-Trichloroethane
Chlorobenzene	trans-1,2-Dichloroethene	Trichloroethene
Chloroethane	1,2-Dichloropropane	TrichlorofluoroMETHane
Chloroform	cis-1,3-Dichloropropene	Vinyl Chloride
DibromochloroMETHane	trans-1,3-Dichloropropene	DichlorodifluoroMETHane
2(Chloroethyl)Ether	ChloroMETHane	

SCAN 2 Purgeable Aromatic Hydrocarbons (MDNR list includes):

Benzene, Ethylbenzene, Toluene, and Xylene Isomers (o, m, and p)

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SCAN 3 - Chlorinated Hydrocarbons, PCBs and Organochlorine Pesticides (MDNR list includes):

Aldrin	alpha-Chlordane	Hexabromobenzene
Aroclor-1016	gamma-Chlordane	Hexachlorobenzene
Aroclor-1221	2-Chloronaphthalene	Hexachlorobutadiene
Aroclor-1232	4,4-DDD	Hexachlorocyclopentadiene
Aroclor-1242	4,4-DDE	Hexachloroethane
Aroclor-1248	1,4-DDT	METHOXYCHLOR
Aroclor-1254	4,4-DDT	Mirex
Aroclor-1260	1,2-Dichlorobenzene	Pentachlorobenzene
Aroclor-1262	1,3-Dichlorobenzene	Pentachloronitrobenzene
Aroclor-1268	1,4-Dichlorobenzene	1,2,3,4-Tetrachlorobenzene
alpha-BHC	Dieldrin	1,2,4,5-Tetrachlorobenzene
beta-BHC	Endosulfen I	Toxaphene
delta-BHC	Endrin	1,2,3-Trichlorobenzene
gamma-BHC (Lindane)	Heptachlor	1,2,4-Trichlorobenzene
BP-6 (PBB)	Heptachlor Epoxide	1,3,5-Trichlorobenzene

SCAN 8 - Phenols (MDNR list includes):

4-Chloro-3-METHylphenol	2,4-Dinitrophenol	4-Nitrophenol
2-Chlorophenol	2-METHyl-4,6-dinitrophenol	Pentachlorophenol
2,4-Dichlorophenol	2-Nitrophenol	Phenol
2,4-DiMETHylphenol		

SVOCs - Semivolatile Organic Compounds (GM list includes):

Benzidine	2,4,6-Trichlorophenol	4-Chloro-3-METHylphenol
1,2-Diphenylhydrazine	Hexachlorocyclopentadiene	Pentachlorophenol
N-NitrosodiMETHylamine	2-Chloronaphthalene	Phenanthrene
Phenol	DiMETHyl Phthalate	Anthracene
Bis(2-Chloroethyl)Ether	Acenaphthalene	Di-n-Butylphthalate
2-Chlorophenol	2,6-Dinitrotoluene	Fluoranthene
1,2-Dichlorobenzene	3-Nitroaniline	Pyrene
1,3-Dichlorobenzene	Acenaphthalene	Butylbenzylphthalate
1,4-Dichlorobenzene	2,4-Dinitrophenol	3,3'-Dichlorobenzidine
Bis(2-Chloroisopropyl)Ether	4-Nitrophenol	Benzo(a)Anthracene
N-Nitroso-Di-n-propylamine	2,4-Dinitrotoluene	Chrysene
Hexachloroethane	Diethylphthalate	Bis(2-Ethylhexyl)Phthalate
Nitrobenzene	4-Chlorophenyl-phenylether	Di-n-Octylphthalate
Isophorone	Fluorene	Benzo(b)Fluoranthene
2-Nitrophenol	4,6-Dinitro-2-METHylphenol	Benzo(k)Fluoranthene
2,4-Dichlorophenol	N-Nitrosodiphenylamine	Benzo(a)Pyrene
1,2,4-Trichlorobenzene	4-Bromophenyl-phenylether	Indeno(1,2,3-cd)Pyrene
Naphthalene	Hexachlorobenzene	Dibenz(a,h)Anthracene
Hexachlorobutadiene	Bis(2-Chloroethoxy)METHane	Benzo(g,h,i)Perylene
2,4-DiMETHylphenol		

VOA5 - Volatile Organic Analyses (List 5 includes):

Benzene	Toluene	DichlorodifluoroMETHane
Chlorobenzene	1,1,1-Trichloroethane	METHylene Chloride
TrichlorodifluoroMETHane		

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VOA6 - Volatile Organic Analyses (List 6 includes):

Benzene	Toluene	TrichlorodifluoromETHane
METHylene Chloride	1,1,1-Trichloroethane	

VOA7 - Volatile Organic Analyses (List 7 includes):

Priority Pollutant VOAs	Bis(ChloroMETHyl)Ether
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VOA8 - Volatile Organic Analyses (List 8 includes):

Priority Pollutant VOAs

VOCs - Volatile Organic Compounds (GM list includes):

Acrolein	Chloroethane	ChloroMETHane
Acrylonitrile	2-Chloroethylvinyl	BromoMETHane
Benzene	Chloroform	Bromoform
Carbon Tetrachloride	1,1-Dichloroethane	BromodichloroMETHane
Chlorobenzene	1,2-Dichloroethane (total)	ChlorodibromoMETHane
1,2-Dichloroethane	1,2-Dichloropropane	Tetrachloroethene
1,1,1-Trichloroethane	cis-1,3-Dichloropropene	Toluene
1,1-Dichloroethane	trans-1,3-Dichloropropene	Trichloroethene
1,1,2-Trichloroethane	Ethylbenzene	Vinyl Chloride
1,1,2,2-Tetrachloroethane	METHylene Chloride	

INORGANICS:

INORG - Inorganic Compounds (List includes):

Biological Oxygen Demand (BOD) & Grease	Hardness
Chemical Oxygen Demand (COD) Phenolics	Alkalinity, Carbonate
Chloride	Acidity, total
Fluoride	Sulfide
Cyanide, total	Total Suspended Solids (TSS) pH
Cyanide, oxidizable	Total Dissolved Solids (TDS)

INORG2 - Inorganic Compounds (List 2 includes):

Ammonia	Nitrate	Sulfite
Biological Oxygen Demand (BOD) Nitrite		Total Suspended Solids (TSS)
Chemical Oxygen Demand (COD) Nitrogen		Total Dissolved Solids (TDS)
Chloride	Oil & Greases	Hardness
Fluoride	Phenolics	Alkalinity, Carbonate
Kjeldahl	Phosphorous	Sulfide
MBAS Surfactants	Sulfate	pH

INORG3 - Inorganic Compounds (List 3 includes):

Ammonia	MBAS Surfactants	Sulfite
Biological Oxygen Demand (BOD) Nitrate		Total Suspended Solids (TSS)
Chemical Oxygen Demand (COD) Nitrite		Total Dissolved Solids (TDS)
Chloride	Nitrogen	Hardness
Cyanide, total	Oil & Greases	Alkalinity, Carbonate
Cyanide, oxidizable	Phenolics	Sulfide
Fluoride	Phosphorous	pH
Kjeldahl	Sulfate	

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CATALOG OF HISTORICAL SURFACE - WATER ANALYSES
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INORG4 - Inorganic Compounds (List 4 includes):

Ammonia	Nitrate	Total Suspended Solids (TSS)
Chloride	Nitrite	Total Dissolved Solids (TDS)
Cyanide, total	Oil & Greases	Hardness
Cyanide, oxidizable	Phenolics	Alkalinity, Carbonate
Fluoride	Phosphorous	Sulfide
MBAS Surfactants	Sulfate	pH

INORG5 - Inorganic Compounds (List 5 includes):

Ammonia	Nitrate	Color
Biological Oxygen Demand (BOD)	Total Organic Carbon (TOC)	Total Suspended Solids (TSS)
Bromide	Dissolved Oxygen	Total Dissolved Solids (TDS)
Chemical Oxygen Demand (COD)	Oil & Greases	Hardness
Chloride	Phenolics	Alkalinity, Carbonate
Fluoride	Phosphorous	Sulfide
MBAS Surfactants	Sulfate	pH

INORG6 - Inorganic Compounds (List 6 includes):

Alkalinity	Chloride	Phenolics
Total Dissolved Solids (TDS)	Chemical Oxygen Demand (COD)	Oil & Grease

Inorgs - Inorganic Compounds (GM list includes):

Antimony	Copper	Selenium
Arsenic	Cyanide	Silver
Beryllium	Lead	Sodium
Cadmium	Magnesium	Sulfate
Calcium	Mercury	Thallium
Chloride	Nickel	Zinc
Chromium (total)	Potassium	

I & WQP - Inorganics & Water Quality Parameters (MDNR list includes):

Alkalinity	Beryllium	Manganese
Bicarbonate Alkalinity	Calcium	Mercury
Carbonate Alkalinity	Cadmium	Molybdenum
Total Organic Carbon	Chromium	Nickel
Chemical Oxygen Demand	Hexavalent Chromium	Nitrate
Chloride	Cobalt	Nitrite
Conductivity	Copper	Selenium
pH	Iron	Sodium
Sulfate	Kjeldahl Nitrogen	Titanium
Aluminum	Lead	Total Phosphorus
Ammonia	Lithium	Vanadium
Arsenic	Potassium	Zinc
Barium	Magnesium	

ME1 - Inorganic Parameters (List 1)

Arsenic, Silver, Barium, Calcium, Cadmium, Chromium, Iron (d) and Iron (t), Lead, Magnesium, Manganese (d), Mercury, Potassium, Selenium, Sodium (d)

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ME2 - Inorganic Parameters (List 2)

Iron (d), Manganese (d), Sodium (d)

MET1 - METals (List 1 includes):

Arsenic	Lead	Potassium
Barium	Magnesium	Selenium
Cadmium	Manganese	Silver
Chromium	Mercury	Sodium
Iron	Nickel	Zinc

MET2 - METals (List 2 includes):

Barium	Manganese	Sodium
Iron	Nickel	

MET3 - METals (List 3 includes):

Cadmium	Iron	Nickel
Calcium	Lead	Potassium
Chromium	Manganese	Zinc
Hexavalent Chromium	Magnesium	Bismuth
Copper	Mercury	

MET4 - METals (List 4 includes):

Aluminum	Hexavalent Chromium	Selenium
Antimony	Cobalt	Silicon
Arsenic	Iron	Silver
Barium	Lead	Thallium
Beryllium	Manganese	Tin
Cadmium	Mercury	Zinc
Calcium	Nickel	Bismuth
Chromium	Potassium	

MET5 - METals (List 5 includes):

Aluminum	Cobalt	Selenium
Antimony	Iron	Silicon
Arsenic	Lead	Silver
Barium	Manganese	Thallium
Cadmium	Mercury	Tin
Calcium	Nickel	Zinc
Chromium	Potassium	Bismuth
Hexavalent Chromium		

MET6 - METals (List 6 includes):

Aluminum	Cobalt	Selenium
Antimony	Copper	Silicon
Arsenic	Lead	Silver
Barium	Magnesium	Tellurium
Beryllium	Manganese	Thallium
Cadmium	Mercury	Tin
Calcium	Nickel	Zinc
Chromium	Potassium	Bismuth
Hexavalent Chromium		

TABLE 3-4

CATALOG OF HISTORICAL SURFACE-WATER ANALYSES
1979-1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW MICHIGAN

MET7 – METals (List 7 includes):

Aluminum	Cobalt	Potassium
Antimony	Iron	Selenium
Arsenic	Lead	Silver
Barium	Lithium	Sodium
Beryllium	Magnesium	Thallium
Cadmium	Manganese	Tin
Calcium	Mercury	Zinc
Chromium	Nickel	Bismuth
Hexavalent Chromium		

MET8 – METals (List 8 includes):

Aluminum	Cobalt	Potassium
Antimony	Iron	Selenium
Arsenic	Lead	Silver
Barium	Lithium	Sodium
Beryllium	Magnesium	Thallium
Boron	Manganese	Tin
Cadmium	Mercury	Zinc
Calcium	Molybdenum	Bismuth
Chromium	Nickel	

MET9 – METals (List 9 includes):

Aluminum	Hexavalent Chromium	Selenium
Antimony	Copper	Silicon
Arsenic	Iron	Silver
Barium	Lead	Thallium
Beryllium	Manganese	Tin
Cadmium	Mercury	Zinc
Calcium	Nickel	
Chromium	Potassium	

Pb – Lead

OTHER:

ASB – Asbestos

F – Fluoride

FEC – Fecal Coliform

RAD – Gross Alpha Radiation and Gross Beta Radiation

WQP1 – Water Quality ParaMETers (List 1)

pH, Conductivity, Alkalinity, Chloride, Chemical Oxygen Demand (COD), Hardness,
Nitrate/Nitrite, Sulfate, Total Organic Carbon (TOC), Cyanide (t), and Phenols

WQP2 – Water Quality ParaMETers (List 2)

pH, Conductivity, Chloride, COD, and Phenols

TABLE 3-5

UNDERGROUND STORAGE TANK DETAILS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Tank Number	Year Installed	Stored Product	Type	Capacity (gal)	Date Removed	Status
1	1978	UL Gasoline	Steel	5,000	17-Jan-91	No further action, MDEQ (Brouillet, June 1993).
2	1978	Diesel	Steel	1,000	22-Oct-91	No further action, Fire Marshal (Schaefer, December 1991).
3 ¹	1963	UL Gasoline	Steel	1,000	04-Jan-90	Additional work required; tank area will be addressed by site RAP.
4 ¹	1963	UL Gasoline	Steel	550	04-Jan-90	Additional work required; tank area will be addressed by site RAP.
5 ¹	1963	UL Gasoline	Steel	1,000	04-Jan-90	Additional work required; tank area will be addressed by site RAP.
6	1974	Diesel	Steel	10,000	19-Dec-91	No further action, Fire Marshal (Schaefer, April 1992).
7	1957	Gasoline	Steel	15,000	03-Jan-90	Additional investigation required; tank area is being addressed in accordance with a separate work plan; and will be addressed by site RAP.
8	1972	Waste Oil	Concrete	1,500	15-Dec-89	No further investigation required; tank area will be addressed by site RAP.
9	1972	Diesel	Steel	1,000	06-Nov-91	No further action, MDEQ (Brouillet, June 1993).
10	1965	Diesel	Steel	500	19-Dec-91	No further action, Fire Marshal (Schaefer, April 1992).
11	1978	Waste Oil	Steel	1,000	Jun-82	No further action; groundwater being monitored hydraulically downgradient of area where UST was believed to have been installed; tank area will be addressed by site RAP.

Note:

UL = Unleaded.

¹ The vicinity of former Tanks 3, 4, and 5 is referred to collectively as Tank Area 4.

TABLE 3-6

CATALOG OF HISTORICAL GROUNDWATER ANALYSES
UST MONITORING WELLS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW MICHIGAN

Year	Date	MW-UST4-1	MW-UST4-2	MW-UST4-3	MW-UST4-4
1994	06/06/94	BTEX, MTBE, Lead	BTEX, MTBE, Lead	BTEX, MTBE, Lead	BTEX, MTBE, Lead

Year	Date	MW-UST7-1	MW-UST7-2	MW-UST7-3	MW-UST7-4
1994	06/08/94	BTEX, Lead	BTEX, Lead	BTEX, Lead	BTEX, Lead

Year	Date	MW-UST7-5	MW-UST7-6
1994	06/08/94	BTEX, Lead	BTEX, Lead

Year	Date	MW-UST8-1	MW-UST8-2	MW-UST8-3	MW-UST8-4
1994	06/08/94	BTEX, SVOCs, Metals, PCBs	BTEX, SVOCs, Metals, PCBs	BTEX, SVOCs, Metals, PCBs	BTEX, SVOCs, Metals, PCBs

Notes: BTEX = Benzene, toluene, ethyl benzene, total xylenes

MTBE = Methyl tertiary-butyl ether

SVOCs = Semi-volatile organic compounds

Naphthalene	Benzo(b)Fluoranthene
Acenaphthene	Benzo(k)Fluoranthene
Acenaphthylene	Benzo(a)Pyrene
Fluorene	Dibenzo(a,h)Anthracene
Phenanthrene	Indeno(1,2,3-c,d)Pyrene
Anthracene	Benzo(g,h,i)Perylene
Fluoranthene	Benzo(a)Anthracene
Pyrene	Chrysene

Metals = dissolved Cadmium, Chromium, and Lead

PCBs = Polychlorinated Biphenyls, Aroclors 1016, 1221, 1232, 1242, 1248, 1254,
and 1260

TABLE 4-1

SOIL ANALYTICAL DATA
FORMER UST #4 AREAGENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameter	B-1 14-16' 8/31/90	B-2 8-9.5' 9/4/90	B-3 8-9.5' 9/4/90	B-4 10-12' 9/4/90	B-4 12-14' 9/4/90	B-7 4-6' 9/10/90	B-7 8-10' 9/10/90	B-7 10-12' 9/10/90	B-8 4-6' 9/10/90
Benzene	0.40	<0.010	<0.010	<0.015	5.6	0.015	<0.010	0.25	<0.010
Ethylbenzene	0.95	<0.010	<0.010	0.015	5.8	<0.010	<0.010	0.65	<0.010
Toluene	3.1	<0.010	<0.010	0.030	12	0.025	0.020	0.8	<0.010
Xylene, Total	3.4	<0.010	<0.010	0.060	53	0.020	<0.010	3.3	<0.010

Parameter	B-8 10-12' 9/10/90	B-8 12-14' 9/10/90	B-9 4-6' 9/10/90	B-9 10-12' 9/10/90	B-9 12-14' 9/10/90	B-10 10-12' 9/10/90	B-11 6-8' 9/10/90	B-11 10-12' 9/10/90	B-12 12-14' 9/11/90
Benzene	<0.010	<0.010	<0.010	<0.010	2.3	<0.010	<0.010	<0.010	<0.010
Ethylbenzene	<0.010	0.015	<0.010	0.020	4.0	<0.010	<0.010	<0.010	<0.010
Toluene	<0.010	0.045	<0.010	0.050	36	0.1	<0.010	<0.010	0.015
Xylene, Total	0.017	0.070	<0.010	0.12	15	<0.010	<0.010	<0.010	0.012

Parameter	B-13 8-10' 10/3/90	B-13 10-12' 10/3/90	B-14 10-12' 10/4/90	B-14 14-16' 10/4/90	B-26 (BG) 4-6' 8/28/90	B-27 4-6' 8/30/90	B-28 2-4' 8/31/90	B-28 8-10' 8/31/90
Benzene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Ethylbenzene	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Toluene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Xylene, Total	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
TPH	NA	NA	NA	NA	81	640	140	670
PNAs	NA	NA	NA	NA	<0.3	<0.3	<0.3	<0.3

Parameter	T4-B103 5-7' 7/10/92	T4-B103 13-15' 7/10/92	T4-B104 5-7' 7/10/92	T4-B104 18-20' 7/10/92	T4-B105 1-3' 7/10/92	T4-B105 18-20' 7/10/92	T4-B106 1-3' 7/10/92	T4-B106 13-15' 7/10/92	T4-B107 5-7' 7/13/95	T4-B107 13-15' 7/13/95
Benzene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Ethylbenzene	<0.010	<0.010	<0.010	0.013	<0.010	0.022	0.084	<0.010	0.024	<0.010
Toluene	<0.010	<0.010	0.025	<0.010	<0.010	<0.010	0.033	<0.010	<0.010	<0.010
Xylene, Total	0.019	0.16	<0.010	<0.010	<0.010	0.080	<0.010	<0.010	0.090	<0.010
Methyl (tert) butyl Ether	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Parameter	UST 4-1 10-12' 6/1/94	UST 4-2 8-10' 6/1/94	UST 4-3 10-12' 6/1/94	UST 4-3 (DUP) 10-12' 6/2/94	UST 4-4 10-12' 6/2/94
Benzene	<0.010	<0.010	<0.010	<0.010	<0.010
Ethylbenzene	<0.010	<0.010	<0.010	<0.010	<0.010
Toluene	<0.010	<0.010	<0.010	<0.010	<0.010
Xylene, Total	<0.030	<0.030	<0.030	<0.030	<0.030
Methyl (tert) butyl Ether	<0.10	<0.10	<0.10	<0.10	<0.10
Lead	17	8.3	6.7	6.8	20
Percent Solids	88	90	93	91	90

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg).

TPH = Total Petroleum Hydrocarbons.

PNAs = Polynuclear Aromatic Hydrocarbon Compounds.

BG = Background.

DUP = Duplicate analysis.

Samples T4-B103 through T4-B107 were collected by Geo-Test, Ltd., 1992.

Samples B-1 through B-28 were collected by Schleede-Hampton Associates, Inc., 1991.

Samples UST 4-1 through UST 4-4 were collected by Earth Tech, June 1994.

Source: Phase II Hydrogeological Study at the GM Powertrain Division SMI Plant Former Tank #4 Area (Earth Tech, June 1995); modified based on the laboratory analytical data sheets.

TABLE 4-2

SOIL ANALYTICAL DATA
FORMER UST #7 AREAGENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY
GREEN POINT LANDFILL AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameter	B-15 7-9' 9/5/90	B-15 11-13' 9/5/90	B-15 13-15' 9/5/90	B-16 7-9' --	B-16 13-15' --	B-17 3-5' 9/5/90	B-17 7-9' 9/5/90	B-18 3-5' 9/5/90	B-19 9-11' 9/5/90
Benzene	73	<0.010	<0.010	11	<0.010	0.050	3.5	0.015	21
Ethylbenzene	13	<0.010	<0.010	20	<0.010	0.050	6.9	0.015	3.7
Toluene	99	<0.010	<0.010	31	<0.010	0.065	5.7	0.025	20
Xylene, Total	320	<0.010	<0.010	99	0.025	0.25	25	0.14	75

Parameter	B-20 5-7' 9/5/90	B-20 7-9' 9/5/90	B-21 7-9' 9/11/90	B-21 13-15' 9/11/90	B-22 5-7' 9/11/90	B-22 7-9' 9/11/90	B-22 13-15' 9/11/90	B-23 10-12' 10/4/90	B-24 8-10' 10/4/90	B-24 10-12' 10/4/90
Benzene	0.13	9.2	23	0.15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Ethylbenzene	<0.010	16	1.7	0.43	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Toluene	<0.010	13	7.0	0.20	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Xylene, Total	0.025	42	50	1.0	<0.010	0.03	<0.010	<0.010	<0.010	<0.010

Parameter	B-26(BG) 4-6' 8/28/90	B-27(BG) 4-6' 8/30/90	B-28(BG) 2-4' 8/31/90	B-28(BG) 8-10' 8/31/90
Benzene	<0.010	<0.010	<0.010	<0.010
Ethylbenzene	<0.010	<0.010	<0.010	<0.010
Toluene	<0.010	0.025	<0.010	<0.010
Xylene, Total	<0.010	0.035	<0.010	<0.010
TPH	81	640	140	670
PNAs	<0.3	<0.3	<0.3	<0.3

Parameter	T7-B108 1-3' 7/13/92	T7-B108 9-11' 7/13/92	T7-B109 9-11' 7/13/92	T7-B109 13-15' 7/13/92	T7-B110 5-7' 7/13/92	T7-B110 13-15' 7/13/92	T7-B111 8-10' 7/13/92	T7-B111 13-15' 7/13/92	T7-B112 8-10' 7/13/92	T7-B112 13-15' 7/13/92
Benzene	<0.010	0.085	0.068	0.16	<0.010	<0.010	16	0.032	<0.050	0.98
Ethylbenzene	<0.010	0.10	0.60	0.52	<0.010	<0.010	12	0.18	0.53	4.5
Toluene	<0.010	<0.010	<0.010	<0.050	0.016	<0.010	7.3	0.1	0.1	1.9
Xylene, Total	<0.010	0.27	0.120	0.37	0.039	<0.010	64	1	2	24
Lead	5.2	5.1	11	36	6.4	5.9	17	3.4	2.1	2.5

Parameter	UST7-1 4-6' 6/3/94	UST7-2 7-9' 6/3/94	UST7-3 6-8' 6/7/94	UST7-4 2-4' 6/7/94	UST7-5 4-6' 6/7/94	BG-94-1 5-7' 7/8/94	MW-UST7-3 5-7' 7/7/94	UST7-4 4-6' 7/7/94	UST7-5 4-6' 7/7/94	UST7-6 2-4' 7/7/94
Benzene	<0.010	4.3	NA	NA	NA	NA	<0.010	<0.010	0.12	<0.010
Ethylbenzene	<0.010	71	NA	NA	NA	NA	<0.010	<0.010	0.88	<0.010
Toluene	<0.010	<2.5	NA	NA	NA	NA	<0.010	<0.010	0.22	<0.010
Xylene, Total	<0.030	240	NA	NA	NA	NA	<0.030	<0.030	6.4	<0.030
Methyl (tert) butyl Ether	NA	NA	NA	NA	NA	NA	<0.10	<0.10	<0.55	<0.10
Lead	2.5	16	18	29	37	17	NA	NA	NA	NA
Percent Solids	92	81	84	92	91	NA	92	90	91	94

Notes:

All concentrations are reported in milligrams per kilogram (mg/kg).

TPH = Total Petroleum Hydrocarbons.

NA = Not applicable.

PNAs = Polynuclear Aromatic Hydrocarbon Compounds.

BG = Background.

Samples T7-B108 through T4-B112 were collected by Geo-Test, Ltd., October 1992.

Samples B-15 through B-28 were collected by Schleede-Hampton Associates, Inc., January, 1991.

Samples UST7-1 through UST 7-6 were collected by Earth Tech.

Source: Phase II Hydrogeological Study at the GM Powertrain Division SMI Plant Former Tank #7 Area (Earth Tech, June 1995); modified based on the laboratory analytical data sheets.

TABLE 4-3

SOIL ANALYTICAL DATA
FORMER UST #8 AREA

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameter	MW-UST8-1 0-2' 5/25/94	MW-UST8-1 2-4' 5/25/94	MW-UST8-2 0-2' 5/25/94	MW-UST8-3 1-3' 5/31/94	SB-UST8-1 2-3' 4/1/94	SB-UST8-2 0-1.2' 4/1/94	SB-UST8-3 0.7-1.1' 4/1/94	SB-UST8-4 1.8-2.3' 4/1/94	SB-UST8-5 4-6' 5/31/94
Volatiles/BTEX									
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10
Xylenes (o, m, & p) Total	<30	<30	<30	<30	<30	31	<30	<30	<30
Semivolatiles/PNAs									
Acenaphthene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Acenaphthylene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Anthracene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Benzo(a)Anthracene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Benzo(b)Fluoranthene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Benzo(k)Fluoranthene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Benzo(a)Pyrene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Benzo(g,h,i)Perylene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Chrysene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Dibenzo(a,h)Anthracene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Fluoranthene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Fluorene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Ideno(1,2,3-c,d)Pyrene	<330	<330	<330	<330	<33,000	<6,600	<666	<330	<330
Naphthalene	<330	<330	<330	<330	<33,000	<6,600	1,600	<330	<330
Phenanthrene	<330	<330	<330	<330	<33,000	<6,600	1,900	<330	<330
Pyrene	<330	<330	<330	<330	<33,000	<6,600	690	<330	<330
Metals									
Cadmium	220	200	440	310	1,000	5,200	2,200	1,200	340
Chromium, Total	9,000	7,000	15,000	12,000	13,000	37,000	14,000	18,000	16,000
Lead, Total	4,900	4,000	14,000	6,700	9,700	68,000	62,000	9,600	9,100
Aroclors/PCBs									
PCB-1016	<330	<330	<330	<330	<330	<4,200**	<330	<330	<330
PCB-1221	<330	<330	<330	<330	<330	<2,800**	<330	<330	<330
PCB-1232	<330	<330	<330	<330	<330	<4,200	<330	<330	<330
PCB-1242	<330	<330	<330	<330	<330	<4,200	<330	<330	<330
PCB-1248	<330	<330	<330	<330	<330	<4,200	<330	<330	<330
PCB-1254	<330	<330	<330	<330	<330	<4,200	380	<470	<330
PCB-1260	<330	<330	<330	<330	<330	<4,200	<330	<330	<330

Notes:

All concentrations are reported in micrograms per kilogram (ug/kg).

** = Elevated detection levels due to interference from other compounds.

Samples collected by Earth Tech, 1994.

Source: Phase II Hydrogeological Study at the GM Powertrain Division Former UST #8 Area (Earth Tech, November 1994); modified based on the laboratory analytical data sheets.

TABLE 4-4

GROUNDWATER ANALYTICAL DATA
FORMER UST #4 AREAGENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameter	MW-UST4-1 6/8/94	MW-UST4-2 6/8/94	MW-UST4-3(DUP) 6/8/94	MW-UST4-3 6/8/94	MW-UST4-4 6/8/94	T4-B103 7/10/92	T4-B104 7/10/92	T4-B105 7/10/92	T4-B106 7/10/92	T4-B107 7/13/92
Benzene	<1.0	<1.0	<1.0	<1.0	22	<5.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	1.5	5.6	73	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	8.0	<5.0	<1.0	<1.0	<1.0	<1.0
Xylene, Total	<3.0	<3.0	<3.0	<3.0	28	120	<1.0	<1.0	<1.0	<1.0
Methyl (tert) butyl Ether	<50	<50	<50	<50	<50	<5.0	<1.0	<1.0	<1.0	<1.0
Lead, dissolved	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA

Notes:

All concentrations are reported in micrograms per liter (ug/L).

NA = Not applicable.

DUP = Duplicate analysis.

Samples T4-B103 through T4-B107 were collected by Geo-Test, Ltd., 1992.

Samples UST 4-1 through UST 4-4 were collected by Earth Tech in June 1994.

Source: Phase II Hydrogeological Study at the GM Powertrain SMI Plant Former Tank #4 Area (Earth Tech, June 1995); modified based on the laboratory analytical data sheets.

TABLE 4-5

GROUNDWATER ANALYTICAL DATA
FORMER UST #7 AREAGENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameter	T7-B108 7/13/92	T7-B109 7/13/92	T7-B110 7/13/92	T7-B111 7/13/92	T7-B112 7/13/92	MW-UST7-1 6/8/94	MW-UST7-2 6/8/94	MW-UST7-3 FB 6/8/94	MW-UST7-3 6/8/94	MW-UST7-4 6/8/94	MW-UST7-5 6/8/94	MW-UST7-6 6/8/94
Benzene	1,400	310	<50	17,000	1,300	29	2,100	<1.0	1.1	110	3,700	33
Ethylbenzene	2,500	210	<50	18,000	2,300	2.6	3,100	<1.0	<1.0	8.1	3,600	8.0
Toluene	1,100	16	<50	16,000	2,000	1.1	<100	<1.0	<1.0	<2.0	13,000	10
Xylene, Total	9,100	400	160	100,000	11,000	<3.0	9,800	<3.0	<3.0	21	19,000	37
Lead, dissolved	180	310	1700	2,600	950	<1.0	1.1	<1.0	<1.0	<1.0	1.0	<1.0

Notes:

All concentrations are reported in micrograms per liter (ug/L).

FB = Field Blank.

Samples T7-B108 through T7-B112 were collected by Geo-Test, Ltd., 1992.

Samples MW-UST7-1 through MW-UST7-6 were collected in 1994 by Earth Tech.

Source: Phase II Hydrogeological Study at the GM Powertrain Division SMI Plant Former UST #7 Area (Earth Tech, June 1995); modified based on the laboratory analytical data sheets.

TABLE 4--6

GROUNDWATER ANALYTICAL DATA
FORMER UST #8 AREAGENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Parameter	MW-UST8-1 6/8/94	MW-UST8-2 6/8/94	MW-UST8-3 6/8/94	MW-UST8-5 6/8/94
Volatiles/BTEX				
Benzene	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0
Xylenes (o, m, & p) Total	<3.0	<3.0	<3.0	<3.0
Semivolatiles/PNAs				
Acenaphthene	<5.0	<5.0	<5.0	<5.0
Acenaphthylene	<5.0	<5.0	<5.0	<5.0
Anthracene	<5.0	<5.0	<5.0	<5.0
Benzo(a)Anthracene	<5.0	<5.0	<5.0	<5.0
Benzo(b)Fluoranthene	<5.0	<5.0	<5.0	<5.0
Benzo(k)Fluoranthene	<5.0	<5.0	<5.0	<5.0
Benzo(a)Pyrene	<5.0	<5.0	<5.0	<5.0
Benzo(g,h,i)Perylene	<5.0	<5.0	<5.0	<5.0
Chrysene	<5.0	<5.0	<5.0	<5.0
Dibenzo(a,h)Anthracene	<5.0	<5.0	<5.0	<5.0
Fluoranthene	<5.0	<5.0	<5.0	<5.0
Fluorene	<5.0	<5.0	<5.0	<5.0
Ideno(1,2,3-c,d)Pyrene	<5.0	<5.0	<5.0	<5.0
Naphthalene	<5.0	<5.0	<5.0	<5.0
Phenanthrene	<5.0	<5.0	<5.0	<5.0
Pyrene	<5.0	<5.0	<5.0	<5.0
Metals				
Cadmium, dissolved	<0.2	<0.2	<0.2	0.8
Chromium, dissolved	<50	<50	<50	<50
Lead, dissolved	<1.0	<1.0	<1.0	<1.0
Aroclors/PCBs				
PCB-1016	<1.0	<1.0	<1.0	<0.20
PCB-1221	<1.0	<1.0	<1.0	1.2
PCB-1232	<1.0	<1.0	<1.0	<0.40
PCB-1242	<1.0	<1.0	<1.0	0.40
PCB-1248	<1.0	<1.0	<1.0	<0.20
PCB-1254	<4.2	<1.0	<1.0	<0.20
PCB-1260	<4.2	<1.0	<1.0	<0.20

Notes:

All concentrations are reported in micrograms per liter (ug/L).

ND=Not detected.

Samples collected by Earth Tech, 1994.

Source: Phase II Hydrogeological Study at the GM Powertrain Division SMI Plant

Former UST #8 Area (Earth Tech, November 1994); modified based on the laboratory analytical data sheets.

TABLE 4-7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-1															
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	878,000	619,000	—	—	—	—	—	—	41,000	43,000	49,000	67,000	71,000	54,000	62,000
Chemical Oxygen Demand (mg/L)	39	19	—	—	—	—	—	—	36	760	43	40	29	790	170
Iron, dissolved	150	260	—	—	—	—	—	—	450	<20	40	1,300	150	100	140
Manganese, dissolved	240	20	—	—	—	—	—	—	170	<20	270	220	190	170	170
Phenol (4-AAP) – Phenolics	30	<10	—	—	—	—	—	—	<10	4	2	11	28	31	6
Sodium, dissolved	540,000	320,000	—	—	—	—	—	—	128,000	84,000	73,000	74,000	62,000	67,000	33,000
pH	—	—	—	—	—	—	—	—	7.5	7.2	7.7	7.6	7.7	7.0	6.9
Conductivity (umhos/cm)	2,940	—	—	3,175	—	—	—	—	760	690	760	680	700	1200	680

Well B-2															
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	85,000	609,000	280,000	—	—	—	—	—	167,000	930,000	3,150,000	3,100,000	9,800,000	4,000,000	2,400,000
Chemical Oxygen Demand (mg/L)	48	141	—	—	—	—	—	—	119	<5	73	590	115	1,000	320
Iron, dissolved	90	2,500	—	—	—	—	—	—	580	2,000	90	9,800	200	280	90
Manganese, dissolved	290	810	—	—	—	—	—	—	180	960	2,300	2,800	360	60	20
Phenol (4-AAP) – Phenolics	10	10	—	—	—	—	—	—	<10	<10	3	5	17	21	4
Sodium, dissolved	109,000	80,000	—	—	—	—	—	—	172,000	560,000	1,560,000	20,000,000	53,000	1,300,000	1,100,000
pH	—	—	7.1	—	—	—	—	—	7.3	6.9	7.1	7.0	7.9	8.1	8.2
Conductivity (umhos/cm)	710	—	1120	800	—	—	—	—	910	3,200	> 10,000	> 10,000	10,000	10,000	7,700

Well B-3															
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	92,000	75,000	—	—	—	—	—	—	47,000	67,000	88,000	50,000	54,000	67,000	120,000
Chemical Oxygen Demand (mg/L)	44	47	—	—	—	—	—	—	42	<5	77	26	130	65	750
Iron, dissolved	240	140	—	—	—	—	—	—	1,480	4,900	50	120	1,600	220	4,500
Manganese, dissolved	930	340	—	—	—	—	—	—	210	150	60	360	300	400	280
Phenol (4-AAP) – Phenolics	<10	<10	—	—	—	—	—	—	<10	<7	6	5	29	26	18
Sodium, dissolved	83,000	39,000	—	—	—	—	—	—	73,200	85,000	91,000	80,000	68,000	70,000	65,000
pH	—	—	—	—	—	—	—	—	6.9	6.9	7.3	7.0	7.1	6.9	6.8
Conductivity (umhos/cm)	1,020	—	1,035	1,045	—	—	—	—	950	1,000	1,400	1,000	900	1,000	1,000

(Notes are included on Page 12.)

TABLE 4--7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 - FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-4A															
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	916,000	659,000	—	—	620,000	516,000	690,000	630,000	620,000	630,000	570,000	610,000	570,000	—	540,000
Chemical Oxygen Demand (mg/L)	559	409	—	—	230	198	174	188	141	330	76	200	240	—	1,600
Iron, dissolved	4,910	3,290	—	—	30	140	80	190	340	3,800	330	180	230	—	270
Manganese, dissolved	250	130	—	—	70	60	50	30	60	80	90	50	80	—	270
Phenol (4-AAP)-Phenolics	8,920	3,150	—	—	33	20	<10	10	<10	<10	19	43	550	—	48
Sodium, dissolved	818,000	820,000	—	—	830,000	848,000	588,000	815,000	855,000	860,000	580,000	800,000	660,000	—	160,000
pH	—	—	—	—	8.4	8.3	8.2	8.0	7.5	7.2	7.6	7.7	7.9	—	5.9
Conductivity (umhos/cm)	3,710	—	—	—	3,600	5,240	3,520	3,160	3,500	3,500	4,000	3,400	3,000	—	5,300

Well B-4B															
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	361,000	327,000	—	—	283,000	294,000	318,000	283,000	281,000	300,000	300,000	290,000	285,000	110,000	290,000
Chemical Oxygen Demand (mg/L)	175	22	—	—	80	64	98	183	86	44	150	90	110	35	430
Iron, dissolved	60	400	—	—	140	15,600	18,000	28,400	129,000	320	240	180	10,000	170	350
Manganese, dissolved	790	230	—	—	270	400	380	470	550	310	170	340	420	120	30
Phenol (4-AAP)-Phenolics	800	60	—	—	10	<10	<10	20	<10	<10	9	<2	100	25	24
Sodium, dissolved	276,000	140,000	—	—	245,000	243,000	233,000	247,000	262,000	300,000	230,000	270,000	220,000	180,000	390,000
pH	—	—	—	—	7.3	7.2	7.2	7.2	6.6	6.6	6.9	7.0	7.0	7.5	6.0
Conductivity (umhos/cm)	2,230	—	—	—	1,680	2,080	2,000	1,700	1,830	1,800	2,200	2,000	1,800	1,350	1,800

Well B-5															
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	179,000	206,000	—	—	157,000	177,000	203,000	148,000	159,000	150,000	140,000	150,000	150,000	150,000	140,000
Chemical Oxygen Demand (mg/L)	151	107	—	—	90	122	94	112	115	350	150	120	110	110	450
Iron, dissolved	1,960	2,070	—	—	3,820	5,950	9,900	7,500	13,500	6,200	1,200	590	1,200	1,100	150
Manganese, dissolved	430	620	—	—	340	310	340	290	420	230	80	210	250	200	200
Phenol (4-AAP)-Phenolics	10	10	—	—	20	<10	<10	10	<10	<4	11	9	580	22	19
Sodium, dissolved	604,000	520,000	—	—	624,000	649,000	611,000	68,000	614,000	680,000	490,000	50,000	440,000	310,000	270,000
pH	—	—	—	—	7.3	7.6	7.3	7.1	6.8	6.9	7.0	7.1	7.1	6.8	6.8
Conductivity (umhos/cm)	2,510	—	—	—	2,400	2,640	2,410	2,350	2,500	2,400	2,800	2,000	2,000	1,000	2,100

(Notes are included on Page 12).

TABLE 4-7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-6															
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	361,000	270,000	—	—	—	—	—	—	61,000	—	22,000	95,000	39,000	39,000	100,000
Chemical Oxygen Demand (mg/L)	181	68	—	—	—	—	—	—	56	—	65	40	39	44	40
Iron, dissolved	180	960	—	—	—	—	—	—	9,720	47,000	880	70	2,400	360	4,000
Manganese, dissolved	890	1,410	—	—	—	—	—	—	610	170	1,000	420	830	710	540
Phenol (4-AAP)-Phenolics	10	<10	—	—	—	—	—	—	<10	6	5	9	140	11	5
Sodium, dissolved	571,000	170,000	—	—	—	—	—	—	184,000	160,000	200,000	110,000	140,000	100,000	100,000
pH	—	—	—	—	—	—	—	—	6.8	—	7.0	7.1	7.0	7.1	6.9
Conductivity (umhos/cm)	1,600	—	—	—	—	—	—	—	925	—	1,400	920	1,000	1,200	1,100

Well B-7															
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	67,000	30,000	—	—	45,000	41,000	49,600	30,000	33,000	92,000	55,000	48,000	46,000	23,000	54,000
Chemical Oxygen Demand (mg/L)	60	45	—	—	20	27	<20	34	40	310	58	35	25	320	1,800
Iron, dissolved	150	350	—	—	250	70	170	100	240	1,400	40	100	70	680	130
Manganese, dissolved	330	330	—	—	330	230	270	190	320	610	380	240	100	250	140
Phenol (4-AAP)-Phenolics	10	20	—	—	10	<10	<10	<10	<10	8	4	10	10	13	17
Sodium, dissolved	28,000	22,000	—	—	33,000	30,000	29,500	26,200	23,700	42,000	45,000	36,000	20,000	34,000	21,000
pH	—	—	—	—	7.6	7.9	7.9	7.1	7.3	6.7	7.5	7.1	7.5	7.5	7.2
Conductivity (umhos/cm)	480	—	—	—	480	430	440	360	465	520	620	500	470	515	480

(Notes are included on Page 12.)

TABLE 4--7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-1A																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	1,400,000	540,000	NA	NA	NA	NA	NA	847,000	770,000	590,000	740,000	800,000	140,000	1,100,000
Chemical Oxygen Demand (mg/L)	NA	NA	—	—	NA	NA	NA	NA	NA	236	190	290	250	280	140	890
Iron, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	25,600	60	80	300	1,400	90	15,000
Manganese, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	60	1,100	30	800	780	470	800
Phenol (4-AAP)–Phenolics	NA	NA	—	20	NA	NA	NA	NA	NA	20	4	150	26	130	9	22
Sodium, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	608,000	620,000	47,000	550,000	420,000	360,000	440,000
pH	NA	NA	7.1	7.8	NA	NA	NA	NA	NA	7.5	6.7	7.6	6.8	6.8	6.6	6.4
Conductivity (umhos/cm)	NA	NA	5,400	4,275	NA	NA	NA	NA	NA	5,030	4,400	4,000	4,300	4,300	4,500	5,500
TOC (mg/L)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	145

Well X-1B																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	88,000	383,000	NA	NA	NA	NA	NA	795,000	990,000	1,230,000	1,130,000	1,700,000	140,000	130,000
Chemical Oxygen Demand (mg/L)	NA	NA	—	—	NA	NA	NA	NA	NA	115	72	98	110	93	11	500
Iron, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	17,400	80	20	300	14,000	5,900	5,000
Manganese, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	390	120	<20	430	360	100	40
Phenol (4-AAP)–Phenolics	NA	NA	—	—	NA	NA	NA	NA	NA	<10	<2	3	8	5	5	7
Sodium, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	526,000	560,000	450,000	420,000	450,000	140,000	67,000
pH	NA	NA	6.9	7.7	NA	NA	NA	NA	NA	6.6	6.7	6.9	6.5	6.6	6.5	6.5
Conductivity (umhos/cm)	NA	NA	2,965	3,035	NA	NA	NA	NA	NA	4,180	4,100	2,200	4,200	4,400	1,100	1,200
TOC (mg/L)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10

Well X-1C																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	410,000	—	NA	NA	NA	NA	NA	203,000	160,000	160,000	140,000	140,000	—	1,300,000
Chemical Oxygen Demand (mg/L)	NA	NA	—	—	NA	NA	NA	NA	NA	482	37	55	20	16	—	3,900
Iron, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	30,000	70	<20	110	320	—	950
Manganese, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	130	80	50	70	70	—	430
Phenol (4-AAP)–Phenolics	NA	NA	—	—	NA	NA	NA	NA	NA	<10	<2	<2	6	8	—	5
Sodium, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	329,000	200,000	190,000	160,000	130,000	—	290,000
pH	NA	NA	7.1	—	NA	NA	NA	NA	NA	6.3	6.9	6.9	7.3	6.9	—	6.5
Conductivity (umhos/cm)	NA	NA	2,200	2,100	NA	NA	NA	NA	NA	1,700	1,300	1,400	1,100	1,000	—	490

(Notes are included on Page 12.)

TABLE 4-7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-2A																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	56,000	39,000	NA	NA	NA	NA	NA	36,000	240,000	29,000	23,000	34,000	29,000	NS ²
Chemical Oxygen Demand (mg/L)	NA	NA	—	—	NA	NA	NA	NA	NA	15	76	25.0	25	140	580	NS ²
Iron, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	850	200	<20	90	210	750	NS ²
Manganese, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	510	1,100	620	530	500	810	NS ²
Phenol (4-AAP)–Phenolics	NA	NA	—	—	NA	NA	NA	NA	NA	10	6	<2	<2	15	26	NS ²
Sodium, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	38,900	38,000	34,000	36,000	37,000	34,000	NS ²
pH	NA	NA	7.5	8.2	NA	NA	NA	NA	NA	7.6	7.1	7.7	7.5	7.6	7.2	NS ²
Conductivity (umhos/cm)	NA	NA	945	750	NA	NA	NA	NA	NA	525	580	600	510	560	710	NS ²

Well X-2B																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	—	—	NA	NA	NA	NA	NA	73,000	85,000	95,000	83,000	93,000	94,000	95,000
Chemical Oxygen Demand (mg/L)	NA	NA	—	—	NA	NA	NA	NA	NA	33	28	27	44	440	25	650
Iron, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	8,240	70	20	320	1,100	710	2,000
Manganese, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	460	450	360	410	310	420	310
Phenol (4-AAP)–Phenolics	NA	NA	—	—	NA	NA	NA	NA	NA	<10	<2	<2	60	4	12	3
Sodium, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	103,000	100,000	120,000	1,200,000	130,000	140,000	86,000
pH	NA	NA	—	—	NA	NA	NA	NA	NA	7.1	7.0	7.5	6.8	7.1	6.8	6.5
Conductivity (umhos/cm)	NA	NA	1,015	1,000	NA	NA	NA	NA	NA	875	1,000	1,250	1,000	1,000	880	490

Well X-2C																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	70,000	—	NA	NA	NA	NA	NA	89,000	110,000	200,000	120,000	100,000	140,000	150,000
Chemical Oxygen Demand (mg/L)	NA	NA	—	—	NA	NA	NA	NA	NA	35	37	39	50	49	34	190
Iron, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	13,400	70	<20	130	130	8,100	5,500
Manganese, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	990	<20	<20	750	590	820	550
Phenol (4-AAP)–Phenolics	NA	NA	—	—	NA	NA	NA	NA	NA	<10	<2	5	3	21	14	17
Sodium, dissolved	NA	NA	—	—	NA	NA	NA	NA	NA	124,000	100,000	110,000	110,000	120,000	120,000	76,000
pH	NA	NA	6.8	—	NA	NA	NA	NA	NA	6.8	7.2	7.4	6.8	7.3	6.8	6.9
Conductivity (umhos/cm)	NA	NA	1,500	810	NA	NA	NA	NA	NA	1,150	1,200	1,600	1,200	1,100	1,100	1,100
TOC (mg/L)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20

(Notes are included on Page 12.)

TABLE 4--7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 - FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-6																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	2,900,000	1,910,000	NA	NA	NA	2,140,000	NA	1,950,000	3,100,000	NS ³	NS ³	NS ³	2,600,000	2,600,000
Chemical Oxygen Demand (mg/L)	NA	NA	-	-	NA	NA	NA	-	NA	6,650	3,300	NS ³	NS ³	NS ³	2,500	7,000
Iron, dissolved	NA	NA	-	-	NA	NA	NA	14,400	NA	5,350	4,200	NS ³	NS ³	NS ³	4,700	2,400
Manganese, dissolved	NA	NA	-	-	NA	NA	NA	-	NA	130	80	NS ³	NS ³	NS ³	80	60
Phenol (4-AAP) - Phenolics	NA	NA	30	160	NA	NA	NA	30	NA	110	295	NS ³	NS ³	NS ³	200	170
Sodium, dissolved	NA	NA	-	-	NA	NA	NA	-	NA	645,000	3,500,000	NS ³	NS ³	NS ³	1,600,000	920,000
pH	NA	NA	8.4	6.7	NA	NA	NA	6.7	NA	7.0	6.9	NS ³	NS ³	NS ³	6.9	6.5
Conductivity (umhos/cm)	NA	NA	8,785	-	NA	NA	NA	7,200	NA	12,200	1,000	NS ³	NS ³	NS ³	> 10,000	14,000
Calcium	NA	NA	-	-	NA	NA	NA	-	NA	72,000	9,000	NS ³	NS ³	NS ³	820,000	2,000,000
Potassium	NA	NA	-	-	NA	NA	NA	-	NA	532,000	72,000	NS ³	NS ³	NS ³	480,000	620,000
Magnesium	NA	NA	-	-	NA	NA	NA	-	NA	124,000	140,000	NS ³	NS ³	NS ³	340,000	800,000
Fluoride	NA	NA	-	-	NA	NA	NA	-	NA	1,120	640	NS ³	NS ³	NS ³	1,400	1,900
Sulfate	NA	NA	-	-	NA	NA	NA	-	NA	15,000	<1,000	NS ³	NS ³	NS ³	33,000	26,000
Bicarbonate Alkalinity (mg/L)	NA	NA	-	-	NA	NA	NA	-	NA	3,170	3,100	NS ³	NS ³	NS ³	3,800	3,500
Organic Carbon (mg/L)	NA	NA	-	530	NA	NA	NA	300	NA	1,100	850	NS ³	NS ³	NS ³	1,020	150
Nitrate	NA	NA	-	-	NA	NA	NA	-	NA	<50	80	NS ³	NS ³	NS ³	120	<20
Nitrite	NA	NA	-	-	NA	NA	NA	-	NA	30	80	NS ³	NS ³	NS ³	1,000	460
Arsenic	NA	NA	210	3	NA	NA	NA	-	NA	10	11	NS ³	NS ³	NS ³	38	320
Barium	NA	NA	2,100	1,230	NA	NA	NA	-	NA	1,060	800	NS ³	NS ³	NS ³	1,800	3,000
Cadmium	NA	NA	<2	<2	NA	NA	NA	-	NA	24	30	NS ³	NS ³	NS ³	<10	<10
Chromium	NA	NA	38	22	NA	NA	NA	-	NA	<30	180	NS ³	NS ³	NS ³	630	1,200
Lead	NA	NA	<20	40	NA	NA	NA	-	NA	<30	310	NS ³	NS ³	NS ³	910	1,800
Mercury	NA	NA	0.5	1.0	NA	NA	NA	-	NA	<0.5	<0.5	NS ³	NS ³	NS ³	1.9	1.0
Selenium	NA	NA	1	<2	NA	NA	NA	-	NA	<2	<5	NS ³	NS ³	NS ³	<5	9
Silver	NA	NA	<20	<20	NA	NA	NA	-	NA	<10	20	NS ³	NS ³	NS ³	<20	<20
Cyanide	NA	NA	-	-	NA	NA	NA	-	NA	29	40	NS ³	NS ³	NS ³	<20	<20
Total Hardness (mg/L)	NA	NA	-	1,151	NA	NA	NA	1,400	NA	740	300	NS ³	NS ³	NS ³	230	420

(Notes are included on Page 12.)

