September 9, 2016

Mr. Chad Staniszewski
Mr. Eugene Melnyck
New York State Department of Environmental Conservation
270 Michigan Avenue
Buffalo, NY 14203

Dear Mr. Staniszewski & Mr. Melnyck:

Babcock Street Properties Investigation Work Plan

On behalf of ExxonMobil and Krog-Renova, and per the requirements of the Brownfield Cleanup Program, Amec Foster Wheeler is submitting this subsurface investigation work plan for a limited geotechnical investigation at the ExxonMobil Operable Unit 2 (OU 2) property located on Elk Street in Buffalo, New York. The limited investigation consists of advancing ten soil borings and retaining soil samples for index and strength testing. The field investigation and following laboratory program will be used to support a redevelopment plan for the property.

SCOPE OF WORK

The proposed remedial investigation consists of advancing up to ten geotechnical borings. The locations of the proposed borings, as well as historic borings, are overlaid on the "Summary of Observations During Test Trenching for Delineation of Petroleum Impacted Soil" figure developed by Roux Associates Inc., and presented as Attachment 1. The following procedures will be adhered to at each test pit location:

- Borings will be advanced using drive and wash methods.
- Standard penetration testing (SPTs) will be conducted at 2-foot intervals from ground surface to bedrock. SPT sampling will be conducted in accordance with ASTM D1586.
- In addition to the SPT sampling, undisturbed samples of the lacustrine clay that underlies the overburden fill materials, will be collected using thin walled Shelby tube samplers in accordance with ASTM D1587 (conventional) or ASTM D6519 (piston sampler). It has been assumed that up to three Shelby tubes will be collected per borehole.
- Bedrock cores will be conducted in up to four locations. Bedrock cores will be conducted in accordance with ASTM D2113 using a double-tube core barrel equipped with diamond impregnated cutting shoe.

Amec Foster Wheeler
Environment & Infrastructure, Inc.
511 Congress St. Suite 200
Portland, Maine 04101 USA
(207) 775-5401
amecfw.com

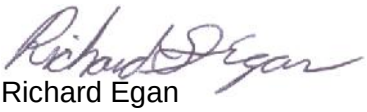
- Investigation derived waste will be containerized in 55 gallon drums and handled in accordance with the site-wide soil management plan.
- Amec Foster Wheeler will provide an engineer or geologist to observe and log the explorations, document the locations of each exploration, and collect soil samples for laboratory testing.
- All down-hole equipment will be decontaminated prior to being demobilized from the site at the completion of field activities.

All field work will be conducted in adherence to the current site Health and Safety Plan including appropriate personal protection equipment and air monitoring procedures. It is anticipated that the subsurface investigation will be completed over the course of one week.

At the conclusion of the field investigation, a laboratory analytical testing program will be initiated. It is anticipated that the laboratory program will include the following material index and strength testing:

- Consolidated Undrained Triaxial Shear – ASTM D4767
- Incremental Consolidation – ASTM D2435
- Laboratory Vane Shear – ASTM D4648
- Moisture Content – ASTM D2216
- Grain Size Analysis – ASTM D422
- Atterberg Limits – ASTM D4318

