



ENVIRONMENTAL FACT SHEET

CITY OF NEW BEDFORD'S INVESTIGATION OF GROUNDWATER SEEPS IN THE BASEMENT OF NEW BEDFORD HIGH SCHOOL

City of New Bedford/TRC, January 2010

The City's environmental consultant (TRC Environmental Corporation) is investigating groundwater (water located beneath the ground in spaces in the soil) which enters, or "seeps" into, the basement of New Bedford High School through small cracks in the foundation in rooms used by maintenance staff. This fact sheet describes TRC's investigation, its implications for building occupants, the next steps in the investigation, and where interested individuals can obtain more detailed information.

What are volatile organic compounds, or VOCs?

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals. VOCs are emitted by a wide array of products numbering in the thousands. Examples include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions. Organic chemicals are widely used as ingredients in household products. Paints, varnishes, and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, degreasing, and hobby products. Fuels are made up of organic chemicals. All of these products can release organic compounds while you are using them, and, to some degree, when they are stored.

What investigation has been completed to date?

TRC collected groundwater and basement water samples near where groundwater seeps into the basement of the high school. Analytical results for these samples suggest the potential for chlorinated volatile organic compounds (VOCs) to be present in indoor air in the building. Therefore, TRC conducted additional sampling, including indoor air sampling, on an expedited basis. On January 30th and 31st, TRC sampled indoor air from several locations within the high school near the groundwater seep and in other areas of the building, including classrooms. The results confirm the presence of chlorinated VOCs in the school. While the chlorinated VOCs detected in indoor air appear to be related to groundwater contamination, the detection of other VOCs in indoor air samples that have not been detected in groundwater is more likely associated with indoor sources such as cleaning materials or outdoor sources such as vehicle exhaust that gets entrained in the high school ventilation system.

TRC's preliminary risk assessment of the indoor

air concentration data indicates that there is no significant risk to the health of building occupants based on criteria established by the Massachusetts Department of Environmental Protection (MassDEP). However, the presence of detectable concentrations of VOCs in indoor air requires further investigation and possibly remedial action.

Is it safe for people to occupy the high school?

Yes, it is safe to occupy the high school, including rooms where samples were collected, based on TRC's assessment of indoor air quality data collected to date. TRC performed risk calculations using the VOC concentration data for indoor air in combination with the same procedures used to evaluate indoor air quality at the Keith Middle School. TRC concluded that there is no significant risk to the health of building occupants based on criteria established by

MassDEP. TRC's risk calculations included all of the VOCs detected in indoor air, regardless of whether they were detected in basement, or seep water. Indoor air was sampled in a manner that was intended to detect the highest concentrations that might exist in the high school by collecting samples: (1) at a time of year when migration of VOCs into the building is likely to be highest; (2) from locations near where groundwater enters the building; and (3) during the weekend when ventilation within the building is likely to be somewhat lower than it is during the week. Risks were calculated separately for each room that was sampled, based on the assumption that someone spends 8 hours per day, 5 days per week for 27 years in that one room.

What are the next steps?

TRC will continue its expedited investigation of the low level VOCs detected in the high school's indoor air and will proceed rapidly over the coming weeks. TRC's investigation will include the following elements:

- collection of additional indoor air samples in the building
- an inventory of potential interior sources of chemicals observed in the recent indoor air samples, such as routinely used/stored cleaning materials or paints;
- an evaluation of potential outdoor sources (for example, vehicle exhaust potentially entrained by the ventilation system);
- an investigation of vapor concentrations beneath the floor of the high school; and
- an investigation to determine whether these compounds are present in the groundwater beneath the high school.

The inventory of potential indoor sources was performed earlier this week, and vapor samples are scheduled to be collected from beneath the floor in the next few weeks.

TRC will evaluate subsequent rounds of indoor air concentration data in the same way and on an expedited basis. TRC is focused on characterizing the nature and extent of the VOCs identified in the indoor air samples, continuing to evaluate potential risk associated with these chemicals, and, if necessary, providing recommendations for remedial measures.

Where can I get more information?

All chemical concentration data for groundwater, seep water, and indoor air will be posted at the City's website <http://www.newbedford-ma.gov/McCoy/Keithmiddleschool.html>. If you have additional questions, please contact Scott Alfonse, City of New Bedford Environmental Stewardship Department, at (508) 991-6188 or email scott.alfonse@newbedford-ma.gov.