TABLE 4-7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-7A																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	9,550,000	9,440,000	NA	NA	NA	654,000	NA	7,500,000	21,000,000	*	*	25,000,000	*	*
Chemical Oxygen Demand (mg/L)	NA	NA	—	—	NA	NA	NA	—	NA	6,770	18,000	3,600	17,500	17,000	5,000	10,000
Iron, dissolved	NA	NA	—	—	NA	NA	NA	24,200	NA	366,000	1,110,000	3,400,000	1,100,000	4,200,000	2,000,000	1,800,000
Manganese, dissolved	NA	NA	—	—	NA	NA	NA	—	NA	15,900	38,000	90,000	34,000	120,000	110,000	55,000
Phenol (4-AAP)—Phenolics	NA	NA	880	—	NA	NA	NA	20	NA	278	1,540	850	5,660	2,800	14,000	8,300
Sodium, dissolved	NA	NA	—	—	NA	NA	NA	—	NA	283,000	940,000	3,000,000	840,000	3,540,000	1,800,000	900,000
pH	NA	NA	—	6.7	NA	NA	NA	6.8	NA	6.2	5.6	7.5	5.7	5.5	5.5	5.4
Conductivity (umhos/cm)	NA	NA	14,160	19,025	NA	NA	NA	3,020	NA	23,000	>10000	620	>10000	>10000	>10000	54,000
Calcium	NA	NA	—	—	NA	NA	NA	—	NA	2,560,000	5,000,000	1,200,000	1,200,000	7,900,000	6,300,000	12,000,000
Potassium	NA	NA	—	—	NA	NA	NA	—	NA	47,800	200,000	—	200,000	7,300,000	430,000	1,200,000
Magnesium	NA	NA	—	—	NA	NA	NA	—	NA	1,130,000	2,200,000	3,300,000	1,200,000	14,000,000	2,400,000	4,100,000
Fluoride	NA	NA	—	—	NA	NA	NA	—	NA	1,350	450	570	130	100	90	150
Sulfate	NA	NA	—	—	NA	NA	NA	—	NA	12,000	250,000	600,000	710,000	810,000	940,000	830,000
Bicarbonate Alkalinity (mg/L)	NA	NA	—	—	NA	NA	NA	—	NA	1,533	5,400	4,000	9,200	11,100	11,000	10,000
Organic Carbon (mg/L)	NA	NA	150	—	NA	NA	NA	20	NA	1,920	9,400	6,400	10,000	10,300	10,600	10,500
Nitrate	NA	NA	—	—	NA	NA	NA	—	NA	<50	350	<20	110	2,000	<20	960
Nitrite	NA	NA	—	—	NA	NA	NA	—	NA	<10	180	120	240	290	<20	390
Arsenic	NA	NA	0.7	<2	NA	NA	NA	—	NA	4	8	<5	1,600	6	6	<5
Barium	NA	NA	44,000	1,000	NA	NA	NA	—	NA	6,410	2,500	400	2,100	1,400	1,300	1,000
Cadmium	NA	NA	14	<2	NA	NA	NA	—	NA	<5	120	210	440	120	<10	<10
Chromium	NA	NA	18	4	NA	NA	NA	—	NA	320	120	200	90	100	630	130
Lead	NA	NA	410	10	NA	NA	NA	—	NA	<30	<50	<50	370	620	910	600
Mercury	NA	NA	0.7	<0.2	NA	NA	NA	—	NA	<0.5	<0.5	<0.5	<0.5	1	2	<5
Selenium	NA	NA	<1	<2	NA	NA	NA	—	NA	<2	<5	5	<5	5	<5	<5
Silver	NA	NA	<20	<20	NA	NA	NA	—	NA	50	120	180	<20	20	<20	<20
Cyanide	NA	NA	—	—	NA	NA	NA	—	NA	28	20	20	<20	20	<20	<20
Total Hardness (mg/L)	NA	NA	—	—	NA	NA	NA	—	NA	11,850	29,000	*	66,500	31,000	25,600	27,300
Di-N-Octylphthalate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	<1	<1
Di-N-Butylphthalate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8,000	<1
2,4-Dimethylphenol	—	—	—	—	—	—	—	—	—	—	—	—	—	—	<60	<10
1,1-Dichloroethylene	—	—	—	—	—	—	—	—	—	—	—	—	—	—	<1	<1
Methylene Chloride	—	—	—	—	—	—	—	—	—	—	—	—	—	—	305,000	<10

(Notes are included on Page 12.)

TABLE 4-7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-9B								
Parameter	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	NA	NA	NA	NA	NA	310,000	300,000
Chemical Oxygen Demand (mg/L)	NA	NA	NA	NA	NA	NA	320	130
Iron, dissolved	NA	NA	NA	NA	NA	NA	28,000	150
Manganese, dissolved	NA	NA	NA	NA	NA	NA	1,500	350
Phenol (4-AAP)-Phenolics	NA	NA	NA	NA	NA	NA	52	9
Sodium, dissolved	NA	NA	NA	NA	NA	NA	210,000	110,000
pH	NA	NA	NA	NA	NA	NA	7	6.5
Conductivity (umhos/cm)	NA	NA	NA	NA	NA	NA	1,165	1,600
Calcium	NA	NA	NA	NA	NA	NA	140,000	140,000
Potassium	NA	NA	NA	NA	NA	NA	3,800	780
Magnesium	NA	NA	NA	NA	NA	NA	47,000	42,000
Fluoride	NA	NA	NA	NA	NA	NA	1,100	12,000
Sulfate	NA	NA	NA	NA	NA	NA	5,000	400
Bicarbonate Alkalinity (mg/L)	NA	NA	NA	NA	NA	NA	6,680	560
Organic Carbon (mg/L)	NA	NA	NA	NA	NA	NA	45	6
Nitrate	NA	NA	NA	NA	NA	NA	3,600	<20
Nitrite	NA	NA	NA	NA	NA	NA	<20	230
Arsenic	NA	NA	NA	NA	NA	NA	9	9
Barium	NA	NA	NA	NA	NA	NA	100	200
Cadmium	NA	NA	NA	NA	NA	NA	<10	<10
Chromium	NA	NA	NA	NA	NA	NA	120	150
Lead	NA	NA	NA	NA	NA	NA	<50	<50
Mercury	NA	NA	NA	NA	NA	NA	1	<.5
Selenium	NA	NA	NA	NA	NA	NA	<5	<5
Silver	NA	NA	NA	NA	NA	NA	<20	<20
Cyanide	NA	NA	NA	NA	NA	NA	<20	<20
Total Hardness (mg/L)	NA	NA	NA	NA	NA	NA	340	260
Di-N-Octylphthalate	-	-	-	-	-	-	<1,000	<1
Di-N-Butylphthalate	-	-	-	-	-	-	<1,000	<1
2,4-Dimethylphenol	-	-	-	-	-	-	<10,000	<10
1,1-Dichloroethylene	-	-	-	-	-	-	<1,000	<1
Methylene Chloride	-	-	-	-	-	-	1,000	<5

(Notes are included on Page 12.)

TABLE 4-7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 - FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-10B								
Parameter	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	208,000	320,000	290,000	270,000	280,000	410,000	170,000
Chemical Oxygen Demand (mg/L)	NA	262	51	11	23	20	180	26
Iron, dissolved	NA	6,100	16,000	14,000	60	11,000	3,200	60
Manganese, dissolved	NA	1,190	290	220	160	170	1,000	580
Phenol (4-AAP) - Phenolics	NA	6	<2	2	3	2	30	<2
Sodium, dissolved	NA	119,000	140,000	130,000	150,000	110,000	93,000	81,000
pH	NA	7.4	6.8	6.8	6.9	6.7	6.4	6.9
Conductivity (umhos/cm)	NA	1,630	1,500	2,000	1,600	1,600	1,000	1,400
Calcium	NA	164,000	160,000	40,000	1,600,000	200,000	150,000	380,000
Potassium	NA	6,880	5,500	6,800	2,200	18,000	4,200	290,000
Magnesium	NA	64,000	21,000	32,000	32,000	880,000	35,000	2,300,000
Fluoride	NA	1,000	270	400	420	340	960	1,100
Sulfate	NA	310,000	3,000	<1,000	<1,000	1,000	250,000	350,000
Bicarbonate Alkalinity (mg/L)	NA	321	520	470	530	550	260	200
Organic Carbon (mg/L)	NA	60.7	34	12	11	8	34	17
Nitrate	NA	130	110	<20	110	50	40	120
Nitrite	NA	<10	40	<20	30	20	<20	<20
Arsenic	NA	3	12	15	<5	8	12	990
Barium	NA	180	300	100	200	200	20	7,900
Cadmium	NA	<5	10	<10	<10	10	<10	<10
Chromium	NA	<30	20	<20	<20	30	20	2,400
Lead	NA	<30	<50	<50	<50	50	<50	2,200
Mercury	NA	0.8	<0.5	0.6	<0.5	0.5	<0.5	<0.5
Selenium	NA	<2	<5	<5	<5	5	<5	13
Silver	NA	<10	<20	<20	<20	20	<20	<20
Cyanide	NA	21	<20	<20	<20	20	<20	<20
Total Hardness (mg/L)	NA	690	540	430	550	530	560	600
Di-N-Octylphthalate	-	-	-	-	-	-	<1,000	<1
Di-N-Butylphthalate	-	-	-	-	-	-	3,000	<1
2,4-Dimethylphenol	-	-	-	-	-	-	<10,000	<10
1,1-Dichloroethylene	-	-	-	-	-	-	<1,000	<1
Methylene Chloride	-	-	-	-	-	-	<1,000	<5

(Notes are included on Page 12.)

TABLE 4--7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 - FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-13B								
Parameter	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	208,000	230,000	340,000	NS ¹	220,000	NS ¹	NS ²
Chemical Oxygen Demand (mg/L)	NA	23	45	26	NS ¹	5	NS ¹	NS ²
Iron, dissolved	NA	9,920	9,300	12,000	NS ¹	6,300	NS ¹	NS ²
Manganese, dissolved	NA	280	360	320	NS ¹	190	NS ¹	NS ²
Phenol (4-AAP)-Phenolics	NA	<3	<2	<2	NS ¹	2	NS ¹	NS ²
Sodium, dissolved	NA	108,000	110,000	110,000	NS ¹	75,000	NS ¹	NS ²
pH	NA	7.1	6.9	7.6	NS ¹	6.6	NS ¹	NS ²
Conductivity (umhos/cm)	NA	1,330	1,300	2,400	NS ¹	1,400	NS ¹	NS ²
Calcium	NA	125,000	120,000	51,000	NS ¹	120,000	NS ¹	NS ²
Potassium	NA	1,650	3,800	6,200	NS ¹	9,400	NS ¹	NS ²
Magnesium	NA	54,000	21,000	39,000	NS ¹	80,000	NS ¹	NS ²
Fluoride	NA	430	270	340	NS ¹	290	NS ¹	NS ²
Sulfate	NA	<5,000	2,000	<1,000	NS ¹	1,000	NS ¹	NS ²
Bicarbonate Alkalinity (mg/L)	NA	471	540	450	NS ¹	510	NS ¹	NS ²
Organic Carbon (mg/L)	NA	18.9	9	11	NS ¹	16	NS ¹	NS ²
Nitrate	NA	40	260	50	NS ¹	1,300	NS ¹	NS ²
Nitrite	NA	<10	200	150	NS ¹	20	NS ¹	NS ²
Arsenic	NA	33	26	30	NS ¹	10	NS ¹	NS ²
Barium	NA	1,700	400	200	NS ¹	300	NS ¹	NS ²
Cadmium	NA	<5	<10	<10	NS ¹	40	NS ¹	NS ²
Chromium	NA	50	<20	<20	NS ¹	20	NS ¹	NS ²
Lead	NA	<30	60	<50	NS ¹	50	NS ¹	NS ²
Mercury	NA	0.5	<0.5	<0.5	NS ¹	0.5	NS ¹	NS ²
Selenium	NA	<2	<5	<50	NS ¹	5	NS ¹	NS ²
Silver	NA	<10	<20	<20	NS ¹	20	NS ¹	NS ²
Cyanide	NA	19	<20	30	NS ¹	20	NS ¹	NS ²
Total Hardness (mg/L)	NA	510	480	480	NS ¹	500	NS ¹	NS ²

(Notes are included on Page 12.)

TABLE 4-7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-14B								
Parameter	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	265,000	290,000	280,000	NS ⁴	280,000	NS ⁴	NS ²
Chemical Oxygen Demand (mg/L)	NA	44	45	9	NS ⁴	24	NS ⁴	NS ²
Iron, dissolved	NA	16,700	15,000	29,000	NS ⁴	16,000	NS ⁴	NS ²
Manganese, dissolved	NA	480	570	570	NS ⁴	400	NS ⁴	NS ²
Phenol (4-AAP) – Phenolics	NA	<30	<2	<2	NS ⁴	4	NS ⁴	NS ²
Sodium, dissolved	NA	157,000	130,000	140,000	NS ⁴	240,000	NS ⁴	NS ²
pH	NA	7.2	6.8	7.5	NS ⁴	6.7	NS ⁴	NS ²
Conductivity (umhos/cm)	NA	1,600	1,600	2,000	NS ⁴	10,000	NS ⁴	NS ²
Calcium	NA	156,000	130,000	56,000	NS ⁴	125,000	NS ⁴	NS ²
Potassium	NA	1,610	4,000	7,400	NS ⁴	2,200	NS ⁴	NS ²
Magnesium	NA	63,000	21,000	40,000	NS ⁴	35,000	NS ⁴	NS ²
Fluoride	NA	380	200	260	NS ⁴	500	NS ⁴	NS ²
Sulfate	NA	50,000	36,000	17,000	NS ⁴	15,000	NS ⁴	NS ²
Bicarbonate Alkalinity (mg/L)	NA	506	580	490	NS ⁴	520	NS ⁴	NS ²
Organic Carbon (mg/L)	NA	11	30	11	NS ⁴	8	NS ⁴	NS ²
Nitrate	NA	120	1,500	70	NS ⁴	20	NS ⁴	NS ²
Nitrite	NA	20	260	<20	NS ⁴	20	NS ⁴	NS ²
Arsenic	NA	17	11	18	NS ⁴	10	NS ⁴	NS ²
Barium	NA	370	200	100	NS ⁴	200	NS ⁴	NS ²
Cadmium	NA	<5	10	<10	NS ⁴	10	NS ⁴	NS ²
Chromium	NA	<30	<20	40	NS ⁴	20	NS ⁴	NS ²
Lead	NA	<30	60	<50	NS ⁴	50	NS ⁴	NS ²
Mercury	NA	0.5	<0.5	<0.5	NS ⁴	0.5	NS ⁴	NS ²
Selenium	NA	<2	<5	<5	NS ⁴	5	NS ⁴	NS ²
Silver	NA	<10	<20	<20	NS ⁴	20	NS ⁴	NS ²
Cyanide	NA	<3	<20	<20	NS ⁴	20	NS ⁴	NS ²
Total Hardness (mg/L)	NA	640	590	560	NS ⁴	500	NS ⁴	NS ²

(Notes are included on Page 12.)

TABLE 4-7

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-15B								
Parameter	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	NA	60,000	82,000	110,000	NS ⁴	110,000	110,000	NS ²
Chemical Oxygen Demand (mg/L)	NA	91	180,000	20	NS ⁴	1	160	NS ²
Iron, dissolved	NA	850	580	3,200	NS ⁴	20,000	790	NS ²
Manganese, dissolved	NA	200	80	120	NS ⁴	1,100	180	NS ²
Phenol (4-AAP)-Phenolics	NA	<3	<2	2	NS ⁴	4	6	NS ²
Sodium, dissolved	NA	85,300	170,000	160,000	NS ⁴	265,000	110,000	NS ²
pH	NA	7.6	7.5	7.4	NS ⁴	7.3	6.7	NS ²
Conductivity (umhos/cm)	NA	1,090	1,000	1,240	NS ⁴	10,000	1,000	NS ²
Calcium	NA	87,000	450,000	850,000	NS ⁴	110,000	180,000	NS ²
Potassium	NA	2,680	1,300,000	17,000	NS ⁴	1,800	7,200	NS ²
Magnesium	NA	58,000	1,300,000	87,000	NS ⁴	34,000	65,000	NS ²
Fluoride	NA	930	2,500	1,000	NS ⁴	500	840	NS ²
Sulfate	NA	138,000	200,000	380,000	NS ⁴	420,000	390,000	NS ²
Bicarbonate Alkalinity (mg/L)	NA	431	300	180	NS ⁴	170	190	NS ²
Organic Carbon (mg/L)	NA	61.5	160	190	NS ⁴	6	57	NS ²
Nitrate	NA	40	710	<20	NS ⁴	470	70	NS ²
Nitrite	NA	10	1,100	<20	NS ⁴	20	170	NS ²
Arsenic	NA	2	1,700	<50	NS ⁴	30	<5	NS ²
Barium	NA	120	6,900	300	NS ⁴	100	100	NS ²
Cadmium	NA	<5	90	30	NS ⁴	10	270	NS ²
Chromium	NA	50	1,800	<20	NS ⁴	20	100	NS ²
Lead	NA	<30	420	<50	NS ⁴	50	110	NS ²
Mercury	NA	<0.5	0.6	0.6	NS ⁴	2	<20	NS ²
Selenium	NA	<2	<50	6	NS ⁴	5	<5	NS ²
Silver	NA	<10	110	20	NS ⁴	<20	<20	NS ²
Cyanide	NA	4	<20	<20	NS ⁴	<20	<20	NS ²
Total Hardness (mg/L)	NA	490	420	380	NS ⁴	360	430	NS ²
Di-N-Octylphthalate	-	-	-	-	-	-	<1,000	NS ²
Di-N-Butylphthalate	-	-	-	-	-	-	<1,000	NS ²
2,4-Dimethylphenol	-	-	-	-	-	-	<10,000	NS ²
1,1-Dichloroethylene	-	-	-	-	-	-	<1,000	NS ²
Methylene Chloride	-	-	-	-	-	-	<1,000	NS ²

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L), except where noted.

mg/L – milligrams per liter.

umhos/cm – micromhos per centimeter.

NS¹ – Not sampled due to lack of well recovery.

NS² – Not sampled due to frozen conditions.

NS³ – Not sampled due to obstruction in well.

NS⁴ – Not sampled due to flooded conditions.

- – Indicates not analyzed.

NA – Indicates not available.

* – Results not reported due to interference in the analysis.

< – Indicates the compound was analyzed for but was not detected above the detection limit.

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-1										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	59,000	59,000	63,000	87,000	110,000	59,000	74,000	56,000	41,000	43,000
Chemical Oxygen Demand (mg/L)	1,100	190	890	13	8	23	12	22	47	210
Iron, dissolved	90	<20	40	50	120	20	20	90	50	70
Manganese, dissolved	200	160	170	240	300	200	210	190	120	340
Phenol (4-AAP)-Phenolics	100	2	10	<2	20	2	10	3	3	10
Sodium, dissolved	49,000	54,000	74,000	44,000	110,000	50,000	54,000	46,000	38,000	58,000
pH	7.10	7.70	7.10	7.20	7.81	7.15	7.40	8.05	7.97	7.70
Conductivity (umhos/cm)	1,000	770	580	662	1,230	690	580	630	560	500

Well B-2										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	2,500,000	1,800,000	980,000	1,200,000	2,200,000	820,000	330,000	1,100,000	490,000	43,000
Chemical Oxygen Demand (mg/L)	1,200	130	930	110	32	58	49	59	320	210
Iron, dissolved	250	60	2,700	330	50	10,000	50	150	510	60
Manganese, dissolved	200	20	50	70	90	120	120	430	110	170
Phenol (4-AAP)-Phenolics	11	<2	80	<2	10	5	4	2	<2	2
Sodium, dissolved	49,000	1,200,000	700,000	570,000	1,100,000	540,000	100,000	410,000	320,000	330,000
pH	6.90	8.40	8.30	9.20	8.59	8.62	7.95	8.09	7.93	8.10
Conductivity (umhos/cm)	8,800	6,400	3,600	4,900	4,200	2,500	860	2,900	1,900	1,900

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-3										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	110,000	96,000	110,000	120,000	88,000	73,000	73,000	67,000	61,000	55,000
Chemical Oxygen Demand (mg/L)	520	270	600	450	130	96	58	110	180	43
Iron, dissolved	1,700	20	70	830	50	2,500	3,500	620	50	30
Manganese, dissolved	340	330	400	260	260	270	250	210	210	180
Phenol (4-AAP)-Phenolics	12	10	2	2	3	5	14	4	3	<2
Sodium, dissolved	77,000	86,000	90,000	61,000	99,000	79,000	82,000	71,000	69,000	71,000
pH	6.80	7.20	7.00	7.40	7.24	6.57	7.20	7.25	7.19	7.47
Conductivity (umhos/cm)	1,400	1,600	2,300	1,412	1,380	1,100	950	920	830	1,000

Well B-4A										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	470,000	520,000	430,000	16,000	510,000	300,000	390,000	460,000	370,000	400,000
Chemical Oxygen Demand (mg/L)	1,300	180	3,200	29	280	98	180	150	470	590
Iron, dissolved	120	120	260	250	140	1,300	630	210	140	120
Manganese, dissolved	30	30	40	20	30	80	70	60	40	20
Phenol (4-AAP)-Phenolics	37	31	87	22	49	38	45	17	24	60
Sodium, dissolved	620,000	710,000	570,000	560,000	580,000	690,000	530,000	560,000	530,000	620,000
pH	6.50	7.60	7.50	7.80	7.92	7.45	7.60	7.84	7.80	7.84
Conductivity (umhos/cm)	3,400	3,500	3,000	2,510	2,560	3,230	2,400	2,600	2,200	2,200

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 - OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-4B										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	260,000	350,000	260,000	490,000	280,000	310,000	290,000	350,000	280,000	280,000
Chemical Oxygen Demand (mg/L)	93	89	140	68	130	90	100	120	140	220
Iron, dissolved	3,300	10,000	4,800	150	130	3,300	18,000	590	660	1,800
Manganese, dissolved	410	420	400	440	410	440	460	410	120	490
Phenol (4-AAP)-Phenolics	4	11	2	2	17	8	<2	3	9	<2
Sodium, dissolved	220,000	240,000	240,000	190,000	260,000	210,000	180,000	230,000	67,000	270,000
pH	7.10	6.90	7.10	6.80	7.04	6.89	6.70	7.06	7.10	7.10
Conductivity (umhos/cm)	2,200	2,300	2,000	1,900	1,710	2,270	1,800	2,000	1,800	1,800

Well B-5										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	130,000	150,000	140,000	130,000	110,000	130,000	150,000	140,000	130,000	140,000
Chemical Oxygen Demand (mg/L)	200	54	570	58	48	91	110	190	220	230
Iron, dissolved	190	290	260	190	420	2,400	2,800	360	640	510
Manganese, dissolved	330	280	280	340	300	410	420	380	330	420
Phenol (4-AAP)-Phenolics	2	4	3	4	10	5	18	5	5	23
Sodium, dissolved	530,000	490,000	470,000	390,000	350,000	430,000	500,000	510,000	480,000	720,000
pH	6.8	7.0	7.1	6.6	7.24	6.85	6.90	7.25	7.20	7.20
Conductivity (umhos/cm)	2,000	2,600	2,300	1,870	1,210	2,430	2,000	2,300	2,300	2,300

(Notes are included on Page 13.)

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QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-6										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	220,000	90,000	38,000	400,000	150,000	120,000	110,000	450,000	230,000	120,000
Chemical Oxygen Demand (mg/L)	350	62	17	14	33	36	43	72	260	790
Iron, dissolved	3,500	<20	4,800	4,200	330	1,800	5,400	18,000	1,800	340
Manganese, dissolved	800	640	600	640	500	800	630	940	600	750
Phenol (4-AAP) - Phenolics	<2	<2	<2	<2	3	5	13	11	11	12
Sodium, dissolved	150,000	150,000	100,000	110,000	130,000	140,000	135,000	170,000	150,000	180,000
pH	7.00	7.00	7.30	6.10	7.70	6.49	7.40	6.79	6.83	6.87
Conductivity (umhos/cm)	1,300	1,300	960	1,600	1,190	1,190	1,200	1,700	1,600	900

Well B-7										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	61,000	77,000	61,000	290,000	44,000	92,000	370,000	59,000	65,000	43,000
Chemical Oxygen Demand (mg/L)	820	520	550	16	130	17	15	47	46	25
Iron, dissolved	40	<20	40	200	330	80	190	280	340	60
Manganese, dissolved	190	210	210	290	240	300	910	300	210	230
Phenol (4-AAP) - Phenolics	3	<2	170	3	3	3	8	4	<2	130
Sodium, dissolved	40,000	39,000	54,000	35,000	41,000	38,000	78,000	36,000	25,000	28,000
pH	7.00	7.40	7.30	7.30	7.75	7.04	7.80	7.20	7.35	7.25
Conductivity (umhos/cm)	580	730	580	4,410	730	820	1,200	490	510	800

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-1A										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Total Organic Carbon (mg/L)	185	260	115	125	170	190	88	150	160	250
Chloride	780,000	1,400,000	930,000	1,500,000	1,600,000	1,200,000	1,100,000	1,300,000	980,000	1,600,000
Chemical Oxygen Demand (mg/L)	6,300	75	1,100	70	62	270	320	380	630	860
Iron, dissolved	4,800	260	830	6,200	2,100	4,400	1,400	550	3,600	1,800
Manganese, dissolved	840	910	740	840	780	780	780	970	710	730
Phenol (4-AAP)-Phenolics	11	12	28	10	20	9	7	10	15	14
Sodium, dissolved	660,000	880,000	600,000	730,000	880,000	610,000	530,000	620,000	710,000	110,000
pH	6.7	6.5	6.9	6.8	6.84	6.74	6.85	7.02	7.00	7.02
Conductivity (umhos/cm)	6,400	7,800	6,000	6,300	3,930	6,700	3,700	5,800	5,700	6,800

Well X-1B										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Total Organic Carbon (mg/L)	40	105	30	84	40	80	120	100	100	57
Chloride	870,000	1,300,000	1,100,000	1,400,000	1,600,000	1,700,000	2,100,000	1,800,000	1,600,000	1,700,000
Chemical Oxygen Demand (mg/L)	540	210	390	71	65	120	51	180	230	270
Iron, dissolved	21,000	3,300	20,000	21,000	22,000	21,000	27,000	5,700	20,000	22,000
Manganese, dissolved	460	530	440	440	590	550	970	1,200	960	1,100
Phenol (4-AAP)-Phenolics	4	<2	3	5	2	4	8	9	24	5
Sodium, dissolved	410,000	420,000	400,000	330,000	420,000	480,000	700,000	660,000	750,000	370,000
pH	6.6	6.4	6.5	5.6	6.74	6.48	6.4	6.56	6.6	6.58
Conductivity (umhos/cm)	5,200	6,600	5,400	5,490	4,610	6,690	5,200	6,400	6,200	5,200

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-1C										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Total Organic Carbon (mg/L)	—	—	—	—	—	—	—	—	—	—
Chloride	120,000	130,000	710,000	140,000	120,000	130,000	150,000	140,000	110,000	120,000
Chemical Oxygen Demand (mg/L)	290	21	110	5	20	10	10	7	12	5
Iron, dissolved	580	3,500	11,000	2,100	3,200	8,500	2,800	120	1,800	50
Manganese, dissolved	100	80	290	130	100	90	90	120	100	100
Phenol (4-AAP)-Phenolics	5	<2	<2	2	11	58	6	<2	3	8
Sodium, dissolved	150,000	140,000	340,000	110,000	1,500,000	150,000	110,000	140,000	130,000	130,000
pH	6.8	6.4	6.5	7.3	6.89	6.22	6.6	7.64	7.7	7.7
Conductivity (umhos/cm)	1,400	1,200	4,000	1,140	1,170	1,430	880	1,200	1,200	1,200

Well X-2A										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Total Organic Carbon (mg/L)	10	—	—	—	—	—	—	21	—	—
Chloride	120,000	—	—	—	—	—	—	380,000	—	—
Chemical Oxygen Demand (mg/L)	4,500	—	—	—	—	—	—	95	—	—
Iron, dissolved	50	—	—	—	—	—	—	100	—	—
Manganese, dissolved	630	—	—	—	—	—	—	890	—	—
Phenol (4-AAP)-Phenolics	10	—	—	—	—	—	—	3	—	—
Sodium, dissolved	42,000	—	—	—	—	—	—	140,000	—	—
pH	7.0	—	—	—	—	—	—	7.63	—	—
Conductivity (umhos/cm)	720	—	—	—	—	—	—	1,300	—	—

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-2B										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Total Organic Carbon (mg/L)	18	14	14	20	14	14	43	32	23	34
Chloride	85,000	92,000	85,000	100,000	84,000	84,000	110,000	84,000	66,000	79,000
Chemical Oxygen Demand (mg/L)	340	70	89	24	37	40	30	48	30	39
Iron, dissolved	370	160	2,000	500	1,500	1,500	280	80	760	30
Manganese, dissolved	380	360	360	400	340	320	360	350	150	320
Phenol (4-AAP)-Phenolics	2	35	4	3	<2	4	<2	<2	<2	5
Sodium, dissolved	138,000	120,000	110,000	120,000	140,000	110,000	140,000	120,000	60,000	150,000
pH	6.7	6.5	6.7	6.5	7.04	6.74	7.50	7.28	7.30	7.19
Conductivity (umhos/cm)	1,200	1,100	1,000	1,300	1,490	1,770	950	1,100	1,000	1,100

Well X-2C										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Total Organic Carbon (mg/L)	21	22	17	37	17	20	73	41	30	38
Chloride	140,000	160,000	140,000	160,000	150,000	170,000	170,000	240,000	160,000	160,000
Chemical Oxygen Demand (mg/L)	53	86	84	160	100	49	30	54	50	51
Iron, dissolved	7,700	3,400	6,100	2,200	3,500	7,500	400	630	2,200	40
Manganese, dissolved	760	690	660	730	730	670	620	640	520	600
Phenol (4-AAP)-Phenolics	<2	<2	<4	4	5	3	<2	3	<3	11
Sodium, dissolved	120,000	120,000	100,000	110,000	120,000	130,000	130,000	140,000	150,000	130,000
pH	7.0	6.2	6.7	6.5	7.09	6.59	7.3	7.05	7.00	7.05
Conductivity (umhos/cm)	1,400	1,600	1,400	1,550	1,640	1,730	1,400	1,400	1,400	1,400

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-7A										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	15,000,000	27,000,000	25,000,000	NA	15,000,000	16,000,000	14,000,000	8,800,000	6,000,000	16,000,000
Chemical Oxygen Demand (mg/L)	39,300	18,000	17,200	800	770	3,800	1,800	1,400	2,200	1,900
Iron, dissolved	2,600,000	3,000,000	3,100,000	1,600,000	2,000,000	1,900,000	160,000	270,000	120,000	940,000
Manganese, dissolved	80,000	94,000	85,000	64,000	44,000	36,000	10,000	1,400	640	4,600
Phenol (4-AAP)-Phenolics	7,900	9,010	8,800	6,000	2,600	6,000	96	87	140	90
Sodium, dissolved	1,500,000	1,900,000	1,900,000	800,000	1,700,000	2,600,000	2,700,000	2,100,000	1,600,000	1,800,000
pH	6.0	5.3	5.5	4.9	5.3	5.7	5.59	6.46	6.61	6.2
Conductivity (umhos/cm)	>10,000	>10,000	>10,000	>10,000	>10,000	40,000	>10,000	26,000	23,000	31,000
Calcium	5,800,000	5,300,000	5,700,000	5,500,000	6,000,000	8,900,000	8,800,000	750,000	220,000	3,600,000
Potassium	750,000	680,000	600,000	310,000	900,000	710,000	740,000	620,000	290,000	440,000
Magnesium	2,200,000	2,000,000	2,000,000	2,000,000	2,000,000	3,600,000	4,200,000	720,000	270,000	1,700,000
Fluoride	110	480	550	360	910	-	-	-	-	-
Sulfate	620,000	630,000	730,000	600,000	220,000	230,000	<26,000	5,800	<1,000	96,000
Bicarbonate Alkalinity (mg/L)	240	13,600	10,600	11,000	13,600	5,500	NA	1,300	1,600	130
Total Organic Carbon (mg/L)	13,900	9,000	9,500	9,000	10,000	6,980	390	490	500	410
Nitrate	20	400	140	640	1,200	500	1,500	<20	<20	<20
Nitrite	50	40	130	90	20	<20	230	30	30	60
Arsenic	<5	6	<5	<5	5	<5	6	<5	<5	100
Barium	900	900	900	1,800	<50	1,300	22,000	1,100	71	8,900
Cadmium	460	<10	150	50	<10	<10	1,600	<20	100	310
Chromium, Total	120	80	180	280	<20	180	1,300	580	180	440
Iron, Total	-	-	-	-	-	-	2,900,000	290,000	200,000	1,500,000
Lead	550	630	420	220	<50	210	1,300	220	<50	720
Mercury	<0.5	<0.5	<0.5	<5	<5	<0.5	6.4	<0.5	<0.5	<0.5
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<20	<20	<20	160	<20	<20	40
Cyanide	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Total Hardness (mg/L)	18,800	22,000	19,800	24,000	40,000	37,000	-	4,800	1,600	18,000
Di-N-Octylphthalate	<1	<1	<1	<1	<1	<1	<10	<2	<2	<2
Di-N-Butylphthalate	<1	<1	<1	<1	<1	<1	550	7	<2	<2
1,1 Dichloroethylene	<5	<1	<1	<1	<1	-	-	-	-	-
Methylene Chloride	690	530	230	250	95	<2	<2	30	25	<2
2-4, Dimethylphenol	<70	740	<15,300	<150	<550	-	-	-	-	-

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 - OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-9B										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	270,000	290,000	200,000	280,000	280,000	300,000	310,000	350,000	330,000	340,000
Chemical Oxygen Demand (mg/L)	20	28	89	17	22	8	21	20	17	11
Iron, dissolved	50	<200	130	50	60	180	170	110	150	130
Manganese, dissolved	420	390	380	510	460	470	460	410	360	460
Phenol (4-AAP)-Phenolics	6	<2	150	6	9	4	<2	<2	<2	4
Sodium, dissolved	280,000	290,000	18,000	210,000	270,000	260,000	310,000	280,000	220,000	350,000
pH	6.40	7.25	7.50	7.20	7.56	6.77	7.65	7.64	7.57	7.70
Conductivity (umhos/cm)	1,900,000	2,200,000	1,000,000	1,600,000	1,850,000	1,890,000	1,800,000	1,700,000	1,700,000	1,800,000
Calcium	74,000	430,000	85,000	88,000	67,000	65,000	92,000	66,000	67,000	70,000
Potassium	3,600	220	4,220	8,100	3,400	2,900	3,000	3,800	3,000	3,600
Magnesium	26,000	130,000	26,000	32,000	22,000	22,000	28,000	22,000	22,000	22,000
Fluoride	880	900	820	650	750	-	-	-	-	-
Sulfate	2,300	12,000	5,000	6,200	2,000	5,000	2,200	2,600	3,200	<1000
Bicarbonate Alkalinity (mg/L)	690	590	440	520	560	530	510	540	510	530
Total Organic Carbon (mg/L)	5	13	12	5	6	7	26	18	18	18
Nitrate	50	200	60	<20	1,200	1,700	<20	<20	<20	<20
Nitrite	90	<20	40	20	20	<20	<20	<20	<20	90
Arsenic	<5	31	9	10	5	<5	<5	<5	<5	<5
Barium	<100	600	<100	4,200	<50	70	90	100	80	70
Cadmium	<10	<10	<10	<10	<10	<10	<10	20	<10	<10
Chromium, Total	<20	150	<20	<20	<20	<20	<20	40	<20	<20
Iron, Total	-	-	-	-	-	-	2,600	1,600	1,000	1,100
Lead	<50	590	<50	<50	<50	<50	50	60	<50	<50
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide	<20	<20	<20	10	<20	<20	50	<20	<20	<20
Total Hardness (mg/L)	260	270	230	240	280	270	310	300	290	330
Di-N-Octylphthalate	<1	<1	<1	<1	<1	<1	<2	<2	<2	<2
Di-N-Butylphthalate	<1	<1	<1	<1	<1	<1	<2	<2	<2	<2
1,1 Dichloroethene	<1	<1	<1	<1	<1	-	-	-	-	-
Methylene Chloride	<1	<1	<1	<1	<1	<2	<2	<2	<2	<2
2-4, Dimethylphenol	<10	<10	<10	<10	<10	-	-	-	-	-

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-10B										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	21,000	550,000	480,000	640,000	570,000	400,000	180,000	240,000	32,000	260,000
Chemical Oxygen Demand (mg/L)	160	1,500	5,000	8	11	11	27	39	39	36
Iron, dissolved	<20	<20	150	80	450	30	23,000	70	210	12,000
Manganese, dissolved	<20	<20	90	20	180	170	530	120	100	200
Phenol (4-AAP) - Phenolics	3	<2	<4	3	2	3	5	<2	<2	26
Sodium, dissolved	300,000	34,000	280,000	200,000	230,000	190,000	100,000	80,000	59,000	140,000
pH	6.9	6.9	7.2	6.6	6.79	6.62	6.53	7.11	7.08	7.01
Conductivity (umhos/cm)	2,200,000	3,100,000	2,200,000	2,950,000	2,210,000	2,130,000	1,100,000	1,300,000	1,200,000	1,600,000
Calcium	98,000	1,500,000	3,500,000	90,000	120,000	120,000	180,000	100,000	260,000	170,000
Potassium	9,000	1,100	200,000	5,100	4,200	5,600	2,100	1,700	3,400	2,900
Magnesium	47,000	580,000	1,200,000	36,000	52,000	55,000	42,000	35,000	63,000	36,000
Fluoride	680	830	720	490	730	-	-	-	-	-
Sulfate	310,000	170,000	150,000	100,000	99,000	93,000	2,000	2,100	720,000	<1,000
Bicarbonate Alkalinity (mg/L)	300	190	250	280	270	310	510	480	400	510
Total Organic Carbon (mg/L)	12	135	7	4	5	8	36	30	20	36
Nitrate	80	390	20	60	580	750	<20	<20	20	<20
Nitrite	370	30	30	60	100	<20	<20	<20	<20	140
Arsenic	<5	180	300	<5	<5	<5	25	30	14	12
Barium	<100	2,200	4,300	3,500	120	110	280	260	80	220
Cadmium	<10	<10	70	<10	<10	<10	20	20	<10	<10
Chromium, Total	<20	590	1,300	<20	<20	20	40	40	20	<20
Iron, Total	-	-	-	-	-	-	24,000	12,000	8,800	6,900
Lead	<50	1,100	1,100	<50	<50	<50	<50	60	60	<50
Mercury	<0.5	1	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Selenium	<5	<5	6	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide	<20	<20	<20	40	<20	<20	<20	<20	<20	<20
Total Hardness (mg/L)	480	650	350	400	540	450	500	520	870	620
Di-N-Octylphthalate	<1	<1	<1	<1	<1	<1	<2	<2	<2	<2
Di-N-Butylphthalate	<1	<1	<1	<1	<1	<1	<2	<2	<2	<2
1,1 Dichloroethene	<1	<1	<1	<1	<1	-	-	-	-	-
Methylene Chloride	<1	<1	<1	<1	3	<2	<2	<2	<2	<2
2-4, Dimethylphenol	<10	<10	<10	<10	<10	-	-	-	-	-

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-13B										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	7/89	10/89
Chloride	NS ⁴	NS ⁴	NS ⁴	NS ⁴	210,000	NS ⁴	NS ²	260,000	200,000	200,000
Chemical Oxygen Demand (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	24	NS ⁴	NS ²	25	20	29
Iron, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ⁴	40	NS ⁴	NS ²	2,300	610	790
Manganese, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ⁴	220	NS ⁴	NS ²	210	230	210
Phenol (4-AAP) -Phenolics	NS ⁴	NS ⁴	NS ⁴	NS ⁴	3	NS ⁴	NS ²	<2	3	<2
Sodium, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ⁴	120,000	NS ⁴	NS ²	80,000	94,000	110,000
pH	NS ⁴	NS ⁴	NS ⁴	NS ⁴	6,970	NS ⁴	NS ²	7,110	6,150	7,080
Conductivity (umhos/cm)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	1,530,000	NS ⁴	NS ²	1,300,000	1,400,000	1,400,000
Calcium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	140,000	NS ⁴	NS ²	100,000	140,000	130,000
Potassium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	3,100	NS ⁴	NS ²	1,700	3,000	2,800
Magnesium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	42,000	NS ⁴	NS ²	3,500	42,000	39,000
Fluoride	NS ⁴	NS ⁴	NS ⁴	NS ⁴	410	NS ⁴	NS ²	-	-	-
Sulfate	NS ⁴	NS ⁴	NS ⁴	NS ⁴	1,400	NS ⁴	NS ²	2,100	<1,000	<1,000
Bicarbonate Alkalinity (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	440	NS ⁴	NS ²	480	560	460
Total Organic Carbon (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	7	NS ⁴	NS ²	17	25	21
Nitrate	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<20	NS ⁴	NS ²	30	20	<20
Nitrite	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<20	NS ⁴	NS ²	<20	<20	170
Arsenic	NS ⁴	NS ⁴	NS ⁴	NS ⁴	390	NS ⁴	NS ²	20	250	11
Barium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	420	NS ⁴	NS ²	20	440	340
Cadmium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	10	NS ⁴	NS ²	20	<10	<.01
Chromium, Total	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<20	NS ⁴	NS ²	20	20	20
Iron, Total	NS ⁴	NS ⁴	NS ⁴	NS ⁴	-	NS ⁴	NS ²	8,100	13,000	4,800
Lead	NS ⁴	NS ⁴	NS ⁴	NS ⁴	100	NS ⁴	NS ²	60	<50	<50
Mercury	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<0.5	NS ⁴	NS ²	<0.5	1	<0.5
Selenium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<5	NS ⁴	NS ²	<5	<5	<5
Silver	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<20	NS ⁴	NS ²	<20	<20	<20
Cyanide	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<20	NS ⁴	NS ²	<20	<20	<20
Total Hardness (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	480	NS ⁴	NS ²	390	560	530
Di-N-Octylphthalate	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<1	NS ⁴	NS ²	<2	<2	<2
Di-N-Butylphthalate	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<1	NS ⁴	NS ²	<2	<2	<2
1,1 Dichloroethene	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<1	NS ⁴	NS ²	-	-	-
Methylene Chloride	NS ⁴	NS ⁴	NS ⁴	NS ⁴	1	NS ⁴	NS ²	<2	<2	<2

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-14B										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	NS ⁴	NS ⁴	NS ⁴	NS ⁴	240,000	NS ⁴	NS ²	290,000	230,000	230,000
Chemical Oxygen Demand (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	450	NS ⁴	NS ²	24	31	15
Iron, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ⁴	60	NS ⁴	NS ²	2,600	1,300	1,700
Manganese, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ⁴	370	NS ⁴	NS ²	340	300	290
Phenol (4-AAP)-Phenolics	NS ⁴	NS ⁴	NS ⁴	NS ⁴	6	NS ⁴	NS ²	5	6	6
Sodium, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ⁴	110,000	NS ⁴	NS ²	130,000	98,000	100,000
pH	NS ⁴	NS ⁴	NS ⁴	NS ⁴	6.89	NS ⁴	NS ²	7.08	7.08	7.08
Conductivity (umhos/cm)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	1,540,000	NS ⁴	NS ²	1,300,000	1,000,000	1,300,000
Calcium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	520,000	NS ⁴	NS ²	100,000	98,000	120,000
Potassium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	15,000	NS ⁴	NS ²	1,800	2,200	3,000
Magnesium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	140,000	NS ⁴	NS ²	30,000	28,000	31,000
Fluoride	NS ⁴	NS ⁴	NS ⁴	NS ⁴	420	NS ⁴	NS ²	-	-	-
Sulfate	NS ⁴	NS ⁴	NS ⁴	NS ⁴	2,100	NS ⁴	NS ²	8,600	5,100	2,000
Bicarbonate Alkalinity (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	450	NS ⁴	NS ²	390	380	550
Total Organic Carbon (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	16	NS ⁴	NS ²	19	20	23
Nitrate	NS ⁴	NS ⁴	NS ⁴	NS ⁴	160	NS ⁴	NS ²	<20	710	350
Nitrite	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<20	NS ⁴	NS ²	<20	<20	300
Arsenic	NS ⁴	NS ⁴	NS ⁴	NS ⁴	46	NS ⁴	NS ²	15	17	12
Barium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	620	NS ⁴	NS ²	160	140	130
Cadmium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<10	NS ⁴	NS ²	20	<10	<10
Chromium, Total	NS ⁴	NS ⁴	NS ⁴	NS ⁴	100	NS ⁴	NS ²	20	<20	<20
Iron, Total	NS ⁴	NS ⁴	NS ⁴	NS ⁴	-	NS ⁴	NS ²	14,000	18,000	18,000
Lead	NS ⁴	NS ⁴	NS ⁴	NS ⁴	210	NS ⁴	NS ²	60	<50	<50
Mercury	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<0.5	NS ⁴	NS ²	<0.5	<0.5	<0.5
Selenium	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<5	NS ⁴	NS ²	<5	<5	<5
Silver	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<20	NS ⁴	NS ²	<20	<20	<20
Cyanide	NS ⁴	NS ⁴	NS ⁴	NS ⁴	<20	NS ⁴	NS ²	<20	<20	<20
Total Hardness (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ⁴	600	NS ⁴	NS ²	420	1,300	510

(Notes are included on Page 13.)

TABLE 4-8

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-15B										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	NS ⁴	NS ⁴	NS ⁴	NS ²	110,000	NS ⁴	120,000	130,000	100,000	110,000
Chemical Oxygen Demand (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ²	11	NS ⁴	39	25	9	<2
Iron, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ²	100	NS ⁴	570	80	80	50
Manganese, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ²	80	NS ⁴	70	70	30	40
Phenol (4-AAP) - Phenolics	NS ⁴	NS ⁴	NS ⁴	NS ²	12	NS ⁴	<2	6	170	1
Sodium, dissolved	NS ⁴	NS ⁴	NS ⁴	NS ²	110,000	NS ⁴	130,000	130,000	110,000	140,000
pH	NS ⁴	NS ⁴	NS ⁴	NS ²	7.7	NS ⁴	7.2	7.74	7.64	6.96
Conductivity (umhos/cm)	NS ⁴	NS ⁴	NS ⁴	NS ²	1,270,000	NS ⁴	900,000	1,300,000	1,200,000	1,300,000
Calcium	NS ⁴	NS ⁴	NS ⁴	NS ²	2,400,000	NS ⁴	250,000	72,000	65,000	79,000
Potassium	NS ⁴	NS ⁴	NS ⁴	NS ²	140,000	NS ⁴	3,300	3,000	7,200	3,400
Magnesium	NS ⁴	NS ⁴	NS ⁴	NS ²	920,000	NS ⁴	77,000	38,000	33,000	39,000
Fluoride	NS ⁴	NS ⁴	NS ⁴	NS ²	860	NS ⁴	—	—	—	—
Sulfate	NS ⁴	NS ⁴	NS ⁴	NS ²	290,000	NS ⁴	390,000	190,000	430,000	390,000
Bicarbonate Alkalinity (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ²	190	NS ⁴	290	170	170	160
Total Organic Carbon (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ²	55	NS ⁴	17	75	9	7
Nitrate	NS ⁴	NS ⁴	NS ⁴	NS ²	<20	NS ⁴	340	200	390	350
Nitrite	NS ⁴	NS ⁴	NS ⁴	NS ²	<20	NS ⁴	<20	100	50	<20
Arsenic	NS ⁴	NS ⁴	NS ⁴	NS ²	200	NS ⁴	20	<5	6	<5
Barium	NS ⁴	NS ⁴	NS ⁴	NS ²	2,900	NS ⁴	90	50	100	<50
Cadmium	NS ⁴	NS ⁴	NS ⁴	NS ²	<10	NS ⁴	10	10	<10	<10
Chromium, Total	NS ⁴	NS ⁴	NS ⁴	NS ²	850	NS ⁴	60	40	30	<20
Iron, Total	NS ⁴	NS ⁴	NS ⁴	NS ²	—	NS ⁴	7,200	500	9,700	140
Lead	NS ⁴	NS ⁴	NS ⁴	NS ²	350	NS ⁴	70	<50	<50	<50
Mercury	NS ⁴	NS ⁴	NS ⁴	NS ²	7	NS ⁴	< .5	< .5	< .5	< .5
Selenium	NS ⁴	NS ⁴	NS ⁴	NS ²	6	NS ⁴	<5	<5	<5	<5
Silver	NS ⁴	NS ⁴	NS ⁴	NS ²	<20	NS ⁴	<20	<20	<20	<20
Cyanide	NS ⁴	NS ⁴	NS ⁴	NS ²	<20	NS ⁴	140	<20	<20	<20
Total Hardness (mg/L)	NS ⁴	NS ⁴	NS ⁴	NS ²	370	NS ⁴	640	340	290	440

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L), except where noted.

mg/L – milligrams per liter.

umhos/cm – micromhos per centimeter.

NA – Indicates not available.

NS¹ – Not sampled due to lack of well recovery.

NS² – Not sampled due to frozen conditions.

NS³ – Not sampled due to obstruction in well.

NS⁴ – Not sampled due to flooded conditions.

– – Indicates not analyzed.

