To: Sudbury Conservation Commission

Date: June 12, 2020
Project #: 12970.00

Memorandum

From: Katherine Kudzma, VHB
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Re: Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project
Summary of Soil and Groundwater Analytical Results and Subsurface Media Management

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VHB has prepared this memorandum in response to the Town of Sudbury Conservation Commission's request to provide soil and groundwater analytical results collected during a 2018 subsurface assessment program conducted within the existing Mass Central Railroad right-of-way ("ROW") in Sudbury (i.e., "Project Locus"). VHB performed subsurface assessment activities in Sudbury, Stow, and Hudson, in support of the Sudbury-Hudson Transmission Reliability project proposed by Eversource Energy, and the Mass Central Rail Trail Project proposed by the Department of Conservation and Recreation ("DCR") (the "Project"). The subsurface assessment was completed in accordance with communications with the Massachusetts Department of Environmental Protection ("MassDEP") and the 2004 MassDEP guidance *Best Management Practices for Controlling Exposure to Soil during the Development of Rail Trails* ("MassDEP Rail Trail Guidance" or "MassDEP RTG").

In their July 7, 2017, comment letter for the Environmental Notification Form filed for the Eversource portion of the Project, MassDEP referenced the MassDEP Rail Trail Guidance to limit exposure to potential receptors during the Project. In accordance with that guidance and to facilitate the development of a soil management strategy, VHB performed an evaluation (reconnaissance and records review) of the Project Locus in September 2017 to identify areas that may potentially be impacted by oil and/or hazardous materials ("OHM") from on-site or abutting sources. Based on the results of the evaluation, subsurface investigations including soil and groundwater testing were deemed appropriate within corridors of the Project Locus that were classified as "Industrial" in accordance with the MassDEP RTG and near locations within these Industrial areas where specific off-site conditions and/or sources of OHM were identified. The typically identified contaminants of concern in surficial soil along railroad ROW corridors have limited mobility and are non-volatile, so they do not migrate readily to groundwater. The soil boring and groundwater monitoring well locations are depicted on **Figure 1.**

Details regarding the assessment conducted by Eversource are provided in Section 9 and Appendices 9-1 and 9-2 of the Draft Environmental Impact Report ("DEIR") dated October 2017. The Certificate on the DEIR issued December 15, 2017, included a requirement for the Final EIR ("FEIR") to address notification and construction protocols to be implemented if contamination is encountered at the Project Site, including identifying the parties that will be notified, and potential construction-period dewatering activities and related permitting requirements. These issues were addressed in Section 8 and Section 2, respectively, of the FEIR filed by Eversource in July 2018. The Certificate on the FEIR issued September 14, 2018, acknowledged the information provided in the FEIR regarding how Eversource plans to address these issues.

Soil Analytical Results

Between October 2 and November 15, 2018, a total of 29 soil samples were collected in Sudbury from borings advanced within the ROW using a hollow stem auger. One soil sample (identified as MP40) was collected during test

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pitting activities being conducted to identify utility locations. Soil samples were submitted to ConTest Analytical Laboratory of Longmeadow, Massachusetts ("ConTest") for parameters summarized in MassDEP Policy #COMM-97-001, which include total petroleum hydrocarbons ("TPH"), volatile organic compounds ("VOCs") via Environmental Protection Agency ("EPA") Method 8260C, semi-volatile organic compounds ("SVOCs") via EPA Method 8270 which includes polycyclic aromatic hydrocarbons ("PAHs"), Massachusetts Contingency Plan ("MCP") 14 Metals, polychlorinated biphenyls ("PCBs") and conductivity as well as supplemental parameters including pH, reactivity, ignitability, herbicides, and pesticides.

Discrete soil samples were taken from the borings using a two-foot split spoon. Four discrete (grab) samples were collected at two-foot intervals at each soil boring location to a total depth of eight feet below surface grade. One of the four discrete samples from each boring was selected and preserved for laboratory analysis for VOCs based on highest photoionization detector ("PID") reading or using visual and olfactory observations in the absence of PID detections. A composite soil sample was then prepared from the four discrete samples at each boring for the remaining laboratory analyses.

Soil analytical results were compared to the most stringent MCP (310 CMR 40.0000) Reportable Concentrations ("RC") for Soil Category 1 ("RCS-1"), which are applicable due to the presence of residences within 500 feet of the railroad ROW.

All soil analytical results were reported below the applicable RCS-1 standards for all parameters with the exception of the following:

- Laboratory analytical results from soil samples collected from soil borings MP34 and SB36 in Sudbury indicated detections of arsenic above the MCP RC for arsenic of 20 milligrams per kilogram ("mg/kg"). The arsenic concentration in both of these samples was reported as 21 mg/kg. Arsenic is commonly detected on railroad ROWs and other areas of historical railroad operations. The detections of this analyte are exempt from MassDEP's reporting requirements under 310 CMR 40.0317(8)(c), which relates to releases of OHM resulting from the application of pesticides in a manner consistent with their labelling, and under 310 CMR 40.0317(9) for releases of OHM related to coal or coal ash.
- Laboratory analytical results from soil samples collected from MP34 and MP33 in Sudbury indicated detections of two PAHs, phenanthrene and benzo(a)pyrene, at concentrations equal to their respective MCP RCs. PAHs are commonly detected on railroad ROWs and other areas of historical railroad operations. Although these parameters were detected at the MCP RCs, the detections are exempt from MassDEP's reporting requirements under 310 CMR 40.0317(9) for releases of OHM related to coal or coal ash. In addition, these concentrations are consistent with background levels for soil containing coal or coal ash as listed in MassDEP's 2002 technical update *Background Levels of Polycyclic Aromatic Hydrocarbons and Metals in Soil*.

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- Laboratory analytical results from the soil sample collected from soil boring SB42 in Sudbury exhibited TPH concentrations equal to the MCP RC of 1,000 mg/kg. The MCP RC for TPH is a general screening threshold that uses a summation of many petroleum hydrocarbons (rather than individual hydrocarbon ranges) and is typically used where there is no known release of specific petroleum hydrocarbons. A monitoring well (identified as MW42) was also installed at this location. No detectable concentrations of petroleum constituents were identified in a groundwater sample collected from this monitoring well. Based on the location of SB42 at the intersection of two public roadways associated Station Road and Boston Post Road, the observed concentrations of TPH in the soil sample can likely be attributed to the normal operations of motor vehicles. Vehicle emissions typically contain low levels of petroleum constituents as well as PAHs. Due to the low levels of TPH at the MCP RC and the low detections of other PAHs such as benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and pyrene, the concentration of TPH in the soil sample associated SB42 is likely attributable to emissions from the exhaust of an engine and is considered exempt from reporting under 310 CMR 40.0317(8)(b). In addition, petroleum residues that are incidental to the normal operation of motor vehicles meet the definition of Anthropogenic Background conditions in accordance with 310 CMR 40.0006.

The remainder of the soil analytical results were below the MCP RCs. Overall, these analytical results demonstrated a lack of significant OHM impacts within the Project Locus either from historical railroad activities or from off-site sources. The soil analytical results are summarized on **Table 1**.

Groundwater Analytical Results

To evaluate localized groundwater conditions, soil boring locations SB33, SB35 and SB42 were completed as groundwater monitoring wells referred to as MW33, MW35 and MW42, respectively, by installing a 2-inch diameter polyvinyl chloride ("PVC") groundwater monitoring well with ten feet of 0.010 slotted screen. Groundwater monitoring wells were installed at these locations to evaluate groundwater conditions in areas with known groundwater impacts along Boston Post Road and Union Avenue. A sand pack was placed up to two feet above the screen area followed by a one-foot-thick layer of bentonite and backfilled to the surface. Each monitoring well was finished at the surface by installing a stand-up steel casing.

Following installation, each groundwater monitoring well was developed by removing several well volumes (20 to 30 gallons) using a disposable bailer or submersible pump to establish a connection with the surrounding aquifer in accordance with the MassDEP guidance WSC-310-1 Standard References for Monitoring Wells. Groundwater samples were collected from the wells on December 5, 2018, using the EPA low flow sampling technique to minimize turbidity in the groundwater samples. The groundwater samples were field-preserved and submitted to ConTest under a chain of custody process for parameters to evaluate known groundwater impacts, which included the following: VOCs via EPA Method 8260C, PCBs, Resource Conservation and Recovery Act ("RCRA") 8 dissolved Metals via EPA Method 6020,

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and TPH. The groundwater samples were field-filtered for RCRA 8 metals using a 0.45-micron filter before being provided to the laboratory for analysis. Groundwater analytical results were compared to the most stringent MCP RCs for Groundwater Category 1 ("RCGW-1") standards due to their location within a Zone II Wellhead Protection Area.

All groundwater analytical results from the monitoring wells were below the RCGW-1 standards. Groundwater analytical results are summarized on **Table 2**.

Subsurface Media Management

Soil Management

Excavated soil will be managed in accordance with the best management practices set forth in the MassDEP RTG, which is specific to work within former railroad ROWs. These recommended BMPs are listed out in the MassDEP RTG, which is included as **Attachment A** for reference. Throughout construction, an independent Environmental Monitor ("EM") will frequently visually inspect soil conditions encountered during Project excavations. If conditions are encountered that suggest soil may require additional evaluation or special handling based on visual, olfactory, or field screening results, excavation activities in that area will immediately be stopped and Eversource and the Licensed Site Professional ("LSP") will be contacted. Eversource will manage this soil in accordance with the BMPs, which may include transporting the soil off-site for disposal to an appropriate facility.

Based on the desktop review and subsurface investigations completed in accordance with the MassDEP RTG in 2018, the Project Locus was segregated into segments that were classified as "Residential, Rural, Undeveloped" or "Industrial." Based on design specifications for the Project, cutting (i.e. excavation) and filling is required throughout the Project Site in order to achieve the final elevation grade. In portions of the Project that will require fill, soil from Residential, Rural, Undeveloped segments may be reused throughout the Project Site, whereas soil from Industrial segments will be limited for reuse only within other Industrial classified areas. Although the MassDEP RTG does not specify a limitation for the reuse of soil within similarly classified segments (i.e. Industrial only within Industrial), Eversource and DCR have adopted this conservative soil management approach. Therefore, soils generated from construction activities will be managed separately depending on their classification, both within the ROW as well as at off-site laydown areas.

Based on the soil analytical results collected to date, the BMPs outlined in the MassDEP RTG will be sufficient for managing soil throughout the Project Site including within Industrial and Residential, Rural, Undeveloped segments. Excess soil that is not reused within the Project Site will be stockpiled temporarily at laydown areas outside of the ROW and Conservation Commission jurisdictional areas. Small temporary stockpiles may be required within the Project Site; these stockpiles will be covered with 6 mil polyethylene sheeting to limit exposure and control the

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infiltration of precipitation, volatilization of potential contaminants, and erosion of the stockpiles. Erosion controls also will be installed at the laydown areas.

Soil stockpiles located at the laydown yard(s) outside of the Project Locus will be sampled for analysis of typical disposal parameters to satisfy MassDEP Policy #COMM-97-001 and additional analyses deemed necessary based on the requirements of the receiving facilities. The disposal destination for excess soil is dependent on the soil analytical results and available options. All excess soils will be shipped off-site for disposal/recycling at a licensed and controlled facility or for reuse at a reclamation facility that operates with a MassDEP-issued administrative consent order.

Dust control measures will be implemented during construction to minimize exposure and the migration of dust emissions. Construction activities will also be scheduled to minimize the amount of soil exposed at any given time.

Groundwater Management

Groundwater will be managed in accordance with applicable state and federal regulations. Based on a review of the nearby MCP sites and the groundwater analytical results, impacted groundwater will likely not be encountered along the Project Locus within Sudbury. However, the EM will frequently visually inspect groundwater to be dewatered. If groundwater conditions are encountered that suggest water may require additional evaluation or special handling, based on visual, olfactory, or field screening results, dewatering in that area will immediately be stopped and Eversource and the LSP will be contacted. Eversource will manage this water appropriately, which may include transporting the water off-site for disposal to an appropriate disposal facility.

During construction, if dewatering is necessary it will be conducted within the limits of work. Groundwater will be discharged in the vicinity of the point of generation and not within wetlands or streams. The contractor may employ any of the following dewatering methods as appropriate based on field conditions:

- Overland flow to vegetated upland areas, which can include Buffer Zone/Adjacent Upland Resource Area (AURA) and Riverfront Area (RFA), within the limits of work where it will infiltrate naturally. Overland flow will be evaluated for use with consideration to water turbidity and implementation of sedimentation/erosion controls;
- Dewatering to a filter bag that has been secured with a hose clamp and surrounded by straw wattles or using other erosion control methods that is set up ahead of the active construction area; and
- Discharging excess water within the existing trench.

Based on the results of the evaluation of environmental conditions and groundwater quality summarized above, the re-infiltration of dewatered groundwater will not have any adverse impact on surrounding soils or groundwater.

