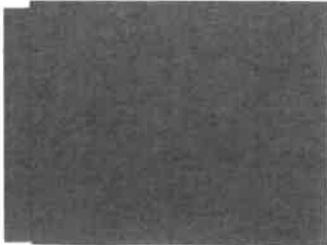


17-0499.1 E

July 13, 2017



Subject: Environmental Soils Information
Proposed Commercial Buildings
636 Riverside Street
Portland, Maine

Dear 

This letter summarizes environmental soil conditions encountered during the June 26 and 27, 2017 geotechnical test boring and test pit explorations program by S. W. Cole Engineering, Inc. (S.W.COLE) at the subject project site.

Petroleum contamination was encountered at the depth range of approximately 2 to 3 feet in uncontrolled fills during the excavation of Test Pit TP-110. Refer to the S.W.COLE Preliminary Geotechnical Information letter dated July 13, 2017 for a plan showing the approximate location of TP-110, and for a log of this test pit.

Photoionization detector (PID) screening of a sample of the petroleum-contaminated soil indicated a concentration of 134 parts per million (ppm). The "Oil in Soil" shake test result for the same sample indicated a "Positive" result for fuel oil.

The lateral extent of the petroleum-contaminated soils was not determined during the geotechnical explorations program. Based on the "Positive" Oil in Soil shake test result, the Maine Department of Environmental Protection (MeDEP) may require remediation of the soils if they are to be excavated during the proposed site development.

The MeDEP issued a Voluntary Response Action Plan (VRAP) Certificate of Completion dated August 30, 2010 to the City of Portland after sand blast grit and soils with documented elevated levels of arsenic were successfully remediated at the site. S.W.COLE reviewed the reports for the environmental investigations completed at the site prior to the 2010 VRAP Certificate of Completion being issued, and did not find evidence that the investigations encountered petroleum-contaminated soils.

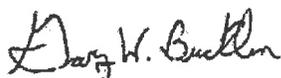
Construction of the proposed development will require an Environmental Media Management Plan (EMMP) that outlines a program for managing the petroleum contaminated soil in the area of TP-110, and for managing previously unidentified contamination that may be encountered in other areas during earthwork activities.

Coordinating and monitoring the management of contaminated soil, preparation of a remedial action completion report, and potentially other environmental services will be necessary in order to facilitate the MeDEP issuing an amended VRAP Certificate of Completion to the site owner and it's assigns after the completion of construction activities at the site.

Please contact us if you have questions regarding this correspondence.

Sincerely,

S. W. Cole Engineering, Inc.



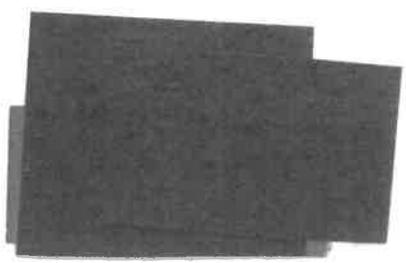
Gary W. Bucklin, C.G.
Senior Geologist

GWB:tjb



17-0499 S

August 22, 2017



Subject: Preliminary Geotechnical Information – rev 1
Proposed Commercial Buildings
636 Riverside Street
Portland, Maine

Dear [Redacted]

As requested, this letter summarizes preliminary geotechnical information relative to foundations, earthwork and pavement associated with the subject project. This letter is provided in advance of our geotechnical report and is subject to the limitations set forth therein. This letter supersedes its prior release, dated July 13, 2017.

S. W. Cole Engineering, Inc. (S.W.COLE) completed test boring and test pit explorations at the site on June 26 and 27, 2017. The attached plan shows the approximate locations of the explorations as well as existing and proposed site features. Logs of the explorations and a key to the notes and symbols used on the logs are also attached.

Based on the subsurface findings and our understanding of the proposed construction, we offer the following geotechnical considerations for the proposed development:

- **Foundations:** The site is principally underlain by uncontrolled fills overlying stable native deposits of glaciomarine clay, glacial outwash sands and glacial till. The uncontrolled fills range from 3 to 25 feet thick and are unsuitable for support of the proposed buildings. We recommend a combination of uncontrolled fill removal and replacement, as well as aggregate piers to improve ground conditions for conventional spread footing and on-grade floor slab support. The

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attached plan summarizes the ground improvement method for each proposed building footprint. We estimate a premium cost of \$6 to \$9 per square foot of proposed building area to improve ground conditions for conventional spread footings and on-grade floor slabs.

- **Earthwork:** As discussed, we recommend raising finished floor elevations and site grades to preclude exporting environmentally impacted site soils. The site soils are sensitive to moisture and frost. We recommend site grading and foundation construction occur in drier, non-freezing weather of Spring, Summer and Fall. The uncontrolled fills and non-organic soils displaced by excavation may be reused as compacted Common Borrow in paved areas and beneath buildings improved with aggregate piers.
- **Pavements:** Pavement subgrades should be proof-rolled and densified with a 10 ton vibratory roller. Areas that become soft after proof-rolling, must be removed and replaced with compacted Granular Borrow prior to installing pavement subbase gravels. We recommend planning consider a 30 inch thick pavement section consisting of 4 inches of hot mix asphalt over 18 inches of compacted MaineDOT Type D Crushed Subbase Gravel over 8 inches of MaineDOT Granular Borrow for Underwater Backfill.

We trust this letter meets your current needs. We will prepare our geotechnical report upon your notice to proceed.

Sincerely,

S. W. Cole Engineering, Inc.



Timothy J. Boyce, P.E.
Senior Geotechnical Engineer

TJB:emw

Attachments: Exploration Location Plan
 Exploration Logs
 Key to Notes and Symbols used on Exploration Logs