TOWN OF EASTHAM

LANDFILL STUDY AREA

IMMEDIATE RESPONSE ACTION PLAN

MA DEP RELEASE TRACKING NUMBER 4-24301

January 2013

NOTICE OF IMMEDIATE RESPONSE ACTION PLAN

TOWN OF EASTHAM
LANDFILL STUDY AREA
EASTHAM, MASSACHUSETTS 02642
RELEASE TRACKING NUMBER 4-24301

A release of oil and/or hazardous materials has occurred in the area of the Eastham Landfill on Old Orchard Road, Eastham, MA, resulting in the need to conduct an Immediate Response Action (IRA) as defined by M.G.L. c. 21E and the Massachusetts Contingency Plan (310 CMR 40.0000). The Disposal Site includes the Eastham Landfill as well as the Study Area, defined by a line running southeasterly along the southeastern boundary of the Landfill property to Starlight Lane and on to Minister's Pond, then easterly along the northern boundary of Minister's Pond to Park Street, westerly along Piper Lane and northerly to Cestaro Way, then westerly across Schoolhouse Road to Moll's Pond, continuing northwesterly across Meetinghouse Road along an unnamed Way to Old Orchard Road nearest the current entrance to the Eastham Landfill/Transfer Station.

This Legal Notice serves to provide notification to property owners within the Disposal Site of the availability of the written "Immediate Response Action Plan" (IRAP) prepared by Bennett Environmental Associates, Inc., dated January 9, 2013, documenting such work and findings. The IRAP has been filed with the Massachusetts Department of Environmental Protection (Mass DEP) as a public record document subject to review and comment by Affected Individuals under public involvement opportunities under 310 CMR 40.1403(9) and 310 CMR 40.1404.

Anyone interested in reviewing the IRAP should notify the Eastham Health Department, 2500 State Highway, Eastham, MA [508-240-5900] or contact MA DEP, Southeast Regional Office at 20 Riverside Drive, Lakeville, MA [508-946-2700] for file review referencing the Release Tracking Number RTN4-24301. These documents are also electronically available through the MA DEP website at the following link http://public.dep.state.ma.us/SearchableSites/Search.asp and on the Town of Eastham Website atwww.eastham-ma.gov/documents. Printed versions are also available for review at the Eastham Public Library, and Eastham Health Department at Town Hall., 2500 State Highway, Eastham, MA 02642.

Written comments related to the IRAP must be submitted within 20 days of this publication to the Eastham Health Department and copied to the Mass DEP, Bureau of Waste Site Cleanup, Southeast Regional Office at 20 Riverside Drive, Lakeville, MA.

IMMEDIATE RESPONSE ACTION PLAN
With IMMMINENT HAZARD EVALUATION
And QUARTERLY LANDFILL MONITORING
SUPPORTING DOCUMENTATION
MA DEP RTN 4-24301

Town of Eastham Landfill
255 Old Orchard Road
Eastham, MA
BEA09-10104

JANUARY 9, 2013

Prepared By:
BENNETT ENVIRONMENTAL ASSOCIATES, INC.
1573 Main Street - P.O. Box 1743
Brewster, MA 02631
David C. Bennett, LSP.

Prepared For:
Massachusetts Department of Environmental Protection
Southeast Regional Offices, BWSC/Emergency Response, BWP/Solid Waste Sections
20 Riverside Drive - Lakeville, MA. 02347
Dan Crafton and Mark Dakers, Case Officers

On Behalf Of:
The Town of Eastham
Sheila Vanderhoef, Town Administrator
2500 State Highway – Eastham, MA 02642

APPENDIX A: Reference Plans
- -Figure 1: Site Locus Plan [USGS Topographic Quad., Eastham, MA. 1998] (excerpt)
- -Figure 2: Ground-Water Resources of Cape Cod, MA [LeBlanc et al, 1986] (excerpt)
- -Figure 3: MA DEP BWSC GIS Map [2012]
- -Site Plan entitled "Environmental Monitoring: Landfill Monitoring Plan/Immediate Response Action ...Eastham Landfill" prepared by BENNETT ENVIRONMENTAL ASSOCIATES, INC., dated January 8, 2013.
- -Site Plan entitled "Capped Landfill Details……Eastham Landfill..." , prepared by BENNETT ENVIRONEMTNAL ASSOCIATES, INC., dated October 16, 2012 (rev. 1/8/13)

APPENDIX B: Field Reports
- -Field Response Log
- -Monitor Well Sample Logs (Landfill MWs 12/5/12 and 12/6/12) Potable and MWs (12/6/12 and 12/7/12)
- -BCDHE Soil Gas Monitoring Results (1/2/13)

APPENDIX C: Environmental Records
- -Notice of Responsibility (11/28/12) and email correspondence to DEP clarifying sampling
- -BWSC-101: Release Log Form
- -BWSC-103: Release Notification Transmittal Form w/ eDEP Submittal Summary, Receipt
- -BWSC-105: Immediate Response Action Transmittal Form w/ eDEP Submittal Summary, Receipt
- -BWSC-123: Notices of Environmental Sampling
- -Legal Notice to Fulfill Public Notice/Involvement Requirements for submittal of IRA Plan

APPENDIX D: Laboratory Analysis
- Landfill Monitoring Wells MW-3I/D [BCDHE] (Lab ID: G1271348, 11/5/12)
- Down gradient Private Wells and Retest of MW-3D [Alpha Analytical] (Lab #: L1220681, 11/15/12)
- Eastham Elementary PWS[Alpha Analytical] (Lab#L1222231, 12/14/12)
- Landfill Monitoring Wells MW-5S/D [BCDHE] (Lab ID: G1271865, 12/14/12)
- Landfill Monitoring Wells MW-2S/D, MW-3S/I/D, MW-4S/D [BCDHE] (LAB ID: G1271889, 12/20/12)
- Down gradient Private Wells and Monitoring Wells [BCDHE] (Lab ID: G1271902, (12/27/12)

APPENDIX E: Quality Assurance/Quality Control Plan

APPENDIX F: Health and Safety Plan

BENNETT ENVIRONMENTAL ASSOCIATES, INC.

LICENSED SITE PROFESSIONALS ◊ ENVIRONMENTAL SCIENTISTS ◊ GEOLOGISTS ◊ ENGINEERS

1573 Main Street - P.O. Box 1743, Brewster, MA 02631 ◊ 508-896-1706 ◊ Fax 508-896-5109 ◊ www.bennett-ea.com

BEA09-10104

January 9, 2013

Mr. Daniel Crafton, Chief WSC – Emergency Response Section
Mr. Mark Dakers, Acting Section Chief BWP - Solid Waste Section
MA Department of Environmental Protection (MA DEP) – Southeast Regional Offices (SERO)
20 Riverside Drive - Lakeville, MA 02347

RE: IMMEDIATE RESPONSE ACTION PLAN (RTN 4-24301) AND QUARTERLY LANDFILL MONITORING REPORT
Eastham Landfill and Transfer Station
255 Old Orchard Road - Eastham, MA

Dear Mr. Crafton and Mr. Dakers,

On behalf of the Town of Eastham, BENNETT ENVIRONMENTAL ASSOCIATES, INC. (BEA) has prepared the following Immediate Response Action Plan (IRAP), with Supporting Documentation inclusive of the quarterly landfill monitoring, as representing release discovery, preliminary response and environmental assessment activities at the above referenced Site in the period from November 7, 2012 to January 3, 2013. Immediate Response Actions have been undertaken under verbal approvals associated with the detection of 1,4-Dioxane in a groundwater monitoring well at the Town of Eastham Landfill above the RCGW-1 Reportable Concentration in a drinking water source area under the revised Landfill Monitoring Plan (LMP) as implemented in the third quarter of 2012. This work has been conducted to satisfy the landfill monitoring protocols under the LMP and towards defining the extent and magnitude of such impacts concurrent with mitigation of environmental and human health hazards to identified human and environmental receptors under the IRA in accordance with the provisions of 310 CMR 40.0410 and as outlined in the Notice of Responsibility dated November 28, 2012.

Under the revised LMP (8/14/12), the sampling of select landfill monitoring wells and private wells for 1,4-Dioxane on an annual basis was prescribed and as such, in the initial quarterly sampling for the period ending 9/30/12, the 8260 SIM analysis was included. Landfill monitoring well samples were collected by the Barnstable County Department of Health and Environmental (BCDHE) and reported concentrations of 1,4 Dioxane in MW-3D (11/7/12) above the RCGW-1 Reportable Concentration. This was reported to the Department for clarification of provisions within the MA Contingency Plan (MCP) under 310 CMR 40.0110 for Adequately Regulated Sites. After consideration of the data, the Department suggested the testing of the downgradient private wells in the quarterly LMP for 1,4-Dioxane to determine if such impacts had migrated off the landfill property. BEA immediately re-sampled the MW-3D landfill monitoring to confirm the presence, persistence and concentration of 1,4-Dioxane in the monitoring well and re-sampled the residential wells at 100 Meetinghouse Road (RES-8), 180

Old Orchard Road (RES-1) and 285 Alston Road (RES-20). These analytical results were received within 48 hours and reported a 1,4-Dioxane concentration of 4.7 ug/L) at the MW-3D monitoring well above the RCGW-1 threshold (3 ug/L); albeit significant lower than previously reported (18 ug/L). The RES-8 private well reported a concentration of 1,4-Dioxane at 1.7 ug/L with the balance of the monitoring wells reported as Non-Detect (ND) with a detection limit of 1.5 ug/L. These results were reported to the Department and although the concentration of 1,4-Dioxane was less than the prescribed standards, the occurrence of 1,4-Dioxane above the prescribed standards was confirmed at the landfill. Additionally, off-site groundwater impacts and potential exposures to downgradient private wells were established as a Critical Exposure Pathway (CEP) for which an Immediate Response Action was appropriate and necessary.