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Attachments: Table 1 – Summary of Soil Analytical Results
Table 2 – Summary of Groundwater Analytical Results
Figure 1 – Subsurface Sample Locations
Attachment A – MassDEP Rail Trail Guidance

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Table 1
Summary of Soil Analytical Results
Sudbury to Hudson Transmission Reliability Project
Sudbury, Massachusetts

SAMPLE LOCATION	RCS-1	RCS-2	Units	MP32	MP34	SB49	MP36	SB33	SB34	SB35	SB36	B28	MP27	MP28	MP29
SAMPLE DATE				10/11/2018	10/11/2018	10/11/2018	10/18/2018	11/07/2018	11/07/2018	11/07/2018	11/07/2018	11/13/2018	11/05/2018	11/05/2018	11/05/2018
LAB NUMBER				18J0746-01	18J0746-02	18J0746-03	1810642-01	18K0569-01	18K0569-04	18K0569-03	18K0569-02	18K0931-01	18K0278-02	18K0278-03	18K0278-04
PID READING (ppmV)				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SM 2540G															
% SOLIDS	NE	NE	% Wt	84	84.5	83.9	77.0	80.6	82.4	83.3	89	87.7	89.1	86.3	92.6
SM21-22 2510B Modified															
SPECIFIC CONDUCTANCE	NE	NE	µmhos/cm	8.1	4.5	5.9	318	2.7	7.3	3.1	2.2	6	2.2	2.7	2.6
SW-846 1030															
IGNITABILITY	NE	NE	present/absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
SW-846 6010D															
ANTIMONY	20	30	mg/Kg	2 U	2 U	2 U	5.25 U	2.1 U	2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.8 U
ARSENIC	20	20	mg/Kg	18	**21**	14	8.42	4.4	2.9	2.5	**21**	14	7.3	3.6	5
BARIUM	1000	3000	mg/Kg	22	32	21	17.0	19	16	16	19	46	16	21	19
BERYLLIUM	90	200	mg/Kg	0.26	0.42	0.31	0.23	0.21	0.24	0.23	0.21	0.29	0.19 U	0.19 U	0.18 U
CADMIUM	70	100	mg/Kg	0.62	0.73	0.47	0.52 U	0.21 U	0.2 U	0.2 U	0.41	0.37	0.26	0.19 U	0.2
CHROMIUM	100	200	mg/Kg	13	16	11	11.0	9.3	8.2	9.2	8.8	13	7.4	7	11
LEAD	200	600	mg/Kg	26	27	6.4	8.08	3.3	6.8	6.9	7.9	26	5.2	6	3.6
NICKEL	600	1000	mg/Kg	8.4	12	8.3	7.21	5.1	4.4	7.7	4.7	13	4.4	4	6.1
SELENIUM	400	700	mg/Kg	3.9 U	4 U	3.9 U	5.25 U	4.1 U	4 U	4 U	3.7 U	3.8 U	3.7 U	3.8 U	3.6 U
SILVER	100	200	mg/Kg	0.39 U	0.4 U	0.39 U	0.52 U	0.41 U	0.4 U	0.4 U	0.37 U	0.38 U	0.37 U	0.38 U	0.36 U
THALLIUM	8	60	mg/Kg	2 U	2 U	2 U	5.25 U	2.1 U	2 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U	1.8 U
VANADIUM	400	700	mg/Kg	14	24	13	10.2	12	10	10	11	16	8.9	9.9	13
ZINC	1000	3000	mg/Kg	28	26	15	13.2	10	27	16	10	14	9.5	7.8	12
SW-846 7471B															
MERCURY	20	30	mg/Kg	0.029 U	0.039	0.029 U	0.028 U	0.031 U	0.03 U	0.029 U	0.028 U	0.028 U	0.029 U	0.029 U	0.026 U
SW-846 8081B															
ALACHOR	NE	NE	mg/Kg	0.23 U	0.023 U	0.022 U	0.0032 U	0.023 U	0.023 U	0.022 U	0.022 U	0.021 U	0.022 U	0.022 U	0.021 U
ALDRIN	0.08	0.5	mg/Kg	0.057 U	0.0057 U	0.0056 U	0.0032 U	0.0058 U	0.0057 U	0.0056 U	0.0054 U	0.0053 U	0.0054 U	0.0055 U	0.0052 U
ALPHA-BHC	50	500	mg/Kg	0.057 U	0.0057 U	0.0056 U	0.0032 U	0.0058 U	0.0057 U	0.0056 U	0.0054 U	0.0053 U	0.0054 U	0.0055 U	0.0052 U
BETA-BHC	10	100	mg/Kg	0.057 U	0.0057 U	0.0056 U	0.0032 U	0.0058 U	0.0057 U	0.0056 U	0.0054 U	0.0053 U	0.0054 U	0.0055 U	0.0052 U
DELTA-BHC	10	100	mg/Kg	0.057 U	0.0057 U	0.0056 U	0.0032 U	0.0058 U	0.0057 U	0.0056 U	0.0054 U	0.0053 U	0.0054 U	0.0055 U	0.0052 U
GAMMA-BHC (LINDANE)	0.003	0.5	mg/Kg	**0.023** U	0.0023 U	0.0022 U	0.0019 U	0.0023 U	0.0023 U	0.0022 U	0.0022 U	0.0021 U	0.0022 U	0.0022 U	0.0021 U
CHLORDANE	5	30	mg/Kg	0.23 U	0.023 U	0.022 U	0.0259 U	0.023 U	0.023 U	0.022 U	0.022 U	0.021 U	0.022 U	0.022 U	0.021 U
4,4'-DDD	8	40	mg/Kg	0.046 U	0.0046 U	0.0045 U	0.0032 U	0.0047 U	0.0046 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0044 U	0.0042 U
4,4'-DDE	6	30	mg/Kg	0.046 U	0.0084	0.0045 U	0.0032 U	0.0047 U	0.0046 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0044 U	0.0042 U
4,4'-DDT	6	30	mg/Kg	0.046 U	0.05	0.0045 U	0.0032 U	0.0047 U	0.0046 U	0.0045 U	0.0043 U	0.0078	0.0043 U	0.0044 U	0.0042 U
DIELDRIN	0.08	0.5	mg/Kg	0.046 U	0.0046 U	0.0045 U	0.0032 U	0.0047 U	0.0046 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0044 U	0.0042 U
ENDOSULFAN I	0.5	1	mg/Kg	0.057 U	0.0057 U	0.0056 U	0.0032 U	0.0058 U	0.0057 U	0.0056 U	0.0054 U	0.0053 U	0.0054 U	0.0055 U	0.0052 U
ENDOSULFAN II	0.5	1	mg/Kg	0.092 U	0.0091 U	0.009 U	0.0032 U	0.0094 U	0.0092 U	0.009 U	0.0086 U	0.0085 U	0.0086 U	0.0087 U	0.0084 U
ENDOSULFAN SULFATE	~	~	mg/Kg	0.092 U	0.0091 U	0.009 U	0.0032 U	0.0094 U	0.0092 U	0.009 U	0.0086 U	0.0085 U	0.0086 U	0.0087 U	0.0084 U
ENDRIN	10	20	mg/Kg	0.092 U	0.0091 U	0.009 U	0.0032 U	0.0094 U	0.0092 U	0.009 U	0.0086 U	0.0085 U	0.0086 U	0.0087 U	0.0084 U
ENDRIN ALDEHYDE	10	100	mg/Kg	0.092 U	0.0091 U	0.009 U	0.0032 U	0.0094 U	0.0092 U	0.009 U	0.0086 U	0.0085 U	0.0086 U	0.0087 U	0.0084 U
ENDRIN KETONE	~	~	mg/Kg	0.092 U	0.0091 U	0.009 U	0.0032 U	0.0094 U	0.0092 U	0.009 U	0.0086 U	0.0085 U	0.0086 U	0.0087 U	0.0084 U
HEPTACHLOR	0.3	2	mg/Kg	0.057 U	0.0057 U	0.0056 U	0.0032 U	0.0058 U	0.0057 U	0.0056 U	0.0054 U	0.0053 U	0.0054 U	0.0055 U	0.0052 U
HEPTACHLOR EPOXIDE	0.1	0.9	mg/Kg	0.057 U	0.0057 U	0.0056 U	0.0032 U	0.0058 U	0.0057 U	0.0056 U	0.0054 U	0.0053 U	0.0054 U	0.0055 U	0.0052 U
HEXACHLOROBENZENE	0.7	0.8	mg/Kg	0.069 U	0.0068 U	0.0067 U	0.0032 U	0.007 U	0.0069 U	0.0067 U	0.0065 U	0.0064 U	0.0065 U	0.0066 U	0.0063 U
METHOXYCHLOR	200	400	mg/Kg	0.57 U	0.057 U	0.056 U	0.0032 U	0.058 U	0.057 U	0.056 U	0.054 U	0.053 U	0.054 U	0.055 U	0.052 U
TOXAPHENE	10	100	mg/Kg	1.1 U	0.11 U	0.11 U	0.162 U	0.12 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.1 U
SW-846 8082A															
PCB 1016	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
PCB 1221	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
PCB 1232	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
PCB 1242	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
PCB 1248	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
PCB 1254	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
PCB 1260	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
PCB 1262	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
PCB 1268	1	4	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
Total PCBs	NE	NE	mg/Kg	0.092 U	0.091 U	0.09 U	0.07 U	0.094 U	0.095 U	0.089 U	0.089 U	0.085 U	0.086 U	0.087 U	0.084 U
SW-846 8100 Modified															
TPH	1000	3000	mg/Kg	330	340	21	51.7	12	22	180	18	61	20	32	12
SW-846 8151A															
2,4-D	100000	1000000	µg/kg	30 U	30 U	30 U	0.059 U	31 U	150 U	150 U	28 U	29 U	28 U	29 U	27 U
2,4-DB	100000	1000000	µg/kg	30 U	30 U	30 U	0.059 U	31 U	150 U	150 U	28 U	29 U	28 U	29 U	27 U
2,4,5-TP (SILVEX)	100000	1000000	µg/kg	3 U	3 U	3 U	0.012 U	3.1 U	15 U	15 U	2.8 U	2.9 U	2.8 U	2.9 U	2.7 U
2,4,5-T	100000	1000000	µg/kg	3 U	3 U	3 U	0.012 U	3.1 U	15 U	15 U	2.8 U	2.9 U	2.8 U	2.9 U	2.7 U
DALAPON	NE	NE	µg/kg	74 U	74 U	75 U	0.057 U	78 U	380 U	380 U	70 U	71 U	70 U	72 U	67 U
DICAMBA	500000	5000000	µg/kg	3 U	3 U	3 U	0.012 U	3.1 U	15 U	15 U	2.8 U	2.9 U	2.8 U	2.9 U	2.7 U
DICHLOROPROP	NE	NE	µg/kg	30 U	30 U	30 U	0.059 U	31 U	150 U	150 U	28 U	29 U	28 U	29 U	27 U
DINOSEB	500000	5000000	µg/kg	15 U	15 U	15 U	0.059 U	16 U	76 U	75 U	14 U	14 U	14 U	14 U	13 U
MCPA	100000	1000000	µg/kg	3,000 U	3,000 U	3,000 U	2.91 U	3100 U	15000 U	15000 U	2800 U	2900 U	2,800 U	2,900 U	2,700 U
MCPP	NE	NE	µg/kg	3,000 U	3,000 U	3,000 U	2.94 J	3100 U	15000 U	15000 U	2800 U	2900 U	2,800 U	2,900 U	2,700 U
SW-846 8260C															
ACETONE	6	50	mg/Kg	0.049 U	0.1 U	0.089 U	0.168	0.076 U	0.069 U	0.12 U	0.083 U	0.056 U	0.08 U	0.074 U	0.072 U
TERT-AMYL METHYL ETHER	NE	NE	mg/Kg	0.00049 U	0.001 U	0.00089 U	0.0022 U	0.00076 U	0.00069 U	0.0012 U	0.00083 U	0.00056 U	0.0008 U	0.00074 U	0.00072 U
BENZENE	2	200	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
BROMOBENZENE	100	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
BROMOCHLOROMETHANE	NE	NE	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
BROMODICHLOROMETHANE	0.1	0.1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
BROMOFORM	0.1	1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
BROMOMETHANE	0.5	0.5	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0045 U	0.0076 U	0.0069 U	0.012 U	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U
2-BUTANONE (MEK)	4	50	mg/Kg	0.02 U	0.042 U	0.036 U	0.0266	0.03 U	0.028 U	0.05 U	0.033 U	0.022 U	0.032 U	0.029 U	0.029 U
N-BUTYLBENZENE	NE	NE	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
SEC-BUTYLBENZENE	NE	NE	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
TERT-BUTYLBENZENE	100	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
TERT-BUTYLETHYL ETHER	NE	NE	mg/Kg	0.00049 U	0.001 U	0.00089 U	0.0022 U	0.00076 U	0.00069 U	0.0012 U	0.00083 U	0.00056 U	0.0008 U	0.00074 U	0.00072 U
CARBON DISULFIDE	100	1000	mg/Kg	0.0029 U	0.0063 U	0.0054 U	0.0022 U	0.0045 U	0.0042 U	0.0074 U	0.005 U	0.0033 U	0.0048 U	0.0044 U	0.0043 U
CARBON TETRACHLORIDE	5	5	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
CHLOROBENZENE	1	3	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
CHLORODIBROMOMETHANE	0.005	0.03	mg/Kg	0.00049 U	0.001 U	0.00089 U	0.0009 U	0.00076 U	0.00069 U	0.0012 U	0.00083 U	0.00056 U	0.0008 U	0.00074 U	0.00072 U
CHLOROETHANE	100	1000	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0045 U	0.0076 U	0.0069 U	0.012 U	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U
CHLOROFORM	0.2	0.2	mg/Kg	0.002 U	0.0042 U	0.0036 U	0.0022 U	0.003 U	0.0028 U	0.005 U	0.0033 U	0.0022 U	0.0032 U	0.0029 U	0.0029 U
CHLOROMETHANE	100	1000	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0045 U	0.0076 U	0.0069 U	0.012 U	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U
2-CHLOROTOLUENE	100	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
4-CHLOROTOLUENE	100	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,2-DIBROMO-3-CHLOROPROPANE	10	100	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,2-DIBROMOETHANE (EDB)	0.1	0.1	mg/Kg	0.00049 U	0.001 U	0.00089 U	0.0022 U	0.00076 U	0.00069 U	0.0012 U	0.00083 U	0.00056 U	0.0008 U	0.00074 U	0.00072 U
DIBROMOMETHANE	500	5000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,2-DICHLOROBENZENE	9	100	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,3-DICHLOROBENZENE	3	200	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,4-DICHLOROBENZENE	0.7	1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0449 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
DICHLORODIFLUOROMETHANE	1000	10000	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0045 U	0.0076 U	0.0069 U	0.012 U	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U
1,1-DICHLOROETHANE	0.4	9	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,2-DICHLOROETHANE	0.1	0.1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,1-DICHLOROETHYLENE	3	40	mg/Kg	0.002 U	0.0042 U	0.0036 U	0.0022 U	0.003 U	0.0028 U	0.005 U	0.0033 U	0.0022 U	0.0032 U	0.0029 U	0.0029 U
CIS-1,2-DICHLOROETHYLENE	0.1	0.1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
TRANS-1,2-DICHLOROETHYLENE	1	1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,2-DICHLOROPROPANE	0.1	0.1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,3-DICHLOROPROPANE	500	5000	mg/Kg	0.00049 U	0.001 U	0.00089 U	0.0022 U	0.00076 U	0.00069 U	0.0012 U	0.00083 U	0.00056 U	0.0008 U	0.00074 U	0.00072 U
2,2-DICHLOROPROPANE	0.1	0.2	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
1,1-DICHLOROPROPENE	0.01	0.1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
CIS-1,3-DICHLOROPROPENE	0.01	0.1	mg/Kg	0.00049 U	0.001 U	0.00089 U	0.0022 U	0.00076 U	0.00069 U	0.0012 U	0.00083 U	0.00056 U	0.0008 U	0.00074 U	0.00072 U
TRANS-1,3-DICHLOROPROPENE	0.01	0.1	mg/Kg	0.00049 U	0.001 U	0.00089 U	0.0022 U	0.00076 U	0.00069 U	0.0012 U	0.00083 U	0.00056 U	0.0008 U	0.00074 U	0.00072 U
DIETHYL ETHER	100	1000	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0022 U	0.0076 U	0.0069 U	0.012 U	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U
DIISOPROPYL ETHER	100	1000	mg/Kg	0.00049 U	0.001 U	0.00089 U	0.0022 U	0.00076 U	0.00069 U	0.0012 U	0.00083 U	0.00056 U	0.0008 U	0.00074 U	0.00072 U
1,4-DIOXANE	0.2	6	mg/Kg	0.049 U	0.1 U	0.089 U	0.0449 U	0.076 U	0.028 U	0.05 U	0.083 U	0.022 U	0.08 U	0.074 U	0.072 U
ETHYLBENZENE	40	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U
HEXACHLOROBUTADIENE	30	100	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U