< – Indicates the compound was analyzed for but was not detected above the detection limit

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-1																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	34,000	52,000	16,000	55,000	56,000	52,000	46,000	NS ¹	42,000	43,000	45,000	46,000	48,000	40,000	51,000	33,000	41,000
Chemical Oxygen Demand (mg/L)	13	13	21	50	150	34	39	NS ¹	18	310	420	16	18	270	24	20	360
Iron, dissolved	30	70	120	80	50	160	20	NS ¹	190	100	<20	<20	90	150	90	<20	<20
Manganese, dissolved	280	170	290	170	280	190	130	NS ¹	450	200	140	80	220	210	220	210	340
Phenol (4-AAP)-Phenolics	9	<2	5	<2	<2	5	<2	NS ¹	<2	5	9	5	<2	5	5	<2	4
Sodium, dissolved	44,000	62,000	33,000	47,000	42,000	54,000	48,000	NS ¹	60,000	51,000	54,000	41,000	48,000	38,000	41,000	41,000	39,000
pH	7.84	7.04	6.9	7.01	7.74	6.8	7.04	NS ¹	7.29	7.46	7.11	7.22	7.22	7.32	7.41	7.42	7.03
Conductivity (umhos/cm)	460	500	460	500	640	500	500	NS ¹	790	760	650	740	800	700	700	810	900
Lead	—	—	—	—	—	—	—	NS ¹	70	60	70	<20	<50	<50	<50	130	110

Well B-2																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	150,000	3,200,000	1,200,000	860,000	780,000	590,000	720,000	NS ¹	1,100,000	2,500,000	1,500,000	560,000	420,000	1,800,000	580,000	220,000	440,000
Chemical Oxygen Demand (mg/L)	20	NA	83	41	110	150	20	NS ¹	13	96	170	48	31	310	44	45	570
Iron, dissolved	<20	60	40	50	70	150	40	NS ¹	30	80	40	60	20	280	70	550	390
Manganese, dissolved	90	620	50	210	100	50	60	NS ¹	260	370	100	<10	90	360	20	20	120
Phenol (4-AAP)-Phenolics	6	<2	3	<2	<5	<2	<2	NS ¹	3	5	3	2	3	2	2	<2	5
Sodium, dissolved	99,000	1,600,000	610,000	410,000	460,000	380,000	450,000	NS ¹	580,000	1,200,000	830,000	360,000	210,000	690,000	380,000	130,000	210,000
pH	8.08	6.9	7	6.9	7.27	7.01	7.02	NS ¹	7.18	7.27	7.52	7.15	7.41	7.31	7.25	7.36	6.95
Conductivity (umhos/cm)	510	500	500	500	2,800	500	500	NS ¹	680	720	4,500	710	740	5,200	900	800	1,400
Lead	—	—	—	—	—	—	—	NS ¹	<50	120	70	120	<50	60	60	280	310
Acenaphthene	—	—	—	—	—	—	—	NS ¹	<3	<3	—	—	—	—	—	—	—
Acenaphthylene	—	—	—	—	—	—	—	NS ¹	<3	<3	—	—	—	—	—	—	—
Anthracene	—	—	—	—	—	—	—	NS ¹	<3	<3	—	—	—	—	—	—	—
Benzo(a)Anthracene	—	—	—	—	—	—	—	NS ¹	<3	<3	—	—	—	—	—	—	—
Benzo(b)Flouranthene	—	—	—	—	—	—	—	NS ¹	<3	<3	—	—	—	—	—	—	—
Benzo(k)Flouranthene	—	—	—	—	—	—	—	NS ¹	<3	<3	—	—	—	—	—	—	—

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 - JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-3																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	62,000	64,000	78,000	98,000	100,000	72,000	69,000	NS ¹	130,000	72,000	67,000	69,000	82,000	150,000	150,000	67,000	70,000
Chemical Oxygen Demand (mg/L)	46	62	65	76	140	46	20	NS ¹	20	53	87	22	11	280	190	19	41
Iron, dissolved	1,700	70	370	60	80	50	30	NS ¹	30	170	<20	<20	<20	750	670	50	780
Manganese, dissolved	200	190	200	230	430	590	950	NS ¹	840	860	950	790	720	340	380	910	940
Phenol (4-AAP) - Phenolics	6	8	18	<2	5	6	<2	NS ¹	4	6	4	4	4	4	<2	<2	4
Sodium, dissolved	62,000	60,000	90,000	70,000	120,000	46,000	67,000	NS ¹	120,000	68,000	62,000	62,000	64,000	610,000	540,000	62,000	65,000
pH	6.62	6.74	7	6.8	7.4	6.75	7.05	NS ¹	7.42	7.61	7.31	7.51	7.51	7.23	7.36	7.61	7.42
Conductivity (umhos/cm)	680	680	800	700	960	700	700	NS ¹	810	860	1,200	1,000	990	2,800	2,100	1,000	1,300
Lead	-	-	-	-	-	-	-	NS ¹	<50	<50	<50	<50	<50	<50	<50	<50	<50
Benzo(a)Pyrene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Benzo(g,h,i)Perylene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Chrysene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Dibenzo(a,h)Anthracene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Di-n-Octylphthalate	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Di-n-Butylphthalate	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Fluoranthene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Fluorene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Indeno(1,2,3-c,d)Pyrene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Naphthalene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Phenanthrene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Pyrene	-	-	-	-	-	-	-	NS ¹	<3	-	-	-	-	-	-	-	-
Oil & Grease	-	-	-	23,000	9,000	-	9,000	NS ¹	21,000	-	-	-	-	-	-	-	-

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-4A																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	390,000	300,000	500,000	320,000	380,000	400,000	470,000	NS ¹	510,000	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Chemical Oxygen Demand (mg/L)	310	265	110	190	230	160	260	NS ¹	230	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Iron, dissolved	440	160	90	120	120	100	90	NS ¹	120	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Manganese, dissolved	40	30	40	80	50	90	60	NS ¹	40	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Phenol (4-AAP) – Phenolics	85	32	41	26	16	26	21	NS ¹	440	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Sodium, dissolved	630,000	200,000	540,000	560,000	560,000	580,000	580,000	NS ¹	580,000	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
pH	7.84	7.9	7.8	7.91	7.36	7.74	7.79	NS ¹	7.82	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Conductivity (umhos/cm)	2,200	2,300	2,200	2,200	2,800	2,200	2,200	NS ¹	2,300	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Lead	–	–	–	–	–	–	–	NS ¹	400	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹

Well B-4B																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	310,000	480,000	300,000	280,000	320,000	300,000	310,000	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Chemical Oxygen Demand (mg/L)	120	86	82	85	140	36	130	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Iron, dissolved	13,000	150	170	180	1,300	600	620	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Manganese, dissolved	530	40	390	360	320	380	400	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Phenol (4-AAP) – Phenolics	5	7	2	<2	13	<2	6	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Sodium, dissolved	250,000	470,000	200,000	290,000	290,000	240,000	220,000	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
pH	7.15	7.4	7.41	7.27	7.27	7.15	7.25	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Conductivity (umhos/cm)	1,800	1,800	1,800	1,800	2,000	1,800	1,800	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Lead	–	–	–	–	–	–	–	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-5																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	150,000	270,000	140,000	160,000	750,000	140,000	140,000	NS ¹	150,000	150,000	200,000	210,000	160,000	150,000	150,000	150,000	170,000
Chemical Oxygen Demand (mg/L)	200	110	110	120	200	160	130	NS ¹	260	360	120	190	190	280	190	30	360
Iron, dissolved	1,900	260	250	220	110	420	130	NS ¹	340	210	120	240	790	750	670	4,600	7,500
Manganese, dissolved	320	320	260	340	500	370	320	NS ¹	320	320	420	300	380	340	380	330	410
Phenol (4-AAP) – Phenolics	8	11	4	3	5	4	<2	NS ¹	12	8	2	7	3	4	<2	4	3
Sodium, dissolved	410,000	400,000	400,000	470,000	410,000	460,000	470,000	NS ¹	510,000	600,000	510,000	490,000	640,000	610,000	540,000	550,000	590,000
pH	6.89	6.87	6.85	7.1	7.39	7.01	7.01	NS ¹	7.15	7.11	7.28	7.26	7.09	7.23	7.36	7.52	7.33
Conductivity (umhos/cm)	1,400	1,400	1,400	1,400	3,000	1,400	1,400	NS ¹	1,700	1,900	3,000	1,900	1,800	2,800	2,100	2,100	2,400
Lead	—	—	—	—	—	—	—	NS ¹	<50	60	<50	<50	<50	<50	<50	<50	<50

Well B-6																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	140,000	280,000	140,000	50,000	150,000	180,000	78,000	NS ¹	260,000	450,000	360,000	NS ¹	71,000	600,000	270,000	120,000	60,000
Chemical Oxygen Demand (mg/L)	480	23	45	100	310	53	64	NS ¹	41	1,200	200	NS ¹	34	750	41	40	1,100
Iron, dissolved	3,900	200	40	40	380	50	280	NS ¹	180	80	20	NS ¹	4,700	4,100	270	690	500
Manganese, dissolved	450	330	600	370	330	620	920	NS ¹	960	1,200	780	NS ¹	740	920	760	640	630
Phenol (4-AAP) – Phenolics	11	8	4	6	6	2	<2	NS ¹	<2	6	9	NS ¹	8	<2	8	<2	25
Sodium, dissolved	130,000	140,000	120,000	90,000	380,000	150,000	130,000	NS ¹	160,000	230,000	210,000	NS ¹	120,000	220,000	200,000	130,000	100,000
pH	6.8	6.9	6.8	6.21	7.19	6.91	7.1	NS ¹	7.23	7.31	7.13	NS ¹	7.38	7.25	7.51	7.32	7.22
Conductivity (umhos/cm)	900	900	900	900	2,200	900	900	NS ¹	1,200	1,400	1,700	NS ¹	1,400	1,400	1,400	1,400	1,400
Lead	—	—	—	—	—	—	—	NS ¹	<50	140	250	NS ¹	70	70	140	210	200

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well-B-7																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	48,000	64,000	96,000	NA	96,000	120,000	70,000	NS ³	NS ²	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³
Chemical Oxygen Demand (mg/L)	20	35	<2	NA	88	22	30	NS ³	NS ²	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³
Iron, dissolved	50	50	40	NA	90	80	20	NS ³	NS ²	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³
Manganese, dissolved	260	280	290	NA	450	420	240	NS ³	NS ²	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³
Phenol (4-AAP) – Phenolics	6	5	9	NA	2	4	<2	NS ³	NS ²	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³
Sodium, dissolved	30,000	34,000	34,000	NA	100,000	43,000	36,000	NS ³	NS ²	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³
pH	6.72	7.01	6.75	NA	7.1	7.1	7.04	NS ³	NS ²	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³
Conductivity (umhos/cm)	410	400	400	NA	700	600	400	NS ³	NS ²	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³	NS ³

Well X-1A																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	1,500,000	1,500,000	2,100,000	1,000,000	1,500,000	770,000	920,000	1,600,000	1,300,000	710,000	980,000	1,400,000	800,000	760,000	540,000	1,500,000	1,200,000
Chemical Oxygen Demand (mg/L)	910	520	670	450	530	540	460	510	650	530	530	570	360	400	140	980	900
Iron, dissolved	4,200	420	7,100	400	420	2,600	540	920	340	220	200	1,000	210	420	240	450	580
Manganese, dissolved	700	1,000	960	710	770	820	900	480	500	850	1,000	540	740	950	970	490	650
Phenol (4-AAP) – Phenolics	15	13	17	10	12	10	4	17	13	7	12	12	8	5	<2	8	85
Sodium, dissolved	730,000	960,000	1,100,000	780,000	730,000	430,000	630,000	820,000	740,000	440,000	470,000	590,000	460,000	450,000	370,000	680,000	720,000
pH	7	6.8	6.89	6.89	7.05	7	6.89	6.85	7	7.08	6.96	7.08	6.91	7.02	7.03	7.11	6.93
Conductivity (umhos/cm)	4,000	4,000	4,000	4,000	7,400	4,000	4,000	4,200	4,500	4,300	6,900	4,500	4,300	5,200	4,300	5,100	6,400
Total Organic Carbon (mg/L)	NA	280	190	130	170	140	120	210	240	75	110	140	80	70	100	150	210
Lead	—	—	—	—	—	—	—	—	<50	<50	140	80	110	<50	100	210	360

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-1B																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	2,300,000	2,000,000	2,200,000	1,000,000	2,100,000	2,100,000	2,100,000	2,300,000	2,300,000	2,200,000	2,100,000	2,200,000	2,100,000	1,900,000	460,000	1,700,000	1,800,000
Chemical Oxygen Demand (mg/L)	280	NA	250	270	270	360	950	320	300	780	990	190	670	320	28	560	1,600
Iron, dissolved	22,000	930	17,000	5,100	120	5,500	9,200	4,500	200	140	80	15,000	140	130	200	2,200	3,600
Manganese, dissolved	1,000	1,500	1,300	1,100	1,100	1,300	1,400	1,300	1,200	1,100	1,000	1,000	1,100	630	130	1,200	890
Phenol (4-AAP) – Phenolics	9	5	3	<2	4	3	<2	11	21	9	10	2	6	2	<2	2	6
Sodium, dissolved	700,000	790,000	770,000	760,000	720,000	850,000	860,000	830,000	830,000	920,000	860,000	860,000	960,000	700,000	180,000	900,000	1,100,000
pH	6	6.66	6.4	6.47	6.9	7.01	6.65	6.82	7.1	7.21	7.06	7.13	6.96	7.16	7.22	7.36	7.02
Conductivity (umhos/cm)	4,500	3,800	3,800	3,800	7,400	4,000	3,800	4,000	4,200	3,900	8,000	4,200	6,700	7,000	4,600	5,600	6,700
Total Organic Carbon (mg/L)	55	220	67	78	68	110	76	83	75	63	59	71	80	74	10	100	130
Lead	–	–	–	–	–	–	–	–	<50	<50	<50	<50	<50	<50	<50	<50	<50

Well X-1C																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	150,000	140,000	160,000	160,000	170,000	190,000	200,000	NA	260,000	300,000	290,000	360,000	380,000	480,000	460,000	320,000	290,000
Chemical Oxygen Demand (mg/L)	10	15	18	18	16	36	26	NA	20	42	32	35	31	37	28	20	15
Iron, dissolved	40	60	2,200	30	290	60	40	NA	40	40	<20	40	<20	530	230	20	100
Manganese, dissolved	100	100	130	80	160	90	90	NA	90	100	160	170	140	110	60	50	50
Phenol (4-AAP) – Phenolics	<2	<2	<2	<2	<2	<2	<2	NA	6	5	2	3	3	<2	<2	<2	<2
Sodium, dissolved	120,000	120,000	140,000	140,000	220,000	140,000	140,000	NA	160,000	160,000	140,000	150,000	160,000	140,000	160,000	160,000	160,000
pH	6.97	7.1	7.01	7.2	7.48	7.05	7.02	NA	7.41	7.47	7.29	7.30	7.32	7.52	7.63	7.35	7.42
Conductivity (umhos/cm)	910	900	900	900	1,300	1,000	900	NA	880	960	1,700	1,100	1,700	1,400	1,400	1,200	1,800
Lead	–	–	–	–	–	–	–	NA	<50	<50	<50	<50	<50	<50	<50	<50	<50

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-2A																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	NA	NA	NA	NA	570,000	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Chemical Oxygen Demand (mg/L)	NA	NA	NA	NA	230	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Iron, dissolved	NA	NA	NA	NA	80	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Phenol (4-AAP) – Phenolics	NA	NA	NA	NA	<2	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Sodium, dissolved	NA	NA	NA	NA	200,000	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
pH	NA	NA	NA	NA	7.69	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Conductivity (umhos/cm)	NA	NA	NA	NA	2,300	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Total Organic Carbon (mg/L)	NA	NA	NA	NA	11	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹

Well X-2B																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	76,000	100,000	110,000	90,000	100,000	140,000	120,000	130,000	160,000	160,000	170,000	170,000	160,000	160,000	150,000	150,000	150,000
Chemical Oxygen Demand (mg/L)	28	44	50	44	48	70	57	35	41	72	110	51	74	81	77	70	85
Iron, dissolved	480	170	1,000	50	60	290	20	180	40	50	30	920	100	100	<20	100	<20
Manganese, dissolved	330	280	260	300	280	260	350	300	330	300	310	230	240	250	260	270	230
Phenol (4-AAP) – Phenolics	4	<2	<2	<2	5	<2	<2	4	<2	<2	6	<2	3	<2	4	5	<2
Sodium, dissolved	120,000	160,000	180,000	170,000	140,000	200,000	190,000	190,000	220,000	240,000	250,000	200,000	230,000	200,000	220,000	230,000	240,000
pH	6.7	6.72	6.89	6.91	7.54	6.91	6.97	6.88	6.97	7.06	7.06	7.12	7.05	7.11	7.08	7.06	7.13
Conductivity (umhos/cm)	850	850	850	850	1,400	800	800	920	1,000	1,200	1,800	1,300	1,100	2,000	1,400	1,200	1,600
Total Organic Carbon (mg/L)	–	54	18	19	15	56	19	24	26	21	16	18	22	22	26	26	23
Lead	–	–	–	–	–	–	–	–	<50	<50	<50	<50	<50	<50	<50	<50	<50

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-2C																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	170,000	160,000	170,000	160,000	150,000	110,000	110,000	110,000	300,000	140,000	170,000	200,000	220,000	380,000	320,000	340,000	370,000
Chemical Oxygen Demand (mg/L)	47	52	61	56	80	62	42	30	28	52	73	17	68	55	50	61	60
Iron, dissolved	4,800	170	1,900	60	230	260	30	820	70	30	60	120	130	120	60	110	2,900
Manganese, dissolved	620	530	570	570	480	440	480	420	310	360	400	430	400	560	590	580	710
Phenol (4-AAP) – Phenolics	5	<2	<2	<2	<2	<2	<2	5	<2	<2	6	<2	<2	<2	7	<2	<2
Sodium, dissolved	150,000	150,000	150,000	180,000	150,000	140,000	110,000	92,000	99,000	160,000	150,000	140,000	190,000	140,000	140,000	140,000	180,000
pH	6.58	6.72	6.68	6.74	7.38	6.69	6.91	7.02	7.13	7.31	7.16	7.22	7.22	7.38	7.28	7.41	7.24
Conductivity (umhos/cm)	1,100	1,000	1,100	1,000	1,400	1,000	1,000	1,200	1,400	1,500	1,500	1,100	1,500	1,600	1,500	1,700	1,700
Total Organic Carbon (mg/L)	19	54	22	23	20	59	15	17	12	13	13	14	16	15	17	18	18
Lead	—	—	—	—	—	—	—	—	<50	<50	<50	<50	<50	<50	<50	<50	<50

Well X-5C																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
trans-1,2-Dichloroethene	—	—	—	—	—	—	—	—	<2	—	—	—	—	—	—	—	—
cis-1,2-Dichloroethene	—	—	—	—	—	—	—	—	<2	—	—	—	—	—	—	—	—
Vinyl Chloride	—	—	—	—	—	—	—	—	<2	—	—	—	—	—	—	—	—

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 - JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-7A																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	NA	<4,000	7,700,000	10,000,000	5,700,000	4,000,000	4,700,000	4,400,000	4,900,000	5,000,000	3,700,000	4,000,000	3,400,000	NS ⁴	4,300,000	3,800,000	4,100,000
Chemical Oxygen Demand (mg/L)	1,700	827	1,400	1,200	1,100	1,300	1,600	1,100	2,100	1,600	1,600	840	1,500	NS ⁴	1,400	2,100	890
Iron, dissolved	790,000	380,000	160,000	16,000	35,000	20,000	28,000	11,000	26,000	29,000	10,000	4,700	3,400	NS ⁴	1,600	1,200	4,000
Iron, total	890,000	4,900,000	740,000	430,000	210,000	89,000	90,000	64,000	290,000	99,000	66,000	350,000	61,000	NS ⁴	310,000	110,000	120,000
Manganese, dissolved	3,900	2,600	1,700	1,200	320	370	460	260	290	250	310	180	240	NS ⁴	230	200	240
Phenol (4-AAP) - Phenolics	18	37	160	38	11	39	49	75	530	56	86	41	38	NS ⁴	50	56	49
Sodium, dissolved	2,000,000	1,600,000	1,700,000	1,600,000	1,600,000	160,000	1,600,000	160,000	1,900,000	1,600,000	170,000	1,400,000	1,500,000	NS ⁴	980,000	1,300,000	1,500,000
pH	6.2	6.24	6.25	7.01	6.53	6.7	6.47	6.33	6.26	6.81	6.27	6.41	6.35	NS ⁴	7.68	6.41	6.51
Conductivity (umhos/cm)	>10,000	20,000	12,000	21,000	18,000	18,000	12,000	13,000	13,000	12,000	15,000	13,000	12,000	NS ⁴	14,000	14,000	14,000
Calcium	2,600,000	4,300,000	1,500,000	1,300,000	370,000	240,000	240,000	240,000	440,000	240,000	160,000	400,000	200,000	NS ⁴	280,000	170,000	160,000
Potassium	400,000	340,000	450,000	450,000	700,000	680,000	710,000	650,000	680,000	630,000	630,000	590,000	650,000	NS ⁴	600,000	550,000	540,000
Magnesium	1,500,000	1,500,000	840,000	850,000	500,000	360,000	380,000	330,000	460,000	350,000	230,000	350,000	270,000	NS ⁴	260,000	210,000	210,000
Sulfate	13,000	72,000	NA	49,000	11,000	2,000	<2,000	20,000	26,000	3,000	1,000	6,000	2,000	NS ⁴	19,000	65,000	14,000
Bicarbonate Alkalinity (mg/L)	440	290	NA	1,200	1,400	2,000	2,100	2,200	2,000	1,800	2,500	1,000	2,200	NS ⁴	2,300	320	2,500
Total Organic Carbon (mg/L)	220	320	330	470	400	420	400	480	440	320	310	380	340	NS ⁴	410	340	620
Nitrate	NA	NA	NA	760	120	<20	280	NA	<20	20	<20	90	<20	NS ⁴	50	790	1,000
Nitrite	NA	NA	NA	140	<20	<20	30	60	<20	60	40	<20	<20	NS ⁴	30	<20	<20
Arsenic	71	14	100	53	18	6	13	12	59	8	7	58	12	NS ⁴	27	30	16
Barium	6,400	10,000	4,200	3,800	1,300	940	880	830	130	840	850	1,600	480	NS ⁴	1,400	930	1,400
Cadmium	270	1,800	370	210	120	10	20	20	60	50	40	60	<10	NS ⁴	120	60	60
Chromium, Total	420	2,500	620	370	240	140	140	140	250	170	120	140	30	NS ⁴	270	120	120
Lead	630	2,400	530	350	250	<80	120	160	130	<50	<50	100	<50	NS ⁴	100	100	100
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS ⁴	<0.5	<0.5	<0.5
Selenium	<5	7	5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	NS ⁴	<5	<5	<5
Silver	30	100	30	<20	20	<50	<50	<50	<20	<20	<20	20	<20	NS ⁴	<20	<20	<20
Cyanide	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	NS ⁴	<20	<20	<20
Total Hardness (mg/L)	16,500	13,000	7,000	9,600	11,000	2,500	2,200	2,100	2,400	2,300	1,600	1,600	1,600	NS ⁴	1,900	1,900	1,600
Methylene Chloride	<4	5	5	<2	10	96	<2	2.6	4.1	<2	<2	<2	<2	NS ⁴	<2	2100 B	<10
Di-n-Octylphthalate	<2	<2	<2	<10	<2	<2	<2	<2	<2	<10	<5	<35	<15	NS ⁴	<5	<10	<30
Di-n-Butylphthalate	<2	<2	<2	<10	<2	<2	6.3	<2	<2	<10	<5	<35	<15	NS ⁴	<5	<10	<30

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-9B																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	340,000	340,000	360,000	370,000	370,000	370,000	370,000	360,000	460,000	440,000	440,000	440,000	440,000	450,000	460,000	440,000	450,000
Chemical Oxygen Demand (mg/L)	17	<2	<2	17	17	30	22	<10	<10	20	21	14	17	20	15	<10	20
Iron, dissolved	60	340	70	100	60	120	60	440	50	90	20	<20	<20	280	860	100	<50
Iron, total	1,200	2,200	690	3,500	1,000	1,300	1,100	520	880	1,500	970	710	430	1,800	1,400	380	390
Manganese, dissolved	500	480	430	520	520	500	540	510	560	490	500	480	560	500	540	620	610
Phenol (4-AAP) – Phenolics	5	<2	2	<2	5	<2	<2	<2	10	3	<2	<2	<2	<2	4	<2	<2
Sodium, dissolved	280,000	300,000	250,000	300,000	270,000	300,000	290,000	280,000	310,000	320,000	290,000	290,000	330,000	260,000	320,000	320,000	320,000
pH	7.7	7	6.75	7.87	7.71	7.03	6.96	7.31	7.39	7.53	7.48	7.41	7.53	7.43	7.42	7.68	7.82
Conductivity (umhos/cm)	1,300	1,300	1,300	1,900	2,000	1,300	1,200	1,500	1,700	1,700	2,000	1,800	1,900	2,100	1,700	1,800	2,100
Calcium	65,000	68,000	72,000	72,000	74,000	71,000	58,000	80,000	76,000	70,000	71,000	70,000	75,000	74,000	78,000	72,000	85,000
Potassium	3,000	3,000	3,300	3,000	3,500	3,300	3,200	3,100	3,600	3,100	3,600	3,200	4,300	2,400	3,700	3,100	3,500
Magnesium	22,000	24,000	24,000	25,000	10,000	24,000	29,000	25,000	26,000	22,000	23,000	23,000	27,000	23,000	25,000	24,000	28,000
Sulfate	1,000	<1,000	<1,000	1,000	<1,000	4,000	4,000	2,000	1,000	2,000	<1,000	<1,000	<1,000	<1,000	<1,000	2,000	<1,000
Bicarbonate Alkalinity (mg/L)	480	440	490	510	480	510	500	480	530	480	510	510	500	100	540	480	480
Total Organic Carbon (mg/L)	4	25	6	9	6	10	6	6	7	5	4	4	4	4	4	6	4
Nitrate	20	110	350	70	6,300	250	<20	540	30	80	<20	310	80	280	260	70	100
Nitrite	<20	940	40	120	<20	<20	40	<20	<20	<20	<20	20	<20	<20	<20	70	<20
Arsenic	<5	<0.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Barium	70	110	80	820	100	80	80	80	80	90	80	80	80	90	90	70	90
Cadmium	<10	<10	<10	20	<10	<10	<10	<40	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chromium, Total	<20	20	<20	90	20	<40	<40	<40	<20	<20	<20	<20	<20	<20	<20	<20	<20
Lead	50	50	<50	100	<50	<80	<80	<80	<50	<50	<50	<50	<50	<50	<50	<50	<50
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Selenium	<5	<5	<5	<5	<5	<50	14	<5	<5	<5	<5	<5	<5	<500	<5	NA	<5
Silver	<20	<20	<20	30	<20	<50	<50	<50	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Total Hardness (mg/L)	430	320	320	320	340	310	320	350	300	320	310	330	430	330	360	350	350
Methylene Chloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	10 B
Di-n-Octylphthalate	<2	<2	<2	<10	110	<2	<2	<2	<2	<5	<5	<7	<5	<5	<5	<10	<10
Di-n-Butylphthalate	<2	<2	<2	<10	3	<2	<2	<2	<2	<5	<5	<7	<5	<5	<5	<10	<10

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-10B																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	350,000	21,000	84,000	14,000	22,000	25,000	49,000	270,000	67,000	38,000	32,000	98,000	17,000	25,000	NS ^s	NS ^s	880,000
Chemical Oxygen Demand (mg/L)	45	19	<2	4	390	27	18	40	18	24	31	13	25	880	NS ^s	NS ^s	130
Iron, dissolved	6,200	540	100	60	80	60	80	6,600	50	560	60	40	<20	170	NS ^s	NS ^s	110
Iron, total	12,000	21,000	15,000	21,000	41,000	23,000	17,000	62,000	42,000	8,600	7,500	1,600	40,000	89,000	NS ^s	NS ^s	42,000
Manganese, dissolved	190	70	590	240	320	140	1,000	340	70	180	20	90	210	560	NS ^s	NS ^s	90
Phenol (4-AAP) – Phenolics	4	5	2	<2	6	<2	5	4	<2	2	3	5	<2	<2	NS ^s	NS ^s	<2
Sodium, dissolved	120,000	64,000	90,000	48,000	52,000	66,000	110,000	140,000	78,000	93,000	77,000	100,000	51,000	74,000	NS ^s	NS ^s	97,000
pH	6.6	6.71	6.7	6.78	7.1	6.94	7.1	7.21	7.29	7.41	7.32	7.33	7.40	7.56	NS ^s	NS ^s	7.51
Conductivity (umhos/cm)	1,600	1,600	1,600	1,600	1,800	1,500	1,500	1,800	2,200	2,300	2,000	2,100	1,400	2,300	NS ^s	NS ^s	1,600
Calcium	160,000	260,000	330,000	190,000	290,000	280,000	320,000	190,000	340,000	250,000	220,000	310,000	130,000	210,000	NS ^s	NS ^s	410,000
Potassium	2,600	10,000	18,000	11,000	14,000	12,000	20,000	6,300	11,000	11,000	23,000	16,000	87,000	11,000	NS ^s	NS ^s	16,000
Magnesium	40,000	64,000	80,000	47,000	70,000	66,000	85,000	51,000	83,000	62,000	72,000	85,000	40,000	54,000	NS ^s	NS ^s	120,000
Sulfate	8,000	860,000	930,000	510,000	670,000	660,000	1,100,000	100,000	860,000	590,000	610,000	780,000	220,000	360,000	NS ^s	NS ^s	440,000
Bicarbonate Alkalinity (mg/L)	480	310	410	1,000	450	740	470	510	360	400	390	490	350	440	NS ^s	NS ^s	400
Total Organic Carbon (mg/L)	15	31	8	51	5	33	5	21	7	4	5	5	5	4	NS ^s	NS ^s	4
Nitrate	<20	380	290	50	940	340	400	420	970	90	30	330	160	460	NS ^s	NS ^s	90
Nitrite	<20	<20	<20	<20	20	<20	<20	<20	<20	<20	<20	30	<20	<20	NS ^s	NS ^s	<20
Arsenic	13	<5	<5	<5	8	8	<5	8	5	<5	<5	<5	<5	<5	NS ^s	NS ^s	10
Barium	250	90	70	90	140	100	70	180	120	40	30	50	70	210	NS ^s	NS ^s	150
Cadmium	<10	20	<10	10	30	<10	<10	20	<10	<10	<10	10	10	30	NS ^s	NS ^s	20
Chromium, Total	<20	50	30	30	70	40	<40	100	70	40	30	<20	<20	60	NS ^s	NS ^s	70
Lead	<50	100	<50	70	130	<80	<80	150	60	<50	<50	<50	<60	150	NS ^s	NS ^s	80
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS ^s	NS ^s	<0.5
Selenium	<5	<5	<0.5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	NS ^s	NS ^s	<5
Silver	<20	<20	<20	<20	<20	<50	<50	<50	<20	<20	<20	<20	<20	<20	NS ^s	NS ^s	<20
Cyanide	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	NS ^s	NS ^s	<20
Total Hardness (mg/L)	630	940	1,400	1,300	910	1,100	1,200	730	1,000	1,000	900	1,300	530	690	NS ^s	NS ^s	1,800
Methylene Chloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	NS ^s	NS ^s	11 B
Di-n-Octylphthalate	<2	<2	<2	<10	<2	<2	<2	<2	<2	<5	<5	<5	<5	<5	NS ^s	NS ^s	<10
Di-n-Butylphthalate	<2	<2	<2	<10	<2	<2	<2	<2	<2	<5	<5	<5	<5	<5	NS ^s	NS ^s	<10

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 - JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-13B																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	210,000	200,000	200,000	200,000	200,000	NS ⁴	210,000	210,000	NS ²	NS ⁴	200,000	230,000	NS ²	NS ⁴	NS ⁴	89,000	NS ²
Chemical Oxygen Demand (mg/L)	16	12	5	13	30	NS ⁴	26	<10	NS ²	NS ⁴	26	12	NS ²	NS ⁴	NS ⁴	29	NS ²
Iron, dissolved	3,800	280	20	60	140	NS ⁴	60	190	NS ²	NS ⁴	50	300	NS ²	NS ⁴	NS ⁴	150	NS ²
Iron, total	21,000	13,000	12,000	2,800	9,800	NS ⁴	20,000	8,700	NS ²	NS ⁴	7,800	6,800	NS ²	NS ⁴	NS ⁴	1,800	NS ²
Manganese, dissolved	240	200	230	1,000	230	NS ⁴	200	230	NS ²	NS ⁴	160	100	NS ²	NS ⁴	NS ⁴	290	NS ²
Phenol (4-AAP) - Phenolics	3	<2	3	<2	4	NS ⁴	3	<2	NS ²	NS ⁴	<2	<2	NS ²	NS ⁴	NS ⁴	<2	NS ²
Sodium, dissolved	100,000	96,000	90,000	97,000	90,000	NS ⁴	120,000	88,000	NS ²	NS ⁴	100,000	95,000	NS ²	NS ⁴	NS ⁴	35,000	NS ²
pH	6.96	7.01	7	7.09	7.07	NS ⁴	7.21	7.38	NS ²	NS ⁴	7.42	7.46	NS ²	NS ⁴	NS ⁴	7.58	NS ²
Conductivity (umhos/cm)	1,200	1,200	1,200	1,200	1,400	NS ⁴	1,200	1,400	NS ²	NS ⁴	1,500	1,600	NS ²	NS ⁴	NS ⁴	1,700	NS ²
Calcium	170,000	110,000	140,000	130,000	130,000	NS ⁴	170,000	130,000	NS ²	NS ⁴	140,000	110,000	NS ²	NS ⁴	NS ⁴	74,000	NS ²
Potassium	4,400	1,700	2,400	1,900	2,100	NS ⁴	2,800	2,300	NS ²	NS ⁴	6,200	1,700	NS ²	NS ⁴	NS ⁴	10,000	NS ²
Magnesium	49,000	35,000	44,000	42,000	38,000	NS ⁴	52,000	37,000	NS ²	NS ⁴	41,000	35,000	NS ²	NS ⁴	NS ⁴	21,000	NS ²
Sulfate	10,000	<1,000	<1,000	<1,000	<1,000	NS ⁴	7,000	3,000	NS ²	NS ⁴	<1,000	2,000	NS ²	NS ⁴	NS ⁴	8,000	NS ²
Bicarbonate Alkalinity (mg/L)	480	460	430	420	420	NS ⁴	390	440	NS ²	NS ⁴	370	520	NS ²	NS ⁴	NS ⁴	230	NS ²
Total Organic Carbon (mg/L)	6	12	8	8	4	NS ⁴	7	9	NS ²	NS ⁴	8	7	NS ²	NS ⁴	NS ⁴	10	NS ²
Nitrate	<20	550	300	110	<20	NS ⁴	390	510	NS ²	NS ⁴	980	320	NS ²	NS ⁴	NS ⁴	530	NS ²
Nitrite	<20	<20	20	130	<20	NS ⁴	30	<20	NS ²	NS ⁴	40	30	NS ²	NS ⁴	NS ⁴	<20	NS ²
Arsenic	28	<5	6	<5	15	NS ⁴	40	20	NS ²	NS ⁴	21	18	NS ²	NS ⁴	NS ⁴	<5	NS ²
Barium	490	470	450	1,600	430	NS ⁴	500	410	NS ²	NS ⁴	420	400	NS ²	NS ⁴	NS ⁴	40	NS ²
Cadmium	<10	10	<10	20	10	NS ⁴	<10	20	NS ²	NS ⁴	<10	<10	NS ²	NS ⁴	NS ⁴	<10	NS ²
Chromium, Total	<20	<20	<20	130	30	NS ⁴	<40	50	NS ²	NS ⁴	<20	<20	NS ²	NS ⁴	NS ⁴	<20	NS ²
Lead	<50	70	<50	80	<50	NS ⁴	<80	100	NS ²	NS ⁴	<50	<50	NS ²	NS ⁴	NS ⁴	<50	NS ²
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	NS ⁴	<0.5	<0.5	NS ²	NS ⁴	<0.5	<0.5	NS ²	NS ⁴	NS ⁴	<0.5	NS ²
Selenium	<5	<5	<5	<5	<5	NS ⁴	<5	<5	NS ²	NS ⁴	<5	<5	NS ²	NS ⁴	NS ⁴	<5	NS ²
Silver	<20	<20	<20	30	<20	NS ⁴	<50	<50	NS ²	NS ⁴	<20	100	NS ²	NS ⁴	NS ⁴	<20	NS ²
Cyanide	<20	<20	<20	<20	<20	NS ⁴	<20	<20	NS ²	NS ⁴	<20	<20	NS ²	NS ⁴	NS ⁴	<20	NS ²
Total Hardness (mg/L)	500	670	520	360	440	NS ⁴	500	520	NS ²	NS ⁴	470	510	NS ²	NS ⁴	NS ⁴	300	NS ²
Methylene Chloride	<2	<2	<2	<2	<2	NS ⁴	<2	<2	NS ²	NS ⁴	<2	<2	NS ²	NS ⁴	NS ⁴	<2	NS ²
Di-n-Octylphthalate	<2	<2	<2	<10	<2	NS ⁴	<2	<2	NS ²	NS ⁴	<5	<5	NS ²	NS ⁴	NS ⁴	<10	NS ²
Di-n-Butylphthalate	<2	<2	<2	<10	<2	NS ⁴	<2	<2	NS ²	NS ⁴	<5	<5	NS ²	NS ⁴	NS ⁴	<10	NS ²

(Notes are included on Page 14).

TABLE 4-9
 QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
 JANUARY 1990 – JANUARY 1994
 GENERAL MOTORS CORPORATION
 SAGINAW MALLEABLE IRON PLANT PROPERTY,
 GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
 SAGINAW, MICHIGAN

Well X-14B																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	300,000	240,000	250,000	220,000	250,000	NS ¹	210,000	230,000	NS ²	NA	250,000	260,000	NS ²	NS ⁴	100,000	220,000	NS ²
Chemical Oxygen Demand (mg/L)	26	25	9	18	25	NS ¹	27	10	NS ²	NA	28	11	NS ²	NS ⁴	49	12	NS ²
Iron, dissolved	3,600	100	30	50	1,200	NS ¹	30	2,800	NS ²	NA	<20	1,600	NS ²	NS ⁴	<20	<20	NS ²
Iron, total	24,000	15,000	17,000	13,000	14,000	NS ¹	24,000	12,000	NS ²	NA	16,000	13,000	NS ²	NS ⁴	5,200	2,600	NS ²
Manganese, dissolved	290	310	350	320	340	NS ¹	220	350	NS ²	NA	170	280	NS ²	NS ⁴	30	450	NS ²
Phenol (4-AAP) – Phenolics	4	<2	2	<2	<2	NS ¹	<2	2	NS ²	NA	2	2	NS ²	NS ⁴	7	<2	NS ²
Sodium, dissolved	98,000	94,000	100,000	100,000	110,000	NS ¹	100,000	140,000	NS ²	NA	92,000	91,000	NS ²	NS ⁴	38,000	74,000	NS ²
pH	7.09	7	7.1	7.2	7.2	NS ¹	7.11	7.36	NS ²	NA	7.36	7.42	NS ²	NS ⁴	7.61	7.16	NS ²
Conductivity (umhos/cm)	1,200	1,200	1,200	1,200	1,400	NS ¹	1,200	1,400	NS ²	NA	1,400	1,500	NS ²	NS ⁴	1,600	1,600	NS ²
Calcium	260,000	94,000	120,000	120,000	120,000	NS ¹	180,000	110,000	NS ²	NA	110,000	110,000	NS ²	NS ⁴	76,000	120,000	NS ²
Potassium	7,200	1,600	2,000	1,900	2,100	NS ¹	2,600	2,000	NS ²	NA	2,100	1,800	NS ²	NS ⁴	11,000	7,100	NS ²
Magnesium	72,000	27,000	36,000	34,000	35,000	NS ¹	57,000	31,000	NS ²	NA	32,000	32,000	NS ²	NS ⁴	21,000	35,000	NS ²
Sulfate	4,000	1,600	<1,000	2,000	<1,000	NS ¹	2,000	7,000	NS ²	NA	1,000	1,000	NS ²	NS ⁴	14,000	8,000	NS ²
Bicarbonate Alkalinity (mg/L)	380	360	350	330	350	NS ¹	380	340	NS ²	NA	310	360	NS ²	NS ⁴	270	340	NS ²
Total Organic Carbon (mg/L)	6	32	8	8	7	NS ¹	11	3	NS ²	NA	6	6	NS ²	NS ⁴	11	8	NS ²
Nitrate	<20	<20	310	70	440	NS ¹	550	520	NS ²	NA	150	210	NS ²	NS ⁴	340	60	NS ²
Nitrite	<20	<20	<20	60	<20	NS ¹	<20	<20	NS ²	NA	<20	30	NS ²	NS ⁴	20	<20	NS ²
Arsenic	23	<5	6	<5	9	NS ¹	39	9	NS ²	NA	18	10	NS ²	NS ⁴	15	<5	NS ²
Barium	350	130	150	140	140	NS ¹	520	130	NS ²	NA	180	160	NS ²	NS ⁴	70	130	NS ²
Cadmium	20	20	<10	10	10	NS ¹	10	10	NS ²	NA	<10	<10	NS ²	NS ⁴	<10	<10	NS ²
Chromium, Total	70	20	<20	20	20	NS ¹	<40	<40	NS ²	NA	<20	<20	NS ²	NS ⁴	<20	<20	NS ²
Lead	80	80	<50	<50	<50	NS ¹	<80	90	NS ²	NA	<50	<50	NS ²	NS ⁴	<50	<50	NS ²
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	NS ¹	<0.5	<0.5	NS ²	NA	<0.5	<0.5	NS ²	NS ⁴	<0.5	<0.5	NS ²
Selenium	<5	<5	<5	<5	<5	NS ¹	<5	<5	NS ²	NA	<5	<5	NS ²	NS ⁴	<5	<5	NS ²
Silver	<20	<20	<20	<20	<20	NS ¹	<50	<50	NS ²	NA	<20	<20	NS ²	NS ⁴	<20	<20	NS ²
Cyanide	<20	<20	<20	<20	<20	NS ¹	<20	<20	NS ²	NA	<20	<20	NS ²	NS ⁴	<20	<20	NS ²
Total Hardness (mg/L)	400	530	490	370	430	NS ¹	490	480	NS ²	NA	460	480	NS ²	NS ⁴	390	510	NS ²

(Notes are included on Page 14).

TABLE 4-9

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-15B																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	120,000	110,000	120,000	110,000	110,000	NS ¹	210,000	110,000	110,000	NA	110,000	110,000	100,000	NS ¹	110,000	110,000	120,000
Chemical Oxygen Demand (mg/L)	<2	16	5	7	11	NS ¹	23	<10	<10	NA	<10	50	18	NS ¹	13	12	15
Iron, dissolved	70	120	<20	100	20	NS ¹	50	110	40	NA	<20	<20	<20	NS ¹	40	<20	370
Iron, total	550,000	2,600	2,100	300	80	NS ¹	27,000	280	180	NA	120	50	50	NS ¹	80	<20	6,800
Manganese, dissolved	80	<20	<20	<20	30	NS ¹	190	50	<10	NA	50	<10	<10	NS ¹	10	10	20
Phenol (4-AAP) – Phenolics	23	<2	2	<2	2	NS ¹	<2	<2	<2	NA	2	<2	<2	NS ¹	<2	<2	<2
Sodium, dissolved	110,000	130,000	120,000	130,000	110,000	NS ¹	98,000	110,000	140,000	NA	170,000	120,000	120,000	NS ¹	120,000	110,000	120,000
pH	7.03	7.2	7.23	7.07	7.74	NS ¹	7.15	7.21	7.41	NA	7.42	7.52	7.71	NS ¹	7.63	7.61	7.52
Conductivity (umhos/cm)	970	990	1,000	1,000	1,400	NS ¹	1,000	1,100	1,300	NA	1,400	1,400	1,200	NS ¹	1,300	1,600	1,400
Calcium	3,300,000	78,000	86,000	88,000	85,000	NS ¹	200,000	76,000	78,000	NA	74,000	53,000	80,000	NS ¹	79,000	80,000	110,000
Potassium	66,000	3,000	3,700	2,800	3,000	NS ¹	3,500	2,900	2,600	NA	2,700	1,800	3,300	NS ¹	2,400	2,500	4,200
Magnesium	1,200,000	39,000	42,000	46,000	43,000	NS ¹	60,000	38,000	42,000	NA	39,000	28,000	47,000	NS ¹	41,000	41,000	50,000
Sulfate	400,000	420,000	400,000	430,000	380,000	NS ¹	<1,000	310,000	380,000	NA	350,000	370,000	380,000	NS ¹	380,000	400,000	440,000
Bicarbonate Alkalinity (mg/L)	140	140	150	150	150	NS ¹	340	150	150	NA	140	160	160	NS ¹	200	150	250
Total Organic Carbon (mg/L)	3	17	3	3	2	NS ¹	7	9	3	NA	2	2	5	NS ¹	4	4	3
Nitrate	40	160	1,200	430	460	NS ¹	500	910	340	NA	440	370	230	NS ¹	210	250	500
Nitrite	50	<20	<20	<20	<20	NS ¹	40	<20	<20	NA	<20	<20	<20	NS ¹	<20	<20	<20
Arsenic	240	<5	<5	<5	<5	NS ¹	43	<5	<5	NA	<5	<5	<5	NS ¹	<5	<5	6
Barium	2,400	<50	<50	<50	<50	NS ¹	550	30	30	NA	20	20	30	NS ¹	30	20	70
Cadmium	190	10	<10	<10	<10	NS ¹	10	10	<10	NA	<10	<10	<10	NS ¹	<10	<10	<10
Chromium, Total	850	30	30	20	20	NS ¹	50	<40	<20	NA	<20	<20	<20	NS ¹	20	<20	20
Lead	1,000	80	<50	<50	<50	NS ¹	<80	<50	<50	NA	<50	<50	<50	NS ¹	<50	<50	<50
Mercury	1.5	<0.5	<0.5	<0.5	<0.5	NS ¹	<0.5	<0.5	<0.5	NA	<0.5	<0.5	<0.5	NS ¹	<0.5	<0.5	<0.5
Selenium	6	<5	<5	<5	<5	NS ¹	<5	<5	<5	NA	<5	<5	<5	NS ¹	<5	<5	<5
Silver	20	<20	<20	<20	<20	NS ¹	<50	<50	<20	NA	<20	<20	<20	NS ¹	<20	<20	<20
Cyanide	<20	<20	<20	<20	<20	NS ¹	<20	<20	<20	NA	<20	<20	<20	NS ¹	<80	<20	<20
Total Hardness (mg/L)	NA	420	480	400	360	NS ¹	500	410	380	NA	410	380	450	NS ¹	440	430	40

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L), except where noted.

mg/L – milligrams per liter.

umhos/cm – micromhos per centimeter.

NA – Not Available

< – Indicates the compound was analyzed for but was not detected above the noted detection limit

() – Total iron concentration; all other iron concentrations are dissolved results.

– – Indicates not analyzed.

NS¹ – Not sampled due to lack of well recovery.

NS² – Not sampled due to frozen conditions.

NS³ – Not sampled due to obstruction in well.

NS⁴ – Not sampled due to flooded conditions.

NS⁵ – Not sampled due to presence of wasp nest on well.

B – Probable laboratory artifact. Trace levels of methylene chloride were found in the analytical blank.

