10/27/2008

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
PRAP/ROD ROUTING SLIP

TO: Sal Ervolina, Assistant Division Director
FROM: The attached is submitted for your approval by:

NAME	INITIAL	DATE
Project Manager: Alicia Thorne	AJT	10/27/08
Section Chief/RHWRE: Russell Huyck	RDH	10/27/08
Bureau Director: Chittibabu Vasudevan	CV	10/27/08

DATE: 10/27/2008

RE: **Site Name** Poultney Street Site **Site Code** 558019
City Whitehall **County** Washington

☐ **PRAP**
- ☐ Draft PRAP
- ☐ Clean copy of the PRAP
- ☐ Redline/Strikeout version of the PRAP
- ☐ Copies of edits to PRAP (Sal's/Dale's)
- ☐ Site Briefing Report
- ☐ NYSDOH concurrence letter
- ☐ USEPA concurrence letter
- ☐ OGC Referral
  - ☐ Attached
  - ☐ Not Required: Explain:
- ☐ Project Reviews (IGP-13) (if waived, explain why)
  - ☐ Scoping RI date: _____
  - ☐ Scoping FS date: _____

PRAP Release Approvals

Ass't Div Director: _____
Sal Ervolina

Division Director: _____
Dale Desnoyers

✓ **ROD** 511298
- ☐ Draft ROD
- ✓ Signature-ready copy of the ROD
- ☐ Redline/Strikeout version of the ROD
- ☐ Copies of edits to ROD (Sal's/Dale's)
  - ✓ Site Briefing Report
- ☐ NYSDOH concurrence letter
- ☐ USEPA concurrence letter

ROD Signoff

Ass't Div Director: _____
Sal Ervolina 10/28/08

☐ **BRIEFING**
Date:_____ **Time:**_____ **Room:**_____

c: Dale Desnoyers
Other reviewers who are invited to Briefing

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
Site Briefing Report

Site Code	558019	**Site Name**	Poultney Street Site		
Classification	02	**Address**	Poultney Street		
Region	5	**City**	Whitehall	**Zip**	12887
Latitude	43.5488	**Town**	Whitehall	**Project Manager**	Alicia Thorne
Longitude	-73.3996	**County**	Washington		
Site Type	Dump			**Estimated Size**	2.0000

Site Description

The site is located on the railroad tracks of the Vermont Railroad (Clarendon & Pittsford) located between the State of New York Champlain Canal and Wood Creek. The site consists of a dump area on the western portion of the property and a former fire training area near the center of the property (east of the open dump area). Forty drums of waste material from an unidentified source were discovered in the open dump area. In 1989, these drums were placed in overpack containers, sampled for hazardous waste characteristics and moved to a holding area for proper removal/disposal under an emergency removal action. The results of the characteristics testing revealed that thirty-two of the drums contained materials with a flashpoint less than 70 degrees Fahrenheit. Environmental samples were collected by the NYSDEC in December of 1989. The results revealed that the surface water was contaminated with acetone at 31 ppm, xylene at 12 ppm, toluene at 14 ppm, trichloroethylene at 35,000 ppm and butylbenzylphthalate at 57 ppm. Soil samples also revealed significant contamination. Other surface water samples collected from a pond on the east side of the property contained trichloroethylene at 92 ppm and 1,1,2-trichloroethane at 0.790 ppm, both at levels exceeding applicable surface water standards. Five of the forty drums staged at the site were sampled for full hazardous waste analysis in January 1990 to determine if the drums were the source of the identified contamination. The results revealed that the drums contained acetone at 81,000 ppm, toluene at 310,000 ppm and xylene at 120,000 ppm. The correlation between the drum contents and the identified soil and surface water contamination had been established. The drums of waste were subsequently removed from the site. A remedial investigation (RI) was conducted between December 2001 and April 2002. Based upon the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. A feasibility study was completed and a Record of Decision (ROD) was issued in March 2004. Excavation of contaminated soil and offsite disposal is the principal aspect of the remedy. The engineering design of the remedy commenced in May 2004.

Materials Disposed at Site	Quantity Disposed
IGNITABLE WASTES (D001)	UNKNOWN
TRICHLOROETHENE (F001)	UNKNOWN
TOLUENE (F005)	UNKNOWN
XYLENE (F003)	UNKNOWN
1,1,2-TRICHLOROETHANE (F002)	UNKNOWN

Analytical Data Available for : Surface Water, Soil, Sediment

Applicable Standards Exceeded for: Surface Water

Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision Amendment

Poultney Street Site
Whitehall, Washington County, New York
Site Number 5-58-019

October 2008

New York State Department of Environmental Conservation
DAVID A. PATERSON, *Governor* ALEXANDER B. GRANNIS, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION AMENDMENT

Poultney Street Inactive Hazardous Waste Disposal Site
Whithall, Washington County, New York
Site No. 558019

Statement of Purpose and Basis

The Record of Decision (ROD) Amendment presents the amended remedy for the Poultney Street site, a Class 2 inactive hazardous waste disposal site. The selected remedial program was chosen in accordance with the New York State Environmental Conservation Law and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Poultney Street inactive hazardous waste disposal site, and the public's input to the Proposed Record of Decision (ROD) Amendment presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD Amendment.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD Amendment, presents a current or potential significant threat to public health and/or the environment.

Description of Amended Remedy

Based on the results of the remedial investigation, feasibility study, and the pre-design geotechnical borings and evaluations for the Poultney Street site, the Department has selected an amended remedy of surface cover and groundwater containment to address the soil and groundwater contamination on site. The components of the amended remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program.

2. Contain the area of contaminated soil with watertight sheetpiling keyed into the basal gray clay underlying the site to approximately twenty (20) feet. The containment barrier would prevent further migration of contaminated groundwater from the waste mass.

3. The contaminated soil area will have an engineered cap designed and constructed in conformance with the substantive requirements of 6 NYCRR Part 360 solid waste regulations.

4. A soil gas investigation will be performed following implementation of the remedy.

5. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner

to complete and submit to the Department a periodic certification of institutional and engineering controls.

6. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover system to maintain integrity of the cap and prevent infiltration of precipitation into the waste mass; (b) continued evaluation of the potential for vapor intrusion for any future buildings, if constructed on the site, including provision for mitigation of any impacts identified; (c) monitoring of groundwater; (d) identification of any use restrictions on the site; (e) fencing to control site access; and (f) provisions for the continued proper operation and maintenance of the components of the remedy.

7. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other professional acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

8. Since the remedy results in untreated hazardous waste remaining at the site, a long-term groundwater monitoring program will be instituted. This program will allow the effectiveness of the landfill cap to be monitored and will be a component of the long-term management for the site.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy selected for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

DEC 1 2008
Date

Dale A. Desnoyers, Director
Division of Environmental Remediation

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RECORD OF DECISION AMENDMENT

Poultney Street Site
Village of Whitehall, Washington County, New York
Site No. 558019
October 2008

1.0 SUMMARY OF THE RECORD OF DECISION AMENDMENT

On January 30, 2004, the New York State Department of Environmental Conservation (Department) signed a Record of Decision (ROD) which selected a remedy to cleanup the Poultney Street Site. The ROD called for soil excavation with monitored natural attenuation. Pre-design geotechnical borings and technical evaluations determined that the soft basal clay layer which lies beneath the contaminated soils is too unstable to allow removal of contaminated subsurface soil with conventional excavation techniques. The presence of the nearby railroad embankment exacerbates the matter. The toe of the railroad embankment slope is at the edge of the proposed excavation area. The additional loading from the railroad embankment could have caused the unstable clay soils to up-well into the excavation area. The application of additional soil stabilization techniques may have aided in performing a soil excavation however, the potential for failure to the adjacent railroad infrastructure did not justify the risk. It addition, applying additional soil stabilization techniques with questionable results to allow excavation would have also essentially doubled the cost of the remedy. The potential risks of failure to the adjacent railroad infrastructure, along with the overall questionable implementability of the technology, compounded by the significant increase in cost to implement the selected remedy led the Department to evaluate other feasible remedial alternatives. The Department has evaluated other alternatives and selected a remedial alternative to contain the soil contamination with watertight sheet piling keyed into the basal clay underlying the site to a depth of approximately 20 feet, instead of excavating the contaminated soils. The containment system will prevent further migration of contaminated groundwater from the waste mass. A low permeable cap will be installed over the waste to reduce infiltration. Design and implementation of this alternative will be completed in a relatively short time frame (6-8 months) due to the proven and familiar technologies employed. As originally proposed in the January 2004 ROD, a groundwater monitoring program will be conducted along with a soil gas investigation. Removal of the contaminated material may be reconsidered should site conditions or technology change, or; if the nearby railroad is decommissioned. The changes in the remedy selected in the January 2004 ROD are presented in this Amendment to the January 2004 ROD.

The Department has issued this ROD Amendment as a component of the Citizen Participation Plan developed pursuant to the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules, and Regulations of the State of New York (6 NYCRR) Part 375. The Department has selected the final remedy for this site only after consideration of all comment received during the public comment period.

The amended remedy, discussed in detail in Section 5, is intended to attain the remedial goals identified for this site in Section 4. The remedy must conform with officially promulgated standards and criteria that are directly applicable, or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

2.0 SITE INFORMATION

2.1 Site Description

The site is an unimproved parcel of land, approximately 2 acres in size, south of the former E.B. Metals facility on Route 4, in the Village of Whitehall, Washington County. The site is on land owned by the Claredon and Pittsford Railroad Company and is approximately bounded by the former E.B. Metals facility to the north, the raised railroad embankment to the south, and the Champlain Canal to the west. The eastern property boundary is located approximately 500 feet from the canal.

2.2 Site History

In the early 1970s, local fire departments used a trench in which flammable liquids were poured, ignited and then extinguished during fire training exercises. In addition, a drum staging area and drum waste disposal occurred on the property.

In December 1989, 40 drums, containing various volatile organic compounds and semi-volatile organic compounds, were removed. In November 1990, the Department listed the site as a Class 2 site in the Registry of Inactive Hazardous Waste Disposal Sites in New York. In March 1995, the Department initiated an Immediate Investigative Work Assignment (IIWA), which detected significant contamination that a Remedial Investigation/Feasibility Study (RI/FS) was necessary. In 1998, the responsible party performed an RI and interim remedial measure (IRM) that removed 25 drums and 15 cubic yards of contaminated soil from the former trench area.

The Department initiated an RI/FS using the New York State Superfund. Pursuant to U.S. District Court consent Decree, Index 93-CV-1356, a cap of $60,000 was established for PRP efforts on the Remedial Investigation, and further obligated parties to pay 10 percent of the estimated remedial cost, up to a cap of $75,000. The PRPs met these obligations. Since the parties had reached the cap set for site assessment activities, the project was referred by the NYS Attorney General's Office to the Department for completion.

2.3 Nature and Extent of Site Contamination

As described in the original ROD and other documents, many soil and groundwater samples were collected at the site to characterize the nature and extent of contamination. The primary contaminants of concern are volatile organic compounds (VOCs) in the soil and groundwater. The VOC soil contamination is located in the former fire training trench and extends to the clay layer which is approximately 17 to 20 feet below ground surface (BGS). The VOC groundwater contamination is primarily concentrated in the soil source area of the former trench location.

2.4 Summary of Human Exposure Pathways

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

There are no known completed exposure pathways at the site. However, potential exposure pathways exist. These are:

- Ingestion of groundwater
- Dermal contact with contaminated soil
- Inhalation of vapors in indoor air

No one is currently using site groundwater for drinking or other uses, but groundwater could be used in the future. Although the ingestion of contaminated groundwater is a potential exposure pathway, the ingestion of contaminated groundwater is not expected because the surrounding area is serviced by public water. In addition, the site is surrounded by the Champlain Canal to the west, railroad tracks and steep terrain to the south, a commercial facility to the north and a heavily vegetated area and stream to the east, limiting available area for future development.

Although site access is limited due to the canal, heavy vegetative growth and steep terrain adjacent to the railroad tracks, dermal contact with contaminated soil is possible because site access is not controlled.

Inhalation of contaminated indoor air is possible because of high concentrations of contaminants in soil and groundwater at the site. The adjacent building was demolished. However, if another building is built, contaminated soil gas could affect the quality of indoor air.

2.5 Summary of Environmental Assessment

This section summarizes the existing and potential future environmental impacts presented by the site. Environmental impacts include existing and potential future exposure pathways to fish and wildlife receptors, as well as damage to natural resources such as aquifers and wetlands.

Site contamination has impacted the groundwater resource in the shallow overburden aquifer. The Champlain Canal is in close proximity to the site. However, contaminants in the groundwater attenuate to significantly lower concentrations 50 to 80 feet from the source area resulting in minimal potential for impacts to fish and wildlife.

2.6 Original Remedy

The Department had previously selected Soil Excavation with Monitored Natural Attenuation as the remedy for the Poultney Street site. Under a remedial design program, contaminated subsurface soil above SCGs was planned to be excavated and properly disposed in an off-site facility. The site was planned to be restored by grading, placement of topsoil, and seeding of excavated and/or filled areas. In addition, a soil gas investigation was planned to be completed to determine the magnitude and extent, if any, of vapor phase contaminants in the subsurface.

