BENNETT ENVIRONMENTAL ASSOCIATES, INC.

LICENSED SITE PROFESSIONALS $|_U$ ENVIRONMENTAL SCIENTISTS $|_U$ GEOLOGISTS $|_U$ ENGINEERS

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

BEA16-10913

July 1, 2016

Ms. Leedara Zola Habitat for Humanity Land Acquisition & Permitting 411 Main Street, Suite 6 Yarmouthport, MA 02675

RE: 93 & 97 Route 28 (Main Street) West Harwich, MA

Dear Ms. Zola,

Per our agreement dated June 1, 2016, BENNETT ENVIRONMENTAL ASSOCIATES, INC. (BEA) has completed limited physical testing at the above referenced property. This work was performed at your request to qualify potential environmental impacts to the subject properties as related to the documented plume of volatile organic compound (VOC) impacts to groundwater to the west. Research of the property identified a historic release of fuel oil occurred in the basement of the on-site dwelling at 97 Main Street. The spill was remediated and the Site was closed in 1996 with a Class A-2 Response Action Outcome (RAO), in accordance with 310 CMR 40.0000. As such, APH testing was also conducted at 97 Main Street to confirm that no significant risk exists relative to indoor air quality as having recently been framed in MCP policy, WSC-14-435.

Physical Testing

On June 10, 2016, BEA personnel traveled to the subject property to oversee the installation of a groundwater monitoring well couplet, as well as soil vapor points in the basement of each of the on-site dwellings. Test borings TB-101A and TB-101B were conducted toward the rear of the developed portion of the property, between the two dwellings. Upon drilling, the contractor noted a confining clay layer at 45' below grade surface (bgs). Wherein the existing confining layer may be serving to prevent vertical mobilization of volatile compounds, it was decided that the clay would not be penetrated and deep monitoring well, MW101D, would be set at 45'bgs. Monitoring well MW101B was then set at 20' bgs.

Upon completion of monitoring well installation, BEA personnel moved to the interior of the dwellings to install soil vapor pins (SVP) through the basement flooring. A photoionization

EMERGENCY SPILL RESPONSE & WASTE SITE CLEANUP & SITE ASSESSMENT & PERMITTING & SEPTIC DESIGN & INSPECTION WATER SUPPLY DEVELOPMENT OPERATION & MAINTENANCE & WASTEWATER TREATMENT, OPERATION & MAINTENANCE detector was used to purge the soil gas and confirm the seal at each location with readings consistent with background (non-detect to 0.3ppmv).

On June 15, 2016, BEA returned to the property to gauge, develop, purge and sample the monitoring well couplet for volatile organic compounds (VOCs). Each of the SVPs were also purged and sampled for VOCs, as well as for air-phase petroleum hydrocarbons (APII) in review of residual indoor air impacts. Each of the samples were then forwarded to a MA certified laboratory for analysis.

Analytical Results

According to the MA DEP BWSC GIS mapping, the subject property is located within a Potential Drinking Water Source Area (PDWSA). As such, the RCGW-1 Reportable Concentrations are applicable for groundwater quality and the GW-1, GW-2 and GW-3 groundwater categories are applicable in Method 1 - Risk Characterization, relative to potential human exposures, inhalation and significant environmental impact. This criterion is used to determine notification and/or remedial response liabilities, pursuant to 310 CMR 40.0000 for groundwater samples. Sub-Slab Soil Gas Screening Values were used to evaluate soil vapor entry.

On June 23, 2016, Alpha Analytical reported the results of laboratory testing for the above noted soil vapor sampling. VOC and APH concentrations at each of the SVPs were reported below the detection limit of the analysis (Non-Detect), wherein the reporting limit was below the MA Residential Sub-slab Guidelines. On June 27, 2016, the results of laboratory testing for the above noted groundwater testing was received. All VOC parameters were reported as Non-Detect and below their respective reporting limits, with the exception of six VOCs (1,2 Dibromoethane, 1,3 Dichloropropene, 1,4 Dioxane, cis 1,3 Dichloropropene, Hexachlorobutadiene, trans 1,3 Dichloropropene) which were reported at their respective reporting limits, as greater than the RCGW-1 Concentrations. In the absence of other related VOC analytes, these compounds are not believed to be present at significant concentrations, and no Notification or Remedial Response liabilities are opined.

