FIVE-YEAR REVIEW REPORT

Fourth Five-Year Review

for

Mottolo Pig Farm Superfund Site

Raymond, New Hampshire

August 2013

PREPARED BY:

U.S. Environmental Protection Agency
Region 1
Boston, Massachusetts

James T. Owens III, Director
Office of Site Remediation and Restoration

8/12/13
Date

EXECUTIVE SUMMARY

The 50-acre Mottolo Pig Farm Superfund site (referred herein as the Site) is an abandoned pig farm located on an undeveloped wooded lot within the Town of Raymond, New Hampshire. From 1975 to 1979, the owner of the Mottolo property disposed of chemical manufacturing wastes from two companies in a 1/4-acre fill area adjacent to the piggery buildings. During this 4-year period, over 1,600 drums and pails of wastes, including primarily volatile organic compounds (VOCs) and aromatics, were disposed of at the Mottolo property. Between November 1980 and January 1982, the Environmental Protection Agency (EPA) performed a removal action including excavation and off-site disposal of 1,600 containers of waste from the Former Drum Disposal Area (FDDA) and Southern Boundary Area (SBA) and an estimated 160 tons of contaminated soil. The Site was added to the National Priorities List in July 1987. Contaminated media identified through numerous investigations included on-site soil, groundwater, and surface water and sediment of Brook A. The 1991 Record of Decision (ROD) specified a source control component and a management of migration component to address the entire Site contamination. The source control component of the 1991 selected remedy has been completed.

The EPA completed a Third five year review (FYR) for the Site in August 2008. EPA's Review evaluated the protectiveness of the remedy due to the persistent and slightly increasing concentrations of several contaminants in groundwater in a number of residential wells since the last FYR in 2003, and the increasing residential development west of the Mottolo property. EPA, working with the New Hampshire Department of Environmental Services (NHDES), has completed numerous, additional field investigations at and surrounding the Mottolo property to determine the nature and extent of impacts from site-related contamination in nearby residential wells. EPA issued an amendment to the ROD (AROD) in September 2010 to supplement the 1991 ROD for groundwater that included the extension of the existing water supply main in Raymond along Route 102 and Blueberry Hill Road to the intersection with Windmere Drive and Strawberry Lane (approximately 2 miles). The water line extension was designed to provide alternate water to approximately 25 residences generally to the west and south of the Mottolo property and was completed in the summer of 2012. In addition, the AROD expanded the required institutional controls and off-site groundwater monitoring requirements.

The Town of Raymond adopted an ordinance to restrict the withdrawal of groundwater within the limits of a newly established Groundwater Management Zone (GMZ) that included both the Mottolo property and select properties to the south (Strawberry Lane), west (Blueberry Hill Road and Windmere Drive) and north-northwest (Perimeter Road subdivision), as well as an undeveloped lot to the west-southwest and conservation land between the Mottolo property and the Exeter River. The ordinance will restrict use of groundwater, installation or reactivation of any wells for any purpose excepting closed-loop geothermal, and disturbance to wetlands within the GMZ, unless approved in advance by the EPA, NHDES, and the Board of Selectmen. A long-term groundwater monitoring program has been developed and has been implemented by EPA and NHDES.

A review of documents, ARARs, risk assumptions, and the results of the site inspection indicates that the remedy is functioning as intended the 1991 ROD as amended by the 2010 AROD. The extension of the public water supply complies with Federal and State requirements that are applicable or relevant and appropriate and will be: (1) protective of human health and the environment, (2) will be effective in the long-term, and (3) will be a permanent solution by providing a source of clean water to the affected residences. However, the extension of public water supply to certain homes proximate to the Mottolo property is anticipated to result in a change in groundwater pumping, which will influence an alteration in the bedrock groundwater flow dynamic in the area. It is anticipated that the resulting groundwater flow and contaminant migration will be more dominant to the north/northwest, consistent with the general bulk groundwater flow direction in the area.

Continued groundwater monitoring at the Mottolo property and surrounding area should be used to further evaluate changes in groundwater quality in response to the changes in pumping patterns. Additional data from future sample events will allow for: (1) a more comprehensive assessment of concentration trends in the groundwater; (2) provide the information needed to reassess cleanup times; and (3) provide the information necessary to continue to evaluate the effectiveness of Natural Attenuation (NA) and the GMZ to meet the Remedial Action Objectives (RAOs).

The remedy implemented at the Mottolo property is currently protective of human health and the environment as envisioned by the 1991 ROD as amended in 2010. However, in order for the remedy to be protective in the long-term, the following actions need to be taken:

- Groundwater monitoring at the Mottolo property and in the surrounding area should be used to evaluate changes in groundwater quality in response to the changes in pumping patterns in the Site vicinity;
- Data collected from future monitoring should be reviewed for comparison with the existing Conceptual Site Model (CSM) developed through previous investigations. Additional data from future sample events will allow for: (1) a more comprehensive assessment of concentration trends in the groundwater; (2) provide the information needed to reassess cleanup times; and (3) provide the information necessary to evaluate the effectiveness of NA and the GMZ to meet the RAOs; and
- Perform an evaluation of the hydrologic regime within the transition zone between groundwater and surface water in Brook A, review of existing data from nearby groundwater monitoring wells relative to appropriate benchmark ecological risk screening values applied to receptor exposures within the ground water – surface water transition zone.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Mottolo Pig Farm Superfund Site		
EPA ID: NHD980503361		
Region: 1	**State:** NH	**City/County:** Raymond/Rockingham

SITE STATUS	
NPL Status: Final	
Multiple OUs? No	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: EPA **If "Other Federal Agency" was selected above, enter Agency name:** Click here to enter text.
Author name (Federal or State Project Manager): Michael Jasinski
Author affiliation: EPA
Review period: 01/11/2013 – 08/2013
Date of site inspection: 3/28/2013
Type of review: Policy
Review number: 4
Triggering action date: 8/26/2008
Due date *(five years after triggering action date)*: 8/26/2013

Five-Year Review Summary Form (continued)

The table below is for the purpose of the summary form and associated data entry and does not replace the two tables required in Section VIII and IX by the FYR guidance. Instead, data entry in this section should match information in Section VII and IX of the FYR report.

Issues/Recommendations				
OU(s) without Issues/Recommendations Identified in the Five-Year Review:				
None				
Issues and Recommendations Identified in the Five-Year Review:				
OU(s): Mottolo Property	**Issue Category: Monitoring**			
	Issue: Potential uncertainty with groundwater flow direction and recent cessation of pumping from residential wells towards the south and west of the Mottolo property.			
	Recommendation: Consider possible expansion of monitoring network and increasing the frequency of monitoring, as well as continue regular monitoring of existing network. Update the conceptual hydrogeologic model for the Site using data collected over the past several years and any new data obtained.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	9/30/16
OU(s): Mottolo Property	**Issue Category: Monitoring**			
	Issue: Concentrations of arsenic and VOCs remain above groundwater cleanup goals on the Mottolo property. Based on trends presented in various site documents, it appears that it will take additional time for the groundwater to attain the interim cleanup levels, as specified in the 1991 ROD (especially due to residential well pumping surrounding the Mottolo property).			
	Recommendation: Perform additional groundwater and geochemical monitoring including appropriate NA parameters to evaluate appropriate cleanup times.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	9/30/15
OU(s): Mottolo Property	**Issue Category: Monitoring**			
	Issue: Determine the approximate dimensions and area of sediment in Brook A where ground water discharges to surface water.			
	Perform a hydrologic evaluation within the transition zone between groundwater and surface water in the Brook A vicinity. Review existing data from nearby groundwater monitoring wells relative to appropriate benchmark ecological risk screening values applied to receptor exposures within the ground water – surface water transition zone.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Implementing Party**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	9/30/15

To add additional issues/recommendations here, copy and paste the above table as many times as necessary to document all issues/recommendations identified in the FYR report.

Protectiveness Statement(s)
Include each individual OU protectiveness determination and statement. If you need to add more protectiveness determinations and statements for additional OUs, copy and paste the table below as many times as necessary to complete for each OU evaluated in the FYR report.

Operable Unit:	*Protectiveness Determination:*	*Addendum Due Date (if applicable):*
Click here to enter text.	Choose an item.	Click here to enter date.
Protectiveness Statement: Click here to enter text.		

Sitewide Protectiveness Statement (if applicable)	
For sites that have achieved construction completion, enter a sitewide protectiveness determination and statement.	
Protectiveness Determination: Short-term Protective	*Addendum Due Date (if applicable):* Click here to enter date.
Protectiveness Statement: The remedy implemented at the Site is currently protective of human health and the environment as envisioned by the 1991 ROD as amended in 2010. However, in order for the remedy to be protective in the long-term, the following actions need to be taken: (1) Groundwater monitoring at the Mottolo property and in the surrounding area should be used to evaluate changes in groundwater quality in response to the changes in pumping patterns in the Site vicinity; (2) Data collected from future monitoring should be reviewed for comparison with the existing CSM developed through previous investigations. Additional data from future sample events will allow for: (a) a more comprehensive assessment of concentration trends in the groundwater; (b) provide the information needed to reassess cleanup times; and (c) provide the information necessary to evaluate the effectiveness of NA and the GMZ to meet the RAOs; and (3) Perform an evaluation of the hydrologic regime within the transition zone between groundwater and surface water in Brook A, review of existing data from nearby groundwater monitoring wells relative to appropriate benchmark ecological risk screening values applied to receptor exposures within the ground water – surface water transition zone.	

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LIST OF ABBREVIATIONS AND ACRONYMS

3D CSM	Three-dimensional conceptual site model
µg/L	micrograms per Liter
AGQS	Ambient Groundwater Quality Standards
ARARs	Applicable or Relevant and Appropriate Requirements
AROD	Amendment to the Record of Decision
bgs	Below ground surface
BOS	Board of Selectmen
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COCs	Contaminants of Concern
CSF	Cancer slope factor
CSM	Conceptual site model
CWA	Clean Water Act
DCA	Dichloroethane
DCE	Dichloroethene
DO	Dissolved Oxygen
EPA	Environmental Protection Agency
FDDA	Former Drum Disposal Area
FFS	Focused Feasibility Study
FYR	Five Year Review
GC	Gas Chromatograph
GMP	Groundwater Management Permit
GMZ	Groundwater Management Zone
H-R	Hager-Richter Geoscience, Inc.
IC	Institutional Control
IRIS	Integrated Risk Information System
MCL	Federal Maximum Contaminant Levels
MCLG	Maximum Contaminant Level Goal
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
NA	Natural Attenuation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NHDES	New Hampshire Department of Environmental Services
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
O&M	Operations and Maintenance
ORP	Oxidation-Reduction Potential
OSHA	Occupation Safety and Health Administration

LIST OF ABBREVIATIONS AND ACRONYMS

OSWER	Office of Solid Waste and Emergency Response
PCE	Tetrachloroethylene
PPRTV	Provisional peer reviewed toxicity values
PRPs	Potentially Responsible Parties
RA	Remedial Action
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RfD	Reference dose
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
ROD ICL	Record of Decision Interim Cleanup Level
RSL	Regional Screening Level
SBA	Southern Boundary Area
SDWA	Safe Drinking Water Act
Site	Entire Mottolo Property
SQuIRT	Screening Quick Reference Table
SRS	New Hampshire Soil Remediation Standards
SVE	Soil Vapor Extraction
TBC	To be considered
TCA	Trichloroethane
TCE	Trichloroethylene
TEC	Threshold effect concentration
THF	Tetrahydrofuran
TPT	Top of pump tube
USGS	United States Geological Survey
VC	Vinyl Chloride
VES	Vacuum Extraction System
VI	Vapor Intrusion
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review (FYR) reports. In addition, FYR reports identify issues found during the review, if any, and recommendations to address them.

The Agency is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) §121, as amended, and the National Oil and Hazardous Substance Contingency Plan (NCP). CERCLA §121states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The Agency interpreted this requirement further in the NCP; 40 Code of Federal Regulations (CFR) §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The United States Environmental Protection Agency (EPA) Region I must conduct a FYR for the Mottolo Pig Farm Superfund Site (referred herein as the Site) in Raymond, New Hampshire. This is the fourth FYR for the Site. This review is required by policy because the remedial actions (RAs) performed at the Site will allow for unlimited use and unrestricted access following completion of the cleanup. The trigger for this policy review was the signature of the last FYR on August 26, 2008 (EPA, 2008).

2.0 SITE CHRONOLOGY

The chronology of the Site, including all significant site-related events and dates, is included in **Table 1** (EPA, 2008a, 2003, New Hampshire Department of Environmental Services [NHDES], 1992-2012).

Table 1. Site Chronology

Year	Site Activities
1960s - 1975	Use of the site for swine husbandry
1975-1979	Disposal of wastes
1979	Discovery of the problem
1980-1981	Excavation, staging and removal of soil and drums
July 22, 1987	Final listing on the National Priorities List (NPL)
March 29, 1991	Remedial Investigation/Feasibility Study (RI/FS) complete
March 29, 1991	ROD signature
20 May 1993	Remedial Design completed
June 24, 1993	Construction start
September 30, 1993	Construction completion
December, 1996	Removal of soil vapor extraction (SVE) system
Spring 1997	Installation of liner to minimize water infiltration and re-grading of site
June 28, 1998	Remedial Action completed
September 11, 1998	First Five-Year Review report
December 1, 1999	Potentially Responsible Party (PRP) consent decree signed
Summer 2000	Removal of chain link fence, vandal-proofing of monitoring wells and decommissioning of unused wells
Fall 2001	Removal of interceptor trench and liner
Early 2003	Surface water sampling on Brook A discontinued
September 10,2003	Second Five-Year Review report. Surface water sampling terminated
June 2003	First Strawberry Lane residential well sampled. Quarterly sampling for five residences on Strawberry Lane began in March 2004
January 18, 2008	PRP issued groundwater management zone permit by NHDES
August 26, 2008	Third Five-Year Review report
July 2009	Off-site migration of site contaminants discovered via residential sampling results. Bottled water provided to up to 12 residences.
September 15, 2009	Public meeting providing site history, current status & next steps of recently discovered off-site migration of site-impacted groundwater.
March 24, 2010	Public meeting summarizing 2009-2010 data gathering & limits of site impacts.
August 4, 2010	Public meeting presenting EPA's proposed plan for waterline extension.
September 2010	Amended Record of Decision supplementing the 1991 ROD, adding a water main extension of Raymond water supply
October 2010	NHDES issues request for proposals for engineering design of water main extension.
November 2010	NHDES & Town of Raymond conduct interviews with engineering design firms. EPA awards NHDES a cooperative agreement for design of water main extension.
January 2011	NHDES awards design of the water main to Underwood Engineers, Inc.
February 9, 2011	A neighborhood meeting was held with the residence to be connected to the waterline to provide and gather information.
February 2011	Underwood Engineers attains 30% design of waterline extension.
March 2011	Underwood Engineers submits 60% design of waterline extension.
April 2011	Underwood Engineers submits 90% design of waterline extension.
May 2011	EPA awards NHDES a cooperative agreement for waterline construction. NHDES amends contract with Underwood Engineers to provide construction services.
June 2011	Public meeting on scope and schedule of waterline extension and connection options.
August 12, 2011	Underwood Engineers advertises the waterline extension for competitive bid.
October 26, 2011	Governor & Executive Council approves construction contract for waterline extension with American Excavating Corporation.
November 3, 2011	Public meeting introducing American Excavating, schedule & logistics.

Year	Site Activities
November 2011	Waterline construction start.
April 16, 2012	EPA/NHDES/American Excavating present waterline construction update to Raymond Board of Selectmen (BOS)
May 31, 2012	Senator Shaheen is provided waterline project update and site tour
August 2012	Waterline construction attains substantial completion.
April 2013	Town of Raymond BOS adopt ordinance for restrict groundwater withdrawals with newly established Groundwater Management Zone

3.0 BACKGROUND

3.1 PHYSICAL CHARACTERISTICS

The Mottolo property is located along Blueberry Hill Road in Raymond, New Hampshire (**Figure 1**). The Mottolo property, formerly used as a pig farm, is approximately 3 miles south of the Town of Raymond's center and is surrounded by residential properties. The Mottolo property includes approximately 50 acres of primarily undeveloped wooded land divided roughly in half by a brook (Brook A). About 2 acres in the southwest portion of the property remain cleared near the former piggery and the Former Drum Disposal Area (FDDA). Mottolo property structures in and near the cleared area include two concrete pads for the former piggery building, a shed housing a boiler, and a dug well of unknown depth and construction. The Mottolo property is surrounded by private residences, all utilizing water supply wells with the exception of 25 residences recently connected to the town water main.

The Site is within the Exeter River drainage basin. The Exeter River is approximately 1,500 feet west of the Site boundary at its closest point (**Figure 1**). Brook A is a perennial stream that flows north across the Mottolo property, draining approximately 285 acres at its confluence with the Exeter River. An ephemeral stream drains approximately four acres of the undeveloped woodland between the cleared portion of the Mottolo property and Blueberry Hill Road. Runoff in the ephemeral stream flows south to north into Brook A. A drainage swale crosses the Mottolo property from west to east, just north of the FDDA, and also discharges to Brook A.

The geology of the Mottolo property and the Site is generally characterized by glacial till and outwash deposits (overburden) overlying bedrock. The onsite overburden deposits are primarily fine to coarse sand with pockets of gravel, that generally range from zero to twenty feet thick with the thickest deposits found at the base of the FDDA, south of the drainage swale (**Figure 1**). Overburden deposits west of the former Piggery Building are thinner and more heterogeneous, and bedrock crops out in several places. Soils were removed during installation and subsequent removal of the remediation system, and backfilled with non-native fill materials.

The bedrock underlying the Mottolo property and the Site consists of Berwick Formation schists, granofels and quartzite intruded by Devonian-age granites and a few pegmatite dikes (Peters and others, 2006, Freedman, 1950, 2002, Utsunomiya and others, 2003). These lithologies are bounded three miles to the northwest by the Flint Hill Fault, and nine miles to the southeast by Devonian-age plutons (Hussey, 1985). Both structural margins trend northeast, with secondary structural trends present throughout the region. The weathered bedrock thickness is highly variable, based on the geotechnical evaluation of the rock core. No pyrite-type minerals were observed in any of the rock core from the Mottolo property (Balsam Environmental Consultants, Inc., 1990). Analysis of various remote sensing data identified two dominant lineament sets in the area surrounding the Mottolo property which may be near vertical fracture zones or fracture sets (Ferguson and others, 1997).

The predominant groundwater flow direction in the Site's overburden is northeast toward Brook A (**Figure 2**). Groundwater discharges to Brook A at the base of the drainage swale in the spring, and likely discharges further north during fall or periods of low groundwater levels. Groundwater flow in the Site's shallow bedrock is consistent with observed overburden groundwater flow direction with the exception of the southwest portion of the Mottolo property where a groundwater divide appears to exist in the vicinity of monitoring wells MOT_MW-7S/D; MOT_MW-8S/D; MOT_MW-20S/D; MOT_MW-21S/D and

MOT_MW-23S/D (**Figure 3**). Groundwater flow in the southwest portion of the Mottolo property appears to be toward the southwest. Refer to **Table 2** for well construction details and **Table 3** for historical water level measurements.

In the deep bedrock, the bulk direction of groundwater flow is estimated to be toward the north. Groundwater flow in bedrock follows a complex fracture system beneath the Mottolo property that can produce flow directions that are different than the bulk groundwater flow direction especially under the influence of local pumping. Previous geophysical explorations and bedrock mapping on/off-site have indicated preferential flow along dominant fracture sets beneath the Mottolo property. Five hydraulically transmissive fracture "planes" were identified beneath the Mottolo property in the 3-dimensional conceptual site model (3D CSM) developed by Hager-Richter Geoscience, Inc. (H-R). The fracture planes included in the 3D CSM are likely a series of discontinuous but interconnected fractures rather than a single, continuous fracture. These five fracture planes are considered to be the dominant fractures in the area that influence groundwater flow and contaminant transport but should not be considered to represent the fracture network as a whole. The actual fracture system is a complex network of interconnected fractures. For additional information regarding the 3D CSM, refer to H-R's report dated July 2, 2010[1], included as an appendix to GZA's 2010 focused feasibility study (FFS), which is available electronically on NHDES' OneStop database (*http://des.nh.gov/onestop/index.htm*).

3.2 LAND AND RESOURCE USE

The area around the Mottolo property is largely wooded, but single-family residences are present on all sides (**Figure 1**). The closest residence is approximately 300 feet south of the Site Boundary, and 500 feet south of the remediated area. Residences on Strawberry Lane were constructed beginning about 2000. The newest completed development is Windmere Drive, located immediately west of the Mottolo property across Blueberry Hill Road. In 2008, a new residential area was cleared and graded for a 35-lot subdivision on Perimeter Road northwest of the Mottolo property; however, home construction has not yet begun. The approximate 2-mile water main extension was completed during the summer of 2012, and the 25 residential bedrock water supply wells, located to the west and the south of the Mottolo property, were disconnected from service. The remaining residential properties near the Mottolo property are served by private bedrock water supply wells of various depths.

3.3 HISTORY OF CONTAMINATION

From 1975 through 1979 over 1,600 drums and pails of chemical manufacturing wastes from two companies were disposed in a ¼-acre depression referred to as the FDDA. In addition, at least one tanker of liquid waste was emptied in the same area. Evidence of leaking drums was reported to the State in 1979 and it was concluded that soil and groundwater beneath the Mottolo property was contaminated with primarily volatile organic compounds (VOCs) and aromatics, and that the contaminants were seeping into a brook (Brook A) located approximately 200 feet east of the FDDA. Arsenic was also found to be present in groundwater and is the primary inorganic contaminant of concern (COC) at the Mottolo property.

The vertical extent of soil contamination in the FDDA typically extended from approximately 2 to 4 feet below ground surface (bgs) to the bedrock surface, with the most contaminated soil being found near the water table. The saturated volume of contaminated soil varied seasonally with groundwater fluctuations of as much as 5 feet. The source area responsible for VOCs in the groundwater in the southern boundary

[1] *3D Geophysical Conceptual Model, Mottolo Pig Farm Superfund Site, Raymond, New Hampshire*, dated July 2, 2010.

area (SBA) was inferred to be overburden soils near the concrete pads west of the Piggery Building and near the bedrock-overburden contact. A description of likely sources can be found in the RI/FS reports (Balsam Environmental Consultants, Inc., 1990, 1991).

3.4 INITIAL RESPONSE

The Site was discovered in April 1979. Preliminary investigations conducted by the New Hampshire Water Supply and Pollution Control Commission (now the NHDES) indicated that disposal of chemicals in the confirmed source area, contaminated soils, surface water, and groundwater with VOCs. Among the VOCs identified were methylene chloride, 1,1,1-trichloroethane (TCA), 1,2 dichloroethene (1,2 DCE [total]), vinyl chloride (VC), trichloroethylene (TCE), and tetrachloroethylene (PCE). Aromatics, including ethyl benzene, toluene and xylenes were also identified, as well as acetone. Arsenic is present in groundwater, and is the primary inorganic compound of concern at the Site.

In 1980, under authority of the Clean Water Act (CWA), the EPA used emergency funds to excavate and store drums on site. Between November 1980 and January 1982, the EPA performed a removal action including excavation, staging, testing, on-site storage, and off-site disposal of 1,600 containers of waste from the FDDA and SBA and an estimated 160 tons of contaminated soil. This removal action was completed before the RI/FS was initiated in the mid-1980s. The Site was subsequently added to the NPL in July 1987.

3.5 BASIS FOR TAKING ACTION

The RI/FS was completed in March 1991. The COCs identified in the RI/FS included the following:

- Groundwater: arsenic, 1,1 dichloroethane (1,1 DCA), 1,2 DCE (total), ethylbenzene, tetrahydrofuran (THF), TCA, toluene, TCE and VC;
- Surface Water: 1,1 DCA and 1,2 DCE (total);
- Sediment: 1,1 DCA and 1,1,1 TCA; and
- Soil: ethylbenzene, toluene, xylene.

The ten COCs were selected to assess Site-related hazards based on toxicity, concentration, frequency of detection, and mobility and persistence in the environment. Several pathways of hypothetical exposure were identified to assess exposures based on the present uses, potential future uses and location of the Mottolo property.

For contaminated groundwater, future residential use of the Mottolo property was assumed and exposure scenarios were developed for both bedrock and overburden aquifers. For soils, incidental ingestion and dermal contact scenarios were developed for current and potential future use of the Mottolo property. The RI found that exposure to on-site soils, air, sediments, and surface waters did not pose an unacceptable environmental or human health risk; however, the health risk from drinking on-site groundwater was determined to be above acceptable risk levels.

4.0 REMEDIAL ACTIONS

4.1 REMEDY SELECTION

The Record of Decision (ROD) issued in March 1991 specified a source control component and a management of migration component to address the entire Site contamination. The remedial action objectives (RAOs) identified in the 1991 ROD are:

- To eliminate or minimize the threat posed to the public health, welfare, and environment by the current extent of contamination of groundwater and soils;
- To eliminate or minimize the migration of contaminants from the soils into the groundwater; and
- To meet federal and state Applicable or Relevant and Appropriate Requirements (ARARs).

The 1991 ROD specified the following response actions:

Source Control Component:

- Installation and operation of a vacuum extraction system (VES) to remove air and vapor phase VOCs present in the soil pore space (soil gas) in the FDDA and SBA;
- Installation of a groundwater interceptor trench upgradient of the FDDA to lower the water table to facilitate VES treatment of contaminated soil; and
- Sealing of the ground surface in both the FDDA and the SBA with temporary caps consisting of 4- or 6-mil thick visqueen sheeting covered with a 6-inch layer of seeded loam to improve the operational efficiency of the VES by limiting short-circuit air flow from the ground surface to the extraction wells and significantly reducing precipitation infiltration.

Management of Migration Component:

- Natural attenuation (NA) of contaminated groundwater to lower contaminant concentrations through physical, chemical and biological processes until groundwater cleanup levels are met.

Additional Measures:

- Installation of a security fence consisting of approximately 1,300 linear feet of galvanized chain link fence (10 feet high) to control access to the FDDA and SBA, and to provide security for the VES;
- Groundwater and surface water monitoring to assess the effectiveness of remediation and to confirm that contaminant concentrations in groundwater attain cleanup levels; and
- Implementation of institutional controls (ICs) to restrict the use of contaminated groundwater and prevent disturbance of ongoing RAs. The objectives of the ICs were to ensure that no activities take place at the Mottolo property or in proximity to the Mottolo property which would either affect implementation of the selected remedy or cause exposures to hazardous substances.

Discussed herein (**Section 4.2** below), the source control component of the 1991 selected remedy has been completed.

EPA issued an amendment to the ROD (AROD) in September 2010 to supplement the 1991 ROD for groundwater that included the extension of the public water supply main in Raymond along Route 102 and Blueberry Hill Road to the intersections with Windmere Drive and Strawberry Lane (approximately 2 miles). The water line extension was designed to provide alternate water to 25 residences generally to the west and south of the Mottolo property. The 1991 RAOs remain unchanged by the AROD. The AROD supplements, but does not change the NA component of the remedy selected in the 1991 ROD. The AROD adds a new component (i.e., extension of the public water supply) to the management of migration component and expands ICs and off-site groundwater monitoring requirements.

The RAOs identified in the AROD were designed to provide adequate protection to human health from direct contact, ingestion, or inhalation of hazardous constituents that exist from use of residential wells and include the following:

- Prevent exposure to contaminates from residential wells used as drinking water wells where contaminates exceed cleanup goals identified in the 1991 ROD/federal and State drinking water standards; and
- Prevent the use of groundwater in the future where such use has the potential to hydraulically influence the movement of groundwater contamination until cleanup goals established in the 1991 ROD and federal and State drinking water standards are met.

4.2 REMEDY IMPLEMENTATION

EPA contracted with Metcalf & Eddy in 1992 to develop the remedial design and implement the RA for soils. Work was divided into two phases: the first phase, completed in 1992, included design and installation of a security fence, a groundwater interceptor trench, and a distribution lateral around the FDDA to lower the groundwater level so that VES could be effective down to the bedrock surface. The second phase, completed in 1993 included pilot testing, design, installation, and operation of the VES system in both the FDDA and SBA. A Preliminary Close-Out Report, signed on September 30, 1993, indicated that construction of the remedy was complete and that the VES was operational and functional.

Confirmatory vapor sampling was conducted to determine when the VES could be shut off. In the fall of 1996, after three years of operation, soil samples were collected and analyzed for VOCs using a field gas chromatograph (GC) (Metcalf and Eddy, 1997). Leachate samples were collected and analyzed at a fixed laboratory using EPA Method 524.2. No soil or groundwater contamination was found above soil cleanup levels in any of the samples. Based on results for soil and leachate samples, the VES was turned off in late 1996. All aboveground components of the system were removed from the treated area in December 1996, and a liner was installed to minimize infiltration of water in spring 1997. The interceptor trench and liner were removed from the FDDA in December 2001 and the area was re-graded and seeded with grass. The final VES closeout report was completed during 1997 and the source control component of the Remedial Action was considered complete by EPA on June 28, 1998.

During 2000, EPA decommissioned a number of wells, removed the chain link fence surrounding the Mottolo property, installed a new entry gate and modified the remaining wells. During the fall of 2001, the final components of the VES were removed, including the groundwater interceptor trench.

Groundwater monitoring began during 1993. Between 1993 and 1998 monitoring varied from quarterly, to three times a year, and then to semi-annual monitoring events. Annual water quality monitoring began during 1999. Water quality monitoring included sampling groundwater from the network of on-site monitoring wells (refer to the attached **Figure 1**) and three surface water locations along Brook A. Surface water sampling was discontinued at EPA's recommendation in June 2003.

In 2003, the responsibility for operating and maintaining the remedy was officially transferred from EPA to NHDES. In addition, NHDES began sampling recently installed residential wells directly abutting the southern border of the Mottolo property on Strawberry Lane. The residential well sampling program in this area has been on-going since 2003.

EPA completed a Third FYR (EPA Review) for the Site in August 2008. EPA's Review evaluated the protectiveness of the remedy due to the persistent and slightly increasing concentrations of several contaminants in groundwater in a number of residential wells since the last FYR in 2003, and the increasing residential development west of the Mottolo property. The Review also considered the NA component of the remedy and found inconsistent levels of attenuation and that the estimated cleanup times had not been achieved. In addition, residential development around the Mottolo property continued with increasing groundwater withdrawal that presented an opportunity for exposure. The Third FYR recommended improving on-site monitoring, expanding off-site monitoring of residential wells, investigating on-site subsurface soils for residual contamination, and finalizing ICs to fully assess and ensure protectiveness.

To begin addressing the issues identified in EPA's Review, in 2009 NHDES implemented a Site-wide groundwater, surface water and sediment sampling event and expanded the residential sampling program to include additional residences in the immediate vicinity of the Mottolo property. Sampling results revealed that many of the residential wells, located mostly west of the Mottolo property on Windermere Drive and Blueberry Hill Road, had concentrations of arsenic above the drinking water standard and four residential wells had detectable concentrations of VOCs. Two of the affected residential wells had a concentration of TCE slightly exceeding the drinking water standard of 5 micrograms per liter (µg/L). NHDES immediately provided bottled water (and in some cases point-of-entry treatment systems) to residences where water samples from the supply well exceeded the drinking water standard for arsenic and/or TCE, and were viewed as potentially having a hydraulic connection to the Mottolo property.

Arsenic is a naturally occurring metal that exceeds the drinking water quality standard of 0.010 milligrams per liter (mg/L) in approximately 20 percent of the bedrock wells in southeastern New Hampshire[2]; however, review of the data showed that the elevated concentrations of arsenic, found to the west of the Mottolo property, could not be disassociated from the past disposal activities that occurred on the Mottolo property. NHDES began an extended effort to assemble a technical team that could assist in planning investigative activities and associated data interpretation that would assist NHDES and EPA in evaluating the full extent of site-related impacts.

Subsequent response actions were performed during the fall and winter of 2009/2010 including the installation of deep bedrock monitoring wells, geophysical logging of the new deep bedrock wells, sampling of numerous residential and Site wells, geophysical logging of several residential wells, depth interval sampling of a contaminated residential well, measuring of deep bedrock groundwater levels in Site and residential wells, depth interval sampling of the Site deep bedrock wells, and evaluation of the collected data. The March 2010 Preliminary Data Report provided a summary, analysis, interpretation,

[2] USGS Fact Sheet 051-03 titled "Arsenic Concentrations in Private Bedrock Wells in Southeastern New Hampshire," dated July 2003.

and findings of these investigations. In addition, an aquifer pumping test was conducted in June 2010 to better define the area that could be impacted by Site-related contaminated groundwater. The report generally concluded that the combined presence of TCE and associated geochemical changes to groundwater likely mobilized naturally occurring arsenic, resulting in concentrations above background levels in the area adjacent to the western boundary of the Mottolo property. Based upon these investigations it was determined that groundwater is influenced by residential well pumping in the vicinity of the Mottolo property, particularly to the west and south.

The 2010 Preliminary Data Report identified homes located west and south of the Mottolo property where supplied alternate water options should be considered in a FFS, as the next phase of evaluating an appropriate long-term solution to these newly discovered groundwater impacts. The options evaluated in the July 2010 FFS included:

- No Action;
- Extension of Public Water Supply; and
- Whole House Treatment Systems.

The FFS was followed by EPA's preparation and release of their preferred remedy to amend the 1991 ROD, extending the municipal water system, in a Proposed Plan. The components of the final remedy selected by EPA, as described in the 2010 AROD, include the following:

- Extension of public water supply approximately 2 miles to provide drinking water to approximately 25 residences. These residences will be completely disconnected from their existing private wells and the wells will be either converted to monitoring wells or decommissioned following NHDES guidelines.
- A long-term groundwater monitoring program will be developed to monitor groundwater levels and groundwater quality in residential areas to assess whether migration patterns of the contaminated groundwater will change once the homes are placed on the public water supply system and to confirm that other residential wells are not contaminated by the Mottolo property given the changes to groundwater hydrology.
- ICs will be required in limited areas surrounding the Mottolo property to prevent the installation of any new wells which may be pumped for any purpose in order to limit the risk of exposure to contaminants in groundwater. These limited areas include where such groundwater pumping has the potential to hydraulically influence the movement of groundwater contamination from the Mottolo property, may alter the NA conditions on the Mottolo property and/or impact the remedy selected in the 1991 ROD.
- Five-Year Review: The Amended Remedy will use the FYR Study process to track the progress of meeting the RA objectives and to evaluate the protectiveness of the overall remedy.

Consistent with the AROD, the approximate 2-mile water main extension was completed during the summer of 2012, and the 25 residential bedrock water supply wells, located to the west and the south of the Mottolo property, were disconnected from service. At nine of the 25 locations, located on Strawberry Lane, Blueberry Hill Road, and Windmere Drive, the submersible pumps, wiring, and piping which connected the wells to the residences were removed and a locking cap was fitted to the top of the well casing in order to allow for future groundwater monitoring. The remaining 16 water supply wells were decommissioned in accordance with NHDES guidelines.

4.2.1 Institutional Controls

With respect to ICs, the State of New Hampshire brought a lawsuit against Richard Mottolo in 2005 seeking to compel Mr. Mottolo to secure and comply with a Groundwater Management permit (GMP) to restrict the use of groundwater on the Mottolo property (Lot 087 on Town of Raymond Tax Map 5). NHDES issued the GMP in 2008 but it was not recorded and did not address the use of groundwater outside of the Mottolo property. The lawsuit regarding the permit was resolved in a Consent Decree approved by the State of New Hampshire Merrimack County Superior Court in 2010. As a result of this settlement, the Mottolo property was conveyed to the State of New Hampshire and the GMP was terminated.

A component of the 1991 ROD and later supplemented by the 2010 AROD was the requirement of ICs "in limited areas surrounding the Site to prevent the installation of any new wells which may be pumped for any purpose." The Town of Raymond, through its Health Officer and the BOS, adopted an ordinance on April 22, 2013, to prevent the withdrawal of groundwater within the limits of a newly established Groundwater Management Zone (GMZ) that included both the Mottolo property and select properties to the south (Strawberry Lane), west (Blueberry Hill Road and Windmere Drive) and north-northwest (Perimeter Road subdivision), as well as an undeveloped lot to the west-southwest and conservation land between the Mottolo property and the Exeter River. Refer to **Appendix A** for a copy of the Town of Raymond ordinance including a figure depicting the GMZ.

The ordinance prohibits use of groundwater, installation or reactivation of any wells for any purpose excepting closed-loop geothermal, and disturbance to wetlands within the GMZ, unless approved in advance by the EPA, NHDES, and the BOS. The ordinance will not prohibit a property owner within the GMZ from developing property provided that any development proposal requiring on-site water demonstrates the ability to connect to town water or other acceptable off-site water supply. The extent of the GMZ shall be reviewed no less frequently than every five years and possibly with greater frequency depending on test results. The ordinance will remain in effect until Mottolo property groundwater achieves cleanup goals, and the BOS shall consult with EPA and NHDES before modifying or terminating the ordinance. The BOS agreed at the April 22, 2013 public hearing to request that the Town Manager prepare a letter to all current property owners within the GMZ surrounding the Mottolo property with a copy of the adopted ordinance for their records.

4.3 SYSTEM OPERATIONS/OPERATION AND MAINTENANCE

Current maintenance activities by NHDES primarily involve collecting groundwater samples and monitoring the integrity of the monitoring network so that representative samples can be obtained. There is also some occasional security gate maintenance. Annual operations and maintenance (O&M) costs are shown in **Table 4**.

Table 4. Estimated Annual System O&M Costs (NHDES, Personal Communication)

Dates		Total Cost
From	To	$
1 Jan 2008	31 Dec 2008	32,000
1 Jan 2009	31 Dec 2009	111,000
1 Jan 2010	31 Dec 2010	43,000
1 Jan 2011	31 Dec 2011	42,000
1 Jan 2012	31 Dec 2012	48,000

The Town of Raymond is responsible for all O&M activities associated with the new waterline in the area of the Mottolo property.

5.0 PROGRESS SINCE THE LAST FIVE-YEAR REVIEW

5.1 PROTECTIVENESS STATEMENTS FROM LAST REVIEW

The last FYR contained the following Protectiveness Statements:

> *"The remedy is no longer protective because of persistence and increases in some COC concentrations in groundwater from several monitoring wells since the last FYR. Several issues raised during this review have led to recommendations to improve monitoring and evaluation of contamination. Analysis indicates that natural attenuation has not occurred uniformly across the Site over the last five or more years and that the estimated cleanup times as specified in the ROD have not been achieved. Also, the cleanup objective for arsenic in groundwater was lowered from 50 µg/L to 10 µg/L, though there are no known exposures occurring due to any of the Site-related COCs for groundwater. Residential development around the site continues with increasing pressures on the groundwater resources that may create the likelihood of exposure.*
>
> *The immediate threats from soil were addressed by completed remedial activities. However, additional investigation of contaminants in soil and/or weathered bedrock, additional groundwater and surface water sampling, evaluation of well conditions to include inspection/replacement/repair of wells, evaluation of well head treatment and finalization of institutional controls are needed to fully assess and ensure protectiveness"*

5.2 STATUS OF ISSUES, RECOMMENDATIONS, AND FOLLOW-UP ACTIONS IDENTIFIED IN THE THIRD FYR (EPA, 2008)

The last FYR identified five issues and twenty-one recommendations and follow-up actions, which are presented in **Table 5**, along with their status and results as appropriate. Detailed discussions of the COC trends over time during the last five years are presented in **Section 6.4**.

Table 5. Status of issues, recommendations, and follow-up actions identified in the third FYR (EPA, 2008).

Issue	Recommendations and Follow-up Actions	Status	Results
1. Potential residual source areas in soil and/or weathered bedrock on-site. May influence offsite and on-site groundwater quality, and potentially impact surface water quality in Brook A where only limited sampling has occurred.	Investigate Suspected Residual Contaminant Source Areas.	Supplemental soil borings and contaminant screening were completed in 2009 to further evaluate the potential for residual contaminant source areas to exist within the FDDA and former piggery building area.	Based on the results of supplemental investigations it was concluded that no residual on-site source areas were identified in the areas assessed
	Investigate soil and weathered bedrock near high arsenic and VOC detections.		
	Remove soil if necessary.	No residual source areas were identified; therefore, no soil removal was deemed necessary	*NA*
	If SBA area wells are sound, conduct a geophysical survey to assess boundary of potential residual source area.	No residual source areas were identified; therefore, a geophysical survey was not deemed necessary.	*NA*

Issue	Recommendations and Follow-up Actions	Status	Results
2. Insufficient sampling to determine seasonal groundwater and surface water contaminant variation and to assess potential remobilization of contaminants on-site (near Brook A) and off-site to the west and north.	Revise Groundwater and Surface Water Sampling Plan. Use low-flow sampling for all wells unless there is a well-specific problem which cannot be overcome.	Low flow or grab sampling is used for all Site wells, with the exception of the new multilevel system (Water FLUTe) installed in bedrock borehole MOT_MW-103D.	Results of additional investigations conducted in 2009-2010 indicated additional measures were needed to prevent exposure to contaminated drinking water and to prevent the further migration of contaminated groundwater in order to protect human health.
	Sample domestic wells north and west of the Mottolo property during high and low groundwater conditions.	Select wells sampled up to a quarterly basis.	
	Re-institute seasonal surface water and groundwater monitoring during high and low groundwater conditions.	Groundwater and surface water are sampled on an annual basis. Extensive 2009 and 2010 investigations performed to understand and document nature and extent of bedrock groundwater contamination in Site vicinity. New deep bedrock monitoring wells installed in center of Site and at northwestern boundary. Significant geophysical work performed in many bedrock wells.	In the 2010 ROD Amendment, EPA outlined the selected remedy that included extension of the Public Water Supply, which was based on an evaluation conducted in the 2010 FFS. The extension of the Public Water Supply was completed in summer 2012.
	Evaluate contaminant pathways and determine if new monitoring wells are needed at the Mottolo property boundaries.		
	Locate groundwater to surface water discharge areas and evaluate the concentration of groundwater contaminants entering the brook.	No VOCs detected in surface water samples; however, sediment requires further evaluation. See issues and recommendations (**Section 8.0** and **Section 9.0**) of this FYR	
	Optimize Site/residential well sampling frequency.	Site/residential well sampling frequency was optimized following, and utilizing information from, the extensive 2009 and 2010 investigations as well as subsequent monitoring rounds.	TCE and elevated arsenic concentrations identified in residential wells west of the Site. Identified hydraulic connection between Site deep bedrock wells and residential wells to west and south of the Site.
	Evaluate the need for well head treatment.	Whole house water treatment systems were evaluated as a remedial alternative in the 2010 FFS.	The selected remedy included extension of the Public Water Supply, negating the need for well head or whole house water treatment.
3. Some wells may not yield representative water samples due to biofouling or siltation.	Evaluate well conditions.	No siltation or biofouling issues have been observed in Site monitoring wells that are currently sampled as part of long-term monitoring.	
	Physically and hydraulically inspect/redevelop all monitoring wells.		
	Remove and/or replace poorly performing monitoring wells.		

Issue	Recommendations and Follow-up Actions	Status	Results
4. Concentrations of arsenic and VOCs remain above cleanup goals.	Collect additional arsenic and VOC data.	2009 and 2010 investigations performed to document nature and extent of bedrock groundwater contamination in Site vicinity.	TCE and elevated arsenic concentrations were identified in residential wells west of the Mottolo property; subsequently, new waterline connection established for 25 impacted residences.
	Include arsenic as analyte for four rounds of surface water, residential and Site groundwater monitoring well networks; optimize each successive round based on the results.		
	Sample some residential wells for full suite of contaminants vs. COCs only.	During 2009, select residential wells sampled for full suite of VOCs, NA parameters, and additional metals.	
	Collect additional NA parameters.	As it was determined that residential wells were affected by the plume from the Mottolo property and the decision to put in the waterline was made, these type of data were determined to be inappropriate for collection at that time.	Refer to the Issues and Recommendations (**Section 8.0** and **Section 9.0**) included in this FYR.
	Apply analytical techniques to refine estimates of cleanup times.		
5. ICs not finalized, accompanied by sustained residential development pressure near the Site.	Re-Assess ICs.	GMP removed from property in 2010; Institutional Control Plan drafted in 2012 and forwarded to the Town of Raymond for consideration and adoption.	Established Mottolo Site Groundwater Management Zone. Town of Raymond adopted local ordinance restricting use of groundwater in the Site vicinity.
	Finalize ICs.		

6.0 FIVE-YEAR REVIEW PROCESS

This fourth FYR was conducted in accordance with EPA's most current FYR guidance (EPA, 2001; 2011). Tasks completed include review of pertinent Site-related documents, interviews with parties associated or familiar with the Site, an inspection of the Mottolo property, and a review of the current status of regulatory or other relevant standards and a data review.

6.1 ADMINISTRATIVE COMPONENTS

The FYR Team was led by Michael Jasinski of EPA, other EPA members with expertise in geology and hydrology (Stephen Mangion), risk assessment (Richard Sugatt), community involvement (Kelsey O'Neil) and legal issues (Susan Scott); Andrew Hoffman and Sharon Perkins of NHDES, and technical support from GZA (Steven Lamb, Stefanie Lamb, Amy Doherty, Tanya Justham, James Wieck, and Chunhua Liu).

Review components included:

- Community Involvement;
- Document Review;
- Data Review;
- Site Inspection;
- Local Interviews; and
- Five-Year Report Development and Review.

6.2 COMMUNITY NOTIFICATION AND INVOLVEMENT

Community involvement for this fourth FYR for the Site was initiated by EPA's publication of a legal notice in the New Hampshire Union Leader on January 14, 2013[3] (see **Appendix B**). Interviews were also undertaken by the FYR Team with various members of the public, Town and State agencies (see **Appendix C**).

Once this document has been finalized, a notice will be published in the local paper. Copies of this document will be placed in the information repositories, including the Dudley-Tucker Public Library in Raymond, New Hampshire. A copy will be provided to the Town Manager, and an electronic copy will be posted on the following:

EPA's Mottolo property web site at:
http://yosemite.epa.gov/r1/npl_pad.nsf/8b160ae5c647980585256bba0066f907/1c118677101531fe8525691f0063f6d8!OpenDocument

NHDES OneStop Environmental Site Information web site at:
http://www2.des.state.nh.us/DESOnestop/PRSDetail.aspx?ID=0002032&Type=PRS

6.3 DOCUMENT REVIEW

A complete list of Site-related documents reviewed as part of this FYR is included in **Section 12**.

[3] "EPA starts 'Five-Year Review' Of Mottolo Superfund Site,"

6.3.1 ROD ARARs

ARARs[4] for the Site were identified in the ROD (EPA, 1991) as follows:

Chemical-Specific:

- Federal Safe Drinking Water Act (SDWA) Maximum Contaminant Levels (MCLs);
- Federal Resource Conservation and Recovery Act (RCRA) 40 CFR 264.94 Maximum Concentration Limit for arsenic;
- Federal National Ambient Air Quality standards during construction activities;
- New Hampshire Ambient Air Quality Standards Env-A 300 for construction and operation; and
- New Hampshire Toxic Air Quality Pollutants for SVE (Env-A 1400, formerly Env-A 1300).

Location-Specific:

- Federal Executive Order 11990 (Protection of Wetlands) for remedial activities;
- Federal CWA, Section 404 (40 CFR Part 230; 33 CFR Parts 320-330) for work performed in wetland areas near the drainage swale;
- New Hampshire Dredging and Control of Runoff; RSA 149:8-a: Dredging Rules for work performed in wetland areas and in the vicinity of Brook A (discharge trench) (Env-Wq 1500, formerly Env-Ws 415); and
- New Hampshire Fill and Dredge in Wetlands, Criteria and Conditions (RSA 483-A, Env-Ws 300, and Env-Wt Chapters 100 through 700) for activities in the drainage swale and near Brook A valley wetland areas.

Action-Specific:

- RCRA (40 CFR 264, Subpart X) for SVE;
- Federal CWA (40 CFR Parts 122 and 125) for diverted groundwater and construction runoff;
- Federal Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (29 CFR 1910.120) for construction and operation;
- Federal OSHA Safety and Health Standards for Construction Sites (29 CFR 1926.652);
- Federal Rivers and Harbors Act (33 CFR 320-329) for activities in the drainage swale and Brook A valley wetland areas;
- Federal Guidelines for Specification of Disposal Sites for Dredged or Fill Material (40 CFR 230) for remedial activities;
- New Hampshire Hazardous Waste Facility Security Requirements (Env-Hw 708.02 (a)(3), 40 CFR 264.14, formerly Env-Wm 708.08(c), 40 CFR 264.14);

[4] A number of Federal ARARs identified have been either rescinded or renamed and a number of State ARARs have been reorganized and renumbered (as noted in this subsection). None of these regulatory changes affect either the cleanup standards cited in the ROD or the implementation and long-term maintenance of the remedy.

- Groundwater Protection (Env-Hw 708.02 (a)(11), 40 CFR 264, Subpart F, formerly Env-Wm 708.02 (j), 40 CFR 264, Subpart F);
- Closure and Post-closure (Env-Wm 708.02 (a)(12), 40 CFR 264, Subpart G, formerly Env-Wm 708.02 (k), 40 CFR 264, Subpart G);
- Post-Closure Requirements (Env-Hw 708.03 (d)(6), 40 CFR 264, Subpart F-Landfills, formerly Env-Wm 708.03 (d)(6), 40 CFR 264, Subpart F-Landfills);
- Technical Standards for Tanks (Env-Hw 708.03 (d)(2) 40 CFR, Subpart J-Tanks, formerly Env-Wm 708.03 (d)(2) 40 CFR, Subpart J-Tanks);
- New Hampshire Groundwater Protection Regulations Groundwater Quality Criteria (Env-Or 600, formerly Env-Ws 410);
- New Hampshire Air Regulations, Toxic Air Pollutants (Env-A 1400, formerly Env-A 1300); and
- Fugitive Dust Emission Control (Env-A 2805.01, formerly New Hampshire Administrative Code, Air, Part 1002).

Additionally, the ROD identifies the following as "To-Be Considered" criteria:

To Be Considered (TBC):

- Federal SDWA Maximum Contaminant Level Goal for 1,1-dichloroethene (chemical-specific TBC);
- New Hampshire Groundwater Protection Standards (Env-Or 600, formerly Env-Ws 410.05) (chemical-specific TBC); and
- Federal Statement of Procedures on Floodplain Management and Wetland Protection (40 CFR Part 6, Attachment A) to implement Executive Order 11990 (location-specific TBC).

6.3.2 AROD ARARs

ARARs for the Mottolo Superfund Site were identified in the AROD (EPA, 2010) as follows:

Chemical-Specific ARARs and TBCs:

- SDWA National Primary Drinking Water Regulations MCLs, 40 CFR 141.11 - 141.16, 141.60 - 141.62; and
- New Hampshire Water Quality Standards; Env-Dw 700.

Action-Specific ARARs and TBCs:

- New Hampshire Ambient Air Quality Standards, Env-A 300;
- New Hampshire Administrative Rules – GENERAL DESIGN STANDARDS: SYSTEMS SERVING 1,000 OR MORE PEOPLE (Env-Ws 370);
- New Hampshire Administrative Rules – DESIGN STANDARDS FOR SMALL COMMUNITY WATER SYSTEMS (Env-Ws 372); and
- New Hampshire Public Water Systems Guidelines, Env-Wq 400 (TBC).

