



2022 Periodic Review Report

(Reporting Period: April 28, 2021 to April 28, 2022)

Location:

Tecumseh Phase II Business Park – Site II-12
2303 Hamburg Turnpike, Lackawanna, New York
NYSDEC Site No. C915198L

Prepared for:

Buffalo & Erie County Industrial Land Development
Corporation
95 Perry Street, Suite 403
Buffalo, New York

LaBella Project No. 2210164.04

May 2022 (revised July 2022)

Table of Contents

1.0	EXECUTIVE SUMMARY	1
1.1	Site Summary	1
1.2	Effectiveness of Remedial Program.....	2
1.3	Non-Compliance	2
1.4	Recommendations	2
2.0	SITE OVERVIEW	2
2.1	Site Description	2
2.2	Summary of Remedial Actions	2
3.0	PERFORMANCE, EFFECTIVENESS & PROTECTIVENESS OF THE REMEDY	3
4.0	INSTITUTIONAL/ENGINEERING CONTROL (IC/EC) PLAN COMPLIANCE REPORT	4
4.1	IC/EC Requirements and Compliance	4
4.1.1	IC Requirements-Site Restrictions	4
4.1.2	Engineering Control-Soil Cover System	4
4.2	IC/EC Certification.....	5
5.0	MONITORING PLAN COMPLIANCE REPORT	5
5.1	Requirements	5
5.2	Comparisons with Remedial Objectives	6
5.3	Monitoring Deficiencies	6
5.4	Monitoring Conclusions and Recommendations	6
6.0	OPERATION AND MAINTENANCE PLAN	6
7.0	CONCLUSIONS AND RECOMMENDATIONS.....	6
8.0	LIMITATIONS.....	7
9.0	REFERENCES.....	7

Figures	Figure 1 – Site Location Map Figure 2 – Phase II Business Park Site Plan Figure 3 – Site Plan
Appendix 1	Boundary Survey
Appendix 2	Cover Inspection Form
Appendix 3	Photographs
Appendix 4	Subsurface Exploration Documentation
Appendix 5	Site Management Periodic Review Report-Institutional and Engineering Controls Certification Form

1.0 EXECUTIVE SUMMARY

This Periodic Review Report (PRR) is a required element of the approved Site Management Plan (SMP) for the Tecumseh Phase II Business Park Site II-12. This New York State Brownfield Cleanup Program (BCP) site was remediated in accordance with Brownfield Cleanup Agreement (BCA) Index No. B9-0696-05-06(B), which was executed on March 14, 2007 and amended on August 22, 2012, October 2, 2017 and December 20, 2017.

1.1 Site Summary

Site II-12 (hereafter referred to as the “Site”) encompasses approximately 12.02 acres of a former industrial site in the City of Lackawanna, Erie County, New York that was historically occupied by an integrated steel mill operated by the Bethlehem Steel Corporation (BSC). The Site is one of multiple parcels on the former BSC property acquired by the Buffalo and Erie County Industrial Land Development Corporation (ILDC) for redevelopment and use as a business park. Historically, the Site was part of a large industrial complex that contained numerous buildings and facilities, none of which currently remain on the Site. The BSC property was the subject of assessments and investigations under the Resource Conservation and Recovery Act (RCRA) and the area containing the Site received a “No Further Assessment” designation from the U.S. Environmental Protection Agency (USEPA). In 2007, Tecumseh Redevelopment Inc. (Tecumseh) entered an approximate 143-acre portion of the BSC property containing the Site and referred to as the Phase II Business Park in the BCP. With NYSDEC’s approval, Tecumseh subdivided the Phase II Business Park into 12 individual BCP sites (Sites II-1, II-2, II-3, II-4, II-5, II-6, II-7, II-8, II-9, II-10, II-11 and II-12) in 2012. The original BCA was amended to cover Site II-1, with separate BCAs executed for the remaining 11 BCP sites (i.e., Sites II-2 through II-12).

The Remedial Investigation (RI) conducted on the Phase II Business Park property between 2010 and 2013 revealed that contamination associated with historical steel mill operations had impacted the soil/fill on the property, necessitating remedial action. The RI identified isolated groundwater impacts on portions of the Phase II Business Park property, but no such impacts were found on the Site. Several phases of remedial actions were undertaken on the Phase II Business Park property in accordance with Interim Remedial Measures (IRM) Work Plans approved by the NYSDEC in 2010 and 2017. Following completion of the remedial work, some contamination was left in the soil/fill of the Site, which is hereafter referred to as the “remaining contamination”. The remaining contamination was generally characterized by widespread exceedances of the 6 New York Codes, Rules and Regulation (NYCRR) Part 375 Soil Cleanup Objectives (SCOs) for un-restricted use for certain metals, polycyclic aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) to the approximate native soil depth of 12 feet below the ground surface. The remedial efforts also included development of a SMP to manage the remaining contamination at the Site in perpetuity or until extinguishment of the Environmental Easement that was placed on the Site in accordance with Environmental Conservation Law (ECL) Article 71, Title 36. The placement of a cover system comprised of 12 inches of clean soil, stone or NYSDEC-approved material, with a demarcation layer in all areas that are not paved or covered by concrete or structures was prescribed for the Site prior to occupancy. Additionally, a vapor barrier is required to be placed under any future structures designated for occupancy.

In 2017, the cover system was placed on the Site, the Site was acquired by the ILDC and a BCP Certificate of Completion (COC) was issued, signifying satisfactory completion of the remedial program and acceptance of the Final Engineering Report (FER) for the Site.

1.2 Effectiveness of Remedial Program

Based on a recent inspection of the Site, the engineering and institutional controls are in place, are performing properly, and remain effective and protective of public health and the environment.

1.3 Non-Compliance

No areas of non-compliance regarding the major elements of the SMP were identified during the preparation of this PRR.

1.4 Recommendations

Overall, the remedial program is viewed to be effective in achieving the remedial objectives for the Site. No changes to the SMP or the frequency of PRR submissions are recommended at this time.

2.0 SITE OVERVIEW

2.1 Site Description

The Site is part of a larger property owned by the ILDC and located at 2303 Hamburg Turnpike in the City of Lackawanna, New York. Figure 1 shows the approximate location of the ILDC property, Figure 2 depicts the configuration of the Phase II Business Park and all 12 individual BCP sites, and Figure 3 illustrates the configuration of the approximate 12.02 acre Site. The Site is bounded to the south by land currently under development and the former 54" Roll Mill building that constitutes BCP Site II-10; to the east by undeveloped land that constitutes BCP Site II-11; to the north by undeveloped land that constitutes BCP Site I-1; and to the west by the undeveloped portions of the Phase III Business Park property. A functioning rail corridor extends along the western margin of the Site, an asphalt road crosses the northwest corner of the Site, and a gravel access road for the Niagara Wind Substation and the former 54" Roll Mill building transects the west portion of the Site. Active and undeveloped industrial properties are located west of the Site, while commercial and residential properties are located east of the Site, beyond Fuhmann Boulevard and the Hamburg Turnpike (NY Route 5). Lake Erie is situated approximately 4,207 feet to the west of the Site, while Smoke Creek is located approximately 2,037 feet southwest of the Site.

Contaminant source areas in soil/fill on the Site were remediated and the remaining soil/fill on the Site was characterized as generally impacted by the historical industrial usage of the BSC property. These impacts were characterized as widespread exceedances of the 6 NYCRR Part 375 SCOs for un-restricted use for certain metals, PAHs and PCBs to the approximate native soil depth of 12 feet below the ground surface. The impacted soil/fill constitutes the remaining contamination on the Site. No groundwater contamination necessitating remediation was identified on the Site.

2.2 Summary of Remedial Actions

In accordance with a NYSDEC-approved IRM Work Plan, an IRM was completed at the Site in 2017 to address contaminant "hot spots" in soil/fill. This IRM involved the excavation and treatment of approximately 1,620 cubic yards of petroleum and PAH-impacted soil/fill from three areas of the Site in a bio-treatment area constructed on Site II-9. The remedial excavations were backfilled with

NYSDEC-approved bio-treated soils.

The final remedy implemented at the Site in 2017 involved the installation of a cover system in accordance with the NYSDEC-approved Remedial Action Work Plan (RAWP). The cover system installed at the Site is depicted on Figure 5 from Appendix H-12 of the SMP for the Tecumseh Phase II Business Park (included in the Figures Appendix) and is comprised of the following components:

1. A minimum of 12 inches of soil material authorized by NYSDEC via a Beneficial Use Determination (BUD) placed over a demarcation layer in areas that are not otherwise covered by rail lines, pavement or structures;
2. A minimum of 12 inches of railroad ballast within the rail corridor that extends along the western Site margin;
3. A minimum of 12 inches of crushed stone for the gravel access road for the Niagara Wind Substation and the former 54" Roll Mill building that transects the west portion of the Site;
4. NYSDEC approved BUD soil material placed over existing concrete pads with minimum concrete pad and sub-base thickness of 6 inches; and
5. A minimum of 6 inches of asphalt pavement and sub-base on the access road that crosses the northwest corner of the Site.

In addition to the cover system, an environmental easement was placed on the Site, recorded with the Erie County Clerk and mandates compliance with the NYSDEC-approved SMP and all engineering and institutional controls placed on the Site. The SMP specifies the procedures required to manage the remaining contamination on the Site post remediation, including (1) implementation and management of all engineering and institutional controls; (2) media monitoring, if applicable; (3) operation and treatment of treatment, collection, containment or recover systems, if applicable; (4) performance of periodic inspections, certification of results and submittal of PRRs; and (5) defining criteria for termination of any remaining treatment system operations. The SMP also requires that a vapor barrier be installed beneath any future structures designated for occupancy as a conservative measure to prevent sub-slab vapor intrusion.

3.0 PERFORMANCE, EFFECTIVENESS & PROTECTIVENESS OF THE REMEDY

All remedial actions prescribed in the RAWP for the Site were completed and the remedial goals were accomplished through the removal and treatment of soil/fill "hot spots" contaminated with petroleum and PAHs; and the installation of the Site-wide cover system to prevent exposure to remaining contamination in the subsurface.

As indicated below in Section 4.1.2, the Site cover system was inspected on April 14, 2022. Based on this inspection, the cover system is intact, functioning effectively throughout the Site and is protective of public health and the environment.

4.0 INSTITUTIONAL/ENGINEERING CONTROL (IC/EC) PLAN COMPLIANCE REPORT

4.1 IC/EC Requirements and Compliance

4.1.1 IC Requirements-Site Restrictions

In accordance with the SMP, a series of Institutional Controls (ICs) have been established for the Site. Adherence to these ICs is required by the Environmental Easement. The Environmental Easement is described on the Boundary Survey of the Phase II Business Park Site, included within Appendix 1. These ICs are:

- Compliance with the environmental easement and the SMP by the Owner and the Owner's successors and assigns;
- All Engineering Controls (ECs) must be installed, operated and maintained as specified in the SMP;
- All ECs on the Site must be inspected at a frequency and in a manner defined in the SMP;
- Environmental or public health monitoring must be performed as defined in the SMP; and
- Data and information pertinent to site management of the Site must be reported at the frequency and in a manner defined in the SMP.

Institutional Controls identified in the environmental easement may not be discontinued without an amendment to or extinguishment of the environmental easement.

The Site has a series of ICs in the form of restrictions. Site restrictions that apply are as follows:

- The Site may only be used for commercial or industrial purposes as defined by Part 375-1.8(g), and that conform to local zoning laws;
- The use of groundwater underlying the Site is restricted as a source of potable or process water, without necessary water quality treatment, as determined by the New York State Department of Health or Erie County Health Department;
- Compliance with the SMP is required; and
- The Site owner is required to provide an IC/EC certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSEC annually or for a period to be approved by the NYSDEC, which will certify that the ICs and ECs put in place are unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; and, nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP.

LaBella has concluded that the ICs are in force and are being adhered to with respect to the condition and use of the Site and activities conducted thereon.

4.1.2 Engineering Control-Soil Cover System

Exposure to the remaining contamination in soil/fill at the Site is prevented by a cover system that was previously placed over the Site. This cover system is comprised of a minimum of 12 inches of BUD-approved soil material overlaying a demarcation layer (orange plastic mesh material) in all areas of the Site that are not covered by: (1) existing access roads constructed with a minimum of 6 inches of asphalt pavement and sub-base material; (2) the rail lines that extend along the western

Site margin and are constructed on 12 inches of railroad ballast; (3) gravel access road for the Niagara Wind Substation and the former 54" Roll Mill building on the west portion of the Site constructed of a minimum of 12 inches of crushed stone; or (4) existing concrete pads and sub-base with overlying BUD-approved soil material. The Excavation Work Plan, which appears in Appendix B of the SMP, outlines the procedures that are required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. The cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in perpetuity.

On April 14, 2022, LaBella conducted the annual Site inspection, which included traversing the Site on foot to observe the current conditions. The Cover Inspection Form is included herein as Appendix 2. Appendix 3 includes photographs taken during the Site inspection.

With the exception of the paved and gravel access roads, and the rail corridor, the Site is generally vacant and undeveloped, with vegetated soil cover occurring at the ground surface. At the time of the Site inspection, the cover system components were observed to be intact and functioning as intended.

Between June 22 and 29, 2021 CME Associates, Inc. (CME) under the direction of C&S Engineers, Inc. (C&S) conducted a geotechnical investigation along the north boundary of Site II-12. The geotechnical investigation included the advancement of five test borings, utilizing a rotary drill rig equipped with hollow stem auger, along the property boundary between Sites I-1 and Sites II-12. The locations of the test borings are depicted in the Subsurface Exploration Data Report dated July 19, 2021 prepared by CME, included in Attachment 5. According to C&S, who conducted the oversight of the test boring activities, the boring activities were conducted in accordance with the EWP for the Site and the Excavation Work Plan Notification prepared by C&S dated June 17, 2021. The cover material was removed and stockpiled prior to the advancement of the test borings and replaced subsequent the completion of each test boring. Site materials beneath the cover were stockpiled and placed back within the boring hole from which they originated beneath the site cover system at the completion of each test boring. No site soils were disposed off-site. C&S conducted community air monitoring during the drilling activities. No community air monitoring issues were reported associated with the drilling activities. C&S daily work reports are included in Appendix 5.

4.2 IC/EC Certification

The IC/EC Certification Form was completed in its entirety as all ICs/ECs are in place for the Site per the SMP. Appendix 4 includes the signed NYSDEC Site Management Periodic Review Report Notice-Institutional and Engineering Controls Certification Form.

5.0 MONITORING PLAN COMPLIANCE REPORT

5.1 Requirements

The Monitoring Plan is included in Section 3.0 of the SMP and describes the measures for evaluating the performance and effectiveness of: the remedy to reduce or mitigate contamination at the Site, the soil cover system, and all affected Site media.

The Monitoring Plan describes the methods to be used for:

- Monitoring the cover system;
- Assessing achievement of the remedial performance criteria;
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and,
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, the Monitoring Plan provides information on:

- Annual inspection and periodic certification.

5.2 Comparisons with Remedial Objectives

Cover system monitoring was performed in accordance with the SMP, and included the annual visual inspection of the cover system components. As described in Section 4.1.2, the cover system was observed to be intact and functioning as intended, and is continuing to satisfy the remedial objectives for the Site.

5.3 Monitoring Deficiencies

No monitoring deficiencies were noted or experienced during the inspection of the cover system or completion of the PRR.

5.4 Monitoring Conclusions and Recommendations

The procedures utilized to evaluate the performance and effectiveness of the cover system were conducted in accordance with the SMP and verified that the cover system is functioning as intended. No changes to the monitoring plan are recommended.

6.0 OPERATION AND MAINTENANCE PLAN

The remedy for the Site does not rely on mechanical systems to protect public health and the environment. Therefore, no operation and maintenance requirements apply to the Site.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Annual inspection of the Site was performed on April 14, 2022 by LaBella Associates, DPC as prescribed in the SMP. As a result of this inspection, LaBella has determined that the Site is in compliance with all elements of the SMP, including the Engineering & Institutional Control Plan, the Site Monitoring Plan and the Operations & Maintenance Plan. No deficiencies or failures to satisfy the requirements of the SMP were identified.