SAMPLE LOCATION	MP30	MP31	MP33	MP35	MP37	MP38	MP39	SB-37	SB-38	SB-39	SB-50	SB-51	SB40	SB41	SB42	SB48	MP-40
SAMPLE DATE	11/06/2018	11/06/2018	11/01/2018	11/06/2018	10/26/2018	10/26/2018	10/26/2018	10/25/2018	10/25/2018	10/25/2018	10/25/2018	10/24/2018	11/15/2018	11/15/2018	11/15/2018	11/15/2018	10/02/2018
LAB NUMBER	18K0278-05	18K0278-06	18K0278-01	18K0278-07	18J1553-06	18J1553-07	18J1553-08	18J1553-03	18J1553-04	18J1553-05	18J1553-02	18J1553-01	18K1190-02	18K1190-03	18K1190-04	18K1190-01	18J0192-01
PID READING (ppmV)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.2	3.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0
SM 2540G																	
% SOLIDS	82	81.6	78.6	83.4	91.3	91.5	90.6	90.7	86.2	90.9	79.6	84.6	82.6	79.9	80.6	77.3	83.3
SM21-22 2510B Modified																	
SPECIFIC CONDUCTANCE	3.8	3.3	3.4	2.8	3	3.5	2.4	2 U	4.4	2.8	3.8	2.9	4.3	3.6	8.1	2 U	5.7
SW-846 1030																	
IGNITABILITY	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
SW-846 6010D																	
ANTIMONY	2 U	2 U	2.1 U	2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	2.1 U	2 U	2 U	2.1 U	2.1 U	2.2 U	2 U
ARSENIC	9.3	3.2	5	5.9	5.6	11	7.3	14	3.9	11	7.2	18	12	9.2	14	4.2	3.4
BARIUM	19	17	16	36	26	78	120	52	26	92	36	61	23	19	57	32	35
BERYLLIUM	0.27	0.2 U	0.21 U	0.41	0.26	0.49	0.6	0.48	0.43	0.48	0.42	0.43	0.37	0.35	0.36	0.42	0.45
CADMIUM	0.34	0.2 U	0.21 U	0.26	0.18	0.35	0.27	0.43	0.19 U	0.38	0.26	0.57	0.45	0.35	0.68	0.22 U	0.2 U
CHROMIUM	11	6.9	8.2	16	8.6	21	20	17	12	21	14	18	11	10	20	13	16
LEAD	7.4	13	7.3	10	19	12	8.7	14	13	12	9.3	13	8.9	8.9	180	9.4	5.1
NICKEL	5.8	5.4	4.7	12	7.2	18	16	13	8.1	16	8.2	15	8.1	7.8	15	8.7	11
SELENIUM	4.1 U	4.1 U	4.2 U	3.9 U	3.6 U	3.6 U	3.7 U	3.7 U	3.8 U	3.7 U	4.2 U	4 U	4 U	4.2 U	4.1 U	4.3 U	3.9 U
SILVER	0.41 U	0.41 U	0.42 U	0.39 U	0.36 U	0.36 U	0.37 U	0.37 U	0.38 U	0.37 U	0.42 U	0.4 U	0.4 U	0.42 U	0.41 U	0.43 U	0.39 U
THALLIUM	2 U	2 U	2.1 U	2 U	1.8 U	1.8 U	1.8 U	1.8 U	1.9 U	1.8 U	2.1 U	2 U	2 U	2.1 U	2.1 U	2.2 U	2 U
VANADIUM	15	7.8	9.4	21	11	23	22	21	15	29	15	26	15	13	28	13	22
ZINC	14	57	9.1	22	15	43	33	29	16	40	21	26	18	14	50	17	22
SW-846 7471B																	
MERCURY	0.03 U	0.031 U	0.03 U	0.03 U	0.027 U	0.027 U	0.027 U	0.027 U	0.028 U	0.027 U	0.031 U	0.03 U	0.03 U	0.033 U	0.038	0.032 U	0.029 U
SW-846 8081B																	
ALACHOR	0.024 U	0.022 U	0.24 U	0.022 U	0.021 U	0.022 U	0.022 U	0.021 U	0.023 U	0.022 U	0.025 U	0.023 U	0.024 U	0.025 U	0.48 U	0.025 U	0.24 U
ALDRIN	0.0059 U	0.0056 U	0.061 U	0.0055 U	0.0052 U	0.0054 U	0.0055 U	0.0052 U	0.0056 U	0.0054 U	0.0062 U	0.0057 U	0.0059 U	0.0062 U	0.12 U	0.0062 U	0.059 U
ALPHA-BHC	0.0059 U	0.0056 U	0.061 U	0.0055 U	0.0052 U	0.0054 U	0.0055 U	0.0052 U	0.0056 U	0.0054 U	0.0062 U	0.0057 U	0.0059 U	0.0062 U	0.12 U	0.0062 U	0.059 U
BETA-BHC	0.0059 U	0.0056 U	0.061 U	0.0055 U	0.0052 U	0.0054 U	0.0055 U	0.0052 U	0.0056 U	0.0054 U	0.0062 U	0.0057 U	0.0059 U	0.0062 U	0.12 U	0.0062 U	0.059 U
DELTA-BHC	0.0059 U	0.0056 U	0.061 U	0.0055 U	0.0052 U	0.0054 U	0.0055 U	0.0052 U	0.0056 U	0.0054 U	0.0062 U	0.0057 U	0.0059 U	0.0062 U	0.12 U	0.0062 U	0.059 U
GAMMA-BHC (LINDANE)	0.0024 U	0.0022 U	0.024 U	0.0022 U	0.0021 U	0.0022 U	0.0022 U	0.0021 U	0.0023 U	0.0022 U	0.0025 U	0.0023 U	0.0024 U	0.0025 U	0.048 U	0.0025 U	0.024 U
CHLORDANE	0.024 U	0.022 U	0.24 U	0.022 U	0.021 U	0.022 U	0.022 U	0.021 U	0.023 U	0.022 U	0.025 U	0.023 U	0.024 U	0.025 U	0.48 U	0.025 U	0.24 U
4,4'-DDD	0.0047 U	0.0045 U	0.048 U	0.0044 U	0.0042 U	0.0043 U	0.0044 U	0.0042 U	0.0045 U	0.0044 U	0.0049 U	0.0046 U	0.0047 U	0.005 U	0.095 U	0.0049 U	0.048 U
4,4'-DDE	0.0047 U	0.0045 U	0.048 U	0.0044 U	0.0042 U	0.0043 U	0.0044 U	0.0042 U	0.0045 U	0.0044 U	0.0049 U	0.0046 U	0.0047 U	0.005 U	0.095 U	0.0049 U	0.048 U
4,4'-DDT	0.0047 U	0.0045 U	0.048 U	0.0044 U	0.0042 U	0.0043 U	0.0044 U	0.0098	0.0045 U	0.0089	0.0049 U	0.0088	0.0047 U	0.005 U	0.34	0.0049 U	0.048 U
DIELDRIN	0.0047 U	0.0045 U	0.048 U	0.0044 U	0.0042 U	0.0043 U	0.0044 U	0.0042 U	0.0045 U	0.0044 U	0.0049 U	0.0046 U	0.0047 U	0.005 U	0.095 U	0.0049 U	0.048 U
ENDOSULFAN I	0.0059 U	0.0056 U	0.061 U	0.0055 U	0.0052 U	0.0054 U	0.0055 U	0.0052 U	0.0056 U	0.0054 U	0.0062 U	0.0057 U	0.0059 U	0.0062 U	0.12 U	0.0062 U	0.059 U
ENDOSULFAN II	0.0095 U	0.009 U	0.097 U	0.0089 U	0.0083 U	0.0087 U	0.0087 U	0.0083 U	0.009 U	0.0087 U	0.0099 U	0.0092 U	0.0095 U	0.0099 U	0.19 U	0.0099 U	0.095 U
ENDOSULFAN SULFATE	0.0095 U	0.009 U	0.097 U	0.0089 U	0.0083 U	0.0087 U	0.0087 U	0.0083 U	0.009 U	0.0087 U	0.0099 U	0.0092 U	0.0095 U	0.0099 U	0.19 U	0.0099 U	0.095 U
ENDRIN	0.0095 U	0.009 U	0.097 U	0.0089 U	0.0083 U	0.0087 U	0.0087 U	0.0083 U	0.009 U	0.0087 U	0.0099 U	0.0092 U	0.0095 U	0.0099 U	0.19 U	0.0099 U	0.095 U
ENDRIN ALDEHYDE	0.0095 U	0.009 U	0.097 U	0.0089 U	0.0083 U	0.0087 U	0.0087 U	0.0083 U	0.009 U	0.0087 U	0.0099 U	0.0092 U	0.0095 U	0.0099 U	0.19 U	0.0099 U	0.095 U
ENDRIN KETONE	0.0095 U	0.009 U	0.097 U	0.0089 U	0.0083 U	0.0087 U	0.0087 U	0.0083 U	0.009 U	0.0087 U	0.0099 U	0.0092 U	0.0095 U	0.0099 U	0.19 U	0.0099 U	0.095 U
HEPTACHLOR	0.0059 U	0.0056 U	0.061 U	0.0055 U	0.0052 U	0.0054 U	0.0055 U	0.0052 U	0.0056 U	0.0054 U	0.0062 U	0.0057 U	0.0059 U	0.0062 U	0.12 U	0.0062 U	0.059 U
HEPTACHLOR EPOXIDE	0.0059 U	0.0056 U	0.061 U	0.0055 U	0.0052 U	0.0054 U	0.0055 U	0.0052 U	0.0056 U	0.0054 U	0.0062 U	0.0057 U	0.0059 U	0.0062 U	0.12 U	0.0062 U	0.059 U
HEXACHLOROBENZENE	0.0071 U	0.0067 U	0.073 U	0.0067 U	0.0063 U	0.0065 U	0.0066 U	0.0062 U	0.0068 U	0.0065 U	0.0074 U	0.0069 U	0.0071 U	0.0074 U	0.14 U	0.0074 U	0.071 U
METHOXYCHLOR	0.059 U	0.056 U	0.61 U	0.055 U	0.052 U	0.054 U	0.055 U	0.052 U	0.056 U	0.054 U	0.062 U	0.057 U	0.059 U	0.062 U	1.2 U	0.062 U	0.59 U
TOXAPHENE	0.12 U	0.11 U	1.2 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.12 U	0.11 U	0.12 U	0.12 U	2.4 U	0.12 U	1.2 U
SW-846 8082A																	
PCB 1016	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.096 U	0.1 U	0.095 U
PCB 1221	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.096 U	0.1 U	0.095 U
PCB 1232	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.096 U	0.1 U	0.095 U
PCB 1242	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.096 U	0.1 U	0.095 U
PCB 1248	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.096 U	0.1 U	0.095 U
PCB 1254	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.23	0.1 U	0.095 U
PCB 1260	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.18	0.1 U	0.095 U
PCB 1262	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.096 U	0.1 U	0.095 U
PCB 1268	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.096 U	0.1 U	0.095 U
Total PCBs	0.095 U	0.09 U	0.097 U	0.089 U	0.081 U	0.086 U	0.082 U	0.081 U	0.089 U	0.085 U	0.1 U	0.09 U	0.092 U	0.098 U	0.41	0.1 U	0.095 U
SW-846 8100 Modified																	
TPH	26	18	360	21	26	18	31	32	12	100	12	24	29	47	**1000**	29	10
SW-846 8151A																	
2,4-D	30 U	30 U	31 U	30 U	27 U	27 U	27 U	27 U	29 U	27 U	31 U	29 U	150 U	160 U	310 U	160 U	30 U
2,4-DB	30 U	30 U	31 U	30 U	27 U	27 U	27 U	27 U	29 U	27 U	31 U	29 U	150 U	160 U	310 U	160 U	30 U
2,4,5-TP (SILVEX)	3 U	3 U	3.1 U	3 U	2.7 U	2.7 U	2.7 U	2.7 U	2.9 U	2.7 U	3.1 U	2.9 U	15 U	16 U	31 U	16 U	3 U
2,4,5-T	3 U	3 U	3.1 U	3 U	2.7 U	2.7 U	2.7 U	2.7 U	2.9 U	2.7 U	3.1 U	2.9 U	15 U	16 U	31 U	16 U	3 U
DALAPON	75 U	76 U	78 U	75 U	68 U	68 U	69 U	69 U	72 U	68 U	78 U	73 U	380 U	390 U	760 U	400 U	75 U
DICAMBA	3 U	3 U	3.1 U	3 U	2.7 U	2.7 U	2.7 U	2.7 U	2.9 U	2.7 U	3.1 U	2.9 U	15 U	16 U	31 U	16 U	3 U
DICHLOROPROP	30 U	30 U	31 U	30 U	27 U	27 U	27 U	27 U	29 U	27 U	31 U	29 U	150 U	160 U	310 U	160 U	30 U
DINOSEB	15 U	15 U	16 U	15 U	14 U	14 U	14 U	14 U	14 U	14 U	16 U	15 U	76 U	78 U	150 U	80 U	15 U
MCPA	3,000 U	3,000 U	3,100 U	3,000 U	2,700 U	2,700 U	2,700 U	2,700 U	2,900 U	2,700 U	3,100 U	2,900 U	15000 U	16000 U	31000 U	16000 U	3000 U
MCPP	3,000 U	3,000 U	3,100 U	3,000 U	2,700 U	2,700 U	2,700 U	2,700 U	2,900 U	2,700 U	3,100 U	2,900 U	15000 U	16000 U	31000 U	16000 U	3000 U
SW-846 8260C																	
ACETONE	0.088 U	0.095 U	0.049 U	0.071 U	0.069 U	0.073 U	0.077 U	0.082 U	0.091 U	0.086 U	0.085 U	2.1 U	0.061 U	0.078 U	0.35	0.065 U	0.062 U
TERT-AMYL METHYL ETHER	0.00088 U	0.00095 U	0.00049 U	0.00071 U	0.00069 U	0.00073 U	0.00077 U	0.00082 U	0.00091 U	0.00086 U	0.00085 U	0.084 U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.00062 U
BENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
BROMOBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
BROMOCHLOROMETHANE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
BROMODICHLOROMETHANE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
BROMOFORM	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.084 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
BROMOMETHANE	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.084 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
2-BUTANONE (MEK)	0.035 U	0.038 U	0.02 U	0.028 U	0.028 U	0.029 U	0.031 U	0.033 U	0.036 U	0.034 U	0.034 U	0.84 U	0.024 U	0.031 U	0.03 U	0.026 U	0.025 U
N-BUTYLBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
SEC-BUTYLBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
TERT-BUTYLBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
TERT-BUTYLETHYL ETHER	0.00088 U	0.00095 U	0.00049 U	0.00071 U	0.00069 U	0.00073 U	0.00077 U	0.00082 U	0.00091 U	0.00086 U	0.00085 U	0.042 U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.00062 U
CARBON DISULFIDE	0.0053 U	0.0057 U	0.0029 U	0.0043 U	0.0042 U	0.0044 U	0.0046 U	0.0049 U	0.0054 U	0.0052 U	0.0051 U	0.42 U	0.0036 U	0.0047 U	0.0045 U	0.0039 U	0.0037 U
CARBON TETRACHLORIDE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
CHLOROBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
CHLORODIBROMOMETHANE	0.00088 U	0.00095 U	0.00049 U	0.00071 U	0.00069 U	0.00073 U	0.00077 U	0.00082 U	0.00091 U	0.00086 U	0.00085 U	**0.021** U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.00062 U
CHLOROETHANE	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.084 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
CHLOROFORM	0.0035 U	0.0038 U	0.002 U	0.0028 U	0.0028 U	0.0029 U	0.0031 U	0.0033 U	0.0036 U	0.0034 U	0.0034 U	0.084 U	0.0024 U	0.0031 U	0.003 U	0.0026 U	0.0025 U
CHLOROMETHANE	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.084 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
2-CHLOROTOLUENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
4-CHLOROTOLUENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,2-DIBROMO-3-CHLOROPROPANE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.17 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,2-DIBROMOETHANE (EDB)	0.00088 U	0.00095 U	0.00049 U	0.00071 U	0.00069 U	0.00073 U	0.00077 U	0.00082 U	0.00091 U	0.00086 U	0.00085 U	0.021 U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.00062 U
DIBROMOMETHANE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,2-DICHLOROBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,3-DICHLOROBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,4-DICHLOROBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
DICHLORODIFLUOROMETHANE	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.084 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
1,1-DICHLOROETHANE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,2-DICHLOROETHANE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,1-DICHLOROETHYLENE	0.0035 U	0.0038 U	0.002 U	0.0028 U	0.0028 U	0.0029 U	0.0031 U	0.0033 U	0.0036 U	0.0034 U	0.0034 U	0.042 U	0.0024 U	0.0031 U	0.003 U	0.0026 U	0.0025 U
CIS-1,2-DICHLOROETHYLENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
TRANS-1,2-DICHLOROETHYLENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,2-DICHLOROPROPANE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,3-DICHLOROPROPANE	0.00088 U	0.00095 U	0.00049 U	0.00071 U	0.00069 U	0.00073 U	0.00077 U	0.00082 U	0.00091 U	0.00086 U	0.00085 U	0.021 U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.00062 U
2,2-DICHLOROPROPANE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,1-DICHLOROPROPENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.084 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
CIS-1,3-DICHLOROPROPENE	0.00088 U	0.00095 U	0.00049 U	0.00071 U	0.00069 U	0.00073 U	0.00077 U	0.00082 U	0.00091 U	0.00086 U	0.00085 U	**0.021** U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.00062 U
TRANS-1,3-DICHLOROPROPENE	0.00088 U	0.00095 U	0.00049 U	0.00071 U	0.00069 U	0.00073 U	0.00077 U	0.00082 U	0.00091 U	0.00086 U	0.00085 U	**0.021** U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.00062 U
DIETHYL ETHER	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.084 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
DIISOPROPYL ETHER	0.00088 U	0.00095 U	0.00049 U	0.00071 U	0.00069 U	0.00073 U	0.00077 U	0.00082 U	0.00091 U	0.00086 U	0.00085 U	0.021 U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.00062 U
1,4-DIOXANE	0.088 U	0.095 U	0.049 U	0.071 U	0.069 U	0.073 U	0.077 U	0.082 U	0.091 U	0.086 U	0.085 U	**2.1** U	0.061 U	0.078 U	0.074 U	0.065 U	0.062 U
ETHYLBENZENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
HEXACHLOROBUTADIENE	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.084 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U