6.4 DATA REVIEW

The RI determined that contaminants associated with the Mottolo property are present in soil (mainly within the FDDA), surface water, sediment, and groundwater (Balsam Environmental Consultants, Inc., 1990). A long-term monitoring program has been implemented to monitor the NA of Site-related contamination, as required by the 1991 ROD. During 2009, NHDES implemented a Site-wide groundwater, surface water and sediment sampling event and expanded the residential sampling program to include additional residences in the immediate vicinity of the Mottolo property. Additional investigation activities performed during 2009 and 2010 included the installation of deep bedrock monitoring wells; geophysical logging of the new deep bedrock wells and several residential wells; depth interval sampling of the Site deep bedrock wells and a contaminated residential well; measuring of deep bedrock groundwater levels in Site and residential wells; and an aquifer pumping test to better define the area that could be impacted by Site-related contaminated groundwater. Refer to **Figure 1** for locations of monitoring wells and surface water and sediment sampling locations. Data for each media are summarized below by media and/or COC group.

6.4.1 Soils

Contaminated soils were removed from the FDDA and drainage swale area between 1980 and 1981. A VES was installed in this area in 1993 and operated for three years. After field gas chromatography testing of soil samples indicated levels below cleanup criteria, the VES was removed in late 1996. A liner was installed when the Mottolo property was re-graded in spring 1997. In December 2001 the liner was removed.

Soil screening analysis of numerous soil boring samples obtained by EPA from above the bedrock within the FDDA in 2009 showed that the in-situ vacuum extraction treatment system successfully reduced the vast majority of the target VOC's below action levels in this area. A limited amount of contamination in one soil boring location (mostly semi-volatile petroleum chemicals but also TCE above the 1991 ROD cleanup level/goal) was detected; however, the average concentrations for VOCs detected within the FDDA soils were well below the New Hampshire Soil Remediation Standards (SRS) included in Env-Or 600 *Contaminated Site Management* (Env-Or 600). It has been concluded that the very limited, residual VOC concentrations remaining in soil will ultimately degrade through NA processes over time.

6.4.2 Groundwater

Groundwater data are summarized in the most recent (2012) Annual Summary Report and for this FYR in the ***attached*** tables including: **Table 6** (Mottolo property monitoring wells); **Table 7** (residential supply wells); and **Table 8** (bedrock boreholes). Each table represents only those contaminants detected in on-site or off-site groundwater or residential drinking water, and lists exceedances of applicable Record of Decision Interim Cleanup Levels (ROD ICLs)/Ambient Groundwater Quality Standards (AGQS). Contaminant concentration trends for monitoring wells are presented graphically and show major Mottolo property and regional activities in Graphs 1 through 10 of Appendix D, as referenced below. For samples collected during the most recent groundwater monitoring, refer to **Figure 4** and **Figure 5** for concentrations and concentration isopleths of TCE and arsenic in Mottolo property monitoring wells, **Figure 6** for the locations of sampled residential supply wells and off-site bedrock boreholes, and **Figure 7** for concentrations of arsenic in residential supply wells.

The following provides a summary of the most recent data available for the impacted media. Refer to the 2012 Annual Summary Report for additional details.

6.4.2.1 Mottolo Property Monitoring Wells

Refer to **Figure 1** that illustrates the monitoring well locations. Prior to 2010, there were 11 overburden wells (ten overburden wells are on the Mottolo property; one overburden well is on Strawberry Lane) and 12 shallow bedrock wells (ten shallow bedrock wells are on the Mottolo property; two shallow bedrock wells are on Strawberry Lane). During 2010, one additional overburden well (MOT_MW-101S) was installed and four additional deep bedrock wells were installed (MOT_MW100D; MOT_MW-101D; MOT_MW-102D; and MOT_MW-103D). As of 2012, sampling occurs at eight of the existing 28 monitoring wells on the Mottolo property. Groundwater samples are analyzed for VOCs and total arsenic. Groundwater quality parameters such as turbidity, pH, dissolved oxygen (DO), temperature, specific conductance, and oxidation reduction potential (ORP) were measured in the field. The following summarizes the groundwater analytical results for Mottolo property monitoring wells:

Overburden/Shallow Bedrock

- The distribution of site-related dissolved-phase contamination is consistent with transport of VOCs within groundwater away from the FDDA;
- Overburden and shallow bedrock TCE groundwater concentrations near the FDDA and former piggery operation area are currently below detection limits (less than 2 µg/L);
- The dissolved phase TCE plume in overburden and shallow bedrock groundwater appears to trend toward the north/northeast;
- TCE concentration data (**Graph 1**) indicate a potential increasing temporal trend in TCE concentration at monitoring wells MOT_MO-3SR and MOT_MW-22D since June 2003, and at monitoring wells MOT_MO-3DR and MOT_OW-2DR since May 2007. Well MOT_MO-2S displayed an increasing trend of TCE concentrations between May 2007 and September 2011; although the November 2012 concentrations returned to a pre-2007 level. TCE concentrations at well MOT_MO-5DR have been relatively stable since April 1997;
- Concentrations of cis-1,2-DCE (**Graph 2**) detected in groundwater samples collected from each of the monitoring wells have similar temporal concentration trends to TCE, with the exception of MOT_MO-3DR, for which cis-1,2-DCE concentration data suggest a decreasing concentration trend since October 1997;
- With the possible exception of MOT_MO-3SR, VC concentrations (**Graph 3**) suggest stable or decreasing concentration trends in each of the observed monitoring wells,
- THF concentrations (**Graph 4**) for each of the monitoring wells have remained below the AGQS/ROD ICL standards since May 2005, and appear to be generally decreasing; and
- An overall increase in total arsenic concentration at well MOT_MO-3SR was observed between April 2000 and August 2009. Detected arsenic concentrations from April 2009 to October 2012 have been relatively stable as illustrated on **Graph 5**. MOT_MO-3SR is a downgradient monitoring well located proximate to Brook A (Refer to **Figure 1**). Arsenic data from each of the other wells appear to indicate relatively stable or slightly decreasing trends in arsenic concentrations.

Deep Bedrock

- Investigations during 2009/2010 confirmed that deep bedrock groundwater was being drawn through bedrock fractures to the west by the pumping of residential wells; and

- Detected TCE concentrations in groundwater samples collected from the four vertical zones[5] isolated using the Water FLUTe™ system installed in MOT_MW-103D ranged from 40 µg/L within MOT_MW-103D-4 to 78 µg/L within MOT_MW-103D-2. Whereas the concentration of TCE at MOT_MW-103D-2 decreased slightly from 2011, the TCE concentrations detected at MOT_MW-103D-1, MOT_MW-103D-3, and MOT_MW-103D-4 increased from 2011. Refer to **Graphs 6** through **8**.

6.4.2.2 Residential Area Wells

Figure 8 illustrates the residential properties surrounding the Mottolo property. NHDES has been sampling tap water from residential wells since 2003. The sampling program was expanded in 2009 to determine the extent of impacts from the Mottolo property. The sampling program was reduced to eight residential supply wells during 2012 following the extension of the municipal waterline. The following summarizes the residential well water supply analytical results:

- Prior to the extension of the municipal waterline, TCE was observed in a few of the residential tap water samples in the Windmere Drive and the upper end of Blueberry Hill Road residential areas at concentrations either below the drinking water standard of 5 µg/L or just above the drinking water standard (7.8 µg/L of TCE at 31-33 Blueberry Hill Road was the maximum concentration detected);
- Residential wells currently included in the residential monitoring program have not historically had detections of VOCs related to the Mottolo property above the laboratory reporting limit;
- Carbon disulfide, chloromethane, methyl-t-butyl-ether, and tertiary amyl methyl ether have been detected in various drinking water samples at concentrations well below the applicable AGQS;
- The elevated concentrations of arsenic previously detected in some residential wells west of the Mottolo property were determined to be the result of arsenic that is naturally occurring in the bedrock formation, but which was liberated from the bedrock into the groundwater due to altered geochemical conditions in the groundwater as a result of past waste disposal practices on the Mottolo property;
- Arsenic concentrations detected in tap water samples from residential wells included in the current sampling program have been relatively stable, with the exception of MOT_DW-92 (#54 Parker Road) which may have a possible increasing trend and experienced a peak in concentrations (0.17 mg/L) in September 2011 (refer to **Graph 9** and **Graph 10**); and
- Detected concentrations of arsenic have been observed to consistently exceed the applicable AGQS at MOT_DW-73 (48 Blueberry Hill Road) and MOT_DW-92 (#54 Parker Road). Arsenic concentrations detected at both MOT_DW-73 and MOT_DW-92 have not been identified as related to the Mottolo contamination, and are likely a result of naturally occurring dissolution of arsenic from bedrock.

[5] Zone 1 (MOT_MW-103D-1): 67.52 – 70.52 feet from top of pump tube (TPT); Zone 2 (MOT_MW-103D-2): 239.48 – 243.48 feet TPT; Zone 3 (MOT_MW-103D-3): 286.5 – 291.5 feet TPT; Zone 4 (MOT_MW-103D-4): 299.51 – 306.0 feet TPT.

6.4.2.3 Former Residential Wells/Bedrock Boreholes

At nine of the 25 residential locations supplied with municipal water, the submersible pumps, electric lines and piping which connected the wells to the residences were removed and a locking cap was fitted to the top of the well casing. These nine former residential wells were selected for the bedrock fracture zone sampling program performed during fall 2012. Refer to **Figure 8** and **Figure 9** for concentrations of TCE and arsenic detected within the fracture zones in the former residential wells, and GZA's Bedrock Borehole Sampling Report dated June 2013 for a detailed discussion of the bedrock borehole sampling. The following summarizes the bedrock borehole groundwater analytical results:

- With two possible exceptions, VOC results from the bulk groundwater quality samples taken from the approximate mid-point between the uppermost and lowermost fractures are generally consistent with the results of historical residential tap water sampling. Refer to **Table 8** for results of the bedrock fracture zone sampling and historical residential tap water sampling results. One of the exceptions is the detection of TCE within the water quality samples collected from MOT_B41 between June 2009 and September 2011 (TCE was detected at concentrations above the laboratory reporting limit of 0.5 µg/L but below the AGQS, with the exception of July 2009 when no site-related VOCs were detected above the reporting limit). During the recent bedrock borehole sampling, VOCs identified on the Mottolo property were not detected above the reporting limit of 0.5 µg/L in the bulk water sample collected from MOT_B41. The second exception is the detection of TCE in the bulk water sample collected from MOT_B31 at a lower concentration than historical detections obtained during residential tap water sampling (0.9 µg/L detected in the bulk sample versus a low of 2.2 µg/L detected during September 2011);
- The decreases in the historic and recent TCE concentrations in samples collected from wells MOT_B41 and MOT_B31 suggest potential decreasing TCE concentrations toward the northwest of the Mottolo property within the area of Windmere Drive. Based on the current understanding of the direction of groundwater flow and TCE transport prior to the cessation of groundwater withdrawals within the Windmere Drive area (i.e., prior to completion of the municipal water line extension to this area), decreasing TCE concentrations within this area may be due to the cessation of groundwater withdrawals, and the direction of bulk groundwater flow shifting back towards the north/northwest;
- With one exception, arsenic results from the bulk groundwater quality samples are generally consistent with the historical residential tap water sampling performed. It should be noted that the concentration of arsenic detected in the groundwater quality sample collected from MOT_B40 was an order of magnitude higher than historical concentrations (refer to **Table 8**) detected during residential tap water sampling, and is the first detected concentration of arsenic from the borehole to exceed AGQS; and
- Consistent with historical on-site and residential tap water sampling results, TCE concentrations detected in groundwater obtained during the bedrock borehole sampling event are up to two orders of magnitude lower than concentrations detected in Mottolo property deep bedrock groundwater. The lower concentrations detected beyond the Mottolo property are consistent with the effects of hydrodynamic dispersion (mixing of groundwater) as groundwater flows through fractures within the bedrock.

6.4.3 Surface Water

Brook A receives the majority of its flow from groundwater discharging between MOT_SW-1 and MOT_SW-3 (**Figure 1**), based on two studies spanning spring, summer, and winter (Balsam Environmental Consultants, Inc., 1990). Summer through winter measurements were limited due to lack of water in Brook A, indicating that groundwater is below the streambed seasonally. Brook A changes from a gaining stream to a losing stream north of MOT_SW-3.

In accordance with the ROD, surface water sampling and analysis was previously included in the long term monitoring program for the Mottolo property using locations selected during the RI. At EPA's recommendation, surface water monitoring ceased in 2004 because contaminants were not detected. Surface water monitoring was reestablished in 2009 at surface water sampling locations MOT_SW-1, MOT_SW-2, and MOT_SW-3 (Refer to **Table 9**). Currently, surface water samples are analyzed for VOCs, arsenic, hardness, and surface water quality field parameters such as turbidity, pH, DO, temperature, specific conductance, and ORP. Since the reestablishment of surface water sampling during 2009, VOCs have not been detected in surface water samples. Arsenic has been detected above the laboratory reporting limit but below applicable Surface Water Quality Criteria in surface water samples collected from MOT_SW-3.

6.4.4 Sediment

Historic sediment samples were collected concurrent with surface water sampling during 1989 for the RI/FS, at which time the COCs for sediment were identified as 1,1 DCA and 1,2 DCE (total) in sediments from the lower swale and Brook A in the vicinity of the drainage swale. During 2009 and 2012, sediment samples from Brook A were again collected concurrent with surface water samples (Refer to **Table 10**). Samples were analyzed for arsenic and iron during 2009 and arsenic during 2012. Sediment results were compared to the consensus-based Threshold Effect Concentration (TEC) included in the National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Table for Inorganics in Sediment (SQuIRT)[6]. The following summarizes the sediment analytical results:

- Arsenic was detected at concentrations below the NOAA SQuIRT TEC of 9.8 milligrams per kilogram (mg/kg) in sediment samples collected at MOT_SED-1 during both 2009 and 2012;
- Arsenic concentrations detected in the samples collected from MOT_SED-2 exceeded the NOAA SQuIRT TEC during 2009; and
- Arsenic detected in the sediment samples collected at MOT_SED-3 exceeded the NOAA SQuIRT TEC during both 2009 and 2012.

6.5 SITE INSPECTION (GZA, NHDES AND EPA)

A Site inspection was conducted on March 28, 2013, which included visual inspection of the FDDA, the site access gate, and groundwater monitoring wells on the Mottolo property. The Site inspection was performed by Michael Jasinski of the EPA. Also present were Drew Hoffman and Sharon Perkins of NHDES, and Stefanie Lamb of GZA.

[6] Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle, WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration.

The Mottolo property and the access gate appeared to be in good condition. The following were identified during the Site inspection relative to the monitoring well network that requires repair and/or replacement by the NHDES:

- A hole was previously drilled in the well cap at monitoring well MOT_MW-102 to provide access for a transducer to be installed in the well.
- The protective road box and concrete apron at well MOT_MW-12D has sustained damage from frost heaving.

Refer to **Appendix E** for the Site Inspection Checklist.

6.6 INTERVIEWS (NHDES AND EPA)

As required in the EPA FYR Guidance Document, interviews were conducted with Mr. Pat Bower (Department of Public Works Director), Mr. Jim Lillis (District 5 Engineer Technician), and three community members with properties abutting the Mottolo property. The Interview Record forms are provided in **Appendix C**.

7.0 TECHNICAL ASSESSMENT

This section addresses the three technical assessment questions identified in the EPA's FYR guidance document as noted below:

- Question A: Is the remedy functioning as intended by the decision documents?
- Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?
- Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

The following discussion details how each question has been answered based on the findings of this FYR.

7.1 *QUESTION A*: IS THE REMEDY FUNCTIONING AS INTENDED BY THE DECISION DOCUMENTS?

YES. The 1991 ROD, as amended in 2010, specified a source control component and a management of migration component to address the entire Mottolo property contamination. A review of documents, ARARs, risk assumptions, and the results of the Site Inspection indicates that the remedy is functioning as intended by these decision documents.

7.1.1 Source Control

The source control remedial components of the selected remedy included: (1) excavation and off-site disposal of 1,600 containers of waste and an estimated 160 tons of contaminated soil from the FDDA and SBA; and (2) installation of a groundwater interceptor trench and the VES system.

Based on results from confirmation sampling following the three years of VES system operation, the system was turned off in late 1996. All aboveground components of the VES were removed from the treated area in December 1996, the interceptor trench and liner were removed from the FDDA in December 2001, and the final VES closeout report was completed during 1997. The source control Remedial Action was considered complete by EPA on June 28, 1998.

7.1.2 Management of Migration

The management of migration remedial component of the selected remedy includes NA for remediation of Mottolo property groundwater, and ICs to prevent consumption of contaminated groundwater until groundwater cleanup levels are attained. The September 2010 AROD added a new component (i.e., extension of public water supply) to the management of migration component, expanded ICs, and expanded off-site groundwater monitoring requirements. The extension of the public water supply complies with federal and State requirements that are applicable or relevant and appropriate.

More specifically, extension of the public water supply currently provides safe drinking water to the 25 impacted residences located in Area 1 near the Mottolo property (refer to **Appendix A**), while the NA remedy selected in the 1991 ROD will continue to gradually decrease contaminant levels in the aquifer at the Mottolo property.

The Town of Raymond recently adopted an ordinance in 2013 to restrict the withdrawal of groundwater within the limits of a newly established GMZ that includes both the Mottolo property and select properties to the south (Strawberry Lane), west (Blueberry Hill Road and Windmere Drive) and north-northwest (Perimeter Road subdivision), as well as an undeveloped lot to the west-southwest and conservation land between the Mottolo property and the Exeter River. The ordinance restricts the use of groundwater by prohibiting installation or reactivation of any wells for any purpose excepting closed-loop geothermal use, and prohibits disturbance to wetlands within the GMZ, unless approved in advance by the EPA, NHDES, and the BOS. This will also reduce the uncertainty regarding groundwater usage in the area and promote improved management decisions regarding future monitoring. The ordinance will not prohibit a property owner within the GMZ from developing property provided that any development proposal requiring on-site water demonstrates the ability to connect to town water or other acceptable off-site water supply.

A long-term groundwater monitoring program has been developed and is currently being implemented by the NHDES. The objectives of the monitoring program include monitoring groundwater levels and groundwater quality in both on-site wells and residential areas to assess whether migration of the contaminants in groundwater will change now that the homes in Area 1 have been placed on the public water supply system, and to evaluate the potential for impacts to other residential wells given the changes to groundwater hydrology. Within the vicinity of the Mottolo property, sampling of select residential bedrock water supply wells will be performed on a more frequent basis than on-site wells for the first year and as required thereafter. Data collected from monitoring of residential wells will be reviewed for comparison with the conceptual Site model (CSM) developed through previous investigations. Additional data from future sample events will allow for: (1) a more comprehensive assessment of concentration trends in the groundwater; (2) provide the information needed to reassess cleanup times; and (3) provide the information necessary to evaluate the effectiveness of NA and the GMZ to meet the RAOs.

In the event that groundwater monitoring data suggests the potential for contaminated groundwater from the Mottolo property to migrate to residential wells outside of the GMZ, the 2010 AROD requires that those homes be connected to the public water supply system, thereby insuring the overall protection of human health and the environment by the remedy.

7.2 ***QUESTION B:*** ARE THE EXPOSURE ASSUMPTIONS, TOXICITY DATA, CLEANUP LEVELS, AND RAOS USED AT THE TIME OF THE REMEDY SELECTION STILL VALID?

YES. The exposure assumptions and RAOs included in the 1991 ROD as amended in 2010 remain valid, and land use relative to both the Mottolo property and the surrounding area has not changed subsequent to the EPA issuing the 2010 AROD. The affected 25 residential properties bordering the Mottolo property to the south and west are now serviced by a public water supply. Additionally, ICs have been placed on selected properties that prohibit use of groundwater, installation or reactivation of any wells for any purpose excepting closed-loop geothermal, and disturbance to wetlands within the GMZ, unless approved in advance by the EPA, NHDES, and the Town of Raymond BOS.

No new sources or exposure pathways were identified during this FYR as described below and no change in site conditions have been identified which would warrant a re-evaluation of risk. The additional data summarized in the tables included in this FYR have been reviewed and it has been concluded that the risk assessment conclusions presented in the 1990 RI Report are still valid and that the remedy recorded in the 1991 ROD and the 2010 AROD is still protective of human health and the environment.

A baseline risk assessment was included in the RI Report submitted in 1990. Toxicity values for all indicator compounds identified in the baseline risk assessment have since changed with the exception of 1,2-dichloroethene. The changes in toxicity values summarized in **Table 11** would not change the risk characterization conclusions presented in the 1990 RI Report, nor would the changes impact the ICLs presented in the 1991 ROD.

The following summarizes pertinent information reviewed as part of this FYR.

7.2.1 Review of Interim Cleanup Levels

Interim Cleanup Levels were identified in the 1991 ROD as amended in 2010 for groundwater based on MCLs, Maximum Contaminant Level Goal (MCLG), New Hampshire Method 1 Groundwater Standards (Ambient Groundwater Quality Standards), or toxicity values. As indicated in the third FYR in 2008, *"During this FYR period, the MCL for arsenic was also reduced from 50 ug/l to 10 ug/l, causing water in several wells to be non-protective. High levels of arsenic were measured in both overburden and bedrock wells. Furthermore, residential development pressures have continued around the Site. Numerous homes have been built adjoining the site boundaries, especially to the northwest. "*

During this FYR period (i.e., between 2008 and 2013), other than the arsenic ICL which was formally changed in the 2010 AROD, the only other ICL change was for tetrahydrofuran which was identified as 100 ug/l in the 1991 ROD. The current AGQS for tetrahydrofuran is 154 µg/L and the current EPA Regional Screening Level (RSL) for tap water is 3,200 µg/L. The updated groundwater ICLs are summarized in the table below.

Table 12. Groundwater Interim Cleanup Levels - Revised

Contaminants of Concern	Interim Cleanup Level (µg/L)	Basis
Arsenic	10	MCL/AGQS
Trichloroethene	5	MCL/AGQS
Vinyl Chloride	2	MCL/AGQS
1,1-Dichloroethane	81	AGQS
Toluene	1,000	MCLG/AGQS
Ethylbenzene	700	MCLG/AGQS
1,2-Dichloroethene (total)	70	MCLG
Tetrahydrofuran	154	AGQS
1,1,1-Trichloroethane	200	MCLG/AGQS

Notes:
1. Highlighted values were revised from the 1991 ROD.
2. The MCLG value for cis-1,2-dichloroethene, which is more restrictive than the MCLG for trans 1,2-dichloroethene, was used for total 1,2-dichloroethene. The AGQS for cis-1,2-dichlorethene is also 70 ug/l.

7.2.2 Review of Changes in Exposure Pathways

No change in conditions or new exposure pathways have been identified. However, as part of this FYR, specific exposure pathways further evaluated based on new data included: (1) exposure to Mottolo property soils following completion of the source control component of the remedy (laboratory and field screening data from 2009), (2) combination of exposure to groundwater and the potential for vapor intrusion (VI), and (3) the potential for exposure of, and risk to, ecological receptors inhabiting sediment.

(1) Mottolo Property Soil

In October 2009, the EPA conducted a Geo-probe soil sampling effort to investigate the potential for residual soil contamination in the FDDA, in the former piggery operation area, and in the sloped downhill area near the larger concrete pad. EPA utilized its mobile screening laboratory to provide real-time field screening results which were used to guide a phased sampling approach to determine subsequent sampling locations for full laboratory analysis of metals and VOCs. This section presents a summary of the review of both the field screening results and full laboratory results.

- 2009 Laboratory Analytical Soil Data: Selected soil samples were submitted for laboratory metal and VOC analysis, the results of which are presented in **Table 13A** and **Table 13B.** Based on the results, the only VOC with concentrations above the EPA residential RSL is ethylbenzene.

  Ethylbenzene was identified as a soil indicator compound in the 1991 baseline risk assessment; the maximum detected ethylbenzene concentration was 140 mg/kg and the average ethylbenzene concentration was 9.2 mg/kg in the 1990 RI. The maximum detected concentration from the 2009 data set was 36 mg/kg and the average concentration was 10 mg/kg. The 2009 ethylbenzene results were consistent with previous data. The RSL of 5.4 mg/kg corresponds to a cancer risk of 10^{-6}. The average ethylbenzene concentration (10 mg/kg based on the 2009 data would result in a cancer risk of $2x10^{-6}$ to residents, which is within the EPA acceptable risk range of $10^{-6}$to 10^{-4}. Therefore, the observed ethylbenzene concentrations would not result in significant risks to potential receptors. Additionally, the maximum ethylbenzene concentration detected in the 2009 soil samples was below the SRS presented in the New Hampshire Code of Administrative Rules Env-or 606.19(b), Table 600-2, of 140 mg/kg.

  The only two metals with concentrations above the EPA residential RSLs were arsenic and lead. The maximum detected arsenic and lead concentrations among the 2009 soil samples were higher than the maximum concentrations presented in the 1991 baseline risk assessment (83 mg/kg vs. 15 mg/kg for arsenic and 530 mg/kg vs. 181 mg/kg for lead). Arsenic was not included in the 1991 baseline risk assessment because the levels observed at the Mottolo property were generally consistent with background. The 1990 RI adopted background range of <0.1 - 73 mg/kg for arsenic based on the eastern United States reference range. The maximum arsenic concentration detected in the 2009 samples was slightly above the upper background limit listed in the 1990 RI report (83 mg/kg vs. 73 mg/kg). Background arsenic levels higher than the maximum arsenic level detected among the 2009 soil samples have been reported by various agencies such as United States Geological Survey (USGS; 1984). Additionally, the arsenic levels observed at the Mottolo property are consistent with background levels established by USGS (1984; mean of 7.2 mg/kg for the eastern United States with a range up to 97 mg/kg). Based on the above discussion, there is no evidence that arsenic levels detected in the Mottolo property soil are related to the release at the Mottolo property and this conclusion is consistent with the 1991 baseline risk assessment.

  The maximum lead concentrations in the 2009 soil samples (530 mg/kg) was above the EPA residential RSL and the SRS (400 mg/kg). However, the average concentration among the 2009 soil samples (140 mg/kg) was below both the EPA residential RSL and the SRS (400 mg/kg). Therefore, the levels in Mottolo property soil are not expected to pose significant risks to potential receptors (including hypothetical future residents). Further, the lead concentrations detected in the 2009 soil samples were generally consistent with background levels established by various agencies. As an example, USGS (1984) listed an upper limit of background concentration of 700 mg/kg, which is higher than the maximum lead concentration detected in Mottolo property soil.

Based on the above discussion, the additional 2009 soil analytical results would not change the overall risk characterization conclusion presented in the 1990 RI.

- 2009 Field Screening Soil Data: As shown in **Table 14**, the laboratory analytical results and field screening results are generally consistent with each other. As a conservative approach, GZA also evaluated the 2009 field screening results, which are summarized in **Tables 15A** through **15D** for different areas (slope area, South area, SB locations, SB road and shed area). Refer to **Figure 10** for the areas and individual locations of the 2009 Geo-probe soil sampling. GZA's findings are summarized below.

  For the slope area (**Table 15A**), the maximum detected lead concentration (364 mg/kg) is below both the EPA residential RSL and the SRS (400 mg/kg); and the maximum detected arsenic concentration (12 mg/kg) is slightly above the SRS (11 mg/kg). The location where arsenic was detected above the SRS (Slope 3) was located at 8 feet bgs. The average lead and arsenic concentrations for the slope area (29 mg/kg and 3.8 mg/kg, respectively) are much lower than the SRS values. Therefore, the slope area is not an area of concern based on the lead and arsenic screening results.

  For the South area (**Table 15B***)*, the average and maximum lead concentrations are below both the EPA residential RSL and the SRS. The maximum arsenic concentration is above the SRS; however, the majority of the exceedances occurred in soil 3 feet bgs or deeper. The average arsenic concentration (10 mg/kg) is below the SRS. As a result, the South area is not an area of concern based on the lead and arsenic screening results.

  For the SB locations (**Table 15C**), the average concentrations of VOCs, lead, and arsenic are all below the SRS values. There are individual exceedances of SRS, but the majority of the exceedances occurred in soil 4 feet bgs or deeper. Further, the laboratory results (**Table 13A** and **Table 13B**) for samples collected in this area would not change the 1991 baseline risk assessment results, as discussed in the preceding section. The SB locations are not an area of concern based on the VOC, lead, and arsenic screening results.

  For the SB Road and Shed area (**Table 15D**), the maximum detected lead concentration (38 mg/kg) is below both the EPA residential RSL and the SRS (400 mg/kg); while the maximum detected arsenic concentration (36 mg/kg) is above the SRS (11 mg/kg). The locations where arsenic was detected above the SRS (SB Road 2, SB Road 3, and SB Road 5) were at least 7 feet bgs. The average lead and arsenic concentrations for the SB Road and Shed area (5.2 mg/kg and 8.0 mg/kg, respectively) are lower than the SRS values. Therefore, the SB Road and Shed area is not an area of concern based on the lead and arsenic screening results.

  Overall, the average concentrations for VOCs, arsenic and lead based on the 2009 field screening data are below the SRS.

(2) Exposure to Groundwater and the Potential for Vapor Intrusion

The 1991 baseline risk assessment concluded that the risk posed by the future potential residential use of groundwater from wells installed within the FDDA could exceed the acceptable cancer risk range. Currently, a GMZ exists that is inclusive of the Mottolo property and select surrounding properties. Therefore, current exposure to groundwater within the GMZ is not considered a complete exposure pathway. The focus of the evaluation of additional groundwater data as summarized below is to: (1) evaluate whether or not the GMZ is inclusive enough, or to assess whether or not there is a potential for significant risk via using groundwater as a source of drinking water; and (2) evaluate potential VI pathway.

- Evaluation of Potential Risks via Use of Groundwater as a Potable Source of Water Supply: Residents in areas adjacent to the FDDA formerly utilized groundwater from bedrock wells as tap water and some area residents are currently still using groundwater from bedrock wells as tap water. Groundwater samples have been collected from bedrock wells at residences adjacent to the Mottolo property during this FYR period. Refer to **Table 7** for a summary of detected concentrations within residential wells currently sampled under the residential sampling program, and the Sampling Data Report, April / August / September 2011 and January 2012 (GZA, 2012) for historical detected concentrations in residential supply wells previously sampled.

  VOCs are not of concern for the majority of the adjacent residences. TCE was detected historically above the MCL of 5 µg/L at 31-33 Blueberry Hill Road and 1 Windmere Drive, and no MCL exceedances were detected in any other properties. The most recent monitoring data (2012) at 31-33 Blueberry Hill Road and 1 Windmere Drive indicated no MCL exceedance. It should be noted that 31-33 Blueberry Hill Road and 1 Windmere Drive properties are within the GMZ and currently have municipal water. As a result, the MCL exceedance of groundwater on the properties does not result in significant risks to residents on the properties.

  It should be noted that arsenic and/or uranium exceedances of MCL standards were observed for multiple properties, some of which are outside the GMZ. There is no evidence that these elevated metal levels are related to the Mottolo property. However, these elevated metal levels could potentially pose significant risks to residents. Iron was noted above the National Secondary Drinking Water Standard of 300 µg/L at multiple residences, some of which are outside the groundwater use restriction area.

- Overburden Groundwater Data and Potential VI Pathway: Office of Solid Waste and Emergency Response (OSWER) Directive 9200.2-84 (*Assessing Protectiveness at Sites for Vapor Intrusion: Supplemental Guidance to the Comprehensive Five-Year Review Guidance (EPA 2012d*)) provides a recommended framework for considering VI while evaluating remedy protectiveness in the context of the Superfund FYR process (even if VI was not addressed as part of the original RA).

  Additional groundwater data have been collected from overburden groundwater at the Mottolo property during this FYR period and reviewed relative to the potential for a complete VI pathway to exist. **Table 16** presents a summary of the VOC data in overburden groundwater. As shown in **Table 16**, exceedances of EPA target groundwater concentrations for the VI pathway were noted for 1,1-dichloroethane, TCE, and VC. However, the exceedances occurred within the FDDA (MOT_MO-2S, MOT_MO-3SR, MOT_OW-4SR, and MOT_MW-8S). There is no building currently located within the FDDA; therefore, the VI pathway was not considered a complete pathway under the current Site use conditions. The VI pathway, however, would warrant further evaluation if future buildings were to be constructed in the FDDA.

  Since no exceedances were observed in the overburden wells outside the FDDA near adjacent residences (MOT_MW-21S, MOT_MW-20S, MOT_MW-23S, MOT_MW-12S, MOT_MW-22S, and MOT_MW-101S), the VI pathway was not considered a pathway of concern for the residential areas adjacent to the Mottolo property. Although exceedances of EPA's target groundwater concentrations for the VI pathway were observed in bedrock groundwater in the adjacent residences, this contamination was not considered a concern to indoor air via the VI pathway due to the considerable depth (>100 feet) at which these very low concentrations were found in bedrock.

(3) Review of Impact to Ecological Risk Assessment by Additional Data

The 1991 baseline risk assessment indicated that *"Potential risks to the environment were evaluated in a qualitative fashion due to the relative importance of human receptors compared to environmental receptors at the site."* Site conditions have not changed significantly as far as the ecological habitat on the Mottolo property; however, many more residential houses have been developed adjacent to the Mottolo property.

Recent technical information[7] from EPA highlights the potential for exposure of, and risk to, ecological receptors inhabiting sediment at the groundwater-surface water transition zone where there is discharge of contaminated groundwater. These zones likely exist within the Mottolo property where groundwater discharges to surface water within Brook A. Arsenic has been detected in sediment exceeding the applicable NOAA SQuIRT as recent as 2012. The dimensions of the affected resource areas using field techniques and estimation of ecological exposure levels are important to understanding whether or not the ROD and AROD are protective of the environment in the long term. The Mottolo property is currently protective of the environment, but further evaluation is needed to confirm its long-term protectiveness through an evaluation of the hydrologic regime and contaminant discharge frequency, duration, and magnitude within the transition zone.

7.2.3 Review of Changes in Toxicity Values Used in Human Health Risk Assessment

Changes of toxicity values for the indicator compounds at the Mottolo property are summarized in **Table 11** and briefly discussed in this Section. The following changes would result in elevated risk estimates relative to the 1990 risk results:

- Arsenic, 1,1-DCA, TCE, and VC. No oral reference dose (RfD) values were used in the 1990 risk assessment for these listed indicator compounds. Oral chronic reference dose values are currently available for these indicator compounds either through the EPA Integrated Risk Information System (IRIS) or the Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV) database;
- Ethylbenzene, toluene, and total xylenes. the current RfD values by the IRIS or PPRTV for these indicator compounds are lower than the RfD values used in the 1990 risk assessment; and
- Trichloroethene. the current cancer slope factor (CSF) listed in the IRIS is higher than the CSF value used in the 1990 risk assessment.

However, based on the review of the 1991 risk assessment, the above toxicity changes would not impact the overall risk assessment conclusions. The RI and ROD concluded that cumulative potential cancer risks and hazard indices associated with current and future scenarios for ingestion and dermal contact with on-site sediment, soil, and surface water did not exceed EPA's target risk limits. It is noted however that future ingestion of groundwater from the FDDA would potentially result in cancer risks and hazard indices above the EPA target risk range. None of the toxicity value changes would change the above conclusion.

[7] ECO Update/Ground Water Forum Issue Paper, Evaluating Ground-Water/Surface-Water Transition Zones in Ecological Risk Assessments, Joint Document of the Ecological Risk Assessment Forum and the Ground Water " Forum, United States Environmental Protection Agency, Office of Solid Waste and Emergency Response, Publication 9285.6-17, EPA-540-R-06-072, July 2008.

The other toxicity values are either the same (e.g., oral chronic RfD value for 1,2-DCE did not change since 1990) or less stringent compared to the values presented in the 1990 RI (e.g., oral chronic RfD values for THF and 1,1,1-TCA and oral CSF values for arsenic and VC are less stringent relative to the 1990 values). An oral CSF is not currently available for 1,1-DCA while an oral CSF of 0.091 mg/kg per day was used in the 1991 risk assessment. These changes would result in lower estimated risk results relative to the 1991 risk results.

7.2.4 Review of Changes in Risk Assessment Methods

While performing the review of the 1991 baseline risk assessment, which is the underlying basis for the ROD, certain discrepancies were noted between the risk assessment approach and the current EPA Risk Assessment Guidance for Superfund. The identified discrepancies are summarized below:

- For all impacted media, analytes were excluded from quantitative risk assessment based on background comparison. As a result, the risk results presented in the 1990 RI do not represent cumulative risks by receptors via exposure to all constituents in impacted media; rather, the risk results were representative of incremental risks above background. As an example, the maximum concentrations of several metals (cobalt, iron, and manganese) in groundwater based on the 1990 RI were above the current EPA risk-screening levels for tap water, indicating potential significant risks for potable use. Other metals such as barium, cadmium, and mercury were not included in the risk assessment or monitoring program. Similarly, metals including arsenic were not included in the baseline risk assessment for soil exposure due to comparability to background.
- A construction worker scenario was not evaluated in the 1991 risk assessment for potential exposure to soil, groundwater, surface water, and sediment.

7.2.5 Expected Progress towards Meeting RAOs

Additional data from future sample events will improve the data set and provide a more comprehensive assessment of concentration trends in the groundwater and the effectiveness of NA to meet the RAOs. The restoration timeframe to attain the interim cleanup levels in the ROD as amended may likely take longer than anticipated. A revised cleanup time-frame for ground water needs to be established in the near future based upon future sampling efforts.

7.3 **QUESTION C**: HAS ANY OTHER INFORMATION COME TO LIGHT THAT COULD CALL INTO QUESTION THE PROTECTIVENESS OF THE REMEDY?

YES. The extension of public water supply to certain homes proximate to the Mottolo property is anticipated to result in a change in groundwater pumping, which will influence an alteration in the bedrock groundwater flow dynamic in the area. The historic data set for the Mottolo property and surrounding area has indicated that groundwater flow and contaminant distribution/transport is influenced by groundwater pumping of residential wells. In general, pumping of residential wells surrounding the Mottolo property to the south and west has influenced contaminant migration towards these pumped wells in certain documented cases. The extension of public water supply has resulted in certain wells in the surrounding area being decommissioned and no longer pumped. It is anticipated that the resulting groundwater flow and contaminant migration will be more dominant to the north/northwest, consistent with the general bulk groundwater flow direction in the area.

Groundwater flow in bedrock follows individual fractures with orientations that can be different from the bulk groundwater flow direction. The actual groundwater flow and contaminant migration patterns in bedrock beneath the Mottolo property and surrounding area are complex due to individual fracture orientation and physical attributes but at a large scale, these patterns typically follow a more predictable path that reflects bulk groundwater flow, known fracture trends, and local pumping influences.

Continued groundwater monitoring at the Mottolo property and surrounding area should be used to evaluate changes in groundwater quality in response to the changes in pumping patterns in the vicinity. Consideration should be given to increasing the sampling frequency of certain monitoring points to generate short term data that would provide a relevant time series for analysis relative to the recent changes in residential pumping patterns. The groundwater quality data should be evaluated to specifically consider changes in contaminant migration.

Data collected from future monitoring should be reviewed for comparison with the CSM developed through previous investigations. Additional data from future sample events will allow for: (1) a more comprehensive assessment of concentration trends in the groundwater; (2) provide the information needed to reassess cleanup times; and (3) provide the information necessary to evaluate the effectiveness of NA and the GMZ to meet the RAOs.

7.4 SUMMARY OF THE TECHNICAL ASSESSMENT

In general, the remedy appears to be functioning as intended by the ROD and AROD based on the four years of groundwater monitoring data collected at the Mottolo property and surrounding area since 2008. Extension of the public water supply complies with Federal and State requirements that are applicable or relevant and appropriate and will be: (1) protective of human health and the environment, (2) will be effective in the long-term, and (3) will be a permanent solution by providing a source of clean water to the affected residences. However, the extension of public water supply to certain homes proximate to the Mottolo property is anticipated to result in a change in groundwater pumping, which will influence an alteration in the bedrock groundwater flow dynamic in the area. It is anticipated that the resulting direction of groundwater flow and contaminant migration will be more dominant to the north/northeast, consistent with the general bulk groundwater flow direction in the area. Continued groundwater monitoring at the Mottolo property and surrounding area should be used to further evaluate changes in groundwater quality in response to the changes in pumping patterns. Additional data from future sample events will allow for: (1) a more comprehensive assessment of concentration trends in the groundwater; (2) provide the information needed to reassess cleanup times; and (3) provide the information necessary to continue to evaluate the effectiveness of NA and the GMZ to meet the RAOs.

8.0 ISSUES

This FYR has identified the following issues of concern with respect to the protectiveness of the remedy implemented to date at the Site (refer to **Table 17**).

Table 17. Issues at the Mottolo Pig Farm Superfund Site, Raymond, New Hampshire

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
There is potential uncertainty associated with the future groundwater flow direction from the Mottolo property as groundwater flow and contaminant distribution/transport has historically been influenced by groundwater pumping of residential wells to the south and west. Cessation of pumping at those residential properties now serviced by the municipal water supply service may affect groundwater flow direction.	N	Y
Concentrations of arsenic and VOCs remain above groundwater cleanup goals on the Mottolo property. Based on trends presented in various site documents, it appears that it will take additional time for the groundwater to attain the interim cleanup levels, as specified in the 1991 ROD (especially due to residential well pumping surrounding the Mottolo property).	N	Y
Determine the approximate dimensions and area of sediment in Brook A where ground water discharges to surface water.	N	Y

9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

In response to the issues noted in **Section 8.0** above, recommended actions are listed in **Table 18**:

Table 18: Recommendations and Follow-up Actions for the Mottolo Pig Farm Superfund Site, Raymond, New Hampshire

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness (Y/N)	
					Current	Future
Potential uncertainty with groundwater flow direction and recent cessation of pumping from residential wells towards the south and west of the Mottolo property.	Consider possible expansion of monitoring network and increasing the frequency of monitoring, as well as continue regular monitoring of existing network. Update the conceptual hydrogeologic model for the Site using data collected over the past several years and any new data obtained.	NHDES	EPA	9/30/16	N	Y
Concentrations of arsenic and VOCs remain above groundwater cleanup goals on the Mottolo property. Based on trends presented in various site documents, it appears that it will take additional time for the groundwater to attain the interim cleanup levels, as specified in the 1991 ROD (especially due to residential wells pumping surrounding the Mottolo property).	Perform additional groundwater and geochemical monitoring including appropriate NA parameters to evaluate appropriate cleanup times.	NHDES	EPA	9/30/15	N	Y
Determine the approximate dimensions and area of sediment in Brook A where ground water discharges to surface water.	Perform a hydrologic evaluation within the transition zone between groundwater and surface water in the Brook A vicinity. Review existing data from nearby groundwater monitoring wells relative to appropriate benchmark ecological risk screening values applied to receptor exposures within the ground water – surface water transition zone.	NHDES	EPA	9/30/15	N	Y

10.0 PROTECTIVENESS STATEMENT(S)

The remedy implemented at the Site is currently protective of human health and the environment as envisioned by the 1991 ROD as amended in 2010. However, in order for the remedy to be protective in the long-term, the following actions need to be taken:

- Groundwater monitoring at the Mottolo property and in the surrounding area should be used to evaluate changes in groundwater quality in response to the changes in pumping patterns in the Site vicinity.
- Data collected from future monitoring should be reviewed for comparison with the existing CSM developed through previous investigations. Additional data from future sample events will allow for: (1) a more comprehensive assessment of concentration trends in the groundwater; (2) provide the information needed to reassess cleanup times; and (3) provide the information necessary to evaluate the effectiveness of NA and the GMZ to meet the RAOs; and
- Perform an evaluation of the hydrologic regime within the transition zone between groundwater and surface water in Brook A, review of existing data from nearby groundwater monitoring wells relative to appropriate benchmark ecological risk screening values applied to receptor exposures within the ground water – surface water transition zone.

11.0 NEXT REVIEW

Because the remedy will result in hazardous substances remaining on Site above levels that allow for unlimited use and unrestricted exposure, a review of the Site remedy will continue to be conducted every five years after initiation of RA to ensure that the remedy is, or will be, protective of human health and the environment. The next FYR is scheduled for Fall 2018.

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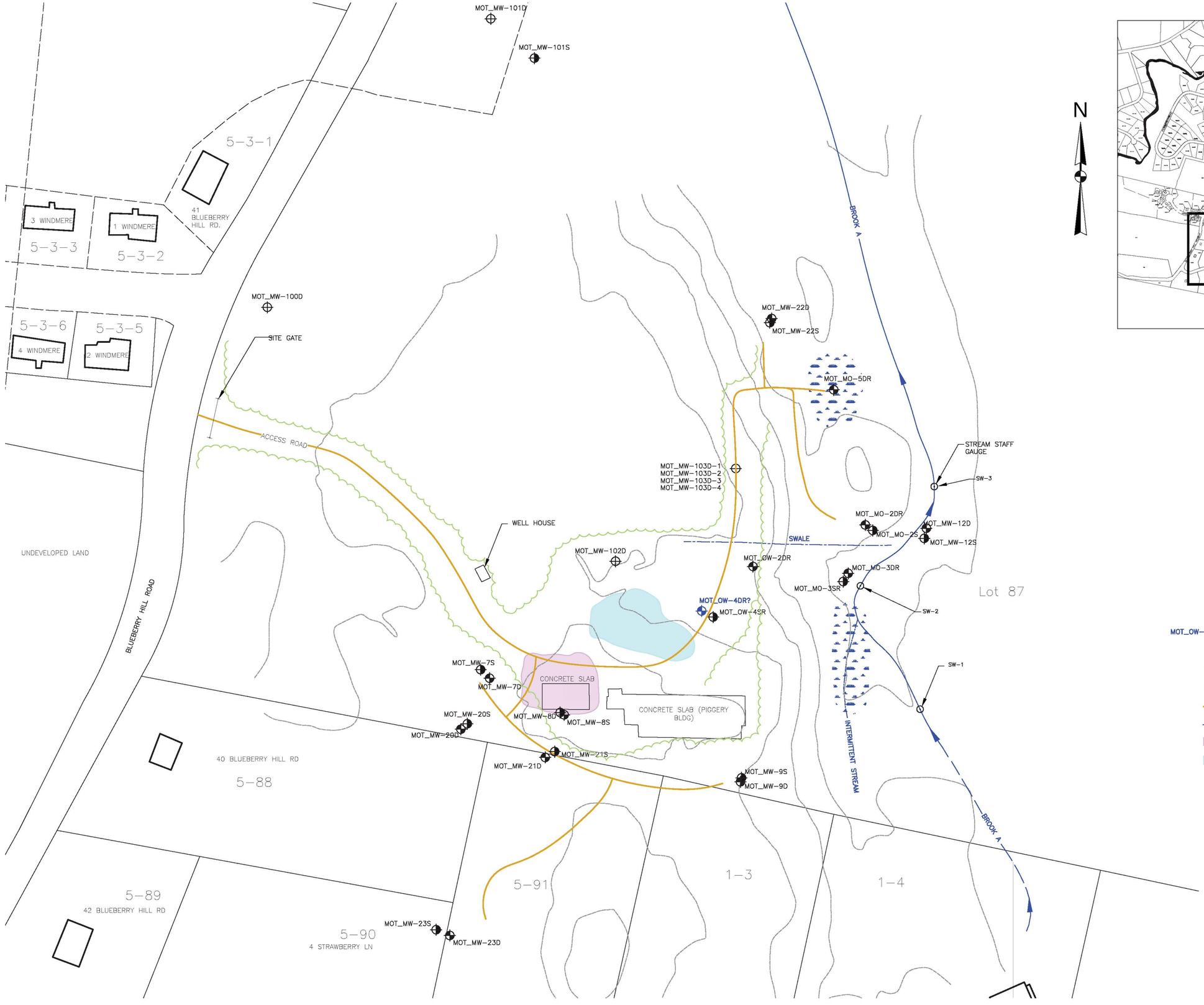
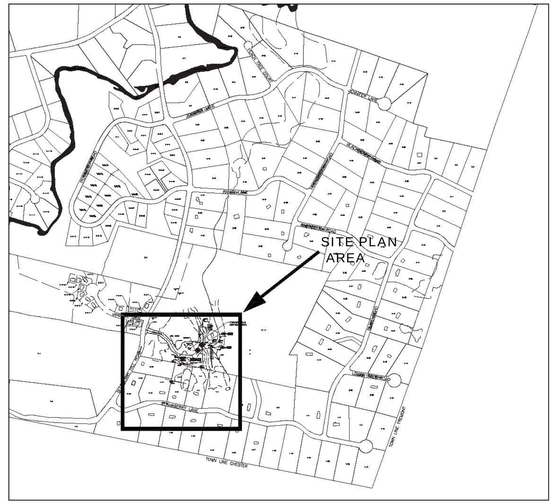
FIGURES





LOCUS PLAN

SCALE: 1" = 800'

NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING No. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) THE LOCATION OF WELL MOT_OW-4DR? WAS DISCOVERED DURING THE SEPTEMBER WATER LEVEL ROUND.THE WELL IS TENTATIVELY IDENTIFIED AS MOT_OW-4DR BASED ON LOCATION AND DESCRIPTION; HOWEVER, THE WELL WAS REPORTED DECOMMISSIONED IN 2000 AND FURTHER INVESTIGATION IS NEEDED.