As reflected by the signed Institutional and Engineering Controls Certification Form (Appendix 4), LaBella has concluded that:

- The required EC/ICs are in place, are performing properly, and remain effective;
- The Site Monitoring Plan is being implemented;
- Operation and Maintenance activities are being conducted properly; and

- The remedy continues to be protective of public health and the environment and is performing as specified in the RAWP and FER.

No changes to the inspection, reporting or certification frequency prescribed in the SMP are recommended.

8.0 LIMITATIONS

The conclusions presented in this report are based on information gathered in accordance with generally acceptable professional consulting principles and practices. All conclusions reflect observable conditions existing at the time of the Site inspection. Information provided by outside sources (individuals, agencies, laboratories, etc.) as cited herein, was used in the assessment of the Site. The accuracy of the conclusions drawn from this assessment is, therefore, dependent upon the accuracy of information provided by these sources. Furthermore, LaBella is not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to the performance of services.

This report is based upon the application of scientific principles and professional judgment to certain facts with resultant subjective interpretations. Professional judgments expressed herein are based upon the facts currently available with the limits of the existing data, scope of services, budget and schedule. To the extent that more definitive conclusions are desired by the Client than are warranted by the current available facts, it is specifically LaBella's intent that the conclusions and recommendations stated herein will be intended as guidance and not necessarily a firm course of action except where explicitly stated as such. LaBella makes no warranties, expressed or implied including without limitation, warranties as to merchantability or fitness of a particular purpose. Furthermore, the information provided in this report is not be construed as legal advice.

This inspection and report have been completed and prepared on behalf of and for the exclusive use of the Buffalo and Erie County Industrial Land Development Corporation. Any reliance on this report by a third party is at such party's sole risk.

9.0 REFERENCES

DER-10/Technical Guidance for Site Investigation and Remediation, NYSDEC, May 3, 2010

Site Management Plan for BCP Tecumseh Phase II Business Park, NYSDEC Site No. C915198 through C915198L, Turnkey Environmental Restoration, LLC, January 2014

Appendix H-12 - Site Management Plan for Tecumseh Phase II Business Park, NYSDEC Site No. C915198L (II-12), Turnkey Environmental Restoration, LLC, July 2021

Remedial Action Work Plan – Tecumseh Business Parks I and II, Turnkey Environmental Restoration, LLC in associations with Benchmark Environmental Engineering & Science, PLLC, June 2017

FIGURES

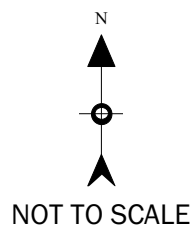
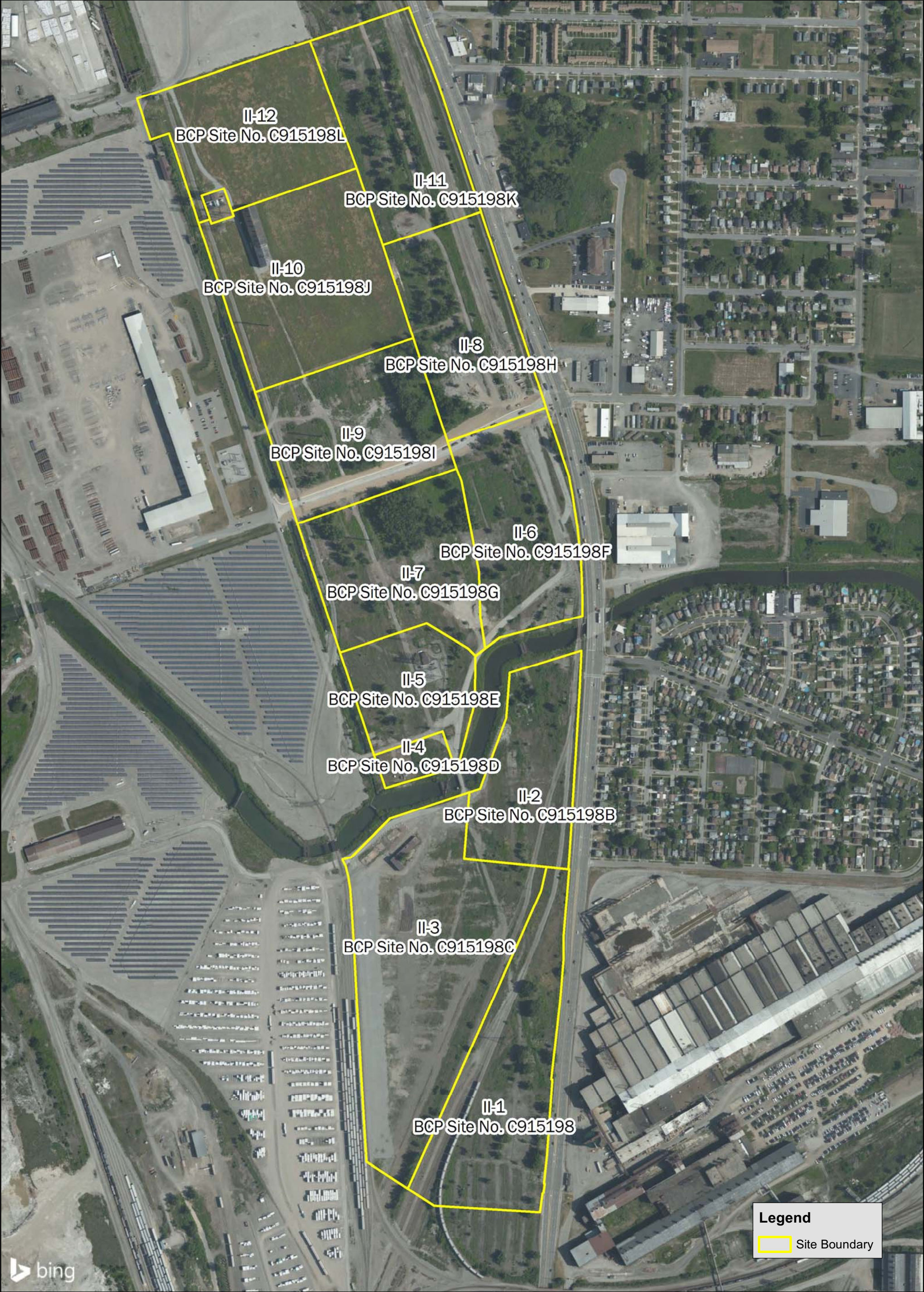


FIGURE 1 SITE LOCATION MAP

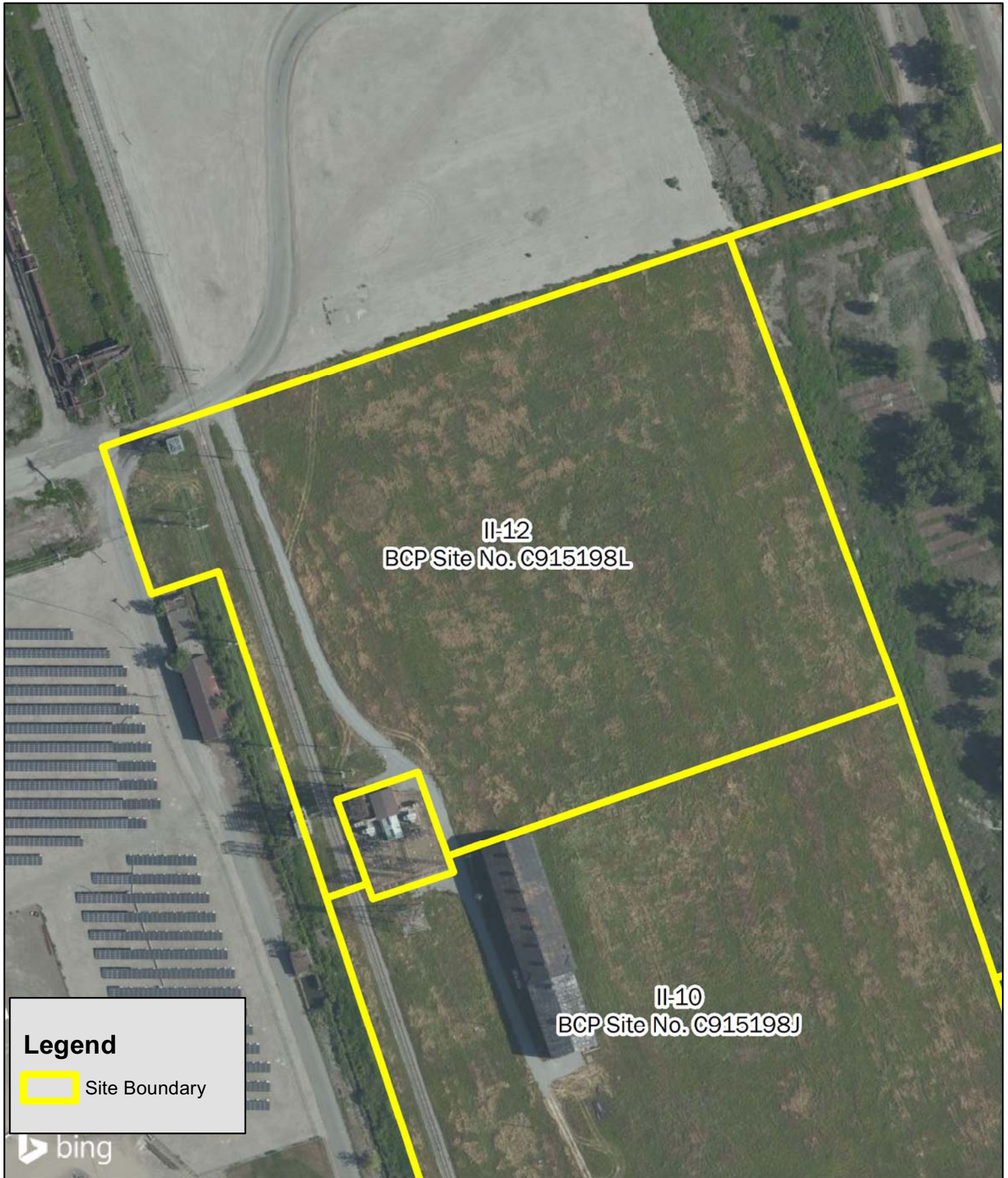
Brownfield Cleanup Program
Tecumseh Phase II Business Park
Lackawanna, New York



PROJ NO. 2210164.05



<div>PROJECT #/DRAWING #/ DATE</div> <div>2210164.05</div> <div>FIGURE 2</div> <div>4/14/2022</div>	<div>DRAWING NAME:</div> <div>PHASE II BUSINESS PARK</div>	<div>PROJECT:</div> <div>BROWNFIELD CLEANUP PROGRAM TECUMSEH PHASE II BUSINESS PARK LACKAWANNA, NEW YORK</div>	<div> 0 300 600 Feet 1 inch = 417 feet INTENDED TO PRINT AS: 11" X 17"</div> <div></div>
---	--	--	--



PROJECT #/DRAWING #/DATE:

2210164.05

FIGURE 3

4/14/2022

DRAWING NAME:

SITE PLAN

PROJECT:

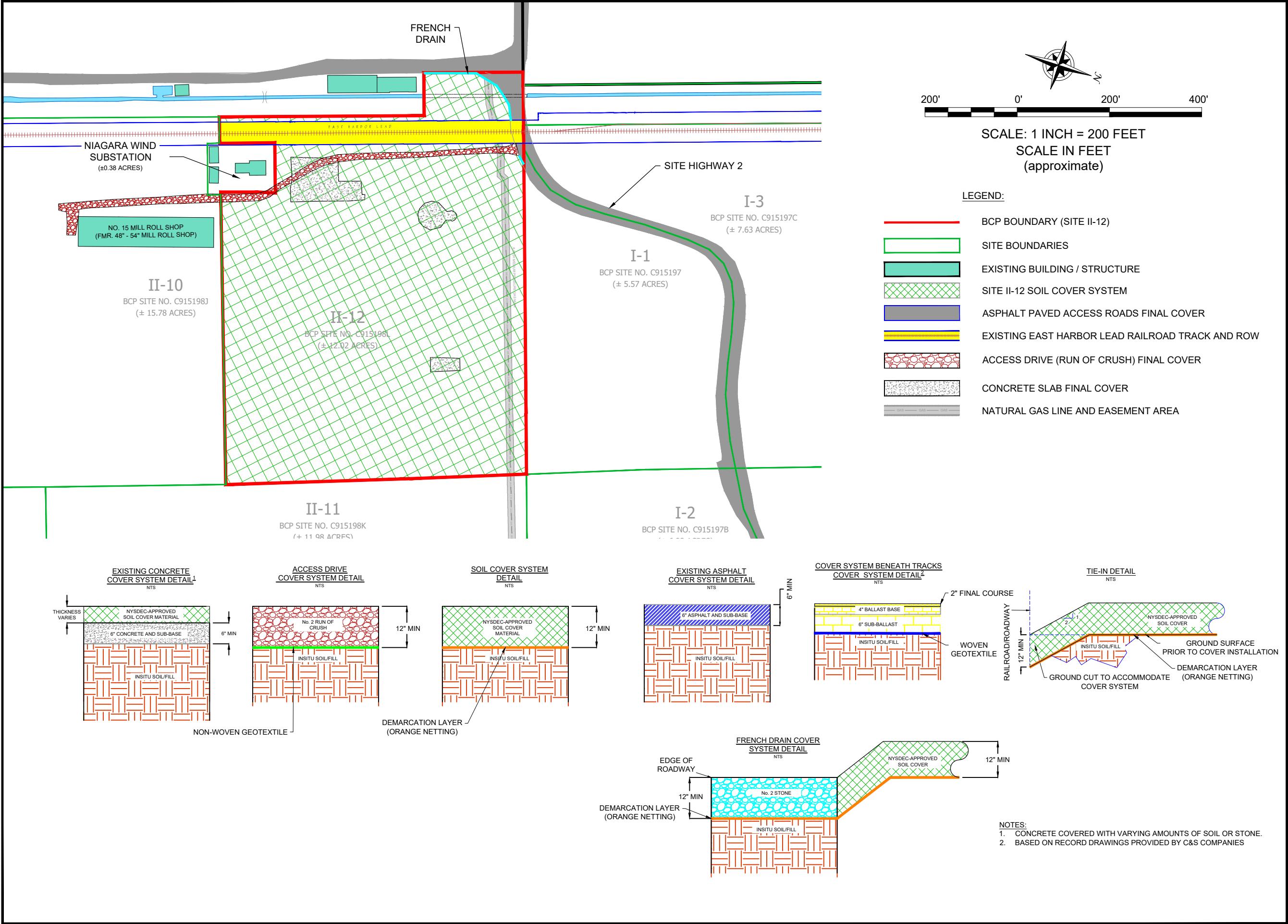
SITE II-12
BCP NO. C915198L
TECUMSEH PHASE II BUSINESS PARK
2303 HAMBURG TURNPIKE
LACKAWANNA, NEW YORK



0 70 140 Feet

1 inch = 167 feet
INTENDED TO PRINT AS: 8.5" X 11"

 **LaBella**
Powered by partnership.



8TURNKEY

ENVIRONMENTAL
RESTORATION, LLC

BENCHMARK

ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

2558 HAMBURG TURNPIKE, SUITE 300, BUFFALO, NY 14218 (716) 856-0599

APPROXIMATE LOCATIONS AND TYPES OF
COVER SYSTEM MATERIALS

SITE MANAGEMENT PLAN

TECUMSEH PHASE II BUSINESS PARK
BCP SITE NO. C915198L (II-12)
LACKAWANNA, NEW YORK

PREPARED FOR
TECUMSEH REDEVELOPMENT INC.

FIGURE 5

DISCLAIMER: PROPERTY OF BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC. & TURNKEY ENVIRONMENTAL RESTORATION, LLC IMPORTANT: THIS DRAWING PRINT IS LOANED FOR MUTUAL ASSISTANCE AND AS SUCH IS SUBJECT TO RECALL AT ANY TIME. INFORMATION CONTAINED HEREON IS NOT TO BE DISCLOSED OR REPRODUCED IN ANY FORM FOR THE BENEFIT OF PARTIES OTHER THAN NECESSARY SUBCONTRACTORS & SUPPLIERS WITHOUT THE WRITTEN CONSENT OF BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC & TURNKEY ENVIRONMENTAL RESTORATION, LLC.