As such, the Department assigned a Release Tracking Number (RTN4-24301) to the project and issued a Notice of Responsibility to the Town of Eastham to conduct an Immediate Response Action. In such communications with the Department, verbal approval was sought to expand the LMP protocols to test all landfill monitoring wells at the downgradient property line (east side along Old Orchard Road), all private wells within 500' of the MW-3D landfill monitoring well for VOC's (8260 TCL), inclusive of low level (SIM) 1,4-Dioxane, and to expedite semi-annual and annual LMP requirements at further downgradient off-site monitoring wells and private homes. The Department advised that although the IRA performance for exposure risk evaluation and mitigation was subject to the provisions within the MCP, the project would be managed by MA DEP BWP-Solid Waste Section and specifically indicated acceptance of a single report (IRAP/LMP) to satisfy both BWSC/BWP requirements.

This IRAP/LMP represents this additional work that has been conducted by the Town of Eastham since the RTN assignment, verbal authorization for IRA activities and issuance of Notice of Responsibility. The remedial response actions undertaken on Town of Eastham authorization as described herein have been conducted under LSP oversight in a manner consistent with the MCP Response Action Performance Standards (RAPS) pursuant to 310 CMR 40.0191 and the QA/QC policies of BENNETT ENVIRONMENTAL ASSOCIATES, INC. The facts and statements herein are, to the best of our knowledge, a true and accurate representation of the Site activities, remedial response actions and environmental conditions associated with the project.

ENVIRONMENTAL CONDITIONS [Refer to Appendix A – Site Plan and Reference Maps]

Monitoring well MW-3D is located in the southeastern portion of the capped Eastham Landfill containing thousands of yards of municipal solid waste (MSW) generated in and around the period from the 1937 through the early 1990's as discontinued when the Transfer Station was constructed. The capped landfill is a portion of the larger Eastham DPW property that contains some 38 acres of land area as located between Route 6 (west) and Old Orchard Road (south and east) and Bracket Road (north) some 1 mile north of Town Hall in the town of Eastham, MA [Refer to Figure 1]. The capped landfill property is represented on Eastham Assessor's Map 8, Parcel 120, and contains 18.74 acres of vacant land of which 10 acres is occupied by the unlined, capped landfill with MSW burial.

Access to property along Old Orchard Road is restricted by a locked and posted fencing that runs along the perimeter of the entire landfill property where the MW-3D monitoring well is located. The downgradient residential area to the east is moderately to highly developed with seasonal and year-round single and two-family dwellings typically located on 30,000-40,000 SF lots of land. To the west, moderate to high intensity mixed commercial properties are located along Route 6 as dominated by hotels/motels and restaurants. The Site, as being those areas where oil and/or hazardous materials (OHM) for which Notification has been made (1,4-Dioxane), is present or has migrated or otherwise has come to be located, is presently defined as the southwest corner of the Eastham Landfill property as running to the southeast between Molls Pond to the north and Ministers Pond to the south and as far east as Schoolhouse Road for which notification has been given. This includes all residential properties within the projected solute pathway as defined by site-specific groundwater flow patterns and identified occurrence from the testing conducted to date. The Site will be further defined by additional testing, research and field work prescribed herein as subject to the future subsurface testing and/or geophysical mapping to further define the horizontal and vertical extent of significant groundwater impacts for projected solute migration and predicted occurrence towards mitigation of exposures. For the purpose of this report, the Site as defined above may be synonymous with the reference to the Study Area and impacted private wells as Affected Residents.

There is no municipal water supply in Eastham and as such, all residential dwelling in the vicinity of the subject Site are serviced by private, on-site wells for potable and domestic water use. Based on the density of development, it is estimated that there are as many as 250 private wells within the Study Area. Additionally, to the west of the landfill, there are several small non-community public water supply wells serving restaurants and hotels/motels along Route 6. Several of these TNC public water supply wells have Zone II protective well radii that fall onto the DPW property and capped unlined landfill area.

The surficial geology in the study area is characterized as a part of the Eastham Plain Deposit consisting primarily of gravelly sand which may contain localized gravel, silt, clay, till and boulders. Hydrologic references indicate groundwater exists at 15' NGVD (+/-) as projected within 20-50' of ground surface over the Study Area, with regional flow to the southeast. Regional groundwater contours indicate a southeast flow direction towards Salt Pond and the Salt Pond Bay estuary beyond, with Molls Pond and Ministers Pond in between. Gauging of Monitoring well MW-3D reported local groundwater at approximately 22' bgs. Local groundwater flow has been qualified to the southeast. As such, Molls Pond and Ministers Pond are identified as the primary potential environmental receptors, as the closest zero-head boundaries [Refer to Figure 2].

Based on the MA DEP, BWSC overlay the subject property is located within the Interim Wellhead Protection Area (IWPA) for the TNC public water supply wells in the area [Refer to Figure 3]. The BWSC mapping also shows the Landfill as a Solid Waste Site and areas to the southeast within the defined Site as within a Medium Yield Aquifer and as part of the Sole Source Aquifer designation for all of Cape Cod east of the canal. Based on such designation and the presence of numerous private well in the area, the Site is a current Drinking Water Source

Area (DWSA). Therefore, the RCGW-1 Reportable Concentrations standards established in 310 CMR 40.1600 is applicable and, in accordance with 310 CMR 40.0932, the GW-1 and GW-3 standards apply when considering potential exposures under Method 1 - Risk Characterization. Additionally, based on the frequency and intensity of use of the residential properties and the Eastham Landfill with children potentially present, the RCS-1 and S-1/GW-1 and S-1/GW-3 soil standards may be considered as applicable. If, however, by nature of the source being from buried MSW under the landfill cap, the S-3/GW-1 and S-3/GW-3 standards would be applied as such soils would be considered isolated under a permanent structure or at depths greater than 15' below existing grades. These standards are developed in review of potential human ingestion, inhalation, and dermal contact exposures, as well as potential environmental exposures. Notwithstanding, the 2012 the MA Office of Research and Standards published a drinking water guideline (ORSG) of 0.0003 mg/L, or 0.3 ug/L.

BACKGROUND [Refer to Appendix B]

In August 2012, the Town of Eastham received a revised Landfill Monitoring Plan (LMP). Included in the revised LMP was the requirement for one-time sampling and analysis of 1,4-Dioxane at selected monitoring and private wells. As such, in the September 2012 quarterly event, the sampling of 1,4-Dioxane was included at the MW-3I and MW-3D monitoring wells. Analytical results received November 7, 2012, reported that 1,4-Dioxane was detected in monitoring well MW-3D at 18 ug/L, above the applicable Reportable Concentration (RCGW-1) of 3 ug/L. As such, after communicating this information to the Town of Eastham, Release Notification was made to the Department and additional sampling was conducted at the RES-1 (180 Old Orchard), RES-8 (100 Meetinghouse) and RES-20 (285 Alston) private wells for 1,4-Dioxane as immediately downgradient of the MW-3D monitoring well. Additionally, MW-3D was re-tested in consideration of data validation, repeatability and variation. All such samples were submitted on a 24-hour RUSH basis.

Concentrations of 1,4-Dioxane was reported as 4.3 ug/L in the repeat sampling of the MW-3D landfill monitoring well as confirming the presence of 1,4-Dioxane above the RCGW-1 albeit significantly decreased from the initial testing some 5 weeks earlier. An estimated concentration of 1.7 ug/L was additionally reported in the RES-8 drinking water well, as less than the aforementioned RCGW-1 and GW-1, Method 1 Risk Standards. No concentrations of 1,4-Dioxane were reported above the reporting limit (2.0 ug/L) or method detection limits (0.75 ug/L) in RES-1 or RES-20 in this confirmatory sampling. The residences sampled were notified of the analytical results and based on the fact that the 100 Meetinghouse Road property reported 1,4-Dioxane at a concentration greater than 50% of the GW-1, Method 1 – Risk Characterization standard, bottled water was provided to the residents at the duplex for drinking and food preparation as a precautionary measure. Table 1 is a summary of the confirmatory re-testing of MW-3D and select private wells leading to the confirmation of an on-site source of 1,4-Dioxane at the Eastham Landfill and the off-site migration of 1,4-Dioxane as a CEP to downgradient residences as establishing the appropriateness and need for an Immediate Response Action to identify and mitigate against potential exposure risks.

