

**APPENDIX 1: Water-quality data collected by the USGS in Oakland County, Michigan**

The following several pages contain the results of water-quality sample collection activities conducted by the USGS in cooperation with the Oakland County Health Division. Included is a key for cross-referencing station names (e.g. OAK 1) to USGS site identification numbers, a table of field-analyzed characteristics for each sample site, a table with the results of analyses for selected inorganic constituents, a table containing the results of seasonal analyses for selected inorganic constituents, and a series of tables containing the results of short-interval time-series sampling for arsenic, manganese and iron.

**Table 1A.** Index of station names with U.S. Geological Survey (USGS) station identification numbers

Station name	USGS Station ID
OAK 1	425032083230101
OAK 2	424835083250601
OAK 3	425050083310901
OAK 4	425219083264301
OAK 7	424351083365501
OAK 8	424303083142101
OAK 9	425055083374901
OAK 10	425154083370001
OAK 11	425221083374101
OAK 12	425131083363001
OAK 14	424308083245701
OAK 15	424315083182801
OAK 16	424323083250501
OAK 17	425218083375001
OAK 19	425033083165701
OAK 20	423307083290201
OAK 21	424315083183901
OAK 22	423105083173201
OAK 23	423108083173801
OAK 24	423036083182701
OAK 24A	425157083083001
OAK 25	425042083083101
OAK 26	425046083083601
OAK 29	423334083293601
OAK 30	423343083292101
OAK 31	424505083205901
OAK 32	423847083265601
OAK 33	423817083365501
OAK 34	424144083074701
OAK 35	424519083081101
OAK 36	422850083230101
OAK 37	423600083262301
OAK 38	424048083243201
OAK 39	424504083324901
OAK 40	424319083315701
OAK 41	423855083292201
OAK 42	425051083310701
OAK 43	425056083310101

**Table 1B.** Field measurements of water-quality characteristics for ground water samples from selected wells in Oakland County, Michigan

[ $\mu\text{S/cm}$ , microsiemens per centimeter at 25 degrees Celsius; mV, millivolts; mg/L, milligrams per liter;  $^{\circ}\text{C}$ , degrees Celsius]

Station name	Sample date	Sample time	Depth, (feet)	Field Specific Conductance ( $\mu\text{S/cm}$ )	Oxidation-reduction Potential (mV)	Oxygen, Dissolved (mg/L)	pH, Field (Standard Units)	Temperature ( $^{\circ}\text{C}$ )	Bicarbonate, Dissolved, (mg/L as $\text{HCO}_3$ )
OAK 1	6/3/98	930		474	35	0.1	7.3	11.3	240
OAK 2	6/3/98	1225		711	35	<.1	7.2	11.5	270
OAK 4	6/4/98	905		482	40	<.1	7.4	11.5	376
OAK 3	6/4/98	1225	86	503	81	.1	7.4	12.3	236
OAK 7	6/4/98	1430		695	180	<.1	7.1	11.4	344
OAK 8	6/9/98	930		1560	65	.1	6.9	11.1	368
OAK 9	6/9/98	1130		520	55	.1	7.3	11.6	462
OAK 10	6/9/98	1300	300	581	88	.1	7.2	13.1	420
OAK 11	6/25/98	1630		--	--	--	--	--	--
OAK 12	6/26/98	1146	300	600	100	.1	7.0	11.4	376
OAK 14	6/25/98	1350	142	570	40	<.1	7.1	12.2	264
OAK 15	6/25/98	1000		753	26	<.1	7.0	13.5	244
OAK 16	6/25/98	1220	161	556	175	<.1	7.3	13.5	276
OAK 17	6/25/98	1520		634	44	<.1	7.0	12.7	322
OAK 19	6/26/98	920		2950	288	7.8	6.5	12.3	320
OAK 21	6/25/98	915		1344	244	3.1	6.6	12.1	422
OAK 22	6/30/98	900	60	1910	66	.1	6.6	13.0	354
OAK 23	6/30/98	1000		1325	92	.1	6.7	12.0	319
OAK 24	6/30/98	1100	75	1439	51	<.1	--	11.8	270
OAK 24A	7/1/98	900		2420	94	.1	7.0	11.4	450
OAK 25	7/1/98	1030		681	70	.1	7.4	12.2	299
OAK 26	7/1/98	1130	54	680	321	4.9	7.2	11.3	318
OAK 29	7/7/98	900		1540	65	1.5	7.1	12.0	330
OAK 30	7/7/98	1010		1209	43	<.1	7.3	13.0	354
OAK 31	7/7/98	1215	73	1174	233	5.4	6.9	10.4	440
OAK 32	7/7/98	1400		1307	46	.1	7.3	12.1	214
OAK 33	7/7/98	1530		1155	169	.1	7.1	12.2	306
OAK 34	7/8/98	930		395	-25	.1	7.6	11.6	334