LEGEND:

- OVERBURDEN MONITORING WELL
- SHALLOW BEDROCK WELL
- DEEP BEDROCK WELL
- MOT_OW-4DR? WELL TENTATIVELY IDENTIFIED AS MOT_OW-4DR
- SURFACE WATER MONITORING LOCATION
- ESTIMATED TREELINE
- VIABLE WETLAND AREAS
- ACCESS PATHS/ROADS
- SWALE
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

N

0 25' 50' 100' 150'

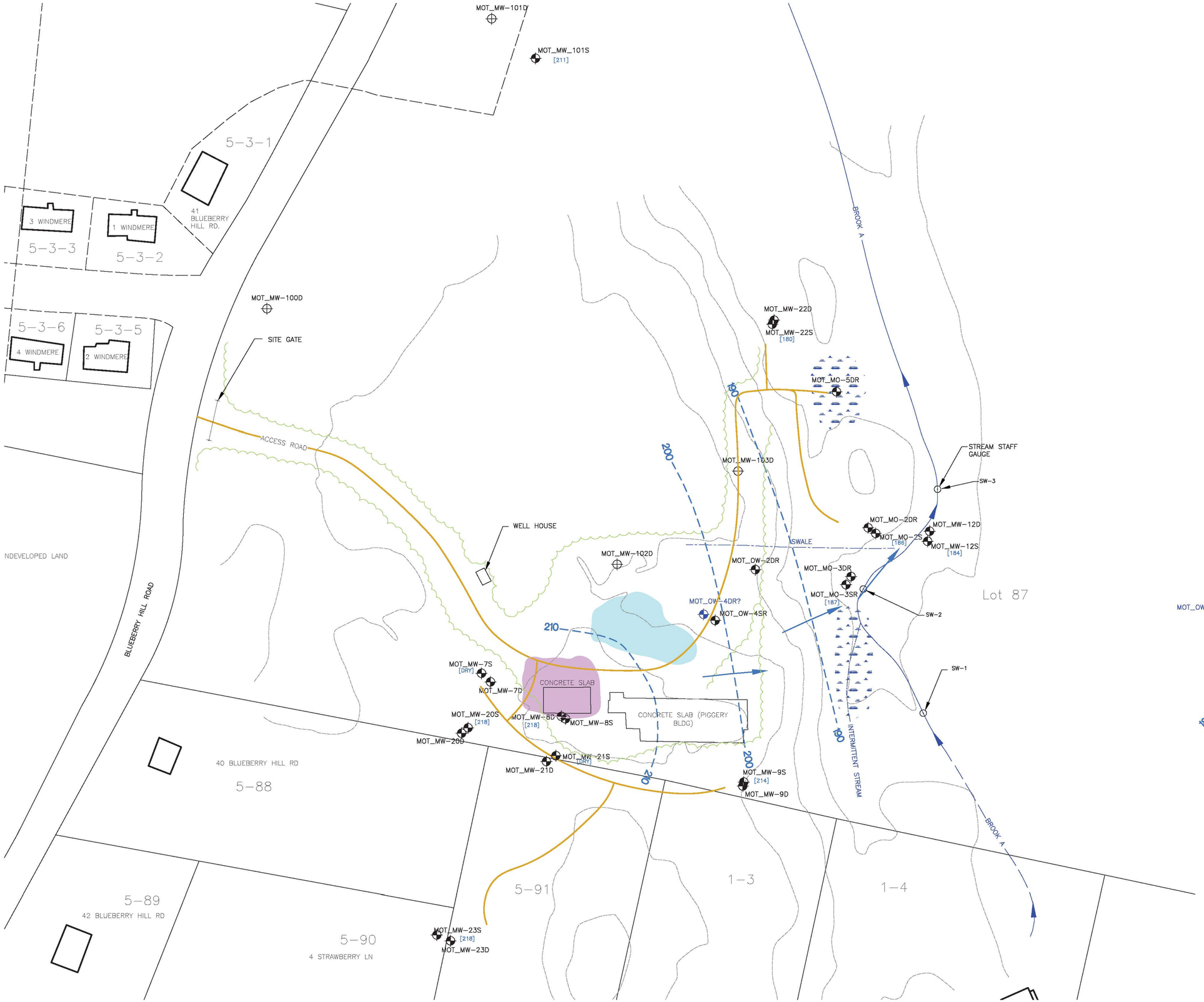
SCALE IN FEET

(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

LOCUS AND SITE PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 380 HARVEY ROAD, MANCHESTER, NEW HAMPSHIRE 03103, (603) 623-3600		PREPARED FOR: NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT	
PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 1
DESIGNED BY: SGL	DRAWN BY: MA	SCALE: EST 1:50'	SHEET NO.
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	



NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING NO. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) ELEVATIONS ARE RELATIVE TO NGVD.

4) GZA NOTES THAT THE GROUNDWATER ELEVATION CONTOURS DEPICTED HERE CONSIDER CURRENT ELEVATION DATA, HISTORIC GROUNDWATER ELEVATION DATA, GROUND SURFACE TOPOGRAPHY, AND THE LOCATION OF SURFACE WATER BODIES. (HISTORIC DATA WERE CONSIDERED WHEN DEVELOPING THE CONTOURS DUE TO THE LIMITED SPATIAL DISTRIBUTION OF GROUNDWATER ELEVATION DATA COLLECTED DURING THE SEPTEMBER 2012 MONITORING ROUND.)

LEGEND:

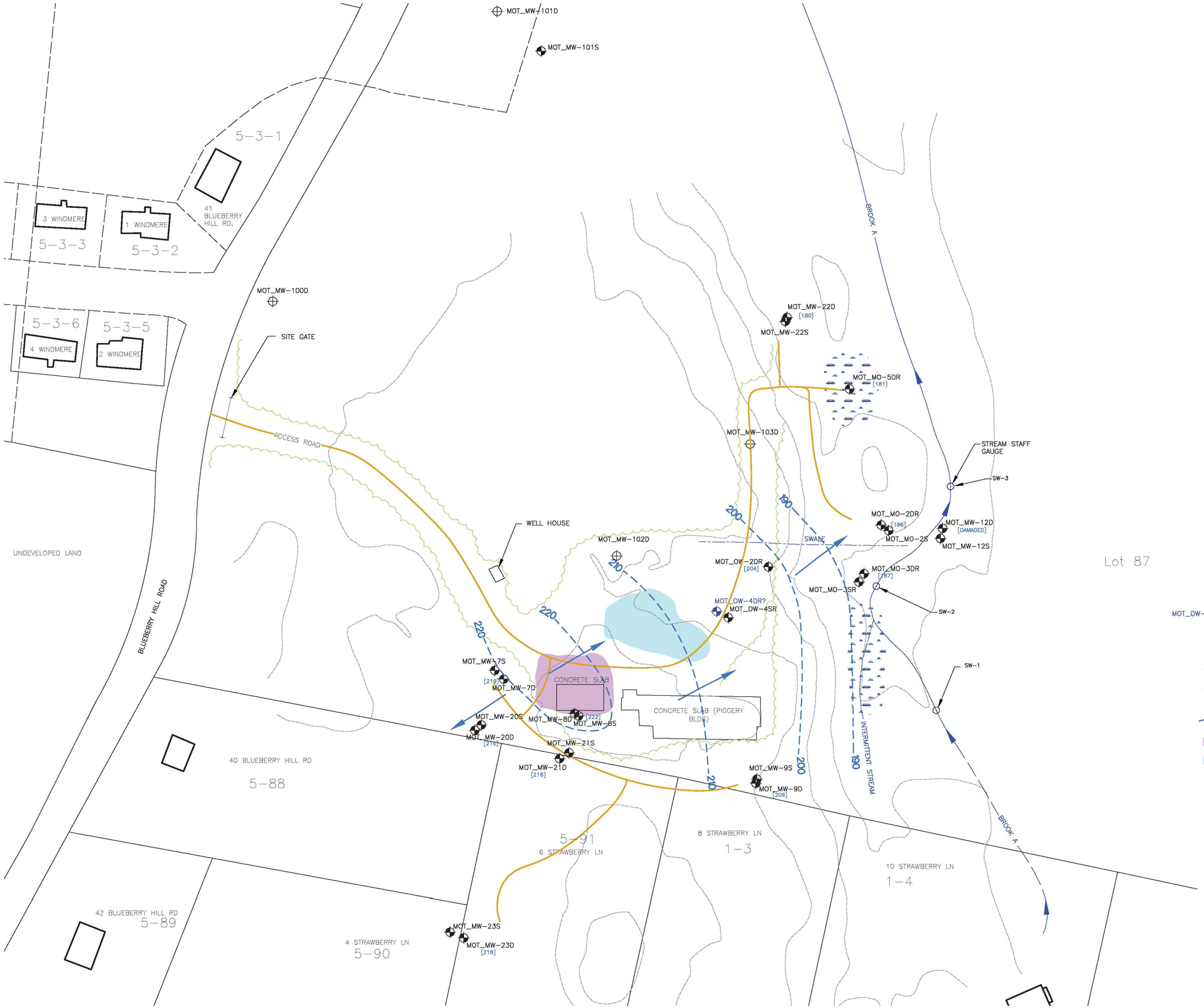
- GROUNDWATER MONITORING WELL
- DEEP BEDROCK WELL
- SURFACE WATER MONITORING LOCATION
- MOT_OW-4DR? WELL TENTATIVELY IDENTIFIED AS MOT_OW-4DR
- ESTIMATED TREELINE
- VIABLE WETLAND AREAS
- ACCESS PATHS/ROADS
- SWALE
- [224] GROUNDWATER ELEVATION AT WELL MEASURED ON SEPTEMBER 19 & 20, 2012 (FEET)
- 185 GROUNDWATER ELEVATION CONTOUR (FEET)
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

ON SITE OVERBURDEN GROUNDWATER ELEVATION CONTOURS SEPTEMBER 2012

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 380 HARVEY ROAD, MANCHESTER, NEW HAMPSHIRE 03103, (603) 623-3600		PREPARED FOR: NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT	
PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 2
DESIGNED BY: JLM	DRAWN BY: JPN	SCALE: EST 1:50'	SHEET NO.
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	



NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING No. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) BEDROCK GROUNDWATER CONTOURS SHOWN ON THIS DRAWING REFLECT THE SHALLOW (≤45 FT) BEDROCK AQUIFER.

4) THE GROUNDWATER CONTOURS AND FLOW ARROWS SHOWN INDICATE THE DIRECTION OF THE AVERAGE BULK GROUNDWATER IN THE SHALLOW BEDROCK. ACTUAL DIRECTION OF FLOW IN BEDROCK IS CONTROLLED BY THE ORIENTATION AND DIP OF INDIVIDUAL FRACTURES UNDER THE INFLUENCE OF HYDRAULIC GRADIENTS. THE ACTUAL DIRECTION OF GROUNDWATER FLOW IN BEDROCK MAY BE DIFFERENT THEN DEPICTED ON THIS PLAN.

5) ELEVATIONS ARE RELATIVE TO NGVD.

6) GZA NOTES THAT THE GROUNDWATER ELEVATION CONTOURS DEPICTED HERE CONSIDER CURRENT ELEVATION DATA, HISTORIC GROUNDWATER ELEVATION DATA, GROUND SURFACE TOPOGRAPHY, AND THE LOCATION OF SURFACE WATER BODIES. (HISTORIC DATA WERE CONSIDERED WHEN DEVELOPING THE CONTOURS DUE TO THE LIMITED SPATIAL DISTRIBUTION OF GROUNDWATER ELEVATION DATA COLLECTED DURING THE SEPTEMBER 2012 MONITORING ROUND.)

LEGEND:

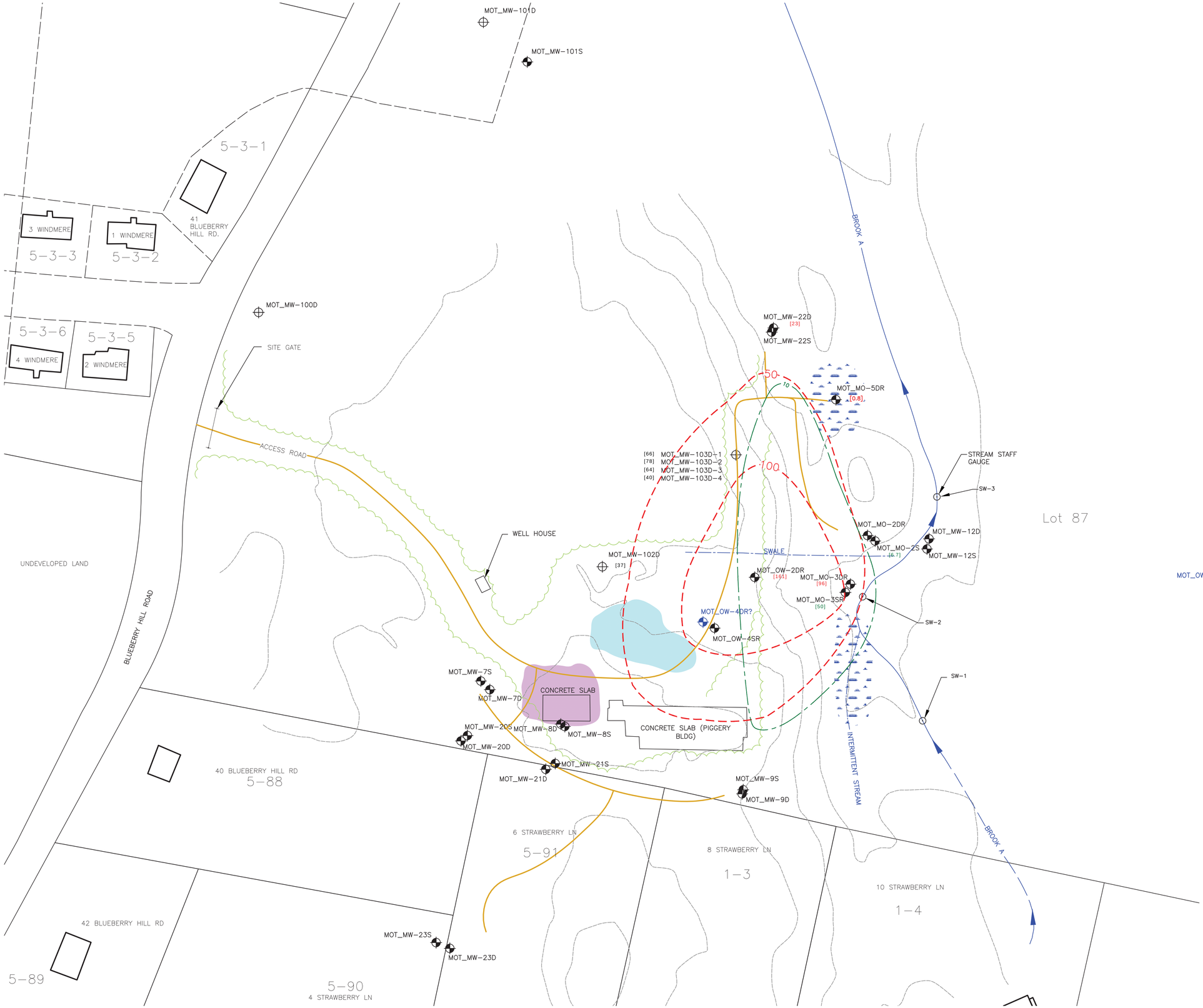
- GROUNDWATER MONITORING WELL
- DEEP BEDROCK WELLS
- SURFACE WATER MONITORING LOCATION
- MOT_OW-4DR? — WELL TENTATIVELY IDENTIFIED AS MOT_OW-4DR
- ESTIMATED TREELINE
- VIABLE WETLAND AREAS
- ACCESS PATHS/ROADS
- SWALE
- [223] — GROUNDWATER ELEVATION AT WELL MEASURED ON SEPTEMBER 19 & 20, 2012 (FEET)
- GROUNDWATER ELEVATION CONTOUR (FEET) SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

ON SITE SHALLOW BEDROCK GROUNDWATER ELEVATION CONTOURS

SEPTEMBER 2012

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 380 HARVEY ROAD, MANCHESTER, NEW HAMPSHIRE 03103, (603) 623-3600		PREPARED FOR: NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT	
PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 3
DESIGNED BY: JLM	DRAWN BY: SBB	SCALE: EST 1:50'	
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.



NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING NO. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) GROUNDWATER SAMPLES COLLECTED DURING THE OCTOBER 2012 GROUNDWATER MONITORING ROUND PERFORMED BY GZA PERSONNEL.

4) TCE CONCENTRATIONS IN BOLD INDICATE AN EXCEEDANCE OF THE ROD ICL LIMIT OF 5 µG/L.

5) FOR CERTAIN MONITORING LOCATIONS, THE OCTOBER 2012 ANALYTICAL DATA ALONE ARE INSUFFICIENT TO CONTOUR CONTAMINANT CONCENTRATIONS IN GROUNDWATER. CONSEQUENTLY, CONTAMINANT CONCENTRATION CONTOURS CONSIDER THE DATA COLLECTED DURING THE OCTOBER 2012 SAMPLING ROUND, AS WELL AS HISTORICAL GROUNDWATER QUALITY DATA AND GZA'S UNDERSTANDING OF SITE HYDROGEOLOGY AND CONTAMINANT DISTRIBUTION. GZA NOTES THAT GIVEN THE NATURE OF ADVECTIVE CONTAMINANT TRANSPORT THROUGH THE SUBSURFACE, PARTICULARLY IN FRACTURED MEDIA, THE CONTAMINANT DISTRIBUTIONS INFERRED BY CONCENTRATION CONTOURS SHOULD BE CONSIDERED ILLUSTRATIVE OF THE BULK DISTRIBUTION OF CONTAMINANTS IN GROUNDWATER. THIS IS BASED ON THE LIMITED CONCENTRATION AND SOURCE DATA AND DIRECTION OF GROUNDWATER FLOW, RATHER THAN AN INDICATION OF THE CONCENTRATION AT A SPECIFIC LOCATION.

6) THE CONCENTRATION CONTOURS PRESENTED ON THIS FIGURE ARE FOR CONCEPTUAL ILLUSTRATION ONLY. CONTAMINANT MIGRATION BENEATH THE SITE FOLLOWS PREFERENTIAL PATHWAYS IN THE OVERBURDEN AND BEDROCK. PREFERENTIAL PATHWAYS IN THE OVERBURDEN INCLUDE ZONES OF HIGHER HYDRAULIC CONDUCTIVITY. PREFERENTIAL PATHWAYS IN THE BEDROCK INCLUDE FLOW ALONG FRACTURES AND JOINTS. THE ACTUAL DISTRIBUTION OF CONTAMINANTS IS ANTICIPATED TO BE MUCH MORE COMPLICATED THAN PRESENTED ON THIS FIGURE.

7) WELLS MOT_MW-102D AND MOT_MW-103D ARE NOT INCLUDED IN THE CONTOURING AS THEY ARE DEEP BEDROCK WELLS.

LEGEND:

- GROUNDWATER MONITORING WELL
- DEEP BEDROCK WELLS
- SURFACE WATER MONITORING LOCATION
- MOT_OW-4DR? WELL TENTATIVELY IDENTIFIED AS MOT_OW-4DR
- ESTIMATED TREELINE
- VIABLE WETLAND AREAS
- ACCESS PATHS/ROADS
- SWALE
- [42] TCE CONCENTRATION IN OVERBURDEN GROUNDWATER (µg/L)
- [42] TCE CONCENTRATION IN SHALLOW BEDROCK GROUNDWATER (µg/L)
- [42] TCE CONCENTRATION IN DEEP BEDROCK GROUNDWATER (µg/L)
- TCE CONCENTRATION CONTOUR IN OVERBURDEN (µg/L)
- TCE CONCENTRATION CONTOUR IN SHALLOW BEDROCK (µg/L)
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

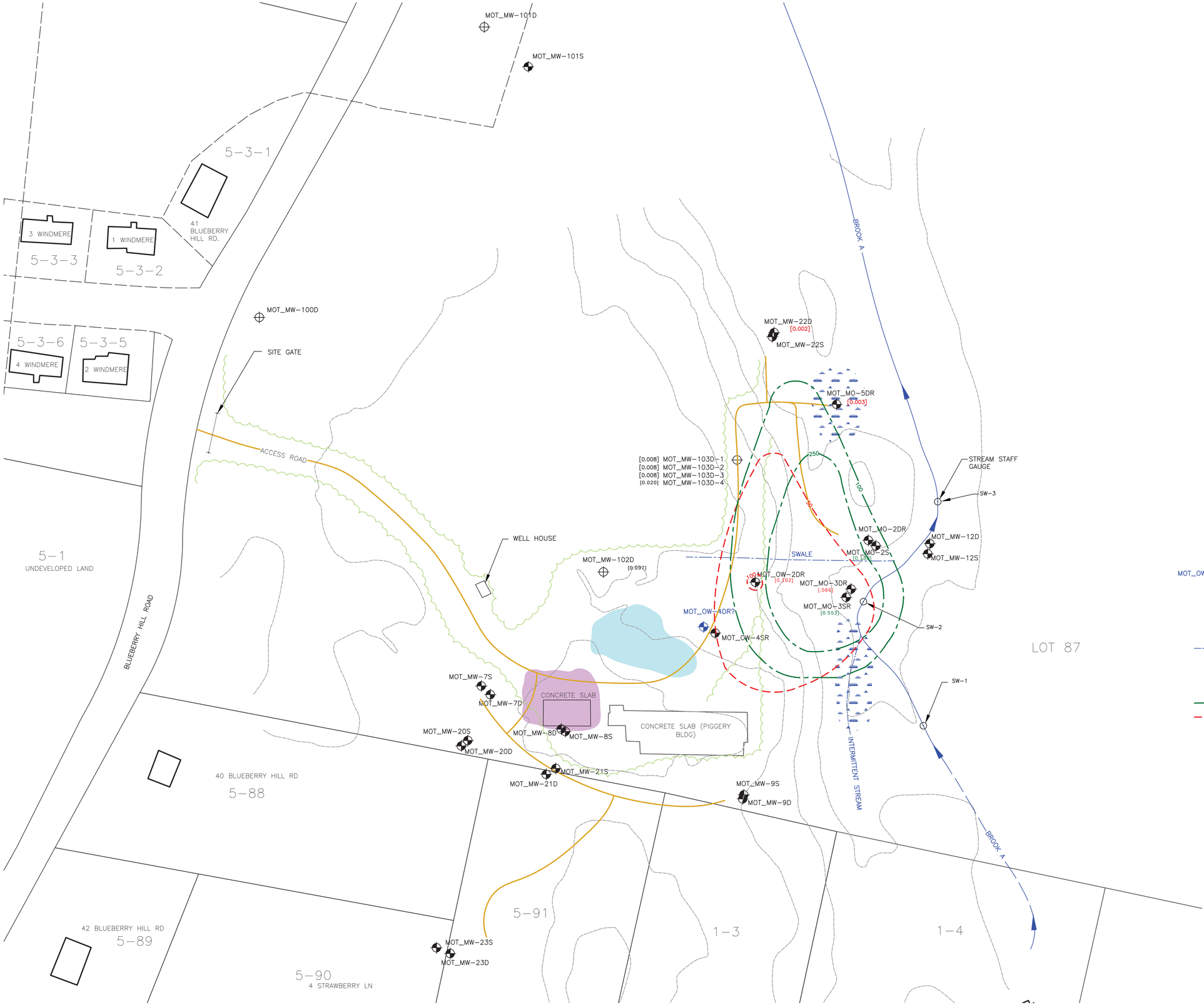
N

0 25' 50' 100' 150'
SCALE IN FEET
(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

ON SITE TCE CONCENTRATION IN GROUNDWATER
OCTOBER 2012

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 380 HARVEY ROAD, MANCHESTER, NEW HAMPSHIRE 03103, (603) 623-3600		PREPARED FOR: NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT	
PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 4
DESIGNED BY: JLM	DRAWN BY: PJH	SCALE: EST 1:50'	
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.



NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING No. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) GROUNDWATER SAMPLES COLLECTED DURING OCTOBER 2012 GROUNDWATER MONITORING ROUND PERFORMED BY GZA PERSONNEL.

4) ARSENIC CONCENTRATIONS IN BOLD INDICATE AN EXCEEDANCE OF THE AGQS/ROD ICL LIMIT OF 0.010 mg/L.

5) FOR CERTAIN MONITORING LOCATIONS, THE OCTOBER 2012 ANALYTICAL DATA ALONE ARE INSUFFICIENT TO CONTOUR CONTAMINANT CONCENTRATIONS IN GROUNDWATER. CONSEQUENTLY, CONTAMINANT CONCENTRATION CONTOURS CONSIDER THE DATA COLLECTED DURING THE OCTOBER 2012 SAMPLING ROUND, AS WELL AS HISTORICAL GROUNDWATER QUALITY DATA AND GZA'S UNDERSTANDING OF SITE HYDROGEOLOGY AND CONTAMINANT DISTRIBUTION. GZA NOTES THAT GIVEN THE NATURE OF ADVECTIVE CONTAMINANT TRANSPORT THROUGH THE SUBSURFACE, PARTICULARLY IN FRACTURED MEDIA, THE CONTAMINANT DISTRIBUTIONS INFERRED BY CONCENTRATION CONTOURS SHOULD BE CONSIDERED ILLUSTRATIVE OF THE BULK DISTRIBUTION OF CONTAMINANTS IN GROUNDWATER. THIS IS BASED ON THE LIMITED CONCENTRATION AND SOURCE DATA AND DIRECTION OF GROUNDWATER FLOW, RATHER THAN AN INDICATION OF THE CONCENTRATION AT A SPECIFIC LOCATION.

6) THE CONCENTRATION CONTOURS PRESENTED ON THIS FIGURE ARE FOR CONCEPTUAL ILLUSTRATION ONLY. CONTAMINANT MIGRATION BENEATH THE SITE FOLLOWS PREFERENTIAL PATHWAYS IN THE OVERBURDEN AND BEDROCK. PREFERENTIAL PATHWAYS IN THE OVERBURDEN INCLUDE ZONES OF HIGHER HYDRAULIC CONDUCTIVITY. PREFERENTIAL PATHWAYS IN THE BEDROCK INCLUDE FLOW ALONG FRACTURES AND JOINTS. THE ACTUAL DISTRIBUTION OF CONTAMINANTS IS ANTICIPATED TO BE MUCH MORE COMPLICATED THAN PRESENTED ON THIS FIGURE.

7) MOT_MW-103D AND MOT_MW-102D ARE NOT INCLUDED IN THE CONTOURING AS THEY ARE DEEP BEDROCK WELLS.

LEGEND:

- GROUNDWATER MONITORING WELL
- DEEP BEDROCK ON-SITE WELLS
- SURFACE WATER MONITORING LOCATION
- MOT_OW-4DR? WELL TENTATIVELY IDENTIFIED AS MOT_OW-4DR
- ESTIMATED TREELINE
- WETLAND AREAS
- ACCESS PATHS/ROADS
- SWALE
- [0.223] ARSENIC CONCENTRATION IN OVERBURDEN GROUNDWATER (mg/L)
- [0.223] ARSENIC CONCENTRATION IN SHALLOW BEDROCK GROUNDWATER (mg/L)
- [0.223] ARSENIC CONCENTRATION IN DEEP BEDROCK GROUNDWATER (mg/L)
- ARSENIC CONCENTRATION CONTOUR IN OVERBURDEN (mg/L)
- ARSENIC CONCENTRATION CONTOUR IN SHALLOW BEDROCK (mg/L)
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

N

0 25' 50' 100' 150'
SCALE IN FEET
(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

ON SITE ARSENIC CONCENTRATION IN GROUNDWATER OCTOBER 2012

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
380 HARVEY ROAD
MANCHESTER, NEW HAMPSHIRE 03103
(603) 623-3600

PREPARED FOR:
NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT

PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 5
DESIGNED BY: JLM	DRAWN BY: PJH	SCALE: EST 1:50'	
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.

PEACH TREE COURT
JENNIFER LANE
PERIMETER ROAD
BLACKBERRY ROAD
HUCKLEBERRY ROAD
RANDY LANE
RASPBERRY ROAD
#1 (5-83)
#26 (5-86)
#16 (5-62)
#31-33 (5-4)
SITE
14 (5-3-7)
WINDMERE DRIVE
41 (5-3-1)
4 (5-3-6)
101D
101S
100D
MOT_MW-103D
MOT_MW-102D
BROOK A
STREAM STAFF GAUGE
BLAKE ROAD
LEMON TREE ROAD
BLUEBERRY HILL ROAD
#40 (5-88)
#6 (5-91)
#8 (1-3)
#10 (1-4)
#16 (1-5)
STRAWBERRY LANE
HANSON ROAD
#48 (1-2)
#9 (1-20)
#11 (1-19)
TOWN LINE FREMONT
TOWN LINE CHESTER
#75 (13-34-35)
#54 (13-34-6)
PARKER ROAD
GREEN ROAD
CROFT LANE
HOLMAN WAY
RAND DRIVE

NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING No. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND:

- RESIDENCES IN THE LONG TERM RESIDENTIAL DRINKING WATER SAMPLING PROGRAM.
- FORMER WATER SUPPLY WELLS USED AS MONITORING WELLS FOR THE MOTTOLO SITE.
- #31-33 STREET/RD NUMBER OR RESIDENTIAL ADDRESS
- (5-4) TAX MAP AND LOT NUMBERS
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

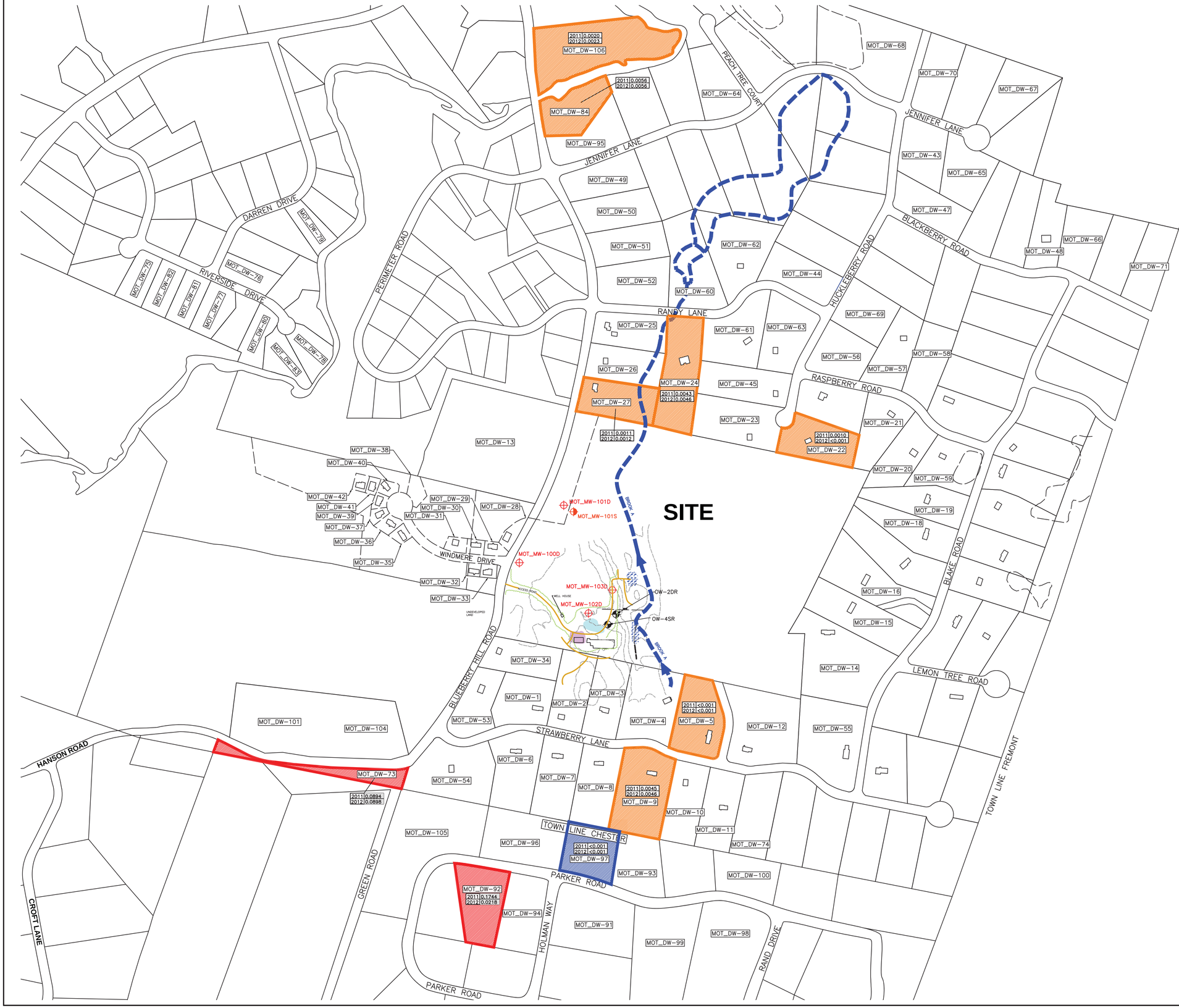
N

0 125 250 500 750
SCALE IN FEET
(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

MOTTOLO RESIDENTIAL SAMPLING PROGRAM

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 380 HARVEY ROAD, MANCHESTER, NEW HAMPSHIRE 03103, (603) 623-3600		PREPARED FOR: New Hampshire Department of Environmental Services, Hazardous Waste Remediation Bureau	
PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 6
DESIGNED BY: ANP	DRAWN BY: SBB	SCALE: EST 1:200'	
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.



NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING No. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS. THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) CONCENTRATION DATA SHOWN IS FROM THE SEPTEMBER 2011 AND OCTOBER 2012 RESIDENTIAL SAMPLING EVENTS FOR THE CURRENT RESIDENTIAL SAMPLING LOCATIONS.

4) MOT_DW-106 (8 BLUEBERRY HILL RD) AND MOT_DW-84 (10 BLUEBERRY HILL RD) WERE SAMPLED DUE TO CONCERN OVER WATER LINE CONSTRUCTION ACTIVITIES, AND NOT AS PART OF THE LONG TERM RESIDENTIAL MONITORING PROGRAM.

N

LEGEND:

- OVERBURDEN ON-SITE WELL
- DEEP BEDROCK ON-SITE WELLS
- OW-4SR — SHALLOW BEDROCK WELLS
- 2011|0.0894 / 2012|0.0898 — ARSENIC CONCENTRATION IN mg/L. GRAY SHADING INDICATES EXCEEDANCE OF AGQS
- TOTAL ARSENIC CONCENTRATION AT THE PROPERTY EXCEEDED THE AGQS (0.010mg/L) SOMETIME DURING THE YEARS 2009/20010/2011/2012.
- DURING THE YEARS 2009/2010/2011/2012.
- TOTAL ARSENIC HAS BEEN DETECTED AT CONCENTRATIONS LOWER THAN THE AGQS SOMETIME TOTAL ARSENIC HAS NOT BEEN DETECTED DURING THE YEARS 2009/2010/2011/2012. THE DETECTION LIMIT FOR ARESENIC UNDER EPA METHOD 200.8 IS 0.001mg/L
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

0 125 250 500 750

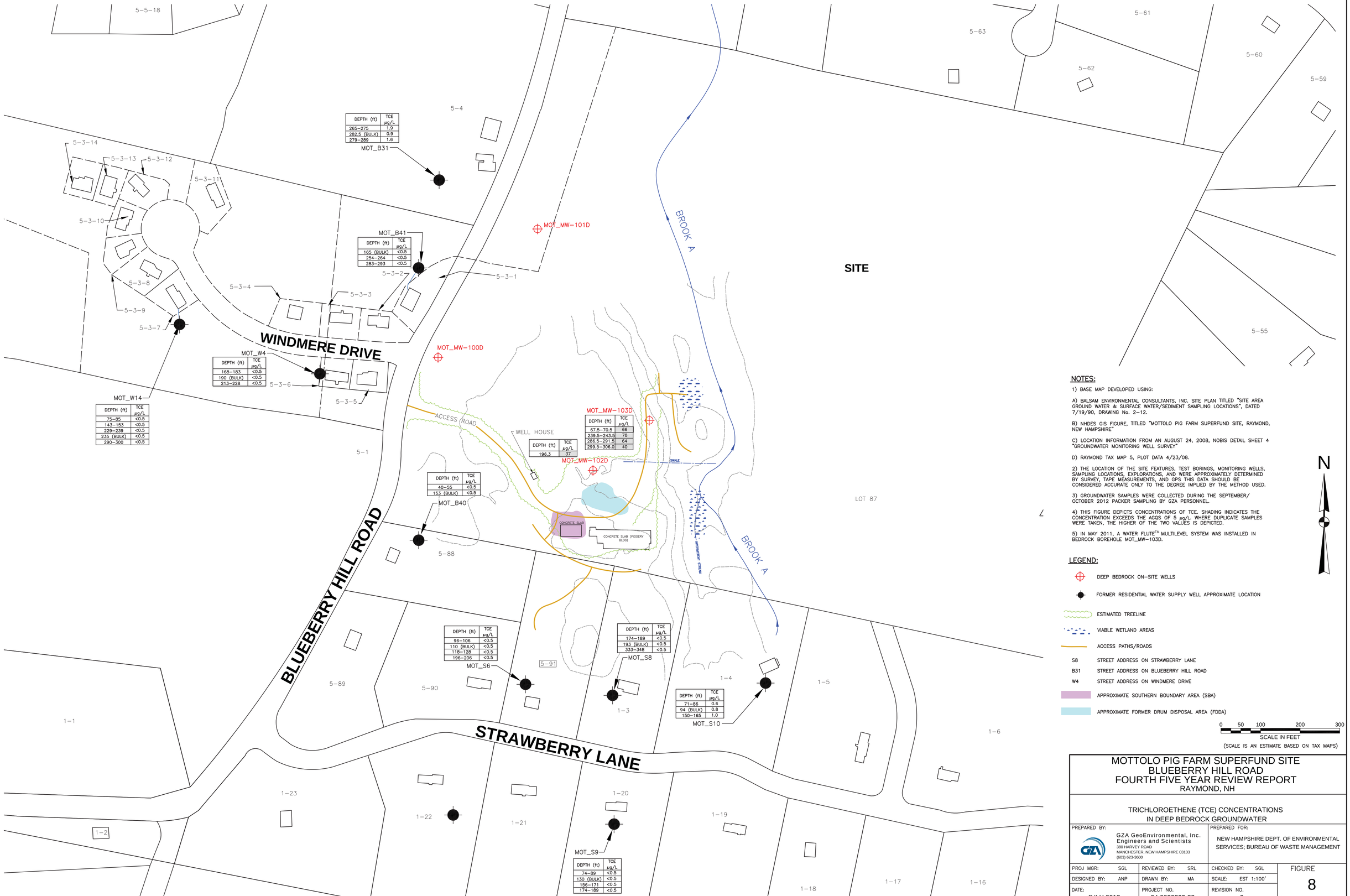
SCALE IN FEET

(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

RESIDENTIAL
ARSENIC CONCENTRATIONS IN GROUNDWATER SUMMARY FOR 2009/2010/2011/2012 SAMPLING EVENTS

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 380 HARVEY ROAD, MANCHESTER, NEW HAMPSHIRE 03103, (603) 623-3600		PREPARED FOR: NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT	
PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 7
DESIGNED BY: ANP	DRAWN BY: MA	SCALE: EST 1:250'	
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.



NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING No. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, AND WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, AND GPS THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) GROUNDWATER SAMPLES WERE COLLECTED DURING THE SEPTEMBER/ OCTOBER 2012 PACKER SAMPLING BY GZA PERSONNEL.

4) THIS FIGURE DEPICTS CONCENTRATIONS OF TCE. SHADING INDICATES THE CONCENTRATION EXCEEDS THE AGQS OF 5 µg/L. WHERE DUPLICATE SAMPLES WERE TAKEN, THE HIGHER OF THE TWO VALUES IS DEPICTED.

5) IN MAY 2011, A WATER FLUTE™ MULTILEVEL SYSTEM WAS INSTALLED IN BEDROCK BOREHOLE MOT_MW-103D.

LEGEND:

- DEEP BEDROCK ON-SITE WELLS
- FORMER RESIDENTIAL WATER SUPPLY WELL APPROXIMATE LOCATION
- ESTIMATED TREELINE
- VIABLE WETLAND AREAS
- ACCESS PATHS/ROADS
- S8 — STREET ADDRESS ON STRAWBERRY LANE
- B31 — STREET ADDRESS ON BLUEBERRY HILL ROAD
- W4 — STREET ADDRESS ON WINDMERE DRIVE
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

N

0 50 100 200 300
SCALE IN FEET
(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

TRICHLOROETHENE (TCE) CONCENTRATIONS
IN DEEP BEDROCK GROUNDWATER

PREPARED BY:
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380 HARVEY ROAD
MANCHESTER, NEW HAMPSHIRE 03103
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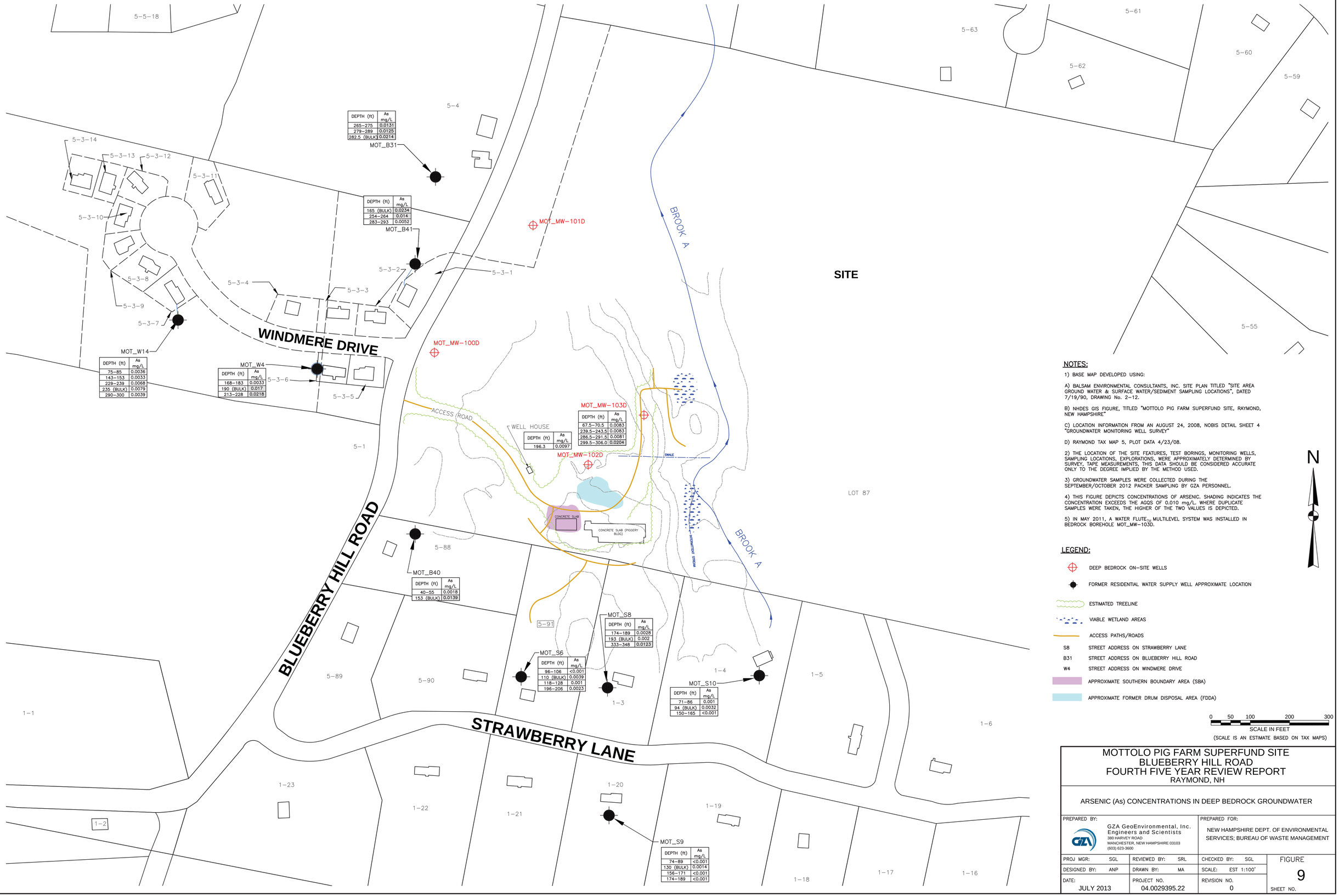
PREPARED FOR:
NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT

PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE
DESIGNED BY: ANP	DRAWN BY: MA	SCALE: EST 1:100'	8
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.



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4) THIS FIGURE DEPICTS CONCENTRATIONS OF ARSENIC. SHADING INDICATES THE CONCENTRATION EXCEEDS THE AOCS OF 0.010 mg/L. WHERE DUPLICATE SAMPLES WERE TAKEN, THE HIGHER OF THE TWO VALUES IS DEPICTED.

5) IN MAY 2011, A WATER FLUTE$_{TM}$ MULTILEVEL SYSTEM WAS INSTALLED IN BEDROCK BOREHOLE MOT_MW–103D.

N

LEGEND:

- DEEP BEDROCK ON–SITE WELLS
- FORMER RESIDENTIAL WATER SUPPLY WELL APPROXIMATE LOCATION
- ESTIMATED TREELINE
- VIABLE WETLAND AREAS
- ACCESS PATHS/ROADS
- S8 STREET ADDRESS ON STRAWBERRY LANE
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- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

0 50 100 200 300
SCALE IN FEET
(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

ARSENIC (As) CONCENTRATIONS IN DEEP BEDROCK GROUNDWATER

PREPARED BY:
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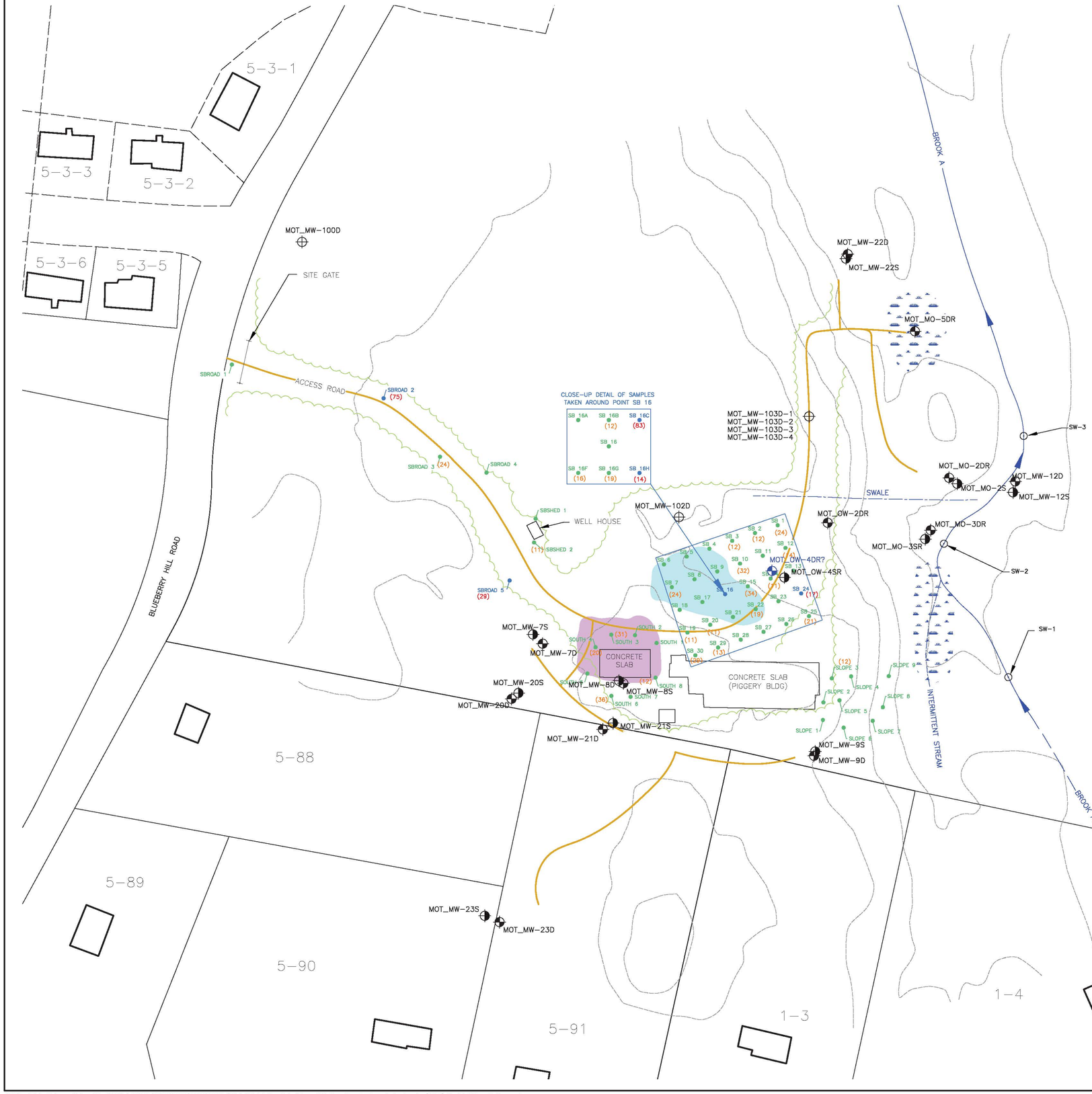
PREPARED FOR:
NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT

PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE	
DESIGNED BY: ANP	DRAWN BY: MA	SCALE: EST 1:100'	9	
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.	



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3) GEOPROBE DATA USED FOR THIS DRAWING WAS THE LABORATORY DATA.

LEGEND:

- GROUNDWATER MONITORING WELL
- SURFACE WATER/SEDIMENT MONITORING LOCATION
- ESTIMATED TREELINE
- WETLAND AREAS
- ACCESS PATHS/ROADS
- SWALE
- 1-5 LOT NUMBER

SB 4	Geoprobe Location with only Field Data generated	
(19)	Arsenic Exceedance Detected by Field Screening	(ppm)
SB 24	Geoprobe Location where sample was analyzed by laboratory	
(17)	Arsenic Exceedance Detected by Laboratory Methods (ppb)	

- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

N

0 25' 50' 100' 150'
SCALE IN FEET
(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

ON SITE EPA GEOPROBE LOCATIONS

OCTOBER 1-8, 2009

PREPARED BY:
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PREPARED FOR:
NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT

PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE
DESIGNED BY: ANP	DRAWN BY: MA	SCALE: EST 1:50'	10
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.