Table 1: Resampling of MW-3D and Downgradient Private Potable Wells (11/14/12)
Town of Eastham Landfill 255 Old Orchard Rd. - Eastham, MA

LOCATION SAMPLING DATE LAB SAMPLE ID	GW-1	RCGW-1	Units	RES-8 11/14/2012 L1220681-01	RES-1 11/14/2012 L1220681-02	RES-20 11/14/2012 L1220681-03	MW-3D 11/14/2012 L1220681-04
Volatile Organics (Detects Only)							
Chloroform	70	50	ug/l	-	-	0.7	-
1,2-Dibromoethane	0.02	0.02	ug/l	-	-	**ND(1)**	-
Ethyl ether	-	1000	ug/l	-	-	0.27	
1,4-Dioxane by SIM 1,4-Dioxane	3	3	ug/l	1.7	ND(1.5)	ND(1.5)	**4.3**

The Department subsequently issued release tracking number (RTN) 4-24301 and authorized additional assessment activities as verbal approvals under the Immediate Response Action (IRA). Supplemental assessment activities including sampling additional private potable wells within 500 feet of the MW-3D well for 1,4-Dioxane, and similar testing of the remaining landfill monitoring wells as consistent with the LMP semi-annual and annual testing requirements. This strategy was approved by the MA DEP and specifically outlined in the Notice of Responsibility (11/28/12) sent to the town as modified for EPA 8260B TCL VOC/SIM testing as falling under CAM/PC protocols to facilitate validation and Representativeness Evaluation and Data Usability Analysis (REDUA).

The research on private well completion depths and hydrogeologic conditions were used to evaluate potential exposure risks, predict occurrence and help refine the Conceptual Site Model to define the Site and potential exposure risks. This information was used to further solicit authorizations for testing of private wells not in the LMP program and to evaluate potential exposure risks to downgradient receptors.

ENVIRONMENTAL ASSESSMENT LMP [Refer to Appendix B]

Groundwater

Barnstable County Department of Health & the Environment (BCDHE) personnel conducted the December quarterly sampling of the Eastham Landfill monitoring wells in accordance with the revised LMP on December 5th and 6th, 2012 as extended to include all multi-level monitoring wells on the downgradient property line (MW-2 S/D, MW-3 S/I/D and MW-4 S/D). Each of the select wells was field screened, purged and sampled for VOCs via Method 8260B as well as inorganics as consistent with 310 CMR 19.132(1)(h) and 1,4-Dioxane. Monitoring wells MW-3I and 3D both reported arsenic at concentrations in excess of the applicable RCGW-1 Reportable Concentration. It is noted that these exceedances are consistent with historic concentrations reported in MCP deliverables submitted under RTN4-18278 for the Moll's Pond Study Area, as exempt from remedial response under the provisions of 310 CMR 40.0110 wherein no such downgradient impacts have been documented in the historic sampling

and analysis of off-site private wells and monitoring wells.

Iron and manganese were also noted as exceeding the applicable standards in each of the two wells also as typical and consistent with historic testing. All other inorganic compounds were reported below the applicable standards. The (BEA) Monitoring Well Sampling Log prepared by BCDHE personnel noted elevated conductivity with a leachate odor observed at the MW-3I and MW-3D location, on the Landfill property.

Concentrations of 1,4-Dioxane were reported in MW-3D (14 ppb) above the RCGW-1 Standard, confirming the presence of this compound in this downgradient well. None of the other landfill wells reported any concentrations of 1,4-Dioxane above the Method Detection Limits (2.5 ug/L). Various additional non-target VOCs, including MtBE, cis-1,2-DCE, benzene and chlorobenzene, were also reported in MW-3D, MW-4S, MW-4D, MW-2S and MW-5S, all significantly below applicable RCGW-1 and GW-1, Method 1 – Risk Characterization standards. These results, with the exception of 1,4-Dioxane reported in MW-3D are consistent with historic testing of the downgradient monitoring wells and indicate that 1,4-Dioxane is isolated in the deeper portion of the upper aquifer (EL -36 +/- NGVD) in the vicinity of MW-3 only. Table 2, Table 3, and Table 4 summarize the most recent analytical test results for the revised LMP for metals, other inorganics and chemical properties and VOC's inclusive of 1,4-Dioxane.

Table 2: Metals Analysis in Landfill Monitoring Wells (mg/L)
Town of Eastham Landfill - Old Orchard Road, Eastham, MA

	Date Sampled	Arsenic	Barium	Cadmium	Chromium	Copper	Iron	Lead	Manganese	Mercury	Selenium	Silver	Zinc
MCL		0.01	2	0.005	0.1			0.015		0.002	0.05		
SMCL						1.0	0.3		0.05			0.10	5.0
MW-2S	12/6/2012	ND (<0.0030)	0.013	ND (<0.0030)	ND (<0.0030)	ND (<0.0030)	0.66	ND (<0.0030)	0.43	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.060)
MW-2D	12/6/2012	ND (<0.0030)	0.0032	ND (<0.0030)	ND (<0.0030)	ND (<0.0030)	ND (<0.10)	ND (<0.0030)	0.051	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.060)
MW-3S	12/6/2012	ND (<0.0030)	0.030	ND (<0.0030)	ND (<0.0030)	ND (<0.0030)	0.25	ND (<0.0030)	0.28	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.060)
MW-3I	12/6/2011	0.045	0.011	ND (<0.003)	ND (<0.003)	ND (<0.003)	80	ND (<0.003)	1	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.06)
	3/20/2012	0.044	0.011	ND (<0.003)	ND (<0.003)	ND (<0.003)	65	ND (<0.003)	1.4	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.06)
	7/10/2012	0.042	ND (<0.003)	ND (<0.003)	ND (<0.003)	ND (<0.003)	68	ND (<0.003)	1.1	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.1)
	10/9/2012	0.040	0.011	ND (<0.003)	ND (<0.003)	ND (<0.003)	65	ND (<0.003)	1.0	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.1)
	12/6/2012	0.039	0.011	ND (<0.003)	ND (<0.003)	ND (<0.003)	72	ND (<0.003)	1.1	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.060)
MW-3D	12/6/2011	0.072	0.1	ND (<0.003)	0.0033	ND (<0.003)	50	ND (<0.003)	1.2	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.06)
	3/20/2012	0.069	0.1	ND (<0.003)	ND (<0.003)	ND (<0.003)	40	ND (<0.003)	1.7	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.06)
	7/10/2012	0.066	0.099	ND (<0.003)	ND (<0.003)	ND (<0.003)	38	ND (<0.003)	1.4	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.1)
	10/9/2012	0.065	0.090	ND (<0.003)	0.0030	ND (<0.003)	39	ND (<0.003)	1.4	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.1)
	12/6/2012	0.062	0.097	ND (<0.003)	ND (<0.003)	ND (<0.003)	40	ND (<0.003)	1.8	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.060)
MW-4S	6/24/2010	ND (<0.005)	0.034	ND (<0.0005)	ND (<0.003)	ND (<0.05)	2.3	ND (<0.003)	4.9	ND (<0.00025	ND (<0.003)	ND (<0.002)	ND (<0.05)
	6/22/2011	ND (<0.0015)	0.03	ND (<0.0015)	ND (<0.0015)	ND (<0.0015)	2.7	ND (<0.0015)	5.2	ND (<0.00025	ND (<0.0075	ND (<0.0005	ND (<0.03)
	7/10/2012	ND (<0.0015)	0.031	ND (<0.0015)	ND (<0.0015)	ND (<0.0015)	2.4	ND (<0.0015)	4.4	ND (<0.00025	ND (<0.0075	ND (<0.001)	ND (<0.05)
	12/6/2012	0.0034	0.028	ND (<0.0015)	ND (<0.0015)	ND (<0.0015)	2.4	ND (<0.0015)	5.1	ND (<0.00025	ND (<0.0075	ND (<0.001)	ND (<0.05)
MW-4D	12/6/2012	ND (<0.0030)	0.028	ND (<0.0030)	ND (<0.0030)	ND (<0.0030)	ND (<0.10)	ND (<0.0030)	0.16	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.060)
MW-5S	12/6/2012	ND(<0.003)	0.044	ND (<0.003)	ND (<0.003)	ND (<0.003)	5.5	ND (<0.003)	3.6	ND (<0.0005)	ND (<0.015)	ND (<0.002)	ND (<0.060)

Table 3: Inorganic Analysis in Landfill Monitoring Wells (mg/L)
Town of Eastham Landfill - Old Orchard Road, Eastham, MA