**Table 1B.** Field measurements of water-quality characteristics for ground water samples from selected wells in Oakland County, Michigan – Continued

[ $\mu$ S/cm, microsiemens per centimeter at 25 degrees Celsius; mV, millivolts; mg/L, milligrams per liter; °C, degrees Celsius]

Station name	Sample date	Sample time	Depth	Field Specific Conductance ( $\mu$ S/cm)	Oxidation – Reduction Potential (mV)	Oxygen, Dissolved (mg/L)	pH, Field (Standard Units)	Temperature (°C)	Bicarbonate, Dissolved, (mg/L as HCO <sub>3</sub> )
OAK 35	7/8/98	1055		601	19	<0.1	7.2	10.9	324
OAK 36	7/8/98	1310		605	33	.1	7.1	11.3	350
OAK 20	7/8/98	1430		491	35	.1	7.0	12.3	246
OAK 37	7/20/98	930		967	208	<.1	6.9	11.7	376
OAK 38	7/20/98	1120		795	876	7.0	7.2	15.5	278
OAK 39	7/20/98	1330		636	61	<.1	7.0	11.5	290
OAK 40	7/20/98	1445		519	64	.1	7.0	11.1	230
OAK 41	11/23/98	2000		577	33	.1	7.5	11.3	--
OAK 42	12/16/98	1115		492	195	.2	7.2	10.8	244
OAK 43	12/16/98	1230		462	230	.1	7.4	11.1	316

**Table 1C.** Results of analyses for selected inorganic chemical constituents in ground-water samples from selected wells in Oakland County, Michigan  
[mg/L, milligrams per liter; µg/L, micrograms per liter; E, estimate; --, No data]

Station name	Station ID	Sample date	Sample time	Depth, feet	Nitrogen, Ammonia mg/L as N	Nitrogen, Nitrite mg/L as N
OAK 1	425032083230101	06/03/98	930		0.25	<0.01
OAK 2	424835083250601	06/03/98	1225		.34	.02
OAK 4	425219083264301	06/04/98	905		.30	.02
OAK 3	425050083310901	06/04/98	1225	86	.11	.02
OAK 7	424351083365501	06/04/98	1430		.02	.08
OAK 8	424303083142101	06/09/98	930		.11	.01
OAK 9	425055083374901	06/09/98	1130		.20	.01
OAK 10	425154083370001	06/09/98	1300	300	.21	.01
OAK 11	425221083374101	06/25/98	1630		--	--
OAK 12	425131083363001	06/26/98	1146	300	.16	<.01
OAK 14	424308083245701	06/25/98	1350	142	.12	<.01
OAK 15	424315083182801	06/25/98	1000		.20	<.01
OAK 16	424323083250501	06/25/98	1220	161	<.02	<.01
OAK 17	425218083375001	06/25/98	1520		.21	<.01
OAK 19	425033083165701	06/26/98	920		.02	.01
OAK 21	424315083183901	06/25/98	900		.02	.01
OAK 22	423105083173201	06/30/98	900	60	.16	<.01
OAK 23	423108083173801	06/30/98	1000		.07	<.01
OAK 24	423036083182701	06/30/98	1100	75	.07	<.01
OAK 24A	425157083083001	07/01/98	900		.05	<.01
OAK 25	425042083083101	07/01/98	1030		.11	<.01
OAK 26	425046083083601	07/01/98	1130	54	.04	<.01
OAK 29	423334083293601	07/07/98	900		.24	<.01
OAK 30	423343083292101	07/07/98	1010		.24	<.01
OAK 31	424505083205901	07/07/98	1215	73	.04	<.01
OAK 32	423847083265601	07/07/98	1400		.04	<.01
OAK 33	423817083365501	07/07/98	1530		.05	.03
OAK 34	424144083074701	07/08/98	930		.31	<.01
OAK 35	424519083081101	07/08/98	1055		.29	<.01
OAK 36	422850083230101	07/08/98	1310		.32	<.01
OAK 20	423307083290201	07/08/98	1430		.56	<.01
OAK 37	423600083262301	07/20/98	930		.40	<.01
OAK 38	424048083243201	07/20/98	1120		<.02	<.01
OAK 39	424504083324901	07/20/98	1330		.05	<.01
OAK 40	424319083315701	07/20/98	1445		.02	<.01
OAK 41	423855083292201	11/23/98	2000		1.40	<.01
OAK 42	425051083310701	12/16/98	1115		.26	.03
OAK 43	425056083310101	12/16/98	1230		.05	.02