TABLES

note the following tables are <u>embedded</u> in the text of this report and not attached

TABLE 1	SITE CHRONOLOGY
TABLE 4	ESTIMATED ANNUAL SYSTEM OPERATIONS AND MAINTENANCE COSTS
TABLE 5	STATUS OF ISSUES, RECOMMENDATIONS, AND FOLLOW-UP ACTIONS IDENTIFIED IN THE THIRD FYR
TABLE 12	GROUNDWATER INTERIM CLEANUP LEVELS – REVISED
TABLE 17	ISSUES AT THE MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE
TABLE 18	RECOMMENDATIONS AND FOLLOW-UP ACTIONS FOR THE MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE

TABLE 2 - WELL CONSTRUCTION INFORMATION
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well Designation	Well Type [/1] (2-in, 1.5-in etc.)	Measuring Point [/2]	Screened Geologic Unit	Sampling Method	Screen Interval/Open Bore Hole (ft, referenced to measuring point)	Well Screen Length (ft)	Depth to Well Bottom (ft, referenced to measuring point)	Historic Low Water Level [/3] (ft, referenced to measuring point)	Depth of Tubing Intake (ft, referenced to measuring point)	Tubing Intake Distance from Top of Screen (ft, referenced to measuring point)	Distance Between Tubing Intake and Bottom of Well [/4] (ft, referenced to measuring point)
Wells to be Sampled in the Current Monitoring Program to Monitor Groundwater Quality Changes and Natural Attenuation.											
MOT_MW-22D	2-in PVC	PVC	Shallow Bedrock	Low Flow/Peristaltic	18.8-33.8	15	33.8	4.60	26.3	7.5	7.5
MOT_MW-102D	2-in PVC	PVC	Deep Bedrock	Low Flow/Peristaltic	191.34-201.34	10	201.34	9.64	196.34 [/9]	5.0	5.0
MOT_MW-103D-1	Flute - Zone 1	Top pump tube [/7]	Deep Bedrock	Flute	67.52-70.52	3	70.52	N/A	69.02	1.5	1.5
MOT_MW-103D-2	Flute - Zone 2	Top pump tube [/7]	Deep Bedrock	Flute	239.48-243.48	4	243.48	N/A	241.48	2.0	2.0
MOT_MW-103D-3	Flute - Zone 3	Top pump tube [/7]	Deep Bedrock	Flute	286.5-291.5	5	291.5	N/A	289	2.5	2.5
MOT_MW-103D-4	Flute - Zone 4	Top pump tube [/7]	Deep Bedrock	Flute	299.51-306.01	6.5	306.01	N/A	302.76	3.25	3.25
MOT_MO-2S	1 1/2-in PVC	PVC	Overburden	Low Flow/Peristaltic	3.6-8.6	5	8.6	0.85	6.1	2.5	2.5
MOT_MO-3SR	2-in PVC	PVC	Overburden	Low Flow/Peristaltic	6.8-9.3	2.5	9.3	0.52	8.0	1.3	1.3
MOT_MO-3DR	4-in Steel	Steel Riser	Shallow Bedrock	Low Flow/Peristaltic	14.0-24.0 [/5]	---	24.0	0.60	19.0	5.0	5.0
MOT_MO-5DR	3-in Steel	Steel Riser	Shallow Bedrock	Low Flow/Peristaltic	14.9-25.5 [/5]	---	25.5	3.57	20.2	5.3	5.3
MOT_OW-2DR	4-in Steel/2-in PVC	PVC	Shallow Bedrock	Low Flow/Peristaltic	24.9-34.9	10	34.9	5.23	29.9	5.0	5.0
MOT_S6	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	300	N/A	300	N/A	Currently N/A	Currently N/A	Currently N/A
MOT_S8	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	500	N/A	500	N/A	Currently N/A	Currently N/A	Currently N/A
MOT_S9	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	200	N/A	200	N/A	Currently N/A	Currently N/A	Currently N/A
MOT_S10	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	240	N/A	240	N/A	Currently N/A	Currently N/A	Currently N/A
MOT_B31	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	300	N/A	300	N/A	Currently N/A	Currently N/A	Currently N/A
MOT_B40	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	365	N/A	365	N/A	Currently N/A	Currently N/A	Currently N/A
MOT_B41	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	325	N/A	325	N/A	Currently N/A	Currently N/A	Currently N/A
MOT_W4	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	545	N/A	545	N/A	Currently N/A	Currently N/A	Currently N/A
MOT_W14	6-in Steel	bgs	Deep Bedrock	Packer Testing [/10]	305	N/A	305	N/A	Currently N/A	Currently N/A	Currently N/A
Wells With Water Level Measurements Only											
MOT_MW-7S	2-in PVC	PVC	Overburden	Water Levels Only	3.5-5.5	2	5.5	4.51 or Dry	5.0	1.5	0.5
MOT_MW-7D	6-in Steel, no riser	Casing	Shallow Bedrock	Water Levels Only	15.3-26.3 [/5]	---	26.3	9.69	20.8	5.5	5.5
MOT_MW-8S	2-in PVC	PVC	Overburden	Water Levels Only	8.1-18.1	10	18.1	11.68	13.1	5.0	5.0
MOT_MW-8D	6-in Steel, no riser	Casing	Shallow Bedrock	Water Levels Only	21.8-32.8 [/5]	---	32.8	21.94	27.4	5.5	5.5
MOT_MW-9S	2-in PVC	PVC	Overburden	Water Levels Only	1.9-3.9	2	3.9	3.94 or Dry	3.4	1.5	0.5
MOT_MW-9D	4-in Steel	Steel Riser	Shallow Bedrock	Water Levels Only	7.0-17.0 [/5]	---	17.0	12.43	12.0	5.0	5.0
MOT_MW-12S	2-in PVC	PVC	Overburden	Water Levels Only	6.4-12.4	6	12.4	7.25	9.8	3.5	2.6
MOT_MW-12D	4-in Steel	Steel Riser	Shallow Bedrock	Water Levels Only	18.4-28.4 [/5]	---	28.4	flowing	23.4	5.0	5.0
MOT_MW-20S	2-in PVC	PVC	Overburden	Water Levels Only	5.7-10.7	5	10.7	4.90	8.2	2.5	2.5
MOT_MW-20D	2-in PVC	PVC	Shallow Bedrock	Water Levels Only	25.1-45.1	20	45.1	7.15	35.14 [/6]	10.0	10.0
MOT_MW-21S	2-in PVC	PVC	Overburden	Water Levels Only	4.7-7.7	3	7.7	6.35 or Dry	7.0	2.3	0.7
MOT_MW-21D	2-in PVC	PVC	Shallow Bedrock	Water Levels Only	20.5-40.5	20	40.5	12.42	24.2 [/8]	10.0	10.0
MOT_MW-22S	2-in PVC	PVC	Overburden	Water Levels Only	6.4-11.4	5	11.4	5.06	8.9	2.5	2.5
MOT_MW-23S	2-in PVC	PVC	Overburden	Water Levels Only	6.4-11.4	5	11.4	6.00	8.9	2.5	2.5
MOT_MW-23D	2-in PVC	PVC	Shallow Bedrock	Water Levels Only	16.6-31.6	15	31.6	5.99	24.1 [/6]	7.5	7.5
MOT_MO-2DR	3-in Steel	Steel Riser	Shallow Bedrock	Water Levels Only	15.2-26.1 [/5]	---	26.1	2.72	20.7	5.5	5.5

TABLE 2 - WELL CONSTRUCTION INFORMATION
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well Designation	**Well Type** [/1] (2-in, 1.5-in etc.)	**Measuring Point** [/2]	**Screened Geologic Unit**	**Sampling Method**	**Screen Interval/Open Bore Hole** (ft, referenced to measuring point)	**Well Screen Length** (ft)	**Depth to Well Bottom** (ft, referenced to measuring point)	**Historic Low Water Level** [/3] (ft, referenced to measuring point)	**Depth of Tubing Intake** (ft, referenced to measuring point)	**Tubing Intake Distance from Top of Screen** (ft, referenced to measuring point)	**Distance Between Tubing Intake and Bottom of Well** [/4] (ft, referenced to measuring point)
MOT_OW-4SR	2-in PVC	PVC	Overburden	Water Levels Only	7.7-12.7	5	12.7	7.33	10.2	2.5	2.5
MOT_MW-100D	4-in Casing	Casing	Deep Bedrock	Water Levels Only	9.5-350 [/5]	---	350	27.42	25.0	15.5	325.0
MOT_MW-101S	2-in PVC	Casing	Overburden	Water Levels Only	5.1-13.1	8	13.1	12.38	9.1	4.0	4.0
MOT_MW-101D	4-in Casing	Casing	Deep Bedrock	Water Levels Only	20-352.5 [/5]	---	352.5	10.29	316.0	296.0	36.5
MOT_MW-103D	6-in Borehole Casing	Metal Rod [/7]	Deep Bedrock	Water Levels Only	17.0 - 327.5 [/8]	---	327.3	5.94	103.0	86.0	224.3

NOTES:

1. Prior to the May 2001 round all of the wells had a protective standpipe. After the April 2000 round, all of the wells were cut down, with the exception of MOT_MO-5DR, and the standpipes were replaced with road boxes for security purposes. Wells installed in, and after, 2009 all have protective standpipes (MOT_MW-100D, MOT_MW-101S, MOT_MW-101D, MOT_MW-102D and MOT_MW-103D).
2. The reference point is permanently marked on the PVC or inner casing of the monitoring well. In the event there is no inner casing, the water level is measured from the outer steel casing at the location of the hasp, or the metal label on the rim of the flush-mounted wells.
3. The historic low water level refers to the lowest recorded water level measurement between 2001 (after wells were flush mounted) and the present date. Exceptions are MOT_MW-7S MOT_MW-9S, and MOT_MW-21S where the second lowest value was used since the historic low indicates that the wells are periodically dry.
4. The distance between tubing intake and bottom of the well is calculated using the Depth to Well Bottom information.
5. "---" indicates open bedrock borehole.
6. These intake depths were recommended in 2010 based on the results of passive diffusion bag (PDB) sampling on wells with a screen length over 10 feet (MOT_MW-20 and MOT_MW-23D) and historical low water level data. The tubing intake must be adjusted before these wells can be sampled .
7. MOT_MW-103D is a 6-in casing open borehole in which a Water FLUTe™ system was installed. The Water FLUTe™ system consists of four isolated sampling Zones (Zones 1-4). The water/mud level is measured in the borehole (MOT_MW-103D) at the bottom of the black triangle mark on the attached metal rod in the cap. Water Levels are measured in the four separate zones (Zones 1-4) from the top of the pump tube.
8. MOT_MW-21D has a screen length of 20 feet. It also has an obstruction at 24.7 feet which prevents sampling below that depth. This is a low-yielding well. The tubing intake depth is recommended to be set 6 inches above the obstruction and must be adjusted before it is sampled.
9. MOT_MW-102D was sampled in 2011 using PDBs. PDBs were placed in the vicinity of two fractured areas within the borehole. The results of the PDB sampling were used to determined the screened interval. In September 2011 the borehole was completed as a 2-inch PVC monitoring well.
10. These wells are residential water supply which were converted to monitoring wells (open bedrock borehole) in 2012. The depth measurements are from the well logs and are referenced to the ground surface, which existed when the well was constructed.

N/A = Not applicable
bgs = below ground surface

TABLE 3 - GROUNDWATER LEVEL MEASUREMENTS AND ELEVATION DATA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well Designation	Screened Geologic Unit	Measuring Point [1]	Well Depth	Measuring Point Elevation [2]	April 9, 1997		October 28, 1997		April 1, 1998		September 9, 1998		May 10, 1999		May 25, 1999		April 24, 2000		New Well Depth	New Measuring Point Elevation [2]	May 23, 2001	
					DTW (feet)	ELEV. (feet)	DTW (feet)	ELEV. (feet)	DTW (feet)	ELEV. (feet)	DTW (feet)	ELEV. (feet)	DTW (feet)	ELEV. (feet)	DTW (feet)	ELEV. (feet)	DTW (feet)	ELEV. (feet)			DTW (feet)	ELEV. (feet)
MOT_MW-7S	Overburden	PVC	6.7	229.80	4.10	225.70	Dry	Dry	5.14	224.66	Dry	Dry	6.43	223.37	6.77	223.03	2.57	227.23	5.5	228.08	Dry	Dry
MOT_MW-7D	Shallow Bedrock	Casing	28.1	229.90	5.68	224.22	13.58	216.32	5.53	224.37	11.99	217.91	7.58	222.32	8.03	221.87	5.81	224.09	26.3	228.32	5.89	222.43
MOT_MW-8S	Overburden	PVC	19.5	231.47	6.12	225.35	14.80	216.67	6.53	224.94	13.56	217.91	8.49	222.98	8.93	222.54	4.91	226.56	18.1	230.15	7.76	222.39
MOT_MW-8D	Shallow Bedrock	Casing	34.9	232.13	12.35	219.78	12.38	219.75	11.27	220.86	11.15	220.98	11.25	220.88	11.29	220.84	11.53	220.60	32.8	230.25	8.79	221.46
MOT_MW-9S	Overburden	PVC	7.5	221.32	6.17	215.15	Dry	Dry	6.28	215.04	Dry	Dry	-- [3]	-- [3]	Dry	Dry	4.57	216.75	3.9	218.17	Dry	Dry
MOT_MW-9D	Shallow Bedrock	Steel Riser	19.8	221.47	6.07	215.40	16.53	204.94	6.23	215.24	14.54	206.93	-- [3]	-- [3]	8.11	213.36	4.41	217.06	17.0	218.64	5.48	213.16
MOT_MW-12S	Overburden	PVC	15.5	191.24	6.00	185.24	7.32	183.92	5.97	185.27	7.38	183.86	-- [3]	-- [3]	6.01	185.23	5.46	185.78	12.4	188.27	3.55	184.72
MOT_MW-12D	Shallow Bedrock	Steel Riser	31.2	189.63	*Flowing*	*Flowing*	1.58	188.05	*Flowing*	*Flowing*	1.03	188.60	-- [3]	-- [3]	*Flowing*	*Flowing*	*Flowing*	*Flowing*	28.4	186.91	*Flowing*	*Flowing*
MOT_MW-20S	Overburden	PVC	11.2	226.57	4.37	222.20	10.30	216.27	4.61	221.96	9.19	217.38	5.16	221.41	5.04	221.53	3.83	222.74	10.7	223.38	2.33	221.05
MOT_MW-20D	Shallow Bedrock	PVC	45.9	225.27	2.95	222.32	10.72	214.55	3.92	221.35	10.33	214.94	5.95	219.32	5.93	219.34	3.65	221.62	45.1	223.31	5.31	218.00
MOT_MW-21S	Overburden	PVC	10.7	231.48	6.05	225.43	Dry	Dry	6.26	225.22	Dry	Dry	8.85	222.63	12.49	218.99	4.34	227.14	7.7	228.46	6.30	222.16
MOT_MW-21D	Shallow Bedrock	PVC	41.4	231.72	9.29	222.43	17.02	214.70	10.30	221.42	16.91	214.81	12.50	219.22	9.56	222.16	9.99	221.73	40.5	228.17	10.38	217.79
MOT_MW-22S	Overburden	PVC	12.0	-- [2]	2.70	-- [2]	8.93	-- [2]	2.40	-- [2]	7.50	-- [2]	-- [3]	-- [3]	2.91	-- [2]	2.02	-- [2]	11.4	185.05	1.90	183.15
MOT_MW-22D	Shallow Bedrock	PVC	34.5	-- [2]	2.25	-- [2]	9.38	-- [2]	2.96	-- [2]	7.97	-- [2]	-- [3]	-- [3]	3.44	-- [2]	2.61	-- [2]	33.8	184.79	1.69	183.10
MOT_MW-23S	Overburden	PVC	12.0	-- [2]	5.43	-- [2]	10.78	-- [2]	5.76	-- [2]	9.72	-- [2]	-- [3]	-- [3]	5.85	-- [2]	4.82	-- [2]	11.4	224.02	3.84	220.18
MOT_MW-23D	Shallow Bedrock	PVC	32.0	-- [2]	5.34	-- [2]	10.88	-- [2]	5.74	-- [2]	9.83	-- [2]	-- [3]	-- [3]	5.90	-- [2]	4.68	-- [2]	31.6	224.00	3.83	220.17
MOT_MO-2S	Overburden	PVC	10.7	188.65	2.10	186.55	3.22	185.43	2.21	186.44	3.50	185.15	2.60	186.05	2.38	186.27	1.80	186.85	8.6	186.50	0.43	186.07
MOT_MO-2DR	Shallow Bedrock	Steel Riser	28.1	190.11	3.17	186.94	4.42	185.69	2.49	187.62	3.47	186.64	3.20	186.91	3.11	187.00	1.60	188.51	26.1	188.32	1.73	186.59
MOT_MO-3SR	Overburden	PVC	11.4	189.29	1.37	187.92	2.75	186.54	1.43	187.86	2.91	186.38	1.76	187.53	1.71	187.58	1.33	187.96	9.3	187.37	*Flowing*	*Flowing*
MOT_MO-3DR	Shallow Bedrock	Steel Riser	27.3	191.03	1.18	189.85	3.52	187.51	1.40	189.63	4.18	186.85	2.33	188.70	2.33	188.70	1.34	189.69	24.0	188.07	*Flowing*	*Flowing*
MOT_MO-5DR	Shallow Bedrock	Steel Riser	25.5	184.17	2.87	181.30	3.95	180.22	2.76	181.41	4.35	179.82	-- [3]	-- [3]	2.97	181.20	2.56	181.61	25.5	184.25	3.07	181.18
MOT_OW-2DR	Shallow Bedrock	PVC	37.3	211.60	6.60	205.00	11.00	`	5.99	205.61	9.82	201.78	7.56	204.04	7.95	203.65	3.24	208.36	34.9	209.27	4.85	204.42
MOT_OW-4SR	Overburden	PVC	13.3	219.30	8.53	210.77	12.69	206.61	6.11	213.19	11.19	208.11	9.11	210.19	9.68	209.62	2.97	216.33	12.7	218.88	7.33	211.55
MOT_MW-100D	Deep Bedrock	Casing	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	350	239.67	--	--
MOT_MW-101S	Overburden	Casing	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13.1	223.47	--	--
MOT_MW-101D	Deep Bedrock	Casing	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	352.5	222.04	--	--
MOT_MW-102D	Deep Bedrock	Casing	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	222.5	223.42	--	--
MOT_MW-102D [6]	Deep Bedrock	PVC	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	201.3	223.26	--	--
MOT_MW-103D	Deep Bedrock	Casing [5]	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	327.3	220.45	--	--
MOT_MW-103D-1	Deep Bedrock	Top Pump Tube [5]	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	70.5	219.93	--	--
MOT_MW-103D-2	Deep Bedrock	Top Pump Tube [5]	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	243.5	219.97	--	--
MOT_MW-103D-3	Deep Bedrock	Top Pump Tube [5]	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	291.5	219.95	--	--
MOT_MW-103D-4	Deep Bedrock	Top Pump Tube [5]	-- [4]	-- [4]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	306.0	219.94	--	--
Brook A	Staff Gauge [7] at MOT_SW-3		N / A	N / A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	N / A	182.60	--	--

See last page for notes.

TABLE 3 - GROUNDWATER LEVEL MEASUREMENTS AND ELEVATION DATA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well Designation	Screened Geologic Unit	Measuring Point [1]	April 29, 2002		June 5, 2003		May 24, 2004		May 19, 2005		June 14, 2006		May 25, 2007		August 3, 2009		January 7, 2010		May 24, 2010		September 16, 2011		September 19, 2012	
			DTW (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)	**DTW** (feet)	**ELEV.** (feet)
MOT_MW-7S	Overburden	PVC	2.95	225.13	4.14	223.94	2.70	225.38	4.46	223.62	2.99	225.09	3.15	224.93	4.51	223.57	--	--	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*
MOT_MW-7D	Shallow Bedrock	Casing	4.88	223.44	4.86	223.46	4.83	223.49	4.21	224.11	3.72	224.60	4.90	223.42	5.65	222.67	--	--	5.92	222.40	7.70	220.62	9.69	218.63
MOT_MW-8S	Overburden	PVC	5.95	224.20	6.30	223.85	5.93	224.22	6.35	223.80	4.50	225.65	5.07	225.08	6.61	223.54	--	--	7.61	222.54	8.42	221.73	11.68	218.47
MOT_MW-8D	Shallow Bedrock	Casing	7.90	222.35	7.59	222.66	21.94	208.31	17.48	212.77	14.17	216.08	12.85	217.40	10.50	219.75	--	--	10.17	220.08	10.55	219.70	8.38	221.87
MOT_MW-9S	Overburden	PVC	3.26	214.91	Dry	Dry	2.99	215.18	3.94	214.23	2.44	215.73	2.97	215.20	*Dry*	*Dry*	--	--	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*	*Dry*
MOT_MW-9D	Shallow Bedrock	Steel Riser	3.60	215.04	3.45	215.19	3.23	215.41	4.28	214.36	2.83	215.81	3.68	214.96	5.02	213.62	--	--	5.27	213.37	8.02	210.62	12.43	206.21
MOT_MW-12S	Overburden	PVC	2.78	185.49	3.05	185.22	2.49	185.78	7.25	181.02	2.87	185.40	2.82	185.45	3.42	184.85	--	--	3.46	184.81	3.66	184.61	4.22	184.05
MOT_MW-12D	Shallow Bedrock	Steel Riser	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	--	--	*Damaged*	*Damaged*	*Damaged*	*Damaged*	*Damaged*	*Damaged*
MOT_MW-20S	Overburden	PVC	1.16	222.22	1.40	221.98	0.84	222.54	1.51	221.87	1.16	222.22	1.17	222.21	2.10	221.28	--	--	2.17	221.21	3.11	220.27	4.90	218.48
MOT_MW-20D	Shallow Bedrock	PVC	2.68	220.63	3.45	219.86	3.08	220.23	3.07	220.24	3.26	220.05	4.11	219.20	4.95	218.36	--	--	6.07	217.24	6.11	217.20	7.15	216.16
MOT_MW-21S	Overburden	PVC	4.30	224.16	4.80	223.66	3.86	224.60	4.61	223.85	3.13	225.33	3.27	225.19	5.32	223.14	--	--	6.35	222.11	*Dry*	*Dry*	*Dry*	*Dry*
MOT_MW-21D	Shallow Bedrock	PVC	7.62	220.55	8.88	219.29	8.41	219.76	8.00	220.17	8.50	219.67	8.95	219.22	9.95	218.22	--	--	11.24	216.93	11.33	216.84	12.42	215.75
MOT_MW-22S	Overburden	PVC	0.20	184.85	0.33	184.72	*Flowing*	*Flowing*	0.41	184.64	*Flowing*	*Flowing*	*Flowing*	*Flowing*	0.83	184.22	--	--	1.02	184.03	2.29	182.76	5.06	179.99
MOT_MW-22D	Shallow Bedrock	PVC	0.25	184.54	0.17	184.62	*Flowing*	*Flowing*	0.23	184.56	*Flowing*	*Flowing*	*Flowing*	*Flowing*	1.65	183.14	--	--	0.77	184.02	1.93	182.86	4.60	180.19
MOT_MW-23S	Overburden	PVC	3.13	220.89	3.35	220.67	2.68	221.34	3.30	220.72	2.90	221.12	2.93	221.09	3.76	220.26	--	--	3.55	220.47	3.84	220.18	6.00	218.02
MOT_MW-23D	Shallow Bedrock	PVC	3.10	220.90	3.29	220.71	2.50	221.50	3.25	220.75	2.72	221.28	2.75	221.25	3.32	220.68	--	--	3.47	220.53	3.78	220.22	5.99	218.01
MOT_MO-2S	Overburden	PVC	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	--	--	0.10	186.40	0.60	185.90	0.85	185.65
MOT_MO-2DR	Shallow Bedrock	Steel Riser	0.72	187.60	0.67	187.65	0.53	187.79	0.86	187.46	*Flowing*	*Flowing*	0.95	187.37	1.09	187.23	--	--	1.38	186.94	1.70	186.62	2.72	185.60
MOT_MO-3SR	Overburden	PVC	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	--	--	*Flowing*	*Flowing*	*Flowing*	*Flowing*	0.52	186.85
MOT_MO-3DR	Shallow Bedrock	Steel Riser	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	*Flowing*	--	--	0.02	188.05	*Flowing*	*Flowing*	0.60	187.47
MOT_MO-5DR	Shallow Bedrock	Steel Riser	2.74	181.51	2.73	181.52	2.59	181.66	2.79	181.46	2.66	181.59	2.64	181.61	3.15	181.10	--	--	3.01	181.24	3.48	180.77	3.57	180.68
MOT_OW-2DR	Shallow Bedrock	PVC	1.00	208.27	1.44	207.83	0.20	209.07	1.70	207.57	0.26	209.01	0.58	208.69	2.56	206.71	1.31	207.96	2.62	206.65	3.47	205.80	5.23	204.04
MOT_OW-4SR	Overburden	PVC	3.17	215.71	3.66	215.22	2.65	216.23	3.66	215.22	1.21	217.67	2.34	216.54	3.70	215.18	3.50	215.38	5.30	213.58	5.68	213.20	-- [8]	--
MOT_MW-100D	Deep Bedrock	Casing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14.19	225.48	17.92	221.75	26.58	213.09	27.42	212.25
MOT_MW-101S	Overburden	Casing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.90	217.57	6.53	216.94	9.00	214.47	12.38	211.09
MOT_MW-101D	Deep Bedrock	Casing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.36	219.68	4.3	217.74	7.30	214.74	10.29	211.75
MOT_MW-102D	Deep Bedrock	Casing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.06	218.36	7.96	215.46	--	--	--	--
MOT_MW-102D [6]	Deep Bedrock	PVC	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.93	214.33	9.64	213.62
MOT_MW-103D	Deep Bedrock	Casing [5]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5.94	214.51	0.40	220.05	7.60	212.85
MOT_MW-103D-1	Deep Bedrock	Top Pump Tube [5]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.89	210.04	9.75	210.18
MOT_MW-103D-2	Deep Bedrock	Top Pump Tube [5]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	6.89	213.08	7.35	212.62
MOT_MW-103D-3	Deep Bedrock	Top Pump Tube [5]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.11	211.84	6.19	213.76
MOT_MW-103D-4	Deep Bedrock	Top Pump Tube [5]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.02	211.92	6.77	213.17
Brook A	Staff Gauge [7] at MOT_SW-3		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.30	182.90	0.20	182.80	0.16	182.76

See last page for notes.

TABLE 3 - GROUNDWATER LEVEL MEASUREMENTS AND ELEVATION DATA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

NOTES:

1. The reference point is permanently marked on the PVC or inner casing of the monitoring well. In the event there is no inner casing, the water level is measured from the outer steel casing at the location of the hasp, or the metal label on the rim of the flush-mounted wells.
2. After the April 2000 sampling round, the height of the protective casing and risers on all wells except for MOT_MO-5DR were cut to below the ground surface and road boxes were installed. The old elevations of wells MOT_MW-22S, MOT_MW-22D, MOT_MW-23S, and MOT_MW-23D cannot be located; it is uncertain whether they were ever surveyed.
3. Water level information collected on May 10, 1999 was lost at wells MOT_MW-9S, MOT_MW-9D, MOT_MW-12S, MOT_MW-12D, MOT_MW-22S, MOT_MW-22D, MOT_MW-23S, MOT_MW-23D, and MOT_MO-5DR. Another complete round of water levels was collected on May 25, 1999.
4. Wells MOT_MW-100D, MOT_MW-101S, MOT_MW-101D, and MOT_MW-102D were installed in the winter of 2009-2010. Well MOT_MW-103D was installed in the spring of 2010.
5. MOT_MW-103D was a 6-inch casing open borehole well converted in 2011 to the Water FLUTe™ system, with 4 sections sealed off from one another as separate Zones (Zones 1-4). Depth to water measurements after 2011 represent the water/mud level measured in the borehole (MOT_MW-103D) at the bottom of the black triangle mark on the attached metal rod in the cap. Zone water level measurements are obtained from the high point of each of the pump tubes.
6. MOT_MW-102D was a 6-inch casing open borehole well converted to a 2-inch PVC well. As of September 2011, depth-to-water measurements are made from the top of PVC.
7. A staff gauge is permanently installed in Brook A at MOT_SW-3. The measuring point elevation refers to the elevation at the zero foot mark at the base of the staff gauge.
8. A water level measurement was not collected from MOT_OW-4SR during the September 2012 comprehensive water level round because it had been buried during Site regrading. The well has since been uncovered.
9. The water/mud level in MOT_MW-103D was observed in September 2012 to have dropped approximately 7 feet from the 2011 measurement. A conversation with FLUTe™ indicated that the water/mud drop was possibly due to settlement of the mud in the borehole or depressed groundwater conditions. Three gallons of spring water were added to the system.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MO-2S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	**11.0**	**9.8**	**4.7**	**4.8**	**20.0**	**24.0**	**68.0**	**120.0**	**60.0**	**34.0**	ND	**2.2**	ND	**3.5**	**4.3**	**4.4**	**0.8**
cis-1,2-Dichloroethene	70	70	ND	**18**	**2.5**	**5.1**	**25.0**	**39.0**	**15.0**	**10.0**	**14.0**	**9.9**	ND	ND	ND	**8.7**	**16**	**26**	**4.8**
trans-1,2-Dichloroethene	100	70	**5.5**	**8.7**	**3.9**	**4.6**	**4.4**	**2.9**	**2.3**	**2.7**	ND	**2.2**	ND	ND	ND	<2.0	**2.0**	**2.9**	**0.6**
Tetrahydrofuran(THF)	154	154	**59**	**53**	**25**	**29**	**42**	ND	**38**	**54**	**50**	**55**	ND	ND	ND	**20**	**30**	**50**	<10.0
Trichloroethene	5	5	**13.0**	**10.0**	**8.1**	**5.8**	**25.0**	**31.0**	**7.0**	**4.6**	**8.6**	**7.0**	ND	ND	ND	**19.0**	**36**	**38**	**6.7**
Vinyl Chloride	2	2	**2.0**	**7.7**	ND	ND	**14.0**	**21.0**	**6.7**	**2.6**	**5.0**	ND	ND	ND	ND	<2.0	**3.8**	**5.0**	<0.50
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	<0.5	<0.50
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	<0.5	<0.50
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	<0.5	<0.50
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	< 10	<10	<10
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	<0.5	<0.50
Chloroethane	na	na	ND	ND	ND	ND	ND	**3.9**	**3.8**	**6.4**	**6.8**	**5.4**	ND	ND	ND	<2.0	< 0.5	< 0.5	<0.50
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	< 0.5	<0.50
Total VOCs (µg/L)	na	na	**91**	**107**	**44**	**49**	**130**	**122**	**141**	**200**	**144**	**114**	ND	**2**	ND	**51**	**92**	**126**	**13**
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	< 2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*	**0.105**	**0.424**	**0.173**	**0.452**	**0.391**	**0.253**	**0.303**	**0.434**	**0.347**	**0.416**	**0.287**	**0.056**	**0.225**	**0.102**	**0.163**	**0.233**	**0.1295**
Additional Metals (mg/L)																			
Calcium	na	na	*Not sampled prior to August 2009*													*ns*	**17.1**	*ns*	*ns*
Iron	na	na														**5.84**	**6.06**	*ns*	*ns*
Magnesium	na	na														*ns*	**3.16**	*ns*	*ns*
Manganese	0.84	na														*ns*	**2.04**	*ns*	*ns*
Sodium	na	na														*ns*	**6.07**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na	*Not sampled prior to August 2009*													**41**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**80**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.064**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.510**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**59.3**	**62.5**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**11**	**12.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.4**	**1.3**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na	***It should be noted that field parameters were collected by NHDES during these years, unless a modifed low flow method was used, and are available in the reports.***													**6.4**	**7.1**	**6.6**	*ns*
ORP (mV)	na	na														**52**	**-10**	**-53**	*ns*
Specfic Conductance (µS/cm)	na	na														**137**	**162**	**220**	*ns*
Dissolved Oxygen (mg/L)	na	na														**1.4**	**0.7**	**0.7**	*ns*
Turbidity (ntu)	na	na														**3**	< 5	<5	*ns*
Temperature (°C)	na	na														**15**	**10**	**13**	*ns*
Ferrous Iron (mg/L)	na	na	*Not sampled prior to August 2009*													**3.58**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MO-2DR Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	Aug-09 DUP	May-10	May-10 DUP	Sep-11	Oct-12
VOCs of Concern (µg/L)																					
1,1-Dichloroethane	81	81	**12**	**10**	**3.3**	**12**	**17**	**9.1**	**21**	**40**	**33**	**25**	**4**	ND	ND	**3.5**	**3.6**	**0.9**	**0.9**	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	**93**	ND	**95**	**11**	**10**	**8.6**	**12**	**11**	**11**	**2.6**	ND	**3.1**	**35**	**37**	**5.1**	**4.8**	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	**4.3**	**5.1**	ND	**5.8**	**4.4**	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<0.5	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	**65**	**130**	**17**	**200**	**130**	ND	**51**	**27**	**60**	**71**	ND	ND	ND	**20**	**21**	< 10	<10	*ns*	*ns*
Trichloroethene	5	5	**6.6**	**23**	**2.2**	**20**	**7.7**	**10**	**3.8**	**5.1**	**3.6**	**4.4**	ND	ND	**3.2**	**17**	**18**	**4.3**	**4.0**	*ns*	*ns*
Vinyl Chloride	2	2	ND	**8.7**	ND	**6.7**	**4.6**	**3.3**	**2.6**	ND	**2.7**	**3.3**	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																					
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	< 10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	2.2	2.1	3.2	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	**88**	**270**	**23**	**340**	**175**	**32**	**87**	**86**	**112**	**118**	**7**	ND	**6**	**76**	**80**	**10**	**10**	*ns*	*ns*
1,4-Dioxane (µg/L)																					
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	< 2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																					
Total Arsenic	0.01	0.01*	**0.020**	**0.042**	< 0.010	**0.0097**	**0.023**	**0.002**	**0.002**	**0.005**	**0.005**	**0.007**	**0.004**	**0.046**	**0.020**	**0.001**	**0.001**	**0.012**	**0.010**	*ns*	*ns*
Additional Metals (mg/L)																					
Calcium	na	na	*Not sampled prior to August 2009*													*ns*	*ns*	**7.67**	**8.41**	*ns*	*ns*
Iron	na	na														**3.19**	**2.97**	**13.2**	**11.7**	*ns*	*ns*
Magnesium	na	na														*ns*	*ns*	**1.65**	**1.79**	*ns*	*ns*
Manganese	0.84	na														*ns*	*ns*	**0.128**	**0.119**	*ns*	*ns*
Sodium	na	na														*ns*	*ns*	**3.39**	**3.56**	*ns*	*ns*
NA - Laboratory																					
Carbon Dioxide (mg/L)	na	na	*Not sampled prior to August 2009*													**18**	**18**	*ns*	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**85**	**100**	*ns*	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.130**	**0.140**	*ns*	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.400**	**0.430**	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**46.2**	**46.7**	**31.9**	**32.3**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	< 3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	*ns*	< 1.0	**1.2**	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**9.3**	**9.4**	**6.9**	**7.1**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.7**	**1.0**	**0.54**	**0.51**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														<0.20	<0.20	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	*ns*	< 0.050	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	*ns*	< 0.050	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	*ns*	< 0.050	<0.050	*ns*	*ns*
Volatile Fatty Acids																					
Acetic acid (mg/L)	na	na														<1.0	<1.0	*ns*	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	<1.0	*ns*	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	<25.0	*ns*	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	<1.0	*ns*	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	<10	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																					
pH (SU)	na	na	***It should be noted that field parameters were collected by NHDES during these years, unless a modifed low flow method was used, and are available in the reports.***													**6.9**	*ns*	**7**	*ns*	*ns*	*ns*
ORP (mV)	na	na														**-33**	*ns*	**-119**	*ns*	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														**128**	*ns*	**78**	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na														**1.1**	*ns*	< 0.5	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na														**13**	*ns*	**143**	*ns*	*ns*	*ns*
Temperature (°C)	na	na														**14**	*ns*	**11**	*ns*	*ns*	*ns*
Ferrous Iron (mg/L)	na	na	*Not sampled prior to August 2009*													**1.84**	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID	NH AGQS	ROD ICL	MOT_MO-3SR																			
Geological Unit of Well Screen			Overburden																			
Sampling Event Date			Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	Aug-09 DUP	May-10	May-10 DUP	Sep-11	Sep-11 DUP	Oct-12	Oct-12 DUP
VOCs of Concern (µg/L)																							
1,1-Dichloroethane	81	81	**3.5**	ND	**3.7**	**4**	**5.1**	**11**	**7.2**	**16**	**36**	**38**	**28**	**12**	**10**	**11**	**11**	**11**	**11**	**5.9**	**5.8**	**13**	**12**
cis-1,2-Dichloroethene	70	70	ND	**8.8**	**27**	**15**	**17**	**32**	**14**	**6.7**	**20**	**26**	**30**	**33**	**44**	**29**	**29**	**45**	**44**	**24**	**24**	**26**	**28**
trans-1,2-Dichloroethene	100	70	**6.4**	**2.3**	**4.6**	ND	ND	**4.1**	**2.7**	ND	**3.3**	**3.4**	**2.5**	ND	**3.4**	**2.6**	**2.6**	**3.9**	**3.6**	**2.3**	**2.3**	**2.3**	**2.1**
Tetrahydrofuran(THF)	154	154	**34**	ND	**34**	ND	**20**	ND	**18**	**15**	**24**	**20**	**15**	ND	ND	<10	<10	< 10	<10	<10	<10	<10.0	<10.0
Trichloroethene	5	5	**18**	**28**	**13**	**46**	**9.5**	**21**	**7**	**2.8**	**12**	**16**	**25**	**24**	**29**	**42**	**42**	**57**	**58**	**46**	**45**	**49**	**50**
Vinyl Chloride	2	2	**8**	ND	**7.8**	**3.6**	**4.4**	**13**	**4.9**	**2.2**	**10**	**14**	**18**	**15**	**22**	**18**	**19**	**22**	**22**	**15**	**14**	**11**	**11**
1,1,1-Trichloroethane	200	200	ND	ND	ND	**2**	**2.1**	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Additional VOCs (µg/L)																							
Acetone	6,000	na	ND	ND	ND	**11**	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	< 10	<10	<10	<10	<10.0	<10.0
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.1**	**7**	**4**	**4.0**	**3.9**	**3.9**	**2.4**	**2.3**	**2.7**	**2.6**	**3.4**	**3.3**
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**2.5**	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Total VOCs (µg/L)	na	na	**70**	**39**	**90**	**82**	**58**	**81**	**54**	**43**	**105**	**127**	**126**	**91**	**112**	**107**	**108**	**141**	**141**	**96**	**94**	**105**	**106**
1,4-Dioxane (µg/L)																							
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	< 2.0	<2.0	*ns*	*ns*	*ns*	*ns*
Metals of Concern (mg/L)																							
Total Arsenic	0.01	0.01*	**0.341**	**0.437**	**0.360**	**0.457**	**0.349**	**0.264**	**0.531**	**0.600**	**0.782**	**0.598**	**1.050**	**0.648**	**0.940**	**0.591**	**0.579**	**0.597**	**0.590**	**0.592**	**0.588**	**0.5465**	**0.5528**
Additional Metals (mg/L)																							
Calcium	na	na	*Not sampled prior to August 2009*													*ns*	*ns*	< 10.0	<10.0	*ns*	*ns*	*ns*	*ns*
Iron	na	na														**35.0**	**35.0**	**38.3**	**37.8**	*ns*	*ns*	*ns*	*ns*
Magnesium	na	na														*ns*	*ns*	< 1.00	<1.00	*ns*	*ns*	*ns*	*ns*
Manganese	0.84	na														*ns*	*ns*	**5.47**	**5.51**	*ns*	*ns*	*ns*	*ns*
Sodium	na	na														*ns*	*ns*	< 10.0	<10.0	*ns*	*ns*	*ns*	*ns*
NA - Laboratory																							
Carbon Dioxide (mg/L)	na	na	*Not sampled prior to August 2009*													**69**	**63**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**72**	**73**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.078**	**0.260**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**6.900**	**7.100**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**72.3**	**72.8**	**85.3**	**86.3**	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	< 3.0	<3.0	*ns*	*ns*	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	*ns*	< 1.0	<1.0	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**18**	**18**	**19**	**19**	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**5.7**	**3.5**	**2.1**	**2.1**	*ns*	*ns*	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														**0.45**	**0.48**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	*ns*	< 0.050	<0.050	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	*ns*	< 0.050	<0.050	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	*ns*	< 0.050	<0.050	*ns*	*ns*	*ns*	*ns*
Volatile Fatty Acids																							*ns*
Acetic acid (mg/L)	na	na														<1.0	<1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	<1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	<25.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	<1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	<10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																							
pH (SU)	na	na	***It should be noted that field parameters were collected by NHDES during these years, unless a modifed low flow method was used, and are available in the reports.***													**6.8**	*ns*	**7.2**	*ns*	**6.6**	*ns*	**6.7**	*ns*
ORP (mV)	na	na														**-88**	*ns*	**-91**	*ns*	**-77**	*ns*	**-74**	*ns*
Specfic Conductance (µS/cm)	na	na														**276**	*ns*	**263**	*ns*	**260**	*ns*	**273**	*ns*
Dissolved Oxygen (mg/L)	na	na														**0.9**	*ns*	**0.6**	*ns*	**0.6**	*ns*	**0.8**	*ns*
Turbidity (ntu)	na	na														**26**	*ns*	**35**	*ns*	<5	*ns*	**7**	*ns*
Temperature (°C)	na	na														**16**	*ns*	**11**	*ns*	**13**	*ns*	**13**	*ns*
Ferrous Iron (mg/L)	na	na	*Not sampled prior to August 2009*													**14.0**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														<0.3	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MO-3DR Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	**6.8**	**13**	**7**	**11**	ND	ND	**8.4**	**14**	**16**	**24**	**19**	**12**	**8.4**	<10	**5.2**	**6**	**3.8**
cis-1,2-Dichloroethene	70	70	ND	**380**	**320**	**410**	**360**	**240**	**320**	**290**	**208**	**290**	**278**	**191**	**182**	**166**	**164**	**212**	**167**
trans-1,2-Dichloroethene	100	70	**67**	**82**	**89**	**94**	**83**	**59**	**80**	**68**	**42**	**61**	**54**	**37**	**36**	**42**	**35**	**42**	**31**
Tetrahydrofuran(THF)	154	154	**200**	**220**	**170**	**290**	**250**	ND	**150**	**144**	**109**	**134**	**108**	**93**	**76**	**69**	**72**	**86**	**65**
Trichloroethene	5	5	**110**	**130**	**150**	**120**	**120**	**100**	**140**	**110**	**89**	**92**	**103**	**69**	**58**	**67**	**84**	**113**	**96**
Vinyl Chloride	2	2	**48**	**100**	**57**	**74**	**67**	**41**	**67**	**69**	**44**	**63**	**51**	**30**	**25**	**22**	**19**	**30**	**15**
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	< 2.5	<2.5	<2.5
Ethylbenzene	700	700	ND	**7.8**	**7.5**	**6.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	< 2.5	<2.5	<2.5
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	< 2.5	<2.5	<2.5
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<50	< 50	<50	<50.0
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	< 2.5	<2.5	<2.5
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	< 2.5	<2.5	<2.5
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 2.5	<2.5	<2.5
Total VOCs (µg/L)	na	na	**432**	**933**	**801**	**1005**	**880**	**440**	**765**	**695**	**508**	**664**	**613**	**432**	**385**	**366**	**379**	**489**	**378**
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	< 2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*	**0.232**	**0.140**	**0.077**	**0.071**	**0.066**	**0.040**	**0.082**	**0.113**	**0.074**	**0.102**	**0.092**	**0.142**	**0.112**	**0.081**	**0.086**	**0.105**	**0.0856**
Additional Metals (mg/L)																			
Calcium	na	na	*Not sampled prior to August 2009*													*ns*	**27.0**	*ns*	*ns*
Iron	na	na														**1.85**	**4.64**	*ns*	*ns*
Magnesium	na	na														*ns*	**4.98**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.167**	*ns*	*ns*
Sodium	na	na														*ns*	**5.5**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na	*Not sampled prior to August 2009*													**3.00 J**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**0.085**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**16**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**260**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**87.1**	**83.7**	*ns*	*ns*
Chloride (mg/L)	na	na														**4.5**	**4.2**	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**15**	**14.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**0.52**	**0.53**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	< 0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	< 0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	< 0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na	***It should be noted that field parameters were collected by NHDES during these years, unless a modifed low flow method was used, and are available in the reports.***													**7.8**	**8.1**	**7.8**	*ns*
ORP (mV)	na	na														**-156**	**-209**	**-179**	*ns*
Specfic Conductance (µS/cm)	na	na														**215**	**199**	**227**	*ns*
Dissolved Oxygen (mg/L)	na	na														**0.6**	**0.7**	**0.8**	*ns*
Turbidity (ntu)	na	na														**5**	<5	<5	*ns*
Temperature (°C)	na	na														**15**	**12**	**14**	*ns*
Ferrous Iron (mg/L)	na	na	*Not sampled prior to August 2009*													**0.27**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_OW-2DR Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	**24**	**44**	**26**	**40**	**21**	**48**	**82**	**140**	**120**	**88**	**48**	**31**	**7.7**	**11**	**6.3**	**9.6**	**7.8**
cis-1,2-Dichloroethene	70	70	ND	**380**	**360**	**330**	**340**	**560**	**500**	**520**	**358**	**299**	**221**	**181**	**64**	**118**	**88**	**162**	**117**
trans-1,2-Dichloroethene	100	70	**6.9**	**13**	**12**	**11**	**11**	**17**	**12**	**10**	**7.2**	**7.4**	**5.2**	**5.8**	ND	<4.0	**2**	**5**	**3**
Tetrahydrofuran(THF)	154	154	ND	**470**	**290**	**560**	**220**	ND	**130**	**230**	**192**	**199**	**129**	**93**	ND	**25**	< 20	<50	**77**
Trichloroethene	5	5	**39**	**140**	**170**	**150**	**160**	**280**	**170**	**150**	**109**	**98**	**76**	**102**	**39**	**119**	**56**	**210**	**161**
Vinyl Chloride	2	2	**2.1**	**74**	**34**	**26**	**22**	**64**	**53**	**61**	**37**	**30**	**18**	**12**	ND	**4.4**	< 1.0	**5**	<2.5
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<4.0	< 1.0	<2.5	<2.5
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<4.0	< 1.0	<2.5	<2.5
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<4.0	< 1.0	<2.5	<2.5
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<20	< 20	<50	<50
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<4.0	< 1.0	<2.5	<2.5
Chloroethane	na	na	**4.4**	**11**	ND	ND	ND	ND	ND	ND	**9.3**	**8.1**	**5.6**	**6.1**	ND	**6.9**	< 1.0	<2.5	<2.5
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 1.0	<2.5	<2.5
Total VOCs (µg/L)	na	na	**76**	**1132**	**892**	**1117**	**774**	**969**	**947**	**1111**	**833**	**730**	**503**	**431**	**111**	**284**	**152**	**392**	**366**
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	< 2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*	**0.049**	**0.314**	**0.287**	**0.141**	**0.198**	**0.194**	**0.323**	**0.225**	**0.2556**	**0.3209**	**0.2897**	**0.2569**	**0.0672**	**0.0451**	**0.0432**	**0.2254**	**0.1024**
Additional Metals (mg/L)																			
Calcium	na	na	*Not sampled prior to August 2009*													*ns*	**19.9**	*ns*	*ns*
Iron	na	na														**0.597**	**1.12**	*ns*	*ns*
Magnesium	na	na														*ns*	**3.3**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.137**	*ns*	*ns*
Sodium	na	na														*ns*	**5.08**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na	*Not sampled prior to August 2009*													**50**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**150**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.031**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.350**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**66.5**	**59.0**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	< 3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	**10**	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**11**	< 1.0	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**2.8**	**3.1**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	< 0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	< 0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	< 0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na	***It should be noted that field parameters were collected by NHDES during these years, unless a modifed low flow method was used, and are available in the reports.***													**6.6**	**6.7**	**6.3**	*ns*
ORP (mV)	na	na														**113**	**107**	**-26**	*ns*
Specfic Conductance (µS/cm)	na	na														**143**	**158**	**273**	*ns*
Dissolved Oxygen (mg/L)	na	na														**1.5**	**1.2**	**1.0**	*ns*
Turbidity (ntu)	na	na														**4**	*ns*	**72**	*ns*
Temperature (°C)	na	na														**15**	**15**	**15**	*ns*
Ferrous Iron (mg/L)	na	na	*Not sampled prior to August 2009*													**0.70**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														<0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_OW-4SR Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	ND	**5.1**	**25**	**123**	ND	**12**	**22**	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8.7**	ND	ND	**6.9**	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	ND	ND	ND	ND	ND	ND	ND	ND	**5**	**25**	**132**	ND	**12**	**29**	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*	< 0.005	*ns*	< 0.010	< 0.005	**0.0095**	**0.0011**	**0.0013**	**0.002**	< 0.001	< 0.001	< 0.001	ND	ND	<0.001	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na	*Not sampled prior to August 2009*													*ns*	**15.4**	*ns*	*ns*
Iron	na	na														<0.050	<0.050	*ns*	*ns*
Magnesium	na	na														*ns*	**1.99**	*ns*	*ns*
Manganese	0.84	na														*ns*	<0.020	*ns*	*ns*
Sodium	na	na														*ns*	**3.27**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na	*Not sampled prior to August 2009*													**240**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**5.5**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														<0.025	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.019 J**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**37.0**	**25.2**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	**1.2**	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**24**	**19.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**12**	**2.4**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	**2.6**	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	**2.6**	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na	***It should be noted that field parameters were collected by NHDES during these years, unless a modifed low flow method was used, and are available in the reports.***													**5.6**	**5.7**	*ns*	*ns*
ORP (mV)	na	na														**164**	**95**	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														**153**	**137**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na														**0.9**	**2.4**	*ns*	*ns*
Turbidity (ntu)	na	na														**2**	**5**	*ns*	*ns*
Temperature (°C)	na	na														**15**	**11**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na	*Not sampled prior to August 2009*													**0.05**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														**1.0**	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MO-5DR Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	**3.4**	ND	**2.1**	**2.3**	**2.9**	ND	**3.9**	**3.2**	**3.1**	**4.2**	**3.4**	**2.3**	**2.1**	<2.0	<0.5	<0.5	<0.50
cis-1,2-Dichloroethene	70	70	ND	**11**	**13**	**14**	**17**	**7.8**	**13**	**8.5**	**6.6**	**9.6**	**8.6**	**8.8**	**10**	<2.0	**1.0**	**2.1**	**2.2**
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	<0.5	<0.50
Tetrahydrofuran(THF)	154	154	**69**	**24**	**35**	**46**	**54**	ND	**42**	**29**	**26**	**34**	**27**	**17**	**16**	<10	<10	<10	<10.0
Trichloroethene	5	5	**5.8**	**3.7**	**3.4**	**4**	**5**	**2.4**	**3.8**	ND	ND	**2**	ND	**7.2**	**9.1**	<2.0	<0.5	<0.5	**0.8**
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	<0.5	<0.50
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	<0.5	<0.50
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	<0.5	<0.50
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	<0.5	<0.50
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	<10	<10.0
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	<0.5	<0.50
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	<0.5	<0.50
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	**0.6**	**0.7**	**0.5**
Total VOCs (µg/L)	na	na	**78**	**39**	**54**	**66**	**79**	**10**	**63**	**41**	**36**	**50**	**39**	**35**	**37**	ND	**2**	**3**	**4**
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														**0.004**	**0.002**	**0.004**	**0.0032**
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**12.8**	*ns*	*ns*
Iron	na	na	*Not sampled prior to August 2009*													**0.058**	**0.17**	*ns*	*ns*
Magnesium	na	na														*ns*	**2.3**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.027**	*ns*	*ns*
Sodium	na	na														*ns*	**5.71**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**0.31 J**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**4.9**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.018 J**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.028**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**59.4**	**41.2**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**12**	**12.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.0**	<0.50	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na	*Not sampled prior to August 2009*													<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**9.1**	**10.3**	**8**	**8**
ORP (mV)	na	na														**76**	**102**	**-24**	**-34**
Specfic Conductance (µS/cm)	na	na														**150**	**126**	**176**	**167**
Dissolved Oxygen (mg/L)	na	na	*Not sampled prior to August 2009*													**0.7**	**0.9**	**0.6**	**1.0**
Turbidity (ntu)	na	na														**5**	<5	<5	<5
Temperature (°C)	na	na														**15**	**13**	**13**	**12**
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														<0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-7S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
cis-1,2-Dichloroethene	70	70									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
trans-1,2-Dichloroethene	100	70									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Tetrahydrofuran(THF)	154	154									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Trichloroethene	5	5									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Vinyl Chloride	2	2									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
1,1,1-Trichloroethane	200	200									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Ethylbenzene	700	700				*Not sampled*					ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Toluene	1,000	1,000									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Carbon Disulfide	70	na									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Chloroethane	na	na									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Total VOCs (µg/L)	na	na									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na														*ns*	*ns*	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														*ns*	*ns*	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	*ns*	*ns*	*ns*
Iron	na	na														*ns*	*ns*	*ns*	*ns*
Magnesium	na	na														*ns*	*ns*	*ns*	*ns*
Manganese	0.84	na														*ns*	*ns*	*ns*	*ns*
Sodium	na	na														*ns*	*ns*	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na																*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	*ns*	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														*ns*	*ns*	*ns*	*ns*
ORP (mV)	na	na														*ns*	*ns*	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														*ns*	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na														*ns*	*ns*	*ns*	*ns*
Temperature (°C)	na	na														*ns*	*ns*	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*

