UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

JUN 23 2014

John Paul Andrews
Real Estate Developer Manager
999 Lake Drive
Issaquah, WA 98027

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Costco Wholesale Facility site located at 200 Legacy Blvd. Dedham, MA 02026, Norfolk County; Authorization # MAG910624

Dear Mr. Andrews:

Based on the review of a Notice of Intent (NOI) submitted by Terracon Consultants, Inc., on behalf of Costco Wholesale, for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you as the named Owner and Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are required to monitor. Also indicated on the checklist are the effluent limits, test methods and minimum levels (MLs) for each pollutant. Please note that the checklist does not represent the complete requirements of the RGP. Operators must comply with all of the applicable requirements of this permit, including influent and effluent monitoring, narrative water quality standards, record keeping, and reporting requirements, found in Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete RGP and other information at: http://www.epa.gov/region1/npdes/mass.html#dgp.

Please note the enclosed checklist includes metal parameters that exceeded Appendix III limits. EPA is also requesting monitoring for the entire list of pollutants established on the petroleum related site remediation, subcategory b, based on the historic pollutant contamination at this site.

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on a dilution factor range (DFR). With the absence of dilution to wetlands, EPA determined that the DFR for each parameter is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for arsenic of 10 ug/L, cadmium of 0.2 ug/L, trivalent chromium of

48.8 ug/L, copper of 5.2 ug/L, lead of 1.3 ug/L, nickel of 29 ug/L, zinc of 66.6 ug/L and iron of 1,000 ug/L, are required to achieve permit compliance at your site.

Finally, please note the checklist of pollutants attached to this authorization is subject to a recertification if the operations at the site result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported this project will terminate on August 31, 2014. You are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,

Thelma Murphy

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Joseph M. Flanagan, Dedham PWD
Frank X. Kehoe, Terracon Consultants, Inc.

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910624**
Authorization Issued:	June, 2014
Facility/Site Name:	Costo Wholesale Facility/ Fuel Addition
Facility/Site Address:	200 Legacy Blvd., Dedham Mass
	Email address of owner: jmb@bederson.com
Legal Name of Operator:	Wholesale Corporation
Operator contact name, title, and Address:	John Paul Andrews (Representing Owner and named Operator) Real Estate Developer Manager located at 999 Lake Drive in Issaquah, WA 98027
	Email: Same as the owner
Estimated date of the site's Completion:	August 31, 2014
Category and Sub-Category:	Petroleum Related Site Remediation. Sub-category B. Fuel Oils and Other Oils Sites.
RGP Termination Date:	September 10, 2015
Receiving Water:	

Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#160.2/ML5ug/L
	2. Total Residual Chlorine (TRC) [1]	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
√	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
	4. Cyanide (CN) [2, 3]	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
√	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) [4]	100 ug/L/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
√	14. Naphthalene [5]	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
√	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	33. Total Phthalates (Phthalate esters) [6]	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L
√	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
√	a. Benzo(a) Anthracene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	b. Benzo(a) Pyrene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	c. Benzo(b)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	d. Benzo(k)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	e. Chrysene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	f. Dibenzo(a,h)anthracene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	g. Indeno(1,2,3-cd) Pyrene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML5ug/L
√	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
√	h. Acenaphthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	i. Acenaphthylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	j. Anthracene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	l. Fluoranthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	m. Fluorene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	n. Naphthalene [5]	20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	o. Phenanthrene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	p. Pyrene	X/Me#8270D/ML5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) [8, 9]	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
√	38. Chloride	Monitor only/Me# 300.0/ ML 100 ug/L

	Metal parameter	Total Recoverable MA/Metal Limit H [10] = 50 mg/l CaCO3, Units = ug/l [(11/12)] Freshwater Limts	Minimum level=ML	
	39. Antimony	5.6	ML	10
√	40. Arsenic **	10	ML	20
	41. Cadmium **	0.2	ML	10
√	42. Chromium III (trivalent) **	48.8	ML	15
	43. Chromium VI (hexavalent) **	11.4	ML	10
√	44. Copper **	5.2	ML	15
√	45. Lead **	1.3	ML	20
	46. Mercury **	0.9	ML	02
√	47. Nickel **	29	ML	20
	48. Selenium **	5	ML	20
	49. Silver	1.2	ML	10
√	50. Zinc **	66.6	ML	15
√	51. Iron	1,000	ML	20

	Other Parameters	Limit
√	52. Instantaneous Flow	Site specific in CFS
√	53. Total Flow	Site specific in CFS
√	54. pH Range for Class A & Class B Waters in MA	6.5-8.3; 1/Month/Grab[13]
	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab[13]
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab[13]
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab[14]
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab[14]
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab[14]
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab[14]
	61. Maximum Change in Temperature in MA – Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab[14]
	62. Maximum Change in Temperature in MA – Any Class SA water body - Coastal	1.5°F; 1/Month/Grab[14]
	63. Maximum Change in Temperature in MA – Any Class SB water body - July to September	1.5°F; 1/Month/Grab[14]
	64. Maximum Change in Temperature in MA –Any Class SB water body - October to June	4°F; 1/Month/Grab[14]

Footnotes:

[1] Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).
[2] Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.
[3] Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).
[4] BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.
[5] Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.
[6] The sum of individual phthalate compounds(not including the #34, Bis (2-Ethylhexyl) Phthalate . The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[7] Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
[8] In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses."Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[9]Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).
[10] Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.
[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.
[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).

May 23, 2014

Mr. Victor Alverez
US Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, Massachusetts 02114-2023
Attn: Remediation General Permit NOI Processing

Re: Notice of Intent for Remediation General Permit
Costco Wholesale – Fuel Facility Addition
200 Legacy Boulevard
Dedham, Norfolk County, Massachusetts
Terracon Project No. J4137103

Dear Mr. Alverez:

In accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000, Terracon Consultants, Inc. (Terracon), is pleased to provide this submittal of a Notice of Intent (NOI) and applicable supporting documentation as required by the US Environmental Protection Agency (EPA) for construction site dewatering under the RGP. Temporary dewatering is planned in support of the construction activities proposed at the Costco Warehouse site in Dedham, Massachusetts, as shown on Exhibit A-1, Site Location Map. Tabular summaries of groundwater sample analytical results are presented in Appendix B. The completed NOI for the proposed discharge is provided in Appendix C

Site Information

This NOI submittal has been prepared for the management of water generated from construction dewatering activities at the Costco Wholesale (Costco) facility. The site is an approximately 1.5-acre area that is currently part of a larger 16.6-acre parent parcel. The parent parcel is currently occupied by the Costco Wholesale store located at 200 Legacy Boulevard in Dedham, Norfolk County, Massachusetts. The site consists of an asphalt-paved parking lot for the store, with landscaped islands of grass and decorative rock. The site is located to the south of the northwest entrance to the Costco Wholesale store and to the northeast of Legacy Boulevard. Costco intends to construct a new vehicle fueling facility at the site.

Regulatory Background

Terracon conducted a Phase I ESA for the site, dated October 2, 2013 and a Limited Site Investigation (LSI), dated September 25, 2013. Terracon reviewed several prior environmental reports in relation to the former New England Concrete Pipe Corporation (NECPC) that included the site, the parent parcel and another parcel to the north of the site. NECPC operated at this location from the early 1950s to late 1980s. Environmental investigations conducted following closure of the NECPC facility identified volatile organic compound (VOC), petroleum hydrocarbon (PHC), lubricating oil, fuel oil and low levels of metal impacts to soil and groundwater in connection with several former underground storage tanks (USTs). The gasoline and oil USTs were reportedly removed from the facility in the 1980s. Although limited remediation measures were performed, some residual contamination remained prior to the development of the existing Costco Wholesale retail store in the 1990s. As required by the Massachusetts Department of Environmental Protection (MassDEP), a Release Abatement Measure (RAM) was undertaken in 1997 which consisted of the removal of approximately 6,675 cubic yards (cy) of petroleum-contaminated soils, the removal of approximately 800 gallons of oil/water, the treatment of groundwater using activated carbon that discharged to the ground surface, recycling of the soil material on the property using asphalt stabilization technologies and reusing the material beneath paved areas. An Activity Use Limitation (AUL) was filed with the deed for the property that restricted the handling and disposal of asphalt-batched recycled soil that was placed beneath the pavement. Review of the AUL indicates the site is outside the inferred limits of the residual contamination buti is within the “approximate limits of the recycled material placement”

Terracon has conducted a Phase I Environmental Site Assessment (ESA) and two Limited Subsurface Investigations (LSIs), which consisted of soil and groundwater testing activities, at the site. Under the LSIs, 17 soil borings were advanced in areas where soil excavation is planned for the new fuel facility. Twenty-six soil samples and two groundwater samples were collected from the seventeen soil borings and submitted for laboratory analysis. Based on the laboratory analytical results for the soil and groundwater samples submitted for testing, contaminants of concern (COCs) were not detected at concentrations above Massachusetts Contingency plan (MCP) Reportable Concentrations (RCs).

Excavation dewatering is anticipated for the installation of the new petroleum underground storage tanks (USTs) at the site. Because the area of the site is subject to an AUL and that some dissolved petroleum constituents might be encountered in the groundwater, a NOI is being submitted for the discharge of water from the excavation to the on-site storm drain. The proposed dewatering, treatment and discharge process is described below.

System Design

A temporary cofferdam will be installed surrounding the buried fuel tank excavations. For purposes of treatment system design, it was assumed the cofferdam will be dewatered using two deep wells installed at opposite ends of the cofferdam. Based on Terracon estimates, both wells combined would produce approximately 75 gallons per minute (gpm) for the initial drawdown and about 20 gpm to maintain the lowered condition.

This estimate is based on a generalized soil profile, empirical correlations for soil permeability, shallow sheet pile embedment, and assumed dewatering methods.

Groundwater treatment will occur prior to discharge. The groundwater treatment system will consist of a 21,000 gallon frac tank, two transfer pumps, two bag filters and two liquid phase carbon absorber units duplex. A line diagram of the groundwater treatment system is included as Exhibit A-4.

The proposed discharge location for the treated groundwater is into the storm water catch basin located on the southwestern portion of the property, as shown in Exhibit A-5

The average flow rate for discharge of treated groundwater from the system to the storm water line is expected to be approximately 50 gallons per minute (gpm). The design capacity of the groundwater treatment system is 75 gpm. The system is expected to operate and discharge through August 2014.

Influent Sample Analysis

A groundwater sample was collected from monitoring well MW-1 on March 6, 2014 and analyzed by Alpha Analytical of Westborough, Massachusetts, per requirements of the RGP, for volatile organic compounds via EPA method 8260, polycyclic aromatic hydrocarbons via EPA method 8270, total petroleum hydrocarbons method 166.1, PCBs via EPA method 8081, chloride, total suspended solids, total cyanide, total residual chlorine, total phenolics and hexavalent chromium. A copy of the laboratory report and chain of custody are included as Appendix F

Appendix III of the 2010 RGP under NPDES sets the effluent limitation from treatment system discharges. Groundwater analytical results of the sample collected from MW-1 on March 6, 2014 were compared to the RGP effluent limits Category III sub category B for treatment system design considerations. The laboratory analytical results indicate that VOCs, PAHs, PCBs, chloride, total cyanide, total phenolics and hexavalent chromium were not detected at concentrations above the comparable limits. One or more metals were detected at

concentrations above Category III sub category B limits, however these are pre-treatment concentrations.

Receiving Water Information

The receiving water body for the treated groundwater is a wetland area that drains eastward to an unnamed brook, located approximately 500 feet to the east of the site. The brook ultimately discharges to Wigwam Pond, located approximately 3,000 feet to the north of the site.

Evaluation of Threatened or Endangered Species or Critical Habitat Located within Receiving Waters

According to the MassDEP Online Map Viewer Priority Resource Map, http://maps.massgis.state.ma.us/images/dep/omv/mcpviewer.htm, accessed on May 12, 2014, no Priority Habitat of Rare Species or Estimated Habitats of Rare Wildlife are located within the proposed work area. A copy of the MassGIS Resource Priority Map of the site area is included in Appendix D

Review of Natural Register of Historic Places

Based on a review of the available resources reviewed from the Massachusetts Cultural Resources Information System (MACRIS) online database at http://mhc-macris.net/Results.aspx, accessed on May 12, 2014, there are no historic places located in close proximity to the Site and proposed discharge area. A copy of the MACRIS report is included in Appendix E.

Should you have any questions or concerns regarding the content of this letter or the NOI for the RPG, please do not hesitate to contact us.

Sincerely,

Terracon Consultants, Inc.

