Engineering a Sustainable Future

EPA Region 1 RAC 2 Contract No. EP-S1-06-03

July 10, 2012
Nobis Project No. 80018
MA-3533-2012-D

Via Electronic Submittal

U.S. Environmental Protection Agency
Attention: Ms. Almerinda Silva, Task Order Project Officer
5 Post Office Square, Suite 100
Boston, Massachusetts 02109-3919

Subject: Supplemental Evaluation of Surface-Water Protection Criteria
Scovill Industrial Landfill Superfund Site, Waterbury, Connecticut
Remedial Investigation/Feasibility Study
EPA Task Order No. 0018-RI-CO-017F

Dear Ms Silva:

Enclosed for EPA review is the Supplemental Evaluation of Surface-Water Protection Criteria for the above referenced Task Order.

Should you have any questions or comments, please contact me at (978) 703-6006, or ballen@nobisengineering.com.

Sincerely,

NOBIS ENGINEERING, INC.

Boyd Allen III, P.G.
Associate / Senior Project Manager

c: L. Chu
File 80018/MA

SDMS Doc ID 542235

Nobis Engineering, Inc.
18 Chenell Drive
Concord, NH 03301
T (603) 224-4182

Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
T (978) 683-0891

SUPPLEMENTAL EVALUATION OF SURFACE-WATER PROTECTION CRITERIA
SCOVILL INDUSTRIAL LANDFILL SITE
WATERBURY, CONNECTICUT
JULY 2012

1.0 INTRODUCTION

Nobis Engineering, Inc. (Nobis), on behalf of the U.S. Environmental Protection Agency (EPA), is conducting a Remedial Investigation (RI) at the Scovill Industrial Landfill Site (Site) in Waterbury, Connecticut. During the course of regularly scheduled quarterly groundwater sampling (December 2008 through October 2010), some groundwater analytes exceeded Connecticut's Remediation Standard Regulations' (RSRs) Surface-Water Protection Criteria (SWPC). A supplemental evaluation of SWPC is needed (as summarized in this memorandum) to determine whether the groundwater poses a threat to surface water quality at the Mad River, the nearest receiving body.

2.0 GROUNDWATER DATA

Quarterly groundwater samples were collected for the Remedial Investigation from 19 on-site locations and 3 off-site locations between December 2008 through October 2010 (Figure 2-1). Analyte concentrations are sporadic and variable within wells. There is no distinct groundwater plume or pattern of distribution.

3.0 COMPARISON TO TABULATED RSRs

Section 22a-133k-3 (b) of the RSRs encapsulates SWPC regulations governing various organic chemicals and metals that may pose a threat to surface water quality. Allowable SWPC limits are quantified in Appendix D to the RSRs. When comparing sample results to allowable SWPC limits, seven analytes had one or more SWPC exceedances: dissolved arsenic, dissolved cadmium, dissolved copper, dissolved lead, dissolved zinc, phenanthrene, and benzo(k)fluoranthene. An eighth analyte, dissolved manganese, is not cited in RSRs but is included on the 2008 Draft Criteria List. Per direction of the Connecticut Department of Energy & Environmental Protection (CT DEEP) Scovill project manager, manganese results were compared to the Connecticut Numerical Water Quality Criteria for Chemical Constituents: Human Health Criteria. These results are tabulated in Attachment A.

According to 22a-133k-3(b)(1), Surface-water Protection Criteria, *"Except as provided in subdivision (2) of this subsection, remediation of a ground-water plume which discharges to a surface water body shall result in the reduction of each substance therein to a concentration which is consistent with subdivision (2) of subsection (f) of this section and which is equal to or less than the surface-water protection criterion or an alternative surface-water protection criterion established in accordance with subdivision (3) of this subsection."* Subdivision (2) of subsection (f) goes on to state, *"Compliance with a surface-water protection criterion for a substance in ground water is achieved when the sampling locations are representative of the subject ground-water plume and (A) the average concentration of such substance in such plume is equal to or less than the applicable surface-water protection criterion for at least four consecutive quarterly sampling periods…"* [22a-133k-3(f)(2)(A)].

Analytical results for the eight analytes exceeding a SWPC were averaged for the last four quarters, Q1 2010 through Q4 2010. In consultation with the CTDEEP project manager, data averaging was limited to the wells closest to the downgradient discharge point in the southern

portion of the Site: MW-5, MW-6S, MW-6D, MW-7S and MW-7D (Figure 2-1). Table 3-1 shows the corresponding SWPC and the average for each analyte. Three analytes had averages higher than the SWPC: dissolved cadmium, dissolved manganese, and dissolved zinc, thus requiring evaluation using an acceptable alternative SWPC.

Table 3-1. Summary of SWPC Four Quarter Average Comparison

Analyte	SWPC (µg/L)	MW-5 (µg/L)	MW-6S (µg/L)	MW-6D (µg/L)	MW-7S (µg/L)	MW-7D (µg/L)	Average (µg/L)
Dissolved Arsenic	4	0.18	4.30	0.00	3.08	0.00	1.51
Dissolved Cadmium	6	0.12	0.00	0.00	29.93	0.00	6.01
Dissolved Copper	48	0.00	0.35	0.00	64.10	0.00	12.89
Dissolved Lead	13	0.00	0.00	0.00	0.00	0.00	0.00
Dissolved Manganese	484*	1,686.75	2,109.75	0.43	215.75	1.05	802.75
Dissolved Zinc	123	59.03	3.78	0.70	5,703.50	0.18	1,153.44
Phenanthrene	0.077	0.00	0.00	0.00	0.00	0.00	0.00
Benzo(k)Fluoranthene	0.3	0.00	0.00	0.00	0.00	0.00	0.00

Notes:

1. All values in micrograms per liter (µg/L)
2. Shading indicates exceedance of SWPC
3. SWPC = Surface Water Protection Criteria (Appendix D to 22a-133k-3 Ground-water Remediation Standards) except for Manganese which comes from CT DEP 2008 Draft Criteria provided by S. Gleason
4. WQS-HHwo = Water Quality Standards - Human Health Criteria, Water and Organism from Appendix D, Numerical Water Quality Criteria for Chemical Constituents, 2011 Connecticut Water Quality Standards Effective February 25, 2011 http://www.ct.gov/dep/lib/dep/water/water_quality_standards/wqs_final_adopted_2_25_11.pdf
5. * = Proxy number from S. Gleason based on Appendix E Comparison of 2011 WQ Criteria to 2002 Water Quality Criteria; Numerical Water Quality Criteria for Human Health Criteria, Class AA & A Consumption of Water and Fish http://www.ct.gov/dep/lib/dep/water/water_quality_standards/surface_wqc_updates/appendix_e__and_f_jan_4_2011_final.pdf

4.0 CALCULATION OF AN ALTERNATIVE SWPC

Section 22a-133k-3(b)(3) allows calculation of alternative surface-water protection criteria *"…in accordance with subparagraph (A) of this subdivision …"* Subparagraph (A) [Section 22a-133k-3(b)(3)(A)] states, *"An alternative surface-water protection criterion may be calculated for a substance in Appendix D of the most recent Water Quality Standards by multiplying the lower of the human health or aquatic life criterion for such substance in said Appendix D by [(0.25 x 7Q10)/Q_{plume}] where Q_{plume} is equal to the average daily discharge plume of polluted ground water from the subject ground-water plume."*

Calculation of Average Daily Discharge From the Site

Although no distinct groundwater plume emanates from the Site, a discharge rate was calculated by multiplying the groundwater velocity passing through a unit volume exiting the Site. Both the groundwater velocity and unit volume were estimated using site-specific

hydrogeological data collected in the RI including horizontal hydraulic gradient, saturated thickness, discharge width, hydraulic conductivity and porosity.

Groundwater velocity is calculated using the following equation:

(Eq. 4-1) $v = ki$

where: v = groundwater velocity (ft/d)
k = hydraulic conductivity (ft/d)
i = horizontal gradient (ft/ft)

Slug testing during the RI yielded mean hydraulic conductivity for the shallow and deep monitoring wells of 1.78 and 2.11 ft/d, respectively. The Site average is 1.95 ft/d.

Potentiometric maps (Figures 4-1 through 4-4) were plotted using shallow and deep aquifer groundwater elevations from March and October/November 2009. Calculated hydraulic gradients were 5.62×10^{-3} ft/ft, 6.84×10^{-3} ft/ft, 5.72×10^{-3} ft/ft, 6.03×10^{-3} ft/ft, respectively and yield an average gradient of 6.05×10^{-3} ft/ft.

