

Superfund Records Center

SITE: OLD SPRINGFIELD LANDFILL

BREAK: 8.3

OTHER: 295800



SDMS DocID 295800

Third Five-Year Review Report

for

Old Springfield Landfill

Springfield

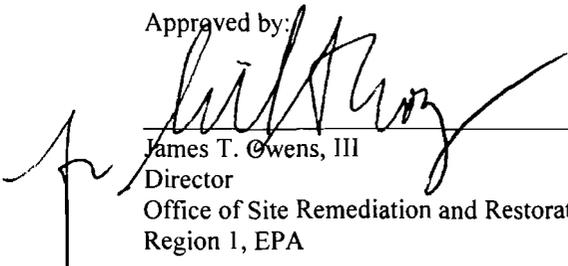
Windsor County, Vermont

September 2008

PREPARED BY:

**United States Environmental Protection Agency
Region 1
Boston, Massachusetts**

Approved by:



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Office of Site Remediation and Restoration
Region 1, EPA

Date:



9-26-08

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Five-Year Review Report

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List of Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	United States Environmental Protection Agency
CFR	Code of Federal Regulations
CWA	Clean Water Act
EW	Extraction well
FD	French Drain
FYR	Five-Year Review
GAC	Granulated activated carbon
HAAS	Hazardous ambient air standards
IC	Institutional control
LSE	Leachate seep extraction
LTMP	Long-term monitoring plan
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MW	Monitoring well
NCP	National Contingency Plan
NPL	National Priorities List
O&F	Operational and functional
O&M	Operation and Maintenance
OU	Operable Unit
PAH	Polyaromatic Hydrocarbon
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethylene
PCOR	Preliminary Close-Out Report
POTW	Publicly-owned treatment works
PTF	Pre-treatment facility
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design

RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
TAL	Target analyte list
TCA	1,1,1-trichloroethane
TCE	trichloroethylene
VGES	Vermont Groundwater Enforcement Standards
VLDPE	Very low density polyethylene
VOC	Volatile Organic Compound
VT DEC	Vermont Department of Environmental Conservation
VT DOH	Vermont Department of Health

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Executive Summary

The remedy for the Old Springfield Landfill Superfund site in Springfield, VT included stabilization and capping of contaminated soils on-site, a leachate and groundwater collection system, on-site pre-treatment of contaminated groundwater and leachate, gas collection vents, and institutional controls. The site achieved construction completion with the signing of the Preliminary Close-Out Report on September 22, 1994. The trigger for this five-year review is the signing of the previous Five-Year Review Report on September 26, 2003.

The assessment of this five-year review found that the remedy was constructed in accordance with the requirements of the OU I and OU II Records of Decision (RODs). The remedy is functioning as designed. Because the remedial actions at all OUs are protective, the site is protective of human health and the environment.

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Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name: Old Springfield Landfill		
EPA ID: VTD00086239		
Region: 1	State: VT	City/County: Springfield/Windsor
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify)		
Remediation status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Construction completion date: 09/22/1994	
Has site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author name: Marisa Guarinello		
Author title: Env. Protection Specialist	Author affiliation: U.S. Environmental Protection Agency, Region 1	
Review period:** 05/05/2008 to 9/26/2008		
Date(s) of site inspection: 5/5/08		
Type of review: <div style="text-align: center; margin-left: 150px;"> <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion </div>		
Review number: <input type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input checked="" type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
Triggering action: <input type="checkbox"/> Actual RA Onsite Construction at OU # _____ <input type="checkbox"/> Actual RA Start at OU# _____ <input type="checkbox"/> Construction Completion <input checked="" type="checkbox"/> Previous Five-Year Review Report <input type="checkbox"/> Other (specify) _____		
Triggering action date: 9/26/2003		
Due date (five years after triggering action date): 9/26/2008		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

There are no major issues associated with the remedial action at this site. EPA, VT DEC, and the Town of Springfield will continue operation of groundwater extraction and treatment, periodic inspections of the cap and other remedy components, and perform maintenance where necessary.

Recommendations and Follow-up Actions:

The only recommendations for this site involve continued monitoring and maintenance by the PRPs, with oversight from VT DEC and EPA, to assure compliance with Record of Decision and consent decree requirements. Particular attention should continue to be paid to slope instability and erosion potential and iron fouling. The Town should also consider pursuing permits with the State that would allow a reduction in water pumped to the POTW and testing for some contaminants that have not been detected at the site for many years.

Protectiveness Statement(s):

Because the remedial actions at all OUs are protective, the site is protective of human health and the environment.

Other Comments:

Fill in the data below:

Date of last Regional review of Human Exposure Indicator (from WasteLAN): _____

Human Exposure Survey Status (from WasteLAN): _____

Date of last Regional review of Groundwater Migration Indicator (from WasteLAN): _____

Groundwater Migration Survey Status (from WasteLAN): _____

Ready for Reuse Determination Status (from WasteLAN): _____

Five-Year Review Report

I. Introduction

EPA conducted a third five-year review (FYR) of the Old Springfield Landfill Superfund Site (“the Site”). The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of these reviews are documented in Five-Year Review Reports. In addition, Five-Year Review Reports identify issues found during the review, if any, and recommendations to address them.

The U.S. Environmental Protection Agency-Region 1 (EPA) is preparing this Five-Year Review Report pursuant to CERCLA §121 and the National Contingency Plan (NCP). CERCLA §121 states:

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 National Contingency Plan (NCP). 40 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 1 conducted a FYR of the remedial actions implemented at the Old Springfield Landfill site in Springfield, VT. This review was conducted from September 2007 through September 2008. The FYR included consultation with the Vermont Department of Environmental Conservation (VT DEC) and the Town of Springfield. This report documents the results of the review.

This is the third FYR for the Old Springfield Landfill Superfund Site. There are two operable units (OUs) at the Site and construction is completed on both. Therefore, this FYR addresses the status of the Site remedial actions in entirety and considers components of both OUs. The triggering action for this review is the date of the previous Five-Year Review Report, signed on September 26, 2003, as shown in EPA’s WasteLAN database. This statutory review is required because hazardous substances, pollutants, or contaminants remain on-site above levels that allow for unlimited use and unrestricted exposure.

2.0 Site Chronology

Table 1: Chronology of Site Events

Table 1: Chronology of Site Events

Event	Date
Approximate time period of initiation of waste disposal activities at the site	July 12, 1947
Closure of dump and conversion to mobile home park	November 19, 1968
NPL listing	December 1982
Installation of water line by PRPs	1984
Remedial Investigation (RI) completed	June 1988
Feasibility Study (FS) for OU I completed	June 1988
OU I Record of Decision (ROD) issued by EPA	September 22, 1988
EPA enters into an Administrative Order with the PRPs to perform OU II Feasibility Study	March 1989
EPA and PRPs enter into Consent Decree (CD) to perform OU I Remedial Action (RA)	September 1989
OU II ROD issued by EPA	September 28, 1990
EPA and PRPs enter into CD to perform OU II RA	May 1991
Remedial Design (RD) for OU I completed	April 1992
RA for OU I initiated	June 1992
RD for OU II completed	May 1993
Construction of OU I completed	September 1993
Interim Remedial Action Report for OU I	September 20, 1994
Construction of OU II completed	June 1994
Preliminary Close-Out Report (PCOR) and Interim Remedial Action Reports of OU II completed	September 22, 1994
Operation and maintenance of OU I and II by PRPs with EPA oversight	1994 to present
Previous FYR Reports issued	September 29, 1998 and September 26, 2003

3.0 Background

The ten acre Old Springfield Landfill Superfund Site is located approximately one mile southeast of the city center of the Town of Springfield, Windsor County, Vermont. Springfield is located in the Connecticut River Valley in the southeastern quadrant of Vermont, south of Hanover, and west of I-91. The 2000 National Census lists the population of the Town of Springfield as 9,078. The Villages of Goulds Mill and Hardscrabble Corner are located within a one mile radius of the Site.

The Old Springfield Landfill, previously referred to as the Will Dean Dump, was operated by the Town of Springfield between 1947 and 1968. After the closure of the landfill in 1968, it was sold and developed for use as a mobile home park, known as Springfield Mobile Home Estates. At the time of the mobile home park's development, the Vermont Department of Health (VT DOH) recommended that drilled wells not be used to supply water to the mobile homes because the development was located over areas previously used for chemical disposal. Municipal water lines were extended to serve the mobile homes. Springfield Mobile Homes Estates is no longer occupied and the mobile homes have been removed. Only a caretaker for the estate of John Curtin, the deceased owner of the property, still resides on the Site. A six-building condominium complex and thirteen single family residences are located in the immediate vicinity of the site.

3.1 Physical Characteristics

The Site is on an upland plateau with slopes descending steeply to the north, east, and west. Seavers Brook runs west of the Site and the Black River runs to the east. Seavers Brook flows northward to the Black River, which flows south and empties into the Connecticut River. Will Dean Road is located along the western side of the Site. Will Dean Road intersects Route 11 just north of the Site. Route 11 runs along the eastern side of the Site. Maps and images of the Site and its location can be found in Attachment 1.

3.2 Land and Resource Use

The land use within a one-mile radius of the Site is primarily low-density residential housing, light agriculture, undeveloped forest land, and commercial. The land in the vicinity of Site to the west is zoned as residential/agricultural and as land reserve to the east.¹ The Springfield High School lies within one mile to the northwest of the Site. Approximately 200 homes and condominiums are located within a one mile radius of the Site, housing an estimated population of 650 to 750 people. The Southern Windsor County Regional Planning Commission lists intended future use of the Site as forest.² Town maps showing these use designations are in Attachment 2.

Natural resources in the vicinity of the Site include groundwater, surface water, fish and game, arable land, forest, woodland, and minerals. Based on soils data, land in the immediate vicinity of the site is listed as "prime agricultural land" by the U.S. Department of Agriculture's Natural Resources Conservation Service. The site drains to the Black River, which is listed by the State as warm water fish habitat from Lovejoy Dam to the Connecticut River and cold water fish habitat elsewhere. The Black River is also on the state's 2006 CWA 303 (d) list as impaired for contact recreation use near Springfield

¹ Current as of early 2008, personal communication from the Town of Springfield zoning administrator

² 2003 map is still current as of early 2008, personal communication from the Town of Springfield zoning administrator

due to combined sewer overflow events.

A bedrock aquifer is a current source of drinking water in the area for those individuals not connected to the municipal water supply system. The State of Vermont classifies this aquifer as Class III (suitable as water source for individual domestic wells, irrigation, agriculture, general industrial and commercial use; this is the standard default classification in VT)³. Users of the bedrock aquifer groundwater in the Site vicinity are located primarily upgradient of the Site. Groundwater monitoring wells are located between the Site and current users of the bedrock aquifer. All other residents in close proximity to the Site receive municipal water from the Town of Springfield.

3.3 History of Contamination

The Site was operated by the Town of Springfield between 1947 and 1968. Hazardous industrial waste from local industries was co-disposed with municipal trash. The industrial waste was disposed both in discrete trenches and mixed with municipal solid waste. Most hazardous material was disposed in bulk liquid and semi-liquid form.

Shortly after the opening of the Springfield Mobile Home Estates, a nearby resident's complaint of foul-smelling water prompted an investigation by VT DOH and VT DEC. Volatile organic compounds (VOCs) were found in a spring located near Seavers Brook and in the residential well near the mobile home park. The spring was abandoned and the affected home near the mobile home park was connected to the public water supply.

3.4 Initial Response

In 1984, the PRPs installed a water line. EPA then performed a remedial investigation and feasibility study (RI/FS) to determine the extent and risk of contamination and potential cleanup actions. In 1988, EPA signed the first Record of Decision (ROD) for the Site to initiate a cleanup action for the contaminated groundwater and seeps. In 1990, EPA signed the second, and final, ROD to address the landfill closure.

3.5 Basis for Taking Action

The Human Health and Risk Assessment for the Old Springfield Landfill documents an unacceptable threat to human health based on:

- Future potential ingestion of groundwater contaminated with vinyl chloride, trichloroethene (TCE), tetrachloroethene (PCE), dichloroethene, and methylene chloride.
- Current and future potential exposure to landfill waste and soil containing polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs).

³ Current as of February 2008, personal communication with VT Water Supply Division

4.0 Remedial Actions

4.1 Remedy Selection

The clean up actions for the Site have been implemented in two Operable Units (OUs).

The Remedial Action Objectives (RAOs) for the first OU (OU I) are:

- Prevent direct contact (incidental ingestion and dermal absorption) with contaminated surface soils throughout the Site by residents and by construction workers;
- Prevent the volatilization of contaminants from contaminated soils, wastes, and leachate seeps;
- Prevent the contamination of fish in the Black River by preventing leaching of contaminants from site soils to shallow groundwater to the bedrock aquifer with subsequent discharge to Seavers Brook and into the Black River; and
- Prevent the leaching of contaminants from site soils to shallow groundwater with subsequent transportation from the shallow groundwater to the potable bedrock aquifer.