Table 1
Summary of Soil Analytical Results
Sudbury to Hudson Transmission Reliability Project
Sudbury, Massachusetts

SAMPLE LOCATION	RCS-1	RCS-2	Units	MP32	MP34	SB49	MP36	SB33	SB34	SB35
SAMPLE DATE				10/11/2018	10/11/2018	10/11/2018	10/18/2018	11/07/2018	11/07/2018	11/07/2018
LAB NUMBER				18J0746-01	18J0746-02	18J0746-03	1810642-01	18K0569-01	18K0569-04	18K0569-03
PID READING (ppmV)				0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-HEXANONE	100	1000	mg/Kg	0.0098 U	0.021 U	0.018 U	0.0045 U	0.015 U	0.014 U	0.025 U
ISOPROPYLBENZENE	1000	10000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
P-ISOPROPYLTOLUENE	100	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
METHYL TERT-BUTYL ETHER (MTBE)	0.1	100	mg/Kg	0.002 U	0.0042 U	0.0036 U	0.0022 U	0.003 U	0.0028 U	0.005 U
METHYLENE CHLORIDE	0.1	20	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0045 U	0.0076 U	0.0069 U	0.012 U
4-METHYL-2-PENTANONE (MIBK)	0.4	50	mg/Kg	0.0098 U	0.021 U	0.018 U	0.0045 U	0.015 U	0.014 U	0.025 U
NAPHTHALENE	4	20	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0022 U	0.0076 U	0.0069 U	0.012 U
N-PROPYLBENZENE	100	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
STYRENE	3	4	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
1,1,1,2-TETRACHLOROETHANE	0.1	0.1	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
1,1,2,2-TETRACHLOROETHANE	0.005	0.02	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
TETRACHLOROETHYLENE	1	10	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
TETRAHYDROFURAN	500	5000	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0022 U	0.0076 U	0.0069 U	0.012 U
TOLUENE	30	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
1,2,3-TRICHLOROBENZENE	NE	NE	mg/Kg	0.002 U	0.0042 U	0.0036 U	0.0022 U	0.003 U	0.0028 U	0.005 U
1,2,4-TRICHLOROBENZENE	2	6	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
1,1,1-TRICHLOROETHANE	30	600	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
1,1,2-TRICHLOROETHANE	0.1	2	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
TRICHLOROETHYLENE	0.3	0.3	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
TRICHLOROFLUOROMETHANE	1000	10000	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0022 U	0.0076 U	0.0069 U	0.012 U
1,2,3-TRICHLOROPROPANE	100	1000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
1,2,4-TRIMETHYLBENZENE	1000	10000	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
1,3,5-TRIMETHYLBENZENE	10	100	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
VINYL CHLORIDE	0.7	0.7	mg/Kg	0.0049 U	0.01 U	0.0089 U	0.0045 U	0.0076 U	0.0069 U	0.012 U
M/P-XYLENE	100	100	mg/Kg	0.002 U	0.0042 U	0.0036 U	0.0045 U	0.003 U	0.0028 U	0.005 U
O-XYLENE	100	100	mg/Kg	0.00098 U	0.0021 U	0.0018 U	0.0022 U	0.0015 U	0.0014 U	0.0025 U
SW-846 8270D										
ACENAPHTHENE	4	3000	mg/Kg	0.2 U	1.1	0.2 U	0.411 U	0.21 U	0.2 U	0.2 U
ACENAPHTHYLENE	1	10	mg/Kg	0.2 U	0.2 U	0.2 U	0.411 U	0.21 U	0.2 U	0.2 U
ACETOPHENONE	1000	10000	mg/Kg	0.4 U	0.39 U	0.4 U	0.824 U	0.42 U	0.41 U	0.4 U
ANILINE	1000	10000	mg/Kg	0.4 U	0.39 U	0.4 U	2.06 U	0.42 U	0.41 U	0.4 U
ANTHRACENE	1000	3000	mg/Kg	0.2 U	2.3	0.2 U	0.411 U	0.21 U	0.2 U	0.35
BENZO(A)ANTHRACENE	7	40	mg/Kg	0.2 U	1.1	0.2 U	0.411 U	0.21 U	0.2 U	0.45
BENZO(A)PYRENE	2	7	mg/Kg	0.2 U	0.4	0.2 U	0.206 U	0.21 U	0.2 U	0.29
BENZO(B)FLUORANTHENE	7	40	mg/Kg	0.24	1	0.2 U	0.411 U	0.21 U	0.2 U	0.68
BENZO(G,H,I)PERYLENE	1000	3000	mg/Kg	0.2 U	0.2	0.2 U	0.411 U	0.21 U	0.2 U	0.2
BENZO(K)FLUORANTHENE	70	400	mg/Kg	0.2 U	0.36	0.2 U	0.411 U	0.21 U	0.2 U	0.23
BIS(2-CHLOROETHOXY)METHANE	500	5000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
BIS(2-CHLOROETHYL)ETHER	0.7	0.7	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
BIS(2-CHLOROISOPROPYL)ETHER	0.7	0.7	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
BIS(2-ETHYLHEXYL)PHTHALATE	90	600	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
4-BROMOPHENYL PHENYL ETHER	100	1000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
BUTYLBENZYLPHTHALATE	100	1000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
4-CHLOROANILINE	1	3	mg/Kg	0.79 U	0.77 U	0.78 U	0.824 U	0.82 U	0.79 U	0.78 U
2-CHLORONAPHTHALENE	1000	10000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
2-CHLOROPHENOL	0.7	100	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
CHRYSENE	70	400	mg/Kg	0.2 U	1.2	0.2 U	0.206 U	0.21 U	0.2 U	0.51
DIBENZ(A,H)ANTHRACENE	0.7	4	mg/Kg	0.2 U	0.2 U	0.2 U	0.206 U	0.21 U	0.2 U	0.2 U
DIBENZOFURAN	100	1000	mg/Kg	0.4 U	1.6	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
DI-N-BUTYLPHTHALATE	50	500	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
1,2-DICHLOROBENZENE	9	100	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
1,3-DICHLOROBENZENE	3	200	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
1,4-DICHLOROBENZENE	0.7	1	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
3,3'-DICHLOROBENZIDINE	3	20	mg/Kg	0.2 U	0.2 U	0.2 U	0.824 U	0.21 U	0.2 U	0.2 U
2,4-DICHLOROPHENOL	0.7	40	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
DIETHYLPHTHALATE	10	200	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
2,4-DIMETHYLPHENOL	0.7	100	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
DIMETHYLPHTHALATE	0.7	50	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
2,4-DINITROPHENOL	3	50	mg/Kg	0.79 U	0.77 U	0.78 U	2.06 U	0.82 U	0.79 U	0.78 U
2,4-DINITROTOLUENE	0.7	10	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
2,6-DINITROTOLUENE	100	1000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
DI-N-OCTYLPHTHALATE	1000	10000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	50	500	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
FLUORANTHENE	1000	3000	mg/Kg	0.26	6.1	0.2 U	0.411 U	0.21 U	0.2 U	1.4
FLUORENE	1000	3000	mg/Kg	0.2 U	0.65	0.2 U	0.411 U	0.21 U	0.2 U	0.2 U
HEXACHLOROBENZENE	0.7	0.8	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
HEXACHLOROBUTADIENE	30	100	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
HEXACHLOROETHANE	0.7	3	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
INDENO(1,2,3-CD)PYRENE	7	40	mg/Kg	0.2 U	0.24	0.2 U	0.411 U	0.21 U	0.2 U	0.23
ISOPHORONE	100	1000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
2-METHYLNAPHTHALENE	0.7	80	mg/Kg	0.2 U	0.67	0.2 U	0.411 U	0.21 U	0.2 U	0.2 U
O-CRESOL	500	5000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
M/P-CRESOL	500	5000	mg/Kg	0.4 U	0.39 U	0.4 U	0.824 U	0.42 U	0.41 U	0.4 U
NAPHTHALENE	4	20	mg/Kg	0.2 U	0.85	0.2 U	0.411 U	0.21 U	0.2 U	0.25
NITROBENZENE	500	5000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
2-NITROPHENOL	100	1000	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
4-NITROPHENOL	100	1000	mg/Kg	0.79 U	0.77 U	0.78 U	2.06 U	0.82 U	0.79 U	0.78 U
PENTACHLOROPHENOL	3	10	mg/Kg	0.4 U	0.39 U	0.4 U	2.06 U	0.42 U	0.41 U	0.4 U
PHENANTHRENE	10	1000	mg/Kg	0.2 U	**10**	0.2 U	0.411 U	0.21 U	0.2 U	1.3
PHENOL	1	20	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
PYRENE	1000	3000	mg/Kg	0.22	4.2	0.2 U	0.411 U	0.21 U	0.2 U	1.1
PYRIDINE	500	5000	mg/Kg	0.4 U	0.39 U	0.4 U	2.06 U	0.42 U	0.41 U	0.4 U
1,2,4-TRICHLOROBENZENE	2	6	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
2,4,5-TRICHLOROPHENOL	4	600	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
2,4,6-TRICHLOROPHENOL	0.7	20	mg/Kg	0.4 U	0.39 U	0.4 U	0.411 U	0.42 U	0.41 U	0.4 U
SW-846 9014										
REACTIVE CYANIDE	NE	NE	mg/Kg	4 U	4 U	3.9 U	2 U	3.9 U	3.9 U	3.9 U
SW-846 9030A										
REACTIVE SULFIDE	NE	NE	mg/Kg	20 U	20 U	20 U	2 U	20 U	19 U	20 U
SW-846 9045C										
PH	NE	NE	pH Units	6.4	6.6	5.9	5.64	5.9	4.9	6.3

