

Appendix B
Tables

Table 1
Summary of Previous Investigations
Hows Corner Superfund Site
Plymouth,ME

Year	Agency/Contractor	Work Conducted
Feb. 1988	MEDEP/Weston Geophysical	Phase I investigations found polychlorinated biphenyls (PCBs), tetrachloroethylene (PCE), trichlorobenzene, and tetrachlorobenzene in soils.
Oct. 1988 through July 1989	MEDEP/Weston Geophysical	Phase II investigations to conduct subsurface soil sampling, a soil-gas survey, a seismic refraction survey, monitoring well installation, and downhole geophysical logging, all documenting significant soil and groundwater contamination.
July 1989	MEDEP/Weston Geophysical	MEDEP and Weston sampled groundwater from all monitoring wells and contaminated residential wells. Chlorinated solvents were found in several monitoring wells.
Spring 1990	MEDEP	MEDEP requested USEPA's assistance with the construction of an alternative public water supply.
June 1990	USEPA	USEPA conducted a removal site evaluation and determined a removal action was warranted.
Sep. 1990	USEPA	USEPA signs an Action Memorandum authorizing the expenditure of funds to minimize the threat posed by the site. Proposed actions are divided into 3 steps: (1) soil evaluation, (2) design and install an alternative water supply, and (3) evaluate and install an Interim Remedial Measure (IRM) to stabilize the groundwater contaminant plume. (This third phase was later abandoned).
Oct. 1990	ATSDR	ATSDR reviews site data and concludes that the contaminated soil poses an immediate threat to public health and the groundwater. USEPA installs a fence enclosing the site to alleviate the threat of human contact, and initiates soil removal activities to the threat to groundwater.
Nov 1990	USEPA/OHM	USEPA/OHM begins the removal of on-site soil
June 1991	USEPA/OHM	USEPA/OHM delineates the lateral extent of contaminated soils on site. Soils were excavated to bedrock in all areas where PCBs were found to be above 10 ppm. Depth to bedrock ranged from 6 inches to 3 feet resulting in the removal of 847 tons of contaminated soil
Feb. 1992	USEPA and MEDEP	USEPA and MEDEP determined that 48 residences might be appropriate for an alternative water supply.
June 1992	MEDEP	MEDEP purchases property to locate an alternative water supply and pump station.
Spring 1994	USEPA	USEPA proposes Hows Corner as an NPL site.
Aug. 1995	USEPA/CDM	Design and construction of the alternative water supply was completed by USEPA/CDM. Thirty-six residences allowed their homes to be connected to the water system. Other residences declined an offer to be connected.
Sept. 1995	USEPA	USEPA finalizes the placement of the Hows Corner Site on the NPL.

Table 2
Summary of Soil Analytical Data
Hows Corner
Superfund Site
Plymouth, Maine

PARAMETER	USEPA Region 9 PRG	SEPP-1	SS-AA	SS-109(0-1)	SS-105(0-1)	SS-105(1-2)	SS-107(0-1)	SS-107(1-2)	SS-108(0-1)	SS-108(0-1)DU	SS-108(1-2)	SS-109(0-1)	SS-110(0-1)	SS-111(0-1)	SS-112(0-1)	SS-113(0-1)	SS-113(0-1)DU	SS-113(1-2)	SS-114(0-1)	SS-114(1-2)	SS-114(2-3)
		11/17/1999	06/22/2000	11/15/1999	11/15/1999	11/15/1999	11/16/1999	11/16/1999	11/16/1999	11/16/1999	11/16/1999	06/01/2000	11/17/1999	11/17/1999	11/17/1999	11/17/1999	11/17/1999	11/17/1999	11/17/1999	11/17/1999	11/17/1999
VOCs (ug/kg)																					
1,2,3-Trichlorobenzene	NS	<10	<10J	<4.9J	<7.5J	<330	<490	<370	<2.8J	<6.5	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
1,2,4-Trichlorobenzene	650000	<10	<10J	<4.9J	<7.5J	<330	<490	<370	7J	<6.5	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
1,2,4-Trimethylbenzene	5700	<10	<10J	<4.9J	<7.5J	<330	<490	<370	<2.8J	<6.5	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
2-Butanone	NS	27	<20J	10J	41J	<660	<970	<730	8J	27J	<820	<13	<810	<850	<960	<1000	<970	<1000	<1000	<770	<800
2-Heptanone	NS	<20J	<20J	81J	150J	<660	<970	<730	<5.6J	93J	<820	<13	<810	<850	<960	<1000	<970	<1000	<1000	<770	<800
4-Isopropyltoluene	NS	11	<10J	14J	28J	<330	<490	<370	5J	10	<410	(5J)	<400	<420	<480	<500	<480	<500	<500	<380	<400
4-Methyl-2-pentanone	NS	<20J	<20J	<9.7J	<15J	<660	<970	<730	<5.6J	<13J	<820	<13	<810	<850	<960	<1000	<970	<1000	<1000	<770	<800
Acetone	1600000	150	<120J	80J	(900)J	<660	1300	1200	100J	2100J	1200	79	<810	<850	(470)J	(930)J	1700	(620)J	(750)J	(430)J	(450)J
Dichlorodifluoromethane	940000	<10J	<10J	<4.9J	8J	<330	<490	<370	5J	12	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
Isopropylbenzene	160000	<10	<10J	<4.9J	(4J)	<330	<490	<370	<2.8J	<6.5	<410	<6	<400	<420	<480	<500	(290)J	<500	<500	<380	<400
Methylene chloride	8900	<19	<16J	(4J)	12J	<1100	1400	<370	6J	<14	<410	<8J	830	990	1200	<480	1200	890	720	740	
Naphthalene	56000	<10	5J	<4.9J	<7.5J	<330	<490	<370	<2.8J	<6.5	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
Tetrachloroethene	5700	220J	77J	54J	<7.5J	<330	<490	<370	<2.8J	<6.5	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
Trichloroethene	2800	8J	<10J	<4.9J	<7.5J	<330	<490	<370	<2.8J	<6.5	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
Toluene	520000	<10	<10J	<4.9J	(4J)	<330	<490	<370	<2.8J	7	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
sec-Butylbenzene	110000	<10	<10J	<4.9J	<7.5J	<330	<490	<370	<2.8J	<6.5	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
tert-Butylbenzene	130000	<10	<10J	<4.9J	<7.5J	<330	<490	<370	<2.8J	<6.5	<410	<6	<400	<420	<480	<500	<480	<500	<500	<380	<400
SVOCs (ug/kg)																					
bis(2-Ethylhexyl) phthalate	35000	<760	<500	(340)J	750	—	—	—	640	3800J	—	<890	—	—	—	—	—	—	—	—	—
PCBs (ug/kg)																					
Aroclor 1260	220	<38	<25	<20	<22	<20	<23	<21	39	<22	<20	—	<20	<23	<24	<21	<20	<20	<24	<22	<21
Pesticides (ug/kg)																					
None detected	NS	—	—	ND	—	—	—	—	ND	ND	—	—	—	—	—	—	—	—	—	—	—
Inorganics (mg/kg)																					
Aluminum	76000	34200	21200	17100	20700	—	—	—	24000	18600	—	15600	—	—	—	—	—	—	—	—	—
Antimony	31	<2.5J	(0.40)BJ	<1.8	<1.7	—	—	—	(0.34)	<0.91	—	<1.6R	—	—	—	—	—	—	—	—	—
Arsenic	0.39	53.8	20.7	14.6	11.5	—	—	—	11.3	9.9	—	10.7	—	—	—	—	—	—	—	—	—
Barium	5400	95.3	82.2J	38.2	60.2	—	—	—	74.4	62.6	—	47.8	—	—	—	—	—	—	—	—	—
Beryllium	150	2.6	1.2	0.58	(0.50)	—	—	—	<0.90	<0.57	—	(0.47)B	—	—	—	—	—	—	—	—	—
Cadmium	37	(1.3)	1.1	<2.2	<2.1	—	—	—	<1.8	<1.1	—	<2.1	—	—	—	—	—	—	—	—	—
Calcium	NS	4030J	4570	372	473	—	—	—	468	190	—	310	—	—	—	—	—	—	—	—	—
Chromium	210	53.8	33.9J	37.0	33.9	—	—	—	36.7	28.0	—	25.9	—	—	—	—	—	—	—	—	—
Cobalt	4700	27.9	13.6	12.4	8.9	—	—	—	14.2	11.1	—	8.8	—	—	—	—	—	—	—	—	—
Copper	2900	96.1	31.5	17.8	11.5J	—	—	—	15.4	12.1	—	13.3	—	—	—	—	—	—	—	—	—
Hardness	—	—	23300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Iron	23000	32500	25100	29500	29600	—	—	—	35600	26700	—	26600	—	—	—	—	—	—	—	—	—
Lead	400	31.6	25.2	13.9	15.1	—	—	—	14.5	13.4	—	34.4	—	—	—	—	—	—	—	—	—
Magnesium	NS	3130	2880	4470	3590	—	—	—	5650	3730	—	2700	—	—	—	—	—	—	—	—	—
Manganese	1800	11500J	5050J	448	382	—	—	—	503	508	—	409	—	—	—	—	—	—	—	—	—
Mercury	23	0.51	0.19	0.06	0.08	—	—	—	0.06	0.04	—	0.08	—	—	—	—	—	—	—	—	—
Nickel	1600	67.1	45.5J	38.6	32.4	—	—	—	46.6	29.7	—	21.4	—	—	—	—	—	—	—	—	—
Potassium	NS	992	1040	<96	<110	—	—	—	1080	854	—	462	—	—	—	—	—	—	—	—	—
Selenium	390	(1.6)	<0.96	(0.74)	<2.1	—	—	—	(0.98)	(0.89)	—	(0.75)B	—	—	—	—	—	—	—	—	—
Silver	390	4.1	2.3J	<1.7	<1.8	—	—	—	(0.15)	<1.7	—	(0.23)B	—	—	—	—	—	—	—	—	—
Sodium	NS	<16	44.7	<11	53.6	—	—	—	<18	<57	—	30.6	—	—	—	—	—	—	—	—	—
Vanadium	550	18.9	15.8J	24.0	32.3	—	—	—	28.1	22.1	—	26.1	—	—	—	—	—	—	—	—	—
Zinc	23000	65	87.5J	55.0	62.5	—	—	—	64.8	49.9	—	56.1	—	—	—	—	—	—	—	—	—
TPH (mg/kg)																					
TPH	NS	—	130	40	280	72	230B	100B	—	—	49B	—	110	210	190	250	290J	180	250	<30	<12
TOC (mg/kg)																					
TOC	NS	—	100000+	—	—	—	—	—	—	—	—	28000	—	—	—	—	—	—	—	—	—
Total Solids (%)																					
Solids - Total Residue	NS	44	67	84	78	78	74	79	52	—	63	74	85	74	71	82	86	84	72	77	80

NA = not analyzed
 () = detected below reporting limits
 B = detected in laboratory method blank(s)
 < = not detected at indicated reporting level
 J = estimated value
 R = rejected
 NS = no standard
 bold = exceedance of Region 9 PRGs

Table 2
Summary of Soil Analytical Data
Hows Corner
Superfund Site
Plymouth, Maine

PARAMETER	USEPA Region 9 PRG	SS-117(0-1)	SS-120(0-1)	SS-124(0-1)	SS-124(1-2)	SS-126(0-1)	SS-128(0-1)	SS-130(0-1)	SS-134(0-1)	SS-134(0-1)DU	SS-135(0-1)	SS-136(0-1)	SS-137(0-1)
		11/17/1999	11/18/1999	12/16/1999	12/16/1999	12/16/1999	12/16/1999	12/16/1999	06/01/2000	06/01/2000	06/01/2000	06/01/2000	06/01/2000
VOCs (ug/kg)													
1,2,3-Trichlorobenzene	NS	<6	---	<6.J	---	---	---	<7.J	---	---	---	---	---
1,2,4-Trichlorobenzene	65000	<6	---	<6.J	---	---	---	<7.J	---	---	---	---	---
1,2,4-Trimethylbenzene	5700	<6	---	<6	---	---	---	18.J	---	---	---	---	---
2-Butanone	NS	25	---	<13.J	---	---	---	51.J	---	---	---	---	---
2-Hexanone	NS	<12.J	---	<13.J	---	---	---	240.J	---	---	---	---	---
4-Isopropyltoluene	NS	19	---	<6.J	---	---	---	69.J	---	---	---	---	---
4-Methyl-2-pentanone	NS	<12.J	---	<13.J	---	---	---	21.J	---	---	---	---	---
Acetone	160000	1600	---	56.J	---	---	---	190.J	---	---	---	---	---
Dichlorodifluoromethane	94000	8.J	---	12.J	---	---	---	10.J	---	---	---	---	---
Isopropylbenzene	180000	<6	---	<6.J	---	---	---	23.J	---	---	---	---	---
Methylene chloride	8900	<21	---	<19	---	---	---	<25	---	---	---	---	---
Naphthalene	56000	<6	---	<6	---	---	---	<7.J	---	---	---	---	---
Tetrachloroethene	5700	<6.J	---	<6	---	---	---	<7.J	---	---	---	---	---
Trichloroethene	2800	<6.J	---	<6	---	---	---	<7.J	---	---	---	---	---
Toluene	520000	(4.J)	---	<6.J	---	---	---	8	---	---	---	---	---
sec-Butylbenzene	110000	<6	---	<6.J	---	---	---	(6.J)	---	---	---	---	---
tert-Butylbenzene	130000	<6	---	<6.J	---	---	---	<7.J	---	---	---	---	---
SVOCs (ug/kg)													
bis(2-Ethylhexyl) phthalate	35000	<400	---	---	---	---	---	<430	<430	---	---	---	---
PCBs (ug/kg)													
Aroclor 1260	220	<20	490	46	<19	<20	65	<23	<22	<23	74	<24	<23
Pesticides (ug/kg)													
None detected	NS	---	---	---	---	---	---	---	---	---	---	---	---
Inorganics (mg/kg)													
Aluminum	76000	11300	---	---	---	---	---	19000	17600	---	---	---	---
Antimony	31	(0.26)J	---	---	---	---	---	<0.99R	<1.6R	---	---	---	---
Arsenic	0.39	(0.6J)	---	---	---	---	---	9.4	9.6	---	---	---	---
Barium	5400	34.8	---	---	---	---	---	53.7	53.4	---	---	---	---
Beryllium	150	<0.53	---	---	---	---	---	(0.49)B	0.52	---	---	---	---
Cadmium	37	<2.1	---	---	---	---	---	<1.2	<2.0	---	---	---	---
Calcium	NS	570J	---	---	---	---	---	263	243	---	---	---	---
Chromium	210	13.9	---	---	---	---	---	26.7	27.3	---	---	---	---
Cobalt	4700	9.3	---	---	---	---	---	7.7	8.0	---	---	---	---
Copper	2900	11.8	---	---	---	---	---	8.4	7.8	---	---	---	---
Hardness	---	---	---	---	---	---	---	---	---	---	---	---	---
Iron	23000	25700	---	---	---	---	---	23900	26100	---	---	---	---
Lead	400	37.3	---	---	---	---	---	15.2	17.3	---	---	---	---
Magnesium	NS	1840	---	---	---	---	---	3040	3040	---	---	---	---
Manganese	1800	922J	---	---	---	---	---	328	410	---	---	---	---
Mercury	23	0.04	---	---	---	---	---	0.06	0.07	---	---	---	---
Nickel	1600	16.8	---	---	---	---	---	25.2	22.7	---	---	---	---
Potassium	NS	280	---	---	---	---	---	631	490	---	---	---	---
Selenium	390	<2.1	---	---	---	---	---	(0.45)B	(0.84)B	---	---	---	---
Silver	390	(0.20)	---	---	---	---	---	(0.18)B	(0.18)B	---	---	---	---
Sodium	NS	<10	---	---	---	---	---	32.0	29.1	---	---	---	---
Vanadium	550	16.2	---	---	---	---	---	25.5	27.5	---	---	---	---
Zinc	23000	47.5	---	---	---	---	---	61.1	59.8	---	---	---	---
TPH (mg/kg)													
TPH	NS	---	200	---	---	---	---	---	---	---	---	---	---
TOC (mg/kg)													
TOC	NS	---	---	---	---	---	---	26000	22000	---	---	---	---
Total Solids (%)													
Solids - Total Residue	NS	82	82	77	87	86	72	74	79	75	75	72	73

