

August 29, 2016

Mr. Hans Jensen
Strategic Planning and Community Development
City of Somerville
93 Highland Avenue
Somerville, MA 02143

RE: Environmental Studies
Peer Review Status Report #1
343 – 349, and 351 Summer Street
Somerville, Massachusetts

Mr. Jensen,

This correspondence has been prepared to provide you with an update for the environmental characterization activities that have been completed to date at 343 – 351 Summer Street (Project Site) in the City of Somerville, Massachusetts. In the way of review the proposed redevelopment plan for the Project Site was approved by the Zoning Board of Appeals (ZBA) on 7 December 2011. This decision was subject to numerous conditions, several of which pertained to the assessment of soil and groundwater quality issues, as well as historic land use practices at the Project Site. To assist in your review of the information presented in this submittal, key issues that serve as the basis for the scope of peer review services being provided by this office include the following:

Condition 39

The peer review consultant, Nangle Consulting Associates, Inc., shall be retained by the City to monitor the on-site environmental work by the Applicant. The Applicant shall incur and pay all costs associated with the peer review consultant's work.

Condition 40

The Applicant shall develop a work plan that includes all of Nangle Consulting Associates' work plan task recommendations and that work plan shall be reviewed by Planning Staff and Nangle Consulting Associates to ensure that it meets the intent of Nangle Consulting Associates' recommendation.

Condition 41

The Applicant shall complete all of the work plan tasks as identified in the work plan in Condition # 40.

Condition 42

Nangle Consulting Associates shall monitor all on-site testing, report how that testing remains compliant with the work plan, and shall review all test results. Test results and the Nangle Consulting reports shall be submitted to Planning Staff.

Condition 43

Notification must be made, within the time period required under applicable regulations, to the Massachusetts Department of Environmental Protection (DEP) if there is any release of oil, hazardous materials, or regulated hazardous substances at the site. The City's OSE office, Fire Department, the Board of Health, and Nangle Consulting Associates, Inc. shall also be notified. The Applicant shall continue to provide copies of all environmental reports regarding soil and groundwater conditions to the Planning Staff upon their completion.

On 11 July 2016, this office received a proposal for a scope of work that was prepared by the firm of EnviroTrac Ltd., (EnviroTrac) on behalf of The Maggiore Companies, to meet the ZBA requirements cited above. In general, this work plan contained the following primary tasks that were proposed for completion.

Task 01 Project Planning

- Prepare a Site-specific Health and Safety Plan in accordance with the requirements of OSHA 29 CFR 1910.120;
- Review available environmental documents, compile existing analytical data into comprehensive data tables, and prepare appropriate figures depicting relevant site features;
- Conduct a site visit to locate and evaluate existing groundwater monitoring wells relative to their viability to yield representative water table elevation measurements and groundwater samples;
- Measure depth to water and non-aqueous phase liquids, if present, in each identified groundwater monitoring well.
- Identify proposed drilling locations consistent with the requirements for utility notification;

Task 02 Geophysical Survey/Test Pit Investigation

- Pre-investigation activities including utility service notification and subcontractor selection and coordination.
- Test pit investigation including the installation of test pits to a maximum depth of 6 feet below grade. Select soil samples will be collected periodically to the maximum depth of exploration, field screened for total organic vapors using a photoionization detector (PID), and field classified for texture. Based on PID screening data and visual observations, soil samples may be selected for laboratory analyses. Recommendations for test pit soil sample analyses will be communicated to Client and approved prior to submittal. Unit rates for typical laboratory analyses are attached.
- Geophysical survey using a combination of electromagnetic (EM) and ground penetrating radar (GPR) techniques. The objective of the geophysical survey is to identify large subsurface magnetic objects, i.e. steel underground storage tanks, which may be present on the Subject Site. An initial survey of target areas of the 351 Summer St. parcel will be conducted using EM. Electromagnetic anomalies identified during the EM survey will be further investigated using GPR. The subcontractor will prepare a report

documenting the geophysical survey methods, results and interpretations. The identification of subsurface anomalies may require the modification of the subsurface investigative activities proposed below to determine the source of the anomalies. The cost estimate quoted herein assumes one day to complete the investigation. If numerous anomalies are detected, the quoted cost may increase to investigate the anomalies.

Task 03: Subsurface Investigation

- Pre-investigation activities including utility service notification and subcontractor selection and coordination.
- Subsurface investigation including the installation of five (5) soil borings to a maximum depth of 20 feet below grade. The soil borings will be completed using Geoprobe® direct-push equipment. Soil samples will be collected continuously to the maximum depth of exploration, field screened for total organic vapors using a photoionization detector, and field classified for texture. Three (3) of the soil borings will be completed as groundwater monitoring wells using 2-inch diameter Schedule 40 PVC well materials. Selected soil samples (5) will be analyzed for semi-volatile organic compounds (SVOC) by EPA Method 8270, 14 MCP metals by EPA Methods and asbestos.
- Conduct a wellhead elevation and location survey of the new monitoring wells;
- Measure depth to water and light non-aqueous phase liquids, if present, in each monitoring well; and,
- Collect groundwater samples from Site monitoring wells. The scope of laboratory analyses will be determined based on the results of field screening of representative groundwater samples, review of historic groundwater analytical results, the results of soil sampling and overall site characterization activities. Recommendations for groundwater sample analyses will be communicated to Client and approved prior to submittal. Unit rates for typical laboratory analyses are attached.