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-1					
Parameter	04/94	07/94	10/94	01/95	04/95
Temperature (degrees F)	-	59	57	-	-
Chloride	40,000	40,000	46,000	46,000	42,000
Chemical Oxygen Demand (mg/L)	830	59	<10	350	330
Iron, dissolved	100	110	<20	50	300
Manganese, dissolved	200	1,200	200	260	12,000
Phenol (4-AAP) - Phenolics	8	<5	<5	8	5
Sodium, dissolved	40,000	70,000	36,000	38,000	46,000
pH	7.41	7.83	7.81	7.12	7.18
Conductivity (umhos/cm)	730	700	700	700	700
Lead	210	230	170	150	<50

Well B-2					
Parameter	04/94	07/94	10/94	01/95	04/95
Temperature (degrees F)	-	59	57	-	-
Chloride	140,000	240,000	310,000	380,000	280,000
Chemical Oxygen Demand (mg/L)	550	53	160	110	99
Iron, dissolved	430	70	<20	120	120
Manganese, dissolved	50	40	180	100	120
Phenol (4-AAP) - Phenolics	<5	<5	<5	<5	<5
Sodium, dissolved	100,000	180,000	160,000	210,000	170,000
pH	7.26	7.7	7.36	7.5	7.35
Conductivity (umhos/cm)	850	1,200	1,300	1,200	900
Lead	330	150	240	120	100
Oil and Grease	-	7000	5000	<5,000	<5000
Acenaphthene	-	-	-	-	-
Acenaphthylene	-	-	-	-	-
Anthracene	-	-	-	-	-
Benzo(a)Anthracene	-	-	-	-	-
Benzo(b)Flouranthene	-	-	-	-	-
Benzo(k)Flouranthene	-	-	-	-	-

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-3					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	58,000	85,000	20,000	74,000	71,000
Temperature (degrees F)	-	58	58	-	-
Chemical Oxygen Demand (mg/L)	25	26	20	46	62
Iron, dissolved	180	160	950	120	30
Manganese, dissolved	980	280	960	810	900
Phenol (4-AAP) - Phenolics	<5	<5	<5	<5	<5
Sodium, dissolved	68,000	35,000	62,000	59,000	62,000
pH	7.82	7.54	7.62	7.38	7.58
Conductivity (umhos/cm)	850	1,200	1,300	1,000	1,000
Lead	<50	<50	<50	<50	<50
Benzo(a)Pyrene	-	-	-	-	-
Benzo(g,h,i)Perylene	-	-	-	-	-
Chrysene	-	-	-	-	-
Dibenzo(a,h)Anthracene	-	-	-	-	-
Di-n-Octylphthalate	-	-	-	-	-
Di-n-Butylphthalate	-	-	-	-	-
Fluoranthene	-	-	-	-	-
Fluorene	-	-	-	-	-
Indeno(1,2,3-c,d)Pyrene	-	-	-	-	-
Naphthalene	-	-	-	-	-
Phenanthrene	-	-	-	-	-
Pyrene	-	-	-	-	-
Oil & Grease	-	-	-	-	-

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 – APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-4A					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Chemical Oxygen Demand (mg/L)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Iron, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Manganese, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Phenol (4-AAP) – Phenolics	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Sodium, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
pH	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Conductivity (umhos/cm)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Lead	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹

Well B-4B					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Chemical Oxygen Demand (mg/L)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Iron, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Manganese, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Phenol (4-AAP) – Phenolics	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Sodium, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
pH	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Conductivity (umhos/cm)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Lead	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 – APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-5					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	170,000	210,000	160,000	200,000	190,000
Temperature (degrees F)	—	59	59	—	—
Chemical Oxygen Demand (mg/L)	390	170	250	340	290
Iron, dissolved	390	320	640	6,800	330
Manganese, dissolved	400	390	290	380	360
Phenol (4-AAP) – Phenolics	15	<5	5	10	13
Sodium, dissolved	640,000	550,000	540,000	510,000	600,000
pH	7.28	7.3	7.46	7.19	7.21
Conductivity (umhos/cm)	1,900	3,000	3,200	2,000	2,100
Lead	50	60	50	70	<50

Well B-6					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Chemical Oxygen Demand (mg/L)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Iron, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Manganese, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Phenol (4-AAP) – Phenolics	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Sodium, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
pH	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Conductivity (umhos/cm)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Lead	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well-B-7					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	NS ³	NS ³	NS ³	NS ³	NS ³
Chemical Oxygen Demand (mg/L)	NS ³	NS ³	NS ³	NS ³	NS ³
Iron, dissolved	NS ³	NS ³	NS ³	NS ³	NS ³
Manganese, dissolved	NS ³	NS ³	NS ³	NS ³	NS ³
Phenol (4-AAP) - Phenolics	NS ³	NS ³	NS ³	NS ³	NS ³
Sodium, dissolved	NS ³	NS ³	NS ³	NS ³	NS ³
pH	NS ³	NS ³	NS ³	NS ³	NS ³
Conductivity (umhos/cm)	NS ³	NS ³	NS ³	NS ³	NS ³

Well X-1A					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	980,000	840,000	1,200,000	920,000	920,000
Temperature (degrees F)	-	58	57	-	-
Chemical Oxygen Demand (mg/L)	300	270	820	780	680
Iron, dissolved	830	270	2,000	360	560
Manganese, dissolved	830	520	530	660	990
Phenol (4-AAP) - Phenolics	7	<5	15	14	14
Sodium, dissolved	480,000	400,000	510,000	430,000	420,000
pH	7.03	6.98	6.82	7.08	6.94
Conductivity (umhos/cm)	4,600	4,900	5,100	4,600	5,200
Total Organic Carbon (mg/L)	48	77	80	58	110
Lead	220	80	200	140	100

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-1B					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	1,000,000	1,700,000	1,800,000	1,700,000	1,600,000
Temperature (degrees F)	-	58	57	-	-
Chemical Oxygen Demand (mg/L)	400	400	460	270	380
Iron, dissolved	220	310	7,100	310	880
Manganese, dissolved	960	1,200	1,000	900	840
Phenol (4-AAP) - Phenolics	<5	8	10	11	14
Sodium, dissolved	880,000	830,000	730,000	710,000	760,000
pH	7.13	6.69	6.58	7.02	7.06
Conductivity (umhos/cm)	4,300	7,600	7,700	4,200	5,400
Total Organic Carbon (mg/L)	6	100	110	6	92
Lead	140	<50	70	100	<50

Well X-1C					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	280,000	270,000	270,000	310,000	380,000
Temperature (degrees F)	-	58	57	-	-
Chemical Oxygen Demand (mg/L)	18	40	64	23	28
Iron, dissolved	80	50	30	260	190
Manganese, dissolved	50	60	30	10	40
Phenol (4-AAP) - Phenolics	<5	<5	24	<5	7
Sodium, dissolved	160,000	150,000	150,000	180,000	160,000
pH	7.56	7.75	7.61	7.62	7.39
Conductivity (umhos/cm)	1,000	1,600	1,900	1,000	1,300
Lead	<50	60	<50	50	<50

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 – APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-2A					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Chemical Oxygen Demand (mg/L)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Iron, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Phenol (4-AAP) – Phenolics	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Sodium, dissolved	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
pH	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Conductivity (umhos/cm)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹
Total Organic Carbon (mg/L)	NS ¹	NS ¹	NS ¹	NS ¹	NS ¹

Well X-2B					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	160,000	170,000	140,000	140,000	180,000
Temperature (degrees F)	—	59	59	—	—
Chemical Oxygen Demand (mg/L)	85	91	82	85	82
Iron, dissolved	320	20	4,000	4,200	90
Manganese, dissolved	260	280	240	280	240
Phenol (4-AAP) – Phenolics	<5	<5	<5	<5	<5
Sodium, dissolved	250,000	240,000	220,000	210,000	25,000
pH	7.03	7.06	7.11	7.11	7.11
Conductivity (umhos/cm)	1,100	1,900	2,100	1,300	1,200
Total Organic Carbon (mg/L)	21	27	26	16	21
Lead	60	<50	<50	70	<50

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-2C					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	410,000	400,000	370,000	470,000	430,000
Temperature (degrees F)	-	59	59	-	-
Chemical Oxygen Demand (mg/L)	60	70	63	72	74
Iron, dissolved	520	290	6,700	80	100
Manganese, dissolved	670	640	550	530	1,200
Phenol (4-AAP) - Phenolics	<5	<5	<5	<5	<5
Sodium, dissolved	170,000	200,000	200,000	180,000	190,000
pH	7.26	7.08	7.32	7.28	7.34
Conductivity (umhos/cm)	1,600	2,100	2,100	1,700	1,800
Total Organic Carbon (mg/L)	17	21	26	15	21
Lead	<50	<50	<50	<50	<50

Well X-5C					
Parameter	04/94	07/94	10/94	01/95	04/95
trans-1,2-Dichloroethene	-	-	-	-	-
cis-1,2-Dichloroethene	-	-	-	-	-
Vinyl Chloride	-	-	-	-	-

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-7A					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	4,300,000	4,600,000	3,700,000	4,100,000	4,600,000
Temperature (degrees F)	-	-	56	53	-
Chemical Oxygen Demand (mg/L)	1,700	5,300	1,400	3,300	5,700
Iron, dissolved	2,000	31,000	8,200	5,600	1,000
Iron, total	240,000	470,000	110,000	65,000	49,000
Manganese, dissolved	220	220	200	210	150
Phenol (4-AAP) - Phenolics	600	41	90	110	67
Sodium, dissolved	1,600,000	1,600,000	1,200,000	1,100,000	1,200,000
pH	6.43	6.92	6.86	6.61	6.88
Conductivity (umhos/cm)	14,000	16,800	18,100	14,700	14,600
Calcium	280,000	570,000	280,000	230,000	180,000
Potassium	660,000	720,000	580,000	530,000	540,000
Magnesium	280,000	420,000	250,000	220,000	240,000
Sulfate	14,000	<1,000	16,000	<1000	<1000
Bicarbonate Alkalinity (mg/L)	2,700	2,200	2,200	2,200	2,100
Total Organic Carbon (mg/L)	48	340	300	270	390
Nitrate	180	<20	1,100	690	2,400
Nitrite	<20	70	<20	<20	<20
Arsenic	30	44	16	13	15
Barium	1,200	1,700	1,100	790	650
Cadmium	120	60	<10	<10	10
Chromium, Total	290	510	120	120	20
Lead	320	680	180	180	<50
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5
Selenium	<5	<5	<5	<5	<5
Silver	<20	30	<20	<20	<20
Cyanide	<20	30	<20	20	<20
Total Hardness (mg/L)	1,400	2,000	2,100	2,700	1,800
Methylene Chloride	<10	<2,000	2,800	3	5
Di-n-Octylphthalate	<5	<10	<5	<5	<5
Di-n-Butylphthalate	<5	<10	<5	<5	<5

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-9B					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	480,000	500,000	470,000	520,000	520,000
Temperature (degrees F)	-	-	57	52	-
Chemical Oxygen Demand (mg/L)	22	48	18	24	43
Iron, dissolved	180	110	170	120	40
Iron, total	1,600	1,100	750	1,300	6,800
Manganese, dissolved	600	630	550	570	530
Phenol (4-AAP) - Phenolics	<5	<5	<5	<5	<5
Sodium, dissolved	320,000	330,000	280,000	300,000	300,000
pH	7.61	7.33	7.58	7.56	7.61
Conductivity (umhos/cm)	1,900	2,600	2,800	1,900	1,900
Calcium	82,000	85,000	83,000	82,000	94,000
Potassium	6,000	4,900	6,700	5,400	4,800
Magnesium	27,000	28,000	30,000	28,000	32,000
Sulfate	<1,000	1,000	<1,000	1,000	1,000
Bicarbonate Alkalinity (mg/L)	500	530	520	520	500
Total Organic Carbon (mg/L)	5	5	4	4	5
Nitrate	30	240	210	30	50
Nitrite	<20	<20	<20	<20	<20
Arsenic	<5	<5	<5	<5	<5
Barium	100	100	80	100	130
Cadmium	<10	<10	<10	<10	20
Chromium, Total	20	20	<20	<20	<20
Lead	<50	<50	<50	<50	<50
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5
Selenium	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<20	<20
Cyanide	<20	<20	<20	20	<20
Total Hardness (mg/L)	360	360	270	410	440
Methylene Chloride	<10	<2,000	<2,000	5	5
Di-n-Octylphthalate	<5	<10	<5	<5	<5
Di-n-Butylphthalate	<5	<10	<5	<5	<5

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-10B					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	520,000	190,000	480,000	220,000	46,000
Temperature (degrees F)	-	-	57	52	-
Chemical Oxygen Demand (mg/L)	98	130	43	720	63
Iron, dissolved	50	20	130	50	30
Iron, total	380	4,100	10,000	54,000	5,200
Manganese, dissolved	210	40	60	60	20
Phenol (4-AAP) - Phenolics	<5	6	<5	<5	11
Sodium, dissolved	55,000	36,000	88,000	65,000	51,000
pH	7.58	7.7	7.58	7.49	7.58
Conductivity (umhos/cm)	2,100	1,800	1,900	1,900	1,800
Calcium	85,000	190,000	260,000	210,000	110,000
Potassium	12,000	11,000	16,000	10,000	8,400
Magnesium	16,000	50,000	77,000	55,000	39,000
Sulfate	130,000	120,000	240,000	290,000	280,000
Bicarbonate Alkalinity (mg/L)	290	430	400	420	430
Total Organic Carbon (mg/L)	4	4	3	7	3
Nitrate	530	250	<20	<20	<20
Nitrite	<20	<20	<20	<20	<20
Arsenic	<5	<5	<5	<5	<5
Barium	<20	120	70	160	40
Cadmium	<10	<10	<10	<10	<10
Chromium, Total	<20	70	20	<20	<20
Lead	<50	80	60	150	<50
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5
Selenium	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<20	<20
Cyanide	<20	<20	<20	<20	<20
Total Hardness (mg/L)	1,100	650	1,200	730	630
Methylene Chloride	<10	<2,000	<2,000	3	4
Di-n-Octylphthalate	<5	<10	<5	<5	<5
Di-n-Butylphthalate	<5	<10	<5	<5	<5

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 - APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-13B					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	NS ⁴	NS ⁴	180,000	220,000	200,000
Temperature (degrees F)	NS ⁴	NS ⁴	57	52	-
Chemical Oxygen Demand (mg/L)	NS ⁴	NS ⁴	16	35	32
Iron, dissolved	NS ⁴	NS ⁴	30	50	7,100
Iron, total	NS ⁴	NS ⁴	7,700	8,300	11,000
Manganese, dissolved	NS ⁴	NS ⁴	140	190	210
Phenol (4-AAP) - Phenolics	NS ⁴	NS ⁴	<5	<5	<5
Sodium, dissolved	NS ⁴	NS ⁴	90,000	92,000	94,000
pH	NS ⁴	NS ⁴	7.82	7.57	7.42
Conductivity (umhos/cm)	NS ⁴	NS ⁴	1,800	1,600	1,700
Calcium	NS ⁴	NS ⁴	120,000	93,000	110,000
Potassium	NS ⁴	NS ⁴	4,000	1,700	2,500
Magnesium	NS ⁴	NS ⁴	42,000	29,000	35,000
Sulfate	NS ⁴	NS ⁴	1,000	2,000	1,400
Bicarbonate Alkalinity (mg/L)	NS ⁴	NS ⁴	400	480	470
Total Organic Carbon (mg/L)	NS ⁴	NS ⁴	7	5	7
Nitrate	NS ⁴	NS ⁴	500	120	180
Nitrite	NS ⁴	NS ⁴	<20	<20	<20
Arsenic	NS ⁴	NS ⁴	22	19	22
Barium	NS ⁴	NS ⁴	430	310	380
Cadmium	NS ⁴	NS ⁴	<10	<10	<10
Chromium, Total	NS ⁴	NS ⁴	<20	<20	<20
Lead	NS ⁴	NS ⁴	<50	50	<50
Mercury	NS ⁴	NS ⁴	<0.5	<0.5	<0.5
Selenium	NS ⁴	NS ⁴	<5	<5	<5
Silver	NS ⁴	NS ⁴	<20	<20	<20
Cyanide	NS ⁴	NS ⁴	<20	<20	<20
Total Hardness (mg/L)	NS ⁴	NS ⁴	480	480	520
Methylene Chloride	NS ⁴	NS ⁴	<2,000	3	5
Di-n-Octylphthalate	NS ⁴	NS ⁴	<5	<5	<5
Di-n-Butylphthalate	NS ⁴	NS ⁴	<5	<5	<5

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 – APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-14B					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	NS ⁴	280,000	250,000	310,000	180,000
Temperature (degrees F)	NS ⁴	–	57	51	–
Chemical Oxygen Demand (mg/L)	NS ⁴	45	22	27	33
Iron, dissolved	NS ⁴	180	<20	60	8,400
Iron, total	NS ⁴	14,000	9,400	12,000	13,000
Manganese, dissolved	NS ⁴	480	450	390	420
Phenol (4-AAP) – Phenolics	NS ⁴	<5	<5	<5	<5
Sodium, dissolved	NS ⁴	89,000	86,000	97,000	92,000
pH	NS ⁴	7.54	7.72	7.68	7.87
Conductivity (umhos/cm)	NS ⁴	1,700	1,800	1,700	1,700
Calcium	NS ⁴	130,000	130,000	100,000	100,000
Potassium	NS ⁴	6,300	8,500	2,800	3,100
Magnesium	NS ⁴	37,000	42,000	30,000	30,000
Sulfate	NS ⁴	4,000	1,000	2,000	2,400
Bicarbonate Alkalinity (mg/L)	NS ⁴	420	350	370	240
Total Organic Carbon (mg/L)	NS ⁴	9	8	4	7
Nitrate	NS ⁴	240	200	<20	390
Nitrite	NS ⁴	<20	<20	<20	<20
Arsenic	NS ⁴	19	15	21	18
Barium	NS ⁴	160	130	120	110
Cadmium	NS ⁴	<10	<10	<10	<10
Chromium, Total	NS ⁴	30	<20	<20	<20
Lead	NS ⁴	50	<50	<50	<50
Mercury	NS ⁴	<0.5	<0.5	<0.5	<0.5
Selenium	NS ⁴	<5	<5	<5	<5
Silver	NS ⁴	<20	<20	<20	<20
Cyanide	NS ⁴	<20	<20	<20	<20
Total Hardness (mg/L)	NS ⁴	600	1,300	400	460

(Notes are included on Page 14).

TABLE 4-10

QUARTERLY GROUNDWATER ANALYTICAL RESULTS,
APRIL 1994 – APRIL 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-15B					
Parameter	04/94	07/94	10/94	01/95	04/95
Chloride	110,000	95,000	110,000	110,000	120,000
Temperature (degrees F)	—	—	57	50	—
Chemical Oxygen Demand (mg/L)	25	19	<10	13	34
Iron, dissolved	50	30	20	100	70
Iron, total	920	690	460	420	190
Manganese, dissolved	<10	170	20	<10	<10
Phenol (4-AAP) – Phenolics	<5	<5	<5	<5	<5
Sodium, dissolved	140,000	130,000	120,000	110,000	120,000
pH	7.53	7.43	7.82	7.68	7.68
Conductivity (umhos/cm)	1,500	1,500	1,700	1,400	1,600
Calcium	83,000	82,000	81,000	72,000	61,000
Potassium	4,500	3,300	3,100	2,700	2,900
Magnesium	42,000	42,000	47,000	40,000	40,000
Sulfate	430,000	410,000	370,000	380,000	360,000
Bicarbonate Alkalinity (mg/L)	140	150	170	170	160
Total Organic Carbon (mg/L)	3	2	2	1	2
Nitrate	220	370	30	300	200
Nitrite	<20	<20	<20	<20	<20
Arsenic	<5	<5	<5	<5	<5
Barium	30	40	30	30	20
Cadmium	<10	<10	<10	<10	<10
Chromium, Total	30	30	20	<20	<20
Lead	<50	60	<50	<50	<50
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5
Selenium	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<20	<20
Cyanide	<20	<20	<20	<20	<20
Total Hardness (mg/L)	830	360	440	420	430

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L), except where mg/L – milligrams per liter.

umhos/cm – micromhos per centimeter.

NA – Not Available

< – Indicates the compound was analyzed for but was not detected above the noted detect

() – Total iron concentration; all other iron concentrations are dissolved results.

– – Indicates not analyzed.

NS¹ – Not sampled due to lack of well recovery.

NS² – Not sampled due to frozen conditions.

NS³ – Not sampled due to obstruction in well.

NS⁴ – Not sampled due to flooded conditions.

NS⁵ – Not sampled due to presence of wasp nest on well.

B – Probable laboratory artifact. Trace levels of methylene chloride were found in the analyt

TABLE 4-11

PRIORITY POLLUTANT ANALYTICAL RESULTS,
AUGUST 1980GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-6	Di-n-octylphthalate	1,380 ug/L
	Di-n-butylphthalate	1.4 ug/L
Well X-7A	1,1-Dichloroethene	1,425 ug/L
	Methyl Chloride	68 ug/L
Well X-10B	2,4-Dimethylphenol	14.6 ug/L

Notes:

These three groundwater samples were analyzed using Gas Chromatography/Mass Spectrometry for priority pollutant organic compounds; only those organic compounds detected above the detection limit are reported.

This table originally presented as Table IX by RMT, November 1980.

ug/L – micrograms per liter.

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well B-1			
Parameter	1987 (1)	1988 (1)	1988 (2)
Toluene	ND	ND	0.42
Bis(2-Ethylhexyl)Phthalate	7.9	4.2	ND
1,2-Dichlorobenzene	0.9	ND	NA
1,4-Dichlorobenzene	0.21	ND	ND
Aroclor 1242	0.26 PS	ND	ND
Arsenic	K 2	K 2	ND
Cadmium	K 20	K 20	ND
Aluminum	NA	K 50	NA
Calcium	47,300	46,700	56,000
Chloride	?	58,000	51,000
Cobalt	K 50	K 50	NA
Iron	680	K 100	NA
Lead	K 50	K 50	ND
Lithium	NA		NA
Magnesium	32,700	21,500	19,000
Molybdenum	NA		NA
Potassium	17,400	5,500	13,000
Titanium	NA		NA
Vanadium	NA	K 10	NA

(Notes are included on Page 23).

Well B-2			
Parameter	1987 (1)	1988 (1)	1988 (2)
Toluene	ND	1.2 UC	0.36
Bis(2-Chloroisopropyl)Ether	ND	ND	2 J
Bis(2-Ethylhexyl)Phthalate	5,900	15	ND
3-Phenylpropionic Acid	230	ND	NA
Aroclor 1242	2.5 DM	ND	0.7
Aroclor 1254	2.5 DM	ND	1.4
Arsenic	?	K 2	ND
Cadmium	K 20	K 20	ND
Sodium	545,000	884,000	1,000,000
Aluminum	NA	K 50	NA
Calcium	?	28,500	29,000
Chloride	1,400,000	1,200,000	1,300,000
Cobalt	K 50		NA
Iron	995	K 100	NA
Lead	K 50	K 50	ND
Lithium	NA		NA
Magnesium	2,400	4,100	4,300
Molybdenum	NA		NA
Potassium	4,700	5,300	5,700
Titanium	NA		NA
Vanadium	NA	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
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SAGINAW, MICHIGAN

Well B-3			
Parameter	1987 (1)	1988 (1)	1988 (2)
Tetrachloroethene	ND	ND	0.27 J
Toluene	ND	ND	0.21
Bis(2-Ethylhexyl)Phthalate	57	7.7	ND
Di-n-Butylphthalate	1.6	ND	ND
Naphthalene	1.1	ND	ND
1,2,4-Trichlorobenzene	0.1	ND	ND
Aroclor 1242	1.4 DM	ND	ND
Aroclor 1254	1 DM	ND	0.18
Antimony	NA	NA	40
Arsenic		K 2	4
Cadmium		K 20	ND
Aluminum		K 50	NA
Calcium		73,500	81,000
Chloride		75,000	78,000
Cobalt		NA	NA
Iron		K 100	NA
Lead		K 50	ND
Lithium			NA
Magnesium		37,700	38,000
Molybdenum		NA	NA
Potassium		25,800	26,000
Titanium			NA
Vanadium		K 10	NA

(Notes are included on Page 23).

Well B-4A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Toluene	ND	6.5 UC	0.27
Bis(2-Ethylhexyl)Phthalate	19	13	ND
2-Methylnaphthalene	NA	NA	2 J
Naphthalene	3.8	ND	ND
Aroclor 1242	1.4 DM	ND	ND
Aroclor 1254	1.8 DM	ND	ND
Arsenic	K 2	3.9	5
Cadmium	K 20	K 20	ND
Sodium	?	642,000	700,000
Aluminum	NA	K 50	NA
Calcium	16,900	24,600	19,000
Chloride	600,000	421,000	400,000
Cobalt	K 50		NA
Iron	250	K 100	NA
Lead	K 50	K 50	ND
Lithium	NA		NA
Magnesium	?	13,500	13,000
Molybdenum	NA		NA
Potassium	900	900	1,500
Titanium	NA		NA
Vanadium	NA	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
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SAGINAW, MICHIGAN

Well B-4B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Toluene	ND	ND	0.59
Bis(2-Ethylhexyl)Phthalate	88	10	ND
Benzenepropanoic Acid	NA	NA	0.2 J
Aroclor 1242	0.34 PS	ND	ND
Aroclor 1254	0.15 PS	ND	ND
Arsenic	K 2	K 2	ND
Cadmium	K 20	K 20	ND
Sodium	241,000	250,000	260,000
Aluminum	NA	K 50	NA
Calcium	103,600	105,000	110,000
Chloride	430,000	282,000	310,000
Cobalt	K 50	NA	NA
Iron	K 100	1,340	NA
Lead	K 50	K 50	ND
Lithium	NA	NA	NA
Magnesium	33,900	37,100	38,000
Molybdenum	NA	NA	NA
Potassium	?	2,700	2,300
Titanium	NA	NA	NA
Vanadium	NA	K 10	NA

(Notes are included on Page 23).

Well B-5			
Parameter	1987 (1)	1988 (1)	1988 (2)
Bis(2-Ethylhexyl)Phthalate	36	ND	ND
trans-1,2-Dichloroethene	K 11 DR	ND	ND
4-Nitrophenol	ND	81	ND
Aroclor 1242	0.59	ND	ND
Aroclor 1254	0.29	ND	ND
Arsenic	6.5	12.9	16
Cadmium	K 20	K 20	ND
Sodium	480,000	513,000	540,000
Aluminum	NA	K 50	NA
Calcium	?	47,300	39,000
Chloride	180,000	124,000	130,000
Cobalt	K 50	NA	NA
Iron	390	K 100	NA
Lead	K 50	K 50	ND
Lithium	NA	NA	NA
Magnesium	11,200	15,200	13,000
Molybdenum	NA	NA	NA
Potassium	7,800	10,200	9,700
Titanium	NA	NA	NA
Vanadium	NA	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
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Well B-6			
Parameter	1987 (1)	1988 (1)	1988 (2)
Toluene	ND	ND	0.34
Chloroform	K 2	ND	ND
Bis(2-Ethylhexyl)Phthalate	7.5	21	ND
Arsenic	K 2	K 2	25
Cadmium	?	K 20	ND
Sodium	173,000	129,000	720,000
Aluminum	NA	120	NA
Calcium	?	79,300	76,000
Chloride	500,000	197,000	220,000
Cobalt	K 50		NA
Iron	?	K 100	NA
Lead	K 50	K 50	ND
Lithium	NA		NA
Magnesium	?	18,500	17,000
Molybdenum	NA		NA
Potassium	?	11,500	12,000
Titanium	NA		NA
Vanadium	NA	K 10	NA

Well B-7			
Parameter	1987 (1)	1988 (1)	1988 (2)
Toluene	ND	ND	0.22 J
Bis(2-Ethylhexyl)Phthalate	12	8.9	2 J
Di-n-Butylphthalate	ND	ND	0.7 J
1,2,4-Trichlorobenzene	0.03	ND	ND
1,3,5-Trichlorobenzene	0.06	0.031	NA
1,2,3,4-Tetrachlorobenzene	0.06	ND	NA
1,2,4,5-Tetrachlorobenzene	K 0.02	0.034	NA
Aroclor 1242	6.8	ND	ND
Aroclor 1254	1.8	ND	ND
Aroclor 1248	ND	ND	0.42
Arsenic	2.5	2.6	5
Cadmium	K 20	K 20	ND
Aluminum	NA	K 50	NA
Calcium	43,500	50,200	56,000
Chloride	43,000	61,000	61,000
Cobalt	K 50		NA
Iron	K 100	K 100	NA
Lead	K 50	K 50	ND
Lithium	NA		NA
Magnesium	7,400	8,800	8,400
Molybdenum	NA		NA
Potassium	3,900	4,300	4,000
Titanium	NA		NA
Vanadium	NA	K 10	NA

(Notes are included on Page 23).

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SUMMARY OF GROUNDWATER ANALYTICAL DATA,
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SAGINAW, MICHIGAN

Well MW-1A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Hexachlorobenzene	NS	0.023	ND
Bis(2-Ethylhexyl)Phthalate	NS	ND	2
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	K 50	NA
Calcium	NS	63,700	76,000
Chloride	NS	46,000	49,000
Cobalt	NS	K 50	NA
Iron	NS	250	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	21,400	22,000
Molybdenum	NS	K 25	NA
Potassium	NS	500	550
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well MW-1B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	0.36
4-Chloro-3-Methylphenol	NS		ND
Arsenic	NS		5
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	K 50	NA
Calcium	NS	123,000	130,000
Chloride	NS	154,000	160,000
Cobalt	NS	K 50	NA
Iron	NS	190	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	37,300	39,000
Molybdenum	NS	K 25	NA
Potassium	NS	1,800	2,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

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SAGINAW, MICHIGAN

Well MW-2A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.45
Toluene	NS	ND	0.16 J
Antimony	NS	NA	60
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	K 50	NA
Calcium	NS	123,000	120,000
Chloride	NS	73,000	98,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	35,500	34,000
Molybdenum	NS	K 25	NA
Potassium	NS	200	120
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well MW-2B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	1.1
Arsenic	NS		4
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	319,000	310,000
Aluminum	NS	K 50	NA
Calcium	NS	114,000	140,000
Chloride	NS	442,000	400,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	30	NA
Magnesium	NS	42,000	45,000
Molybdenum	NS	K 25	NA
Potassium	NS	3,200	3,200
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

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1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
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SAGINAW, MICHIGAN

Well MW-3A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.43
1,2-Dichloroethene (Total)	NS	ND	0.5
Arsenic	NS		4
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	K 50	NA
Calcium	NS	133,000	170,000
Chloride	NS	268,000	230,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	36,700	42,000
Molybdenum	NS	K 25	NA
Potassium	NS	1,400	1,300
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well MW-3B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.43
1,2-Dichloroethene (Total)	NS	ND	0.43
Arsenic	NS		11
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	5
Aluminum	NS	K 50	NA
Calcium	NS	126,000	140,000
Chloride	NS	267,000	320,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	44,000	47,000
Molybdenum	NS	K 25	NA
Potassium	NS	2,100	2,100
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

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SUMMARY OF GROUNDWATER ANALYTICAL DATA,
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Well MW-4			
Parameter	1987 (1)	1988 (1)	1988 (2)
4-Chloro-3-Methylphenol	NS	14J	ND
Isophorone	NS	ND	1 J
Phenol	NS	14 J	ND
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Manganese	NS	1,300	NA
Sodium	NS	448,000	530,000
Aluminum	NS	K 50	NA
Calcium	NS	245,000	300,000
Chloride	NS	938,000	1,100,000
Cobalt	NS	K 50	NA
Iron	NS	4,900	NA
Lead	NS	K 50	ND
Lithium	NS	130	NA
Magnesium	NS	98,000	130,000
Molybdenum	NS	K 25	NA
Potassium	NS	12,000	12,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well MW-5A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Bis(2-Ethylhexyl)Phthalate	NS	2.7	ND
Aroclor 1248	NS	0.75	ND
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	K 50	NA
Calcium	NS	67,400	87,000
Chloride	NS	56,000	59,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	8,500	92,000
Molybdenum	NS	K 25	NA
Potassium	NS	5,100	5,500
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

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SUMMARY OF GROUNDWATER ANALYTICAL DATA,
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Well MW-5B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Di-n-Butylphthalate	NS	ND	1 J
Antimony	NS	NA	50
Arsenic	NS		4
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	861,000	930,000
Aluminum	NS	K 50	NA
Calcium	NS	89,400	100,000
Chloride	NS	1,052,000	1,100,000
Cobalt	NS	K 50	NA
Iron	NS	120	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	30,900	34,000
Molybdenum	NS	K 25	NA
Potassium	NS	500	670
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well MW-6A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.57
Di-n-Butylphthalate	NS	ND	0.7 J
Aroclor 1248	NS	ND	0.23
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	40,600	210,000
Aluminum	NS	K 50	NA
Calcium	NS	81,100	96,000
Chloride	NS	62,000	66,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	11,700	27,000
Molybdenum	NS	K 25	NA
Potassium	NS	4,500	4,200
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

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Well MW-6B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.55
Di-n-Butylphthalate	NS	ND	0.8 J
Aroclor 1248	NS	4	ND
Arsenic	NS		4
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	206,000	220,000
Aluminum	NS	55	NA
Calcium	NS	78,200	100,000
Chloride	NS	222,000	220,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA

Well X-1A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	ND	ND	4.2
Chloroethane	NA	130	76
Chloroform	ND	ND	0.4
Chloromethane	NA	NA	0.65 J
1,1-Dichloroethane	ND	ND	0.77
1,2-Dichloroethene (Total)	ND	ND	0.47
Toluene	ND	ND	0.29
Trichloroethene	ND	ND	0.21
Xylenes	5.8**	34	NA
Bis(2-Ethylhexyl)Phthalate	12	ND	30
1,4-Dichlorobenzene	0.99 DM	ND	ND
Aroclor 1248	ND	ND	2.8
Aroclor 1242	4 DM	ND	ND
Aroclor 1254	1.5 DM	ND	ND
Arsenic	K 2		8
Beryllium*	NA	K 1	ND

(Notes are included on Page 23).

Well MW-6B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	27,000	30,000
Molybdenum	NS	K 25	NA
Potassium	NS	1,800	1,600
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA
Magnesium	NS	98,000	130,000
Molybdenum	NS	K 25	NA
Potassium	NS	12,000	12,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

Well X-1A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Cadmium	K 20	K 20	ND
Manganese	?	945	NA
Sodium	?	980,000	1,200,000
Aluminum	NA	94	NA
Calcium	155,000	152,000	180,000
Chloride	1,800,000	1,422,000	1,600,000
Cobalt	K 50	K 50	NA
Iron	430	575	NA
Lead	?	K 50	ND
Lithium	NA	190	NA
Magnesium	?	106,000	120,000
Molybdenum	NA	K 25	NA
Potassium	?	244,000	250,000
Titanium	NA	K 15	NA
Vanadium	NA	K 10	NA

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Well X-1B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	ND	ND	1.1
Chloroethane	NA	ND	2.7
Chloroform	ND	ND	1
1,2-Dichloroethene (Total)	ND	ND	0.25
Chloromethane	NA	NA	0.62 J
Toluene	ND	ND	0.47
Xylenes	5.9**	13	NA
Bis(2-Ethylhexyl)Phthalate	8	ND	ND
4-Chloro-3-Methylphenol	ND	14 J	ND
Phenol	ND	15 J	ND
Aroclor 1248	ND	ND	4.7
Aroclor 1242	2.2 DM	ND	ND
Aroclor 1254	0.85 DM	ND	ND
Arsenic	K 2		5
Beryllium*	NA	K 1	ND

Well X-1B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Cadmium	K 20	K 20	ND
Manganese	550	920	NA
Sodium	479,000	588,000	600,000
Aluminum	NA	73	NA
Calcium	445,000	405,000	500,000
Chloride	?	1,424,000	780,000
Cobalt	K 50	K 50	NA
Iron	170	160	NA
Lead	K 50	K 50	ND
Lithium	NA	25	NA
Magnesium	141,000	151,000	160,000
Molybdenum	NA	K 25	NA
Potassium	?	16,100	16,000
Titanium	NA	K 15	NA
Vanadium	NA	K 10	NA

Well X-1C			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	6.5	ND	ND
Chloroform	ND	ND	1
Xylenes	98	ND	NA
Isophorone	ND	ND	0.3 J
Bis(2-Ethylhexyl)Phthalate	64	ND	28
4-Chloro-3-Methylphenol	ND	48J	ND
Phenol	ND	17 J	ND
Aroclor 1248	ND	ND	0.73 PJ
Aroclor 1242	1.3 DM	ND	ND
Aroclor 1254	1.1 DM	ND	ND
Arsenic	K 2		ND
Beryllium*	NA	K 1	ND
Cadmium	K 20	K 20	ND

Well X-1C			
Parameter	1987 (1)	1988 (1)	1988 (2)
Aluminum	NA	K 50	NA
Calcium	?	55,000	61,000
Chloride	180,000	125,000	250,000
Cobalt	K 50	K 50	NA
Iron	K 100	5,650	NA
Lead	K 50	K 50	ND
Lithium	NA	K 20	NA
Magnesium	?	27,800	30,000
Molybdenum	NA	K 25	NA
Potassium	?	5,800	6,500
Titanium	NA	K 15	NA
Vanadium	NA	K 10	NA

(Notes are included on Page 23).

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SUMMARY OF GROUNDWATER ANALYTICAL DATA,
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Well X-2A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	0.36
Naphthalene	NS	5.8	
Bis(2-Ethylhexyl)Phthalate	NS	570	
Antimony	NS	NA	40
Arsenic	NS	K 2	ND
Cadmium	NS	K 20	ND
Manganese	NS	780	NA
Aluminum	NS	K 50	NA
Calcium	NS	72,600	81,000
Chloride	NS	118,000	130,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS		NA
Magnesium	NS	27,500	29,000
Molybdenum	NS		NA
Potassium	NS	12,300	13,000
Titanium	NS		NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well X-2B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	ND	NS	14
1,2-Dichloroethene (Total)	ND	NS	0.43
Bis(2-Ethylhexyl)Phthalate	9.5	NS	
Aroclor 1242	0.41 DM	NS	
Aluminum		NS	NA
Calcium		NS	94,000
Chloride		NS	84,000
Cobalt		NS	NA
Iron		NS	NA
Lead		NS	ND
Lithium		NS	NA
Magnesium		NS	23,000
Molybdenum		NS	NA
Potassium		NS	1,300
Titanium		NS	NA
Vanadium		NS	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-2C			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	ND	ND	2.1
Bis(2-Ethylhexyl)Phthalate	7.2	8.4	
Antimony	NA	NA	60
Arsenic	3.2	K 2	ND
Cadmium	K 20	K 20	ND
Manganese	735	845	NA
Aluminum	NA	K 50	NA
Calcium	132,000	131,000	150,000
Chloride	220,000	162,000	170,000
Cobalt	K 50	K 50	NA
Iron	110	K 100	NA
Lead	K 50	K 50	ND
Lithium	NA		NA
Magnesium	35,100	34,600	36,000
Molybdenum	NA		NA
Potassium	?	1,500	1,300
Titanium	NA		NA
Vanadium	NA	K 10	NA

Well X-3A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	1.1
Chloroethane	NS	ND	3.9
Chloroform	NS	ND	0.38
1,1-Dichloroethane	NS	ND	0.5
1,1-Dichloroethene	NS	ND	0.5
Ethylbenzene	NS	ND	0.77 J
Toluene	NS	ND	0.4
Trichloroethene	NS	ND	0.22
Vinyl Chloride	NA	5.5	ND
Arsenic	NS		48
Barium	NS	3,000	NA
Beryllium*	NS	K 2 DM	ND
Cadmium	NS	K 20	9
Manganese	NS	12,000	NA
Sodium	NS	750,000	890,000
Aluminum	NS	380	NA
Calcium	NS	1,470,000	33,000
Chloride	NS	5,888,000	6,400,000
Cobalt	NS	K 50	NA
Iron	NS	260,000	NA
Lead	NS	K 50	ND
Lithium	NS	80	NA
Magnesium	NS	730,000	18,000
Molybdenum	NS	K 100 DM	NA
Potassium	NS	76,000	95,000
Titanium	NS	K 30 DM	NA
Vanadium	NS	K 40 DM	NA

(Notes are included on Page 23).

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-3B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.26 J
Bis(2-Ethylhexyl)Phthalate	NS	ND	0.7 J
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	K 50	NA
Calcium	NS	147,000	150,000
Chloride	NS	202,000	190,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	42,000	45,000
Molybdenum	NS	K 25	NA
Potassium	NS	2,370	2,500
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well X-4A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	0.25
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	50	NA
Calcium	NS	138,000	140,000
Chloride	NS	55,000	56,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	27,500	28,000
Molybdenum	NS	K 25	NA
Potassium	NS	300	800
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-4B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Di-n-Butylphthalate	NS	ND	0.5 J
Arsenic	NS		4
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	333,000	340,000
Aluminum	NS	K 50	NA
Calcium	NS	41,600	42,000
Chloride	NS	308,000	310,000
Cobalt	NS	K 50	NA
Iron	NS	100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	14,500	15,000
Molybdenum	NS	K 25	NA
Potassium	NS	2,600	2,600
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

Well X-5A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	16	14
Chloroethane	NS	ND	0.88 J
Chloroform	NS	ND	0.35
1,2-Dichloroethene (Total)	NS	ND	1.5
Ethylbenzene	NS	ND	0.82 J
Toluene	NS	ND	0.55
Trichloroethene	NS	ND	0.76
Vinyl Chloride	NS	ND	0.86
Xylenes	NS	6.4	NA
Bis(2-Ethylhexyl)Phthalate	NS	ND	0.6 J
Naphthalene	NS	ND	0.9 J
Arsenic	NS		9
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Manganese	NS	705	NA
Aluminum	NS	K 50	NA
Calcium	NS	113,000	130,000
Chloride	NS	103,000	87,000
Cobalt	NS	K 50	NA
Iron	NS	19,300	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	62,000	63,000
Molybdenum	NS	K 25	NA
Potassium	NS	57,000	60,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-5B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	3.6
1,1-Dichloroethane	NS	ND	0.89
Chloroethane	NS	ND	1.4
Chloroform	NS	ND	0.34
1,2-Dichloroethene (Total)	NS	ND	3.4
Toluene	NS	ND	0.61
Trichloroethene	NS	ND	0.28
Vinyl Chloride	NS	ND	2.7
Arsenic	NS		6
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	771,000	790,000
Aluminum	NS	K 50	NA
Calcium	NS	26,800	22,000
Chloride	NS	1,060,000	1,000,000
Cobalt	NS	K 50	NA
Iron	NS	765	NA
Lead	NS	K 50	ND
Lithium	NS	240	NA
Magnesium	NS	84,000	83,000
Molybdenum	NS	K 25	NA
Potassium	NS	283,000	300,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well X-5C			
Parameter	1987 (1)	1988 (1)	1988 (2)
Acrolein	NS	NA	16
Benzene	NS	ND	2.6
1,1-Dichloroethene	NS	ND	2.5
1,2-Dichloroethene (Total)	NS	1002.1	590 R
Ethylbenzene	NS	ND	0.29 J
Toluene	NS	ND	0.5
Trichloroethene	NS	37	27
Vinyl Chloride	NS	320	170 R
Bis(2-Ethylhexyl)Phthalate	NS	ND	3
Arsenic	NS		3
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	289,000	270,000
Aluminum	NS	K 50	NA
Calcium	NS	70,800	77,000
Chloride	NS	401,000	270,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	80	NA
Magnesium	NS	55,000	61,000
Molybdenum	NS	K 25	NA
Potassium	NS	70,000	49,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-7A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	1,400	23	31
Toluene	340	ND	3.1
Trichloroethene	ND	ND	0.42
Vinyl Chloride	ND	ND	0.84
Xylenes	ND	5.1	NA
Bis(2-Ethylhexyl)Phthalate	270	ND	ND
1,4-Dichlorobenzene	2.1 DM	ND	ND
Diethylphthalate	300	ND	ND
Isophorone	520	ND	ND
Phenol	4,800 DM		180
Aroclor 1242	0.18	ND	ND
Barium	730	11,000	NA
Beryllium*	NA	K 2.5 DM	ND
Cadmium	K 20	K 20	74
Manganese	75,000	8,000	NA
Nickel	1,080	190	230
Sodium	2,020,000	1,920,000	2,100,000
Sulfate*	730,000	123,000	ND
Zinc	15,000	130	730
Aluminum	NA	1,800	NA
Calcium	5,750,000	4,080,000	5,000,000
Chloride	26,000,000	17,700,000	2,000,000
Cobalt	130	K 50	NA
Iron	2,900,000	1,290,000	NA
Lead	K 50	K 50	ND
Lithium	NA	150	NA
Magnesium	2,110,000	2,390,000	
Molybdenum	NA	K 120 DM	NA
Potassium	670,000	320,000	340,000
Titanium	NA	K 60 DM	NA
Vanadium	NA	K 90 DM	NA

(Notes are included on Page 23).

Well X-7B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	850 DR	1,200
Toluene	NS	170 DR	290
Xylenes	NS	200 DR	NA
1,2,4-Trichlorobenzene	NS	0.032	ND
Phenol	NS	90 J	ND
4-Chloro-3-Methylphenol	NS	11	ND
2,4,6-Trichlorophenol	NS	12 J	ND
Beryllium*	NS	K 3 DM	ND
Cadmium	NS	K 20	86
Manganese	NS	31,000	NA
Nickel	NS	390	300
Chromium, Total*	NS	K 50	100
Sodium	NS	2,240,000	1,900,000
Aluminum	NS	1,500	NA
Calcium	NS	4,060,000	3,900,000
Chloride	NS	13,900,000	16,000,000
Cobalt	NS	K 50	NA
Iron	NS	1,620,000	NA
Lead	NS	K 50	ND
Lithium	NS	310	NA
Magnesium	NS	1,890,000	1,800,000
Molybdenum	NS	K 52 DM	NA
Potassium	NS	780,000	750,000
Titanium	NS	K 65 DM	NA
Vanadium	NS	K 70 DM	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-9A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	0.36
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	K 50	NA
Calcium	NS	147,000	170,000
Chloride	NS	108,000	100,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	39,300	42,000
Molybdenum	NS	K 25	NA
Potassium	NS	200	300
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well X-9B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Toluene	22	ND	ND
Bis(2-Ethylhexyl)Phthalate	3.8	ND	ND
Aroclor 1242	0.4 PS	ND	ND
Arsenic	K 2		3
Beryllium*	NA	K 1	ND
Cadmium	K 20	K 20	ND
Sodium	255,000	319,000	330,000
Aluminum	NA	K 50	NA
Calcium	64,500	69,100	70,000
Chloride	380,000	318,000	320,000
Cobalt	?	K 50	NA
Iron	230	K 100	NA
Lead	K 50	K 50	ND
Lithium	NA	K 20	NA
Magnesium	21,300	23,600	23,000
Molybdenum	NA	K 25	NA
Potassium	2,900	2,800	3,000
Titanium	NA	K 15	NA
Vanadium	NA	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-10B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	ND	ND	0.59
1,2-Dichloroethene (Total)	ND	ND	0.31
Bis(2-Ethylhexyl)Phthalate	4.1	7.7	ND
Diethylphthalate	2.3	ND	ND
Di-n-Butylphthalate	1.4	ND	ND
Aroclor 1242	0.19	ND	ND
Arsenic	?	1.2	ND
Cadmium	K 20	K 20	ND
Aluminum	NA	K 50	NA
Calcium	?	140,000	150,000
Chloride	880,000	247,000	250,000
Cobalt	K 50	NA	NA
Iron	?	K 100	NA
Lead	?	K 50	ND
Lithium	NA	NA	NA
Magnesium	?	37,200	36,000
Molybdenum	NA	NA	NA
Potassium	?	1,700	1,400
Titanium	NA	NA	NA
Vanadium	NA	K 10	NA

(Notes are included on Page 23).

Well X-10C			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	0.61
Bis(2-Ethylhexyl)Phthalate	NS	4	ND
Arsenic	NS	3.2	ND
Cadmium	NS	K 20	ND
Mercury	NS	2.7	0.4
Sodium	NS	195,000	200,000
Aluminum	NS	K 50	NA
Calcium	NS	113,000	120,000
Chloride	NS	353,000	380,000
Cobalt	NS	NA	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	NA	NA
Magnesium	NS	55,000	54,000
Molybdenum	NS	NA	NA
Potassium	NS	NA	2,800
Titanium	NS	NA	NA
Vanadium	NS	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-16A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	0.53
1,2-Dichloroethene (Total)	NS	ND	0.29
Trichloroethene	NS	ND	0.31
Vinyl Chloride	NS	ND	2.5
Arsenic	NS		4
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sulfate*	NS	656,000	700,000
Aluminum	NS	K 50	NA
Calcium	NS	343,000	400,000
Chloride	NS	253,000	220,000
Cobalt	NS	K 50	NA
Iron	NS	8,000	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	112,000	130,000
Molybdenum	NS	K 25	NA
Potassium	NS	2,060	1,100
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 23).

Well X-16B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	0.5
Toluene	NS	2.8 UC	ND
Trichloroethene	NS	ND	0.38
Vinyl Chloride	NS	ND	1.8
Diethylphthalate	NS		0.4 J
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS	K 50	NA
Calcium	NS	57,300	67,000
Chloride	NS		25,000
Cobalt	NS	K 50	NA
Iron	NS	2,440	NA
Lead	NS	K 50	ND
Lithium	NS	25	NA
Magnesium	NS	45,000	47,000
Molybdenum	NS	K 25	NA
Potassium	NS	3,920	2,500
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-19A			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	NS	0.26
Chloroform	NS	NS	1.2
Trichloroethene	NS	NS	0.26
Antimony	NS	NS	70
Arsenic	NS	NS	6
Sulfate*	NS	NS	610,000
Aluminum	NS	NS	NA
Calcium	NS	NS	340,000
Chloride	NS	NS	350,000
Cobalt	NS	NS	NA
Iron	NS	NS	NA
Lead	NS	NS	ND
Lithium	NS	NS	NA
Magnesium	NS	NS	170,000
Molybdenum	NS	NS	NA
Potassium	NS	NS	3,100
Titanium	NS	NS	NA
Vanadium	NS	NS	NA

(Notes are included on Page 23).

Well X-19B			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	NS	0.73
Chloroform	NS	NS	1.1
Toluene	NS	NS	0.19
Trichloroethene	NS	NS	0.35
Aluminum	NS	NS	
Calcium	NS	NS	
Chloride	NS	NS	
Cobalt	NS	NS	
Iron	NS	NS	
Lead	NS	NS	
Lithium	NS	NS	
Magnesium	NS	NS	
Molybdenum	NS	NS	
Potassium	NS	NS	
Titanium	NS	NS	
Vanadium	NS	NS	

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well X-20			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	4.7
1,2-Dichloroethene (Total)	NS	ND	0.23
Diethylphthalate	NS	ND	0.9 J
Di-n-Butylphthalate	NS	ND	1 J
Bis(2-Ethylhexyl)Phthalate	NS	ND	0.9 J
Arsenic	NS		26
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Manganese	NS	1,300	NA
Sodium	NS	150,000	150,000
Aluminum	NS	64	NA

(Notes are included on Page 23).

Well X-20			
Parameter	1987 (1)	1988 (1)	1988 (2)
Calcium	NS	529,000	610,000
Chloride	NS	456,000	460,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	176,000	200,000
Molybdenum	NS	K 25	NA
Potassium	NS	900	830
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

TABLE 4-12

SUMMARY OF GROUNDWATER ANALYTICAL DATA,
1987 AND 1988 SITE WIDE SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Notes:

(1) Indicates MDNR sampling results.

(2) Indicates GM sampling results.

All concentrations are reported as micrograms per liter (ug/L), equivalent to parts per billion (ppb).

J - Mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero.

PJ - As above for J; P - used to identify the analyte which is reported even though the concentration is reported below the detection limit.

R - Indicates the value obtained from the initial analysis exceeded the calibration range for this compound. The sample was re-analyzed with an appropriate dilution for quantitation.

DR - High sample dilution was required to bring value into the analytical working range.

K - Actual value is less than the value given. Substance, if present, is below this level.

UC - Unable to confirm the identity of the reported compound by a second independent technique.

HT - The recommended maximum laboratory holding time was exceeded before analysis.

DM - Sample was diluted to bring possible matrix interference into working range.

PS - Possible interference may have affected the accuracy of the laboratory result.

NA - Indicates not analyzed for.

ND - Indicates not detected.

NS - Indicates not sampled.

** - Only analyzed for M & P xylene isomers.

< - Indicates the compound was analyzed for but was not detected above noted the detection limit.

Inorganic analytical concentrations are dissolved with the exception of chloride, cyanide, and sulfate.

Only those organic constituents whose concentrations are above the detection limit are presented.

Missing all or some of the 1987 MDNR inorganic sampling results for wells B-2, B-3, B-4A, B-5, B-6, X-1A, X-1B, X-2B, and X-10B.

? - Unable to read source data sheet.

Empty cells indicate that no data was given or data is missing.

Only those organic constituents detected in one or more analyses are listed.

TABLE 4-13

SUMMARY OF VOLATILE ORGANIC COMPOUND GROUNDWATER ANALYTICAL RESULTS,
APRIL 1988

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Volatile Organic Compound	B-1	B-2	B-3	B-4A	B-4B	B-5	B-6	B-7
Benzene	<1	<1	<1	<1	1.3	<1	<1	<1
Chloroform	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1	<1	<1	<1
Xylenes	<3	<3	<3	<3	<3	<3	<3	<3

Notes:

Concentrations are reported as micrograms per liter (ug/L).

Sampling was conducted by RMT, Inc. for General Motors Corporation.

< - Indicates the compound was analyzed for but was not detected above the noted detection limit.