To meet these RAOs, the OU I ROD required the design and construction of:

- 1) two groundwater extraction wells;
- 2) a collection system for three areas of contaminated seepage: two on the Site's east side at the base of Waste Areas 2 and 3, and one on the Site's west side along Seavers Brook Road; and
- 3) a pre-treatment facility (PTF) for the discharge of collected water to a public-owned treatment works (POTW).

The OU I ROD also included the implementation of the Town of Springfield Municipal Ordinance 88-2 as an institutional control (IC) to restrict the future use of groundwater until such time that groundwater reaches the maximum contaminant levels (MCLs). The ROD recommends that the State and Town implement and enforce this ordinance. The ROD recommends this IC apply to an area bounded by Route 11 on the east, Seavers Brook Rd. on the west, and John Curtin's property boundaries on the south and north.

The OU I ROD did not address closure of the landfill and recommended further studies to determine the final cleanup activities needed for the Site.

To complete remediation of the Site, EPA signed a ROD to implement the second OU (OU II) in September 1990. The RAOs for OU II are:

- Prevent direct contact (dermal contact and ingestion) with contaminated soil;
- Reduce or prevent, to the extent practicable, infiltration of surface and/or groundwater into waste areas and leaching of contaminants from waste areas into the groundwater below and downgradient of the waste;
- Prevent leaching of soil contaminants to the groundwater; and
- Control the harmful buildup or emission of landfill gases containing hazardous substances.

To meet these RAOs, the OU II ROD required the design and construction of:

- 1) a third groundwater extraction well;
- 2) upgradient french drains and surface water diversions; and
- 3) a multi-layer landfill cap with gas vents.

The OU II ROD also required measures to stabilize the side slopes of Waste Areas 2 & 3.

The OU II ROD also required deed restrictions to restrict the use, such as excavation, of the site within the fenced area. Objectives of these restrictions include preventing interference with, and protecting the integrity of, the multi-layer cap, french drains, wells, and other remedial action (RA) components.

Long-term operation, maintenance, and monitoring of the remedial actions were requirements of the OU I and OU II RODs.

4.2. Remedy Implementation

The remedial design process for OU I was completed in April 1992. The final design required the construction of a pre-treatment facility with two air strippers, metal pre-treatment, and carbon treatment of the air emissions. The PRPs' contractor, REMCOR, mobilized to the Site on June 1, 1992. Construction activities for the groundwater extraction wells, west side seepage collection system, and pre-treatment facility were completed by February 8, 1993. The east side leachate collection system was delayed until placement of the cap. The start-up testing and performance testing of the collection system and additional extraction wells were completed by June 18, 1993. Performance testing for the source control well and eastern seep collection system was completed on August 8, 1993.

The completion of OU I collection systems and pre-treatment facility construction was documented in the Remedial Action (RA) Report for OU I, September 1993. EPA approved this Report on September 20, 1993. EPA and the oversight contractors performed a final inspection on September 16, 1993. At the time of this FYR Report, the OU I remedy is performing as expected, capturing groundwater flow, and meeting its RAOs.

The final design of OU II was completed in May 1993. As part of the pre-design activities a pre-load of common borrow soil was placed on Waste Area 4 in the fall on 1992 to reduce long-term settlement of the waste material. The PRPs' contractor, REMCOR, mobilized to the Site on May 1993. In June 1993, two french drains were installed using a bio-polymer slurry technique. One drain is upgradient of Waste Area 4 and the other is upgradient of Waste Area 3. Cap construction began in July 1993. The cap includes a 12 inch gas vent layer, a geosynthetic clay liner, a 40 mil VLDPE geomembrane, 12 inch sand drainage layer, 36 inches of frost and erosion protection, and 6 inches of top soil. Passive gas vents with carbon treatment canisters attached were installed. The cap on the steep slopes consists of a 40 mil textured geomembrane over common borrow soil. The layers above the geomembrane were the same as those detailed above. Construction activities were completed in November 1993. EPA and the oversight contractor performed a substantial completion inspection in December 1993. In April 1994, a retention pond overflowed due to a construction defect. This defect was corrected by changing the design of the discharge pipe and installing a new overflow channel. In addition, areas of erosion were repaired and re-seeded in June 1994.

EPA and the oversight contractor performed a final inspection of OU II on June 30, 1994. The cap,

source control well, french drains, and surface water diversions were determined to be constructed according to design with some minor erosion and sparse vegetation noted. On August 11, 1994, based upon an EPA follow-up inspection, the landfill was determined to have a well-established grass cover in all areas. The french drains and cap were found to be successful in reducing the saturation of the waste material as measured by piezometers below the waste. A Remedial Action Report for OU II was completed in September 1994. At that time, all physical construction for the Site was complete and this was documented in a Preliminary Close-Out Report (PCOR) for OUs I and II, signed on September 22, 1994. This document designates this site as a construction complete (CC) site.

The remedial action is complete and is considered operational and functional (O&F) as of the PCOR and the OU II RA Report in 1994. Two consent decrees require the PRPs to conduct operation and maintenance (O&M) on the long-term remedial action for thirty years. In reality, O&M will likely continue at the Site in perpetuity. The Town of Springfield is performing the O&M.

A Final Remedial Action Report will be prepared once the remedial action has achieved the ground water cleanup goals established in the OU I and OU II RODs. This report will support the final Superfund Site Closeout Report to document the completion of all cleanup activities.

4.3 Institutional Controls

Institutional controls are non-engineered instruments, such as administrative and/or legal controls, that help minimize the potential for exposure to contamination and protect the integrity of the remedy. Compliance with ICs is required to assure long-term protectiveness for any areas which do not allow for unlimited use or unrestricted exposure (UU/UE). ICs are required at the Site to ensure the protectiveness of the remedy and are selected in both the OU I and OU II RODs. All non-UU/UE areas are addressed effectively by institutional controls as determined by IC evaluation activities discussed below. The ICs in use at this site are effective and no further ICs or changes to the current ICs are recommended at this time.

4.3.1 ICs in Site Documents

The 1988 OU I ROD includes a requirement for ICs to restrict the use of groundwater where it exceeds MCLs. The ROD recommends that the State and Town implement and enforce Town of Springfield Ordinance 88-2 (Attachment 3). The ROD recommends this IC apply to an area bounded by Route 11 on the east, Seavers Brook Rd. on the west, and John Curtin's property boundaries on the south and north. The 1990 OU II ROD includes a general requirement for deed restrictions to restrict the use of the site within the fenced area. It identifies the objectives of restricting excavation, preventing interference with and protecting the integrity of the cap, french drains, wells, stabilized slopes, and other RA components.

The 1993 Administrative Order on Consent (AOC) with Harold Millay includes in Section VI. "Access and Notice" (paragraph #22) the following provision for a deed notice:

"Respondent shall file in the land records of Windsor County a notice, approved by EPA, to subsequent purchasers of the land, that hazardous substances have migrated into a sand and gravel aquifer which is located approximately 80 ft. beneath the Respondent's property and the EPA makes no representation as to the appropriate use of the property."

The AOC notes that the Millay property is on both sides of Will Dean Rd. and is listed in the Town of Springfield Map Index (5/1988), as Block #3, Lot #53 under deed 59-466.

4.3.2 IC Implementation

Ordinance 88-2 provides a mechanism by which the Town can apply any number of listed restrictions to parcels of land containing hazardous, toxic, or otherwise harmful substances. Superfund sites are specifically mentioned in this ordinance. However, a resolution must be passed by the Town to apply restrictions in Ordinance 88-2 to specific parcels of land. Such a resolution, Town of Springfield Resolution 92-4 (Attachment 3), was passed on August 3, 1992. This resolution applies 10 restrictions to the Old Springfield Landfill Superfund Site. The resolution refers to maps on file which describe the restricted area, which can be generally described as the fenced area of remediation for the Site. In brief the restrictions are:

1. no construction of buildings
2. no breaking of soil surface
3. no crops
4. no residential, commercial, or recreational use
5. no taking, use, or consumption of water- surface or ground
6. no excavation, filling, depositing soil or liquid material
7. no changes in topography
8. no entry
9. no activities that would alter water table
10. restrictions are subject to and will not encumber source control remedy

The 1993 AOC included a provision requiring Harold Millay, owner of a property on Will Dean Rd., to place the AOC as a record on his deed indicating possible contamination in the sand and gravel unit underneath his property. It is uncertain whether this requirement was ever fulfilled. However, subsequent site investigations and monitoring results indicate that no groundwater contamination is migrating off-site. Thus, any need for filing such a statement on the property deed is negated.

The 1994 PCOR states that ICs that meet the objectives of protecting the integrity of the remedial action components and preventing exposure to groundwater by prohibiting use of areas within the site fence had been implemented. This refers to the implementation of Ordinance 88-2 through Resolution 92-4. The PCOR also noted that ICs to prohibit groundwater use under private wells within the area of the groundwater plume were not yet implemented due to Town reluctance. However, the groundwater contamination is now contained directly beneath the landfill and is not migrating off-site. Therefore, IC measures to address groundwater use beyond the landfill boundary are no longer determined to be necessary.

Table 2: Institutional Controls Summary Table

Media, Engineered Controls, & Areas that Do Not Support UU/UE Based on Current Conditions.	IC Objective	Title of Institutional Control Instrument Implemented
<i>Old Springfield Landfill Property</i> - Area within fenced area, cap, french drains, wells, and other RA components	Protect integrity of remedy	Town Ordinance 88-2 applied to site via Town Resolution 92-4
<i>Groundwater</i> – the area beneath the landfill where the plume that exceeds groundwater cleanup standards (MCLs) is contained	Prohibit groundwater use until cleanup standards are achieved	Town Ordinance 88-2 applied to site via Town Resolution 92-4

4.4 Operation and Maintenance

The Town of Springfield is conducting long-term monitoring and maintenance activities associated with the Operation and Maintenance (O&M) Plan and the Long-term Monitoring Plan (LTMP). The Town budgets \$200,000 annually for all site-related costs including electric, water, and oversight. The Town employs Stantec as a technical consultant to assist with these activities. The primary activities associated with O&M and long-term monitoring include:

- Routine inspection and maintenance of the landfill cover system, extraction wells, french drains, and water treatment system;
- Periodic sampling of the groundwater, treatment plant influent and effluent, ambient air within the treatment facility, and air discharges from carbon units; and
- Submission of an annual report to EPA and VT DEC to document the performance of the O&M and present sampling results.

EPA's oversight contractor, Nobis Engineering, Inc.,⁴ performs semi-annual inspections of the Site as part of EPA's oversight of the Town of Springfield. Inspections are typically conducted each spring and fall.

5.0 Progress Since the Last Review

This is the third FYR for the Site. The previous Five-Year Review Report was completed in September 2003. The 2003 review found that "because the remedial actions at this Site are protective, the Site is protective of human health and the environment." No major issues were identified. The site inspection conducted during the 2003 FYR did identify several maintenance issues requiring attention including rodent removal on the cap, monitoring and removal of sediment and vegetation in channels, investigation of a seep, and repair of the detention basin to address erosion concerns. The Second Five-Year Review Report recommended that EPA and VT DEC continue to perform periodic inspections and that oversight of the PRPs' O&M and monitoring work continue.

Actions completed since the last FYR include:

- Repair of sinkholes on the eastern side of the southern Fabriform ditch and riprap channel (2007);
- Slope stability improvement projects;
- Periodic system maintenance, such as change out of carbon filters (annually); and
- replacement extraction well and seep pumps, and general land upkeep activities.

All these actions have been completed at this time.

6.0 Five-Year Review Process

6.1 Administration Components

EPA, the lead agency for this FYR, notified VT DEC and the PRPs in February 2008 that it was conducting a five-year review with a report to be completed by September 2008. The Five-Year Review Team was led by Marisa Guarinello and Edward Hathaway, the site Remedial Project Manager, of EPA's Office of Site Remediation and Restoration. Sarah White is the EPA Community Involvement

⁴ Nobis Engineering, Inc. replaced TRC Solutions, Inc. as EPA's oversight contractor in late 2007.

Coordinator for the site and provided support in these capacities. Brian Woods, the site manager for VTDEC, was also a part of the review team. Document review began in October 2007 and other activities were conducted as indicated.

Components of this review included:

- Community involvement
- Document review
- Data review
- Site inspection
- Local interviews
- Five-Year Review Report development

6.2 Community Involvement

EPA placed a public notice in a local paper on June 11, 2008 describing the five-year review process, recent actions at the Site, and how the community can contribute during the review process. EPA did not receive any comments regarding the protectiveness of remedial actions. Site interviews indicate that there is little current public interest in the site.

6.3 Document Review

The FYR includes a review of documents containing information relevant to assessing the protectiveness of the Site. Documents, such as Records of Decision, provide the remedial action objectives of the site. Others, such as Remedial Action Reports, detail specific actions taken at the site. Previous FYRs are also examined to assess the status of the Site over time. Additionally, enforcement documents, institutional controls, and various regulations are reviewed. A complete of documents reviewed for this FYR can be found in Attachment 4.

6.4 Data Review

Monitoring data presented in the Annual Operation and Maintenance Reports for the Site covering the time period since the last FYR were reviewed. Specific details from 2006 and 2007 are included for examination here, in addition to overall trend summaries. A summary of the reviewed data is presented below.