SAMPLE LOCATION	SB36	B28	MP27	MP28	MP29	MP30	MP31	MP33	MP35	MP37	MP38
SAMPLE DATE	11/07/2018	11/13/2018	11/05/2018	11/05/2018	11/05/2018	11/06/2018	11/06/2018	11/01/2018	11/06/2018	10/26/2018	10/26/2018
LAB NUMBER	18K0569-02	18K0931-01	18K0278-02	18K0278-03	18K0278-04	18K0278-05	18K0278-06	18K0278-01	18K0278-07	18J1553-06	18J1553-07
PID READING (ppmV)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2-HEXANONE	0.017 U	0.011 U	0.016 U	0.015 U	0.014 U	0.018 U	0.019 U	0.0098 U	0.014 U	0.014 U	0.015 U
ISOPROPYLBENZENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
P-ISOPROPYLTOLUENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
METHYL TERT-BUTYL ETHER (MTBE)	0.0033 U	0.0022 U	0.0032 U	0.0029 U	0.0029 U	0.0035 U	0.0038 U	0.002 U	0.0028 U	0.0028 U	0.0029 U
METHYLENE CHLORIDE	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U
4-METHYL-2-PENTANONE (MIBK)	0.017 U	0.011 U	0.016 U	0.015 U	0.014 U	0.018 U	0.019 U	0.0098 U	0.014 U	0.014 U	0.015 U
NAPHTHALENE	0.0083 U	0.0056 U	0.0032 U	0.0029 U	0.0029 U	0.0035 U	0.0038 U	0.002 U	0.0028 U	0.0069 U	0.0073 U
N-PROPYLBENZENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
STYRENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
1,1,1,2-TETRACHLOROETHANE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
1,1,2,2-TETRACHLOROETHANE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
TETRACHLOROETHYLENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
TETRAHYDROFURAN	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U
TOLUENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
1,2,3-TRICHLOROBENZENE	0.0033 U	0.0022 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0028 U	0.0029 U
1,2,4-TRICHLOROBENZENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
1,1,1-TRICHLOROETHANE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
1,1,2-TRICHLOROETHANE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
TRICHLOROETHYLENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
TRICHLOROFLUOROMETHANE	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U
1,2,3-TRICHLOROPROPANE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
1,2,4-TRIMETHYLBENZENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
1,3,5-TRIMETHYLBENZENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
VINYL CHLORIDE	0.0083 U	0.0056 U	0.008 U	0.0074 U	0.0072 U	0.0088 U	0.0095 U	0.0049 U	0.0071 U	0.0069 U	0.0073 U
M/P-XYLENE	0.0033 U	0.0022 U	0.0032 U	0.0029 U	0.0029 U	0.0035 U	0.0038 U	0.002 U	0.0028 U	0.0028 U	0.0029 U
O-XYLENE	0.0017 U	0.0011 U	0.0016 U	0.0015 U	0.0014 U	0.0018 U	0.0019 U	0.00098 U	0.0014 U	0.0014 U	0.0015 U
SW-846 8270D											
ACENAPHTHENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.22 U	0.2 U	0.18 U	0.18 U
ACENAPHTHYLENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.49	0.2 U	0.18 U	0.18 U
ACETOPHENONE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
ANILINE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
ANTHRACENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.56	0.2 U	0.18 U	0.18 U
BENZO(A)ANTHRACENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	3.2	0.2 U	0.18 U	0.18 U
BENZO(A)PYRENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	**2**	0.2 U	0.18 U	0.18 U
BENZO(B)FLUORANTHENE	0.19 U	0.26	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	2.9	0.2 U	0.18 U	0.18 U
BENZO(G,H,I)PERYLENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.77	0.2 U	0.18 U	0.18 U
BENZO(K)FLUORANTHENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	1.2	0.2 U	0.18 U	0.18 U
BIS(2-CHLOROETHOXY)METHANE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
BIS(2-CHLOROETHYL)ETHER	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
BIS(2-CHLOROISOPROPYL)ETHER	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
BIS(2-ETHYLHEXYL)PHTHALATE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
4-BROMOPHENYL PHENYL ETHER	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
BUTYLBENZYLPHTHALATE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
4-CHLOROANILINE	0.73 U	0.75 U	0.73 U	0.76 U	0.69 U	0.79 U	0.8 U	0.84 U	0.77 U	0.71 U	0.71 U
2-CHLORONAPHTHALENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
2-CHLOROPHENOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
CHRYSENE	0.19 U	0.23	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	2.6	0.2 U	0.18 U	0.18 U
DIBENZ(A,H)ANTHRACENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.34	0.2 U	0.18 U	0.18 U
DIBENZOFURAN	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
DI-N-BUTYLPHTHALATE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
1,2-DICHLOROBENZENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
1,3-DICHLOROBENZENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
1,4-DICHLOROBENZENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
3,3'-DICHLOROBENZIDINE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.22 U	0.2 U	0.18 U	0.18 U
2,4-DICHLOROPHENOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
DIETHYLPHTHALATE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
2,4-DIMETHYLPHENOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
DIMETHYLPHTHALATE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
2,4-DINITROPHENOL	0.73 U	0.75 U	0.73 U	0.76 U	0.69 U	0.79 U	0.8 U	0.84 U	0.77 U	0.71 U	0.71 U
2,4-DINITROTOLUENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
2,6-DINITROTOLUENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
DI-N-OCTYLPHTHALATE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
FLUORANTHENE	0.19 U	0.31	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	8.3	0.2 U	0.18 U	0.18 U
FLUORENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.22 U	0.2 U	0.18 U	0.18 U
HEXACHLOROBENZENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
HEXACHLOROBUTADIENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
HEXACHLOROETHANE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
INDENO(1,2,3-CD)PYRENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	1.1	0.2 U	0.18 U	0.18 U
ISOPHORONE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
2-METHYLNAPHTHALENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.22 U	0.2 U	0.18 U	0.18 U
O-CRESOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
M/P-CRESOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
NAPHTHALENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.22 U	0.2 U	0.18 U	0.18 U
NITROBENZENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
2-NITROPHENOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
4-NITROPHENOL	0.73 U	0.75 U	0.73 U	0.76 U	0.69 U	0.79 U	0.8 U	0.84 U	0.77 U	0.71 U	0.71 U
PENTACHLOROPHENOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
PHENANTHRENE	0.19 U	0.19 U	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	0.22 U	0.2 U	0.18 U	0.18 U
PHENOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
PYRENE	0.19 U	0.25	0.19 U	0.2 U	0.18 U	0.2 U	0.21 U	6.4	0.2 U	0.18 U	0.18 U
PYRIDINE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
1,2,4-TRICHLOROBENZENE	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
2,4,5-TRICHLOROPHENOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
2,4,6-TRICHLOROPHENOL	0.38 U	0.39 U	0.37 U	0.39 U	0.36 U	0.41 U	0.41 U	0.43 U	0.4 U	0.37 U	0.37 U
SW-846 9014											
REACTIVE CYANIDE	4 U	4 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	3.9 U	4 U	3.9 U	4 U
SW-846 9030A											
REACTIVE SULFIDE	20 U	20 U	19 U	19 U	19 U	19 U	20 U	20 U	20 U	19 U	20 U
SW-846 9045C											
PH	5.4	4.8	5.2	5.5	5.1	4.6	5.3	5.9	5.5	4.9	5.6

SAMPLE LOCATION	MP39	SB-37	SB-38	SB-39	SB-50	SB-51	SB40	SB41	SB42	SB48	MP-40
SAMPLE DATE	10/26/2018	10/25/2018	10/25/2018	10/25/2018	10/25/2018	10/24/2018	11/15/2018	11/15/2018	11/15/2018	11/15/2018	10/02/2018
LAB NUMBER	18J1553-08	18J1553-03	18J1553-04	18J1553-05	18J1553-02	18J1553-01	18K1190-02	18K1190-03	18K1190-04	18K1190-01	18J0192-01
PID READING (ppmV)	0.0	2.9	0.2	3.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0
2-HEXANONE	0.015 U	0.016 U	0.018 U	0.017 U	0.017 U	0.42 U	0.012 U	0.016 U	0.015 U	0.013 U	0.012 U
ISOPROPYLBENZENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
P-ISOPROPYLTOLUENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
METHYL TERT-BUTYL ETHER (MTBE)	0.0031 U	0.0033 U	0.0036 U	0.0034 U	0.0034 U	0.042 U	0.0024 U	0.0031 U	0.003 U	0.0026 U	0.0025 U
METHYLENE CHLORIDE	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.21 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
4-METHYL-2-PENTANONE (MIBK)	0.015 U	0.016 U	0.018 U	0.017 U	0.017 U	0.42 U	0.012 U	0.016 U	0.015 U	0.013 U	0.012 U
NAPHTHALENE	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.21 U	0.0024 U	0.0031 U	0.003 U	0.0026 U	0.0062 U
N-PROPYLBENZENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
STYRENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,1,1,2-TETRACHLOROETHANE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,1,2,2-TETRACHLOROETHANE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.021 U	0.00061 U	0.00078 U	0.00074 U	0.00065 U	0.0012 U
TETRACHLOROETHYLENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
TETRAHYDROFURAN	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.17 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
TOLUENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,2,3-TRICHLOROBENZENE	0.0031 U	0.0033 U	0.0036 U	0.0034 U	0.0034 U	0.21 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0025 U
1,2,4-TRICHLOROBENZENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.084 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,1,1-TRICHLOROETHANE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,1,2-TRICHLOROETHANE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
TRICHLOROETHYLENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
TRICHLOROFLUOROMETHANE	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.084 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
1,2,3-TRICHLOROPROPANE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.084 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,2,4-TRIMETHYLBENZENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
1,3,5-TRIMETHYLBENZENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
VINYL CHLORIDE	0.0077 U	0.0082 U	0.0091 U	0.0086 U	0.0085 U	0.084 U	0.0061 U	0.0078 U	0.0074 U	0.0065 U	0.0062 U
M/P-XYLENE	0.0031 U	0.0033 U	0.0036 U	0.0034 U	0.0034 U	0.084 U	0.0024 U	0.0031 U	0.003 U	0.0026 U	0.0025 U
O-XYLENE	0.0015 U	0.0016 U	0.0018 U	0.0017 U	0.0017 U	0.042 U	0.0012 U	0.0016 U	0.0015 U	0.0013 U	0.0012 U
SW-846 8270D											
ACENAPHTHENE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.22 U	0.2 U
ACENAPHTHYLENE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.31	0.22 U	0.2 U
ACETOPHENONE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
ANILINE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
ANTHRACENE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.22 U	0.2 U
BENZO(A)ANTHRACENE	0.45	0.18 U	0.2 U	0.57	0.21 U	0.2 U	0.21 U	0.21 U	0.95	0.22 U	0.2 U
BENZO(A)PYRENE	0.45	0.18 U	0.2 U	0.29	0.21 U	0.2 U	0.21 U	0.21 U	0.98	0.22 U	0.2 U
BENZO(B)FLUORANTHENE	0.83	0.23	0.2 U	0.59	0.21 U	0.2 U	0.21 U	0.21 U	1.5	0.22 U	0.2 U
BENZO(G,H,I)PERYLENE	0.22	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.69	0.22 U	0.2 U
BENZO(K)FLUORANTHENE	0.35	0.18 U	0.2 U	0.24	0.21 U	0.2 U	0.21 U	0.21 U	0.65	0.22 U	0.2 U
BIS(2-CHLOROETHOXY)METHANE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
BIS(2-CHLOROETHYL)ETHER	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
BIS(2-CHLOROISOPROPYL)ETHER	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
BIS(2-ETHYLHEXYL)PHTHALATE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
4-BROMOPHENYL PHENYL ETHER	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
BUTYLBENZYLPHTHALATE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
4-CHLOROANILINE	0.73 U	0.72 U	0.77 U	0.71 U	0.81 U	0.76 U	0.8 U	0.82 U	0.82 U	0.85 U	0.78 U
2-CHLORONAPHTHALENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
2-CHLOROPHENOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
CHRYSENE	0.46	0.19	0.2 U	0.56	0.21 U	0.2 U	0.21 U	0.21 U	1.3	0.22 U	0.2 U
DIBENZ(A,H)ANTHRACENE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.22 U	0.2 U
DIBENZOFURAN	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
DI-N-BUTYLPHTHALATE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
1,2-DICHLOROBENZENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
1,3-DICHLOROBENZENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
1,4-DICHLOROBENZENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
3,3'-DICHLOROBENZIDINE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.22 U	0.2 U
2,4-DICHLOROPHENOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
DIETHYLPHTHALATE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
2,4-DIMETHYLPHENOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
DIMETHYLPHTHALATE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
2,4-DINITROPHENOL	0.73 U	0.72 U	0.77 U	0.71 U	0.81 U	0.76 U	0.8 U	0.82 U	0.82 U	0.85 U	0.78 U
2,4-DINITROTOLUENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
2,6-DINITROTOLUENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
DI-N-OCTYLPHTHALATE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
FLUORANTHENE	0.45	0.26	0.2 U	1	0.21 U	0.23	0.21 U	0.21 U	1.8	0.22 U	0.2 U
FLUORENE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.22 U	0.2 U
HEXACHLOROBENZENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
HEXACHLOROBUTADIENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
HEXACHLOROETHANE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
INDENO(1,2,3-CD)PYRENE	0.3	0.18 U	0.2 U	0.2	0.21 U	0.2 U	0.21 U	0.21 U	0.78	0.22 U	0.2 U
ISOPHORONE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
2-METHYLNAPHTHALENE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.22 U	0.2 U
O-CRESOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
M/P-CRESOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
NAPHTHALENE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.21 U	0.22 U	0.2 U
NITROBENZENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
2-NITROPHENOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
4-NITROPHENOL	0.73 U	0.72 U	0.77 U	0.71 U	0.81 U	0.76 U	0.8 U	0.82 U	0.82 U	0.85 U	0.78 U
PENTACHLOROPHENOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
PHENANTHRENE	0.19 U	0.18 U	0.2 U	0.18 U	0.21 U	0.2 U	0.21 U	0.21 U	0.61	0.22 U	0.2 U
PHENOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
PYRENE	0.72	0.3	0.2 U	1.1	0.21 U	0.27	0.21 U	0.21 U	2	0.22 U	0.2 U
PYRIDINE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
1,2,4-TRICHLOROBENZENE	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
2,4,5-TRICHLOROPHENOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
2,4,6-TRICHLOROPHENOL	0.38 U	0.37 U	0.39 U	0.36 U	0.42 U	0.39 U	0.41 U	0.42 U	0.42 U	0.44 U	0.4 U
SW-846 9014											
REACTIVE CYANIDE	3.9 U	3.9 U	4 U	4 U	4 U	3.9 U	3.9 U	3.9 U	4 U	3.9 U	3.9 U
SW-846 9030A											
REACTIVE SULFIDE	20 U	19 U	20 U	20 U	20 U	20 U	19 U	20 U	20 U	20 U	20 U
SW-846 9045C											
PH	5.7	4.8	4.3	5.7	5.6	6.5	5	5.2	5.3	5.2	5.8