Using Equation 4.1 v ft/d = 1.95 ft/d x 6.05×10^{-3} ft/ft
$v = 1.18 \times 10^{-2}$ ft/d

Based on the potentiometric maps, groundwater discharges from the Site in the southwest corner following the former Carrington Brook discharge corridor. A line drawn perpendicular to flow across the discharge path leaving the Site is estimated at 396.7 ft wide (see Figure 4-3). The average saturated thickness at MW-6D (the deep well in this area) measured during the eight quarterly sampling rounds is 42.9 ft. Porosity in this area is assumed to be 0.3 based on literature values for this type of formation in Connecticut. Available cross-sectional area for groundwater flow is calculated using the following equation:

(Eq. 4-2) $A = bw\eta$

where: A = Cross-sectional area (ft^2)
b = saturated thickness (ft)
w = discharge path width (ft)
η = porosity (dimensionless)

Using Equation 4.2 A ft^2 = 42.9 ft x 396.7 ft x 0.3
$A = 5{,}105.5$ ft^2

Assuming a unit length of 1 foot, the volume of water or discharge (Q_{plume}) passing through the unit volume is calculated using the following equation:

(Eq. 4-3) $Q_{plume} = Avc_f$

where: Q_{plume} = groundwater discharge (ft^3/s or cfs)
A = Cross-sectional area (ft^2)
v = groundwater velocity (ft/d)
c_f = conversion factor = 1.157×10^{-5} (d/s)

Using Equation 4-3 Q_{plume} cfs = 5,105.5 ft^2 x 1.18×10^{-2} ft/d x 1.157×10^{-5} d/s
$Q_{plume} = 6.97 \times 10^{-4}$ cfs

Calculation of 7Q10 for the Site

For purposes of the dilution calculation, the Mad River is used as the receiving water body at a point hydraulically downgradient of the Site shown on Figure 4-5. The river is ungaged at this location. CTDEEP, then the Connecticut Department of Environmental Protection (CT DEP) in their "*Guidance For Groundwater Monitoring For Demonstrating Compliance With The Connecticut Remediation Standard Regulations", Prepared by the EPOC Technical Practices Work Group on Groundwater Monitoring and the Connecticut Department of Environmental Protection, March 17, 2006* provide direction to determining the "7Q10" low flow metric at a particular location along a stream using CTDEP Connecticut Water Resources Bulletin No. 34, *"A Method for Estimating the 7-day, 10-year Low Flow of Streams in Connecticut,"* by Michael A. Cervione, Robert L. Melvin and Kathleen A. Cyr, 1982. The methodology uses the following regression equation to describe the relationship of the 7Q10 flow statistic at a specific location to the proportion of upstream drainage underlain by coarse-grained stratified drift and till-mantled bedrock.

(Eq. 4-4) $7Q10 = 0.67A_{sd} + 0.01A_{till}$

where: 7Q10 = 7-day, 10-year low flow (cfs)

A_{sd} = upstream drainage underlain by coarse-grained stratified drift (mi^2)

A_{till} = upstream drainage underlain by till (mi^2)

The *"Baseline Ecological Risk Assessment, Scovill Industrial landfill Superfund Site, Waterbury, Connecticut"* prepared by TechLaw, December 2010, used the USGS StreamStats tool and delineated a 485 acre (0.758 mi^2) subwatershed area contributing to the Mad River. There is additional upstream drainage contributing to the flow statistic at this interception point, so the computed statistic will be smaller than the actual 7Q10. But using this previously defined, albeit smaller drainage area saved additional computation time. Stratified drift boundaries were obtained from CTDEEP GIS data layers and encompass 0.294 mi^2 within the subwatershed leaving 0.464 mi^2 underlain by till.

Using Equation 4.4 $7Q10 = 0.67A_{sd} + 0.01A_{till}$

$7Q10\ (cfs) = 0.67 \times 0.294\ mi^2 + 0.01 \times 0.464\ mi^2$

$7Q10\ (cfs) = 0.20\ cfs$

With the results from Equations 4-3 and 4-4, an alternative SWPC multiplier is calculated using the formula provided in Section 22a-133k-3(b)(3)(A):

(Eq. 4-5) $SWPC_{mult} = (0.25 \times 7Q10)/Q_{plume}$

where: $SWPC_{mult}$ = the SWPC multiplier (dim)

7Q10 = 7-day, 10-year low flow (cfs)

Q_{plume} = groundwater discharge (cfs)

Using Equation 4-5 $SWPC_{mult} = [(0.25 \times 0.20\ cfs)/\ 6.97 \times 10^{-4}\ cfs$

$SWPC_{mult} = 71.74$

In accordance with Section 22a-133k-3(b)(3)(A) the alternative SWPC is calculated by multiplying the lower of the human health or aquatic life criterion. For dissolved cadmium, the aquatic life criterion was the lower value and when multiplied by the $SWPC_{mult}$, the 4-quarter average (6.01 µg/L) was below the calculated Alternative SWPC (9 µg/L). for the dissolved manganese and dissolved zinc listed in Appendix D of the Water Quality Standards. There are no criteria for dissolved manganese in the 2011 Connecticut Water Quality Standards so the

CTDEEP project manager recommended using Numerical Water Quality Criteria for Human Health Criteria, Class AA & A Consumption of Water and Fish from Appendix E - Comparison of 2011 WQ Criteria to 2002 Water Quality Criteria as a proxy. The proxy SWPC was multiplied by the $SWPC_{mult}$. The 4-quarter average (803 µg/L) was well below the calculated Alternative SWPC (34,722 µg/L). For dissolved zinc, the Aquatic Life Criterion was the lower value and when multiplied by the $SWPC_{mult}$, the 4-quarter average (1,153 µg/L) was also below the calculated Alternative SWPC (4,663 µg/L).

Table 4-1. Comparison to Aquatic Life and Human Health Criteria

Analyte	SWPC (µg/L)	Four Quarter Average (µg/L)	Aquatic Life Criteria (µg/L)	Human Health Criteria (µg/L)	SWPC Multiplier	Alternative SWPC (µg/L)	Result
Dissolved Cadmium	6	6.01	0.125	5	71.74	8.96	Compliant
Dissolved Manganese	None	803	None	484	71.74	34,722	Compliant
Dissolved Zinc	123	1,153	65	7,400	71.74	4,663	Compliant

Thus, as shown below on Table 4-2, all groundwater analytes at Scovill comply with the SWPC either by direct comparison to RSRs, 4-Quarter Average or Site-Specific Alternative SWPC.

Table 4-2. Summary of SWPC Comparisons

Analyte	SWPC (µg/L)	Four Quarter Average Result	Alternative SWPC (µg/L)	Alternative SWPC Result
Dissolved Arsenic	4	Compliant		
Dissolved Cadmium	6	Exceeds SWPC	8.96	Compliant
Dissolved Copper	48	Compliant		
Dissolved Lead	13	Compliant		
Dissolved Manganese	484*	Exceeds SWPC	34,722	Compliant
Dissolved Zinc	123	Exceeds SWPC	4,663	Compliant
Phenanthrene	0.077	Compliant		
Benzo(k)Fluoranthene	0.3	Compliant		

Note: * = Proxy SWPC designated by CTDEEP in lieu of published value

FIGURES

1. Aerial imagery provided by EPA-ESD, September, 2001.
2. Parcel boundaries provided by City of Waterbury, CT.
3. Data Collected by Nobis
4. Elevation in ft MSL