Frank X. Kehoe, CES
Senior Project Manager

for James B. Matz, LSP, PG
Office Manager

for Alex Goharioon
Senior Vice President

Appendices:	Appendix A	Exhibit A-1: Site Location Map
		Exhibit A-2: Site Plan Showing Soil Boring and Groundwater Monitoring Well Locations
		Exhibit A-3: Site Plan Showing Proposed Excavation Area
		Exhibit A-4 Treatment System Design
		Exhibit A-5 Proposed Effluent Discharge Location
	Appendix B	Summary of Groundwater Sample Analytical Results
	Appendix C	NOI for the RGP
	Appendix D	On-line MassGIS Resources and Priority Map
	Appendix E	MACRIS Database Search Results
	Appendix F	Laboratory Analytical Reports and Chain of Custody Records

Appendix A

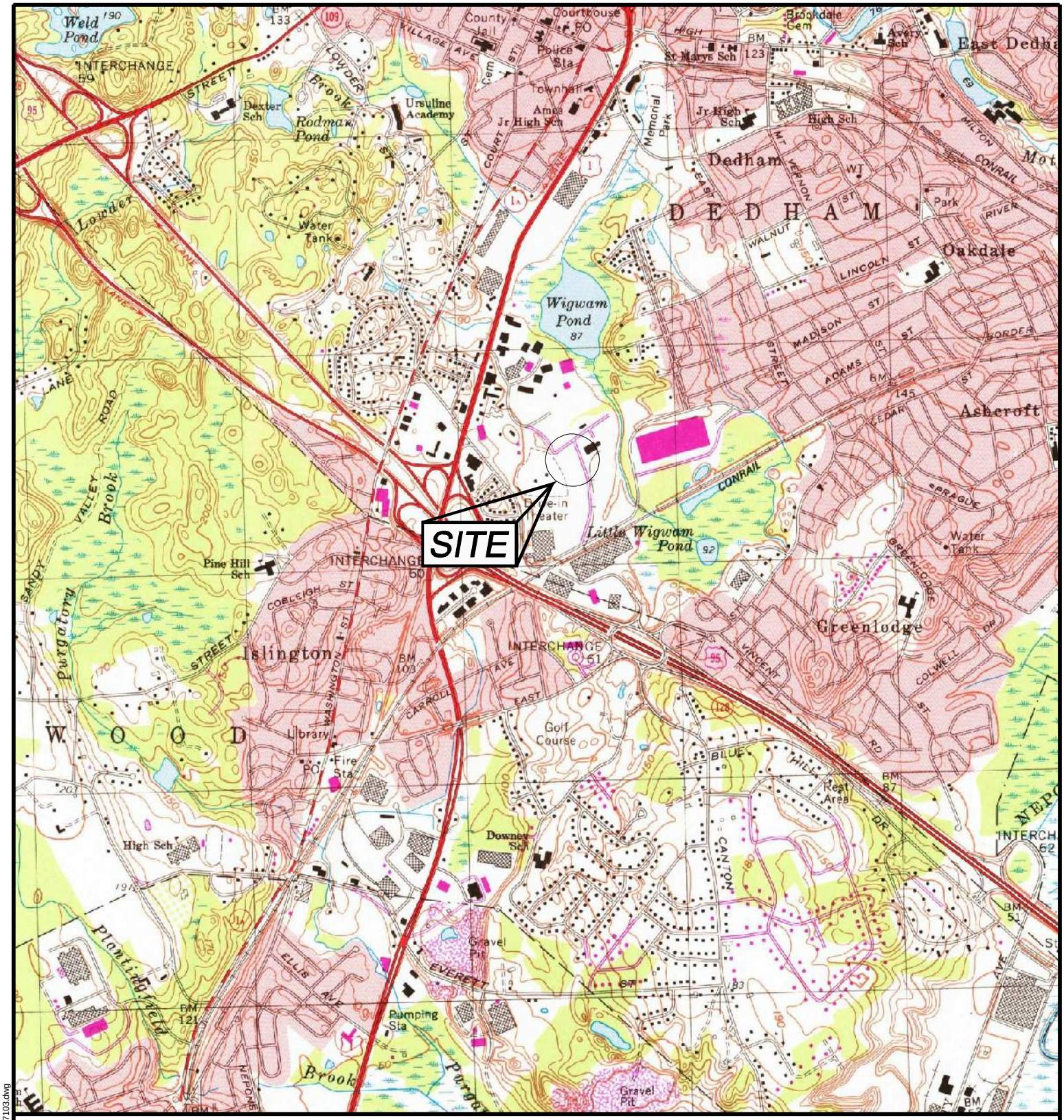
Exhibit A-1 – Site Location Map

Exhibit A-2 – Site Plan Showing Soil Boring and Groundwater Monitoring Well Locations

Exhibit A-3 – Site Plan Showing Proposed Excavation Area

Exhibit A-4 – Treatment System Design

Exhibit A-5 – Proposed Effluent Discharge Location



SCALE: 1:24 000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

QUADRANGLE LOCATION

Project Mngr:	FXK
Drawn By:	JRL
Checked By:	FXK
Approved By:	JSD

Project No.	J4137103
Quadrangle:	NORWOOD, MASS. - 1979
File No.	J4137103
Date:	September 2013

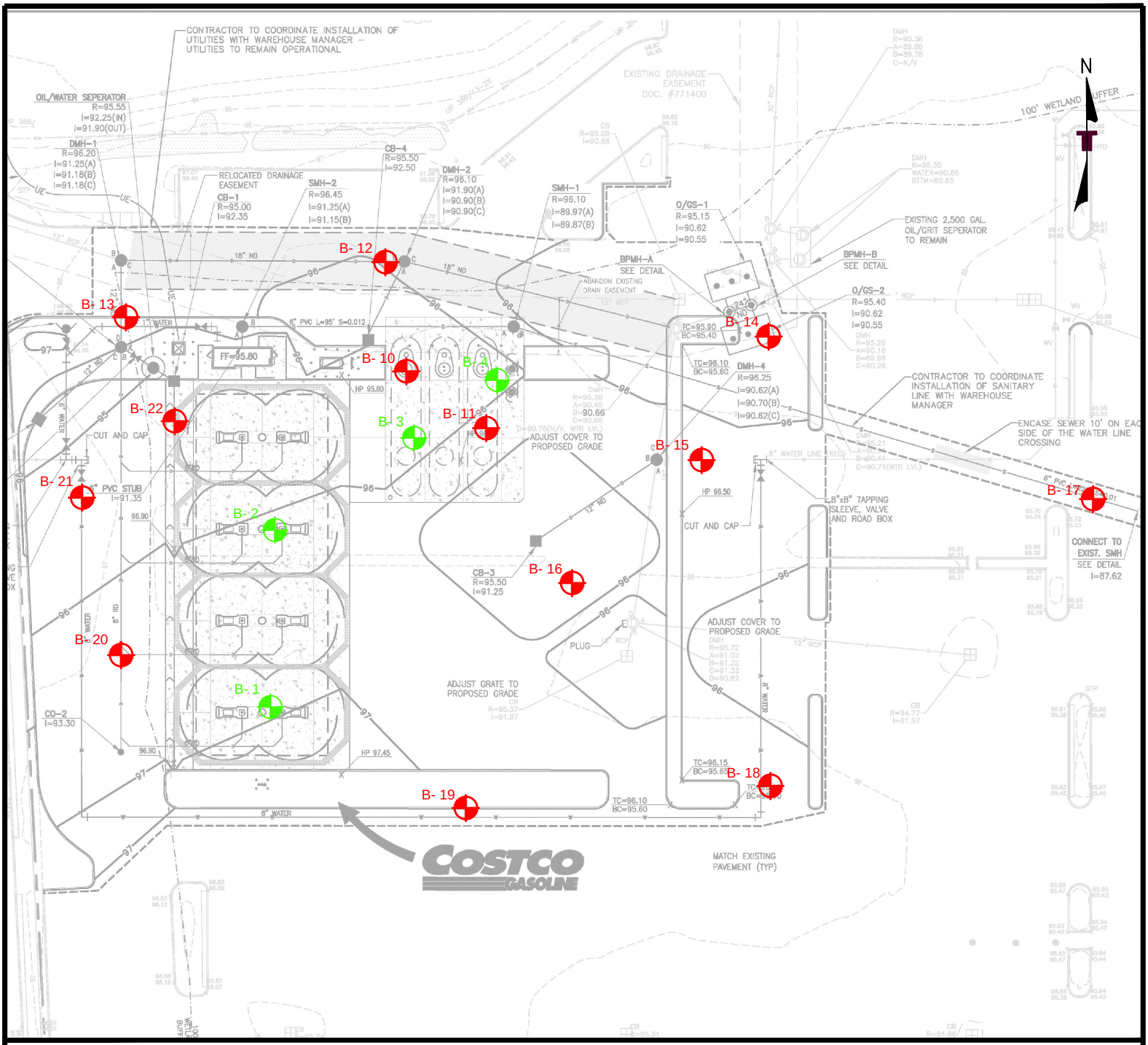
Terracon
Consulting Engineers and Scientists
310 South Street, Ste. 5 Plainville, MA 02762
PH. (508)643-7100 FAX.(508)643-7171

SITE LOCATION MAP

PHASE I ENVIRONMENTAL SITE ASSESSMENT
COSTCO FUELING FACILITY

200 LEGACY BOULEVARD
DEDHAM, MASSACHUSETTS

EXHIBIT
A-1



50 0 25 50

APPROXIMATE SCALE IN FEET

NOTES:

1. THIS DIAGRAM WAS PREPARED USING A 03/14/2014 DRAWING PREPARED BY RJ O'CONNELL & ASSOCIATES DRAWING NO: C-2; GRADING, DRAINAGE, AND UTILITY PLAN FOR THE PROPOSED COSTCO FUEL FACILITY.

2. THIS DIAGRAM SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING REPORT.

3. USE OF THIS DIAGRAM IS LIMITED TO THE ILLUSTRATION OF THE APPROXIMATE LOCATIONS OF THE PERTINENT SITE FEATURES INDICATED IN THE REPORT. ANY OTHER USE OF THIS DIAGRAM WITHOUT PERMISSION FROM TERRACON IS PROHIBITED.

PREVIOUS BORING LOCATION (COMPLETED 2013)

TERRACON BORING LOCATION (TYP) (COMPLETED 2014)

Project Mngr:	FXK
Drawn By:	CWO
Checked By:	FXK
Approved By:	JSD
Project No.	J4137103
Scale:	AS SHOWN
File No.	J4137103
Date:	MARCH 2014

Terracon
Consulting Engineers and Scientists
310 South Street, Ste. 5 Plainville, MA 02762
PH. (508)643-7100 FAX.(508)643-7171

SITE PLAN SHOWING BORING LOCATIONS

PROPOSED COSTCO WHOLESALE FUEL FACILITY
200 LEGACY BOULEVARD
DEDHAM, MASSACHUSETTS

EXHIBIT
A-2

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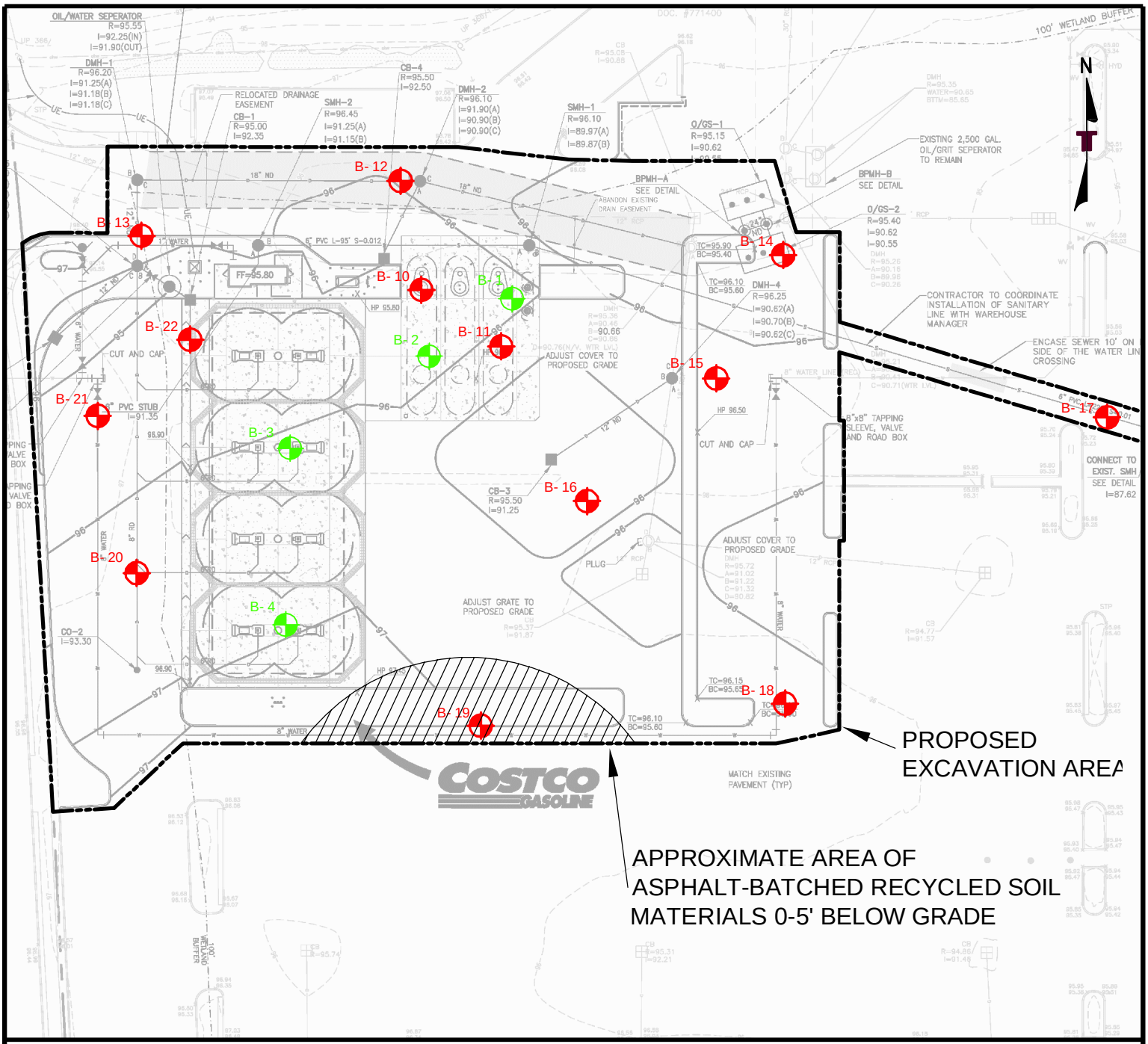

50 0 25 50

APPROXIMATE SCALE IN FEET

PREVIOUS BORING LOCATION (COMPLETED 2013)

TERRACON BORING LOCATION (TYP) (COMPLETED 2014)

NOTES:

1. THIS DIAGRAM WAS PREPARED USING A 03/14/2014 DRAWING PREPARED BY RJ O'CONNELL 7 ASSOCIATES DRAWING NO: C-2; GRADING, DRAINAGE, AND UTILITY PLAN FOR THE PROPOSED COSTCO FUEL FACILITY.
2. THIS DIAGRAM SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING REPORT.
3. USE OF THIS DIAGRAM IS LIMITED TO THE ILLUSTRATION OF THE APPROXIMATE LOCATIONS OF THE PERTINENT SITE FEATURES INDICATED IN THE REPORT. ANY OTHER USE OF THIS DIAGRAM WITHOUT PERMISSION FROM TERRACON IS PROHIBITED.