	Date Sampled	COD	Total Cyanide	Nitrate - N	Alkalinity	Chloride	Sulfate	TDS
MCL			0.2	10				
SMCL						250	250	500
MW-2S	12/6/2012	ND (<3.0)	NT	0.45	150	27	40	280
MW-2D	12/6/2012	ND (<3.0)	NT	0.60	23	22	6.7	81
MW-3S	12/6/2012	ND (<3.0)	NT	3.0	16	10	10	61
MW-3I	12/6/2011	ND (<3.0)	ND (<0.01)	ND (<0.01)	180	18	60	290
	3/20/2012	15	ND (<0.01)	0.42	180	19	63	290
	7/10/2012	18	ND (<0.01)	0.19	180	19	66	320
	10/9/2012	ND (<3.0)	ND (<0.01)	ND (<0.01)	180	12	79	270
	12/6/2012	17	NT	0.35	190	10	81	290
MW-3D	12/6/2011	84	ND (<0.01)	0.53	990	120	65	1800
	3/20/2012	62	ND (<0.01)	1.7	1000	240	68	1500
	7/10/2012	71	ND (<0.01)	0.72	970	100	67	1700
	10/9/2012	5.8	ND (<0.01)	6.2	960	130	70	1500
	12/6/2012	63	NT	1.4	960	91	73	1700
MW-4S	12/6/2011	ND (<1.5)	ND (<0.005)	0.29	220	27	26	410
	3/20/2012	ND (<1)	ND (<0.005)	0.22	190	34	18	270
	7/10/2012	13	ND (<0.005)	0.18	180	26	20	300
	10/9/2012	14	NT	ND (<0.05)	180	21	22	240
	12/6/2012	14	NT	ND (<0.05)	180	21	22	240
MW-4D	12/6/2012	ND (<3.0)	NT	2.3	16	50	18	140
MW-5S	12/6/2012	8	0.45	200	34	29	320	61

Table 4: VOC Analysis in Landfill Monitoring Wells (Detects only) (ug/L)
Town of Eastham Landfill: Old Orchard Road, Eastham, MA

	Date Sampled	Vinyl Chloride	Chloroethane	cis-1 2-DCE	Benzene	Chlorobenzene	MTBE	1, 4-Dioxane
RCGW-1		2.0	1,000	70	5	100	70	3
MW-2S	12/6/2012	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<2.5)
MW-2D	12/6/2012	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<2.5)
MW-3S	12/6/2012	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<2.5)
MW-3I	12/6/2011	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<500)
	3/20/2012	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	NA
	7/10/2012	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	NA
	10/9/2012	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<2.5)
	12/6/2012	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<2.5)
MW-3D	12/6/2011	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<0.5)	ND (<500)
	3/20/2012	ND (<0.5)	ND (<0.5)	1.5	1.2	1.8	ND (<0.5)	NA
	7/10/2012	ND (<0.5)	ND (<0.5)	1.7	1.4	1.9	1.2	NA
	10/9/2012	0.58	0.58	1.3	1.2	1.9	1.6	18
	12/6/2012	ND (<0.050)	ND (<0.050)	1.2	1.1	1.8	1.1	14
MW-4S	12/6/2012	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	0.56	ND (<2.5)
MW-4D	12/6/2012	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<2.5)
MW-5S	12/6/2012	ND (<0.50)	ND (<0.50)	0.51	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<2.5)
MW-5D	12/6/2012	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<2.5)

Significant concentrations of alkalinity and total dissolved solids (TDS) consistent with historic testing were reported for MW-3D as evidence of groundwater impacts associated with MSW burial at that location. Moderate concentrations of alkalinity and TDS continue to be reported at MW-3I. Moderate concentrations of alkalinity and TDS were also reported in MW-2S, MW-4S and MW-5S. TDS concentrations were noted as consistent with previous testing in these wells. Alkalinity testing in these wells is new under the revised LMP; as such no historic data is available.

Drinking Water

BEA personnel performed additional sampling of the private potable wells and downgradient monitoring wells on December 6th and 7th, 2012 under the expanded environmental monitoring protocols. These wells included three additional private wells beyond that prescribed in the LMP (RES-37: 275 Alston Avenue, RES-38: 100 Old Orchard Road, and RES-39: 80-82 Old Orchard Road) as within 500-feet of monitoring well MW-3D. Additionally, thirteen residences, the DPW well, and monitoring wells MW-8 and MW-21S were sampled for EPA 8260B TCL VOC's/SIM 1, 4-Dioxane as well as those other parameters specified under the revised LMP (metals, other inorganics, indicators). Additionally, as a precautionary measure, the Eastham Elementary School PWS well was sampled for 1,4-Dioxane with routine VOC testing performed by BEA as the PWSO for the facility.

Drinking water samples were collected from either the residents' tap or an outdoor spigot. In dwellings equipped with a filtration or treatment system, a raw water sample was collected at the point of entry prior to treatment. In each case, the water was allowed to flow for a minimum of five minutes prior to obtaining the sample to purge the pressure tank and three well volumes as based on the size and type of well indicated. The pump, or pump switch, was monitored to make sure that water from the aquifer was sampled and field measurements made (conductivity, temperature, DO, pH) until field measurements stabilized as recorded on Well Sampling Logs [Refer to Appendix B]. Each of the samples was placed in 40-ml glass vials which were preserved with hydrochloric acid and placed in a cooler with ice. Care was taken not to agitate the samples during collection to prevent the potential loss of volatile constituents.

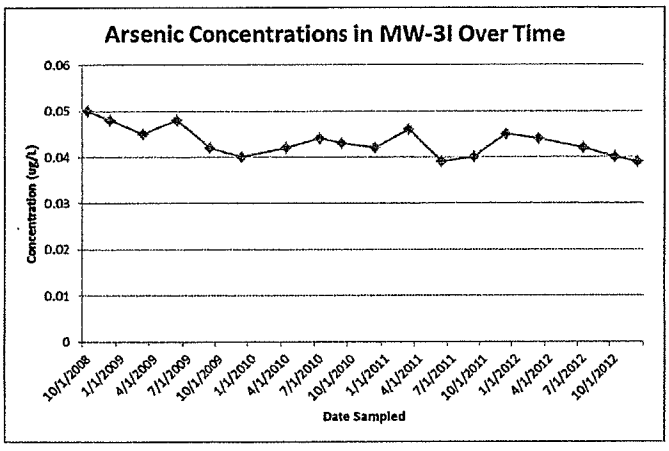
Results of the residential well sampling reported concentrations of 1,4-Dioxane in two of the residential wells sampled (RES-30: 325 Schoolhouse and RES-35: 50 Alston) and in downgradient monitoring well MW-21S (Alston at Molls Pond). The residential property designated RES-30 reported a concentration of 7.9 ug/L and property RES-35 reported a concentration of 4.9 ug/L, monitoring well MW-21S reported a concentration of 3.7 ug/L, all of which are above the applicable RCGW-1 concentration of 3 ug/L. The re-testing of RES-8: 100 Meetinghouse that had previously reported low level 1,4-Dioxane (1.7 ug/L) reported concentrations as Non-Detect (ND < 2.5 ug/L) in December 2012. Additional non-target VOCs, including MtBE, cis-1,2-DCE, chloroform, chloroethane and benzene, were also reported in several of the potable wells in low level concentrations less than the RCGW-1 Reportable Concentrations and the GW-1, Method 1- Risk Characterization standards.

Of the sixteen (16) residential wells tested in December 2012, two (2) private wells reported concentrations of 1,4-Dioxane above the GW-1, Method 1- Risk Standard. Additionally, four (4) of the sixteen (16), including the two with 1,4-Dioxane, reported other low level VOC's as less than these referenced and applicable standards. All other wells, including the Eastham Elementary School, reported target VOC's and 1,4-Dioxane as ND. The results for all wells tested in the reporting period are contained within the analytical reports in Appendix D and graphically represented on the Site Plan entitled "Environmental Monitoring: Landfill Monitoring Plan/Immediate Response Action ...Eastham Landfill" in Appendix A. All property owners that have had their wells tested have been notified of these testing results using the BWSC-112 Reporting Form. Copies of these communications are provided in Appendix C.

Soil Gas Monitoring

Soil gas monitoring was conducted by the BCDHE on December 12, 2012. No concentrations of methane were reported in any well above the detection limit of the instrument. Low-level hydrogen sulfide (1 ppm) was reported at GMW-1, initially and after purging. Low level hydrogen sulfide was also detected in GMW-3 (2 ppm) and GMW-4 (2 ppm) after purging the wells. At no time were the oxygen levels reported above 20.9%, which would indicate a potential fire hazard. All other sampling points were noted as relatively consistent with previous reporting wherein no apparent fire or health hazards are identified as associated with landfill venting. In the evaluation of potential preferential pathways for gas migration, BEA has located the underground utilities and conveyance systems within the landfill property as represented on the "Capped Landfill Details" plan attached.