6.4.1 Groundwater Monitoring Data

Monitoring Wells

Monitoring of groundwater levels and concentrations is conducted in accordance with the LTMP, with any modification negotiated with EPA and VT DEC, and select wells in various subsurface units (e.g., sand and gravel, bedrock, till) are sampled annually. Sampling is conducted for VOCs and target analyte list (TAL) metals. Water levels vary little over the site, especially compared to the steep gradient between the site and the Black River to the north. Elevations measured in recent years are all within historical ranges.

TCE concentrations were detected at 4ug/L in MW-52G in 2006 and 2007, the first detections below the Vermont Groundwater Enforcement Standards (VGES). This well is in the sand and gravel layer and is

located to the west of the cap. Levels at this well have steadily decreased since the initiation of groundwater treatment. No compounds have been detected above detection limits for the last three years at the companion bedrock well, MW-52B or in the monitoring wells closest to EW-1 and EW-2: MW-41G and MW-41B.

Near the discharge zone at the east slope, VOCs continue to be detected in the center of the zone but not to the south. TCE and its decay products are seen in MW-45T. In 2006 and 2007, respective concentrations were: TCE, 39 ug/L, 41 ug/L; total 1,2-dichloroethene, 110 ug/L in both years; and, vinyl chloride, 27 ug/L, 19 ug/L. These levels exceed VGES levels. In the companion bedrock well, MW-45B, in 2006/2007 the levels were: TCE 16 ug/L, 7 ug/L (2007, lowest level since 1999); 1,1,-dichloroethane, 4 ug/L, below detection; total 1,2-dichloroethene 41 ug/L, 18 ug/L; and, vinyl chloride, 23 ug/L, 9 ug/L.

At the remaining 20 series of wells located approximately 1/4 mile to the south, both bedrock and surficial wells are free of VOCs.

Extraction Point Monitoring

Sampling of EW-1, EW-2, SC-2, french drains, and LSE 3/4 is conducted annually, most recently in August 2007. In 2006 and 2007, no VOCs were detected in EW-1, and those detected in EW-2 were below historical concentrations with some compounds exceeding their VGES. Concentrations of VOCs in SC-1, which extracts groundwater from the bedrock aquifer, by far exceeded their VGESs and are higher than historical averages.

The following 2006, 2007 detections in EW-2 exceeded their VGESs as follows (detected concentration vs. VGES concentration): vinyl chloride (6 ug/L, 5 ug/L vs. 2 ug/L), PCE (6 ug/L, 9 ug/L vs. 5 ug/L), and TCE (93 ug/L, 190 ug/L vs. 5 ug/L). Whereas the TCE values are far higher than its VGES, they represent the two the lowest of all 22 rounds of sampling taken. However, given the combination of these concentrations and the volume of water extracted from this point, EW-2 provides most of the contamination removed by the PTF.

TCE, PCE, TCA, and vinyl chloride all greatly exceeded the corresponding VGES at SC-1 in 2006, 2007 as follows: TCE at 6,700 ug/L, 5,100 ug/L (the first and third highest detections over the life of the project); PCE at 220 ug/L, 150 ug/L; TCA at 570 ug/L, 460 ug/L; and vinyl chloride at less than 100 ug/L for both years.

No compounds were detected in 2006 and 2007 in french drains 1 and 2. In FD-3, vinyl chloride was detected at 25 ug/L in 2006 and at 10 ug/L in 2007, both above the VGES of 2ug/L. In 2006 and 2007 cis 1,2-dichloroethene was also detected at 26 ug/L and 9 ug/L. The french drains are designed to intercept off-site groundwater before it enters the landfill. Therefore it is possible that the contamination represents some leakage from the landfill, perhaps driven partially by the pumping of the french drains.

In 2006 and 2007, five VOCs were detected in the LSE 3/4. In 2006 all were below the corresponding VGES and in 2007 TCE exceeded its VGES of 5ug/L with a reading of 8 ug/L.

PTF and Western Seep Monitoring

Quarterly sampling of the combined PTF influent and effluent and of the Western Seep tests for VOCs, alkalinity, total iron, total manganese, TAL metals, pesticides, PCBs, SVOCs, and phenols. The sampling of the latter four of these components is only conducted once per year on PTF effluent and the Western

Seep. TAL metals are also analyzed only once per year, but for all samples. The most recent sampling of all these components was in August 2007. Elimination of expensive PCB and SVOC testing was recommended in the 2006 and 2007 Annual O&M Reports, as PCBs have not been detected since post-closure monitoring began in 1995 and significant components of SVOCs have not been detected since 2001. Elimination of this monitoring is estimated to save the Town approximately \$3,000 per year. This change to the monitoring plan has been approved by EPA and the State (June 14, 2005).

Seven VOC compounds have been detected regularly in PTF influent: 1,1-dichloroethene, 1,2-dichloroethane (total), methylene chloride, tetrachloroethene (PCE), 1,1,1-trichloroethane (TCA), trichloroethene (TCE), and vinyl chloride. Periodic detections of acetone and 1,1-dichloroethane have also been recorded. Vinyl chloride, TCE, 1,1-dichloroethene, and PCE are above their respective VGES standards, as has been the historical trend. This indicates that the groundwater from the site is still contaminated and needs treating.

Average TCE concentration for groundwater influent at the site was 573 ug/L, 582 ug/L, 478 ug/L, and 49 ug/L in 2004, 2005, 2006, and 2007 respectively. The overall long-term average for the influent is 627 ug/L. Therefore, current levels of about 80% of this average indicate a slight declining trend in TCE concentrations. Calculations show that to-date, the PTF has removed 930 grams of TCE from the influent, 54 grams of which was in 2007.

TCE was the only VOC compound detected in the PTF effluent, typically below its VGES of 5 ug/L. Removal efficiency of the PTF over the course of 2006 ranged from 97-99% and fluctuated around 99% in 2007. This results in values slightly below and above the VGES of 5 ug/L. A general, if marginal, declining trend in TCE concentrations continues to be indicated by the past several years' results.

No significant contamination has been detected in the Western Seep samples for several years. Discussions have been conducted between the Town, VT DEC, and EPA regarding whether treating the 25gpm discharge for the Western Seep can be eliminated. Untreated discharge would need to be controlled and quality monitoring would need to continue for some time. Discussions at the time of the FYR site inspection confirmed these observations and noted that elimination would require a state permit. It is, therefore, up to the Town of Springfield POTW to pursue this potential change with the State of Vermont.

6.4.2 Surface Water Monitoring

Based on previous sampling results, EPA and VT DEC have agreed to eliminate the sampling of surface water in drainage channels.

6.4.3 Extraction System Monitoring

Flow Monitoring

The flows associated with each of the seven groundwater and leachate collection points and downstream of the PTF equalization tank are measured continuously by digitized totalizing flow meters and are read every workday. This information is summarized in the annual O&M reports. Pumping rates in many of the components were higher than the long-term average in 2006, partially due to heavier-than-normal precipitation. The average total 2006 flow was 28.46 gpm (gallons per minute), 118% of the long-term average, due to higher input from the french drains because of higher than normal precipitation in 2006. The average total 2007 flow was lower than in 2006, but still higher than the long-term average for the

site, likely reflecting a second year of higher than average precipitation. This flow was 26.17 gpm (gallons per minute), 108% of the long-term average, mainly due to higher pumping rates from EW-2 and also LSE 3/4. The recent flow rates are similar to historical flows. The average flow rate is by far below (only 24.4%) of the designed capacity of 87 gpm flow.

In 2006, 31.0 million gallons (55.3gpm average) was discharged to the POTW, a 16% increase from the previous year. In 2007, 29.2 million gallons (59.2gpm average) was discharged to the POTW. The discharge was roughly split between the PTF and the Western Seep. The average flow from the PTF has been around 27gpm and from the Western Seep has been around 24 gpm since the last FYR. The total volume treated at the POTW since the inception of this project is close to 400 million gallons.

Groundwater extracted from EW-1 and EW-2 flows to the PTF, where it typically accounts for 75% of total flow. They combined for 40% of total flow in 2006 and 60% of total flow in 2007. The average pumping rate of EW-1 declined over 2005-2006 to 1.19gpm, dropping the long-term average by 6%. This reduction is likely due to iron clogging the vault piping. Problems with fouling of these pipes for both extraction wells were also noted in the previous FYR Report. The EW-1 pump was replaced in March 2007, resulting in a significant increase in flow rate from 1gpm to over 10gpm. This change marks a significant peak in flow, however, as over previous years, this peak was followed by flow at levels below the running average (approximated 6-8 gpm since the last FYR). However, problems with iron clogging persist and the pump was replaced again in December after the well was dewatered. EW-2 pumped well above the long-term average in 2007, although the pumping rates in the earlier years of this FYR period tend to be below the long-term average of approximately 9 gpm. EW-2 does not appear to have any specific maintenance issues. During the FYR inspection, iron fouling was also described as a continuing issue for the extraction wells and PTF.

Pumping rates in SC-1 (i.e., EW-3) improved since replacement of the pump in April 2005. The mean pumping rate for 2007 was 2.6 gpm, which raised the long-term average by 0.06 gpm. The pumping rate for SC-1 has generally been above the long-term average during the period covered by this FYR. Pumping rates in the eastern leachate seep collection system (LSE 3/4) were also higher than normal in 2006, 8 gpm compared to the long-term average of 2.67 gpm, following cleaning of the meter and heavy precipitation. However, pumping rates fell to an average of 4.3 gpm in 2007; nonetheless, still above the long-term average of 2.6 gpm. These changes likely reflect precipitation volume in the area. Generally, the extraction rates here have been above the long-term average during the five years covered by this review.

French drains continue to operate efficiently with pumping rates in 2006 and 2007 well above average, a trend that applies for much of the past five years, although FD-3 has had periods below the average as well.

6.4.6 Air Monitoring, Emissions, and Compliance

For air monitoring samples are collected from the passive gas vents at the landfill, in the ambient air in the PTF, and for the vapor phase carbon for air stripper influent and effluent. While there continues to be some documented breakthroughs of minor chlorinated VOCs, these levels all fall below the Vermont Hazardous Ambient Air Standard (HAAS) action levels.

Comparison of influent and effluent levels of TCE, the primary contaminant of concern, show that air strippers are performing effectively because influent concentrations are over 3000 ug/m³, whereas effluent levels are below the detection limit. The air strippers operate at greater than 99% efficiency in

reducing TCE. A breakthrough of TCE in the effluent indicates that the carbon filters need to be changed, which is roughly once a year or slightly sooner.

Even though TCE concentrations traveling from the PTF to the POTW exceed VGES levels at times, the concentrations are below those which could cause violation of air quality standards (OSHA).

Vinyl chloride has been detected at vents 5, 7, and 9 and replacement of the vent canisters is conducted when the concentrations reach 100 times the HAAS level (adjusted as such from lifetime exposure to brief worker exposure level of concern). This threshold was met and canisters changed for vents 5 and 9.

6.4.7 System Performance Evaluation

Overall, the RA components have been performing as expected.

The pretreatment facility (PTF) operated as designed daily in 2006 and 2007 with only typical one to two hour shutdowns for routine maintenance. Leachate collected at 7 locations is pumped to the PTF equalization tank followed by treatment to reduce iron and remove VOCs by air stripping. Vapor effluent is treated with granular activated carbon (GAC) to remove VOCs and is then discharged on-site. Liquid effluent flows by gravity to the Town of Springfield POTW, where it is joined by untreated leachate collected at the Western Seep. Maintenance in 2006 included two change-outs of the GAC canisters, weekly cleaning of filters and probes, cleaning and replacement of vault meters as needed, and cleaning and inspection of air strippers. GAC change-out is needed on an approximately yearly basis and is indicated by breakthrough of TCE. The ten carbon canisters treating passive air discharge from the cap are replaced annual, usually at the same time as GAC change-out at the PTF. These ten canisters were replaced in December 2007, as were eight canisters in the shed.

The 2007 Annual O&M Report noted that the landfill appears to be in excellent condition.

6.5 Site Inspections

Regular (i.e., roughly twice monthly) inspections of the facility are conducted by the Town of Springfield. There is almost constant presence at the POTW as at least one staff member is on-site nearly every workday. Flow data from the extraction points at the PTF is collected each of these workdays. Oversight inspections are performed by EPA's contractor on a semi-annual schedule. There was a gap in these inspections in 2007 when EPA switched contractors from TRC to Nobis Engineering. Nobis was introduced to the site during the FYR site inspection and they will be conducting semi-annual inspections in the future.

The FYR site inspection was conducted on Monday May 5, 2008. Representatives from EPA, VT DEC, the Town of Springfield, Stantec (Town's O&M inspection contractor), and Nobis (EPA's new oversight contractor) were in attendance (See Attachment 5 for a roster). The inspection team visited the on-site treatment facility and walked all areas of the landfill. The surface of the cap and the various drainage channels and collection areas were evaluated.