Task 04: Limited Subsurface Investigation Report

EnviroTrac will prepare a summary report documenting the methods and results of the LSI. The report will include appropriate text, tables and figures, plus all supporting documentation.

On 1 August 2016, an on-site meeting was held between representatives of the development team and this office. At that time, proposed soil and groundwater sampling locations were reviewed and a schedule was developed for the proposed field work. A Sketch Plan of Site showing the proposed sampling locations is presented as Figure 1. Based upon a review of the proposed scope, NCA recommended that one of the proposed boring locations (B-103) be completed as an additional monitoring well to enable the characterization of groundwater quality at this location. Further, based upon site characteristics and the extent of subsurface investigation work to be performed, which included both the placement of test borings and test pits, it was concluded that subject to the outcome of the test pit/trench program, the geophysical survey proposed as a part of Task 2 may not be necessary.

Site characterization activities were initiated by EnviroTrac on 8 August 2016, and included the placement of eight (8) geoprobe soil borings, six (6) of which were completed as 2-inch diameter PVC groundwater monitoring wells. Representative soil samples were collected during the boring advancement and screened for potential oil and/or hazardous materials (OHM) using a photoionization detector and total organic vapor screening methodologies. To supplement the field screening program, selected soil samples were submitted for laboratory analyses by EnviroTrac for various parameters, inclusive of volatile organic compounds (VOCs), volatile petroleum hydrocarbons (VPH), extractable petroleum hydrocarbons (EPH) and Massachusetts Contingency Plan (MCP) 14 Metals, as well as soil disposal/re-use parameters. The results of the soil analyses are currently pending.

Field work initiated on 8 August also included the placement of exploratory test pits/trenches within the area of former underground storage, as identified on Sanborn Fire Maps dated 1933-1934 and 1934-1950. Test pit excavations on 8 August through the former UST area revealed the presence of one (1) approximate 70 gallon underground storage vessel containing what appeared to be a waste oil mixture. A second underground tank of similar dimensions was also encountered on the second day of test pit excavations, which also appeared to contain waste oil. At that time, NCA recommended that fingerprint analysis of the tank contents be performed to assist in the characterization of site conditions. The contents of each tank were removed using a vacuum truck and though hand cleaning. The tanks were subsequently transported off-site for appropriate disposal.

A groundwater sampling event was conducted by EnviroTrac on 17 August 2016. This scope of work, which was also observed by NCA, included the sampling of the on-site monitoring wells for basic water quality parameters and the completion of a ground control survey to determine groundwater flow direction across the Project Site. In addition, groundwater samples were collected by EnviroTrac for the laboratory analyses of various parameters inclusive of VOCs, VPH, EPH and dissolved MCP Metals. The results of the groundwater analyses are currently pending and will be reviewed upon receipt from EnviroTrac.

As of this date, the work plan components associated with Tasks 1 and 2 have been completed, with the exception of the geophysical survey, which was determined to be unnecessary due to the direct exploration conducted through the placement of test pits/trenches. Upon receipt of the pending soil and groundwater laboratory analytical data from recent site activities, Task 3 will also be considered completed.