Not sampled prior to August 2009

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-7D Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154									ND	*ns*	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700				*Not sampled*					ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na									ND	*ns*	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na									ND	*ns*	ND	ND	ND	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<1.0	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**9.45**	*ns*	*ns*
Iron	na	na														**1.99**	**0.982**	*ns*	*ns*
Magnesium	na	na														*ns*	**0.224**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.098**	*ns*	*ns*
Sodium	na	na														*ns*	**12.1**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**0.49 J**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**7.5**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.250**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.091**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**64.0**	**58.9**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**13**	**8.3**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.9**	**0.75**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na															*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**8.6**	**8.8**	*ns*	*ns*
ORP (mV)	na	na														**-216**	**-248**	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														**163**	**149**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na														**0.52**	**0.9**	*ns*	*ns*
Turbidity (ntu)	na	na														**9**	**8**	*ns*	*ns*
Temperature (°C)	na	na														**14**	**10**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														**0.09**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-8S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	**36**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5	ND	**45.00**	**3.10**	**66.00**	ND	**9.00**	ND	ND	**57.00**	**20.00**	**4.80**	**2.90**	**3.00**	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	**12**	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	**36**	**7**	**3**	**66**	ND	**9**	ND	**12**	**57**	**20**	**5**	**3**	**3**	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**4.32**	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								<0.050	<0.050	*ns*	*ns*
Magnesium	na	na														*ns*	**0.472**	*ns*	*ns*
Manganese	0.84	na														*ns*	<0.020	*ns*	*ns*
Sodium	na	na														*ns*	**2.22**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**62**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**2.9**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														<0.025	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.028**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**7.2**	**5.3**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**11**	**11.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														<0.50	<0.50	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	**0.13**	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	**0.13**	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**5.5**	**5.8**	*ns*	*ns*
ORP (mV)	na	na														**126**	**227**	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														**51**	**50**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**2.8**	**5.1**	*ns*	*ns*
Turbidity (ntu)	na	na														**< 1**	<5	*ns*	*ns*
Temperature (°C)	na	na														**13**	**10**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														**0.5**	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-8D Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154									ND	*ns*	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5									ND	*ns*	**2.6**	**2.3**	ND	<2.0	0.50	*ns*	*ns*
Vinyl Chloride	2	2									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700				*Not sampled*					ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na									ND	*ns*	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na									ND	*ns*	**3**	**2**	ND	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na									*Not sampled prior to August 2009*					<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**6.14**	*ns*	*ns*
Iron	na	na														**2.78**	**1.82**	*ns*	*ns*
Magnesium	na	na									*Not sampled prior to August 2009*					*ns*	**1.42**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.047**	*ns*	*ns*
Sodium	na	na														*ns*	**70.8**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**1.20 J**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**2.1**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.170**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.089**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**240**	**268.0**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**11**	**10.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**4.6**	**0.87**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														**1.0**	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	**0.24**	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	**0.23**	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**8.8**	**8.6**	*ns*	*ns*
ORP (mV)	na	na														**186**	**155**	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														**521**	**513**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na														**0.7**	**1.2**	*ns*	*ns*
Turbidity (ntu)	na	na														**48**	*ns*	*ns*	*ns*
Temperature (°C)	na	na														**13**	**12**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-9S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
cis-1,2-Dichloroethene	70	70									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
trans-1,2-Dichloroethene	100	70									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Tetrahydrofuran(THF)	154	154									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Trichloroethene	5	5									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Vinyl Chloride	2	2									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
1,1,1-Trichloroethane	200	200									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Ethylbenzene	700	700				*Not sampled*					*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Toluene	1,000	1,000									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Carbon Disulfide	70	na									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Chloroethane	na	na									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Total VOCs (µg/L)	na	na									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na						*Not sampled prior to August 2009*								*ns*	*ns*	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														*ns*	*ns*	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	*ns*	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								*ns*	*ns*	*ns*	*ns*
Magnesium	na	na														*ns*	*ns*	*ns*	*ns*
Manganese	0.84	na														*ns*	*ns*	*ns*	*ns*
Sodium	na	na														*ns*	*ns*	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	*ns*	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														*ns*	*ns*	*ns*	*ns*
ORP (mV)	na	na														*ns*	*ns*	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														*ns*	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								*ns*	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na														*ns*	*ns*	*ns*	*ns*
Temperature (°C)	na	na														*ns*	*ns*	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-9D Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154									ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700				*Not sampled*					ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na									ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na									ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na									ND	ND	ND	ND	ND	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na														ND	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**1.03**	*ns*	*ns*
Iron	na	na														**5.34**	**2.38**	*ns*	*ns*
Magnesium	na	na														*ns*	**0.469**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.116**	*ns*	*ns*
Sodium	na	na														*ns*	**2.58**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**34**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**0.670**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.190**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.055**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														<1	**2.5**	*ns*	*ns*
Chloride (mg/L)	na	na														**3.4**	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**11**	**8.2**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.5**	**1.3**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**4.5**	**5**	*ns*	*ns*
ORP (mV)	na	na														**386**	**109**	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														**57**	**44**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na														**0.6**	**2.7**	*ns*	*ns*
Turbidity (ntu)	na	na														**55**	**43**	*ns*	*ns*
Temperature (°C)	na	na														**13**	**9**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														**0.29**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														<0.3	*ns*	*ns*	*ns*

Not sampled prior to August 2009

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-12S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	**3.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	**2.4**	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	**5.6**	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	ND	**3**	ND	ND	ND	ND	ND	**8**	ND	ND	ND	ND	ND	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**3.37**	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								<0.05	<0.050	*ns*	*ns*
Magnesium	na	na														*ns*	**0.639**	*ns*	*ns*
Manganese	0.84	na														*ns*	<0.020	*ns*	*ns*
Sodium	na	na														*ns*	**2.18**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**8.7**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**0.100 J**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														<0.025	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.025 J**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**8.0**	**9.0**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**4.4**	**4.5**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**0.68**	<0.50	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**6.3**	**6.5**	*ns*	*ns*
ORP (mV)	na	na														**76**	**85**	*ns*	*ns*
Specfic Conductance (µS/cm)	na	na														**36**	**39**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**7.5**	**8.4**	*ns*	*ns*
Turbidity (ntu)	na	na														**2**	<5	*ns*	*ns*
Temperature (°C)	na	na														**13**	**10**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														**0.03**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-12D Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70		**6.7**	**11.0**	**8.7**	**15.0**	**7.7**	**8.3**	**7.4**	**9.9**	**8.2**	**11**	**12**	**11**	**13**	**14**	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	**1.1**	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	ND	ND	ND	ND	ND	ND	ND	**12**	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5	**3**	**2.90**	**4.90**	**3.50**	**5.90**	**3.60**	**3.40**	**3.40**	**4.40**	**3.00**	**4.80**	**4.50**	**3.60**	**4.60**	**4.5**	*ns*	*ns*
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	**1**	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	**3**	**10**	**16**	**12**	**21**	**11**	**12**	**23**	**14**	**11**	**16**	**17**	**15**	**18**	**21**	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														**0.006**	**0.009**	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**24.1**	*ns*	*ns*
Iron	na	na	*Not sampled prior to August 2009*													**0.222**	**1.79**	*ns*	*ns*
Magnesium	na	na														*ns*	**4.36**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.167**	*ns*	*ns*
Sodium	na	na														*ns*	**5.35**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**1.5 J**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**32**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.008 J**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.370**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**71.6**	**70.3**	*ns*	*ns*
Chloride (mg/L)	na	na														**3.5**	**3.5**	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**13**	**13.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.8**	**0.58**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na	*Not sampled prior to August 2009*													<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			*ns*
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**7.3**	*ns*	*ns*	*ns*
ORP (mV)	na	na														**22**	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na														**180**	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na	*Not sampled prior to August 2009*													**0.5**	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na														**< 1**	*ns*	*ns*	*ns*
Temperature (°C)	na	na														**12**	*ns*	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														**0.17**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														<0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-20S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154									ND	*ns*	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700				*Not sampled*					ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na									ND	*ns*	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na									ND	*ns*	ND	ND	ND	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na						*Not sampled prior to August 2009*								<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**4.55**	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*									<0.050	<0.050	*ns*	*ns*
Magnesium	na	na														*ns*	**0.57**	*ns*	*ns*
Manganese	0.84	na														*ns*	<0.020	*ns*	*ns*
Sodium	na	na														*ns*	**2.79**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**29**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**2.5**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														<0.025	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.024 J**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**6.7**	**9.2**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	**1.5**	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**8.6**	**8.3**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.4**	<0.50	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			*ns*
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**5.7**	**0.7**	*ns*	*ns*
ORP (mV)	na	na														**90**	**155**	*ns*	*ns*
Specific Conductance (µS/cm)	na	na														**45**	**50**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**7.3**	**6**	*ns*	*ns*
Turbidity (ntu)	na	na														**5**	<5	*ns*	*ns*
Temperature (°C)	na	na														**14**	**10**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-20D Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
cis-1,2-Dichloroethene	70	70									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
trans-1,2-Dichloroethene	100	70									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Tetrahydrofuran(THF)	154	154									ND	*ns*	ND	ND	ND	<10	*ns*	*ns*	*ns*
Trichloroethene	5	5									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Vinyl Chloride	2	2									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
1,1,1-Trichloroethane	200	200									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Ethylbenzene	700	700									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Toluene	1,000	1,000									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na									ND	*ns*	ND	ND	ND	<10	*ns*	*ns*	*ns*
Carbon Disulfide	70	na									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Chloroethane	na	na									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na									ND	*ns*	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Total VOCs (µg/L)	na	na									ND	*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na														<2.0	*ns*	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	*ns*	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	*ns*	*ns*	*ns*
Iron	na	na														<0.05	*ns*	*ns*	*ns*
Magnesium	na	na														*ns*	*ns*	*ns*	*ns*
Manganese	0.84	na														*ns*	*ns*	*ns*	*ns*
Sodium	na	na														*ns*	*ns*	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**12**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**0.21**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.007 J**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.024 J**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**16.8**	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	*ns*	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**9.0**	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.0**	*ns*	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na														<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	*ns*	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**6.3**	*ns*	*ns*	*ns*
ORP (mV)	na	na														**151**	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na														**69**	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na														**5.1**	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na														**2**	*ns*	*ns*	*ns*
Temperature (°C)	na	na														**14**	*ns*	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*

Not sampled

Not sampled prior to August 2009

Not sampled prior to August 2009

Not sampled prior to August 2009

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-21S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	<0.0010	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**5.39**	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								<0.05	<0.050	*ns*	*ns*
Magnesium	na	na														*ns*	**0.894**	*ns*	*ns*
Manganese	0.84	na														*ns*	<0.020	*ns*	*ns*
Sodium	na	na														*ns*	**4.76**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**45**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**1.7**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														<0.025	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.020 J**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**17.0**	**14.5**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	**3**	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	**1.3**	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**13**	**13.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**2.3**	**0.8**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**5.9**	**6.3**	*ns*	*ns*
ORP (mV)	na	na														**125**	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na														**75**	**81**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**4.0**	**6.2**	*ns*	*ns*
Turbidity (ntu)	na	na														**1**	*ns*	*ns*	*ns*
Temperature (°C)	na	na														**13**	**9**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														<0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-21D Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	5	ND	2.60	3.5	ND	2	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	ND	14	ND	10.00	15	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5	**5.5**	**120**	**34**	**60**	**61**	**38**	**50**	**28**	**34**	**43**	**12**	**12**	**4.2**	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	**13**	ND	**19**	**33**	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	**6**	**139**	**34**	**73**	**80**	**38**	**52**	**28**	**34**	**56**	**12**	**31**	**37**	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	**0.004**	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**18.1**	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								**2.82**	**9.17**	*ns*	*ns*
Magnesium	na	na														*ns*	**2.91**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.626**	*ns*	*ns*
Sodium	na	na														*ns*	**6.65**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**21**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**14**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.025 J**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.034**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**50.8**	**47.7**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**11**	**13.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														<0.50	**0.82**	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			*ns*
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**6.6**	*ns*	*ns*	*ns*
ORP (mV)	na	na														**-19**	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na														**142**	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**0.8**	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na														**2**	*ns*	*ns*	*ns*
Temperature (°C)	na	na														**13**	*ns*	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														**1.88**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														<0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-22S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.3**	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**4.3**	ND	ND	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**2.06**	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								**0.053**	<0.050	*ns*	*ns*
Magnesium	na	na														*ns*	**0.421**	*ns*	*ns*
Manganese	0.84	na														*ns*	<0.020	*ns*	*ns*
Sodium	na	na														*ns*	**1.75**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**26**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**0.24**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.006 J**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.020 J**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**4.6**	**2.5**	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**5.7**	**5.3**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**2.3**	<0.50	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	<0.050	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	<0.050	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**5.5**	**5.7**	*ns*	*ns*
ORP (mV)	na	na														**185**	**68**	*ns*	*ns*
Specific Conductance (µS/cm)	na	na														**31**	**31**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**2.1**	**6.5**	*ns*	*ns*
Turbidity (ntu)	na	na														**1**	<5	*ns*	*ns*
Temperature (°C)	na	na														**13**	**11**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														< 0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-22D Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	**3.3**	**3.2**		ND	ND	ND	<2.0	*ns*	**0.8**	**0.7**
cis-1,2-Dichloroethene	70	70		**2.6**	**3.9**	**2.3**	**4.8**	**2**	**4.5**	**6.7**	**11**	**5.8**	**12**	**13**	**14**	**21**	*ns*	**21**	**21**
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	**1**	**1.3**
Tetrahydrofuran(THF)	154	154	**14**	ND	ND	ND	**13**	ND	ND	ND	ND	ND	ND	ND	ND	<10	*ns*	<10	<10
Trichloroethene	5	5	**2.8**	ND	**4.7**	**2.3**	**4.6**	**2.2**	ND	ND	**4.1**	**2.6**	**6.4**	**11.0**	**15.0**	**22.0**	*ns*	**27**	**23**
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	**0.5**	<0.5
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	<0.5	<0.5
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	<0.5	<0.5
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	<0.5	<0.5
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	*ns*	<10	<10
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	<0.5	<0.5
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	<0.5	<0.5
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	<0.5	<0.5
Total VOCs (µg/L)	na	na	**17**	**3**	**9**	**5**	**22**	**4**	**5**	**10**	**18**	**8**	**18**	**24**	**29**	**43**	*ns*	**50**	**46**
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	*ns*	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														**0.001**	*ns*	**0.0012**	**0.002**
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	*ns*	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								**0.057**	*ns*	*ns*	*ns*
Magnesium	na	na														*ns*	*ns*	*ns*	*ns*
Manganese	0.84	na														*ns*	*ns*	*ns*	*ns*
Sodium	na	na														*ns*	*ns*	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**3.80 J**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**1.3**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.013 J**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.034**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**72.3**	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na														<3.0	*ns*	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**15**	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														**1.9**	*ns*	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	*ns*	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**7.1**	*ns*	**7.6**	*ns*
ORP (mV)	na	na														**124**	*ns*	**167**	*ns*
Specific Conductance (µS/cm)	na	na														**176**	*ns*	**216**	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**1.4**	*ns*	**0.5**	*ns*
Turbidity (ntu)	na	na														**4**	*ns*	<5	*ns*
Temperature (°C)	na	na														**15**	*ns*	**13**	*ns*
Ferrous Iron (mg/L)	na	na														**0.01**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														<0.3	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-23S Overburden Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**3.3**	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	**16**	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**9.1**	ND	ND	<2.0	<0.5	*ns*	*ns*
Total VOCs (µg/L)	na	na	ND	ND	ND	**16**	ND	ND	ND	ND	ND	ND	**12**	ND	ND	ND	ND	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	<0.001	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	**3.46**	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								<0.05	<0.050	*ns*	*ns*
Magnesium	na	na														*ns*	**0.753**	*ns*	*ns*
Manganese	0.84	na														*ns*	**0.082**	*ns*	*ns*
Sodium	na	na														*ns*	**9.09**	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**46**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**0.24**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														**0.011**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.028**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**7.4**	**5.9**	*ns*	*ns*
Chloride (mg/L)	na	na														**25**	**12**	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**4.6**	**7.3**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														<0.50	<0.50	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	**0.099**	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	**0.097**	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**5.4**	**6.3**	*ns*	*ns*
ORP (mV)	na	na														**104**	**237**	*ns*	*ns*
Specific Conductance (µS/cm)	na	na														**125**	**82**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**5.4**	**7**	*ns*	*ns*
Turbidity (ntu)	na	na														**3**	**4.6**	*ns*	*ns*
Temperature (°C)	na	na														**14**	**12**	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														**0.4**	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-23D Shallow Bedrock Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun-03	May-04	May-05	Jun-06	May-07	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
cis-1,2-Dichloroethene	70	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
trans-1,2-Dichloroethene	100	70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Tetrahydrofuran(THF)	154	154	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	*ns*	*ns*	*ns*
Trichloroethene	5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Vinyl Chloride	2	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
1,1,1-Trichloroethane	200	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Ethylbenzene	700	700	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Toluene	1,000	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Additional VOCs (µg/L)																			
Acetone	6,000	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	*ns*	*ns*	*ns*
Carbon Disulfide	70	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Chloroethane	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Methyl-t-butylether (MTBE)	13	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	*ns*	*ns*	*ns*
Total VOCs (µg/L)	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	*ns*	*ns*	*ns*
1,4-Dioxane (µg/L)																			
1,4-Dioxane	3	na	*Not sampled prior to August 2009*													<2.0	*ns*	*ns*	*ns*
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.01*														<0.001	*ns*	*ns*	*ns*
Additional Metals (mg/L)																			
Calcium	na	na														*ns*	*ns*	*ns*	*ns*
Iron	na	na						*Not sampled prior to August 2009*								<0.05	*ns*	*ns*	*ns*
Magnesium	na	na														*ns*	*ns*	*ns*	*ns*
Manganese	0.84	na														*ns*	*ns*	*ns*	*ns*
Sodium	na	na														*ns*	*ns*	*ns*	*ns*
NA - Laboratory																			
Carbon Dioxide (mg/L)	na	na														**130**	*ns*	*ns*	*ns*
Methane (µg/L)	na	na														**0.19**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na														<0.025	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na														**0.022**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na														**23.2**	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na														**77**	*ns*	*ns*	*ns*
Sulfide (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na														**13**	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na														<0.50	*ns*	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na						*Not sampled prior to August 2009*								<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na														*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na														*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na														*ns*	*ns*	*ns*	*ns*
Volatile Fatty Acids																			
Acetic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na														<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na														<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na														<10	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na														**5.3**	*ns*	*ns*	*ns*
ORP (mV)	na	na														**133**	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na														**456**	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na						*Not sampled prior to August 2009*								**1.6**	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na														**1**	*ns*	*ns*	*ns*
Temperature (°C)	na	na														**14**	*ns*	*ns*	*ns*
Ferrous Iron (mg/L)	na	na														0.00	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na														**0.8**	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-100D Deep Bedrock				MOT_MW-101S Overburden				MOT_MW-101D Deep Bedrock				MOT_MW-102D Deep Bedrock			
			Aug-09	May-10	Sep-11	Oct-12	Aug-09	May-10	Sep-11	Oct-12	Aug-09	May-10	Sep-11	Oct-12	Aug-09	May-10	Sep-11	Oct-12
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	81	81	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 1.0	<1.0	*ns*	<0.5
cis-1,2-Dichloroethene	70	70	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	**125**	**86**	*ns*	**25**
trans-1,2-Dichloroethene	100	70	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	**36**	**31**	*ns*	**9.8**
Tetrahydrofuran(THF)	154	154	< 20	<10	*ns*	*ns*	< 10	<10	*ns*	*ns*	< 10	<10	*ns*	*ns*	< 20	<20	*ns*	<10
Trichloroethene	5	5	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	**41**	**32**	*ns*	**37**
Vinyl Chloride	2	2	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 1.0	<1.0	*ns*	<0.5
1,1,1-Trichloroethane	200	200	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 1.0	<1.0	*ns*	<0.5
Ethylbenzene	700	700	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 1.0	<1.0	*ns*	<0.5
Toluene	1,000	1,000	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 1.0	<1.0	*ns*	<0.5
Additional VOCs (µg/L)																		
Acetone	6,000	na	< 20	<10	*ns*	*ns*	< 10	<10	*ns*	*ns*	< 10	<10	*ns*	*ns*	< 20	<20	*ns*	<10
Carbon Disulfide	70	na	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 1.0	<1.0	*ns*	**2.8**
Chloroethane	na	na	< 1.0	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 0.5	<0.5	*ns*	*ns*	< 1.0	<1.0	*ns*	<0.5
Methyl-t-butylether (MTBE)	13	na	<2.0	<0.5	*ns*	*ns*	<2.0	<0.5	*ns*	*ns*	<2.0	11	*ns*	*ns*	<2.0	<1.0	*ns*	<0.5
Total VOCs (µg/L)	na	na	ND	ND	*ns*	*ns*	ND	ND	*ns*	*ns*	ND	ND	*ns*	*ns*	**202**	**149**	*ns*	**75**
1,4-Dioxane (µg/L)																		
1,4-Dioxane	3	na	< 2.0	<2.0	*ns*	*ns*	*ns*	<2.0	*ns*	*ns*	< 2.0	<2.0	*ns*	*ns*	< 2.0	<2.0	*ns*	*ns*
Metals of Concern (mg/L)																		
Total Arsenic	0.01	0.01*	**0.002**	**0.001**	*ns*	*ns*	< 0.001	<0.001	*ns*	*ns*	**0.001**	<0.001	*ns*	*ns*	**0.025**	**0.022**	*ns*	**0.0097**
Additional Metals (mg/L)																		
Calcium	na	na	**9.61**	**10.8**	*ns*	*ns*	**10.9**	**3.91**	*ns*	*ns*	**50.7**	**58.7**	*ns*	*ns*	**26.3**	**16**	*ns*	*ns*
Iron	na	na	**1.94**	**0.118**	*ns*	*ns*	**0.126**	<0.050	*ns*	*ns*	**0.095**	**0.254**	*ns*	*ns*	**1.54**	**0.235**	*ns*	*ns*
Magnesium	na	na	**1.79**	**1.43**	*ns*	*ns*	**1.43**	**0.557**	*ns*	*ns*	**4.89**	**5.29**	*ns*	*ns*	**2.98**	**3.05**	*ns*	*ns*
Manganese	0.84	na	**0.042**	<0.020	*ns*	*ns*	**0.043**	<0.020	*ns*	*ns*	**0.087**	**0.065**	*ns*	*ns*	**0.064**	**0.073**	*ns*	*ns*
Sodium	na	na	**6.43**	**11.2**	*ns*	*ns*	**13.2**	**5.16**	*ns*	*ns*	**7.76**	**9.19**	*ns*	*ns*	**5.73**	**5.09**	*ns*	*ns*
NA - Laboratory																		
Carbon Dioxide (mg/L)	na	na	**33**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**2.70 J**	*ns*	*ns*	*ns*	< 5.00 U	*ns*	*ns*	*ns*
Methane (µg/L)	na	na	**12**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.80**	*ns*	*ns*	*ns*	**24**	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na	**0.007 J**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.017 J**	*ns*	*ns*	*ns*	**0.055**	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na	**0.034**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.017 J**	*ns*	*ns*	*ns*	**0.690**	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	**15**	**8.4**	*ns*	*ns*	*ns*	**5.8**	*ns*	*ns*	**84.5**	**96.8**	*ns*	*ns*	**38.5**	**50.7**	*ns*	*ns*
Chloride (mg/L)	na	na	**13**	**43**	*ns*	*ns*	*ns*	**5.7**	*ns*	*ns*	**50.00**	**56**	*ns*	*ns*	< 3.0	<3.0	*ns*	*ns*
Sulfide (mg/L)	na	na	*ns*	<1.0	*ns*	*ns*	*ns*	<1.0	*ns*	*ns*	*ns*	**2.6**	*ns*	*ns*	*ns*	<1.0	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na	**9.5**	**6.7**	*ns*	*ns*	*ns*	**8.3**	*ns*	*ns*	**18**	**21.0**	*ns*	*ns*	**14**	**13.0**	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	**1.2**	<0.50	*ns*	*ns*	*ns*	<0.50	*ns*	*ns*	< 0.50	<0.50	*ns*	*ns*	**0.54**	<0.50	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na	<0.2	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<0.20	*ns*	*ns*	*ns*	<0.20	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	< 0.05	<0.050	*ns*	*ns*	*ns*	<0.050	*ns*	*ns*	< 0.05	<0.050	*ns*	*ns*	< 0.050	<0.050	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	*ns*	<0.050	*ns*	*ns*	*ns*	<0.050	*ns*	*ns*	*ns*	**0.19**	*ns*	*ns*	*ns*	**0.18**	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	< 0.05	<0.050	*ns*	*ns*	*ns*	<0.050	*ns*	*ns*	< 0.05	**0.18**	*ns*	*ns*	< 0.050	**0.18**	*ns*	*ns*
Volatile Fatty Acids																		
Acetic acid (mg/L)	na	na	<1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<1.0	*ns*	*ns*	*ns*	<1.0	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na	<1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<1.0	*ns*	*ns*	*ns*	<1.0	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na	<25.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<25.0	*ns*	*ns*	*ns*	<25.0	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na	<1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<1.0	*ns*	*ns*	*ns*	<1.0	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na	<10	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	<10	*ns*	*ns*	*ns*	<10	*ns*	*ns*	*ns*
NA - Field Screening																		
pH (SU)	na	na	**7.7**	*ns*	*ns*	*ns*	**6.1**	**6**	*ns*	*ns*	**7.8**	**7.7**	*ns*	*ns*	**9.7**	*ns*	*ns*	**9.5**
ORP (mV)	na	na	**33**	*ns*	*ns*	*ns*	**77**	**97**	*ns*	*ns*	**49**	**-11**	*ns*	*ns*	**16**	*ns*	*ns*	**-174**
Specific Conductance (µS/cm)	na	na	**107**	*ns*	*ns*	*ns*	**162**	**64**	*ns*	*ns*	**352**	**417**	*ns*	*ns*	**152**	*ns*	*ns*	**187**
Dissolved Oxygen (mg/L)	na	na	**8.4**	*ns*	*ns*	*ns*	**6.1**	**5.3**	*ns*	*ns*	**9.1**	<0.5	*ns*	*ns*	**1.3**	*ns*	*ns*	**0.8**
Turbidity (ntu)	na	na	**18**	*ns*	*ns*	*ns*	**3.5**	<5	*ns*	*ns*	**1.2**	**8**	*ns*	*ns*	**12.4**	*ns*	*ns*	<5
Temperature (°C)	na	na	**7**	*ns*	*ns*	*ns*	**4.9**	**10**	*ns*	*ns*	**6.9**	**12**	*ns*	*ns*	**7.3**	*ns*	*ns*	**14**
Ferrous Iron (mg/L)	na	na	**0.06**	*ns*	*ns*	*ns*	**0.01**	*ns*	*ns*	*ns*	0.00	*ns*	*ns*	*ns*	**0.05**	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date	NH AGQS	ROD ICL	MOT_MW-103D Deep Bedrock May-10	MOT_MW-103D-1 Deep Bedrock Sep-11	 Oct-12	MOT_MW-103D-2 Deep Bedrock Sep-11	 Sep-11 DUP	 Oct-12	 Oct-12 DUP	MOT_MW-103D-3 Deep Bedrock Sep-11	 Oct-12	MOT_MW-103D-4 Deep Bedrock Sep-11	 Oct-12
VOCs of Concern (µg/L)													
1,1-Dichloroethane	81	81	<1.0	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	**54**	**7.7**	**35**	**51**	**51**	**38**	**39**	**12**	**32**	**4**	**20**
trans-1,2-Dichloroethene	100	70	**24**	**1.3**	**18**	**21**	**22**	**20**	**21**	**4**	**14**	0.8	**10**
Tetrahydrofuran(THF)	154	154	<20	**31**	<10	<20	<20	<10	<10	<10	<20	<10	<10
Trichloroethene	5	5	**117**	**8.9**	**66**	**119**	**122**	**76**	**78**	**21**	**64**	**8**	**40**
Vinyl Chloride	2	2	<1.0	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5
1,1,1-Trichloroethane	200	200	<1.0	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5
Ethylbenzene	700	700	<1.0	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5
Toluene	1,000	1,000	<1.0	**28**	<0.5	<1.0	<1.0	<0.5	<0.5	**22**	<1.0	**8.2**	**0.5**
Additional VOCs (µg/L)													
Acetone	6,000	na	<20	<10	<10	<20	<20	<10	<10	<10	<20	<10	<10
Carbon Disulfide	70	na	<1.0	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5
Chloroethane	na	na	<1.0	<0.5	<0.5	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5
Methyl-t-butylether (MTBE)	13	na	<1.0	**0.6**	<0.5	<1.0	<1.0	<0.5	<0.5	**1.1**	<1.0	**1.5**	<0.5
Total VOCs (µg/L)	na	na	**195**	**78**	**119**	**191**	**195**	**134**	**138**	**60**	**110**	**23**	**71**
1,4-Dioxane (µg/L)													
1,4-Dioxane	3	na	<2.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Metals of Concern (mg/L)													
Total Arsenic	0.01	0.01*	**0.011**	**0.019**	**0.0083**	**0.0087**	**0.0087**	**0.0083**	**0.0083**	**0.0263**	**0.0081**	**0.0331**	**0.0204**
Additional Metals (mg/L)													
Calcium	na	na	**24.5**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Iron	na	na	**0.167**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Magnesium	na	na	**3.86**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Manganese	0.84	na	**0.082**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Sodium	na	na	**5.19**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Laboratory													
Carbon Dioxide (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Methane (µg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Ethane (µg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Ethene (µg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Alkalinity (mg/L)	na	na	**68.1**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Chloride (mg/L)	na	na	**3.4**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Sulfide (mg/L)	na	na	**1**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Sulfate, as SO4 (mg/L)	500	na	**14.0**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Total Organic Carbon (mg/L)	na	na	<0.50	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Ammonia Nitrogen (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrite-Nitrogen (mg/L)	1	na	<0.050	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate+Nitrite-Nitrogen (mg/L)	na	na	**0.065**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate-Nitrogen (mg/L)	10	na	**0.065**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Volatile Fatty Acids													
Acetic acid (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Butyric acid (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Lactic acid (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Propionic acid (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Pyruvic acid (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening													
pH (SU)	na	na	*ns*	**7.8**	**7.1**	**8.0**	*ns*	**7.3**	*ns*	**7.9**	**7.3**	**7.8**	**7.4**
ORP (mV)	na	na	*ns*	**-167**	**-140**	**-95**	*ns*	**-139**	*ns*	**-136**	**-134**	**-119**	**-154**
Specific Conductance (µS/cm)	na	na	*ns*	**265**	**237**	**193**	*ns*	**233**	*ns*	**266**	**233**	**318**	**288**
Dissolved Oxygen (mg/L)	na	na	*ns*	<0.5	<0.5	**1.5**	*ns*	<0.5	*ns*	<0.5	<0.5	<0.5	<0.5
Turbidity (ntu)	na	na	*ns*	<5 J*	<1	<5 J*	*ns*	<1	*ns*	<5 J*	<1	<5 J*	<1
Temperature (°C)	na	na	*ns*	**10**	**10**	**10**	*ns*	**11**	*ns*	**11**	**10**	**11**	**10**
Ferrous Iron (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Nitrate (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

Notes: Refer to last page.

TABLE 6 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

TABLE KEY:
AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management
ROD ICL = Interim Cleanup Levels established in the Record of Decision (ROD) for Site groundwater
na = no current standard available
ns = not sampled
< = analyte not detected above the laboratory reporting limit
ND = analyte not detected above the laboratory reporting limit (RL unknown because of gaps in historical data)
J = estimated concentration qualified by the laboratory (NHDES, EPA, or Microseeps) or by the Environmental Data Services, see laboratory report for explanation
J* = estimated field measurement qualified by GZA due to end of day calibration check issues or failure of parameter to stabilize
VOCs = Volatile Organic Compounds
NA = Natural Attenuation
ORP = Oxidation Reduction Potential
µg/L = micrograms per Liter
mg/L = milligrams per Liter
SU = Standard Units
mV = milliVolts
µS/cm = micro Siemens per centimeter
ntu = Nephelometric Turbidity Units
^{o}C = degrees Celsius

NOTES:
1. Groundwater samples collected in October 2012 were collected using peristaltic pumps and dedicated tubing, with the exception of MOT_MW-103D, which was sampled using the Water FLUTe System.
2. Groundwater data from 2009 through 2011 were collected by GZA personnel. All data prior were collected by NHDES and others.
3. **Bold** indicates that the concentration was detected above the laboratory reporting detection limit. Shading indicates that the concentration exceeds the AGQS and/or ROD ICL.
4. Some spaces in the table are intentionally left blank in cases where the available historical data was unclear as to whether the parameter was not sampled, or sampled but not detected.
5. The interim cleanup level for Tetrahydrofuran was based upon interim reference dose and risk management factors which account for uncertainties in the risk studies.
6. The analytical test methods for each compound are as follows: VOCs by SW-846 8260B/524, SVOCs by Method SW-846 8270C, Metals by EPA 200.7/200.8, Alkalinity SM 2320B, Chloride by LACHAT 10-117-07-01-B, TOC by SM 5310B, Sulfide by EPA 376.1, and Sulfate by LACHAT 10-511-00-1-A.
7. The low-flow field screening parameter readings reported represent the last round of readings prior to sample collection.
8. * The ROD ICL for arsenic was changed from 0.050 mg/L to 0.010 mg/L in the 2010 ROD Amendment.

TABLE 7 - SUMMARY OF DETECTED COMPOUNDS IN RESIDENTIAL DRINKING WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Address			26 Blueberry Hill Road				48 Blueberry Hill Rd				
Well ID #	AGQS	ROD ICL	MOT_DW-27		MOT_DW-27A		MOT_DW-73				
Date Sampled			Jun-09	Dec-09	Oct-10	Oct-12	Apr-10	Jun-10	Oct-10	Sep-11	Oct-12
Detected VOCs of Concern (µg/L)	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND
Additional Detected VOCs (µg/L)											
Carbon disulfide	70	na	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	30	na	**1.2**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2	<2.0
Methyl tert-butyl ether (MtBE)	13	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tertiary amyl methyl ether (TAME)	140	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Metal of Concern (mg/L)											
Total Arsenic	0.010	0.010 *	**0.0012**	**0.0015**	**0.0011**	**0.0012**	**0.0814**	**0.0941**	**0.0927**	**0.0894**	**0.0898**

TABLE 7 - SUMMARY OF DETECTED COMPOUNDS IN RESIDENTIAL DRINKING WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Address Well ID # Date Sampled	AGQS	ROD ICL	16 Huckleberry Road MOT_DW-22				54 Parker Rd MOT_DW-92			
			Jun-09	Apr-10	Sep-11	Oct-12	Jun-10	Oct-10	Sep-11	Oct-12
Detected VOCs of Concern (µg/L)	na	na	ND	ND	ND	ND	ND	ND	ND	ND
Additional Detected VOCs (µg/L)										
Carbon disulfide	70	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	30	na	<1	<2.0	<2	<2.0	<2	<2.0	<2	<2.0
Methyl tert-butyl ether (MtBE)	13	na	<0.5	<0.5	<0.5	<0.5	**0.7**	**0.5**	<0.5	<0.5
Tertiary amyl methyl ether (TAME)	140	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Metal of Concern (mg/L)										
Total Arsenic	0.010	0.010 *	**0.001**	<0.001	**0.001**	<0.001	**0.0082**	**0.0152**	**0.1744**	**0.0218**

TABLE 7 - SUMMARY OF DETECTED COMPOUNDS IN RESIDENTIAL DRINKING WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Address Well ID # Date Sampled	AGQS	ROD ICL	75 Parker Rd MOT_DW-97					1 Randy Lane MOT_DW-24				
			Jun-10	Jun-10 (Resample)	Oct-10	Sep-11	Oct-12	Jun-09	Dec-09	Apr-10	Sep-11	Oct-12
Detected VOCs of Concern (µg/L)	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Additional Detected VOCs (µg/L)												
Carbon disulfide	70	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	30	na	<2	<2	<2.0	<2	<2.0	**1.4**	<2.0	<2	<2.0	<2.0
Methyl tert-butyl ether (MtBE)	13	na	<0.5	<0.5	<0.5	<0.5	<0.5	**0.7**	**0.8**	**0.8**	**0.8**	**0.8**
Tertiary amyl methyl ether (TAME)	140	na	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Metal of Concern (mg/L)												
Total Arsenic	0.010	0.010 *	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0048**	**0.0047**	**0.0043**	**0.0043**	**0.0046**

TABLE 7 - SUMMARY OF DETECTED COMPOUNDS IN RESIDENTIAL DRINKING WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Address Well ID # Date Sampled	AGQS	ROD ICL	11 Strawberry Lane MOT_DW-9A Dec-09	Apr-10	Jun-10	Sep-11	Oct-12	16 Strawberry Lane MOT_DW-5 Dec-06	Jan-07	Mar-07	Jun-07	Oct-07
Detected VOCs of Concern (µg/L)	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Additional Detected VOCs (µg/L)												
Carbon disulfide	70	na	<0.5	<0.5	<0.5	<0.5	<0.5	ND	ND	ND	ND	ND
Chloromethane	30	na	<2.0	<2	<2	<2	<2.0	ND	ND	ND	ND	ND
Methyl tert-butyl ether (MtBE)	13	na	<0.5	<0.5	<0.5	<0.5	<0.5	**7.2**	**9.3**	**6.0**	**5.5**	**4.6**
Tertiary amyl methyl ether (TAME)	140	na	<0.5	<0.5	<0.5	<0.5	<0.5	**0.8**	**1.0**	**1.1**	**0.7**	**0.7**
Metal of Concern (mg/L)												
Total Arsenic	0.010	0.010 *	**0.0046**	**0.0041**	**0.0048**	**0.0045**	**0.0046**	*ns*	*ns*	*ns*	*ns*	*ns*

TABLE 7 - SUMMARY OF DETECTED COMPOUNDS IN RESIDENTIAL DRINKING WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Address Well ID # Date Sampled	AGQS	ROD ICL	16 Strawberry Lane MOT_DW-5 Jan-08	Apr-08	Mar-09	Jun-09	Dec-09	Apr-10	Jun-10	Sep-11	Sep-11 DUP	Oct-12	Oct-12 DUP
Detected VOCs of Concern (µg/L)	na	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Additional Detected VOCs (µg/L)													
Carbon disulfide	70	na	ND	ND	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	30	na	ND	ND	<1	<1	<2.0	<2.0	<0.5	<2.0	<2.0	<2.0	<0.5
Methyl tert-butyl ether (MtBE)	13	na	**2.9**	**4.5**	**2.4**	**0.9**	**1.4**	**2.3**	**1.6**	**1.0**	**0.9**	**0.7**	**0.8**
Tertiary amyl methyl ether (TAME)	140	na	ND	**0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Metal of Concern (mg/L)													
Total Arsenic	0.010	0.010 *	*ns*	*ns*	*ns*	**0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

TABLE 7 - SUMMARY OF DETECTED COMPOUNDS IN RESIDENTIAL DRINKING WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

TABLE KEY:

VOCs = Volatile Organic Compounds
AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management
ROD ICL = Interim Cleanup Levels established in the Record of Decision (ROD) for Site groundwater
na = no current standard available
ns = not sampled
ND = analyte not detected above the laboratory reporting limit, limit unknown or not applicable
< = analyte not detected above the laboratory reporting limit
µg/L = micrograms per Liter
mg/L = milligrams per Liter

NOTES:

1. This table contains only historical results for residential wells included in the sampling program following installation of the town water line in 2012. Please refer to Table 6 of the 2011 Annual Report for sampling data for residential wells sampled previously.
2. 2012 residential well water samples were collected by NHDES.
3. **Bold** indicates that the concentration was detected above the laboratory reporting detection limit. Shading indicates that the concentration exceeds the AGQS and/or ROD ICL.
4. The analytical test methods for each compound are as follows: VOCs by 524 and Metals by EPA 200.7.
5. * The ROD ICL for arsenic was changed from 0.050 mg/L to 0.010 mg/L in the 2010 ROD Amendment.

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sample Date / Sample Interval Depth (ft)	NH AGQS	ROD ICL	MOT_DW-2 6 Strawberry Lane																				
			8/31/03	3/2/04	6/2/04	9/7/04	12/2/04	12/30/04	3/2/05	3/2/05 DUP	6/9/05	6/9/05 DUP	9/13/05	12/6/05	3/10/06	6/20/06	9/11/06	12/8/06	3/9/07	10/4/07	1/10/08	4/2/08	6/19/08
VOCs of Concern (µg/L)																							
1,1-Dichloroethane	81	81	<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	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<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	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	70	<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	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	**0.6**	**0.5**	**1**	**1**	<0.5	<0.5	<0.5	**1.2**	**0.6**	**0.5**	<0.5	**0.9**	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<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	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	200	<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	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<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	<0.5	<0.5	<0.5	<0.5
Toluene	1,000	1,000	**15**	<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	**0.8**	<0.5	<0.5	<0.5	<0.5
Additional VOCs (µg/L)																							
Chloroform	70	na	**5.1**	<0.5	**0.7**	**1.4**	<0.5	**0.6**	**0.6**	**0.6**	<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
Chloromethane	30	na	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl-t-butyl ether (MtBE)	13	na	<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	<0.5	<0.5	<0.5	<0.5
Metals of Concern (mg/L)																							
Total Arsenic	0.01	0.05	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																							
pH (SU)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
ORP (mV)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Temperature (°C)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID			MOT_DW-2									MOT_S6				MOT_DW-3							
Geological Unit of Well Screen			6 Strawberry Lane									6 Strawberry Lane				8 Strawberry Lane							
Sample Date	NH AGQS	ROD ICL	9/10/08	12/18/08	3/27/09	6/25/09	6/25/09 DUP	9/23/09	12/2/09	4/7/10	9/19/11	10/2/12		10/1/12		6/24/03	9/5/2003	12/4/03	1/12/04	3/3/04	6/2/04	9/7/04	9/13/05
Sample Interval Depth (ft)												96-106	118-128	196-206	110 (BULK)				Resample				
VOCs of Concern (µg/L)																							
1,1-Dichloroethane	81	81	<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	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<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	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	70	<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	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	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	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<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	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	200	<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	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<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	<0.5	<0.5	<0.5	<0.5
Toluene	1,000	1,000	<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	**9.9**	<0.5	**1.4**	**0.9**	**1**	<0.5	<0.5	<0.5
Additional VOCs (µg/L)																							
Chloroform	70	na	<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	<0.5	<0.5	<0.5	<0.5
Chloromethane	30	na	<1	<1	<1	**1.4**	**1.3**	<2	<2	<2	<2	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	<1	<1
Methyl-t-butyl ether (MtBE)	13	na	<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	<0.5	<0.5	<0.5	<0.5
Metals of Concern (mg/L)																							
Total Arsenic	0.01	0.05	*ns*	*ns*	*ns*	<0.001	**0.001**	**0.0024**	<0.001	**0.0015**	**0.0011**	<0.001	**0.0010**	**0.0023**	**0.0039**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																							
pH (SU)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**6.5**	**6.81**	*ns*	**6.4**	**6.6**	**6.5**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
ORP (mV)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**119**	**104.5**	*ns*	**71**	**61**	**70**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**1773**	**865**	*ns*	**1,384**	**1,051**	**1,863**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.9**	**1.72**	*ns*	**3.5**	**2.1**	**5.1**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**38**	**65**	**25**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Temperature (°C)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**10**	**10.1**	*ns*	**13**	**12**	**10**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID			MOT_DW-3																MOT_S8			MOT_DW-8			
Geological Unit of Well Screen			8 Strawberry Lane																8 Strawberry Lane			9 Strawberry Lane			
Sample Date	NH AGQS	ROD ICL	9/13/05	12/6/05	3/10/06	6/20/06	9/11/06	12/8/06	3/9/07	6/13/07	10/4/07	1/10/08	4/2/08	3/27/09	6/25/09	9/23/09	12/3/09	4/7/10	9/19/11	9/25/12		10/12/12	12/5/03	12/4/09	4/7/10	9/19/11
Sample Interval Depth (ft)			DUP																	174-189	333-348	193 (BULK)				
VOCs of Concern (µg/L)																										
1,1-Dichloroethane	81	81	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	70	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	200	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	1,000	1,000	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Additional VOCs (µg/L)																										
Chloroform	70	na	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	30	na	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<2	<2	<2				<1	<2	<2	<2
Methyl-t-butyl ether (MtBE)	13	na	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Metals of Concern (mg/L)																										
Total Arsenic	0.01	0.05	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.0090**	**0.0050**	**0.0468**	**0.0050**	**0.0100**	**0.0028**	**0.0123**	**0.0020**	*ns*	<0.001	<0.001	<0.001
NA - Field Screening																										
pH (SU)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.3**	**7**	*ns*	**7.4**	**7.3**	*ns*	*ns*	**7.3**	**6.9**	*ns*
ORP (mV)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**-67**	**153**	*ns*	**61**	**26**	*ns*	*ns*	**145**	**145**	*ns*
Specific Conductance (µS/cm)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**219**	**187**	*ns*	**200**	**222**	*ns*	*ns*	**276**	**290**	*ns*
Dissolved Oxygen (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.5**	**0.6**	*ns*	**2.2**	**8.4**	*ns*	*ns*	**5.1**	**4.0**	*ns*
Turbidity (ntu)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**8**	**33**	*ns*	*ns*	*ns*	*ns*	*ns*
Temperature (°C)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**10**	**9.9**	*ns*	**11**	**10**	*ns*	*ns*	**9.9**	**9.6**	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID			MOT_S9				MOT_DW-4												
Geological Unit of Well Screen			9 Strawberry Lane				10 Strawberry Lane												
Sample Date	NH AGQS	ROD ICL	9/27/12	9/26/12			6/6/2003	6/19/2003	9/5/2003	9/5/2003	12/5/03	12/5/03	3/3/04	3/3/04	6/2/04	6/2/04	9/7/04	9/7/04	3/2/05
Sample Interval Depth (ft)			74-89	156-171	174-189	130 (BULK)		Resample		DUP		DUP		DUP		DUP		DUP	
VOCs of Concern (µg/L)																			
1,1-Dichloroethane	81	81	<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
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	<0.5	<0.5	**0.8**	**1.1**	**0.6**	**0.6**	**0.8**	**0.9**	**0.9**	**0.8**	**0.5**	**0.5**	**0.5**	**0.5**	<0.5
trans-1,2-Dichloroethene	100	70	<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
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	**1**	**1.3**	**0.9**	**1**	**1.3**	**1.3**	**1.2**	**1.2**	**0.8**	**0.9**	**0.8**	**0.8**	**0.8**
Vinyl Chloride	2	2	<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
1,1,1-Trichloroethane	200	200	<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
Ethylbenzene	700	700	<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
Toluene	1,000	1,000	**3.0**	<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
Additional VOCs (µg/L)																			
Chloroform	70	na	<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
Chloromethane	30	na					<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl-t-butyl ether (MtBE)	13	na	<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
Metals of Concern (mg/L)																			
Total Arsenic	0.01	0.05	<0.001	<0.001	<0.001	**0.0014**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																			
pH (SU)	na	na	**6.7**	**6.5**	**6.4**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
ORP (mV)	na	na	**121**	**127**	**121**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na	**291**	**331**	**329**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na	**5.5**	**1.4**	**4.6**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na	**68**	**16**	**15**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Temperature (°C)	na	na	**11**	**10**	**11**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sample Date / Sample Interval Depth (ft)	NH AGQS	ROD ICL	MOT_DW-4 10 Strawberry Lane																				
			6/9/05	9/13/05	12/6/05	12/6/05 DUP	3/10/06	3/10/06 DUP	6/20/06	6/20/06 DUP	9/11/06	9/11/06 DUP	12/8/06	12/8/06 DUP	3/9/07	3/9/07 DUP	6/13/07	6/13/07 DUP	10/4/07	10/4/07 DUP	1/10/08	1/10/08 DUP	4/2/08
VOCs of Concern (µg/L)																							
1,1-Dichloroethane	81	81	<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	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<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	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	70	<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	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	5	**0.7**	**0.5**	**0.7**	**0.7**	**0.7**	**0.7**	**0.8**	**0.8**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	**0.7**	<0.5	<0.5	<0.5	<0.5	**0.6**
Vinyl Chloride	2	2	<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	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	200	<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	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<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	<0.5	<0.5	<0.5	<0.5
Toluene	1,000	1,000	<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	<0.5	<0.5	<0.5	<0.5
Additional VOCs (µg/L)																							
Chloroform	70	na	<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	<0.5	<0.5	<0.5	<0.5
Chloromethane	30	na	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl-t-butyl ether (MtBE)	13	na	<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	<0.5	<0.5	<0.5	<0.5
Metals of Concern (mg/L)																							
Total Arsenic	0.01	0.05	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
NA - Field Screening																							
pH (SU)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
ORP (mV)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Temperature (°C)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID			MOT_DW-4															MOT_S10			MOT_DW-32						
Geological Unit of Well Screen			10 Strawberry Lane															10 Strawberry Lane			4 Windmere Drive						
Sample Date	NH AGQS	ROD ICL	4/2/08	6/19/08	6/19/08	9/10/08	9/10/08	12/18/08	12/18/08	3/27/09	3/27/09	6/25/09	6/25/09	9/23/09	12/3/09	4/7/10	9/19/11	9/28/12		9/27/12	6/25/09	9/23/09	12/2/09	4/7/10	6/28/10	10/6/10	9/19/11
Sample Interval Depth (ft)			DUP		DUP		DUP		DUP		DUP		DUP					71-86	150-165	94 (BULK)							
VOCs of Concern (µg/L)																											
1,1-Dichloroethane	81	81	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<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	**0.6**	**0.5**	<0.5	<0.5	<0.5	<0.5	**0.5**	<0.5	<0.5
trans-1,2-Dichloroethene	100	70	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	5	**0.6**	<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	**0.6**	**0.6**	**1.0**	**0.8**	<0.5	<0.5	<0.5	**0.6**	**0.9**	<0.5	<0.5
Vinyl Chloride	2	2	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	200	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	1,000	1,000	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Additional VOCs (µg/L)																											
Chloroform	70	na	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	30	na	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<2	<2	<2				<1	<2	<2	<2	<2	<2	<2
Methyl-t-butyl ether (MtBE)	13	na	<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	<0.5	**0.9**	**1.3**	**1.2**	**1.4**	**1**	**0.8**	**0.7**
Metals of Concern (mg/L)																											
Total Arsenic	0.01	0.05	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.0012**	**0.0011**	**0.001**	**0.0011**	**0.0011**	<0.001	**0.001**	<0.001	**0.0032**	**0.0135**	**0.0185**	**0.0207**	**0.0183**	**0.0138**	**0.0202**	**0.0158**
NA - Field Screening																											
pH (SU)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**7.2**	**6.2**	*ns*	**7.2**	**7.3**	*ns*	*ns*	*ns*	**7.4**	**6.8**	**8.2**	**7.5**	*ns*
ORP (mV)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**145**	**283**	*ns*	**62**	**2**	*ns*	*ns*	*ns*	**-59**	**11**	**-63**	*ns*	*ns*
Specific Conductance (µS/cm)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**382**	**239**	*ns*	**523**	**544**	*ns*	*ns*	*ns*	**783**	**816**	**777**	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**1.8**	**3.7**	*ns*	**4.7**	**4.2**	*ns*	*ns*	*ns*	**0.33**	**0.22**	**0.7**	**0.57**	*ns*
Turbidity (ntu)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**11**	**12**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*
Temperature (°C)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**10**	**9.5**	*ns*	**10**	**10**	*ns*	*ns*	*ns*	**10.8**	**10**	**12**	**11.3**	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID			MOT_W4			MOT_DW-35							MOT_W14				
Geological Unit of Well Screen			4 Windmere Drive			14 Windmere Drive							14 Windmere Drive				
Sample Date	NH AGQS	ROD ICL	10/5/12		10/4/12	7/24/09	7/24/09	12/2/09	4/7/10	6/28/10	10/6/10	9/21/11	10/4/12		10/3/12		
Sample Interval Depth (ft)			168-183	213-228	190 (BULK)		DUP						75-85	143-153	229-239	290-300	235 (BULK)
VOCs of Concern (µg/L)																	
1,1-Dichloroethane	81	81	<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
cis-1,2-Dichloroethene	70	70	<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
trans-1,2-Dichloroethene	100	70	<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
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.7**	**1.2**	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<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
1,1,1-Trichloroethane	200	200	<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
Ethylbenzene	700	700	<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
Toluene	1,000	1,000	<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
Additional VOCs (µg/L)																	
Chloroform	70	na	<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
Chloromethane	30	na	<2	<2	<2	<1	**1.1**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl-t-butyl ether (MtBE)	13	na	<0.5	<0.5	<0.5	**1**	**1**	**1.6**	**2**	**1**	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	<0.5
Metals of Concern (mg/L)																	
Total Arsenic	0.01	0.05	**0.0033**	**0.0218**	**0.0170**	**0.0104**	**0.0093**	**0.0078**	**0.0158**	**0.0046**	**0.0027**	**0.0049**	**0.0036**	**0.0033**	**0.0068**	**0.0039**	**0.0079**
NA - Field Screening																	
pH (SU)	na	na	**7.1**	**6.9**	*ns*	*ns*	*ns*	**7.5**	**7.7**	**8.6**	**7.0**	*ns*	**7.1**	**7.0**	**7.0**	**7.0**	*ns*
ORP (mV)	na	na	**-94**	**-55**	*ns*	*ns*	*ns*	**-60**	**-119**	**27**	*ns*	*ns*	**-25**	**12.7**	**-2**	**-9**	*ns*
Specific Conductance (µS/cm)	na	na	**502**	**689**	*ns*	*ns*	*ns*	**333**	**345**	**302**	*ns*	*ns*	**265**	**377**	**327**	**332**	*ns*
Dissolved Oxygen (mg/L)	na	na	**1.9**	**4.4**	*ns*	*ns*	*ns*	**1.5**	**0.27**	**2**	**0.43**	*ns*	**1.6**	**2.9**	**2.5**	**6.4**	*ns*
Turbidity (ntu)	na	na	**29**	**145**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**4**	**7**	**84**	**54**	*ns*
Temperature (°C)	na	na	**11**	**11**	*ns*	*ns*	*ns*	**9.9**	**9.6**	**11**	**11**	*ns*	**10**	**10**	**11**	**12**	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sample Date / Sample Interval Depth (ft)	NH AGQS	ROD ICL	MOT_DW-13 31 Blueberry Hill Road												MOT_B31 31 Blueberry Hill Road				
			3/2/05	6/25/09	7/16/09 Resample	9/23/09	9/23/09 DUP	12/2/09	12/2/09 DUP	4/6/10	6/28/10	6/28/10 DUP	10/6/10	10/6/10 DUP	9/19/11	10/10/12 265-275	10/10/12 279-289	10/10/12 279-289 DUP	10/9/12 282.5 (BULK)	10/9/12 282.5 (DUP)
VOCs of Concern (µg/L)																				
1,1-Dichloroethane	81	81	<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	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	**2.1**	**2.6**	**1.7**	**1.3**	**3.0**	**3.1**	**4.2**	**2.2**	**2.3**	**1.3**	**1.3**	**1.2**	**0.9**	**0.8**	**0.8**	**0.5**	**0.5**
trans-1,2-Dichloroethene	100	70	<0.5	**0.6**	**0.7**	**0.5**	<0.5	**0.9**	**0.9**	**1.1**	**0.6**	**0.6**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	5	<0.5	**4.9**	**5.9**	**3.7**	**2.8**	**6.4**	**6.5**	**7.8**	**3.7**	**3.7**	**2.5**	**2.4**	**2.2**	**1.9**	**1.6**	**1.6**	**0.9**	**0.8**
Vinyl Chloride	2	2	<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	<0.5
1,1,1-Trichloroethane	200	200	<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	<0.5
Ethylbenzene	700	700	<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	<0.5
Toluene	1,000	1,000	<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	<0.5
Additional VOCs (µg/L)																				
Chloroform	70	na	<0.5	<0.5	<0.5	**4.8**	**6.4**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.6**	**4.5**	**4.3**	**4.2**	**3.7**
Chloromethane	30	na	<1	<1	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl-t-butyl ether (MtBE)	13	na	**6.1**	**1.6**	**1.1**	**1.3**	**1.3**	**1.1**	**1**	**1**	**0.9**	**0.9**	**0.9**	**0.9**	**0.8**	**0.7**	**0.6**	**0.7**	**0.8**	**0.8**
Metals of Concern (mg/L)																				
Total Arsenic	0.01	0.05	*ns*	**0.0078**	*ns*	**0.0186**	**0.0302**	**0.0095**	**0.0091**	**0.0134**	**0.0171**	**0.0157**	**0.0164**	**0.0167**	**0.0156**	**0.0131**	**0.0125**	**0.0122**	**0.0182**	**0.0214**
NA - Field Screening																				
pH (SU)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	**7.3**	*ns*	**7.6**	**6.8**	*ns*	**7.7**		*ns*	**7.5**	**7.5**	*ns*	*ns*	*ns*
ORP (mV)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	**-75**	*ns*	**-135**	**-69**	*ns*	*ns*		*ns*	**-111**	**-105**	*ns*	*ns*	*ns*
Specific Conductance (µS/cm)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	**425**	*ns*	**367**	**369**	*ns*	*ns*		*ns*	**579**	**598**	*ns*	*ns*	*ns*
Dissolved Oxygen (mg/L)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	**1.4**	*ns*	**0.3**	**1.7**	*ns*	**0.41**		*ns*	**4.9**	**4.2**	*ns*	*ns*	*ns*
Turbidity (ntu)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*		*ns*	**3**	**2**	*ns*	*ns*	*ns*
Temperature (°C)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	**9.7**	*ns*	**9.3**	**11**	*ns*	**10.6**		*ns*	**10**	**10**	*ns*	*ns*	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING AND HISTORICAL DATA FOR THESE WELLS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID			MOT_DW-34						MOT_B40		MOT_DW-28								MOT_B41			
Geological Unit of Well Screen			40 Blueberry Hill Road						40 Blueberry Hill Road		41 Blueberry Hill Road								41 Blueberry Hill Road			
Sample Date	NH AGQS	ROD ICL	6/25/09	12/4/09	4/6/10	6/28/10	10/5/10	9/20/11	10/9/12	10/8/12	6/25/09	7/17/09	9/23/09	12/3/09	4/7/10	6/25/10	10/5/10	9/19/11	10/11/12			
Sample Interval Depth (ft)									40-55	153 (BULK)		Resample							254-264	254-264 DUP	283-293	165 (BULK)
VOCs of Concern (µg/L)																						
1,1-Dichloroethane	81	81	<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	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	70	70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	**1.4**	**0.6**	**1.2**	**0.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	100	70	<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	<0.5	<0.5	<0.5
Tetrahydrofuran(THF)	154	154	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Trichloroethene	5	5	<0.5	<0.5	<0.5	<0.5	**0.5**	<0.5	<0.5	<0.5	**1.3**	<0.5	**3.3**	**1.4**	**2.3**	**1.4**	**1**	**0.7**	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	2	2	<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	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	200	200	<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	<0.5	<0.5	<0.5
Ethylbenzene	700	700	<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	<0.5	<0.5	<0.5
Toluene	1,000	1,000	<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	<0.5	<0.5	<0.5
Additional VOCs (µg/L)																						
Chloroform	70	na	<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	<0.5	<0.5	<0.5
Chloromethane	30	na	**1.5**	<2	<2	<2	<2	<2	<2	<2	<1	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl-t-butyl ether (MtBE)	13	na	**0.7**	**2**	**1.4**	**1**	**1.1**	**0.6**	<0.5	<0.5	**2.2**	**2.9**	**1.9**	**1.9**	**1.4**	**1.3**	**1.6**	**1.1**	**0.7**	**0.7**	**0.7**	**0.5**
Metals of Concern (mg/L)																						
Total Arsenic	0.01	0.05	<0.001	**0.0034**	**0.0012**	**0.0016**	**0.0012**	**0.0019**	**0.0018**	**0.0139**	**0.0111**	*ns*	**0.0124**	**0.0098**	**0.0095**	**0.0127**	**0.0109**	**0.0087**	**0.014**	**0.0139**	**0.0052**	**0.0234**
NA - Field Screening																						
pH (SU)	na	na	*ns*	**6.8**	**6.2**	**7.0**	**6.4**	*ns*	**6.0**	*ns*	*ns*	*ns*	*ns*	**6.8**	**6.4**	**7.9**	**7.0**	*ns*	**7.0**	*ns*	**7.0**	*ns*
ORP (mV)	na	na	*ns*	**98**	**242**	**130**	*ns*	*ns*	**61**	*ns*	*ns*	*ns*	*ns*	**-39.0**	**-27.0**	**111**	*ns*	*ns*	**-75**	*ns*	**-51**	*ns*
Specific Conductance (µS/cm)	na	na	*ns*	**762**	**828**	**889**	*ns*	*ns*	**1,112**	*ns*	*ns*	*ns*	*ns*	**746**	**361**	**607**	*ns*	*ns*	**926**	*ns*	**942**	*ns*
Dissolved Oxygen (mg/L)	na	na	*ns*	**1.4**	**1.4**	**1.0**	**1.7**	*ns*	**4.1**	*ns*	*ns*	*ns*	*ns*	**2.4**	**0.9**	**0.7**	**0.9**	*ns*	**4.9**	*ns*	**2.7**	*ns*
Turbidity (ntu)	na	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**15**	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**2**	*ns*	**6**	*ns*
Temperature (°C)	na	na	*ns*	**10.5**	**9.7**	**13**	**12.1**	*ns*	**12**	*ns*	*ns*	*ns*	*ns*	**10.6**	**10.4**	**11**	**11.4**	*ns*	**11**	*ns*	**10**	*ns*