NA = not analyzed
() = detected below reporting limits
B = detected in laboratory method blank(s)
< = not detected at indicated reporting level
J = estimated value
R = rejected
NS = no standard
bold = exceedance of Region 9 PRGs

Table 3
Summary of Detected Surface Water Analytical Data

Hows Corner
Superfund Site
Plymouth, Maine

PARAMETER	MW-1POND 11/24/1999	SEEP-1 10/29/1999	SW-101 11/04/1999	SW-101 DUP 11/04/1999	SW-102 11/04/1999	SW-103 11/04/1999	SW-104 11/04/1999	SW-105 11/04/1999	SW-106 11/04/1999	SW-107 11/04/1999	SW-108 11/05/1999	SW-108 DUP 11/05/1999	SW-109 11/05/1999	SW-110 11/05/1999	SW-111 11/05/1999	SW-112 11/05/1999	SW-113 11/05/1999
VOCs (ug/l)																	
Methylene chloride	<1	1.	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	22	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1	(0.7)J	2	1	1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	<1	4.	<1	<1	<1	<1	<1	18	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1	<1	<1	(0.6)J	<1	<1	<1	<1	<1	<1	<1	<1	2
Tetrachloroethane	2	82	16	12	12	<1	<1	60	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MTBE	<1J	(0.7)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	(3)J	<5J	<5J	<5J
m+p-Xylenes	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SVOCs (ug/l)																	
None detected	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs (ug/l)																	
None detected	---	---	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (ug/l)																	
Aluminum	---	---	320	330	133	<100	<100	<100	119	<100	<100	<100	<100	<100	735	<100	373
Arsenic	---	---	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Barium	---	---	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	20.7	15.8	31.5	8.2	87.2	20.5	15.8
Calcium	---	---	21400	22000	20400	9200	9350	18800	18300	29800	7190	7180	7100	5180	11400	10500	25100
Chromium	---	---	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	(5.3)J	<15
Cobalt	---	---	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Copper	---	---	<25	<25	<25	<25	<25	<25	<25	<25	<25	(2.6)J	<25	<25	<25	<25	<25
Hardness	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Iron	---	---	855	855	324	218	153	1020	1540	<5.0	352J	357J	383J	779J	907E	493J	894J
Lead	---	---	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	(1.3)J	<5.0	(1.2)J	(1.5)J	(1.8)J	<5.0
Magnesium	---	---	5530	5680	5270	2320	2350	5420	5480	9460	1810	1760	1750	1560	2820	2810	4870
Manganese	---	---	43.6	48.0	95.7	49.2	19.6	264	267	12.7	39.4	40.4	37.0	127	40.8	88.8	49.7
Mercury	---	---	<0.20	<0.20	<0.20	<0.20	(0.02)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	---	---	<40	<40	<40	<40	<40	<40	<40	<40	(1.2)J	<40	<40	<40	<40	<40	<40
Potassium	---	---	1120	1140	(985)	(817)	(673)	(761)	3240	2190	1380	(994)J	1390	1090	(655)J	1110	1280
Selenium	---	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Silver	---	---	<15	<15	<15	<15	<15	<15	<15	<15	<15	(1.1)J	<15	<15	<15	<15	<15
Sodium	---	---	4950	5060	4380	3280	3250	11600	9430	5700	3510	3570	3540	2270	7820	4510	8940
Zinc	---	---	<25	<25	<25	<25	<25	<25	<6.1	<25	<25	<25	<25	(16.0)J	(16.7)J	<25	<25

NA = not analyzed
 J = estimated
 < = not detected at indicated reporting limit
 () = detected below the reporting limit

Table 3
Summary of Detected Surface Water Analytical Data

How's Corner
Superfund Site
Plymouth, Maine

PARAMETER	SW-114 11/05/1999	SW-116A 11/10/1999	SW-116 DUP 11/10/1999	SW-116 11/10/1999	SW-117 11/10/1999	SW-118 11/10/1999	SW-119 11/10/1999	SW-120A 11/18/1999	SW-121 08/21/2000	SW-121 DUP 08/21/2000	SW-122 08/21/2000	SW-123 08/22/2000	SW-126 08/22/2000
VOCs (ug/l)													
Methylene chloride	<1	<1	<1	<1J	<1J	<1J	<1	<1	<1J	<1J	<1	<1	<1
cis-1,2-Dichloroethene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7	<1	<1
1,1,1-Trichloroethane	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	1	<1
Trichloroethene	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1
Toluene	<1	<1	1	1	(0.6)J	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	<1	<1	<1	<1	<1	<1	46	<1	<1	<1	<1	11	<1
1,2,4-Trimethylbenzene	<1	<1	(0.5)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MTBE	<1	<1	<1J	<1J	<1J	<1J	<1	<1	<1	<1	<1	<1	<1
Acetone	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J	<5J
m+p-Xylenes	<1	<1	(0.7)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
SVOCs (ug/l)													
None detected	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs (ug/l)													
None detected	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (ug/l)													
Aluminum	436	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	443
Arsenic	<8.0	(2.4)J	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	(2.6)B
Barium	10.2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	14.5	5.5	5.5	5.5	(2.1)B	5.6
Calcium	30400	17200	16300	15000	4900	3110	3030	16100	2640	2590	13000	16800	37500
Chromium	<15	<15	<15	(0.89)J	(0.63)J	(0.79)J	<15	(0.68)J	<15	<15	<15	<15	<15
Cobalt	<30	<30	<30	<30	<30	<30	<30	(1.6)J	<30	<30	<30	<30	<30
Copper	(4.2)J	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Hardness	---	---	---	---	---	---	---	---	10100	9960	54000	61200	118000
Iron	872J	4200	3270	1180	218	<50	72.1	378	196	190	2270	<50	830
Lead	<5.0	<5.0	<5.0	(0.72)J	<5.0	(1.1)J	<1.8	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Magnesium	4920	4130	4090	4490	1670	1470	1050	3970	850	847	5200	4710	5820
Manganese	113	691	593	770	37.7	60.8	95.9	1380	105	106	252	62.6	118
Mercury	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	<40	<1	<40	<1.4	(0.93)J	<40	<40	(1.3)J	<40	<40	<40	<40	<40
Potassium	1500	<1000	1690	<1000	<1000	<1000	<1000	2000	(7.67)B	(7.45)B	(650)B	(880)B	(918)B
Selenium	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	(3.8)B
Silver	<15	<15	<15	<15	(1.1)J	<15	<15	<15	<15	<15	<15	<15	<15
Sodium	8880	18500	17400	3230	1250	1360	1770	11100	1070	1050	10700	3400	11100
Zinc	<25	<25	<25	<25	<25	<25	<25	(20.8)J	(18.2)B	(17.8)B	(19.0)B	<25	<25

NA = not analyzed
J = estimated
< = not detected at indicated reporting limit
() = detected below the reporting limit

Table 4
Summary of Detected Sediment Analytical Data

Hows Corner
Superfund Site
Plymouth, Maine

	05/1999	07/1999	08/1999	09/1999	10/1999	11/1999	12/1999	01/2000	02/2000	03/2000	04/2000	05/2000	06/2000	07/2000	08/2000	09/2000	10/2000	11/2000	12/2000
VOCs (ug/kg)																			
1,1-Dichloroethane	<11J	<10J	<8.5J	<13	<10	<30R	<22J	<8J	<11J	<8	<9J	<40R	<18J	<50R	<10J				
2-Butanone	<22J	<21J	32J	(17J)	(17J)	160J	80J	<13J	<22J	(16J)	<18J	<79R	<36J	<100R	31J				
2-Hexanone	<22J	<21J	<17J	<26J	<80J	<60R	<43J	40J	200J	<17J	200J	<79R	624J	870J	190J				
4-Isopropyltoluene	<11J	<10J	<8.5J	<13	<10	<66J	<22J	<6J	<11J	<8	90J	<40R	(9J)	<50J	12J				
Acetone	37J	44J	112J	73J	85J	520J	220J	32J	290J	51J	240J	(72J)	742J	670J	200J				
Benzene	<11J	<10J	<8.5J	<13	<10	<30R	<22J	<6J	<11J	<8	<9J	<40R	<18J	<50R	<10J				
Carbon disulfide	<11J	<10J	<8.5J	13	<10	<30R	(11J)	<6J	<11J	(5J)	<9J	<40R	<18J	<50R	<10J				
Dichlorodifluoromethane	<11J	<10J	<8.5J	<13	<10	80J	<22J	18J	(6J)	<8	<9J	<40R	<18J	<50R	<10J				
Isopropylbenzene	<11J	<10J	<8.5J	<13	<10	<30R	<22J	<6J	<11J	<8	22J	<40R	<18J	<50R	<10J				
Methylene chloride	<12J	<11J	<8.5J	<17J	<13J	<110R	<22J	<14J	<11J	<8J	<9J	<40R	<24J	<67R	<10J				
Styrene	<11J	<10J	<8.5J	<13	<10	<30R	<22J	<6J	<11J	<8	16J	<40R	<18J	<50R	<10J				
Tetrachloroethene	(10J)	48J	33J	<13J	<10J	34J	<22J	<6J	<11J	<8	(7J)	<40R	<18J	<50R	<10J				
Toluene	<11J	<10J	<8.5J	<13	<10	88J	(13J)	<6J	<11J	<8	(7J)	<40R	<18J	<50R	<10J				
Trichloroethene	11J	15J	<8.5J	<13	<10	62J	<22J	<6J	<11J	<8	<9J	<40R	<18J	<50R	<10J				
cis-1,2-Dichloroethene	<11J	<10J	<8.5J	<13	<10	490J	<22J	<6J	<11J	<8	<9J	<40R	<18J	<50R	<10J				
trans-1,2-Dichloroethene	<11J	<10J	<8.5J	<13	<10	<30R	<22J	<6J	<11J	<8	<9J	<40R	<18J	<50R	<10J				
SVOCs (ug/kg)																			
None detected	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs (ug/kg)																			
None detected	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (mg/kg)																			
Aluminum	13100	16800	13600	9120	13000	8800J	13200	14200	15400	19900	14500	8560R	21300	13300J	13700				
Antimony	<1.4J	<1.5N	<0.92	<1.3	<1.1	<2.9R	<1.8	<1.4	<0.86	<0.93	<1.3	<2.2R	<1.3	<4.5R	<1.6				
Arsenic	7.8	10.3	8.8	5.4	8.6	2.9J	5.4	9.2	9.3	7.6	9.8	4.6J	8.4	8.5J	14.9				
Barium	36.6	55.4	43.5	33.7	34.8	35.7J	39.0	49.4	20.5	28.7	45.4	42.4J	86.8	52.6J	61.4				
Beryllium	(0.36J)	(0.43J)	(0.34J)	(0.25J)	(0.30J)	<1.8R	<1.1	(0.26J)	(0.38)	(0.43)	(0.34)	(0.14J)	(0.71)	(0.82J)	(0.32)				
Cadmium	<1.8	<1.9	<1.2	<1.6	<1.4	<3.6R	<2.3	(0.1J)	<1.1	<1.2	<1.6	<2.7R	<1.6	<5.6R	<2.0				
Calcium	1980	2810	1420	1500	1540	3470J	1870	1990	1180	1500	696	2430J	4310	17500J	1930				
Chromium	29.0	35.2	26.8	16.9	22.1	14.3J	18.5	31.4	20.9	24.4	26.3	13.1J	35.4	39.3J	31.2				
Cobalt	9.4	10.2	8.2	5.9	7.8	(3.5J)	(5.6J)	11.1	5.7	5.8	7.9	(4.5J)	10.5	(5.9J)	14.0				
Copper	16.4	19.4	10.5	6.7	10.7	(7.7J)	9.0	14.9	7.6	6.3	6.0	(6.6J)	16.6	29.6J	20.7				
Hardness	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---				
Iron	18300	20700	19200	12500	17600	8480J	13300	23400	20400	17500	25300	10900J	27200	14000J	36100				
Lead	28.8	35.6	12.6	8.0	11.6	14.6J	12.9	9.7	16.2J	9.7J	10.0	22.2J	17.0	16.9J	10.2				
Magnesium	4320	5060	3920	2480	3570	1980J	2140	5300	2340	2430	4710	1840J	5640	2520J	6830				
Manganese	167	200	269	212	226	105J	243	312	145	110	264	68.2J	455	504J	4060				
Mercury	<0.058	0.02J	(0.02J)	(0.03J)	(0.03J)	<0.12R	(0.04J)	<0.041	0.06	0.08	(0.01)	(0.07J)	0.08	0.26J	<0.042				
Nickel	30.7	33.3	27.4	17.8	28.8	(12.2J)	15.2	34.6	19.0	19.2	26.7	14.0J	38.2	(21.9J)	60.8				
Potassium	1110J	2130J	1420	753	1000J	716J	644	2270	310	524	983	1060J	1460	976J	1130				
Selenium	(0.63)	(0.66J)	<1.2	(0.44J)	<1.4	<3.6R	(0.64J)	<1.7	(0.49)	(0.42)	<1.6	<2.7R	(0.52)	(3.2J)	<2.0				
Silver	<2.7	<2.8	<1.7	<2.4	<2.1	<5.4R	<3.4	<2.5	<1.8	<1.7	<2.4	<4.1R	<2.5	<8.4R	<3.0				
Sodium	108J	187J	138	97.4	123	154J	87.3	204	<11	57.7	64.9	109J	136	<56R	141				
Thallium	<2.7	<2.8	<1.7	<2.4	<2.1	<5.4R	<3.4	<2.5	<1.8	<1.7	<2.4	<4.1R	<2.5	<8.4R	<3.0				
Vanadium	19.6	25.8	21.8	12.6	18.8	16.3J	22.2	22.1	17.1	21.4	22.8	19.6J	25.6	18.9J	18.4				
Zinc	54.1J	65.3J	42.9J	38.2J	41.7J	32.4J	32.9J	43.6J	29.4	28.2	34.8	33.0J	81.1	51.4J	55.8				
TOC (mg/kg)																			
TOC (mg/kg)	29000	24000	18000	26000	23000	130000+J	45000	1800	29000	32000	2900	120000+J	57000	160000+J	2700				
Residue Solids (%)																			
Solids - Total Residue	51.	54.	69.	56.	53.	24.	38.	79.	69.	71.	82.	20.	45.	14.	77.				