N

Drawn By: JH	Checked By: BA
July 9, 2012	Revision No. 00

APPROXIMATE SCALE
0 75 150 300 Feet

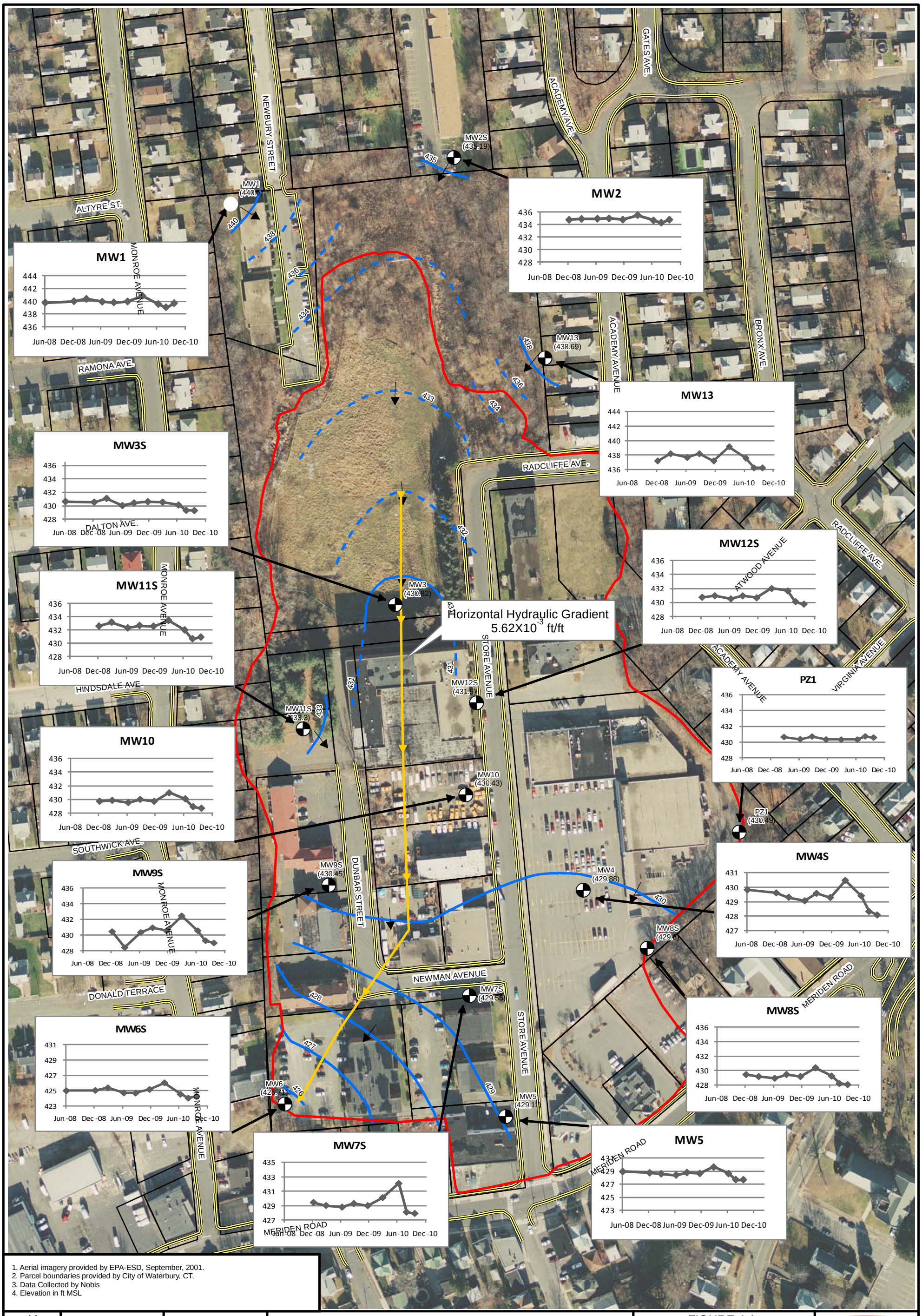
- Modern Roads
- Assessor's Parcel Boundries
- Groundwater Contours
- Estimated Groundwater Contours (Average March Elvations)
- Groundwater Flow Line
- Estimated Limit of Scovill Derived/Placed Fill
- Monitoring Well Sample Locations (PZ-1 for Water Levels Only)

Draft

FIGURE 2-1
Groundwater Monitoring Well Locations
Scovill Industrial Landfill
Waterbury, CT

Nobis
Engineering a Sustainable Future
Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
(978) 683-0891

Path: R:\80000 Task Orders\80018 Scovill LF\Technical Data (TD)\GIS_Data\Maps\RI_Report\Draft_New\2-1_GW_Monitoring_Well_Locations.mxd



1. Aerial imagery provided by EPA-ESD, September, 2001.
2. Parcel boundaries provided by City of Waterbury, CT.
3. Data Collected by Nobis
4. Elevation in ft MSL

N

Drawn By: JRS	Checked By:
May 08, 2012	Revision No. 00

APPROXIMATE SCALE
0 75 150 300 Feet

- Modern Roads
- Assessor's Parcel Boundries
- Groundwater Contours
- Estimated Groundwater Contours
- Groundwater Flow Line
- Estimated Limit of Scovill Derived/Placed Fill
- Monitoring Well Sample Locations (Avg. March Elevation)

Draft

FIGURE 4-1
Shallow Wells Groundwater Elevation Contours
Average of March Data
Scovill Industrial Landfill
Waterbury, CT

Nobis
Engineering a Sustainable Future
Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
(978) 683-0891

Path: R:\80000 Task Orders\80018 Scovill LFT\Technical Data (TD)\GIS_Data\Maps\RI_Report\Draft_New\4-1_GW_Contour_March_Shallow.mxd

1. Aerial imagery provided by EPA-ESD, September, 2001.
2. Parcel boundaries provided by City of Waterbury, CT.
3. Data Collected by Nobis
4. Elevation in ft MSL

N

Drawn By: JRS	Checked By:
May 08, 2012	Revision No. 00

APPROXIMATE SCALE
0 75 150 300 Feet

- Modern Roads
- Assessor's Parcel Boundries
- Groundwater Contours
- Estimated Groundwater Contours
- Groundwater Flow Line
- Estimated Limit of Scovill Derived/Placed Fill
- Monitoring Well Sample Locations (Avg. March Elevation)

Draft

FIGURE 4-2
Deep Wells Groundwater Elevation Contours
Average of March Data
Scovill Industrial Landfill
Waterbury, CT

Nobis
Engineering a Sustainable Future
Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
(978) 683-0891

Path: R:\80000 Task Orders\80018 Scovill LF\Technical Data (TD)\GIS_Data\Maps\RI_Report\Draft_New\4-2_GW_Contour_March_Deep.mxd

1. Aerial imagery provided by EPA-ESD, September, 2001.
2. Parcel boundaries provided by City of Waterbury, CT.
3. Data Collected by Nobis
4. Elevation in ft MSL

N

Drawn By: JRS	Checked By:
May 08, 2012	Revision No. 00

APPROXIMATE SCALE
0 75 150 300 Feet

- Modern Roads
- Assessor's Parcel Boundries
- Groundwater Contours
- Estimated Groundwater Contours
- Groundwater Flow Line
- Estimated Limit of Scovill Derived/Placed Fill
- Monitoring Well Sample Locations (Avg. Fall Elevations)

Draft

FIGURE 4-3
Shallow Wells Groundwater Elevation Contours Average of Oct/Nov/Dec Data
Scovill Industrial Landfill
Waterbury, CT

Nobis
Engineering a Sustainable Future
Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
(978) 683-0891

Path: R:\80000 Task Orders\80018 Scovill LF\Technical Data (TD)\GIS_Data\Maps\RI_Report\Draft_New\4-3_GW_Contour_Fall_Shallow.mxd

1. Aerial imagery provided by EPA-ESD, September, 2001.
2. Parcel boundaries provided by City of Waterbury, CT.
3. Data Collected by Nobis
4. Elevation in ft MSL