See last page for notes

TABLE 8 - SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER - BEDROCK BOREHOLE PACKER SAMPLING
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

TABLE KEY:
AGQS = Ambient Groundwater Quality Standards included in Env-Or 600 - Contaminated Site Management
ROD ICL = Interim Concentration Limits established in the Record of Decision (ROD) for Site groundwater
VOCs = Volatile Organic Compounds
na = no current standard available
ns = not sampled
< = analyte not detected above the laboratory reporting limit
µg/L = micrograms per Liter
mg/L = milligrams per Liter
NA = Natural Attenuation
ORP = Oxidation Reduction Potential
SU = Standard Units
mV = milliVolts
µS/cm = micro Siemens per centimeter
ntu = Nephelometric Turbidity Units
^{o}C = degrees Celsius

NOTES:
1. During the September/October 2012 packer sampling event, Northeast Geophysical Services of Bangor, Maine, provided and operated a pneumatic packer system to facilitate groundwater sample collection from selected fracture zones. GZA personnel obtained groundwater samples utilizing a Grundfos Redi Flow2 submersible pump.
2. "S" indicates Strawberry Lane; "B" indicates Blueberry Hill Road; "W" indicates Windmere Drive. The number following the street designation is the street number of the property on which the former water supply well is located.
3. Historical analytical data are listed under the residential drinking water designations (*e.g.* MOT_DW-2) and represent samples collected from taps associated with the former residential water wells. Comparisons to the historical data should be made with the bulk water samples and not with the fracture samples collected from the former bedrock residential water supply wells.
4. **Bold** indicates that the concentration was detected above the laboratory reporting detection limit. Shading indicates that the concentration exceeds the AGQS and/or ROD ICL.
5. The analytical test methods for each compound are as follows: VOCs by 524 and Metals (Arsenic) by EPA 200.8.
6. The field screening parameter readings reported represent the last round of readings obtained following purging and prior to sample collection for packer testing.

TABLE 9 - SUMMARY OF DETECTED COMPOUNDS IN SURFACE WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Surface Water Sample Location ID / Sampling Event Date	NH SWQC	MOT_SW-1											
		Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun -03*	Aug-09	May-10	Nov-12
VOCs (µg/L)													
1,1-Dichloroethane	na	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
cis-1,2-Dichloroethene	11,600*	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
trans-1,2-Dichloroethene	11,600*	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Tetrahydrofuran(THF)	na	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<10	<10	<10
Trichloroethene	21,900	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Vinyl Chloride	na	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
1,1,1-Trichloroethane	na	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Ethylbenzene	32,000	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Toluene	na	ND	ND	ND	*ns*	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Metals (mg/L)													
Arsenic	0.15	ND	**0.014**	ND	*ns*	**0.001**	ND	ND	ND	ND	<0.001	<0.001	<0.001
Iron	1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**1.17**	**0.278**	*ns*
Hardness	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**46.5**	**35.5**	**48.94**
NA Parameters - Field													
pH (SU)	na	*Not sampled prior to August 2009*									**6.5**	**6.9**	**7.0**
ORP (mV)	na										**107**	**203**	**220**
Specific Conductance (µS/cm)	na										**295**	**250**	**374**
Dissolved Oxygen (mg/L)	na										**6.4**	**7.7**	**14.6**
Turbidity (ntu)	na										**9.0**	**1.7**	**1**
Temperature (°C)	na										**18**	**16**	**4**

See last page for notes.

TABLE 9 - SUMMARY OF DETECTED COMPOUNDS IN SURFACE WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Surface Water Sample Location ID / Sampling Event Date	NH SWQC	MOT_SW-2											
		Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun -03*	Aug-09	May-10	Nov-12
VOCs (µg/L)													
1,1-Dichloroethane	na	ND	ND	ND	**2.3**	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
cis-1,2-Dichloroethene	11,600*	ND	ND	ND	**13**	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
trans-1,2-Dichloroethene	11,600*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Tetrahydrofuran(THF)	na	ND	ND	ND	**15**	ND	ND	ND	ND	ND	<10	<10	<10
Trichloroethene	21,900	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Vinyl Chloride	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
1,1,1-Trichloroethane	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Ethylbenzene	32,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Toluene	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<0.50
Metals (mg/L)													
Arsenic	0.15	ND	ND	ND	**0.0141**	ND	ND	**0.0012**	ND	ND	<0.001	<0.001	<0.001
Iron	1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.994**	**0.249**	*ns*
Hardness	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**44.6**	**33.6**	**47.69**
NA Parameters - Field													
pH (SU)	na	*Not sampled prior to August 2009*									**7.3**	**7.1**	**7.3**
ORP (mV)	na										**98**	**97**	**166**
Specific Conductance (µS/cm)	na										**281**	**239**	**357**
Dissolved Oxygen (mg/L)	na										**7.4**	**8.5**	**14.8**
Turbidity (ntu)	na										**7.5**	**3.2**	**1**
Temperature (°C)	na										**18**	**13**	**4**

See last page for notes.

TABLE 9 - SUMMARY OF DETECTED COMPOUNDS IN SURFACE WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Surface Water Sample Location ID / Sampling Event Date	NH SWQC	MOT_SW-3														
		Apr-97	Oct-97	Apr-98	Sep-98	May-99	Apr-00	May-01	Apr-02	Jun -03*	Aug-09	Aug-09 DUP	May-10	May-10 DUP	Nov-12	Nov-12 DUP
VOCs (µg/L)																
1,1-Dichloroethane	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
cis-1,2-Dichloroethene	11,600*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
trans-1,2-Dichloroethene	11,600*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
Tetrahydrofuran(THF)	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	<10	<10	<10	<10
Trichloroethene	21,900	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
Vinyl Chloride	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
1,1,1-Trichloroethane	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
Ethylbenzene	32,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
Toluene	na	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	<0.50	<0.50
Metals (mg/L)																
Arsenic	0.15	ND	**0.015**	ND	**0.0244**	ND	**0.0016**	**0.0042**	ND	ND	**0.0023**	**0.0022**	**0.0014**	**0.0015**	**0.0013**	**0.0013**
Iron	1.0	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**0.805**	**0.794**	**0.194**	**0.195**	*ns*	*ns*
Hardness	na	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	*ns*	**45.0**	**44.3**	**33.6**	**34.3**	**49.04**	**47.6**
NA Parameters - Field																
pH (SU)	na	*Not sampled prior to August 2009*									**6.3**	*ns*	**6.4**	*ns*	**7.7**	*ns*
ORP (mV)	na										**72**	*ns*	**148**	*ns*	**151**	*ns*
Specific Conductance (µS/cm)	na										**278**	*ns*	**236**	*ns*	**356**	*ns*
Dissolved Oxygen (mg/L)	na										**7.6**	*ns*	**9.1**	*ns*	**14.9**	*ns*
Turbidity (ntu)	na										**8.4**	*ns*	**1.1**	*ns*	**2**	*ns*
Temperature (°C)	na										**17**	*ns*	**16**	*ns*	**4**	*ns*

See last page for notes.

TABLE 9 - SUMMARY OF DETECTED COMPOUNDS IN SURFACE WATER SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

TABLE KEY:

SWQC = Water Quality Criteria for Toxic Substances included in Env-Wq 1700 - Surface Water Quality Regulations
VOCs = Volatile Organic Compounds
na = no current standard available
ns = not sampled
ND = analyte not detected above the laboratory reporting limit, limit unknown
< = analyte not detected above the laboratory reporting limit
NA = Natural Attenuation
ORP = Oxidation Reduction Potential
µg/L = micrograms per Liter
mg/L = milligrams per Liter
SU = Standard Units
mV = milliVolts
µS/cm = micro Siemens per centimeter
ntu = Nephelometric Turbidity Units
^{o}C = degrees Celsius

NOTES:

1. 2009, 2010 and 2012 surface water samples were collected by GZA, surface water samples prior to 2009 were collected by NHDES and others.
2. SWQC standards assume the Protection of Aquatic Life in Freshwaters with chronic criteria. If a chronic criteria standard has not been established, GZA used the Freshwater Acute Criteria.
3. "*" indicates that the compound shown has two or more isomers. The sum of the concentrations of each isomer shall meet the SWQC.
4. **Bold** indicates that the concentration was detected above the laboratory reporting detection limit. Shading indicates that the concentration exceeds the SWQC.
5. The analytical test methods for each compound are as follows: VOCs by SW-846 8260B, Metals by EPA 200.8, and hardness by EPA 200.7.
6. There are no ROD Interim Cleanup Goals established for surface water.
7. * EPA recommended that the surface water sampling be discontinued after the June 2003 sampling round. Surface water samples were not collected again until 2009.

TABLE 10 - SUMMARY OF DETECTED COMPOUNDS IN SEDIMENT SAMPLES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Sediment Sample Location / Sampling Event Date	SQUIRT TEC [2]	MOT_SED-1		MOT_SED-2		MOT_SED-3			
		Aug-09	Nov-12	Aug-09	Nov-12	Aug-09	Aug-09 DUP	Nov-12	Nov-12 DUP
Metals (mg/kg dry)									
Arsenic	9.8	<9.64	**4.01**	**163**	**4.57**	**12.5**	**26.8**	**27.0**	**39.5**
Iron	na	**7,320**	*ns*	**19,171**	*ns*	**6,184**	**4,938**	*ns*	*ns*

TABLE KEY:

na = no current standard available

ns = not sampled

< = analyte not detected above the laboratory reporting limit

mg/kg= milligrams per kilogram

NOTES:

1. 2009 and 2012 sediment samples were collected by GZA.
2. Buchman, M.F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration. "TEC" is Threshold Effect Concentration, which is consensus-based and incorporates the Ontario Ministry of the Environment lowest-observed effect levels (LELs) (Persaud et al. 1993) as well as data from up to five other sediment quality guidelines (when available), including:
   - threshold effects levels (TELs) (Smith et al. 1996),
   - effects range-low (ER-L) values (Long and Morgan 1991),
   - threshold effect levels for Hyalella azteca in 28 day tests (TEL-HA28) (U.S.EPA 1996a; Ingersoll et al. 1996),
   - minimal effect thresholds (MET) from EC and MENVIQ (1992), and
   - chronic equilibrium partitioning thresholds (SQAL) (Bolton et al. 1985; Zarba 1992; U.S.EPA 1997a).
3. **Bold** indicates that the concentration was detected above the laboratory reporting detection limit. Shading indicates that the concentration exceeds the SRS.
4. The analytical test methods for each compound are as follows: Metals by EPA 200.8.
5. There are no ROD Interim Cleanup Goals established for sediment.

TABLE 11
SUMMARY OF CHANGE OF TOXICITY VALUES
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Indicator Compound	Oral Reference Dose (mg/kg-day) Chronic 1990	Current	
Arsenic	NA	0.0003	a
1,1-Dichloroethane	NA	0.2	b
1,2-Dichloroethene (total)	0.02	0.02	a
Ethylbenzene	0.1	0.05	b
Tetrahydrofuran	0.002	0.9	a
Toluene	0.3	0.08	a
1,1,1-Trichloroethane	0.09	2	a
Trichloroethene	NA	0.0005	a
Vinyl Chloride	NA	0.003	a
Total Xylenes	2	0.2	a

Indicator Compound	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$ 1990	Current	
Arsenic	1.8	1.5	a
1,1-Dichloroethane	0.091	NA	
Trichloroethene	0.011	0.046	a
Vinyl Chloride	2.3	1.4	a

Notes:
1. Sources of the current toxicity values:
   a. USEPA Integrated Risk Information System (IRIS), http://www.epa.gov/IRIS, May, 2013.
      Toxicity value for trans-1,2-dichloroethene was used for total 1,2-dichloroethene.
   b. USEPA Provisional Peer Reviewed Toxicity Values for Superfund (PPRTV); current as of May, 2013.
      Subchronic reference dose was used as chronic reference dose for ethylbenzene.
2. Toxcity values used in the 1990 baseline risk assessment were from the 1990 Remedial Investigation Report.

NA = Not Available

TABLE 13A
2009 GEOPROBE SOIL METAL ANALYTICAL DATA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Metals in Soil Sampling Depth (feet) Sampling Date	SB 16C-12 12 10/8/2009	SB 16C-14.5 14.5 10/8/2009	SB 16H-4 4 10/8/2009	SB 16H-9 9 10/8/2009	SB 24-1 1 10/8/2009	SB Road 2-7 7 10/8/2009	SB Road 5-8 8 10/8/2009	2009 Maximum Detected Concentration	2009 Average Concentration	New Hampshire Soil Remediation Standards	Residential Soil RSL	Industrial Soil RSL	1990 RI Maximum Detected Concentration	Indicator Compound in 1990 Baseline Risk Assessment?
Aluminum	22,000	22,000	11,000	5,700	13,000	7,000	7,200	22,000	12,557	NA	77,000	990,000	NA	No
Antimony	<2.0	<2.0	2.2	<2.0	2.6	<2.0	<2.0	2.6	1.4	9	31	410	38	No
Arsenic	83	61	14	6.8	17	75	29	83	41	11	0.39	1.6	15	No
Barium	96	110	32	12	41	36	35	110	52	1000	15,000	190,000	37	No
Beryllium	<0.8	1.4	<0.8	<0.8	<0.78	<0.82	<0.80	1.4	0.54	1	160	2000	NA	No
Cadmium	<1.0	<1.0	<1.0	3.6	1.1	<1.0	<1.0	3.6	1.0	33	70	800	NA	No
Calcium	1,300	770	880	610	1,200	720	1200	1,300	954	NA	NA	NA	NA	No
Chromium	66	78	110	7.0	150	21	21	150	65	130	120,000	1,500,000	NA	No
Cobalt	6.4	8.9	3.8	2.4	4.1	2.4	3.2	8.9	4.5	NA	23	300	NA	No
Copper	25	22	27	4.5	13	25	9.8	27	18	NA	3,100	41,000	5.5	No
Iron	28,000	26,000	10,000	3,900	14,000	14,000	9,100	28,000	15,000	NA	55,000	720,000	NA	No
Lead	<4.0	4.7	420	<4.0	530	17	<4.0	530	140	400	400	800	181	No
Magnesium	14,000	8600	3,000	760	3,500	2,700	3,200	14,000	5,109	NA	NA	NA	NA	No
Manganese	360	560	140	54	230	130	160	560	233	5,200	1,800	23,000	NA	No
Nickel	35	36	14	5.8	15	16	13	36	19	400	3,800	47,000	18	No
Vanadium	68	40	18	7.1	23	18	17	68	27	NA	390	5200	23	No
Zinc	70	75	84	18	61	30	28	84	52	1,000	23,000	310,000	51	No

TABLE KEY:
< = analyte not detected above the laboratory reporting limit (RL)
RI = Remedial Investigation
NA = Not Available
RSL = Regional Screening Levels

NOTES:
1. Concentrations are presented in units of milligrams per kilogram (mg/kg) or parts per million (ppm) unless otherwise noted.
2. Regional Screening Levels (RSL) for residential and industrial soil recommended by USEPA Region 3, 6, and 9 (2012), presented in the RSL for Chemical Contaminants at Superfund Sites (http://www.epa.gov/region09/superfund/prg/index.html).
3. The New Hampshire Soil Remediation Standards are from the New Hampshire Code of Administrative Rules Env-or 606.19(b), Table 600-2.
4. For average concentration calculations, half of the RL was used for non-detect compounds.

TABLE 13B
2009 GEOPROBE SOIL VOC ANALYTICAL DATA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

VOAs in Soil Sampling Depth (feet) Sampling Date	SB 16B-5.0 5 10/8/2009	SB 16B-6 6 10/8/2009	SB 16C-10 10 10/8/2009	SB 16C-11.5 11.5 10/8/2009	SB 16H-7 7 10/8/2009	Maximum Detected Concentration	Average Concentration	New Hampshire Soil Remediation Standards	Residential Soil RSL	Industrial Soil RSL	1990 RI Maximum Detected Concentration	Indicator Compound in 1990 Baseline Risk Assessment?
1,1,1-Trichloroethane	<2.7	<0.19	<0.038	<0.037	20	20	4.3	78	8,700	38,000	0.3	No
1,2,4-Trimethylbenzene	7.4	<0.19	<0.038	<0.037	<13	7.4	2.8	130	62	260	NA	No
Ethylbenzene	36	0.77	<0.038	<0.037	15	36	10	140	5.4	27	140	Yes
m/p Xylene	96	1.8	<0.076	<0.074	84	96	36		590	2,500	NA	as total xylene
o Xylene	24	0.51	<0.038	<0.037	22	24	9.3	500	690	3,000	NA	as total xylene
Total Xylene	120	2.3	<0.038	<0.037	106	120	46		630	2,700	NA	Yes
Toluene	95	1.5	<0.038	<0.037	210	210	61	100	5,000	45,000	47	Yes
Trichloroethene	<2.7	<0.19	0.15	0.73	<13	0.73	1.8	0.8	0.9	6.4	0.032	No
cis-1,2-Dichloroethene	<2.7	<0.19	<0.038	0.094	<13	0.094	1.6	2	160	2,000	0.004	No

TABLE KEY:
VOC = Volatile organic compound
< = analyte not detected above the laboratory reporting limit (RL)
RI = Remedial Investigation
NA = Not Available
RSL = Regional Screening Levels

NOTES:
1. Concentrations are presented in units of milligrams per kilogram (mg/kg) or parts per million (ppm) unless otherwise noted.
2. Only analytes detected in one or more soil samples are listed in the table.
3. The sum of the m/p-xylene and o-xylene results was used to represent the total xylene result for each sample. If neither m/p-xylene nor o-xylene was detected, the lowest reporting limit of m/p-xylene and o-xylene was used to represent the RL of total xylene.
5. Regional Screening Levels (RSL) for residential and industrial soil recommended by USEPA Region 3, 6, and 9 (2012), presented in the RSL for Chemical Contaminants at Superfund Sites (http://www.epa.gov/region09/superfund/prg/index.html).
6. The New Hampshire Soil Remediation Standards are from the New Hampshire Code of Administrative Rules Env-or 606.19(b), Table 600-2.
7. For average concentration calculations, half of the RL was used for non-detect compounds.

TABLE 14
COMPARISON OF 2009 GEOPROBE SOIL LABORATORY AND FIELD RESULTS AT SOUTHERN BOUNDARY LOCATIONS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Location	Depth (feet)	Lead	Arsenic	Trichloroethene	Tetrachloroethene	Toluene	m/p Xylene	o Xylene	Ethylbenzene
SB 16B	5	---	---	<0.4 (<2.7)	<0.3 (<2.7)	74.2 (95)	71 (96)	23 (24)	40 (36)
SB 16B	6	---	---	<0.01 (<0.19)	<0.007 (<0.19)	1.6 (1.5)	1.6 (1.8)	0.63 (0.51)	0.94 (0.77)
SB 16C	10	---	---	0.188 (0.15)	<0.007 (<0.038)	---	---	---	---
SB 16C	11.5	---	---	0.718 (0.73)	<0.007 (<0.037)	---	---	---	---
SB 16C	12	<7 (<4)	62 (83)	---	---	---	---	---	---
SB 16C	14.5	<6 (4.7)	41 (61)	---	---	---	---	---	---
SB 16H	4	237 (420)	<12 (14)	---	---	---	---	---	---
SB 16H	9	<6 (<4.0)	<4 (6.8)	---	---	---	---	---	---
SB 24	1	239 (530)	26 (17)	---	---	---	---	---	---
SB Road 2	7	38 (17)	36 (75)						

TABLE KEY:
< = analyte not detected above the laboratory reporting limit (RL).
--- = a comparison of field results and geoprobe laboratory results is not available.

NOTES:
1. Concentrations are presented in units of milligrams per kilogram (mg/kg) or parts per million (ppm) unless otherwise noted.
2. The first number represents the field screening results; analytical laboratory detections are presented in parentheses.
3. Only volatile organic compounds detected in one or more soil sample are listed in this table.
4. Cis-1,2 dichloroethene and 1,1,1-trichloroethane are not listed in this table. Cis-1,2-dichloroethene was detected at 108 ppb in sample SB 16C at 11.5 feet below ground surface during the field screening analysis, while it was detected at 94 ppb via the laboratory analysis. 1,1,1-Trichloroethane was detected at 29 ppm in sample SB 16H at 7 feet below ground surface during the field screening analysis.

TABLE 15A
2009 FIELD SCREENING RESULTS AT SLOPE LOCATIONS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Location	Depth feet	Lead	Arsenic
New Hampshire Soil Remediation Standards:		400	11
Slope 1	1	10	<5
Slope 1	2.75	7	8
Slope 1A	7.5	<6	6
Slope 2	1	23	<5
Slope 2	7.5	<7	8
Slope 2	11.5	<6	9
Slope 3	4	<6	<4
Slope 3	8	<7	12
Slope 3	12	<6	<5
Slope 3	15	<6	7
Slope 4	0.5	12	<5
Slope 4	0.5	13	<5
Slope 4	1.5	12	<4
Slope 4	2.5	15	<5
Slope 4	3.5	10	<5
Slope 4	3.5	10	<5
Slope 5	0.5	364	<12
Slope 5	1.5	126	<8
Slope 5	2.5	132	10
Slope 5	3.5	27	<6
Slope 5	4.5	14	<5
Slope 5	5.25	33	<6
Slope 6	0.5	48	<7
Slope 6	1.5	33	<5
Slope 6	2.5	7	<5
Slope 6	3.25	<7	<5
Slope 7	0.5	<6	<4
Slope 7	1.5	<6	<5
Slope 7	2.25	<6	<4
Slope 8	1.25	36	<5
Slope 8	2	33	<5
Slope 8	3	<6	<4
Slope 9	0.5	<6	<5
Slope 9	1.5	<6	<4
Slope 9	2.25	<6	<5
Slope Average:		**29**	**3.8**
Slope Maximum Detected Concentration:		**364**	**12**

TABLE KEY:
< = analyte not detected above the laboratory reporting limit (RL)

NOTES:
1. Concentrations are presented in units of milligrams per kilogram (mg/kg) or parts per million (ppm) unless otherwise noted.
2. The New Hampshire Soil Remediation Standards are from the New Hampshire Code of Administrative Rules Env Or 606.19(b), Table 600-2.
3. For average concentration calculations, half of the RL was used for non-detect compounds.

TABLE 15B
2009 FIELD SCREENING RESULTS AT SOUTH LOCATIONS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Location	Depth (feet)	Lead	Arsenic
New Hampshire Soil Remediation Standards:		400	11
South 1	1	<7	5
South 1	3	<7	9
South 1A	3	<6	<5
South 2	1	33	<6
South 2	3	<6	<4
South 3	1	<6	19
South 3	4	<7	27
South 3	4	<7	31
South 4	1	<6	11
South 4	3.5	<7	20
South 5	1	12	<6
South 5	4	<6	<5
South 5	4	<6	<5
South 5	8	<6	<5
South 5	9.5	<6	<5
South 6	1	7	<5
South 6	4	<7	14
South 6	8	<7	36
South 7	1	8	<5
South 7	4	<6	<5
South 7	8	<6	<5
South 8	1	11	12
South 8	4	15	8
South 8	6	8	<5
South 9	1.5	<6	8
South 10	1	<6	12
South 10	4	<7	26
South 10	5.5	<7	15
South Average:		**5.8**	**10**
South Maximum Detected Concentration:		**33**	**36**

TABLE KEY:
< = analyte not detected above the laboratory reporting limit (RL)

NOTES:
1. Concentrations are presented in units of milligrams per kilogram (mg/kg) or parts per million (ppm) unless otherwise noted.
2. The New Hampshire Soil Remediation Standards are from the New Hampshire Code of Administrative Rules Env-Or 606.19(b), Table 600-2.
3. For average concentration calculations, half of the RL was used for non-detect compounds.

TABLE 15C
2009 FIELD SCREENING RESULTS AT SOUTHERN BOUNDARY LOCATIONS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Location	Depth (feet)	Lead ppm	Arsenic ppm	TCE ppb	PCE ppb	Toluene ppm	m/p Xylene ppm	o Xylene ppm	Ethylbenzene ppm
New Hampshire Soil Remediation Standards:		400	11	800	2,000	100	500		140
SB 01	1	<7	10	---	---	---	---	---	---
SB 01	4	<7	14	---	---	---	---	---	---
SB 01	8	<6	11	---	---	---	---	---	---
SB 01	12	<7	24	---	---	---	---	---	---
SB 2	1	8	12	---	---	---	---	---	---
SB 2	4	<6	7	---	---	---	---	---	---
SB 2	8	<6	<5	---	---	---	---	---	---
SB 2	11	<6	5	---	---	---	---	---	---
SB 3	1	<6	12	---	---	---	---	---	---
SB 3	4	<6	12	---	---	---	---	---	---
SB 3	8	<6	8	---	---	---	---	---	---
SB 3	10	<6	12	---	---	---	---	---	---
SB 4	1	<7	7	---	---	---	---	---	---
SB 4	4	<6	<5	---	---	---	---	---	---
SB 4	8	<6	7	---	---	---	---	---	---
SB 4	12	<6	<5	---	---	---	---	---	---
SB 4	14	<6	10	---	---	---	---	---	---
SB 5	1	8	<5	---	---	---	---	---	---
SB 5	4	7	6	---	---	---	---	---	---
SB 5	8	<7	<5	---	---	---	---	---	---
SB 5	12	<7	<5	---	---	---	---	---	---
SB 5	14	<6	<5	---	---	---	---	---	---
SB 5	17	<6	<5	---	---	---	---	---	---
SB 6	1	<6	<5	---	---	---	---	---	---
SB 6	4	12	<5	---	---	---	---	---	---
SB 6	8	<6	5	---	---	---	---	---	---
SB 6	8	<6	<4	---	---	---	---	---	---
SB 6	10	<7	<5	---	---	---	---	---	---
SB 7	1	20	7	---	---	---	---	---	---
SB 7	4	10	8	---	---	---	---	---	---
SB 7	8	<6	<4	---	---	---	---	---	---
SB 7	10	<6	26	---	---	---	---	---	---
SB 8	1	<6	<5	---	---	---	---	---	---
SB 8	4	<6	<5	---	---	---	---	---	---
SB 8	8	<6	<4	---	---	---	---	---	---
SB 8	12	<6	<5	---	---	---	---	---	---
SB 8	15.5	<6	8	---	---	---	---	---	---
SB 9	1	<6	<5	---	---	---	---	---	---
SB 9	4	35	<6	---	---	---	---	---	---
SB 9	8	<7	<5	---	---	---	---	---	---
SB 9	12	<6	7	---	---	---	---	---	---
SB 9	14	<5	<4	---	---	---	---	---	---
SB 10	1	12	10	---	---	---	---	---	---
SB 10	4	<7	<5	---	---	---	---	---	---
SB 10	8	<6	8	---	---	---	---	---	---
SB 10	12	<6	32	---	---	---	---	---	---
SB 10	13	<6	20	---	---	---	---	---	---
SB 11	1	<7	<5	---	---	---	---	---	---
SB 11	2.5	11	<5	---	---	---	---	---	---
SB 12	1	22	<6	---	---	---	---	---	---
SB 12	4	<7	<5	---	---	---	---	---	---
SB 12	8	<6	9	---	---	---	---	---	---
SB 12	10	<6	14	---	---	---	---	---	---
SB 13	1	12	5	---	---	---	---	---	---
SB 13	1	11	<5	---	---	---	---	---	---
SB 13	4	<7	<5	---	---	---	---	---	---
SB 13	8	<6	8	---	---	---	---	---	---
SB 13	10	<6	5	---	---	---	---	---	---
SB 13	14.5	<6	<5	---	---	---	---	---	---

TABLE 15C
2009 FIELD SCREENING RESULTS AT SOUTHERN BOUNDARY LOCATIONS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Location	Depth (feet)	Lead ppm	Arsenic ppm	TCE ppb	PCE ppb	Toluene ppm	m/p Xylene ppm	o Xylene ppm	Ethylbenzene ppm
New Hampshire Soil Remediation Standards:		400	11	800	2,000	100	500		140
SB 14	1	<7	<5	---	---	---	---	---	---
SB 14	1	<7	6	---	---	---	---	---	---
SB 14	4	<6	<4	---	---	---	---	---	---
SB 14	5.5	<7	7	---	---	---	---	---	---
SB 14	8	<7	6	---	---	---	---	---	---
SB 14	12	<6	11	---	---	---	---	---	---
SB 15	1	144	10	---	---	---	---	---	---
SB 15	3.5	---	---	30	27	7.1	4.5	1.6	2.8
SB 15	4	806	34	---	---	---	---	---	---
SB 15	4.2	---	---	<10	<10	1.3	1.2	0.39	0.352
SB 15	8	<6	<4	---	---	0.15	---	---	---
SB 15	12	<6	9	---	---	---	---	---	---
SB 15	14	<6	21	---	---	---	---	---	---
SB 16	1	<6	<4	---	---	---	---	---	---
SB 16	2.5	---	---	<10	<7	---	---	---	---
SB 16	4	43	7	---	---	---	---	---	---
SB 16	4.8	340	28	<1500	<900	---	162.4	---	87
SB 16	5.2	585	<17	<1500	<900	146	1100	220	496
SB 16	5.8	385	<13	<12	<12	80	177	345	80
SB 16	6.2	211	<11	<1500	<900	99.7	238	49.7	131
SB 16 (1147)	8	<6	<4	<7	<5	0.378	1.07	---	766
SB 16 (1210)	8	---	---	---	---	0.328	0.721	---	0.442
SB 16	12	<6	<4	---	---	---	---	---	---
SB 16	14	<6	<5	---	---	---	---	---	---
SB 16A	1	<6	<5	---	---	---	---	---	---
SB 16A	4	7	7	---	---	---	---	---	---
SB 16A	5.5	---	---	<10	<7	---	---	---	---
SB 16A	7	<6	<4	---	---	---	---	---	---
SB 16B	1	<7	<5	---	---	---	---	---	---
SB 16B	2	---	---	<10	<7	---	---	---	---
SB 16B	4	127	12	---	---	---	---	---	---
SB 16B	5	---	---	<400	<300	74.2	71	23	40
SB 16B	6	---	---	<10	<7	1.6	1.6	0.63	0.94
SB 16B	7	---	---	<10	<7	0.32	0.48	---	0.29
SB 16B	8	<6	<4	---	---	---	---	---	---
SB 16B	10	---	---	<10	<7	---	---	---	---
SB 16B	12	<6	<4	---	---	---	---	---	---
SB 16B	14	<6	<4	<10	<7	---	---	---	---
SB 16C	1	<6	<5	---	---	---	---	---	---
SB 16C	2	---	---	<10	<7	---	---	---	---
SB 16C	4	122	<9	---	---	---	---	---	---
SB 16C	5	---	---	<10	<7	---	---	---	---
SB 16C	8	<6	<4	---	---	---	---	---	---
SB 16C	10	---	---	188	<7	---	---	---	---
SB 16C	11.5	---	---	718	<7	---	---	---	---
SB 16C	12	<7	62	---	---	---	---	---	---
SB 16C	12	<6	41	---	---	---	---	---	---
SB 16C	14.5	<6	41	107	<7	---	---	---	---
SB 16F	1	<6	<5	---	---	---	---	---	---
SB 16F	2	---	---	<10	<7	---	---	---	---
SB 16F	4	129	<9	---	---	---	---	---	---
SB 16F	6	---	---	<10	<7	---	---	---	---
SB 16F	8	70	16	---	---	---	---	---	---
SB 16F	10	---	---	<10	<7	---	---	---	---
SB 16F	12	13	8	---	---	---	---	---	---
SB 16F	13	<7	10	<10	<7	---	---	---	---

TABLE 15C
2009 FIELD SCREENING RESULTS AT SOUTHERN BOUNDARY LOCATIONS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Location	Depth (feet)	Lead ppm	Arsenic ppm	TCE ppb	PCE ppb	Toluene ppm	m/p Xylene ppm	o Xylene ppm	Ethylbenzene ppm
New Hampshire Soil Remediation Standards:		400	11	800	2,000	100	500		140
SB 16G	1	<6	<5	---	---	---	---	---	---
SB 16G	3	---	---	<10	<7	---	---	---	---
SB 16G	4	43	8	---	---	---	---	---	---
SB 16G	6	---	---	<10	<7	---	---	---	---
SB 16G	8	361	19	---	---	---	---	---	---
SB 16G	10.5	<7	<5	<10	<7	---	---	---	---
SB 16H	1	399	17	---	---	---	---	---	---
SB 16H	2	---	---	<10	<7	---	---	---	---
SB 16H	4	237	<12	---	---	---	---	---	---
SB 16H	7	32	<6	1520	6100	280	165	48	28
SB 16H	8	<6	<5	---	---	0.5	---	---	---
SB 16H	9	<6	<4	<10	<7	---	---	---	---
SB 17	1	<7	8	---	---	---	---	---	---
SB 17	4	23	<6	---	---	---	---	---	---
SB 17	8	47	<6	---	---	0.195	3.34	0.91	1.43
SB 17	12	<6	<5	---	---	---	---	---	---
SB 17	14	<6	<4	---	---	---	---	---	---
SB 18	1	22	9	---	---	---	---	---	---
SB 18	4	40	10	---	---	---	---	---	---
SB 18	8	<7	6	---	---	---	---	---	---
SB 18	12	<7	8	---	---	---	---	---	---
SB 19	1	19	<6	---	---	---	---	---	---
SB 19	4	95	15	---	---	---	---	---	---
SB 19	5	<7	11	---	---	---	---	---	---
SB 20	1	<7	<5	---	---	---	---	---	---
SB 20	1	<7	<5	---	---	---	---	---	---
SB 20	4	81	11	---	---	---	---	---	---
SB 20	6	---	---	---	27	---	---	---	---
SB 20	8	<7	6	---	---	---	---	---	---
SB 20	10.5	<6	7	---	---	---	---	---	---
SB 21	1	10	<5	---	---	---	---	---	---
SB 21	4	70	<7	---	---	---	---	---	---
SB 21	7.5	607	<17	11	9	0.19	---	---	---
SB 22	1	75	<7	---	---	---	---	---	---
SB 22	4	265	19	---	---	---	---	---	---
SB 22	6.5	---	---	---	14	---	---	---	---
SB 23	1	44	8	---	---	---	---	---	---
SB 23	4	23	<5	---	---	---	---	---	---
SB 23	8	<6	5	---	---	---	---	---	---
SB 23	12	<6	7	---	---	---	---	---	---
SB 24	1	239	26	---	---	---	---	---	---
SB 24	4	<7	<5	---	---	---	---	---	---
SB 24	8	<7	11	---	---	---	---	---	---
SB 24	9	<6	<4	---	---	---	---	---	---
SB 25	1	151	21	---	---	---	---	---	---
SB 25	4	<6	8	---	---	---	---	---	---
SB 25	7.5	<6	8	---	---	---	---	---	---
SB 26	1	106	<8	---	---	---	---	---	---
SB 26	3	111	<8	---	---	---	---	---	---
SB 27	1	177	<10	---	---	---	---	---	---
SB 27	4	11	8	---	---	---	---	---	---
SB 27	5	46	7	---	---	---	---	---	---
SB 28	1	21	<6	---	---	---	---	---	---
SB 28	4	<6	<5	---	---	---	---	---	---
SB 28	7	<6	<5	---	---	---	---	---	---
SB 29	1	149	13	---	---	---	---	---	---
SB 29	4	<7	10	---	---	---	---	---	---
SB 29	5	<7	8	---	---	---	---	---	---

TABLE 15C
2009 FIELD SCREENING RESULTS AT SOUTHERN BOUNDARY LOCATIONS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Location	Depth (feet)	Lead ppm	Arsenic ppm	TCE ppb	PCE ppb	Toluene ppm	m/p Xylene ppm	o Xylene ppm	Ethylbenzene ppm
New Hampshire Soil Remediation Standards:		400	11	800	2,000	100	500		140
SB 30	1	<6	5	---	---	---	---	---	---
SB 30	4	<6	8	---	---	---	---	---	---
SB 30	6	<7	29	---	---	---	---	---	---
SB Average:		**45**	**7.9**	**165**	**235**	**46**	**148**	**77**	**126**
SB Maximum Detected Concentration:		**806**	**62**	**1520**	**6100**	**280**	**1100**	**345**	**766**

TABLE KEY:
< = analyte not detected above the laboratory reporting limit (RL)
--- = not analyzed

NOTES:
1. Concentrations are presented in units of parts per million (ppm) or parts per billion (ppb).
2. The New Hampshire Soil Remediation Standards are from the New Hampshire Code of Administrative Rules Env-Or 606.19(b), Table 600-2.
3. For average concentration calculations, half of the RL was used for non-detect compounds.
4. Only selected volatile organic compounds are listed in this table. Unless otherwise noted below, the volatile organic compounds that are not included in this table were not detected above reporting limits.:
   a) Cis-1,2 DCE was detected at 108 ppb in sample SB 16C at 11.5 feet below ground surface. The soil remediation standard for cis-1,2 DCE is 2000 ppb, therefore the detection does not exceed the standard.
   b) 1,1,1-TCA was detected at 29 ppm in sample SB 16H at 7 feet below ground surface. The soil remediation standard for 1,1,1-TCA is 78 ppm, therefore the detection does not exceed the standard.