NA = not analyzed
J = estimated value
R = rejected
N = spiked sample recovery outside control limits
< = not detected at indicated reporting limit
() = detected below reporting limits

Table 4
Summary of Detected Sediment Analytical Data

How's Corner
Superfund Site
Plymouth, Maine

PARAMETER	SE 1	SE 2	SE 3	SE 4	SE 5	SE 6	SE 7	SE 8	SE 9	SE 10	SE 11	SE 12	
VOCs (ug/kg)													
1,1-Dichloroethane	<13	<8	<7	<70R	<90R	<14	<8	<10	(8)J	<14	(80)J	<22	<38R
2-Butanone	38	(7)J	14	(110)J	<180R	<27	<17	(10)J	<26J	<27	<210 R	(28)J	<77R
2-Hexanone	<26	<13J	<14J	<140R	<180R	<27J	<17J	<20J	<26J	<27	<210 R	<43J	<77R
4-Isopropyltoluene	<13	<8	<7	<70R	(73)R	<14	<8	<10	<13J	<14J	<100R	<22	<38R
Acetone	72J	15	14	250J	270R	40	61	100	<26J	29J	290 R	(42)J	79J
Benzene	<13	<8	<7	<70R	<90R	<14	<8	<10	<13J	<14	<100R	<22	<38R
Carbon disulfide	<13J	<8	<7	<70R	<90R	<14	<8	<10	<13J	<14	(79)J	<22	<38R
Dichlorodifluoromethane	<13	9	<7	<70R	<90R	<14	<8	<10J	<13J	<14	<100R	<22	<38R
Isopropylbenzene	<13	<8	<7	<70R	<90R	<14	<8	<10	<13J	<14J	<100R	<22	<38R
Methylene chloride	<13J	13J	(5)J	(69)J	91R	(13)J	8J	<17	<13J	<20J	<120R	<25J	<45R
Styrene	<13	<8	<7	<70R	<90R	<14	<8	<10	<13J	<14	<100R	<22	<38R
Tetrachloroethene	<13	<8	<7	<70R	<90R	(11)J	79	<10J	1300	860	<100R	<22	<38R
Toluene	<13	<8	<7	<70R	<90R	<14	<8	<10	<13J	<21J	<100R	<22	<38R
Trichloroethene	<13	<8	<7	<70R	<90R	<14	<8	<10	320J	270	<100R	<22	<38R
cis-1,2-Dichloroethene	<13	<8	<7	<70R	<90R	<14	<8	<10	(310)J	(560)J	9800J	(18)J	<38R
trans-1,2-Dichloroethene	<13	<8	<7	<70R	<90R	<14	<8	<10	<13J	<14	(57)J	<22	<38R
SVOCs (ug/kg)													
None detected	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs (ug/kg)													
None detected	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics (mg/kg)													
Aluminum	23200	10000	9220	7060J	4530R	21300	6500	7380	8810	10300	14900J	24500	22100J
Antimony	<2.8	(0.26)J	(0.16)J	<4.7R	<5.6R	<1.3N	<0.96N	<0.94	<0.75	<0.74	(0.34)J	<2.4J	<2.4R
Arsenic	28.5	7.4	7.3	(1.9)J	(2.1)R	3.2	5.6	12.0	2.0	2.6	9.2J	17.9	32.7J
Barium	75.1	26.3	24.9	64.2J	52.7R	37.7	25.7	22.3	108J	31.7J	59.9J	78.2	70.8J
Beryllium	(0.51)	(0.30)J	<0.44	<3.0R	<3.5R	(0.45)J	<0.60	<0.58	(0.32)B	(0.30)B	0.81J	0.79	0.83J
Cadmium	<3.6	<1.3	<0.88	<5.9R	<7.0R	<1.6	<1.2	<1.2	<0.94	(0.25)B	0.89J	<3.0	(1.4)J
Calcium	4940	1390	1300	13100J	15200R	334	294	1600	576	442	12100J	1990	6330J
Chromium	46.0	25.8	22.3	(8.2)J	(2.4)R	21.4	4.7	10.6	12.4	11.4	17.7J	48.6J	49.6J
Cobalt	25.5	9.7	9.2	(5.6)J	<23R	(3.7)J	(0.66)J	3.7	(1.4)B	(1.7)B	12.7J	20.2	28.8J
Copper	42.2	15.5	14.5	(13.9)J	(12.0)R	4.6	(1.4)J	9.1	2.8	2.6	26.2J	31.7	38.6J
Hardness	---	---	---	---	---	---	---	---	4950	5560	40300J	43500	48200J
Iron	48600	20700J	7780	5480J	1870R	13900	7060	20700	5020	6170	12700J	40100	48600J
Lead	26.6	9.9	8.4	46.2J	16.6R	13.4	9.8	16.6	33.0J	15.5J	43.2J	22.2J	29.0J
Magnesium	8720	4360	3880	1540J	1700R	1820	339	977	853	1080	2420J	9360	7860J
Manganese	2350	188	178	559J	70.7R	42.1	14.0	116	25.0	31.0	483J	451	4430J
Mercury	(0.03)	(0.02)J	0.01J	0.30J	0.27R	0.08	(0.03)J	(0.02)J	(0.06)B	(0.05)B	0.37J	(0.02)B	(0.09)J
Nickel	62.9	33.9	29.4	<29R	<31R	24.2	5.1	12.1	6.8	9.6	23.8J	60.3	64.4J
Potassium	2580	758	717	<740R	<770R	<160	<110	273	288	366	575J	2360	1580J
Selenium	<3.6	<1.3	<0.88	<5.9R	(2.5)R	<1.6	<1.2	<1.2	<0.94	<0.93	<0.77R	<3.0	<3.0R
Silver	<5.3	<1.9	<1.3	<8.9R	<10R	<2.4	<1.8	(0.32)J	<1.4	<1.4	(0.44)J	<3.0J	(0.45)J
Sodium	294	<13	<8.8	<59R	<70R	<16	<12	<12	35.0	41.2	125J	132	220J
Thallium	<5.3	<1.9	(0.54)J	<8.9R	<10R	<2.4	(0.54)J	(0.88)J	<1.4	<1.4	<1.2R	<4.5	<4.4R
Vanadium	32.0	18.4	14.6	13.1J	<7.8R	21.2	7.3	16.3	11.0	13.2	20.1J	32.7J	32.1J
Zinc	88.8	40.9	36.8	33.5J	<11R	29.7	8.0	67.8	83.0J	19.6J	100J	116J	145J
TOC (mg/kg)													
TOC (mg/kg)	14000	---	---	24000+J	23000+R	---	---	29000	59000	37000	100000+J	17000	37000J
Residue Solids (%)													
Solids - Total Residue	45.	71.	75.	12.	9.8	53.	70.	68.	44.	47.	10.	31.	27.

NA = not analyzed
 J = estimated value
 R = rejected
 N = spiked sample recovery outside control limits
 < = not detected at indicated reporting limit
 () = detected below reporting limits

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Hows Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	source area	MW-1B	MW-1B DUP	MW-1B	MW-1B	MW-200B	MW-200B	MW-200B	MW-200B	MW-21B	MW-21B	MW-21B	MW-3B	MW-3B DUP	MW-3B	MW-3B DUP	MW-40	MW-5B	MW-5B
	MCL/MEQ	01/08/2000	01/08/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	05/23/2000	12/17/1998	01/08/2000	05/23/2000
<i>Inorganics (ug/l)</i>																			
Aluminum	NS/1430	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Antimony	6/3	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Arsenic	50/10	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Barium	2000/2000	<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	<5.0	<5.0
Beryllium	4/NS	<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	<5.0	<5.0
Cadmium	5/NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	NS/NS	16700	16800	14900	14900	20000	20000	27700	18300	49000	47000	49100	49700	11800	24100	16400	11800	24100	16400
Chromium	100/40	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Cobalt	NS/NS	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Copper	1300/1300	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Iron	NS/NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Lead	15/10	<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	<5.0	<5.0
Magnesium	NS/NS	5000	4810	4230	4230	13200	13200	10100	6770	17400	16800	19000	19500	3040	6480	3400	3040	6480	3400
Manganese	NS/500	<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	<5.0	<5.0
Mercury	2/2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	NS/140	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
Potassium	NS/NS	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Silver	NS/35	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Sodium	NS/20000	2370	2250	2010	2010	2800	2800	2460	1640	9150	8820	9700	9800	12700	81400	2280	12700	81400	2280
Thallium	2/0.5	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Vanadium	NS/NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Zinc	NS/2000	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
<i>Net. Atten. Parameters (mg/l)</i>																			
Sulfate	NS/NS	5.5	5.0	5.0	5.0	5.0	5.0	4.8	10	9.6	10	9.6	10	9.6	10	9.6	10	9.6	10
Ferric iron	NS/NS	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alkalinity (as CaCO3)	NS/NS	63	63	63	63	140	140	120	180	180	180	180	180	180	180	180	180	180	180
Nitrate (as N)	NS/NS	0.061	0.061	0.061	0.061	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfide	NS/NS	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Ferrous iron	NS/NS	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total organic carbon	NS/NS	3.2	3.0	3.0	3.0	6.8	6.8	6.7	4.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Chloride	NS/NS	2.1	2.1	2.1	2.1	3.0	3.0	4.8	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2

NA = not analyzed
NS = no standard
J = estimated value
< = not detected at indicated reporting limit
(J) = detected below reporting limit
MCL = Federal Maximum Contaminant Level
MEQ = State of Maine Maximum Exposure Guideline
(January 20, 2000)
DUP = duplicate sample

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Hows Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	source area MCL/MEG	MW-8DB	MW-8SB	MW-89B	MW-8DB	MW-8DB-DUP	MW-8DB	MW-89B	MW-89B	MW-12DB	MW-12DB	MW-12SB	MW-12SB	MW-13DB	MW-13DB-DUP	MW-13DB	MW-13SB	MW-13SB
		05/23/2000	01/08/2000	05/23/2000	11/12/2000	11/22/1999	05/23/2000	12/22/1999	05/25/2000	12/21/1999	05/22/2000	12/21/1999	05/22/2000	12/21/1999	12/21/1999	06/23/2000	12/21/1999	10/22/2000
Inorganics (ug/l)																		
Aluminum	NS/1430	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Antimony	83	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Arsenic	50/10	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Barium	2000/2000	<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	<5.0
Beryllium	4/NS	<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	<5.0
Cadmium	5/NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	NS/NS	17200	9440	9230	26000	25600	27500	16800	16800	19000	20400	26800	27600	22300	21800	19200	8600	7200
Chromium	100/40	<15	<15	(4.1)B	<15	(0.8A)	<15	(0.7B)	<15	<15	<15	<15	<15	(0.71)	<15	<15	<15	<15
Cobalt	NS/NS	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Copper	1300/1300	<25	<25	<25	<25	<25	<25	<25	<25	(2.1)	<25	(2.5)	<25	(2.1)	<25	(1.8)	<25	(2.3)
Iron	NS/NS	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Lead	15/10	<5.0	<5.0	<5.0	<5.0	(1.8)B	<5.0	(1.8)B	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Magnesium	NS/NS	3520	2790	2790	6410	6320	7050	3830	4060	2800	3130	4900	5030	4480	4380	3700	1450	1680
Manganese	NS/500	<5.0	<5.0	<5.0	<5.0	<5.0	(1.5)B	<5.0	<5.0	<5.0	<5.0	19.8	215	<5.0	<5.0	10.0	<0.82	<5.0
Mercury	2/2	<0.20	<0.20	<0.20	<0.20	(0.04)B	<0.20	(0.03)B	<0.20	(0.17)B	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	NS/140	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
Potassium	NS/NS	(514)B	<1000	(832)B	1440J	1700J	1090	1420J	(982)B	<1000	(424)B	1300	(705)B	<1000	<1000	(622)B	<1000	(478)B
Silver	NS/25	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Sodium	NS/20000	2020	2110	1740	5590	5620	5420	4090	3690	3270	3200	3060	3200	3200	3210	2070	3250	3250
Thallium	20/6	<15	<15	<15	<30	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Vanadium	NS/NS	<25	<25	(6.3)B	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Zinc	NS/2000	<25	<25	(2.3)B	(4.6)J	(10.2)	<25	<25	<25	<25	<25	<25	(2.6)B	<25	<25	<25	<25	<25
Nat. Affen. Parameters (mg/l)																		
Sulfate	NS/NS	---	6.2	---	---	---	---	---	---	5.1	---	---	---	3.3	3.6	---	---	4.4
Ferric iron	NS/NS	---	<0.1	---	---	---	---	---	---	<0.1	---	---	---	<0.1	<0.1	---	---	<0.1
Alkalinity (as CaCO3)	NS/NS	---	34	---	---	---	---	---	---	57	---	---	---	83	83	---	---	<20
Nitrate (as N)	NS/NS	---	0.16	---	---	---	---	---	---	0.83	---	---	---	0.082	0.091	---	---	0.072
Sulfide	NS/NS	---	<4.0	---	---	---	---	---	---	2.8	---	---	---	<4.0	4.4	---	---	<2.0
Ferrous iron	NS/NS	---	<0.10	---	---	---	---	---	---	<0.10	---	---	---	<0.10	<0.10	---	---	<0.10
Total organic carbon	NS/NS	---	1.5	---	---	---	---	---	---	1.4	---	---	---	1.4	1.4	---	---	1.6
Chloride	NS/NS	---	<2.0	---	---	---	---	---	---	5.4	---	---	---	3.8	3.4	---	---	8.5

NA = not analyzed
 NS = no standard
 J = estimated value
 < = not detected at indicated reporting limit
 () = detected below reporting limits
 MCL = Federal Maximum Contaminant Level
 MEG = State of Maine Maximum Exposure Guideline
 (January 20, 2000)
 DUP = duplicate sample