Long term groundwater monitoring of natural attenuation parameters was planned to be conducted to evaluate the overall effectiveness of the remedy. Institutional controls, in the form of an environmental easement, was planned to be imposed to prevent the use of groundwater as a source of potable or process water. Annual certification of institutional controls would also be required. The 2004 estimated present worth cost to implement the remedy was $1,116,000. The cost to construct the remedy was estimated to be $967,000 and the estimated average annual operation, maintenance, and monitoring costs for 30 years was $22,900.

3.0 DESCRIPTION OF REMEDY CHANGES

3.1 New Information

Pre-design geotechnical borings and technical evaluations determined that the soft basal clay layer which lies beneath the contaminated soils would not support conventional excavation techniques and additional soil stabilization techniques would have essentially doubled the cost of the remedy. This significant increase in cost to perform the selected remedy under these poor subsurface conditions has led the Department to evaluate other alternatives and propose an amendment to the ROD.

3.2 Remedy Changes

Since the change in the proposed cost of the remedy is significant, the original ROD remedial alternatives were re-evaluated based on the revised cost estimates. Based on this evaluation, a remedial alternative that is different from the recommended remedy in the 2004 ROD was proposed.

Excavation was the technology chosen in the January 2004 ROD. Therefore, only remedial alternatives identified in the original Feasibility Study that did not include excavation were re-evaluated. Specifically, Alternative 3, Soil Excavation with Groundwater Monitored Natural Attenuation and Alternative 4, Soil Excavation with Groundwater Extraction and Treatment, were excluded from further reconsideration because their main remedial component of excavation is infeasible at this time. Therefore, the following remedial alternatives were re-considered for evaluation:

Alternative 1: No Action

Total Present Worth: *$0*
Capital Cost: *$0*
Annual OM&M: *$0*
Present Worth OM&M Cost: $0

This alternative will leave the site in its present condition and will not provide any additional protection to human health or the environment.

Alternative 2: Surface Cover with Zero-Valent Iron (ZVI) Groundwater Treatment

Total Present Worth: *$1,137,000*
Capital Cost: *$937,000*
Annual OM&M: *$14,550*
Present Worth OM&M Cost: $200,000

The area of contaminated soils will be capped with an impermeable cover. The intent is to reduce infiltration thereby limiting the volume of precipitation flowing through contaminated soils, becoming contaminated and, entering groundwater. The cover will consist of an impermeable flexible membrane, 18 inches of soil, topsoil and grass vegetation.

Groundwater treatment will be accomplished by employing zero-valent iron (ZVI) technology. As the chlorinated VOC plume migrates by means of the natural hydraulic gradient, this plume will flow through a zone of emplaced elemental iron filings designed to destroy chlorinated contaminants through reductive dechlorination. The treatment zone, inherently more permeable than the surrounding soil formation, is constructed across the path (perpendicular) of groundwater flow encouraging preferential migration through that medium. The treatment wall will be installed from grade to the underlying basal clay layer

approximately 20 feet deep. The iron will react with the chlorinated compounds causing dechlorination as the groundwater passes through the wall. Groundwater concentrations will eventually be reduced to within applicable SCGs downgradient of the reactive treatment wall.

Preliminary small scale testing will be required to establish actual bed parameters for use in the final design. Engineering design is expected to take six to nine months followed by several months for actual cap and reactive treatment wall installation. Due to the passive nature of this remedy, ZVI treatment will continue for many years (30 years was presumed for cost estimating purposes) to achieve groundwater SCGs.

Alternative 3: Soil Excavation with Groundwater Monitored Natural Attenuation

This alternative was the selected remedy in the January 2004 ROD, and based on further evaluation, was determined to be technically impractical to implement and too expensive for the site specific soil conditions.

Alternative 4: Soil Excavation with Groundwater Extraction and Treatment

This alternative, which is similar to Alternative 3, was excluded from further evaluation due to the main remedial component of excavation was determined to be unfeasible for to the site specific soil conditions.

Alternative 5: In-situ Electrical Resistance Heating and Monitored Natural Attenuation

Total Present Worth: *$1,240,000*
Capital Cost: *$1,028,000*
Annual OM&M: *$32,300*
Present Worth OM&M Cost: *$212,000*

Electrical Resistance Heating (ERH) is an in-situ remedial technology whereby the subsurface soils are heated promoting volatilization of contaminants. More specifically, electrodes are installed in the subsurface; and, as electrical current passes from anodes to cathodes, the resistance caused by the soil/water generates the necessary heat. The volatilized compounds will be collected via a vapor recovery system and subsequently treated.

The implementation of Monitored Natural Attenuation (MNA) will be as described in alternative 3.

It is anticipated that soil remediation will be completed within several months. However, groundwater monitoring will continue for many years due to the passive nature of MNA.

Alternative 6: Surface Cover and Soil/Groundwater Containment

Total Present Worth: *$1,175,000*
Capital Cost: *$602,000*
Annual OM&M: *$41,700*
Present Worth OM&M Cost: *$573,000*

This alternative presents an option which will completely contain the waste in place. The area of contaminated soil will be encircled with watertight sheetpiling keyed into the basal gray clay layer underlying the site at approximately twenty (20) feet. The containment barrier will prevent further migration of contaminated groundwater from the waste mass. At the surface, a flexible geomembrane will be installed to provide an impermeable cover to greatly reduce infiltration. Monitoring wells will be installed inside and outside of the sheetpiling to ensure and monitor the integrity of the cover system.

Design and implementation of this alternative will be completed in a relatively short time frame (6-8 months) due to the proven and familiar technologies employed. A limited monitoring program will be conducted to document contaminant trends in the existing downgradient plume.

4.0 EVALUATION OF PROPOSED CHANGES

4.1 Remedial Goals

Goals for the cleanup of the site were established in the original ROD. The remediation goals for this site are to eliminate or reduce to the extent practicable:

- the release of contaminants from soil into groundwater that create exceedances of groundwater quality standards; and
- reduce the impact of the residual mass of NAPL present in the subsurface soil.

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards.
- reducing contaminant concentrations in soils to below applicable SCGs.

4.2 Evaluation Criteria

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the original Feasibility Study.