Summary of Analytical Results for Groundwater Samples -- January 2010

New Bedford High School
New Bedford, Massachusetts

Analysis	Analyte	Sample ID:		MW-4 1/6/2010	MW-5		MW-6 1/7/2010	MW-7 1/7/2010
		Sample Date:			1/6/2010	1/6/2010 Field Dup		
		GW-2	GW-3					
VOCs (ug/L)	Acetone	50,000	50,000	50 U	50 U	50 U	50 U	50 U
	tert-Amyl Methyl Ether (TAME)	NS	NS	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	Benzene	2,000	10,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Bromobenzene	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Bromochloromethane	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Bromodichloromethane	6	50,000	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	Bromoform	700	50,000	10 U	10 U	10 U	10 U	10 U
	Bromomethane	7	800	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	2-Butanone (MEK)	50,000	50,000	20 U	20 U	20 U	20 U	20 U
	n-Butylbenzene	7,000 ⁽¹⁾	50,000 ⁽¹⁾	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	sec-Butylbenzene	7,000 ⁽¹⁾	50,000 ⁽¹⁾	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	tert-Butylbenzene	7,000 ⁽¹⁾	50,000 ⁽¹⁾	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	tert-Butyl Ethyl Ether (TBEE)	NS	NS	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	Carbon Disulfide	NS	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	Carbon Tetrachloride	2	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Chlorobenzene	200	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Chlorodibromomethane	20	50,000	10 U	10 U	10 U	10 U	10 U
	Chloroethane	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Chloroform	50	20,000	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	Chloromethane	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	2-Chlorotoluene	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	4-Chlorotoluene	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,2-Dibromo-3-chloropropane (DBCP)	NS	NS	10 U	10 U	10 U	10 U	10 U
	1,2-Dibromoethane (EDB)	2	50,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	Dibromomethane	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,2-Dichlorobenzene	2,000	2,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,3-Dichlorobenzene	2,000	50,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,4-Dichlorobenzene	200	8,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Dichlorodifluoromethane (Freon 12)	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	1,1-Dichloroethane	1,000	20,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,2-Dichloroethane	5	20,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,1-Dichloroethylene	80	30,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	cis-1,2-Dichloroethylene	100	50,000	1.0 U	3.7	4.1	1.0 U	20
	trans-1,2-Dichloroethylene	90	50,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,2-Dichloropropane	3	50,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,3-Dichloropropane	NS	NS	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	2,2-Dichloropropane	NS	NS	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,1-Dichloropropene	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	cis-1,3-Dichloropropene	10 ⁽²⁾	200 ⁽²⁾	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	trans-1,3-Dichloropropene	10 ⁽²⁾	200 ⁽²⁾	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	Diethyl Ether	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U

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Analysis	Analyte	Sample ID:		MW-4 1/6/2010	MW-5		MW-6 1/7/2010	MW-7 1/7/2010
		Sample Date:			1/6/2010	1/6/2010 Field Dup		
		GW-2	GW-3					
	Diisopropyl Ether (DIPE)	NS	NS	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	1,4-Dioxane	6,000	50,000	50 U	50 U	50 U	50 U	50 U
	Ethylbenzene	20,000	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Hexachlorobutadiene	1	3,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	2-Hexanone (MBK)	NS	NS	10 U	10 U	10 U	10 U	10 U
	Isopropylbenzene (Cumene)	7,000 ⁽¹⁾	50,000 ⁽¹⁾	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	p-Isopropyltoluene (p-Cymene)	7,000 ⁽¹⁾	50,000 ⁽¹⁾	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Methyl tert-Butyl Ether (MTBE)	50,000	50,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Methylene Chloride	10,000	50,000	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	4-Methyl-2-pentanone (MIBK)	50,000	50,000	10 U	10 U	10 U	10 U	10 U
	Naphthalene	1,000	20,000	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	n-Propylbenzene	7,000 ⁽¹⁾	50,000 ⁽¹⁾	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Styrene	100	6,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,1,1,2-Tetrachloroethane	10	50,000	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,1,2,2-Tetrachloroethane	9	50,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
	Tetrachloroethylene	50	30,000	1.0 U	1.0 U	1.0 U	1.0 U	63
	Tetrahydrofuran	NS	NS	10 U	10 U	10 U	10 U	10 U
	Toluene	50,000	40,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,2,3-Trichlorobenzene	NS	NS	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
	1,2,4-Trichlorobenzene	2,000	50,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,1,1-Trichloroethane	4,000	20,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,1,2-Trichloroethane	900	50,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Trichloroethylene	30	5,000	1.0 U	1.0 U	1.0 U	1.0 U	6.8
	Trichlorofluoromethane (Freon 11)	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	1,2,3-Trichloropropane	NS	NS	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	1,2,4-Trimethylbenzene	7,000 ⁽¹⁾	50,000 ⁽¹⁾	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	1,3,5-Trimethylbenzene	7,000 ⁽¹⁾	50,000 ⁽¹⁾	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
	Vinyl Chloride	2	50,000	2.0 U	2.0 U	2.0 U	2.0 U	3.4
	m+p Xylene	9,000	5,000	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
	o-Xylene	9,000	5,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

ug/L - micrograms per liter.

NS - No MassDEP standards exist for this compound.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed one or more of the listed MassDEP Method 1 standards.

VOCs - Volatile Organic Compounds.

(1) - MassDEP Method 1 standards for C9-C10 aromatic hydrocarbons used.

(2) - MassDEP Method 1 standards for 1,3-Dichloropropene used.