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Howe Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	SOURCE AREA	MW-14DB	MW-14BO	MW-15DB	MW-15BO	MW-16DB	MW-16BO	MW-16SB	MW-16SO	MW-16DB	MW-16BO	MW-16SB	MW-16SO	MW-16DO	MW-17DO	MW-17DO	MW-17SO	MW-17BO	
		outside 01/05/2000	outside 12/21/1999	outside 12/22/1999	outside 05/22/2000	outside 05/22/2000	outside 12/22/1999	outside 05/22/2000	outside 12/20/1999	outside 05/26/2000	outside 05/26/2000	outside 05/26/2000	outside 05/25/2000	outside 12/20/1999	outside 01/05/2000	outside 05/22/2000	outside 01/05/2000	outside 05/22/2000	
VOCs (ug/l)																			
1,1-Dichloroethane	70/6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Methylene chloride	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
trans-1,2-Dichloroethane	100/140	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1-Dichloroethane	NS/70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethane	70/70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,1-Trichloroethane	NS/70	<1	<1	<1	<1	<1	<1	<1	<1	6	6	6	<1	<1	<1	<1	<1	<1	
Benzene	5/12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Trichloroethane	5/32	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Toluene	1000/1400	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	5/6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Dibromochloromethane	NS/4	<1	<1	<1	<1	<1	<1	<1	<1	14	16	16	<1	<1	<1	<1	<1	<1	
Tetrachloroethane	5/7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Chlorobenzene	100/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	NS/13	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Ethylbenzene	700/70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Isopropylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
n-Propylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	70/70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
neo-Butylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	NS/80	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
p-Isopropyltoluene	NS/70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	75/21	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2-Dichlorobenzene	600/83	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
n-Butylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Naphthalene	NS/14	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
MTBE	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Acetone	35/35	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	
2-Butanone	NS/NS	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	
m-p-Xylene	10000/1400	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
o-Xylene	10000/1400	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Carbon disulfide	NS/NS	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Tetrahydrofuran	NS/70	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
SVOCs (ug/l)																			
Phenol	NS/4000	---	<13	<10	<10	<10	<10	<10	<10	78	<10	<10	<10	<11	<10	<10	<10	<10	
1,2,4-Trichlorobenzene	70/70	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Naphthalene	NS/14	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
bis(2-Ethylhexyl) phthalate	NS/NS	---	(6)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
PCBs (ug/l)																			
Aroclor-1260	NS/NS	---	<0.10	<0.10	---	---	<0.10	---	<0.10	---	---	<0.10	---	<0.10	<0.1	---	<0.1	---	
PCB Homologs (ng/l)																			
Dichlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Tetrachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Pentachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Hexachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Heptachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Octachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Nonachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Pesticides (ug/l)																			
Dieldrin	NS/02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Hows Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	SOURCE AREA MCL/MEG	MW-14DB	MW-14BC	MW-16DB														
		OUTSIDE																
Inorganics (ug/l)																		
Aluminum	NS/1430	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Antimony	8.3	---	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Arsenic	50/10	---	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Barium	2000/2000	---	10.4	<4.0	(4.0)B	(4.1)B	<5.0	5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Beryllium	4/NS	---	<5.0	<0.2B	<5.0	<5.0	<5.0	5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	5/NS	---	<10	<0.2B	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	NS/NS	---	20000	56400	60400	60800	22300	28300	24800	27500	27000	11800	13300	3380	15700	14100	29100	29400
Chromium	100/40	---	(0.73)	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Cobalt	NS/NS	---	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Copper	1300/1300	---	(2.7)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	(2.8)	<25	<25	(2.6)
Iron	NS/NS	---	<50	<50	<50	<50	<50	100	<50	<50	<50	<50	<50	<50	<50	<50	<50	354
Lead	15/10	---	<5.0	<5.0	<5.0	<5.0	<5.0	(0.91)	<5.0	<5.0	(0.87)	<5.0	(1.5)B	(1.5)	<5.0	<5.0	<5.0	<5.0
Magnesium	NS/NS	---	4450	26200	26800	29100	7190	9480	9310	9620	9670	3030	3810	500	1050	798	2220	5030
Manganese	NS/500	---	(4.4)	(4.2)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	8.9	9.1	8.8	8.8
Mercury	2/2	---	<0.20	(0.4)B	(0.04)B	(0.03)B	<0.20	(0.03)B	<0.20	<0.20	<0.20	<0.20	(0.04)B	<0.20	<0.20	<0.20	<0.20	(0.04)B
Nickel	NS/140	---	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
Potassium	NS/NS	---	7700	18000	20900	20900	6520	8550	(810)	(441)B	(433)B	<1000	<1000	(397)	<1000	<1000	<1000	2020
Silver	NS/35	---	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Sodium	NS/20000	---	12500	22500	23000	23000	8550	10000	9080	10200	9740	9150	9170	2640	2220	1310	2310	2670
Thallium	2/0.5	---	<15	<45	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Vanadium	NS/NS	---	<25	<25	<25	<25	<25	(4.1)B	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Zinc	NS/2000	---	<25	<25	<25	<25	(10.8)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	(17.8)B
Nat. Acton. Parameters (mg/l)																		
Sulfate	NS/NS	---	---	17	---	---	---	5.1	---	---	---	---	---	---	---	---	---	---
Ferric iron	NS/NS	---	---	<0.1	---	---	---	<0.10	---	---	---	---	---	---	---	---	---	---
Alkalinity (as CaCO3)	NS/NS	---	---	260	---	---	---	110	---	---	---	---	---	---	---	---	---	---
Nitrate (as N)	NS/NS	---	---	8.3	---	---	---	0.25	---	---	---	---	---	---	---	---	---	---
Sulfide	NS/NS	---	---	<4.0	---	---	---	4.4	---	---	---	---	---	---	---	---	---	---
Ferrous iron	NS/NS	---	---	0.11	---	---	---	<0.10	---	---	---	---	---	---	---	---	---	---
TOTAL organic carbon	NS/NS	---	---	4.0	---	---	---	<1.0	---	---	---	---	---	---	---	---	---	---
Chloride	NS/NS	---	---	33	---	---	---	15	---	---	---	---	---	---	---	---	---	---

NA = not analyzed
 NS = no standard
 J = estimated value
 < = not detected at indicated reporting limit
 () = detected below reporting limits
 MCL = Federal Maximum Contaminant Level
 MEG = State of Maine Maximum Exposure Guideline
 (January 26, 2000)
 DUP = duplicate sample

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

How's Corner
Superfund Site
Plymouth, Maine

Contaminant	Source Area	MW-101D	MW-101E	MW-101F	MW-101I DUF	MW-101I	MW-101B	MW-101B	MW-102D	MW-102D DUF	MW-102D	MW-102B	MW-102B	MW-103D	MW-103D	MW-103B	MW-103B	MW-103B DUF	
		Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade	Inade
	MCL/MEG	01/04/2000	05/24/2000	01/04/2000	01/04/2000	05/24/2000	01/04/2000	05/24/2000	01/05/2000	01/05/2000	05/23/2000	01/04/2000	05/23/2000	01/05/2000	05/24/2000	01/05/2000	05/24/2000	05/24/2000	
VOCs (ug/l)																			
1,1-Dichloroethene	7/0.6	(0.5)J	<1	(0.5)J	<1	(0.5)J	(0.5)J	<1	2	---	---	3	8	4	30	27	87	31	30
Methylene chloride	NS/NS	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J	<1J
trans-1,2-Dichloroethene	100/140	1	1	11	10	7	7	7	<1	<1	<1	<1	<1	<1	(0.6)J	(0.6)J	<1	<1	<1
1,1-Dichloroethane	NS/70	(0.5)J	(0.5)J	(0.5)J	(0.7)J	2	2	<1	(0.5)J	---	<1	2	1	4	4	2	1	1	1
cis-1,2-Dichloroethane	70/70	60	60	420	380	370	280	630	21	---	22	21	20	43	39	21	13	12	12
1,1,1-Trichloroethane	NS/70	8	6	3	4	9	10	1	22	---	14	54	40	600	460	950	630	570	570
Benzene	5/12	<1	<1	<1	<1	(0.5)J	(0.5)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	5/32	220	280	1100	1500	1200	1100	530	120	---	120	150	170	320	380	140	87	88	88
Toluene	1000/1400	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	5/8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloroethane	NS/4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	5/7	800	540	410	840	1700	2100	460	1700J	---	1200	4800	4100	14000J	17000	16000J	14000	13000	13000
Chlorobenzene	100/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	NS/13	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	2	(0.9)J	<1	<1	<1
Ethylbenzene	700/70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	(0.5)J	---	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	70/70	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	2	<1	30	34	(0.5)J	<1	(0.5)J	(0.5)J
o-Butylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	NS/90	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propyltoluene	NS/70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	75/21	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	500/83	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1
n-Butylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	2	<1	<1	<1	<1
1,2,4-Trimethylbenzene	NS/NS	<1	<1	<1	<1	<1	<1	<1	(0.5)J	---	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	NS/14	<1	<1	<1	<1	<1	<1	<1	<2	---	<1J	<1	<1J	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	NS/NS	<1	<1	<1	<1	<1	(0.5)J	<1	<1	<1	<1	(0.7)J	<1	18	18	<1	(0.7)J	(0.9)J	(0.9)J
MTBE	35/35	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	NS/700	<5J	<5	<5J	<5J	<5	<5J	<5	<5J	---	<5J	<5J	<5J	<5J	<5	<5	<5	<5	<5
2-Butanone	NS/NS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
m,p-Xylenes	10000/1400	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	10000/1400	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	NS/NS	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Tetrahydrofuran	NS/70	<10J	<10	<10J	<10J	<10	<10J	<10	<10J	---	<10	<10J	<10	<10J	<10	<10	<10	<10J	<10
SVOCs (ug/l)																			
Benzil	NS/4000	<10	<10	<10	<10	<10	<10	<10	<10	---	<10	<10 J	<10	<10	<10	<10	<10	<10J	<10
1,2,4-Trichlorobenzene	70/70	<10	<10	<10	<10	<10	<10	<10	<10J	---	<10	<10	<10	<10	<10	<10	<10	<10J	<10
Naphthalene	NS/14	<10	<10	<10	<10	<10	<10	<10	<10J	---	<10	<10	<10	<10	<10	<10	<10	<10J	<10
bis(2-Ethylhexyl) phthalate	NS/NS	<10	<10	<10	<10	<10	<10	<10J	(5)J	---	<10	<10	<10	<10	<10	<10	<10	<10J	<10
PCBs (ug/l)																			
0.50.5																			
Aroclor-1260	NS/NS	<0.1	---	<0.1	<0.1	---	<0.1	---	<0.1	---	---	<0.1	---	<0.1	---	<0.1	---	<0.1	---
PCB Homologs (ng/l)																			
Dichlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Trichlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Tetrachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pentachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Heptachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Octachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nonachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ferrous (ug/l)																			
Dieldrin	NS/02	---	---	---	---	---	<0.10	---	<0.11	<0.10	---	---	---	---	---	---	---	---	---

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Howe Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	MW-101D	MW-101D	MW-101D	MW-101D	MW-101D	MW-101B	MW-101B	MW-102D	MW-102D	MW-102D	MW-102S	MW-102S	MW-103D	MW-103D	MW-103S	MW-103S	MW-103S
	source area MCL/MEG	inside															
	01/04/2000	05/24/2000	01/04/2000	05/24/2000	05/24/2000	01/04/2000	05/24/2000	01/05/2000	01/05/2000	05/23/2000	01/04/2000	05/23/2000	01/06/2000	05/24/2000	01/06/2000	05/24/2000	05/24/2000
Inorganics (µg/l)																	
Aluminum	NS/1430	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Antimony	6/3	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Arsenic	60/10	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Barium	2000/2000	<5.0	<5.0	138	138	<5.0	<5.0	87.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	17.5	<5.0	<5.0
Beryllium	4/NS	(0.36)	<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
Cadmium	5/NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	NS/NS	19400	19700	23100	23600	24100	23600	21200	25000	24900	16900	16800	31900	33400	29300	28900	28100
Chromium	100/40	(0.94)	<15	(2.0)	(1.9)	<15	<15	<15	<15	<15	<15	<15	<15	<15	(0.68)	<15	(4.1)
Cobalt	NS/NS	<30	<30	(11.1)	(10.5)	<30	(0.76)	(15.0)	<30	<30	<30	<30	<30	<30	<30	<30	<30
Copper	1300/1300	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Iron	NS/NS	<50	<50	1140	1010	<50	<50	2270	<50	<50	(12.6)	<50	<50	<50	<50	<50	<50
Lead	15/10	<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
Magnesium	NS/NS	5120	5990	5070	5080	11200	10600	5510	8120	6250	5130	5790	7140	7940	6200	8780	8530
Manganese	NS/500	32.2	24.9	7360	7070	192	265	8540	<5.0	(2.9)	7.1	5.7	7.0	5.7	11.1	(2.9)	(2.9)
Mercury	2/2	(0.03)	<0.20	(0.04)	<0.20	(0.02)	<0.20	<0.20	<0.20	<0.20	(0.04)	<0.20	<0.20	(0.04)	(0.03)	<0.20	(0.02)
Nickel	NS/140	<40	<40	(11.9)	(11.5)	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
Potassium	NS/NS	(451)	<1000	<1000	(881)	<1000	<1000	<1000	<1000	(544)	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Silver	NS/25	<1.5	<1.5	(1.5)	(1.2)	<1.5	<1.5	(3.0)	<1.5	<1.5	(8.5)	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Sodium	NS/20000	3260	2540	5060	5200	2860	4400	3240	2620	2420	2990	2920	3000	3000	4230	3350	3130
Thallium	2/0.5	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Vanadium	NS/NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Zinc	NS/2000	126	(13.1)	(5.4)	(11.5)	(2.0)	(4.5)	(6.1)	<25	(1.7)	(7.2)	<25	<25	<25	<25	<25	<25
Net. Atten. Parameters (mg/l)																	
Sulfate	NS/NS	---	---	5.5	5.5	---	---	---	4.8	---	---	---	6.5	---	7.9	---	---
Ferric iron	NS/NS	---	---	<0.1	<0.1	---	---	---	<0.1	---	---	---	<0.1	---	<0.1	---	---
Alkalinity (as CaCO3)	NS/NS	---	---	100	100	---	---	---	96	---	---	---	120	---	110	---	---
Nitrate (as N)	NS/NS	---	---	<0.050	<0.050	---	---	---	0.093	---	---	---	<0.050	---	0.12	---	---
Sulfide	NS/NS	---	---	4.0	4.0	---	---	---	4.0	---	---	---	4.0	---	4.0	---	---
Ferrous iron	NS/NS	---	---	1.3	1.5	---	---	---	<0.10	---	---	---	<0.10	---	<0.10	---	---
Total organic carbon	NS/NS	---	---	13	13	---	---	---	2.6	---	---	---	2.4	---	1.2	---	---
Chloride	NS/NS	---	---	3.5	3.2	---	---	---	<2.0	---	---	---	2.5	---	3.0	---	---

NA = not analyzed
 NS = no standard
 J = estimated value
 < = not detected at indicated reporting limit
 () = detected below reporting limits
 MCL = Federal Maximum Contaminant Level
 MCL = State of Maine Maximum Exposure Guideline
 (January 20, 2000)
 DUP = duplicate sample

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Howe Corner
Superfund Site
Plymouth, Maine