Project Mngr:	FXK
Drawn By:	CWO
Checked By:	FXK
Approved By:	JSD

Project No.	J4137103
Scale:	AS SHOWN
File No.	J4137103
Date:	MARCH 2014

Terracon
Consulting Engineers and Scientists
310 South Street, Ste. 5 Plainville, MA 02762
PH. (508)643-7100 FAX.(508)643-7171

SITE PLAN SHOWING PROPOSED EXCAVATION AREA

PROPOSED COSTCO WHOLESALE FUEL FACILITY
200 LEGACY BOULEVARD
DEDHAM, MASSACHUSETTS

EXHIBIT
A-3

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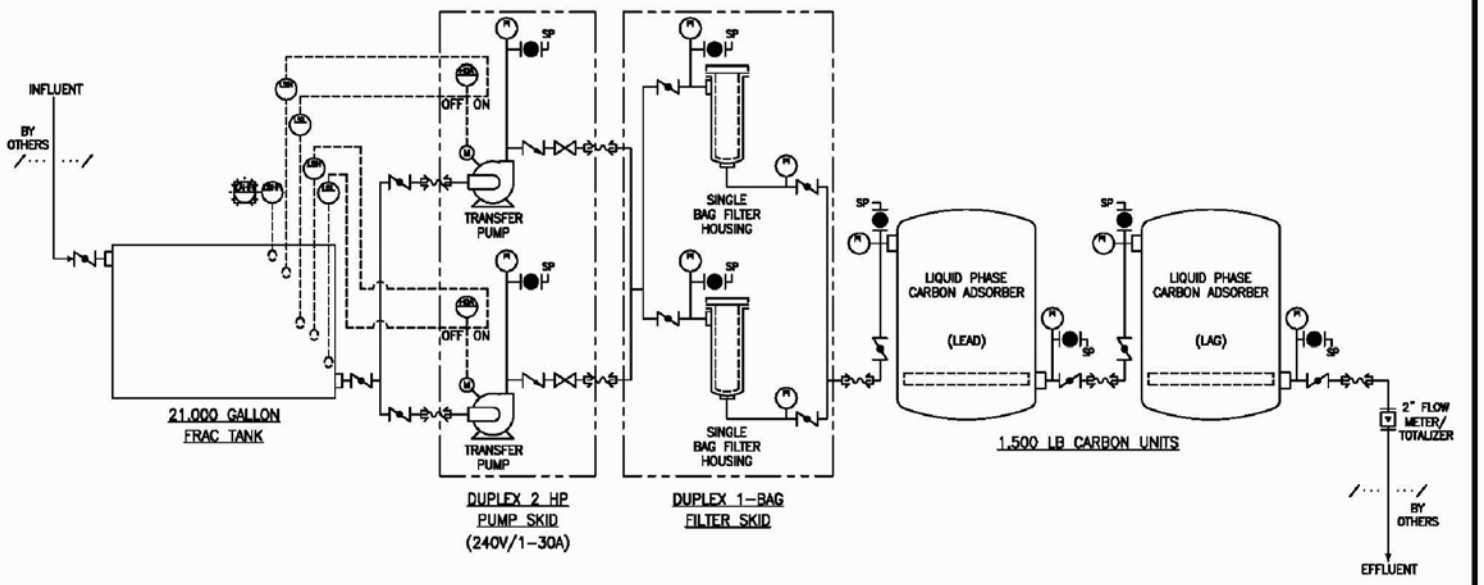

LEGEND

- PROCESS PIPING
- FLEXIBLE HOSE
- FLOW DIRECTION
- PIPE CROSS OVER
- LEVEL FLOAT
- MOTOR
- FLOW METER
- BALL VALVE (NORMALLY CLOSE)
- BUTTERFLY VALVE
- CHECK VALVE
- GATE VALVE (OPEN)
- SP SAMPLE PORT
- CAM LOCK COUPLING
- PRESSURE GAUGE
- LEVEL ALARM HIGH HIGH
- LEVEL SWITCH HIGH
- LEVEL SWITCH HIGH HIGH
- LEVEL SWITCH LOW
- HAND OPERATED SWITCH

NOTES:
1) DESIGN FLOWRATE = 75 GPM
2) NOT ALL VALVES, INSTRUMENTATION AND PIPING, ETC. SHOWN FOR CLARITY
3) GENERATOR BY OTHERS

NO.	REVISIONS	DATE
A	PRELIMINARY DESIGN FOR REVIEW	05/02/14

COSTCO FUEL FACILITY
DEDHAM, MA

75 GPM PROPOSED TEMPORARY WATER TREATMENT SYSTEM

SCALE:	NTS	APPROVED BY:	JL	DRAWN BY:	RS
DATE:	05/02/14				

GROUND/WATER TREATMENT & TECHNOLOGY
627 MT. HOPE ROAD
WHARTON NJ 07885

DWG SIZE:	A	SHEET:	1 OF 1	DRAWING NUMBER:	UNASSIGNED	A

NOTES:

1. THIS DIAGRAM WAS PREPARED BASED ON A PLAN BY GROUND/WATER TREATMENT & TECHNOLOGY OF WHARTON, NEW JERSEY, PROJECT No. UNASSIGNED, SHEET No. UNASSIGNED, TITLED "*75 GPM PROPOSED TEMPORARY WATER TREATMENT SYSTEM*" DATED: MAY 2ND, 2014.
2. THE LOCATIONS OF THE EXISTING BUILDINGS, ASTS, AND OTHER FEATURES WERE ESTIMATED BASED ON AVAILABLE AERIAL PHOTOGRAPHY, LIMITED RECORDS THAT WERE READILY AVAILABLE, AND FIELD OBSERVATIONS.
3. THIS DIAGRAM SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING REPORT.
4. USE OF THIS DIAGRAM IS LIMITED TO THE ILLUSTRATION OF THE APPROXIMATE LOCATIONS OF THE PERTINENT SITE FEATURES INDICATED IN THE REPORT. ANY OTHER USE OF THIS DIAGRAM WITHOUT PERMISSION FROM TERRACON IS PROHIBITED.

Project Mngr:	FXK
Drawn By:	CWO
Checked By:	FXK
Approved By:	JSD

Project No.	J4137103
Scale:	NTS
File No.	J4137103
Date:	MAY 2014

Terracon
Consulting Engineers and Scientists
201 Hammer Mill Road Rocky Hill, CT 06067
PH. (8600) 721 1900 FAX.(860) 721 1939

75 GPM PROPOSED TEMPORARY WATER TREATMENT SYSTEM

PROPOSED COSTCO WHOLESALE FUEL FACILITY
200 LEGACY BOULEVARD
DEDHAM, MASSACHUSETTS

EXHIBIT
A-4

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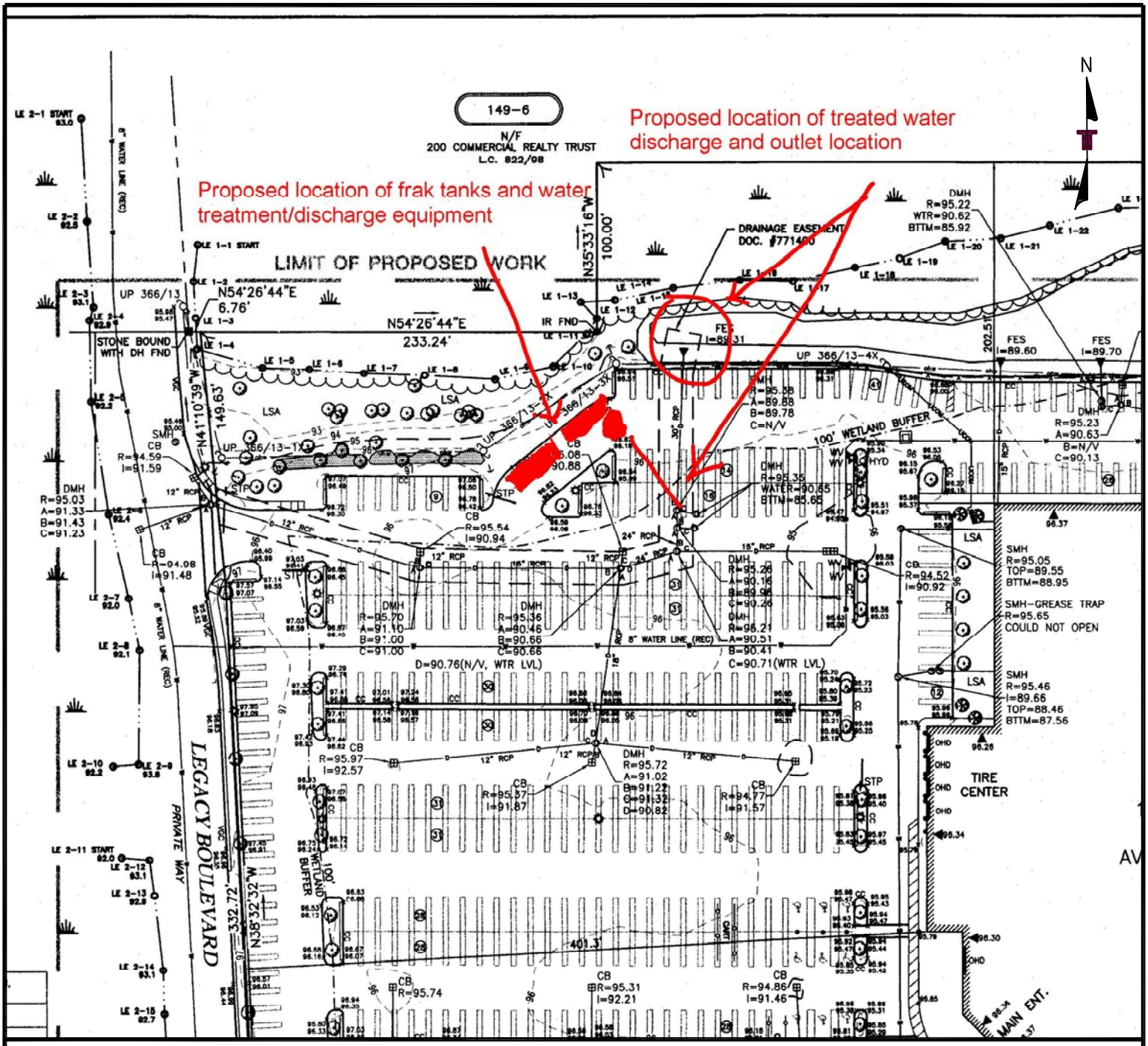

NOTES:

1. THIS DIAGRAM WAS PREPARED BASED ON A PLAN BY RJ O'CONNELL & ASSOCIATES INC. OF STONEHAM, MASSACHUSETTS, PROJECT No. 11084, SHEET No. EX-1, TITLED "*EXISTING CONDITIONS PLAN*" DATED: MARCH 21ST, 2013.

2. THE LOCATIONS OF THE EXISTING BUILDINGS, ASTS, AND OTHER FEATURES WERE ESTIMATED BASED ON AVAILABLE AERIAL PHOTOGRAPHY, LIMITED RECORDS THAT WERE READILY AVAILABLE, AND FIELD OBSERVATIONS.

3. THIS DIAGRAM SHOULD BE READ IN CONJUNCTION WITH THE ACCOMPANYING REPORT.

4. USE OF THIS DIAGRAM IS LIMITED TO THE ILLUSTRATION OF THE APPROXIMATE LOCATIONS OF THE PERTINENT SITE FEATURES INDICATED IN THE REPORT. ANY OTHER USE OF THIS DIAGRAM WITHOUT PERMISSION FROM TERRACON IS PROHIBITED.