Summary of Analytical Results for Indoor Air Samples -- January 2010
New Bedford High School
New Bedford, Massachusetts

Analyte	Sample ID: Sample Date:				TRC-IA-1 1/31/2010	TRC-IA-2 1/31/2010	TRC-IA-3 1/31/2010	TRC-IA-4 1/31/2010	TRC-IA-5 1/31/2010
	Risk Management Criteria								
	HI = 0.2	HI = 1.0	ELCR = 1 x 10 ⁻⁶	ELCR = 1 x 10 ⁻⁵					
TO-15 (ug/m3)									
1,1,1-Trichloroethane	1,100	5,500	NS	NS	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U
1,1,2,2-Tetrachloroethane	19	95	0.041	0.41	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U
1,1,2-Trichloroethane	15	75	0.15	1.5	1.09 U	1.09 U	1.09 U	1.09 U	1.09 U
1,1-Dichloroethane	100	500	NS	NS	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,1-Dichloroethene	40	200	NS	NS	0.792 U	0.792 U	0.792 U	0.792 U	0.792 U
1,2,4-Trichlorobenzene	40	200	NS	NS	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U
1,2,4-Trimethylbenzene	10 ^(a)	50 ^(a)	NS	NS	0.982 U	0.982 U	0.982 U	0.982 U	3.18
1,2-Dibromoethane	1.8	9	0.011	0.11	1.54 U	1.54 U	1.54 U	1.54 U	1.54 U
1,2-Dichlorobenzene	40	200	NS	NS	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
1,2-Dichloroethane	11	55	0.09	0.9	0.809 U	0.809 U	0.809 U	0.809 U	0.809 U
1,2-Dichloropropane	0.8	4	0.13	1.3	0.924 U	0.924 U	0.924 U	0.924 U	0.924 U
1,3,5-Trimethylbenzene	10 ^(a)	50 ^(a)	NS	NS	0.982 U	0.982 U	0.982 U	0.982 U	0.982 U
1,3-Dichlorobenzene	40	200	NS	NS	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
1,4-Dichlorobenzene	160	800	0.35	3.5	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
1,4-Dioxane	24	120	0.59	5.9	0.720 U	0.720 U	0.720 U	0.720 U	0.720 U
2-Butanone	1,000	5,000	NS	NS	1.01	0.589 U	0.589 U	0.589 U	1.89
2-Hexanone	NS	NS	NS	NS	0.819 U	0.819 U	0.819 U	0.819 U	0.819 U
Acetone	160	800	NS	NS	3.4	3.57	29.6	3.68	2.37 U
Benzene	6	30	0.3	3	0.983	0.638 U	0.638 U	0.638 U	2.55
Bromodichloromethane	14	70	0.14	1.4	1.34 U	1.34 U	1.34 U	1.34 U	1.34 U
Bromoform	14	70	2.2	22	2.06 U	2.06 U	2.06 U	2.06 U	2.06 U
Bromomethane	1	5	NS	NS	0.776 U	0.776 U	0.776 U	0.776 U	0.776 U
Carbon disulfide	NS	NS	NS	NS	0.622 U	0.622 U	0.622 U	0.622 U	0.622 U
Carbon tetrachloride	86	430	0.16	1.6	1.26 U	1.26 U	1.26 U	1.26 U	1.26 U
Chlorobenzene	4	20	NS	NS	0.920 U	0.920 U	0.920 U	0.920 U	0.920 U
Chloroethane	NS	NS	NS	NS	0.527 U	0.527 U	0.527 U	0.527 U	0.527 U
Chloroform	130	650	0.11	1.1	0.976 U	0.976 U	0.976 U	0.976 U	0.976 U
Chloromethane	NS	NS	NS	NS	1.11	1.03	0.92	1.16	1.29
cis-1,2-Dichloroethene	7	3.5	NS	NS	4.33	0.792 U	0.792 U	0.792 U	3.54
cis-1,3-Dichloropropene	4	20	0.6	6	0.907 U	0.907 U	0.907 U	0.907 U	0.907 U
Dibromochloromethane	14	70	0.1	1	1.70 U	1.70 U	1.70 U	1.70 U	1.70 U
Dichlorodifluoromethane	NS	NS	NS	NS	2.00	2.02	2.08	2.13	3.36
Ethylbenzene	200	1,000	NS	NS	0.868 U	0.868 U	3.06	0.868 U	1.80
Hexachlorobutadiene	0.14	0.7	0.11	1.1	2.13 U	2.13 U	2.13 U	2.13 U	2.13 U
Methylene chloride	600	3,000	5	50	1.74 U	1.74 U	1.74 U	1.74 U	1.74 U

Summary of Analytical Results for Indoor Air Samples -- January 2010
New Bedford High School
New Bedford, Massachusetts