Contaminant	Source area	MW-104D	MW-104D	MW-104I	MW-104I	MW-104B	MW-104B	MW-106D	MW-106D	MW-106D	MW-106D	MW-106B	MW-106B	MW-108B	MW-107D	MW-107D	MW-106D	MW-106D	
		inside	inside	inside	inside	inside	inside	outside	outside										
	MCL/MEQ	01/04/2000	05/24/2000	01/04/2000	05/24/2000	01/04/2000	05/24/2000	12/17/1999	05/22/2000	12/17/1999	05/22/2000	12/17/1999	05/22/2000	12/23/2000	12/20/1999	05/22/2000	12/22/1999	05/23/2000	
VOCs (ug/l)																			
1,1-Dichloroethene	70/8	(14)J	7	18	18	2	4	4	2	<1	(0.8)J	<1J	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	NS/NS	<40	<1J	<2	<1J	<1J	<1J	<1	<1J	<1	<2J	<1	<1J	<1	<1	<1J	<1	<1J	<1
trans-1,2-Dichloroethene	100/140	<20	(0.8)J	(0.7)J	(0.8)J	7	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	NS/70	<20	(0.9)J	(0.9)J	1	1	(0.7)J	(0.8)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethane	70/70	42	30	20	32	120	33	22	22	<1	1	(0.8)J	<1	<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	NS/70	280	170	500	1000	86	140	36	23	<1	0	<1	<1	<1	<1	<1	<1	<1	<1
Benzene	5/12	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethene	5/32	300	180	500	890	1200	850	120	87	<1	10	6J	<1	<1	<1	<1	<1	<1	<1
Toluene	1000/1400	<20	(0.6)J	(0.7)J	(0.9)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	(0.8)J	<1
1,1,2-Trichloroethane	5/6	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromochloroethane	NS/4	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrachloroethene	5/7	4500	3400	32000	32000	15000	13000	1500	420J	(0.7)J	250	180	<1	<1	<1	<1	<1	<1	2
Chlorobenzene	100/NS	<20	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-Tetrachloroethane	NS/13	<20	(0.8)J	<1	4	<1	(0.9)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	700/70	<20	<1	(0.7)J	(0.8)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isopropylbenzene	NS/NS	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Propylbenzene	NS/NS	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	NS/NS	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	70/70	<20	<1	17	18	7	8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	NS/NS	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	NS/60	<20	<1	(0.8)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	NS/70	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	75/21	<20	<1	(0.9)J	<1	(0.8)J	(0.7)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	800/83	<20	<1	3	4	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-Butylbenzene	NS/NS	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	NS/NS	<20	<1	(0.8)J	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Naphthalene	NS/14	<20	<1	(0.5)J	1	(0.8)J	1	<1	<1	<1	<1	<1	<1	<1J	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	NS/NS	<20	<1	5	5	3	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MTBE	35/36	<20	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	NS/700	<100J	<5	<5J	<5	<5J	<5	<5	<5J	<5	<5	<5	<5J	<5	<5	<5J	<5	<5	<5
2-Butanone	NS/NS	<100	<5	<5	<5	<5	<5	<5	<5J	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
m-p-Xylenes	10000/1400	<20	<1	(0.8)J	(0.8)J	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene	10000/1400	<20	<1	(0.9)J	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon disulfide	NS/NS	<40	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Tetrahydrofuran	NS/70	<200J	<10	<10J	<10	<10J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
SVOCS (ug/l)																			
Phenol	NS/4000	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2,4-Trichlorobenzene	70/70	<10	<10	(7)J	(7)J	(5)J	(7)J	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	NS/14	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
bis(2-Ethylhexyl) phthalate	NS/NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
PCBs (ug/l)																			
0.8/0.8																			
Aroclor-1260	NS/NS	<0.1	---	0.25	---	<0.1	---	<0.10	---	<0.10	---	<0.10	---	<0.10	<0.10	---	---	---	---
PCB Homologs (ug/l)																			
Dichlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	<0.50	---	<0.50	---	---	---	---	---	---	---
Trichlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	<0.50	---	<0.50	---	---	---	---	---	---	---
Tetrachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	<0.50	---	<0.50	---	---	---	---	---	---	---
Pentachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	<0.50	---	<0.50	---	---	---	---	---	---	---
Hexachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	<0.50	---	<0.50	---	---	---	---	---	---	---
Heptachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	<0.50	---	<0.50	---	---	---	---	---	---	---
Octachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	<0.50	---	<0.50	---	---	---	---	---	---	---
Nonachlorobiphenyl	NS/NS	---	---	---	---	---	---	---	---	<0.50	---	<0.50	---	---	---	---	---	---	---
PAHs (ug/l)																			
Benzo(a)pyrene	NS/02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Hows Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	MW-104D	MW-104D	MW-104I	MW-104I	MW-104B															
	source area MCL/MEG	inside																		
	01/04/2000	05/24/2000	01/04/2000	05/24/2000	01/04/2000	05/24/2000	01/04/2000	05/24/2000	12/17/1999	05/22/2000	12/17/1999	05/23/2000	12/17/1999	05/23/2000	12/20/1999	12/20/1999	05/22/2000	12/22/1999	05/25/2000	
Inorganics (ug/l)																				
Aluminum	NS/1430	<100	<100	<100	562	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	291	<100	<100	161
Antimony	5/2	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	(2.1)J	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Arsenic	50/10	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Barium	2000/2000	23.8	22.7J	<5.0	<5.0	<5.0	<5.0	<5.0	23.7J	17.1	23.8J	<5.0	25.8J	<5.0	<5.0	<5.0	<5.0	13.2	10.8	---
Beryllium	4/NS	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
Cadmium	5/NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	NS/NS	26400	29200	21800	27000	10100	11500	25600	30100	36500	18600	17900	33900	21200J	20700J	27700	---	---	---	---
Chromium	100/40	<15	<15	<15	<15	(1.6)	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Cobalt	NS/NS	<30	<30	<30	<30	(2.1)	(3.1)B	<30	<30	<30	<30	<30	<30	(3.1)B	<30	<30	<30	<30	<30	<30
Copper	1300/1300	<25	<25	(1.1)	<25	(1.2)	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Iron	NS/NS	<50	<50	164	832	269	313	<50	<50	280	<50	<50	164	<50	<50	138	---	---	---	---
Lead	15/10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	(1.0)J	<5.0	(0.72)J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Magnesium	NS/NS	3960	4020	2840	3370	1250	1510	6550	8110	7930	4140	3810	7750	14700J	14200	16400	---	---	---	---
Manganese	NS/500	130	128	310	402	711	880	50.2	18.4	304	(4.3)B	33.3	811	(3.0)	(4.8)	21.4	---	---	---	---
Mercury	2/2	<0.20	<0.20	(0.03)	<0.20	(0.03)	(0.03)B	<0.20	(0.05)J	<0.20	(0.03)J	<0.20	(0.03)J	<0.20	(0.03)	(0.04)B/J	---	---	---	---
Nickel	NS/140	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
Potassium	NS/NS	(858)	<1000	(752)	<1000	<1000	<1000	<1000	(932)B	(933)J	<1000	<1000	(739)B	(454)J	(646)J	(505)B	---	---	---	---
Silver	NS/35	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Sodium	NS/20000	19900	24800	5890	6920	4740	2700	8890	4920	7310	2070	2640	3630	7870	7810	12500	---	---	---	---
Thallium	2/0.5	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Vanadium	NS/NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	(4.1)B
Zinc	NS/2000	(19.7)	(18.0)B	(2.1)	(2.4)B	(5.0)	(4.0)B	31.8	25.5	<25	(8.8)B	(12.0)J	(2.0)B	<25	<25	<25	<25	<25	<25	<25
Nat. Atten. Parameters (mg/l)																				
Sulfate	NS/NS	---	---	10	---	---	---	6.8	---	10	---	---	6.0	---	6.4	6.9	---	---	---	---
Ferric iron	NS/NS	---	---	<0.1	---	---	---	<0.10	---	<0.37	---	---	<0.10	---	<0.10	<0.10	---	---	---	---
Alkalinity (as CaCO3)	NS/NS	---	---	81	---	---	---	110	---	150	---	---	88	---	140	140	---	---	---	---
Nitrate (as N)	NS/NS	---	---	0.12	---	---	---	0.079	---	0.095	---	---	0.062	---	0.060	0.061	---	---	---	---
Sulfide	NS/NS	---	---	<4.0	---	---	---	<2	---	<2	---	---	<2	---	6.8	<4.0	---	---	---	---
Ferrous iron	NS/NS	---	---	0.18	---	---	---	<0.10	---	0.37	---	---	<0.10	---	<0.10	<0.10	---	---	---	---
Total organic carbon	NS/NS	---	---	4.8	---	---	---	1.9	---	2.2	---	---	1.3	---	1.2	1.2	---	---	---	---
Chloride	NS/NS	---	---	3.1	---	---	---	2.2	---	<2.0	---	---	<2.0	---	<2.0	<2.0	---	---	---	---

NA = not analyzed
 NS = no standard
 J = estimated value
 * = not detected at indicated reporting limit
 () = detected below reporting limits
 MCL = Federal Maximum Contaminant Level
 MEG = State of Maine Maximum Exposure Guideline
 (January 20, 2000)
 DUP = duplicate sample

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Hows Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	MW-108S	MW-108S	MW-1100J	MW-1100J	MW-1111D	MW-1111D	MW-1111D	MW-112D	MW-112D	MW-112S	MW-112S	MW-113D	MW-113D	MW-114D	MW-114D	MW-114D DUP	MW-114S	MW-114S
	source area MCL/MEG	outside 12/20/1999	outside 05/25/2000	outside 12/20/1999	outside 05/24/2000	outside 12/21/1999	outside 05/22/2000	outside 12/20/1999	outside 05/24/2000	outside 12/20/1999	outside 05/24/2000	outside 12/22/1999	outside 05/23/2000	outside 12/21/1999	outside 05/23/2000	outside 05/23/2000	outside 01/05/2000	outside 05/05/2000
Inorganics (µg/l)																		
Aluminum	NS/1430	<100	155	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Antimony	5/3	<8.0	<8.0	<8.0	<8.0	(2.7)J	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Arsenic	50/10	<8.0	<8.0	<8.0	<8.0	40.7	37.3	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0	<8.0
Barium	2000/2000	<5.0	<5.0	32.8J	29.8J	70.0J	53.9	69.4J	<5.0	<5.0	(0.83)B	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Beryllium	4/NS	<5.0	(0.85)B	<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
Cadmium	5/NS	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Calcium	NS/NS	11800J	11100	31800J	33000	31200	34400	24900J	27900	26000J	31000	<10	<10	23900	(3.2)B	24700	30200	29400
Chromium	100/40	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Cobalt	NS/NS	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Copper	1300/1300	<25	<25	<25	<25	(2.7)J	<25	<25	<25	<25	(1.8)B	<25	<25	(1.4)	<25	<25	<25	<25
Iron	NS/NS	<50	237	<50	73.3	129	199	<50	56.4	298	141	<50	<50	<50	<50	<50	<50	74.9
Lead	15/10	<5.0	<5.0	<5.0	<5.0	(1.1)J	<5.0	<5.0	<5.0	<5.0	(1.8)B	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Magnesium	NS/NS	4060J	3520	12200J	12400	16600	18800	14700J	17100	12300J	16800	<10	<10	14400	15100	15900	10400	11200
Manganese	NS/500	<5.0	(3.7)B	188	249	37.8	200	27.9	42.8	25.9	(3.0)B	<5.0	<5.0	(2.0)	<5.0	<5.0	7.0	(1.5)B
Mercury	2/2	<0.20	<0.20	<0.20	<0.20	0.06J	(0.04)B,N	<0.20	<0.20	<0.20	(0.04)B	<0.20	<0.20	<0.20	<0.20	<0.20	(0.04)	(0.03)B
Nickel	NS/140	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40	<40
Potassium	NS/NS	(721)	(370)B	(599)	<1000	<1000	1455	1060	<40	(84)B	(614)	(859)B	<1000	(339)B	<1000	<1000	<1000	<1000
Silver	NS/35	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Sodium	NS/20000	3150	2500	4100	4360	4370	4350	10300	8710	14200	4300	<10	<10	3010	3080	2990	3110	2710
Thallium	2/0.5	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Vanadium	NS/NS	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Zinc	NS/2000	<25	<25	<25	(8.9)B	44.7	<25	<25	<25	<25	<25	<25	<25	(3.4)B	(4.1)B	<25	<25	<25
Nat. Acten. Parameters (mg/l)																		
Sulfate	NS/NS	<10	<10	5.8	<10	13	<10	7.0	<10	<10	<10	<10	<10	5.8	<10	<10	5.8	<10
Ferric iron	NS/NS	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Alkalinity (as CaCO3)	NS/NS	>140	>140	140	>140	180	>140	150	>140	>140	>140	>140	>140	130	>140	>140	120	>140
Nitrate (as N)	NS/NS	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.084	<0.050	<0.050	<0.050	<0.050	<0.050	0.18	<0.050	<0.050	0.31	<0.050
Sulfide	NS/NS	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	5.8	<4.0	<4.0	<4.0	<4.0	<4.0	5.8	<4.0	<4.0	<4.0	<4.0
Ferrous iron	NS/NS	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total organic carbon	NS/NS	<1.2	<1.2	<1.2	<1.2	2.0	<1.2	1.1	<1.2	<1.2	<1.2	<1.2	<1.2	2.3	<1.2	<1.2	<1.2	<1.2
Chloride	NS/NS	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	<2.3	3.9	<2.3	<2.3	5.2	<2.3

NA = not analyzed
 NS = no standard
 J = estimated value
 < = not detected at indicated reporting limit
 () = detected below reporting limits
 MCL = Federal Maximum Contaminant Level
 MEG = State of Maine Medium Exposure Guideline
 (January 20, 2000)
 DUP = duplicate sample

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Howe's Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	source area	MW-118D outside	MW-118D outside (2)
	MCL/MEO	12/21/1999	05/24/2000
VOCs (ug/l)			
1,1-Dichloroethane	70/8	<1	<1
Methylene chloride	NS/NS	<1	<1
trans-1,2-Dichloroethane	100/140	<1	<1
1,1-Dichloroethane	NS/70	<1	<1
cis-1,2-Dichloroethane	70/70	<1	<1
1,1,1-Trichloroethane	NS/70	<1	<1
Benzene	5/12	<1	<1
Trichloroethane	5/32	<1	<1
Toluene	1000/1400	(0.6)U	<1
1,1,2-Trichloroethane	5/8	<1	<1
Dibromochloromethane	NS/4	<1	<1
Tetrachloroethane	5/7	3	<1
Chlorobenzene	100/NS	<1	<1
1,1,1,2-Tetrachloroethane	NS/13	<1	<1
Ethylbenzene	700/70	<1	<1
Isopropylbenzene	NS/NS	<1	<1
n-Propylbenzene	NS/NS	<1	<1
1,3,5-Trimethylbenzene	NS/NS	<1	<1
1,2,4-Trichlorobenzene	70/70	<1	<1
sec-Butylbenzene	NS/NS	<1	<1
1,3-Dichlorobenzene	NS/60	<1	(0.6)U
p-Isopropyltoluene	NS/70	<1	<1
1,4-Dichlorobenzene	75/21	<1	<1
1,2-Dichlorobenzene	600/63	<1	<1
n-Butylbenzene	NS/NS	<1	<1
1,2,4-Trimethylbenzene	NS/NS	<1	<1
Naphthalene	NS/14	<1	<1
1,2,3-Trichlorobenzene	NS/NS	<1	<1
MTBE	35/35	<1	<1
Acetone	NS/700	<5	<5
2-Butanone	NS/NS	<5	<5
m,p-Xylenes	10000/1400	<1	<1
o-Xylene	10000/1400	<1	<1
Carbon disulfide	NS/NS	<2.0	<2.0
Tetrahydrofuran	NS/70	<10	<10
SVOCs (ug/l)			
Phenol	NS/4000	<12	<10
1,2,4-Trichlorobenzene	70/70	<11	<10
Naphthalene	NS/14	<11	<10
bis(2-Ethylhexyl) phthalate	NS/NS	14	<10
PCBs (ug/l)			
Aroclor-1260	0.5/0.5	<0.10	---
PCB Homologs (ng/l)			
Dichlorobiphenyl	NS/NS	---	---
Trichlorobiphenyl	NS/NS	---	---
Tetrachlorobiphenyl	NS/NS	---	---
Pentachlorobiphenyl	NS/NS	---	---
Hexachlorobiphenyl	NS/NS	---	---
Heptachlorobiphenyl	NS/NS	---	---
Octachlorobiphenyl	NS/NS	---	---
Nonachlorobiphenyl	NS/NS	---	---
Pesticides (ug/l)			
Dechlor	NS/02	---	---

