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Sterling Environmental Engineering, P.C.

December 4, 2012

Mr. James E. Candiloro, P.E.
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7014

Subject: Former Circle M Wood Treatment Site
BCP Site ID No. C314083
Town of Fishkill, Dutchess County
STERLING File #21044

Dear Mr. Candiloro,

Enclosed you will find the Supplemental Investigation Report for the Former Circle M Wood Treatment Site. This report summarizes the results of the work completed in accordance with the March 20, 2012 Supplemental Remedial Work Plan as approved by the New York State Department of Environmental Conservation.

Please contact me should you have any questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.



Mark P. Millspaugh, P.E.
President
mark@sterlingenvironmental.com

MPM/bc
Email/First Class Mail
Attachment

cc: Robert Schick, P.E., NYSDEC Central Office
Michael Ryan, P.E., NYSDEC Central Office
George Heitzman, NYSDEC Central Office
Daniel Simone, P.E., Chelsea Waterfront Development, LLC

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24 Wade Road ♦ Latham, New York 12110 ♦ Tel: 518-456-4900 ♦ Fax: 518-456-3532
E-mail: sterling@sterlingenvironmental.com ♦ Website: www.sterlingenvironmental.com



SUPPLEMENTAL INVESTIGATION REPORT

FORMER CIRCLE M WOOD TREATMENT SITE
TOWN OF FISHKILL
DUTCHESS COUNTY, NEW YORK

BROWNFIELD CLEANUP PROGRAM
NYSDEC SITE #3-14-083
BROWNFIELD CLEANUP AGREEMENT W3-1077-05-09

Prepared For:

Chelsea Waterfront Development, LLC
1 Executive Boulevard
Yonkers, New York 10701

Prepared By:

Sterling Environmental Engineering, P.C.
24 Wade Road
Latham, New York 12110



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1.0 INTRODUCTION

This Supplemental Investigation Report for the former Circle M Wood Treatment Site (Circle M) summarizes the results of the work completed in accordance with the March 20, 2012 Supplemental Remedial Work Plan as approved by the New York State Department of Environmental Conservation (NYSDEC). The Supplemental Remedial Work Plan was prepared to address additional sampling requested by the NYSDEC; and supplement the Remedial Design outlined in the approved Record of Decision (ROD) and Remedial Design & Engineering Report. The approved ROD provided for excavation, relocation, consolidation and capping of impacted soils. The Remedial Design & Engineering Report will be revised based upon additional data collected and the modification in the ultimate plans for development of the Site. The Site will be remediated based on Restricted Residential Soil Cleanup Objectives (SCOs) set forth in 6 NYCRR Part 375.6, in accordance with DER-10, "Technical Guidance for Site Investigation and Remediation," and CP-51 "Soil Cleanup Guidance."

1.1 Site Description & Background

Chelsea Industrial Park consists of a 58.6-acre parcel at the end of Brockway Road in the Town of Fishkill, Dutchess County, New York (Figure 1). The Circle M Wood Treatment facility formerly occupied approximately eight (8) acres of Chelsea Industrial Park. For the purposes of this Supplemental Investigation Report and the Brownfield Cleanup Program, an area of approximately 19.9 acres has been designated as "the Site", which includes the former Circle M building and surrounding acreage, as more fully described by Exhibit A to the Brownfield Site Cleanup Agreement (BCA).

Previous sampling efforts and data generated at the Site are summarized in the 2002 Supplemental Remedial Investigation and the Focused Feasibility Study (FFS).

1.2 Program Status

The NYSDEC issued the ROD on September 30, 2005, setting forth the selected remedy for the Site. The Remedial Design & Engineering Report, revised March 20, 2009, set forth the remedial design elements, construction sequence, project schedule, and supporting plans, including the Community Air Monitoring Plan (CAMP), Health and Safety Plan (HASP), Site Management Plan (SMP), and Storm Water Pollution Prevention Plan (SWPPP). The Remedial Design & Engineering Report will be revised based upon additional data collected and the modification in the ultimate plans for development of the Site. The Site will be remediated based on Restricted Residential SCOs set forth in 6 NYCRR Part 375.6, and in accordance with DER-10 and CP-51 "Soil Cleanup Guidance."