The first two evaluation criteria are called threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Alternative 1 will not be protective of human health or the environment. Alternatives 2, 5 and 6 will comply with this criterion however the time varies greatly. Alternative 5 will be protective in a shorter time frame due to the active nature of heating the subsurface soils in-situ directly while Alternative 2, ZVI treatment, is passive in nature and will take many years before achieving a protective state. Alternative 6 will take considerable less time to achieve a protective state due to the ease of implementing the containment technology.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

The major SCGs applicable for this site include groundwater quality standards in 6 NYCRR Part 703, and Soil SCGs are based on the Department's Cleanup Objectives ("Technical and Administrative Guidance Memorandum [TAGM] 4046; Determination of Soil Cleanup Objectives and Cleanup Levels," and 6 NYCRR Subpart 375-6 - Remedial Program Soil Cleanup Objectives.

Alternative 1 will not meet SCGs. Alternative 5 will comply with SCGs as it aims to reduce or eliminate the source of contamination. Alternatives 2 and 6 will comply with SCGs but to a lesser degree.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

There will be no short term impacts under Alternative 1 as there will be no construction activities. Alternatives 2 and 5 are in-situ remedies and therefore have limited short-term impacts on workers, community and the environment. Alternative 6 will not remove contamination, therefore will not have potential for adverse impacts to the community, the workers and the environment during implementation.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Alternative 1 has no long-term effectiveness because all of the contaminated soil will remain on-site and continue to act as a source of groundwater contamination. The other Alternatives (2, 5 and 6) result in the material remaining onsite and therefore a potential hindrance to site use. The suitability and long-term effectiveness of ZVI and ERH (Alternatives 2 and 5) at this location have yet to be demonstrated. Alternatives 2 and 5 will require a relatively long time to achieve soil cleanup goals since the soils will require long-term in-situ treatment. Alternatives 6 will result in complete containment of the waste onsite. However, an institutional control for soil and groundwater, cell and cover repair and maintenance and long-term monitoring will be required.

Installation of sheet piling, which will be required for the excavation and removal of the waste, will already be completed under Alternative 6. If site conditions change, i.e. the railroad becomes inactive or additional technology becomes available to enable excavation and removal of the contaminated soils, complete removal of the contaminant source will be considered.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 1 will not reduce toxicity, mobility or volume. Under Alternatives 2 and 6, the mobility of the contamination in soil will be controlled but toxicity or volume will not be reduced. The soil and groundwater treatment under Alternative 5 will reduce toxicity, mobility and volume but to a lesser degree of certainty in effectiveness.

6. Implementability. The technical feasibility and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternative 1 will be easiest to implement since no construction is involved. There is uncertainty with the technical implementability of Alternative 2 as it will require pilot testing. Alternative 5, In-Situ Electrical Resistance Heating may be suitable but the existing electrical infrastructure does not currently have the

capacity to serve the site, therefore Alternative 5 is not technically feasible. Alternative 6 is favorable in that it is readily implementable.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

There is no cost associated with Alternative 1. Alternative 6 at $672,000 is the most cost-effective alternative. This remedy is about 60% of the cost of the second least costly alternative, Alternative 2. Alternatives 5 is well over $1 million.

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the proposed ROD amendment have been received.

8. Community Acceptance. Concerns of the community regarding the proposed changes have been evaluated. The responsiveness summary (Appendix A) presents the public comments received and the manner in which the Department addressed the concerns raised. In general, the public comments received were supportive of the selected remedy.

5.0 SUMMARY OF THE AMENDED REMEDY

Based on the Administrative Record (Appendix B) and the discussion presented below, the Department has selected Alternative 6, Surface cover and Groundwater Containment for the amended remedy for the Poultney Street site rather than excavation and off-site disposal as described in the January 2004 ROD. The elements of the selected remedy include:

- Based on the pre-design geotechnical borings and technical evaluations, it was determined that the gray basal clay would not support conventional excavation techniques. These poor subsurface conditions will require costly and intricate soil stabilization techniques, essentially doubling the cost of the remedy. The greatest change to the original remedy is that in lieu of excavating and disposing the soils in an off-site landfill, soils would be contained on site, isolating them from the environment. The area of contaminated soil will be encircled with watertight sheetpiling keyed into the basal gray clay layer underlying the site at approximately twenty (20) feet. The basal clay layer serves as a natural vertical migration barrier and will inhibit vertical migration of contaminants. The containment barrier will prevent further horizontal migration of contaminated groundwater from the waste mass.

- Instead of removing the soil contamination, the waste source will be encapsulated so that it does not serve as a source of further groundwater contamination. At the surface, a flexible geomembrane will be placed to provide an impermeable cover to reduce infiltration.

The estimated present worth cost to carry out the amended remedy is $1,175,000. The capital cost to construct the amended remedy is estimated to be $602,000 and the estimated average annual cost for 30 years is $41,700. The original estimated present worth to complete the original remedy was $1,116,000.

The elements of the amended remedy, Alternative 6, are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program.

2. Contain the area of contaminated soil with watertight sheetpiling keyed into the basal gray clay underlying the site to approximately twenty (20) feet. The containment barrier will prevent further migration of contaminated groundwater from the waste mass.

3. The contaminated soil area will have an engineered cap designed and constructed in conformance with the substantive requirements of 6 NYCRR Part 360 solid waste regulations.

4. A soil gas investigation will be performed following implementation of the remedy.

5. Imposition of an institutional control in the form of an environmental easement that will require (a) limiting the use and development of the property to industrial use; (b) compliance with the approved site management plan; (c) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH; and (d) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.

6. Development of a site management plan which will include the following institutional and engineering controls: (a) management of the final cover system to maintain integrity of the cap and prevent infiltration of precipitation into the waste mass; (b) continued evaluation of the potential for vapor intrusion for any future buildings, if constructed on the site, including provision for mitigation of any impacts identified; (c) monitoring of groundwater; (d) identification of any use restrictions on the site; (e) fencing to control site access; and (f) provisions for the continued proper operation and maintenance of the components of the remedy.

7. The property owner will provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other professional acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal will: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that will impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

8. Since the remedy results in untreated hazardous waste remaining at the site, a long-term groundwater monitoring program will be instituted. This program will allow the effectiveness of the landfill cap to be monitored and will be a component of the long-term management for the site.

6.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- Documents were placed in the document repositories.

- A meeting/invitation fact sheet was distributed per the public contact list.