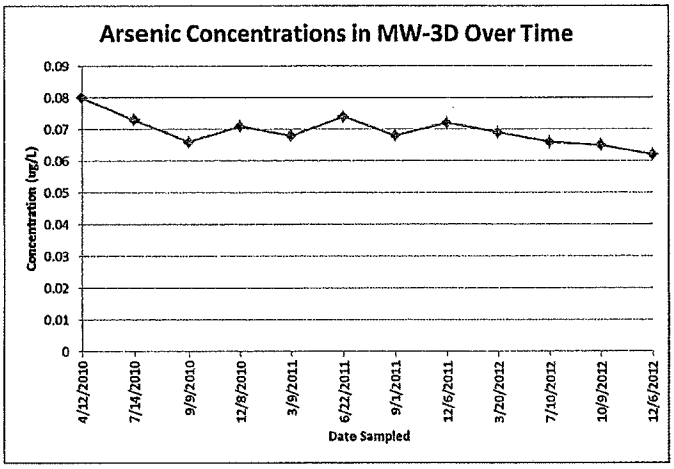
Interpretation of Data and Trend Analysis



No evaluation of 1,4-Dioxane data and trends are offered within this section of the report as addressed in the following Immediate Response Action section that follows. The following information is presented under the LMP requirements for the evaluation of other VOC's, metals and other inorganics and indicators tested.

All laboratory analytical results for these compounds in the reporting period were consistent with previous historic testing as presented and evaluated in MCP deliverable submitted under RTN 4-18278. Currently, arsenic is the only parameter which exceeds the applicable RCGW-1 Reportable Concentration as well as the current MA Drinking Water Standard (GW-1) of 0.01mg/L. Graphic analysis of historic and current data demonstrates that although fluctuations have

occurred between specific sampling events, reported concentrations at the MW-3I location have remained primarily between 0.04 and 0.05 mg/L, while those at MW-3D have remained primarily between 0.06 and 0.08 mg/L.



Graphic analysis further illustrates a significant decrease in arsenic concentrations at MW-2S, MW-4S and MW-5S after 2005. It is noted that in each of the sampling rounds in 2005 these three monitoring wells, with the exception of MW-4S in December 2005, reported arsenic as non-detect. As such, half of the reporting limit of the analysis, which was 0.01mg/L at that time, was used for tracking purposes. Subsequent technological improvements have allowed for a reduction in the reporting limit of the arsenic analysis to 0.005mg/L and therefore, while overall these locations continued to report arsenic as non-detect, graphically there appears to have been significant decrease in concentration. The one obvious exception is the December 2005 sampling at MW-4S, which reported arsenic at 0.01mg/L that, at that time, was below the Drinking Water standard of 0.05mg/L. While some minor fluctuation is again noted between specific sampling events, trend analysis indicates an overall reduction in concentrations reported at these three locations and at no time have arsenic concentrations exceeded the applicable concentrations.

IMMEDIATE RESPONSE ACTION – PRELIMINARY RESPONSE [Refer to Appendix C]

The expanded testing of landfill monitoring wells and private wells was conducted in the first week in December 2012 as previously reported. The final results for the private potable well sampling were received on December 27, 2012. Upon learning of the concentrations of 1,4-Dioxane in RES-30 and RES-35, residents at the properties were immediately notified and provided bottled water for potable use as was RES-8 at the time of initial discovery of 1,4-Dioxane at that private well as driving Release Notification in November 2012. The provision of bottled water is prescribed and will be provided as an interim measure in all private wells wherein the reportable concentration of 1,4-Dioxane exceeds 50% of the GW-1 Standard as an immediate and interim measure to mitigate exposures while the investigation and resolve of effective treatment and consideration of redevelopment/replacement of private wells is ongoing. Such consideration of well replacement requires further interpretation of data such that any new well must be located in a portion of the aquifer that has not been similarly impacted and affords reasonable yield and water quality and does not result in cross-contamination.

It is noted that in the review of the technical literature on the treatment of 1,4-Dioxane for potable water applications, oxidation with hydrogen peroxide or chlorine has been used in large municipal applications but that the handling and use of such oxidants in private home applications has severe limitations and reservations. Otherwise the use of activated carbon has shown some promise with mixed results. The Colley Residence (RES-30) is currently equipped with a granulated activated carbon (GAC) filtration system for the removal of VOCs at the point of entry. This is due to the former detection of Vinyl Chloride and low level VOC's in their water after the installation of a new well at their property in March 2004. This former investigation of the occurrence of chlorinated solvents in groundwater and impacts to downgradient private wells, and ensuing remedial response actions under the MCP in the period from 2004-2009 is documented under RTN4-18278. As such, the re-testing of the finished water was conducted on January 3, 2013 as outside the reporting period in review of the performance and potential use of GAC filtration. Results just received have not been fully evaluated and are not at this time incorporated into this report but such testing did indicate effective VOC removal and a reduction in 1,4-Dioxane by more than 50%. The review of GAC use, alternative treatment technologies, and alternative water supply will continue as a priority towards resolve in the next reporting period.

Concurrent with the testing of monitoring wells, local research has been conducted to identify the location, depth and production horizon of approximately 38 residences within the projected solute transport pathway and a larger Study Area as currently defines the Site. This information helps further refine the Conceptual Site Model and establish the horizontal and lateral extent of significant groundwater impacts as a predictive model for prioritizing testing and identifing impacts towards mitigating significant exposures to human and environmental receptors.

To this end and as limited severely by the amount of available credible well completion data, the occurrence of 1,4-Dioxane has been noted as present in the Landfill in MW-3D at EL -36' +/- in the lower portion of what appears to be the upper unconfined aquifer and found to be present at RES-8 at EL -59' +/- some 200' downgradient. Some 1,200' downgradient of the landfill, 1,4-Dioxane was identified at MW-21S, below various clay horizons at EL -128 +/-, and some 2,000' downgradient of the landfill 1,4-Dioxane was identified at RES-30 at EL -167' +/-, through a substantial thickness of clay. It is apparent from this information that the solute plume of 1,4-Dioxane is diving to greater depths with distance from the source. This occurrence is relatively consistent with the former mapping of the occurrence of chlorinated solvent impacts and is being used towards prescribing additional future testing of private wells as outlined in the proposed Immediate Response Action Plan.

RISK CHARACTERIZATION [Refer to Appendix D]

The Method 1 - Risk Characterization standards are considered as a conservative measure for the review of potential exposure risk to human health (ingestion, inhalation and dermal contact) and in accordance with the provisions of 310 CMR 40.0975. The GW-1 standard for 1,

4-Dioxane is 3.0 ppb as previously noted. The 1,4-Dioxane impact identified in the RES-30 private well was reported at a concentration of 7.9 ug/L. The 1,4-Dioxane concentrations identified in the RES-35 private well was reported at a concentration of 4.9 ug/L. Both of these concentrations in private wells represent a Critical Exposure Pathways (CEP) for potential exposures and represent a Condition of Substantial Release Migration (SRM), pursuant to 310 CMR 40.0925. CEPs are defined as the route by which measurable concentrations of oil or hazardous materials attributable to the disposal site are transported to human receptors as identified in a potable well as representing exposure risk. The presence of a CEP and condition of SRM drive the need for Remedial Monitoring Reports (RMR) for an active monitoring program with the initial report due with the IRA Status Report submittal to be filed by March 12, 2013. Additional periodic testing, the interim provision of bottled water, and review/implementation of treatment will be incorporated in these reports as outlined in the IRA Plan prescribed herein.

To further evaluate significant exposure risks and imminent hazard for short-term and chronic exposures, a Method 3 – Risk Characterization was considered, as consistent with the provisions of using the MA DEP ShortForms as consistent with the provisions of 310 CMR 40.0940 and 40.0990, albeit these forms are currently being revised. The Method 3 – Residential ShortForm is the most conservative and provides specific exposure risks for chronic and acute exposures for cancer and non-cancer risks for ingestion, inhalation and dermal contact exposures to sensitive human receptors. Such significant exposure risk is defined by a Hazard Index (HI) of less than 1.0 and Excess Lifetime Cancer Risk (ELCR) as less than 1 x 10^{-5} (1:100,000). The results for the testing of the RES-30 private well as the currently identified "worst case" impact to drinking water in a private well were input into the Residential ShortForms towards further evaluation of what exposures were driving the most risk and the cumulative risks relative to Significant Risk thresholds. These forms are presented below.