Overall the remedy was found to be operating effectively and as intended. A few areas with potential for erosion and slope instability were noted. These include the steep southern slope near the outfall pipe from the landfill into a drainage channel and the area immediately above the culvert at the base of the site. The Fabriform ditch on the western boundary also appears to be in good working order and installation of

weep-holes helped alleviate some of the pressure that was of concern here. Detailed notes from the inspection and photographs taken during the visit can be found in Attachments 5 and 6, respectively.

The 2007 Annual O&M Report notes that Town inspections no longer include use of a checklist for periodic observations and recommend reinstating this feature. At the time of the FYR site visit, this observation was confirmed and no changes have yet been made. One suggestion made during the FYR site inspection was for the Town to use a site map as a checklist while walking the site so as to minimize any time spent on paperwork after the inspection. EPA agrees with this idea and encourages the Town to adopt this approach for their twice monthly inspections.

6.6 Interviews

Interviews were conducted during the FYR site inspection with the EPA and VT DEC project managers, the Town POTW chief operator, and the Stantec project manager. Previous interviews were conducted over the phone with the Town zoning administrator and the VT Water Supply Division. Records of the site interviews can be found in Attachment 5.

7.0 Technical Assessment

7.1 Question A: Is the remedy functioning as intended by the decision documents?

Yes.

The remedy is functioning as intended by the OU I and OU II RODs. Concentrations in the extracted groundwater exceed cleanup standards, indicating that treatment is still required at the Site. The PTF has a 97-99% removal rate for key contaminants. Concentrations of TCE detected in monitoring wells are gradually declining, indicating an effective remedy. SVOCs have not been detected since 2001 and PCBs and pesticides since 1995. Gas vents operate as intended, given yearly replacement of GAC. Air standards are generally met.

Slope stability is the largest concern regarding the cap itself. Given the very steep nature of the site, the remedy is performing quite well. Periodic inspections and updates to drainage channels are necessitated by these issues and will remain a key component of post-construction O&M. Frequent assessment of erosion potential, performance of drainage channel material, and identification of weak spots where erosion or instability may occur will allow the site team to address any problems quickly and maintain the effectiveness of the remedy. The other issue requiring continuous monitoring is iron-fouling of extraction wells and the pipes in the on-site treatment facility for groundwater. This is due to naturally-occurring iron. Because of recent higher than normal flows due to elevated precipitation levels, more pipes were affected in 2007-2008 and pipe replacement may be needed soon. The continued presence of Town officials on the site helps ensure that the remedy continues to function as designed and that exposure to contaminants is not a concern at this site.

7.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

Yes.

The RAOs established in the RODs are to prevent direct contact with contaminated soils, to prevent build up and volatilization of landfill gas, to prevent contamination of fish from leachate, and to prevent

leaching of landfill contaminants to the groundwater. The remedial actions at this site address these RAOs through the landfill cap to prevent contact with soils, passive gas vents to collect landfill gas, a leachate collection and treatment system to prevent leachate from reaching ground and surface water.

The exposure assumptions used to develop the Human Health Risk Assessment included:

1. ingestion of groundwater
2. direct contact with leachate
3. inhalation of the contaminants from the soil, groundwater, surface water, and leachate by workers or other individuals
4. consumption of fish

No individuals are exposed to contaminated groundwater. The expansion of public water supply, landfill cap, leachate collection system, and security fence all address the exposure scenarios identified above. The potential ingestion of contaminated fish remains the only valid exposure scenario. The intent of the remedial action with respect to this exposure assumption was to prevent the migration of contaminants that could bioaccumulate in fish tissue. The landfill cap prevents the migration of such contaminants into the Black River. The contaminants contained within the groundwater are volatile and are not considered to be a concern with respect to fish ingestion. The exposure pathways analyzed at the time of remedy selection remain valid for this site.

The MCLs set as the established cleanup levels for the Site have not changed since the signing of the RODs. The VT Department of Health Advisory Level for PCE is 0.7 ppb, however the federal MCL of 5 ppb is used as the cleanup level for this site. The Remedial Action Objectives and cleanup levels remain valid.

There have been no changes to the ARARs or To Be Considered requirements identified in the 1988 and 1990 RODs that affect the cleanup standards for the remedy. While the Vermont Water Quality Regulations were updated in February 2006, the changes therein do not affect cleanup action or levels at the Site. The water treatment operates under a State of Vermont permit that is periodically updated.

7.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No.

Review of site material and the site inspection revealed no new information that calls into question the effectiveness and protectiveness of the remedy selected in the RODs. No new human or ecological receptors have been identified at this time.

Technical Assessment Summary

According to the data reviewed, the site inspection, and the interviews, the remedy is functioning as intended by the RODs. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. There have been no changes to the overall exposure assumptions used in evaluating human health and ecological risk. ARARs have not changed and the site cleanup levels remain unchanged. There is no other information that calls into question the protectiveness of the

remedy.

8.0 Issues

There are no issues which affect the protectiveness of the remedy. For continued protectiveness and effectiveness of remedy implementation, regular O&M should be continued by the Town of Springfield with oversight by VT DEC and EPA.

While there are no protectiveness issues at this time, it is possible that conditions not addressed by improved O&M could potentially affect protectiveness in the future. None of the issues listed below affect current protectiveness and future protectiveness would only be affected if O&M is not continued as conducted at present or improved.

Table for Listing Issues

Issues	Affects Protectiveness (Y/N)	
	Current	Future
Slope instability	N	?
Erosion potential along slopes and in drainage channels	N	?
Iron fouling in extraction wells and pre-treatment facility	N	?

9.0 Recommendations and Follow-up Actions

There are a few recommendations beyond continuing O&M. The Town should consider making notes on a map as a written records of their regular (usually twice per month) inspections. The Town POTW should consider pursuing a permit with the State to eliminate discharge from the Western Seep to the POTW and eliminate testing for PCBs and pesticides. These recommendations do not affect the protectiveness of the site. Recommendations listed here address O&M activities and updates that are importance for the future long-term protectiveness of the remedy at Old Springfield Landfill.

Table for Listing Recommendations and Follow-up Actions

Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Affects Protectiveness (Y/N)	
				Current	Future
Reinstate use of site inspection checklist or map for twice monthly inspections	Town of Springfield	VTDEC/EPA	2009	N	N
Continue updates to drainage channels as needed to address erosion weak spots	Town of Springfield	VTDEC/EPA	As needed	N	Y
Replace pipes in PTF when needed	Town of Springfield	VTDEC/EPA	Anticipated need before next FYR	N	Y

10.0 Protectiveness Statement

Because the remedial actions at all OUs are protective, the site is protective of human health and the environment. Contamination at the site has been addressed through stabilization and capping of contaminated soils on-site, a leachate and groundwater collection system, on-site pre-treatment of contaminated groundwater and leachate, gas collection vents, and institutional controls. Operation and maintenance activities and regular oversight inspections ensure that the remedy remain effective and the site protective of human health and the environment.

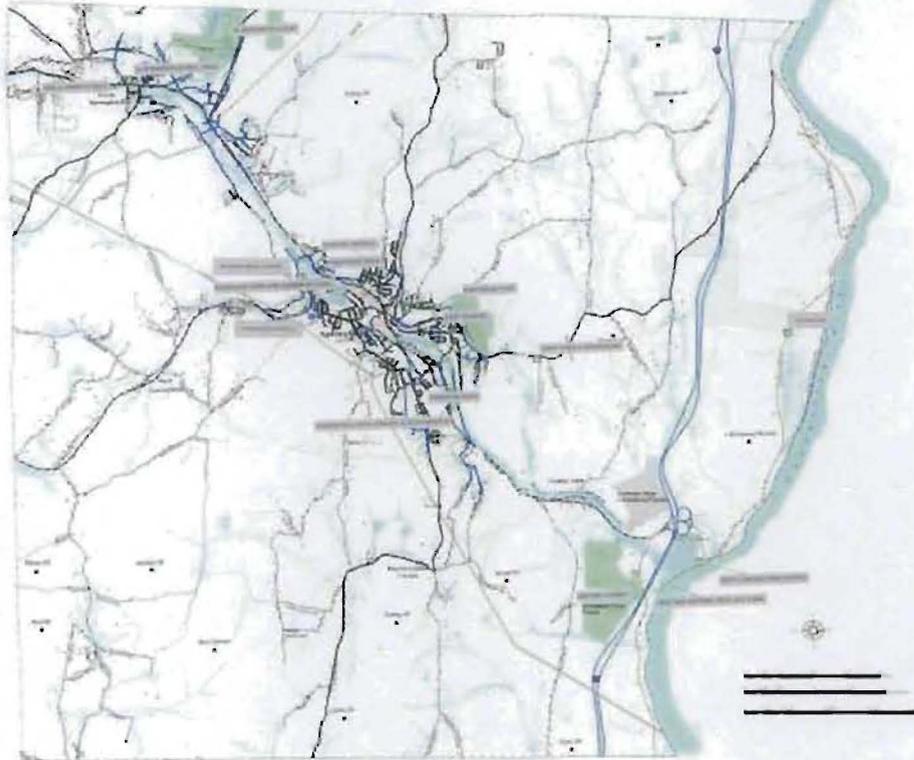
11.0 Next Review

The next five-year review for the Old Springfield Landfill Superfund Site is required by September 2013, five years from the date this FYR Report is signed.

ATTACHMENT 2

Town of Springfield Maps

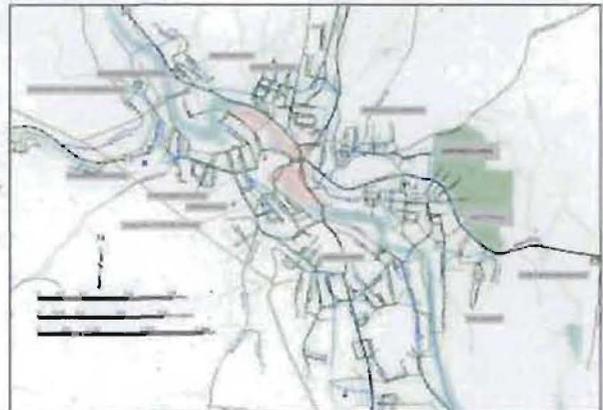
TOWN OF SPRINGFIELD *Base Features*



Legend

Waterbody Types	Public Lands	Town Boundary
□ Location	□ State Owned	--- Town Boundary
□ Boat Launching Area	■ Municipal Owned	Roads
□ Utility Pole		□ Class I TR
□ Utility Management Area		□ Class II TR
□ Contaminated Area		□ Class III TR
		□ State Road
Other		□ Major Road
□ Cemetery	□ Public School Zone	□ Vermont State Highway
□ Title	□ Public Water Line	□ US Highway
□ Wireless Transmission Facility	□ Electric Transmission Line	□ Interstate
□ Utility Pole and/or Pole Structure	□ Electric Generation	□ Light Rail
□ Station	□ Surface Water	□ Delivery Station
□ Building	□ Floodplain	
	□ Structure	

Map of the Town of Springfield, Vermont, showing base features. The map is a vector-style map with various colors and line styles representing different features. The legend is located in the bottom left corner of the map area. The map shows the town boundary, roads, water bodies, and various land use zones. The title 'TOWN OF SPRINGFIELD Base Features' is centered at the top of the map area.