Project Mngr: FXK	Project No. J4137103	Terracon Consulting Engineers and Scientists	EXISTING CONDITIONS PLAN	EXHIBIT
Drawn By: CWO	Scale: NTS		PROPOSED COSTCO WHOLESALE FUEL FACILITY	A-5
Checked By: FXK	File No. J4137103		200 LEGACY BOULEVARD	
Approved By: JSD	Date: MAY 2014	201 Hammer Mill Road Rocky Hill, CT 06067 PH. (860) 721 1900 FAX.(860) 721 1939	DEDHAM, MASSACHUSETTS	

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Appendix B
Summary of Groundwater Sample Analytical Results

Table 2A - VOCs
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
			MW-1	Qual
		Category III, Sub Category B of RGP	3/6/2014	
Volatile Organic Compounds (ug/l)				
1,2-Dibromoethane	106-93-4	NE	0.01	U
Methylene chloride	75-09-2	4.6	3	U
1,1-Dichloroethane	75-34-3	70	0.75	U
Chloroform	67-66-3	NE	0.75	U
Carbon tetrachloride	56-23-5	4.4	0.5	U
1,2-Dichloropropane	78-87-5	NE	1.8	U
Dibromochloromethane	124-48-1	NE	0.5	U
1,1,2-Trichloroethane	79-00-5	5	0.75	U
Tetrachloroethene	127-18-4	5	0.5	U
Chlorobenzene	108-90-7	NE	0.5	U
Trichlorofluoromethane	75-69-4	NE	2.5	U
1,2-Dichloroethane	107-06-2	5	0.5	U
1,1,1-Trichloroethane	71-55-6	200	0.5	U
Bromodichloromethane	75-27-4	NE	0.5	U
trans-1,3-Dichloropropene	10061-02-6	NE	0.5	U
cis-1,3-Dichloropropene	10061-01-5	NE	0.5	U
1,1-Dichloropropene	563-58-6	NE	2.5	U
Bromoform	75-25-2	NE	2	U
1,1,2,2-Tetrachloroethane	79-34-5	NE	0.5	U
Benzene	71-43-2	50.0 ug/l for hydrostatic testing only	0.5	U
Toluene	108-88-3	limited as ug/l total BTEX	0.75	U
Ethylbenzene	100-41-4	limited as ug/l total BTEX	0.5	U
Chloromethane	74-87-3	NE	2.5	U
Bromomethane	74-83-9	NE	1	U
Vinyl chloride	75-01-4	2	1	U
Chloroethane	75-00-3	NE	1	U
1,1-Dichloroethene	75-35-4	3.2	0.5	U
trans-1,2-Dichloroethene	156-60-5	NE	0.75	U

Table 2A - VOCs
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
			MW-1	Qual
		Category III, Sub Category B of RGP	3/6/2014	
Volatile Organic Compounds (ug/l)				
Trichloroethene	79-01-6	5	0.5	U
1,2-Dichlorobenzene	95-50-1	600	2.5	U
1,3-Dichlorobenzene	541-73-1	320	2.5	U
1,4-Dichlorobenzene	106-46-7	5	2.5	U
Methyl tert butyl ether	1634-04-4	70	1	U
p/m-Xylene	179601-23-1	limited as ug/l total BTEX	1	U
o-Xylene	95-47-6	limited as ug/l total BTEX	1	U
cis-1,2-Dichloroethene	156-59-2	70	0.5	U
Dibromomethane	74-95-3	NE	5	U
1,4-Dichlorobutane	110-56-5	NE	5	U
1,2,3-Trichloropropane	96-18-4	NE	5	U
Styrene	100-42-5	NE	1	U
Dichlorodifluoromethane	75-71-8	NE	5	U
Acetone	67-64-1	Monitor Only (ug/l)	5	U
Carbon disulfide	75-15-0	NE	5	U
2-Butanone	78-93-3	NE	5	U
Vinyl acetate	108-05-4	NE	5	U
4-Methyl-2-pentanone	108-10-1	NE	5	U
2-Hexanone	591-78-6	NE	5	U
Ethyl methacrylate	97-63-2	NE	5	U
Acrylonitrile	107-13-1	NE	5	U
Bromochloromethane	74-97-5	NE	2.5	U
Tetrahydrofuran	109-99-9	NE	5	U
2,2-Dichloropropane	594-20-7	NE	2.5	U
1,2-Dibromoethane	106-93-4	NE	2	U
1,3-Dichloropropane	142-28-9	NE	2.5	U
1,1,1,2-Tetrachloroethane	630-20-6	NE	0.5	U
Bromobenzene	108-86-1	NE	2.5	U

Table 2A - VOCs
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
			MW-1	Qual
		Category III, Sub Category B of RGP	3/6/2014	
Volatile Organic Compounds (ug/l)				
n-Butylbenzene	104-51-8	NE	0.5	U
sec-Butylbenzene	135-98-8	NE	0.5	U
tert-Butylbenzene	98-06-6	NE	2.5	U
o-Chlorotoluene	95-49-8	NE	2.5	U
p-Chlorotoluene	106-43-4	NE	2.5	U
1,2-Dibromo-3-chloropropane	96-12-8	NE	2.5	U
Hexachlorobutadiene	87-68-3	NE	0.5	U
Isopropylbenzene	98-82-8	NE	0.5	U
p-Isopropyltoluene	99-87-6	NE	0.5	U
Naphthalene	91-20-3	NE	2.5	U
n-Propylbenzene	103-65-1	NE	0.5	U
1,2,3-Trichlorobenzene	87-61-6	NE	2.5	U
1,2,4-Trichlorobenzene	120-82-1	NE	2.5	U
1,3,5-Trimethylbenzene	108-67-8	NE	2.5	U
1,2,4-Trimethylbenzene	95-63-6	NE	2.5	U
trans-1,4-Dichloro-2-butene	110-57-6	NE	2.5	U
Ethyl ether	60-29-7	NE	2.5	U
Tert-Butyl Alcohol	75-65-0	NE	10	U
Tertiary-Amyl Methyl Ether	994-05-8	NE	2	U
1,4-Dioxane	123-91-1	Monitor Only (ug/l)	3	U

Notes:
Results compared to RPG effluent limits Category III subcategory B
NE = None Established
NA = Not Analyzed
U = Not Detected Above Detection Limits
ug/l = Micrograms per Liter
RGP = Remedial General Permit

Table 2B - SVOCs
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
			MW-1	Qual
		Category III, Sub Category B of RGP	3/6/2014	
Semi Volatile Organic Compounds (ug/l)				
Benzidine	92-87-5	NE	20	U
1,2,4-Trichlorobenzene	120-82-1	NE	5	U
Bis(2-chloroethyl)ether	111-44-4	NE	2	U
1,2-Dichlorobenzene	95-50-1	NE	2	U
1,3-Dichlorobenzene	541-73-1	NE	2	U
1,4-Dichlorobenzene	106-46-7	NE	2	U
3,3'-Dichlorobenzidine	91-94-1	NE	5	U
2,4-Dinitrotoluene	121-14-2	NE	5	U
2,6-Dinitrotoluene	606-20-2	NE	5	U
Azobenzene	122-66-7	NE	2	U
4-Chlorophenyl phenyl ether	7005-72-3	NE	2	U
4-Bromophenyl phenyl ether	101-55-3	NE	2	U
Bis(2-chloroisopropyl)ether	108-60-1	NE	2	U
Bis(2-chloroethoxy)methane	111-91-1	NE	5	U
Hexachlorocyclopentadiene	77-47-4	NE	20	U
Isophorone	78-59-1	NE	5	U
Nitrobenzene	98-95-3	NE	2	U
NDPA/DPA	86-30-6	NE	2	U
Bis(2-ethylhexyl)phthalate	117-81-7	NE	3	U
Butyl benzyl phthalate	85-68-7	NE	5	U
Di-n-butylphthalate	84-74-2	NE	5	U
Di-n-octylphthalate	117-84-0	NE	5	U
Diethyl phthalate	84-66-2	NE	5	U
Dimethyl phthalate	131-11-3	NE	5	U
Aniline	62-53-3	NE	2	U
4-Chloroaniline	106-47-8	NE	5	U
2-Nitroaniline	88-74-4	NE	5	U
3-Nitroaniline	99-09-2	NE	5	U

Table 2B - SVOCs
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
			MW-1	Qual
		Category III, Sub Category B of RGP	3/6/2014	
4-Nitroaniline	100-01-6	NE	5	U
Dibenzofuran	132-64-9	NE	2	U
n-Nitrosodimethylamine	62-75-9	NE	2	U
2,4,6-Trichlorophenol	88-06-2	NE	5	U
p-Chloro-m-cresol	59-50-7	NE	2	U
2-Chlorophenol	95-57-8	NE	2	U
2,4-Dichlorophenol	120-83-2	NE	5	U
2,4-Dimethylphenol	105-67-9	NE	5	U
2-Nitrophenol	88-75-5	NE	10	U
4-Nitrophenol	100-02-7	NE	10	U
2,4-Dinitrophenol	51-28-5	NE	20	U
4,6-Dinitro-o-cresol	534-52-1	NE	10	U
Phenol	108-95-2	NE	5	U
2-Methylphenol	95-48-7	NE	5	U
3-Methylphenol/4-Methylphenol	108-39-4	NE	5	U
2,4,5-Trichlorophenol	95-95-4	NE	5	U
Benzoic Acid	65-85-0	NE	50	U
Benzyl Alcohol	100-51-6	NE	2	U
Carbazole	86-74-8	NE	2	U
Pyridine	110-86-1	NE	5	U
Acenaphthene	83-32-9	(limited as total ug/L Group II PAHs-100 ug/l)	0.37	
2-Chloronaphthalene	91-58-7		0.2	U
Fluoranthene	206-44-0	(limited as total ug/L Group II PAHs-100 ug/l)	0.2	U
Hexachlorobutadiene	87-68-3		0.5	U
Naphthalene	91-20-3		0.2	U
Benzo(a)anthracene[7]	56-55-3	0.0038	0.2	U
Benzo(a)pyrene[7]	50-32-8	0.0038	0.2	U
Benzo(b)fluoranthene[7]	205-99-2	0.0038	0.2	U
Benzo(k)fluoranthene[7]	207-08-9	0.0038	0.2	U

Table 2B - SVOCs
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
			MW-1	Qual
		Category III, Sub Category B of RGP	3/6/2014	
Chrysene[7]	218-01-9	0.0038	0.2	U
Acenaphthylene	208-96-8	(limited as total ug/L Group II PAHs-100 ug/l)	0.2	U
Anthracene	120-12-7	(limited as total ug/L Group II PAHs-100 ug/l)	0.2	U
Benzo(ghi)perylene	191-24-2	(limited as total ug/L Group II PAHs-100 ug/l)	0.2	U
Fluorene	86-73-7	(limited as total ug/L Group II PAHs-100 ug/l)	0.2	U
Phenanthrene	85-01-8	(limited as total ug/L Group II PAHs-100 ug/l)	0.2	U
Dibenzo(a,h)anthracene[7]	53-70-3	0.0038	0.2	U
Indeno(1,2,3-cd)Pyrene[7]	193-39-5	0.0038	0.2	U
Pyrene	129-00-0	(limited as total ug/L Group II PAHs-100 ug/l)	0.2	U
1-Methylnaphthalene	90-12-0	NE	0.2	U
2-Methylnaphthalene	91-57-6	NE	0.2	U
Pentachlorophenol	87-86-5	NE	0.8	U
Hexachlorobenzene	118-74-1	NE	0.8	U
Hexachloroethane	67-72-1	NE	0.8	U

Notes:
Results compared to RPG effluent limits Category III subcategory B
NE = None Established
NS = Not Sampled
NA = Not Analyzed
U = Not Detected Above Detection Limits
< = Not Detected Above Detection Limits
PAHs = Polyaromatic Hydrocarbons
RGP = Remedial General Permit
ug/l = Micrograms per Liter
[7] = Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI of the RGP

Table 2C - Metals
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
			MW-1	Qual
		Category III, Sub Category B of RGP	3/6/2014	
Metals (ug/l)				
Antimony, Total	7440-36-0	5.6	10	U
Arsenic, Total	7440-38-2	10	5.28	
Cadmium, Total	7440-43-9	0.2	1.01	
Chromium III	7440-47-3	48.8	61.55	
Copper, Total	7440-50-8	5.2	144.1	
Iron, Total	7439-89-6	1,000	58,000	
Lead, Total	7439-92-1	1.3	56.9	
Mercury, Total	7439-97-6	0.9	0.2	U
Nickel, Total	7440-02-0	29	36.06	
Selenium, Total	7782-49-2	5	25	U
Silver, Total	7440-22-4	1.2	2	U
Zinc, Total	7440-66-6	66.6	105.8	

Notes:
Results compared to RPG effluent limits Category III subcategory B
NS = Not Sampled
U = Not Detected Above Detection Limits
< = Not Detected Above Detection Limits
RGP = Remedial General Permit
ug/l = Micrograms per Liter

Table 2D - PCBs
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
			MW-1	Qual
		Category III, Sub Category B of RGP	3/6/2014	
PCBs (ug/l)				
Aroclor 1016[8,9]	12674-11-2	0.000064	0.25	U
Aroclor 1221[8,9]	11104-28-2	0.000064	0.25	U
Aroclor 1232[8,9]	11141-16-5	0.000064	0.25	U
Aroclor 1242[8,9]	53469-21-9	0.000064	0.25	U
Aroclor 1248[8,9]	12672-29-6	0.000064	0.25	U
Aroclor 1254[8,9]	11097-69-1	0.000064	0.25	U
Aroclor 1260[8,9]	11096-82-5	0.000064	0.2	U