**Table 1C.** Results of analyses for selected inorganic chemical constituents in ground-water samples from selected wells in Oakland County, Michigan – Continued  
 [mg/L, milligrams per liter; µg/L, micrograms per liter; E, estimate; --, No data]

Station name	Nitrogen, Ammonia + Organic mg/L as N	Nitrite + Nitrate, Dissolved mg/L as N	Phosphorus, Dissolved mg/L as P	Phosphorus, Ortho mg/L as P	Calcium, Dissolved mg/L as Ca
OAK 1	.24	<.05	<.01	<.01	49.1
OAK 2	.27	.06	<.01	.02	67.7
OAK 4	.27	.06	<.01	.01	48.5
OAK 3	.12	.05	<.01	.01	63.9
OAK 7	<.1	.92	<.01	.02	81.7
OAK 8	<.1	<.05	<.01	<.01	149.
OAK 9	.16	<.05	<.01	.01	57.0
OAK 10	.15	<.05	<.01	<.01	63.4
OAK 11	--	--	--	--	--
OAK 12	.18	<.05	<.01	<.01	66.1
OAK 14	<.1	<.05	<.01	<.01	69.3
OAK 15	.33	<.05	<.01	<.01	93.5
OAK 16	<.1	<.05	.03	.05	0.2
OAK 17	.31	<.05	<.01	<.01	79.1
OAK 19	.15	23.86	<.01	<.01	84.0
OAK 21	.11	13.97	<.01	<.01	145.
OAK 22	.23	<.05	<.01	<.01	131.
OAK 23	<.1	<.05	<.01	<.01	115.
OAK 24	.13	<.05	<.01	<.01	65.2
OAK 24A	<.1	<.05	<.01	<.01	175.
OAK 25	.14	<.05	<.01	<.01	79.8
OAK 26	<.1	2.34	<.01	<.01	89.4
OAK 29	.31	<.05	<.01	<.01	114.
OAK 30	.40	<.05	<.01	<.01	87.2
OAK 31	.12	2.56	<.01	<.01	130.
OAK 32	.11	<.05	.01	<.01	101.
OAK 33	<.10	2.12	<.01	<.01	100.
OAK 34	.36	<.05	.03	.04	30.8
OAK 35	.31	<.05	<.01	.02	59.9
OAK 36	.37	<.05	<.01	<.01	69.7
OAK 20	.68	<.05	<.01	<.01	69.8
OAK 37	.49	.20	<.01	.02	88.5
OAK 38	<.10	.16	.54	.52	83.6
OAK 39	<.10	<.05	<.01	.01	86.7
OAK 40	<.10	<.05	<.01	.01	73.3
OAK 41	1.52	.05	.02	.10	67.3
OAK 42	.41	<.05	<.01	.01	65.0
OAK 43	<.10	<.05	.02	.04	0.1

**Table 1C.** Results of analyses for selected inorganic chemical constituents in ground-water samples from selected wells in Oakland County, Michigan – Continued  
[mg/L, milligrams per liter; µg/L, micrograms per liter; E, estimate; --, No data]