Analyte	Sample ID: Sample Date:				TRC-IA-1	TRC-IA-2	TRC-IA-3	TRC-IA-4	TRC-IA-5
	Risk Management Criteria				1/31/2010	1/31/2010	1/31/2010	1/31/2010	1/31/2010
	HI = 0.2	HI = 1.0	ELCR = 1 x 10 ⁻⁶	ELCR = 1 x 10 ⁻⁵					
4-Methyl-2-pentanone	600	3,000	NS	NS	0.819 U	0.819 U	0.819 U	0.819 U	1.21
Methyl tert butyl ether	600	3,000	NS	NS	0.720 U	0.720 U	0.720 U	0.720 U	0.720 U
p/m-Xylene	20	100	NS	NS	1.74 U	1.74 U	9.61	1.74 U	7.55
o-Xylene	20	100	NS	NS	0.868 U	0.868 U	2.03	0.868 U	2.44
Styrene	200	1,000	4.1	41	0.851 U	0.851 U	0.851 U	0.851 U	0.851 U
Tetrachloroethene	920	4,600	0.23	2.3	1.36 U	1.36 U	1.36 U	1.36 U	1.36 U
Tetrahydrofuran	NS	NS	NS	NS	0.589 U	0.589 U	0.589 U	0.589 U	0.589 U
Toluene	1,000	5,000	NS	NS	1.97	0.753 U	4.18	0.753 U	13.1
trans-1,2-Dichloroethene	14	70	NS	NS	2.30	0.792 U	0.792 U	0.792 U	1.72
trans-1,3-Dichloropropene	4	20	0.6	6	0.907 U	0.907 U	0.907 U	0.907 U	0.907 U
Trichloroethene	36	180	1.4	14	2.20	1.07 U	1.07 U	1.07 U	1.12
Trichlorofluoromethane	NS	NS	NS	NS	1.12 U	1.12 U	1.12 U	1.12 U	4.92
Vinyl chloride	20	100	0.27	2.7	0.57	0.511 U	0.511 U	0.511 U	0.531
Naphthalene	0.61	3.05	NS	NS	1.05 U	1.05 U	1.05 U	1.05 U	1.05 U
1,1,1,2-Tetrachloroethane	NS	NS	NS	NS	1.37 U	1.37 U	1.37 U	1.37 U	1.37 U
Isopropylbenzene	NS	NS	NS	NS	0.982 U	0.982 U	0.982 U	0.982 U	0.982 U
1,2,3-Trichloropropane	NS	NS	NS	NS	1.20 U	1.20 U	1.20 U	1.20 U	1.20 U
Bromobenzene	NS	NS	NS	NS	1.28 U	1.28 U	1.28 U	1.28 U	1.28 U
Dibromomethane	NS	NS	NS	NS	1.42 U	1.42 U	1.42 U	1.42 U	1.42 U
tert-Amyl Methyl Ether	NS	NS	NS	NS	0.835 U	0.835 U	0.835 U	0.835 U	0.835 U
2-Chlorotoluene	NS	NS	NS	NS	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U
4-Chlorotoluene	NS	NS	NS	NS	1.03 U	1.03 U	1.03 U	1.03 U	1.03 U
2,2-Dichloropropane	NS	NS	NS	NS	0.923 U	0.923 U	0.923 U	0.923 U	0.923 U
1,1-Dichloropropene	NS	NS	NS	NS	0.907 U	0.907 U	0.907 U	0.907 U	0.907 U
Diisopropyl ether	NS	NS	NS	NS	0.835 U	0.835 U	0.835 U	0.835 U	0.835 U
tert-Butyl Ethyl Ether	NS	NS	NS	NS	0.835 U	0.835 U	0.835 U	0.835 U	0.835 U
1,2,3-Trichlorobenzene	NS	NS	NS	NS	1.48 U	1.48 U	1.48 U	1.48 U	1.48 U
Ethyl ether	NS	NS	NS	NS	0.606 U	0.606 U	0.606 U	0.606 U	0.606 U
n-Butylbenzene	NS	NS	NS	NS	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U
sec-Butylbenzene	NS	NS	NS	NS	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U
tert-Butylbenzene	NS	NS	NS	NS	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U
1,2-Dibromo-3-chloropropane	NS	NS	NS	NS	1.93 U	1.93 U	1.93 U	1.93 U	1.93 U
p-Isopropyltoluene	NS	NS	NS	NS	1.10 U	1.10 U	1.10 U	1.10 U	1.10 U
n-Propylbenzene	NS	NS	NS	NS	0.982 U	0.982 U	0.982 U	0.982 U	0.982 U
1,3-Dichloropropane	NS	NS	NS	NS	0.923 U	0.923 U	0.923 U	0.923 U	0.923 U