NOTES:
Bolded, shaded, and underlined results meet or exceed regulatory threshold
Bolded results are a laboratory detection limit that exceed a regulatory threshold
RCS-x = MCP Reportable Concentrations for Soil Category x
U = Not detected above the laboratory reporting limits shown to the left of the "U"
NE = Standard not established
mg/kg = Milligrams per kilogram, aslo known as parts per million
J = Modfied results based on quality control analysis

Table 2
Summary of Groundwater Analytical Results
Sudbury to Hudson Transmission Reliability Project
Sudbury, Massachusetts

LOCATION				SB/MW33		SB/MW35		SB/MW42	
SAMPLING DATE	RCGW-1	RCGW-2	Units	12/05/2018		12/05/2018		12/05/2018	
LAB SAMPLE ID				18L0240-01		18L0240-02		18L0240-03	
RCRA 8 METALS									
ARSENIC	10	900	µg/L	0.4	U	0.4	U	4.4	
BARIUM	2000	50000	µg/L	16		18		87	
CADMIUM	4	4	µg/L	0.5	U	0.5	U	0.5	U
CHROMIUM	100	300	µg/L	1	U	1		1.7	
LEAD	10	10	µg/L	1	U	1	U	1	
SELENIUM	50	100	µg/L	5	U	5	U	5	U
SILVER	7	7	µg/L	0.5	U	0.5	U	0.5	U
MERCURY	0.002	0.02	mg/L	0.0001	U	0.0001	U	0.0001	U
TOTAL PETROLEUM HYDROCARBONS									
DIESEL RANGE ORGANICS	NE	NE	mg/L	0.19	U	0.22	U	0.19	U
POLYCHLORINATED BIPHENYLS									
PCB 1016	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
PCB 1221	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
PCB 1232	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
PCB 1242	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
PCB 1248	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
PCB 1254	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
PCB 1260	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
PCB 1262	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
PCB 1268	0.5	5	µg/L	0.19	U	0.2	U	0.2	U
VOLATILE ORGANIC COMPOUNDS									
ACETONE	6300	50000	µg/L	10	U	10	U	10	U
TERT-AMYL METHYL ETHER	NE	NE	µg/L	0.5	U	0.5	U	0.5	U
BENZENE	5	1000	µg/L	1	U	1	U	1	U
BROMOBENZENE	1000	10000	µg/L	1	U	1	U	1	U
BROMOCHLOROMETHANE	NE	NE	µg/L	1	U	1	U	1	U
BROMODICHLOROMETHANE	3	6	µg/L	1	U	1	U	1	U
BROMOFORM	4	700	µg/L	2	U	2	U	2	U
BROMOMETHANE	7	7	µg/L	2	U	2	U	2	U
2-BUTANONE (MEK)	4000	50000	µg/L	10	U	10	U	10	U
N-BUTYLBENZENE	NE	NE	µg/L	1	U	1	U	1	U
SEC-BUTYLBENZENE	NE	NE	µg/L	1	U	1	U	1	U
TERT-BUTYLBENZENE	1000	10000	µg/L	1	U	1	U	1	U
TERT-BUTYLETHYL ETHER	NE	NE	µg/L	0.5	U	0.5	U	0.5	U
CARBON DISULFIDE	1000	10000	µg/L	5	U	5	U	5	U
CARBON TETRACHLORIDE	2	2	µg/L	1	U	1	U	1	U
CHLOROBENZENE	100	200	µg/L	1	U	1	U	1	U
CHLORODIBROMOMETHANE	2	20	µg/L	0.5	U	0.5	U	0.5	U
CHLOROETHANE	1000	10000	µg/L	2	U	2	U	2	U
CHLOROFORM	50	50	µg/L	2	U	2	U	2	U
CHLOROMETHANE	1000	10000	µg/L	2	U	2	U	2	U
2-CHLOROTOLUENE	1000	10000	µg/L	1	U	1	U	1	U
4-CHLOROTOLUENE	1000	10000	µg/L	1	U	1	U	1	U
1,2-DIBROMO-3-CHLOROPROPANE	100	1000	µg/L	2	U	2	U	2	U
1,2-DIBROMOETHANE (EDB)	0.02	2	µg/L	**0.5**	U	**0.5**	U	**0.5**	U
DIBROMOMETHANE	5000	50000	µg/L	1	U	1	U	1	U
1,2-DICHLOROBENZENE	600	2000	µg/L	1	U	1	U	1	U
1,3-DICHLOROBENZENE	100	6000	µg/L	1	U	1	U	1	U
1,4-DICHLOROBENZENE	5	60	µg/L	1	U	1	U	1	U
DICHLORODIFLUOROMETHANE	10000	100000	µg/L	2	U	2	U	2	U
1,1-DICHLOROETHANE	70	2000	µg/L	1	U	1	U	1	U
1,2-DICHLOROETHANE	5	5	µg/L	1	U	1	U	1	U
1,1-DICHLOROETHYLENE	7	80	µg/L	1	U	1	U	1	U
CIS-1,2-DICHLOROETHYLENE	20	20	µg/L	1	U	1	U	1	U
TRANS-1,2-DICHLOROETHYLENE	80	80	µg/L	1	U	1	U	1	U
1,2-DICHLOROPROPANE	3	3	µg/L	1	U	1	U	1	U
1,3-DICHLOROPROPANE	5000	50000	µg/L	0.5	U	0.5	U	0.5	U
2,2-DICHLOROPROPANE	5	9	µg/L	1	U	1	U	1	U
1,1-DICHLOROPROPENE	0.5	5	µg/L	0.5	U	0.5	U	0.5	U
CIS-1,3-DICHLOROPROPENE	0.5	5	µg/L	0.4	U	0.4	U	0.4	U
TRANS-1,3-DICHLOROPROPENE	0.5	5	µg/L	0.4	U	0.4	U	0.4	U
DIETHYL ETHER	1000	10000	µg/L	2	U	2	U	2	U
DIISOPROPYL ETHER	1000	10000	µg/L	0.5	U	0.5	U	0.5	U
1,4-DIOXANE	0.3	6000	µg/L	**50**	U	**50**	U	**50**	U
ETHYLBENZENE	700	5000	µg/L	1	U	1	U	1	U
HEXACHLOROBUTADIENE	0.6	50	µg/L	0.6	U	0.6	U	0.6	U
2-HEXANONE	1000	10000	µg/L	10	U	10	U	10	U
ISOPROPYLBENZENE	10000	100000	µg/L	1	U	1	U	1	U
P-ISOPROPYLTOLUENE	1000	10000	µg/L	1	U	1	U	1	U
METHYL TERT-BUTYL ETHER (MTBE)	70	5000	µg/L	1	U	1	U	1	U
METHYLENE CHLORIDE	5	2000	µg/L	5	U	5	U	5	U
4-METHYL-2-PENTANONE (MIBK)	350	50000	µg/L	10	U	10	U	10	U
NAPHTHALENE	140	700	µg/L	2	U	2	U	2	U
N-PROPYLBENZENE	1000	10000	µg/L	1	U	1	U	1	U
STYRENE	100	100	µg/L	1	U	1	U	1	U
1,1,1,2-TETRACHLOROETHANE	5	10	µg/L	1	U	1	U	1	U
1,1,2,2-TETRACHLOROETHANE	2	9	µg/L	0.5	U	0.5	U	0.5	U
TETRACHLOROETHYLENE	5	50	µg/L	1	U	1	U	1	U
TETRAHYDROFURAN	5000	50000	µg/L	2	U	2	U	2	U
TOLUENE	1000	40000	µg/L	1	U	1	U	1	U
1,2,3-TRICHLOROBENZENE	NE	NE	µg/L	2	U	2	U	2	U
1,2,4-TRICHLOROBENZENE	70	200	µg/L	1	U	1	U	1	U
1,1,1-TRICHLOROETHANE	200	4000	µg/L	1	U	1	U	1	U
1,1,2-TRICHLOROETHANE	5	900	µg/L	1	U	1	U	1	U
TRICHLOROETHYLENE	5	5	µg/L	1	U	1	U	1	U
TRICHLOROFLUOROMETHANE	10000	100000	µg/L	2	U	2	U	2	U
1,2,3-TRICHLOROPROPANE	1000	10000	µg/L	2	U	2	U	2	U
1,2,4-TRIMETHYLBENZENE	10000	100000	µg/L	1	U	1	U	1	U
1,3,5-TRIMETHYLBENZENE	100	1000	µg/L	1	U	1	U	1	U
VINYL CHLORIDE	2	2	µg/L	2	U	2	U	2	U
M/P-XYLENE	3000	3000	µg/L	2	U	2	U	2	U
O-XYLENE	3000	3000	µg/L	1	U	1	U	1	U

NOTES:
Bolded, shaded, and underlined results meet or exceed regulatory threshold
Bolded results are a laboratory detection limit that exceed a regulatory threshold
RCGW-x = MCP Reportable Concentrations for Groundwater Category x
U = Not detected above the laboratory reporting limits shown to the left of the "U"
NE = Standard not established
ug/L = micrograms per liter, aslo known as parts per billion

EVERSOURCE ENERGY

vhb April 16, 2020 | **Figure 1**

Sudbury to Hudson Transmission Reliability and Mass Central Rail Trail Project | Sudbury, Massachusetts

Residential, Rural, Undeveloped Corridor per MassDEP Rail Trail BMP

Industrial Corridor per MassDEP Rail Trail BMP

OHM Sampling Location

Monitoring Well Location

MA Towns (Multi-part Polygons, from Survey Points)

Subsurface Sample Locations

Sources: MassGIS 2013 Aerial Imagery

Note: This figure does not include geotechnical sampling locations.