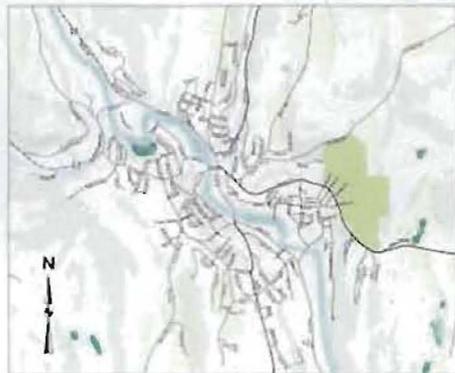
TOWN OF SPRINGFIELD

Natural Resources



Legend

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> — Town Boundary — Contour ■ Deer Wintering Area ■ Wetland Protection Area ■ Floodplain ■ Surface Water ■ Areas Above 25% Slope ■ Wetland ■ Boat Launch Area | <p>Key Plant (Wetland)</p> <ul style="list-style-type: none"> ■ Bird ■ Plant ■ Other Animal <p>Public Land</p> <ul style="list-style-type: none"> ■ State Owned ■ Municipally Owned ■ Conservation ■ Easement ■ Prime ■ Agricultural Lands (BORGO will take from NRCS) | <p>Roads</p> <ul style="list-style-type: none"> — Class I TH — Class II TH — Class III TH — State Forest Road — Private Road — Vermont State Highway — US Highway — Interstate — Levee Trail — Driveway (Private) |
|---|---|--|

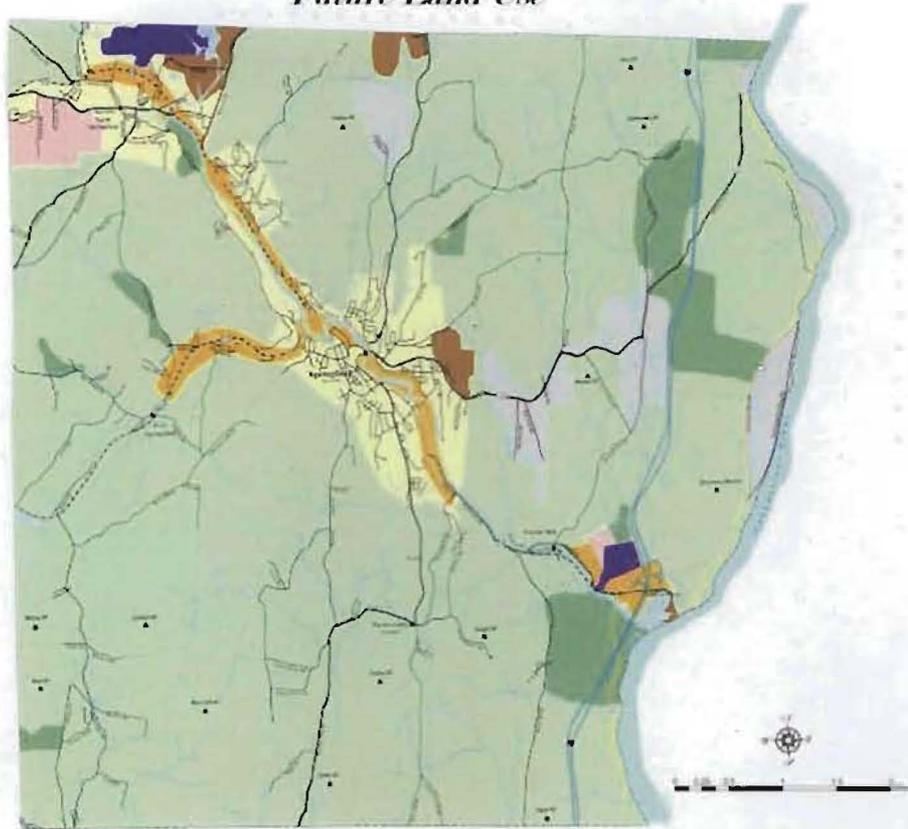


Map prepared by the Town of Springfield, Vermont, in cooperation with the Vermont Department of Environmental Conservation (DEC) and the Vermont Department of Fish and Wildlife (DFW). The map is based on data provided by the Vermont Department of Environmental Conservation (DEC) and the Vermont Department of Fish and Wildlife (DFW). The map is not to be used for any purpose other than that for which it was prepared. The map is the property of the Town of Springfield, Vermont, and is loaned to you for your information only. It is to be returned to the Town of Springfield, Vermont, upon request. The map is not to be used for any purpose other than that for which it was prepared. The map is the property of the Town of Springfield, Vermont, and is loaned to you for your information only. It is to be returned to the Town of Springfield, Vermont, upon request.



TOWN OF SPRINGFIELD

Future Land Use

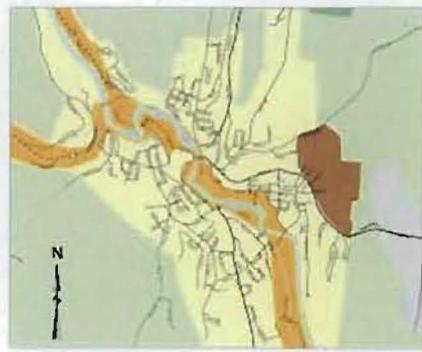


Legend

- | | |
|--|--|
| <ul style="list-style-type: none"> --- Town Boundary --- Rivers and lakes --- Surface Water <p>Roads:</p> <ul style="list-style-type: none"> --- Class I TH --- Class II TH --- Class III TH --- Class IV TH --- State Forest Road --- Private Road --- Vermont State Highway --- US Highway --- Interstate --- Legal Trail --- Driveway (Private) --- Springfield Bike Path | <p>Land Use Categories</p> <ul style="list-style-type: none"> AGRICULTURE CONSERVATION FOREST INDUSTRIAL INSTITUTIONAL MIXED USE RECREATION RESIDENTIAL |
|--|--|

Source of Data:
 Vermont State Geographic Information System (GIS)
 Northern White-Cedar Regional Planning Commission (NWRPC)
 BRITAIN, VAIL Road & Environs, June 2, 1999 (attribution and GIS contribution)
 REED, W. D., L. K. & S. J. 1999. Middlebury Area. 1:25,000 scale map.
 F. C. 1998. 1:25,000 scale map. 1998. 1:25,000.

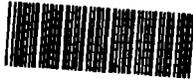
All Data used herein is provided as is. All users are responsible for gathering pertinent data.
 SWPC and VAIL make no representation of any kind, including but not limited to the accuracy of
 information or fitness for a particular use, nor any other statements, negative or implied, on this data.



ATTACHMENT 3

Institutional Controls

Town of Springfield Ordinance 88-2
Town of Springfield Resolution 92-4



SDMS DocID 262632

Superfund Records Center

262632

TOWN OF SPRINGFIELD
ORDINANCE 88-2

Be it ordained by the Town of Springfield:

- SECTION I. PURPOSE: For protection of the health, safety, and welfare of the inhabitants of the Town of Springfield, it is necessary for the Board of Selectmen to have authority to determine where and when necessary, that certain parcels of land within the Town contain hazardous wastes, toxic materials or harmful chemical matter. Upon such determination, the Board of Selectmen may restrict the uses and activities upon said lands consistent with the provisions hereinafter set forth.
- SECTION II. This Ordinance shall apply to any parcel of land determined to contain hazardous waste, harmful and/or toxic substances by the United States Environmental Protection Agency (EPA) and declared to be a Superfund Site or an otherwise hazardous place.
- SECTION III. This Ordinance shall also apply to any parcel of land determined to contain hazardous waste, harmful and/or toxic substances by the Board of Selectmen of the Town of Springfield, or any applicable agency of the State of Vermont.
- SECTION IV. The restrictions hereinafter set forth may apply to any parcel of land adjacent to land determined to be subject to Sections I-III hereof, or to any parcel of land which carries seepages or any above or below ground watercourse containing hazardous or toxic materials from land defined in Sections I-III.

SECTION V.

RESTRICTIONS: The Board of Selectmen to protect the health and welfare of the inhabitants of the Town of Springfield may, upon the designation that a parcel of land contains hazardous, harmful or toxic wastes or chemicals, by resolution, restrict the subject land in one or more of the following ways:

A. Prohibit the construction of, or the maintenance of, habitable buildings or other structures upon the subject premises;

B. Prohibit the breaking of the surface of the soil by digging, trenching, drilling, boring or disruption of the soil surface;

C. Prohibit the growing of crops upon the subject premises, the consumption thereof or transportation thereof;

D. Prohibit any residential, commercial or recreational use of said premises;

E. Prohibit the taking, use or consumption of water from or which flows through the subject premises either above or below the soil surface;

F. Prohibit the excavation, filling or depositing of any solid or liquid material on the subject premises, including the sewage, sludge or other waste material;

G. Prohibit the making of any change in the topography of the subject premises;

H. Prohibit the entry upon the subject premises by any person where the degree

of danger is such as to be a threat to life or to health;

I. Prohibit any activity on or near the subject premises which would tend to alter the water table thereon;

J. To place any other restriction on the subject premises which may in the exercise of prudence be necessary for public protection, including posting or fencing of the premises.

SECTION VI. The Board of Selectmen shall designate such parcels of land as are subject to this Ordinance by Resolution, and in said Resolution determine the applicable restrictions necessary to carry out the purposes of this Ordinance.

SECTION VII. Prior to the adoption, modification or removal of a limitation imposed by Resolution pursuant to the terms of this Ordinance, the Board of Selectmen shall cause notice to be given to each affected landowner, and to any other person who may have a record interest in said premises, and shall also give notice to any necessary State or Federal agency.

A. Notice. Notice shall include:

- (1) A statement of the time, place and nature of the hearing;
- (2) A statement of the legal authority and jurisdiction under which the hearing is to held;
- (3) A reference to the particular sections of the statutes and rules involved; and
- (4) A short and plain statement of the matters at issue.

If the Board of Selectmen or other agency is unable to state the matters in detail at the time notice is served, the initial notice may be limited to a statement of the issues involved. As soon as possible thereafter, a more definite and detailed statement shall be furnished.

B. Hearing. All persons who respond to said notice shall have opportunity to present evidence and argument on all issues involved.

C. Informal Disposition. Unless precluded by law, informal disposition may be made by stipulation, agreed settlement, consent order, or default.

D. Record. The record in each case shall include:

- (1) All pleadings, motions, intermediate rulings;
- (2) All evidence received or considered;
- (3) A statement of matters officially noticed;
- (4) Questions and offers of proof, objections and rulings thereon;
- (5) Proposed findings and exceptions; and
- (6) Any decision, opinion or report.

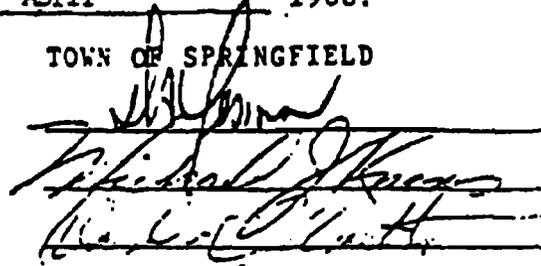
E. Evidence. Findings of fact shall be based exclusively on the evidence and on matters officially noticed.

F. Transcript. Oral proceedings or any part thereof shall be transcribed on request of any party subject to other

applicable provisions of law, and upon payment by the requesting party of the reasonable costs thereof.

Dated at Springfield, County of Windsor and State of Vermont, this 18th day of April, 1988.

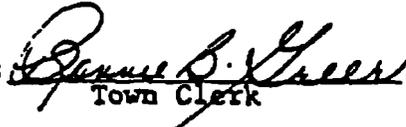
TOWN OF SPRINGFIELD



Board of Selectmen

June 10, 1988

I hereby certify that the foregoing is a true copy of Ordinance 088-2 as it appears in the Book of Ordinances for the Town of Springfield, Vermont.

Attest:  CMC
Town Clerk

TOWN OF SPRINGFIELD, VERMONT

RESOLUTION 92-4

RESOLVED, in accordance with Town of Springfield Ordinance 88-2, V, that the Old Springfield Landfill located on Will Dean Road in Springfield, Vermont is hereby determined as a parcel of land which contains hazardous waste, toxic materials or harmful chemical matters. Said parcel is more particularly described as set forth on a Drawing entitled "Figure 3, Property Boundary Plan, Old Springfield Landfill Remediation" and being the area within a proposed permanent eight (8') foot high chain link fence, a copy of which is on file in the Springfield Town Offices, and a copy of which is appended to this Resolution. Being a portion of the lands of the John Curtin Estate.

RESOLVED, in accordance with Town of Springfield Ordinance 88-2, that the designated land is subject to the following restrictions:

1. The construction of habitable buildings or other structures upon the premises is prohibited.
2. The breaking of the surface of the soil by digging, trenching, drilling, boring or disruption of the soil surface is prohibited.
3. The growing of crops or the consumption or transportation thereof on the premises is prohibited.
4. Residential, commercial, or recreational use of the premises is prohibited.
5. The taking, use, or consumption of water from or which flows through the premises, either above or below the soil surface is prohibited.
6. The excavation, filling or depositing of any solid or liquid material on the premises, including sewage, sludge or other waste material is prohibited.
7. The making of any change in the topography of the designated parcel is prohibited.
8. The entry upon the subject premises is prohibited.
9. Any activity on the subject premises which would tend to alter the water table thereon is prohibited.

10. The prohibitions set forth above are subject to and shall not in any way encumber or inhibit the source control remedial action to be carried out as outlined in the Partial Conset Decree entered in the matter entitled "United States v. Browning-Ferris Industries of Vermont, Inc., No. 5:91CV383(D. Vt.)"

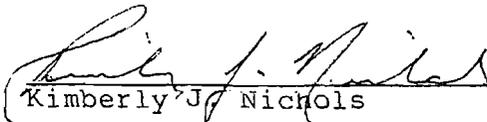
FURTHER, the restrictions set forth herein may be modified or removed at any time upon a showing by an interested party that such restriction is not necessary for the protection of the health and welfare of the inhabitants of the Town, or to carry out the remedial action.

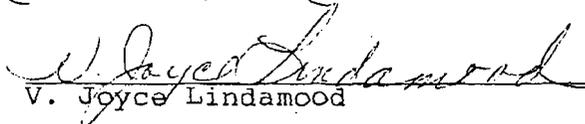
Dated at Springfield, County of Windsor and State of Vermont, this 3rd day of August, 1992.