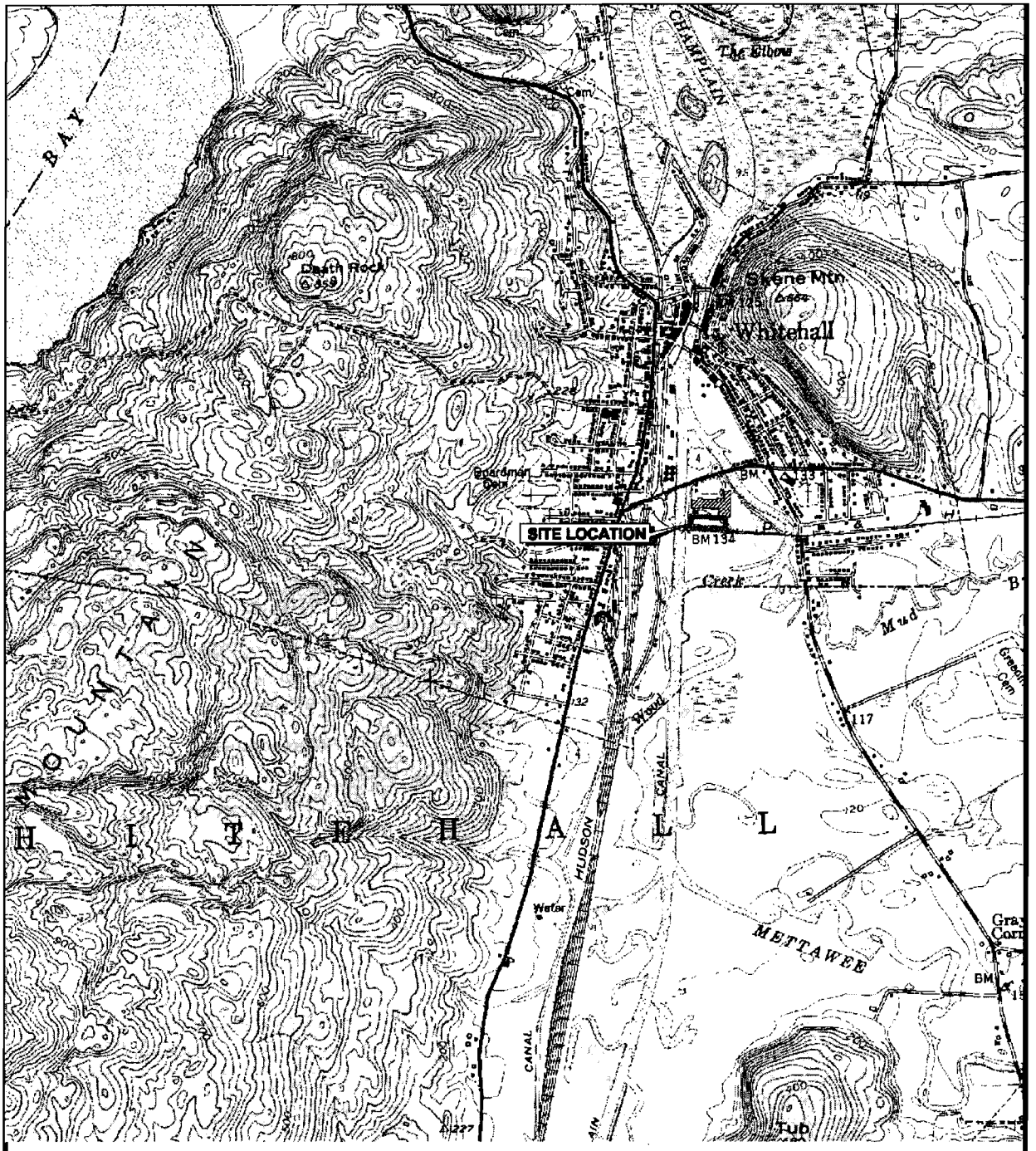
- A public meeting was held on September 17, 2008 to present and receive comments on the proposed ROD Amendment.

- A responsiveness summary (Appendix A) was prepared to address the comments received during the public comment period for the ROD Amendment.

In general, the public comments received were supportive of the selected remedy.