Notes:
Results compared to RPG effluent limits Category III subcategory B
NS = Not Sampled
U = Not Detected Above Detection Limits
< = Not Detected Above Detection Limits
RGP = Remedial General Permit
PCBs = Polychlorinated Biphenyls
ug/l = Micrograms per Liter
[8] = In November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as *total PCBs is the same of all homologue, all isomer, all congener, or all "Oroclar analyses. "Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.*
[9] = Although the maximum value for PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI of the RGP (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l

Table 2E - VPH, EPH and General Chemistry
Summary of Groundwater Sample Laboratory Analytical Results
Costco Wholesale
200 Legacy Boulevard, Dedham, MA
Terracon Project Number: J4137103

Compound	CasNum	Comparable Criteria	Well ID/Sample Date	
		Category III, Sub Category B of RGP	MW-1 3/6/2014	Qual
MA VPH				
C5-C8 Aliphatic Hydrocarbons *1,2		NE	NS	NS
C9-C10 Aromatic Hydrocarbons *1		NE	NS	NS
C9-C12 Aliphatic Hydrocarbons *1,3		NE	NS	NS
Unadjusted C5-C8 Aliphatics (*1)		NE	NS	NS
Unadjusted C9-C12 Aliphatics (*1)		NE	NS	NS
MA EPH			NS	NS
C11-C22 Aromatic Hydrocarbons 1,2*		NE	NS	NS
C19-C36 Aliphatic Hydrocarbons 1*		NE	NS	NS
C9-C18 Aliphatic Hydrocarbons 1*		NE	NS	NS
Total TPH 1*		5.0 (mg/l)	NS	NS
General Chemistry				
Chloride	16887-00-6	Monitor Only	382,000	
Solids, Total Suspended	NONE	30 milligrams/liter (mg/l), 50 mg/l for hydrostatic testing	2,200,000	
Cyanide, Total[2,3]	57-12-5	5.2 ug/l	5	U
Chlorine, Total Residual	NONE	11 ug/l	40	U
TPH	NONE	5	4,000	U
Phenolics, Total	NONE	NE	30	U
Chromium, Hexavalent	18540-29-9	11.4	50	U

Notes:
Results compared to RPG effluent limits Category III subcategory B
NE = None Established
NS = Not Sampled
U = Not Detected Above Detection Limits
< = Not Detected Above Detection Limits
VPH - Volatile Petroleum Hydrocarbons
EPH = Extractable Petroleum Hydrocarbons
EPA = Environmental Protection Agency
RGP = Remedial General Permit
mg/l = Milligrams/Liter
ug/l = Micrograms per Liter

[2] = Limits for cyanide are based on EPA's water quality criteria expressed as micrograms (ug/L) for free cyanide per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported

[3] = Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l)

Appendix C
NOI for the RGP

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General facility/site information. Please provide the following information about the site:

a) Name of **facility/site:** Costco Wholesale Facility		**Facility/site** mailing address:			
Location of **facility/site:** longitude: -71.174744 latitude: 42.231450	Facility SIC code(s):	Street: 200 Legacy Blvd			
b) Name of **facility/site owner:**		Town: Dedham			
Email address of facility/site owner: jmb@bederson.com		State: MA	Zip: 02026	County: Norfolk	
Telephone no. of facility/site **owner:** 716-878-9626					
Fax no. of facility/site **owner:** 716-886-1026		**Owner** is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ⊙ 4. Other ○ if so, describe:			
Address of **owner** (if different from site):					
Street: 570 Delaware Avenue					
Town: Buffalo	State: NY	Zip: 14202	County: Erie		
c) Legal name of **operator:**	**Operator** telephone no: 703-564-8434				
Wholesale Corporation	**Operator** fax no.: 703-564-8434	**Operator** email: johnpaul.andrews@gmail.com			
Operator contact name and title: John Paul Andrews - Real Estate Development Manager					
Address of **operator** (if different from owner):	Street: 999 Lake Drive				
Town: Issaquah	State: WA	Zip: 98027	County: King		

d) Check Y for "yes" or N for "no" for the following:
1. Has a prior NPDES permit exclusion been granted for the discharge? Y ○ N ⊙, if Y, number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge?
Y ○ N ⊙, if Y, date and tracking #:
3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Y ⊙ N ○
4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ⊙ N ○

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ○ N ⊙
If Y, please list:
1. site identification # assigned by the state of NH or MA:
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

f) Is the site/facility covered by any other EPA permit, including:
1. Multi-Sector General Permit? Y ○ N ⊙, if Y, number:
2. Final Dewatering General Permit? Y ○ N ⊙, if Y, number:
3. EPA Construction General Permit? Y ○ N ⊙, if Y, number:
4. Individual NPDES permit? Y ○ N ⊙, if Y, number:
5. any other water quality related individual or general permit? Y ○ N ○, if Y, number:

g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ○ N ⊙

h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.

Activity Category	**Activity Sub-Category**
I - Petroleum Related Site Remediation	A. Gasoline Only Sites ☐ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☒ C. Petroleum Sites with Additional Contamination ☐
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites ☐ B. VOC Sites with Additional Contamination ☐ C. Primarily Heavy Metal Sites ☐
III - Contaminated Construction Dewatering	A. General Urban Fill Sites ☐ B. Known Contaminated Sites ☐

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as necessary) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage:

Dewatering excavation(s) to facilitate installation of new utilities, drain lines and UST system in association with construction of new Costco self-serve fuel station

b) Provide the following information about each discharge:

1) Number of discharge points: 1

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow: 75 gpm Is maximum flow a **design value**? Y ◉ N ○
Average flow (include units): 50 gpm Is average flow a design value or estimate? estimate

3) Latitude and longitude of each discharge within 100 feet:

pt.1: lat.	42.231958	long.	-71.174508	pt.2: lat.		long.	;
pt.3: lat.		long.		pt.4: lat.		long.	;
pt.5: lat.		long.		pt.6: lat.		long.	;
pt.7: lat.		long.		pt.8: lat.		long.	; etc.

4) If hydrostatic testing, total volume of the discharge (gals):

5) Is the discharge intermittent ◉ or seasonal ○?
Is discharge ongoing? Y ○ N ◉

c) Expected dates of discharge (mm/dd/yy): start Jul 1, 2014 end Aug 31, 2014

d) Please attach a line drawing or flow schematic showing water flow through the facility including:
1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s): See attached

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids (TSS)		☐	☒	1	grab	30,2540D	100 mg/L	2200000	1019.3	2200000	599.6
2. Total Residual Chlorine (TRC)		☒	☐								
3. Total Petroleum Hydrocarbons (TPH)		☒	☐								
4. Cyanide (CN)	57125	☒	☐								
5. Benzene (B)	71432	☒	☐								
6. Toluene (T)	108883	☒	☐								
7. Ethylbenzene (E)	100414	☒	☐								
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐								
9. Total BTEX [2]	n/a	☒	☐								
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐								
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐								
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐								

* Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub-Category included in Appendix III, as well as the Test Methods and Minimum Levels associated with each parameter provided in Appendix VI.

[2] BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

[3] EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐								
14. Naphthalene	91203	☒	☐								
15. Carbon Tetrachloride	56235	☒	☐								
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐								
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐								
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐								
18a. Total dichlorobenzene		☒	☐								
19. 1,1 Dichloroethane (DCA)	75343	☒	☐								
20. 1,2 Dichloroethane (DCA)	107062	☒	☐								
21. 1,1 Dichloroethene (DCE)	75354	☒	☐								
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐								
23. Methylene Chloride	75092	☒	☐								
24. Tetrachloroethene (PCE)	127184	☒	☐								
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐								
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐								
27. Trichloroethene (TCE)	79016	☒	☐								

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
28. Vinyl Chloride (Chloroethene)	75014	☒	☐								
29. Acetone	67641	☒	☐								
30. 1,4 Dioxane	123911	☒	☐								
31. Total Phenols	108952	☒	☐								
32. Pentachlorophenol (PCP)	87865	☒	☐								
33. Total Phthalates (Phthalate esters) [4]		☒	☐								
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐								
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐								
a. Benzo(a) Anthracene	56553	☒	☐								
b. Benzo(a) Pyrene	50328	☒	☐								
c. Benzo(b)Fluoranthene	205992	☒	☐								
d. Benzo(k)Fluoranthene	207089	☒	☐								
e. Chrysene	21801	☒	☐								
f. Dibenzo(a,h)anthracene	53703	☒	☐								
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐								
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐								

[4] The sum of individual phthalate compounds.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
h. Acenaphthene	83329	☐	☒	1	grab	8260C	2.5 ug/L	0.37	0.00017	0.37	0.00010
i. Acenaphthylene	208968	☒	☐								
j. Anthracene	120127	☒	☐								
k. Benzo(ghi) Perylene	191242	☒	☐								
l. Fluoranthene	206440	☒	☐								
m. Fluorene	86737	☒	☐								
n. Naphthalene	91203	☒	☐								
o. Phenanthrene	85018	☒	☐								
p. Pyrene	129000	☒	☐								
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐								
38. Chloride	16887006	☐	☐	1	grab	44,300	12.5 mg/L	382000	177	382000	104.1
39. Antimony	7440360	☒	☐								
40. Arsenic	7440382	☐	☒	1	grab	6020A	0.0005 mg/L	5.28	0.00245	5.28	0.00144
41. Cadmium	7440439	☐	☒	1	grab	6020A	0.0002 mg/L	1.01	0.00047	1.01	0.00028
42. Chromium III (trivalent)	16065831	☐	☒	1	grab	6020A	0.001 mg/L	61.55	0.02852	61.55	0.01678
43. Chromium VI (hexavalent)	18540299	☒	☐								
44. Copper	7440508	☐	☒	1	grab	6020A	0.002 mg/L	144.1	0.066677	144.1	0.03927
45. Lead	7439921	☐	☒	1	grab	6020A	0.001 mg/L	56.9	0.02636	56.9	0.01551
46. Mercury	7439976	☒	☐								
47. Nickel	7440020	☐	☒	1	grab	6020A	0.0005 mg/L	36.06	0.01671	36.06	0.008983
48. Selenium	7782492	☒	☐								
49. Silver	7440224	☒	☐								
50. Zinc	7440666	☐	☒	1	grab	6020A	0.01 mg/L	105.8	0.04902	105.8	0.02884
51. Iron	7439896	☐	☒	1	grab	6020A	0.05 mg/L	58000	26.873	58000	15.80
Other (describe):		☐	☐								

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
		☐	☐								
		☐	☐								

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

Step 1: Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ⊙ N ○	If yes, which metals? Cd, Cr, Cu, Fe, Pb, Ni, Zn
Step 2: For any metals which exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metal: DF: 1 Metal: DF: Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ⊙ N ○ If Y, list which metals: Cd, Cr, Cu, Fe, Pb, Ni, Zn

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:

The groundwater treatment system will consist of a 21,000 gallon frac tank, two transfer pumps, two bag filters and two liquid phase carbon absorber units constructed in parallel.

b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☒	Air stripper ☐	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☒	GAC filter ☒
	Chlorination ☐	De-chlorination ☐	Other (please describe):			

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:
Average flow rate of discharge 50 gpm Maximum flow rate of treatment system 75 gpm
Design flow rate of treatment system 75 gpm

d) A description of chemical additives being used or planned to be used (attach MSDS sheets):

None are planned at this time

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:	Direct to receiving water ☐	Within facility (sewer) ☐	Storm drain ☒	Wetlands ☒	Other (describe):

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:
Disch. to on-site catch basin in parking lot to 30-in dia. concrete drain pipe to wetland; disch to unnamed brook connecting Little Wigwam & Wigwam Pond

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water Mass. Class B

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0 cfs
Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ○ N ⊙ If yes, for which pollutant(s)?

Is there a final TMDL? Y ○ N ⊙ If yes, for which pollutant(s)?

6. ESA and NHPA Eligibility.

Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?

A ⊙ B ○ C ○ D ○ E ○ F ○

b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ○ N ○ Underway ○

c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Y ○ N ○

d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.

e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?