Resident - Drinking Water: Table RWIH-1
Exposure Point Concentration (EPC) and Risk
Based on Resident Age 1-6

ShortForm Version 4-06
Vlookup Version v0808

ELCR (all chemicals) = 9E-07
HI (all chemicals) = 8E-02

****Do not insert or delete any rows****
Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material (OHM)	EPC (ug/L)	ELCR ingestion	ELCR dermal	ELCR inhalation	ELCR total	Chronic HQ ingestion	Chronic HQ dermal	Chronic HQ inhalation	Chronic HQ total
Dioxane, 1,4-	7.9E+00	4.2E-07	1.2E-09	5.5E-08	4.8E-07	5.4E-03	1.6E-05	1.6E-03	7.0E-03
Dichloroethylene, cis-1,2-	2.3E+00					1.6E-03	1.4E-04	5.7E-02	5.9E-02
Benzene	5.6E-01	1.5E-07	2.0E-08	3.0E-07	4.7E-07	3.8E-03	5.0E-04	5.9E-03	1.0E-02
Methyl tert butyl ether	2.0E+00					1.4E-04	3.2E-06	4.8E-04	6.2E-04

Resident - Drinking Water: Table RW-1
Exposure Point Concentration (EPC) and Risk
Based on Resident Ages 1-31 (Cancer) and 1-8 (Noncancer)

ShortForm Version 4-06
Vlookup Version v0808

ELCR (all chemicals) = 4E-06
HI (all chemicals) = 1E-01

****Do not insert or delete any rows****
Click on empty cell below and select OHM using arrow.

Oil or Hazardous Material (OHM)	EPC (ug/l)	ELCR Ingestion	ELCR dermal	ELCR Inhalation	ELCR Total	Chronic HIO Ing	HIO Derm	HIO Inh	HIO Total
Dioxane, 1,4-	7.9E+00	1.6E-06	4.8E-09	2.7E-07	1.9E-06	4.6E-02	1.4E-04	1.5E-03	4.8E-02
Dichloroethylene, cis-1,2-	2.3E+00					1.4E-02	1.3E-03	5.4E-02	6.9E-02
Benzene	5.6E-01	5.8E-07	7.6E-08	1.5E-06	2.1E-06	8.2E-03	1.2E-03	1.7E-02	2.6E-02
Methyl tert butyl ether	2.0E+00					1.2E-03	2.9E-05	4.5E-04	1.7E-03

This evaluation under Method 3 indicates that the primary exposure route is ingestion (1.6×10^{-6}) as followed by inhalation (2.7×10^{-7}) and dermal contact (4.8×10^{-9}). It is further noted that the cumulative risk for all chemicals present report HI and ELCR at values less than the significant risk thresholds defined.

Substantial Hazard and Imminent Hazard Evaluation

Based on the above noted Method 3 evaluation, the Immediate Response Actions completed wherein residents were contacted and provided with bottled water for drinking and food preparation, no Imminent or Substantial Hazards have been identified. Notwithstanding, groundwater monitoring and private well testing will continue for the identification of other impacted private wells and bottled water will be provided to those residences wherein 1,4-Dioxane is reported as more than 50% of the aforementioned GW-1 standard. In private wells where the 3.0 ug/L standard is exceeded as confirmed by duplicate or confirmatory quarterly sampling, treatment, well relocation or alternate water supply will be pursued to mitigate Substantial and Imminent Hazards.

IMMEDIATE RESPONSE ACTION PLAN

Regardless, the review of treatment alternatives, well replacement and alternate water supply will be prioritized for mitigation of potential exposure risk to private wells that report 1,4-Dioxane above the GW-1 standard as noted. Various blends of activated carbon show promise relative to point of entry treatment but initial findings indicate potential limitations as do chemical oxidation and membrane treatment strategies. As such, well replacement (redevelopment in the upper aquifer) and alternative water supply (feeding domestic needs from an abutting well that is not impacted) will be evaluated simultaneously for resolve in the near term.

Part of this evaluation will be the broad testing of additional potable wells and monitoring wells and securing through research or field work additional information on subsurface geology and hydrogeologic properties the occurrence of impacts in the area. The Town of Eastham will conduct registered mailing to all residents within the Study Area (Site) to solicit and encourage

residents to allow for the sampling of their private wells for VOC's 8260B TCL/SIM analysis. The number of residents participating in the program will be dictated by response to this mailing and the availability of the well wherein a majority of residents are closed and winterized for the season.

RES-30 and RES-35 will be tested for 1,4-Dioxane monthly through the next reporting period. Additionally, those residents within the Study Area and prescribed in the quarterly LMP, and those with semi-annual and annual testing requirements that were not available for testing in December 2012, will be sampled and tested for the prescribed analysis including 1,4-Dioxane. Additionally, the quarterly testing of the landfill monitoring wells prescribed under the LMP will be conducted.

Over the next reporting period, additional research of well completion information for the depths of wells will be reviewed and used to map the vertical and horizontal extend of 1,4-Dioxane impacts to facilitate future sampling protocols, direct additional environmental assessment activities and to further define the Site and narrow the Study Area specifically to those properties impacted. Impacted wells with no well records will be opened and investigated for this information. This information may be supplemented by test borings and additional monitoring wells to better define subsurface geology and hydrogeologic characteristics for evaluation of solute fate and exposure risks to both human and environmental receptors.

CONCLUSIONS

The identified presence of 1,4-Dioxane in the private wells at 100 Meetinghouse Road, 325 Schoolhouse Road (RES-30) and 50 Alston Avenue (RES-35) represent Critical Exposure Pathways (CEPs), as well as a Condition of Substantial Release Migration. The identified CEPs have been addressed by the provision of bottled water to eliminate Substantial Hazards on an interim basis. Additional research of treatment alternatives, and/or relocation of wells or an alternative water supply is being investigated and will be implemented based on such investigations for both RES-30 and RES-35 or other private wells identified with concentrations of 1,4-Dioxane exceeding the GW-1 standards as a priority of the continuing Immediate Response Actions.

Extensive testing of all private wells within the Study Area is intended as will be facilitated by both direct mailing and published Legal Notice. This broad investigation, rather than systematic assessment and targeted sampling, is intended to gather the greatest amount of information in the shortest period of time to identified CEP and help mitigate exposures. Concurrent to this work, additional research and field measurements will further help define the horizontal and vertical extent of impacted groundwater where 1,4-Dioxane has been identified.

The balance of the data collected from area wells, along with a review of CEPs and review and recommendations of treatment alternative will be filed with Department no later than March 12, 2013 for approval and implementation. By this filing we seek approval for well

replacement and temporary water supply as a contingency for absolving potential exposure risks at RES-30 and RES-35.

It must be recognized that environmental investigations are inherently limited in the sense that conclusions are drawn and recommendations developed from limited information obtained under the context of the regulations and standard of practice at the time of reporting. The passage of time may result in revisions to regulations, published Policy Guidance and change in the LSP community standard of practice. This report does not warrant against future changes in regulations, policy or standard of practice as may differ and/or conflict with the current regulations, policies or standard of practice.

The findings of this investigation, as represented herein, set forth the rationale and technical justifications for the LSP opinions offered, as established by the certifications made on the attached Transmittal Forms. The LSP opinions are based on the available data and regulations in effect at the time of this reporting. Should you have any questions regarding the project or require additional information, please contact me at your earliest convenience.

Sincerely,
BENNETT ENVIRONMENTAL ASSOCIATES, INC.