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Analyte	Sample ID: Sample Date:				TRC-IA-1	TRC-IA-2	TRC-IA-3	TRC-IA-4	TRC-IA-5
	Risk Management Criteria				1/31/2010	1/31/2010	1/31/2010	1/31/2010	1/31/2010
	HI = 0.2	HI = 1.0	ELCR = 1 x 10 ⁻⁶	ELCR = 1 x 10 ⁻⁵					
TO-15-SIM									
(ug/m3) cis-1,2-Dichloroethene	7	3.5	NS	NS	4.27	0.087	0.079 U	0.079 U	3.58
Tetrachloroethene	920	4,600	0.23	2.3	0.136 U	0.136 U	0.136 U	0.136 U	0.136 U
trans-1,2-Dichloroethene	14	70	NS	NS	2.38	0.079 U	0.079 U	0.079 U	1.62
Trichloroethene	36	180	1.4	14	2.10	0.107 U	0.107 U	0.107 U	1.04
Vinyl chloride	20	100	0.27	2.7	0.562	0.051 U	0.051 U	0.051 U	0.498

Notes:

ug/m3 - micrograms per cubic meter.

ug/L - micrograms per liter.

NS - No risk management criteria exist for this compound.

U - Compound was not detected at specified quantitation limit.

Values in Bold indicate the compound was detected.

Values shown in Bold and shaded type exceed one or more of the listed criteria.

TO - Toxic organics.

SIM - selected ion monitoring.

ELCR - Excess lifetime cancer risk.

HI - Hazard index.

Risk Management Criteria - MassDEP Indoor Air Threshold Values for the Evaluation of a Vapor Intrusion Pathway, Attachment C, updated June 26, 2008.

(b) - The risk management criteria for C5-C8 used.

Summary of Analytical Results for Basement Water Samples -- December 2009 and January 2010
 New Bedford High School
 New Bedford, Massachusetts