Jean M. Willard, Chairman


Robert D. Yoder


Douglas C. Moulton


Kimberly J. Nichols


V. Joyce Lindamood

ATTEST:


Bonnie L. Reynolds, CMC/AEE

ATTACHMENT 4: List of Documents Reviewed

Document	Author	Date	Type
Administrative Order by Consent, Old Springfield Landfill (AC001)	U.S. EPA	April, 1984	Enforcement
Administrative Order for Property Access	U.S. EPA	January, 1991	Enforcement
Second Administrative Order for Property Access	U.S. EPA	July, 1992	Enforcement
Administrative Order By Consent, Old Springfield Landfill	U.S. EPA	January, 1993	Enforcement
Consent Decree, Old Springfield Landfill (CD002)	U.S. EPA	June, 1992	Enforcement
Administrative Order by Consent, Old Springfield Landfill (AC002)	U.S. EPA	March, 1989	Enforcement
Consent Decree, Old Springfield Landfill (CD001)	U.S. EPA	May, 1990	Enforcement
Partial Consent Decree, Old Springfield Landfill	U.S. EPA	September, 1989	Enforcement
Superfund Five Year Review, Old Springfield Landfill	U.S. EPA	September, 1998	FYR
Second Five Year Review Report, Old Springfield Landfill	U.S. EPA	September, 2003	FYR
Comprehensive Five-Year Review Guidance	U.S. EPA	June, 2001	Guidance
Town of Springfield Ordinance 88-2	Town of Springfield	April, 1988	IC
Town of Springfield Resolution 92-4	Town of Springfield	August, 1992	IC
Town of Springfield Municipal Charter, Ordinances; Vermont Statutes, 24 App. V.S.A. § 149-5. Ordinances	State of Vermont		IC
Groundwater Protection, Classification of Groundwater, Vermont Statutes, 10. V.S.A. § 1394.	State of Vermont		IC
Preliminary Close-Out Report, Old Springfield Landfill	U.S. EPA	September, 1994	PCOR
Record of Decision, Old Springfield Landfill, OU1	U.S. EPA	September, 1988	ROD
Record of Decision, Old Springfield Landfill, OU2	U.S. EPA	September, 1990	ROD
Vermont Water Quality Standards	VTDEC	February, 2006	Regulation
Federal Water Quality Standards (MCLs list)	U.S. EPA	June, 2003	Regulation
Annual Operation and Maintenance Report for 2006	Town of Springfield (Stantec)	February, 2007	Report
Annual Operation and Maintenance Report for 2007	Town of Springfield (Stantec)	April, 2008	Report

ATTACHMENT 5: FYR Site Inspection and Interview Records

Inspection Roster

Monday May 5, 2008

EPA:

Ed Hathaway, RPM
 Marisa Guarinello, writing FYR
 Yoon-Jean Choi, engineer

VTDEC:

Brian Woods, Site Manager

Town of Springfield:

Rick Chambers, Chief Operator, POTW (for visit at pre-treatment facility only)

Stantec (Town's O&M inspection contractor)

Dave Deane, Senior Project Manager

Nobis (EPA's new oversight contractor):

Stephen Druschel
 Brian Wachler

Site Inspection Checklist

I. SITE INFORMATION											
Site name: Old Springfield Landfill	Date of inspection:										
Location and Region: Springfield, VT Region 1	EPA ID: VTD000860239										
Agency, office, or company leading the five-year review: EPA, Region 1, OSRR	Weather/temperature: Sunny, warm 60s										
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Landfill cover/containment</td> <td style="width: 50%;"><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls <i>-(fencing)</i></td> <td><input checked="" type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input checked="" type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Surface water collection and treatment (<i>French drains</i>)</td> <td></td> </tr> </table> <p>Other _____</p>		<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls <i>-(fencing)</i>	<input checked="" type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input checked="" type="checkbox"/> Groundwater pump and treatment		<input checked="" type="checkbox"/> Surface water collection and treatment (<i>French drains</i>)	
<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation										
<input checked="" type="checkbox"/> Access controls <i>-(fencing)</i>	<input checked="" type="checkbox"/> Groundwater containment										
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls										
<input checked="" type="checkbox"/> Groundwater pump and treatment											
<input checked="" type="checkbox"/> Surface water collection and treatment (<i>French drains</i>)											
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached											
II. INTERVIEWS (Check all that apply)											

1. O&M site manager

Name Rick Chambers Title Chief Operator, POTW Date 5/5/08

Interviewed at site ___ at office ___ by phone Phone no. _____

Problems, suggestions; Report attached _____

treatment plant upgrades completed in 2004

2. O&M staff Dave Deane (Stantec) Sr Project Manager 5/5/08

Name Title Date

Interviewed at site ___ at office ___ by phone Phone no. _____

Problems, suggestions; 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 VTDEC

Contact Brian Woods Site Manager 5/5/08
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.

C. Institutional Controls (ICs)			
1.	Implementation and enforcement		
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Type of monitoring (e.g., self-reporting, drive by) _____		
	Frequency _____		
	Responsible party/agency _____ Town of Springfield _____		
	Contact _____		
	Name	Title	Date Phone no.
	Reporting is up-to-date <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Reports are verified by the lead agency <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Specific requirements in deed or decision documents have been met <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Violations have been reported <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
	Other problems or suggestions: <input type="checkbox"/> Report attached		

2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A
	Remarks _____ town ordinances and consistent town presence at site ensures appropriate use of property		

D. General			
1.	Vandalism/trespassing	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No vandalism evident
	Remarks _____		

2.	Land use changes on site	<input type="checkbox"/> N/A	
	Remarks _____ None _____		

3.	Land use changes off site	<input type="checkbox"/> N/A	
	Remarks _____		

VI. GENERAL SITE CONDITIONS			
A. Roads <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N/A
	Remarks _____		

B. Other Site Conditions

Remarks _____

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 POTW staff checks regularly

2. **Cracks** Location shown on site map Cracking not evident
Lengths _____ Widths _____ Depths _____
Remarks _____

3. **Erosion** Location described Erosion not evident
Areal extent _____ Depth _____
Remarks a little mvt (creep) into internal cap drainage ditch on the south slope of the landfill below the detention pond and before the body-catcher device

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
 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 <input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of slope instability Areal extent _____ Remarks: <u>Potential exists in certain places at the steep landfill, especially at base near culvert and along the southern drainage ditch; site is in good condition, no immediate concerns regarding slope instability; slope creep is inevitable</u>
B. Benches <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> 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 <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay Remarks _____
2.	Bench Breached <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> N/A or okay Remarks _____
3.	Bench Overtopped <input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay Remarks _____
C. Letdown Channels <input type="checkbox"/> Applicable <input type="checkbox"/> 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 <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement Areal extent _____ Depth _____ Remarks _____
2.	Material Degradation <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of degradation Material type _____ Areal extent _____ Remarks _____
3.	Erosion <input checked="" type="checkbox"/> Location described <input type="checkbox"/> No evidence of erosion Areal extent _____ Depth _____ Remarks _____ a bit on sides by southern ditch (see "slope instability above) ; _____ _____

4.	Undercutting <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of undercutting Areal extent _____ Depth _____ Remarks _____ _____
5.	Obstructions Type _____ Leaves _____ <input type="checkbox"/> No obstructions <input type="checkbox"/> Location shown on site map Areal extent _____ Size _____ Remarks _____ in northern ditch to culvert, does not negatively affect flow _____ _____
6.	Excessive Vegetative Growth Type _____ <input checked="" type="checkbox"/> No evidence of excessive growth <input checked="" type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____ Remarks _____ western ditch-some standing water and veg in ditch- flat grade encourages this _____
D. Cover Penetrations <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Gas Vents <input type="checkbox"/> Active <input checked="" type="checkbox"/> Passive <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance Remarks _____ _____
2.	Gas Monitoring Probes <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
3.	Monitoring Wells (within surface area of landfill) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____
4.	Leachate Extraction Wells <input type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ routinely sampled for flow _____ _____
5.	Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A Remarks _____ _____

E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
1.	Gas Treatment Facilities <input type="checkbox"/> Flaring <input type="checkbox"/> Thermal destruction <input type="checkbox"/> Collection for reuse <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
2.	Gas Collection Wells, Manifolds and Piping <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____	
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A Remarks _____ _____	
F. Cover Drainage Layer <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	Outlet Pipes Inspected <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
2.	Outlet Rock Inspected <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
G. Detention/Sedimentation Ponds <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1.	Siltation Areal extent <input checked="" type="checkbox"/> X (400 sqyrd ?) Depth N/A <input type="checkbox"/> Siltation not evident Remarks _____ grass and a bit of water; originally GCL lining _____ _____	
2.	Erosion Areal extent _____ Depth _____ <input checked="" type="checkbox"/> Erosion not evident Remarks _____ _____	
3.	Outlet Works <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	
4.	Dam <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ _____	

H. Retaining Walls <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Deformations <input type="checkbox"/> Location shown on site map <input type="checkbox"/> not evident Horizontal displacement _____ Vertical displacement _____ Rotational displacement _____ Remarks _____
2.	Degradation <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident Remarks _____
I. Perimeter Ditches/Off-Site Discharge <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Siltation <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Siltation not evident Areal extent _____ Depth _____ Remarks _____
2.	Vegetative Growth <input checked="" type="checkbox"/> Location described <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____ veg and standing water in NW ditch
3.	Erosion <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Erosion not evident Areal extent _____ Depth _____ Remarks _____ not much _____
4.	Discharge Structure <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks _____ Western Fabriform ditch has weepholes to relieve pressure water flowing underneath The end of this drainage channel was recently replaced with a Fabriform gravel ditch- looks good
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Settlement <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident Areal extent _____ Depth _____ Remarks _____
2.	Performance Monitoring Type of monitoring _____ <input type="checkbox"/> Performance not monitored Frequency _____ Evidence of breaching _____ Head differential _____ Remarks _____

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.

_____ need to maintain regular inspections and keep eye out for potential indications of slope instability and erosion potential- this has been a priority and problems are identified and assessed quickly

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

_____ none _____

Interview and Inspection Questions

1. Is vapor intrusion a potential issue anywhere? Are there any structures over the gw plume where the plume is shallow? **No**
2. What slope stabilization activities have taken place over the last 5 years? Which, if any,

have been successful? Are there other alternatives to try? See other doc

3. Residences

- a. Does the caretaker for estate of John Curtin, owner of the property, still live on the site? Yes
- b. Are there still 13 single family residences and a 6-bldg condo complex w/in immediate vicinity? Yes
- c. How many homes and est population w/in 1 mile radius? (2003- 200homes, 650-750 people) No change

4. Confirm that users of bedrock aquifer in site vicinity are all upgradient of the Site and that those in immediate vicinity receive Town of Springfield water.

5. Is public in downgradient vicinity still on public water supply? Yes

6. P&T system: opportunities for optimization and general improvement? Not really

- a. overdesign corrections to reduce costs?: design was for 87 gpm, flow is <30 gpm
 - i. high flows recently- 65,000 gallons/day
- b. Are the pipes monitored for fouling? How often? Have and how often have the pipes needed to be cleaned/replaced? (FYR2003 noted need to clean pipes) 3' to 1 1/4' pipes cleaned regularly, flow is high this year, so more pipes affected; some may need to be replaced in future (Rick Chambers)
- c. Sampling frequency? MW currently on annual schedule [OU1 ROD expected MW sampling every other year after 10 yr.- 2004]

7. Status of new and suspected seeps: LSE-1A and "Headwall"?

8. Actions completed since the last five-year review include:

- a. Repair of sinkholes on the eastern side of the southern Fabriform ditch and riprap channel (2007)
- b. Slope stability improvement projects
- c. Periodic system maintenance, such as change out of carbon filters, replacement

extraction well and seep pumps, and general land upkeep activities.

9. To check at inspection:

- a. Check for rodent hole in landfill surface. Some noted in Waste Areas 3 and 4 during last FYR –Woodchuck hole in area above culvert and MW (44T)- (Rick Chambers)
- b. Check for rodent damage to gas vent sheds. Should be a concrete floor in there now to prevent this kind of thing.
- c. Has the Geosynthetic Clay Liner below the detention basin been replaced and the sidewall repaired (recommended by TRC in 2001-2002)
- d. Has the cause of the seep in the detention basin been determined?
- e. Has the erosion in the detention basin been repaired?
- f. Have there been any other erosion issues? Any pipe damage?
- g. What is the condition of the replacement southerly ditch that was lined w/ stones and underlain by filter fiber in Sept 2006? Done, looks good Also- underdrain and riprap added to off-site southerly swale; weep holes drilled into concrete ditch liner in the west portion of the Fabriform and weep plugs installed (See Appendix M, O&M Report (2/07)
- h. Have sediment and veg in the channels been monitored and removed as needed?
This is a persistent issue in the flatter ditches- the water diverts to underneath the Fabriform material, not a capacity issue; Dave Deane to apply Roundup

10. The 1991 Access Order to John Curtin included a requirement to file a copy of the order w/ the deed and that it should run w/ the land.- Was this requirement ever fulfilled? –No
The 1992 Access Order to the Curtin estate (John Curtin died 4/18/91) did not mention the first order. –The CD supersedes this; it is not needed

11. Millay property on Will Dean Rd.- 1993 AOC included a provision to place the AOC on the deed indicating possible contamination in the sand and gravel unit under his property.