TABLE 4-14

SUMMARY OF GROUNDWATER PCB ANALYTICAL RESULTS,
1987 TO 1992GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PRPROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

	Well B-1			Well B-2						Well B-3					
	2/87 (1)	3/88 (1)	5/88 (2)	2/87 (1)	3/88 (1)	5/88 (2)	2/92 (3)	5/92 (3)	5/92 (4)	2/87 (1)	3/88 (1)	5/88 (2)	2/92 (3)	5/92 (3)	5/92 (4)
Aroclor															
1016	<0.10	<0.050	<0.050	<0.54	<0.050	<0.25	<0.050	<0.10	<0.10	<0.52	<0.055	<0.15	<0.050	<0.05	<0.10
1221	<0.10	<0.050	<0.050	<0.54	<0.050	<0.25	<0.050	<0.10	<0.22	<0.52	<0.055	<0.15	<0.050	<0.05	<0.10
1232	<0.10	<0.050	<0.050	<0.54	<0.050	<0.25	<0.050	<0.10	<0.14	<0.52	<0.055	<0.15	<0.050	<0.05	<0.10
1242	0.26 PS	<0.050	<0.050	2.5 DM	<0.050	0.70	<0.050	<0.10	<0.10	1.4 DM	<0.055	<0.15	<0.050	<0.05	<0.10
1248	<0.10	<0.050	<0.050	<0.54	<0.050	<0.25	<0.050	<0.10	<0.10	<0.52	<0.055	<0.15	<0.050	<0.05	<0.10
1254	<0.10	<0.050	<0.050	2.5 DM	<0.050	1.4	0.14	0.14	<0.22	1 DM	<0.055	0.18	<0.050	<0.05	<0.10
1260	<0.10	<0.050	<0.050	<0.54	<0.050	<0.25	<0.050	<0.05	<0.22	<0.52	<0.055	<0.15	<0.050	<0.05	<0.10
1262	<0.10	<0.050	<0.050	<0.54	<0.050	<0.25	<0.050	NA	NA	<0.52	<0.055	<0.15	NA	NA	NA
1268	<0.10	<0.050	<0.050	<0.54	<0.050	<0.25	<0.050	NA	NA	<0.52	<0.055	<0.15	NA	NA	NA
Totals	0.26 PS	ND	ND	5.0 DM	ND	2.1	0.14	0.14	ND	2.4 DM	ND	0.18	ND	ND	ND
Method	MDNR	MDNR	608	MDNR	MDNR	608	608	8080	8080	MDNR	MDNR	608	608	8080	8080

	Well B-4A			Well B-4B			Well B-5			Well B-6			Well B-7		
	2/87 (1)	3/88 (1)	5/88 (2)	2/87 (1)	3/88 (1)	5/88 (2)	2/87 (1)	3/88 (1)	5/88 (2)	2/87 (1)	3/88 (1)	5/88 (2)	2/87 (1)	5/88 (1)	5/88 (2)
Aroclor															
1016	<0.64	<0.055	<0.050	<0.10	<0.050	<0.050	<0.15	<0.055	<0.050	<0.58	<0.055	<0.050	<0.11	<0.065	<0.050
1221	<0.64	<0.055	<0.050	<0.10	<0.050	<0.050	<0.15	<0.055	<0.050	<0.58	<0.055	<0.050	<0.11	<0.065	<0.050
1232	<0.64	<0.055	<0.050	<0.10	<0.050	<0.050	<0.15	<0.055	<0.050	<0.58	<0.055	<0.050	<0.11	<0.065	<0.050
1242	1.4 DM	<0.055	<0.050	0.34 PS	<0.050	<0.050	0.59	<0.055	<0.050	<0.58	<0.055	<0.050	6.8	<0.065	<0.050
1248	<0.64	<0.055	<0.050	<0.10	<0.050	<0.050	<0.15	<0.055	<0.050	<0.58	<0.055	<0.050	<0.11	<0.065	0.42
1254	1.8 DM	<0.055	<0.050	0.15 PS	<0.050	<0.050	0.29	<0.055	<0.050	<0.58	<0.055	<0.050	1.8	<0.065	<0.050
1260	<0.64	<0.055	<0.050	<0.10	<0.050	<0.050	<0.15	<0.055	<0.050	<0.58	<0.055	<0.050	<0.11	<0.065	<0.050
1262	<0.64	<0.055	<0.050	<0.10	<0.050	<0.050	<0.15	<0.055	<0.050	<0.58	<0.055	<0.050	<0.11	<0.065	<0.050
1268	<0.64	<0.055	<0.050	<0.10	<0.050	<0.050	<0.15	<0.055	<0.050	<0.58	<0.055	<0.050	<0.11	<0.065	<0.050
Totals	3.2 DM	ND	ND	0.49 PS	ND	ND	0.88	ND	ND	ND	ND	ND	8.6	ND	0.42
Method	MDNR	MDNR	608	MDNR	MDNR	608	MDNR	MDNR	608	MDNR	MDNR	608	MDNR	MDNR	608

TABLE 4-14

SUMMARY OF GROUNDWATER PCB ANALYTICAL RESULTS,
1987 TO 1992GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PRPOPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Aroclor	Well MW-1A		Well MW-1B	Well MW-2A		Well MW-2B		Well MW-3A		Well MW-3B		Well MW-4		
	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (1)
1016	<0.055	<0.052	<0.050	<0.050	<0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.051	<0.055	<0.094	<0.050
1221	<0.055	<0.052	<0.050	<0.050	<0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.051	<0.055	<0.094	<0.050
1232	<0.055	<0.052	<0.050	<0.050	<0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.051	<0.055	<0.094	<0.050
1242	<0.055	<0.052	<0.050	<0.050	<0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.051	<0.055	<0.094	<0.050
1248	<0.055	<0.052	<0.050	<0.050	<0.051	<0.050	<0.050	<0.050	<0.050	<0.050	<0.051	<0.055	<0.094	0.75
1254	<0.055	<0.10	<0.050	<0.050	<0.10	<0.050	<0.10	<0.050	<0.10	<0.050	<0.10	<0.055	<0.19	<0.050
1260	<0.055	<0.10	<0.050	<0.050	<0.10	<0.050	<0.10	<0.050	<0.10	<0.050	<0.10	<0.055	<0.19	<0.050
1262	<0.055	NA	<0.050	<0.050	NA	<0.050	NA	<0.050	NA	<0.050	NA	<0.055	NA	<0.050
1268	<0.055	NA	<0.050	<0.050	NA	<0.050	NA	<0.050	NA	<0.050	NA	<0.055	NA	<0.050
Totals	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.75
Method	MDNR	608	MDNR	MDNR	608	MDNR	608	MDNR	608	MDNR	608	MDNR	608	MDNR

Aroclor	Well MW-5A				Well MW-5B	Well MW-6A					Well MW-6B				
	5/88 (2)	2/92 (3)	5/92 (3)	5/92 (4)	5/88 (1)	5/88 (1)	5/88 (2)	2/92 (3)	5/92 (3)	5/92 (4)	5/88 (1)	5/88 (2)	2/92 (3)	5/92 (3)	5/92 (4)
1016	<0.054	ND	<0.05	<0.10	<0.050	<0.050	<0.056	<0.050	<0.05	<0.10	<0.050	<0.057	<0.050	<0.05	<0.10
1221	<0.054	ND	<0.05	<0.10	<0.050	<0.050	<0.056	<0.050	<0.05	<0.10	<0.050	<0.057	<0.050	<0.05	<0.10
1232	<0.054	ND	<0.05	<0.10	<0.050	<0.050	<0.056	<0.050	<0.05	<0.10	<0.050	<0.057	<0.050	<0.05	<0.10
1242	<0.054	ND	<0.05	<0.10	<0.050	<0.050	<0.056	<0.050	<0.05	<0.10	<0.050	<0.057	<0.050	<0.05	<0.10
1248	<0.054	ND	<0.05	<0.10	<0.050	<0.050	0.23	1.1	1.4	2.9	4	<0.057	<0.050	<0.05	<0.10
1254	<0.011	ND	<0.05	<0.10	<0.050	<0.050	<0.11	<0.050	0.21	<0.10	<0.050	<0.11	<0.050	<0.05	<0.10
1260	<0.011	ND	<0.05	<0.10	<0.050	<0.050	<0.11	<0.050	<0.05	<0.10	<0.050	<0.11	<0.050	<0.05	<0.10
1262	NA	NA	NA	NA	<0.050	<0.050	NA	NA	NA	NA	<0.050	NA	NA	NA	NA
1268	NA	NA	NA	NA	<0.050	<0.050	NA	NA	NA	NA	<0.050	NA	NA	NA	NA
Totals	ND	ND	ND	ND	ND	ND	0.23	1.1	1.4	2.9	4	ND	ND	ND	ND
Method	608	608	8080	8080	MDNR	MDNR	608	608	8080	8080	MDNR	608	608	8080	8080

TABLE 4-14

SUMMARY OF GROUNDWATER PCB ANALYTICAL RESULTS,
1987 TO 1992GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Aroclor	Well X-1A						Well X-1B						Well X-1C		
	2/87 (1)	5/88 (1)	5/88 (2)	2/92 (3)	5/92 (3)	5/92 (4)	2/87 (1)	5/88 (1)	5/88 (2)	2/92 (3)	5/92 (3)	5/92 (4)	2/87 (1)	5/88 (1)	5/88 (2)
1016	<0.58	<0.055	<0.26	<0.2	<0.30	<0.10	<0.51	<0.065	<0.32	<0.050	<0.05	<0.10	<0.68	<0.055	<0.051
1221	<0.58	<0.055	<0.26	<0.2	<0.30	<0.10	<0.51	<0.065	<0.32	<0.050	<0.05	<1.0	<0.68	<0.055	<0.051
1232	<0.58	<0.055	<0.26	<0.2	<0.30	<0.10	<0.51	<0.065	<0.32	<0.050	<0.05	<0.10	<0.68	<0.055	<0.051
1242	4 DM	<0.055	<0.26	<0.2	<0.30	<0.10	2.2 DM	<0.065	<0.32	0.20	<0.05	<0.10	1.3 DM	<0.055	<0.051
1248	<0.58	<0.055	2.8	<0.2	<0.30	0.51	<0.51	<0.065	4.7	<0.050	0.55	0.73	<0.68	<0.055	0.73 PJ
1254	1.5 DM	<0.055	<0.050	0.46	0.13	<0.10	0.85 DM	<0.065	<0.63	<0.050	0.16	<0.50	1.1 DM	<0.055	<0.10
1260	<0.58	<0.055	<0.050	<0.050	<0.05	<0.10	<0.51	<0.065	<0.63	<0.050	<0.05	<0.10	<0.68	<0.055	<0.10
1262	<0.58	<0.055	NA	NA	NA	NA	<0.51	<0.065	<0.63	NA	NA	NA	<0.68	<0.055	NA
1268	<0.58	<0.055	NA	NA	NA	NA	<0.51	<0.065	<0.63	NA	NA	NA	<0.68	<0.055	NA
Totals	5.5 DM	ND	2.8	0.46	0.13	0.51	3.05 DM	ND	4.7	0.20	0.71	0.73	2.4 DM	ND	0.73 PJ
Method	MDNR	MDNR	608	608	8080	8080	MDNR	MDNR	608	608	8080	8080	MDNR	MDNR	608

Aroclor	Well X-2A					Well X-2B		Well X-2C			Well X-3A		Well X-3B		Well X-4A
	3/88 (1)	3/88 (2)	2/92 (3)	5/92 (3)	5/92 (4)	2/87 (1)	5/88 (2)	2/87 (1)	3/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (1)
1016	<0.055	<0.050	ND	<0.05	<0.10	<0.52	<0.050	<0.51	<0.050	<0.050	<0.050	<0.052	<0.050	<0.051	<0.065
1221	<0.055	<0.050	ND	<0.05	<0.10	<0.52	<0.050	<0.51	<0.050	<0.050	<0.050	<0.052	<0.050	<0.051	<0.065
1232	<0.055	<0.050	ND	<0.05	<0.10	<0.52	<0.050	<0.51	<0.050	<0.050	<0.050	<0.052	<0.050	<0.051	<0.065
1242	<0.055	<0.050	ND	<0.05	<0.10	0.41 DM	<0.050	<0.51	<0.050	<0.050	<0.050	<0.052	<0.050	<0.051	<0.065
1248	<0.055	<0.050	ND	<0.05*	<0.10	<0.52	<0.050	<0.51	<0.050	<0.050	<0.050	<0.052	<0.050	<0.051	<0.065
1254	<0.055	0.051	ND	<0.05*	<0.10	<0.52	<0.050	<0.51	<0.050	<0.050	<0.050	<0.10	<0.050	<0.10	<0.065
1260	<0.055	<0.050	ND	<0.05	<0.10	<0.52	<0.050	<0.51	<0.050	<0.050	<0.050	<0.10	<0.050	<0.10	<0.065
1262	<0.055	<0.050	NA	NA	NA	<0.52	<0.050	<0.51	<0.050	<0.050	<0.050	NA	<0.050	NA	<0.065
1268	<0.055	<0.050	NA	NA	NA	<0.52	<0.050	<0.51	<0.050	<0.050	<0.050	NA	<0.050	NA	<0.065
Totals	ND	0.051	ND	ND	ND	0.41 DM	ND	ND	ND	ND	ND	ND	ND	ND	ND
Method	MDNR	608	608	8080	8080	MDNR	608	MDNR	MDNR	608	MDNR	608	MDNR	608	MDNR

TABLE 4-14

SUMMARY OF GROUNDWATER PCB ANALYTICAL RESULTS,
1987 TO 1992GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Aroclor	Well X-4B		Well X-5A		Well X-5B		Well X-5C	Well X-7A		Well X-7B		Well X-9A		Well X-9B	
	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (2)	2/87 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	2/87 (1)	5/88 (1)
1016	<0.050	<0.052	<0.055	<0.05	<0.050	<0.11	<0.092	<0.10	<0.053	<0.055	<0.24	<0.050	<0.054	<0.10	<0.050
1221	<0.050	<0.052	<0.055	<0.05	<0.050	<0.11	<0.092	<0.10	<0.053	<0.055	<0.24	<0.050	<0.054	<0.10	<0.050
1232	<0.050	<0.052	<0.055	<0.05	<0.050	<0.11	<0.092	<0.10	<0.053	<0.055	<0.24	<0.050	<0.054	<0.10	<0.050
1242	<0.050	<0.052	<0.055	<0.05	<0.050	<0.11	<0.092	0.18	<0.053	<0.055	<0.24	<0.050	<0.054	0.4 PS	<0.050
1248	<0.050	<0.052	<0.055	<0.05	<0.050	<0.11	<0.092	<0.10	<0.053	<0.055	<0.24	<0.050	<0.054	<0.10	<0.050
1254	<0.050	<0.10	<0.055	<0.10	<0.050	<0.21	<0.18	<0.10	<0.11	<0.055	<0.47	<0.050	<0.11	<0.10	<0.050
1260	<0.050	<0.10	<0.055	<0.10	<0.050	<0.21	<0.18	<0.10	<0.11	<0.055	<0.47	<0.050	<0.11	<0.10	<0.050
1262	<0.050	NA	<0.055	NA	<0.050	NA	NA	<0.10	NA	<0.055	NA	<0.050	NA	<0.10	<0.050
1268	<0.050	NA	<0.055	NA	<0.050	NA	NA	<0.10	NA	<0.055	NA	<0.050	NA	<0.10	<0.050
Totals	ND	ND	ND	ND	ND	ND	ND	0.18	ND	ND	ND	ND	ND	0.4 PS	ND
Method	MDNR	608	MDNR	608	MDNR	608	608	MDNR	608	MDNR	608	MDNR	608	MDNR	MDNR

Aroclor	Well X-10B			Well X-10C		Well X-16A		Well X-16B	Well X-20	
	2/87 (1)	3/88 (1)	5/88 (2)	3/88 (1)	5/88 (2)	5/88 (1)	5/88 (2)	5/88 (2)	5/88 (1)	5/88 (2)
1016	<0.13	<0.050	<0.050	<0.050	<0.050	<0.065	<0.090	<0.11	<0.050	<0.053
1221	<0.13	<0.050	<0.050	<0.050	<0.050	<0.065	<0.090	<0.11	<0.050	<0.053
1232	<0.13	<0.050	<0.050	<0.050	<0.050	<0.065	<0.090	<0.11	<0.050	<0.053
1242	0.19	<0.050	<0.050	<0.050	<0.050	<0.065	<0.090	<0.11	<0.050	<0.053
1248	<0.13	<0.050	<0.050	<0.050	<0.050	<0.065	<0.090	<0.11	<0.050	<0.053
1254	<0.13	<0.050	<0.050	<0.050	<0.050	<0.065	<0.18	<0.22	<0.050	<0.11
1260	<0.13	<0.050	<0.050	<0.050	<0.050	<0.065	<0.18	<0.22	<0.050	<0.11
1262	<0.13	<0.050	<0.050	<0.050	<0.050	<0.065	NA	NA	<0.050	NA
1268	<0.13	<0.050	<0.050	<0.050	<0.050	<0.065	NA	NA	<0.050	NA
Totals	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND
Method	MDNR	MDNR	608	MDNR	608	MDNR	608	608	MDNR	608

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L).

(1) - Sample collected and analyzed by MDNR.

(2) - Sample collected and analyzed by Hazeltan Laboratories America, Inc.

(3) - Sample collected and analyzed by NET, Inc.

(4) - Sample collected by NET, Inc. and analyzed by WWES, Inc.

(5) - Non-validated data, use with caution.

PJ - Mass spectral data indicated presence of the analyte that meets the identification criteria
but the result is less than the specified detection limit but greater than zero.

NA - Not available.

DM - Sample was deleted to bring possible matrix interference into working range.

MDNR - MDNR Scan - method of analysis not indicated on data sheets.

ND - Not detected.

PS - Possible interference may have effected accuracy of the laboratory result.

< - Indicates the compound was analyzed for but was not detected above the noted detection limit.

TABLE 4-15

QUARTERLY SURFACE WATER ANALYTICAL RESULTS,
NOVEMBER 1979 - FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-1																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	96,000	111,000	220,000	78,000	NA	NA	NA	198,000	NA	88,000	67,000	46,000	24,000	110,000	58,000	130,000
Chemical Oxygen Demand (mg/L)	32	44	-	-	NA	NA	NA	-	NA	43	23	12	24	22	26	120
Iron, dissolved	90	160	-	-	NA	NA	NA	<30	NA	80	770	<20	230	1,200	430	20
Manganese, dissolved	30	150	-	-	NA	NA	NA	-	NA	<10	110	80	<20	30	40	10
Phenol (4-AAP)-Phenolics	8	<2	9	<5	NA	NA	NA	<10	NA	<3	<2	660	5	8	18	1,300
Sodium, dissolved	32,000	44,000	-	-	NA	NA	NA	-	NA	42,400	35,000	46,000	18,000	60,000	31,000	75,000
pH	-	-	6.30	7.90	NA	NA	NA	8.20	NA	7.90	7.80	8.00	7.60	8.40	8.00	7.40
Conductivity (umhos/cm)	630	-	1,080	915	NA	NA	NA	880	NA	660	560	540	400	710	2,900	780
Calcium	-	-	-	-	NA	NA	NA	-	NA	58,000	4,600	34,000	54,000	60,000	100,000	45,000
Potassium	2,170	-	-	-	NA	NA	NA	-	NA	3,380	17,000	11,000	2,200	3,300	2,300	4,600
Magnesium	20,900	-	-	-	NA	NA	NA	-	NA	21,000	17,000	6,800	13,000	20,000	20,000	8,300
Fluoride	-	-	-	-	NA	NA	NA	-	NA	410	140	1,000	160	920	180	1,300
Sulfate	44,200	-	-	-	NA	NA	NA	-	NA	50,000	44,000	49,000	37,000	58,000	44,000	63,000
Bicarbonate Alkalinity (mg/L)	186	248	-	-	NA	NA	NA	-	NA	176	210	110	340	210	240	130
Organic Carbon (mg/L)	-	-	11	-	NA	NA	NA	14	NA	13	13	14	11	10	13	15
Nitrate	1,090	-	-	-	NA	NA	NA	-	NA	510	100	500	2,400	680	350	1,400
Nitrite	-	-	-	-	NA	NA	NA	-	NA	10	140	130	50	<20	<20	20
Arsenic	<2	-	1	<2	NA	NA	NA	-	NA	3	<5	<5	48,000	6	<5	<5
Barium	<100	<70	1,200	310	NA	NA	NA	-	NA	<100	100	<100	<100	<100	<100	<100
Cadmium	<5	-	<2	<2	NA	NA	NA	-	NA	<5	10	<10	20	<10	<10	<10
Chromium	<20	-	<2	<2	NA	NA	NA	-	NA	<30	<20	<20	20	<20	40	<20
Lead	<40	-	<20	<20	NA	NA	NA	-	NA	<30	<50	<50	<50	<50	<50	<50
Mercury	<0.2	-	450	<0.2	NA	NA	NA	-	NA	<5	<0.5	<0.5	<5	1	1	<5
Selenium	8	-	<1	<2	NA	NA	NA	-	NA	<2	<5	<5	<5	<5	<5	<5
Silver	<20	-	<20	<20	NA	NA	NA	-	NA	<10	<20	<20	<20	<20	<20	<20
Cyanide	-	-	-	-	NA	NA	NA	-	NA	4	40	<20	<20	<20	<20	30
Total Hardness (mg/L)	-	-	-	380	NA	NA	NA	260	NA	235	280	130	200	270	220	160

TABLE 4-15

QUARTERLY SURFACE WATER ANALYTICAL RESULTS,
NOVEMBER 1979 – FEBRUARY 1986

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-5																
Parameter	11/79	2/80	6/80	8/80	7/81	1/82	6/82	9/82	1/83	8/83	5/84	1/85	4/85	7/85	10/85	2/86
Chloride	12,000	42,000	NA	NA	40,000	53,000	40,700	NA	37,700	39,000	70,000	54,000	51,000	68,000	57,000	130,000
Chemical Oxygen Demand (mg/L)	28	26	NA	NA	40	94	<20	NA	59	27	37	24	56	160	330	120
Iron, dissolved	450	140	NA	NA	30	<30	<30	NA	<30	110	30	<20	90	50	400	50
Manganese, dissolved	30	60	NA	NA	30	100	80	NA	90	60	<20	80	20	20	50	80
Phenol (4-AAP)-Phenolics	300	900	NA	NA	2,440	2,600	59	NA	2,000	150	14	900	664	820	290	2,800
Sodium, dissolved	NA	26,000	NA	NA	29,000	33,000	22,100	NA	26,800	30,200	35,000	40,000	50,000	44,000	30,000	71,000
pH	NA	NA	NA	NA	8.00	7.90	8.30	NA	7.90	7.90	8.20	7.80	7.80	8.20	7.30	7.60
Conductivity (umhos/cm)	340	NA	NA	NA	310	500	400	NA	630	450	620	500	460	600	590	730

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L), except where noted.

mg/L – milligrams per liter.

umhos/cm – micromhos per centimeter.

– – Indicates not analyzed.

NA – Indicates not available.

< – Indicates the compound was analyzed for but was not detected above the noted detection limit.

TABLE 4-16

QUARTERLY SURFACE WATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-1										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	57,000	55,000	39,000	49,000	59,000	92,000	72,000	94,000	41,000	32,000
Chemical Oxygen Demand (mg/L)	21	20	174	10	33	19	19	45	17	26
Iron, dissolved	30	100	<20	50	50	<20	110	100	30	<20
Manganese, dissolved	<20	30	50	200	<20	70	60	20	30	40
Phenol (4-AAP) – Phenolics	1	<2	680	720	11	1,400	730	3	7	39
Sodium, dissolved	42,000	31,000	33,000	30,000	34,000	60,000	49,000	31,000	28,000	24,000
pH	7,600	7,700	7,800	6,600	8,360	7,050	7,400	7,700	8,200	7,850
Conductivity (umhos/cm)	640,000	600,000	370,000	472,000	680,000	820,000	1,400,000	570,000	5,000,000	420,000
Calcium	53,000	44,000	43,000	30,000	62,000	38,000	32,000	64,000	46,000	42,000
Potassium	4,800	4,000	1,000	3,400	3,600	3,800	3,500	3,700	4,800	3,800
Magnesium	12,000	9,800	8,900	5,200	19,000	7,100	6,300	14,000	9,600	7,200
Fluoride	700	590	920	750	430	–	–	–	–	–
Sulfate	57,000	54,000	61,000	46,000	19,000	38,000	43,000	40,000	61,000	51,000
Bicarbonate Alkalinity (mg/L)	180	160	120	110	230,000	120	92	150	120	100
Total Organic Carbon (mg/L)	7	5	9	5	9	6	14	13	7	13
Nitrate	400	400	960	520	440	640	690	1,200	750	500
Nitrite	130	50	110	140	70	170	100	20	50	60
Arsenic	<5	<5	5	<5	<5	<5	<5	<5	<5	<5
Barium	<100	<100	<100	1,100	50	<50	<50	<50	<50	<50
Cadmium	<10	<10	<10	<10	<10	<10	<10	10	<10	<10
Chromium, Total	<20	<20	<20	<20	<20	<20	20	30	<20	<20
Iron, Total	–	–	–	–	–	–	150	1,000	1,000	1,700
Lead	<50	<50	<50	<50	<50	<50	90	50	50	50
Mercury	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5	<.5
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Total Hardness (mg/L)	190	180	140	130	230	130	130	220	610	160

(Notes are included on Page 2).

TABLE 4-16

QUARTERLY SURFACE WATER ANALYTICAL RESULTS,
MAY 1986 – OCTOBER 1989

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-5										
Parameter	05/86	08/86	11/86	02/87	06/87	02/88	01/89	04/89	07/89	10/89
Chloride	59,000	55,000	38,000	46,000	60,000	88,000	63,000	51,000	38,000	27,000
Chemical Oxygen Demand (mg/L)	120	39	164	32	79	17	20	88	300	68
Iron, dissolved	120,000	20	<20	100	210	20	1,200	60	50	50
Manganese, dissolved	20	40	70	70	20	70	650	600	40	60
Phenol (4-AAP)-Phenolics	180	970	1,600	1,100	760	970	780	280	54	33
Sodium, dissolved	37,000	30,000	31,000	31,000	34,000	59,000	49,000	32,000	23,000	22,000
pH	7.60	7.80	7.80	7.80	8.30	6.99	6.25	8.06	8.21	8.03
Conductivity (umhos/cm)	640	480	360	402	710	720	320	510	510	400

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L), except where noted.

mg/L – milligrams per liter.

umhos/cm – micromhos per centimeter.

< – Indicates the compound was analyzed for but was not detected above the noted detection limit.

– – Indicates not analyzed.

TABLE 4-17

QUARTERLY SURFACE WATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-1																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	85,000	49,000	80,000	62,000	78,000	42,000	36,000	36,000	82,000	60,000	37,000	32,000	NS ²	40,000	69,000	38,000	59,000
Chemical Oxygen Demand (mg/L)	22	31	12	11	44	45	350	6,900	24	17	20	410	NS ²	21	24	13	32
Iron, dissolved	30	290	40	40	30	40	<20	50	30	60	<20	30	NS ²	640	100	<20	300
Iron, total	1,400	1,400	630	1,600	840	840	1,100	1,200	920	340	890	2,000	NS ²	1,000	1,800	1,100	730
Manganese, dissolved	90	30	20	60	160	70	70	90	140	200	150	120	NS ²	240	90	260	360
Phenol (4-AAP) – Phenolics	97	2	6	1,100	48	5	16	17	1,700	1,100	10	39	NS ²	280	18	310	1,500
Sodium, dissolved	52,000	30,000	40,000	38,000	74,000	25,000	22,000	20,000	48,000	33,000	21,000	17,000	NS ²	52,000	64,000	30,000	28,000
pH	7.72	6.6	7	6.67	8.06	7	6.71	6.82	6.76	6.96	6.78	6.81	NS ²	7.01	7.01	7.02	7.04
Conductivity (umhos/cm)	470	490	500	500	660	500	500	550	620	710	500	600	NS ²	600	650	600	700
Calcium	44,000	46,000	52,000	43,000	54,000	40,000	34,000	38,000	48,000	49,000	39,000	33,000	NS ²	32,000	44,000	46,000	46,000
Potassium	4,400	2,400	4,300	4,300	5,300	3,800	3,100	3,000	4,800	4,400	3,600	3,100	NS ²	2,700	3,300	4,100	3,800
Magnesium	9,500	11,000	11,000	8,500	12,000	7,200	8,100	7,400	9,900	10,000	7,500	6,600	NS ²	6,200	1,200	9,100	8,300
Sulfate	60,000	44,000	51,000	51,000	55,000	43,000	45,000	43,000	46,000	53,000	37,000	38,000	NS ²	44,000	31,000	47,000	64,000
Bicarbonate Alkalinity (mg/L)	120	160	110	140	150	500	100	96	120	140	100	98	NS ²	89	130	96	80
Total Organic Carbon (mg/L)	<5	21	5	19	14	30	20	36	8	7	4	7	NS ²	5	6	5	13
Nitrate	570	2,000	1,100	430	2,700	820	800	900	480	470	400	610	NS ²	600	660	380	500
Nitrite	80	<20	70	150	120	40	50	60	140	100	30	60	NS ²	90	20	50	130
Arsenic	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NS ²	<5	<5	<5	<5
Barium	<50	70	<50	<50	<50	50	40	50	40	50	30	40	NS ²	30	<5	40	40
Cadmium	<10	<10	<10	<10	<10	<10	<10	10	<10	<10	<10	<10	NS ²	<10	<10	10	<10
Chromium, Total	<20	<20	<20	<20	<20	<40	<40	<40	<20	<20	<20	<20	NS ²	<20	<20	<20	<20
Lead	<50	60	<50	<50	<50	<80	<80	100	<50	<50	<50	<50	NS ²	<50	60	<50	<50
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NS ²	<0.5	0.6	<0.5	<0.5
Selenium	<5	<5	<50	<5	<5	<50	<5	<5	<5	<5	<5	<5	NS ²	<500	<5	<5	<5
Silver	<20	<20	<20	<20	<20	<50	<50	<50	<20	<20	<20	<20	NS ²	<20	<20	<20	<20
Cyanide	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	NS ²	<20	80	<20	<20
Total Hardness (mg/L)	180	240	240	200	170	140	140	140	150	180	140	150	NS ²	120	260	150	180

TABLE 4-17

QUARTERLY SURFACE WATER ANALYTICAL RESULTS,
JANUARY 1990 – JANUARY 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-5																	
Parameter	01/90	05/90	07/90	11/90	03/91	06/91	08/91	10/91	01/92	04/92	07/92	11/92	01/93	04/93	07/93	10/93	01/94
Chloride	83,000	49,000	78,000	58,000	72,000	40,000	33,000	NA	76,000	55,000	35,000	30,000	49,000	39,000	43,000	36,000	52,000
Chemical Oxygen Demand (mg/L)	260	30	49	13	120	50	15	NA	<10	76	<290	<10	36	680	23	30	90
Iron, dissolved	100	2,400	110	880	30	80	<20	NA	40	30	<20	50	100	70	120	<20	<20
Manganese, dissolved	100	60	40	140	110	80	90	NA	140	200	120	100	170	170	70	150	190
Phenol (4-AAP) – Phenolics	710	39	38	1,000	540	38	22	NA	1,400	1,500	980	1,300	4,600	1,700	590	730	2,600
Sodium, dissolved	51,000	36,000	43,000	120,000	44,000	24,000	23,000	NA	50,000	33,000	21,000	17,000	29,000	28,000	38,000	21,000	28,000
pH	6.76	6.8	6.8	6	8.15	7.05	6.91	NA	7.01	7.08	6.98	7.09	7.05	6.99	7.11	7.02	7.01
Conductivity (umhos/cm)	480	480	400	500	640	500	500	NA	720	780	400	700	740	510	700	460	550
Lead	—	—	—	—	—	—	—	NA	<50	<50	70	80	60	<50	90	80	<50

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L), except where noted.

mg/L – milligrams per liter

umhos/cm – micromhos per centimeter.

NA – Not Available.

NS² – Not sampled due to frozen conditions.

< – Indicates the compound was analyzed for but was not detected above the noted detection limit.

– – Indicates not analyzed.

TABLE 4-18

SUMMARY OF SURFACE WATER ANALYTICAL DATA,
1987 AND 1988 SAMPLING EVENTS

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-1			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.75
Beryllium	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	225,000	34,000
Aluminum	NS	K 50	
Calcium	NS	145,000	
Chloride	NS	632,000	
Cobalt	NS	K 50	
Iron	NS	K 100	
Lead	NS	K 50	
Lithium	NS	60	
Magnesium	NS	87,000	
Molybdenum	NS	K 25	
Potassium	NS	49,600	
Titanium	NS	K 15	
Vanadium	NS	K 10	

SW-2			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.47
Beryllium	NS	K 1	ND
Cadmium	NS	K 20	ND
Aluminum	NS		NA
Calcium	NS	121,000	130,000
Chloride	NS	142,000	160,000
Cobalt	NS	K 50	NA
Iron	NS	210	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	33,200	32,000
Molybdenum	NS	K 25	NA
Potassium	NS	2,200	2,100
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 3).

TABLE 4-18

SUMMARY OF SURFACE WATER ANALYTICAL DATA,
1987 AND 1988 SAMPLING EVENTSGENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-3			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroform	NS	ND	0.3
Beryllium	NS	K 1	ND
Cadmium	NS	K 20	ND
Arsenic	NS		6
Aluminum	NS	K 50	NA
Calcium	NS	80,000	100,000
Chloride	NS	51,000	52,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	K 20	NA
Magnesium	NS	24,000	28,000
Molybdenum	NS	K 25	NA
Potassium	NS	1,800	2,100
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

SW-4			
Parameter	1987 (1)	1988 (1)	1988 (2)
Chloroethane	NS	ND	0.83 J
Bis(2-Ethylhexyl)Phthalate	NS	ND	1
Beryllium	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	285,000	270,000
Arsenic	NS		7
Aluminum	NS	K 50	NA
Calcium	NS	102,000	110,000
Chloride	NS	558,000	520,000
Cobalt	NS	K 50	NA
Iron	NS	K 100	NA
Lead	NS	K 50	ND
Lithium	NS	75	NA
Magnesium	NS	68,000	67,000
Molybdenum	NS	K 25	NA
Potassium	NS	55,400	54,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

(Notes are included on Page 3).

TABLE 4-18

SUMMARY OF SURFACE WATER ANALYTICAL DATA,
1987 AND 1988 SAMPLING EVENTSGENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SW-5			
Parameter	1987 (1)	1988 (1)	1988 (2)
Benzene	NS	ND	0.95
Chlorobenzene	NS	ND	0.41
4-Chloro-3-Methylphenol	NS	14J	ND
Phenol	NS	15J	ND
2,4,6-Trichlorophenol	NS	13J	ND
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	826,000	800,000
Arsenic	NA		8
Aluminum	NS	K 50	NA
Calcium	NS	62,900	61,000
Chloride	NS	1,196,000	1,300,000
Cobalt	NS	K 50	NA
Iron	NS	2,700	NA
Lead	NS	K 50	ND
Lithium	NS	210	NA
Magnesium	NS	143,000	150,000
Molybdenum	NS	74	NA
Potassium	NS	272,000	270,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

SW-6			
Parameter	1987 (1)	1988 (1)	1988 (2)
1,2-Dichloroethene (Total)	NS	96	81
Vinyl Chloride	NS	38 HT	18
4-Chloro-3-Methylphenol	NS	14 J	ND
Beryllium*	NS	K 1	ND
Cadmium	NS	K 20	ND
Sodium	NS	426,000	380,000
Antimony	NS	NA	40
Arsenic	NS		5
Aluminum	NS	K 50	NA
Calcium	NS	108,000	94,000
Chloride	NS	606,000	540,000
Cobalt	NS	K 50	NA
Iron	NS	1,460	NA
Lead	NS	K 50	ND
Lithium	NS	130	NA
Magnesium	NS	77,000	71,000
Molybdenum	NS	28	NA
Potassium	NS	120,000	120,000
Titanium	NS	K 15	NA
Vanadium	NS	K 10	NA

Notes:

(1) Indicates MDNR sampling results.

(2) Indicates GM sampling results.

All concentrations are reported in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

J - Mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero.

K - Actual value is less than the value given. Substance, if present, is below this level.

HT - The recommended maximum laboratory holding time was exceeded before analysis.

NA - Indicates not analyzed for.

ND - Indicates not detected.

NS - Indicates not sampled.

** - Only analyzed for M & P xylene isomers.

Empty cells indicate that no data was given or data is missing.

TABLE 4-19
SUMMARY OF SURFACE WATER PCB ANALYTICAL DATA
1980 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Date	Aroclor	G-1	G-2	G-3	G-4	G-5	G-6	G-7	G-8	CFD-01	CFD-02
4/17/80*	1242										
	1260										
4/23/81	1242	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				
	1260	0.04	0.03	0.02	0.01	0.06	0.07				
6/10/82	1248	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10				
	1254	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10				
	1260	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10				
8/11/83	1242	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2				
	1248	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2				
	1254	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2				
	1260	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2				
10/10/84	1242										
	1248										
	1254						0.17				
	1260										
	Totals	<0.2	<0.2	<0.2	<0.2	<0.2	0.17	<0.2	<0.2		
10/85	Totals	<0.05	<0.05	<0.05	1.1	<0.05	<0.05	<0.05	<0.05	1.7	<0.05
10/13/86	PPL	BDL	BDL	BDL	BDL	BDL					
6/10/87	PPL	BDL	BDL	BDL	BDL	BDL				BDL	BDL
3/29-30/88	PPL	BDL	BDL	BDL	BDL	BDL					
10/20/88	PPL	BDL	BDL	BDL	BDL	BDL					
4/12/89	PPL	BDL	BDL	BDL	BDL	BDL					
10/4-6/89	PPL	BDL	BDL	BDL	BDL	BDL					
6/28/90	PPL	<10	<10	<10	<10	<10					
8/24/90	PPL	<0.05	<0.05								
11/26/90	PPL		<10.0	<10.0	<10.0	<10.0					
5/24/91	PPL	<1.0	<1.0	<1.0	<1.0	<1.0					
10/15/91	1254	1.6									
	PPL	<0.3	<0.05	<0.05	<0.05	<0.05					
5/29/92	PPL	<0.5	<0.03	<0.05	<0.05	<0.05					
4/93	PPL	<0.05	<0.05	<0.05	<0.05	<0.05					
10/93	PPL	<0.05	<0.05	<0.05	<0.05	<0.05					
4/94	PPL	<0.05	<0.05	<0.05	<0.05	<0.05					
10/94	PPL	<0.05	<0.05	<0.05	<0.05	<0.05					
4/95	PPL	<0.05	<0.05	<0.05	<0.05	<0.05					

(Notes are included on Page 2.)

TABLE 4-19

SUMMARY OF SURFACE WATER PCB ANALYTICAL DATA
1980 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Date	Aroclor	SW-1	SW-2	SW-3	SW-4	SW-5	SW-6
5/88	1016	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1221	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1232	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1242	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1248	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1254	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1260	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1262	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	1268	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L).

(1) - Sample collected and analyzed by MDNR.

ND - Not detected.

PPL - Priority Pollutant List of PCB aroclors.

BDL - Below Detection Limit.

* - Aroclor 1242 concentrations at weir and river = 0.02 and <1.0, respectively.

Aroclor 1260 concentrations at weir and river = 0.06 and <1.0, respectively.

< - Indicates the compound was analyzed for but was not detected above the noted detection limit.

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-1										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
pH	7.94	7.12	7.71	7.92	7.11	7.86	7.90	7.63	7.28	7.08
Conductivity	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Asbestos, mfl/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Biological Oxygen Demand, mg/L	<6	6	22	10	5	5	4	9	<3	7
Chloride	62,000	52,000	46,000	70,000	58,000	46,000	43,000	56,000	48,000	70,000
Chemical Oxygen Demand, mg/L	53	18	46	67	29	14	<10	27	25	23
Cyanide, amenable	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide, total	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Fluoride	680	830	1,000	1,200	1,200	1,100	1,000	1,100	1,200	1,000
MBAS Surfactants, mg/L	<0.02	0.04	NA	NA	0.06	0.03	<0.02	<0.02	<0.02	<0.02
Nitrogen, Ammonia	1,300	2,700	1,800	1,200	1,600	2,000	1,300	1,700	1,400	1,600
Nitrogen, Kjeldahl	1,600	2,800	3,200	1,600	2,200	2,000	1,300	2,000	1,000	2,100
Nitrogen, Nitrate	2,300	500	510	870	<20	320	670	410	400	850
Nitrogen, Nitrite	100	50	60	60	60	90	50	80	50	100
Oil & Grease	<5,000	47,000	10,000	66,000,000	5,000	5,000	<5,000	<5,000	5,000	<5,000
Phenolics	11	23	3	92	47	610	45	370	67	34
Phosphorus, Total	350	20	80	90	50	50	200	120	<20	<20
Solids, Suspended, mg/L	38	10	<4	8	<4	5	23	28	37	11
Sulfate	49,000	54,000	46,000	43,000	43,000	44,000	51,000	60,000	52,000	47,000
Sulfide	150	<50	60	60	80	<50	<50	70	<1,000	<50
Aluminum	980	150	310	<500	230	<50	470	760	740	300
Antimony	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Arsenic	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Barium	<50	<50	<50	40	50	40	50	50	40	50
Beryllium	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5
Cadmium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	52,000	59,000	43,000	35,000	50,000	35,000	40,000	49,000	38,000	63,000
Chromium, Hexavalent	<50	<50	<50	<50	<50	<20	<20	<20	<20	<20
Chromium, Total	<20	<20	<20	<40	<20	<20	<20	<20	<20	<20
Copper	<20	<20	<20	<10	10	10	10	10	20	10
Iron	2,100	610	720	420	730	390	1,400	1,300	1,300	650
Lead	<50	<50	<50	<80	<50	<50	<50	<50	<50	<50
Manganese	90	80	100	140	310	270	280	320	280	330
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	<20	30	<20	<50	<20	<20	<20	<20	<20	<100
Potassium	4,000	5,000	4,000	2,800	4,700	3,300	3,400	4,800	4,100	6,700
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<50	<20	<20	<20	<20	<20	<20

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-1										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Thallium	<500	<500	<500	<200	<200	<200	<200	<200	<200	<200
Zinc	90	20	110	300	560	390	1,400	1,300	1,500	610
Acrolein	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Acrylonitrile	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Tetrachloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibromochloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloropropane	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichloropropene	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<10	<10	NA	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Anthracene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Benzidine	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(a) Anthracene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(b) Fluoranthene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(k) Fluoranthene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-1										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Benzo(a)Pyrene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(g,h,i)Perylene	<25	<64	<25	<25	<10	<10	<10	<10	<10	<10
Bis(2-Chloroethyl)Ether	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Chloroethoxy)Methane	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Ethylhexyl)Phthalate	15	<25	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Chloroisopropyl)Ether	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Butylbenzylphthalate	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
4-Bromophenyl-phenylether	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloronaphthalene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
4-Chlorophenyl-phenylether	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Chrysene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Dibenzo(a,h)Anthracene	<25	<25	<25	<25	<10	<10	<10	<10	<10	<10
Di-n-Butylphthalate	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichlorobenzene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
3,3'-Dichlorobenzidine	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Diethylphthalate	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Dimethylphthalate	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrotoluene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
2,6-Dinitrotoluene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Di-n-Octylphthalate	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
Fluoranthene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Fluorene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobenzene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobutadiene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Hexachloroethane	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Indeno(1,2,3-cd)Pyrene	<25	<64	<25	<25	<10	<10	<10	<10	<10	<10
Isophorone	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Nitrobenzene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitrosodimethylamine	<100	<252	<100	<100	<10	<10	<10	<10	<10	<10
N-Nitrosodiphenylamine	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitroso-Di-n-propylamine	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Phenanthrene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Pyrene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-1										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
1,2,4-Trichlorobenzene	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
4-Chloro-3-Methylphenol	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
2-Chlorophenol	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dichlorophenol	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dimethylphenol	<10	<25	<10	<10	19	<10	21	81	<10	25
2,4-Dinitrophenol	<50	<125	<50	<50	<50	<50	<50	<50	<50	<50
4,6-Dinitro-2-Methylphenol	<50	<125	<50	<50	<50	<50	<50	<50	<50	<50
2-Nitrophenol	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
4-Nitrophenol	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Phenol	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol	<10	<25	<10	<10	<10	<10	<10	<10	<10	<10
Aldrin	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-BHC	<10		<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
beta-BHC	<10		<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
delta-BHC	<10		<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
gamma-BHC (Lindane)	<10		<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlordane	<10		<10	NA	<1	<1	<1	<1	<1	<1
4,4'-DDD	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan I	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan II	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan Sulfate	<10		<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.5
Endrin	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	<10		<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor	<10		<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor Epoxide	<10		<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.83
Toxaphene	<25		<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<2.4
Aroclor 1016	<10		<10	<0.3	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1221	<10		<1	<0.3	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1232	<10		<1	<0.3	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1242	<10		<1	<0.3	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1248	<10		<1	<0.3	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1254	<10		<1	1.6	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1260	<10		<1	<0.3	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-2										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Oct-94
pH	7.85	7.48	7.21	7.26	7.57	8.04	7.97	7.78	7.02	7.68
Conductivity	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Asbestos, mf/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Biological Oxygen Demand, mg/L	<6	3	5	<2	6	<3	6	<3	<2	<2
Chloride	6,000	84,000	61,000	120,000	50,000	40,000	58,000	72,000	72,000	86,000
Chemical Oxygen Demand, mg/L	43	35	44	<10	32	23	18	30	21	32
Cyanide, amenable	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide, total	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Fluoride	160	180	170	250	210	130	210	210	240	210
MBAS Surfactants, mg/L	<0.02	<0.02	NA	0.03	NA	0.03	<0.02	0.02	<0.02	<0.02
Nitrogen, Ammonia	210	150	<100	<100	<100	<100	<100	120	500	<100
Nitrogen, Kjeldahl	1,100	440	3,000	500	1,000	<500	<500	700	700	<500
Nitrogen, Nitrate	1,000	2,100	670	800	380	1,300	1,300	890	800	1,200
Nitrogen, Nitrite	100	<20	40	30	20	30	<20	<20	<20	50
Oil & Grease	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	22,000	<5,000
Phenolics	<2	4	<2	<2	5	5	<2	7	<5	<5
Phosphorus, Total	90	70	160	40	100	80	280	110	70	90
Solids, Suspended, mg/L	19	12	53	19	27	15	450	37	38	32
Sulfate	44,000	46,000	40,000	46,000	31,000	31,000	45,000	38,000	140,000	36,000
Sulfide	110	<50	50	<50	100	100	<50	<50	<1,000	<50
Aluminum	500	200	1,200	<500	590	220	5,900	610	1,200	540
Antimony	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Arsenic	<5	<5	<5	<5	<5	<5	5	<5	<5	<5
Barium	<50	<50	<50	40	40	30	100	40	50	40
Beryllium	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5
Cadmium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	66,000	84,000	65,000	68,000	54,000	54,000	92,000	62,000	70,000	62,000
Chromium, Hexavalent	<50	<50	<50	<50	<50	<20	<20	<20	<20	<20
Chromium, Total	<20	<20	<20	<40	<20	<20	20	<20	<20	<20
Copper	<20	<20	<20	<10	10	<10	20	10	<10	<10
Iron	880	470	1,900	560	1,100	640	10,000	1,100	1,400	840
Lead	<50	<50	<50	<80	<50	<50	<50	<50	<50	<50
Manganese	50	30	100	50	50	40	330	80	70	70
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	<20	20	<20	<50	<20	<20	20	<20	<20	<100
Potassium	3,000	3,900	2,800	3,100	2,500	2,600	5,600	2,500	4,400	3,000
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<50	<20	<20	<20	<20	<20	<20

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-2										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Thallium	<500	<500	<500	<200	<200	<200	<200	<200	<200	<200
Zinc	<20	<20	20	<20	<20	<20	110	20	<20	20
Acrolein	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Acrylonitrile	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Tetrachloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibromochloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloropropane	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichloropropene	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<10	<10	NA	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(a)Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(b)Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(k)Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-2										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Benzo(a)Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(g,h,i)Perylene	<25	<25	<25	<25	<10	<10	<10	<10	<10	<10
Bis(2-Chloroethyl) Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Chloroethoxy) Methane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Ethylhexyl) Phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Chloroisopropyl) Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Butylbenzylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Bromophenyl-phenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloronaphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Chlorophenyl-phenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chrysene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibenzo(a,h)Anthracene	<25	<10	<25	<25	<10	<10	<10	<10	<10	<10
Di-n-Butylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
3,3'-Dichlorobenzidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Diethylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dimethylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Di-n-Octylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluorene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobutadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Indeno(1,2,3-cd)Pyrene	<25	<25	<25	<25	<10	<10	<10	<10	<10	<10
Isophorone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nitrobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitrosodimethylamine	<100	<100	<100	<100	<10	<10	<10	<10	<10	<10
N-Nitrosodiphenylamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitroso-Di-n-propylamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenanthrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-2										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
1,2,4-Trichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Chloro-3-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dimethylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrophenol	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
4,6-Dinitro-2-Methylphenol	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
2-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Aldrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
beta-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
delta-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
gamma-BHC (Lindane)	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlordane	<10	<10	<10	NA	<1	<1	<1	<1	<1	<1
4,4'-DDD	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan I	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan II	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan Sulfate	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Endrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor Epoxide	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.8
Toxaphene	<25	<25	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<2.0
Aroclor 1016	<10	<10	<1	<0.05	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1221	<10	<10	<1	<0.05	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1232	<10	<10	<1	<0.05	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1242	<10	<10	<1	<0.05	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1248	<10	<10	<1	<0.05	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1254	<10	<10	<1	<0.05	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1260	<10	<10	<1	<0.05	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-3										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
pH	7.90	7.25	7.21	7.42	7.44	8.00	7.82	7.28	7.31	7.91
Conductivity		NA	NA	NA	NA	NA	NA	NA	NA	NA
Asbestos, mf/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Biological Oxygen Demand, mg/L	<6	<3	5	3	4	<3	<3	<3	3	5
Chloride	64,000	94,000	60,000	120,000	54,000	42,000	62,000	72,000	88,000	160,000
Chemical Oxygen Demand, mg/L	68	29	59	<10	32	24	27	23	28	36
Cyanide, amenable	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide, total	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Fluoride	150	170	170	230	210	140	230	160	240	210
MBAS Surfactants, mg/L	<0.02	0.02	NA	0.03	NA	0.03	0.03	0.03	<0.02	<0.02
Nitrogen, Ammonia	140	220	<100	<100	<100	<100	<100	<100	530	160
Nitrogen, Kjeldahl	1,500	960	7,800	800	800	<500	<500	500	870	630
Nitrogen, Nitrate	1,300	1,800	860	860	370	880	1,200	890	800	1,200
Nitrogen, Nitrite	90	<20	30	30	20	30	<20	<20	20	60
Oil & Grease	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	7,000	<5,000
Phenolics	<2	3	<2	2	3	16	5	<5	<5	<5
Phosphorus, Total	160	60	300	<20	80	100	100	110	90	110
Solids, Suspended, mg/L	21	11	91	24	20	15	21	27	65	42
Sulfate	44,000	42,000	38,000	43,000	27,000	29,000	37,000	36,000	40,000	28,000
Sulfide	90	<50	<50	<50	80	60	<50	<50	<1,000	<50
Aluminum	330	150	860	<500	490	240	900	400	850	760
Antimony	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Arsenic	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Barium	<50	<50	<50	40	40	30	60	40	50	50
Beryllium	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5
Cadmium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	62,000	84,000	64,000	70,000	56,000	49,000	71,000	63,000	66,000	84,000
Chromium, Hexavalent	<50	<50	<50	<50	<50	<20	<20	<20	<20	<20
Chromium, Total	<20	<20	<20	<40	<20	30	<20	<20	<20	<20
Copper	<20	<20	<20	<10	<10	<10	<10	<10	10	<10
Iron	740	440	1,500	600	860	610	1,400	820	1,300	1,200
Lead	<50	<50	<50	<80	<50	<50	<50	<50	<50	<50
Manganese	60	30	100	50	90	40	90	60	80	230
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	<20	<20	<20	<50	<20	<20	30	<20	<20	<100
Potassium	2,700	3,800	2,700	3,100	2,300	2,600	4,400	2,400	3,900	3,800
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<50	<20	<20	<20	<20	<20	<20

(Notes are included on Page 20.)