JOB NO.: 0071-017-327

APPENDIX 1

Boundary Survey

NOTES:

—ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MAP MARKED WITH THE SIGNATURE AND AN ORIGINAL OF THE LAND SURVEYOR'S SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES.

—UNAUTHORIZED ALTERATION OR ADDITION TO ANY SURVEY DRAWING, DESIGN, SPECIFICATION, PLAN OR REPORT IS A VIOLATION OF SECTION 2209, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL EASEMENT HELD BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION PURSUANT TO TITLE 36 OF ARTICLE 71 OF THE NEW YORK ENVIRONMENTAL CONSERVATION LAW.

ENVIRONMENTAL EASEMENT AREA ACCESS

THE DEC OR THEIR AGENT MAY ACCESS THE ENVIRONMENTAL EASEMENT AREA AS SHOWN HEREON THROUGH ANY EXISTING STREET ACCESS OR BUILDING INGRESS/EGRESS ACCESS POINT

THE ENGINEERING AND INSTITUTIONAL CONTROLS FOR THIS EASEMENT ARE SET FORTH IN THE SITE MANAGEMENT PLAN (SMP). A COPY OF THE SMP MUST BE OBTAINED BY ANY PARTY WITH AN INTEREST IN THE PROPERTY. THE SMP CAN BE OBTAINED FROM THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION, SITE CONTROL SECTION, 625 BROADWAY, ALBANY, NY 12233 OR AT DERWEB@GW.DEC.STATE.NY.US.

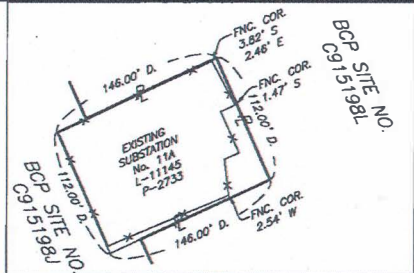


CITY OF LACKAWANNA
TOWN OF HAMBURG

NORTHERLY LINE SOUTH BUFFALO RAILWAY COMPANY
L-10118, P-123

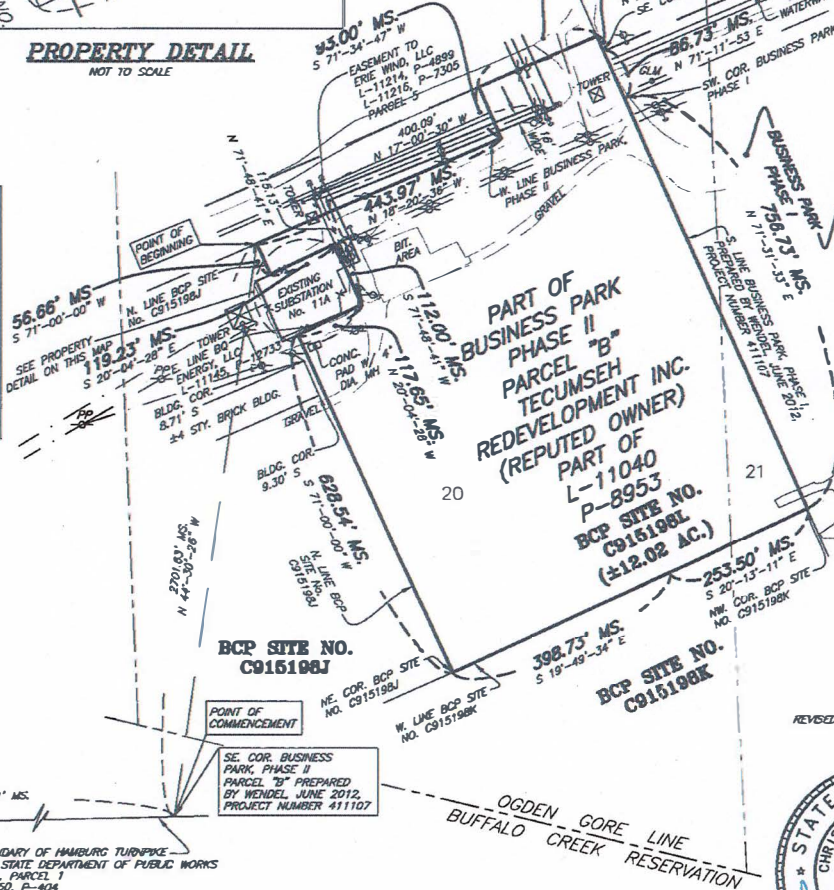
PARCEL ACQUIRED BY NEW YORK STATE DEPARTMENT OF TRANSPORTATION FOR CITY OF LACKAWANNA
HAMBURG TURNPIKE S.H. NO. FAC 49-10
MAP 305, PARCEL 306
L-10960, P-2028

WENDEL PROJECT NUMBER: 411107
DRAWING NAME: P12-12 C915198L.DWG



PROPERTY DETAIL

NOT TO SCALE



ENVIRONMENTAL EASEMENT DESCRIPTION FOR BCP SITE NO. C915198L

ALL THAT TRACT OR PARCEL OF LAND SITUATE IN THE CITY OF LACKAWANNA, COUNTY OF ERIE AND STATE OF NEW YORK, BEING PART OF LOTS 20 AND 21 OF THE OGDEN GORE TRACT, BEING BCP SITE NUMBER C915198L, AS SHOWN ON A MAP OF "LAND TO BE CONVEYED TO BUFFALO AND ERIE COUNTY INDUSTRIAL LAND DEVELOPMENT CORPORATION", PREPARED BY WENDEL MAY 2017, PROJECT NUMBER 411110, (BEING PART OF WENDEL'S PROJECT NO. 411107) BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT IN THE WESTERLY HIGHWAY BOUNDARY OF THE HAMBURG TURNPIKE (ALSO KNOWN AS STATE ROUTE NO. 5), BEING 2684.21 FEET NORTH OF THE DIVISION LINE BETWEEN LANDS CONVEYED TO TECUMSEH REDEVELOPMENT INC. RECORDED IN THE ERIE COUNTY CLERK'S OFFICE IN LIBER 11040 OF DEEDS AT PAGE 8953 ON THE NORTH, AND LANDS CONVEYED TO SOUTH BUFFALO RAILWAY COMPANY RECORDED IN THE ERIE COUNTY CLERK'S OFFICE IN LIBER 10119 OF DEEDS AT PAGE 131 ON THE SOUTH, AS MEASURED ALONG THE WESTERLY HIGHWAY BOUNDARY OF THE HAMBURG TURNPIKE AS APPROVED BY NEW YORK STATE DEPARTMENT OF PUBLIC WORKS MAP 1, PARCEL 1, RECORDED IN THE ERIE COUNTY CLERK'S OFFICE IN LIBER 5650 OF DEEDS AT PAGE 404 ALSO BY NEW YORK STATE DEPARTMENT OF TRANSPORTATION FOR THE CITY OF LACKAWANNA, S.H. NO. FAC 49-10, MAP 305, PARCEL 306, RECORDED IN THE ERIE COUNTY CLERK'S OFFICE IN LIBER 10960 OF DEEDS AT PAGE 2028, SAID POINT ALSO BEING THE SOUTHEAST CORNER OF SAID BUSINESS PARK PHASE II, PARCEL "B";

THENCE N 44°-30'-26" W, A DISTANCE OF 2701.63 FEET TO THE POINT OF BEGINNING, SAID POINT ALSO BEING THE WESTERLY LINE OF SAID BUSINESS PARK PHASE II, PARCEL B;

THENCE ALONG THE WESTERLY LINE OF SAID BUSINESS PARK PHASE II, PARCEL B, N 18°-20'-36" W, A DISTANCE OF 443.97 FEET TO A POINT;

THENCE S 71°-34'-47" W, A DISTANCE OF 93.00 FEET TO THE WESTERLY LINE OF SAID BUSINESS PARK PHASE II, PARCEL B;

THENCE ALONG THE WESTERLY LINE OF SAID BUSINESS PARK PHASE II, PARCEL B, N 18°-20'-36" W, A DISTANCE OF 214.85 FEET TO A POINT ON THE SOUTH LINE OF LANDS CONVEYED TO GATEWAY TRADE CENTER, INC. BY DEED RECORDED IN THE ERIE COUNTY CLERK'S OFFICE IN LIBER 10886 OF DEEDS AT PAGE 1084;

THENCE ALONG THE SOUTH LINE OF SAID LANDS CONVEYED TO GATEWAY TRADE CENTER, INC., N 71°-41'-32" E, A DISTANCE OF 28.04 FEET TO THE SOUTHEAST CORNER OF GATEWAY TRADE CENTER, INC.;

THENCE EASTERLY N 71°-11'-53" E, A DISTANCE OF 86.73 FEET TO THE SOUTHWEST CORNER OF BUSINESS PARK PHASE I;

THENCE ALONG THE SOUTH LINE OF SAID BUSINESS PARK PHASE I, N 71°-31'-33" E, A DISTANCE OF 756.73 FEET TO THE NORTHWEST CORNER OF BCP SITE NUMBER C915198L;

THENCE ALONG THE WEST LINE OF BCP SITE NUMBER C915198L, S 20°-13'-11" E, A DISTANCE OF 253.50 FEET TO AN ANGLE POINT IN SAID LINE;

THENCE CONTINUING ALONG THE WEST LINE OF BCP SITE NUMBER C915198L, S 19°-49'-34" E, A DISTANCE OF 398.73 FEET TO THE NORTHEAST CORNER OF BCP SITE NUMBER C915198L;

THENCE ALONG THE NORTH LINE OF BCP SITE NUMBER C915198L, S 71°-00'-00" W, A DISTANCE OF 628.54 FEET TO A POINT IN THE EAST LINE OF LANDS CONVEYED TO BQ ENERGY, LLC BY DEED RECORDED IN THE ERIE COUNTY CLERK'S OFFICE IN LIBER 11145 OF DEEDS AT PAGE 2733;

THENCE THE BOUNDARY OF SAID LANDS CONVEYED TO BQ ENERGY, LLC. THE FOLLOWING 3 COURSES AND DISTANCES:

1. N 20°-04'-28" W, A DISTANCE OF 117.85 FEET TO A POINT;
2. S 71°-48'-41" W, A DISTANCE OF 112.00 FEET TO A POINT;
3. S 20°-04'-28" E, A DISTANCE OF 119.23 FEET TO A POINT IN THE NORTH LINE OF BCP SITE NUMBER C915198L;

THENCE ALONG THE NORTH LINE OF BCP SITE NUMBER C915198L, S 71°-00'-00" W, A DISTANCE OF 56.66 FEET TO THE POINT OF BEGINNING, CONTAINING 12.02 ACRES OF LAND, MORE OR LESS.

ALTERATION OF THIS DOCUMENT, EXCEPT BY A LICENSED LAND SURVEYOR, IS ILLEGAL

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PREPARED BY THE CONSULTANT



Cartersville Corporate Park, 375 Essjay Road, Suite 200
Williamsville, New York 14221
PHONE: 716.858.0766 FAX: 716.625.8925
WEBSITE: www.wendelcorp.com
Wendel W.D. Architecture, Engineering, Surveying and
Landscape Architecture P.C.

MAP OF LANDS OF
BCA BOUNDARIES & PLANNED SUB-PARCELS BROWNFIELD CLEAN-UP PROGRAM
IN BUSINESS PARK PHASE II

TO
THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SITUATE IN PART OF LOTS 20 & 21 OF THE OGDEN GORE TRACT
TOWNSHIP 10, RANGE 8 OF THE HOLLAND LAND COMPANY'S SURVEY
CITY OF LACKAWANNA, COUNTY OF ERIE, STATE OF NEW YORK
T.M.# PART OF 141.11-1-1.111

200' 100' 50' 0' 200' 400'
1 inch = 200 Feet

I HEREBY CERTIFY THAT THIS IS AN ACCURATE SURVEY MAP PREPARED UNDER MY
DIRECTION, FROM AN ACTUAL SURVEY, PERFORMED IN ACCORDANCE TO THE
STANDARDS AND PROCEDURES ADOPTED BY THE NEW YORK STATE DEPARTMENT OF
ENVIRONMENTAL CONSERVATION, SEPTEMBER 1989.
FIELD SURVEY COMPLETED JUNE 2012

Christopher J. Scott, LAND SURVEYOR #050708 11/2/17 DATE

SHEET 1 of 1 CHECKED BY: CJS MAP NUMBER: BCP SITE NO. C915198L



REVISED 11/2/2017; UPDATE MAP

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Form
12/20/2017

SITE DESCRIPTION

SITE NO. C915198L

SITE NAME Site II-12 Tecumseh Phase II Business Park

SITE ADDRESS: 2303 Hamburg Turnpike **ZIP CODE:** 14218

CITY/TOWN: Lackawanna

COUNTY: Erie

ALLOWABLE USE: Commercial and Industrial

SITE MANAGEMENT DESCRIPTION

SITE MANAGEMENT PLAN INCLUDES: YES NO

IC/EC Certification Plan



Monitoring Plan



Operation and Maintenance (O&M) Plan



Periodic Review Frequency: once a year

Periodic Review Report Submitted Date: 04/29/2019

Description of Institutional Control

Buffalo & Erie County ILDC

95 Perry Street, Suite 403

2303 Hamburg Turnpike

Environmental Easement

Block: 1

Lot: 48

Sublot: 1

Section: 141

Subsection: 11

S_B_L Image: 141.11-1-48.1

Ground Water Use Restriction

IC/EC Plan

Landuse Restriction

Monitoring Plan

Site Management Plan

Soil Management Plan

Description of Engineering Control

Buffalo & Erie County ILDC

95 Perry Street, Suite 403

2303 Hamburg Turnpike

Environmental Easement

Block: 1

Lot: 48

Sublot: 1

Section: 141

Subsection: 11

S_B_L Image: 141.11-1-48.1

Cover System

APPENDIX 2

Cover Inspection Form

Annual Site Inspection Form

**Former Bethlehem Steel Business Park Area 1 –Site II-12
2303 Hamburg Turnpike, Lackawanna, New York
NYSDEC Site No. C915197L**

Date: 4/14/2022

Inspector: A. Koons

Weather: 43°F, overcast & windy

1. Compliance with all ICs, including site usage:

SITE USAGE: Use of the Site is limited to Commercial & Industrial Uses. Indicate if any other type of use is occurring at the Site.

Undeveloped land

GROUNDWATER USAGE: Use of groundwater underlying the Site is prohibited without treatment. Indicate whether groundwater use is occurring at the Site along with any treatment measures being applied.

Groundwater not used

COMPLIANCE WITH SMP: List Site activities and indicate compliance or non-compliance with SMP.

Site is in compliance with the SMP

2. An evaluation of the condition and continued effectiveness of the ECs:

SITE COVER CONDITION: Good, Fair, or Poor

Good

SITE COVER EFFECTIVENESS: As Intended or Needs Repair

As intended

3. General site conditions at the time of the inspection:

Acceptable: ☒ Unacceptable: ☐ describe:

APPENDIX 3

Photographs



View of Site facing east



View of Site facing north



View of Site facing south



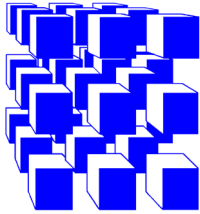
Gravel access road on west portion of Site



Railroad track on west portion of Site

APPENDIX 4

Subsurface Investigation Documentation



CME
Associates, Inc.

6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)
www.cmeassociates.com

Transmittal

July 19, 2021

C&S Companies
141 Elm Street, Suite 100
Buffalo, New York 14203

Attn: Mr. Victor O'Brien, P.E., Department Manager

**Re: Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project
Hamburg, New York
CME Project No.: 27808-05**

Gentlepeople:

Enclosed you will find....

<u>Number of Copies</u>	<u>Report Number/Description</u>
1	27808B-01-0721/Subsurface Exploration Data Report

This report was emailed to Mr. Victor O'Brien at VObrien@cscos.com on 07/19/21.