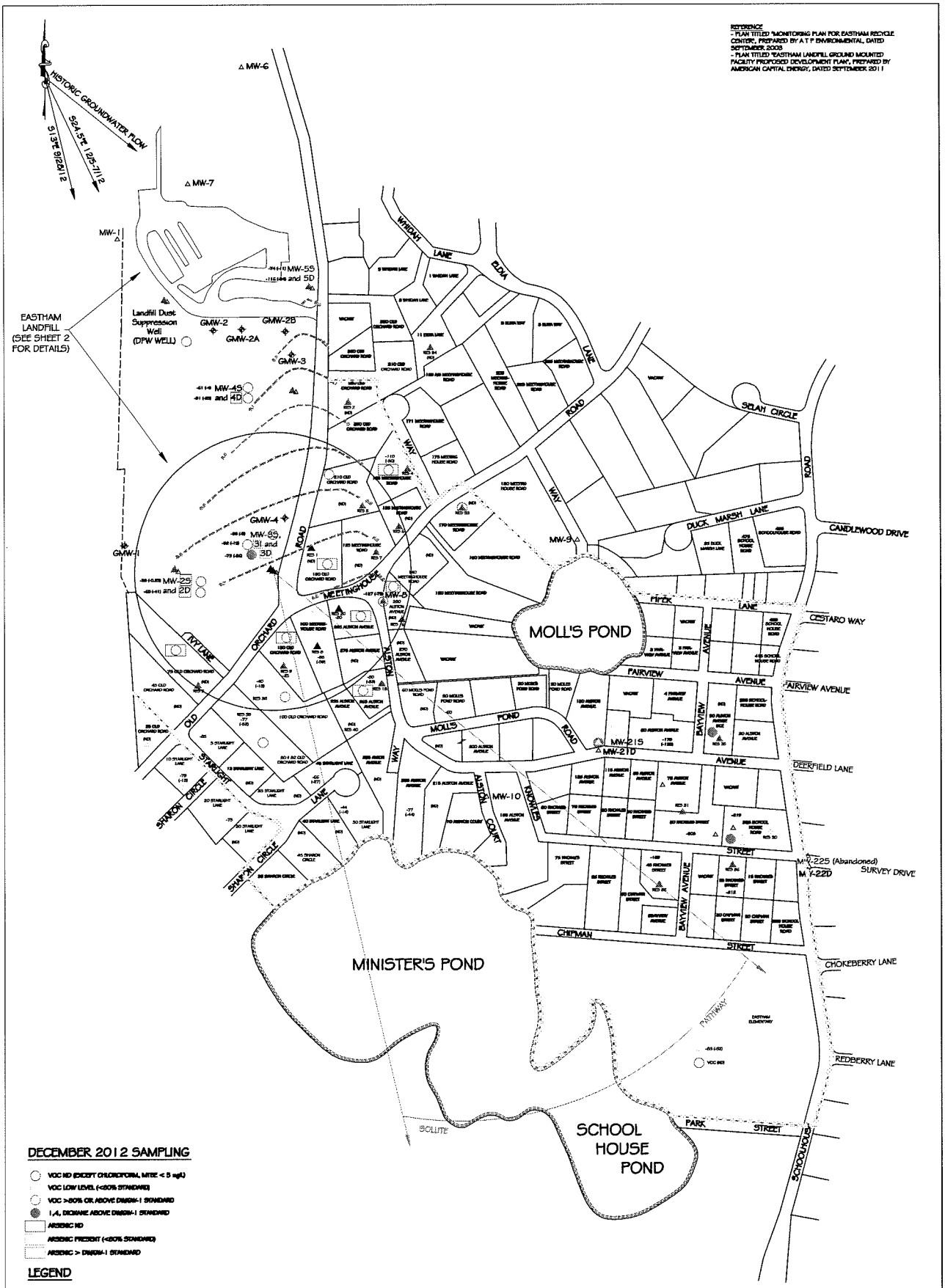
David C. Bennett, LSP
President

John D. Tadema-Wielandt, ES
Senior Project Manager

Encl. Supporting Documentation [Appendices A-F]

Cc: Sheila Vanderhoef - Eastham Town Administrator
Jane Crowley, Agent – Eastham Health Department[1]
Chief Glenn Olson – Eastham Fire Department[1]
Steve and Lisa Colley, Property Owners RES-30
Chris and Deanna Ross, Property Owners RES-35
Jeff Carlson, Property Owner RES-8

[1] Narrative, Title Page and Site Plan provided under public notice distribution requirements pursuant to paperwork reduction policy. Legal Notice being published as consistent with the provisions of 310 CMR 401406 to Notify all parties with Disposal Site. Full copies of reports (electronic or paper) provided on written request.



DECEMBER 2012 SAMPLING

- VOC ND (EXCEPT CHLOROFORM, MTBE < 5 ug/L)
- VOC LOW LEVEL (<50% STANDARD)
- VOC >50% OR ABOVE DWSM-1 STANDARD
- 1,4, DIOXANE ABOVE DWSM-1 STANDARD
- ARSENIC ND
- ARSENIC PRESENT (<50% STANDARD)
- ARSENIC > DWSM-1 STANDARD

LEGEND

- ANNUAL SAMPLING POINTS PER REVISED LANDFILL MONITORING PLAN
- SEMI-ANNUAL SAMPLING POINTS PER REVISED LANDFILL MONITORING PLAN
- QUARTERLY SAMPLING POINTS PER REVISED LANDFILL MONITORING PLAN
- GAS MONITORING WELL
- APPROXIMATE LOCATION OF EXISTING MONITOR WELL
- EXISTING PRIVATE POTABLE WELLS
- PRIVATE POTABLE WELLS SAMPLED FOR A ONE TIME EVENT AS WITHIN 500' OF MW-30
- -44 WELL DEPTH
- (-140) ELEVATION OF PRODUCTION HORIZON OF WELL
- (ND) NO DATA
- DEEP WELL GROUNDWATER CONTOUR 12/5/12 – 12/7/12
- STUDY AREA

SITE PLAN

0 150 300 450

SCALE 1"=150'

RTN 4-24301

Project:	TOWN OF EASTHAM 2500 STATE HIGHWAY, EASTHAM, MA 02642
Title:	ENVIRONMENTAL MONITORING LANDFILL MONITORING PLAN / IMMEDIATE RESPONSE ACTION EASTHAM LANDFILL - OLD ORCHARD ROAD, EASTHAM, MA
	BENNETT ENVIRONMENTAL ASSOCIATES, INC. LICENSED SITE PROFESSIONALS, ENVIRONMENTAL SCIENTISTS, GEOLOGISTS, ENGINEERS 1573 MAIN STREET, P.O. BOX 1743, BREWSTER, MA 02631

DATE	SCALE	BY	CHECK	JOB NUMBER
01/08/13	1" = 150'	SRF	DCB	BEA09-10104

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC103

RELEASE NOTIFICATION & NOTIFICATION RETRACTION FORM

Pursuant to 310 CMR 40.0335 and 310 CMR 40.0371 (Subpart C)

Release Tracking Number: 4 - 24301

A. RELEASE OR THREAT OF RELEASE LOCATION:

1. Release Name/Location Aid: EASTHAM LANDFILL
2. Street Address: OLD ORCHARD ROAD
3. City/Town: EASTHAM 4. ZIP Code:
5. UTM Coordinates: a. UTM N: 4633094 b. UTM E: 418653

B. THIS FORM IS BEING USED TO: (check one)

- [x] 1. Submit a **Release Notification**
- [ ] 2. Submit a **Revised Release Notification**
- [ ] 3. Submit a **Retraction of a Previously Reported Notification** of a release or threat of release including supporting documentation required pursuant to 310 CMR 40.0335 (Section C is not required)

(All sections of this transmittal form must be filled out unless otherwise noted above)

C. INFORMATION DESCRIBING THE RELEASE OR THREAT OF RELEASE (TOR):

1. Date and time of Oral Notification, if applicable: 11/13/2012 (mm/dd/yyyy) Time: 03:57 (hh:mm) [ ] AM [x] PM
2. Date and time you obtained knowledge of the Release or TOR: 11/13/2012 (mm/dd/yyyy) Time: 10:38 (hh:mm) [x] AM [ ] PM
3. Date and time release or TOR occurred, if known: (mm/dd/yyyy) Time: (hh:mm) [ ] AM [ ] PM

Check all Notification Thresholds that apply to the Release or Threat of Release:
(for more information see 310 CMR 40.0310 - 40.0315)

4. 2 HOUR REPORTING CONDITIONS

- [ ] a. Sudden Release
- [ ] b. Threat of Sudden Release
- [ ] c. Oil Sheen on Surface Water
- [ ] d. Poses Imminent Hazard
- [ ] e. Could Pose Imminent Hazard
- [ ] f. Release Detected in Private Well
- [ ] g. Release to Storm Drain
- [ ] h. Sanitary Sewer Release (Imminent Hazard Only)

5. 72 HOUR REPORTING CONDITIONS

- [ ] a. Subsurface Non-Aqueous Phase Liquid (NAPL) Equal to or Greater than 1/2 Inch
- [ ] b. Underground Storage Tank (UST) Release
- [ ] c. Threat of UST Release
- [x] d. Release to Groundwater near Water Supply
- [x] e. Release to Groundwater near School or Residence
- [x] f. Substantial Release Migration

6. 120 DAY REPORTING CONDITIONS

- [ ] a. Release of Hazardous Material(s) to Soil or Groundwater Exceeding Reportable Concentration(s)
- [ ] b. Release of Oil to Soil Exceeding Reportable Concentration(s) and Affecting More than 2 Cubic Yards
- [ ] c. Release of Oil to Groundwater Exceeding Reportable Concentration(s)
- [ ] d. Subsurface Non-Aqueous Phase Liquid (NAPL) Equal to or Greater than 1/8 Inch and Less than 1/2 Inch

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC103

RELEASE NOTIFICATION & NOTIFICATION RETRACTION FORM

Release Tracking Number: 4 - 24301

Pursuant to 310 CMR 40.0335 and 310 CMR 40.0371 (Subpart C)

C. INFORMATION DESCRIBING THE RELEASE OR THREAT OF RELEASE (TOR): (cont.)

7. List below the Oils (O) or Hazardous Materials (HM) that exceed their Reportable Concentration (RC) or Reportable Quantity (RQ) by the greatest amount.

O or HM Released	CAS Number, if known	O or HM	Amount or Concentration	Units	RCs Exceeded, if Applicable (RCS-1, RCS-2, RCGW-1, RCGW-2)
1,4-DIOXANE	123-91-1	HM	4.3	UG/L	N/A

☐ 8. Check here if a list of additional Oil and Hazardous Materials subject to reporting is attached.

D. PERSON REQUIRED TO NOTIFY:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☑ c. change in the person notifying

2. Name of Organization: TOWN OF EASTHAM

3. Contact First Name: SHELIA 4. Last Name: VANDERHOEF

5. Street: 2500 STATE HIGHWAY 6. Title: TOWN ADMINISTRATOR

7. City/Town: EASTHAM 8. State: MA 9. ZIP Code: 026420000

10. Telephone: 5082405900 11. Ext.: 12. FAX:

☑ 13. Check here if attaching names and addresses of owners of properties affected by the Release or Threat of Release, other than an owner who is submitting this Release Notification (required).