EVERSOURCE ENERGY

vhb April 16, 2020 | **Figure 1**

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0 150 300 600 Feet

Sudbury to Hudson Transmission Reliability and Mass Central Rail Trail Project | Sudbury, Massachusetts

Residential, Rural, Undeveloped Corridor per MassDEP Rail Trail BMP

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Sudbury to Hudson Transmission Reliability and Mass Central Rail Trail Project | Sudbury, Massachusetts

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Subsurface Sample Locations

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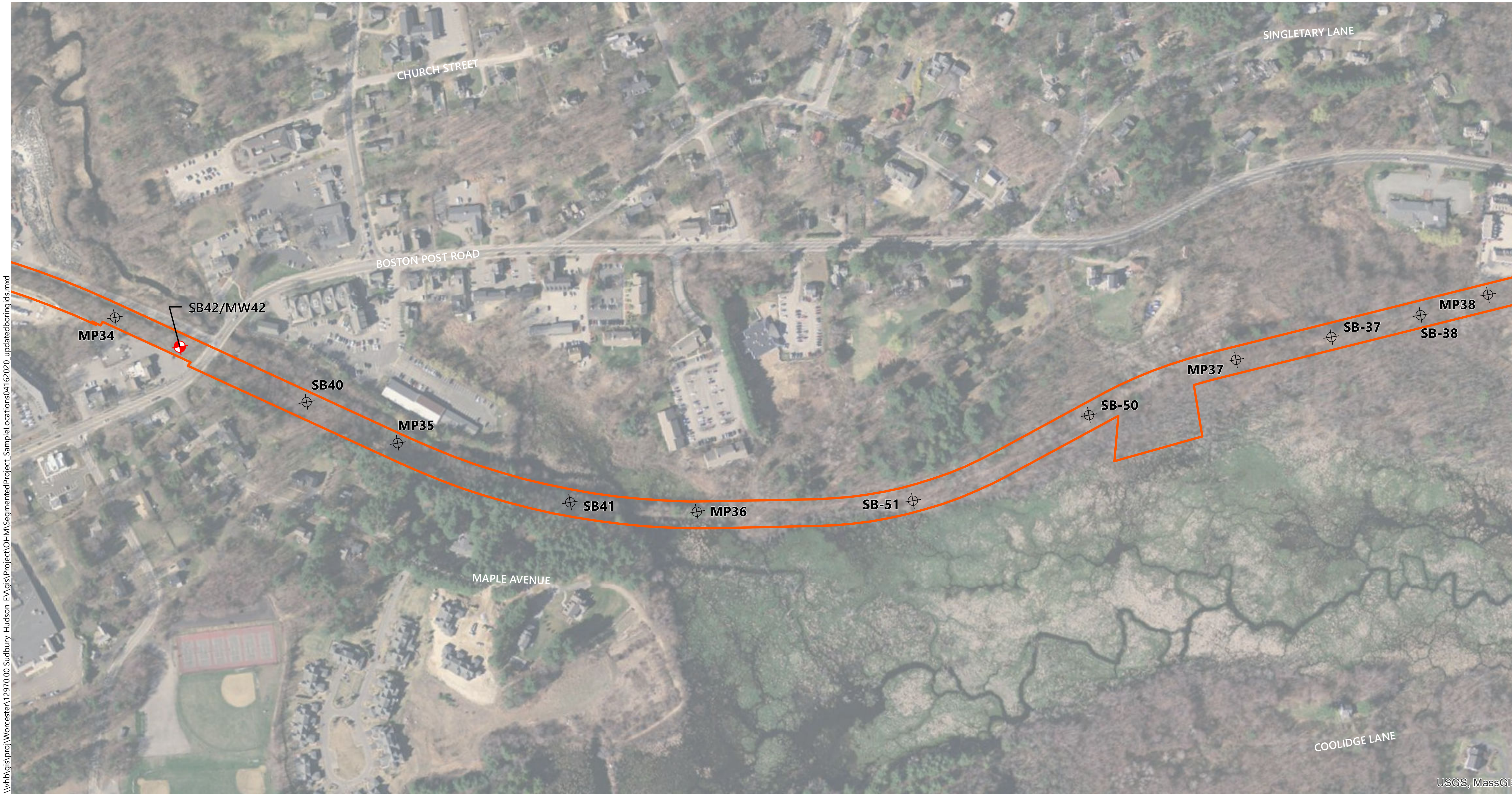
EVERSOURCE ENERGY

vhb April 16, 2020 | **Figure 1**



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0 150 300 600 Feet

Sudbury to Hudson Transmission Reliability and Mass Central Rail Trail Project | Sudbury, Massachusetts

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Best Management Practices for Controlling Exposure to Soil during the Development of Rail Trails

This document summarizes **Best Management Practices ("BMPs")** that should be considered before, during, and after former railroad lines are converted to recreation trails. These BMPs have been developed to eliminate or minimize potential exposures to residual oil or hazardous materials commonly found along railroad rights-of-way being converted to rail trails. This document also identifies locations and conditions for which the application of BMPs alone may not be sufficiently protective of public health and the environment.

These BMPs have been developed specifically for situations where a municipality has acquired a property interest in a rail corridor from the Massachusetts Bay Transportation Authority (MBTA) in order to convert the corridor to a rail trail[1], This fact sheet is relevant to municipalities: (1) with specific knowledge of a release of oil or hazardous materials through testing or other means and/or (2) without specific knowledge of a release, that seek to prevent the exposure of persons to oil or hazardous materials that may be present in such corridor until a responsible person conducts response action under MGL Chapter 21E.

Background Information

The waxing and waning of railroad activity in Massachusetts over the past century has left the Commonwealth a legacy of under-utilized rights-of-way that may be redeveloped for new rail service (such as the Amtrak Downeaster and the Greenbush line) or recreational trails (such as the Minuteman Trail or the Mass Central Rail-Trail).

When active, these railroad lines were important transportation corridors serving the citizens and industries of Massachusetts. Now many communities are actively seeking to convert former railroad lines to create new links -- trails that link:

- commuter's homes to workplaces;
- children's schools to the playgrounds;
- tourists' curiosity to the region's history; and
- communities to their neighbors.

[1] More specifically, only for those situations addressed under Chapter 46 of the Acts of 2003

This information is available in alternate format. Call Debra Doherty, ADA Coordinator at 617-292-5565. TDD Service - 1-800-298-2207.

DEP on the World Wide Web: http://www.mass.gov/dep
Printed on Recycled Paper

Many former rail lines were abandoned years ago and appear to be nearly reclaimed by nature. Other lines run parallel to active lines, or reveal rusted rails threading through industrial areas. In some instances adjacent industrial activities, historic loading practices, leaks during material transfers or storage, and repair activities have contaminated soil with oil or hazardous materials. In addition, residual contamination is often found along the length of the line, incidental to the maintenance and use of the railway itself.

Redevelopment of former rail lines to recreational trails can be accomplished in a way that protects public health and the environment. It requires recognizing potential problems and implementing actions to safeguard nearby residents, workers, and trail users throughout the life of the project.

Residual Contamination from Railroad Operations

Some historic railroad operations involved the use of chemicals that may have resulted in presence today of contamination. The most commonly reported contamination along rail lines includes metals, pesticides[2] (such as lead arsenate), and constituents of oil or fuel (petroleum products). These chemicals have been associated with normal railroad operations and are likely to be found anywhere along the line. For example, it would not be uncommon to find arsenic (up to ten times natural background levels) present in the soil along a right-of-way from old railroad ties dipped in an arsenic solution, arsenic weed-control sprays, and arsenic-laced slag used as railroad bed fill[3]. Lubricating oil and diesel that dripped from the trains are likely sources of the petroleum product found along the lines. Other sources of contaminants associated with historic railroad operation may include coal ash from engines, creosote from ties, and polynuclear aromatic hydrocarbons ("PAHs") from the diesel exhaust.

The BMPs outlined in this document are specifically designed to be protective of public health and provide a practical alternative to extensively testing for and possibly removing these "typical" residues expected from the historic operation of a rail line[4].

In some instances, a rail corridor may have been open for a relatively short time, during a period of time or in a region where chemicals were not used by the rail operator. Application of the BMPs would not provide any significant benefit in those instances. In the absence of good historic information, the only sure way to know whether residuals pose a risk to trail users is to collect environmental samples along the corridor. Location-specific sampling results may then be used to modify these measures or obviate the need for their use.

Elevated Contamination from Railroad Operations or Other Sources

Several potential sources of contamination along a rail line may pose significant health and environmental risks worthy of closer examination. These sources include operations at switching and repair yards, railroad accidents involving hazardous cargoes, and releases of chemicals on rail spurs and properties that abut rail lines, but which are unrelated to the railroad operations. The latter two examples may

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[2] The application of pesticides consistent with their labeling is excluded from the definition of a "release" under M.G.L. Chapter 21E.

[3] Sampling along the abandoned Greenbush Line in the Fall of 2003, prior to its rehabilitation for commuter rail service, indicates the presence of arsenic concentrations up to 205 mg/kg, with 16% of the results greater than the MCP S-1 soil standard of 30 mg/kg, and 25% greater than the ***proposed*** standard of 20 mg/kg.

[4] Consistent with Section 8C of Chapter 46 of the Acts of 2003 (http://www.state.ma.us/legis/laws/seslaw03/sl030046.htm), the BMPs described in this document suitably prevent access to the residual oil or hazardous materials expected to be present along a railroad right-of-way.

involve almost any chemical, such as the phosphorus trichloride released in an April 3, 1980, tank car incident in Somerville, or the asbestos released from the Zonolite processing plant in Easthampton. The contamination in rail yards is somewhat more predictable, including petroleum; metals; pesticides and organic compounds emanating from equipment cleaning areas; fueling areas; maintenance and repair activities; and the railroad beds themselves.

An MCP Phase 1[5] level of investigation, tailored to the nature of the contaminant and source, would be appropriate to address these sources of elevated chemical contamination. A Phase 1 Preliminary Investigation would typically contain sufficient information in the following areas to determine the need for a Response Action or further detailed investigation:

- General Disposal Site Information (description of location and potential receptors in the area);
- Disposal Site Map (description of the property itself, with buildings, drains, and sampling locations noted);
- Disposal Site History (description of ownership, releases, chemical use, management of waste, compliance history);
- Site Hydrogeological Characteristics (description of groundwater flow, borings, wells, and the results of any investigations);
- Nature and Extent of Contamination (description of evidence of releases, laboratory results, thickness of NAPL, approximate location of contamination);
- Migration Pathways and Exposure Potential (description of contamination in air, water, soil, and discussion of potential human and environmental receptors);
- Evaluation for Immediate Response Actions; and
- Conclusions.

The results of such an investigation would be used to determine appropriate measures to implement to eliminate or reduce current and future exposure to the contaminated soils. Such measures could be similar to the BMPs proposed in this guidance, more extensive than these BMPs, or less stringent, depending on the outcome of the investigation.

Identifying Areas of Concern

As described above, locations along rail corridors could exhibit a wide range of chemical contamination, depending on the use of the line and adjacent properties. Trail developers can conduct historic research to categorize segments of a rail corridor by level of concern.

DEP has identified four categories of interest for the purpose of implementing the soil BMPs. Any given rail-trail may be comprised of one or more of these areas.

> <u>Residential, undeveloped or rural rights-of-way</u>
> These are stretches along a rail line that border historically residential, undeveloped or rural properties. These areas are likely to have been affected only by the normal operation of the rail line, with a residual level of contamination. The BMPs outlined in this document are considered appropriate for these locations, absent evidence of a specific release.

[5] The general content of a Phase I "Initial Site Investigation Report" is described in the Massachusetts Contingency Plan, 310 CMR 40.0483.

Stations and crossings
These relatively small stretches along a right-of-way would be expected to be associated with contamination elevated over the residual levels, due to more frequent/intense use of pesticides to improve sight lines and greater frequency/intensity of human activities. The BMPs outlined in this document are considered appropriate for these locations, absent evidence of a specific release.

Industrial corridors
Many rail-trails include segments that pass through industrial areas, even the predominantly rural trails of western and central Massachusetts. These stretches have a higher *potential* for contamination within the right-of-way that is unrelated to the historic railroad use. The BMPs outlined in this document may not be sufficiently protective of public health and the environment at these locations. A preliminary review is recommended in order to establish whether site-specific concerns indicate a need for further investigation, including soil testing. Absent a site-specific concern, the BMPs outlined in this document are considered appropriate for these locations.

Switching and Repair Yards
As discussed earlier, switching and repair yards have a greater range of potential contaminants of concern and a higher likelihood that the contaminants are present at significant levels. The BMPs outlined in this document are not considered sufficient by themselves to protect public health and the environment at these locations, absent further investigation.

Figure 1 outlines the decision-making steps trail developers should follow in identifying locations of interest along the corridor they are developing and whether the BMPs apply without the need for further site investigation, including soil testing.

Goals of Best Management Practices

DEP's goals in publishing BMPs for use in developing rail-trails include:

- promoting rail-trail conversions that are both health-protective and cost-effective[6];
- recognizing the potential presence of oil or hazardous material along the right-of-way;
- recognizing the potential health and environmental risks associated with developing the right-of-way;
- expediting trail development to prevent (or minimize) risk to current users of "beaten paths" along inactive rail corridors;
- preventing (or minimizing) exposures to oil or hazardous material before, during, and after construction of rail-trails; and
- preventing (or minimizing) off-site migration of contaminants before, during, and after the construction of rail-trails.

These BMPs are intended to be applied to those rail corridor segments where residual contamination from historic railroad operations is assumed to be present. Trail developers always have the option to conduct soil testing to rule-out the presence of contamination and tailor soil management practices to actual site conditions.