Respectfully submitted,
CME Associates, Inc.

Bryan Reles, P.G.
Project Manager

BR.cw



6035 Corporate Drive
East Syracuse, New York 13057
(315) 701-0522
(315) 701-0526 (Fax)

www.cmeassociates.com

July 19, 2021

C&S Companies
141 Elm Street, Suite 100
Buffalo, New York 14203

Attn: Mr. Victor O'Brien, P.E., Department Manager
Email: VObrien@cscos.com

Re: Subsurface Exploration Data Report
Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project
Hamburg, New York
Report No.: 27808B-01-0721
Page 1 of 2

1.0 INTRODUCTION

CME Associates, Inc. (CME) was authorized by C&S Companies (Client) to provide subsurface exploration services for the subject project. CME advanced twenty-seven (27) Test Borings at the project site between June 22 and June 29, 2021.

The Scope of Basic Services and this report have been provided pursuant to the acceptance of CME Proposal/Agreement No. 05.6311R(2) by Client. This report provides a summary of exploration activities conducted at the subject site.

2.0 EXPLORATION METHODOLOGY

Site Plans with approximate exploration locations were provided by Client and the exploration locations were then marked in the field by CME (See Attached Client Provided Site Plan). Prior to initiation of exploration activities, all test boring locations were also scanned/cleared across a minimum 15-foot radius for the presence of private utilities and/or other subsurface obstructions by CME using ground penetrating radar (GPR). Test boring locations were adjusted accordingly if potential underground utilities or obstructions were observed to provide for a safe working distance between what was observed and the final drilling location. Following the field mark out and private utility clearing, CME contacted Dig Safe New York (DSNY) to clear public utilities.

GPS coordinates and elevations at the as-drilled location were obtained by CME using a hand-held Spectra Precision Ranger 3 GPS unit. GPS data is provided on the attached GPS Coordinates and Elevations Table. An Exploration Location Plan, ELP-1, is attached which depicts the final as-drilled exploration locations.



Between June 22 and June 29, 2021, twenty-seven (27) Test Borings (B-1 through B-27) were advanced using a CME model 550X, ATV-mounted, rotary exploration drill rig, equipped with 3-¼" I.D. hollow stem augers and drive sampling tools. Soil sampling was conducted using a 140-pound automatic hammer dropping through a distance of 30 inches to drive a 2" O.D. and/or a 3" O.D. split barrel sampler in general conformance with ASTM Standard Practice D1586. Upon completion, each borehole was backfilled with auger cuttings to match existing grade.

Samples were logged and visually classified in the field by CME's drillers and a portion of each soil sample was placed and sealed in a glass jar. The soil classifications were later reviewed by CME Senior Geologist, Mark Schumacher, P.G. The visual soil classifications were made using a modified Burmister Classification System, as practiced by CME, and as generally described in the attached document entitled, *General Information & Key to Test Boring Logs*.

3.0 STANDARD OF CARE

CME endeavored to conduct services identified herein in a manner consistent with that level of care and skill ordinarily exercised by members of the industry currently practicing in the same locality and under similar conditions as this project. No warranty, either expressed or implied, is made or intended by CME's proposal, contract, and written and oral reports, all of which warranties are hereby expressly disclaimed. CME shall not be responsible for the acts or omissions of Client, its contractors, agents and consultants. CME may rely upon information supplied by Client, its contractors, agents and consultants or information available from generally accepted reputable sources, without independent verification, and CME assumes no responsibility for the accuracy thereof.

4.0 CLOSING

CME's services have been provided according to the requirements of the referenced CME Proposal/Agreement. No other representations, expressed or implied, are intended or made with respect to the information provided herein, and including but not limited to, its suitability for use by others.

Respectfully Submitted,
CME Associates, Inc.

A handwritten signature in blue ink, appearing to read "Bryan Reles".

Bryan Reles, P.G.
Project Manager

Attachment Listing:

- Client Provided Site Plan (1 of 1)
- CME Exploration Location Plan ELP-1 (1 of 1)
- GPS Coordinates and Elevations Table (1 of 1)
- CME Subsurface Exploration Test Boring Logs (B-1 through B-27) (27 of 27)
- General Information & Key to Test Boring Logs (4 of 4)*



CME EXPLORATION LOCATION PLAN - ELP 1
CME Report No. 27808B-01-0721
Former Bethlehem Steel Sanitary Sewer & Water Line Extensions Project
Buffalo, New York

Legend

- Approximate Reference Elevation Location
- Approximate Test Boring Location



GPS Coordinates and Elevations Table


Former Bethlehem Steel Sanitary Sewer & Water Line Extensions Project, Buffalo, New York

TABLE 1			
Boring ID	Latitude	Longitude	Elevation (FT. AMSL)
B-1	42.81988254	-78.85289510	583.6
B-2	42.82007270	-78.85250099	584.2
B-3	42.82020810	-78.85194961	584.4
B-4	42.82033916	-78.85140810	582.8
B-5	42.82048216	-78.85086290	583.5
B-6	42.82059492	-78.85030049	584.2
B-7	42.82074892	-78.84960516	582.9
B-8	42.82087329	-78.84916688	582.1
B-9	42.82125194	-78.84922630	582.1
B-10	42.82165225	-78.84941040	582.0
B-11	42.82205331	-78.84959686	582.4
B-12	42.82240832	-78.84977605	582.9
B-13	42.82287415	-78.84990782	583.3
B-14	42.82327878	-78.85010167	583.1
B-15	42.82367907	-78.85028767	583.0
B-16	42.82408655	-78.85047680	583.0
B-17	42.82448806	-78.85065427	582.9
B-18	42.82488947	-78.85083851	583.0
B-19	42.82529317	-78.85102419	583.1
B-20	42.82569861	-78.85120288	583.2
B-21	42.82610329	-78.85138967	583.3
B-22	42.82650112	-78.85157943	583.7
B-23	42.82690528	-78.85176624	583.7
B-24	42.82730218	-78.85192580	584.3
B-25	42.82734138	-78.85241626	582.8
B-26	42.82721010	-78.85297303	583.7
B-27	42.82707682	-78.85352093	584.4
Reference 1	42.82081296	-78.84967871	583.3

Notes:


AMSL: Above Mean Sea Level

1. GPS coordinates were obtained utilizing a Spectra Precision Ranger 3 GPS survey equipment.
2. NYSDOT CORS positions are based on NAD 83 (2011).
3. Elevations are based on the North American Vertical Datum of 1988 (NAVD 1988).
4. Reference 1 refers to the center of sanitary sewer manhole northwest of test boring B-7.

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div>SUBSURFACE EXPLORATION</div> <div>TEST BORING LOG</div>		<div>Boring No.</div> <div>B-1</div>
		<div>Page No.</div> <div>1 of 1</div>		
		<div>Report No.</div> <div>27808B-01-0721</div>		
<div>Project Name:</div> <div>Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York</div>		<div>Date Started</div> <div>06/29/21</div>		
<div>Client:</div> <div>C&S Companies</div>		<div>Date Finished</div> <div>06/29/21</div>		
<div>Location:</div> <div>See Exploration Location Plan, ELP-1</div>		<div>Surface Elev.</div> <div>583.6'</div>		
METHODS OF INVESTIGATION			GROUNDWATER OBSERVATIONS	
<div>Driller:</div> <div>John Winks</div>		<div>Casing:</div> <div>3¼" ID H.S.A.</div>	<div>Date</div>	<div>Time</div>
<div>Driller:</div> <div>Ryan Casatelli</div>		<div>Casing Hammer:</div>	<div>Depth (Ft.)</div>	<div>Casing At (Ft.)</div>
<div>Inspector:</div>		<div>Other:</div>	<div>06/29/21</div>	<div>While Drilling</div>
<div>Drill Rig:</div> <div>CME 550X</div>		<div>Soil Sampler:</div> <div>2" OD Split Barrel</div>	<div>06/29/21</div>	<div>Before Casing Removed</div>
<div>Type:</div> <div>ATV Mounted</div>		<div>Hammer Wt:</div> <div>140 lbs.</div>	<div>06/29/21</div>	<div>After Casing Removed</div>
<div>Rod Size:</div> <div>AWJ</div>		<div>Hammer Fall:</div> <div>30 in.</div>	<div>06/29/21</div>	<div>After Casing Removed</div>
			<div>caved @ 5.9'</div>	<div>out</div>
LOG OF BORING SAMPLES			VISUAL CLASSIFICATION OF MATERIAL	
<div>Depth Scale (Feet)</div>	<div>Sample No.</div>	<div>Sample Depth (Ft.)</div> <div>From To</div>		<div>Type / Sample Rec. (in.)</div>
				<div>Blows on Sampler Per 6 Inches</div>
				<div>Depth of Change (Ft.)</div>
				<div>c - coarse</div> <div>m - medium</div> <div>f - fine</div>
				<div>and - 35 to 50% / some - 20 to 35%</div> <div>little - 10 to 20% / trace - 0 to 10%</div>
				<div>SPT "N" or RQD %</div>
0	1A	0.0 0.3		SS/13
1	1B	0.3 1.4		4-5-100@5"
2	2	2.0 4.0		SS/19
3				58-36-35-19
4	3	4.0 6.0		SS/18
5				11-10-12-15
6	4	6.0 8.0		SS/17
7				7-5-10-28
8	5	8.0 10.0		SS/20
9				11-12-35-42
10				
11				
12				
13	6	13.5 15.0		SS/15
14				3-2-3
15				
16				
17				
18	7	18.5 20.0		SS/14
19				1-2-6
20				
				Bottom of Boring @ 20.0'


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No. Page No. Report No.	B-2 1 of 1 27808B-01-0721				
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/29/21				
Client:		C&S Companies		Date Finished	06/29/21				
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	584.2'				
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS					
Driller:	John Winks	Casing:	3¼" ID H.S.A.	Date	Time				
Driller:	Ryan Casatelli	Casing Hammer:		06/29/21	While Drilling				
Inspector:		Other:		06/29/21	Before Casing Removed				
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	06/29/21	After Casing Removed				
Type:	ATV Mounted	Hammer Wt:	140 lbs.	06/29/21	After Casing Removed				
Rod Size:	AWJ	Hammer Fall:	30 in.	06/29/21	After Casing Removed				
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL					
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/16	8-5-7-6		Miscellaneous FILL; Brown cmf sand, silt, mf gravel, concrete, roots (moist)		12
1									
2	2	2.0	4.0	SS/17	18-20-16-7		Miscellaneous FILL; Brown cmf sand, mf gravel, slag, silt, brick, coal (moist)		36
3									
4	3	4.0	6.0	SS/17	4-4-30-102		Miscellaneous FILL; Brown/Grey silt, concrete, cmf sand, mf gravel, brick (moist)		34
5									
6	4	6.0	8.0	SS/14	22-8-8-7		Miscellaneous FILL; Brown slag, concrete, ash, silt, cmf sand (wet)		16
7									
8	5	8.0	10.0	SS/5	3-1-1-1		Miscellaneous FILL; Brown concrete, silt, cmf sand (wet)		2
9									
10									
11									
12									
13							Auger refusal @ 13.1' on possible former concrete building foundation		
14							Bottom of Boring @ 13.1'		
15									
16									
17									
18									
19									
20									

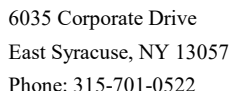
SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-3
				Page No.	1 of 1
				Report No.	27808B-01-0721
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/29/21
Client:		C&S Companies		Date Finished	06/29/21
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	584.4'
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS	
Driller:	John Winks	Casing:	3¼" ID H.S.A.	Date	Time
Driller:	Ryan Casatelli	Casing Hammer:		06/29/21	While Drilling
Inspector:		Other:		06/29/21	Before Casing Removed
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	06/29/21	After Casing Removed
Type:	ATV Mounted	Hammer Wt:	140 lbs.	06/29/21	After Casing Removed
Rod Size:	AWJ	Hammer Fall:	30 in.	06/29/21	After Casing Removed
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)
0	1	0.0 2.0	SS/17	3-5-14-51	c - coarse m - medium f - fine
1					and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%
2	2	2.0 2.7	SS/8	86-100@2"	Miscellaneous FILL; Brown cmf sand, cmf gravel, silt, brick, roots, plastic (moist)
3					
4	3	4.0 4.8	SS/8	43-100@4"	Miscellaneous FILL; Dark Brown/Black cmf sand, slag, metal pieces, mf gravel, silt, coal (moist) Spoon refusal @ 2.7'
5					
6	4	6.0 8.0	SS/18	6-3-1-3	Miscellaneous FILL; Dark Brown cmf sand, slag, silt (moist) Spoon refusal @ 4.8'
7					
8	5	8.0 10.0	SS/15	3-4-2-3	Miscellaneous FILL; Brown cmf sand, silt, wood (wet)
9					
10					
11					
12					
13	6	13.5 14.2	SS/8	75-100@2"	Miscellaneous FILL; Dark Grey/Black silt, slag, wood (wet)
14					
15					
16					
17					
18					
19					
20					

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:



Boring No.	B-4
Page No.	1 of 1
Report No.	27808B-01-0721

Date Started	06/28/21
---------------------	----------

Date Finished	06/28/21
----------------------	----------

Surface Elev.	582.8'
----------------------	--------

GROUNDWATER OBSERVATIONS


Date	Time	Depth (Ft.)	Casing At (Ft.)
06/28/21	While Drilling	4.6'	6.0'
06/28/21	Before Casing Removed	15.0'	18.5'
06/28/21	After Casing Removed	3.4'	out
06/28/21	After Casing Removed	caved @ 3.7'	out

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	1.2	SS/10	2-5-100@2"		Miscellaneous FILL; Brown cmf sand, slag, mf gravel, silt, roots (moist)		100+
1									
2	2	2.0	4.0	SS/14	4-10-7-5		Miscellaneous FILL; Grey/Brown concrete, brick, silt (moist)		17
3									
4	3	4.0	6.0	SS/9	12-9-15-7		Miscellaneous FILL; Brown concrete, slag, brick, cmf sand, silt (moist)		24
5									
6	4	6.0	8.0	SS/14	13-11-8-11		Miscellaneous FILL; Grey concrete, slag, cmf sand, silt (wet)		20
7									
8	5	8.0	10.0	SS/24	12-6-8-8		Miscellaneous FILL; Brown silt, cmf sand, brick, slag (wet)		14
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/14	8-6-5		Miscellaneous FILL; Dark Grey/Brown concrete, slag, brick, cmf sand, silt (wet)		11
15									
16									
17									
18									
19	7	18.5	20.0	SS/5	3-2-2		Miscellaneous FILL; Dark Grey/Brown cmf sand, silt, slag (wet)		4
20							Bottom of Boring @ 20.0'		


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-5
				Page No.	1 of 1
				Report No.	27808B-01-0721
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/28/21
Client:		C&S Companies		Date Finished	06/28/21
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	583.5'
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS	
Driller: John Winks		Casing: 3¼" ID H.S.A.		Date	Time
Driller: Ryan Casatelli		Casing Hammer:		06/28/21	While Drilling
Inspector:		Other:		06/28/21	Before Casing Removed
Drill Rig: CME 550X		Soil Sampler: 2" OD Split Barrel		06/28/21	After Casing Removed
Type: ATV Mounted		Hammer Wt: 140 lbs.		06/28/21	After Casing Removed
Rod Size: AWJ		Hammer Fall: 30 in.		06/28/21	After Casing Removed
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches
Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %		
0	1	0.0	2.0	SS/15	12-9-14-5
1					
2	2	2.0	3.2	SS/12	16-32-100@2"
3					
4	3	4.0	6.0	SS/8	30-10-4-4
5					
6	4	6.0	8.0	SS/8	1-2-2-2
7					
8	5	8.0	10.0	SS/17	4-31-4-5
9					
10					
11					
12					
13					
14	6	13.5	13.6	SS/1	100@1"
15					
16					
17					
18					
19					
20					

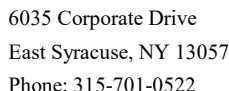
SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		<div> Boring No. B-6 Page No. 1 of 1 Report No. 27808B-01-0721 </div>					
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started		06/28/21			
Client:		C&S Companies		Date Finished		06/28/21			
Location:		See Exploration Location Plan, ELP-1		Surface Elev.		584.2'			
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS					
Driller:		John Winks		Casing:		3¼" ID H.S.A.			
Driller:		Ryan Casatelli		Casing Hammer:					
Inspector:				Other:					
Drill Rig:		CME 550X		Soil Sampler:		2" OD Split Barrel			
Type:		ATV Mounted		Hammer Wt:		140 lbs.			
Rod Size:		AWJ		Hammer Fall:		30 in.			
				Date		Time			
				06/28/21		While Drilling			
				06/28/21		Before Casing Removed			
				06/28/21		After Casing Removed			
				06/28/21		After Casing Removed			
						Depth (Ft.)			
						Casing At (Ft.)			
						None Noted			
						2.0'			
						None Noted			
						3.5'			
						None Noted			
						out			
						caved @ 1.3'			
						out			
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL					
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
0	1	0.0	1.2	SS/12	3-17-100@3"		Miscellaneous FILL; Brown asphalt pieces, cmf sand, concrete, brick, mf gravel, silt (moist)		100+
1									
2	2	2.0	2.2	SS/2	100@2"		Miscellaneous FILL; Grey concrete (moist)		
3							Spoon refusal on concrete @ 2.2'		
4							Auger refusal @ 3.5' on concrete. See remark 1.		
5							Bottom of Boring @ 3.5'		
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:
1. Offset boring 5.0' to south, auger refusal @ 3.0' on concrete. Offset boring 5.0' west of original boring, auger refusal @ 1.5' on concrete. Boring terminated due to location likely being a former building pad.