Analysis	Analyte	Sample ID:		NBHSBRM	BRM-S-1			BRM-S-2			BRM-S-3				FIP-S-1			
		Sample Date:			2/20/2009	12/2/2009	1/7/2010	1/30/2010	12/2/2009	1/7/2010	1/30/2010	12/2/2009	1/7/2010	1/30/2010	1/30/2010 Field Dup	12/2/2009	1/7/2010	1/30/2010
		GW-2	GW-3															
	Tetrahydrofuran	NS	NS	NA	10 U	10 U	5.0 U	10 U	10 U	5.0 U	10 U	10 U	5.0 U	5.0 U	10 U	10 U	5.0 U	
	Toluene	50,000	40,000	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
	1,2,3-Trichlorobenzene	NS	NS	NA	5.0 U	5.0 U	2.0 U	5.0 U	5.0 U	2.0 U	5.0 U	5.0 U	2.0 U	2.0 U	5.0 U	5.0 U	2.0 U	
	1,2,4-Trichlorobenzene	2,000	50,000	NA	5.0 U	1.0 U	2.0 U	5.0 U	1.0 U	2.0 U	5.0 U	1.0 U	2.0 U	2.0 U	5.0 U	1.0 U	2.0 U	
	1,1,1-Trichloroethane	4,000	20,000	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
	1,1,2-Trichloroethane	900	50,000	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
	Trichloroethylene	30	5,000	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	6.0	1.2	1.3	1.0 U	1.0 U	
	Trichlorofluoromethane (Freon 11)	NS	NS	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	
	1,2,3-Trichloropropane	NS	NS	NA	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	
	1,2,4-Trimethylbenzene	7,000 ⁽¹⁾	50,000 ⁽¹⁾	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
	1,3,5-Trimethylbenzene	7,000 ⁽¹⁾	50,000 ⁽¹⁾	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
	Vinyl Chloride	2	50,000	NA	2.0 U	2.0 U	1.0 U	2.0 U	2.0 U	1.0 U	2.1	34	1.4	1.3	2.0 U	2.0 U	1.3	
	m+p Xylene	9,000	5,000	NA	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	
	o-Xylene	9,000	5,000	NA	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U	2.0 U	
EPH (ug/L)	C9-C18 Aliphatics	5,000	50,000	NA	150 U	NA	NA	150 U	NA	NA	150 U	NA	NA	NA	150 U	NA	NA	
	C19-C36 Aliphatics	NS	50,000	NA	190	NA	NA	150 U	NA	NA	150 U	NA	NA	NA	150 U	NA	NA	
	C11-C22 Aromatics	50,000	5,000	NA	100 U	NA	NA	100 U	NA	NA	100 U	NA	NA	NA	100 U	NA	NA	
	Acenaphthene	NS	6,000	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Acenaphthylene	10,000	40	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Anthracene	NS	30	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Benzo(a)anthracene	NS	1,000	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Benzo(a)pyrene	NS	500	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Benzo(b)fluoranthene	NS	400	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Benzo(g,h,i)perylene	NS	20	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Benzo(k)fluoranthene	NS	100	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Chrysene	NS	70	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Dibenz(a,h)anthracene	NS	40	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Fluoranthene	NS	200	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Fluorene	NS	40	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Indeno(1,2,3-cd)pyrene	NS	100	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	2-Methylnaphthalene	2,000	20,000	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Naphthalene	1,000	20,000	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Phenanthrene	NS	10,000	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
	Pyrene	NS	20	NA	2.0 U	NA	NA	2.0 U	NA	NA	2.0 U	NA	NA	NA	2.0 U	NA	NA	
PAHs (ug/L)	Acenaphthene	NS	6,000	NA	0.30 U	NA	NA	0.30 U	NA	NA	0.30 U	NA	NA	NA	0.30 U	NA	NA	
	Acenaphthylene	10,000	40	NA	0.30 U	NA	NA	0.30 U	NA	NA	0.30 U	NA	NA	NA	0.30 U	NA	NA	
	Anthracene	NS	30	NA	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	NA	NA	NA	0.20 U	NA	NA	
	Benzo(a)anthracene	NS	1,000	NA	0.050 U	NA	NA	0.050 U	NA	NA	0.050 U	NA	NA	NA	0.050 U	NA	NA	
	Benzo(a)pyrene	NS	500	NA	0.10 U	NA	NA	0.10 U	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	
	Benzo(b)fluoranthene	NS	400	NA	0.050 U	NA	NA	0.050 U	NA	NA	0.050 U	NA	NA	NA	0.050 U	NA	NA	
	Benzo(g,h,i)perylene	NS	20	NA	0.50 U	NA	NA	0.50 U	NA	NA	0.50 U	NA	NA	NA	0.50 U	NA	NA	
	Benzo(k)fluoranthene	NS	100	NA	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	NA	NA	NA	0.20 U	NA	NA	
	Chrysene	NS	70	NA	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	NA	NA	NA	0.20 U	NA	NA	
	Dibenz(a,h)anthracene	NS	40	NA	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	NA	NA	NA	0.20 U	NA	NA	
	Fluoranthene	NS	200	NA	0.50 U	NA	NA	0.50 U	NA	NA	0.50 U	NA	NA	NA	0.50 U	NA	NA	
	Fluorene	NS	40	NA	1.0 U	NA	NA	1.0 U	NA	NA	1.0 U	NA	NA	NA	1.0 U	NA	NA	
	Indeno(1,2,3-cd)pyrene	NS	100	NA	0.20 U	NA	NA	0.20 U	NA	NA	0.20 U	NA	NA	NA	0.20 U	NA	NA	
	2-Methylnaphthalene	2,000	20,000	NA	1.0 U	NA	NA	1.0 U	NA	NA	1.0 U	NA	NA	NA	1.0 U	NA	NA	
	Naphthalene	1,000	20,000	NA	1.0 U	NA	NA	1.0 U	NA	NA	1.0 U	NA	NA	NA	1.0 U	NA	NA	
	Phenanthrene	NS	10,000	NA	0.050 U	NA	NA	0.050 U	NA	NA	0.050 U	NA	NA	NA	0.050 U	NA	NA	
	Pyrene	NS	20	NA	1.0 U	NA	NA	1.0 U	NA	NA	1.0 U	NA	NA	NA	1.0 U	NA	NA	
PCBs (ug/L)	Aroclor 1016	5	10	1.0 U	0.0500 U	NA	NA	0.0500 U	NA	NA	0.0500 U	NA	NA	NA	0.0500 U	NA	NA	
	Aroclor 1221	5	10	1.0 U	0.0500 U	NA	NA	0.0500 U	NA	NA	0.0500 U	NA	NA	NA	0.0500 U	NA	NA	
	Aroclor 1232	5	10	1.0 U	0.0500 U	NA	NA	0.0500 U	NA	NA	0.0500 U	NA	NA	NA	0.0500 U	NA	NA	
	Aroclor 1242	5	10	1.0 U	0.0500 U	NA	NA	0.0500 U	NA	NA	0.0500 U	NA	NA	NA	0.0500 U	NA	NA	
	Aroclor 1248	5	10	1.0 U	0.0500 U	NA	NA	0.0500 U	NA	NA	0.0500 U	NA	NA	NA	0.0500 U	NA	NA	
	Aroclor 1254	5	10	1.0 U	0.0500 U	NA	NA	0.0500 U	NA	NA	0.0500 U	NA	NA	NA	0.0500 U	NA	NA	
	Aroclor 1260	5	10	1.0 U	0.0500 U	NA	NA	0.0500 U	NA	NA	0.0500 U	NA	NA	NA	0.0500 U	NA	NA	
	Total PCB Amount	5	10	1.0 U	0.0500 U	NA	NA	0.0500 U	NA	NA	0.0500 U	NA	NA	NA	0.0500 U	NA	NA	

Summary of Analytical Results for Basement Water Samples -- December 2009 and January 2010
 New Bedford High School
 New Bedford, Massachusetts