Summary and Conclusions

BEA has performed limited physical testing, as described in detail above, at the subject property. This testing has revealed no groundwater impacts with all parameters reported as non-detect, as consistent with background conditions. Soil vapor concentrations were reported beneath the Soil Gas Screening Values listed in Appendix II of WSC-14-435, as indicating no threat of vapor entry into the dwelling as would degrade indoor air quality.

Should you have any additional questions regarding this work, or need additional information, please contact us at your convenience.

JULY 1, 2016 PAGE 3 OF 3

Sincerely, BENNETT ENVIRONMENTAL ASSOCIATES, INC.

sall. -_الأليا Kara Risk, RS

Project Manager

Cc: David C. Bennett, LSP

Encl. Geologic Borehole Logs and Monitoring Well Sampling Log Analytical Reports with Summary Spreadsheets

3225 MAIN STREET • P.O. BOX 226 BARNSTABLE, MASSACHUSETTS 02630

(508) 362-3828 • Fax (508) 362-3136 • www.capecodcommission.org

March 2, 2017

Patty Daley, Deputy Director Cape Cod Commission 3225 Main Street, PO Box 226 Barnstable, MA 02630

David Ryer, Chair Zoning Board of Appeals Town of Harwich 732 Main Street Harwich, MA 02645

RE: Main Street West Harwich Community Housing Comprehensive Permit Application

CAPE COD

COMMISSION

Dear Mr. Ryer,

The Cape Cod Commission (Commission) received a copy of the February 2, 2017 application from Habitat for Humanity of Cape Cod, LLC to the Harwich Zoning Board of Appeals (ZBA) for the Comprehensive Permit project proposed at 93 & 97 Main Street, West Harwich. Fursuant to Section 13(j) of the Commission Act, the Commission is considered a local board for purposes of project review under the Comprehensive Permit Law, GL Ch. 40B, ss. 20-23, inclusive, and on its behalf, Commission staff provides the following comments for the ZBA's consideration in its review of and decision-making on the project.

Commission staff has reviewed the project application relative to the Cape Cod Commission Act and 2009 Regional Policy Plan (RPP), as amended August 2012, and its comments are based on and arranged by the relevant issue areas from the RPP.

Affordable Housing

The applicant is proposing to make 6 of the 12 units affordable. This exceeds the Comprehensive Permit minimum requirement of 25% and the RPP's 10% requirement.

The proposed development taggets the creation of affordable ownership units for individuals and families. Provision of affordable non-age-restricted ownership units for households has been identified as one of the priorities in the RPP and the Barnstable County HOME Consortium's Consolidated Plan. The project is also consistent with the Town of Harwich's Housing Needs Assessment and Production Plan, which contains an ambitious goal to create 180 units of affordable housing over the next five years.

The mix of dwelling unit sizes includes two and three bedroom homes that will meet the needs of families ranging in size. The proposal for sheds on each affordable parcel is an excellent addition and will address storage needs, including maintenance equipment needed to maintain a single family home.

<u>Natural Resources</u>

The project site is not mapped for rare species habitat, there are no wetlands on or near the site, and the existing wooded area to be developed is disconnected from larger habitat areas.

Water Resources

The project is located in the Herring River watershed, which is a nitrogen-impaired watershed. The project is not mapped in any other RPP Water Resources protection areas, such as a drinking water resource area.

The Commission approved the Town of Harwich's Comprehensive Wastewater Management Plan (CWMP) in August 2016. The CWMP plans for sewering in the project area during Phase 7 of the plan, which may be adjusted in accordance with the CWMP's Adaptive Management Plan. The project has been designed to include provisions for connection to the sewer when it becomes available.

Staff encourages the applicant to adopt best management practices for landscape installation and maintenance and stormwater management.

Transportation

Commission staff has reviewed the Transportation Impact Assessment (TIA) included in the application and suggests that the TIA appropriately characterizes the anticipated trip generation of the proposed project.

The project is located within a reasonable walking distance to shopping and various services, and improved pedestrian accommodations at the project site could be a substantial benefit for both residents of the project and the surrounding area. The Town of Harwich is currently pursuing a Route 28 improvement project with the Massachusetts Department of Transportation that is likely to include the construction of a sidewalk along the south side of Route 28. The narrow layout of state land is likely to constrain the design of the sidewalk, resulting in pedestrian activity immediately adjacent to motor vehicles. Commission staff recommends that the applicant coordinate with the town and state to best locate the sidewalk, given the constraints of the road layout.

Heritage Preservation & Community Character

The proposed new units will be located to the rear of the site where they will not have a significant visual impact on the character of the surrounding area. Additionally, the proposed lot layout and the varied design and materials of the new structures is consistent with traditional development in the surrounding area.