TABLE 4--20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-3										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Thallium	<500	<500	<500	<200	<200	<200	<200	<200	<200	<200
Zinc	20	<20	<20	<20	<20	<20	30	<20	60	<20
Acrolein	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Acrylonitrile	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Tetrachloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibromochloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloropropane	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichloropropene	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<10	<10	NA	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(a)Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(b)Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(k)Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-3										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Benzo(a)Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(g,h,i)Perylene	<25	<25	<25	<25	<10	<10	<10	<10	<10	<10
Bis(2-Chloroethyl)Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Chloroethoxy)Methane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Ethylhexyl)Phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Chloroisopropyl)Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Butylbenzylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Bromophenyl-phenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloronaphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Chlorophenyl-phenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chrysene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibenzo(a,h)Anthracene	<25	<10	<25	<25	<10	<10	<10	<10	<10	<10
Di-n-Butylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
3,3'-Dichlorobenzidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Diethylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dimethylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Di-n-Octylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluorene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobutadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Indeno(1,2,3-cd)Pyrene	<25	<25	<25	<25	<10	<10	<10	<10	<10	<10
Isophorone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nitrobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitrosodimethylamine	<100	<100	<100	<100	<10	<10	<10	<10	<10	<10
N-Nitrosodiphenylamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitroso-Di-n-propylamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenanthrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-3										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
1,2,4-Trichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Chloro-3-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dimethylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrophenol	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
4,6-Dinitro-2-Methylphenol	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
2-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Aldrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
beta-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
delta-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
gamma-BHC (Lindane)	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlordane	<10	<10	<10	NA	<1	<1	<1	<1	<1	<1
4,4'-DDD	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan I	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan II	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan Sulfate	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Endrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor Epoxide	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.83
Toxaphene	<25	<25	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<2.4
Aroclor 1016	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1221	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1232	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1242	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1248	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1254	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1260	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-4										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
pH	8.05	7.51	7.57	7.86	7.91	7.57	7.44	7.86	7.22	7.78
Conductivity		NA	NA	NA	NA	NA	NA	NA	NA	NA
Asbestos, mf/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Biological Oxygen Demand, mg/L	<6	6	<2	7	2	6	<3	6	<2	6
Chloride	54,000	54,000	46,000	32,000	56,000	45,000	39,000	60,000	50,000	69,000
Chemical Oxygen Demand, mg/L	57	20	34	<10	21	20	13	33	24	24
Cyanide, amenable	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide, total	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Fluoride	750	830	1,000	1,100	1,200	1,000	1,000	960	1,200	1,000
MBAS Surfactants, mg/L	<0.02	0.03	NA	NA	0.03	0.03	<0.02	<0.02	<0.02	<0.02
Nitrogen, Ammonia	1,400	2,600	2,000	1,700	1,500	2,000	1,400	1,600	1,200	1,600
Nitrogen, Kjeldahl	1,900	2,800	9,800	1,600	2,200	2,000	1,300	1,900	1,100	1,900
Nitrogen, Nitrate	2,000	560	600	740	80	310	700	530	500	770
Nitrogen, Nitrite	1,400	40	50	60	40	90	50	90	60	90
Oil & Grease	<5,000	<5,000	<5,000	41,000	<5,000	7,000	<5,000	<5,000	5,000	<5,000
Phenolics	9	22	8	110	72	640	310	420	170	130
Phosphorus, Total	30	30	80	20	40	50	30	40	<20	40
Solids, Suspended, mg/L	34	5	7	33	5	8	36	17	22	5
Sulfate	54,000	56,000	48,000	41,000	42,000	44,000	49,000	57,000	54,000	48,000
Sulfide	190	<50	<50	70	80	70	<50	60	<1,000	<50
Aluminum	670	110	470	690	140	100	430	550	670	<50
Antimony	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Arsenic	<5	<5	<5	<5	<5	<5	<5	5	<5	<5
Barium	<50	<50	<50	40	40	40	50	50	50	<20
Beryllium	<10	<10	<10	<5	<5	<5	<5	<5	<5	<5
Cadmium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	51,000	59,000	45,000	37,000	47,000	36,000	41,000	49,000	41,000	100
Chromium, Hexavalent	<50	<50	<50	<50	<50	<20	<20	<20	<20	<20
Chromium, Total	<20	<20	<20	<40	<20	<20	<20	<20	<20	<20
Copper	<20	<20	<20	<10	10	<10	<10	10	20	<10
Iron	1,800	660	980	1,900	470	520	1,500	990	1,500	<20
Lead	<50	<50	<50	<80	<50	<50	<50	<50	50	<50
Manganese	80	80	120	180	230	270	390	300	290	<10
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	<20	<20	<20	<50	<20	<20	<20	<20	<20	<100
Potassium	4,000	4,900	4,100	2,800	5,000	3,500	3,500	4,700	4,100	160
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<50	<20	<20	<20	<20	<20	<20

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-4										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Thallium	<500	<500	<500	<200	<200	<200	<200	<200	<200	<200
Zinc	40	<20	140	380	490	440	1,600	1,200	1,600	<200
Acrolein	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Acrylonitrile	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Tetrachloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibromochloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloropropane	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichloropropane	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<10	<10	NA	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(a)Anthracene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(b)Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(k)Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4--20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-4										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Benzo(a)Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzo(g,h,i)Perylene	<25	<25	<25	<25	<10	<10	<10	<10	<10	<10
Bis(2-Chloroethyl)Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Chloroethoxy)Methane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bis(2-Ethylhexyl)Phthalate	<10	<10	<10	16	<10	<10	<10	<10	<10	<10
Bis(2-Chloroisopropyl)Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Butylbenzylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Bromophenyl-phenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloronaphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Chlorophenyl-phenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chrysene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibenzo(a,h)Anthracene	<25	<10	<25	<25	<10	<10	<10	<10	<10	<10
Di-n-Butylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
3,3'-Dichlorobenzidine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Diethylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dimethylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Di-n-Octylphthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Diphenylhydrazine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Fluorene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorobutadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Hexachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Indeno(1,2,3-cd)Pyrene	<25	<25	<25	<25	<10	<10	<10	<10	<10	<10
Isophorone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Nitrobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitrosodimethylamine	<100	<100	<100	<100	<10	<10	<10	<10	<10	<10
N-Nitrosodiphenylamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
N-Nitroso-Di-n-propylamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenanthrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pyrene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-4										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
1,2,4-Trichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Chloro-3-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2,4-Dimethylphenol	<10	<10	<10	<10	<10	41	<10	78	<10	33
2,4-Dinitrophenol	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
4,6-Dinitro-2-Methylphenol	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
2-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Phenol	<10	<10	<10	<10	<10	130	<10	<10	<10	<10
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Aldrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
beta-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
delta-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
gamma-BHC (Lindane)	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlordane	<10	<10	<10	NA	<1	<1	<1	<1	<1	<1
4,4'-DDD	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan I	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan II	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan Sulfate	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Endrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor Epoxide	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toxaphene	<25	<25	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<2.4
Aroclor 1016	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1221	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1232	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1242	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1248	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1254	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1260	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-5										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
pH	7.97	7.47	7.41	7.62	7.81	8.07	7.93	7.31	7.11	7.65
Conductivity		NA	NA	NA	NA	NA	NA	NA	NA	NA
Asbestos, mf/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Biological Oxygen Demand, mg/L	<12	6	2	6	8	14	4	8	3	10
Chloride	54,000	48,000	42,000	31,000	52,000	43,000	43,000	54,000	52,000	66,000
Chemical Oxygen Demand, mg/L	270	48	25	47	980	650	20	67	53	3,100
Cyanide, amenable	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cyanide, total	<20	<20	<20	<20	<20	<20	50	<20	20	<20
Fluoride	730	850	1,000	1,100	1,300	890	1,100	870	1,200	960
MBAS Surfactants, mg/L	<0.02	NA	0.02	NA	NA	NA	<0.02	<0.02	<0.02	NA
Nitrogen, Ammonia	1,400	2,600	1,900	1,500	1,900	2,000	1,400	1,600	1,200	2,000
Nitrogen, Kjeldahl	1,600	3,400	2,400	3,000	7,000	9,000	1,300	2,000	1,200	15,000
Nitrogen, Nitrate	2,000	470	500	490	<20	730	590	770	500	780
Nitrogen, Nitrite	<20	70	50	60	70	130	50	90	60	80
Oil & Grease	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
Phenolics	110	100	6	480	1,300	1,500	350	410	60	900
Phosphorus, Total	130	70	50	<20	330	350	90	<20	50	780
Solids, Suspended, mg/L	360	320	100	530	66	2,700	510	170	88	9,700
Sulfate	50,000	52,000	43,000	41,000	44,000	48,000	52,000	57,000	53,000	49,000
Sulfide	480	<50	<50	50	100	3,400	<50	80	<25,000	NA
Aluminum	6,100	2,800	710	5,500	24,000	29,000	3,500	1,800	1,300	75,000
Antimony	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Arsenic	<5	<5	<5	<5	6	<5	<5	<5	<5	12
Barium	70	<50	<50	70	180	230	80	60	<40	560
Beryllium	<10	<10	<10	<5	<5	<5	<5	<5	<5	6
Cadmium	20	<10	<10	<10	20	40	10	<10	<10	<10
Calcium	55,000	52,000	42,000	38,000	58,000	49,000	42,000	48,000	32,000	87,000
Chromium, Hexavalent	<50	<50	<50	<50	<50	<20	<20	<20	<20	<20
Chromium, Total	40	<20	<20	<40	60	60	20	30	<20	160
Copper	50	20	20	40	100	160	40	40	20	350
Iron	26,000	13,000	13,000	22,000	56,000	100,000	23,000	21,000	3,700	200,000
Lead	<50	<50	<50	<80	180	140	100	<50	80	410
Manganese	470	300	340	550	1,400	2,200	750	760	360	5,000
Mercury	<0.5	<0.5	<0.5	<0.5	11	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	30	<20	<20	<50	50	90	20	<20	20	140
Potassium	4,400	4,800	3,700	3,100	6,200	5,200	3,600	4,300	3,400	11,000
Selenium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<20	<20	<20	<50	<20	<20	<20	<20	<20	<20

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-5										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Thallium	<500	<500	<500	<200	<200	<200	<200	<200	<200	<200
Zinc	120	30	230	970	5,600	5,000	3,500	880	2,300	18,000
Acrolein	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Acrylonitrile	<100	NA	<100	<100	<100	<100	<100	<100	<100	<100
Benzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Bromomethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Carbon Tetrachloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-Chloroethylvinyl Ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Dibromochloromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-Dichloropropane	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
1,3-Dichloropropene	<10	NA	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Methylene Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Tetrachloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,1-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane	<10	<10	NA	<10	<10	<10	<10	<10	<10	<10
Vinyl Chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acenaphthene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Acenaphthylene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Anthracene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Benzidine	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Benzo(a)Anthracene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Benzo(b)Fluoranthene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-5										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Benzo(k)Fluoranthene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Benzo(a)Pyrene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Benzo(g,h,i)Perylene	<25	<25	<25	<25	<10	<60	<10	<10	<10	<10
Bis(2-Chloroethyl)Ether	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Bis(2-Chloroethoxy)Methane	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Bis(2-Ethylhexyl)Phthalate	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Bis(2-Chloroisopropyl)Ether	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Butylbenzylphthalate	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
4-Bromophenyl-phenylether	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
2-Chloronaphthalene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
4-Chlorophenyl-phenylether	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Chrysene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Dibenzo(a,h)Anthracene	<25	<10	<25	<25	<10	<60	<10	<10	<10	<10
Di-n-Butylphthalate	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
3,3'-Dichlorobenzidine	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Diethylphthalate	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Dimethylphthalate	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Di-n-Octylphthalate	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
1,2-Diphenylhydrazine	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Fluoranthene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Fluorene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Hexachlorobenzene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Hexachlorobutadiene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Hexachloroethane	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Indeno(1,2,3-cd)Pyrene	<25	<25	<25	<25	<10	<60	<10	<10	<10	<10
Isophorone	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Naphthalene	<10	14	<10	<10	<10	<60	<10	<10	<10	<10
Nitrobenzene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
N-Nitrosodimethylamine	<100	<100	<100	<100	<10	<60	<10	<10	<10	<10
N-Nitrosodiphenylamine	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
N-Nitroso-Di-n-propylamine	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Phenanthrene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10

(Notes are included on Page 20.)

TABLE 4-20

WATER RECIRCULATION SYSTEM AND SAGINAW RIVER
ANALYTICAL RESULTS
1990 TO 1995

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

G-5										
Parameter	May-90	Nov-90	May-91	Oct-91	May-92	Apr-93	Oct-93	Apr-94	Oct-94	Apr-95
Pyrene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
1,2,4-Trichlorobenzene	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
4-Chloro-3-Methylphenol	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
2-Chlorophenol	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
2,4-Dichlorophenol	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
2,4-Dimethylphenol	<10	<10	<10	32	79	120	<10	62	26	41
2,4-Dinitrophenol	<50	<50	<50	<50	<50	<300	<50	<50	<50	<50
4,6-Dinitro-2-Methylphenol	<50	<50	<50	<50	<50	<300	<50	<50	<50	<50
2-Nitrophenol	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
4-Nitrophenol	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Pentachlorophenol	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Phenol	<10	<10	<10	63	<10	1,300	<10	<10	<10	64
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<60	<10	<10	<10	<10
Aldrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
alpha-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
beta-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
delta-BHC	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
gamma-BHC (Lindane)	<10	<10	<10	NA	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chlordane	<10	<10	<10	NA	<1	<1	<1	<1	<1	<1
4,4'-DDD	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDE	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4,4'-DDT	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan I	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan II	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan Sulfate	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Endrin	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor	<10	<10	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Heptachlor Epoxide	<10	<10	<10	NA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.83
Toxaphene	<25	<25	<10	NA	<0.8	<0.8	<0.8	<0.8	<0.8	<2.4
Aroclor 1016	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1221	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1232	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1242	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1248	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1254	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aroclor 1260	<10	<10	<1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Notes:

Concentrations and detection limits are reported as micrograms per liter (ug/L), except where noted.

NA - Indicates not analyzed.

< - Indicates the compound was analyzed for but was not detected above the detection limit.

mg/L - milligrams per liter.

mf/L - million fibers per liter.

TABLE 4-21

POTENTIOMETRIC SURFACE ELEVATION DATA
1979 TO 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well	Groundwater Elevation in Feet										
	Nov-79	Feb-80	Jun-80	Jun-80	Aug-80	Feb-87	Jun-87	Feb-88	May-88	May-88	Jan-89
B-1	588.07	587.52	NA	588.03	588.58	587.80	587.55	587.75	NA	589.09	589.44
B-2	588.34	587.55	NA	587.95	588.25	587.52	587.57	587.92	NA	589.16	588.86
B-3	586.73	586.82	NA	587.13	587.99	588.23	586.98	574.03	NA	588.21	588.74
B-4A	582.84	583.07	NA	NA	NA	583.41	582.91	582.31	NA	583.34	582.46
B-4B	583.40	583.40	NA	NA	NA	583.01	582.56	582.11	NA	583.41	582.05
B-5	584.01	584.01	NA	NA	NA	584.82	583.97	584.82	NA	585.77	585.61
B-6	584.57	584.57	NA	NA	NA	584.92	585.27	584.92	NA	586.23	585.53
B-7	583.25	583.25	NA	583.25	583.12	582.85	583.05	582.15	NA	583.54	583.75
MW-1A	NA	NA	NA	NA	NA	NA	NA	NA	NA	583.20	NA
MW-1B	NA	NA	NA	NA	NA	NA	NA	NA	NA	583.30	NA
MW-2A	NA	NA	NA	NA	NA	NA	NA	NA	NA	582.09	NA
MW-2B	NA	NA	NA	NA	NA	NA	NA	NA	NA	583.01	NA
MW-3A	NA	NA	NA	NA	NA	NA	NA	NA	NA	582.51	NA
MW-3B	NA	NA	NA	NA	NA	NA	NA	NA	NA	582.55	NA
MW-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	590.94	NA
MW-5A	NA	NA	NA	NA	NA	NA	NA	NA	NA	584.08	NA
MW-5B	NA	NA	NA	NA	NA	NA	NA	NA	NA	581.58	NA
MW-6A	NA	NA	NA	NA	NA	NA	NA	NA	NA	582.61	NA
MW-6B	NA	NA	NA	NA	NA	NA	NA	NA	NA	581.51	NA
X-1A	NA	NA	585.82	585.56	585.73	588.52	585.62	586.12	586.77	NA	586.97
X-1B	NA	NA	584.22	584.58	584.72	586.12	585.57	585.32	586.27	NA	585.98
X-1C	NA	NA	571.98	581.18	585.51	585.58	586.03	586.48	586.08	NA	586.93
X-2A	NA	NA	586.24	586.80	587.19	585.44	585.04	585.44	587.37	NA	589.48
X-2B	NA	NA	579.71	581.62	581.78	582.81	582.06	582.11	583.37	NA	582.87
X-2C	NA	NA	582.25	581.61	581.55	583.45	582.75	582.75	583.37	NA	583.00
X-3A	NA	NA	580.29	580.29	580.26	585.39	582.54	582.49	585.26	NA	584.72
X-3B	NA	NA	581.92	581.52	581.72	584.37	582.67	583.52	582.40	NA	581.99
X-4A	NA	NA	580.52	581.16	581.30	NA	NA	NA	581.98	NA	NA
X-4B	NA	NA	581.69	582.49	582.52	NA	NA	NA	583.94	NA	NA
X-5A	NA	NA	585.78	586.55	587.85	584.53	584.08	584.68	587.95	NA	587.35
X-5B	NA	NA	585.10	586.55	586.71	594.12	595.00	585.20	587.93	NA	587.35
X-5C	NA	NA	587.28	585.58	586.78	NA	NA	NA	587.55	NA	NA
X-6	NA	NA	586.90	585.03	587.63	NA	608.60	NA	NA	NA	598.14
X-7A	NA	NA	580.69	580.23	580.55	587.29	589.59	584.39	591.16	NA	586.86
X-7B	NA	NA	581.22	581.23	581.52	589.35	588.95	NA	588.56	NA	587.34
X-8A	NA	NA	581.32	579.90	579.86	NA	NA	NA	NA	NA	NA
X-8B	NA	NA	581.45	581.43	581.60	NA	NA	NA	NA	NA	NA
X-8C	NA	NA	580.42	579.95	579.89	NA	NA	NA	NA	NA	NA
X-9A	NA	NA	580.61	581.10	581.65	NA	NA	NA	582.38	NA	NA
X-9B	NA	NA	584.95	582.83	582.55	NA	583.60	583.31	583.92	NA	583.35
X-10A	NA	NA	579.94	579.94	580.08	573.18	NA	NA	NA	NA	588.20
X-10B	NA	NA	581.57	581.28	581.55	575.62	NA	573.87	582.86	NA	582.21
X-10C	NA	NA	578.95	580.51	580.75	NA	NA	NA	584.65	NA	NA
X-11A	NA	NA	583.05	582.32	583.26	NA	NA	NA	NA	NA	NA
X-11B	NA	NA	547.19	557.17	569.57	NA	NA	NA	NA	NA	NA
X-12A	NA	NA	581.06	579.80	581.25	NA	NA	NA	NA	NA	NA
X-12B	NA	NA	581.34	580.34	581.04	NA	NA	NA	NA	NA	NA
X-13A	NA	NA	579.68	579.96	580.99	NA	583.00	NA	NA	NA	NA
X-13B	NA	NA	580.10	581.20	581.48	NA	582.30	NA	NA	NA	NA
X-14A	NA	NA	580.62	578.80	580.68	NA	582.88	NA	NA	NA	NA
X-14B	NA	NA	581.62	581.10	581.37	NA	582.92	NA	NA	NA	NA
X-15A	NA	NA	580.99	580.49	580.76	NA	581.19	581.69	NA	NA	582.53
X-15B	NA	NA	571.66	573.66	580.06	NA	582.31	NA	NA	NA	582.24
X-16A	NA	NA	585.10	585.49	585.55	NA	NA	572.38	NA	586.16	NA
X-16B	NA	NA	585.40	585.60	585.01	NA	NA	NA	NA	585.28	NA
X-17	NA	NA	580.76	585.54	585.55	578.30	582.95	583.50	NA	NA	NA
X-18	NA	NA	584.08	585.02	585.23	NA	NA	NA	NA	NA	NA
X-19A	NA	NA	584.43	584.96	585.09	NA	NA	NA	NA	NA	NA
X-19B	NA	NA	580.30	584.56	575.62	NA	NA	NA	NA	NA	NA
X-20	NA	NA	583.28	585.03	585.39	NA	NA	NA	586.69	NA	NA
N	8	8	41	45	45	23	29	24	20	21	26

(Notes are included on Page 3).

TABLE 4-21

POTENTIOMETRIC SURFACE ELEVATION DATA
1979 TO 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well	Groundwater Elevation in Feet									
	Apr-89	Jul-89	Oct-89	Jan-90	May-90	Jul-90	Nov-90	Mar-91	Jun-91	Jul-91
B-1	588.99	589.14	588.29	587.69	587.69	587.50	587.69	589.69	589.69	585.49
B-2	588.91	588.56	588.51	588.81	588.81	588.78	588.81	587.01	589.90	587.68
B-3	588.17	589.07	588.42	588.32	588.32	588.31	588.32	589.22	588.55	NA
B-4A	583.06	583.25	582.76	582.01	582.01	582.01	582.01	583.57	585.10	580.53
B-4B	582.80	583.05	582.20	581.45	581.45	581.46	581.45	583.20	583.60	580.34
B-5	585.06	585.71	585.76	585.21	585.21	585.21	585.21	587.06	585.36	584.14
B-6	585.68	586.18	585.73	585.73	585.73	585.72	585.73	585.83	587.41	585.04
B-7	583.45	581.75	582.55	581.85	581.85	581.84	575.65	584.35	576.70	573.87
MW-1A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-1A	586.57	585.67	586.17	586.57	586.57	586.56	586.57	588.27	587.54	584.79
X-1B	585.88	586.03	585.73	586.03	586.03	586.02	586.03	587.53	587.47	584.44
X-1C	586.53	586.43	586.73	586.73	586.73	586.73	586.73	587.63	586.76	585.55
X-2A	587.08	587.18	NA	583.78	583.78	NA	583.78	590.68	594.91	582.24
X-2B	583.22	582.22	582.17	582.32	582.32	582.32	582.32	584.12	584.42	581.61
X-2C	583.20	582.80	582.20	582.30	582.30	582.30	582.30	584.20	583.51	580.78
X-3A	584.92	583.72	583.32	583.52	583.52	583.51	583.52	584.32	584.10	581.64
X-3B	582.24	581.79	581.29	581.44	581.44	581.44	581.44	583.14	583.11	579.43
X-4A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-4B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-5A	587.35	587.80	586.65	587.35	587.35	587.30	587.35	588.40	588.26	586.87
X-5B	587.35	587.75	586.60	587.30	587.30	587.20	587.30	589.05	588.44	586.57
X-5C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-6	598.34	598.74	598.69	598.84	598.84	NA	588.84	598.84	599.72	597.31
X-7A	589.21	592.16	587.96	588.11	588.11	588.11	588.11	593.26	588.93	587.24
X-7B	588.14	585.54	591.24	589.59	589.59	589.59	589.59	590.04	590.60	588.64
X-8A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-8B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-8C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-9A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-9B	580.50	583.45	582.85	582.95	582.95	582.90	582.95	584.40	585.41	580.99
X-10A	589.55	588.75	588.65	588.70	588.70	NA	588.70	590.45	589.99	587.88
X-10B	582.71	581.51	581.61	582.01	582.01	582.00	582.01	592.41	582.30	581.44
X-10C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-11A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-11B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-12A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-12B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-13A	583.00	579.33	579.18	NA	NA	NA	579.33	579.83	NA	578.21
X-13B	581.70	580.90	580.85	581.10	581.10	581.10	581.10	582.10	NA	580.87
X-14A	582.88	579.68	579.68	NA	NA	NA	579.58	580.23	NA	578.63
X-14B	581.67	581.72	581.22	581.42	581.42	581.42	581.42	582.72	NA	580.34
X-15A	582.33	582.48	582.53	581.93	581.93	NA	581.93	582.53	NA	581.36
X-15B	580.79	583.04	582.44	581.94	581.94	581.93	581.94	582.84	NA	580.86
X-16A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-16B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-17	NA	582.90	582.95	583.40	583.40	NA	583.40	583.90	585.40	583.11
X-18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-19A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-19B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N	30	31	30	29	29	24	31	31	25	30

(Notes are included on Page 3).

TABLE 4--21

POTENTIOMETRIC SURFACE ELEVATION DATA
1979 TO 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well	Groundwater Elevation in Feet									
	Oct-91	Jan-92	Apr-92	Jul-92	Oct-92	Jan-93	Apr-93	Jul-93	Oct-93	Jan-94
B-1	589.23	588.57	589.48	589.63	NA	NA	NA	589.47	588.88	589.86
B-2	586.56	589.60	586.73	587.00	NA	NA	NA	587.80	586.51	587.13
B-3	599.93	587.81	591.41	591.22	NA	NA	NA	592.31	591.01	591.95
B-4A	582.99	583.35	586.05	582.09	NA	583.13	NA	583.11	583.20	583.39
B-4B	582.55	NA	585.32	582.03	NA	583.09	NA	582.85	582.88	582.69
B-5	585.98	586.66	588.68	586.74	NA	NA	NA	587.36	587.10	587.14
B-6	585.30	586.25	586.54	587.41	NA	NA	NA	585.52	585.68	585.60
B-7	583.23	NA	NA	NA	NA	NA	NA	NA	584.37	584.11
MW-1A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-1B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-5B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-6B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-1A	586.81	587.37	587.99	587.25	NA	NA	NA	588.42	588.06	588.14
X-1B	586.45	587.12	587.61	586.87	NA	NA	NA	587.23	587.28	587.38
X-1C	586.90	587.52	587.80	587.51	NA	NA	NA	587.47	587.47	587.45
X-2A	590.16	589.60	590.02	590.74	NA	590.45	NA	590.56	589.96	590.47
X-2B	583.55	583.56	584.31	584.10	NA	NA	NA	583.81	583.96	583.92
X-2C	583.49	583.27	583.74	583.72	NA	NA	NA	584.70	583.82	583.89
X-3A	584.46	583.92	585.34	584.76	596.39*	NA	585.15	584.17	584.20	584.29
X-3B	583.03	582.66	584.42	583.23	584.14*	NA	583.62	583.08	583.03	583.06
X-4A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-4B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-5A	588.14	588.05	588.28	588.17	588.02	588.29	588.96	588.15	588.00	588.31
X-5B	588.69	588.50	588.93	588.98	587.94	588.88	589.37	588.73	588.87	588.91
X-5C	NA	632.19	632.76	NA	NA	NA	NA	NA	NA	NA
X-6	NA	NA	NS ³	NA	NA	NA	NA	NA	598.24	NA
X-7A	589.61	592.26	592.45	589.74	NA	NA	NA	592.85	593.21	593.15
X-7B	588.01	587.53	589.49	588.28	589.34	590.12	NA	589.59	589.58	589.82
X-8A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-8B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-8C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-9A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-9B	581.96	583.77	583.89	582.49	NA	NA	NA	584.23	584.50	584.24
X-10A	579.54	589.04	590.01	579.81	589.69	578.58	591.36	NA	590.02	590.36
X-10B	581.99	590.79	592.60	582.15	NA	NA	NA	NA	592.06	592.30
X-10C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-11A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-11B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-12A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-12B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-13A	580.32	NA	NA	580.92	582.08	NA	NA	NA	579.53	Frozen
X-13B	581.00	NA	NA	581.09	NA	NA	NA	NA	582.10	Frozen
X-14A	580.12	NA	580.52	580.47	NA	580.45	NA	579.88	579.83	Frozen
X-14B	583.20	NA	582.72	583.69	580.36	579.16	NA	582.72	582.72	Frozen
X-15A	582.40	582.32	583.31	582.65	581.51	582.25	NA	582.41	581.81	581.82
X-15B	581.38	583.12	582.79	580.71	NA	NA	NA	582.33	582.66	582.68
X-16A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-16B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-17	582.79	582.18	584.11	582.89	583.84	583.76	584.32	583.34	583.55	583.39
X-18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-19A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-19B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
X-20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N	30	25	24	27	8	11	6	25	31	26

Notes:

All measurements are reported in feet.

N = Number of wells measured for a given round of water levels.

NA = Not Available.

* = Well is damaged; elevation is estimated.

TABLE 4-22

SUMMARY STATISTICS OF POTENTIOMETRIC
SURFACE ELEVATION DATA
1979 TO 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well	Minimum Elevation (feet)	Maximum Elevation (feet)	Difference (feet)	Number of Observations
B-1	585.49	589.86	4.37	24
B-2	586.51	589.90	3.39	24
B-3	574.03	599.93	* 25.90	23
B-4A	580.53	586.05	5.52	23
B-4B	580.34	585.32	4.98	22
B-5	583.97	588.68	4.71	22
B-6	584.92	587.41	2.49	22
B-7	573.87	584.37	10.50	20
MW-1A	583.20	583.20	0.00	1
MW-1B	583.30	583.30	0.00	1
MW-2A	582.09	582.09	0.00	1
MW-2B	583.01	583.01	0.00	1
MW-3A	582.51	582.51	0.00	1
MW-3B	582.55	582.55	0.00	1
MW-4	590.94	590.94	0.00	1
MW-5A	584.08	584.08	0.00	1
MW-5B	581.58	581.58	0.00	1
MW-6A	582.61	582.61	0.00	1
MW-6B	581.51	581.51	0.00	1
X-1A	584.79	588.52	3.73	25
X-1B	584.22	587.61	3.39	25
X-1C	571.98	587.80	15.82	25
X-2A	582.24	594.91	12.67	24
X-2B	579.71	584.42	4.71	25
X-2C	580.78	584.70	3.92	25
X-3A	580.26	* 596.39	* 16.13	27
X-3B	579.43	584.42	4.99	27
X-4A	580.52	581.98	1.46	4
X-4B	581.69	583.94	2.25	4
X-5A	584.08	588.96	4.88	28

(Notes are included on Page 2).

TABLE 4-22

SUMMARY STATISTICS OF POTENTIOMETRIC
SURFACE ELEVATION DATA
1979 TO 1994

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

Well	Minimum Elevation (feet)	Maximum Elevation (feet)	Difference (feet)	Number of Observations
X-5B	585.10	595.00	9.90	28
X-5C	585.58	632.76	* 47.18	6
X-6	566.90	608.60	* 41.70	15
X-7A	580.23	593.26	13.03	25
X-7B	581.22	591.24	10.02	26
X-8A	579.86	581.32	1.46	3
X-8B	581.43	581.60	0.17	3
X-8C	579.89	580.42	0.53	3
X-9A	580.61	582.38	1.77	4
X-9B	580.50	585.41	4.91	24
X-10A	573.18	591.36	* 18.18	23
X-10B	573.87	592.60	* 18.73	23
X-10C	578.95	584.65	5.70	4
X-11A	582.32	583.26	0.94	3
X-11B	547.19	569.57	* 22.38	3
X-12A	579.80	581.25	1.45	3
X-12B	580.34	581.34	1.00	3
X-13A	578.21	583.00	4.79	14
X-13B	580.10	582.30	2.20	16
X-14A	578.63	582.88	4.25	16
X-14B	579.16	583.69	4.53	20
X-15A	580.49	583.31	2.82	23
X-15B	571.66	583.12	11.46	21
X-16A	572.38	586.16	13.78	5
X-16B	585.01	585.60	0.59	4
X-17	578.30	585.55	7.25	24
X-18	584.08	585.23	1.15	3
X-19A	584.43	585.09	0.66	3
X-19B	575.62	584.56	8.94	3
X-20	583.28	586.69	3.41	4

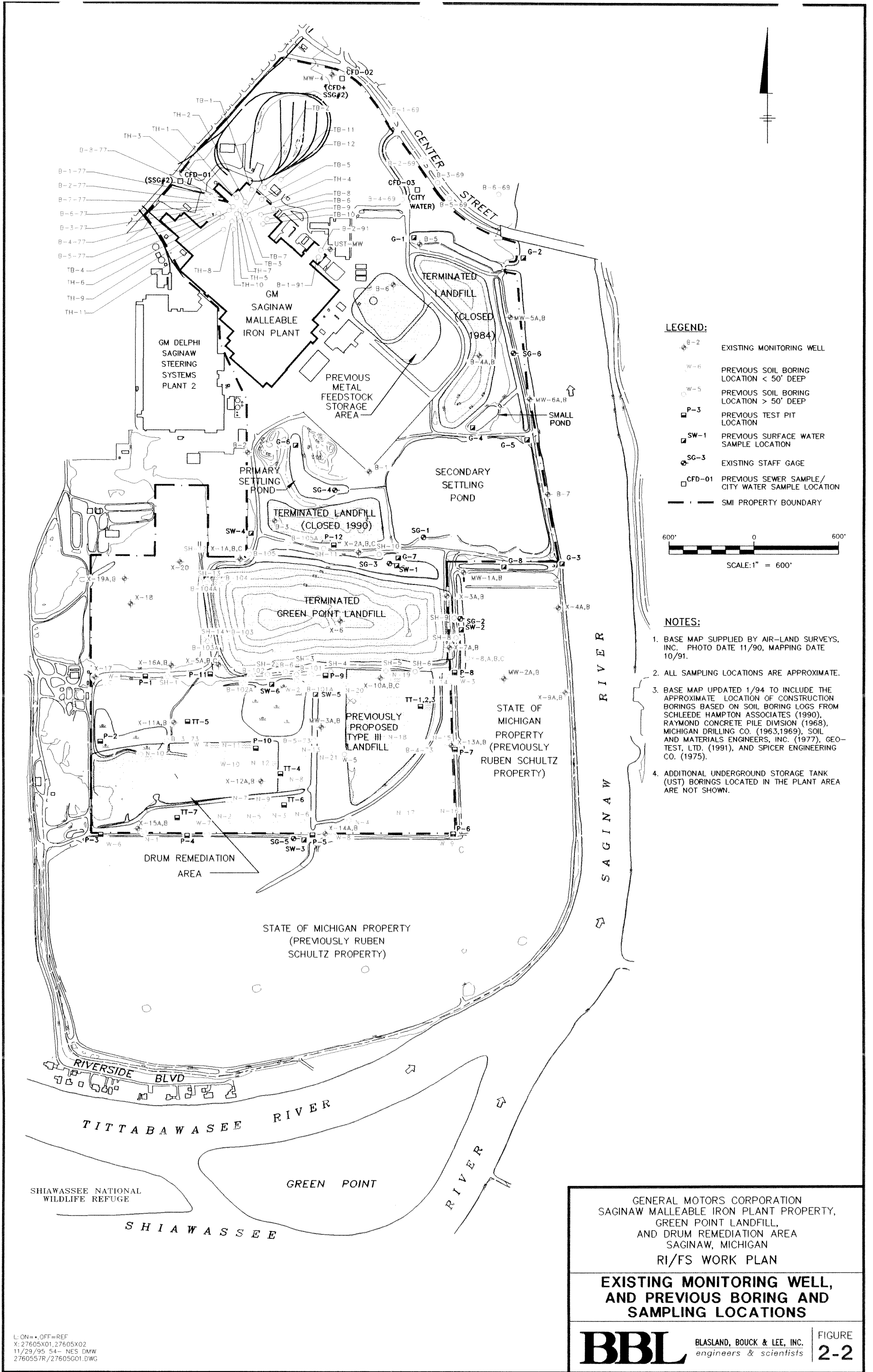
Notes:

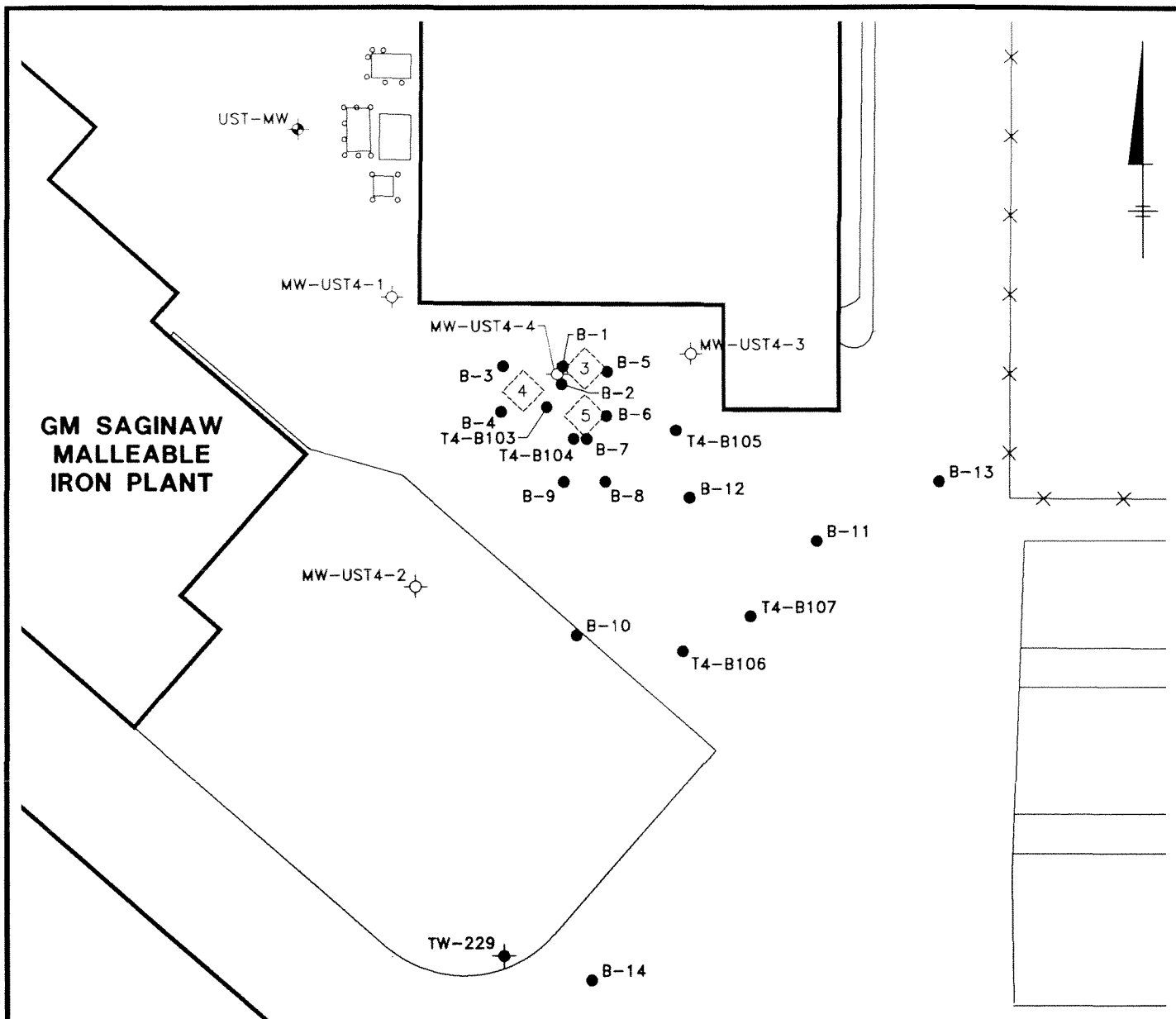
* – Indicates a high probability of error in elevation datum reference, field measurement, or data recording for one or more of the reported elevations. All measurements are reported in feet above mean sea level.

Work Plan

Miscellaneous Figures

- 2-2 Existing Monitoring Well and Previous Soil Boring and Sampling Locations
- 3-2 Former Underground Storage Tank #4 Area Site Plan
- 3-3 Former Underground Storage Tank #4 Area Site Plan
- 3-4 Former Underground Storage Tank #4 Area Site Plan





LEGEND:

- SOIL BORING
- ⊙ RI TEMPORARY MONITORING WELL
- ⊕ WATER TABLE MONITORING WELL INSTALLED BY EARTH TECH
- ⊙ EXISTING (PRE-RI) MONITORING WELL
- 4 APPROXIMATE UNDERGROUND STORAGE TANK LOCATION

NOTES:

1. BASE MAP MODIFIED FROM SEWER MAP PREPARED BY SPICER ENGINEERING COMPANY, SAGINAW MICHIGAN, JANUARY 1995, FROM PREVIOUS SAMPLE LOCATION MAP PREPARED BY EARTH TECH, JANUARY 1994, FROM SOIL BORING/MONITORING WELL LOCATION MAP PREPARED BY EARTH TECH, SEPTEMBER 1994, AND FROM SOIL BORING LOCATION DIAGRAM - TANK 4 AREA PREPARED BY GEO-TEST, LTD., JULY 1992.
2. ALL SAMPLING LOCATIONS ARE APPROXIMATE.

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL,
AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN
RI/FS WORK PLAN

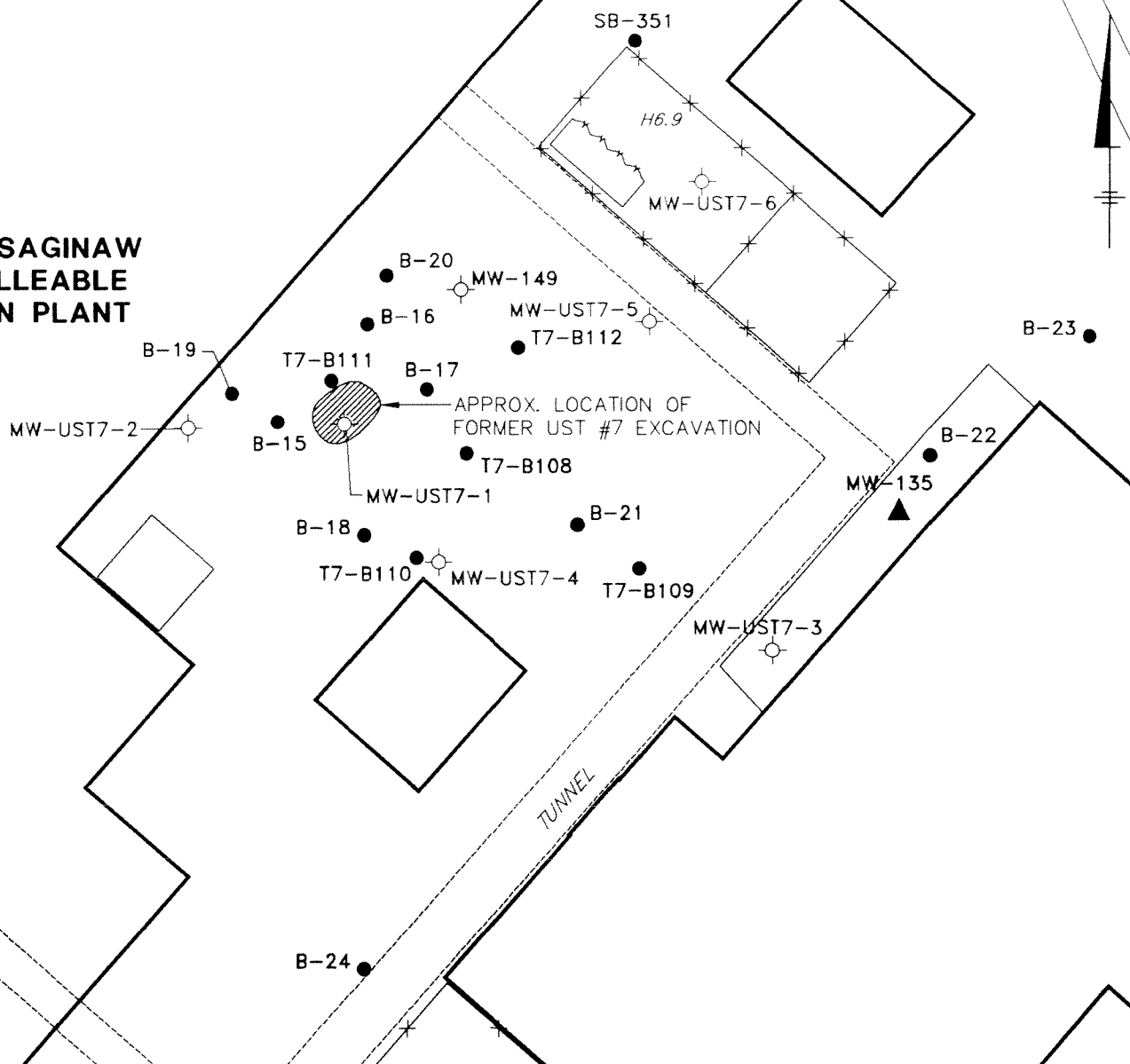
FORMER UNDERGROUND STORAGE TANK #4 AREA SITE PLAN

BBL

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE
3-2

**GM SAGINAW
MALLEABLE
IRON PLANT**



LEGEND:

- ▲ RI MONITORING WELL CLUSTER LOCATION
- SOIL BORING
- ⊙ WATER TABLE MONITORING WELL INSTALLED BY EARTH TECH

NOTES:

1. BASE MAP MODIFIED FROM SEWER MAP PREPARED BY SPICER ENGINEERING COMPANY, SAGINAW MICHIGAN, JANUARY 1995, FROM PREVIOUS SOIL BORING/MONITORING WELL LOCATION MAP PREPARED BY EARTH TECH, MARCH 1994, FROM WELL LOCATION MAP PREPARED BY EARTH TECH, NOVEMBER 1994, AND FROM SOIL BORING LOCATION DIAGRAM - TANK 7 AREA PREPARED BY GEO-TEST, LTD., JULY 1992.
2. ALL SAMPLING LOCATIONS ARE APPROXIMATE.



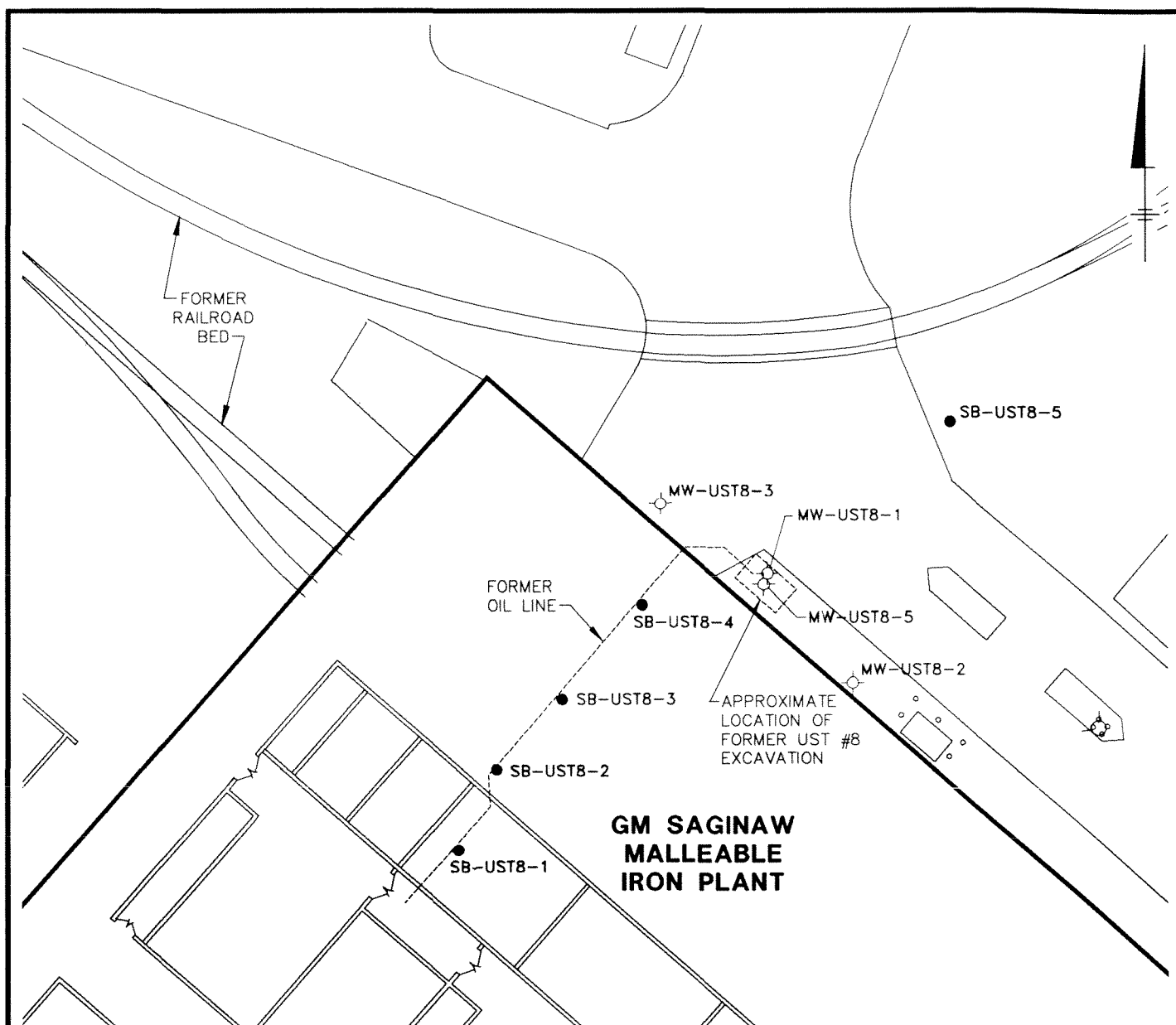
GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL,
AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN
RI/FS WORK PLAN

**FORMER UNDERGROUND STORAGE
TANK #7 AREA SITE PLAN**

BBL

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE
3-3



LEGEND:

- SOIL BORING
- ☼ WATER TABLE MONITORING WELL INSTALLED BY EARTH TECH

NOTES:

1. BASE MAP MODIFIED FROM SEWER MAP PREPARED BY SPICER ENGINEERING COMPANY, SAGINAW MICHIGAN, JANUARY 1995, AND FROM SOIL BORING/MONITORING WELL LOCATION MAP PREPARED BY EARTH TECH, SEPTEMBER 1994.
2. ALL SAMPLING LOCATIONS ARE APPROXIMATE.