Table 5
Summary of Detected Pre-ROD and Supplemental Groundwater Analytical Data
Monitoring Wells

Hows Corner
Superfund Site
Plymouth, Maine

LOCATION PARAMETER	source area	MW-115D outside	MW-115D outside
	MCL/MEG	12/21/1999	05/24/2000
<i>Inorganics (ug/l)</i>			
Aluminum	NS/1430	<100	223
Antimony	6/3	<8.0	<8.0
Arsenic	50/10	<8.0	(2.8)B
Barium	2000/2000	46.5	24.6J
Beryllium	4/NS	<5.0	<5.0
Cadmium	5/NS	<10	<10
Calcium	NS/NS	32500	32600
Chromium	100/40	(0.97)	(4.1)B
Cobalt	NS/NS	<30	<30
Copper	1300/1300	(3.7)	<25
Iron	NS/NS	<50	407
Lead	15/10	<5.0	<5.0
Magnesium	NS/NS	10400	6400
Manganese	NS/500	52.2	78.5
Mercury	2/2	<0.20	<0.20
Nickel	NS/140	<40	<40
Potassium	NS/NS	<1000	3270
Silver	NS/35	<15	<15
Sodium	NS/20000	4340	3230
Thallium	2/0.5	<15	<15
Vanadium	NS/NS	<25	<25
Zinc	NS/2000	68.7	1030
<i>Not Often Parameters (mg/l)</i>			
Sulfate	NS/NS	17	---
Ferric iron	NS/NS	0.13	---
Alkalinity as CaCO3	NS/NS	130	---
Nitrate (as N)	NS/NS	<0.050	---
Sulfide	NS/NS	<4.0	---
Ferrous iron	NS/NS	<0.10	---
Total organic carbon	NS/NS	1.5	---
Chloride	NS/NS	<2.0	---

NA = not analyzed
 NS = no standard
 J = estimated value
 < = not detected at indicated reporting limit
 () = detected below reporting limit
 MCL = Federal Maximum Contaminant Level
 MEG = State of Maine Maximum Exposure Guideline
 (January 20, 2000)
 DUP = duplicate sample

Table 6
Summary of Chemicals of Concern and
Medium-Specific Exposure Point Concentrations
Hows Corner Superfund Site
Plymouth, ME

Scenario Timeframe: Current/ Future
Medium: Groundwater
Exposure Medium: Monitoring Wells

Exposure Point	Chemical of Concern	Concentration Detected		Units	Frequency of Detection	Exposure Point Concentration	Exposure Point Concentration Units	Statistical Measure
		Min	Max					
Source area/ non-source area monitoring wells	1,1-Dichloroethene	0.5	57	ppb	20/48	0.057	ppm	Max.
	cis-1,2-Dichloroethene	0.8	630	ppb	24/48	0.63	ppm	Max.
	1,1,1-Trichloroethane	0.9	1000	ppb	29/48	1	ppm	Max.
	Trichloroethene	0.7	7250	ppb	25/48	7.25	ppm	Max.
	Tetrachloroethene	0.6	32000	ppb	38/48	32	ppm	Max.
	1,2,4-Trichlorobenzene	0.7	150	ppb	9/48	0.150	ppm	Max.
	Aroclor 1260	0.25	119	ppb	4/45	0.119	ppm	Max.
	Dieldrin	<0.1	0.24	ppb	1/3	0.00024	ppm	Max.
	Manganese	1.5	8540	ppb	32/44	8.540	ppm	Max.
	Arsenic	2.2	42.5	ppb	6/44	0.425	ppm	Max.

Key

ppb: Parts per billion
ppm: Parts per million
MAX: Maximum Concentration

The table presents the chemicals of concern (COCs) and exposure point concentration for each of the COCs detected in groundwater (*i.e.*, the concentration that will be used to estimate the exposure and risk from each COC in the groundwater). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (*i.e.*, the number of times the chemical was detected in the samples collected at the site), the exposure point concentration (EPC), and how the EPC was derived. The table indicates that PCE the most frequently detected COC in groundwater at the site. Due to the limited number of sampling events, the maximum concentration was used as the default exposure point concentration for all COCs.

**Table 7
Cancer Toxicity Data - Oral/Dermal**

**Hows Corner
Superfund Site
Plymouth, Maine**

Chemical	Concentration (mg/kg)	Weight of Evidence	Dose (mg/kg-day)	Unit	EPA Group	Source	Date (MM/DD/YY)
Chloroform	6.10E-03	NA	6.10E-03	(mg/kg-day)	B2	IRIS	05/04/00
1,1-Dichloroethene	6.00E-01	NA	6.00E-01	(mg/kg-day)	C	IRIS	05/04/00
cis-1,2-Dichloroethene	NA	NA	NA		D	IRIS	05/04/00
1,1,1-Trichloroethane	NA	NA	NA		D	IRIS	05/04/00
Benzene	5.50E-02	NA	5.50E-02	(mg/kg-day)	A	IRIS	05/04/00
PCE	5.20E-02	NA	5.20E-02	(mg/kg-day)	B2	NCEA	05/04/00
TCE	1.10E-02	NA	1.10E-02	(mg/kg-day)	B2	NCEA	05/04/00
1,1,2-Trichloroethane	5.70E-02	NA	5.70E-02	(mg/kg-day)	C	IRIS	05/04/00
1,1,1,2-Tetrachloroethane	2.60E-02	NA	2.60E-02	(mg/kg-day)	C	IRIS	05/04/00
1,3-Dichlorobenzene	9.00E-04	NA	9.00E-04	(mg/kg-day)	D	IRIS	05/04/00
Phenol	6.00E-01	NA	6.00E-01	(mg/kg-day)	D	IRIS	05/04/00
1,3,5-Trimethylbenzene	NA	NA	NA			IRIS	05/04/00
1,2,4-Trichlorobenzene	NA	NA	NA		D	IRIS	05/04/00
1,4-Dichlorobenzene	2.40E-02	NA	2.40E-02	(mg/kg-day)	B2	HEAST	05/04/00
1,2,4-Trimethylbenzene	NA	NA	NA			NCEA	05/04/00
Naphthalene	NA	NA	NA		C	IRIS	05/04/00
Acetone	NA	NA	NA			IRIS	05/04/00
Tetrahydrofuran	7.60E-03	NA	7.60E-03	(mg/kg-day)		NCEA	05/04/00
Bis(2-ethylhexyl)phthalate	1.40E-02	NA	1.40E-02	(mg/kg-day)	B2	IRIS	05/04/00
Dieldrin	1.60E+01	NA	1.60E+01	(mg/kg-day)	B2	IRIS	05/04/00
Aroclor 1260*	2.00E+00	80% - 96%	2.00E+00	(mg/kg-day)	B2	IRIS	05/04/00
Arsenic	1.50E+00	95%	1.50E+00	(mg/kg-day)	A	IRIS	05/04/00
Antimony	NA	15%	NA			IRIS	05/04/00
Chromium	NA	2.50%	NA		A	IRIS	05/04/00
Manganese	NA	6%	NA		D	IRIS	05/04/00
Lead	NA	NA	NA			IRIS	05/04/00
Silver	NA	4%	NA		D	IRIS	05/04/00
Thallium	NA	100%	NA			IRIS	05/04/00

IRIS = Integrated Risk Information System
HEAST= Health Effects Assessment Summary Tables
NA = Not Applicable
mg/kg - day = milligram/kilogram - day

EPA Group:
A - Human carcinogen
B1 - Probable human carcinogen - indicates that limited human data are available
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E - Evidence of noncarcinogenicity
Weight of Evidence:
Known/Likely
Cannot be Determined
Not Likely

Table 8
Non-Cancer Toxicity Data - Oral/Dermal

Hows Corner
Superfund Site
Plymouth, Maine

Chemical	Route	Oral RfD	Oral RfD Unit	Oral to Dermal Adjustment Factor	Adjusted Dermal RfD	Unit	Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD Target Organ	Date of RfD Target Organ
Chloroform	Chronic	1.0E-02	mg/kg-day	NA	1.0E-02	mg/kg-day	liver	1000	IRIS	5/4/00
1,1-Dichloroethene	Chronic	9.0E-03	mg/kg-day	NA	9.0E-03	mg/kg-day	liver	1000	IRIS	5/4/00
cis-1,2-Dichloroethene	Chronic	1.0E-02	mg/kg-day	NA	1.0E-02	mg/kg-day	blood	3000	HEAST	5/4/00
1,1,1-Trichloroethane	Chronic	2.0E-02	mg/kg-day	NA	2.0E-02	mg/kg-day			NCEA	5/4/00
Benzene	Chronic	3.0E-03	mg/kg-day	NA	3.0E-03	mg/kg-day			NCEA	5/4/00
PCE	Chronic	1.0E-02	mg/kg-day	NA	1.0E-02	mg/kg-day	liver	1000	IRIS	5/4/00
TCE	Chronic	6.0E-03	mg/kg-day	NA	6.0E-03	mg/kg-day			NCEA	5/4/00
1,1,2-Trichloroethane	Chronic	4.0E-03	mg/kg-day	NA	4.0E-03	mg/kg-day	liver	1000	IRIS	5/4/00
1,1,1,2-Tetrachloroethane	Chronic	3.0E-02	mg/kg-day	NA	3.0E-02	mg/kg-day	kidney		IRIS	5/4/00
1,3-Dichlorobenzene	Chronic	9.0E-04	mg/kg-day	NA	9.0E-04	mg/kg-day			NCEA	5/4/00
Phenol	Chronic	6.0E-01	mg/kg-day	NA	6.0E-01	mg/kg-day	reduced fetal weight		IRIS	5/4/00
1,3,5-Trimethylbenzene	Chronic	5.0E-02	mg/kg-day	NA	5.0E-02	mg/kg-day			NCEA	5/4/00
1,2,4-Trichlorobenzene	Chronic	1.0E-02	mg/kg-day	NA	1.0E-02	mg/kg-day	adrenal gland	1000	IRIS	5/4/00
1,4-Dichlorobenzene	Chronic	3.0E-02	mg/kg-day	NA	3.0E-02	mg/kg-day	liver		NCEA	5/4/00
1,2,4-Trimethylbenzene	Chronic	5.0E-02	mg/kg-day	NA	5.0E-02	mg/kg-day			NCEA	5/4/00
Naphthalene	Chronic	2.0E-02	mg/kg-day	NA	2.0E-02	mg/kg-day	body weight	3000	IRIS	5/4/00
Acetone	Chronic	1.0E-01	mg/kg-day	NA	1.0E-01	mg/kg-day	liver	1000	IRIS	5/4/00
Tetrahydrofuran	Chronic	2.1E-01	mg/kg-day	NA	2.1E-01	mg/kg-day			NCEA	5/4/00
Bis(2-ethylhexyl)phthalate	Chronic	2.0E-02	mg/kg-day	NA	2.0E-02	mg/kg-day	liver	1000	IRIS	5/4/00
Dieldrin	Chronic	5.0E-05	mg/kg-day	NA	5.0E-05	mg/kg-day	liver	100	IRIS	5/4/00
Aroclor 1260*	Chronic	2.0E-05	mg/kg-day	NA	2.0E-05	mg/kg-day	growth		IRIS	10/1/00
Arsenic	Chronic	3.0E-04	mg/kg-day	95%	3.0E-04	mg/kg-day	skin	3	IRIS	5/4/00
Antimony	Chronic	4.0E-04	mg/kg-day	15%	6.0E-05	mg/kg-day	blood	1000	IRIS	5/4/00
Chromium	Chronic	3.0E-03	mg/kg-day	2.50%	7.5E-05	mg/kg-day	none observed	100	IRIS	5/4/00
Manganese	Chronic	7.0E-02 (soil)	mg/kg-day	6%	4.2E-03 (soil)	mg/kg-day	CNS	1	IRIS	9/1/99
	Chronic	2.4E-02 (water)	mg/kg-day		1.4E-03 (water)	mg/kg-day				
Lead	Chronic	ND	mg/kg-day	NA	ND	mg/kg-day			IRIS	5/4/00
Silver	Chronic	5.0E-03	mg/kg-day	4%	2.0E-04	mg/kg-day	skin	3	IRIS	5/4/00
Thallium	Chronic	7.0E-05	mg/kg-day	100%	7.0E-05	mg/kg-day			IRIS	5/4/00

*RfD used for Aroclor 1260 is based on the Aroclor 1254 RfD

NA = Not Applicable

ND = Not Determined

(1) Refer to EPA RAGS Part E, May 2000

(2) Refer to EPA RAGS Part A Adjusted dermal RfD = Oral RfD * oral to dermal adjustment factor.

mg/kg-day = milligram/kilogram · day

* RfDs used is for Aroclor-1254, per EPA's request.