Boring No.	B-7
Page No.	1 of 1
Report No.	27808B-01-0721

Project Name:	Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York
Client:	C&S Companies
Location:	See Exploration Location Plan, ELP-1

Date Started	06/28/21
Date Finished	06/28/21
Surface Elev.	582.9'

GROUNDWATER OBSERVATIONS

Driller:	John Winks	Casing:	3¼" ID H.S.A.
Driller:	Ryan Casatelli	Casing Hammer:	
Inspector:		Other:	
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel
Type:	ATV Mounted	Hammer Wt:	140 lbs.
Rod Size:	AWJ	Hammer Fall:	30 in.


Date	Time	Depth (Ft.)	Casing At (Ft.)
06/28/21	While Drilling	None Noted	2.0'
06/28/21	Before Casing Removed	None Noted	2.0'
06/28/21	After Casing Removed	N/A	N/A
06/28/21	After Casing Removed	N/A	N/A

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	0.4	SS/5	100@5"		Miscellaneous FILL; Grey concrete, silt (moist) <i>Augered through concrete from 0.5' to 1.5'. See remark 1.</i>	100+	
1	2	2.0	4.0	SS/2	6-2-1-1		Grey concrete <i>Spoon broke through concrete ~ 2.0' below grade, revealing a void space ~ 3.5' deep. Appears to be possible basement area below a concrete pad. Backfilled to extent possible and sealed hole with concrete plug.</i> Bottom of Boring @ 4.0'		
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks: 1. Offset boring 12.0' to south of original boring, hit concrete again just below grade. Offset boring second time, 12.0' north of original boring.

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-8
				Page No.	1 of 1
				Report No.	27808B-01-0721
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/28/21
Client:		C&S Companies		Date Finished	06/28/21
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	582.1'
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS	
Driller:	John Winks	Casing:	3¼" ID H.S.A.	Date	Time
Driller:	Ryan Casatelli	Casing Hammer:		06/28/21	While Drilling
Inspector:		Other:		06/28/21	Before Casing Removed
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	06/28/21	After Casing Removed
Type:	ATV Mounted	Hammer Wt:	140 lbs.	06/28/21	After Casing Removed
Rod Size:	AWJ	Hammer Fall:	30 in.	06/28/21	After Casing Removed
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)
0	1	0.0 2.0	SS/16	6-8-7-4	c - coarse m - medium f - fine
1					Miscellaneous FILL; Dark Brown cmf sand, slag, silt, clay, coal (moist)
2	2	2.0 4.0	SS/16	8-10-10-8	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%
3					Miscellaneous FILL; White/Grey slag, ash, silt (wet)
4	3	4.0 6.0	SS/15	3-3-5-4	FILL; Grey clay, cmf gravel, silt, cmf sand (moist)
5					
6	4	6.0 8.0	SS/15	2-2-2-2	FILL; Dark Brown silt, fine sand, roots (moist)
7					
8	5	8.0 10.0	SS/10	2-5-3-3	FILL; Grey cmf gravel, silt, cmf sand (moist)
9					
10					
11					
12					
13	6	13.5 15.0	SS/7	3-2-2	FILL; Grey cmf gravel, clay, silt, cmf sand (wet)
14					
15					
16					
17					
18	7	18.5 20.0	SS/18	8-10-11	Grey SILT, trace fine SAND (wet, very stiff)
19					
20					Bottom of Boring @ 20.0'

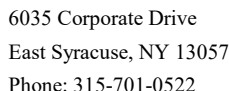
SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div>SUBSURFACE EXPLORATION</div> <div>TEST BORING LOG</div>		<div>Boring No.</div> <div>B-9</div>	<div>Page No.</div> <div>1 of 1</div>	<div>Report No.</div> <div>27808B-01-0721</div>			
<div>Project Name:</div> <div>Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York</div>		<div>Date Started</div> <div>06/24/21</div>		<div>Date Finished</div> <div>06/24/21</div>		<div>Surface Elev.</div> <div>582.1'</div>			
<div>Client:</div> <div>C&S Companies</div>									
<div>Location:</div> <div>See Exploration Location Plan, ELP-1</div>									
METHODS OF INVESTIGATION					GROUNDWATER OBSERVATIONS				
<div>Driller:</div> <div>John Winks</div>		<div>Casing:</div> <div>3¼" ID H.S.A.</div>		<div>Date</div>	<div>Time</div>	<div>Depth (Ft.)</div>	<div>Casing At (Ft.)</div>		
<div>Driller:</div> <div>Ryan Casatelli</div>		<div>Casing Hammer:</div>		<div>06/24/21</div>	<div>While Drilling</div>	<div>13.0'</div>	<div>13.5'</div>		
<div>Inspector:</div>		<div>Other:</div>		<div>06/24/21</div>	<div>Before Casing Removed</div>	<div>None Noted</div>	<div>18.5'</div>		
<div>Drill Rig:</div> <div>CME 550X</div>		<div>Soil Sampler:</div> <div>2" OD Split Barrel</div>		<div>06/24/21</div>	<div>After Casing Removed</div>	<div>5.8'</div>	<div>out</div>		
<div>Type:</div> <div>ATV Mounted</div>		<div>Hammer Wt:</div> <div>140 lbs.</div>		<div>06/24/21</div>	<div>After Casing Removed</div>	<div>caved @ 11.5'</div>	<div>out</div>		
<div>Rod Size:</div> <div>AWJ</div>		<div>Hammer Fall:</div> <div>30 in.</div>							
LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
<div>Depth Scale (Feet)</div>	<div>Sample No.</div>	<div>Sample Depth (Ft.)</div> <div>From To</div>		<div>Type / Sample Rec. (in.)</div>	<div>Blows on Sampler Per 6 Inches</div>	<div>Depth of Change (Ft.)</div>	<div>c - coarse m - medium f - fine</div>	<div>and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%</div>	<div>SPT "N" or RQD %</div>
0	1	0.0	2.0	SS/15	4-7-5-6		Miscellaneous FILL; Dark Brown/Grey slag, cmf sand, silt (moist)		12
1									
2	2	2.0	4.0	SS/15	12-12-9-7		FILL; Grey/Brown clay, silt, mf gravel, cmf sand (moist)		21
3									
4	3	4.0	6.0	SS/13	3-4-4-5		FILL; Grey clay, cmf gravel, silt, cmf sand (moist)		8
5									
6	4	6.0	8.0	SS/13	4-6-4-5		FILL; Grey cmf gravel, clay, silt, cmf sand (moist)		10
7									
8	5	8.0	10.0	SS/14	3-4-4-5		Similar as above (moist)		8
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/15	4-2-2		Grey/Brown CLAY, some SILT, trace fine SAND (wet, medium stiff)		4
15									
16									
17									
18									
19	7	18.5	20.0	SS/17	5-8-11		Grey/Brown SILT, little fine SAND, trace CLAY (wet, very stiff)		19
20							Bottom of Boring @ 20.0'		

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:



Boring No.	B-10
Page No.	1 of 1
Report No.	27808B-01-0721

Date Started	06/24/21
---------------------	----------

Date Finished	06/24/21
----------------------	----------

Surface Elev.	582.0'
----------------------	--------


GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
06/24/21	While Drilling	None Noted	8.0'
06/24/21	Before Casing Removed	None Noted	18.5'
06/24/21	After Casing Removed	None Noted	out
06/24/21	After Casing Removed	caved @ 11.9'	out

VISUAL CLASSIFICATION OF MATERIAL


Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/16	7-9-11-10		Miscellaneous FILL; Brown/Grey cmf sand, slag, cmf gravel, silt, coal (moist)	20	
1									
2	2	2.0	4.0	SS/16	10-11-17-12		Miscellaneous FILL; Grey cmf sand, cmf gravel, slag, silt (wet)	28	
3									
4	3	4.0	6.0	SS/14	5-4-5-9		FILL; Grey clay, cmf gravel, silt, cmf sand (moist)	9	
5									
6	4	6.0	8.0	SS/19	6-5-4-5		FILL; Grey clay, cmf gravel, silt, cmf sand (moist) <i>Reworked Material</i>	9	
7									
8	5	8.0	10.0	SS/17	3-3-5-5		FILL; Grey clay, mf gravel, silt, cmf sand (moist)	8	
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/18	2-1-2		Dark Brown PEAT, trace woody ORGANIC MATERIAL, trace SILT (moist, soft)	3	
15									
16									
17									
18									
19	7	18.5	20.0	SS/18	4-4-9		Grey SILT, little cmf SAND (wet, stiff)	13	
20							Bottom of Boring @ 20.0'		

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-11	
				Page No.	1 of 1	
				Report No.	27808B-01-0721	
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/24/21	
Client:		C&S Companies		Date Finished	06/24/21	
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	582.4'	
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS		
Driller:	John Winks	Casing:	3¼" ID H.S.A.	Date	Time	
Driller:	Ryan Casatelli	Casing Hammer:		06/24/21	While Drilling	
Inspector:		Other:		06/24/21	Before Casing Removed	
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	06/24/21	After Casing Removed	
Type:	ATV Mounted	Hammer Wt:	140 lbs.	06/24/21	After Casing Removed	
Rod Size:	AWJ	Hammer Fall:	30 in.	06/24/21	After Casing Removed	
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL		
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	
					c - coarse m - medium f - fine	
					and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	
					SPT "N" or RQD %	
0	1	0.0 2.0	SS/15	2-9-11-12	Miscellaneous FILL; Brown/Grey silt, cmf gravel, cmf sand, slag, coal, roots (moist)	20
1						
2	2	2.0 4.0	SS/12	9-10-8-6	Miscellaneous FILL; Grey silt, slag, cmf sand, coal (moist)	18
3						
4	3	4.0 6.0	SS/10	9-10-5-4	FILL; Grey clay, mf gravel, silt, cmf sand, roots, organic material (wet)	15
5						
6	4	6.0 8.0	SS/0	6-8-9-5	Miscellaneous FILL; Grey clay, slag, mf gravel, silt, cmf sand (wet) <i>See remark 1</i>	17
7						
8	5	8.0 10.0	SS/13	2-2-2-2	FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist) <i>Reworked Material</i>	4
9						
10						
11						
12						
13	6	13.5 15.0	SS/18	1-2-2	Dark Brown PEAT, little woody ORGANIC MATERIAL, trace SILT (moist, medium stiff)	4
14						
15						
16						
17						
18	7	18.5 20.0	SS/18	2-3-5	Grey SILT, little CLAY, trace fine SAND (wet, stiff)	8
19						
20					Bottom of Boring @ 20.0'	

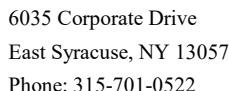
SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks: 1. No recovery with a 2" split spoon, therefore a 3" split spoon was utilized.

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-12
				Page No.	1 of 1
				Report No.	27808B-01-0721
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/24/21
Client:		C&S Companies		Date Finished	06/24/21
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	582.9'
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS	
Driller: John Winks		Casing: 3¼" ID H.S.A.		Date	Time
Driller: Ryan Casatelli		Casing Hammer:		06/24/21	While Drilling
Inspector:		Other:		06/24/21	Before Casing Removed
Drill Rig: CME 550X		Soil Sampler: 2" OD Split Barrel		06/24/21	After Casing Removed
Type: ATV Mounted		Hammer Wt: 140 lbs.		06/24/21	After Casing Removed
Rod Size: AWJ		Hammer Fall: 30 in.		06/24/21	After Casing Removed
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)
0	1	0.0 2.0	SS/19	35-27-16-14	c - coarse m - medium f - fine
1					Miscellaneous FILL; Dark Brown asphalt pieces, slag, cmf sand, mf gravel, silt (moist)
2	2	2.0 4.0	SS/17	13-18-21-15	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%
3					Miscellaneous FILL; Grey/White slag, cmf sand, silt (wet)
4	3	4.0 6.0	SS/18	4-3-4-4	FILL; Grey/Brown clay, cmf gravel, silt, cmf sand, roots (moist)
5					
6	4	6.0 8.0	SS/15	4-4-3-4	FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist)
7					
8	5	8.0 10.0	SS/10	2-2-2-2	FILL; Grey cmf gravel, clay, silt, cmf sand (moist)
9					
10					
11					
12					
13	6	13.5 15.0	SS/8	1-2-2	Brown/Grey CLAY, little SILT, little PEAT, trace mf GRAVEL, trace cmf SAND (moist, medium stiff)
14					
15					
16					
17					
18	7	18.5 20.0	SS/5	4-6-11	Grey CLAY, little SILT, trace cmf SAND (wet, very stiff)
19					
20					Bottom of Boring @ 20.0'

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:



Boring No.	B-13
Page No.	1 of 1
Report No.	27808B-01-0721

Date Started	06/23/21
---------------------	----------

Date Finished	06/24/21
----------------------	----------

Surface Elev.	583.3'
----------------------	--------

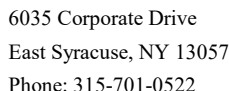
GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
06/23/21	While Drilling	None Noted	8.0'
06/24/21	Before Casing Removed	11.4'	18.5'
06/24/21	After Casing Removed	None Noted	out
06/24/21	After Casing Removed	caved @ 8.7'	out

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/15	2-15-49-45		Miscellaneous FILL; Brown cmf sand, mf gravel, silt, slag, roots (moist)		64
1	2	2.0	4.0	SS/17	14-14-22-35		Miscellaneous FILL; Dark Brown cmf sand, slag, fine gravel, silt (moist)		36
2									
3	3	4.0	6.0	SS/15	14-6-8-10		FILL; Grey/Brown silt, mf gravel, clay, cmf sand (moist)		14
4									
5	4	6.0	8.0	SS/17	7-8-8-8		FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist)		16
6									
7	5	8.0	10.0	SS/12	5-8-7-5		Miscellaneous FILL; Grey/Brown clay, cmf gravel, slag, silt, cmf sand (moist)		15
8									
9	6	13.5	15.0	SS/18	2-1-2		Brown woody ORGANIC MATERIAL, some SILT, trace PEAT (moist, soft)		3
10									
11	7	18.5	20.0	SS/16	3-5-10		Grey/Brown SILT, little fine SAND (wet, very stiff)		15
12									
13	20								
14									
15									
16									
17									
18									
19									
20	Bottom of Boring @ 20.0'								

Remarks:



Boring No.	B-14
Page No.	1 of 1
Report No.	27808B-01-0721

Date Started	06/23/21
---------------------	----------

Date Finished	06/23/21
----------------------	----------

Surface Elev.	583.1'
----------------------	--------

GROUNDWATER OBSERVATIONS


Date	Time	Depth (Ft.)	Casing At (Ft.)
06/23/21	While Drilling	None Noted	8.0'
06/23/21	Before Casing Removed	None Noted	18.5'
06/23/21	After Casing Removed	None Noted	out
06/23/21	After Casing Removed	caved @ 9.2'	out

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/20	5-22-53-34		Miscellaneous FILL; Dark Brown cmf sand, slag, mf gravel, silt, roots (moist)		75
1									
2	2	2.0	4.0	SS/20	18-22-27-37		Miscellaneous FILL; Grey/Brown cmf sand, slag, silt, coal, fine gravel (moist)		49
3									
4	3	4.0	6.0	SS/16	18-7-8-10		Miscellaneous FILL; Grey/Brown clay, mf gravel, silt, slag, cmf sand (moist)		15
5									
6	4	6.0	8.0	SS/19	9-16-10-9		FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist)		26
7									
8	5	8.0	10.0	SS/10	4-5-6-8		FILL; Grey/Brown cmf gravel, clay, silt, cmf sand (moist)		11
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/18	1-2-3		Dark Brown PEAT, some woody ORGANIC MATERIAL, trace SILT (moist, medium stiff)		5
15									
16									
17									
18									
19	7	18.5	20.0	SS/18	4-5-8		Grey/Brown SILT, little fine SAND (wet, stiff)		13
20							Bottom of Boring @ 20.0'		


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-15
				Page No.	1 of 1
				Report No.	27808B-01-0721
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/23/21
Client:		C&S Companies		Date Finished	06/23/21
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	583.0'
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS	
Driller:	John Winks	Casing:	3¼" ID H.S.A.	Date	Time
Driller:	Ryan Casatelli	Casing Hammer:		06/23/21	While Drilling
Inspector:		Other:		06/23/21	Before Casing Removed
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	06/23/21	After Casing Removed
Type:	ATV Mounted	Hammer Wt:	140 lbs.	06/23/21	After Casing Removed
Rod Size:	AWJ	Hammer Fall:	30 in.	06/23/21	After Casing Removed
				Depth (Ft.)	Casing At (Ft.)
				None Noted	8.0'
				None Noted	18.5'
				None Noted	out
				caved @ 9.2'	out
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)
0	1	0.0 2.0	SS/24	8-23-68-54	c - coarse m - medium f - fine
1					Miscellaneous FILL; Brown cmf sand, silt, fine gravel, slag, brick, roots (moist)
2	2	2.0 4.0	SS/19	19-22-30-36	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%
3					Miscellaneous FILL; Grey/Brown slag, clay, cmf sand, silt, coal (moist)
4	3	4.0 6.0	SS/17	15-7-8-8	SPT "N" or RQD %
5					Miscellaneous FILL; Grey/Brown cmf gravel, wood, silt, clay (moist)
6	4	6.0 8.0	SS/14	7-8-8-7	91
7					FILL; Grey/Brown clay, mf gravel, silt, cmf sand (moist)
8	5	8.0 10.0	SS/17	4-10-5-5	52
9					FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist)
10					15
11					16
12					15
13	6	13.5 15.0	SS/18	2-3-2	5
14					Dark Brown PEAT, some SILT (moist, medium stiff)
15					6
16					6
17					6
18	7	18.5 20.0	SS/12	3-2-4	6
19					Grey/Brown SILT, little fine SAND, trace CLAY (wet, medium stiff)
20					Bottom of Boring @ 20.0'

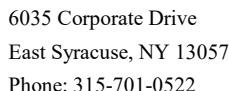
SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div>6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522</div>		SUBSURFACE EXPLORATION TEST BORING LOG			Boring No.	B-16			
					Page No.	1 of 1			
					Report No.	27808B-01-0721			
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York			Date Started	06/23/21			
Client:		C&S Companies			Date Finished	06/23/21			
Location:		See Exploration Location Plan, ELP-1			Surface Elev.	583.0'			
METHODS OF INVESTIGATION					GROUNDWATER OBSERVATIONS				
Driller:	John Winks	Casing:	3¼" ID H.S.A.		Date	Time	Depth (Ft.)	Casing At (Ft.)	
Driller:	Ryan Casatelli	Casing Hammer:							
Inspector:		Other:			06/23/21	While Drilling	None Noted	8.0'	
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel		06/23/21	Before Casing Removed	None Noted	18.5'	
Type:	ATV Mounted	Hammer Wt:	140 lbs.		06/23/21	After Casing Removed	None Noted	out	
Rod Size:	AWJ	Hammer Fall:	30 in.		06/23/21	After Casing Removed	caved @ 9.7'	out	
LOG OF BORING SAMPLES					VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/24	2-16-17-14		Miscellaneous FILL; Brown silt, cmf gravel, cmf sand, slag, coal, roots (moist)		33
1									
2	2	2.0	4.0	SS/15	12-13-15-14		Miscellaneous FILL; Grey/Brown slag, silt, cmf sand (moist)		28
3									
4	3	4.0	6.0	SS/16	15-8-9-10		FILL; Grey silt, cmf gravel, clay, cmf sand (moist)		17
5									
6	4	6.0	8.0	SS/15	11-7-9-8		FILL; Grey clay, cmf gravel, silt, cmf sand (moist)		16
7									
8	5	8.0	10.0	SS/15	4-4-6-11		Similar as above (moist)		10
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/0	4-3-5		Brown PEAT, trace SILT, trace woody ORGANIC MATERIAL (moist, stiff) <i>See remark 1</i>		8
15									
16									
17									
18									
19	7	18.5	20.0	SS/18	2-2-3		Grey/Brown CLAY, some SILT, trace fine SAND (wet, medium stiff)		5
20							Bottom of Boring @ 20.0'		

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks: 1. No recovery with a 2" split spoon, therefore a 3" split spoon was utilized.



Boring No.	B-17
Page No.	1 of 1
Report No.	27808B-01-0721

Date Started	06/22/21
---------------------	----------

Date Finished	06/23/21
----------------------	----------

Surface Elev.	582.9'
----------------------	--------

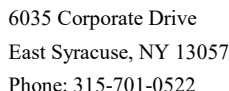
GROUNDWATER OBSERVATIONS

Date	Time	Depth (Ft.)	Casing At (Ft.)
06/22/21	While Drilling	None Noted	8.0'
06/23/21	Before Casing Removed	None Noted	18.5'
06/23/21	After Casing Removed	None Noted	out
06/23/21	After Casing Removed	caved @ 8.2'	out

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/19	4-15-35-44		Miscellaneous FILL; Dark Brown slag, cmf sand, silt, roots (moist)		50
1									
2	2	2.0	4.0	SS/18	21-25-22-19		Miscellaneous FILL; Brown/Grey slag, cmf sand, silt (moist)		47
3									
4	3	4.0	6.0	SS/15	12-6-9-10		FILL; Grey cmf gravel, silt, clay (moist)		15
5									
6	4	6.0	8.0	SS/19	7-8-10-6		Similar as above (moist) <i>Reworked Material</i>		18
7									
8	5	8.0	10.0	SS/14	4-5-5-5		FILL; Grey/Brown cmf gravel, clay, silt (moist)		10
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/13	6-3-4		Dark Brown PEAT, trace woody ORGANIC MATERIAL, trace SILT (moist, medium stiff)		7
15									
16									
17									
18									
19	7	18.5	20.0	SS/15	2-1-2		Grey SILT, little fine SAND, trace CLAY (wet, soft)		3
20							Bottom of Boring @ 20.0'		

Remarks:



Boring No.	B-18
Page No.	1 of 1
Report No.	27808B-01-0721

Date Started	06/23/21
---------------------	----------

Date Finished	06/23/21
----------------------	----------

Surface Elev.	583.0'
----------------------	--------

GROUNDWATER OBSERVATIONS


Date	Time	Depth (Ft.)	Casing At (Ft.)
06/23/21	While Drilling	None Noted	8.0'
06/23/21	Before Casing Removed	None Noted	18.5'
06/23/21	After Casing Removed	None Noted	out
06/23/21	After Casing Removed	caved @ 9.0'	out

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/19	4-21-50-29		Miscellaneous FILL; Brown slag, cmf sand, silt (moist)		71
1									
2	2	2.0	4.0	SS/15	20-13-12-25		Miscellaneous FILL; Brown slag, cmf sand, silt, mf gravel, coal (moist)		25
3									
4	3	4.0	6.0	SS/14	9-11-7-6		FILL; Grey clay, cmf gravel, silt, cmf sand (moist)		18
5									
6	4	6.0	8.0	SS/16	6-8-9-7		FILL; Grey cmf gravel, silt, clay, cmf sand (moist)		17
7									
8	5	8.0	10.0	SS/15	4-5-3-4		FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist)		8
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/8	4-4-4		Dark Brown PEAT, trace woody ORGANIC MATERIAL, trace SILT (moist, stiff)		8
15									
16									
17									
18									
19	7	18.5	20.0	SS/18	WH-2-3		Grey CLAY, some SILT, trace fine SAND (wet, medium stiff)		5
20							Bottom of Boring @ 20.0'		


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No. B-19																				
				Page No. 1 of 1																				
				Report No. 27808B-01-0721																				
Project Name: Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started		06/23/21																				
Client: C&S Companies		Date Finished		06/23/21																				
Location: See Exploration Location Plan, ELP-1		Surface Elev.		583.1'																				
METHODS OF INVESTIGATION			GROUNDWATER OBSERVATIONS																					
Driller: John Winks Driller: Ryan Casatelli Inspector: Drill Rig: CME 550X Type: ATV Mounted Rod Size: AWJ		Casing: 3¼" ID H.S.A. Casing Hammer: Other: Soil Sampler: 2" OD Split Barrel Hammer Wt: 140 lbs. Hammer Fall: 30 in.		<table border="1"> <tr> <th>Date</th> <th>Time</th> <th>Depth (Ft.)</th> <th>Casing At (Ft.)</th> </tr> <tr> <td>06/23/21</td> <td>While Drilling</td> <td>None Noted</td> <td>8.0'</td> </tr> <tr> <td>06/23/21</td> <td>Before Casing Removed</td> <td>None Noted</td> <td>18.5'</td> </tr> <tr> <td>06/23/21</td> <td>After Casing Removed</td> <td>None Noted</td> <td>out</td> </tr> <tr> <td>06/23/21</td> <td>After Casing Removed</td> <td>caved @ 9.7'</td> <td>out</td> </tr> </table>	Date	Time	Depth (Ft.)	Casing At (Ft.)	06/23/21	While Drilling	None Noted	8.0'	06/23/21	Before Casing Removed	None Noted	18.5'	06/23/21	After Casing Removed	None Noted	out	06/23/21	After Casing Removed	caved @ 9.7'	out
Date	Time	Depth (Ft.)	Casing At (Ft.)																					
06/23/21	While Drilling	None Noted	8.0'																					
06/23/21	Before Casing Removed	None Noted	18.5'																					
06/23/21	After Casing Removed	None Noted	out																					
06/23/21	After Casing Removed	caved @ 9.7'	out																					
LOG OF BORING SAMPLES			VISUAL CLASSIFICATION OF MATERIAL																					
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %															
0	1	0.0	2.0	SS/19	2-10-27-30		Miscellaneous FILL; Brown slag, cmf sand, silt, mf gravel, ceramic, roots (moist)		37															
1																								
2	2	2.0	4.0	SS/16	13-10-11-12		Miscellaneous FILL; Grey/White slag, clay, silt, cmf sand (wet)		21															
3																								
4	3	4.0	6.0	SS/14	10-22-8-9		Miscellaneous FILL; Grey cmf sand, slag, silt, mf gravel (moist)		30															
5																								
6	4	6.0	8.0	SS/18	16-13-11-12		FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist)		24															
7																								
8	5	8.0	10.0	SS/14	10-7-6-6		FILL; Grey cmf gravel, silt, clay, cmf sand (moist)		13															
9																								
10																								
11																								
12																								
13																								
14	6	13.5	15.0	SS/3	7-7-4		FILL; Grey cmf gravel, silt, cme sand (moist) <i>Reworked Material</i>		11															
15																								
16																								
17																								
18																								
19	7	18.5	20.0	SS/6	3-3-2		Grey/Brown CLAY and PEAT, trace woody ORGANIC MATERIAL (moist, mediumstiff)		5															
20							Bottom of Boring @ 20.0'																	

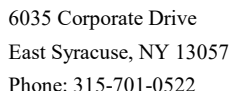
SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-20
				Page No.	1 of 1
				Report No.	27808B-01-0721
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/23/21
Client:		C&S Companies		Date Finished	06/23/21
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	583.2'
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS	
Driller:	John Winks	Casing:	3¼" ID H.S.A.	Date	Time
Driller:	Ryan Casatelli	Casing Hammer:		06/23/21	While Drilling
Inspector:		Other:		06/23/21	Before Casing Removed
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	06/23/21	After Casing Removed
Type:	ATV Mounted	Hammer Wt:	140 lbs.	06/23/21	After Casing Removed
Rod Size:	AWJ	Hammer Fall:	30 in.	06/23/21	After Casing Removed
				Depth (Ft.)	Casing At (Ft.)
				None Noted	8.0'
				None Noted	18.5'
				None Noted	out
				caved @ 7.9'	out
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)
0	1	0.0 2.0	SS/20	3-15-42-32	c - coarse m - medium f - fine
1					Miscellaneous FILL; Dark Brown slag, silt, cmf sand, tile, roots (moist)
2	2	2.0 4.0	SS/21	30-23-32-25	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%
3					Miscellaneous FILL; Brown/Grey cmf sand, slag, silt, coal (moist)
4	3	4.0 6.0	SS/18	3-6-11-6	FILL; Grey cmf gravel, silt, clay, cmf sand (moist)
5					
6	4	6.0 8.0	SS/17	6-7-8-8	FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist)
7					
8	5	8.0 10.0	SS/18	3-4-5-10	FILL; Grey/Brown cmf gravel, silt, clay, cmf sand (moist)
9					
10					
11					
12					
13	6	13.5 15.0	SS/7	2-2-3	Dark Brown PEAT, trace woody ORGANIC MATERIAL (moist, medium stiff)
14					
15					
16					
17					
18	7	18.5 20.0	SS/18	3-3-3	Grey/Brown CLAY, little SILT (moist, medium stiff)
19					
20					Bottom of Boring @ 20.0'

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:



Boring No.	B-21
Page No.	1 of 1
Report No.	27808B-01-0721

Date Started	06/23/21
---------------------	----------

Date Finished	06/23/21
----------------------	----------

Surface Elev.	583.3'
----------------------	--------

GROUNDWATER OBSERVATIONS


Date	Time	Depth (Ft.)	Casing At (Ft.)
06/23/21	While Drilling	None Noted	8.0'
06/23/21	Before Casing Removed	17.0'	18.5'
06/23/21	After Casing Removed	None Noted	out
06/23/21	After Casing Removed	caved @ 9.1'	out

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/19	2-14-51-36		Miscellaneous FILL; Dark Brown slag, silt, cmf sand, roots (moist)		65
1									
2	2	2.0	4.0	SS/20	22-30-32-45		Miscellaneous FILL; Grey slag, cmf sand, silt (moist)		62
3									
4	3	4.0	6.0	SS/18	18-27-13-9		Miscellaneous FILL; Grey cmf gravel, slag, silt, clay, cmf sand (moist)		40
5									
6	4	6.0	8.0	SS/17	17-14-8-9		FILL; Grey cmf gravel, silt, cmf sand (moist)		22
7									
8	5	8.0	10.0	SS/17	6-6-5-5		FILL; Grey cmf gravel, silt, clay, cmf sand (moist)		11
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/18	2-2-3		Dark Brown PEAT, trace SILT (moist, medium stiff)		5
15									
16									
17									
18									
19	7	18.5	20.0	SS/14	4-4-5		Grey/Brown CLAY, little SILT (moist, stiff)		9
20							Bottom of Boring @ 20.0'		