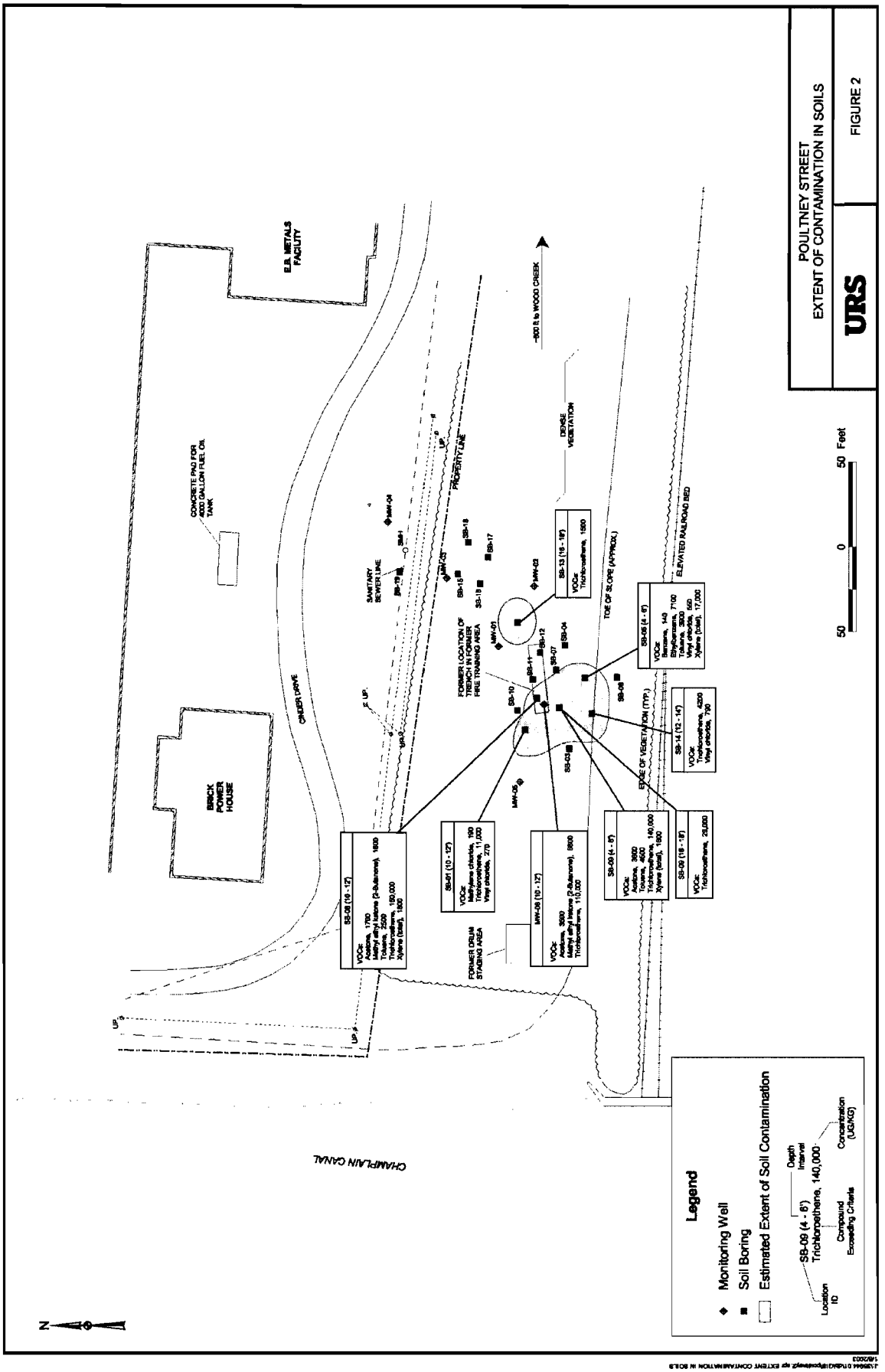
Table 1
Remedial Alternative Costs

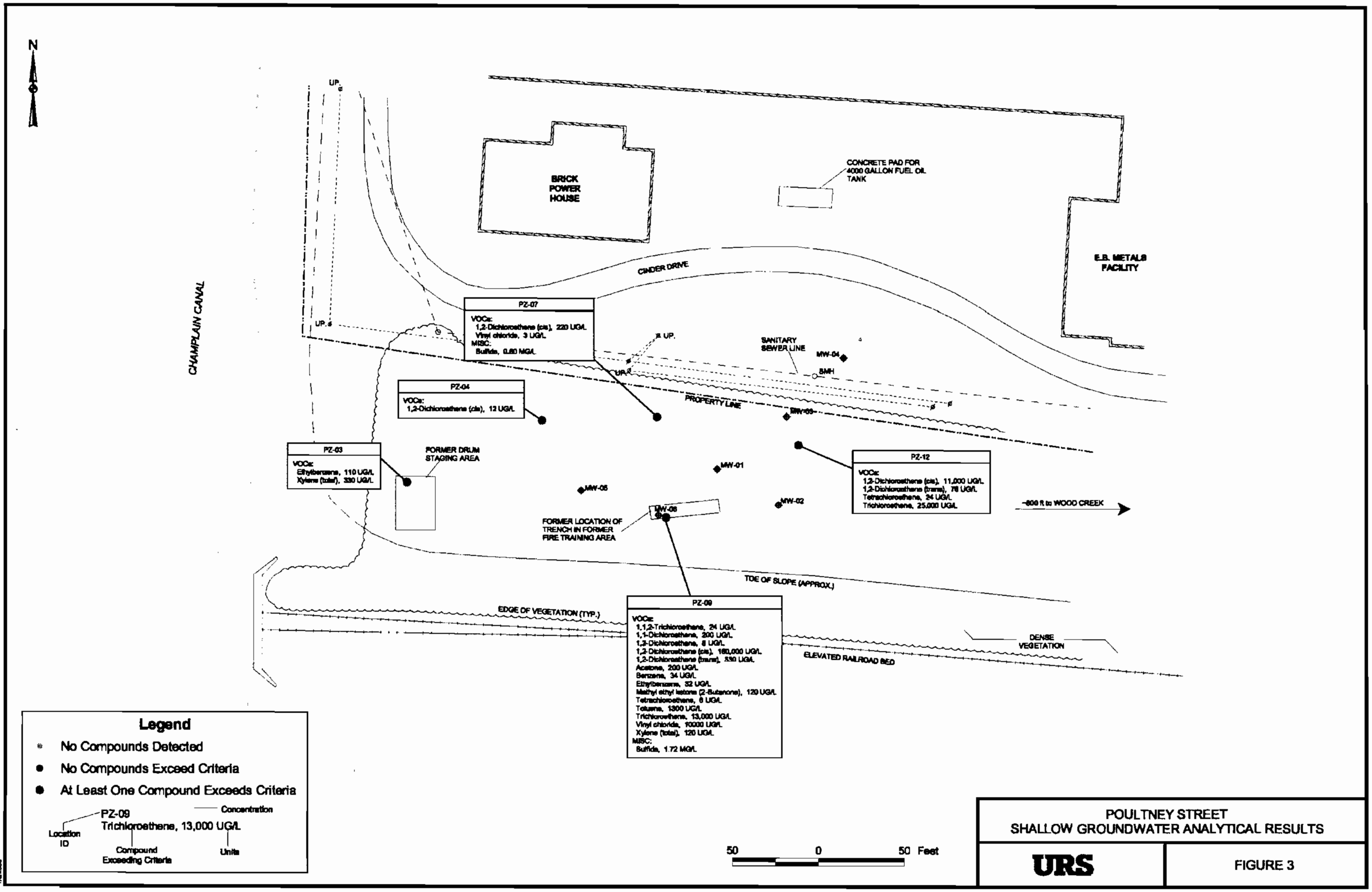
Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
Alternative 1: No Action	$0	$0	$0
Alternative 2: Surface Cover with ZVI Groundwater Treatment	$937,000	$200,120	$1,137,000
This alternative has been eliminated			
This alternative has been eliminated			
Alternative 5: In-situ Electrical Resistance Heating and Monitored Natural Attenuation	$1,028,000	$212,000	$1,240,000
Alternative 6: Surface Cover and Soil/Groundwater Containment	$602,000	$573,000	$1,175,000