N

Drawn By: JRS	Checked By:
May 08, 2012	Revision No. 00

APPROXIMATE SCALE
0 75 150 300 Feet

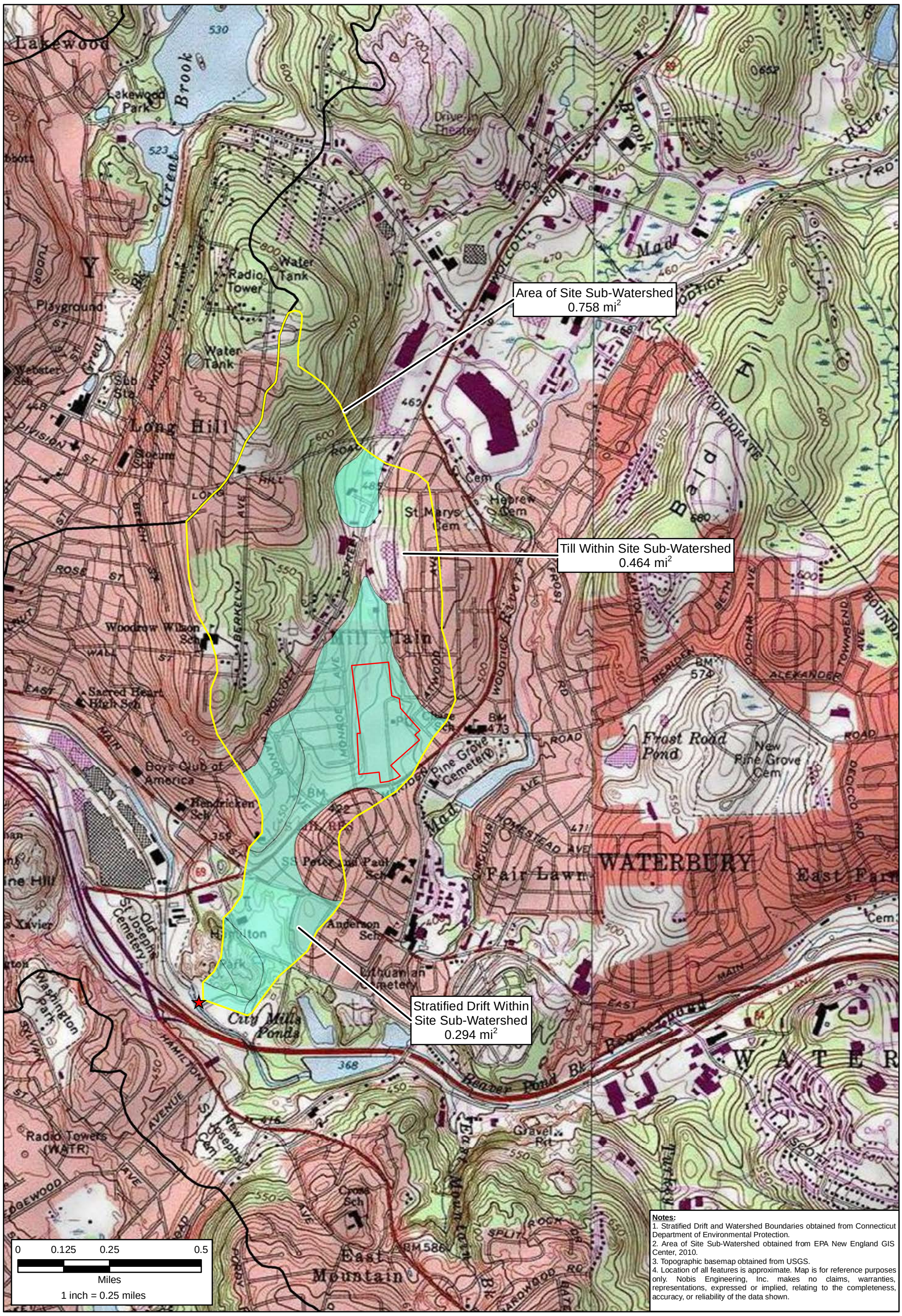
- Modern Roads
- Assessor's Parcel Boundries
- Groundwater Contours
- Estimated Groundwater Contours
- Groundwater Flow Line
- Estimated Limit of Scovill Derived/Placed Fill
- Monitoring Well Sample Locations (Avg. Fall Elevations)

Draft

FIGURE 4-4
Deep Wells Groundwater Elevation Contours
Average of Oct/Nov/Dec Data
Scovill Industrial Landfill
Waterbury, CT

Nobis
Engineering a Sustainable Future
Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
(978) 683-0891

Path: R:\80000 Task Orders\80018 Scovill LF\Technical Data (TD)\GIS_Data\Maps\RI_Report\Draft_New\4-4_GW_Contour_Fall_Deep.mxd



Notes:
1. Stratified Drift and Watershed Boundaries obtained from Connecticut Department of Environmental Protection.
2. Area of Site Sub-Watershed obtained from EPA New England GIS Center, 2010.
3. Topographic basemap obtained from USGS.
4. Location of all features is approximate. Map is for reference purposes only. Nobis Engineering, Inc. makes no claims, warranties, representations, expressed or implied, relating to the completeness, accuracy, or reliability of the data shown.

Legend

- Scovill Project Site
- Watershed Boundary
- Coarse-Grained Stratified Drift
- Fine-Grained Stratified Drift
- Sub-Watershed of Site
- Stratified Drift Within Site Sub-Watershed
- Sub-Watershed Entry Point to Mad River

	Sqft	Acre	Sqmi
Subwatershed Area	21,126,600	485.00	0.758
Stratified Drift Area	8,210,171	188.48	0.294
Till Area	12,916,429	296.52	0.464

N

Nobis
Engineering a Sustainable Future
Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
T(978) 683-0891
www.nobiseng.com
Client-Focused, Employee-Owned

FIGURE 4-5

7Q10 CALCULATION AREA
SCOVILL INDUSTRIAL LANDFILL
WATERBURY, CONNECTICUT

PREPARED BY: JH | CHECKED BY: BA
PROJECT NO. 80018.06 | DATE: APRIL 2012

Path: R:\80000 Task Orders\80018 Scovill LF\Technical Data (TD)\GIS_Data\Maps\7Q10 Calculation\4-5_Scovill_7Q10.mxd

ATTACHMENT A

Scovill Groundwater Data
Dissolved Arsenic (in ug/L)

	Quarter Year	2008-Q4		2008-Q4		2009-Q1		2009-Q1		2009-Q2		2009-Q2		2009-Q3	
	Sample Type	N		FD		N		FD		N		FD		N	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	1	UJ	--		1	U	--		1	U	--		1	U
Shallow Overburden	MW10	4.8	J	--		5.2		5.1		7.9	J	--		8	
Shallow Overburden	MW11S	1.3	J	--		1.2		--		1.9		--		4.4	
Shallow Overburden	MW12S	4.4	J	--		3.5		--		4.6	J	--		7.9	
Shallow Overburden	MW13	1	UJ	--		1	U	--		1	U	--		1	U
Shallow Overburden	MW2S	0.63	J	--		0.62	J	--		2.9	J	--		5.3	
Shallow Overburden	MW3	0.75	J	0.76	J	1	U	--		0.56	J	--		1	U
Shallow Overburden	MW4	0.83	J	--		1	U	--		1	U	--		1	U
Shallow Overburden	MW5	0.4	J	--		0.33	J	--		1	U	--		1	U
Shallow Overburden	MW6	6.8	J	--		2.6		2.7		8.8	J	5.8	J	2.4	
Shallow Overburden	MW7S	6.5	J	--		2.6		--		3.7		--		3.2	
Shallow Overburden	MW8S	1	UJ	--		1	U	--		1	U	--		1	U
Shallow Overburden	MW9S	4.3	J	--		2.5		--		1.9		--		2.9	
Deep Overburden	MW11D	1	UJ	--		1	U	--		1	U	1	U	1	U
Deep Overburden	MW12D	1	UJ	--		0.13	J	--		1	U	--		1	U
Deep Overburden	MW3D	1	UJ	--		0.15	J	--		1	U	--		1	U
Deep Overburden	MW4D	1	UJ	--		1	U	--		1	U	--		1	U
Deep Overburden	MW6D	1	UJ	--		1	U	--		1	U	--		1	U
Deep Overburden	MW7D	1	UJ	--		0.18	J	--		1	U	--		1	U
Deep Overburden	MW8D	1	UJ	1	UJ	1	U	--		1	U	--		1	U
Deep Overburden	MW9D	1	UJ	--		0.34	J	--		1	U	--		1	U
Bedrock Wells	MW3B	0.71	J	--		1	U	--		1	U	--		1	U

Scovill Groundwater Data
Dissolved Arsenic (in ug/L)