Commission staff commends the applicant for proposing to retain the Chase Home and for keeping it on a separate lot in order to facilitate its preservation by a separate entity. The

application states an intent to convey lot 7, with the historic house and barn, to a developer who will record a preservation restriction on the front façade of the Chase Home and barn. Commission staff would suggest any such preservation restriction be structured to protect the historical significance of the original structures while also allowing future alteration or expansion of these buildings. Commission staff would be happy to assist the applicant in the development of a preservation restriction for these buildings.

CONCLUSION

The project is consistent with the goal articulated in the Commission Act and RPP to promote and support efforts to address the affordable housing needs of present and future Cape Cod residents.

Sincerely,

Patty Daley, Deputy Director

CC:	Leedara Zola, Habitat for Humanity of Cape Cod, Inc. Aly Sabatino, Town Planner, Town of Harwich Jacqueline Etsten, Harwich Representative, Cape Cod Commission	(via email) (via email) (via email)
	Harold Mitchell, Chair, Cape Cod Commission Elizabeth Taylor, Chair, Committee on Planning and Regulation, Cape Cod Commission	(via email) (via email)
	Project File	V



75 State Street, Suite 701 Boston, Massachusetts 02109 tel: 617 452-6000 fax: 617 345-3901 cdmsmith.com

April 25, 2017

Ms. Victoria Goldsmith Executive Director Habitat for Humanity of Cape Cod Inc. 411 Main Street/ Route 6A/ Suite 6 Yarmouthport, MA 02675

Subject: 93/97 Route 28 Peer Review of Bennett Environmental Associates Letter

Dear Ms. Goldsmith:

CDM Smith Inc. (CDM Smith) has prepared this letter to summarize our Licensed Site Professional (LSP) peer review of the Bennett Environmental Associates (BEA) letter dated July 1, 2016, related to the project site located at 93/97 West Main Street, Route 28 in Harwich, MA to Habitat for Humanity of Cape Cod Inc.

The BEA letter contains a summary of environmental activities conducted to determine potential impacts to the subject properties (93/97 West Main Street, Route 28 in Harwich, MA) related to a documented plume of volatile organic compound (VOC) impacts to groundwater to the west and impacts to indoor air from a fuel oil release to the basement of 97 West Main Street. The report includes boring logs for wells installed on the property, a monitoring well sampling log, and laboratory reports. No figures or tables were included as part of the report, although the laboratory reports do include summary tables. One of the summary tables compares soil gas sampling results to the Massachusetts Department of Environmental Protection (MassDEP) Vapor Intrusion Guidance document (WSC#-14-435) screening values for sub-slab soil gas at a residential site and the other table compares the groundwater sampling results to the MassDEP reportable concentrations. As part of CDM Smith's effort we reviewed the Town of Harwich website containing information regarding the project site and the MassDEP Bureau of Waste Site Cleanup electronic file viewer website for information on sites near 93/97 West Main Street. The MassDEP file contained an Immediate Response Action Completion Statement and Response Action Outcome Statement for the site at 97 Main Street dated October 18, 1996.

Although the BEA letter report does not specify which site(s) or what VOC contaminants are of concern to the west of 93/97 West Main, it is assumed here that the PCE/TCE Study Area in West Harwich is the area of concern (the site is identified as RTN 4-13326). The release(s) from the PCE/TCE Study Area were identified as potentially from chemicals used during the dry cleaning process and



Ms. Victoria Goldsmith April 25, 2017 Page 2

other unknown sources. From the MassDEP electronic database several other nearby sites were identified. These sites included releases from fuel oil sites.

The release associated with 97 Main Street was a No. 2 fuel oil release to the basement that occurred sometime before December 1, 1995 from a 275-gallon tank. Remediation of the release to the basement at 97 Main Street included soil excavation and recovery of free phase oil from groundwater. Additional remedial measures included a passive soil vapor extraction system, addition of remedial additives to stimulate biological remediation, and an air sparging system. The Response Action Outcome statement submitted for the site was a Class A-2 indicating that a permanent solution for the site had been achieved and the soil and groundwater had been cleaned up to a condition of no significant risk, however remaining contamination could still be above background levels.