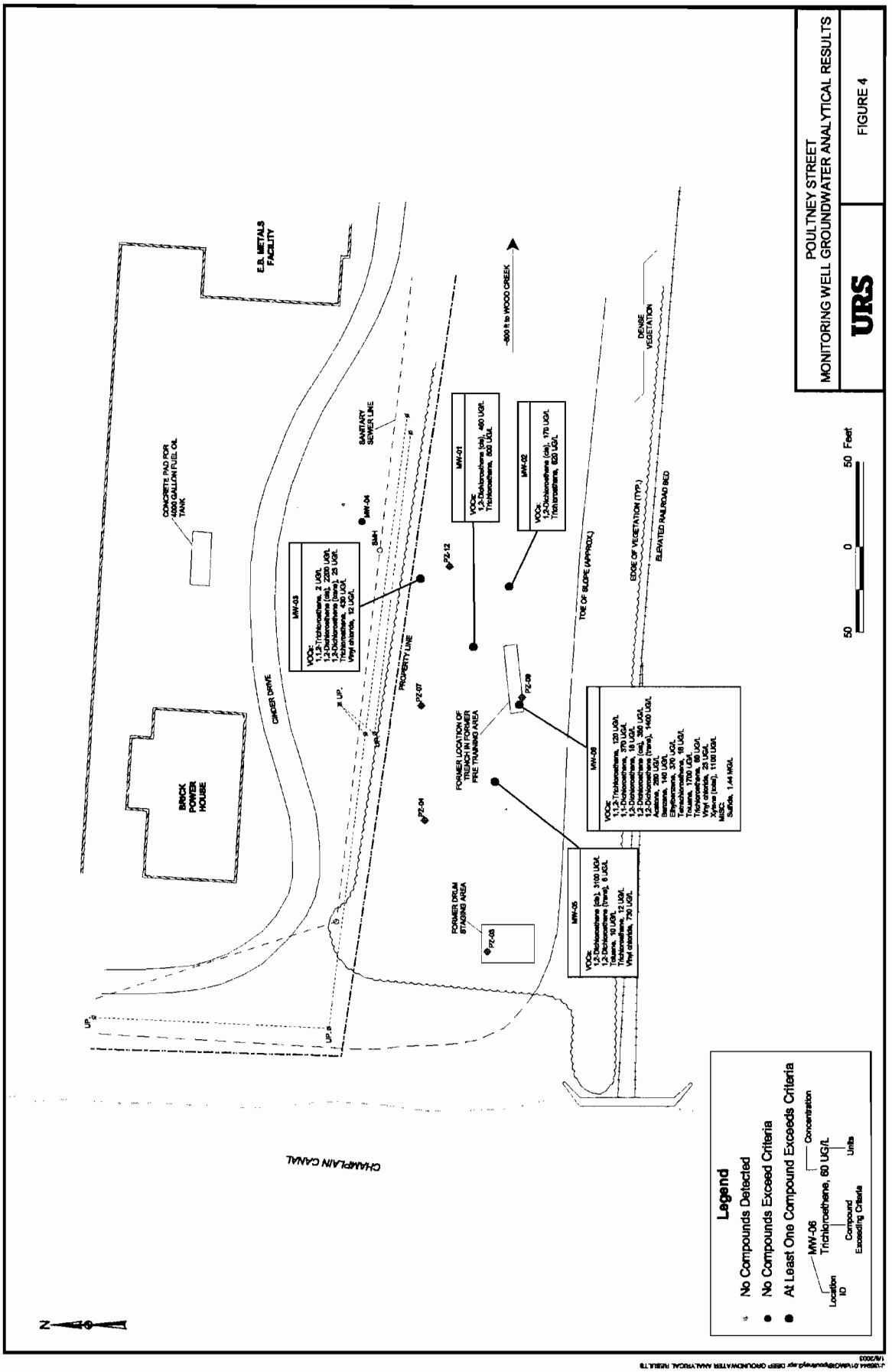


SOURCE:
USGS Topographic 7.5 Minute Quadrangles
Whitehall, NY - 1990

URS	POULTNEY STREET SITE WHITEHALL, NEW YORK SITE LOCATION MAP	FIGURE 1


POULTNEY STREET
EXTENT OF CONTAMINATION IN SOILS
URS
FIGURE 2
50 0 50 Feet
E.A. METALS FACILITY
BRICK POWER HOUSE
CONCRETE PAD FOR 4000 GALLON FUEL OIL TANK
GRUBER DRIVE
SANITARY SEWER LINE
PROPERTY LINE
FORMER LOCATION OF TRENCH IN FORMER FIRE TRAINING AREA
FORMER DRUM STAGING AREA
DENSE VEGETATION
TOE OF SLOPE (APPROX.)
EDGE OF VEGETATION (TYP.)
ELEVATED RAILROAD BED
~800 ft to WOOD CREEK
CHAMPLAIN CANAL
SS-08 (10 - 12)
VOCs:
Acetone, 1700
Methyl ethyl ketone (2-Butanone), 1600
Toluene, 2500
Trichloroethene, 180,000
Xylene (total), 1800
SS-01 (10 - 12)
VOCs:
Methylene chloride, 190
Trichloroethene, 11,000
Vinyl chloride, 270
MW-06 (10 - 12)
VOCs:
Acetone, 3600
Methyl ethyl ketone (2-Butanone), 8600
Trichloroethene, 110,000
SS-09 (4 - 6')
VOCs:
Acetone, 3600
Toluene, 4600
Trichloroethene, 140,000
Xylene (total), 1800
SS-09 (10 - 18')
VOCs:
Trichloroethene, 25,000
SS-14 (12 - 14')
VOCs:
Trichloroethene, 4200
Vinyl chloride, 790
SS-06 (4 - 6')
VOCs:
Benzene, 140
Ethylbenzene, 7100
Toluene, 3800
Vinyl chloride, 580
Xylene (total), 17,000
SS-13 (16 - 18')
VOCs:
Trichloroethene, 1500
Legend
Monitoring Well
Soil Boring
Estimated Extent of Soil Contamination
Location ID
SS-09 (4 - 6')
Depth Interval
Trichloroethene, 140,000
Compound Exceeding Criteria
Concentration (UG/KG)
N


N
UP.
BRICK
POWER
HOUSE
CONCRETE PAD FOR
4000 GALLON FUEL OIL
TANK
E.B. METALS
FACILITY
CINDER DRIVE
CHAMPLAIN CANAL
PZ-07
VOCs:
1,2-Dichloroethene (cis), 220 UG/L
Vinyl chloride, 3 UG/L
MISC:
Sulfide, 0.60 MG/L
UP.
SANITARY
SEWER LINE
MW-04
SMH
PROPERTY LINE
MW-03
PZ-04
VOCs:
1,2-Dichloroethene (cis), 12 UG/L
PZ-03
VOCs:
Ethylbenzene, 110 UG/L
Xylene (total), 330 UG/L
FORMER DRUM
STAGING AREA
MW-01
MW-05
MW-02
MW-06
PZ-12
VOCs:
1,2-Dichloroethene (cis), 11,000 UG/L
1,2-Dichloroethene (trans), 78 UG/L
Tetrachloroethene, 24 UG/L
Trichloroethene, 25,000 UG/L
~800 ft to WOOD CREEK
FORMER LOCATION OF
TRENCH IN FORMER
FIRE TRAINING AREA
TOE OF SLOPE (APPROX.)
EDGE OF VEGETATION (TYP.)
PZ-09
VOCs:
1,1,2-Trichloroethane, 24 UG/L
1,1-Dichloroethene, 200 UG/L
1,2-Dichloroethane, 8 UG/L
1,2-Dichloroethene (cis), 160,000 UG/L
1,2-Dichloroethene (trans), 530 UG/L
Acetone, 200 UG/L
Benzene, 34 UG/L
Ethylbenzene, 32 UG/L
Methyl ethyl ketone (2-Butanone), 120 UG/L
Tetrachloroethene, 6 UG/L
Toluene, 1300 UG/L
Trichloroethene, 13,000 UG/L
Vinyl chloride, 10000 UG/L
Xylene (total), 120 UG/L
MISC:
Sulfide, 1.72 MG/L
DENSE
VEGETATION
ELEVATED RAILROAD BED
Legend
No Compounds Detected
No Compounds Exceed Criteria
At Least One Compound Exceeds Criteria
PZ-09
Trichloroethene, 13,000 UG/L
Location ID
Compound Exceeding Criteria
Concentration
Units
50 0 50 Feet
POULTNEY STREET
SHALLOW GROUNDWATER ANALYTICAL RESULTS
URS
FIGURE 3