Was this ever done? Previous 2003 FYR and ICTS statement regarding no more gw contamination outside site boundary + supporting reports and monitoring results- seem to indicate that this deed notice is no longer needed, if ever record. Moot point, not needed at this time b/c no gw contamination is migrating off-site

12. Has the Town resumed/considered resuming the use of checklists for its periodic inspections of the site (recommendation in 2007 O&M report)? Town does inspection 2/month. Suggestions from Brian and Dave D are to have the Town person use a map and make any notes on that, that way there is no post-inspection paperwork and there is a record of the inspection
13. O&M costs?- Town budgets \$200k/yr
14. Elimination of PCB and pesticide testing? –requires a state permit; it is up to the Town to pursue w/ the State (Ed)
15. Elimination of treatment for Western Seep discharge? Same as above
16. (Brian) Any new ARARs? I didn't find anything that changes site requirements in my searches. No; changes in progress are surface water, soil, and sed documents

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.

<u>Brian Woods</u> Name	<u>Project Manager</u> Title/Position	VTDEC-Waste <u>Management Division</u> Organization	<u>5/5/08</u> Date
<u>F. David Deane, P.E.</u> Name	<u>Senior Project Manager</u> Title/Position	<u>Stantec</u> Organization	<u>5/5/08</u> Date
<u>Rick Chambers</u> Name	<u>Chief Operator-POTW</u> Title/Position	Springfield Dept of <u>Public Works</u> Organization	<u>5/5/08</u> Date
<u>Linda Rouse</u> Name	<u>Zoning Administrator</u> Title/Position	<u>Town of Springfield</u> Organization	<u>1/17/08</u> Date
<u>Rodney Pingree</u> Name	Title/Position	VT Water Supply <u>Division</u> Organization	<u>2/08</u> Date

INTERVIEW RECORD

Site Name: Old Springfield Landfill		EPA ID No.: VTD00086239	
Subject:		Time: ?	Date: 1/17/08
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Marisa Guarinello		Title: Env Protection Specialist	Organization: EPA
Individual Contacted:			
Name: Linda Rouse		Title: Zoning Administrator	Organization: Town of Springfield
Telephone No: 802-885-2104		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>The land in the vicinity of Site to the west is zoned as residential/agricultural and as land reserve to the east.</p> <p>The Southern Windsor County Regional Planning Commission lists intended future use of the Site as forest</p>			

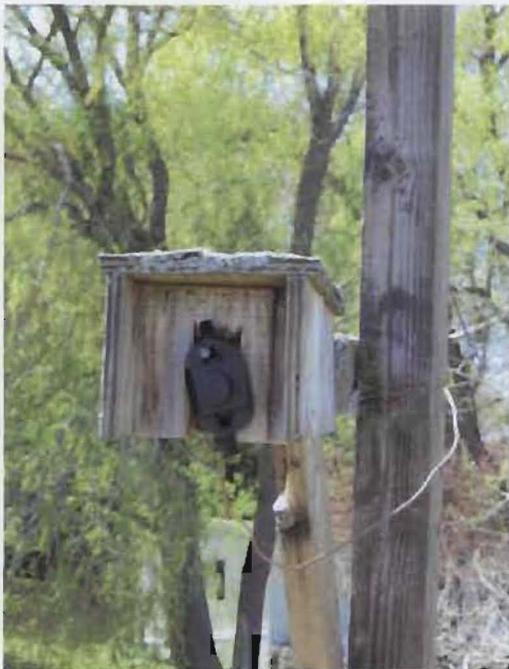
INTERVIEW RECORD

Site Name: Old Springfield Landfill		EPA ID No.: VTD00086239	
Subject:		Time: ?	Date: 2/08
Type: <input checked="" type="checkbox"/> Telephone <input type="checkbox"/> Visit <input type="checkbox"/> Other		<input type="checkbox"/> Incoming <input type="checkbox"/> Outgoing	
Location of Visit:			
Contact Made By:			
Name: Marisa Guarinello		Title: Env Protection Specialist	Organization: EPA
Individual Contacted:			
Name: Rodney Pingree		Title:	Organization: VT Water Supply Division
Telephone No: 802-241-3418		Street Address:	
Fax No:		City, State, Zip:	
E-Mail Address:			
Summary Of Conversation			
<p>The State of Vermont classifies this aquifer as Class III (suitable as water source for individual domestic wells, irrigation, agriculture, general industrial and commercial use; this is the standard default classification in VT)</p>			

ATTACHMENT 6: Photos from May 5, 2008 Site Inspection



On-site pre-treatment facility



Flow meter for extraction well



French Drain 2, in NW corner of cap



Vegetation and standing water in ditch on north boundary just west of French Drain 2



Drainage ditch outside site boundary to the west



Fabriform ditch on western boundary



Detention basin



Outflow from detention basin, looking east



Outflow from cap on the south side, below the detention basin and near the top of the steep slope. Rust color is from iron oxidation.



From the south side of the landfill, looking NE. Hutches are gas vent covers.



Drainage ditch along south slope of cap



View downslope, looking southeast



Culvert at base on site, final drainage point on site

ATTACHMENT 7

Site Inspection Report 2008

**SEMI-ANNUAL INSPECTION REPORT
OLD SPRINGFIELD LANDFILL SUPERFUND SITE
SPRINGFIELD, VERMONT**

1.0 INTRODUCTION

This letter report documents and presents the observations made by Nobis Engineering, Inc. (Nobis) during the Spring Inspection of the Old Springfield Landfill Superfund Site (Site) performed by Nobis engineers on May 5, 2008. In addition, this report includes the findings of a summary review of the 2007 Annual Operations and Maintenance Report for this Site, dated April 8, 2008, prepared by Stantec.

The inspection was conducted by representatives from the United States Environmental Protection Agency (EPA), the State of Vermont, and Nobis.

The inspection included the following activities:

- The perimeter and top of the landfill cap were walked to look for evidence of erosion, cap disturbance, settlement, and poor growth of vegetation.
- On and off-cap storm water control structures were inspected for damage, settlement, sedimentation, vegetation and blockage.
- The above ground portions of structures that penetrate the cap (i.e., gas vents, etc.) were inspected for damage. The evaluation of subsurface conditions was not within the scope of this inspection.
- A site-specific inspection checklist was used to document the inspection (Attachment 1). This report is based on visual inspections with reference to the Record Drawings of the cover system installation. Observations made during the inspection are summarized below.

2.0 SUMMARY OF INSPECTION

The results of the inspection are presented according to the various components of the landfill cover system. The following sections of the report correspond to the inspection items listed in

the checklist. Photos documenting observations during the inspection are provided in Attachment 2.

Landfill Surface

The inspectors found the following items when inspecting the landfill surface:

- There is an area of instability, approximately 20 feet wide and extending 10 feet up the slope of the landfill, near the downstream end of the eastern downchute, near monitoring wells MW44S and MW44T. See Photo 1.
 - Due to steep slope, zone of creep (time based downward movement) may cause stretching of cap materials, and possible change of surface water drainage.
 - Area should be watched for evidence of larger or quicker movements. Area should also be watched for localized erosion related to cracking associated with soil movement (Rill factor).
- A low area near Gas Vent 8 needs approximately 1 foot of fill.
- There are woodchuck holes in several locations as identified on Figure 1.

Sections of the landfill surface are also shown in Photos 2 and 3.

Benches

An area directly adjacent to Gas Vent (GV) 10 has a soft, undermined ground surface with erosion to an underdrain. This area needs repair with fill and seed. See Photo 4.

The benches are otherwise in fair to good condition.

Letdown Channels (Downdrains)

The inspectors found the following items when inspecting the downchute channel (mostly lined with Fabriform but some areas near the detention basin lined with riprap) that discharges to the eastern end of the Site:

- In the channel upstream of the sedimentation basin, there is seepage in the Fabriform lining – areas where water in the trench seeps in from underground and other areas where water seeps into the ground. This area should be watched, with a possible future remedy being to install PVC pipes in weep holes to relieve groundwater pressure. See Photo 5.
- Standing water is visible in a section of channel that is lined with riprap. See Photo 6.
- There is an area of erosion and soft spots in the cap surface next to the downchute, in an area near GV-10 and LSE02. See Photo 7.

Cover Penetrations

Cover penetrations through the landfill cover system include 10 passive gas vent structures (GV-1 through GV-10) that are each covered in a shed structure. The shed structures appeared to be in good condition. They were not opened to inspect the gas vents themselves. Photo 2 shows GV-5.

Monitoring Wells/Extraction Wells

There are approximately 15 monitoring wells on the Site and approximately six more adjacent to Will Dean Road to the west where groundwater contamination was previously found. No damage was found to the wells.

There are two extraction wells on Site which are used to take samples of groundwater leaving the Site to the west. These wells were opened and do not appear damaged. See Photo 8 for a picture of one of the wells.

Detention Basin

The detention basin at the southeastern end of the Site is in good condition with no excessive vegetation. See Photos 9, 10, and 11.

Perimeter Ditches/Off-Site Discharge

The inspectors found the following items when inspecting the perimeter area of the Site:

- There is standing water present in a ditch near GV-5 and FD-2. See Photo 12.
- There is a slight subsidence of the top edge of the ditch between FD-1 and MW34S, on the landfill side of the ditch.
- Small trees near the fence between FD-1 and MW34S need to be removed.

Perimeter Roads

The perimeter roads were in good condition with no signs of erosion, ruts or potholes.

Pretreatment Facility

The groundwater pretreatment facility was operational during the inspection, but was not inspected closely.

3.0 ANNUAL OPERATION AND MAINTENANCE REPORT SUMMARY REVIEW

The Annual Operation and Maintenance Report, including the results of the August 2007 groundwater monitoring round, was reviewed for general trend and comparison with historic data. No independent statistical evaluation was included at this time. Findings in the Annual Report were reasonable based on the sampling data. The report findings are summarized below. Refer to the Annual Report for the location of wells not shown on Figure 1.

Water level measurements were made in 10 monitoring wells. Results were reported as consistent with previous measurements and that the flow directions appear stable.

Groundwater samples were taken in August, 2007 from the monitoring wells and analyzed for volatile organic compounds (VOCs) and Target Analyte List (TAL) metals. Contrary to the information in the report, no Chain of Custody forms or laboratory analytical reports were provided for the August 2007 monitoring well sampling round. A summary of the VOC water quality data was provided, however no source of the data was identified.

The TAL metal results for the monitoring well samples were not provided. The report contained no evaluation nor was comparison made to any standard.

From the summary of the VOC water quality data, results less than method detection limit (MDL) were reported for all VOCs at 7 monitoring well locations. Trichloroethene was detected at 4 ug/L in MW-52G, located in the sand and gravel layer at the western end of the Site. VOCs were detected at low levels (<20 ug/L) in MW-45B, located in bedrock at the bottom of the slope on the eastern end of the Site. VOCs were measured at slightly higher levels (up to 110 ug/L of 1,2 Dichloroethene and up to 41 ug/L of trichloroethene) in MW-45T. MW-45T is located in the till layer at the bottom of the slope on the eastern end of the Site. The results conform to the trends observed over the last few years with consistent levels of selected VOCs observed in only three monitoring wells (MW-52G, MW-45B, and MW-45T).

No sampling was made of surface water drainage channels, residential wells or springs.

Flows from groundwater extraction wells (EW-1, EW-2 and SC-1/EW-3) were generally consistent with the flows from 2006, with the exception of EW-1 which had a markedly increased flow (from around 1 gpm to approximately 15 gpm) for the three months following pump replacement in March. Flows from EW-2 and SC-1 were approximately 11 gpm and 2.6 gpm, respectively. Flows from the French drain systems (FD-1, FD-2 and FD-3) also were generally consistent with previous flows in the range of 0.75 to 1.5 gpm each, although flows declined somewhat in the latter half of 2007, likely due to reduced precipitation. Flow from LSE 3/4 continued a modest decline from recent years and was just under 5 gpm. Flow from the Western Seep continued a steady trend of approximately 26 gpm. Total flow collected (both pre-treated and not pre-treated) then discharged to the Publically-Owned Treatment Works (POTW) was approximately 55 gpm, averaged over the year.

Trichloroethene was the main contaminant compound measured in the groundwater influent to the pretreatment facility, ranging from 250 to 710 ug/L when measured in duplicate samples collected quarterly. Other VOCs were measured in the groundwater influent at concentrations up to 63 ug/L. Effluent from the pretreatment facility contained residual trichloroethene at a maximum concentration of 6 ug/L, with no other VOC measured above Maximum Detection Level (MDL). Trichloroethene sources included SC-1 and EW-2, measured in August 2007 as 5100 and 190 ug/L, respectively. Other VOCs were measured to 460 and 10 ug/L in SC-1 and EW-2, respectively. Trace levels (<10 ug/L) of VOCs were also measured in FD-3. For the pretreatment facility influent, the concentration of trichloroethene and the other VOCs are within historic range, however the concentrations are exhibiting an upward trend during the second half of 2007. Whether these upward progressing concentrations are statistically significant has not been evaluated, however the overall trend bears watching. No evaluation was made of the year to year trends in the extraction well or French drain concentrations.