Table 9
Risk Assessment Summary
Compounds Exceeding Target Risk
Reasonable Maximum Exposure
Groundwater Monitoring Wells

Hows Corner
Superfund Site
Plymouth, Maine

Scenario Timefr: Current/Future
 Receptor Popula: Resident
 Receptor Age: 0-30 years

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient							
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total			
Monitoring Wells	Groundwater	Drinking Water and Vapors in Air at Showerhead and Dermal Exposure	1,1-Dichloroethene	4.0E-04	4.0E-04	5.8E-05	8.6E-04	cis-1,2-Dichloroethene	blood	1.7E+00	1.7E+00	--	3.5E+00			
			Trichloroethene	9.4E-04	9.4E-04	1.6E-04	2.0E-03	1,1,1-Trichloroethane		1.4E+00	1.4E+00	2.6E-01	3.0E+00			
			Tetrachloroethene	2.0E-02	2.0E-02	1.3E-02	5.2E-02	Trichloroethene		3.3E+01	3.3E+01	5.7E+00	7.2E+01			
			Benzene	1.3E-06	1.3E-06	--	2.6E-06	Tetrachloroethene	liver	8.8E+01	8.8E+01	5.6E+01	2.3E+02			
			Arsenic	7.5E-04	--	--	7.5E-04	1,2,4-Trichlorobenzene	adrenal gland	4.1E-01	4.1E-01	5.9E-01	1.4E+00			
			Tetrahydrofuran	1.2E-03	--	--	1.2E-03	Manganese	CNS	9.8E+00	--	--	9.8E+00			
			1,1,1,2-Tetrachloroethane	1.2E-06	1.2E-06	--	2.4E-06	Arsenic	skin	3.9E+00	--	--	3.9E+00			
			1,4-Dichlorobenzene	1.7E-06	1.7E-06	1.2E-06	4.6E-06	Aroclor 1260		1.6E+02	--	2.5E+03	2.7E+03			
			Bis(2-ethylhexyl)phthalate	2.0E-05	--	2.1E-06	2.2E-05	Tetrahydrofuran		1.7E+00	--	--	1.7E+00			
			Dieldrin	4.5E-05	--	3.4E-05	8.0E-05	Chromium		2.0E-01	--	8.6E-02	2.9E-01			
			Aroclor 1260	2.8E-03	--	4.3E-02	4.6E-02									
			(Total)			(Total)	2.6E-02	2.1E-02	5.6E-02	1.0E-01	(Total)		3.0E+02	1.2E+02	2.6E+03	3.0E+03

Total Risk Across Groundwater 1.0E-01
 Total Risk Across All Media and All Exposure Routes 1.0E-01

Total skin HI = 3.9E+00
 Total CNS HI = 9.8E+00
 Total liver HI = 2.3E+02
 Total blood HI = 3.5E+00
 Total adrenal gland HI = 1.4E+00
 Total remainder HI = 2.7E+03

Table 10
Comparison of Surface Water Compounds to Selected Benchmarks
Hows Corner Superfund Site
Plymouth, ME

Compound	Minimum Detected Concentration, µg/L	Maximum Detected Concentration, µg/L	Frequency of Detection	Surface Water Benchmark Values, µg/L				
				Ecotox ¹ Thresholds, 1996	Revised ² Tier II SVC, 1996	Region IV ³ SV, 1996	USEPA WQC ⁴ CCC, 1999	MEDEP ⁵ Chronic SWPC, 1977
<i>VOCs</i>								
<i>cis</i> -1,2-DCE	7	22	2/30	NS ⁷	2,200	NS	NS	NS
PCE	2	82	9/30	120	98	84	NS	840
1,1,1-TCA	0.7	5	7/30	62	11	528	NS	NS
TCE	2	18	2/28	350	47	NS	NS	21,900
<i>Metals</i>								
Arsenic	2.4	2.6B	2/28	8.1	NS	90	150	190
Chromium	0.63	5.3J	5/28	NS	NS	117	11	NS
Lead	0.72	1.8J	6/28	NS	NS	1.32	2.5	0.41
Mercury	<0.02	0.02	1/28	NS	1.3	0.012	0.77	0.012
Nickel	0.93	1.3	3/28	NS	NS	87.71	52	40.4
Zinc	16	20.8J	6/28	NS	NS	58.91	120	27.1

Bold text denotes lowest benchmark, which was used for comparison

¹USEPA Eco Update, 1996

²SCV – Secondary Chronic Values from Suter and Tsao, 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota, 1996; Revision Oak Ridge National Laboratory (ORNL).

³Screening Values, USEPA Region IV, October 1996. Values for lead, nickel, and zinc are hardness dependent, and are based on a hardness of 50 mg/l. Hardness in RI surface water samples ranged from 9.96 to 118 mg/l.

⁴CCC – Criterion Continuous Concentration, National Recommended Water Quality Criteria (WQC), USEPA, 1999. Values for lead, nickel and zinc are hardness dependent, and are based on a hardness of 100 mg/l. Hardness in RI surface water samples ranged from 9.96 to 118 mg/l.

⁵Maine DEP Chronic Surface Water Protection Criteria. Values for lead, nickel and zinc are hardness dependent, and are based on a hardness of 20 mg/l. Hardness in RI surface water samples ranged from 9.96 to 118 mg/l.

Shaded compound indicates that maximum detected concentration exceeds the lowest benchmark standard

⁷NS = No screening value available.

B = detected between the IDL and PQL (inorganics)

J = estimated

Table 11
Comparison of Sediment Concentrations to Selected Benchmarks
Hows Corner Superfund Site
Plymouth, ME

Compound	Minimum Concentration	Maximum Concentration	Frequency of Detection	Benchmark Value					
				USEPA SQB, 1996 ¹	Ingersoll et al, 1996 ²	USEPA Region IV 1996 ³	ORNL SQB, 1997 ⁴	Ontario SQC, 1996 ⁵	MacDonald et al. 2000 TEC ⁷
VOCs, µg/kg									
1,1-DCA	8	80J	2/24	NS ⁶	NS	NS	27	NS	NS
Methylene chloride	5	91 J	6/26	NS	NS	NS	370	NS	NS
<i>cis</i> -1,2-DCE	18	9,800J	5/25	NS	NS	NS	400	NS	NS
<i>trans</i> -1,2-DCE	<6	57J	1/24	NS	NS	NS	400	NS	NS
PCE	10	1,300	8/24	530	NS	NS	410	NS	NS
TCE	11	320J	5/24	1,600	NS	NS	220	NS	NS
acetone	14	742	26/27	NS	NS	NS	8.7	NS	NS
2-hexanone	40	870	7/23	NS	NS	NS	22	NS	NS
Metals, mg/kg									
Arsenic	1.9	32.7	28/28	NS	50	7.24	NS	6.0	9.79
Cobalt	0.66	28.8	27/28	NS	NS	NS	NS	50	NS
Copper	1.4	42.2	28/28	NS	190	18.7	NS	16	31.6
Lead	8	46.2	28/28	NS	99	30.2	NS	31	35.8
Mercury	0.01	0.37	24/28	NS	NS	0.13	NS	0.2	0.18
Zinc	8	145J	27/28	NS	550	124	NS	120	121

¹SQB – Sediment Quality Benchmarks, USEPA Eco Update, January 1996.

²Value presented is an Effect Range-Medium value as calculated by Ingersoll et al. 1996. Concentrations are on a dry wt. basis, not normalized to TOC.

³Sediment Screening Values; USEPA Region IV, October 1996.

⁴ORNL SQB – Oak Ridge National Laboratory Sediment Quality Benchmarks, Jones et. al, 1997: Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects of Sediment Associated Biota: 1997 Revision. Values based on 1996 Tier II Surface Water Values. Values for acetone and 2-hexanone are based on equilibrium partitioning, which produces a conservative value for these and other polar nonionic compounds.

⁵Guidelines for Use at Contaminated Sites in Ontario, Appendix A, Table E: Sediment Quality Criteria, 1996.

⁶NS = No screening value available. J = concentration below quantitation limit.

Shaded compound indicates that maximum detected concentration exceeds the lowest benchmark standard.

Bold denotes lowest value, used as benchmark

TECs = Threshold Effect Concentrations, as determined by consensus-based approach, MacDonald et al., 2000.

Table 13
Hazard Quotients for Sediments
Hows Corner Superfund Site
Plymouth, ME

Compound	Toxicity Reference Value (TRV)	Maximum Concentration			Hazard Quotients		
		Site Pond	Road Pond	Farm Pond	Site Pond	Road Pond	Farm Pond
<i>Metals (ppb)</i>							
Copper	16	4.6	26.2	31.7	0.29	1.64	1.98
Zinc	124	83	100	116	0.67	0.81	0.94
Lead	30.2	33	43.2	35.6	1.09	1.43	1.18
Arsenic	6	5.6	9.2	17.9	0.93	1.53	2.98
Mercury	0.13	0.08	0.37	0.02	0.62	2.85	0.15
<i>VOCs (ppb)</i>							
PCE	410	1300	34	48	3.17	0.08	0.12
TCE	220	320	62	15	1.45	0.28	0.07
<i>Cis</i> -1,1 DCE	400	580	9800	18	1.45	24.50	0.05
<i>trans</i> -1,2 DCE	400	ND	57	ND	NA	0.14	NA
1,1-DCA	27	8	80	ND	0.30	2.96	NA
Acetone	8.7	61	520	112	7.01	59.77	12.87
2-Heanone	22	ND	ND	ND	NA	NA	NA

NA= Not applicable; compound not a CPC for this media

ND= compound not detected at concentration indicated

HQ= Maximum Concentration/ TRV

Note: Site related COCs with HQs>1 are shaded

**TABLE 14
COMPARATIVE ANALYSIS OF ALTERNATIVES**

**HOWS CORNER SUPERFUND SITE
PLYMOUTH, MAINE**

THRESHOLD CRITERIA			Balancing Criteria				
ALTERNATIVE	OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT	COMPLIANCE WITH ARARs	LONG-TERM EFFECTIVENESS AND PERMANENCE	REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT	SHORT-TERM EFFECTIVENESS	IMPLEMENTABILITY	COST
Alternative GW-1: No Action	Environmental monitoring would not be conducted to evaluate potential future risks to human health and the environment. Therefore, this alternative provides little overall protection.	Under baseline conditions, concentrations in groundwater exceed chemical-specific ARARs and would not be met in the future in a reasonable timeframe. No location- or action-specific ARARs would apply.	Would not prevent potential future exposure to contaminants in groundwater in the long term.	None through active treatment.	No remedial actions would be implemented under this alternative; therefore, no adverse impacts to the local community or environment would be expected.	No remedial activities would require implementation under this alternative.	Least costly of the alternatives. NPV = \$0 M

**TABLE 14
COMPARATIVE ANALYSIS OF ALTERNATIVES**

**HOWS CORNER SUPERFUND SITE
PLYMOUTH, MAINE**

THRESHOLD CRITERIA		Balancing Criteria					
ALTERNATIVE	OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT	COMPLIANCE WITH ARARs	LONG-TERM EFFECTIVENESS AND PERMANENCE	REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT	SHORT-TERM EFFECTIVENESS	IMPLEMENTABILITY	COST
Alternative GW-3 Hydraulic Containment	<p>Groundwater extraction would capture Source Area groundwater, preventing migration of source material.</p> <p>Extracting and treating groundwater from the Source Area would reduce the time frame required to meet remedial action objectives compared to natural conditions.</p> <p>Monitored natural attenuation and environmental monitoring would ensure continued protection of human health and the environment outside the containment zone (i.e., the Source Area). If monitoring indicates exposure to contaminated groundwater that presents an unacceptable risk, upgrade of the public water line would provide residents with an alternative water supply.</p> <p>Institutional controls would minimize future risks to human health and the environment while contaminant concentrations in Non-Source Area</p>	<p>Would potentially achieve chemical-specific ARARs in groundwater in a reasonable time frame.</p> <p>Would be designed to comply with location and action-specific ARARs.</p>	<p>Groundwater extraction under Alternative GW-3 would prevent migration of dissolved contaminants.</p> <p>Environmental monitoring with a contingency for providing public water would prevent future exposure to groundwater containing site-related contaminants that presents an unacceptable risk.</p> <p>Institutional controls would minimize future risks to human health, the environment, and manage migration of the plume. However, the long-term effectiveness of institutional controls would be dependent on implementation and adequate enforcement.</p>	<p>Groundwater extraction and treatment would remove dissolved phase contaminants (e.g., VOCs) in groundwater, thereby reducing toxicity, mobility, and volume in the plume. In addition, hydraulic containment will greatly reduce mobility of contaminants from Source Area to Non-Source Groundwater.</p>	<p>Construction and operation of the extraction, treatment, and reinjection systems as well as construction of the water main extension and hook-ups would not have significant impact on the local community. Residents are not expected to be exposed to any site-related contaminants during construction or implementation.</p> <p>Operation of the extraction system would potentially cause harm to Site Pond, and potentially other wetland areas, by dewatering them. Impacts are unavoidable. There is no practical alternative and impact will be minimized to the extent practical.</p> <p>Impacts to site worker health and safety during implementation would be unlikely, and would be minimized by the implementation of health and safety training and safe work practices.</p>	<p>Well-developed technologies. Would require standard construction techniques. Would require frequent maintenance of extraction and reinjection wells due to fouling from dissolved metals present in groundwater.</p> <p>Land-use restrictions on private lands would be necessary and may present some implementability issues given the number and variability of the parcels involved.</p> <p>Construction time estimated to be approximately 1 year.</p>	<p>Alternative NPV = \$8.1M</p>

**TABLE 14
COMPARATIVE ANALYSIS OF ALTERNATIVES**

**HOWS CORNER SUPERFUND SITE
PLYMOUTH, MAINE**

ALTERNATIVE	OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT	COMPLIANCE WITH ARARs	LONG-TERM EFFECTIVENESS AND PERMANENCE	REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT	SHORT-TERM EFFECTIVENESS	IMPLEMENTABILITY	COST
Alternative GW-3: Hydraulic Containment (continued)	<p>groundwater are reduced by natural processes over time.</p> <p>Although extraction under this alternative would minimize potential ecological risks due to contaminant discharges, it could cause harm to Site Pond, and potentially other wetland areas, by dewatering them.</p> <p>Road Pond sediments would be monitored to evaluate potential future risks to ecological receptors.</p> <p>Provides the greatest level of overall protection of human health and the environment.</p>						

Notes:

- ARAR = Applicable or Relevant and Appropriate Requirement
- DNAPL = dense non-aqueous phase liquid
- KMnO₄ = potassium permanganate
- NPV = Net Present Value
- PRG = preliminary remediation goal

TABLE 15
DETAILED ANALYSIS: ALTERNATIVE GW-3
SOURCE CONTROL VIA HYDRAULIC CONTAINMENT
HOWS CORNER SUPERFUND SITE
PLYMOUTH, MAINE

EVALUATION CRITERIA	ALTERNATIVE GW-3: SOURCE CONTROL { TC \L1 '' }
OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT { TC \L1 '' }	
Human Health Protection	<p>The results of the baseline risk assessment indicate no current risk to human health from groundwater. Potential future risks are associated with future domestic use of groundwater.</p> <p>In the event that groundwater is used in the future for potable purposes, this alternative may provide an increased level of protection over other alternatives as it would provide capture of Source Area Groundwater, thereby preventing migration and the expansion of the existing groundwater plume. This will, in the long term, reduce the time to achieve ARARS (e.g., MCLs and MEGs) in Non-Source Area Groundwater and/or decrease the area requiring institutional controls.</p> <p>Monitored natural attenuation combined with environmental monitoring would be relied upon to ensure the continued protection of human health and the environment outside the Source Area. In the event that environmental monitoring indicates exposure that presents an unacceptable risk in groundwater used for drinking water, upgrade/expansion of the public water line would be implemented to provide residents with an alternative water supply. Institutional controls would be implemented to limit access to and use of groundwater in order to reduce exposure to contaminated groundwater and avoid increasing migration of contaminated groundwater.</p>
Ecological Protection	<p>The results of the baseline ecological risk assessment indicate no significant risks to the environment from contaminants detected in surface waters/sediments with the exception of Road Pond sediments. As described previously, active remediation of Road Pond sediments is unwarranted at this time given the relatively low concentrations detected and restricted exposure opportunities for receptors.</p> <p>Groundwater extraction under Alternatives GW-3 may provide an increased level of protection to ecological receptors by reducing groundwater discharges to Road Pond and other wetland areas. However, the groundwater flow model developed for the site indicates that extraction/ reinjection under alternative GW-3 may dewater the Site Pond and potentially other wetland areas by pumping them dry. It was, however, assumed that losses of wetland habitat would be compensated for via replacement/construction of a wetland area in an alternative location.</p>
COMPLIANCE WITH ARARS { TC \L1 '' }	
Chemical-Specific	Chemical-specific ARARs for Alternative GW-3 are presented in Appendix B. This alternative is expected, over time, to achieve chemical-specific ARARs.
Location-Specific	Location specific ARARs for Alternative GW-3 are presented in Appendix B. This alternative would be designed to comply with pertinent location-specific ARARs.
Action-Specific	Action-specific ARARs identified for Alternative GW-3 are presented in Appendix B. This alternative would be designed to comply with pertinent action-specific ARARs.