DJ-T7-A.PCP
L: ON=*,OFF=REF
12/20/95 54-DWW
27605030/27605803.DWG

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL,
AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN
RI/FS WORK PLAN

FORMER UNDERGROUND STORAGE TANK #8 AREA SITE PLAN

BBL

BLASLAND, BOUCK & LEE, INC.
engineers & scientists

FIGURE
3-4

Attachment II Aboveground Storage Tank Data Tables and Figures

BLASLAND, BOUCK & LEE, INC.
e n g i n e e r s & s c i e n t i s t s

ENVIRONMENTAL DRILLING AND SAMPLING
TANK FARM
GENERAL MOTORS-CENTRAL FOUNDRY
SAGINAW, MICHIGAN

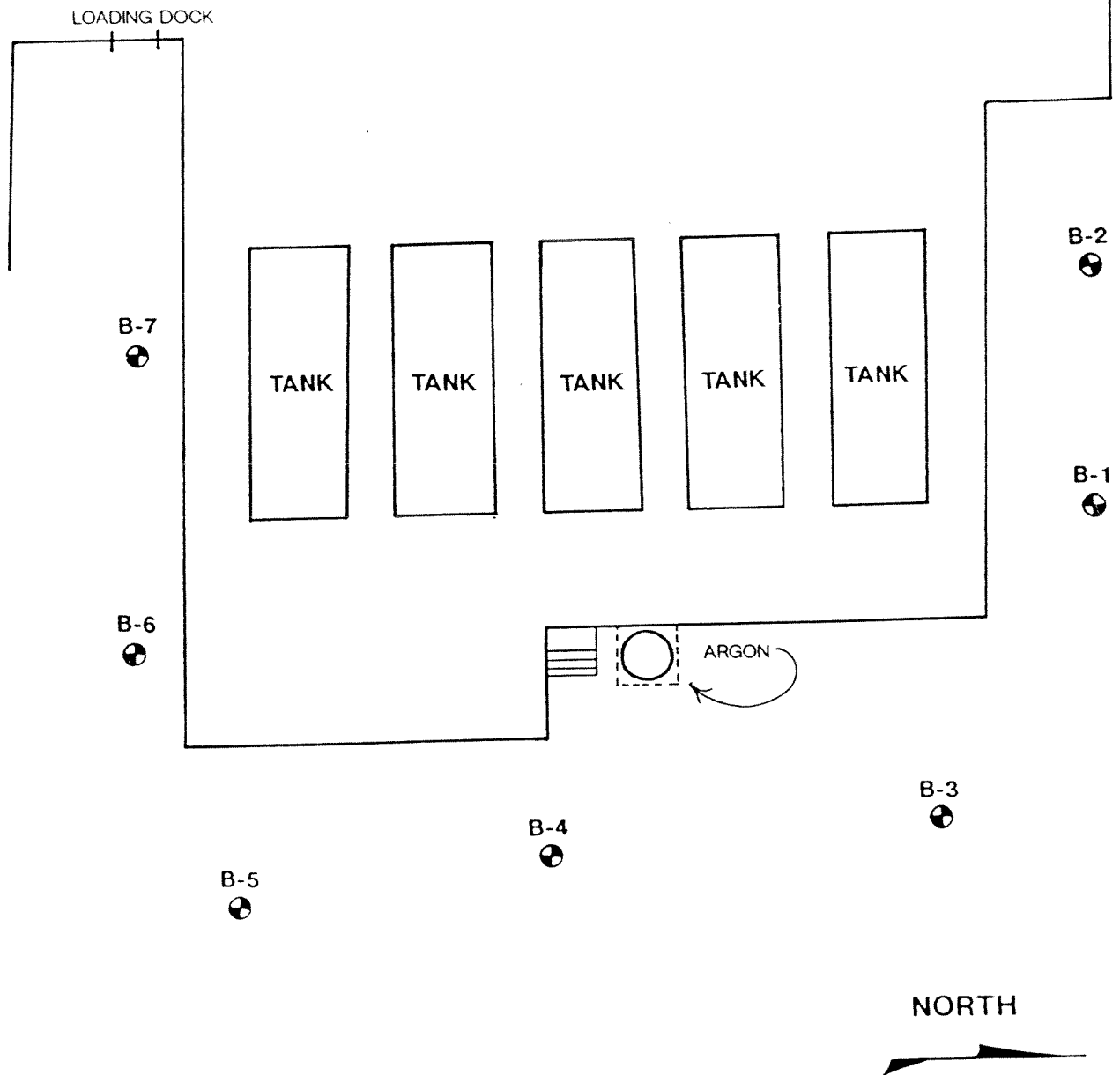
Prepared for: General Motors

Soil and Materials Engineers, Inc.
Project No. B-12625

December 1988



FIGURE



Date	12/16/88
Drawn By	LCB
Scale	NTS
Job	B 12580

ANN ARBOR
BATTLE CREEK
BAY CITY
LANSING
LIVONIA



BORING LOCATION MAP
GM FOUNDRY
SAGINAW, MICHIGAN

Figure No. 1

TABLE

TABLE 1
GENERAL MOTORS-CENTRAL FOUNDRY
SAGINAW, MICHIGAN
SME PROJECT NO. B-12625

HNU READINGS (ppm)

	B-1	B-2	B-3	B-4	B-5	B-6	B-7
S-1	280	38	54	240	36	8	90
S-2	300	200	64	260	22	45	70
S-3	220	54	34	200	12	110	15
S-4	260	32	26	26	5.2	58	114
S-5	52	44	6.8	60	0.2	110	4
S-6	---	---	----	---	64	1.4	---

BACKGROUND = 0.2 ppm



TABLE 2
GENERAL MOTORS-CENTRAL FOUNDRY
SAGINAW, MICHIGAN
SME PROJECT NO. B-12625

SAMPLES COMBINED TO FORM COMPOSITES

SAMPLE NUMBER	COMPOSITE NUMBER
B-1 S-1	B-1 COMPOSITE
B-1 S-2	
B-1 S-3	
B-1 S-4	
B-1 S-5	
B-2 S-1	B-2 COMPOSITE
B-2 S-2	
B-2 S-3	
B-2 S-4	
B-2 S-5	
B-3 S-1	B-3 COMPOSITE
B-3 S-2	
B-3 S-3	
B-3 S-4	
B-3 S-5	
B-4 S-1	B-4 COMPOSITE
B-4 S-2	
B-4 S-3	
B-4 S-4	
B-4 S-5	
B-5 S-1	B-5 COMPOSITE
B-5 S-2	
B-5 S-3	
B-5 S-4	
B-5 S-5	
B-5 S-6	
B-6 S-1	B-6 COMPOSITE
B-6 S-2	
B-6 S-3	
B-6 S-4	
B-6 S-5	
B-6 S-6	B-6 S-6
B-7 S-1	B-7 COMPOSITE
B-7 S-2	
B-7 S-3	
B-7 S-4	

ANALYTICAL DATA

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-1 Comp.
ENCOTEC Number: 22497
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	11
Alpha-BHC	319-84-6	ug/kg	U	11
Beta-BHC	319-85-7	ug/kg	U	11
Delta-BHC	319-86-8	ug/kg	U	11
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	11
PBB (BP-6)		ug/kg	U	22
Alpha-Chlordane	5103-71-9	ug/kg	U	6.0
Gamma-Chlordane	5103-74-2	ug/kg	U	6.0
2-Chloronaphthalene	91-58-7	ug/kg	U	880
4,4'-DDD	72-54-8	ug/kg	U	22
4,4'-DDE	72-55-9	ug/kg	U	11
2,4'-DDT	789-02-6	ug/kg	U	11
4,4'-DDT	50-29-3	ug/kg	U	11
1,2-Dichlorobenzene	95-50-1	ug/kg	U	220
1,3-Dichlorobenzene	541-73-1	ug/kg	U	220
1,4-Dichlorobenzene	106-46-7	ug/kg	U	440
Dieldrin	60-57-1	ug/kg	U	11
Endosulfan I	1031-07-08	ug/kg	U	11
Endrin	72-20-8	ug/kg	U	11
Heptachlor	76-44-8	ug/kg	U	11
Heptachlor Epoxide	1024-57-3	ug/kg	U	11
Hexabromobenzene	87-82-1	ug/kg	U	11
Hexachlorobenzene	118-74-1	ug/kg	U	11
Hexachlorobutadiene	87-68-3	ug/kg	U	11
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	440
Hexachloroethane	67-72-1	ug/kg	U	11
Methoxychlor	72-43-5	ug/kg	U	110
Mirex	2385-85-5	ug/kg	U	11
Pentachlorobenzene	608-93-5	ug/kg	U	11
Pentachloronitrobenzene	82-68-8	ug/kg	U	11
PCB-1016	12674-11-2	ug/kg	U	110
PCB-1221	11104-28-2	ug/kg	U	110
PCB-1232	11141-16-5	ug/kg	U	110
PCB-1242	53469-21-9	ug/kg	U	110
PCB-1248	12572-29-6	ug/kg	U	110

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48118
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-1 Comp.
ENCOTEC Number: 22497
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11197-69-1	ug/kg	U	220
PCB-1260	11196-82-5	ug/kg	U	220
PCB-1262	37324-23-5	ug/kg	U	220
PCB-1268	11110-14-4	ug/kg	U	220
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	11
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	11
Toxaphene	80001-35-2	ug/kg	U	220
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	11
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	11
1,3,5-Trichlorobenzene	118-70-3	ug/kg	U	11

Analysis is reported on a WET X DRY weight basis.

% Solids 91

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	111	1SCN3S88

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-2 Comp.
ENCOTEC Number: 22498
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	11
Alpha-BHC	319-84-6	ug/kg	U	11
Beta-BHC	319-85-7	ug/kg	U	11
Delta-BHC	319-86-8	ug/kg	U	11
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	11
PBB (BP-6)		ug/kg	U	22
Alpha-Chlordane	5103-71-9	ug/kg	U	6.0
Gamma-Chlordane	5103-74-2	ug/kg	U	6.0
2-Chloronaphthalene	91-58-7	ug/kg	U	900
4,4'-DDD	72-54-8	ug/kg	U	22
4,4'-DDE	72-55-9	ug/kg	U	11
2,4'-DDT	789-02-6	ug/kg	U	11
4,4'-DDT	50-29-3	ug/kg	U	11
1,2-Dichlorobenzene	95-50-1	ug/kg	U	220
1,3-Dichlorobenzene	541-73-1	ug/kg	U	220
1,4-Dichlorobenzene	106-46-7	ug/kg	U	450
Dieldrin	60-57-1	ug/kg	U	11
Endosulfan I	1031-07-08	ug/kg	U	11
Endrin	72-20-8	ug/kg	U	11
Heptachlor	76-44-8	ug/kg	U	11
Heptachlor Epoxide	1024-57-3	ug/kg	U	11
Hexabromobenzene	87-82-1	ug/kg	U	11
Hexachlorobenzene	118-74-1	ug/kg	U	11
Hexachlorobutadiene	87-68-3	ug/kg	U	11
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	450
Hexachloroethane	67-72-1	ug/kg	U	11
Methoxychlor	72-43-5	ug/kg	U	110
Mirex	2385-85-5	ug/kg	U	11
Pentachlorobenzene	608-93-5	ug/kg	U	11
Pentachloronitrobenzene	82-68-8	ug/kg	U	11
PCB-1016	12674-11-2	ug/kg	U	110
PCB-1221	11104-28-2	ug/kg	U	110
PCB-1232	11141-16-5	ug/kg	U	110
PCB-1242	53469-21-9	ug/kg	U	110
PCB-1248	12572-29-6	ug/kg	U	110

Scan 3 (soil)
ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48118
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-2 Comp.
ENCOTEC Number: 22498
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11197-69-1	ug/kg	U	220
PCB-1260	11196-82-5	ug/kg	U	220
PCB-1262	37324-23-5	ug/kg	U	220
PCB-1268	11110-14-4	ug/kg	U	220
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	11
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	11
Toxaphene	80001-35-2	ug/kg	U	220
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	11
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	11
1,3,5-Trichlorobenzene	118-70-3	ug/kg	U	11

Analysis is reported on a WET X DRY weight basis.

% Solids 89

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	111	1SCN3S88

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-3 Comp.
ENCOTEC Number: 22499
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	11
Alpha-BHC	319-84-6	ug/kg	U	11
Beta-BHC	319-85-7	ug/kg	U	11
Delta-BHC	319-86-8	ug/kg	U	11
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	11
PBB (BP-6)		ug/kg	U	22
Alpha-Chlordane	5103-71-9	ug/kg	U	6.0
Gamma-Chlordane	5103-74-2	ug/kg	U	6.0
2-Chloronaphthalene	91-58-7	ug/kg	U	890
4,4'-DDD	72-54-8	ug/kg	U	22
4,4'-DDE	72-55-9	ug/kg	U	11
2,4'-DDT	789-02-6	ug/kg	U	11
4,4'-DDT	50-29-3	ug/kg	U	11
1,2-Dichlorobenzene	95-50-1	ug/kg	U	220
1,3-Dichlorobenzene	541-73-1	ug/kg	U	220
1,4-Dichlorobenzene	106-46-7	ug/kg	U	440
Dieldrin	60-57-1	ug/kg	U	11
Endosulfan I	1031-07-08	ug/kg	U	11
Endrin	72-20-8	ug/kg	U	11
Heptachlor	76-44-8	ug/kg	U	11
Heptachlor Epoxide	1024-57-3	ug/kg	U	11
Hexabromobenzene	87-82-1	ug/kg	U	11
Hexachlorobenzene	118-74-1	ug/kg	U	11
Hexachlorobutadiene	87-68-3	ug/kg	U	11
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	440
Hexachloroethane	67-72-1	ug/kg	U	11
Methoxychlor	72-43-5	ug/kg	U	110
Mirex	2385-85-5	ug/kg	U	11
Pentachlorobenzene	608-93-5	ug/kg	U	11
Pentachloronitrobenzene	82-68-8	ug/kg	U	11
PCB-1016	12674-11-2	ug/kg	U	110
PCB-1221	11104-28-2	ug/kg	U	110
PCB-1232	11141-16-5	ug/kg	U	110
PCB-1242	53469-21-9	ug/kg	U	110
PCB-1248	12572-29-6	ug/kg	U	110

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48118
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-3 Comp.
ENCOTEC Number: 22499
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11197-69-1	ug/kg	U	220
PCB-1260	11196-82-5	ug/kg	U	220
PCB-1262	37324-23-5	ug/kg	U	220
PCB-1268	11110-14-4	ug/kg	U	220
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	11
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	11
Toxaphene	80001-35-2	ug/kg	U	220
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	11
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	11
1,3,5-Trichlorobenzene	118-70-3	ug/kg	U	11

Analysis is reported on a ____ WET X DRY weight basis.

% Solids 90

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	102	1SCN3S88

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
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313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-4 Comp.
ENCOTEC Number: 25500
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	11
Alpha-BHC	319-84-6	ug/kg	U	11
Beta-BHC	319-85-7	ug/kg	U	11
Delta-BHC	319-86-8	ug/kg	U	11
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	11
PBB (BP-6)		ug/kg	U	22
Alpha-Chlordane	5103-71-9	ug/kg	U	6.0
Gamma-Chlordane	5103-74-2	ug/kg	U	6.0
2-Chloronaphthalene	91-58-7	ug/kg	U	890
4,4'-DDD	72-54-8	ug/kg	U	22
4,4'-DDE	72-55-9	ug/kg	U	11
2,4'-DDT	789-02-6	ug/kg	U	11
4,4'-DDT	50-29-3	ug/kg	U	11
1,2-Dichlorobenzene	95-50-1	ug/kg	U	220
1,3-Dichlorobenzene	541-73-1	ug/kg	U	220
1,4-Dichlorobenzene	106-46-7	ug/kg	U	440
Diieldrin	60-57-1	ug/kg	U	11
Endosulfan I	1031-07-08	ug/kg	U	11
Endrin	72-20-8	ug/kg	U	11
Heptachlor	76-44-8	ug/kg	U	11
Heptachlor Epoxide	1024-57-3	ug/kg	U	11
Hexabromobenzene	87-82-1	ug/kg	U	11
Hexachlorobenzene	118-74-1	ug/kg	U	11
Hexachlorobutadiene	87-68-3	ug/kg	U	11
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	440
Hexachloroethane	67-72-1	ug/kg	U	11
Methoxychlor	72-43-5	ug/kg	U	110
Mirex	2385-85-5	ug/kg	U	11
Pentachlorobenzene	608-93-5	ug/kg	U	11
Pentachloronitrobenzene	82-68-8	ug/kg	U	11
PCB-1016	12674-11-2	ug/kg	U	110
PCB-1221	11104-28-2	ug/kg	U	110
PCB-1232	11141-16-5	ug/kg	U	110
PCB-1242	53469-21-9	ug/kg	U	110
PCB-1248	12572-29-6	ug/kg	U	110

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48118
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-4 Comp.
ENCOTEC Number: 25500
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11197-69-1	ug/kg	U	220
PCB-1260	11196-82-5	ug/kg	U	220
PCB-1262	37324-23-5	ug/kg	U	220
PCB-1268	11110-14-4	ug/kg	U	220
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	11
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	11
Toxaphene	80001-35-2	ug/kg	U	220
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	11
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	11
1,3,5-Trichlorobenzene	118-70-3	ug/kg	U	11

Analysis is reported on a WET X DRY weight basis.

% Solids 90

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	93	1SCN3S88

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
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ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-5 Comp.
ENCOTEC Number: 22501
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	12
Alpha-BHC	319-84-6	ug/kg	U	12
Beta-BHC	319-85-7	ug/kg	U	12
Delta-BHC	319-86-8	ug/kg	U	12
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	12
PBB (BP-6)		ug/kg	U	24
Alpha-Chlordane	5103-71-9	ug/kg	U	6.0
Gamma-Chlordane	5103-74-2	ug/kg	U	6.0
2-Chloronaphthalene	91-58-7	ug/kg	U	980
4,4'-DDD	72-54-8	ug/kg	U	24
4,4'-DDE	72-55-9	ug/kg	U	120
2,4'-DDT	789-02-6	ug/kg	U	120
4,4'-DDT	50-29-3	ug/kg	U	120
1,2-Dichlorobenzene	95-50-1	ug/kg	U	240
1,3-Dichlorobenzene	541-73-1	ug/kg	U	240
1,4-Dichlorobenzene	106-46-7	ug/kg	U	490
Diieldrin	60-57-1	ug/kg	U	12
Endosulfan I	1031-07-08	ug/kg	U	12
Endrin	72-20-8	ug/kg	U	12
Heptachlor	76-44-8	ug/kg	U	12
Heptachlor Epoxide	1024-57-3	ug/kg	U	12
Hexabromobenzene	87-82-1	ug/kg	U	12
Hexachlorobenzene	118-74-1	ug/kg	U	12
Hexachlorobutadiene	87-68-3	ug/kg	U	12
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	490
Hexachloroethane	67-72-1	ug/kg	U	12
Methoxychlor	72-43-5	ug/kg	U	120
Mirex	2385-85-5	ug/kg	U	12
Pentachlorobenzene	608-93-5	ug/kg	U	12
Pentachloronitrobenzene	82-68-8	ug/kg	U	12
PCB-1016	12674-11-2	ug/kg	U	120
PCB-1221	11104-28-2	ug/kg	U	120
PCB-1232	11141-16-5	ug/kg	U	120
PCB-1242	53469-21-9	ug/kg	U	120
PCB-1248	12572-29-6	ug/kg	U	120

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48118
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ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-5 Comp.
ENCOTEC Number: 22501
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11197-69-1	ug/kg	U	240
PCB-1260	11196-82-5	ug/kg	U	240
PCB-1262	37324-23-5	ug/kg	U	240
PCB-1268	11110-14-4	ug/kg	U	240
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	12
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	12
Toxaphene	80001-35-2	ug/kg	U	240
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	12
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	12
1,3,5-Trichlorobenzene	118-70-3	ug/kg	U	12

Analysis is reported on a WET X DRY weight basis.

% Solids 82

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	121	1SCN3S88

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
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ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-6 Comp.
ENCOTEC Number: 22502
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	11
Alpha-BHC	319-84-6	ug/kg	U	11
Beta-BHC	319-85-7	ug/kg	U	11
Delta-BHC	319-86-8	ug/kg	U	11
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	11
PBB (BP-6)		ug/kg	U	22
Alpha-Chlordane	5103-71-9	ug/kg	U	6.0
Gamma-Chlordane	5103-74-2	ug/kg	U	6.0
2-Chloronaphthalene	91-58-7	ug/kg	U	900
4,4'-DDD	72-54-8	ug/kg	U	22
4,4'-DDE	72-55-9	ug/kg	U	11
2,4'-DDT	789-02-6	ug/kg	U	11
4,4'-DDT	50-29-3	ug/kg	U	11
1,2-Dichlorobenzene	95-50-1	ug/kg	U	220
1,3-Dichlorobenzene	541-73-1	ug/kg	U	220
1,4-Dichlorobenzene	106-46-7	ug/kg	U	450
Dieldrin	60-57-1	ug/kg	U	11
Endosulfan I	1031-07-08	ug/kg	U	11
Endrin	72-20-8	ug/kg	U	11
Heptachlor	76-44-8	ug/kg	U	11
Heptachlor Epoxide	1024-57-3	ug/kg	U	11
Hexabromobenzene	87-82-1	ug/kg	U	11
Hexachlorobenzene	118-74-1	ug/kg	U	11
Hexachlorobutadiene	87-68-3	ug/kg	U	11
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	450
Hexachloroethane	67-72-1	ug/kg	U	11
Methoxychlor	72-43-5	ug/kg	U	110
Mirex	2385-85-5	ug/kg	U	11
Pentachlorobenzene	608-93-5	ug/kg	U	11
Pentachloronitrobenzene	82-68-8	ug/kg	U	11
PCB-1016	12674-11-2	ug/kg	U	110
PCB-1221	11104-28-2	ug/kg	U	110
PCB-1232	11141-16-5	ug/kg	U	110
PCB-1242	53469-21-9	ug/kg	U	110
PCB-1248	12572-29-6	ug/kg	U	110

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48118
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-6 Comp.
ENCOTEC Number: 22502
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11197-69-1	ug/kg	U	220
PCB-1260	11196-82-5	ug/kg	U	220
PCB-1262	37324-23-5	ug/kg	U	220
PCB-1268	11110-14-4	ug/kg	U	220
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	11
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	11
Toxaphene	80001-35-2	ug/kg	U	220
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	11
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	11
1,3,5-Trichlorobenzene	118-70-3	ug/kg	U	11

Analysis is reported on a WET X DRY weight basis.

% Solids 89

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	121	1SCN3S88

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-7 Comp.
ENCOTEC Number: 22503
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	11
Alpha-BHC	319-84-6	ug/kg	U	11
Beta-BHC	319-85-7	ug/kg	U	11
Delta-BHC	319-86-8	ug/kg	U	11
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	11
PBB (BP-6)		ug/kg	U	23
Alpha-Chlordane	5103-71-9	ug/kg	U	6.0
Gamma-Chlordane	5103-74-2	ug/kg	U	6.0
2-Chloronaphthalene	91-58-7	ug/kg	U	920
4,4'-DDD	72-54-8	ug/kg	U	23
4,4'-DDE	72-55-9	ug/kg	U	11
2,4'-DDT	789-02-6	ug/kg	U	11
4,4'-DDT	50-29-3	ug/kg	U	11
1,2-Dichlorobenzene	95-50-1	ug/kg	U	230
1,3-Dichlorobenzene	541-73-1	ug/kg	U	230
1,4-Dichlorobenzene	106-46-7	ug/kg	U	460
Dieldrin	60-57-1	ug/kg	U	11
Endosulfan I	1031-07-08	ug/kg	U	11
Endrin	72-20-8	ug/kg	U	11
Heptachlor	76-44-8	ug/kg	U	11
Heptachlor Epoxide	1024-57-3	ug/kg	U	11
Hexabromobenzene	87-82-1	ug/kg	U	11
Hexachlorobenzene	118-74-1	ug/kg	U	11
Hexachlorobutadiene	87-68-3	ug/kg	U	11
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	460
Hexachloroethane	67-72-1	ug/kg	U	11
Methoxychlor	72-43-5	ug/kg	U	110
Mirex	2385-85-5	ug/kg	U	11
Pentachlorobenzene	608-93-5	ug/kg	U	11
Pentachloronitrobenzene	82-68-8	ug/kg	U	11
PCB-1016	12674-11-2	ug/kg	U	110
PCB-1221	11104-28-2	ug/kg	U	110
PCB-1232	11141-16-5	ug/kg	U	110
PCB-1242	53469-21-9	ug/kg	U	110
PCB-1248	12572-29-6	ug/kg	U	110

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48118
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ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-7 Comp.
ENCOTEC Number: 22503
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11197-69-1	ug/kg	U	230
PCB-1260	11196-82-5	ug/kg	U	230
PCB-1262	37324-23-5	ug/kg	U	230
PCB-1268	11110-14-4	ug/kg	U	230
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	11
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	11
Toxaphene	80001-35-2	ug/kg	U	230
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	11
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	11
1,3,5-Trichlorobenzene	118-70-3	ug/kg	U	11

Analysis is reported on a WET X DRY weight basis.

% Solids 87

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	130	1SCN3S88

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
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ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-6, S-6
ENCOTEC Number: 22504
Sample Date: 11/8/88
Date Received: 11/4/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	13
Alpha-BHC	319-84-6	ug/kg	U	13
Beta-BHC	319-85-7	ug/kg	U	13
Delta-BHC	319-86-8	ug/kg	U	13
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	13
PBB (BP-6)		ug/kg	U	25
Alpha-Chlordane	5103-71-9	ug/kg	U	6.0
Gamma-Chlordane	5103-74-2	ug/kg	U	6.0
2-Chloronaphthalene	91-58-7	ug/kg	U	1000
4,4'-DDD	72-54-8	ug/kg	U	25
4,4'-DDE	72-55-9	ug/kg	U	13
2,4'-DDT	789-02-6	ug/kg	U	13
4,4'-DDT	50-29-3	ug/kg	U	13
1,2-Dichlorobenzene	95-50-1	ug/kg	U	250
1,3-Dichlorobenzene	541-73-1	ug/kg	U	250
1,4-Dichlorobenzene	106-46-7	ug/kg	U	500
Diieldrin	60-57-1	ug/kg	U	13
Endosulfan I	1031-07-08	ug/kg	U	13
Endrin	72-20-8	ug/kg	U	13
Heptachlor	76-44-8	ug/kg	U	13
Heptachlor Epoxide	1024-57-3	ug/kg	U	13
Hexabromobenzene	87-82-1	ug/kg	U	13
Hexachlorobenzene	118-74-1	ug/kg	U	13
Hexachlorobutadiene	87-68-3	ug/kg	U	13
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	500
Hexachloroethane	67-72-1	ug/kg	U	13
Methoxychlor	72-43-5	ug/kg	U	130
Mirex	2385-85-5	ug/kg	U	13
Pentachlorobenzene	608-93-5	ug/kg	U	13
Pentachloronitrobenzene	82-68-8	ug/kg	U	13
PCB-1016	12674-11-2	ug/kg	U	130
PCB-1221	11104-28-2	ug/kg	U	130
PCB-1232	11141-16-5	ug/kg	U	130
PCB-1242	53469-21-9	ug/kg	U	130
PCB-1248	12572-29-6	ug/kg	U	130

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
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313 / 761-1389

ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-6, S-6
ENCOTEC Number: 22504
Sample Date: 11/8/88
Date Received: 11/4/88
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11097-69-1	ug/kg	U	250
PCB-1260	11096-82-5	ug/kg	U	250
PCB-1262	37324-23-5	ug/kg	U	250
PCB-1268	11100-14-4	ug/kg	U	250
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	13
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	13
Toxaphene	80001-35-2	ug/kg	U	250
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	13
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	13
1,3,5-Trichlorobenzene	108-70-3	ug/kg	U	13

Analysis is reported on a WET X DRY weight basis.

% Solids 80

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	119	1SCN3S88

Scan 3 (soil)

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ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: Method Blank 11/18/88
ENCOTEC Number: NA
Sample Date: NA
Date Received: NA
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/kg	U	10
Alpha-BHC	319-84-6	ug/kg	U	10
Beta-BHC	319-85-7	ug/kg	U	10
Delta-BHC	319-86-8	ug/kg	U	10
Gamma-BHC (Lindane)	58-89-9	ug/kg	U	10
PBB (BP-6)		ug/kg	U	20
Alpha-Chlordane	5103-71-9	ug/kg	U	5.0
Gamma-Chlordane	5103-74-2	ug/kg	U	5.0
2-Chloronaphthalene	91-58-7	ug/kg	U	800
4,4'-DDD	72-54-8	ug/kg	U	20
4,4'-DDE	72-55-9	ug/kg	U	10
2,4'-DDT	789-02-6	ug/kg	U	10
4,4'-DDT	50-29-3	ug/kg	U	10
1,2-Dichlorobenzene	95-50-1	ug/kg	U	200
1,3-Dichlorobenzene	541-73-1	ug/kg	U	200
1,4-Dichlorobenzene	106-46-7	ug/kg	U	400
Diieldrin	60-57-1	ug/kg	U	10
Endosulfan I	1031-07-08	ug/kg	U	10
Endrin	72-20-8	ug/kg	U	10
Heptachlor	76-44-8	ug/kg	U	10
Heptachlor Epoxide	1024-57-3	ug/kg	U	10
Hexabromobenzene	87-82-1	ug/kg	U	10
Hexachlorobenzene	118-74-1	ug/kg	U	10
Hexachlorobutadiene	87-68-3	ug/kg	U	10
Hexachlorocyclopentadiene	77-47-2	ug/kg	U	400
Hexachloroethane	67-72-1	ug/kg	U	10
Methoxychlor	72-43-5	ug/kg	U	100
Mirex	2385-85-5	ug/kg	U	10
Pentachlorobenzene	608-93-5	ug/kg	U	10
Pentachloronitrobenzene	82-68-8	ug/kg	U	10
PCB-1016	12674-11-2	ug/kg	U	100
PCB-1221	11104-28-2	ug/kg	U	100
PCB-1232	11141-16-5	ug/kg	U	100
PCB-1242	53469-21-9	ug/kg	U	100
PCB-1248	12572-29-6	ug/kg	U	100

Scan 3 (soil)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 Research Park Drive * Ann Arbor, MI 48108
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ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: Method Blank 11/18/88
ENCOTEC Number: NA
Sample Date: NA
Date Received: NA
Date Extracted: 11/18/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11097-69-1	ug/kg	U	200
PCB-1260	11096-82-5	ug/kg	U	200
PCB-1262	37324-23-5	ug/kg	U	200
PCB-1268	11100-14-4	ug/kg	U	200
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/kg	U	10
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/kg	U	10
Toxaphene	80001-35-2	ug/kg	U	200
1,2,3-Trichlorobenzene	87-61-6	ug/kg	U	10
1,2,4-Trichlorobenzene	120-82-1	ug/kg	U	10
1,3,5-Trichlorobenzene	108-70-3	ug/kg	U	10

Analysis is reported on a WET X DRY weight basis.

% Solids NA

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	95	1SCN3S88

Scan 3 (water)

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
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ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-5
ENCOTEC Number: 22505
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/23/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/L	U	0.10
Alpha-BHC	319-84-6	ug/L	U	0.10
Beta-BHC	319-85-7	ug/L	U	0.10
Delta-BHC	319-86-8	ug/L	U	0.10
Gamma-BHC (Lindane)	58-89-9	ug/L	U	0.10
PBB (BP-6)		ug/L	U	0.20
Alpha-Chlordane	5103-71-9	ug/L	U	0.04
Gamma-Chlordane	5103-74-2	ug/L	U	0.04
2-Chloronaphthalene	91-58-7	ug/L	U	8.0
4,4'-DDD	72-54-8	ug/L	U	0.20
4,4'-DDE	72-55-9	ug/L	U	0.10
2,4'-DDT	789-02-6	ug/L	U	0.10
4,4'-DDT	50-29-3	ug/L	U	0.10
1,2-Dichlorobenzene	95-50-1	ug/L	U	2.0
1,3-Dichlorobenzene	541-73-1	ug/L	U	2.0
1,4-Dichlorobenzene	106-46-7	ug/L	U	4.0
Dieldrin	60-57-1	ug/L	U	0.10
Endosulfan I	1031-07-08	ug/L	U	0.10
Endrin	72-20-8	ug/L	U	0.10
Heptachlor	76-44-8	ug/L	U	0.10
Heptachlor Epoxide	1024-57-3	ug/L	U	0.10
Hexabromobenzene	87-82-1	ug/L	U	0.10
Hexachlorobenzene	118-74-1	ug/L	U	0.10
Hexachlorobutadiene	87-68-3	ug/L	U	0.10
Hexachlorocyclopentadiene	77-47-2	ug/L	U	4.0
Hexachloroethane	67-72-1	ug/L	U	0.10
Methoxychlor	72-43-5	ug/L	U	1.0
Mirex	2385-85-5	ug/L	U	0.10
Pentachlorobenzene	608-93-5	ug/L	U	0.10
Pentachloronitrobenzene	82-68-8	ug/L	U	0.10
PCB-1016	12674-11-2	ug/L	U	1.0
PCB-1221	11104-28-2	ug/L	U	1.0
PCB-1232	11141-16-5	ug/L	U	1.0
PCB-1242	53469-21-9	ug/L	U	1.0
PCB-1248	12572-29-6	ug/L	U	1.0

Scan 3 (water)
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ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: B-5
ENCOTEC Number: 22505
Sample Date: 11/8/88
Date Received: 11/14/88
Date Extracted: 11/23/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11097-69-1	ug/L	U	2.0
PCB-1260	11096-82-5	ug/L	U	2.0
PCB-1262	37324-23-5	ug/L	U	2.0
PCB-1268	11100-14-4	ug/L	U	2.0
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/L	U	0.10
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/L	U	0.10
Toxaphene	80001-35-2	ug/L	U	2.0
1,2,3-Trichlorobenzene	87-61-6	ug/L	U	0.10
1,2,4-Trichlorobenzene	120-82-1	ug/L	U	0.10
1,3,5-Trichlorobenzene	108-70-3	ug/L	U	0.10

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	75	1SCN3W88

Scan 3 (water)

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ORGANIC ANALYSIS DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: Method Blank 11/23/88
ENCOTEC Number: NA
Sample Date: NA
Date Received: NA
Date Extracted: 11/23/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST	CAS #	Units	Conc.	Detection Limit
Aldrin	309-00-2	ug/L	U	0.05
Alpha-BHC	319-84-6	ug/L	U	0.05
Beta-BHC	319-85-7	ug/L	U	0.05
Delta-BHC	319-86-8	ug/L	U	0.05
Gamma-BHC (Lindane)	58-89-9	ug/L	U	0.05
PBB (BP-6)		ug/L	U	0.10
Alpha-Chlordane	5103-71-9	ug/L	U	0.02
Gamma-Chlordane	5103-74-2	ug/L	U	0.02
2-Chloronaphthalene	91-58-7	ug/L	U	4.0
4,4'-DDD	72-54-8	ug/L	U	0.10
4,4'-DDE	72-55-9	ug/L	U	0.05
2,4'-DDT	789-02-6	ug/L	U	0.05
4,4'-DDT	50-29-3	ug/L	U	0.05
1,2-Dichlorobenzene	95-50-1	ug/L	U	1.0
1,3-Dichlorobenzene	541-73-1	ug/L	U	1.0
1,4-Dichlorobenzene	106-46-7	ug/L	U	2.0
Dieldrin	60-57-1	ug/L	U	0.05
Endosulfan I	1031-07-08	ug/L	U	0.05
Endrin	72-20-8	ug/L	U	0.05
Heptachlor	76-44-8	ug/L	U	0.05
Heptachlor Epoxide	1024-57-3	ug/L	U	0.05
Hexabromobenzene	87-82-1	ug/L	U	0.05
Hexachlorobenzene	118-74-1	ug/L	U	0.05
Hexachlorobutadiene	87-68-3	ug/L	U	0.05
Hexachlorocyclopentadiene	77-47-2	ug/L	U	2.0
Hexachloroethane	67-72-1	ug/L	U	0.05
Methoxychlor	72-43-5	ug/L	U	0.50
Mirex	2385-85-5	ug/L	U	0.05
Pentachlorobenzene	608-93-5	ug/L	U	0.05
Pentachloronitrobenzene	82-68-8	ug/L	U	0.05
PCB-1016	12674-11-2	ug/L	U	0.50
PCB-1221	11104-28-2	ug/L	U	0.50
PCB-1232	11141-16-5	ug/L	U	0.50
PCB-1242	53469-21-9	ug/L	U	0.50
PCB-1248	12572-29-6	ug/L	U	0.50

Scan 3 (water)
ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
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ORGANIC ANALYSIS DATA SUMMARY SHEET
(continued)

Project Name: SME
Project Number: 25801
Method: GC/ECD
Report Date: December 16, 1988

Sample: Method Blank 11/23/88
ENCOTEC Number: NA
Sample Date: NA
Date Received: NA
Date Extracted: 11/23/88
Analysis Date: 12/2/88

U = Analyte not detected
B = Analyte present in
method blank

MICHIGAN DNR SCAN 3 LIST (continued)	CAS #	Units	Conc.	Detection Limit
PCB-1254	11097-69-1	ug/L	U	1.0
PCB-1260	11096-82-5	ug/L	U	1.0
PCB-1262	37324-23-5	ug/L	U	1.0
PCB-1268	11100-14-4	ug/L	U	1.0
1,2,3,4-Tetrachlorobenzene	634-66-2	ug/L	U	0.05
1,2,3,5-Tetrachlorobenzene	634-90-2	ug/L	U	0.05
Toxaphene	80001-35-2	ug/L	U	1.0
1,2,3-Trichlorobenzene	87-61-6	ug/L	U	0.05
1,2,4-Trichlorobenzene	120-82-1	ug/L	U	0.05
1,3,5-Trichlorobenzene	108-70-3	ug/L	U	0.05

Quality Assurance Data

Surrogate Spike	Percent Recovery	QC Set
Dibutylchloroendate	103	1SCN3W88

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
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PRIORITY POLLUTANT DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: Scan 2 (Michigan DNR list)
Report Date: December 16, 1988

Client Sample I.D.: B-1 Comp.
ENCOTEC Sample Number: 22497
Date Sampled: 11/8/88
Date Received: 11/14/88
Analysis Date: 12/13/88

U = Analyzed, Not Detected
J = Present at Level Less
Than Detection Limit
B = Present in Method Blank

VOLATILE ORGANICS	CAS #	Units	Conc.	Detection Limit
Benzene	71-43-2	mg/kg	U	0.4
Ethylbenzene	100-41-4	mg/kg	U	0.4
Toluene	108-88-3	mg/kg	U	0.4
1,2-Xylene	95-47-6	mg/kg	U	0.4
1,3-Xylene (108-38-3) + 1,4-Xylene (106-42-3)		mg/kg	U	0.8

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PRIORITY POLLUTANT DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: Scan 2 (Michigan DNR list)
Report Date: December 16, 1988

Client Sample I.D.: B-2 Comp.
ENCOTEC Sample Number: 22498
Date Sampled: 11/8/88
Date Received: 11/14/88
Analysis Date: 12/13/88

U = Analyzed, Not Detected
J = Present at Level Less
Than Detection Limit
B = Present in Method Blank

VOLATILE ORGANICS	CAS #	Units	Conc.	Detection Limit
Benzene	71-43-2	mg/kg	U	0.4
Ethylbenzene	100-41-4	mg/kg	U	0.4
Toluene	108-88-3	mg/kg	U	0.4
1,2-Xylene	95-47-6	mg/kg	U	0.4
1,3-Xylene (108-38-3) + 1,4-Xylene (106-42-3)		mg/kg	U	0.8

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PRIORITY POLLUTANT DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: Scan 2 (Michigan DNR list)
Report Date: December 16, 1988

Client Sample I.D.: B-3 Comp.
ENCOTEC Sample Number: 22499
Date Sampled: 11/8/88
Date Received: 11/14/88
Analysis Date: 12/13/88

U = Analyzed, Not Detected
J = Present at Level Less
Than Detection Limit
B = Present in Method Blank

VOLATILE ORGANICS	CAS #	Units	Conc.	Detection Limit
Benzene	71-43-2	mg/kg	U	0.4
Ethylbenzene	100-41-4	mg/kg	U	0.4
Toluene	108-88-3	mg/kg	U	0.4
1,2-Xylene	95-47-6	mg/kg	U	0.4
1,3-Xylene (108-38-3) + 1,4-Xylene (106-42-3)		mg/kg	U	0.8

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PRIORITY POLLUTANT DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: Scan 2 (Michigan DNR list)
Report Date: December 16, 1988

Client Sample I.D.: B-4 Comp.
ENCOTEC Sample Number: 22500
Date Sampled: 11/8/88
Date Received: 11/14/88
Analysis Date: 12/13/88

U = Analyzed, Not Detected
J = Present at Level Less
Than Detection Limit
B = Present in Method Blank

VOLATILE ORGANICS	CAS #	Units	Conc.	Detection Limit
Benzene	71-43-2	mg/kg	U	0.4
Ethylbenzene	100-41-4	mg/kg	U	0.4
Toluene	108-88-3	mg/kg	U	0.4
1,2-Xylene	95-47-6	mg/kg	0.5	0.4
1,3-Xylene (108-38-3) + 1,4-Xylene (106-42-3)		mg/kg	J	0.8

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PRIORITY POLLUTANT DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: Scan 2 (Michigan DNR list)
Report Date: December 16, 1988

Client Sample I.D.: B-5 Comp.
ENCOTEC Sample Number: 22501
Date Sampled: 11/8/88
Date Received: 11/14/88
Analysis Date: 12/13/88

U = Analyzed, Not Detected
J = Present at Level Less
Than Detection Limit
B = Present in Method Blank

VOLATILE ORGANICS	CAS #	Units	Conc.	Detection Limit
Benzene	71-43-2	mg/kg	U	0.4
Ethylbenzene	100-41-4	mg/kg	U	3.0
Toluene	108-88-3	mg/kg	U	0.4
1,2-Xylene	95-47-6	mg/kg	U	0.6
1,3-Xylene (108-38-3) + 1,4-Xylene (106-42-3)		mg/kg	U	0.8

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PRIORITY POLLUTANT DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: Scan 2 (Michigan DNR list)
Report Date: December 16, 1988

Client Sample I.D.: B-6 Comp.
ENCOTEC Sample Number: 22502
Date Sampled: 11/8/88
Date Received: 11/14/88
Analysis Date: 12/13/88

U = Analyzed, Not Detected
J = Present at Level Less
Than Detection Limit
B = Present in Method Blank

VOLATILE ORGANICS	CAS #	Units	Conc.	Detection Limit
Benzene	71-43-2	mg/kg	U	0.4
Ethylbenzene	100-41-4	mg/kg	U	2.0
Toluene	108-88-3	mg/kg	U	1.0
1,2-Xylene	95-47-6	mg/kg	U	0.5
1,3-Xylene (108-38-3) + 1,4-Xylene (106-42-3)		mg/kg	U	5.0

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PRIORITY POLLUTANT DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: Scan 2 (Michigan DNR list)
Report Date: December 16, 1988

Client Sample I.D.: B-7 Comp.
ENCOTEC Sample Number: 22503
Date Sampled: 11/8/88
Date Received: 11/14/88
Analysis Date: 12/13/88

U = Analyzed, Not Detected
J = Present at Level Less
Than Detection Limit
B = Present in Method Blank

VOLATILE ORGANICS	CAS #	Units	Conc.	Detection Limit
Benzene	71-43-2	mg/kg	U	0.4
Ethylbenzene	100-41-4	mg/kg	U	0.4
Toluene	108-88-3	mg/kg	U	0.4
1,2-Xylene	95-47-6	mg/kg	U	0.4
1,3-Xylene (108-38-3) + 1,4-Xylene (106-42-3)		mg/kg	U	0.8

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PRIORITY POLLUTANT DATA SUMMARY SHEET

Project Name: SME
Project Number: 25801
Method: Scan 2 (Michigan DNR list)
Report Date: December 16, 1988

Client Sample I.D.: B-6, S-6
ENCOTEC Sample Number: 22504
Date Sampled: 11/8/88
Date Received: 11/14/88
Analysis Date: 12/13/88

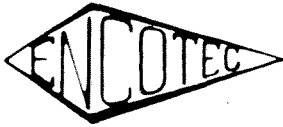
U = Analyzed, Not Detected
J = Present at Level Less
Than Detection Limit
B = Present in Method Blank

VOLATILE ORGANICS	CAS #	Units	Conc.	Detection Limit
Benzene	71-43-2	mg/kg	U	0.4
Ethylbenzene	100-41-4	mg/kg	U	0.4
Toluene	108-88-3	mg/kg	U	0.4
1,2-Xylene	95-47-6	mg/kg	U	0.4
1,3-Xylene (108-38-3) + 1,4-Xylene (106-42-3)		mg/kg	U	0.8

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PROJECT Soil & Material Engineers
#25801

Soils



DATA SUMMARY SHEET

DATE December, 1988

[illegible]



DATE December, 1988

Sample/Date

[illegible]



DATA SUMMARY SHEET

DATE December, 1988

Sample/Date

Parameter	Units	B-5 11/18/88							
ENCOTEC ID	#	22505							
Total Hydrocarbon	mg/l	1- 10							

ENVIRONMENTAL CONTROL TECHNOLOGY CORPORATION
3985 RESEARCH PARK DR. • ANN ARBOR, MI 48108 • 313/761-1389

PROJECT Soil & Material Engineers
#25801



DATA SUMMARY SHEET

DATE December, 1988

Sample/Date

[illegible]

PHASE II SUBSURFACE INVESTIGATION
GENERAL MOTORS CORPORATION
SAGINAW FOUNDRY
SAGINAW, MICHIGAN

FOR

GENERAL MOTORS CORPORATION
SAGINAW, MICHIGAN

PREPARED BY: SOIL AND MATERIALS ENGINEERS, INC.

SME PROJECT NO. B-12625

NOVEMBER 29, 1989



HNU READINGS

TABLE 1
HNU SCREENING RESULTS
GENERAL MOTORS TANK FARM
SAGINAW, MICHIGAN
SME PROJECT NO. 12625

BORING NUMBER	DEPTH (FEET)	HNU READING (PPM)
B-1A	0-2	10
	2-4	16
	4-6	28
	6-8	45
	8-10	50
	14-16	6
B-1B	0-2	1.2
	2-4	0.8
	4-6	28
	6-8	82
	8-10	50
	14-16	0.8
B-1C	1-2.5	3.2
	3.5-5	6.6
	6-7.5	25
	8.5-10	11
	14-16	0.4
B-1D	1-2.5	1.4
	3.5-5	2.0
	6-7.5	6.0
	8.5-10	10.2
	14-16	NC
	17-19	1.7
B-1E	1-2.5	48
	3.5-5	25
	6-7.5	7.5
	8.5-10	7.2
	14-16	5.8



HNU SCREENING RESULTS
GENERAL MOTORS TANK FARM

BORING	DEPTH	READING
B-2A	1-2.5	18
	3.5-5	19
	6-7.5	20
	8.5-10	34
	14-16	10
	18-20	1.2
B-2B	1.2-5	3.5
	3.5-5	7.2
	6-7.5	2.5
	8.5-10	3.2
	14-16	2.8
	18.5-20	1.8
B-2C	1-2.5	13
	3.5-5	9.6
	6-7.5	9.2
	8.5-10	4.2
	13.5-15	NC
	15-16.5	2.4
B-2D	1-2.5	5.2
	3.5-5	62
	6-7.5	13.2
	8.5-10	11.4
	13.5-15	7.8
TW-1	1-2.5	3.2
	3.5-5	10.2
	6-7.5	4.2
	8.5-10	2.6
	11-12.5	2.8
	13.5-15	1.6



HNU SCREENING RESULTS
GENERAL MOTORS TANK FARM

BORING	DEPTH	READING
TW-2	1-2.5	2.2
	3.5-5	11.0
	6-7.5	16.8
	8.5-10	30
	11-12.5	13.8
	13.5-15	1.5
TW-3	1-2.5	40
	3.5-5	24
	6-7.5	110
	8.5-10	8.0
	11-12.5	2.4
	13.5-15	1.2
TW-4	1-2.5	116
	3.5-5	22
	6-7.5	8.2
	8.5-10	6.4
	11-12.5	0.8
	13.5-15	0.6

NC = No Recovery



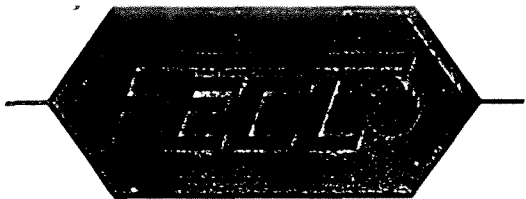
LABORATORY ANALYTICAL RESULTS



TABLE 2
TOTAL OIL & GREASE/PETROLEUM OIL & GREASE
GENERAL MOTORS TANK FARM
SAGINAW, MICHIGAN
SME PROJECT NO. 12625

BORING NUMBER	SAMPLE NUMBER	DEPTH (FEET)	TOG (PPM)	POG (PPM)
TW-1	S-1	1-2.5	183	140
	S-1	3.5-5	38	23
	S-3	6-7.5	99	72
	S-5	11-12.5	25	12
	S-6	13.5-15	375	280
	WATER	11-14	6	3
TW-2	S-2	3.5-5	150	100
	S-3	6-7.5	70	44
	S-4	8.5-10	179	117
	S-5	11-12.5	170	45
	S-6	13.5-15	121	37
	WATER	11-14	12	10
TW-3	S-1	1-2.5	56	32
	S-3	6-7.5	121	31
	S-4	8.5-10	27	19
	S-5	11-12.5	11	7
	S-6	13-15.5	241	193
	WATER	11-14	9	6
TW-4	S-1	1-2.5	108	64
	S-2	3.5-5	194	58
	S-3	6-7.5	95	28
	S-5	11-12.5	22	11
	S-6	13.5-15	290	241
	WATER	11-14	9	7





Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr., Suite 222 East Lansing, MI 48823 (517) 332-0167

September 25, 1989

SME
34400 Glendale
Livonia, MI 48150

Attention: Ms. Cheryl Kehres-Dietrich

Analytical Laboratory Report

FECL #: 3045-89-E1-24

Samples Collected by:
Jeffrey King

Samples Analyzed by: M. Murshak, J. Elaszcozyk Date/Time Samples Submitted:
Analyses Requested by: Cheryl Kehres-Dietrich 09-11-89 5:20 p.m.
P.O. #: Verbal

Submitting Company: SME
34400 Glendale
Livonia, MI 48150

Project Description: B12625 GM Saginaw Central Foundry

FECL #: 3045-89-E1

Tag: TW4 S-1
Container: Glass jar/vials
Sample Type: Soil
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E4

Tag: TW4 S-5
Container: Glass jar/vials
Sample Type: Soil
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E2

Tag: TW4 S-2
Container: Glass jar/vials
Sample Type: Soil
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E5

Tag: TW4 S-6
Container: Glass jar/vials
Sample Type: Soil
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E3

Tag: TW4 S-3
Container: Glass jar/vials
Sample Type: Soil
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E6

Tag: TW1 S-1
Container: Glass jar/vials
Sample Type: Soil
Preservation: None
Sampling date/time: 09-07-89



Analytical Laboratory Report
SME

FECL #: 3045-89-E1-E4

September 25, 1989

Page Two

FECL #: 3045-89-E7

Tag: TW1 S-2

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E8

Tag: TW1 S-3

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E9

Tag: TW1 S-5

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E10

Tag: TW1 S-6

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E11

Tag: TW2 S-2

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E12

Tag: TW2 S-3

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E13

Tag: TW2 S-4

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E14

Tag: TW2 S-5

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E15

Tag: TW2 S-6

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E16

Tag: TW3 S-1

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E17

Tag: TW3 S-2

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89

FECL #: 3045-89-E18

Tag: TW3 S-4

Container: Glass jar/vials

Sample Type: Soil

Preservation: None

Sampling date/time: 09-07-89



Analytical Laboratory Report
SME
FECL #: 3045-89-E1-24
September 25, 1989
Page Three

FECL #: 3045-89-E19
Tag: TW3 S-5
Container: Glass jar/vials
Sample Type: Soil
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E20
Tag: TW3 S-6
Container: Glass jar/vials
Sample Type: Soil
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E21
Tag: TW1 Water
Container: Glass jar/vials
Sample Type: Liquid
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E22
Tag: TW2 Water
Container: Glass jar/vials
Sample Type: Liquid
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E23
Tag: TW3 Water
Container: Glass jar/vials
Sample Type: Liquid
Preservation: None
Sampling date/time: 09-07-89

FECL #: 3045-89-E24
Tag: TW4 Water
Container: Glass jar/vials
Sample Type: Liquid
Preservation: None
Sampling date/time: 09-07-89



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September 14, 1989
Page Four

FECL #:	3045-89-E1	3045-89-E2	3045-89-E3
Tag:	TW4 S-1	TW4 S-2	TW4 S-3

Purgeable Aromatics

Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Toluene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Ethyl Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
p,m-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
o-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg

Organics

Total Petroleum Hydrocarbons	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
------------------------------	-------------	-------------	-------------

Conventional

Total Oil & Grease	108 mg/kg*	194 mg/kg*	95 mg/kg*
Petroleum Oil & Grease	64 mg/kg*	58 mg/kg*	28 mg/kg*

FECL #:	3045-89-E4	3045-89-E5	3045-89-E6
Tag:	TW4 S-5	TW4 S-6	TW1 S-1

Purgeable Aromatics

Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Toluene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Ethyl Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
p,m-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
o-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg

Organics

Total Petroleum Hydrocarbons	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
------------------------------	-------------	-------------	-------------

Conventional

Total Oil & Grease	22 mg/kg*	290 mg/kg*	183 mg/kg*
Petroleum Oil & Grease	11 mg/kg*	241 mg/kg*	140 mg/kg*

*Analyzed on a wet basis.