1 ⊙ 2 ○ 3 ○

f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

7. Supplemental information.

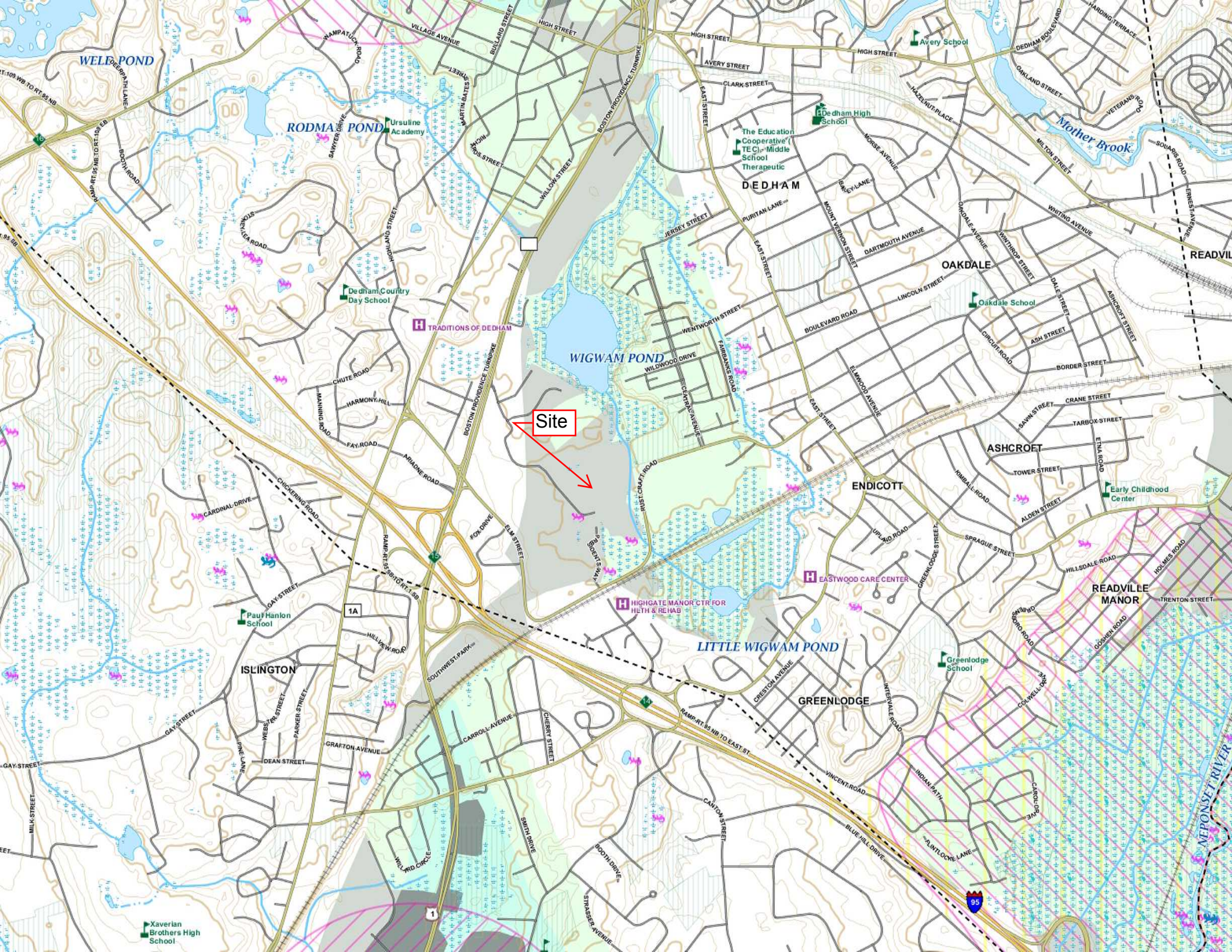
Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name:	Costco Dedham
Operator signature:	
Printed Name &Title:	John Paul Andrews - Real Estate Development Manager
Date:	5/20/14

Appendix D
On-Line MassGIS Resources Priority Map


Site
WELD POND
RODMA POND
WIGWAM POND
LITTLE WIGWAM POND
Mother Brook
DEDHAM
OAKDALE
ASHCROFT
ENDICOTT
GREENLODGE
READVILLE MANOR
ISLINGTON
Ursuline Academy
Dedham Country Day School
TRADITIONS OF DEDHAM
Dedham High School
The Education Cooperative (TEC) - Middle School Therapeutic
Avery School
Oakdale School
Early Childhood Center
EASTWOOD CARE CENTER
HIGHGATE MANOR CTR FOR HLTH & REHAB
Paul Hanlon School
Greenlodge School
Xaverian Brothers High School
BOSTON PROVIDENCE TURNPIKE
RAMP-RT.95 SB TO RT.1 SB
RAMP-RT.95 NB TO EAST ST
HIGH STREET
AVERY STREET
CLARK STREET
EAST STREET
DEDHAM BOULEVARD
HARDING TERRACE
OAKLAND STREET
VETERANS RD
HAZELNUT PLACE
MILTON STREET
SQUARE ROAD
ERNEST AVENUE
MORSE AVENUE
BAILEY LANE
PURITAN LANE
MOUNT VERNON STREET
DARTMOUTH AVENUE
WHITING AVENUE
OAKDALE AVENUE
WINTHROP STREET
DALE STREET
ASHCROFT STREET
LINCOLN STREET
BOULEVARD ROAD
CIRCUIT ROAD
ASH STREET
BORDER STREET
CRANE STREET
SAWIN STREET
TARBOX STREET
ETNA ROAD
TOWER STREET
KIMBALL ROAD
ALDEN STREET
SPRAGUE STREET
GREENLODGE STREET
UPLAND ROAD
HILLSDALE ROAD
HOLMES ROAD
TRENTON STREET
ONEIDA ROAD
GOSHEN ROAD
COLWELL RD
CRESTON AVENUE
INTERVALE ROAD
VINCENT ROAD
INDIAN PATH
CAROL DR
BLUE HILL DRIVE
CANTON STREET
SMITH DRIVE
BOOTH DRIVE
STRASSER AVENUE
WILLARD CIRCLE
CHERRY STREET
CARROLL AVENUE
GRAFTON AVENUE
DEAN STREET
SOUTHWEST PARK
WEBSTER STREET
PARKER STREET
PINE LANE
GAY STREET
MILK STREET
HILL VIEW ROAD
CHICKERING ROAD
CARDINAL DRIVE
ARIADNE ROAD
FAY ROAD
HARMONY HILL
CHUTE ROAD
MANNING ROAD
STONELEA ROAD
BOOTH ROAD
SAWYER DRIVE
MARTIN BATES STREET
RICH SQUARE
WILLOW STREET
HIGHLAND STREET
VILLAGE AVENUE
BULLARD STREET
WAMPATUCK ROAD
COLEPATH LANE
RAMP-RT.95 NB TO RT.109 EB
RAMP-RT.109 WB TO RT.95 NB
JERSEY STREET
WENTWORTH STREET
WILDWOOD DRIVE
CENTRAL AVENUE
FAIRBANKS ROAD
ELMWOOD AVENUE
RUSTCRAFT ROAD
PRESIDENTIAL WAY
FOX DRIVE
ELM STREET
1A
95
128
1
16

Appendix E
MACRIS Database Search Results

Massachusetts Cultural Resource Information Syste

MACRIS

MHC Home | MACRIS Home

Results

Get Results in Report Format

○ PDF ◉ Spreadsheet

Below are the results of your search, using the following search criteria:

Town(s): Dedham
Street No: 200
Street Name: Legacy Blvd

For more information about this page and how to use it, click here

No Results Found.

New Search | New Search – Same Town(s) | Previous

MHC Home | MACRIS Home

Appendix F
Laboratory Analytical Reports and Chain of Custody

ANALYTICAL REPORT

Lab Number:	L1404737
Client:	Terracon Consultants 201 Hammer Mill Road Rocky Hill, CT 06067
ATTN:	Frank Kehoe
Phone:	(860) 721-1900
Project Name:	COSTCO, DEDHAM
Project Number:	J4137103
Report Date:	03/13/14

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1404737-01	MW-1	DEDHAM, MA	03/06/14 11:55

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: COSTCO, DEDHAM **Lab Number:** L1404737
Project Number: J4137103 **Report Date:** 03/13/14

Case Narrative (continued)

Sample Receipt

Headspace was noted in the sample containers submitted for the Volatile Organics by Method 504 analysis.
L1404737-01 was not appropriately preserved for the Volatile Organics by Method 504 analysis.

Semivolatile Organics

The WG674112-2 LCS recovery, associated with L1404737-01, is below the acceptance criteria for benzidine (8%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

PCBs

The WG674114-3 MS recovery, performed on L1404737-01, is below the acceptance criteria for aroclor 1260 (35%); however, the associated LCS recovery is within overall method allowances.

Total Metals

L1404737-01 has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

Chlorine, Total Residual

L1404737-01 has an elevated detection limit due to limited sample volume available for analysis.
WG674105: A laboratory duplicate could not be performed due to insufficient sample volume available for analysis.

TPH

WG674196: A matrix spike could not be performed due to insufficient sample volume available for analysis.

Chromium, Hexavalent

L1404737-01 has an elevated detection limit due to the dilution required by the sample matrix.
The WG674101-4 MS recovery (0%), performed on L1404737-01, is outside the acceptance criteria. This has been attributed to matrix interference.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative Date: 03/13/14

ORGANICS

VOLATILES

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

SAMPLE RESULTS

Lab ID: L1404737-01
Client ID: MW-1
Sample Location: DEDHAM, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 03/10/14 15:58
Analyst: MM

Date Collected: 03/06/14 11:55
Date Received: 03/06/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: COSTCO, DEDHAM **Lab Number:** L1404737

Project Number: J4137103 **Report Date:** 03/13/14

SAMPLE RESULTS

Lab ID: L1404737-01 Date Collected: 03/06/14 11:55

Client ID: MW-1 Date Received: 03/06/14

Sample Location: DEDHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1

Project Name: COSTCO, DEDHAM **Lab Number:** L1404737

Project Number: J4137103 **Report Date:** 03/13/14

SAMPLE RESULTS

Lab ID: L1404737-01 Date Collected: 03/06/14 11:55

Client ID: MW-1 Date Received: 03/06/14

Sample Location: DEDHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	98		70-130

Project Name: COSTCO, DEDHAM
Lab Number: L1404737
Project Number: J4137103
Report Date: 03/13/14

SAMPLE RESULTS

Lab ID:	L1404737-01	Date Collected:	03/06/14 11:55
Client ID:	MW-1	Date Received:	03/06/14
Sample Location:	DEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	1,8260C-SIM(M)		
Analytical Date:	03/10/14 15:58		
Analyst:	MM		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	3.0	--	1

Project Name: COSTCO, DEDHAM
Lab Number: L1404737
Project Number: J4137103
Report Date: 03/13/14

SAMPLE RESULTS

Lab ID:	L1404737-01	Date Collected:	03/06/14 11:55
Client ID:	MW-1	Date Received:	03/06/14
Sample Location:	DEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	14,504.1	Extraction Date:	03/10/14 11:00
Analytical Date:	03/10/14 15:58		
Analyst:	GP		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 03/10/14 15:10
Analyst: GP

Extraction Date: 03/10/14 11:00

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG674472-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	A

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 03/10/14 07:48
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG674671-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 03/10/14 07:48
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG674671-3					
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
Iodomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 03/10/14 07:48
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG674671-3					
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	2.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 03/10/14 07:48
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG674671-3					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	102		70-130

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 03/10/14 14:20
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG674672-3					
1,4-Dioxane	ND		ug/l	3.0	--

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG674472-2									
1,2-Dibromoethane	97		-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	81		-		70-130	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG674671-1 WG674671-2								
Methylene chloride	103		105		70-130	2		20
1,1-Dichloroethane	97		98		70-130	1		20
Chloroform	98		101		70-130	3		20
Carbon tetrachloride	99		103		63-132	4		20
1,2-Dichloropropane	97		100		70-130	3		20
Dibromochloromethane	98		98		63-130	0		20
1,1,2-Trichloroethane	98		100		70-130	2		20
2-Chloroethylvinyl ether	99		101		70-130	2		20
Tetrachloroethene	99		100		70-130	1		20
Chlorobenzene	98		100		75-130	2		25
Trichlorofluoromethane	103		105		62-150	2		20
1,2-Dichloroethane	94		98		70-130	4		20
1,1,1-Trichloroethane	98		103		67-130	5		20
Bromodichloromethane	98		99		67-130	1		20
trans-1,3-Dichloropropene	99		102		70-130	3		20
cis-1,3-Dichloropropene	100		101		70-130	1		20
1,1-Dichloropropene	100		100		70-130	0		20
Bromoform	92		95		54-136	3		20
1,1,2,2-Tetrachloroethane	96		97		67-130	1		20
Benzene	98		100		70-130	2		25
Toluene	99		99		70-130	0		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG674671-1 WG674671-2								
Ethylbenzene	100		99		70-130	1		20
Chloromethane	97		97		64-130	0		20
Bromomethane	119		117		39-139	2		20
Vinyl chloride	98		102		55-140	4		20
Chloroethane	100		104		55-138	4		20
1,1-Dichloroethene	100		102		61-145	2		25
trans-1,2-Dichloroethene	98		104		70-130	6		20
Trichloroethene	95		100		70-130	5		25
1,2-Dichlorobenzene	97		97		70-130	0		20
1,3-Dichlorobenzene	95		97		70-130	2		20
1,4-Dichlorobenzene	98		99		70-130	1		20
Methyl tert butyl ether	98		102		63-130	4		20
p/m-Xylene	98		99		70-130	1		20
o-Xylene	99		99		70-130	0		20
cis-1,2-Dichloroethene	98		101		70-130	3		20
Dibromomethane	100		100		70-130	0		20
1,4-Dichlorobutane	95		95		70-130	0		20
Iodomethane	72		74		70-130	3		20
1,2,3-Trichloropropane	94		94		64-130	0		20
Styrene	101		98		70-130	3		20
Dichlorodifluoromethane	98		99		36-147	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG674671-1 WG674671-2								
Acetone	134		112		58-148	18		20
Carbon disulfide	100		101		51-130	1		20
2-Butanone	101		98		63-138	3		20
Vinyl acetate	99		100		70-130	1		20
4-Methyl-2-pentanone	96		97		59-130	1		20
2-Hexanone	100		98		57-130	2		20
Ethyl methacrylate	97		98		70-130	1		20
Acrolein	85		82		70-130	4		20
Acrylonitrile	98		99		70-130	1		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	98		94		58-130	4		20
2,2-Dichloropropane	101		105		63-133	4		20
1,2-Dibromoethane	97		98		70-130	1		20
1,3-Dichloropropane	97		98		70-130	1		20
1,1,1,2-Tetrachloroethane	100		101		64-130	1		20
Bromobenzene	95		99		70-130	4		20
n-Butylbenzene	102		98		53-136	4		20
sec-Butylbenzene	101		96		70-130	5		20
tert-Butylbenzene	99		99		70-130	0		20
o-Chlorotoluene	98		97		70-130	1		20
p-Chlorotoluene	98		98		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG674671-1 WG674671-2								
1,2-Dibromo-3-chloropropane	102		98		41-144	4		20
Hexachlorobutadiene	107		108		63-130	1		20
Isopropylbenzene	100		98		70-130	2		20
p-Isopropyltoluene	101		98		70-130	3		20
Naphthalene	96		99		70-130	3		20
n-Propylbenzene	100		98		69-130	2		20
1,2,3-Trichlorobenzene	99		99		70-130	0		20
1,2,4-Trichlorobenzene	100		99		70-130	1		20
1,3,5-Trimethylbenzene	99		98		64-130	1		20
1,3,5-Trichlorobenzene	99		102		70-130	3		20
1,2,4-Trimethylbenzene	97		98		70-130	1		20
trans-1,4-Dichloro-2-butene	93		90		70-130	3		20
Halothane	99		100		70-130	1		20
Ethyl ether	96		99		59-134	3		20
Methyl Acetate	95		99		70-130	4		20
Ethyl Acetate	97		98		70-130	1		20
Isopropyl Ether	96		98		70-130	2		20
Cyclohexane	99		101		70-130	2		20
Tert-Butyl Alcohol	107		106		70-130	1		20
Ethyl-Tert-Butyl-Ether	98		101		70-130	3		20
Tertiary-Amyl Methyl Ether	96		102		66-130	6		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG674671-1 WG674671-2								
1,4-Dioxane	117		106		56-162	10		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	105		108		70-130	3		20
Methyl cyclohexane	101		101		70-130	0		20
p-Diethylbenzene	100		98		70-130	2		20
4-Ethyltoluene	99		98		70-130	1		20
1,2,4,5-Tetramethylbenzene	102		99		70-130	3		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		99		70-130
Toluene-d8	101		97		70-130
4-Bromofluorobenzene	98		97		70-130
Dibromofluoromethane	101		103		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG674672-1 WG674672-2								
1,4-Dioxane	78		88		70-130	12		25