	Quarter Year	2009-Q3		2009-Q4		2009-Q4		2010-Q1		2010-Q1		2010-Q2		2010-Q2		2010-Q4		2010-Q4	
	Sample Type	FD		N		FD		N		FD		N		FD		N		FD	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	--		1	U	--		0.071	J	--		1	U	--		1	U	--	
Shallow Overburden	MW10	--		8.3		--		4.8	J	--		4.7	J	--		5.2	J	--	
Shallow Overburden	MW11S	--		2.3		--		2.8	J	--		3.6	J	--		3.4	J	--	
Shallow Overburden	MW12S	--		--		--		2.8	J	--		5.3	J	--		--		--	
Shallow Overburden	MW13	--		1	U	--		0.1	J	--		1	U	--		1	U	--	
Shallow Overburden	MW2S	--		4.7		--		1.1	J	--		3.6	J	--		3.5	J	--	
Shallow Overburden	MW3	--		0.69	J	--		0.57	J	--		0.5	J	--		1	U	--	
Shallow Overburden	MW4	--		1	U	--		0.45	J	--		1	U	--		0.56	J	--	
Shallow Overburden	MW5	--		1	U	--		0.31	J	--		0.42	J	--		1	U	--	
Shallow Overburden	MW6	--		3.1		--		2.6	J	--		2.5	J	--		9	J	--	
Shallow Overburden	MW7S	--		3.4		--		3.1	J	--		1.6	J	--		4.2	J	--	
Shallow Overburden	MW8S	--		1	U	--		0.14	J	--		1	U	--		1	U	--	
Shallow Overburden	MW9S	--		2.5		--		0.66	J	--		1.6	J	--		13.6	J	--	
Deep Overburden	MW11D	--		1	U	--		1	U	--		1	U	--		1	U	--	
Deep Overburden	MW12D	1	U	1	U	--		1	U	--		1	U	--		1	U	--	
Deep Overburden	MW3D	--		1	U	--		0.2	J	--		0.34	J	--		1	U	1	U
Deep Overburden	MW4D	--		1	U	--		0.18	J	--		1	U	--		1	U	--	
Deep Overburden	MW6D	--		1	U	1	U	1	U	0.29	J	1	U	1	U	1	U	1	U
Deep Overburden	MW7D	--		1	U	--		1	U	--		1	U	--		1	U	--	
Deep Overburden	MW8D	1	U	1	U	1	U	0.089	J	0.096	J	1	U	1	U	1	U	--	
Deep Overburden	MW9D	--		1	U	--		1	U	--		1	U	--		1	U	--	
Bedrock Wells	MW3B	--		1	U	--		0.15	J	--		1	U	--		1	U	--	

Scovill Groundwater Data
Dissolved Cadmium (in ug/L)

	Quarter Year	2008-Q4		2008-Q4		2009-Q1		2009-Q1		2009-Q2		2009-Q2		2009-Q3	
	Sample Type	N		FD		N		FD		N		FD		N	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	0.031	J	--		1	UJ	--		1	U	--		1	U
Shallow Overburden	MW10	0.72	J	--		0.45	J	0.44	J	1	U	--		1	U
Shallow Overburden	MW11S	0.14	J	--		1	UJ	--		1	U	--		1	U
Shallow Overburden	MW12S	1	UJ	--		0.15	J	--		1	U	--		1	U
Shallow Overburden	MW13	0.12	J	--		1	UJ	--		1	U	--		1	U
Shallow Overburden	MW2S	1.4	J	--		1	UJ	--		1	U	--		1	U
Shallow Overburden	MW3	0.071	J	0.062	J	1	UJ	--		1	U	--		1	U
Shallow Overburden	MW4	25.1	J	--		23.5	J	--		25	J	--		21	
Shallow Overburden	MW5	0.34	J	--		0.62	J	--		1	U	--		1	U
Shallow Overburden	MW6	0.056	J	--		1	UJ	1	UJ	1	U	1	U	1	U
Shallow Overburden	MW7S	0.95	J	--		49.9	J	--		41.3	J	--		44.6	
Shallow Overburden	MW8S	1	UJ	--		0.53	J	--		1	U	--		1	U
Shallow Overburden	MW9S	0.069	J	--		0.3	J	--		1	U	--		1	U
Deep Overburden	MW11D	0.1	J	--		0.058	J	--		1	U	1	U	1	U
Deep Overburden	MW12D	1	UJ	--		1	UJ	--		1	U	--		1	U
Deep Overburden	MW3D	0.03	J	--		1	UJ	--		1	U	--		1	U
Deep Overburden	MW4D	0.1	J	--		1	UJ	--		1	U	--		1	U
Deep Overburden	MW6D	1	UJ	--		1	UJ	--		1	U	--		1	U
Deep Overburden	MW7D	0.027	J	--		1	UJ	--		1	U	--		1	U
Deep Overburden	MW8D	0.18	J	1	UJ	1	UJ	--		1	U	--		1	U
Deep Overburden	MW9D	0.07	J	--		0.041	J	--		1	U	--		1	U
Bedrock Wells	MW3B	1	UJ	--		1	UJ	--		1	U	--		1	U

Scovill Groundwater Data
Dissolved Cadmium (in ug/L)

	Quarter Year	2009-Q3		2009-Q4		2009-Q4		2010-Q1		2010-Q1		2010-Q2		2010-Q2		2010-Q4		2010-Q4	
	Sample Type	FD		N		FD		N		FD		N		FD		N		FD	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	--		1	U	--		0.069	J	--		1	U	--		0.029	J	--	
Shallow Overburden	MW10	--		1	U	--		2.6		--		1	U	--		1.4	J	--	
Shallow Overburden	MW11S	--		1	U	--		0.012	J	--		1	U	--		1	U	--	
Shallow Overburden	MW12S	--		--		--		0.22	J	--		1	U	--		--		--	
Shallow Overburden	MW13	--		1	U	--		0.11	J	--		1	U	--		0.12	J	--	
Shallow Overburden	MW2S	--		1	U	--		0.091	J	--		1	U	--		1	U	--	
Shallow Overburden	MW3	--		1	U	--		0.038	J	--		1	U	--		1	U	--	
Shallow Overburden	MW4	--		23.4		--		19.9	J	--		20.6		--		18.1	J	--	
Shallow Overburden	MW5	--		0.22	J	--		0.25	J	--		1	U	--		1	U	--	
Shallow Overburden	MW6	--		1	U	--		0.008	J	--		1	U	--		1	U	--	
Shallow Overburden	MW7S	--		37		--		18.3		--		47		--		17.4	J	--	
Shallow Overburden	MW8S	--		0.52	J	--		0.32	J	--		1	U	--		0.51	J	--	
Shallow Overburden	MW9S	--		0.35	J	--		0.46	J	--		1	U	--		1	U	--	
Deep Overburden	MW11D	--		1	U	--		0.039	J	--		1	U	--		1	U	--	
Deep Overburden	MW12D	1	U	1	U	--		0.018	J	--		1	U	--		1	U	--	
Deep Overburden	MW3D	--		1	U	--		0.013	J	--		1	U	--		1	U	0.007	J
Deep Overburden	MW4D	--		1	U	--		0.049	J	--		1	U	--		1	U	--	
Deep Overburden	MW6D	--		1	U	1	U	0.008	J	1	U	1	U	1	U	1	U	1	U
Deep Overburden	MW7D	--		1	U	--		1	U	--		1	U	--		1	U	--	
Deep Overburden	MW8D	1	U	1	U	1	U	0.014	J	0.012	J	1	U	1	U	1	U	--	
Deep Overburden	MW9D	--		1	U	--		0.067	J	--		1	U	--		1	U	--	
Bedrock Wells	MW3B	--		1	U	--		0.032	J	--		1	U	--		1	U	--	

Scovill Groundwater Data
Dissolved Copper (in ug/L)

	Quarter Year	2008-Q4		2008-Q4		2009-Q1		2009-Q1		2009-Q2		2009-Q2		2009-Q3	
	Sample Type	N		FD		N		FD		N		FD		N	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	25	U	--		25	U	--		25	U	--		25	U
Shallow Overburden	MW10	1.9	U	--		25	U	25	U	25	U	--		0.84	J
Shallow Overburden	MW11S	3.9	U	--		25	U	--		25	U	--		25	U
Shallow Overburden	MW12S	4.2	U	--		25	U	--		1.8	J	--		20.7	J
Shallow Overburden	MW13	25	U	--		25	U	--		25	U	--		25	U
Shallow Overburden	MW2S	25	U	--		25	U	--		25	U	--		25	U
Shallow Overburden	MW3	25	U	25	U	25	U	--		1.2	J	--		25	U
Shallow Overburden	MW4	627		--		605		--		826		--		621	
Shallow Overburden	MW5	25	U	--		25	U	--		25	U	--		25	U
Shallow Overburden	MW6	25	U	--		25	U	25	U	25	U	25	U	25	U
Shallow Overburden	MW7S	0.88	U	--		96.4		--		71.7		--		125	
Shallow Overburden	MW8S	3.6	U	--		25	U	--		25	J	--		2	J
Shallow Overburden	MW9S	25	U	--		25	U	--		25	U	--		6	J
Deep Overburden	MW11D	25	U	--		25	U	--		25	U	25	U	25	U
Deep Overburden	MW12D	2.2	U	--		25	U	--		25	U	--		25	U
Deep Overburden	MW3D	25	U	--		25	U	--		25	U	--		25	U
Deep Overburden	MW4D	10.2	J	--		5.5	J	--		25	U	--		0.99	J
Deep Overburden	MW6D	25	U	--		25	U	--		25	U	--		25	U
Deep Overburden	MW7D	0.68	U	--		25	U	--		25	U	--		25	U
Deep Overburden	MW8D	1.3	U	1.3	U	25	U	--		25	U	--		25	U
Deep Overburden	MW9D	25	U	--		25	U	--		25	U	--		25	U
Bedrock Wells	MW3B	25	U	--		25	U	--		25	U	--		25	U