E. RELATIONSHIP OF PERSON TO RELEASE OR THREAT OF RELEASE:

☐ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☐ e. Other RP or PRP Specify: _____

☑ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Otherwise Required to Notify Specify Relationship: _____

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC103

RELEASE NOTIFICATION & NOTIFICATION RETRACTION FORM

Release Tracking Number
4 - 24301

Pursuant to 310 CMR 40.0335 and 310 CMR 40.0371 (Subpart C)

F. CERTIFICATION OF PERSON REQUIRED TO NOTIFY:

1. I, **Sheila Vanderhoef**, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: **Sheila Vanderhoef** (Signature) 3. Title: **TOWN ADMINISTRATOR**

4. For: **TOWN OF EASTHAM** (Name of person or entity recorded in Section D) 5. Date: **1/11/2013** mm/dd/yyyy

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section D.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext.: _____ 13. FAX: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

Received by DEP on

1/11/2013 6:00:00 PM

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number: 4 - 24301

A. RELEASE OR THREAT OF RELEASE LOCATION:

1. Release Name/Location Aid: EASTHAM LANDFILL
2. Street Address: OLD ORCHARD ROAD
3. City/Town: EASTHAM 4. ZIP Code:
5. UTM Coordinates: a. UTM N: 4633094 b. UTM E: 418653

☐ 6. Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.
☐ a. Tier IA ☐ b. Tier IB ☐ c. Tier IC ☐ d. Tier II

☑ 7. Check here if this location is Adequately Regulated, pursuant to 310 CMR 40.0110-0114. Specify Program (check one):
☐ a. CERCLA ☐ b. HSWA Corrective Action ☑ c. Solid Waste Management
☐ d. RCRA State Program (21C Facilities)

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial IRA Written Plan (if previously submitted): _____ (mm/dd/yyyy)

☑ 2. Submit an **Initial IRA Plan**.

☐ 3. Submit a **Modified IRA Plan** of a previously submitted written IRA Plan.

☑ 4. Submit an **Imminent Hazard Evaluation**. (check one)
☐ a. An Imminent Hazard exists in connection with this Release or Threat of Release.
☐ b. An Imminent Hazard does not exist in connection with this Release or Threat of Release.
☑ c. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release, and further assessment activities will be undertaken.
☐ d. It is unknown whether an Imminent Hazard exists in connection with this Release or Threat of Release. However, response actions will address those conditions that could pose an Imminent Hazard.

☐ 5. Submit a request to **Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard**.

☐ 6. Submit an **IRA Status Report**.

☐ 7. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP.)
a. Type of Report: (check one) ☐ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report
b. Frequency of Submittal: (check all that apply)
☐ i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.
☐ ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.
☐ iii. A Remedial Monitoring Report(s) submitted concurrent with a IRA Status Report.
c. Number of Remedial Systems and/or Monitoring Programs: _____

A separate BWSC105A, IRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number
4 - 24301

B. THIS FORM IS BEING USED TO (cont.): (check all that apply)

☐ 8. Submit an **IRA Completion Statement**.

☐ a. Check here if future response actions addressing this Release or Threat of Release notification condition will be conducted as part of the Response Actions planned or ongoing at a Site that has already been Tier Classified under a different Release Tracking Number (RTN). When linking RTNs, rescoring via the NRS is required if there is a reasonable likelihood that the addition of the new RTN(s) would change the classification of the site.

b. Provide Release Tracking Number of Tier Classified Site (Primary RTN): ☐ - ☐

These additional response actions must occur according to the deadlines applicable to the Primary RTN. Use the Primary RTN when making all future submittals for the site unless specifically relating to this Immediate Response Action.

☐ 9. Submit a **Revised IRA Completion Statement**.

(All sections of this transmittal form must be filled out unless otherwise noted above)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT IRA:

1. Identify Media Impacted and Receptors Affected: (check all that apply)

☐ a. Air ☐ b. Basement ☑ c. Critical Exposure Pathway ☑ d. Groundwater ☐ e. Residence

☐ f. Paved Surface ☑ g. Private Well ☐ h. Public Water Supply ☐ i. School ☐ j. Sediments

☐ k. Soil ☐ l. Storm Drain ☐ m. Surface Water ☐ n. Unknown ☐ o. Wetland ☐ p. Zone 2

☐ q. Others Specify: _____

2. Identify Oils and Hazardous Materials Released: (check all that apply)

☐ a. Oils ☐ b. Chlorinated Solvents ☐ c. Heavy Metals

☑ d. Others Specify: 1,4-DIOXANE

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

☐ 1. Assessment and/or Monitoring Only
☐ 2. Temporary Covers or Caps
☐ 3. Deployment of Absorbent or Containment Materials
☑ 4. Temporary Water Supplies
☐ 5. Structure Venting System
☐ 6. Temporary Evacuation or Relocation of Residents
☐ 7. Product or NAPL Recovery
☐ 8. Fencing and Sign Posting
☐ 9. Groundwater Treatment Systems
☐ 10. Soil Vapor Extraction
☐ 11. Bioremediation
☐ 12. Air Sparging

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

☐ 13. Excavation of Contaminated Soils

☐ a. Re-use, Recycling or Treatment ☐ i. On Site Estimated volume in cubic yards _____

☐ ii. Off Site Estimated volume in cubic yards _____

iia. Receiving Facility: _____ Town: _____ State: _____

iib. Receiving Facility: _____ Town: _____ State: _____

iii. Describe: _____

☐ b. Store ☐ i. On Site Estimated volume in cubic yards _____

☐ ii. Off Site Estimated volume in cubic yards _____

iia. Receiving Facility: _____ Town: _____ State: _____

iib. Receiving Facility: _____ Town: _____ State: _____

☐ c. Landfill

☐ i. Cover Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: _____

☐ ii. Disposal Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: _____

☐ 14. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount: _____

_____

b. Receiving Facility: _____ Town: _____ State: _____

c. Receiving Facility: _____ Town: _____ State: _____

☐ 15. Removal of Other Contaminated Media:

a. Specify Type and Volume: _____

_____

b. Receiving Facility: _____ Town: _____ State: _____

c. Receiving Facility: _____ Town: _____ State: _____

☑ 16. Other Response Actions:

Describe: **SAMPLING AND LABORATORY ANALYSIS OF MULTIPLE MWS AND PWS WITHIN STUDY AREA.**

☐ 17. Use of Innovative Technologies:

Describe: _____

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number
4 - 24301

E. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> *if Section B of this form indicates that an* ***Immediate Response Action Plan*** *is being submitted*, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B of this form indicates that an* ***Imminent Hazard Evaluation*** *is being submitted*, this Imminent Hazard Evaluation was developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and the assessment activity(ies) undertaken to support this Imminent Hazard Evaluation comply(ies) with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000;

> *if Section B of this form indicates that an* ***Immediate Response Action Status Report*** *and/or a* ***Remedial Monitoring Report*** *is(are) being submitted*, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B of this form indicates that an* ***Immediate Response Action Completion Statement*** *or a request to* ***Terminate an Active Remedial System or Response Action(s) Taken to Address an Imminent Hazard*** *is being submitted*, the response action(s) that is(are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is(are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 4303

2. First Name: DAVID C 3. Last Name: BENNETT

4. Telephone: 5088961706 5. Ext.: 6. FAX:

7. Signature: David C Bennett

8. Date: 1/11/2013 (mm/dd/yyyy)

9. LSP Stamp:

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number: 4 - 24301

F. PERSON UNDERTAKING IRA:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☑ c. change in the person undertaking response actions

2. Name of Organization: TOWN OF EASTHAM

3. Contact First Name: SHELIA 4. Last Name: VANDERHOEF

5. Street: 2500 STATE HIGHWAY 6. Title: TOWN ADMINISTRATOR

7. City/Town: EASTHAM 8. State: MA 9. ZIP Code: 026420000

10. Telephone: 5082405900 11. Ext.: 12. FAX:

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING IRA:

☐ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☐ e. Other RP or PRP Specify: _____

☑ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking IRA Specify Relationship: _____

H. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if any Remediation Waste, generated as a result of this IRA, will be stored, treated, managed, recycled or reused at the site following submission of the IRA Completion Statement. If this box is checked, you must submit one of the following plans, along with the appropriate transmittal form.

☐ a. A Release Abatement Measure (RAM) Plan (BWSC106) ☐ b. Phase IV Remedy Implementation Plan (BWSC108)

☐ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☑ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the implementation of an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.

☐ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health were notified of the submittal of a Completion Statement for an Immediate Response Action taken to control, prevent, abate or eliminate an Imminent Hazard.

☐ 5. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to the DEP Regional Office.

☑ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC105

IMMEDIATE RESPONSE ACTION (IRA) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0424 - 40.0427 (Subpart D)

Release Tracking Number
4 - 24301

I. CERTIFICATION OF PERSON UNDERTAKING IRA:

1. I, **Sheila Vanderhoef**, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: **Sheila Vanderhoef** (Signature) 3. Title: **TOWN ADMINISTRATOR**

4. For: **TOWN OF EASTHAM** (Name of person or entity recorded in Section F) 5. Date: **1/11/2013** (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. ZIP Code: _____

11. Telephone: _____ 12. Ext.: _____ 13. FAX: _____

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

Received by DEP on

1/11/2013 6:14:51 PM