POULTNEY STREET
MONITORING WELL GROUNDWATER ANALYTICAL RESULTS
URS
FIGURE 4
E.B. METALS FACILITY
CONCRETE PAD FOR 4000 GALLON FUEL OIL TANK
BRICK POWER HOUSE
CANDER DRIVE
SANITARY SEWER LINE
PROPERTY LINE
MW-03
VOCs:
1,1,2-Trichloroethane, 2 UG/L
1,2-Dichloroethane (cis), 2200 UG/L
1,2-Dichloroethane (trans), 23 UG/L
Trichloroethene, 480 UG/L
Vinyl chloride, 12 UG/L
MW-04
SMH
MW-01
VOCs:
1,2-Dichloroethene (cis), 460 UG/L
Trichloroethene, 820 UG/L
MW-02
VOCs:
1,2-Dichloroethene (cis), 170 UG/L
Trichloroethene, 820 UG/L
PZ-12
PZ-07
PZ-04
PZ-09
FORMER LOCATION OF TRENCH IN FORMER FIRE TRAINING AREA
FORMER DRUM STAGING AREA
PZ-05
MW-05
VOCs:
1,2-Dichloroethene (cis), 3100 UG/L
1,2-Dichloroethene (trans), 8 UG/L
Toluene, 10 UG/L
Trichloroethene, 21 UG/L
Vinyl chloride, 750 UG/L
MW-06
VOCs:
1,1,2-Trichloroethane, 120 UG/L
1,1-Dichloroethene, 370 UG/L
1,2-Dichloroethene (cis), 1400 UG/L
1,2-Dichloroethene (trans), 1400 UG/L
Acetone, 280 UG/L
Benzene, 140 UG/L
Ethylbenzene, 1700 UG/L
Tetrachloroethene, 68 UG/L
Toluene, 1700 UG/L
Trichloroethene, 68 UG/L
Vinyl chloride, 210 UG/L
Xylene (total), 1100 UG/L
MISC:
Sulfide, 1.44 MG/L
TOE OF SLOPE (APPROX.)
EDGE OF VEGETATION (TYP.)
ELEVATED RAILROAD BED
DENSE VEGETATION
~800 ft to WOOD CREEK
CHAMPLAIN CANAL
50 0 50 Feet
N
Legend
No Compounds Detected
No Compounds Exceed Criteria
At Least One Compound Exceeds Criteria
MW-06
Location ID
Trichloroethene, 60 UG/L
Compound Exceeding Criteria
Concentration
Units

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Poultney Street Site
Whitehall, Washington County, New York
Site No. 558019

The Proposed Record of Decision (ROD) Amendment for the Poultney Street site, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on August 25, 2008. The ROD Amendment outlined the revised remedial measure proposed for the contaminated soil and groundwater at the Poultney Street site.

The release of the ROD Amendment was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on September 17, 2008 which included a presentation of the Remedial Investigation (RI), the Feasibility Study (FS), and the Record of Decision (ROD) as well as a discussion of the proposed amended remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the ROD Amendment ended on September 25, 2008.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: Where were the former trenches located?

RESPONSE 1: In the center of the site by the locations of montioring well MW-6, and soil borings SB-11 and SB-12.

COMMENT 2: Who owns the property where the monitoring wells are located?

RESPONSE 2: The Vermont Railway Company.

COMMENT 3: Where is the property line between the former E.B. Metals site and the Poultney Street site?

RESPONSE 3: Approximately 150 feet North of the rail line, in between MW-03 and SB-19.

COMMENT 4: Did you detect any contamination in soil borings SB-15 through SB-17?

RESPONSE 4: Not all of the soil borings were analyzed, however based on the photo ionizatoin detector (PID) readings and laboratory analysis, no volatile or fuel/solvent contamination was detected.

COMMENT 5: If the contamination is sealed off as proposed, what happens to the bacteria or bugs? Would there still be degradation?

RESPONSE 5: Yes, it is anticipated that the bacteria would continue to consume or degrade the volatile contamination.

COMMENT 6: What if you blacktop the site instead of the proposed cap?

RESPONSE 6: The proposed cap includes a flexible geomembrane to provide an impermeable cover to greatly reduce infiltration. Blacktop cracks, degrades over time and thereby enhancing the infiltration of surface water and precipitation into the underlying waste materials. For these reasons, blacktopping the site is not an effective alternative.

COMMENT 7: Was anything found during the investigation at the former E.B. Metals site?

RESPONSE 7: Yes, there was volatile contamination found during a Phase II investigation, the owner, a volunteer, has recently applied and been accepted into the NYSDEC Brownfields Cleanup Program to investigate and address that contamination, as required.

COMMENT 8: Does it make sense to address other brownfield sites in the area along with the Poultney Street site? Is there a benefit to doing so?

RESPONSE 8: There is a Brownfield Opportunity Area (BOA) Program that the Village of Whitehall could apply into that specifically addresses issues such as strategic planning and marketing strategies for areas afflicted with brownfield sites.

COMMENT 9: What is the timeframe for the construction of the proposed remedy?

RESPONSE 9: It is expected that the design would be completed within 2 years, so therefore in approximately 2 years time.

Administrative Record

Poultney Street Site
Whitehall, Washington County, New York
Site No. 558019

1. Record of Decision for the Poultney Street site, dated Januray 2004, prepared by the Department.

2. "Remedial Investigation Report - Final", Poultney Street Site, Whitehall (V), Washington (Co), New York, dated November 2002 prepared by URS Corporation.

3. "Remedial Investigation Report - Final", Poultney Street Site, Whitehall (V), Washington (Co), New York, dated November 2003 prepared by URS Corporation.

4. Proposed Remedial Action Plan (PRAP) Fact Sheet dated November 2003 prepared by the Department.

5. Proposed Record of Decision (ROD) Amendment Fact Sheet dated August 2008 prepared by the Department.

6. Technical Memorandum dated January 2006 prepared by URS Corporation.

7. Geotechnical Evaluation Letter dated September 2006 prepared by URS Corporation.