Scovill Groundwater Data
Dissolved Copper (in ug/L)

	Quarter Year	2009-Q3		2009-Q4		2009-Q4		2010-Q1		2010-Q1		2010-Q2		2010-Q2		2010-Q4		2010-Q4	
	Sample Type	FD		N		FD		N		FD		N		FD		N		FD	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	--		25	U	--		25	U	--		25	U	--		25	U	--	
Shallow Overburden	MW10	--		25	U	--		23.1	J	--		25	U	--		25	U	--	
Shallow Overburden	MW11S	--		25	U	--		25	U	--		25	U	--		25	U	--	
Shallow Overburden	MW12S	--		--		--		11.6	J	--		25	U	--		--		--	
Shallow Overburden	MW13	--		25	U	--		25	U	--		25	U	--		25	U	--	
Shallow Overburden	MW2S	--		25	U	--		1.8	J	--		25	U	--		25	U	--	
Shallow Overburden	MW3	--		25	U	--		25	U	--		25	U	--		25	U	--	
Shallow Overburden	MW4	--		687		--		293		--		695		--		707		--	
Shallow Overburden	MW5	--		25	U	--		25	U	--		25	U	--		25	U	--	
Shallow Overburden	MW6	--		25	U	--		1.4	J	--		25	U	--		25	U	--	
Shallow Overburden	MW7S	--		79.3		--		44.5		--		104		--		28.6		--	
Shallow Overburden	MW8S	--		2.5	J	--		3.6	J	--		25	U	--		2.6	J	--	
Shallow Overburden	MW9S	--		5	J	--		6.7	J	--		25	U	--		2.8	J	--	
Deep Overburden	MW11D	--		25	U	--		25	U	--		25	U	--		25	U	--	
Deep Overburden	MW12D	25	U	25	U	--		25	U	--		25	U	--		25	U	--	
Deep Overburden	MW3D	--		25	U	--		25	U	--		25	U	--		25	U	25	U
Deep Overburden	MW4D	--		10.5	J	--		25	U	--		10.6	J	--		11.9	J	--	
Deep Overburden	MW6D	--		25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U
Deep Overburden	MW7D	--		25	U	--		25	U	--		25	U	--		25	U	--	
Deep Overburden	MW8D	25	U	25	U	25	U	25	U	25	U	25	U	25	U	25	U	--	
Deep Overburden	MW9D	--		25	U	--		25	U	--		25	U	--		25	U	--	
Bedrock Wells	MW3B	--		25	U	--		25	U	--		25	U	--		25	U	--	

Scovill Groundwater Data
Dissolved Lead (in ug/L)

	Quarter Year	2008-Q4		2008-Q4		2009-Q1		2009-Q1		2009-Q2		2009-Q2		2009-Q3	
	Sample Type	N		FD		N		FD		N		FD		N	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	10	U	--		10	U	--		10	U	--		10	U
Shallow Overburden	MW10	10	U	--		4.1	J	2.1	J	10	U	--		10	U
Shallow Overburden	MW11S	10	U	--		1.9	J	--		10	U	--		10	U
Shallow Overburden	MW12S	10	U	--		10	U	--		10	U	--		6.1	J
Shallow Overburden	MW13	10	U	--		10	U	--		10	U	--		10	U
Shallow Overburden	MW2S	10	U	--		10	U	--		10	U	--		10	U
Shallow Overburden	MW3	10	U	10	U	10	U	--		10	U	--		10	U
Shallow Overburden	MW4	18.5		--		42		--		39.2	J	--		39.8	
Shallow Overburden	MW5	10	U	--		10	U	--		10	U	--		10	U
Shallow Overburden	MW6	10	U	--		10	U	10	U	10	U	10	U	10	U
Shallow Overburden	MW7S	2.7	J	--		10	U	--		10	U	--		10	U
Shallow Overburden	MW8S	10	U	--		10	U	--		10	U	--		10	U
Shallow Overburden	MW9S	10	U	--		10	U	--		10	U	--		10	U
Deep Overburden	MW11D	10	U	--		10	U	--		10	U	10	U	10	U
Deep Overburden	MW12D	10	U	--		10	U	--		10	U	--		10	U
Deep Overburden	MW3D	10	U	--		10	U	--		10	U	--		10	U
Deep Overburden	MW4D	10	U	--		10	U	--		10	U	--		10	U
Deep Overburden	MW6D	10	U	--		10	U	--		10	U	--		10	U
Deep Overburden	MW7D	10	U	--		10	U	--		10	U	--		10	U
Deep Overburden	MW8D	10	U	10	U	10	U	--		10	U	--		10	U
Deep Overburden	MW9D	10	U	--		10	U	--		10	U	--		10	U
Bedrock Wells	MW3B	10	U	--		10	U	--		10	U	--		10	U

Scovill Groundwater Data
Dissolved Lead (in ug/L)

	Quarter Year	2009-Q3		2009-Q4		2009-Q4		2010-Q1		2010-Q1		2010-Q2		2010-Q2		2010-Q4		2010-Q4	
	Sample Type	FD		N		FD		N		FD		N		FD		N		FD	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	--		10	U	--		10	U	--		4.7	J	--		10	U	--	
Shallow Overburden	MW10	--		3.8	J	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW11S	--		2.4	J	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW12S	--		--		--		10	U	--		10	U	--		--		--	
Shallow Overburden	MW13	--		10	U	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW2S	--		10	U	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW3	--		10	U	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW4	--		41.4		--		24.4	J	--		26.2		--		60.5		--	
Shallow Overburden	MW5	--		10	U	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW6	--		10	U	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW7S	--		10	U	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW8S	--		10	U	--		10	U	--		10	U	--		10	U	--	
Shallow Overburden	MW9S	--		10	U	--		10	U	--		10	U	--		10	U	--	
Deep Overburden	MW11D	--		2	J	--		10	U	--		10	U	--		10	U	--	
Deep Overburden	MW12D	10	U	10	U	--		10	U	--		10	U	--		10	U	--	
Deep Overburden	MW3D	--		10	U	--		10	U	--		10	U	--		10	U	10	U
Deep Overburden	MW4D	--		10	U	--		10	U	--		10	U	--		10	U	--	
Deep Overburden	MW6D	--		10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Deep Overburden	MW7D	--		10	U	--		10	U	--		10	U	--		10	U	--	
Deep Overburden	MW8D	10	U	10	U	10	U	10	U	10	U	10	U	10	U	10	U	--	
Deep Overburden	MW9D	--		10	U	--		2.6	J	--		10	U	--		10	U	--	
Bedrock Wells	MW3B	--		10	U	--		10	U	--		10	U	--		10	U	--	

Scovill Groundwater Data
Dissolved Manganese (in ug/L)

	Quarter Year	2008-Q4		2008-Q4		2009-Q1		2009-Q1		2009-Q2		2009-Q2		2009-Q3	
	Sample Type	N		FD		N		FD		N		FD		N	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	41.5		--		0.45	U	--		15	U	--		15	U
Shallow Overburden	MW10	729		--		807		789		601		--		559	
Shallow Overburden	MW11S	2770		--		2110		--		2380		--		2130	
Shallow Overburden	MW12S	102		--		85.3		--		271		--		651	
Shallow Overburden	MW13	44.6		--		8.7	J	--		12	J	--		10	J
Shallow Overburden	MW2S	6570		--		4490		--		5400		--		4060	
Shallow Overburden	MW3	559		545		531		--		502		--		531	
Shallow Overburden	MW4	120		--		64.9		--		95		--		49.9	
Shallow Overburden	MW5	1870		--		1810		--		1670		--		1860	
Shallow Overburden	MW6	3800		--		2800		2690		2240		2200		1980	
Shallow Overburden	MW7S	218		--		299		--		334		--		223	
Shallow Overburden	MW8S	402		--		72.2		--		23.6		--		21.4	
Shallow Overburden	MW9S	902		--		902		--		773		--		582	
Deep Overburden	MW11D	346		--		106		--		47.6		49.3		28.9	
Deep Overburden	MW12D	26.5		--		7.5	J	--		15	U	--		2.2	J
Deep Overburden	MW3D	15	U	--		15	U	--		15	U	--		15	U
Deep Overburden	MW4D	9	J	--		9.9	J	--		15.7		--		48.8	
Deep Overburden	MW6D	15	U	--		3.3	J	--		4.2	J	--		15	U
Deep Overburden	MW7D	10.7	J	--		3.2	J	--		0.92	J	--		15	U
Deep Overburden	MW8D	77.8		81.8		22.5		--		20.4		--		2.5	J
Deep Overburden	MW9D	308		--		249		--		242		--		231	
Bedrock Wells	MW3B	15	U	--		1.2	U	--		1.2	J	--		1.1	J