TABLE 15
DETAILED ANALYSIS: ALTERNATIVE GW-3
SOURCE CONTROL VIA HYDRAULIC CONTAINMENT
HOWS CORNER SUPERFUND SITE
PLYMOUTH, MAINE

EVALUATION CRITERIA	ALTERNATIVE GW-3: SOURCE CONTROL { TC \L1 }
LONG-TERM EFFECTIVENESS AND PERMANENCE	
Magnitude of Residual Risk	<p>Extraction and treatment of groundwater under this alternative would be expected to minimize the migration of highly contaminated groundwater beyond the Source Area of the Site. This should reduce the time to achieve ARARs in Non-Source Area Groundwater (i.e., groundwater outside the 2-acre fenced area of the Site) and/or decrease the area requiring institutional controls. Therefore, this alternative will reduce the magnitude of residual risk in Non-Source Area Groundwater to an acceptable level.</p> <p>As stated previously, the residual risks associated with use of groundwater are considered to be acceptable for this Site once ARARs are met and the remedy is found to be protective. While contaminant concentrations are reduced over time, environmental monitoring with a contingency for providing public water would be implemented to verify that residents are not exposed to groundwater containing site-related contaminants that present an unacceptable risk. Institutional controls would limit access to and use of groundwater. Therefore, future potential exposure to contaminants in groundwater would be prevented, effectively eliminating this exposure pathway. In addition, five-year site reviews would be conducted to ensure the continued protection of human health and the environment.</p>
Adequacy and Reliability of Controls	<p>The groundwater extraction system proposed under Alternative GW-3 would adequately and reliably manage the migration within the Source Area and reduce the concentrations of dissolved contaminants in groundwater outside this area. A long-term monitoring program would be implemented to monitor groundwater concentrations and to evaluate the effectiveness of this alternative.</p> <p>Maintenance of extraction and reinjection wells will be required to prevent fouling caused by metals in groundwater. With the exception of pumps, which may need to be replaced frequently, the estimated service life of the treatment system components is expected to be at least 30 years.</p> <p>Environmental monitoring with a contingency for providing public water would ensure that residents are not exposed to site-related contaminants in groundwater that present an unacceptable risk. Although institutional controls would effectively limit use of groundwater impacted by site contaminants and manage migration of the groundwater plume, the long-term effectiveness of institutional controls would be dependent on implementation and adequate enforcement.</p>

**TABLE 15
 DETAILED ANALYSIS: ALTERNATIVE GW-3
 SOURCE CONTROL VIA HYDRAULIC CONTAINMENT**

**HOWS CORNER SUPERFUND SITE
 PLYMOUTH, MAINE**

EVALUATION CRITERIA	ALTERNATIVE GW-3: SOURCE CONTROL { TC \L1 '' }
{ TC \L1 '' } REDUCTION OF TOXICITY, MOBILITY, AND VOLUME THROUGH TREATMENT { TC \L1 '' }	
Treatment Process Used and Materials Treated	Extracted groundwater would be treated on site via precipitation and air stripping in series with liquid phase carbon adsorption to meet PRGs. Air stripper off-gases would be treated using carbon adsorption. Treated groundwater would subsequently be reinjected to the aquifer. Sludges and/or NAPL generated during the groundwater treatment process would require off-site disposal.
Amount Destroyed or Treated	An estimated 165 to 330 pounds of VOCs would initially be removed from extracted groundwater during the first year of operation. However, this amount would be expected to decrease over time.
Degree of Expected Reductions of Toxicity, Mobility, or Volume Through Treatment	By containing and treating contaminated groundwater, the toxicity and volume of contaminants in the aquifer would be reduced. The system would also effectively manage the migration of groundwater via groundwater extraction. The volume of contaminants would ultimately be reduced via regeneration of carbon at a permitted off-site treatment facility.
Degree to Which Treatment is Irreversible	Groundwater extraction with on-site treatment would permanently remove site-related contaminants (e.g., chlorinated VOCs and PCBs) from source area groundwater.
Type and Quantity of Residuals Remaining After Treatment	Pretreatment of groundwater for removal of iron and manganese would produce a sludge/solids. It was assumed that these solids would be non-hazardous and disposed off site at a licensed non-hazardous waste landfill. Treatment using both liquid and vapor phase activated carbon would produce treatment residuals that would require off-site disposal at a permitted facility. If NAPLs are recovered from source area groundwater, they would also require disposal at a permitted facility.
SHORT-TERM EFFECTIVENESS	
Protection of Community During Remedial Action	Construction and operation of an on-site groundwater treatment facility would not have significant short-term impacts on the local community. The treatment facility would be constructed on the George West property in the vicinity of the Source Area. However, a portion of the extraction and/or reinjection systems may be located on residential properties surrounding the George West property. Construction activities would be a short term inconvenience to property owners; the estimated time for well and pipeline construction is between 3 and 6 months and is not expected to expose residents to any site-related hazards. If implemented, installation of new pumps and construction of the water main extension and hook-ups would not have significant short-term impacts on the local community. Although water main construction activities would be conducted on residential properties, subsurface work would not be at a depth where exposure to groundwater contaminants would occur. Activities involving heavy construction equipment and open excavations would follow standard industry practice for public safety.
SHORT-TERM EFFECTIVENESS	

TABLE 15
DETAILED ANALYSIS: ALTERNATIVE GW-3
SOURCE CONTROL VIA HYDRAULIC CONTAINMENT

HOWS CORNER SUPERFUND SITE
PLYMOUTH, MAINE

EVALUATION CRITERIA	ALTERNATIVE GW-3: SOURCE CONTROL { TC \L1 }
Protection of Workers During Remedial Action	Workers would be required to be trained in health and safety procedures for work at hazardous waste sites. Appropriate site-specific health and safety plan(s) would also be followed and appropriate personal protective equipment would be used to minimize risks to workers during well installation, construction activities, sampling, and treatment plant operation. Hazards associated with heavy equipment and open excavations during construction would be mitigated through safe work practices.
	<p>To protect treatment plant workers from exposure to VOCs that could volatilize from open tanks, the tanks would be covered as completely as possible and hatches and viewing ports would be provided, as required. A ventilation system would be installed that would produce a negative pressure in the headspace above these vessels in relation to the treatment plant building atmosphere.</p> <p>If the environmental monitoring program or alternative water supply study indicated the need to upgrade the public water line, water main construction activities would be conducted in accordance with applicable OSHA requirements. Hazards associated with heavy equipment and open excavations during construction would be mitigated through safe work practices.</p>
Environmental Impacts	<p>Significant impact to ecological receptors would not be expected from installation of wells and piping and construction of a treatment facility. Although operation of the system could potentially impacts to the Site Pond, and potentially other wetland areas, by pumping them dry, it was assumed that losses of wetland habitat would be compensated for via replacement/construction of a wetland area in an alternative location. All remedial activities would be conducted in accordance with pertinent ARARs.</p> <p>Implementation of this alternative would also include expansion of the existing water main as a contingency measure in the event that environmental monitoring indicated exposure of residents to groundwater containing site-related contaminants that present an unacceptable risk. Although these activities have the potential to impact the environment, significant impact would not be expected because of the location of the construction activities (i.e., road side) and the limited area impacted by construction activities.</p>
Time Until Remedial Action Objectives Are Achieved	The time to achieve remedial action objectives for non-source area groundwater under GW-3 has an estimated range of 35 to 1434 years.
IMPLEMENTABILITY	
Ability to Construct and Operate the Technology	<p>The installation of a wells and underground piping involves common construction techniques and would be easy to implement. Several vendors are available to design, install, and operate the treatment system. Prior to implementation, treatability tests to determine the requirements for the extraction system and treatment parameters would be performed.</p> <p>The estimated time to design and construct the extraction, treatment, and reinjection system is estimated to be approximately 12 months.</p>
IMPLEMENTABILITY	
Ability to Construct and Operate the Technology	If necessary, the public water system upgrade would be a straight forward common construction activity.

**TABLE 15
 DETAILED ANALYSIS: ALTERNATIVE GW-3
 SOURCE CONTROL VIA HYDRAULIC CONTAINMENT**

**HOWS CORNER SUPERFUND SITE
 PLYMOUTH, MAINE**

EVALUATION CRITERIA	ALTERNATIVE GW-3: SOURCE CONTROL { TC \L1 }
Reliability of Technology	<p>Because both residual source material and dissolved contaminants are located in fractured bedrock, it may be difficult to effectively place the groundwater extraction wells. However, groundwater extraction is a demonstrated and reliable method for capturing and collecting contaminated groundwater. Similar systems have been used successfully to extract contaminated groundwater plumes at other hazardous waste sites.</p>
	<p>Air stripping and GAC are proven technologies for treatment of site-related contaminants (e.g., chlorinated VOCs and PCBs) and are often used in both industrial and hazardous waste treatment applications. Both are presumptive ex situ technologies for treatment of dissolved organic contaminants in extracted groundwater at Superfund sites (USEPA, 1996b). GAC is also demonstrated for vapor phase treatment and is identified as such by USEPA in their Presumptive Remedy Guidance (USEPA, 1996b).</p> <p>Discharge of treated groundwater via a reinjection system is considered a reliable means of disposal.</p> <p>The reliability of the water main to provide public water is proven and effective.</p>
Ease of Undertaking Additional Remedial Actions, If Necessary	<p>This alternative would not limit or interfere with the ability to perform future remediation actions.</p>
Ability to Monitor Effectiveness of Remedy	<p>Treatment system effluent would be monitored on a routine basis to evaluate the effectiveness of the treatment system and ensure that reinjection criteria are achieved. Monitoring/analysis of samples collected from the treatment system would be easily implemented using an off-site laboratory.</p> <p>The effectiveness of institutional controls would be evaluated every year to ensure that groundwater within the ICZ is not being used for any purpose (other than monitoring).</p> <p>The long-term environmental monitoring program would be easily implemented and would verify continued protection to human health and the environment, as well as monitor the effectiveness of this alternative and contaminant migration.</p>
Ability to Obtain Approvals and Coordinate with Other Agencies	<p>Administratively, the containment system should be easy to implement. However, as a portion of the extraction and/or reinjection systems would be constructed outside the George West property, it would be necessary to obtain easements from some property owners prior to construction.</p>
IMPLEMENTABILITY	
Ability to Obtain Approvals and Coordinate with Other Agencies	<p>Coordination with adjacent property owners and appropriate federal, state, and local agencies would be required to implement institutional controls. Obtaining land-use restrictions on private lands is likely to be complex. If necessary, upgrade of the public water system would require approval and coordination with the local agencies and utilities.</p> <p>A detailed long-term groundwater monitoring program and the five-year site review would be subject to regulatory review and approval.</p>

**TABLE 15
 DETAILED ANALYSIS: ALTERNATIVE GW-3
 SOURCE CONTROL VIA HYDRAULIC CONTAINMENT**

**HOWS CORNER SUPERFUND SITE
 PLYMOUTH, MAINE**

EVALUATION CRITERIA	ALTERNATIVE GW-3: SOURCE CONTROL { TC \L1 }
Availability of Off-site Treatment, Storage, and Disposal Services and Capacity.	Implementation of this alternative would require off-site disposal of waste solids generated from the treatment system that may be hazardous. Both non-hazardous and hazardous waste services and off-site disposal facilities are currently available.
Availability of Necessary Equipment and Specialists	Equipment, materials, and services for construction of the extraction, treatment, and reinjection systems, as well as the public water system upgrade, would be readily available.
Availability of Technology	Several qualified vendors would be available to design, construct, and operate the groundwater extraction and treatment system.
COSTS – ALTERNATIVE GW-3	
Capital Cost	\$3,447,000
Net Present Worth Cost of Operations and Maintenance	\$2,574,000
Net Present Worth of Environmental Monitoring	\$1,985,000
Net Present Worth Cost of Five-Year Site Reviews	\$ 129,000
Total Net Present Worth Cost	\$8,135,000

Table 16
COST ESTIMATE: ALTERNATIVE GW-3
HYDRAULIC CONTAINMENT (10,000 ug/L Contour)

FEASIBILITY STUDY REPORT
HOWS CORNER SUPERFUND SITE
PLYMOUTH, MAINE

DIRECT COSTS	
Institutional Controls	
Legal assistance	\$515,000
Engineering Support	\$60,000
Groundwater Extraction System	\$148,000
Treatability/Pumping Study for Groundwater System	\$75,000
Groundwater Treatment System	\$512,000
Treated Groundwater Discharge System	\$68,000
Installation of Groundwater Extraction /Treatment/ Discharge Systems	\$377,000
Environmental Monitoring Well Installation	\$115,000
Wetlands Restoration	\$20,000
Public Water Upgrade	
Pump Installation (yr 3)	\$29,000
Upgrade/Program PLC (Program Logic Control) (yr 3)	\$16,000
Waterline Extension (yr 3)	\$82,000
Connections for Future Residents (yr 3)	\$49,000
Connections for Future Residents (yr 5)	\$43,000
Alternative Water Supply Evaluation/Construction (yr 2)	\$100,000
SUBTOTAL	\$2,209,000
20% Contingency on Direct Costs	\$442,000
TOTAL DIRECT COSTS	\$2,651,000
INDIRECT COSTS	
Health and Safety @ 5%	\$133,000
Legal, Administrative and Permitting @ 5%	\$133,000
Engineering Design @ 10%	\$265,000
Services during Construction @ 10 %	\$265,000
TOTAL INDIRECT COSTS	\$796,000
TOTAL CAPITAL COSTS (DIRECT AND INDIRECT)	\$3,447,000
ANNUAL OPERATION AND MAINTENANCE COSTS	
Treatment System (Labor, Power, Chemicals, Maintenance, etc.)	\$114,500
Monitoring 5 Extraction Wells (Quarterly)	\$18,000
Treatment System Monitoring (Monthly)	\$12,000
Extraction Well Maintenance	\$5,000
Institutional Controls Effectiveness Review	\$10,000
SUBTOTAL	\$159,500
Engineering @ 10%	\$16,000
20% Contingency on Annual O&M	\$32,000
TOTAL O&M COSTS	\$207,500
TOTAL PRESENT WORTH ANNUAL O&M COSTS (7%, 30 YEARS)	\$2,574,000
Five Year Site Reviews (includes 20% Contingency)	\$60,000
TOTAL PRESENT WORTH OF FIVE YEAR SITE REVIEWS (7%, 30 YEARS)	\$129,000
Annual Environmental Monitoring (includes 20% contingency) (Groundwater, Surface Water/Sediments, Restored Wetlands)	\$160,000
TOTAL PRESENT WORTH ANNUAL ENVIRONMENTAL MONITORING COSTS (7%, 30 Years)	\$1,985,000
TOTAL PRESENT WORTH (30 YEARS) - ALTERNATIVE GW-3	\$8,135,000