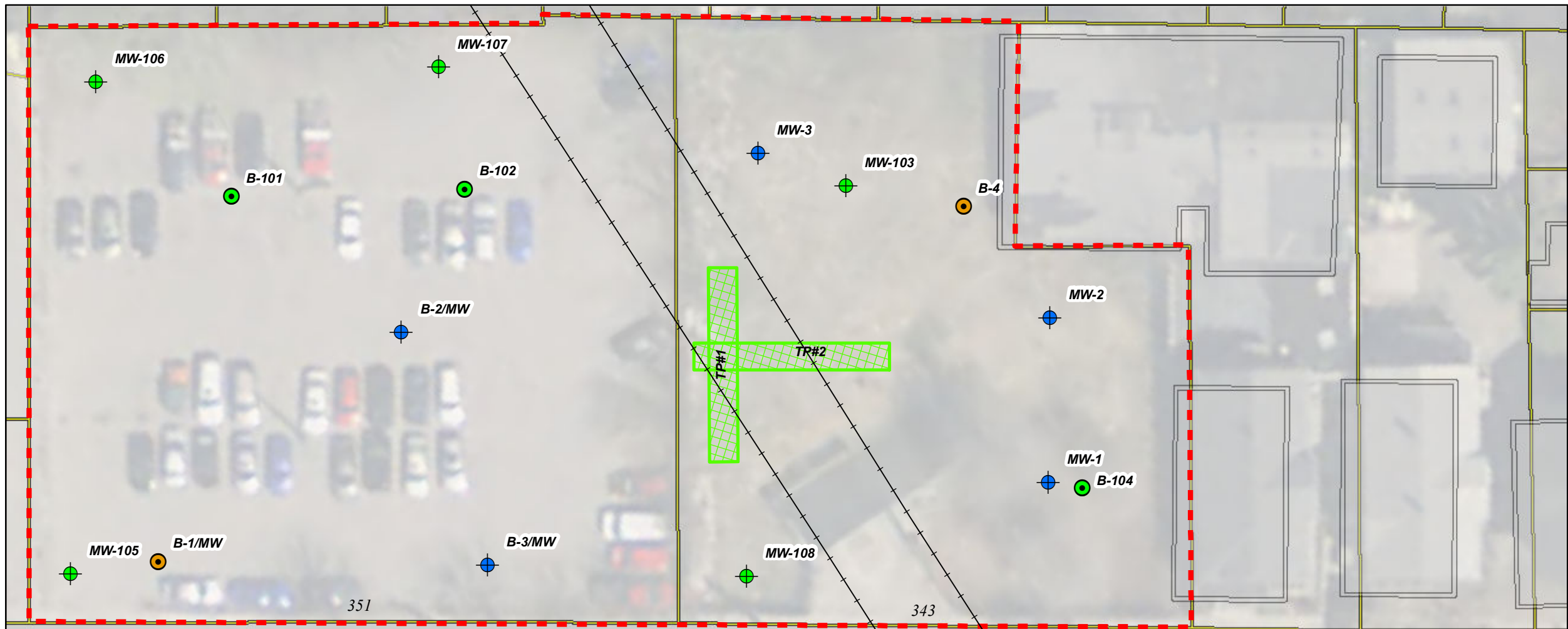
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Pending our review of the outstanding laboratory data, we will provide appropriate recommendations pertaining to the overall characterization of site conditions for your review and consideration. In the interim, if you should have any questions, please don't hesitate to contact this office at your convenience.

Very Truly Yours,

Nangle Consulting Associates, Inc.

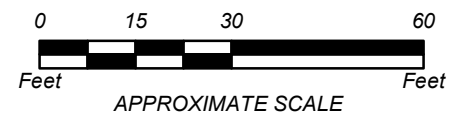
Jeffrey A. Nangle, P.E., L.S.P.



- LEGEND**
- 343-351 PROPERTY BOUNDARY
 - PROPOSED TEST PIT
 - PROPOSED SOIL BORING
 - PROPOSED MONITORING WELL
 - HISTORIC SOIL BORING
 - EXISTING MONITORING WELL



Data Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs.



REVISED BY: RHB
REVISION DATE: 8/5/2016

FIGURE

1

**PROPOSED
SUBSURFACE EXPLORATION
LOCATIONS**

**343-351 SUMMER STREET
SOMERVILLE, MASSACHUSETTS**



343-351 SUMMER STREET														
SOIL & GROUNDWATER ANALYTICAL SUMMARY														
WELL	BORING	WELL	DEPTH	SCREEN INTERVAL	ANALYTICAL									
					VOC 8260	VPH	EPH	MCP 14 METALS	PCB	SVOC 8270	Spec. Conduct.	pH	Reactivity	Flash Point
B-2/MW		X	??	??	X	X	X	X						
B-3/MW		X	??	??	X	X	X	X						
MW-1		X	19	9-19	X	X	X	X						
MW-2		X	19	9-19	X	X	X	X						
MW-3		X	19	9-19	X	X	X	X						
B-101	X		10	NA	X	X	X	X	X	X	X	X	X	X
B-102	X		10	NA	X	X	X	X	X	X	X	X	X	X
B-103	X		20				X	X						
MW-103		X		10-20	X	X	X	X						
B-104	X		10	NA	X	X	X	X	X	X	X	X	X	X
B-105	X		20				X	X						
MW-105		X		10-20	X	X	X	X						
B-106	X		20				X	X						
MW-106		X		10-20	X	X	X	X						
B-107	X		20				X	X						
MW-107		X		10-20	X	X	X	X						
B-108	X		20				X	X						
MW-108		X		10-20	X	X	X	X						
TP#1			8				X	X						
TP#2			8				X	X						
Notes: Existing Monitoring Well														
General Soil Characterization: EPH and MCP 14 Metals; If PID reading >10 ppmv, add VPH and VOC														
General Groundwater Characterization: VOC, VPH, EPH and 14 MCP Metals (dissolved)														
Disposal Pre-Characterization: B-101, B-102 and B-104														