Analysis	Analyte	Sample ID:		NBHSBRM	BRM-S-1			BRM-S-2			BRM-S-3				FIP-S-1			
		Sample Date:			2/20/2009	12/2/2009	1/7/2010	1/30/2010	12/2/2009	1/7/2010	1/30/2010	12/2/2009	1/7/2010	1/30/2010	1/30/2010	12/2/2009	1/7/2010	1/30/2010
		GW-2	GW-3		Field Dup													
Metals, dissolved																		
(ug/L)	Antimony	NS	8,000	NA	40 U	NA	NA	40 U	NA	NA	40 U	NA	NA	NA	40 U	NA	NA	
	Arsenic	NS	900	NA	6.5	NA	NA	8.9	NA	NA	8.4	NA	NA	NA	6.0	NA	NA	
	Barium	NS	50,000	NA	79	NA	NA	73	NA	NA	67	NA	NA	NA	50 U	NA	NA	
	Beryllium	NS	200	NA	2.5 U	NA	NA	2.5 U	NA	NA	2.5 U	NA	NA	NA	2.5 U	NA	NA	
	Cadmium	NS	4	NA	2.5 U	NA	NA	2.5 U	NA	NA	2.5 U	NA	NA	NA	2.5 U	NA	NA	
	Chromium	NS	300	NA	5.0 U	NA	NA	5.0 U	NA	NA	5.0 U	NA	NA	NA	5.0 U	NA	NA	
	Lead	NS	10	NA	7.5 U	NA	NA	7.5 U	NA	NA	7.5 U	NA	NA	NA	7.5 U	NA	NA	
	Mercury	NS	20	NA	0.10 U	NA	NA	0.10 U	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	
	Nickel	NS	200	NA	5.0 U	NA	NA	5.0 U	NA	NA	5.0 U	NA	NA	NA	5.0 U	NA	NA	
	Selenium	NS	100	NA	25 U	NA	NA	25 U	NA	NA	25 U	NA	NA	NA	25 U	NA	NA	
	Silver	NS	7	NA	2.5 U	NA	NA	2.5 U	NA	NA	2.5 U	NA	NA	NA	2.5 U	NA	NA	
	Thallium	NS	3,000	NA	30 U	NA	NA	30 U	NA	NA	30 U	NA	NA	NA	30 U	NA	NA	
	Vanadium	NS	4,000	NA	25 U	NA	NA	25 U	NA	NA	25 U	NA	NA	NA	25 U	NA	NA	
	Zinc	NS	900	NA	160	NA	NA	43	NA	NA	48	NA	NA	NA	25	NA	NA	
Metals, total																		
(ug/L)	Antimony	NS	8,000	40.0 U	40 U	NA	NA	40 U	NA	NA	40 U	NA	NA	NA	40 U	NA	NA	
	Arsenic	NS	900	5.0 U	9.2	NA	NA	11	NA	NA	10	NA	NA	NA	5.8	NA	NA	
	Barium	NS	50,000	288	98	NA	NA	76	NA	NA	140	NA	NA	NA	50 U	NA	NA	
	Beryllium	NS	200	2.0 U	2.5 U	NA	NA	2.5 U	NA	NA	2.5 U	NA	NA	NA	2.5 U	NA	NA	
	Cadmium	NS	4	3.7	2.5 U	NA	NA	2.5 U	NA	NA	2.5 U	NA	NA	NA	2.5 U	NA	NA	
	Chromium	NS	300	30.0	5.0 U	NA	NA	5.0 U	NA	NA	5.0 U	NA	NA	NA	5.0 U	NA	NA	
	Lead	NS	10	50.8	7.5 U	NA	NA	7.5 U	NA	NA	220	NA	NA	NA	7.5 U	NA	NA	
	Mercury	NS	20	0.36	0.10 U	NA	NA	0.10 U	NA	NA	0.10 U	NA	NA	NA	0.10 U	NA	NA	
	Nickel	NS	200	26.0	5.0 U	NA	NA	5.0 U	NA	NA	5.0 U	NA	NA	NA	5.0 U	NA	NA	
	Selenium	NS	100	30.0 U	25 U	NA	NA	25 U	NA	NA	25 U	NA	NA	NA	25 U	NA	NA	
	Silver	NS	7	3.0 U	2.5 U	NA	NA	2.5 U	NA	NA	2.5 U	NA	NA	NA	2.5 U	NA	NA	
	Thallium	NS	3,000	30.0 U	30 U	NA	NA	30 U	NA	NA	30 U	NA	NA	NA	30 U	NA	NA	
	Vanadium	NS	4,000	25.0 U	25 U	NA	NA	25 U	NA	NA	25 U	NA	NA	NA	25 U	NA	NA	
	Zinc	NS	900	1,870	260	NA	NA	51	NA	NA	150	NA	NA	NA	21	NA	NA	

Notes:

ug/L - micrograms per liter.

NA - Sample not analyzed for the listed analyte.

NS - No MassDEP standards exist for this compound.

U - Compound was not detected at specified quantitation limit.

Values in **Bold** indicate the compound was detected.

Values shown in Bold and shaded type exceed one or more of the listed MassDEP Method 1 standards.

VOCs - Volatile Organic Compounds.

EPH - Extractable Petroleum Hydrocarbons.

PAHs - Polynuclear Aromatic Hydrocarbons.