Scovill Groundwater Data
Dissolved Manganese (in ug/L)

	Quarter Year	2009-Q3		2009-Q4		2009-Q4		2010-Q1		2010-Q1		2010-Q2		2010-Q2		2010-Q4		2010-Q4	
	Sample Type	FD		N		FD		N		FD		N		FD		N		FD	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	--		6	J	--		15	U	--		15	U	--		18.6		--	
Shallow Overburden	MW10	--		730		--		636		--		394		--		477		--	
Shallow Overburden	MW11S	--		2340		--		2040		--		2433		--		1864		--	
Shallow Overburden	MW12S	--		--		--		1842	J	--		1146		--		--		--	
Shallow Overburden	MW13	--		8.1	J	--		12.2	J	--		16		--		66.4		--	
Shallow Overburden	MW2S	--		3780		--		2807		--		3192		--		3236		--	
Shallow Overburden	MW3	--		528		--		471	J	--		565		--		741		--	
Shallow Overburden	MW4	--		78.4		--		25.2	J	--		61.1		--		186		--	
Shallow Overburden	MW5	--		1720		--		1826		--		1646		--		1555		--	
Shallow Overburden	MW6	--		2310		--		2948		--		2127		--		1054		--	
Shallow Overburden	MW7S	--		149		--		208		--		239		--		267		--	
Shallow Overburden	MW8S	--		75.1		--		37.9	J	--		15	U	--		4.1	J	--	
Shallow Overburden	MW9S	--		724		--		188		--		493		--		2144		--	
Deep Overburden	MW11D	--		16.9		--		14.2	J	--		15	U	--		5	J	--	
Deep Overburden	MW12D	2.1	J	3.5	J	--		15	U	--		15	U	--		15	U	--	
Deep Overburden	MW3D	--		15	U	--		15	U	--		15	U	--		15	U	15	U
Deep Overburden	MW4D	--		7.3	J	--		138	J	--		15	U	--		3.1	J	--	
Deep Overburden	MW6D	--		1.7	J	1.4	J	15	U	15	U	15	U	15	U	15	U	15	U
Deep Overburden	MW7D	--		4.2	J	--		15	U	--		15	U	--		15	U	--	
Deep Overburden	MW8D	2.1	J	2.1	J	2.2	J	4	J	15	U	15	U	15	U	4.6	J	--	
Deep Overburden	MW9D	--		191		--		199		--		252		--		218		--	
Bedrock Wells	MW3B	--		1.1	J	--		2.7	J	--		15	U	--		15	U	--	

Scovill Groundwater Data
Dissolved Zinc (in ug/L)

	Quarter Year	2008-Q4		2008-Q4		2009-Q1		2009-Q1		2009-Q2		2009-Q2		2009-Q3	
	Sample Type	N		FD		N		FD		N		FD		N	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	60	U	--		3.9	U	--		60	U	--		4	J
Shallow Overburden	MW10	2510	J	--		2710		2740		2040	J	--		1550	
Shallow Overburden	MW11S	10.9	U	--		5	J	--		60	U	--		60	U
Shallow Overburden	MW12S	5.1	U	--		9	J	--		60	U	--		24.2	J
Shallow Overburden	MW13	60	U	--		3.3	U	--		60	U	--		6.1	J
Shallow Overburden	MW2S	60	U	--		136		--		51	J	--		554	
Shallow Overburden	MW3	196		183		85.5		--		59.5	J	--		50.8	J
Shallow Overburden	MW4	6690	J	--		7010		--		6920		--		5920	
Shallow Overburden	MW5	57.7	J	--		65.5		--		51	J	--		78.1	
Shallow Overburden	MW6	60	U	--		2.7	U	2.7	U	60	U	60	U	5.1	J
Shallow Overburden	MW7S	3800	J	--		8110		--		8580		--		6730	
Shallow Overburden	MW8S	42.6	U	--		51.8	J	--		43.6	J	--		50.9	J
Shallow Overburden	MW9S	14.8	U	--		72.4		--		21.4	J	--		32.7	J
Deep Overburden	MW11D	7.5	U	--		4	J	--		60	U	60	U	8.1	J
Deep Overburden	MW12D	8.7	U	--		5.3	J	--		60	U	--		7	J
Deep Overburden	MW3D	60	U	--		3.9	J	--		60	U	--		60	U
Deep Overburden	MW4D	60	U	--		36.8	J	--		22.2	J	--		25	J
Deep Overburden	MW6D	60	U	--		9.1	U	--		60	U	--		5.4	J
Deep Overburden	MW7D	3.1	U	--		2.7	J	--		60	U	--		60	U
Deep Overburden	MW8D	60	U	7.2	U	2.2	J	--		60	U	--		60	U
Deep Overburden	MW9D	10.9	U	--		3.1	J	--		60	U	--		4.6	J
Bedrock Wells	MW3B	60	U	--		3.5	U	--		60	U	--		60	U

Scovill Groundwater Data
Dissolved Zinc (in ug/L)

	Quarter Year	2009-Q3		2009-Q4		2009-Q4		2010-Q1		2010-Q1		2010-Q2		2010-Q2		2010-Q4		2010-Q4	
	Sample Type	FD		N		FD		N		FD		N		FD		N		FD	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	--		60	U	--		60	U	--		60	U	--		60	U	--	
Shallow Overburden	MW10	--		1430		--		2039		--		1194	J	--		1513		--	
Shallow Overburden	MW11S	--		1.6	J	--		2.6	J	--		49.6	J	--		2.2	J	--	
Shallow Overburden	MW12S	--		--		--		1965		--		156	J	--		--		--	
Shallow Overburden	MW13	--		1.2	J	--		60	U	--		37.7	J	--		60	U	--	
Shallow Overburden	MW2S	--		33.7	J	--		694		--		253		--		921		--	
Shallow Overburden	MW3	--		88.8		--		660		--		286	J	--		309		--	
Shallow Overburden	MW4	--		7260		--		5022		--		5234		--		6440		--	
Shallow Overburden	MW5	--		68.6		--		57.5	J	--		51.4	J	--		58.6	J	--	
Shallow Overburden	MW6	--		60	U	--		15.1	J	--		60	U	--		60	U	--	
Shallow Overburden	MW7S	--		5270		--		5489		--		6981	J	--		5074		--	
Shallow Overburden	MW8S	--		51.7	J	--		29.8	J	--		55.8	J	--		56.3	J	--	
Shallow Overburden	MW9S	--		23.8	J	--		45.5	J	--		29.7	J	--		13.4	J	--	
Deep Overburden	MW11D	--		60	U	--		3.2	J	--		60	U	--		1.9	J	--	
Deep Overburden	MW12D	5.4	J	9.8	J	--		1.2	J	--		84.5	J	--		2.5	J	--	
Deep Overburden	MW3D	--		1.2	J	--		60	U	--		31.2	J	--		60	U	60	U
Deep Overburden	MW4D	--		23.2	J	--		14.7	J	--		23.8	J	--		24.9	J	--	
Deep Overburden	MW6D	--		60	U	60	U	2.8	J	3.7	J	60	U	33.5	J	60	U	60	U
Deep Overburden	MW7D	--		60	U	--		0.71	J	--		60	U	--		60	U	--	
Deep Overburden	MW8D	60	U	60	U	60	U	60	U	60	U	132	J	60	U	60	U	--	
Deep Overburden	MW9D	--		1.2	J	--		3.8	J	--		60	U	--		4.9	J	--	
Bedrock Wells	MW3B	--		0.5	J	--		60	U	--		60	U	--		60	U	--	

Scovill Groundwater Data
Phenanthrene (in ug/L)