TABLE 15D
2009 FIELD RESULTS AT SOUTHERN BOUNDARY ROAD AND SHED LOCATIONS
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Location	Depth (feet)	Lead	Arsenic
New Hampshire Soil Remediation Standards:		400	11
SB Road 1	1	<7	<5
SB Road 1	4	<6	<5
SB Road 1	6	16	<7
SB Road 2	1	<6	<5
SB Road 2	4	<6	<5
SB Road 2	7	38	36
SB Road 3	1	<6	<4
SB Road 3	4	<6	<4
SB Road 3	8	<6	14
SB Road 3	10.5	<7	24
SB Road 4	1	<6	<4
SB Road 4	4	<6	<4
SB Road 4	6	<7	<5
SB Road 4	12	<6	9
SB Road 5	1	<6	<4
SB Road 5	4	<6	<4
SB Road 5	8	<6	30
SB Road 5	11.5	<6	12
SB Shed 1	1	<5	<2
SB Shed 1	4	<6	<4
SB Shed 1	4.4	<6	9
SB Shed 2	1	8	7
SB Shed 2	4	<5	9
SB Shed 2	7	<6	11
SB Road & Shed Average:		**5.2**	**8.0**
SB Road & Shed Maximum Detected Concentration:		**38**	**36**

TABLE KEY:
< = analyte not detected above the laboratory reporting limit (RL)

NOTES:
1. Concentrations are presented in units of milligrams per kilogram (mg/kg) or parts per million (ppm) unless otherwise noted.
2. The New Hampshire Soil Remediation Standards are from the New Hampshire Code of Administrative Rules Env-Or 606.19(b), Table 600-2.
3. For average concentration calculations, half of the RL was used for non-detect compounds.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID **Geological Unit of Well Screen** **Sampling Event Date** **Water Levels (ft)**	**2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1**	**MOT_MO-2S** **Overburden (8.6 ft)**																
		Apr-97 2.10	**Oct-97** 3.22	**Apr-98** 2.21	**Sep-98** 3.50	**May-99** 2.38	**Apr-00** 1.80	**May-01** 0.43	**Apr-02** *Flowing*	**Jun-03** *Flowing*	**May-04** *Flowing*	**May-05** *Flowing*	**Jun-06** *Flowing*	**May-07** *Flowing*	**Aug-09** *Flowing*	**May-10** 0.10	**Sep-11** 0.60	**Oct-12** 0.85
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	11.0	9.8	4.7	4.8	20.0	24.0	68.0	120.0	60.0	34.0	ND	2.2	ND	3.5	4.3	4.4	0.8
cis-1,2-Dichloroethene	NA	ND	18	2.5	5.1	25.0	39.0	15.0	10.0	14.0	9.9	ND	ND	ND	8.7	16	26	4.8
trans-1,2-Dichloroethene	380	5.5	8.7	3.9	4.6	4.4	2.9	2.3	2.7	ND	2.2	ND	ND	ND	<2.0	2.0	2.9	0.6
Tetrahydrofuran(THF)	7.2E+05	59	53	25	29	42	ND	38	54	50	55	ND	ND	ND	20	30	50	<10.0
Trichloroethene	1.1	13.0	10.0	8.1	5.8	25.0	31.0	7.0	4.6	8.6	7.0	ND	ND	ND	19.0	36	38	6.7
Vinyl Chloride	0.14	2.0	7.7	ND	ND	14.0	21.0	6.7	2.6	5.0	ND	ND	ND	ND	<2.0	3.8	5.0	<0.50
1,1,1-Trichloroethane	7.4E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	<0.5	<0.50
Ethylbenzene	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	<0.5	<0.50
Toluene	1.9E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	<0.5	<0.50
Additional VOCs (µg/L)																		
Acetone	2.3E+07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	< 10	<10	<10
Chloroethane	2.3E+04	ND	ND	ND	ND	ND	3.9	3.8	6.4	6.8	5.4	ND	ND	ND	<2.0	< 0.5	< 0.5	<0.50
Methyl-t-butylether (MTBE)	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	< 0.5	< 0.5	<0.50
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	< 2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID **Geological Unit of Well Screen** **Sampling Event Date** **Water Levels (ft)**	**2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1**	**MOT_MO-3SR** **Overburden (9.3 ft)**																				
		Apr-97 1.37	**Oct-97** 2.75	**Apr-98** 1.43	**Sep-98** 2.91	**May-99** 1.71	**Apr-00** 1.33	**May-01** *Flowing*	**Apr-02** *Flowing*	**Jun-03** *Flowing*	**May-04** *Flowing*	**May-05** *Flowing*	**Jun-06** *Flowing*	**May-07** *Flowing*	**Aug-09** *Flowing*	**Aug-09** **DUP**	**May-10** *Flowing*	**May-10** **DUP**	**Sep-11** *Flowing*	**Sep-11** **DUP**	**Oct-12** 0.52	**Oct-12** **DUP**
VOCs of Concern (µg/L)																						
1,1-Dichloroethane	6.6	3.5	ND	3.7	4	5.1	11	7.2	16	36	38	28	12	10	11	11	11	11	5.9	5.8	13	12
cis-1,2-Dichloroethene	NA	ND	8.8	27	15	17	32	14	6.7	20	26	30	33	44	29	29	45	44	24	24	26	28
trans-1,2-Dichloroethene	380	6.4	2.3	4.6	ND	ND	4.1	2.7	ND	3.3	3.4	2.5	ND	3.4	2.6	2.6	3.9	3.6	2.3	2.3	2.3	2.1
Tetrahydrofuran(THF)	7.2E+05	34	ND	34	ND	20	ND	18	15	24	20	15	ND	ND	<10	<10	< 10	<10	<10	<10	<10.0	<10.0
Trichloroethene	1.1	18	28	13	46	9.5	21	7	2.8	12	16	25	24	29	42	42	57	58	46	45	49	50
Vinyl Chloride	0.14	8	ND	7.8	3.6	4.4	13	4.9	2.2	10	14	18	15	22	18	19	22	22	15	14	11	11
1,1,1-Trichloroethane	7.4E+03	ND	ND	ND	2	2.1	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Ethylbenzene	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Toluene	1.9E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
Additional VOCs (µg/L)																						
Acetone	2.3E+07	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	< 10	<10	<10	<10	<10.0	<10.0
Chloroethane	2.3E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.1	7	4	4.0	3.9	3.9	2.4	2.3	2.7	2.6	3.4	3.3
Methyl-t-butylether (MTBE)	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	ND	<2.0	<2.0	< 0.5	<0.5	<0.5	<0.5	<0.50	<0.50
1,4-Dioxane (µg/L)																						
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	<2.0	< 2.0	<2.0	*ns*	*ns*	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID **Geological Unit of Well Screen** **Sampling Event Date** **Water Levels (ft)**	**2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1**	**MOT_OW-4SR** **Overburden (12.7 ft)**																
		Apr-97 8.53	**Oct-97** 12.69	**Apr-98** 6.11	**Sep-98** 11.19	**May-99** 9.68	**Apr-00** 2.97	**May-01** 7.33	**Apr-02** 3.17	**Jun-03** 3.66	**May-04** 2.65	**May-05** 3.66	**Jun-06** 1.21	**May-07** 2.34	**Aug-09** 3.70	**May-10** 5.30	**Sep-11** 5.68	**Oct-12** ---
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	ND	ND	ND	ND	ND	ND	ND	ND	5.1	25	123	ND	12	22	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1.9E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																		
Acetone	2.3E+07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Chloroethane	2.3E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.7	ND	ND	6.9	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID **Geological Unit of Well Screen** **Sampling Event Date** **Water Levels (ft)**	**2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1**	**MOT_MW-7S** **Overburden (5.5 ft)**																
		Apr-97 4.10	**Oct-97** Dry	**Apr-98** 5.14	**Sep-98** Dry	**May-99** 6.77	**Apr-00** 2.57	**May-01** Dry	**Apr-02** 2.95	**Jun-03** 4.14	**May-04** 2.70	**May-05** 4.46	**Jun-06** 2.99	**May-07** 3.15	**Aug-09** 4.51	**May-10** *Dry*	**Sep-11** *Dry*	**Oct-12** *Dry*
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	*Not sampled*								ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
cis-1,2-Dichloroethene	NA									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
trans-1,2-Dichloroethene	380									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Trichloroethene	1.1									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Vinyl Chloride	0.14									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Ethylbenzene	3									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Toluene	1.9E+04									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Additional VOCs (µg/L)																		
Acetone	2.3E+07									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Chloroethane	2.3E+04									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Methyl-t-butylether (MTBE)	390									ND	*ns*	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													*ns*	*ns*	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date / Water Levels (ft)	2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1	MOT_MW-8S Overburden (18.1 ft)																
		Apr-97 6.12	Oct-97 14.80	Apr-98 6.53	Sep-98 13.56	May-99 8.93	Apr-00 4.91	May-01 7.76	Apr-02 5.95	Jun-03 6.30	May-04 5.93	May-05 6.35	Jun-06 4.50	May-07 5.07	Aug-09 6.61	May-10 7.61	Sep-11 8.42	Oct-12 11.68
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	1.1	ND	45.00	3.10	66.00	ND	9.00	ND	ND	57.00	20.00	4.80	2.90	3.00	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1.9E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																		
Acetone	2.3E+07	ND	ND	ND	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Chloroethane	2.3E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date Water Levels (ft)	2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1	MOT_MW-9S Overburden (3.9 ft) Apr-97 6.17	Oct-97 *Dry*	Apr-98 6.28	Sep-98 *Dry*	May-99 *Dry*	Apr-00 4.57	May-01 Dry	Apr-02 3.26	Jun-03 Dry	May-04 2.99	May-05 3.94	Jun-06 2.44	May-07 2.97	Aug-09 *Dry*	May-10 *Dry*	Sep-11 *Dry*	Oct-12 *Dry*
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	*Not sampled*								*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
cis-1,2-Dichloroethene	NA									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
trans-1,2-Dichloroethene	380									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Trichloroethene	1.1									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Vinyl Chloride	0.14									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Ethylbenzene	3									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Toluene	1.9E+04									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Additional VOCs (µg/L)																		
Acetone	2.3E+07									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Chloroethane	2.3E+04									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
Methyl-t-butylether (MTBE)	390									*ns*	ND	ND	ND	ND	*ns*	*ns*	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													*ns*	*ns*	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date / Water Levels (ft)	2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1	MOT_MW-12S Overburden (12.4 ft)																
		Apr-97 6.00	Oct-97 7.32	Apr-98 5.97	Sep-98 7.38	May-99 6.01	Apr-00 5.46	May-01 3.55	Apr-02 2.78	Jun-03 3.05	May-04 2.49	May-05 7.25	Jun-06 2.87	May-07 2.82	Aug-09 3.42	May-10 3.46	Sep-11 3.66	Oct-12 4.22
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	NA	ND	3.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1.9E+04	ND	ND	ND	ND	ND	ND	ND	2.4	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																		*ns*
Acetone	2.3E+07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Chloroethane	2.3E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	390	ND	ND	ND	ND	ND	ND	ND	5.6	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date / Water Levels (ft)	2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1	MOT_MW-20S Overburden (10.7 ft)																
		Apr-97 4.37	Oct-97 10.30	Apr-98 4.61	Sep-98 9.19	May-99 5.04	Apr-00 3.83	May-01 2.33	Apr-02 1.16	Jun-03 1.40	May-04 0.84	May-05 1.51	Jun-06 1.16	May-07 1.17	Aug-09 2.10	May-10 2.17	Sep-11 3.11	Oct-12 4.90
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	*Not sampled*								ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	NA									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	380									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05									ND	*ns*	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	1.1									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	0.14									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	3									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1.9E+04									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																		*ns*
Acetone	2.3E+07									ND	*ns*	ND	ND	ND	<10	<10	*ns*	*ns*
Chloroethane	2.3E+04									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	390									ND	*ns*	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID **Geological Unit of Well Screen** **Sampling Event Date** **Water Levels (ft)**	**2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1**	**MOT_MW-21S** **Overburden (7.7 ft)**																
		Apr-97 6.05	**Oct-97** *Dry*	**Apr-98** 6.26	**Sep-98** *Dry*	**May-99** 12.49	**Apr-00** 4.34	**May-01** 6.30	**Apr-02** 4.30	**Jun-03** 4.80	**May-04** 3.86	**May-05** 4.61	**Jun-06** 3.13	**May-07** 3.27	**Aug-09** 5.32	**May-10** 6.35	**Sep-11** *Dry*	**Oct-12** *Dry*
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	NA	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	380	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	1.1	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	0.14	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	3	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1.9E+04	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																		*ns*
Acetone	2.3E+07	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Chloroethane	2.3E+04	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	390	ND	*ns*	ND	*ns*	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID **Geological Unit of Well Screen** **Sampling Event Date** **Water Levels (ft)**	**2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1**	**MOT_MW-22S** **Overburden (11.4 ft)**																
		Apr-97 2.70	**Oct-97** 8.93	**Apr-98** 2.40	**Sep-98** 7.50	**May-99** 2.91	**Apr-00** 2.02	**May-01** 1.90	**Apr-02** 0.20	**Jun-03** 0.33	**May-04** *Flowing*	**May-05** 0.41	**Jun-06** *Flowing*	**May-07** *Flowing*	**Aug-09** 0.83	**May-10** 1.02	**Sep-11** 2.29	**Oct-12** 5.06
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1.9E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																		
Acetone	2.3E+07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Chloroethane	2.3E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.3	ND	ND	<2.0	<0.5	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID / Geological Unit of Well Screen / Sampling Event Date / Water Levels (ft)	2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1	MOT_MW-23S Overburden (11.4 ft)																
		Apr-97 5.43	Oct-97 10.78	Apr-98 5.76	Sep-98 9.72	May-99 5.85	Apr-00 4.82	May-01 3.84	Apr-02 3.13	Jun-03 3.35	May-04 2.68	May-05 3.30	Jun-06 2.90	May-07 2.93	Aug-09 3.76	May-10 3.55	Sep-11 3.84	Oct-12 6.00
VOCs of Concern (µg/L)																		
1,1-Dichloroethane	6.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Trichloroethene	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Vinyl Chloride	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Ethylbenzene	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Toluene	1.9E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.3	ND	ND	<2.0	<0.5	*ns*	*ns*
Additional VOCs (µg/L)																		
Acetone	2.3E+07	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	<10	<10	*ns*	*ns*
Chloroethane	2.3E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<2.0	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.1	ND	ND	<2.0	<0.5	*ns*	*ns*
1,4-Dioxane (µg/L)																		
1,4-Dioxane	NA	*Not sampled prior to August 2009*													<2.0	<2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

Monitoring Well ID Geological Unit of Well Screen Sampling Event Date Water Levels (ft)	2012 USEPA Target Groundwater Concentration @TCR=1E-6 or THQ=1	MOT_MW-101S Overburden (13.1 ft)			
		Aug-09 ---	May-10 6.53	Sep-11 9.00	Oct-12 12.38
VOCs of Concern (µg/L)					
1,1-Dichloroethane	6.6	< 0.5	<0.5	*ns*	*ns*
cis-1,2-Dichloroethene	NA	< 0.5	<0.5	*ns*	*ns*
trans-1,2-Dichloroethene	380	< 0.5	<0.5	*ns*	*ns*
Tetrahydrofuran(THF)	7.2E+05	< 10	<10	*ns*	*ns*
Trichloroethene	1.1	< 0.5	<0.5	*ns*	*ns*
Vinyl Chloride	0.14	< 0.5	<0.5	*ns*	*ns*
1,1,1-Trichloroethane	7.4E+03	< 0.5	<0.5	*ns*	*ns*
Ethylbenzene	3	< 0.5	<0.5	*ns*	*ns*
Toluene	1.9E+04	< 0.5	<0.5	*ns*	*ns*
Additional VOCs (µg/L)					
Acetone	2.3E+07	< 10	<10	*ns*	*ns*
Chloroethane	2.3E+04	< 0.5	<0.5	*ns*	*ns*
Methyl-t-butylether (MTBE)	390	<2.0	<0.5	*ns*	*ns*
1,4-Dioxane (µg/L)					
1,4-Dioxane	NA	*ns*	<2.0	*ns*	*ns*

See Last Page for Table Key and Notes.

TABLE 16
COMPARISON OF OVERBURDEN WELL ANALYTICAL RESULTS TO SOIL VAPOR INTRUSION CRITERIA
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

TABLE KEY:
--- = no water level available for the designated date
NA = not available
ND = analyte not detected above the laboratory reporting limit (RL unknown because of gaps in historical data)
ns = not sampled
< = analyte not detected above the laboratory reporting limit (RL)

NOTES:
1. Only indicator volatile organic compounds (VOCs) are listed in this table.
2. Target groundwater concentrations are from the USEPA (2013) Vapor Intrusion Screening Level (VISL) Calculator.
3. The target groundwater concentration corresponds to a cancer risk of 1E-6 or a hazard quotient of 1, whichever is lower, for a residential scenario via the vapor intrusion pathway.
4. Shading indicates that the concentration exceeds the USEPA Vapor Intrusion Groundwater Screening Level.

APPENDIX A

TOWN OF RAYMOND ORDINANCE

Town Code Ordinance Section: §292-3 (a)

MOTTOLO SITE GROUNDWATER MANAGEMENT ZONE

Adopted April 22, 2013 by the Town of Raymond Board of Health
(Consisting of the Health Officer and the Board of Selectmen, hereafter "Board")

I. AUTHORITY AND PURPOSE

Pursuant to RSA 147:1, Local Regulations, the Board adopts a Groundwater Management Zone in consultation with the United States Environmental Protection Agency (US-EPA) and New Hampshire Department of Environmental Services (NH-DES) to be entitled, "MOTTOLO SITE GROUNDWATER MANAGEMENT ZONE" (MS-GMZ).

Objectives of the Mottolo Site Groundwater Management Zone are:

A. To prevent use of groundwater drawn from within a designated Federal Superfund site, as defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq., until the cleanup goals required under CERCLA decision documents for the Mottolo Superfund Site are achieved.

B. To further the implementation of clean water initiatives following Federal and State funding for a water line within the Town of Raymond.

C. To protect the public health and safety of the citizens of Raymond in the vicinity of the Mottolo Superfund Site by preventing the possible spread of contaminated water from groundwater to drinking water.

II. ZONE BOUNDARIES

The MS-GMZ, is represented on the attached map entitled **"Limited Area of Groundwater Use Restriction",** dated **February 2011** and shall extend to any newly-created lot and map numbers created as a result of a legal subdivision within the defined area. The extent of the boundary of the MS-GMZ shall be reviewed no less frequently than every five years and possibly with greater frequency depending on the results of testing. Subsequent to such review, lots may be removed from or added to the MS-GMZ after consultation with US-EPA and NH-DES.

When the actual boundary of the MS-GMZ is in dispute by any owner or abutter affected by said boundary, the Board will engage, at the owner or abutter's expense, a professional geologist or hydrogeologist to determine more accurately the precise boundary of the Zone. The Board shall consult with the US-EPA. and NH-DES, before any modification of the MS-GMZ is made.

III. PROHIBITED USES

All use of on-site groundwater for any purpose whatsoever in the MS-GMZ is prohibited without prior approval from the Board, US-EPA and the NH-DES. No wells of any nature whatsoever, including but not limited to, irrigation wells and drinking water wells shall be dug, installed, reactivated or otherwise created within the MS-GMZ without prior approval from the Board, US-EPA and NH-DES. No

Rec'd 4/23/13
Sharon & Wallace

groundwater shall be drawn by any means whatsoever or for any use whatsoever from within the MS-GMZ without prior approval from the Board, US-EPA and the NH-DES.

No disturbance of wetlands within the MS-GMZ shall be permitted without prior approval from all authorities having jurisdiction, including but not limited to, the Board, US-EPA and the NH-DES.

These restrictions do not apply to US-EPA and NH-DES activities authorized under CERCLA.

Nothing in this regulation shall prohibit a property owner from developing property within the MS-GMZ provided that any development proposal requiring on-site water shall demonstrate the ability to connect to town water or other acceptable off-site water supply at the applicant's expense.

Nothing in this regulation shall prohibit the use of a closed loop system for geothermal heating purposes.

IV. ADMINISTRATION

The provisions of the MS-GMZ shall be administered by the Board acting through the Health Officer.

Any element of this ordinance may be waived by the Board and US-EPA and NH-DES, provided that the granting of such waiver does not adversely affect any adjoining property.

V. ENFORCEMENT

The Board shall be responsible for enforcement of the provisions of the MS-GMZ and may pursue all legal and equitable remedies to ensure compliance with this ordinance.

VI. EFFECTIVE DATE

This Ordinance shall become effective upon passage.

The MS-GMZ shall remain in effect until the clean-up goals required under CERCLA decision documents for the Mottolo Superfund Site are achieved. The Board shall consult with the US-EPA and NH-DES before modifying or terminating the MS-GMZ.

Adopted April 22, 2013:

Frank Bourque, Chairman, Board of Selectmen

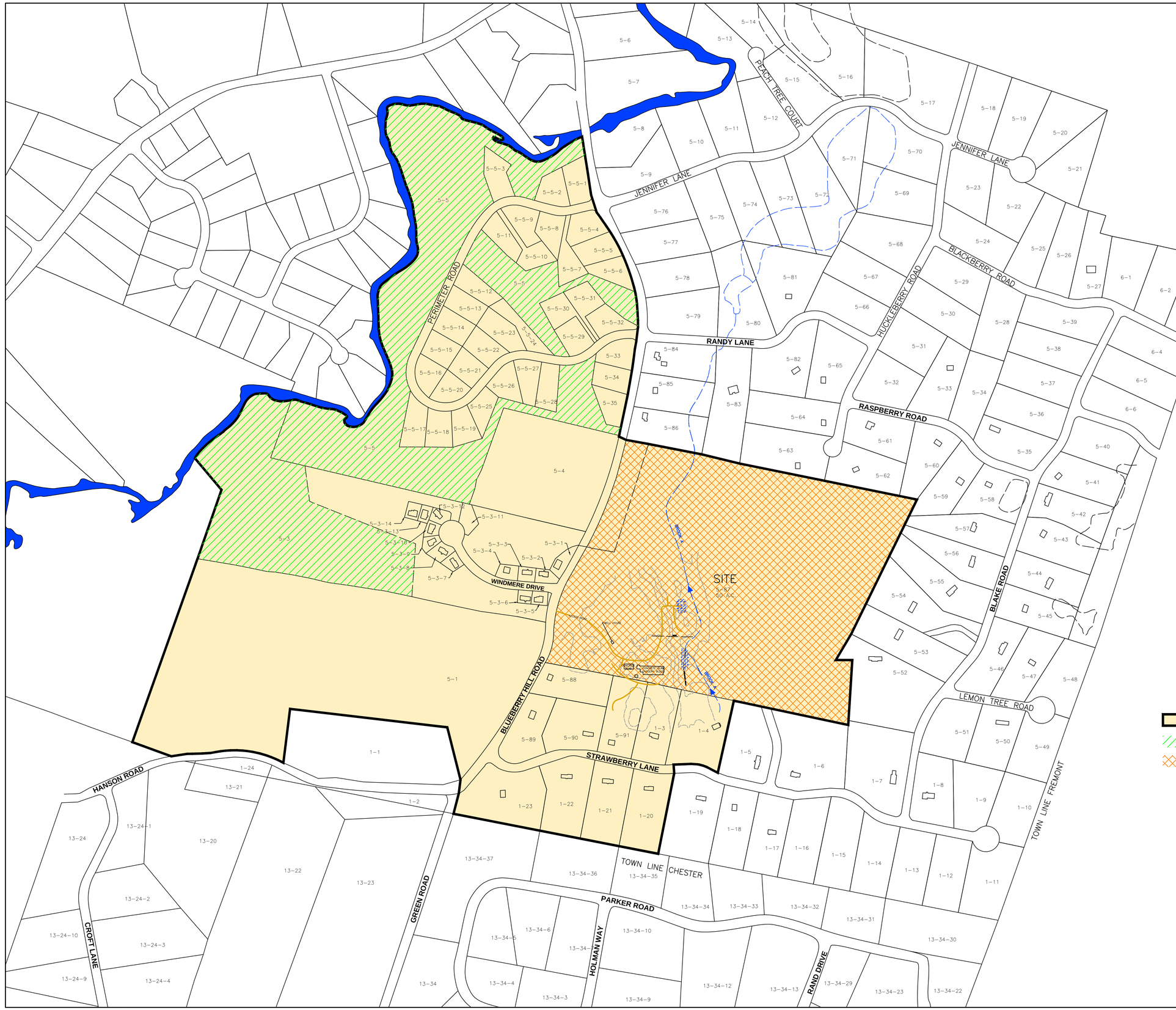
Peter Buckingham, Vice Chair, Selectmen

William Hoitt, Selectman

Wayne Welch, Selectman

Greg Bemis, Selectman

rec'd 4/23/13
Sharon E. Wallace
Page 2 of 2



NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING No. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 1 DATED 5/1/08 AND TAX MAP 5, DATED 4/23/08.

2) THE LOCATION OF THE SITE FEATURES WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

N

LEGEND:

- AREA OF GROUNDWATER USE RESTRICTION
- CONSERVATION EASEMENT
- STATE OWNED MOTTOLO PIG FARM SUPERFUND SITE

0 125 250 500 750

SCALE IN FEET

(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD

RAYMOND, NH

LIMITED AREA OF GROUNDWATER USE RESTRICTION

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 380 HARVEY ROAD, MANCHESTER, NEW HAMPSHIRE 03103, (603) 623-3600		PREPARED FOR: NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT	
PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 1
DESIGNED BY: SGL	DRAWN BY: JPN	SCALE: EST 1:250'	
DATE: OCTOBER 2012	PROJECT NO. 04.0029395.21	REVISION NO. 0	SHEET NO.

APPENDIX B

PUBLIC NOTICE

Mortgagee may, at its option, retain the deposit as liquidated damages.

RESERVATION OF RIGHTS: The Mortgagee reserves the right to (i) cancel or continue the foreclosure sale to such subsequent date or dates as the Mortgagee may deem necessary or desirable, (ii) bid upon and purchase the Mortgaged Premises at the foreclosure sale, (iii) reject any and all bids for the Mortgaged Premises and (iv) amend or change the terms of sale set forth herein by announcement, written or oral, made before or during the foreclosure sale. Such change(s) or amendment(s) shall be binding on all bidders.

Other terms to be announced at sale.

PHH Mortgage Corporation
Present holder of said mortgage,
by its Attorneys
Susan W. Cody
Korde & Associates, P.C.
321 Billerica Road, Suite 210
Chelmsford, MA 01824-4100
(978) 256-1500

PHH 12-009662 Hamel (January 9, 2013), (January 16, 2013), (January 23, 2013)
(UL - Jan. 9, 16, 23)

Mortgagee may, at its option, retain the deposit as liquidated damages.

RESERVATION OF RIGHTS: The Mortgagee reserves the right to (i) cancel or continue the foreclosure sale to such subsequent date or dates as the Mortgagee may deem necessary or desirable, (ii) bid upon and purchase the Mortgaged Premises at the foreclosure sale, (iii) reject any and all bids for the Mortgaged Premises and (iv) amend or change the terms of sale set forth herein by announcement, written or oral, made before or during the foreclosure sale. Such change(s) or amendment(s) shall be binding on all bidders.

Other terms to be announced at sale.

Ocwen Loan Servicing, LLC
Present holder of said mortgage,
by its Attorneys
Susan W. Cody
Korde & Associates, P.C.
321 Billerica Road, Suite 210
Chelmsford, MA 01824-4100
(978) 256-1500

BFB 12-009740 Duverger (January 9, 2013), (January 16, 2013), (January 23, 2013)
(UL - Jan. 9, 16, 23)

EPA Starts 'Five-Year Review' Of Mottolo Superfund Site

The U.S. Environmental Protection Agency (EPA) has begun its fourth, Five-Year Review of the Mottolo Pig Farm Superfund Site located in Raymond, NH. EPA reviews sites where hazardous substances remain above levels that allow for unlimited use every five years to ensure protectiveness with regards to human health and the environment. This Five-Year Review is expected to be completed on or about June 2013 and the results will be publicly available.

The 50-acre Mottolo Pig Farm Superfund Site (the Site) is an abandoned pig farm located on an undeveloped wooded lot. From 1975-1979, the owner of the Mottolo property disposed of chemical manufacturing wastes from two companies in a ¼ acre fill area adjacent to the piggery buildings. Studies by the State of New Hampshire showed that groundwater beneath the Site was contaminated and that the contaminants were seeping into a brook on the Mottolo property that eventually empties into the Exeter River. The Exeter River is a drinking water supply for the nearby communities of Exeter, Hampton, and Stratham. An estimated 1,600 people depend on groundwater within three miles of the Site as a source of drinking water.

In 1980, under authority of the Clean Water Act, the EPA used emergency funds to excavate drums found on-site. From 1981 to 1982, the EPA removed over 1,600 drums and pails from the Site along with 160 tons of contaminated soil, preventing further contamination of the soil and groundwater. EPA subsequently conducted a more extensive soil cleanup to eliminate the source of groundwater contamination. The ongoing remedy for the Site groundwater includes natural attenuation and a waterline extension, which began construction in 2012, to affected residents. The waterline has been recently completed and all 25 previously affected residents are now connected to the town water supply.

EPA and the New Hampshire Department of Environmental Services (NHDES) have worked very closely with the Town of Raymond on the remedial projects and waterline extension implemented at the Site.

More information about cleanup activities at the Mottolo site may be found on the EPA New England web site at: www.epa.gov/region1/superfund/sites/mottolo. EPA technical reports including prior Five year review reports are available for public review in the information repository located at the EPA library at Five Post Office Square in Boston and at the Dudley-Tucker Library, 6 Epping Street, Raymond, NH 03077.

EPA
United States
Environmental Protection
Agency New England

For more information, contact:
Mike Jasinski Toll Free
1-800-372-7341, ext.81325,
jasinski.mike@epa.gov or visit:
www.epa.gov/region1/
superfund/sites/mottolo.

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'03 PONTIAC Grand AM. Clean, 1 owner, $3,100. '97 FORD Ranger. 4WD, clean, needs brakes, $4,000. Call 603-523-7250, 5-8PM.

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Betley Chevrolet-Buick-Geo
Rte. 28 ByPass, Derry, 434-1546

Imported & Sports Cars 41

'08 HONDA CRV EX - light blue, 74K mi., exc. cond., $14,500 or BO. 603-524-7911

TRUCKS BUSES & TRACTORS Classification 47

HEAVY CONSTRUCTION Classification 49

EQUAL HOUSING OPPORTUNITY

All real estate advertising in this newspaper is subject to the Federal Fair Housing Act of 1968 which makes it illegal to advertise 'any preference, limitation or discrimination based on race, color, religion, sex, handicap & familial status or national origin, or an intention to make any such preference, limitation or discrimination.

This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis. To complain of discrimination, call HUD Toll-free at 1-800-669-9777. For the New England area, please call HUD at (617) 565-5308. The Toll-free telephone number for the hearing impaired is 1-800-927-9275.

You may also call the New Hampshire Commission for Hu-

Imported & Sports Cars 41

'98 IMPREZA, AWD, 72K, auto, 4 dr, clean, inspect/warranty, $3995. Others, 765-3275.

CONCORD NISSAN
175 Manchester St, Conc, 1-888-224-1300 www.concordnissan.com

HOLLOWAY MOTOR CARS
Mercedes Benz
603-669-6788 benzcars.com

MANCHESTER SUBARU
603-668-2411

PETERS HONDA OF NASHUA
300 Amherst St, Nashua 579-5230
www.petershonda.com

PETERS NISSAN of NASHUA
280 Amherst St, Nashua, NH
579-5212 petersnisson.com

ROCKINGHAM
Toyota, Scion, Nissan, Honda
Salem, NH 893-3525

SEACOAST VW
Corner of Ocean Rd. & Rt. 33
Greenland, NH 888-815-5300

TOYOTA OF PORTSMOUTH
Rt. 1, Portsmouth, NH
431-6100; Toll free 888-888-9070

WENTWORTH MTRS Volvo
140 Portsmouth Ave, Exeter
603-772-5975

SUV's & 4 WD Vehicles 43

'02 CHEVY SILVERADO 4WD Ext. cab, power accessories, 138K easy miles, great shape, a must see! asking $8500. 603-305-9067

'09 HONDA CRV, loaded, exc. cond, well maintained, 80,000 miles, asking $17,500. Call 603-785-6998.

'09 HONDA CRV, lt. blue, exc. cond. inside & out, 1 owner, well maint., 67,000 mi, new brakes. $14,500. Call 603-724-0268.

Vans 45

'05 CHEVY EXPRESS VAN 10 ft Utilimaster body, 88K miles, 1 owner, $10,900. Call Tom,669-2977 leave message.

Trucks, Buses & Tractors 47

OVER 100 QUALITY USED Trucks in Stock. View them at Tim's Truck Capital.com 736-8143

TOWN OF ORFORD
2529 ROUTE 25A
ORFORD, NH 03777
603-353-4889

The Town of Orford is soliciting bids for a 2005 International 7500 red truck w/a DT570 Engine, 8LL trans., 20K front end, 38K rear, 10' FloNDump body w/built-in sander, live hydraulics, 11' Flink reversible plow, 10' Flink patrol wing, 62,506

75-124

Employment Information/ Service 75

NOTICE Replying To A Newspaper Box Number

The Union Leader Corp. cannot disclose the identity of a box number advertiser; however, readers interested in positions but desiring to avoid sending resumes to certain companies may do so by following these instructions: Address your reply to the box number. Place this envelope inside a second envelope addressed to The Union Leader, P.O. Box 9555, Manchester, NH 03108-9555. Attention: Classified Advertising with a note listing the companies you do not want to receive your resume. If the advertiser is anyone on your list, we will destroy your reply. Ad numbers are at advertiser's risk. Any response to any advertisement listing a box number assigned to an advertiser, whether the identity of the advertiser is disclosed or not disclosed, shall be given to the advertiser without being opened and without any manner of screening or approval whatsoever. The newspaper does not offer and does not contract to have any confidential business, employment or agency relationship with either the advertiser or any respondent and specifically disclaims any such relationships. This newspaper will disclose the identity of a blind box advertiser in response to a lawful subpoena or other judicial process or order. The newspaper shall not be responsible for any disclosure, loss of responses or misdirection of responses.

Some Positions Under This Classification

REQUIRE A FEE PAID BY THE APPLICANT

Child Care Services 76

ADVERTISERS under this classification can care for any number of their own children both adopted and biological, and up to 3 others. (Must be licensed to care for more than 3)

Elderly Care Services 78

We help Seniors live at home... Hygiene assist., meals, hswork, up to 24 hr care. Top refs. We do things your way, affordable rates! Visiting Angels, 1-866-492-6435

LAND! To Buy

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Dover
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Medication Nurse
Pharmacy T
Phlebotomy
EKG Tec
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APPENDIX C

INTERVIEW DOCUMENTATION

INTERVIEW DOCUMENTATION FORM

The following is a list of individual interviewed for this five-year review. See the attached contact record(s) for a detailed summary of the interviews.

Name	Title/Position	Organization	Date
Abutter to Mottolo Site		Resident	March 15, 2013
Pat Bower	DPW Director	Town of Raymond, NH	March 28, 2013
Abutter to Mottolo Site		Resident	March 22, 2013
Abutter to Mottolo Site		Resident	April 1, 2013
Jim Lillis	District 5 Engineer Technician	NH-DOT	April 2, 2013

INTERVIEW RECORD

Site Name: Mottolo Pig Farm Superfund Site		**EPA ID No.**: NHD980503361
Subject: Fourth Five-Year Review	**Time:** ~10:00 am	**Date**: March 15, 2013
Type: **Telephone** ☐Visit ☐Other Location of Visit:		Incoming ☐**Outgoing**

CONTACT MADE BY

Name: Kelsey O'Neil	**Title**: Community Involvement Coordinator	**Organization**: EPA – Region I

INDIVIDUAL CONTACTED:

Name: Abutter to Mottolo Site	**Title**:	**Organization**: Resident
	Street Address:	
	City, State, Zip:	

SUMMARY OF CONVERSATION

Community interviewee #1 has lived in the Windermere complex since 2006 when he purchased one of the first homes developed. Before the purchase he was aware of the Motollo site and the pig farm that operated on the site. Before purchasing the home, he contacted the NHDES after reading the EPA five year review. He was told that everything was contained at the site at the time and he should not have any concern in living in the neighborhood.

Around 2009, he was contacted by NHDES when they requested sampling the home's well and put his family on bottled water. He feels that he was well informed about the site and did his due diligence and researched the area before moving in. Although the circumstances were unfortunate, he feels that all agencies involved did what was best for the community and is in favor of the decisions that were made. Some community members were put off by the time it took to share information and get the project going, others were upset that they were not told about the site before purchasing and moving in to a new home. He understands that this type of project can take some time and a lot of details went into it.

Although he is not concerned about ongoing issues at the site now that he is connected to the new water line, others in the neighborhood have concerns. His next door neighbor (1 Windermere) has a child with speech and hearing issues. The parents think there may be a connection with the use of TCE contaminated water before the water line was built. There are others in the area that are not connected to the water line and believe they may have contaminated water.

He is happy with the project and did not have anything he would have liked to have seen done differently. He would not like to see anyone else develop in the area because it is right on the site. There is concern about new houses being built to the North. He would like to be kept up to speed about any new activities at the site, especially anything that involves new development.

INTERVIEW RECORD

Site Name: Mottolo Pig Farm Superfund Site		**EPA ID No.**: NHD980503361
Subject: Fourth Five-Year Review	**Time:** ~9:30 AM	**Date**: March 28, 2013
Type: ☐ Telephone ☐**Visit** ☐Other Location of Visit: Mottolo Superfund Site; Raymond, NH		☐ Incoming ☐Outgoing

CONTACT MADE BY

Name: Michael Jasinski	**Title**: Project Manager	**Organization**: EPA-Region I

INDIVIDUAL CONTACTED:

Name: Pat Bower	**Title**: DPW Director	**Organization**: Town of Raymond, NH
		Street Address: 4 Epping Street **City, State, Zip**: Raymond, NH 03077

SUMMARY OF CONVERSATION

Mr. Bower has been DPW Director in Raymond, NH since July 2010; which is approximately the same time that EPA was holding public meetings on their Proposed Plan for extension of the Raymond water supply line to affected residents near the Mottolo site. He was aware of the contaminated groundwater situation at and surrounding the Mottolo site from his attendance at these public meetings, and from his review of previous documents on file at the local repository. He noted that, from his involvement starting in July 2010 and throughout the water line extension project that was completed in August 2012, all the work performed was of excellent quality and was hugely beneficial to the residents impacted by the contaminated groundwater in their residential wells. Pat was instrumental to EPA and NHDES in obtaining many easements for the water line construction project along Route 102 leading to the Mottolo site area. He and his staff have continued to check the chlorine residual concentrations along the new water line, and he has not heard of any resident calls or complaints since the water line construction was completed approximately 7 months ago. He does have concerns about the water supply capacity of the Town, but the Town is looking at installing new supply wells to address these future concerns. He commented that communications throughout and since completion of the water line project have been excellent and could not have been any better. He also noted that once the Town passes the local ordinance for the area of the Mottolo site to exclude new well installations/groundwater withdrawals, that the situation will be even better for the residents of the area. Pat did indicate that an open comment – information avenue for residents (e.g., facebook) would be an idea to consider in keeping residents informed about future work at the site and the ongoing cleanup. Finally, Pat noted that he would like to continue to directly receive technical reports prepared by EPA and NHDES regarding the site; especially, future testing results from the site and residential wells in the area.

INTERVIEW RECORD

Site Name: Mottolo Pig Farm Superfund Site		**EPA ID No.**: NHD980503361
Subject: Fourth Five-Year Review	**Time:** ~1:00 pm	**Date**: March 22, 2013
Type: **Telephone** ☐Visit ☐Other Location of Visit:		Incoming ☐**Outgoing**

CONTACT MADE BY

Name: Kelsey O'Neil	**Title**: Community Involvement Coordinator	**Organization**: EPA – Region I

INDIVIDUAL CONTACTED:

Name: Abutter to Mottolo Site	**Title**:	**Organization**: Resident
	Street Address: **City, State, Zip**:	

SUMMARY OF CONVERSATION

Community member #2 has lived in the Windermere complex since it was first built, approximately 2004. The resident was aware of the Motollo Superfund site and its nearby location prior to purchasing her home. She did some research before the purchase and was told that the site would not be an issue given the proximity to her property. She was first made aware of the concern regarding drinking water at the site when the issue made the local news and concerned friends began to call when they saw the news. NHDES contacted the resident right after the local news broke the story.

The resident has lived in the home with her daughter and now has two grandchildren and has concerns for their future health and potential effects of having used contaminated water for several years. She is happy with the project now that the water line has been installed and feels confident that the water supply is clean. She does feel that there should be some compensation for the contamination that existed in her well and the fact that she was unaware of the contamination for years before hearing from NHDES. The resident feels that she should not be responsible for paying for the water since before the remedy she did not have to pay for her well water. She is concerned that the site and the remediation have damaged her property value.

Throughout the cleanup, including the ROD and planning stages, she feels that both the EPA and NHDES have done a great job. Both agencies were quick to get back to her whenever she called with a question. She was very pleased to have the water line put in and shocked at how quickly it was completed, also noted how nice it was when she loses power to still have water running. It is her impression that everyone in the area seems very happy with the remedy.

She would like to stay involved with any future activities on the site. Email is the preferred way to communicate.

INTERVIEW RECORD

Site Name: Mottolo Pig Farm Superfund Site		**EPA ID No.**: NHD980503361
Subject: Fourth Five-Year Review	**Time:** ~11:00 am	**Date**: April 1, 2013
Type: **Telephone** ☐Visit ☐Other Location of Visit:		Incoming ☐**Outgoing**

CONTACT MADE BY

Name: Kelsey O'Neil	**Title**: Community Involvement Coordinator	**Organization**: EPA – Region I

INDIVIDUAL CONTACTED:

Name: Abutter to Mottolo Site	**Title**:	**Organization**: Resident
	Street Address: **City, State, Zip**:	

SUMMARY OF CONVERSATION

Community Interviewee #3 was aware of the Motollo Superfund Site before he bought his home on Blueberry Hill in 2007. The house had been built over one hundred years earlier and never had any problems. Prior to purchasing, he contacted NHDES and also talked with the town to get some background on the site and make sure it was a safe place to move. NHDES and the Town of Raymond were more than confident that there would not be an issue with living in the house. He was told that the site had been cleaned up and was in the wrap-up phase. He also had his home wells (there are two on the property) tested before purchasing and moving, the tests did not find any contamination. When the Windermere complex was built, an issue came about on his property on Blueberry Hill because one well is located close to Windermere.

He owns a home that was built over 100 years ago and has 2 wells on the property. He cannot take water out of either of these wells, one of which is not even contaminated. While work was being done hear his property, part of the well was damaged, he feels has was bullied through the process. The historic well wasn't even being used and was damaged during some sampling.

When an issue was discovered at Windermere, NHDES came to his home and put him and his family on bottled water. They were on bottled water until the water line was installed in the Summer of 2012. He believes that the water line was the best solution to be implemented, but there are several things that could have been improved upon. People should have been notified earlier of a potential problem. People must have been suspicious that the contamination was migrating long before he was notified. He believes he was drinking contaminated water for several months and someone may have had an inkling that was the case. He had a baby at home while he was on bottled water; his wife also suffered a miscarriage. Windermere had already been built when he heard from NHDES and believes that the issue was known before it was communicated.

There is concern about another development up the street from Windermere that has not been built but he is afraid the project will be approved and more will be built in that area. He would be concerned about what would happen if that project went through; when Windermere was built EPA should have been involved since it is near a Superfund

site. No one is taking responsibility for letting the project go through in the first place. Unfortunately, he does not believe that most people even know or care about the site.

In the future he would like to receive any information about activity on the site. He does not have much concern about the contamination now, but has been involved throughout the process and would like to continue being informed.

INTERVIEW RECORD

Site Name: Mottolo Pig Farm Superfund Site		**EPA ID No.**: NHD980503361
Subject: Fourth Five-Year Review	**Time:** 10:05 AM	**Date**: April 2, 2013
Type: **Telephone** ☐Visit ☐Other Location of Visit:		Incoming ☐**Outgoing**

CONTACT MADE BY

Name: Drew Hoffman	**Title**: Project Manager	**Organization**: NH-DES

INDIVIDUAL CONTACTED:

Name: Jim Lillis	**Title**: District 5 Engineer Technician	**Organization**: NH-DOT
	Street Address: 16 East Point Drive **City, State, Zip**: Bedford, NH, 03110	

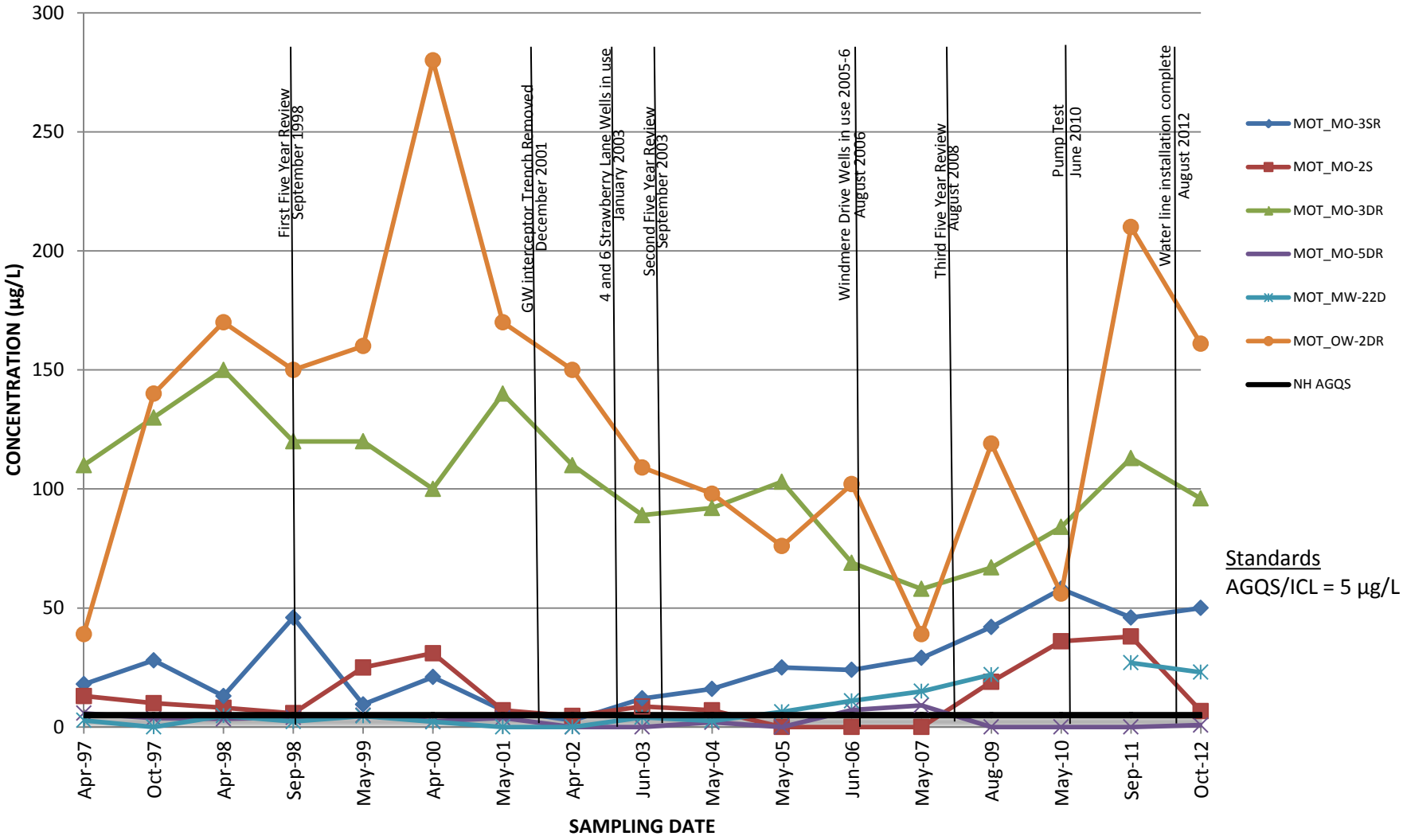
SUMMARY OF CONVERSATION

Mr. Lillis understood the problem that brought about the need for the water main extension in Raymond to be contaminated groundwater that was found to have migrated from the Mottolo site Mr. Lillis indicated that there were no design changes that would have caused a long-term concern for the maintenance of Route 102. He indicated that there were no outstanding issues with regard to the project and added that the contractor was very responsive to DOT requirements and/or requests. Mr. Lillis is not aware of any community concerns regarding the project nor did he have any comments, suggestions or recommendations regarding the project (e.g., design, construction documents, constructability, management, regulatory agency issues, operations, etc.). NH-DOT has visited the project since completion and found no wash out or pavement settlement which confirms that the proper construction techniques were consistently implemented on the project. Mr. Lillis expressed that he was overall very pleased with the outcome of the project and team approach of all stakeholders. Mr. Lillis was not in need of any additional information regarding the project or Mottolo Site.