Station name	Magnesium, Dissolved mg/L as Mg	Sodium, Dissolved mg/L as Na	Potassium, Dissolved mg/L as K	Chloride, Dissolved mg/L as Cl	Sulfate, Dissolved mg/L as SO <sub>4</sub>
OAK 1	24.9	14.8	1.3	3.6	12.0
OAK 2	32.8	26.6	1.6	53.5	18.9
OAK 4	24.2	17.7	1.8	6.8	2.0
OAK 3	23.7	6.2	1.1	1.2	14.1
OAK 7	27.9	19.1	1.5	26.2	42.0
OAK 8	48.1	85.2	3.9	253.	80.7
OAK 9	26.7	16.5	1.4	0.5	11.3
OAK 10	32.6	14.0	1.9	0.5	9.8
OAK 11	--	--	--	--	--
OAK 12	36.6	13.0	1.6	.58	11.3
OAK 14	26.8	14.4	1.0	13.0	15.2
OAK 15	27.5	18.7	1.8	68.2	48.1
OAK 16	.02	139.	.1	6.1	13.7
OAK 17	33.1	7.2	1.8	6.9	10.4
OAK 19	57.7	431.	13.0	661.	58.8
OAK 21	51.8	64.5	1.9	110.	68.7
OAK 22	37.6	198.	2.5	367.	60.2
OAK 23	37.8	90.8	2.7	194.	65.2
OAK 24	45.8	145.	4.2	249.	68.6
OAK 24A	51.5	204.	1.9	444.	57.7
OAK 25	30.7	9.2	1.3	10.4	34.4
OAK 26	28.5	3.7	.8	4.1	31.0
OAK 29	29.3	156.	2.9	289.	62.5
OAK 30	22.6	124.	4.1	226.	14.9
OAK 31	40.2	54.2	1.9	140.	17.3
OAK 32	26.9	116.	2.4	253	53.3
OAK 33	27.4	101.	2.4	156.	51.9
OAK 34	18.6	26.8	1.3	3.5	1.3
OAK 35	25.6	26.6	1.3	30.5	10.7
OAK 36	26.1	18.2	1.5	29.2	1.7
OAK 20	18.3	3.8	.8	.9	6.4
OAK 37	20.1	86.7	1.9	132.	33.6
OAK 38	30.0	37.3	1.8	66.0	34.3
OAK 39	29.8	6.8	1.0	3.5	46.2
OAK 40	22.9	4.0	1.1	7.7	30.7
OAK 41	--	11.4	1.4	20.3	18.2
OAK 42	23.1	10.0	1.8	2.6	8.2
OAK 43	0.1	120.	.4	1.2	15.2

**Table 1C.** Results of analyses for selected inorganic chemical constituents in ground-water samples from selected wells in Oakland County, Michigan – Continued  
[mg/L, milligrams per liter; µg/L, micrograms per liter; E, estimate; --, No data]

Station name	Silica, Dissolved mg/L as SiO <sub>2</sub>	Arsenic, Total µg/L as As	Iron, Dissolved µg/L as Fe	Manganese, Dissolved µg/L as Mn	Residue, Dissolved, 180°C mg/L
OAK 1	16.1	40	742	9	278
OAK 2	14.5	26	2116	38	411
OAK 4	13.5	46	581	38	278
OAK 3	16.7	27	459	23	294
OAK 7	9.25	<1	89	330	410
OAK 8	14.6	8	2815	65	862
OAK 9	17.6	39	746	17	307
OAK 10	19.3	53	577	13	343
OAK 11	--	68	--	--	--
OAK 12	19.4	56	499	18	350
OAK 14	18.3	24	1100	26	330
OAK 15	14.5	2	2299	51	428
OAK 16	17.8	11	<10	<4	350
OAK 17	19.6	39	1853	15	367
OAK 19	13.8	<1	<30	<12	1620
OAK 21	15.0	<1	13	<4	794
OAK 22	13.1	--	2123	93	1050
OAK 23	11.5	1	1206	37	752
OAK 24	11.7	2	2228	76	794
OAK 24A	12.9	2	1506	158	1282
OAK 25	17.2	19	1152	31	375
OAK 26	14.6	<1	<10	<4	387
OAK 29	13.1	<1	1978	49	894
OAK 30	12.2	<1	1317	95	688
OAK 31	11.5	<1	27	<4	686
OAK 32	11.0	1	2028	94	750
OAK 33	9.85	<1	24	77	684
OAK 34	14.2	<1	549	9	228
OAK 35	16.7	12	1246	21	331
OAK 36	17.2	4	1329	14	348
OAK 20	16.9	3	2361	51	301
OAK 37	10.3	<1	68	285	561
OAK 38	16.6	3	<10	<4	482
OAK 39	14.0	3	1534	32	388
OAK 40	11.0	<1	755	36	316
OAK 41	23.0	176	3575	--	--
OAK 42	10.4	34	206	114	299
OAK 43	13.9	57	E 6	<3	304

**Table 1C.** Results of analyses for selected inorganic chemical constituents in ground-water samples from selected wells in Oakland County, Michigan – Continued  
 [mg/L, milligrams per liter; µg/L, micrograms per liter; E, estimate; --, No data]