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FECL #:	3045-89-E7	3045-89-E8	3045-89-E9
Tag:	TW1 S-2	TW1 S-3	TW1 S-5

Purgeable Aromatics

Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Toluene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Ethyl Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
p,m-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
o-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg

Organics

Total Petroleum Hydrocarbons	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
------------------------------	-------------	-------------	-------------

Conventional

Total Oil & Grease	38 mg/kg*	99 mg/kg*	25 mg/kg*
Petroleum Oil & Grease	23 mg/kg*	72 mg/kg*	12 mg/kg*

FECL #:	3045-89-E10	3045-89-E11	3045-89-E12
Tag:	TW1 S-6	TW2 S-2	TW2 S-3

Purgeable Aromatics

Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Toluene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Ethyl Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
p,m-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
o-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg

Organics

Total Petroleum Hydrocarbons	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
------------------------------	-------------	-------------	-------------

Conventional

Total Oil & Grease	375 mg/kg*	150 mg/kg*	70 mg/kg*
Petroleum Oil & Grease	280 mg/kg*	100 mg/kg*	44 mg/kg*

*Analyzed on a wet basis.



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FECL #:	3045-89-E13	3045-89-E14	3045-89-E15
Tag:	TW2 S-4	TW2 S-5	TW2 S-6

Purgeable Aromatics

Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Toluene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Ethyl Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
p,m-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
o-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg

Organics

Total Petroleum Hydrocarbons	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
------------------------------	-------------	-------------	-------------

Conventional

Total Oil & Grease	179 mg/kg*	170 mg/kg*	121 mg/kg*
Petroleum Oil & Grease	117 mg/kg*	45 mg/kg*	37 mg/kg*

FECL #:	3045-89-E16	3045-89-E17	3045-89-E18
Tag:	TW3 S-1	TW3 S-3	TW3 S-4

Purgeable Aromatics

Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Toluene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Ethyl Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
p,m-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
o-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg

Organics

Total Petroleum Hydrocarbons	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
------------------------------	-------------	-------------	-------------

Conventional

Total Oil & Grease	56 mg/kg*	121 mg/kg*	27 mg/kg*
Petroleum Oil & Grease	32 mg/kg*	31 mg/kg*	19 mg/kg*

*Analyzed on a wet basis.



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FECL #:	3045-89-E19	3045-89-E20	3045-89-E21
Tag:	TW3 S-5	TW3 S-6	TW1 Water

Purgeable Aromatics

Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Toluene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Ethyl Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
p,m-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
o-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg

Organics

Total Petroleum Hydrocarbons	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
------------------------------	-------------	-------------	-------------

Conventional

Total Oil & Grease	11 mg/kg*	241 mg/kg*	6 mg/kg*
Petroleum Oil & Grease	7 mg/kg*	193 mg/kg*	3 mg/kg*

FECL #:	3045-89-E22	3045-89-E23	3045-89-E24
Tag:	TW2 Water	TW3 Water	TW4 Water

Purgeable Aromatics

Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Toluene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
Ethyl Benzene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
p,m-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
o-Xylene	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg

Organics

Total Petroleum Hydrocarbons	<0.01 mg/kg	<0.01 mg/kg	<0.01 mg/kg
------------------------------	-------------	-------------	-------------

Conventional

Total Oil & Grease	12 mg/kg*	9 mg/kg*	9 mg/kg*
Petroleum Oil & Grease	10 mg/kg*	6 mg/kg*	7 mg/kg*

*Analyzed on a wet basis.



Analytical Laboratory Report
SME
FEOL #: 3045-89-E1-24
September 25, 1989
Page Eight

V. F. Marshak

Violetta F. Marshak
Laboratory Manager

VFM/ab

Attachment III-I27.7 and Melting Area Investigation Soil Sampling Data Tables and Location Figures

BLASLAND, BOUCK & LEE, INC.
e n g i n e e r s & s c i e n t i s t s

TABLE III-1

TCL PCB ANALYTICAL RESULTS FOR SOIL
AT I27.7 INVESTIGATION SAMPLING LOCATIONS

SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION

Constituents (ug/kg)	MDEQ Generic IDC Value	BH01-98 (1 - 3')	BH01-98 (5 - 7')	BH01-98 (9 - 11')	BH02-98 (1 - 3')	BH02-98 (5 - 7')	BH02-98 (9 - 11')	BH03-98 (1 - 3')	BH03-98 (3 - 5')	BH03-98 (5 - 6.5')	BH04-98 (1 - 3')	BH04-98 (5 - 7')	BH04-98 (7 - 7.25')
		FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
Aroclor-1016	20,000 {J,T}	24,000 U	2,300 U	330 U	330 U	330 U	330 U	330 U	330 U	2,200 U	2,300 U	330 U	2,400 U
Aroclor-1221	20,000 {J,T}	24,000 U	2,300 U	330 U	330 U	330 U	330 U	330 U	330 U	2,200 U	2,300 U	330 U	2,400 U
Aroclor-1232	20,000 {J,T}	24,000 U	2,300 U	330 U	330 U	330 U	330 U	330 U	330 U	2,200 U	2,300 U	330 U	2,400 U
Aroclor-1242	20,000 {J,T}	24,000 U	2,300 U	330 U	330 U	330 U	330 U	330 U	330 U	2,200 U	2,300 U	330 U	2,400 U
Aroclor-1248	20,000 {J,T}	24,000 U	2,300 U	330 U	330 U	330 U	330 U	330 U	330 U	2,200 U	2,300 U	380	11,000
Aroclor-1254	20,000 {J,T}	100,000	35,000	400	2,000	1,500	330 U	440	370	29,000	42,000	330	8,800
Aroclor-1260	20,000 {J,T}	24,000 U	2,300 U	330 U	330 U	330 U	330 U	330 U	330 U	2,200 U	2,300 U	330 U	2,400 U
Total Aroclors	20,000 {J,T}	100,000	35,000	400	2,000	1,500	ND	440	370	29,000	42,000	710	19,800

See generic notes pages.

TABLE III-1

TCL PCB ANALYTICAL RESULTS FOR SOIL
AT I27.7 INVESTIGATION SAMPLING LOCATIONS

SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION

Constituents (ug/kg)	MDEQ Generic IDC Value	BH05-98 (1 - 3')	BH05-98 (5 - 7')	BH05-98 (7 - 9')	BH06-98 (1 - 3')	BH06-98 (7 - 9')	BH06-98 (13 - 15')	BH07-98 (1 - 3')	BH07-98 (7 - 9')	BH07-98 (13 - 15')	BH08-98 (1 - 3')	BH08-98 (7 - 9')
		FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
Aroclor-1016	20,000 {J,T}	50,000 U	330 U	330 U	17,000 U	330 U	330 U	330 U	330 U	170,000 U	330 U	330 U
Aroclor-1221	20,000 {J,T}	50,000 U	330 U	330 U	17,000 U	330 U	330 U	330 U	330 U	170,000 U	330 U	330 U
Aroclor-1232	20,000 {J,T}	50,000 U	330 U	330 U	17,000 U	330 U	330 U	330 U	330 U	170,000 U	330 U	330 U
Aroclor-1242	20,000 {J,T}	50,000 U	330 U	330 U	17,000 U	330 U	330 U	330 U	330 U	170,000 U	330 U	330 U
Aroclor-1248	20,000 {J,T}	50,000 U	330 U	330 U	17,000 U	330 U	330 U	330 U	330 U	170,000 U	330 U	330 U
Aroclor-1254	20,000 {J,T}	4,900,000	3,600	3,900	93,000	330 U	330 U	330 U	330 U	1,500,000	510	710
Aroclor-1260	20,000 {J,T}	50,000 U	330 U	330 U	17,000 U	330 U	330 U	330 U	330 U	170,000 U	330 U	330 U
Total Aroclors	20,000 {J,T}	4,900,000	3,600	3,900	93,000	ND	ND	ND	ND	1,500,000	510	710

See generic notes pages.

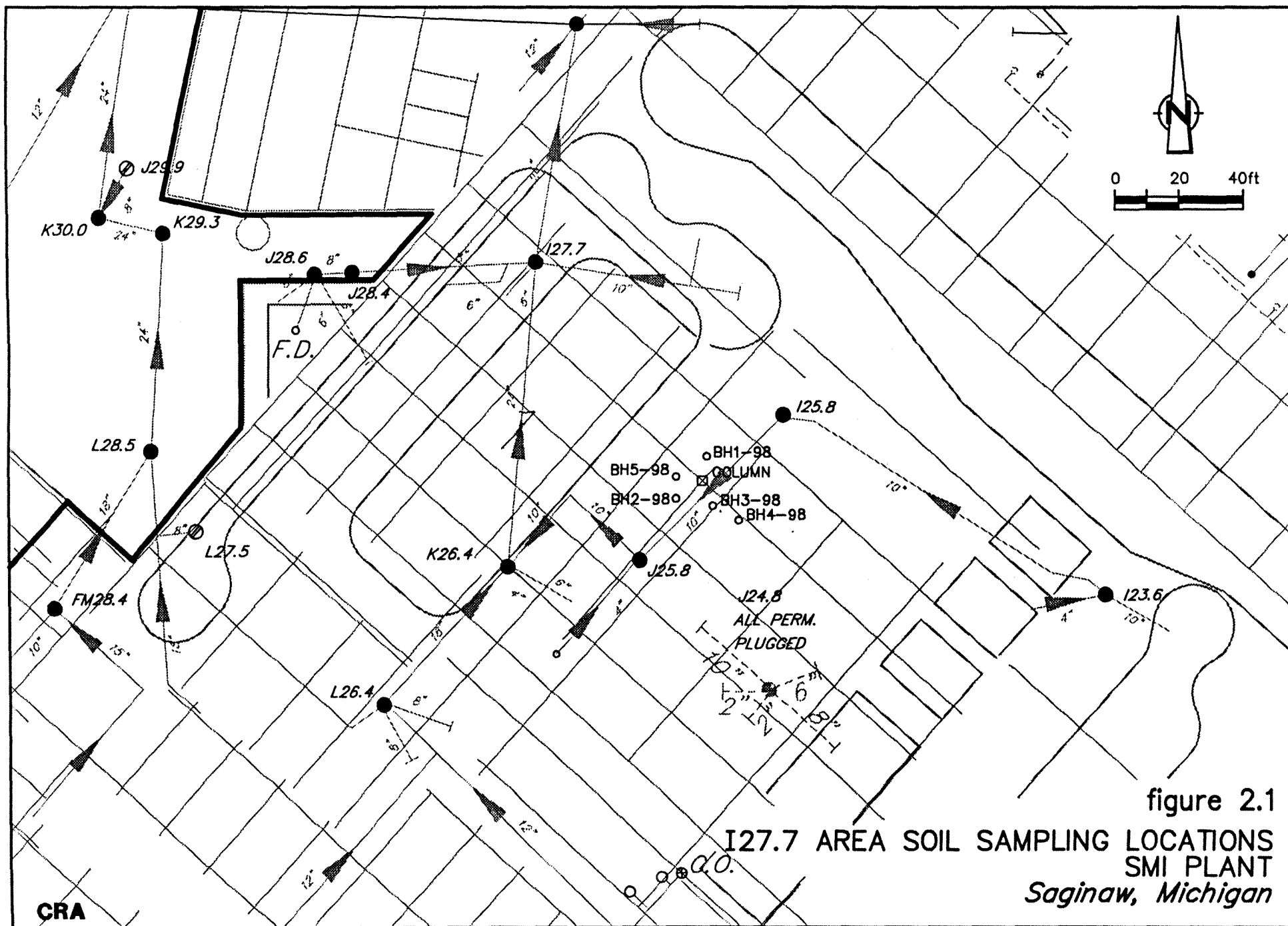


figure 2.1

I27.7 AREA SOIL SAMPLING LOCATIONS
SMI PLANT
Saginaw, Michigan

CRA

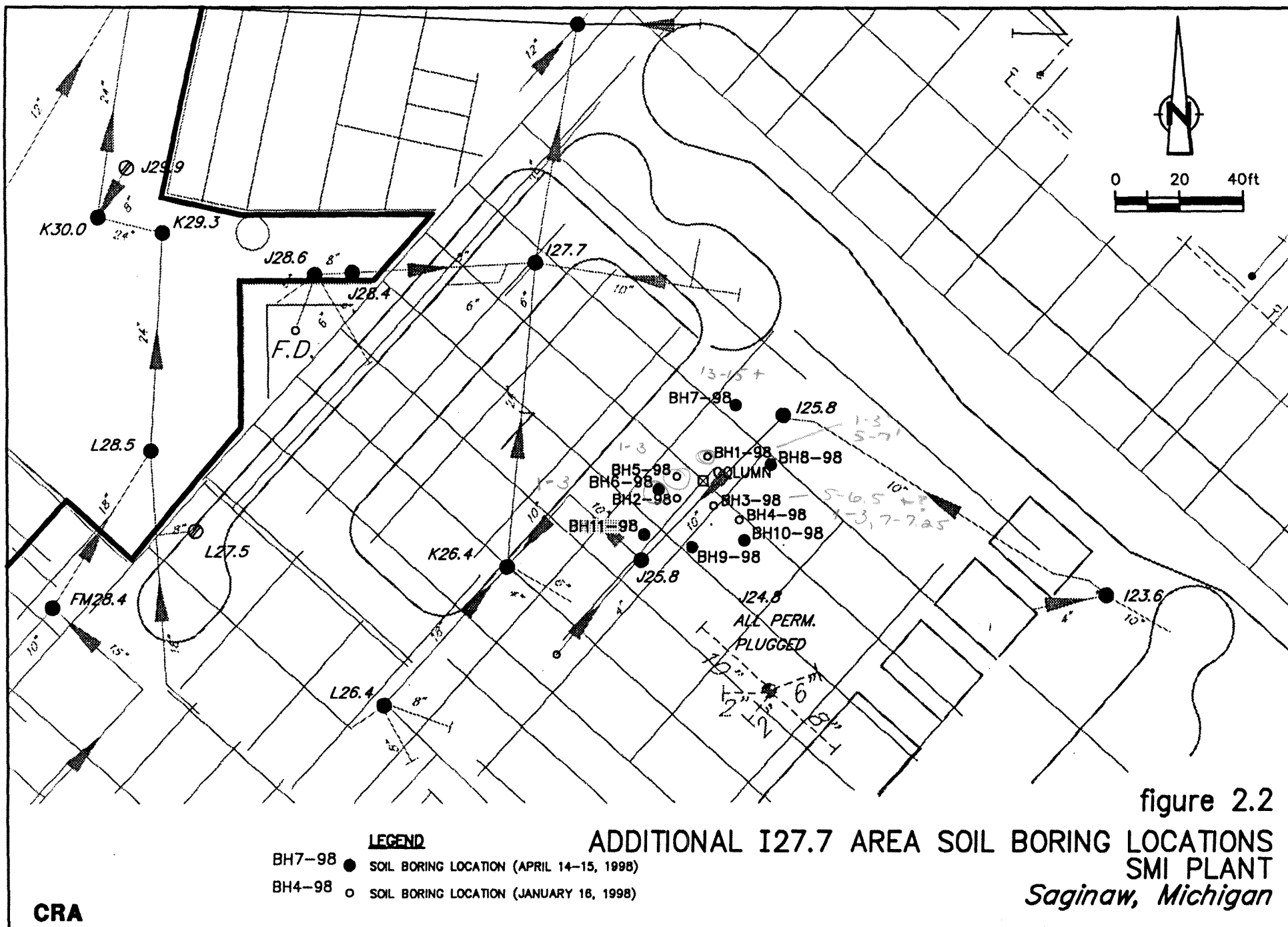


TABLE III-2

**TCL PCB ANALYTICAL RESULTS FOR SOIL
AT MELTING DEPARTMENT INVESTIGATION SAMPLING LOCATIONS**

**SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION**

	MDEQ	S1155	S1156	S1157	S1158	S1159	S1160	S1161	S1162	S1163	S1164	S1165	S1166
	Generic	(0 - 0.5')	(0 - 0.5')	(0 - 0.5')	(0.5 - 1')	(1 - 2')	(0 - 0.5')	(0.5 - 1')	(1 - 2')	(0 - 0.5')	(0.5 - 1')	(1 - 2')	(0 - 0.5')
Constituents (ug/kg)	IDC	6/17/96	6/17/96	6/20/96	6/20/96	6/20/96	6/20/96	6/20/96	6/20/96	6/20/96	6/20/96	6/20/96	6/20/96
	Value	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
Aroclor-1016	20,000 {J,T}	1,000 U	1,000 U	10,000 UJ	5,000 U	1,000 U	1,000 U	1,000 U	1,000 UJ	5,000 UJ	10,000 U	1,000 UJ	10,000 U
Aroclor-1221	20,000 {J,T}	1,000 U	1,000 U	10,000 UJ	5,000 U	1,000 U	1,000 U	1,000 U	1,000 UJ	5,000 UJ	10,000 U	1,000 UJ	10,000 U
Aroclor-1232	20,000 {J,T}	1,000 U	1,000 U	10,000 UJ	5,000 U	1,000 U	1,000 U	1,000 U	1,000 UJ	5,000 UJ	10,000 U	1,000 UJ	10,000 U
Aroclor-1242	20,000 {J,T}	10,000	210	91,000 J	19,000	8,300	17,000	5,600	1,000 UJ	55,000 J	120,000	1,000 UJ	96,000
Aroclor-1248	20,000 {J,T}	1,000 U	1,000 U	10,000 UJ	5,000 U	1,000 U	1,000 U	1,000 U	1,000 UJ	5,000 UJ	10,000 U	1,000 UJ	10,000 U
Aroclor-1254	20,000 {J,T}	1,000 U	1,000 U	10,000 UJ	5,000 U	1,000 U	1,000 U	1,000 U	1,000 U	5,000 UJ	10,000 U	1,000 U	10,000 U
Aroclor-1260	20,000 {J,T}	1,000 U	1,000 U	10,000 UJ	5,000 U	1,000 U	1,000 U	1,000 U	1,000 U	5,000 UJ	10,000 U	1,000 U	10,000 U
Total Aroclors	20,000 {J,T}	10,000	210	91,000	19,000	8,300	17,000	5,600	ND	55,000	120,000	1,000	96,000

See generic notes pages.

TABLE III-2

TCL PCB ANALYTICAL RESULTS FOR SOIL
AT MELTING DEPARTMENT INVESTIGATION SAMPLING LOCATIONS

SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION

	MDEQ Generic IDC	S1167 (0.5 - 1') 6/20/96	S1168 (1 - 2') 6/20/96	S1169 (0 - 0.5') 6/20/96	S1170 (0.5 - 1') 6/20/96	S1171 (1 - 2') 6/20/96	S1172 (0 - 0.5') 6/20/96	S1173 (0.5 - 1') 6/20/96	S1174 (1 - 2') 6/20/96	S1175 (0 - 0.5') 6/20/96	S1176 (0.5 - 1') 6/20/96	S1177 (1 - 2') 6/20/96
Constituents (ug/kg)	Value	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
Aroclor-1016	20,000 (J,T)	1,000 U	5,000 UJ	1,000 U	1,000 UJ	1,000 UJ	1,000 U	1,000 U	1,000 U	5,000 U	10,000 U	50,000 U
Aroclor-1221	20,000 (J,T)	1,000 U	5,000 UJ	1,000 U	1,000 UJ	1,000 UJ	1,000 U	1,000 U	1,000 U	5,000 U	10,000 U	50,000 U
Aroclor-1232	20,000 (J,T)	1,000 U	5,000 UJ	1,000 U	1,000 UJ	1,000 UJ	1,000 U	1,000 U	1,000 U	5,000 U	10,000 U	50,000 U
Aroclor-1242	20,000 (J,T)	2,300	76,000	1,000 U	1,000 UJ	1,000 UJ	1,800	6,700	5,800	50,000	220,000	640,000
Aroclor-1248	20,000 (J,T)	1,000 U	5,000 UJ	1,000 U	1,000 UJ	1,000 UJ	1,000 U	1,000 U	1,000 U	5,000 U	10,000 U	50,000 U
Aroclor-1254	20,000 (J,T)	1,000 U	5,000 UJ	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	5,000 U	10,000 U	50,000 U
Aroclor-1260	20,000 (J,T)	1,000 U	5,000 UJ	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	5,000 U	10,000 U	50,000 U
Total Aroclors	20,000 (J,T)	2,300	76,000	ND	ND	ND	1,800	6,700	5,800	50,000	220,000	640,000

See generic notes pages.

TABLE III-2

TCL PCB ANALYTICAL RESULTS FOR SOIL
AT MELTING DEPARTMENT INVESTIGATION SAMPLING LOCATIONS

SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION

	MDEQ Generic IDC	S1178 (0 - 0.5') 6/20/96 FS	S1179 (0.5 - 1') 6/20/96 FS	S1180 (1 - 2') 6/20/96 FS	S1181 (0 - 0.5') 6/20/96 FS	S1182 (0.5 - 1') 6/20/96 FS	S1183 (1 - 2') 6/20/96 FS	S2031 (0 - 0.5') 9/6/96 FS	S2032 (0 - 0.5') 9/6/96 FS	S2033 (0 - 0.5') 9/6/96 FS	S2034 (0 - 0.5') 9/6/96 FS	S2035 (0 - 0.5') 9/6/96 FS
Constituents (ug/kg)	Value											
Aroclor-1016	20,000 {J,T}	5,000 U	1,000 U	5,000 U	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	10,000 U	1,000 U	1,000 U
Aroclor-1221	20,000 {J,T}	5,000 U	1,000 U	5,000 U	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	10,000 U	1,000 U	1,000 U
Aroclor-1232	20,000 {J,T}	5,000 U	1,000 U	5,000 U	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	10,000 U	1,000 U	1,000 U
Aroclor-1242	20,000 {J,T}	26,000	18,000	40,000	3,700	4,800	1,400	7,500	360,000	650,000	27,000	1,900
Aroclor-1248	20,000 {J,T}	5,000 U	1,000 U	5,000 U	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	10,000 U	1,000 U	1,000 U
Aroclor-1254	20,000 {J,T}	5,000 U	1,000 U	5,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1260	20,000 {J,T}	5,000 U	1,000 U	5,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Total Aroclors	20,000 {J,T}	26,000	18,000	40,000	3,700	4,800	1,400	7,500	360,000	650,000	27,000	1,900

See generic notes pages.

TABLE III-2

**TCL PCB ANALYTICAL RESULTS FOR SOIL
AT MELTING DEPARTMENT INVESTIGATION SAMPLING LOCATIONS**

**SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION**

Constituents (ug/kg)	MDEQ Generic IDC Value	S2036 (0 - 0.5') 9/6/96 FS	S3043 (0 - 0.5') 9/6/96 FS	S3044 (0 - 0.5') 9/6/96 FS	S3045 (0 - 0.5') 9/6/96 FS	S3046 (0 - 0.5') 9/6/96 FS	S3047 (0 - 0.5') 9/6/96 FS	S3048 (0 - 0.5') 9/6/96 FS
Aroclor-1016	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1221	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1232	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1242	20,000 {J,T}	12,700	6,300	1,000 U	1,400	3,100	1,000 U	2,100
Aroclor-1248	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1254	20,000 {J,T}	1,000 U	1,000 U	670	1,000 UJ	1,000 UJ	1,000 UJ	1,000 UJ
Aroclor-1260	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 UJ	1,000 UJ	1,000 UJ	1,000 UJ
Total Aroclors	20,000 {J,T}	12,700	6,300	670	1,400	3,100	ND	2,100

See generic notes pages.

TABLE III-3

**TCL PCB ANALYTICAL RESULTS FOR CONFIRMATION SOIL SAMPLES
AT MELTING DEPARTMENT EXCAVATION LOCATIONS**

**SMI PLANT PROPERTY, GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
REMEDIAL INVESTIGATION**

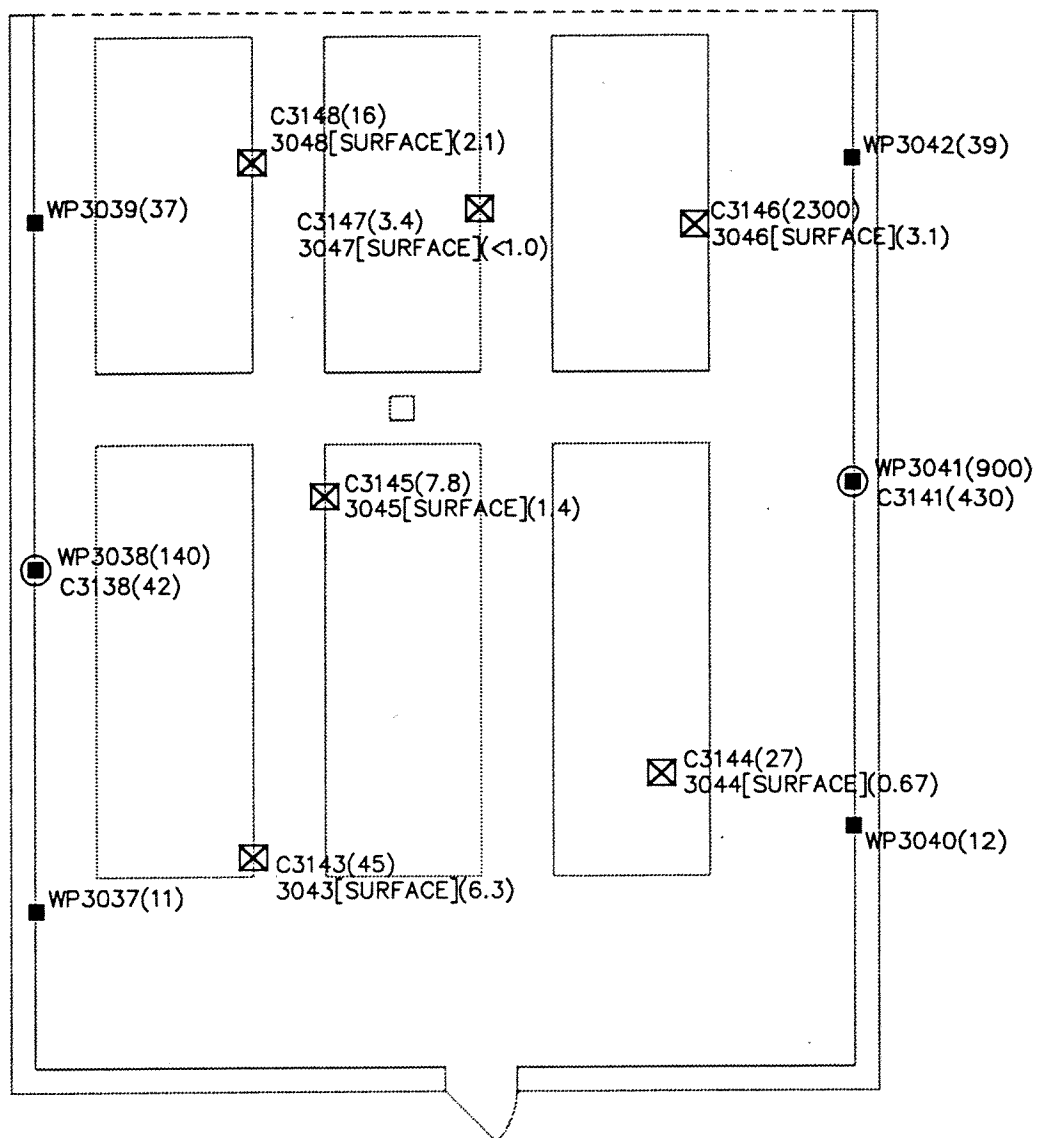
Constituents (ug/kg)	MDEQ Generic IDC Value	S1184 (3 - 5') 7/9/96 FS	S1185 (3 - 5') 7/9/96 FS	S1186 (3 - 5') 7/9/96 FS	S1187 (3 - 5') 7/9/96 FS	S1188 (3 - 5') 6/15/96 FS	S1189 (3 - 5') 6/15/96 FS	S2037 (3 - 5') 9/24/96 FS	S2038 (3 - 5') 9/24/96 FS
Aroclor-1016	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1221	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1232	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1242	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	41,000	1,300	1,000 U	1,000 U
Aroclor-1248	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	1,000 U	1,000 U	1,000
Aroclor-1254	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	1,000 U	1,000 U	1,000 U
Aroclor-1260	20,000 {J,T}	1,000 U	1,000 U	1,000 U	1,000 U	10,000 U	1,000 U	1,000 U	1,000 U
Total Aroclors	20,000 {J,T}	ND	ND	ND	ND	41,000	1,300	ND	1,000

See generic notes pages.



SCALE: 1/8" = 1'-0"

CEILING HEIGHT = 15'



LEGEND

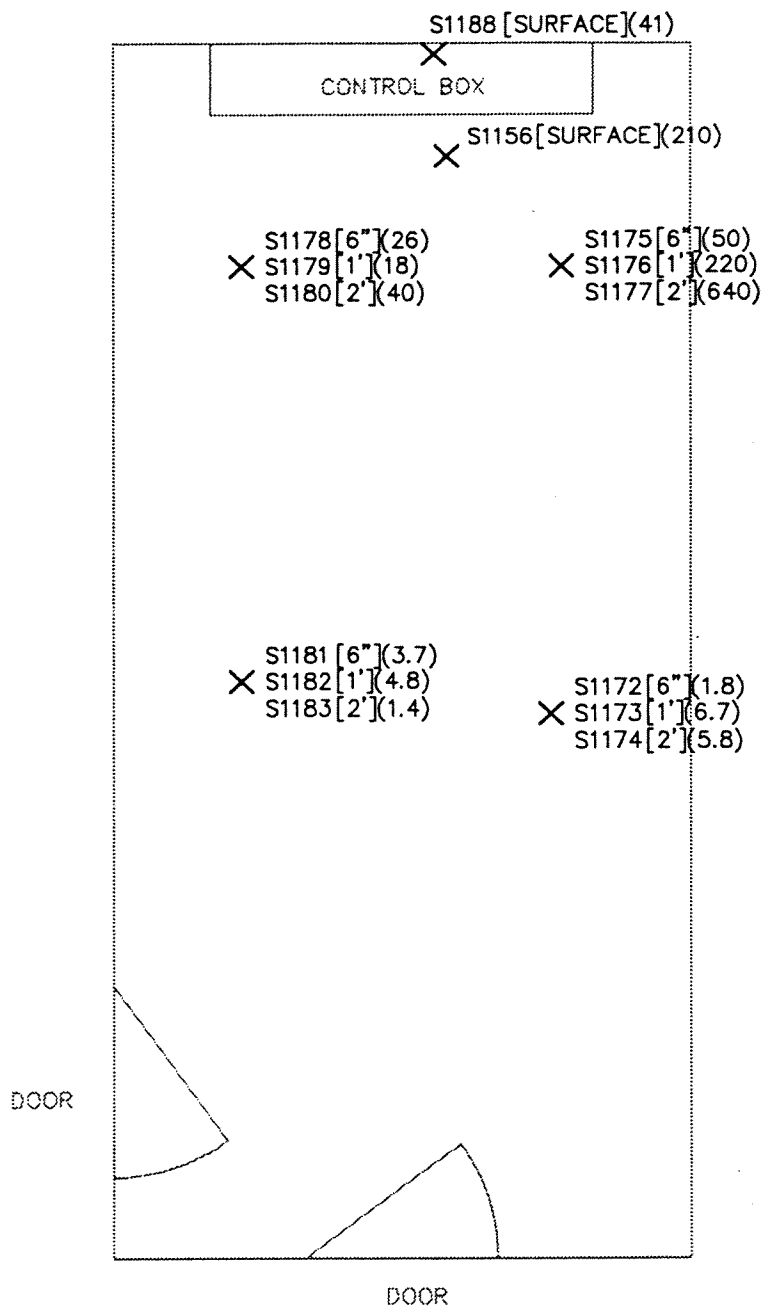
- WP3037 WIPE SAMPLES (PCB RESULTS- $\mu\text{g}/100\text{cm}^2$)
- C3138 WALL CORE SAMPLES (PCB RESULTS-mg/kg 0"-1/2")
- C3143 FLOOR CORE SAMPLES (PCB RESULTS-mg/kg 5"-10")
- ✕ 3043 SOIL SAMPLES [DEPTH OF SAMPLE] (PCB RESULTS-mg/kg)

NOTES: SAMPLES TAKEN NOVEMBER 27/96

figure 5.6

SAMPLE LOCATIONS
CAPACITOR ROOM 1
GMPT SAGINAW MALLEABLE IRON PLANT
Saginaw, Michigan

CRA



LEGEND

X SOIL SAMPLES [DEPTH OF SAMPLE] (PCB RESULTS—mg/kg)

NOTES: SAMPLES TAKEN JUNE 7/96,
JUNE 20/96 AND JULY 15/96

figure 6.5

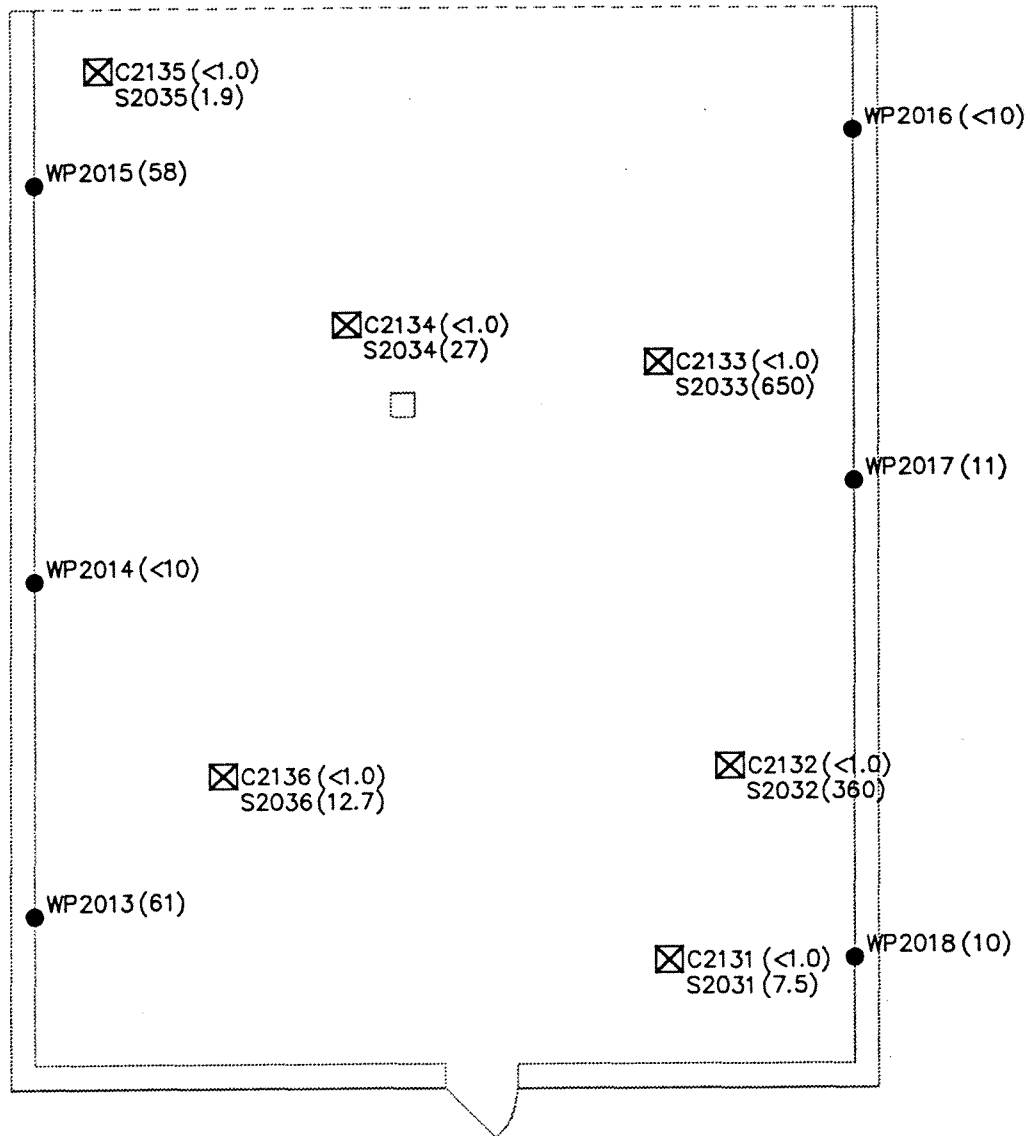
SOIL SAMPLE LOCATIONS
HYDRAULIC ROOM 2
GMPT SAGINAW MALLEABLE IRON PLANT
Saginaw, Michigan

CRA



SCALE: 1/8" = 1'-0"

CEILING HEIGHT = 15'



LEGEND

- WP140 WIPE SAMPLES (PCB RESULTS— $\mu\text{g}/100\text{cm}^2$)
- C195 FLOOR CORE SAMPLES (PCB RESULTS—mg/kg BRICK, 5"—10")
- × SOIL SAMPLES (PCB RESULTS— $\mu\text{g}/100\text{cm}^2$)

NOTES: SAMPLES TAKEN SEPT 4/96, SEPT 5/96

figure 7.5

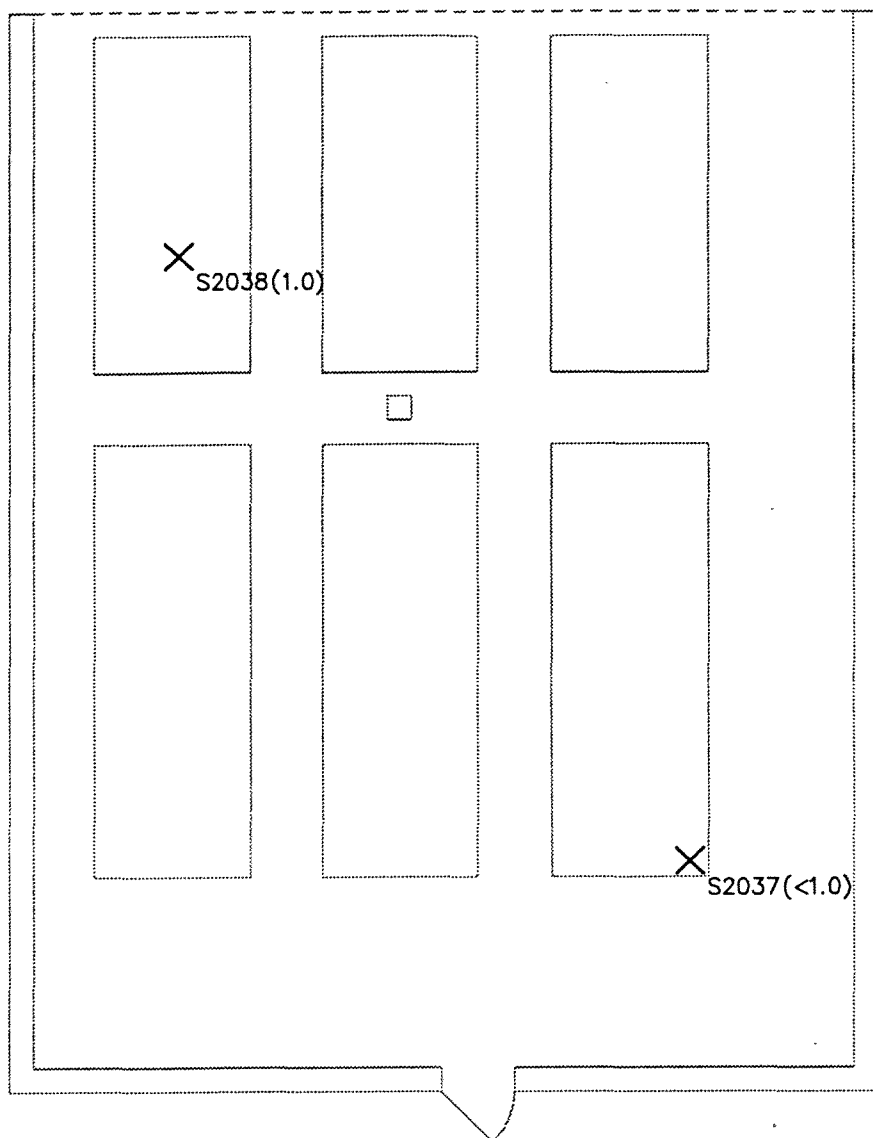
SAMPLE LOCATIONS
CAPACITOR ROOM 3
GMPT SAGINAW MALLEABLE IRON PLANT
Saginaw, Michigan

CRA



SCALE: 1/8" = 1'-0"

CEILING HEIGHT = 15'



LEGEND

× SOIL SAMPLES (PCB RESULTS—mg/kg)

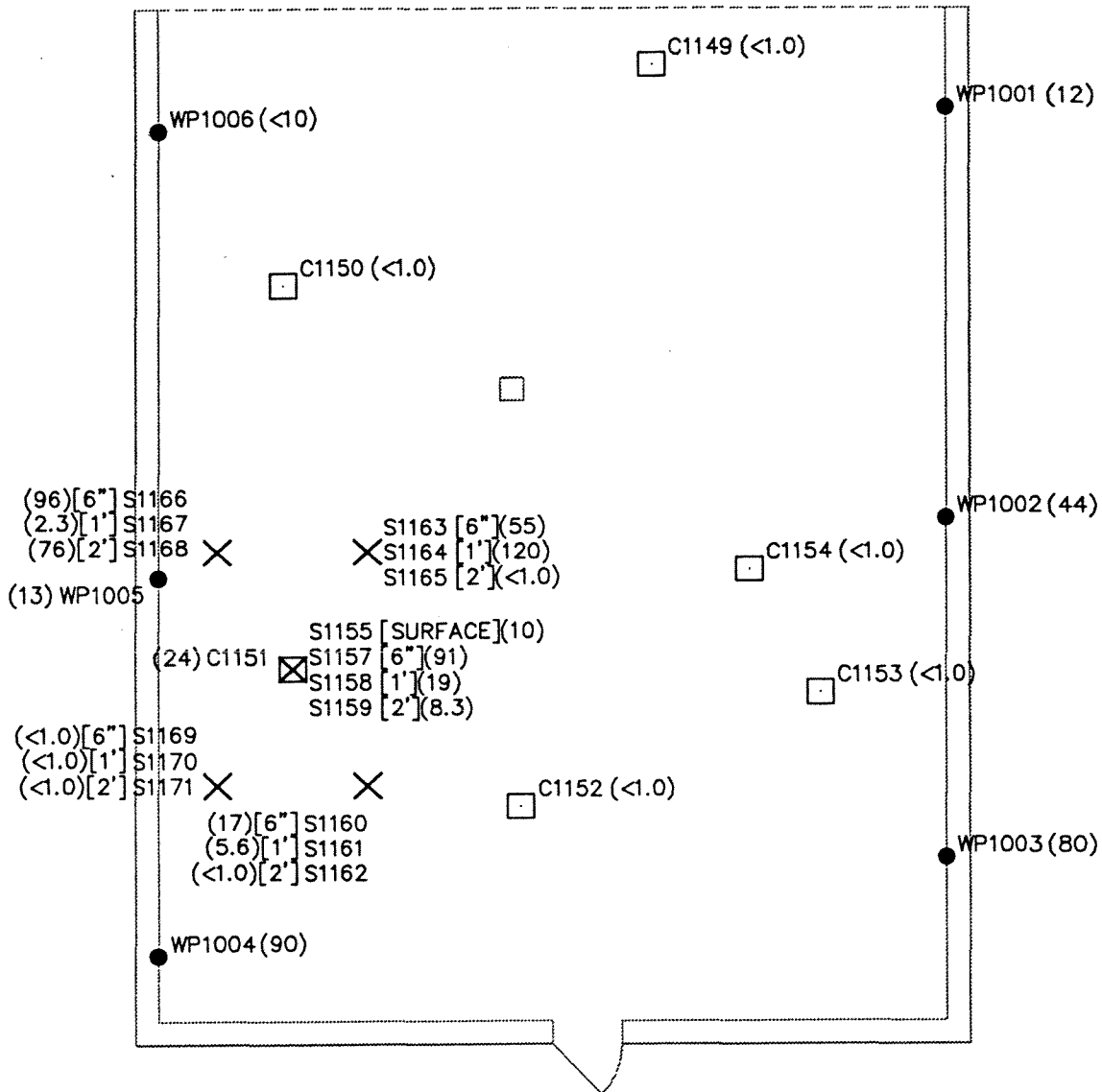
NOTES: SAMPLES TAKEN SEPT 24/96

figure 7.6

VERIFICATION SAMPLE LOCATIONS
CAPACITOR ROOM 3
GMPT SAGINAW MALLEABLE IRON PLANT
Saginaw, Michigan

CRA

0 4 8ft
 SCALE: 1/8" = 1'-0"
 CEILING HEIGHT = 15'



LEGEND

- WP140 WIPE SAMPLES (PCB RESULTS- $\mu\text{g}/100\text{cm}^2$)
- × SOIL SAMPLES [DEPTH OF SAMPLE] (PCB RESULTS-mg/kg)
- C195 FLOOR CORE SAMPLES (PCB RESULTS-mg/kg 5"-10")

NOTES: SAMPLES TAKEN JUNE 7/96,
 JUNE 17/96, JUNE 20/96

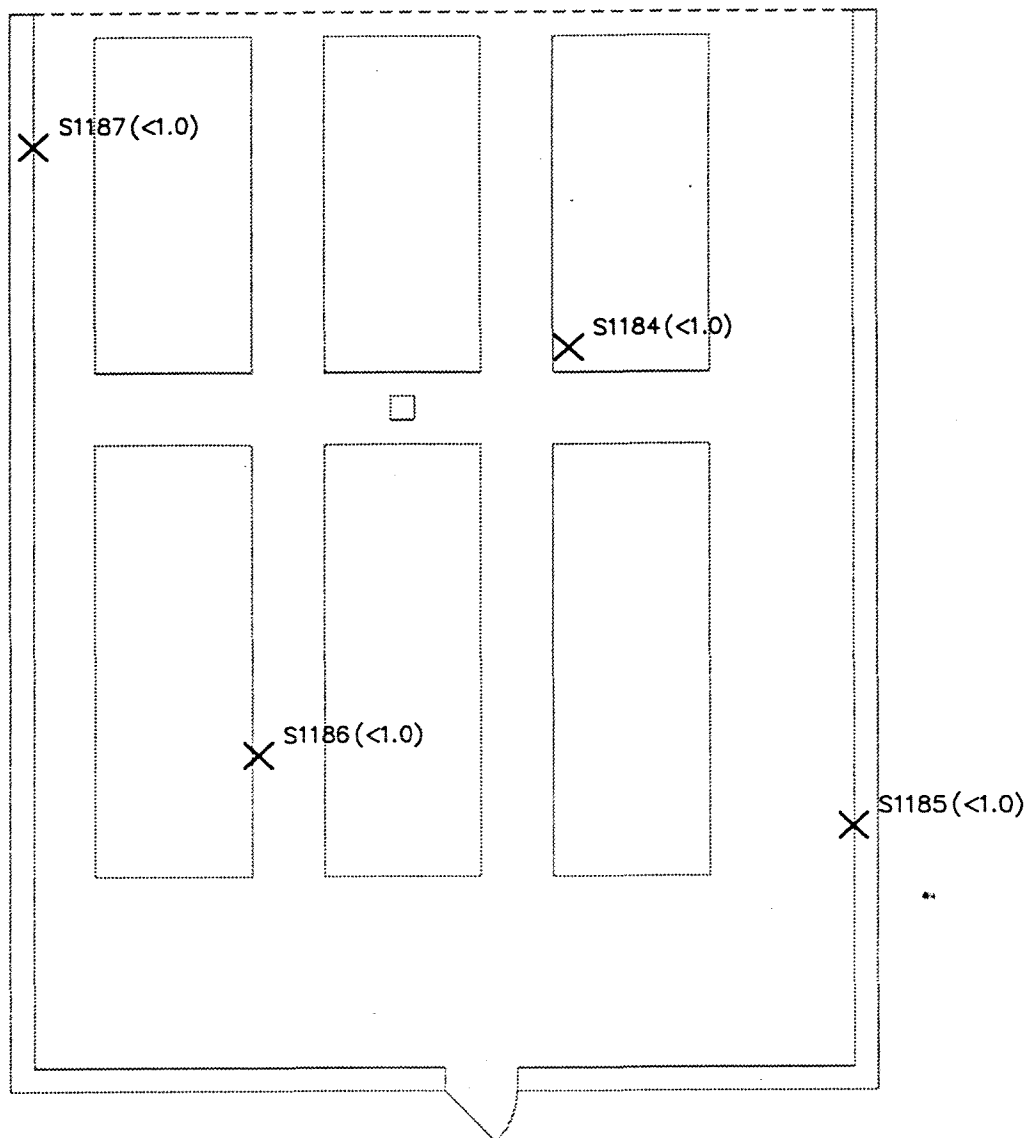
figure 8.6
 SAMPLE LOCATIONS
 CAPACITOR ROOM 4
 GMPT SAGINAW MALLEABLE IRON PLANT
 Saginaw, Michigan

CRA



SCALE: 1/8" = 1'-0"

CEILING HEIGHT = 15'



LEGEND

× SOIL SAMPLES (PCB RESULTS—mg/kg)

NOTES: SAMPLES TAKEN JULY 9/96

figure 8.7
VERIFICATION SAMPLE LOCATIONS
CAPACITOR ROOM 4
GMPT SAGINAW MALLEABLE IRON PLANT
Saginaw, Michigan

CRA



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