The testing conducted by BEA for Habitat for Humanity of Cape Cod Inc. included installing two soil borings toward the rear of the developed portion of the properties and between the two buildings on June 10, 2016. No plan was provided to show the precise location of these two borings. The borings were completed as a shallow and deep well pair. During the installation of the soil borings a description of the geology was recorded, however no soil headspace screening for VOCs was provided. The shallow well was completed as a water table well and was screened across the water table at an interval of approximately 10 to 20 feet below the ground surface. The second well was a deep well terminated at a depth of approximately 45 feet below the ground surface after a clay layer was encountered. The deep well was screened at an interval of approximately 11.5 feet below the top of the well casing. Following well installation, the wells were developed and sampled on June 15, 2016. Groundwater from the wells was analyzed for VOCs using the MassDEP method for volatile organic compounds. The wells are identified as MW-101S and MW-101D.

On the same day that the soil borings and monitoring wells were being installed two soil gas sampling points (one in each basement at 93/97 Main Street) were installed. The details of these installations were not provided in the report. The soil gas sampling points were sampled for Air-Phase Petroleum Hydrocarbons (APH) and TO-15 VOCs using MassDEP methods. The samples were identified as SVP-1 and SVP-2. No indication as to which home the samples came from was provided.

The results of the groundwater sampling indicated no detectable concentrations for all compounds analyzed for in both wells. Most of the compounds were reported with detection limits that are below the MassDEP reportable concentration for releases to groundwater classified as RCGW-1. However, as indicated in the BEA letter, the detection limits for six of the compounds were above the MassDEP reportable concentration limits, meaning that a reportable concentration could potentially be exceeded for those compounds at a concentration below the detection limit. The results of the soil



Ms. Victoria Goldsmith April 25, 2017 Page 3

gas samples indicated the presence of low levels of some VOCs, however all compounds detected were below the applicable MassDEP sub slab-soil gas screening values. A review of the laboratory reports indicates that the analytical results achieved MassDEP presumptive certainty, indicating the analytical results met the quality requirements of the methods. It was noted on the chain-of-custody form for the air samples that the flow controller for sample SVP-2 did not register a final vacuum level on the sampling canister. As part of the normal quality assurance process it is a standard procedure to have a small remaining vacuum level on the sampling canister. In this case, the meter failed to provide a vacuum measurement, therefore the remaining vacuum could not be verified upon completion of sampling.

The BEA letter concluded that groundwater sampling results indicated no groundwater impacts from VOCs and that there was no notification or remedial response liabilities. The letter stated that the results of the of the sub-slab soil gas indicated no threat of vapor entry into the dwellings that would degrade indoor air quality.

Based on CDM Smith's review of the information provided in the BEA letter, and other information reviewed above, the following comments are provided. Based on the analysis performed it is assumed that the contaminants of concern for groundwater were VOCs associated with the dry cleaner release. The main contaminants of concern for the dry cleaner release are tetrachloroethene (PCE) and degradation products associated with PCE, such as trichloroethene (TCE). The VOC analysis used for the groundwater sample analysis did include compounds that would be associated with a gasoline or fuel oil release (such as benzene), however, it would not include the hydrocarbon fractions associated with these releases. The installation of a well pair in the area between the two dwellings appears to be a reasonable location. The screening of a shallow water table well and a deeper well above the clay layer is a reasonable approach. The use of only VOC analytical methods for a dry cleaner release is a reasonable approach. Based on CDM Smith's review of the groundwater data we agree with the conclusions stated in the BEA letter that no groundwater impacts are indicated by the analytical results. In addition, we agree that these results do not indicate a reportable condition under the Massachusetts Contingency Plan (MCP).

The sub-slab soil gas was sampled for both VOCs and APH. The sampling appears to have been conducted in accordance with the MassDEP guidance and the results indicated low levels of compounds were detected. The chain-of-custody form note concerning the flow controller does not appear to be a significant issue as the laboratory was able to perform the analytical analysis without further issue. Based on CDM Smith's review of the sub-slab soil gas results we agree with the conclusions stated in the BEA letter and that the results do not indicate a potential vapor intrusion pathway into indoor air at the two dwellings tested and further evaluation is not warranted.



Ms. Victoria Goldsmith April 25, 2017 Page 4

In summary, based on the information provided for this review, it would appear that reasonable sampling and analyses efforts have been conducted for the intended purpose and the results match the findings presented in the BEA letter of July 1, 2016. If you have any questions regarding the information contained in this letter, please contact me at (617) 452-6817.

Very truly yours,

Edward P. Vom Doran

Edward P. Van Doren, P.E., LSP Principal Environmental Engineer CDM Smith Inc.

CC: Aly Sabatino, Harwich Town Planner David Young, CDM Smith