Station name	Bromide, Dissolved mg/L as Br	Acid Neutralizing Capacity, pH 4.5 mg/L as CaCO <sub>3</sub>
OAK 1	0.07	252
OAK 2	.08	286
OAK 4	.03	263
OAK 3	.03	268
OAK 7	.05	296
OAK 8	.09	344
OAK 9	.03	280
OAK 10	.02	319
OAK 11	--	--
OAK 12	.05	332
OAK 14	.06	281
OAK 15	.17	247
OAK 16	.04	284
OAK 17	.05	336
OAK 19	5.51	325
OAK 21	.19	445
OAK 22	.24	353
OAK 23	.28	308
OAK 24	.24	275
OAK 24A	.64	367
OAK 25	.03	295
OAK 26	.03	290
OAK 29	.12	294
OAK 30	.07	263
OAK 31	.06	413
OAK 32	.06	226
OAK 33	.13	325
OAK 34	.03	215
OAK 35	.07	276
OAK 36	.09	287
OAK 20	.03	267
OAK 37	.09	279
OAK 38	.04	288
OAK 39	.06	308
OAK 40	.05	246
OAK 41	.08	--
OAK 42	.04	272
OAK 43	.01	247

**Table 1D.** Seasonal comparison of selected water-quality parameters for samples from selected wells in Oakland County, Michigan  
 [mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; °C, degrees Celsius]

Station name	OAK 3		OAK 4		OAK 9		OAK 12		OAK 35	
Station number	425050083310901		425219083264301		425055083374901		425131083363001		424519083081101	
Sample date	6/4/98	12/16/98	6/4/98	12/15/98	6/9/98	12/3/98	6/26/98	12/3/98	7/8/98	12/15/98
Sample time	1225	950	905	1545	1130	1500	1146	1700	1055	1300
pH, Laboratory (Standard Units)	7.3	7.6	7.5	7.7	7.6	7.6	7.4	7.4	7.6	7.6
Nitrogen, Ammonia (mg/L as N)	.11	.11	.30	.25	.20	.18	.16	.18	.29	.26
Nitrogen, Nitrite (mg/L as N)	.02	.02	.02	.02	.01	<.01	<.01	<.01	<.01	.02
Nitrogen, Ammonia + Organic (mg/L as N)	.12	<.1	.27	.31	.16	.28	.18	.24	.31	.34
Nitrite + Nitrate, Dissolved (mg/L as N)	.05	<.05	.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05
Phosphorus, Dissolved (mg/L as P)	<.01	<.05	<.01	<.05	<.01	<.05	<.01	<.05	<.01	<.05
Phosphorus, Ortho (mg/L as P)	.01	.01	.01	.01	.01	.01	<.01	<.01	.02	.02
Calcium, Dissolved (mg/L as Ca)	63.9	63.1	48.5	50.5	57.0	57.4	66.1	66.4	59.9	62.0
Magnesium, Dissolved (mg/L as Mg)	23.7	22.6	24.2	24.3	26.7	24.6	36.6	33.6	25.6	25.1
Sodium, Dissolved (mg/L as Na)	6.2	5.9	17.7	15.9	16.5	15.0	13.0	12.0	26.6	23.8

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**Table 1D.** Seasonal comparison of selected water-quality parameters for samples from selected well in Oakland County, Michigan--Continued  
 [mg/L, milligrams per liter; µg/L, micrograms per liter; µS/cm, microsiemens per centimeter at 25 degrees Celsius; °C, degrees Celsius]

Station name	OAK 3		OAK 4		OAK 9		OAK 12		OAK 35	
Station number	425050083310901		425219083264301		425055083374901		425131083363001		424519083081101	
Sample date	6/4/98	12/16/98	6/4/98	12/15/98	6/9/98	12/3/98	6/26/98	12/3/98	7/8/98	12/15/98
Sample time	1225	950	905	1545	1130	1500	1146	1700	1055	1300
Flouride, Dissolved (mg/L as F)	.3	.3	.8	.8	.7	.6	.9	.9	.8	.8
Silica, Dissolved (mg/L as SiO <sub>2</sub> )	16.7	16.2	13.5	14.0	17.6	17.7	19.4	20.1	16.7	16.9
Arsenic, Total (µg/L as As)	27	27	46	48	39	38	56	58	12	13
Iron, Dissolved (µg/L as Fe)	459	577	581	974	746	745	499	504	1245	1201
Manganese Dissolved (µg/L as Fe)	23	20	38	42	17	17	18	15	21	20
Residue, Dissolved, 180°C (mg/L)	294	294	278	270	307	305	350	290	331	343
Bromide, Dissolved (mg/L as Br)	.03	.12	.03	.15	.03	.05	.05	.04	.07	.21
Specific Conductance (µS/cm)	497	509	493	484	513	525	611	609	610	604
Acid Neutralizing Capacity, pH 4.5 (mg/L as CaCO <sub>3</sub> )	268	234	263	255	280	278	332	330	276	276