Air samples for VOC analyses were taken quarterly from the influent and effluent of the vapor phase granular activated carbon system used for the treatment of the air stripper discharge. Air samples for VOC analyses were also taken annually from the effluent of the vapor phase granular activated carbon system of each of the ten passive gas vents. The treatment of the air stripper discharge was found to be acceptable, with only the August 2007 effluent samples found to be above MDL at 200 ug/m³ of trichloroethene. Influent concentrations ranged from 1400 to 3800 ug/m³ of trichloroethene. Other compounds were observed, typically below 300 ug/m³ in the influent and 110 ug/m³ in the effluent, except during the August 2007 sampling round in which compounds were measured to 300 ug/m³ in the effluent. The higher effluent concentrations measured in August 2007 were attributed to breakthrough of the vapor phase granular activated carbon system, and change out was ordered. Note that the maintenance log reports change out in December 2007, yet the effluent concentrations were substantially reduced (< MDL of Trichloroethene) as of the November 2007 sampling round.

Gas vent effluent was measured for all VOCs at <35 ug/m³ for any one compound, except for 1,4-dichlorobenzene which was measured at many of the gas vents between 65 and 110 ug/m³. The maintenance log reports gas vent carbon change out was in December 2007, concurrent with the air stripper discharge treatment system.

4.0 CORRECTIVE ACTIONS

There were no prior corrective actions to evaluate.

5.0 RECOMMENDATIONS

The following corrective actions are recommended based on the observations made during the May 2008 inspection:

- The area of instability near monitoring wells MW44S and MW44T should be watched for larger, quicker movements, or erosion associated with cracking.
- Fill and seed should be provided for the low area near GV-8, and for the woodchuck holes as identified on Figure 1. The area near GV-8 should be watched for future settling, and the areas of woodchuck activity should be watched for future damage.
- The ground surface near GV-10 needs fill and seed to eliminate erosion damage.
- Fill and seed should be provided for the area of erosion and soft spots near the downchute, as shown in Photo 7.
- Small trees by fence between FD-1 and MW34S need to be removed.
- Several areas need watching:
 - Slight subsidence on top edge of ditch between FD-1 and MW34S
 - Seepage in Fabriform-lined trench upstream of detention pond
 - Standing water in riprap-lined trench near detention pond
 - Standing water in ditch near GV-5 and FD-2
- The concentration of VOCs within the pretreatment facility influent need to be monitored for continuing upward trend.
- Monitoring well sample analytical results need to be provided.

ATTACHMENT 1

**INSPECTION CHECKLIST AND SITE PLAN
MAY 5, 2008**



EPA RAC Contract # EP-S1-06-03

SEMI-ANNUAL LANDFILL INSPECTION CHECKLIST

Task Order: 0014-RX-ME-0139 Weather: Sunny
 Site Name: Old Springfield Landfill Temperature: 65°F
 Town: Springfield Site Map: Attach Map
 State: Vermont Date of Inspection: May 5, 2008
 PRP Representatives: Inspection Team: S. Druschel, B. Wachter

ITEM	REMARKS
LANDFILL SURFACE	
1. SETTLEMENT (LOW SPOTS) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Location (indicate on site map): Areal Extent: Depth:	Near GV-8 (1ft.)
2. CRACKS Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Location (indicate on site map): Length: Width: Depth:	
3. EROSION Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Location (indicate on site map): Areal Extent: Depth:	
4. HOLES Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Location (indicate on site map): Areal Extent: Depth: Suspected Cause (rodent or other):	Various woodchuck holes
5. VEGETATIVE COVER Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Grass: Condition: Trees/Shrubs: Yes <input type="checkbox"/> No <input type="checkbox"/> Location (indicate on site map): Size:	
6. ARMORED COVER Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Material Type: Condition:	
7. BULGES Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Location (indicate on site map): Areal Extent: Height: Suspected Cause (gas pressure or other):	



EPA RAC Contract # EP-S1-06-03

ITEM	REMARKS
4. EXTRACTION WELLS Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Located: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Functioning: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Condition:	
COVER DRAINAGE LAYER	
1. OUTLET PIPES Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Functioning: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Condition:	
2. OUTLET ROCK Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Functioning: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Condition:	
DETENTION/SEDIMENTATION PONDS	
1. SILTATION Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Areal Extent: Depth:	
2. EROSION Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Areal Extent: Depth:	
3. OUTLET WORKS Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Functioning: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Condition:	
GROUNDWATER SYSTEMS	
1. OFF-CAP MONITORING WELLS Damage: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
PERIMETER DITCHES/OFF-SITE DISCHARGE	
1. SILTATION Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Location (indicate on site map): Areal Extent: Depth:	
2. VEGETATION GROWTH Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Location (indicate on site map): Areal Extent: Type:	
3. EROSION Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Location (indicate on site map): Areal Extent: Depth:	- Slight subsidence between FD-1 + AW-348 MLW 345 - standing water near GV-5 + FD-2
4. DISCHARGE STRUCTURE Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Functioning: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Condition:	



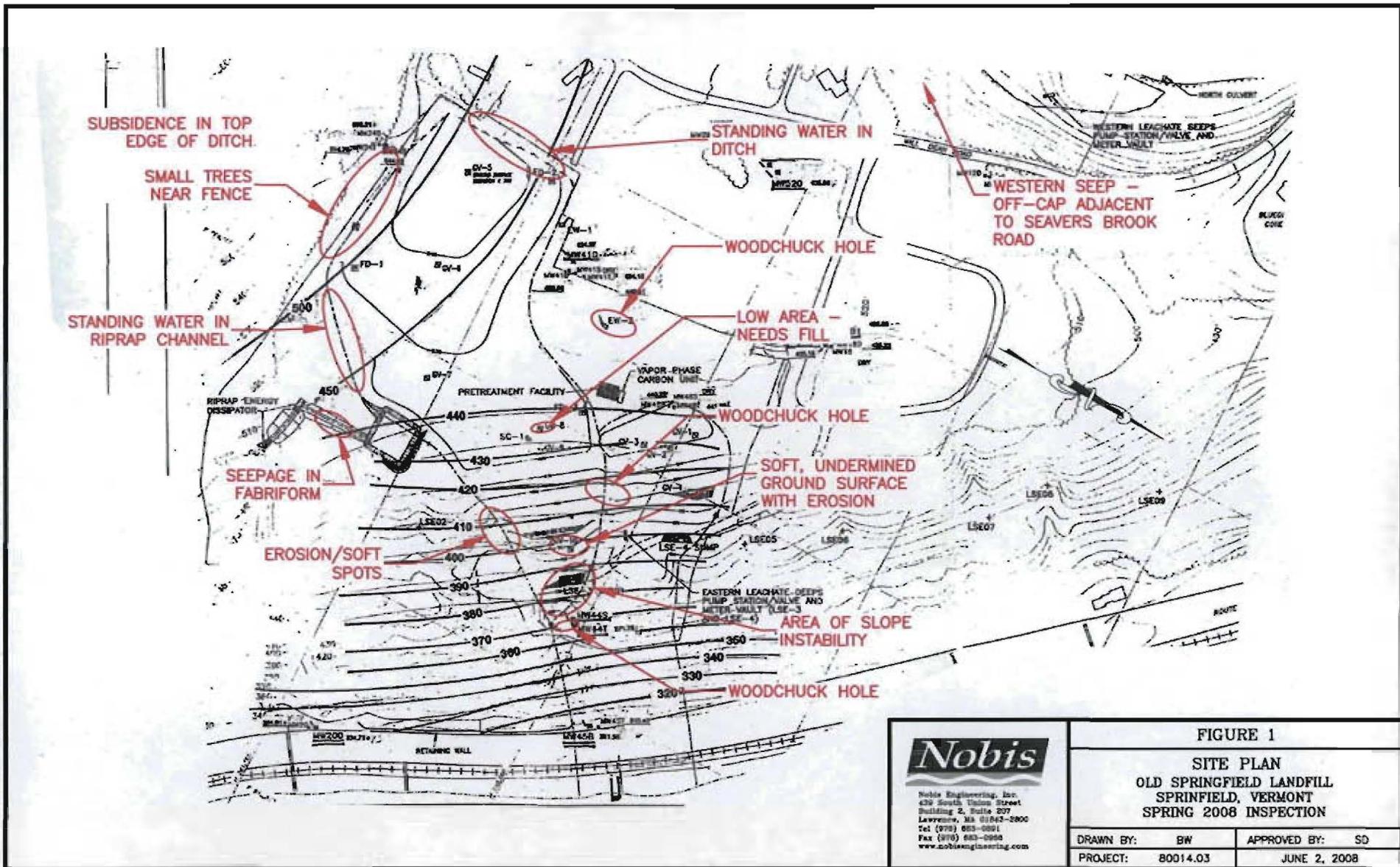
EPA RAC Contract # EP-S1-06-03

ITEM	REMARKS
FENCING	
1. FENCING DAMAGE Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Location (indicate on site map): Description of Damage:	
PERIMETER ROADS	
1. ROADS DAMAGED Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Location (indicate on site map): Description of Damage:	
SITE ACCESS	
1. ACCESS RESTRICTION Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
GENERAL	
1. VANDALISM Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Location (indicate on site map): Description of Damage:	
2. CHANGED SITE CONDITION Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	



EPA RAC Contract # EP-S1-06-03

INTERVIEWS (conduct interviews if the following are present during inspection)	
1. INTERVIEW WORKERS ON SITE Problems: <i>None</i> Suggestions: <i>None</i> <i>Attach Report</i>	
2. INTERVIEW SITE NEIGHBORS Problems: <i>None</i> Suggestions: <i>None</i> <i>Attach Report</i>	
3. INTERVIEW LOCAL OFFICIALS Problems: <i>None</i> Suggestions: <i>None</i> <i>Attach Report</i>	
REVIEW DOCUMENTS	
1. GROUNDWATER MONITORING RECORDS Abnormalities:	<i>Monitoring reports reviewed separately from inspections</i>
2. LANDFILL CLOSURE PROGRESS REPORT Report Date: Abnormalities:	<i>None</i>
3. OPERATION AND MAINTENANCE PLAN Is there a plan in place? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is it being followed? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is it adequate? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	



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FIGURE 1	
SITE PLAN	
OLD SPRINGFIELD LANDFILL	
SPRINGFIELD, VERMONT	
SPRING 2008 INSPECTION	
DRAWN BY:	APPROVED BY:
BW	SD
PROJECT:	JUNE 2, 2008
80014.03	

ATTACHMENT 2

**SITE INSPECTION PHOTOGRAPHS
MAY 5, 2008**



Photo 1 Area of Instability at Eastern Tip of Site



Photo 2 Landfill Surface on Western Side, GV-5 in foreground



Photo 3 Eastern Face of Landfill

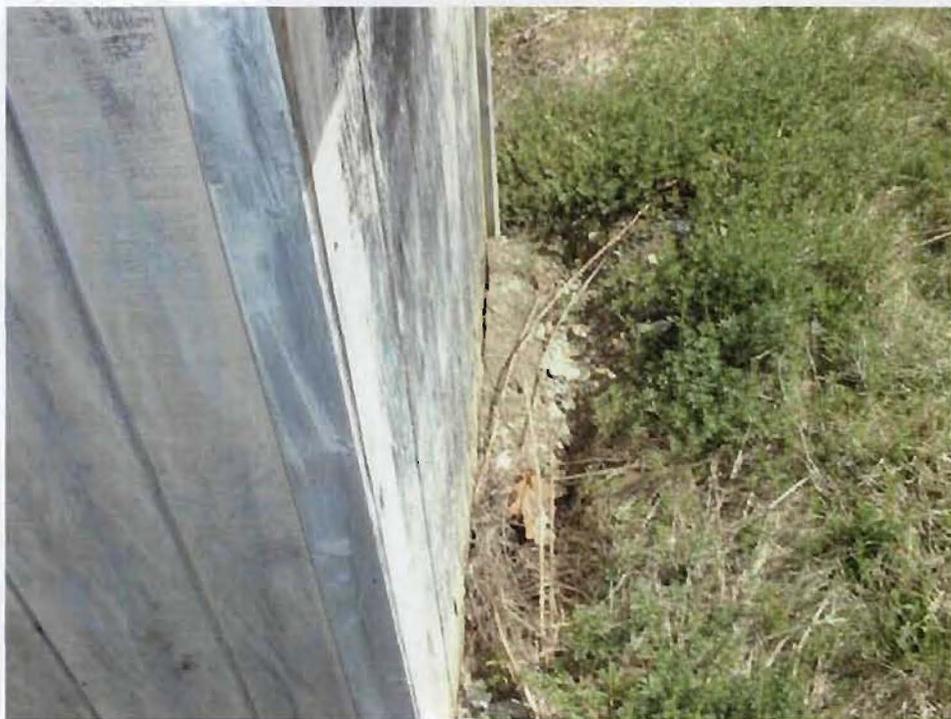


Photo 4 Erosion Area near GV-10



Photo 5 Seepage in Fabriform-lined Channel



Photo 6 Standing Water in Riprap-lined Channel



Photo 7 Erosion Adjacent to Downchute



Photo 8 Extraction Well EW-1



Photo 9 Detention Basin



Photo 10 Detention Basin



Photo 11 Detention Basin



Photo 12 Standing Water in Ditch near GV-5 and FD-2