Matrix Spike Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674472-3 QC Sample: L1404737-01 Client ID: MW-1													
1,2-Dibromoethane	ND	0.256	0.246	96		-	-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.256	0.212	83		-	-		70-130	-		20	A

SEMIVOLATILES

Project Name: COSTCO, DEDHAM **Lab Number:** L1404737

Project Number: J4137103 **Report Date:** 03/13/14

SAMPLE RESULTS

Lab ID:	L1404737-01	Date Collected:	03/06/14 11:55
Client ID:	MW-1	Date Received:	03/06/14
Sample Location:	DEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D	Extraction Date:	03/07/14 01:13
Analytical Date:	03/08/14 16:00		
Analyst:	RC		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	20	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA	ND		ug/l	2.0	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1

Project Name: COSTCO, DEDHAM **Lab Number:** L1404737

Project Number: J4137103 **Report Date:** 03/13/14

SAMPLE RESULTS

Lab ID: L1404737-01 Date Collected: 03/06/14 11:55

Client ID: MW-1 Date Received: 03/06/14

Sample Location: DEDHAM, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	31		21-120
Phenol-d6	20		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	67		15-120
2,4,6-Tribromophenol	83		10-120
4-Terphenyl-d14	83		41-149

Project Name: COSTCO, DEDHAM **Lab Number:** L1404737

Project Number: J4137103 **Report Date:** 03/13/14

SAMPLE RESULTS

Lab ID:	L1404737-01	Date Collected:	03/06/14 11:55
Client ID:	MW-1	Date Received:	03/06/14
Sample Location:	DEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	03/07/14 01:12
Analytical Date:	03/10/14 16:48		
Analyst:	MW		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.37		ug/l	0.20	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	0.20	--	1
Benzo(a)anthracene	ND		ug/l	0.20	--	1
Benzo(a)pyrene	ND		ug/l	0.20	--	1
Benzo(b)fluoranthene	ND		ug/l	0.20	--	1
Benzo(k)fluoranthene	ND		ug/l	0.20	--	1
Chrysene	ND		ug/l	0.20	--	1
Acenaphthylene	ND		ug/l	0.20	--	1
Anthracene	ND		ug/l	0.20	--	1
Benzo(ghi)perylene	ND		ug/l	0.20	--	1
Fluorene	ND		ug/l	0.20	--	1
Phenanthrene	ND		ug/l	0.20	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--	1
Pyrene	ND		ug/l	0.20	--	1
1-Methylnaphthalene	ND		ug/l	0.20	--	1
2-Methylnaphthalene	ND		ug/l	0.20	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	30		21-120
Phenol-d6	19		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	59		15-120
2,4,6-Tribromophenol	80		10-120
4-Terphenyl-d14	76		41-149

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 03/08/14 12:34
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 03/07/14 01:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG674112-1					
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Isophorone	ND		ug/l	5.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--
Dimethyl phthalate	ND		ug/l	5.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 03/08/14 12:34
Analyst: RC

Extraction Method: EPA 3510C
Extraction Date: 03/07/14 01:13

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG674112-1					
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	31		21-120
Phenol-d6	19		10-120
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	56		15-120
2,4,6-Tribromophenol	62		10-120
4-Terphenyl-d14	90		41-149

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 03/10/14 15:16
Analyst: MW

Extraction Method: EPA 3510C
Extraction Date: 03/07/14 01:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG674113-1					
Acenaphthene	ND		ug/l	0.20	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 03/10/14 15:16
Analyst: MW

Extraction Method: EPA 3510C
Extraction Date: 03/07/14 01:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG674113-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	30		21-120
Phenol-d6	19		10-120
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	54		15-120
2,4,6-Tribromophenol	67		10-120
4-Terphenyl-d14	82		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG674112-2 WG674112-3								
Benzidine	**8**	Q	14		10-75	**50**	Q	30
1,2,4-Trichlorobenzene	45		47		39-98	4		30
Bis(2-chloroethyl)ether	66		74		40-140	11		30
1,2-Dichlorobenzene	46		49		40-140	6		30
1,3-Dichlorobenzene	44		46		40-140	4		30
1,4-Dichlorobenzene	44		46		36-97	4		30
3,3'-Dichlorobenzidine	48		51		40-140	6		30
2,4-Dinitrotoluene	88		95		24-96	8		30
2,6-Dinitrotoluene	86		92		40-140	7		30
Azobenzene	88		95		40-140	8		30
4-Chlorophenyl phenyl ether	73		78		40-140	7		30
4-Bromophenyl phenyl ether	80		86		40-140	7		30
Bis(2-chloroisopropyl)ether	69		77		40-140	11		30
Bis(2-chloroethoxy)methane	75		79		40-140	5		30
Hexachlorocyclopentadiene	**31**	Q	**33**	Q	40-140	6		30
Isophorone	76		81		40-140	6		30
Nitrobenzene	66		72		40-140	9		30
NDPA/DPA	84		92		40-140	9		30
Bis(2-ethylhexyl)phthalate	97		102		40-140	5		30
Butyl benzyl phthalate	96		99		40-140	3		30
Di-n-butylphthalate	95		98		40-140	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG674112-2 WG674112-3								
Di-n-octylphthalate	92		99		40-140	7		30
Diethyl phthalate	87		93		40-140	7		30
Dimethyl phthalate	85		92		40-140	8		30
Aniline	**17**	Q	**20**	Q	40-140	16		30
4-Chloroaniline	62		66		40-140	6		30
2-Nitroaniline	91		94		52-143	3		30
3-Nitroaniline	51		55		25-145	8		30
4-Nitroaniline	86		93		51-143	8		30
Dibenzofuran	71		76		40-140	7		30
n-Nitrosodimethylamine	38		43		22-74	12		30
2,4,6-Trichlorophenol	75		80		30-130	6		30
p-Chloro-m-cresol	74		79		23-97	7		30
2-Chlorophenol	55		60		27-123	9		30
2,4-Dichlorophenol	66		71		30-130	7		30
2,4-Dimethylphenol	62		70		30-130	12		30
2-Nitrophenol	67		72		30-130	7		30
4-Nitrophenol	52		56		10-80	7		30
2,4-Dinitrophenol	68		75		20-130	10		30
4,6-Dinitro-o-cresol	84		90		20-164	7		30
Phenol	22		25		12-110	13		30
2-Methylphenol	50		54		30-130	8		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG674112-2 WG674112-3								
3-Methylphenol/4-Methylphenol	48		53		30-130	10		30
2,4,5-Trichlorophenol	79		86		30-130	8		30
Benzoic Acid	24		27		10-164	12		30
Benzyl Alcohol	51		55		26-116	8		30
Carbazole	93		96		55-144	3		30
Pyridine	27		34		10-66	23		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	32		36		21-120
Phenol-d6	22		24		10-120
Nitrobenzene-d5	70		76		23-120
2-Fluorobiphenyl	65		69		15-120
2,4,6-Tribromophenol	85		89		10-120
4-Terphenyl-d14	88		91		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG674113-2 WG674113-3								
Acenaphthene	65		63		37-111	3		40
2-Chloronaphthalene	61		58		40-140	5		40
Fluoranthene	85		82		40-140	4		40
Hexachlorobutadiene	48		43		40-140	11		40
Naphthalene	60		56		40-140	7		40
Benzo(a)anthracene	99		93		40-140	6		40
Benzo(a)pyrene	79		67		40-140	16		40
Benzo(b)fluoranthene	85		75		40-140	13		40
Benzo(k)fluoranthene	86		74		40-140	15		40
Chrysene	83		78		40-140	6		40
Acenaphthylene	71		69		40-140	3		40
Anthracene	71		70		40-140	1		40
Benzo(ghi)perylene	82		62		40-140	28		40
Fluorene	73		72		40-140	1		40
Phenanthrene	80		78		40-140	3		40
Dibenzo(a,h)anthracene	82		65		40-140	23		40
Indeno(1,2,3-cd)Pyrene	86		66		40-140	26		40
Pyrene	81		78		26-127	4		40
1-Methylnaphthalene	62		60		40-140	3		40
2-Methylnaphthalene	62		60		40-140	3		40
Pentachlorophenol	86		81		9-103	6		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG674113-2 WG674113-3								
Hexachlorobenzene	71		67		40-140	6		40
Hexachloroethane	50		44		40-140	13		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	34		33		21-120
Phenol-d6	22		22		10-120
Nitrobenzene-d5	64		62		23-120
2-Fluorobiphenyl	57		56		15-120
2,4,6-Tribromophenol	83		81		10-120
4-Terphenyl-d14	80		78		41-149

PCBS

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

SAMPLE RESULTS

Lab ID:	L1404737-01	Date Collected:	03/06/14 11:55
Client ID:	MW-1	Date Received:	03/06/14
Sample Location:	DEDHAM, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 608
Analytical Method:	5,608	Extraction Date:	03/07/14 01:11
Analytical Date:	03/11/14 11:47	Cleanup Method1:	EPA 3665A
Analyst:	JW	Cleanup Date1:	03/10/14
		Cleanup Method2:	EPA 3660B
		Cleanup Date2:	03/10/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		30-150	A
Decachlorobiphenyl	33		30-150	A

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 03/11/14 11:59
Analyst: JW

Extraction Method: EPA 608
Extraction Date: 03/07/14 01:11
Cleanup Method1: EPA 3665A
Cleanup Date1: 03/10/14
Cleanup Method2: EPA 3660B
Cleanup Date2: 03/10/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG674114-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	32		30-150	A
Decachlorobiphenyl	45		30-150	A

Matrix Spike Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674114-3 QC Sample: L1404737-01 Client ID: MW-1													
Aroclor 1016	ND	2	0.813	41		-	-		40-140	-		50	A
Aroclor 1260	ND	2	0.699	**35**	Q	-	-		40-140	-		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	38				30-150	A
Decachlorobiphenyl	**25**	Q			30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG674114-2									
Aroclor 1016	47		-		40-140	-		50	A
Aroclor 1260	46		-		40-140	-		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	39				30-150	A
Decachlorobiphenyl	54				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674114-4 QC Sample: L1404737-01 Client ID: MW-1							
Aroclor 1016	ND	ND	ug/l	NC		50	A
Aroclor 1221	ND	ND	ug/l	NC		50	A
Aroclor 1232	ND	ND	ug/l	NC		50	A
Aroclor 1242	ND	ND	ug/l	NC		50	A
Aroclor 1248	ND	ND	ug/l	NC		50	A
Aroclor 1254	ND	ND	ug/l	NC		50	A
Aroclor 1260	ND	ND	ug/l	NC		50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		66		30-150	A
Decachlorobiphenyl	33		43		30-150	A