**Table 1E.** Total arsenic concentrations in drinking water at selected ground-water sampling sites in Oakland County, Michigan  
 [All concentrations are in micrograms per liter; --, No data. Time is measured in seconds from the time water began to flow]

Station name	Oak 41	Oak 9	Oak 12	Oak 35	Oak 4	
Sample date	11/23/98	12/3/98	12/3/98	12/15/98	12/15/98	
Seconds	0	177	17	50	1	47
	30	--	40	--	--	--
	60	180	38	52	2	47
	90	180	--	--	--	--
	120	177	36	50	3	48
	150	181	36	--	--	--
	180	173	37	51	2	47
	210	--	37	--	--	--
	240	194	37	48	10	49
	270	188	--	--	--	--
	300	180	36	58	10	51
	360	172	37	56	11	51
	420	177	37	55	11	53
	480	174	39	53	12	50
	540	--	38	52	11	50
	600	173	38	63	11	49
	660	--	--	--	12	49
	720	179	41	59	11	48
	780	--	--	--	11	51
	840	171	39	56	11	48
	900	--	38	--	12	48
	960	181	40	60	12	49
	1020	--	--	58	12	50
	1080	176	40	58	12	51
	1140	--	--	--	12	50
	1200	176	--	58	11	--
	1260	--	--	--	--	--
	1320	--	--	--	12	--
	1380	--	--	--	12	--
	1440	--	--	--	12	--

**Table 1F.** Total manganese concentrations in drinking water at selected ground water sampling sites in Oakland County, Michigan  
 [All concentrations are in micrograms per liter; -- No data. Time is measured in seconds from the time water began to flow]

Station name	Oak 41	Oak 9	Oak 12	Oak 35	Oak 4	
Sample date	11/23/98	12/3/98	12/3/98	12/15/98	12/15/98	
Seconds	0	59	<10.	15	22	42
	30	--	15	--	--	--
	60	56	17	15	23	45
	90	56	--	--	--	--
	120	57	17	15	23	44
	150	56	16	--	--	--
	180	60	16	14	23	44
	210	--	17	--	--	--
	240	58	16	14	23	44
	270	59	--	--	--	--
	300	59	17	14	24	42
	360	60	16	14	23	43
	420	60	17	14	24	43
	480	61	16	14	24	44
	540	--	16	14	24	43
	600	62	16	13	24	44
	660	--	--	--	24	43
	720	65	16	13	25	44
	780	--	--	--	25	44
	840	62	16	14	23	44
	900	--	--	--	23	44
	960	62	16	12	23	44
	1020	--	--	--	24	44
	1080	63	16	13	24	45
	1140	--	--	--	25	44
	1200	65	--	13	24	--
	1260	--	--	--	--	--
	1320	--	--	--	24	--
	1380	--	--	--	24	--
	1440	--	--	--	23	--

**Table 1G.** Total iron concentrations in drinking water at selected ground water sampling sites in Oakland County, Michigan  
 [All concentrations are in micrograms per liter; -- No data. Time is measured in seconds from the time water began to flow]

Station name	Oak 41	Oak 9	Oak 12	Oak 35	Oak 4	
Sample date	11/23/98	12/3/98	12/3/98	12/15/98	12/15/98	
Seconds	0	4040	38	398	216	1013
	30	--	854	--	--	--
	60	3790	685	413	171	1280
	90	3710	--	--	--	--
	120	3740	668	388	374	1191
	150	3880	676	--	--	--
	180	4095	674	392	432	1260
	210	--	668	--	--	--
	240	4050	674	416	1345	1193
	270	4130	--	--	--	--
	300	4190	671	525	1325	906
	360	4090	670	501	1525	930
	420	4110	676	465	1455	949
	480	3995	696	432	1455	1083
	540	--	687	440	1415	1097
	600	4155	686	553	1500	1114
	660	--	--	--	1440	973
	720	4290	758	491	1370	1005
	780	--	--	--	1390	985
	840	4350	698	462	1365	1001
	900	--	--	--	1325	1138
	960	4235	692	507	1355	1122
	1020	--	--	--	1520	1116
	1080	4115	724	502	1550	1137
	1140	--	--	--	1500	1132
	1200	4265	--	489	1480	--
	1260	--	--	--	--	--
	1320	--	--	--	1570	--
	1380	--	--	--	1470	--
	1440	--	--	--	1480	--