APPENDIX D

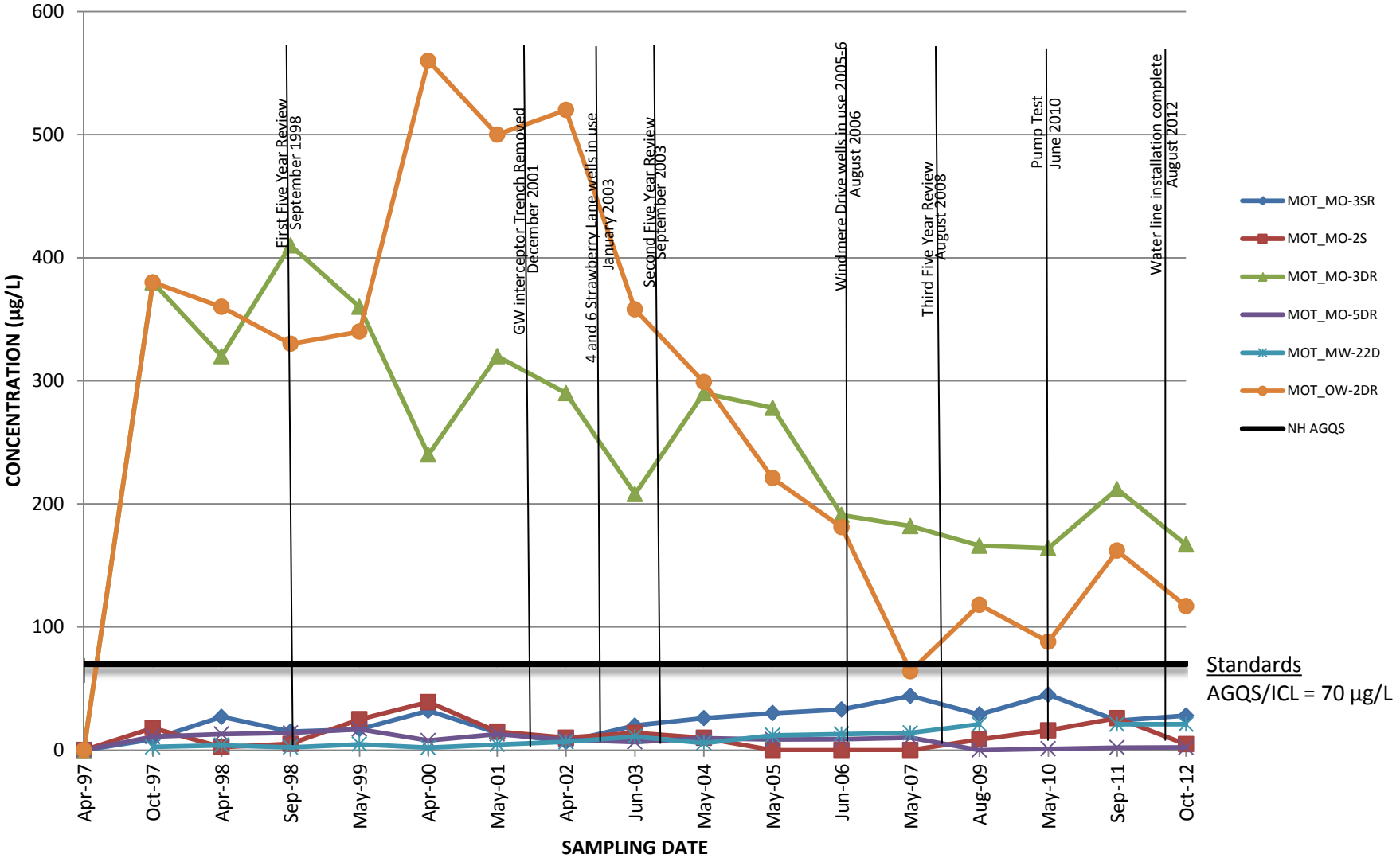
CONTAMINANT CONCENTRATION TREND GRAPHS

Graph 1 - D
Trichloroethene (TCE) Concentration Trends in On-site Groundwater
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



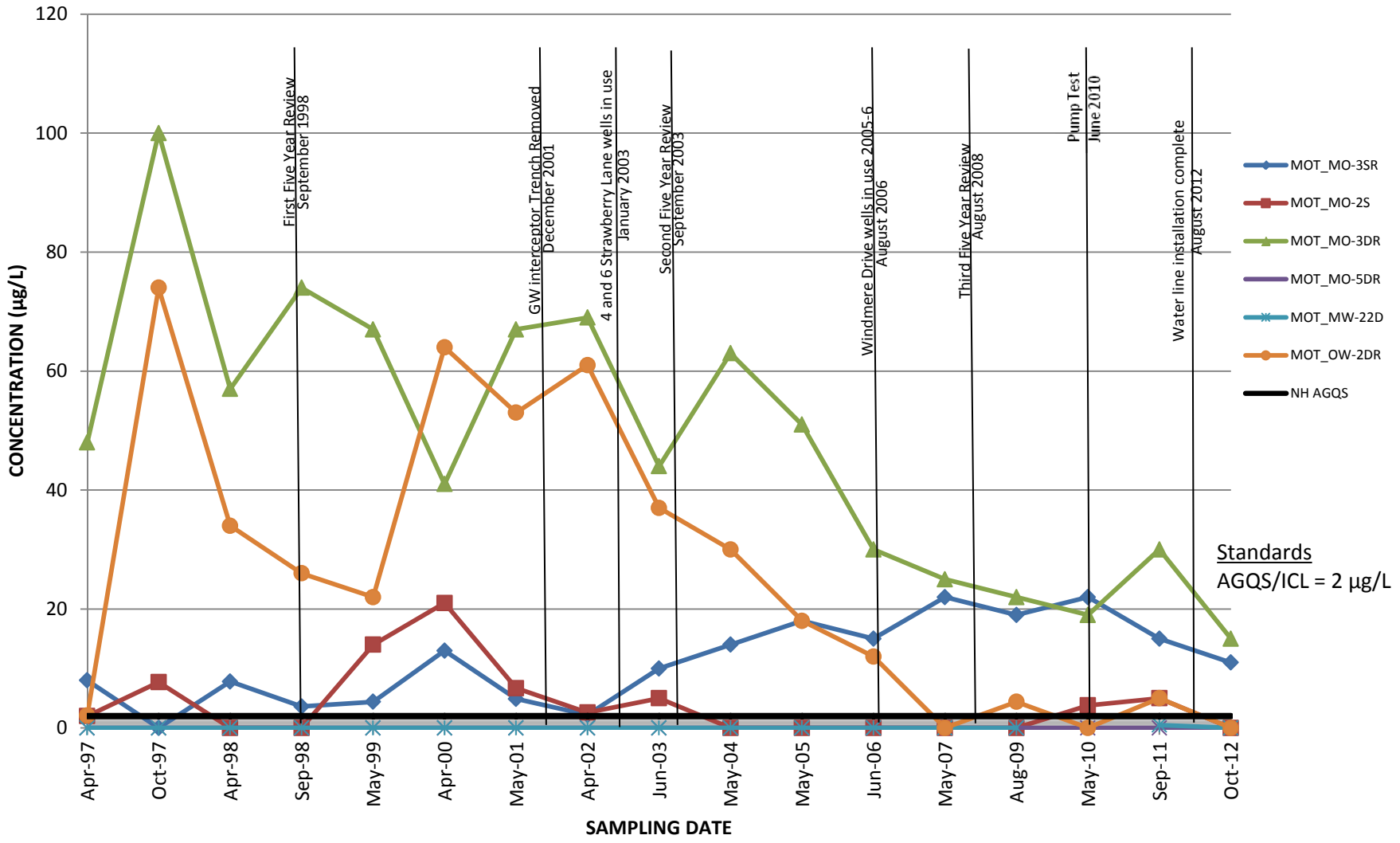
Standards
AGQS/ICL = 5 µg/L

Graph 2 - D
cis-1,2-Dichloroethene (DCE) Concentration Trends in On-site Groundwater
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

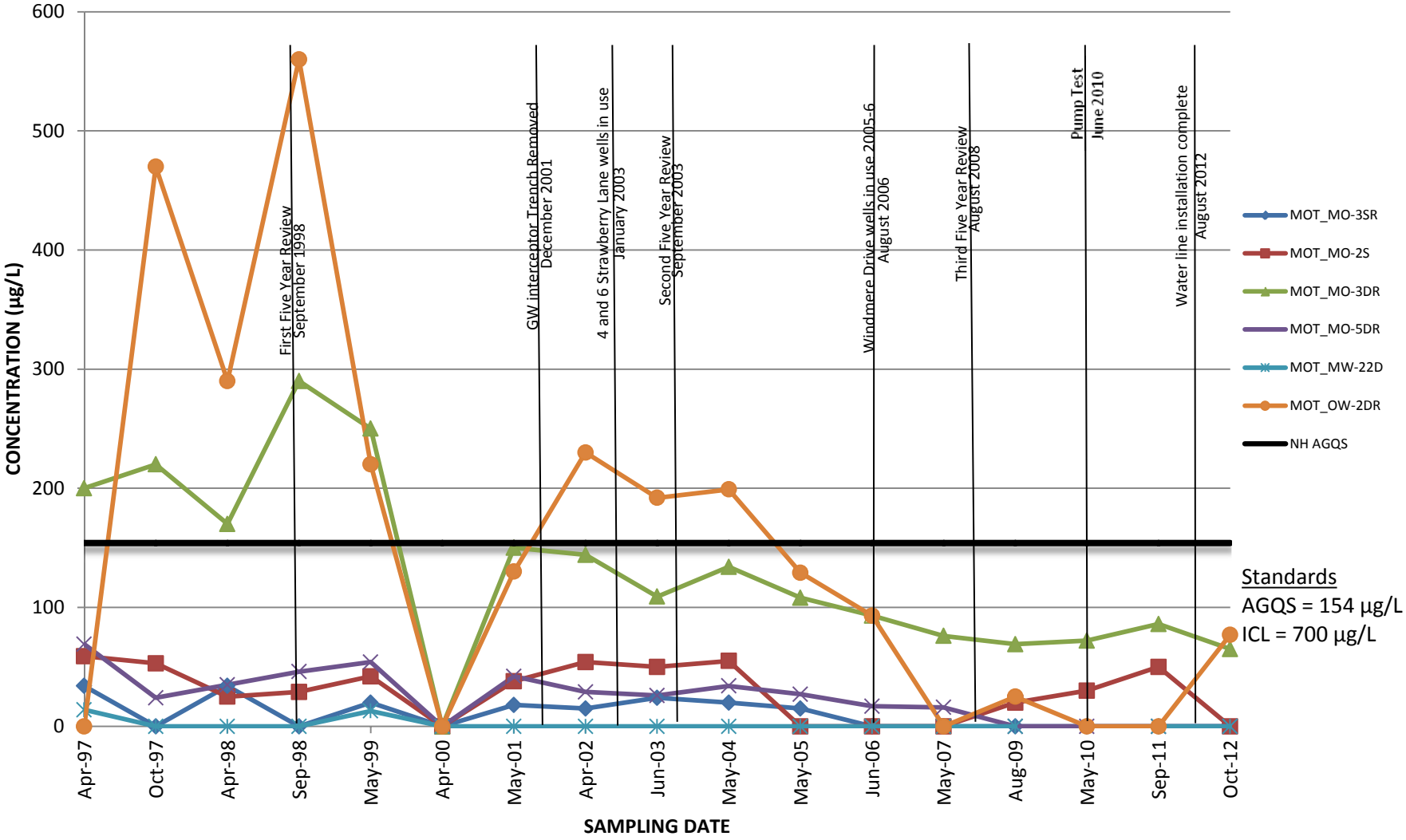


Standards
AGQS/ICL = 70 µg/L

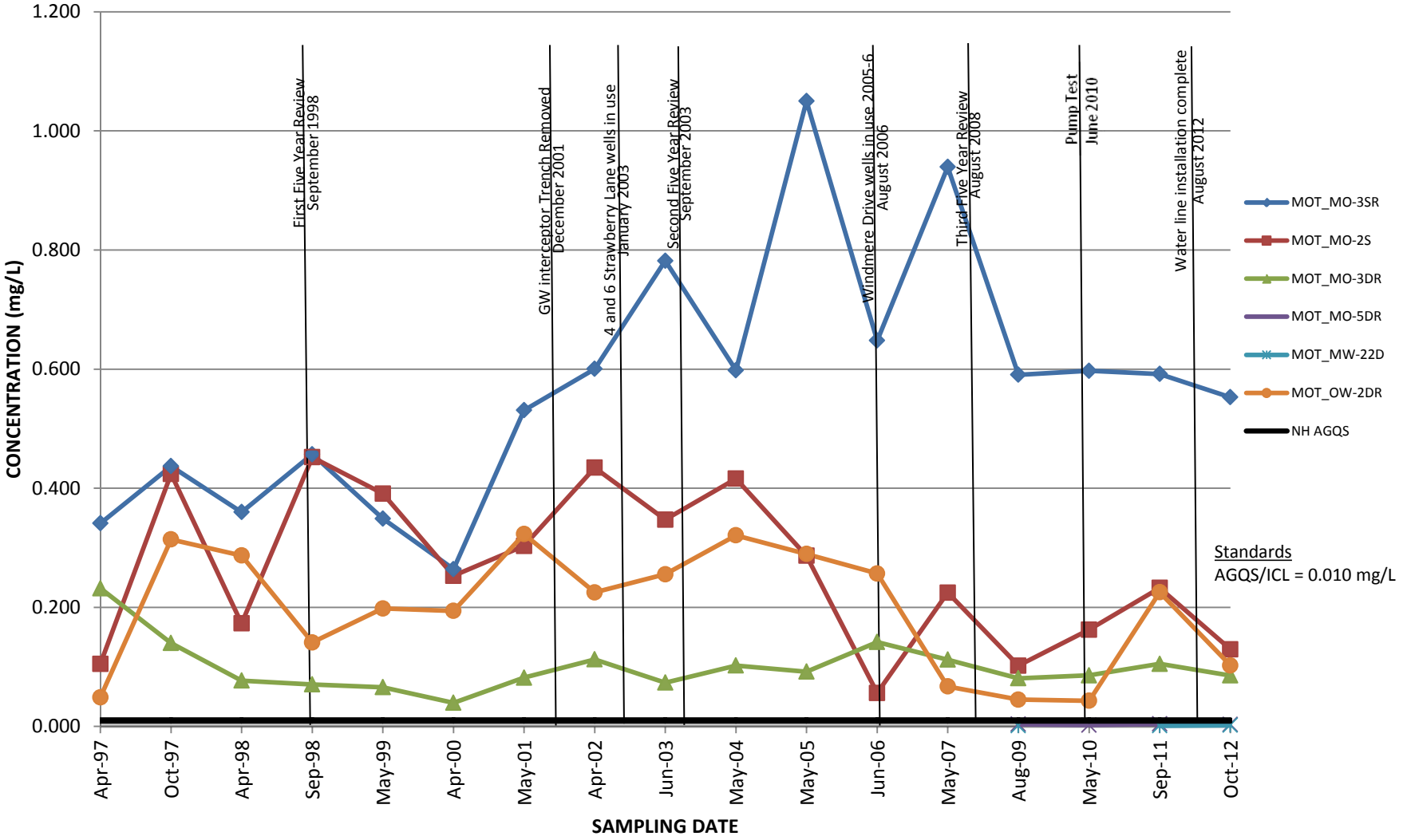
Graph 3 - D
Vinyl Chloride Concentration Trends in On-site Groundwater
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



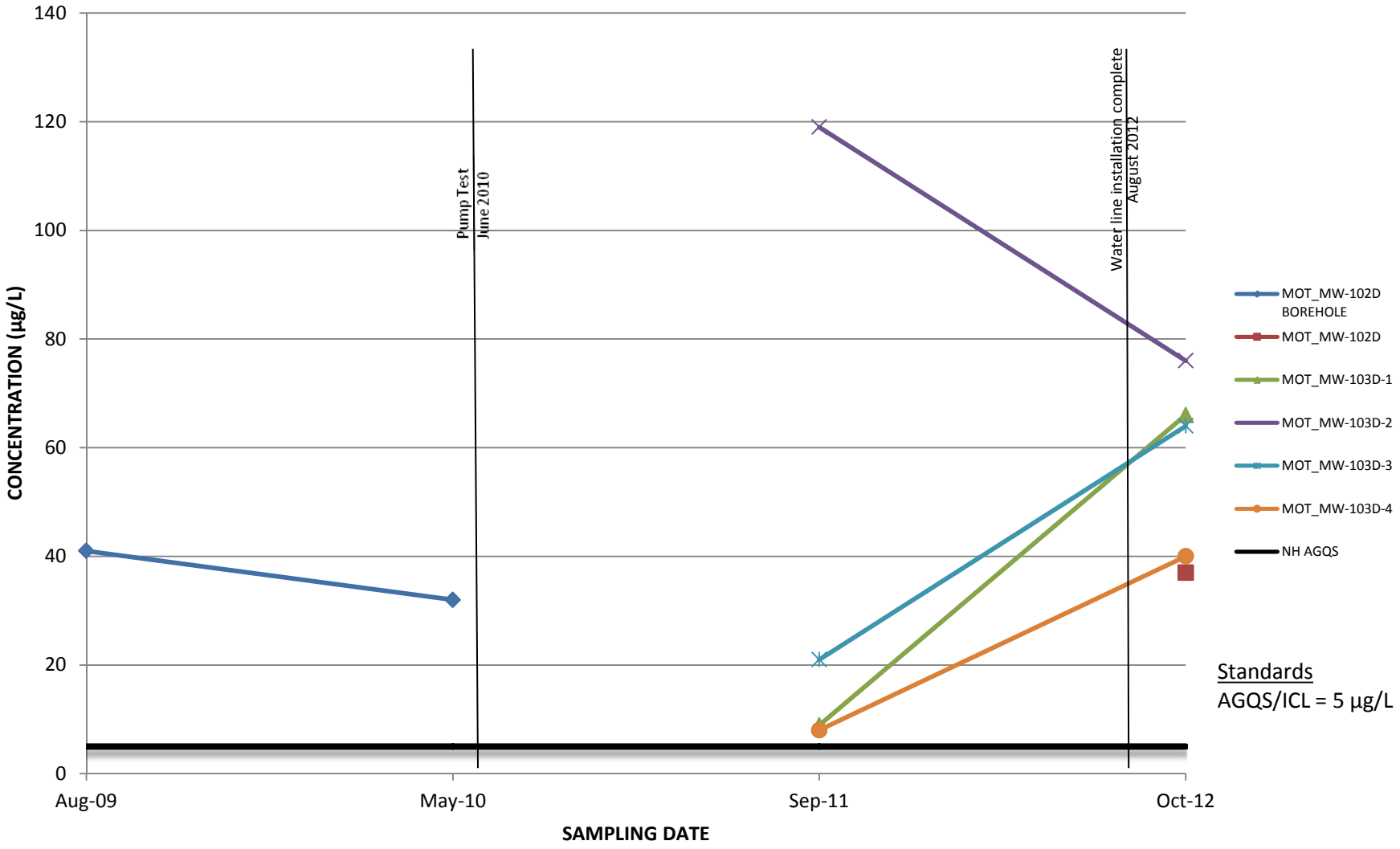
Graph 4 - D
Tetrahydrofuran (THF) Concentration Trends in On-site Groundwater
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



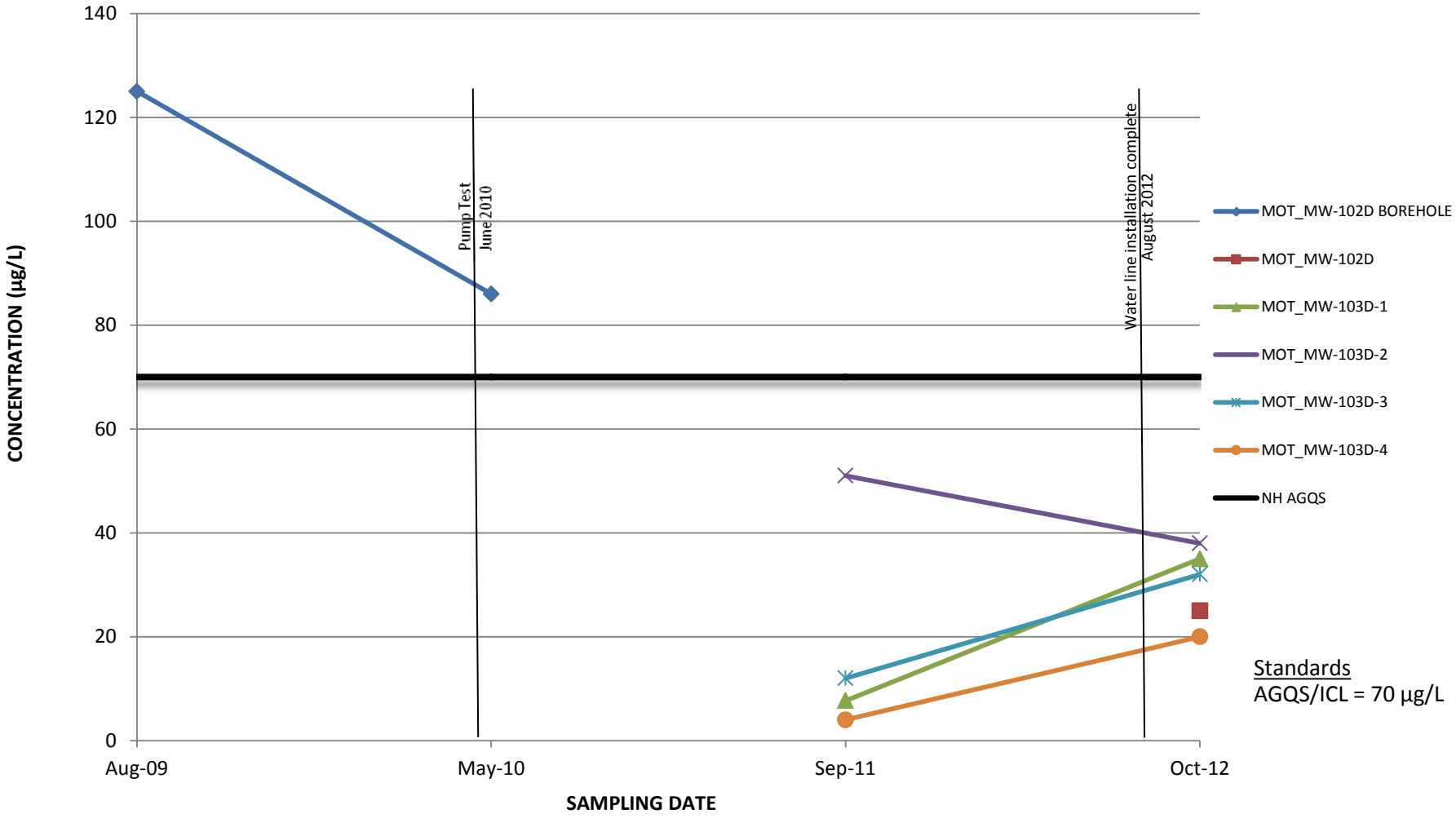
Graph 5 - D
Arsenic (As) Concentration Trends in On-site Groundwater
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



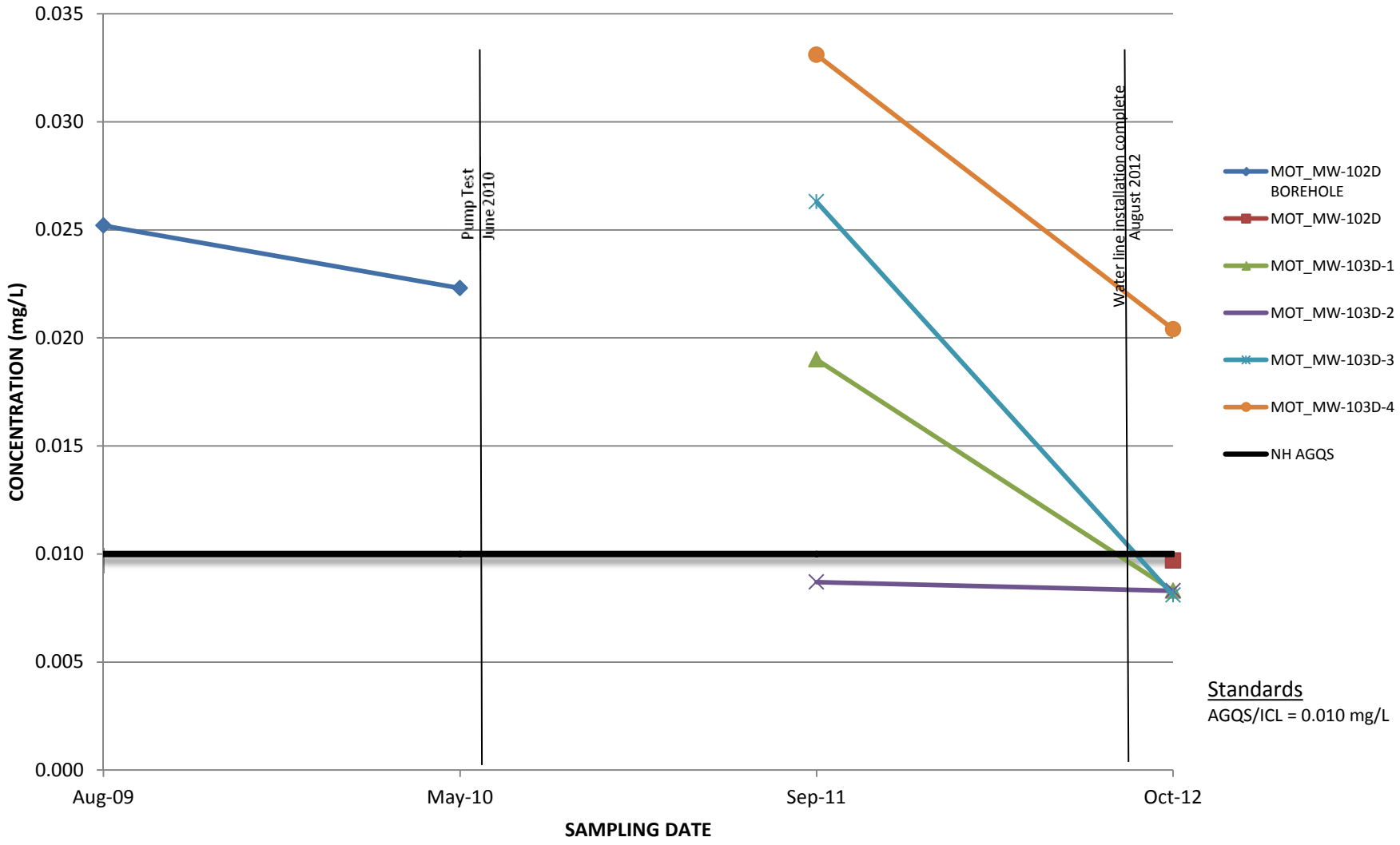
Graph 6 - D
Trichloroethene (TCE) Concentration Trends in Deep Bedrock Groundwater
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



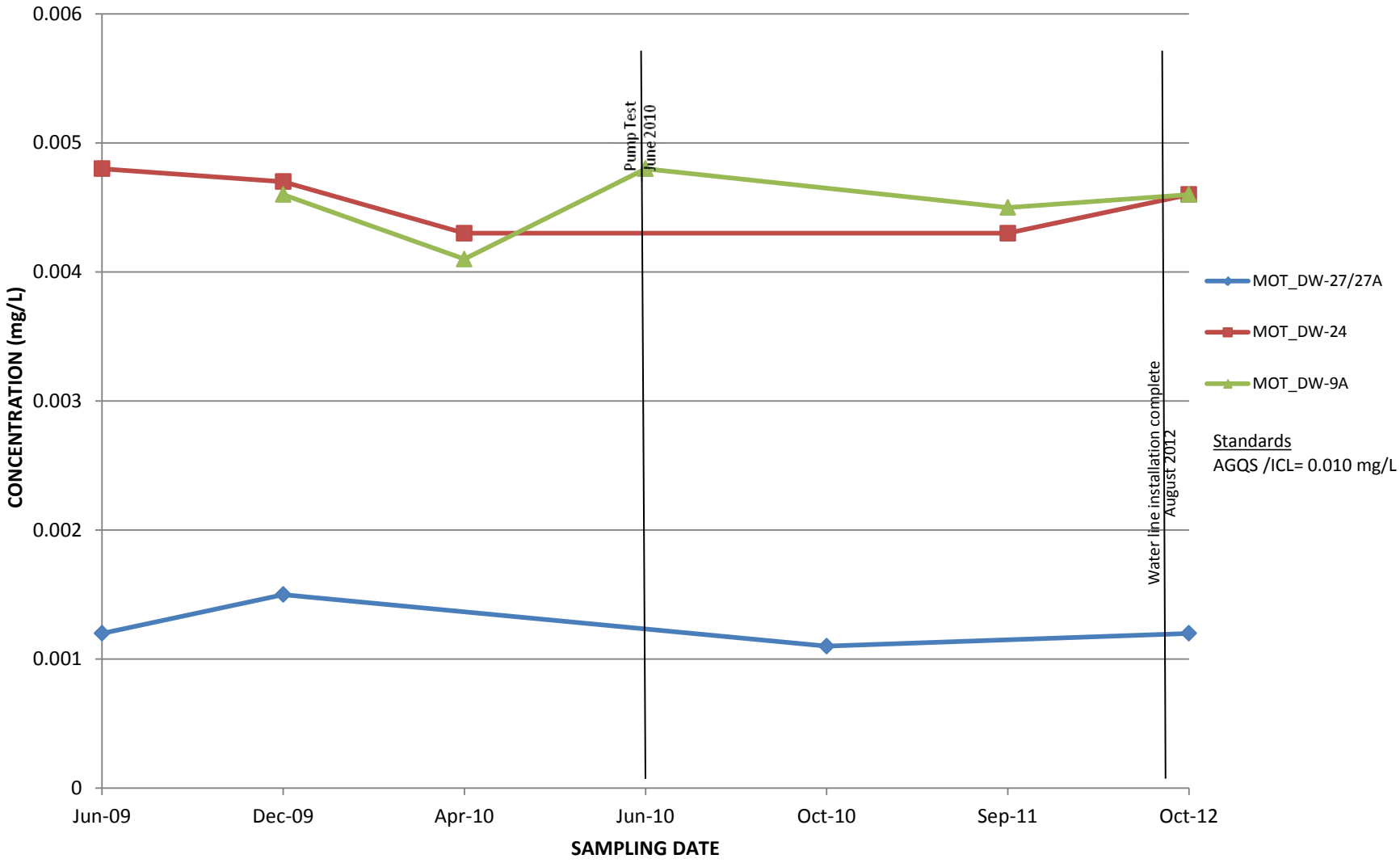
Graph 7 - D
cis-1,2-Dicholorethene (DCE) Concentration Trends in Deep Bedrock Groundwater
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



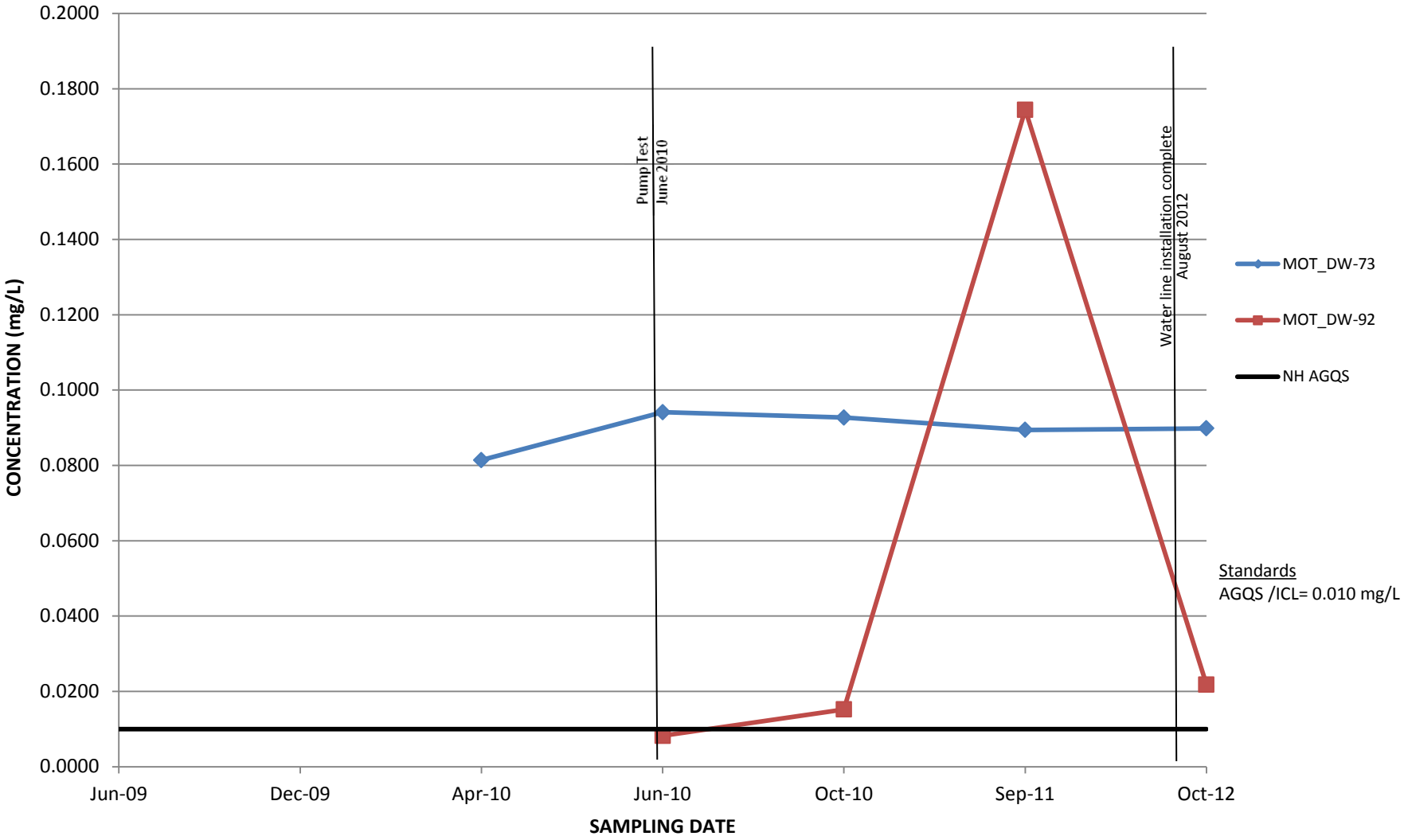
Graph 8 - D
Arsenic (As) Concentration Trends in Deep Bedrock Groundwater
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



Graph 9 - D
Arsenic Concentration Trends in Residential Supply Water
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



Graph 10 - D
Arsenic Concentration Trends Exceeding AGQS in Residential Supply Water
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire



APPENDIX E

SITE INSPECTION CHECKLIST

Site Inspection Checklist
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

I. SITE INFORMATION	
Site name: *Mottolo Pig Farm Superfund Site*	**Date of inspection:** *3/28/13*
Location and Region: *Raymond, NH / Region 1*	**EPA ID:** *NH0980503361*
Agency, office, or company leading the five-year review: *EPA*	**Weather/temperature:** *Cloudy, mid 30s*

Remedy Includes: (Check all that apply)

_ Landfill cover/containment
_ Access controls
✓ Institutional controls
_ Groundwater pump and treatment
_ Surface water collection and treatment
_ Other_____
_____

✓ Natural attenuation
_ Groundwater containment
_ Vertical barrier walls

Attachments: ✓ Inspection team roster attached ✓ Site map attached

II. INTERVIEWS (Check all that apply) **

1. **O&M site manager** *Andrew Hoffman* (Name) *Project Manager* (Title) *3/28/2013* (Date)
   Interviewed ✓ at site _ at office _ by phone Phone no. _____
   Problems, suggestions; _ Report attached _____
   _____

2. **O&M staff** _____ (Name) _____ (Title) _____ (Date)
   Interviewed _ at site _ at office _ by phone Phone no. _____
   Problems, suggestions; G Report attached _____
   _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency _____*Town of Raymond Department of Public Works*_____
Contact *Pat Bower*, _____ *Director* *3/28/13* _____
Name Title Date Phone no.
Problems; suggestions; ✓ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; _ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; _ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; _ Report attached _____
_____

4. **Other interviews** (optional) _ Report attached.

Site Inspection Checklist
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire

	III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	**O&M Documents**			
	_ O&M manual	_ Readily available	_Up to date	✓ N/A
	_ As-built drawings	_ Readily available	_Up to date	✓ N/A
	_ Maintenance logs	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
2.	**Site-Specific Health and Safety Plan**	✓ Readily available	✓ Up to date	_ N/A
	_ Contingency plan/emergency response plan	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
3.	**O&M and OSHA Training Records**	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
4.	**Permits and Service Agreements**			
	_ Air discharge permit	_ Readily available	_ Up to date	✓ N/A
	_ Effluent discharge	_ Readily available	_ Up to date	✓ N/A
	_ Waste disposal, POTW	_ Readily available	_ Up to date	✓ N/A
	_ Other permits	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
5.	**Gas Generation Records**	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
6.	**Settlement Monument Records**	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
7.	**Groundwater Monitoring Records**	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
8.	**Leachate Extraction Records**	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
9.	**Discharge Compliance Records**			
	_ Air	_ Readily available	_ Up to date	✓ N/A
	_ Water (effluent)	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			
10.	**Daily Access/Security Logs**	_ Readily available	_ Up to date	✓ N/A
	Remarks_____			

IV. O&M COSTS

1. **O&M Organization**
✓ State in-house _ Contractor for State
_ PRP in-house _ Contractor for PRP
_ Federal Facility in-house _ Contractor for Federal Facility
_ Other_____

2. **O&M Cost Records**
✓ Readily available ✓ Up to date *See Section 4.3 of text*
✓ Funding mechanism/agreement in place
Original O&M cost estimate_____ _ Breakdown attached

Total annual cost by year for review period if available

From *1 Jan 2008*	To *31 Dec 2009*	*$32,000*	_ Breakdown attached
Date	Date	Total cost	
From *1 Jan 2009*	To *31 Dec 2009*	*$111,000*	_ Breakdown attached
Date	Date	Total cost	
From *1 Jan 2010*	To *31 Dec 2009*	*$43,000*	_ Breakdown attached
Date	Date	Total cost	
From *1 Jan 2011*	To *31 Dec 2009*	*$42,000*	_ Breakdown attached
Date	Date	Total cost	
From *1 Jan 2012*	To *31 Dec 2009*	*$48,000*	_ Breakdown attached
Date	Date	Total cost	

3. **Unanticipated or Unusually High O&M Costs During Review Period**
Describe costs and reasons: *The 2009 annual O&M cost was unusually high (approximately two to three times the cost of the other years during the review period) due to the need for supplemental investigations to determine whether a residual source area existed on Site, and whether VOC and arsenic detections in nearby residential supply wells were Site-related.*

V. ACCESS AND INSTITUTIONAL CONTROLS ✓ Applicable _ N/A

A. Fencing

1. **Fencing damaged** _ Location shown on site map ✓ Gates secured _ N/A
Remarks_____

B. Other Access Restrictions

1. **Signs and other security measures** _Location shown on site map ✓ N/A
Remarks_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented _Yes ✓ No _ N/A
Site conditions imply ICs not being fully enforced _ Yes ✓ No _ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) _____
Frequency _____
Responsible party/agency _____
Contact *Andrew Hoffman* *Project Manager* _____ _____

Name	Title	Date	Phone no.

Reporting is up-to-date _ Yes _ No ✓ N/A
Reports are verified by the lead agency _Yes _ No ✓ N/A

Specific requirements in deed or decision documents have been met ✓Yes _ No _ N/A
Violations have been reported _ Yes ✓ No _ N/A
Other problems or suggestions: _ Report attached

2. **Adequacy** ✓ ICs are adequate _ ICs are inadequate _ N/A
Remarks_____

D. General

1. **Vandalism/trespassing** _ Location shown on site map ✓ No vandalism evident
Remarks _____

2. **Land use changes on site** ✓ N/A
Remarks _____

3. **Land use changes off site** ✓ N/A
Remarks_____

VI. GENERAL SITE CONDITIONS

A. Roads _ Applicable ✓ N/A

1. **Roads damaged** _ Location shown on site map ✓ Roads adequate _ N/A
Remarks_____

B. Other Site Conditions

Remarks *No problems identified*

VII. LANDFILL COVERS _ Applicable ✓ N/A

A. Landfill Surface

1. **Settlement** (Low spots) _ Location shown on site map _ Settlement not evident
Areal extent_____ Depth_____
Remarks_____

2. **Cracks** _ Location shown on site map _ Cracking not evident
Lengths_____ Widths_____ Depths_____
Remarks_____

3. **Erosion** _ Location shown on site map _ Erosion not evident
Areal extent_____ Depth_____
Remarks_____

4. **Holes** _Location shown on site map _ Holes not evident
Areal extent_____ Depth_____
Remarks_____

5. **Vegetative Cover** _ Grass _ Cover properly established _ No signs of stress
G Trees/Shrubs (indicate size and locations on a diagram)
Remarks_____

6. **Alternative Cover (armored rock, concrete, etc.)** _ N/A
Remarks_____

7. **Bulges** _ Location shown on site map _ Bulges not evident
Areal extent_____ Height_____
Remarks_____

8. **Wet Areas/Water Damage** _ Wet areas/water damage not evident
_ Wet areas _ Location shown on site map Areal extent_____
_ Ponding _ Location shown on site map Areal extent_____
_ Seeps _ Location shown on site map Areal extent_____
_ Soft subgrade _ Location shown on site map Areal extent_____
Remarks_____
_____

9. **Slope Instability** _ Slides _ Location shown on site map _ No evidence of slope instability
Areal extent_____
Remarks_____
_____

B. Benches _ Applicable _ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** _ Location shown on site map _ N/A or okay
Remarks_____
_____

2. **Bench Breached** _ Location shown on site map _N/A or okay
Remarks_____
_____

3. **Bench Overtopped** _ Location shown on site map _ N/A or okay
Remarks_____
_____

C. Letdown Channels _ Applicable _ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** _ Location shown on site map _ No evidence of settlement
Areal extent_____ Depth_____
Remarks_____
_____

2. **Material Degradation** _Location shown on site map _ No evidence of degradation
Material type_____ Areal extent_____
Remarks_____
_____

3. **Erosion** _ Location shown on site map _ No evidence of erosion
Areal extent_____ Depth_____
Remarks_____
_____

4. **Undercutting** _ Location shown on site map _ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____
_____

5. **Obstructions** Type_____ _No obstructions
_Location shown on site map Areal extent_____
Size_____
Remarks_____
_____

6. **Excessive Vegetative Growth** Type_____
_ No evidence of excessive growth
_ Vegetation in channels does not obstruct flow
_Location shown on site map Areal extent_____
Remarks_____
_____

D. Cover Penetrations _ Applicable _ N/A

1. **Gas Vents** _ Active _ Passive
_ Properly secured/locked G Functioning _ Routinely sampled _ Good condition
_ Evidence of leakage at penetration _ Needs Maintenance
_ N/A
Remarks_____
_____

2. **Gas Monitoring Probes**
_Properly secured/locked G Functioning _ Routinely sampled _ Good condition
_ Evidence of leakage at penetration _ Needs Maintenance _ N/A
Remarks_____
_____

3. **Monitoring Wells** (within surface area of landfill)
_ Properly secured/locked _ Functioning _ Routinely sampled _ Good condition
_Evidence of leakage at penetration _ Needs Maintenance _ N/A
Remarks _____
_____

4. **Leachate Extraction Wells**
_ Properly secured/locked G Functioning _ Routinely sampled _Good condition
_ Evidence of leakage at penetration _ Needs Maintenance _ N/A
Remarks_____
_____

5. **Settlement Monuments** _ Located _ Routinely surveyed _ N/A
Remarks_____
_____

E. Gas Collection and Treatment _ Applicable _ N/A

1. **Gas Treatment Facilities**
_ Flaring _ Thermal destruction _ Collection for reuse
_ Good condition _ Needs Maintenance
Remarks_____
_____

2. **Gas Collection Wells, Manifolds and Piping**
_Good condition _ Needs Maintenance
Remarks_____
_____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
_Good condition G Needs Maintenance _ N/A
Remarks_____
_____

F. Cover Drainage Layer _ Applicable _ N/A

1. **Outlet Pipes Inspected** _ Functioning _ N/A
Remarks_____
_____

2. **Outlet Rock Inspected** _ Functioning _ N/A
Remarks_____
_____

G. Detention/Sedimentation Ponds _ Applicable _ N/A

1. **Siltation** Areal extent_____ Depth_____ _ N/A
_ Siltation not evident
Remarks_____
_____

2. **Erosion** Areal extent_____ Depth_____
_ Erosion not evident
Remarks_____
_____

3. **Outlet Works** _ Functioning _ N/A
Remarks_____
_____

4. **Dam** _ Functioning _ N/A
Remarks_____
_____

H. Retaining Walls _Applicable _ N/A

1. **Deformations** _ Location shown on site map _ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____
   _____

2. **Degradation** _ Location shown on site map _ Degradation not evident
   Remarks_____
   _____

I. Perimeter Ditches/Off-Site Discharge _ Applicable _ N/A

1. **Siltation** _ Location shown on site map _ Siltation not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Vegetative Growth** _Location shown on site map _ N/A
   _ Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks_____
   _____

3. **Erosion** _ Location shown on site map _Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

4. **Discharge Structure** _ Functioning _ N/A
   Remarks_____
   _____

VIII. VERTICAL BARRIER WALLS _ Applicable ✓ N/A

1. **Settlement** _ Location shown on site map _ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____
   _____

2. **Performance Monitoring** Type of monitoring_____
   _ Performance not monitored
   Frequency_____ _ Evidence of breaching
   Head differential_____
   Remarks_____
   _____

IX. GROUNDWATER/SURFACE WATER REMEDIES _ Applicable ✓ N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines _ Applicable _ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
_ Good condition _ All required wells properly operating _ Needs Maintenance _ N/A
Remarks_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
_ Good condition _ Needs Maintenance
Remarks_____

3. **Spare Parts and Equipment**
_ Readily available _ Good condition G Requires upgrade _ Needs to be provided
Remarks_____

B. Surface Water Collection Structures, Pumps, and Pipelines _ Applicable _ N/A

1. **Collection Structures, Pumps, and Electrical**
_ Good condition G Needs Maintenance
Remarks_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
_ Good condition _ Needs Maintenance
Remarks_____

3. **Spare Parts and Equipment**
_ Readily available _ Good condition G Requires upgrade _ Needs to be provided
Remarks_____

C. Treatment System _ Applicable ✓ N/A

1. **Treatment Train** (Check components that apply)
   _ Metals removal _ Oil/water separation _ Bioremediation
   _ Air stripping _ Carbon adsorbers
   _Filters_____
   _ Additive (*e.g.*, chelation agent, flocculent)_____
   _ Others_____
   _ Good condition G Needs Maintenance
   _ Sampling ports properly marked and functional
   _ Sampling/maintenance log displayed and up to date
   _ Equipment properly identified
   _ Quantity of groundwater treated annually_____
   _ Quantity of surface water treated annually_____
   Remarks_____
   _____

2. **Electrical Enclosures and Panels** (properly rated and functional)
   _ N/A _ Good condition _ Needs Maintenance
   Remarks_____
   _____

3. **Tanks, Vaults, Storage Vessels**
   _ N/A _Good condition G Proper secondary containment _ Needs Maintenance
   Remarks_____
   _____

4. **Discharge Structure and Appurtenances**
   _ N/A _ Good condition G Needs Maintenance
   Remarks_____
   _____

5. **Treatment Building(s)**
   _ N/A _ Good condition (esp. roof and doorways) _ Needs repair
   _Chemicals and equipment properly stored
   Remarks_____
   _____

6. **Monitoring Wells** (pump and treatment remedy)
   _ Properly secured/locked _ Functioning _ Routinely sampled _ Good condition
   _ All required wells located _ Needs Maintenance _ N/A
   Remarks_____
   _____

D. Monitoring Data

1. Monitoring Data
   ✓ Is routinely submitted on time ✓ Is of acceptable quality

2. Monitoring data suggests:
   ✓ Groundwater plume is effectively contained ✓ Contaminant concentrations are declining

D. Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
✓ Properly secured/locked ✓ Functioning ✓ Routinely sampled _ Good condition
✓ All required wells located ✓ Needs Maintenance _ N/A
Remarks *The roadbox and concrete apron at monitoring well MOT_MW-12D have been uplifted by heaving and need to be replaced. The well cap at MOT_MW-102D needs to be replaced due to a hole drilled in the cap to allow transducer access.*

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

See section 7.1 of the text for additional details.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

See sections 7 and 8 of the text for additional details.

C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.
	None

D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.
	No opportunity for optimization of monitoring tasks observed during the site visit

FIVE-YEAR REVIEW SITE INSPECTION TEAM ROSTER
Mottolo Pig Farm Superfund Site
Raymond, New Hampshire
NHD980503361

Site Inspection Date: March 28, 2013

Purpose: Conduct site inspection as required by the five-year review. Complete "Site Inspection Checklist"

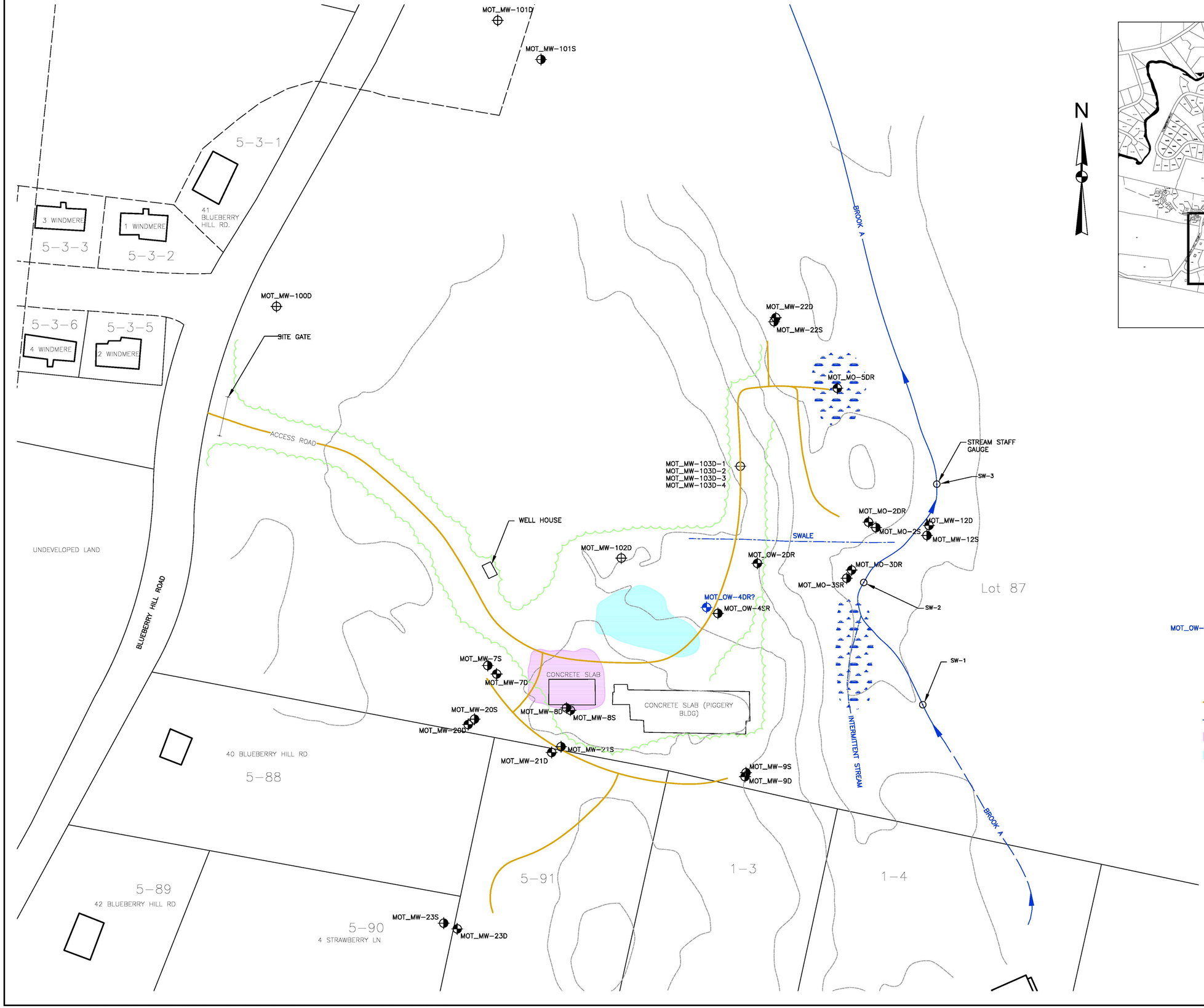
Weather: Cloudy, mid 30s

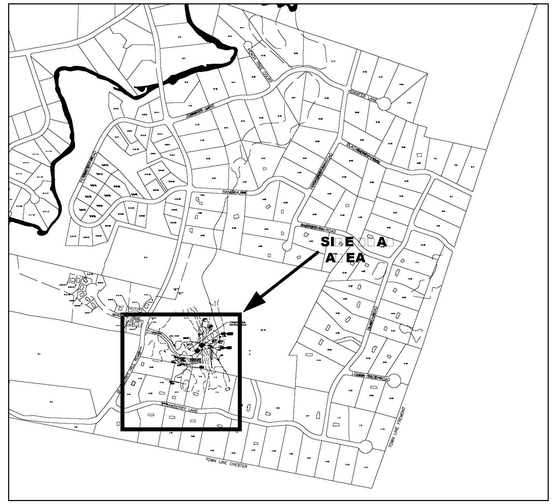
Site Inspection Attendees:

US EPA, Region 1
Michael Jasinski

New Hampshire Department of Environmental Services
Drew Hoffman
Sharon Perkins

GZA GeoEnvironmental, Inc
Stefanie Lamb





LOCUS PLAN

SCALE: 1" = 800'

NOTES:

1) BASE MAP DEVELOPED USING:

A) BALSAM ENVIRONMENTAL CONSULTANTS, INC. SITE PLAN TITLED "SITE AREA GROUND WATER & SURFACE WATER/SEDIMENT SAMPLING LOCATIONS", DATED 7/19/90, DRAWING No. 2-12.

B) NHDES GIS FIGURE, TITLED "MOTTOLO PIG FARM SUPERFUND SITE, RAYMOND, NEW HAMPSHIRE"

C) LOCATION INFORMATION FROM AN AUGUST 24, 2008, NOBIS DETAIL SHEET 4 "GROUNDWATER MONITORING WELL SURVEY"

D) RAYMOND TAX MAP 5, PLOT DATA 4/23/08.

2) THE LOCATION OF THE SITE FEATURES, TEST BORINGS, MONITORING WELLS, SAMPLING LOCATIONS, EXPLORATIONS, WERE APPROXIMATELY DETERMINED BY SURVEY, TAPE MEASUREMENTS, THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

3) THE LOCATION OF WELL MOT_OW-4DR? WAS DISCOVERED DURING THE SEPTEMBER WATER LEVEL ROUND.THE WELL IS TENTATIVELY IDENTIFIED AS MOT_OW-4DR BASED ON LOCATION AND DESCRIPTION; HOWEVER, THE WELL WAS REPORTED DECOMMISSIONED IN 2000 AND FURTHER INVESTIGATION IS NEEDED.

LEGEND:

- OVERBURDEN MONITORING WELL
- SHALLOW BEDROCK WELL
- DEEP BEDROCK WELL
- MOT_OW-4DR? WELL TENTATIVELY IDENTIFIED AS MOT_OW-4DR
- SURFACE WATER MONITORING LOCATION
- ESTIMATED TREELINE
- VIABLE WETLAND AREAS
- ACCESS PATHS/ROADS
- SWALE
- APPROXIMATE SOUTHERN BOUNDARY AREA (SBA)
- APPROXIMATE FORMER DRUM DISPOSAL AREA (FDDA)

0 25 50 100 150
SCALE IN FEET

(SCALE IS AN ESTIMATE BASED ON TAX MAPS)

MOTTOLO PIG FARM SUPERFUND SITE
BLUEBERRY HILL ROAD
FOURTH FIVE YEAR REVIEW REPORT
RAYMOND, NH

LOCUS AND SITE PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists, 380 HARVEY ROAD, MANCHESTER, NEW HAMPSHIRE 03103, (603) 623-3600		PREPARED FOR: NEW HAMPSHIRE DEPT. OF ENVIRONMENTAL SERVICES; BUREAU OF WASTE MANAGEMENT	
PROJ MGR: SGL	REVIEWED BY: SRL	CHECKED BY: SGL	FIGURE 1
DESIGNED BY: SGL	DRAWN BY: MA	SCALE: EST 1:50'	
DATE: JULY 2013	PROJECT NO. 04.0029395.22	REVISION NO. 0	SHEET NO.