PCBs - Polychlorinated Biphenyls.

(1) - MassDEP Method 1 standards for C9-C10 aromatic hydrocarbons used.

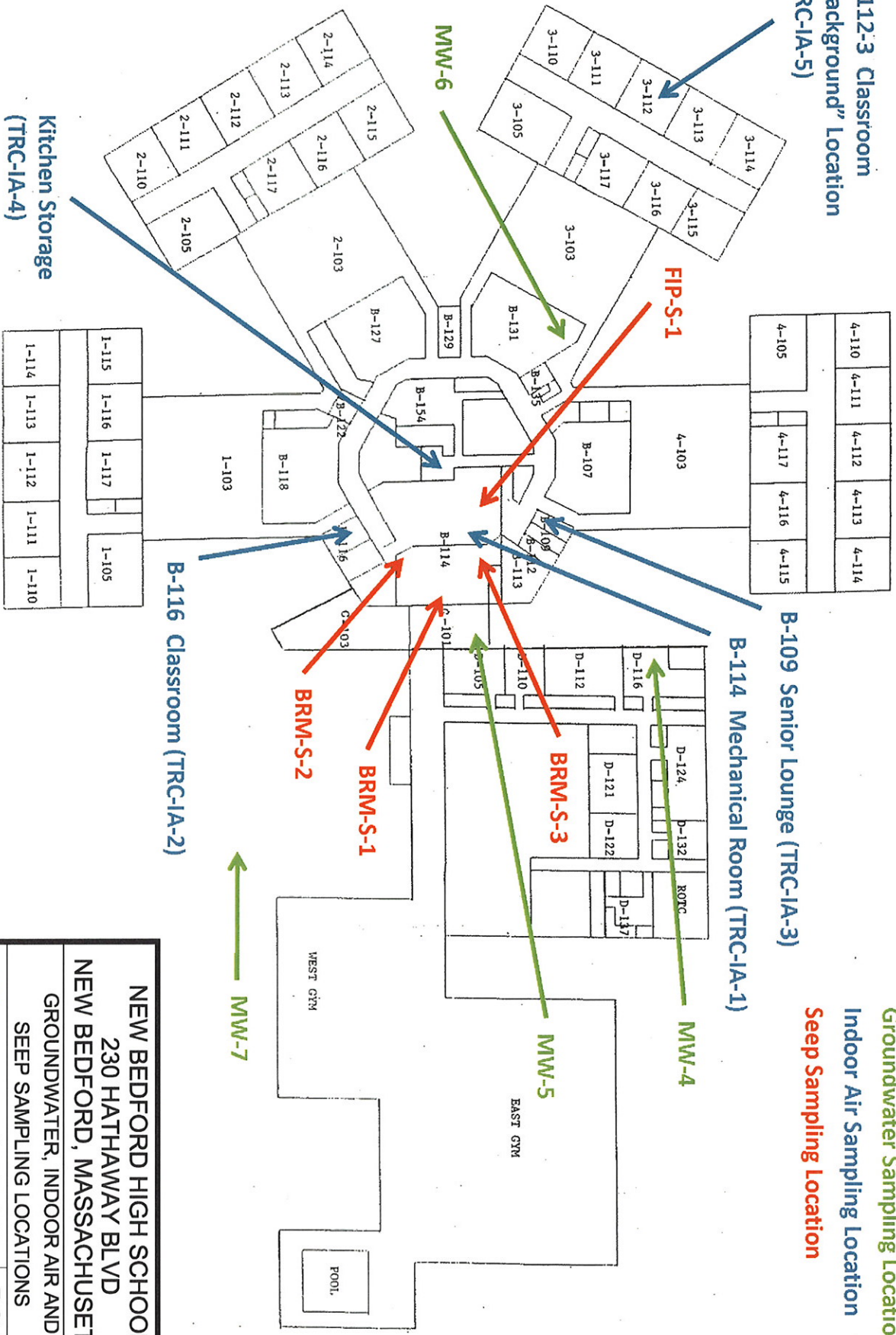
(2) - MassDEP Method 1 standards for 1,3-Dichloropropene used.

A-112-3 Classroom
 "Background" Location
 (TRC-IA-5)

B-109 Senior Lounge (TRC-IA-3)

B-114 Mechanical Room (TRC-IA-1)

Groundwater Sampling Location
 Indoor Air Sampling Location
 Seep Sampling Location



- Notes:
1. All sampling locations are approximate.
 2. Drawing is not to scale.

<p>NEW BEDFORD HIGH SCHOOL 230 HATHAWAY BLVD NEW BEDFORD, MASSACHUSETTS</p>	
<p>GROUNDWATER, INDOOR AIR AND SEEP SAMPLING LOCATIONS</p>	
<p>Wanonaquit Mills 650 Suffolk Street Lowell, MA 01854 (978) 970-5600</p>	<p>FIGURE 1</p>
<p>DRAWN BY: HWB CHECKED BY: JBS</p>	<p>DATE: FEB 2010</p>