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-22			
				Page No.	1 of 1			
				Report No.	27808B-01-0721			
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/22/21			
Client:		C&S Companies		Date Finished	06/22/21			
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	583.7'			
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS				
Driller:	John Winks	Casing:	3¼" ID H.S.A.	Date	Time			
Driller:	Ryan Casatelli	Casing Hammer:		06/22/21	While Drilling			
Inspector:		Other:		06/22/21	Before Casing Removed			
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	06/22/21	After Casing Removed			
Type:	ATV Mounted	Hammer Wt:	140 lbs.	06/22/21	After Casing Removed			
Rod Size:	AWJ	Hammer Fall:	30 in.	06/22/21	After Casing Removed			
				Depth (Ft.)	Casing At (Ft.)			
				None Noted	8.0'			
				None Noted	18.5'			
				None Noted	out			
				caved @ 9.7'	out			
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL				
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)			
					c - coarse m - medium f - fine			
					and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%			
					SPT "N" or RQD %			
0	1A	0.0	0.5	SS/20	4-15-34-30	0.5	Topsoil and Organic Material (moist)	49
1	1B	0.5	2.0				Miscellaneous FILL; Dark Brown slag, cmf sand, silt (moist)	
2	2	2.0	4.0	SS/17	28-29-19-13		Miscellaneous FILL; Brown cmf sand, slag, silt, fine gravel (moist)	48
3								
4	3	4.0	6.0	SS/17	5-6-4-7		FILL; Grey/Brown clay, mf gravel, silt, cmf sand (moist)	10
5								
6	4	6.0	8.0	SS/22	8-8-8-37		FILL; Grey silt, cmf gravel, clay, cmf sand (moist)	16
7								
8	5	8.0	10.0	SS/6	24-8-6-4		FILL; Grey cmf gravel, clay, silt, cmf sand (moist)	14
9								
10								
11								
12								
13	6	13.5	15.0	SS/18	5-3-4		Grey/Brown SILT, little fine SAND, trace CLAY (moist, medium stiff)	7
14								
15								
16								
17								
18	7	18.5	20.0	SS/18	4-3-3		Grey/Brown CLAY, little SILT (moist, medium stiff)	6
19								
20							Bottom of Boring @ 20.0'	


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-23
				Page No.	1 of 1
				Report No.	27808B-01-0721
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/22/21
Client:		C&S Companies		Date Finished	06/22/21
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	583.7'
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS	
Driller:	John Winks	Casing:	3¼" ID H.S.A.	Date	Time
Driller:	Ryan Casatelli	Casing Hammer:		06/22/21	While Drilling
Inspector:		Other:		06/22/21	Before Casing Removed
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel	06/22/21	After Casing Removed
Type:	ATV Mounted	Hammer Wt:	140 lbs.	06/22/21	After Casing Removed
Rod Size:	AWJ	Hammer Fall:	30 in.	06/22/21	After Casing Removed
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)
					c - coarse m - medium f - fine
					and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%
0	1A	0.0	0.5	SS/20	3-9-10-15
1	1B	0.5	2.0		
2	2	2.0	4.0	SS/20	19-33-23-11
3					
4	3	4.0	6.0	SS/18	3-4-7-10
5					
6	4	6.0	8.0	SS/20	12-11-12-9
7					
8	5	8.0	10.0	SS/22	4-4-5-5
9					
10					
11					
12					
13	6	13.5	15.0	SS/12	1-2-2
14					
15					
16					
17					
18	7	18.5	20.0	SS/3	6-8-8
19					
20					
				Bottom of Boring @ 20.0'	


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		<div> Boring No. B-24 Page No. 1 of 1 Report No. 27808B-01-0721 </div>					
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started		06/22/21			
Client:		C&S Companies		Date Finished		06/22/21			
Location:		See Exploration Location Plan, ELP-1		Surface Elev.		584.3'			
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS					
Driller:		John Winks		Casing:		3¼" ID H.S.A.			
Driller:		Ryan Casatelli		Casing Hammer:					
Inspector:				Other:					
Drill Rig:		CME 550X		Soil Sampler:		2" OD Split Barrel			
Type:		ATV Mounted		Hammer Wt:		140 lbs.			
Rod Size:		AWJ		Hammer Fall:		30 in.			
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL					
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/17	3-12-11-7		Miscellaneous FILL; Dark Brown slag, cmf sand, silt, fine gravel, roots (moist)		23
1									
2	2	2.0	4.0	SS/16	9-9-9-13		FILL; Grey/Brown silt, cmf gravel, cmf sand (moist)		18
3									
4	3	4.0	6.0	SS/15	6-6-7-7		FILL; Grey/Brown cmf gravel, clay, silt, cmf sand (moist)		13
5									
6	4	6.0	8.0	SS/18	6-7-6-5		FILL; Grey/Brown cmf gravel, silt, cmf sand (moist)		13
7									
8	5	8.0	10.0	SS/18	2-3-3-3		FILL; Grey/Brown clay, cmf gravel, silt, cmf sand (moist)		6
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/18	3-7-9		FILL; Brown/Grey clay, cmf gravel, silt, cmf sand (wet)		16
15									
16									
17							Auger refusal @ 17.0' on unknown obstruction.		
18							Bottom of Boring @ 17.0'		
19									
20									


SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-25
				Page No.	1 of 1
				Report No.	27808B-01-0721
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/22/21
Client:		C&S Companies		Date Finished	06/22/21
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	582.8'
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS	
Driller: John Winks Driller: Ryan Casatelli Inspector: Drill Rig: CME 550X Type: ATV Mounted Rod Size: AWJ		Casing: 3¼" ID H.S.A. Casing Hammer: Other: Soil Sampler: 2" OD Split Barrel Hammer Wt: 140 lbs. Hammer Fall: 30 in.		Date	Time
				06/22/21	While Drilling
				06/22/21	Before Casing Removed
				06/22/21	After Casing Removed
				06/22/21	After Casing Removed
				caved @ 2.0'	out
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL	
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches
Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %		
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	1 2 3 4 5 6 7	0.0 2.0 2.0 4.0 4.0 6.0 6.0 8.0 8.0 10.0 13.5 15.0 18.5 20.0		SS/14 SS/11 SS/14 SS/16 SS/15 SS/14 SS/12	3-5-8-15 34-19-15-16 13-11-9-8 6-8-9-10 7-9-5-3 2-2-5 6-10-15
					Miscellaneous FILL; Brown slag, cmf gravel, cmf sand, silt, roots (moist)
					Miscellaneous FILL; Brown cmf gravel, cmf sand, silt (moist)
					Miscellaneous FILL; Brown slag, cmf sand, mf gravel, silt (wet)
					Miscellaneous FILL; clay, slag, cmf sand, silt (wet)
					Miscellaneous FILL; Dark Brown slag, cmf gravel, cmf sand, silt (wet)
					Grey/Brown CLAY, some SILT, trace fine GRAVEL, trace cmf SAND (wet, medium stiff)
					Grey/Brown CLAY, some cmf GRAVEL, little SILT, little cmf SAND (moist, very stiff)
					Bottom of Boring @ 20.0'

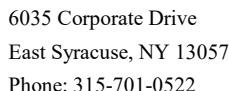
SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:

 <div> 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522 </div>		<div> SUBSURFACE EXPLORATION TEST BORING LOG </div>		Boring No.	B-26				
				Page No.	1 of 1				
				Report No.	27808B-01-0721				
Project Name:		Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York		Date Started	06/22/21				
Client:		C&S Companies		Date Finished	06/22/21				
Location:		See Exploration Location Plan, ELP-1		Surface Elev.	583.7'				
METHODS OF INVESTIGATION				GROUNDWATER OBSERVATIONS					
Driller: John Winks		Casing: 3¼" ID H.S.A.		Date	Time				
Driller: Ryan Casatelli		Casing Hammer:		06/22/21	While Drilling				
Inspector:		Other:		06/22/21	Before Casing Removed				
Drill Rig: CME 550X		Soil Sampler: 2" OD Split Barrel		06/22/21	After Casing Removed				
Type: ATV Mounted		Hammer Wt: 140 lbs.		06/22/21	After Casing Removed				
Rod Size: AWJ		Hammer Fall: 30 in.							
				Depth (Ft.)	Casing At (Ft.)				
				5.6'	8.0'				
				16.2'	18.5'				
				2.2'	out				
				caved @ 2.4'	out				
LOG OF BORING SAMPLES				VISUAL CLASSIFICATION OF MATERIAL					
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
0	1	0.0 2.0		SS/16	2-4-6-9		Miscellaneous FILL; Dark Brown cmf sand, slag, silt, brick, coal (moist)	10	
1									
2	2	2.0 4.0		SS/17	5-7-6-6		Miscellaneous FILL; Brown cmf sand, brick, slag, silt (moist)	13	
3									
4	3	4.0 6.0		SS/7	9-6-7-5		Miscellaneous FILL; Brown brick, slag, silt (moist)	13	
5									
6	4	6.0 8.0		SS/15	5-4-5-11		Miscellaneous FILL; Grey cmf sand, concrete, mf gravel, silt (wet)	9	
7									
8	5	8.0 10.0		SS/15	5-3-4-1		Miscellaneous FILL; Grey concrete, brick, silt (wet)	7	
9									
10									
11									
12									
13									
14	6A	13.5 14.0		SS/12	1-1-3		Brown CLAY, little PEAT, trace SILT, trace woody ORGANIC MATERIAL (moist)	4	
15	6B	14.0 15.0					Grey SILT and CLAY, trace fine SAND (wet, medium stiff)		
16									
17									
18									
19	7	18.5 20.0		SS/15	2-2-3		Grey/Brown CLAY, some cmf GRAVEL, little SILT, trace cmf SAND (wet, medium stiff)	5	
20							Bottom of Boring @ 20.0'		

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:



Boring No.	B-27
Page No.	1 of 1
Report No.	27808B-01-0721

Project Name:	Former Bethlehem Steel Sanitary Sewer and Water Line Extensions Project, Buffalo, New York
Client:	C&S Companies
Location:	See Exploration Location Plan, ELP-1

Date Started	06/22/21
Date Finished	06/22/21
Surface Elev.	584.4'

GROUNDWATER OBSERVATIONS

Driller:	John Winks	Casing:	3¼" ID H.S.A.
Driller:	Ryan Casatelli	Casing Hammer:	
Inspector:		Other:	
Drill Rig:	CME 550X	Soil Sampler:	2" OD Split Barrel
Type:	ATV Mounted	Hammer Wt:	140 lbs.
Rod Size:	AWJ	Hammer Fall:	30 in.

Date	Time	Depth (Ft.)	Casing At (Ft.)
06/22/21	While Drilling	4.6'	4.0'
06/22/21	Before Casing Removed	14.0'	18.5'
06/22/21	After Casing Removed	None Noted	out
06/22/21	After Casing Removed	caved @ 4.7'	out

VISUAL CLASSIFICATION OF MATERIAL

Depth Scale (Feet)	Sample No.	Sample Depth (Ft.)		Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
		From	To						
0	1	0.0	2.0	SS/18	2-6-26-64		Miscellaneous FILL; Brown asphalt pieces, silt, cmf sand, roots (moist)		32
1									
2	2	2.0	3.2	SS/12	30-32-100@2"		Miscellaneous FILL; Dark Brown cmf sand, slag, silt (moist)		100+
3									
4	3	4.0	6.0	SS/14	5-16-14-7		Miscellaneous FILL; Dark Grey slag, silt, (wet)		30
5									
6	4	6.0	8.0	SS/12	8-12-4-5		Similar as above (wet)		16
7									
8	5	8.0	10.0	SS/12	9-9-10-8		Miscellaneous FILL; Grey slag, cm fsand, silt (wet)		19
9									
10									
11									
12									
13									
14	6	13.5	15.0	SS/15	5-2-2		Dark Brown PEAT, trace woody ORGANIC MATERIAL, trace SILT (moist, medium stiff)		4
15									
16									
17									
18									
19	7	18.5	20.0	SS/10	2-3-4		Grey CLAY, little SILT (moist, medium stiff)		7
20							Bottom of Boring @ 20.0'		

Remarks:

GENERAL INFORMATION & KEY TO TEST BORING LOGS

The **Subsurface Exploration – Test Boring Logs** produced by **CME Associates, Inc.** (CME) present observations and mechanical data collected by the CME Drill Crew while at the site, supplemented, at times, by classification of the materials removed from the borings determined through visual identification by technicians in the laboratory. It is cautioned that the materials removed from the borings represent only a fraction of the total volume of the deposits at the site and may not necessarily be representative of the subsurface conditions between adjacent borings or between the sampled intervals. The data presented on the Exploration Logs together with the recovered samples will provide a basis for evaluating the character of the subsurface conditions relative to the proposed construction. The evaluation must consider all the recorded details and their significance relative to each other. Often, analyses of standard boring data indicate the need for additional testing and sampling procedures to more accurately evaluate the subsurface conditions. Any evaluations of the contents of CME's report and the recovered samples must be performed by Licensed Professionals having experience in Soil Mechanics, Geological Sciences and Geotechnical Engineering. The information presented in this Key defines some of the methods, procedures and terms used on the CME Exploration Logs to describe the conditions encountered. Refer to the Log on page 4 for key number.

Key No.

Description

1. The figures in the **DEPTH SCALE** column define the vertical scale of the Boring Log.
2. The **SAMPLE NO.** is used for identification on the sample containers and in the Laboratory Test Report or Summary.
3. The **SAMPLE DEPTH** column gives the depth range from which a sample was recovered.
4. The **TYPE / SAMPLE RECOVERY** column is used to signify the various types of samples. "SS is Split Spoon, "U" is Undisturbed Tube, and "C" is Rock Core. For soil and rock samples, the recovered length of the sample is recorded in inches.
5. **BLOWS ON SAMPLER** – This column shows the results of the "Standard Penetration Test (SPT) ASTM D1586", recording the number of blows required to drive a 2-inch outside diameter (O.D.) split spoon sampler into the ground beneath the casing. The number of blows required for each six inches of penetration is recorded. The total number of blows required for the 6-inch to 18-inch interval is summarized in the **SPT "N"** column and represents the "Standard Penetration Number". The outside diameter of the sampler, the hammer weight and the length of drop are noted in the **Methods of Investigation** portion of the log. A "WH" or "WR" in this column indicates that the sample spoon advanced a 6-inch interval under the Weight of **Hammer + Rod** or **Weight of Rod**, respectively. If a rock core sample is taken, the core bit size designation is given here.
6. The **DEPTH OF CHANGE** column designates the depth (in feet) that the driller noted a compactness or stratum change. In soft materials or soil strata exhibiting a consistent relative density, it is difficult for the driller to determine the exact change from one stratum to the next. In addition, a grading or gradual change may exist. In such cases the depth noted is approximate or estimated only and may be represented by a dashed line. When continuous split spoon sampling is not employed, or an interval of several feet exists between samplings, the Depth of Change may not be indicated at all.
7. **VISUAL CLASSIFICATION OF MATERIAL** – Soil materials sampled and recovered are described by the Driller or Geotechnical Representative on the original field log. Notes of the Drillers observations are also placed in this column. Recovered samples may also be visually classified by a Geologist, Engineer, or Soil Technician. Visual soil classifications are made using a modified Burmister System as practiced by CME and as generally described in this Key and abbreviated on the Test Boring Log. This modified Burmister System is a type of visual-manual textural classification estimated by the Driller, Geologist, Engineer, or Technician on the basis of weight-fraction of the recovered material and estimated plasticity, among other characteristics. See Table 1 "**Classification of Materials**". The description of the relative compactness or consistency is based upon the standard penetration number as defined in Table 2. The description of the recovered sample moisture condition is described as dry, moist, wet, or saturated. Water used to advance the boring may affect the moisture content of the recovered sample. Special terms may be used to describe recovered materials in greater detail, such terms are listed in ASTM D653. When sampling gravelly soils with a standard two-inch O.D. Split Spoon, the true percentage of gravel is often not recovered due to the relatively small sampler diameter. The presence of boulders, cobbles, and large gravel is sometimes, but not necessarily, detected by observation of the casing advancement and sampler blows and/or through the "action" of the drill rig, sampler and/or casing as reported by the Driller.