METALS

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

SAMPLE RESULTS

Lab ID: L1404737-01
Client ID: MW-1
Sample Location: DEDHAM, MA
Matrix: Water
Date Collected: 03/06/14 11:55
Date Received: 03/06/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.01000	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Arsenic, Total	0.00528		mg/l	0.00250	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Cadmium, Total	0.00101		mg/l	0.00100	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Chromium, Total	0.06155		mg/l	0.00500	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Copper, Total	0.1441		mg/l	0.01000	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Iron, Total	58		mg/l	0.05	--	1	03/07/14 09:07	03/12/14 16:12	EPA 3005A	19,200.7	JH
Lead, Total	0.05690		mg/l	0.00500	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Mercury, Total	ND		mg/l	0.0002	--	1	03/08/14 07:47	03/08/14 10:52	EPA 245.1	3,245.1	AK
Nickel, Total	0.03606		mg/l	0.00250	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Selenium, Total	ND		mg/l	0.0250	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Silver, Total	ND		mg/l	0.00200	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM
Zinc, Total	0.1058		mg/l	0.05000	--	5	03/07/14 09:07	03/08/14 05:28	EPA 3005A	1,6020A	BM

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG674165-1										
Antimony, Total	ND		mg/l	0.00200	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Arsenic, Total	ND		mg/l	0.00050	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Cadmium, Total	ND		mg/l	0.00020	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Chromium, Total	ND		mg/l	0.00100	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Copper, Total	ND		mg/l	0.00200	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Lead, Total	ND		mg/l	0.00100	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Nickel, Total	ND		mg/l	0.00050	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Selenium, Total	ND		mg/l	0.00500	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Silver, Total	ND		mg/l	0.00040	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM
Zinc, Total	ND		mg/l	0.01000	--	1	03/07/14 09:07	03/07/14 21:01	1,6020A	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG674347-1										
Mercury, Total	ND		mg/l	0.0002	--	1	03/08/14 07:47	03/08/14 10:49	3,245.1	AK

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG675072-1										
Iron, Total	ND		mg/l	0.05	--	1	03/07/14 09:07	03/08/14 09:08	19,200.7	JH

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG674165-2								
Antimony, Total	91		-		80-120	-		
Arsenic, Total	98		-		80-120	-		
Cadmium, Total	100		-		80-120	-		
Chromium, Total	105		-		80-120	-		
Copper, Total	104		-		80-120	-		
Lead, Total	101		-		80-120	-		
Nickel, Total	103		-		80-120	-		
Selenium, Total	96		-		80-120	-		
Silver, Total	99		-		80-120	-		
Zinc, Total	110		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG674347-2								
Mercury, Total	98		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG675072-2								
Iron, Total	100		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674165-4 QC Sample: L1404776-01 Client ID: MS Sample												
Antimony, Total	0.01497	0.5	0.5546	108		-	-		75-125	-		20
Arsenic, Total	0.00843	0.12	0.1348	105		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.05320	104		-	-		75-125	-		20
Chromium, Total	0.00302	0.2	0.2192	108		-	-		75-125	-		20
Copper, Total	0.00439	0.25	0.2664	105		-	-		75-125	-		20
Lead, Total	0.02182	0.51	0.5388	101		-	-		75-125	-		20
Nickel, Total	0.00853	0.5	0.5220	103		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.115	96		-	-		75-125	-		20
Silver, Total	ND	0.05	0.05038	101		-	-		75-125	-		20
Zinc, Total	0.04972	0.5	0.5854	107		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674347-4 QC Sample: L1404737-01 Client ID: MW-1												
Mercury, Total	ND	0.005	0.0052	103		-	-		70-130	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG675072-4 QC Sample: L1400003-17 Client ID: MS Sample												
Iron, Total	0.55	1	1.6	105		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674165-3 QC Sample: L1404776-01 Client ID: DUP Sample						
Antimony, Total	0.01497	0.01501	mg/l	0		20
Arsenic, Total	0.00843	0.00803	mg/l	5		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.00302	0.00313	mg/l	4		20
Copper, Total	0.00439	0.00434	mg/l	1		20
Lead, Total	0.02182	0.02178	mg/l	0		20
Nickel, Total	0.00853	0.00859	mg/l	1		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.04972	0.05068	mg/l	2		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674347-3 QC Sample: L1404737-01 Client ID: MW-1						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG675072-3 QC Sample: L1400003-17 Client ID: DUP Sample						
Iron, Total	0.55	0.52	mg/l	6		20

INORGANICS
&
MISCELLANEOUS

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

SAMPLE RESULTS

Lab ID: L1404737-01
Client ID: MW-1
Sample Location: DEDHAM, MA
Matrix: Water

Date Collected: 03/06/14 11:55
Date Received: 03/06/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	2200		mg/l	100	NA	20	-	03/10/14 13:10	30,2540D	DW
Cyanide, Total	ND		mg/l	0.005	--	1	03/07/14 09:00	03/10/14 12:43	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.04	--	2	-	03/06/14 23:30	30,4500CL-D	JO
TPH	ND		mg/l	4.00	--	1	03/07/14 07:30	03/07/14 12:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.03	--	1	03/10/14 11:30	03/10/14 14:51	4,420.1	TE
Chromium, Hexavalent	ND		mg/l	0.050	--	5	03/07/14 00:05	03/07/14 00:25	30,3500CR-D	JO
Anions by Ion Chromatography - Westborough Lab										
Chloride	382.		mg/l	12.5	--	25	-	03/06/14 20:33	44,300.0	AU

Project Name: COSTCO, DEDHAM
Project Number: J4137103
Lab Number: L1404737
Report Date: 03/13/14

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG674099-1										
Chloride	ND		mg/l	0.500	--	1	-	03/06/14 19:57	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG674101-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	03/07/14 00:05	03/07/14 00:20	30,3500CR-D	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG674105-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	03/06/14 23:30	30,4500CL-D	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG674160-1										
Cyanide, Total	ND		mg/l	0.005	--	1	03/07/14 09:00	03/10/14 12:40	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG674196-1										
TPH	ND		mg/l	4.00	--	1	03/07/14 07:30	03/07/14 12:30	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG674445-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	03/10/14 13:10	30,2540D	DW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG674513-1										
Phenolics, Total	ND		mg/l	0.03	--	1	03/10/14 11:30	03/10/14 14:49	4,420.1	TE

Lab Control Sample Analysis

Batch Quality Control

Project Name: COSTCO, DEDHAM

Project Number: J4137103

Lab Number: L1404737

Report Date: 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG674099-2								
Chloride	93		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG674101-2								
Chromium, Hexavalent	103		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG674105-2								
Chlorine, Total Residual	97		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG674160-2								
Cyanide, Total	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG674196-2								
TPH	85		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG674513-2								
Phenolics, Total	108		-		70-130	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674099-3 QC Sample: L1404715-01 Client ID: MS Sample												
Chloride	4.92	4	8.65	93		-	-		40-151	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674101-4 QC Sample: L1404737-01 Client ID: MW-1												
Chromium, Hexavalent	ND	0.1	ND	**0**	Q	-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674160-4 QC Sample: L1404749-01 Client ID: MS Sample												
Cyanide, Total	0.038	0.2	0.237	99		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674513-4 QC Sample: L1404826-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.36	90		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674099-4 QC Sample: L1404715-01 Client ID: DUP Sample						
Chloride	4.92	4.91	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674101-3 QC Sample: L1404737-01 Client ID: MW-1						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674160-3 QC Sample: L1404749-01 Client ID: DUP Sample						
Cyanide, Total	0.038	0.044	mg/l	14		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674196-3 QC Sample: L1404778-01 Client ID: DUP Sample						
TPH	5.80	5.27	mg/l	10		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674445-2 QC Sample: L1404694-01 Client ID: DUP Sample						
Solids, Total Suspended	140	160	mg/l	13		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG674513-3 QC Sample: L1404826-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: COSTCO, DEDHAM
Project Number: J4137103

Lab Number: L1404737
Report Date: 03/13/14

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1404737-01A	Vial HCl preserved	A	N/A	5.2	Y	Absent	8260(14)
L1404737-01B	Vial HCl preserved	A	N/A	5.2	Y	Absent	8260(14)
L1404737-01C	Vial HCl preserved	A	N/A	5.2	Y	Absent	8260(14)
L1404737-01D	Vial HCl preserved	A	N/A	5.2	Y	Absent	8260-SIM(14)
L1404737-01E	Vial HCl preserved	A	N/A	5.2	Y	Absent	8260-SIM(14)
L1404737-01G	Vial unpreserved	A	N/A	5.2	Y	Absent	504(14)
L1404737-01H	Vial unpreserved	A	N/A	5.2	Y	Absent	504(14)
L1404737-01I	Amber 1000ml unpreserved	A	7	5.2	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1404737-01K	Amber 1000ml unpreserved	A	7	5.2	Y	Absent	PCB-608(7)
L1404737-01M	Plastic 250ml HNO3 preserved	A	<2	5.2	Y	Absent	SE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180),HG-U(28),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180)
L1404737-01N	Plastic 500ml unpreserved	A	7	5.2	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1),TSS-2540(7)
L1404737-01O	Plastic 120ml unpreserved	A	7	5.2	Y	Absent	CL-300(28)
L1404737-01P	Plastic 250ml NaOH preserved	A	>12	5.2	Y	Absent	TCN-4500(14)
L1404737-01Q	Amber 1000ml unpreserved	A	N/A	5.2	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1404737-01R	Amber 120 mL H2SO4 preserved	A	<2	5.2	Y	Absent	TPHENOL-420(28)
L1404737-01S	Amber 1000ml H2SO4 preserved	A	<2	5.2	Y	Absent	TPH-1664(28)

*Values in parentheses indicate holding time in days

Project Name:	COSTCO, DEDHAM	**Lab Number:**	L1404737
Project Number:	J4137103	**Report Date:**	03/13/14

GLOSSARY

Acronyms

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

Report Format: Data Usability Report

Project Name:	COSTCO, DEDHAM	**Lab Number:**	L1404737
Project Number:	J4137103	**Report Date:**	03/13/14

Data Qualifiers

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	COSTCO, DEDHAM	**Lab Number:**	L1404737
Project Number:	J4137103	**Report Date:**	03/13/14

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).

14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

Last revised December 11, 2013

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility
EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.
EPA 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.
EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.
EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 625: 4-Chloroaniline, 4-Methylphenol.
SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE ____ OF ____

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 3/6/14

ALPHA Job #: L1404737

Project Information

Project Name: Costco, Dedham
Project Location: Dedham, MA
Project #: J4137103
Project Manager: Jeff Day
ALPHA Quote #:

Report Information - Data Deliverables

☐ FAX ☑ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Client Information

Client: Terracon Consultants
Address: 201 Hammer Mill Rd Rocky Hill CT
Phone: 860-721-1900
Fax:
Email: fxkelhoe@terracon.com
☐ These samples have been previously analyzed by Alpha

Regulatory Requirements/Report Limits

State /Fed Program: MA Criteria: RGP

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Turn-Around Time

☒ Standard ~~☑ RUSH (only confirmed if pre-approved!)~~

Date Due: ~~3-7-13~~ Time: ~~1600~~

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required , indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

mg 3/6/14 per Jeff Day- Needs RGP criteria including SVOCs with PAH,PCP via SIM, EDB 504 1,4-Diioxane via 8260SIM ETC.

ANALYSIS: Total Phenol, Chloride, Metals, Hex Cr, TSS, TCR, TPH-1664, PAHs, PCBs, EDB, 8260, TCN

SAMPLE HANDLING
Filtration ______
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Total Phenol	Chloride	Metals	Hex Cr	TSS	TCR	TPH-1664	PAHs	PCBs	EDB	8260	TCN	Sample Specific Comments	TOTAL # BOTTLES
04737-01	J4137103	3-6-14	11:55	W	FXK	X	X	X	X	X	X	X	X	X	X	X	X	for NPDES RGP	

Container Type
Preservative

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	3-6-14 / 1500	[signature]	3-6-14 1500
[signature]	3-6-14 / 1815	[signature]	3/6/14 1815

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 18-Jan-2010)

CHAIN OF CUSTODY

PAGE ____ OF ____

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 3/6/14

ALPHA Job #: L1404737

Client Information

Client: Terracon Consultants
Address: 201 Hammer Mill Rd Rocky Hill CT
Phone: 860-721-1900
Fax:
Email: [illegible]@terracon.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Costco, Dedham
Project Location: Dedham, MA
Project #: J4137103
Project Manager: Jeff Day
ALPHA Quote #:

Turn-Around Time

☐ Standard ☑ RUSH (only confirmed if pre-approved!)

Date Due: 3.7.13 Time: 1600

Report Information - Data Deliverables

☐ FAX ☑ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program: MA Criteria: RCP

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All *CAM* methods for inorganic analyses require MS every 20 soil samples)

ANALYSIS: Total Phenol; Chloride; Metals; Hex Cr; TSS; TCR; TPH-1664; PAHs; PCBs; EDB; RCGP; TIN

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments	TOTAL # BOTTLES
04737-01	J4137103	3.6.14	11:55	W	FXC	for NPDES RGP	

Container Type
Preservative

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	3.6.14 / 1500	[signature]	3.6.14 15:0[illegible]
[signature]	3-6-14 / 1815	[signature]	3/6/14 1815

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 18-Jan-2010)