Sincerely,
AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE



Richard Egan
Senior Geotechnical Engineer

Attachments

Attachment 1

Exploration Location Plan

Existing Test Pit

Proposed Test Pit

Proposed Geotechnical Boring

TP-2
Depth 7ft
Water 5.5 ft
sheen noted

TP-5
Depth 6ft
Water 5.5 ft
heavy sheen

TP-7

TP-8

TP-3
Depth 6.5ft
Water 5.5 ft
free product

TP-9

TP-4
Depth 5ft
Water 2 ft
odor

TP-11

TP-12

TP-10

TP-6
Depth >3 ft
Water 2.8 ft
odor/sheen

TP-14

TP-13

TP-1
Depth 10.5 ft
Water 6.5 ft
paint waste

GORHAM STRE
PARCEL #4
WINONA STREET
PARCEL #5
BRADFORD STREET
ELK STREET
PRENATT STREET
BABCOCK STREET
BABCOCK ST. SEWER
BABCOCK STREET PROPERTIES AREA
SOME PETROLEUM IMPACTED SOIL
OIL AT 3.5'
TANK FARM AREA
CENTRAL TAIL AND PROCESS AREA
ADMINISTRATIVE OFFICES AND OPERATIONS AREA
NORTHEAST PROCESS AND STORAGE AREA
BSA-MH1
BSA-MH2
BSA-MH4
SB-15 (DESTROYED)
BTC-5 (DESTROYED)
BTC-4 (DESTROYED)
NTY-T60 (DESTROYED)

LEGEND

- EXISTING TANK
- EXISTING STRUCTURE
- CURRENT PROPERTY LINE (BASED ON DENLUCK-O'NEILL ENGINEERING AND SURVEYING, DEC. 15, 1988; AND NUSSBAUMER & CLARKE, INC. FEBRUARY 6, 1995)
- LIMITS OF PROPERTY FORMERLY OWNED BY EXXONMOBIL OIL CORPORATION
- GEOGRAPHIC AREA BOUNDARY AND/ OR FORMER PROPERTY LINES
- CLAY PIPE REMOVED
- STEEL PIPE REMOVED
- CONDUIT PIPE REMOVED
- CAST IRON PIPE REMOVED
- CONCRETE PIPE REMOVED
- EXPLORATORY TRENCHES
- STEEL, HP WATER MAIN
- SLAB
- MW-35 — LOCATION AND DESIGNATION OF MONITORING WELL COMPLETED DURING PREVIOUS INVESTIGATIONS
- SB-116 — LOCATION AND DESIGNATION OF SOIL BORING COMPLETED DURING PREVIOUS INVESTIGATIONS
- TP-31 — TEST PITS FOR DELINEATION OF LEAD OR EVALUATION OF PETROLEUM IMPACTED SOIL
- TP-10 — TEST TRENCHES FOR EVALUATION OF PETROLEUM IMPACTED SOIL
- TT-83 — DESIGNATION OF TEST TRENCH
- NON-PETROLEUM IMPACTED SOIL
- 1-4' — PETROLEUM IMPACTED SOIL WITH OBSERVED DEPTH
- NOT OBSERVED DUE TO SURFACE WATER
- NOT OBSERVED DUE TO CONCRETE/ ASPHALT OBSTRUCTION
- A — LOCATION AND DESIGNATION OF PIPE REMOVAL SOIL SAMPLE (SEE BELOW FOR LIST OF SOIL SAMPLES)

SAMPLING LOCATIONS

A	BSPA-1-2-3/0	M	FRA 209/+60
B	BSPA-3/83	N	FRA 210/+0
C	FRA 12/+75	O	FRA 210/+60
D	FRA 20-29/+75	P	FRA 276-280/+145
E	FRA 54-69/+15	Q	FRA 309/+36
F	FRA 74-81/+25	R	FRA 365/+175
G	FRA 96/+75	S	FRA 400/+25
H	FRA 103/+130	T	NTYA 570/+0
I	FRA 137/+170	U	NPSA 1161-1163/+25
J	FRA 154/+25	V	NPSA 1161-1163/+75
K	FRA 171/+25	W	NPSA 1164-1167/+50
L	FRA 176 CONT./+125		

N

80' 0 80'

Title:
SUMMARY OF OBSERVATIONS DURING TEST TRENCHING FOR DELINEATION OF PETROLEUM IMPACTED SOIL

EXXONMOBIL FORMER BUFFALO TERMINAL, BUFFALO, NEW YORK

Prepared For:
EXXONMOBIL OIL CORPORATION

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: W.K.	Date: 28SEP12	PLATE
Prepared by: J.A.D.	Scale: AS SHOWN	7
Project Mgr: N.C.	Project: 0172.0052Y015	
File: 0172.0052Y441.15.DWG		

V:\CAD\PROJECTS\0172Y\0052Y\441\0172.0052Y441.15.DWG