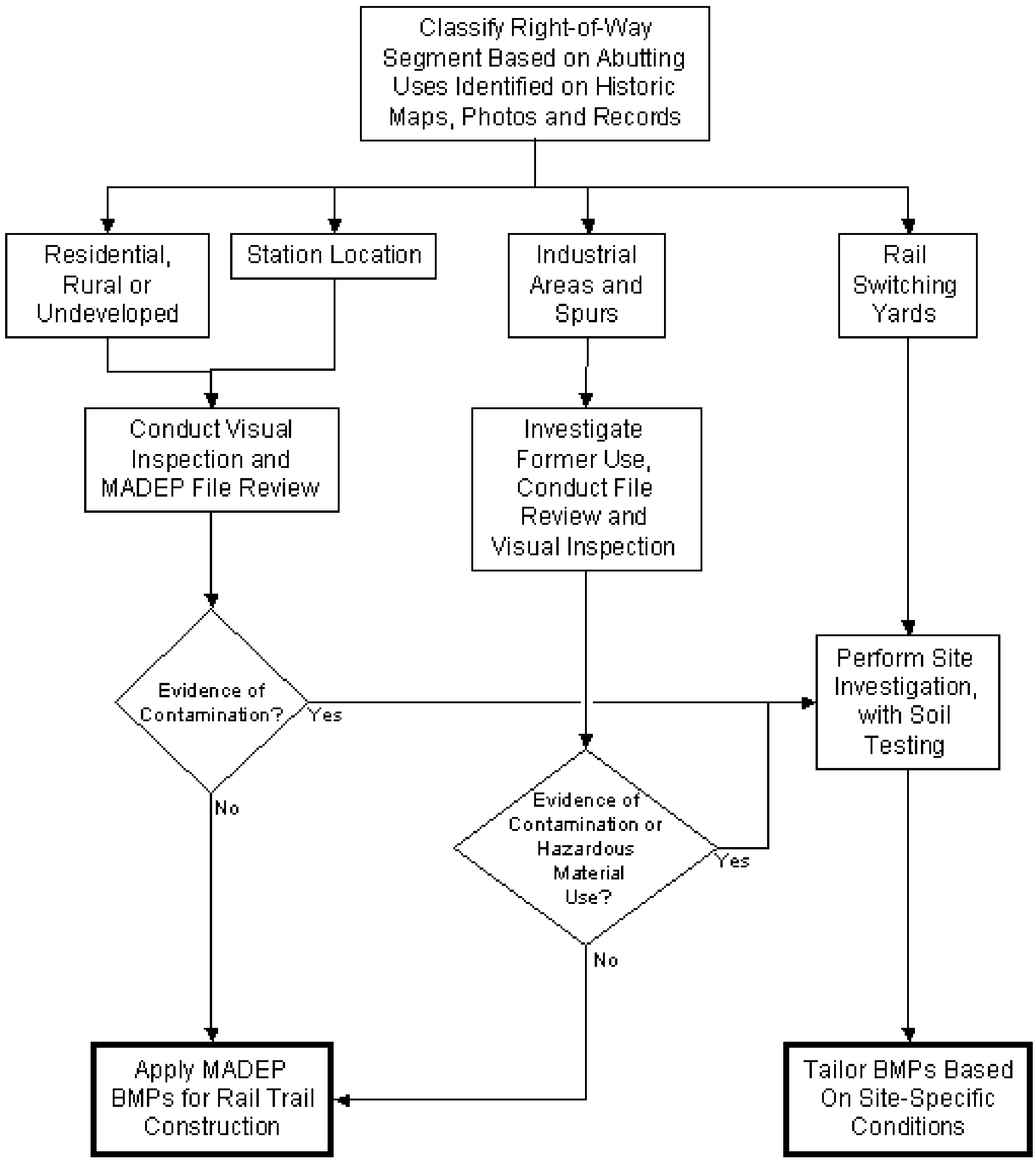
In addition to reducing risk of exposure to contaminants, the focus of this guidance, trails promote public health by encouraging active and healthy lifestyles.

The application of these BMPs to any portion of a rail corridor converted to residential use in conjunction with rail trail development is not appropriate. Only a site-specific investigation, including soil testing, can determine whether conversion to residential use is health protective.

Figure 1

Application of MADEP Best Management Practices at Rail Trail Conversions

(Pursuant to Section 8C of Chapter 46 of the Acts of 2003)



BMP Applicability

These BMPs were developed primarily for residential or rural rights-of-way, and stations and crossings. The BMPs will also be applicable in many industrial corridors, but those locations may need case-by-case review to determine the likelihood of contamination beyond the residual levels assumed here.

DEP does not believe that these BMPs are, by themselves, sufficient and appropriate for use without more extensive site investigation in industrial areas with known or likely non-railroad sources, or in rail yards.

Note that the focus of these BMPs is the potentially contaminated soil along the right-of-way and the human exposures and environmental exposures that may result from improperly managing that soil at or near the surface. This document is not intended to be a summary of all environmental requirements, such as wetlands permitting or Underground Storage Tank (UST) removal that may apply to a project. Municipalities developing rail trails are also obligated to contain the further release or threat of release of oil or hazardous materials from any structure or container within the corridor.

Phases of Project/Exposures of Concern

Rail-trail development occurs in three main phases, or time periods. Each phase has unique exposures that must be considered to identify appropriate BMPs. These phases are pre-construction, construction, and post-construction.

Pre-Construction Phase

The pre-construction phase covers the period up to the time construction actually begins. Depending on project finances and construction sequences, this phase may last several years as communities seek funds to develop a project. Trail design also occurs during the Pre-construction Phase.

While the right-of-way is not a designated rail-trail at this point, a potential may exist for people to be exposed to contaminated soil on or from the right-of-way. Dirt bikers, hikers, or children taking shortcuts, and adjacent residents may receive runoff or dust from the rail bed in its unimproved condition. Many future rail-trails also serve as utility corridors. Workers repairing or installing subsurface utilities (such as sewer lines) may have the highest potential for exposure, albeit short-term.

During trail design, developers should identify which soils will be handled during construction and plan the areas where people will congregate once the trail has been completed.

As the final grades are established, areas for playgrounds identified, and trailheads located, long-term exposures may be created to any contaminated soil remaining along the trail. By following the design guidelines provided below, designers can ensure that any long-term exposures are eliminated or minimized.

If any soil will be excavated from the right-of-way and reused off-site, the potential for exposure should also be considered.

Construction Phase

The construction phase has the potential to create significant exposures to contaminated soil as the old rail line is cleared, the right-of-way is prepared, and the trail is constructed. While construction activities may be sporadic and short-term on any given stretch of the line, the project itself may continue for many months, or even longer than a year.

The receptors of concern during the construction phase include:
demolition workers (clearing the brush; and removing the rails, ties, ballast, and debris);
construction workers (grading and shaping the trail; and creating, moving, and dissipating soil stockpiles);
adjacent residents (inhaling dust generated from the project; exploring the partially-built trail; coming in contact with soil pushed onto their property, etc...); and
environmentally sensitive areas/species.

Post –Construction Phase

After construction, trail managers must monitor activities along the trail corridor to ensure that the steps taken to reduce exposure remain effective. Trail managers should be involved in decisions to excavate material from the trail corridor to ensure that users are protected both during and after such excavation. Workers repairing or installing subsurface utilities (such as sewer lines) may have the highest potential for exposure, albeit short-term. Maintenance activities will be necessary to ensure the integrity of the trail surface, structures and landscaping that help serve to eliminate exposures.

Recommended BMPs

Absent analytical evidence to the contrary, all soil along the right-of-way should be presumed to have at least residual levels of lead, arsenic, and PAHs from historic railroad operations, as described above. The following BMPs should be considered for the pre-construction, construction, and post-construction phases of rail-trail development, as appropriate.

Pre-Construction

1. Conduct a thorough, pre-construction paper review of the right-of-way and adjacent properties.
    - Investigate the rail line history; locate old stations, crossings, spurs, and rail yards. The Valuation Plans and historic aerial photos for the properties abutting the rail line can provide much of this information[7].
    - Investigate site use and the history of adjacent properties; identify commercial and industrial stretches. The Valuation Plans and Sanborn Insurance maps can provide much of the information for the snapshot in time when they were developed. Local historical societies may have information on leading local industrialists and their local businesses.
    - Review the existing list of known or suspected disposal sites to see if any are located along the right-of-way[8]

[6]Rails-to-Trails Conservancy provides additional guidance in its publication “Acquiring Rail Corridors” p 95-97. (http://www.trailsandgreenways.org/resources/development/acquis/arc_book.asp)

- Inquire with neighbors, fire department personnel or the local historical society for further information on train crashes, accidents, and other incidents that may have released chemicals.[9]

2. Conduct a thorough, visual inspection of the right-of-way, looking for:
   - contaminated soil as evidenced by discoloration, odors, differences in soil properties, pipes, or buried debris;
   - signs of illegal dumping of waste from businesses or industry (not simply household trash);
   - stressed vegetation or "dead zones";
   - areas of soil run-off, both away from the right-of-way and toward the right-of-way;
   - signs of wind erosion sufficient to create a dust inhalation exposure;
   - signs of public use of the existing right-of-way (condoned or trespassing), such as dirt-bike trails, play forts, beverage cans, and fire pits.

3. Control current (pre-construction) exposures to soil in areas of concern by implementing one or more of the following measures, as indicated by site conditions:
   - install signs to redirect people from areas of concern; or
   - strategically place barriers to control use in the areas of concern; or
   - implement other measures to eliminate contact with soils in areas of concern.

   In the event these three measures do not prove successful, trail developers should consider covering areas of exposed soil or planting bushes (such as puckerbrush) to divert people away from areas of concern.

Design Guidelines to Reduce Exposure

While developing the design for the trail, the design engineer or architect should follow these guidelines in order to reduce potential exposures.

1. Within the tread way[10] and in areas designated for recreational use along the trail (such as rest areas, picnic areas, and playgrounds), eliminate contact with potentially contaminated soil by implementing one or more measures, as appropriate:
   - Place potentially contaminated soil under pavement or an equivalent layer of compacted stone dust; or
   - Place potentially contaminated soil under at least 12 inches of clean fill and mark with a geosynthetic barrier immediately above the potentially contaminated soil; or
   - Remove and appropriately dispose of potentially contaminated soil off-site. Replace with clean material (soil, stone dust, wood chips, etc.) to establish the path and maintain grade.

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[7]The Massachusetts DEP databases (http://Mass.Gov/dep/cleanup/sites/sdown) have spills information from the early 1980's and list known and suspected locations of contamination by street address. If evidence exists that an off-site source may have contaminated the right-of-way, further investigation is needed. DEP files may contain sufficient information to determine whether the right-of-way has been affected.
[8]If evidence exists that an incident may have contaminated the right-of-way, further investigation is indicated. DEP files may contain sufficient information to determine the extent of the problem.
[9]The tread way includes any area intended for active use including jogging side paths and equestrian trails

2. Outside of the tread way, control contact with potentially contaminated soil by implementing one or more measures to minimize or eliminate contact with potential residual contamination, including:
   - Design landscaping, including the nature, location, and density of plantings, that channels recreational users of the trail to the tread way, disrupts the creation of informal tread ways (such as single track trails) and directs users away from potentially contaminated soil;
   - Create areas of congregation, such as benches, rest areas, and scenic areas, that draw recreational users of the trail and encourage congregation away from potentially contaminated soil;
   - Install signs informing users of upcoming congregation areas and/or advising users to remain on the path;
   - Stabilize the soil through plantings, grading, or other erosion control measures;
   - Install guardrails, curbing, or fences in areas to encourage users to stay the tread way; or
   - Implement other design features that would minimize or eliminate contact with residual contamination in the soil.

3. The design should identify areas where potentially contaminated soil will be removed and areas within the corridor where such soils can be safely stored temporarily so that the Construction Contractors can re-use as much material on-site as possible.

During Construction

The following BMPs presume the trail construction includes excavation, movement, placement and grading of soil. Trail construction activities that involve no movement of soil may be carried out with the application of standard dust control measures, such as spraying soil with water.

The following guidelines should be followed during construction involving soil grading and excavation and be incorporated into the construction bid documents in order to ensure the proper handling of soils during trail construction:

1. Hire an independent environmental monitor or task existing staff to oversee the Construction Contractor[11]. The monitor will:
   - Verify that construction-related plans and training are in place before construction begins ;
   - Oversee all excavation,
   - Visually inspect material that will be moved, and
   - Ensure proper management of soil along the right-of-way and the implementation of BMPs.

   During construction, the environmental monitor should be present whenever known contaminated soil will be excavated and should inspect construction-related BMPs several times each week.

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[10]For example, a municipality may enter into an agreement with Mass Highway to manage a trail construction funded with federal transportation appropriations. The agreement should require that the construction contract include provisions requiring the contractor to follow the BMPs and the directions of the independent environmental monitor.

2. Minimize or eliminate exposure of construction workers to potentially contaminated soil.
    - Prepare site-specific soil management and health and safety plans.
    - Have employees and subcontractors complete a safety-training program covering the potential hazards associated with working with contaminated soil likely to be present along a rail line, before excavation work begins.
    - Educate employees and subcontractors in identifying contaminated soil and on handling and disposal procedures for contaminated soil.
    - Hold regular meetings to discuss and reinforce the health and safety procedures.
    - Prevent visible dust during excavation, transportation, and placement operations. Implement dust control measures, such as spraying soil with water, during excavation or grading operations. Exercise caution to prevent soil spillage during transport.

3. Minimize or eliminate exposure of adjacent residents and curious trespassers to potentially contaminated soil.
    - Prevent visible dust during excavation, transportation, and placement operations. Implement dust control measures, such as spraying soil with water, during excavation or grading operations. Exercise caution to prevent soil spillage during transport.
    - Install temporary signs and/or security fence to surround and secure areas where potentially contaminated soil may pose an Imminent Hazard to human health.
    - Avoid temporary stockpiling of potentially contaminated soils. Take the following precautions stockpiling, as necessary:
        - Identify long-term stockpile locations that are away from residences, schools or playgrounds;
        - Cover the stockpile with plastic sheeting or tarps to prevent dust generation and erosion;
        - Install a berm, hay bales, and/or silt fences around the stockpile to prevent runoff from leaving the area;
        - Do not stockpile in or near storm drains or watercourses; and
        - Clean-up materials should be staged near the storage area.

4. Minimize or eliminate the migration of potentially contaminated soil off-site.
    - Protect gutters, storm drains, catch basins, and other drainage system features on the site with hay bales and/or silt fences during construction. They should be cleaned following the completion of site work.
    - Prevent visible dust during excavation, transportation, and placement operations. Implement dust control measures, such as spraying soil with water, during excavation or grading operations.
    - Exercise caution to prevent soil spillage during transport.
    - Stabilize exposed areas of potentially contaminated soil and prevent run-off.

5. Prevent new leaks and spills and notify DEP, as appropriate, if they occur.

6. Transport and dispose potentially contaminated soil in accordance with the applicable rules and regulations of the United States Department of Transportation (USDOT), the United States Environmental Protection Agency (USEPA), and the Massachusetts Department of Environmental Protection (MADEP) (the specifications for the off-site management of contaminated soil supersede the procedures outlined in this BMP).

Post- Construction

1. Establish a protocol to ensure that future workers performing maintenance or construction within the right-of-way are made aware of the need for appropriate BMPs, including:
   - Posting of signage indicating that a permit from the trail manager is necessary before any excavation of the corridor begins.
   - Sending notice of the existence of such requirement to easement holders and the municipal engineer and/or public works department; and
   - Developing Standard Operating Procedures with local utilities, easement holders, DPWs, and other municipal offices for work in the right-of-way.

2. Establish a procedure for the trail manager to periodically travel the corridor and inspect the integrity of the trail surface, structures and landscaping and require appropriate action to correct any problems observed.

DEP Contact

For further information, please contact Paul Locke in the DEP Bureau of Waste Site Cleanup at (617) 556-1160 or Paul.Locke@state.ma.us.