	Quarter Year	2008-Q4		2008-Q4		2009-Q1		2009-Q1		2009-Q2		2009-Q2	
	Sample Type	N		FD		N		FD		N		FD	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	4.8	U	--		5	U	--		5	U	--	
Shallow Overburden	MW10	4.8	U	--		5	U	5	U	5	U	--	
Shallow Overburden	MW11S	0.56	J	--		5	U	--		5	U	--	
Shallow Overburden	MW12S	5.1	U	--		5	UJ	--		5	U	--	
Shallow Overburden	MW13	4.7	U	--		5	U	--		5	U	--	
Shallow Overburden	MW2S	4.7	U	--		5	U	--		5	U	--	
Shallow Overburden	MW3	5	U	5	U	5	U	--		5	U	--	
Shallow Overburden	MW4	4.8	U	--		5	U	--		5	U	--	
Shallow Overburden	MW5	5	U	--		5	UJ	--		5	U	--	
Shallow Overburden	MW6	4.7	U	--		5	U	5	U	5	U	5	U
Shallow Overburden	MW7S	4.8	U	--		5	U	--		5	U	--	
Shallow Overburden	MW8S	5	U	--		5	UJ	--		5	U	--	
Shallow Overburden	MW9S	4.7	U	--		5	U	--		5	U	--	
Deep Overburden	MW11D	5	U	--		5	U	--		5	U	5	U
Deep Overburden	MW12D	5	U	--		5	UJ	--		5	U	--	
Deep Overburden	MW3D	4.8	U	--		5	U	--		5	U	--	
Deep Overburden	MW4D	4.7	U	--		5	U	--		5	U	--	
Deep Overburden	MW6D	5	U	--		5	U	--		5	U	--	
Deep Overburden	MW7D	4.8	U	--		5	U	--		5	U	--	
Deep Overburden	MW8D	5.2	U	5	U	5	UJ	--		5	U	--	
Deep Overburden	MW9D	5	U	--		5	U	--		5	U	--	
Bedrock Wells	MW3B	5	U	--		5	U	--		5	U	--	

Scovill Groundwater Data
Phenanthrene (in ug/L)

	Quarter Year	2009-Q3		2009-Q3		2009-Q4		2009-Q4		2010-Q1		2010-Q1		2010-Q2		2010-Q2		2010-Q4	
	Sample Type	N		FD		N		FD		N		FD		N		FD		N	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW10	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW11S	1.1	J	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW12S	5	U	--		--		--		5	U	--		5	U	--		5	U
Shallow Overburden	MW13	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW2S	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW3	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW4	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW5	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW6	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW7S	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW8S	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Shallow Overburden	MW9S	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Deep Overburden	MW11D	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Deep Overburden	MW12D	5	U	5	U	5	U	--		5	U	--		5	U	--		5	U
Deep Overburden	MW3D	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Deep Overburden	MW4D	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Deep Overburden	MW6D	5	U	--		5	U	5	U	5	U	5	U	5	U	5	U	5	U
Deep Overburden	MW7D	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Deep Overburden	MW8D	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Deep Overburden	MW9D	5	U	--		5	U	--		5	U	--		5	U	--		5	U
Bedrock Wells	MW3B	5	U	--		5	U	--		5	U	--		5	U	--		5	U

Scovill Groundwater Data
Phenanthrene (in ug/L)

	Quarter Year	2010-Q4	
	Sample Type	FD	
Location Group:	Well No.:	Result	Qual.
Shallow Overburden	MW1	--	
Shallow Overburden	MW10	--	
Shallow Overburden	MW11S	--	
Shallow Overburden	MW12S	--	
Shallow Overburden	MW13	--	
Shallow Overburden	MW2S	--	
Shallow Overburden	MW3	--	
Shallow Overburden	MW4	--	
Shallow Overburden	MW5	--	
Shallow Overburden	MW6	--	
Shallow Overburden	MW7S	--	
Shallow Overburden	MW8S	--	
Shallow Overburden	MW9S	--	
Deep Overburden	MW11D	--	
Deep Overburden	MW12D	--	
Deep Overburden	MW3D	5	U
Deep Overburden	MW4D	--	
Deep Overburden	MW6D	5	U
Deep Overburden	MW7D	--	
Deep Overburden	MW8D	--	
Deep Overburden	MW9D	--	
Bedrock Wells	MW3B	--	

Scovill Groundwater Data
Benzo(k)Fluoranthene (in ug/L)

	Quarter Year	2008-Q4		2008-Q4		2009-Q1		2009-Q1		2009-Q2		2009-Q2		2009-Q3		2009-Q3	
	Sample Type	N		FD		N		FD		N		FD		N		FD	
Location Group:	Well No.:	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.	Result	Qual.
Shallow Overburden	MW1	4.8	U	--		5	U	--		5	U	--		5	U	--	
Shallow Overburden	MW10	4.8	U	--		5	U	5	U	5	U	--		5	U	--	
Shallow Overburden	MW11S	5	U	--		5	U	--		5	U	--		5	U	--	
Shallow Overburden	MW12S	5.1	U	--		5	UJ	--		5	U	--		--		--	
Shallow Overburden	MW13	4.7	U	--		5	U	--		5	U	--		5	U	--	
Shallow Overburden	MW2S	4.7	U	--		5	U	--		5	U	--		5	U	--	
Shallow Overburden	MW3	5	U	5	U	5	UJ	--		5	U	--		5	U	--	
Shallow Overburden	MW4	4.8	U	--		5	U	--		5	U	--		5	U	--	
Shallow Overburden	MW5	5	U	--		5	UJ	--		5	U	--		5	U	--	
Shallow Overburden	MW6	4.7	U	--		5	U	5	U	5	U	5	U	5	U	--	
Shallow Overburden	MW7S	4.8	U	--		5	U	--		5	U	--		5	U	--	
Shallow Overburden	MW8S	5	U	--		5	UJ	--		5	U	--		5	U	--	
Shallow Overburden	MW9S	4.7	U	--		5	U	--		5	U	--		5	U	--	
Deep Overburden	MW11D	5	U	--		5	U	--		5	U	5	U	5	U	--	
Deep Overburden	MW12D	5	U	--		5	UJ	--		5	U	--		5	U	5	U
Deep Overburden	MW3D	4.8	U	--		5	U	--		5	U	--		5	U	--	
Deep Overburden	MW4D	4.7	U	--		5	U	--		5	U	--		5	U	--	
Deep Overburden	MW6D	5	U	--		5	U	--		5	U	--		5	U	--	
Deep Overburden	MW7D	4.8	U	--		5	U	--		5	U	--		5	U	--	
Deep Overburden	MW8D	5.2	U	5	U	5	UJ	--		5	U	--		5	U	5	U
Deep Overburden	MW9D	5	U	--		5	U	--		5	U	--		5	U	--	
Bedrock Wells	MW3B	5	U	--		5	U	--		5	U	--		5	U	--	

Scovill Groundwater Data
Benzo(k)Fluoranthene (in ug/L)

	Quarter Year	2009-Q4	2009-Q4	2010-Q1	2010-Q1	2010-Q2	2010-Q2	2010-Q4	2010-Q4
	Sample Type	N	FD	N	FD	N	FD	N	FD
Location Group:	Well No.:	Result Qual.	Result Qual.	Result Qual.	Result Qual.	Result Qual.	Result Qual.	Result Qual.	Result Qual.
Shallow Overburden	MW1	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW10	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW11S	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW12S	--	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW13	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW2S	5 U	--	5 U	--	5	--	5 U	--
Shallow Overburden	MW3	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW4	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW5	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW6	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW7S	5 U	--	5 U	--	5 U	--	5 U	--
Shallow Overburden	MW8S	5 U	--	0.31 J	--	5 U	--	5 U	--
Shallow Overburden	MW9S	5 U	--	5 U	--	5 U	--	5 U	--
Deep Overburden	MW11D	5 U	--	5 U	--	5 U	--	5 U	--
Deep Overburden	MW12D	5 U	--	5 U	--	5 U	--	5 U	--
Deep Overburden	MW3D	5 U	--	5 U	--	5 U	--	5 U	5 U
Deep Overburden	MW4D	5 U	--	5 U	--	5 U	--	5 U	--
Deep Overburden	MW6D	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Deep Overburden	MW7D	5 U	--	5 U	--	5 U	--	5 U	--
Deep Overburden	MW8D	5 U	5 U	5 U	5 U	5 U	5 U	5 U	--
Deep Overburden	MW9D	5 U	--	5 U	--	5 U	--	5 U	--
Bedrock Wells	MW3B	5 U	--	0.17 J	--	5 U	--	5 U	--