1.3 Brownfield Site Cleanup Agreement (BCA)

The implementation of the selected remedy will be in accordance with the December 2005 Brownfield Site Cleanup Agreement (BCA) signed by Chelsea Waterfront Development, LLC.

2.0 SUMMARY OF SUPPLEMENTAL INVESTIGATION

2.1 Soil Sampling

The NYSDEC determined the need for additional sampling to support the Remedial Design. The purpose of additional sampling efforts is to: 1) provide data in areas where little or no information has been obtained regarding contaminants in soil other than Copper, Chromium and Arsenic; and 2) refine the Remedial Design regarding opportunities for consolidation and limits of the cap. Figure 2 shows the soil boring locations.

The soil samples and analytes are listed on Table 1. Nine (9) soil boring locations (SB-1 through SB-9) were selected for full Target Compound List/Target Analyte List (TCL/TAL) analysis. Soil samples at these locations were collected from the 0-6, 6-12, 12-18, and 18-24 inch soil depth horizons. At location SB-1, only the top two (2) soil intervals were able to be collected due to the nature of the fill (i.e., mostly concrete and rock). No sample was collected at location SB-2, as it was located on a concrete slab that was reported to be 3 feet thick by a representative of the Site owner. In accordance with the requirements in DER-10, "Technical Guidance for Site Investigation and Remediation", two (2) duplicate samples were collected.

Additionally, 48 surficial soil samples (SS-1 through SS-48) were collected around the proposed limits of the excavation and consolidation areas and analyzed for Copper, Chromium and Arsenic. These samples were collected in the 0-6 inch soil horizon with an auger and six (6) inch spade. Four (4) duplicate samples were collected in accordance with DER-10. These samples will aid in refining the limits of the proposed excavation and consolidation areas. At the direction of the NYSDEC, seventeen (17) boring locations (SSB-1 to SSB-17) were collected from the 0-24 inch soil horizon and analyzed for Copper, Chromium and Arsenic.

The nine (9) soil boring locations (SB-1 through SB-9) and seventeen (17) boring locations (SSB-1 to SSB-17) were obtained using a 6620 GeoProbe by direct push. All soil boring locations required two (2) soil borings to a depth of 24 inches per location to fill the required sampling containers.

Table 1

Sampling Method Summary

Samples	Matrix	Sample Depth	QA/QC	Total Samples	Analysis	Category
SB-1(a,b,c,d) to SB-9 (a,b,c,d)	Soil	a 0-6" b 6-12" c 12-18" d 18-24" *composite each depth range except for VOC samples	2 dup 2 MS/MSD	40 (9x4 + 4)	Full EPA TCL+30/TAL +Total, tri and hexavalent Cr	B
SS-1 to SS-48	Soil	0-6" composite	3 dup 3 MS/MSD	54	Part 375 Copper, Arsenic, Total, tri and hexavalent Cr	B
SSB-1 to SSB-17	Soil	0-24" composite	1 dup 1 MS/MSD	19	Part 375 Copper, Arsenic, Total, tri and hexavalent Cr	B
MW- 4, -5, - 6, -7R, -8, -9S	Groundwater	NA	1 trip blank	7	Part 375 Toluene, Copper, Arsenic, Total, tri and hexavalent Cr	A

NA = Not Applicable

All of the soil samples were submitted to Phoenix Environmental Laboratories, Inc., in Manchester, CT for analysis. Soil samples for full TCL/TAL analysis were analyzed for TCL Volatile Organic Compounds (VOCs) by Method SW8260, Semi-Volatile Organic Compounds (SVOCs) by Method SW8270, TAL Metals by Method SW6010, Polychlorinated Biphenyls (PCBs) by Method SW8082, and Pesticides by Method SW8081. Soil samples were analyzed for Copper, Total Chromium, trivalent Chromium and Arsenic by Method SW6010 and for hexavalent Chromium by Method SW3060/7196. All laboratory results for soil samples were delivered with Category B data packages. Soil sample results were submitted to Alpha Geoscience in Clifton Park, NY for data validation.