The description of **Rock** is based upon the recovered rock core. Terms frequently used in the description are included in Tables 3, 4 and 5. The length of core run is defined as length of penetration between retrievals of the core barrel from the bore hole, expressed in inches. The core recovery expresses the length of core recovered from the core barrel per core run, in percent. The size core barrel used is noted in Column 5. An "N" size core, being larger in diameter than "A" size core, often produces better recovery, and is frequently utilized where accurate information regarding the geologic conditions and engineering properties is needed. An estimate of in-situ rock quality is provided by a modified core recovery ratio known as the "**Rock Quality Designation**" (**RQD**). This ratio is determined by considering only pieces of core that are at least 4 inches long and are hard and sound. Breaks obviously caused by drilling are ignored. The percentage ratio between the total length of such core recovered and the length of core drilled on a given run is the RQD. Table 4 indicates in-situ rock quality as related to the **RQD**.

8. The SPT “N” or RQD is given in this column as applicable to the specific sample taken. In Very Compact coarse-grained soils and in Hard fine-grained soils the N-value may be indicated as 50+ or 100+. This typically means that the blow count was achieved prior to driving the sampler the entire 6-inch interval or the sampler refused further penetration. For an “N” size rock core, the RQD is reported here, expressed in percent (%).
9. **GROUNDWATER OBSERVATIONS** and timing noted by the Drill Crew are shown in this section. It is important to realize that the reliability of the water level observations depend upon the soil type (e.g. water does not readily stabilize in a hole through fine grained soils), and that drill water used to advance the boring may have influenced the observations. Groundwater levels typically fluctuate seasonally so those noted on the log are only representative of that exhibited during the period of time noted on the log. One or more perched or trapped water levels may exist in the ground seasonally. All the available resources and data should be evaluated. If definite conclusions cannot be made, it is often prudent to examine the conditions more thoroughly through test pit excavations or through groundwater observation well installations.
10. **METHODS of INVESTIGATION** provides pertinent information regarding the identity of the Drill Crew members, inspector (if any), drill rig make and model, drill rig mount vehicle, casing and type of advancement, soil and rock sampling tools and appurtenances used in the installation of the Test Boring.

TABLE 1 - CLASSIFICATION OF MATERIALS	
GROUP	COARSE GRAINED SOILS TEXTURAL SIZES
BOULDERS	larger than 12" diameter
COBBLES	12" diameter to 3" sieve
GRAVEL	3" - coarse - 1" - medium - 1/2" - fine - #4 sieve
SAND	#4 - coarse - #10 - medium - #40 - fine - #200 sieve
GROUP	FINE GRAINED SOILS SIZE (PLASTICITY*)
SILT	#200 sieve (0.074mm) to 0.005mm size (see below *)
CLAY	0.005mm size to 0.001 mm size (see below *)
GROUP	ORGANIC SOILS, PEAT, MUCK, MARL
ORGANIC	Based on smell, visual-manual and laboratory testing

ABBREVIATIONS	TERM	ESTIMATED PERCENT OF TOTAL SAMPLE BY WEIGHT
f - fine	and	35 to 50%
m - medium	some	20 to 35%
c - coarse	little	10 to 20%
	trace	0 to 10%

*PLASTICITY DESCRIPTIONS and INDICATOR FIELD TESTS			
TERM	PLASTICITY INDEX	DRY STRENGTH TEST	
		INDICATION	FIELD TEST RESULT
non-plastic	0 - 3	Very low	falls apart easily
slightly plastic	4 - 15	Slight	easily crushed by fingers
plastic	15 - 30	Medium	difficult to crush
highly plastic	31 or more	High	impossible to crush with fingers
Other Field Tests include: Dilatancy, Thread and Shine Testing			

TABLE 2 - DESCRIPTION OF SOIL COMPACTNESS OR CONSISTENCY based on SPT "N"*

Primary Soil Type	Descriptive Term of Compactness	Range of Standard Penetration Resistance (N)
COARSE GRAINED SOILS	Very Loose	less than 4 blows per foot
(More than half of Material is larger than No. 200 sieve size)	Loose	4 to 10
	Medium Compact	10 to 30
	Compact	30 to 50
	Very Compact	Greater than 50
FINE GRAINED SOILS	Descriptive Term of Consistency	Range of Standard Penetration Resistance (N)
(More than half of material is smaller than No. 200 sieve size)	Very Soft	less than 2 blows per foot
	Soft	2 to 4
	Medium Stiff	4 to 8
	Stiff	8 to 15
	Very Stiff	15 to 30
	Hard	Greater than 30
*The number of blows of 140-pound weight falling 30 inches to drive a 2-inch O.D., 1-3/8 inch I.D. sampler 12 inches is defined as the Standard Penetration Resistance, designated "N".		

TABLE 3 - ROCK CLASSIFICATION TERMS


Rock Classification Terms		Field Test or Meaning of Term
Hardness	Soft	Scratched by fingernail. Crumbles under firm blows with a geologic pick.
	Medium Soft	Shallow indentations (1 to 3 mm) can be made by firm blows of a geologic pick. Can be peeled with a pocketknife with difficulty.
	Medium Hard	Scratched distinctly by penknife or steel nail. Can't be peeled or scraped with knife.
	Hard	Scratched with difficulty by penknife or steel nail. Requires more than one blow with a geologic hammer to break it
	Very Hard	Cannot be scratched by penknife or steel nail. Breaks only by repeated heavy blows with a geologic hammer.
Bedding (Divisional planes and/or surfaces separating it from layers above and below)	Thinly Laminated Laminated Thinly Bedded Medium Bedded Thickly Bedded Massive	less than 1/8 th inch 1/8 th to 1 inch 1 inch to 4 inches 4 inches to 12 inches 12 inches to 48 inches greater than 48 inches

TABLE 4
Relation of Rock Quality Designation (RQD) and in-situ Rock Quality

RQD %	Rock Quality Term Used
90 to 100	Excellent
75 to 90	Good
50 to 75	Fair
25 to 50	Poor
0 to 25	Very Poor

TABLE 5 – BEDROCK WEATHERING CLASSIFICATION

Classification	Diagnostic Features
Fresh	No visible sign of decomposition or discoloration. Rings under hammer impact.
Slightly Weathered	Slight discoloration inwards from open fractures, otherwise similar to Fresh.
Moderately Weathered	Discoloration throughout. Strength somewhat less than fresh rock but cores cannot be broken by hand or scraped with knife. Texture observed.
Highly Weathered	Most minerals somewhat decomposed. Specimens can be broken by hand with effort or shaved with knife. Core stones present in rock mass. Texture becoming indistinct but fabric preserved.
Completely Weathered	Minerals decomposed to soil, but fabric and structure preserved (e.g. Saprolite). Specimens easily crumbled or penetrated.
Residual Soil	Advanced state of decomposition resulting in plastic soils. Rock fabric and structure completely destroyed. Large volume change.

 6035 Corporate Drive East Syracuse, NY 13057 Phone: 315-701-0522		SUBSURFACE EXPLORATION TEST BORING LOG		Boring No. B-2				
				Page No. 1 of 1				
				Report No. 				
Project Name:				Date Started				
Client:				Date Finished				
Location:				Surface Elev.				
METHODS OF INVESTIGATION			GROUNDWATER OBSERVATIONS					
Driller: 10 Driller: Inspector: Drill Rig: Type: Rod Size:	Casing: 10 Casing Hammer: Other: Soil Sampler: Hammer Wt: Hammer Fall:	Date Time While Drilling Before Casing Removed After Casing Removed After Casing Removed	Depth (Ft.) 9 	Casing At (Ft.) 9 				
LOG OF BORING SAMPLES			VISUAL CLASSIFICATION OF MATERIAL					
Depth Scale (Feet)	Sample No.	Sample Depth (Ft.) From To	Type / Sample Rec. (in.)	Blows on Sampler Per 6 Inches	Depth of Change (Ft.)	c - coarse m - medium f - fine	and - 35 to 50% / some - 20 to 35% little - 10 to 20% / trace - 0 to 10%	SPT "N" or RQD %
1	2	3 3	4	5	6	7		8

SS - Split Spoon, U - Undisturbed Tube, C - Core, WH - Weight of Hammer + Rod, WR - Weight of Rod

Remarks:



Date: 12/22/21 6/22/21

Attachments:

- 1.
- 2.
- 3.

to

Equipment Calibration		
Time	Type	Result

Former Zernichem Steel Site. Field Soil Borings, Groutch Drilling

[illegible]



DAILY WORK REPORT

Description of Work:

- CTE ARRIVED ON SITE AT 9:30 AND BYAN DRILLING
- ONSITE 9:30 TO 6:00 9 HRS.
- Wind DIRECTION WAS NW, SET UPWIND MONITORING ~~WAS~~ SOUTH ~~WIND~~ EAST OF DRILLING LOCATIONS AND DOWNWIND MONITOR NORTH OF DRILLING OPERATIONS.

Community Air Monitoring Issues:

NONE

Sampling (Soil/Water/Air):

NONE

Sample ID	Sample Location	Description & Analysis

Upcoming work:

Submitted By: Rich Balkas



DAILY WORK REPORT

Location

TECUMSEH BUSINESS PARK

Date: 6/23/21

Attachments:

1. _____
2. _____
3. _____

Contractor Work Hours: _____

to _____

C&S Work Hours: _____

to _____

	AM	PM
Weather	SUNNY	SUNNY
Temp.	60°F	70°
Pecip.	None	None
Wind Speed	5-15 mph	5 mph
Wind Direct.	SW	SW

Equipment Calibration		
Time	Type	Result

Work Area Description:

FOSTER BETHLEHEM STEEL SITE, GEOTECH, CME DRILLING BOREHOLE

Material Imported			
Time	Type	Origin	Quantity

Material Exported			
Time	Type	Destination	Quantity



DAILY WORK REPORT

Description of Work:

- COTE ARRIVED ON SITE AT 7:00 A.M., ASSEMBLED EQUIPMENT AND CONTINUED DRILLING.
- ARRIVED ON SITE AT 7:00 A.M. UNTIL
- WIND DIRECTION WAS SW, POSITIONED UPWIND MONITOR NORTH OF WHERE THE FIRST BORING WAS BEING DRILLED. THE DOWNWIND MONITOR WAS POSITIONED SOUTH OF THE DRILLING OPERATIONS
- DRILLING OPERATIONS MOVED PASTED THE DOWNWIND AIR MONITOR SO THE AIR MONITOR WAS MOVED FURTHER SOUTH.

Community Air Monitoring Issues:

NONE

Sampling (Soil/Water/Air):

NONE

Sample ID	Sample Location	Description & Analysis

Upcoming work:

Submitted By: RICH BACKERT



DAILY WORK REPORT

Location

TECHNISEN Business Park

Date: 6/28/21

Attachments:

-
-
-

Contractor Work Hours:

C&S Work Hours:

to

to

	AM	PM
Weather	Sunny	Sunny
Temp.	76°F	80°F
Pecip.	None	None
Wind Speed	11 mph	13 mph
Wind Direct.	SW	SW

Equipment Calibration		
Time	Type	Result

Work Area Description:

FORN BATHROOM STEEL SIDE GEOTECH DRILLING

Material Imported			
Time	Type	Origin	Quantity

Material Exported			
Time	Type	Destination	Quantity



DAILY WORK REPORT

Description of Work:

- ON SITE AT 9:00 Assembled Air Monitors & Equipment And Continued Geotech Drilling
- Wind Direction SW
- CME STATED AT 87 x BLE THE DRILL BEGAN HITTING CONCRETE FOUNDATION (BASEMENT), RE DRILLING AROUND ORIGINAL BORING LOCATION
- AN OLD STRUCTURE IS BEING DEMOLISHED AND TORN DOWN ON A NEIGHBORING LOT TO THE SOUTH OF WHERE THE BORINGS ARE BEING CONDUCTED.

Community Air Monitoring Issues:

Sampling (Soil/Water/Air):

NONE

Sample ID	Sample Location	Description & Analysis

Upcoming work:

Submitted By: _____



DAILY WORK REPORT

Location

Bethlehem Steel Site
Former Building Location/Utility Line
Install

Date: Tuesday, June 29, 2021

Attachments:

1. Photos
2. _____
3. _____

Contractor Work Hours:

7:00 AM to 12:30 PM

C&S Work Hours:

6:45 AM to 12:15 PM

	AM	PM
Weather	Sun	
Temp.	75	
Pecip.	No	
Wind Speed	10 mph	
Wind Direct.	SW	

Equipment Calibration		
Time	Type	Result
7:15 AM	Dust Zero Cal	good

Work Area Description:

Former building location. Perimeter of gravel area. 3 borings remain to be completed.

Material Imported			
Time	Type	Origin	Quantity

Material Exported			
Time	Type	Destination	Quantity



DAILY WORK REPORT

Description of Work:

CME onsite to complete remaining boring characterization for future utility line install.

C&S onsite to perform air monitoring and oversight. Alex Brennen onsite at 6:50 am. Phil opened gate at 7:10. CAMPs set up at 7:15 am. Zero calcd.

Demolition of metal building occuring upwind from site. Minimal visual effect downwind.
Background dust: 0.040 mg/m³. Background PID: 0.00 ppm

Drilling ended at 1120. Decon completed near final boring. Moved to backfill previous boring closer to Ridge Rd.

AB left site at 1215.

Community Air Monitoring Issues:

Demolition of old metal building occuring upwind.

Sampling (Soil/Water/Air):

NONE

Sample ID	Sample Location	Description & Analysis

Upcoming work: Final Day for oversight. Possible Remob for approx.
10 borings in coming weeks.

Submitted By: Alex Brennen



APPENDIX 5

**Site Management Periodic Review Report Notice-Institutional and
Engineering Controls Certification Form**



Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



Site Details

Box 1

Site No. **C915198L**

Site Name **Site II-12 Tecumseh Phase II Business Park**

Site Address: 2303 Hamburg Turnpike Zip Code: 14218
City/Town: Lackawanna
County: Erie
Site Acreage: 12.020

Reporting Period: April 28, 2021 to April 28, 2022

YES NO

1. Is the information above correct? ☒ ☐

If NO, include handwritten above or on a separate sheet.

2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period? ☐ ☒

3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))? ☐ ☒

4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period? ☐ ☒

If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.

5. Is the site currently undergoing development? ☐ ☒

Box 2

YES NO

6. Is the current site use consistent with the use(s) listed below? ☒ ☐
Commercial and Industrial

7. Are all ICs in place and functioning as designed? ☒ ☐

IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

Box 2A

YES NO

8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid? ☐ ☒

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

9. Are the assumptions in the Qualitative Exposure Assessment still valid? ☒ ☐
(The Qualitative Exposure Assessment must be certified every five years)

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C915198L**Box 3****Description of Institutional Controls**ParcelOwnerInstitutional Control**141.11-1-52**

Buffalo & Erie County ILDC

Soil Management Plan
IC/EC Plan
Ground Water Use Restriction
Landuse Restriction
Monitoring Plan
Site Management Plan

Institutional Control Description:

Adherence to Site Management Plan (SMP)
Restriction to commercial re-use
Prohibition of groundwater use
Allowance for Departmental access
Requires a Periodic Review and Report

Box 4**Description of Engineering Controls**ParcelEngineering Control**141.11-1-52**

Cover System

Engineering Control Description:

Soil cover, over 5 acres

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;

b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO

☒ ☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

(a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

☒ ☐

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C915198L

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I John Cappellino at 95 Perry St. Buffalo, NY 14203
print name print business address

am certifying as Owner (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

John Cappellino
Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification

5/9/2022
Date

EC CERTIFICATIONS

Box 7

Qualified Environmental Professional Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I ROBERT NAPIERZALSKI at LABELLA ASSOCIATES, DPC
print name 300 PEARL ST., SUITE 130, BUFFALO, NY
print business address

am certifying as a Qualified Environmental Professional for the OWNER
(Owner or Remedial Party)


Signature of Qualified Environmental Professional, for
the Owner or Remedial Party, Rendering Certification

Stamp
(Required for PE)

5/30/22
Date