Results of the soil analyses are discussed below in Section 3.1.

Daily Field Reports are provided in Appendix A. Laboratory data is provided as Appendix B, and the Data Usability Summary Report (DUSR) is provided in Appendix C.

2.2 Groundwater Sampling

Groundwater samples were collected from six (6) onsite wells: MW-4, MW-5, MW-6, MW-7R, MW-8, and MW-9S. Samples were collected by PVE Sheffler using low-flow methodology after field parameters were stabilized, as monitored with a water quality meter. Groundwater samples were submitted to Phoenix Environmental Laboratories, Inc. for analysis. Groundwater samples were analyzed for Toluene by Method SW8260, Total Chromium, Copper, and Arsenic by Method SW6010, and hexavalent Chromium by Method S3500CRD/7196.

Results of the groundwater analyses are discussed below in Section 3.2.

Daily Field Reports are provided in Appendix A, and the laboratory data is provided as Appendix B.

3.0 SUMMARY OF SUPPLEMENTAL DATA

3.1 Soil Data

Results of the soil analyses are contained in Appendix B, and exceedances of Restricted Residential Soil Cleanup Objectives (SCOs) set forth in 6 NYCRR Part 375.6 are shown on Figure 2.

In all of the soil samples, Arsenic was the only constituent detected above SCOs. Of the nine (9) soil boring locations sampled at four (4) discrete depth intervals, SB-4 (0-6") was the only one that contained Arsenic above the SCO of 16 mg/Kg. Out of the 48 surface soil samples (0-6"), 24 contained Arsenic at levels above the SCO. Arsenic concentrations in these samples ranged from 16.1 mg/Kg to 104 mg/Kg. Of the 17 soil samples collected from the 0 to 24" interval, only SSB-4 contained Arsenic slightly above the SCO.

3.2 Groundwater Data

Results of the groundwater analyses are contained in Appendix B, and exceedances of NYSDEC Division of Water Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values are shown on Figure 2.

Toluene was not detected in any of the groundwater samples during this event. Arsenic was detected at two (2) monitoring wells (MW-6 and MW-7R) at levels exceeding the TOGS 1.1.1 Groundwater Quality Standard. These results are consistent with historic groundwater analytical results.

3.3 Data Usability

The Data Usability Summary Report prepared by Alpha Geoscience in accordance with DER-10 is provided as Appendix C.

4.0 IMPLEMENTATION OF THE REMEDY

The March 20, 2009 Remedial Design & Engineering Report outlines the Remedial Design elements, construction sequence, project schedule and supporting plans necessary for the implementation of the chosen remedy. The Remedial Design & Engineering Report will be revised based upon the additional data collected and the change in the ultimate plans for development of the Site. The Site will be remediated based on Restricted Residential SCOs set forth in DER-10 and CP-51 "Soil Cleanup

Guidance.”

The ROD provides for the onsite excavation and consolidation of contaminated soil. Soil will be consolidated within a designated area and will include the former treatment building's slab, which will be left in place, beneath a portion of the consolidation area. The consolidation area will then be covered with a geotextile fabric and two (2) feet of clean fill. Figure 3 shows the proposed excavation, consolidation and fill areas. These have been refined based upon the additional data that has been collected.

Modifications to the Remedial Design & Engineering Report will include the appropriate revisions to the construction specifications and contract documents, and revisions to the engineering drawings necessary to address the newly determined limits of excavation and consolidation.