

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Remedial Bureau E

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November 9, 2017

Mr. Shawn Wright
Silos at Elk Street LLC
740 Seneca Street
Buffalo, New York 14201

RE: Silos at Elk Street Site, Site ID No. C915309
Buffalo (C), Erie County
Decision Document

Dear Mr. Wright:

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health (NYSDOH) have reviewed the Remedial Investigation/Alternatives Analysis applicable to the Silos at Elk Street Site dated June 2017 prepared by Benchmark.

Enclosed is a copy of the Department's Decision Document for the site. The remedy is to be implemented in accordance with this Decision Document. Please ensure that a copy of the Decision Document is placed in the document repository.

Please contact the Department's Project Manager, Maurice Moore, at (716) 851-7220 or maurice.moore@dec.ny.gov at your earliest convenience to discuss next steps.

Sincerely,



Michael J. Cruden, P.E.
Director
Remedial Bureau E
Division of Environmental Remediation

Enclosure

ec: M. Ryan, DER
M. Cruden, DER
C. Staniszewski, Region 9
M. Moore, Region 9
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C. Bethony, NYSDOH
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T. Forbes, P.E., Benchmark
C. Slater, Esq., The Slater Law Firm

DECISION DOCUMENT

Silos at Elk Street Site
Brownfield Cleanup Program
Buffalo, Erie County
Site No. C915309
October 2017



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

Silos at Elk Street Site
Brownfield Cleanup Program
Buffalo, Erie County
Site No. C915309
October 2017

Statement of Purpose and Basis

This document presents the remedy for the Silos at Elk Street Site site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Silos at Elk Street Site site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principals and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. Backfill: On-site soil which does not exceed the IRM excavation criteria may be used below the cover system described in remedy element 3 to backfill the excavations completed as part of the approved IRM. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be

brought in to complete the backfilling of the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of the cover system as described in remedy element 3.

3. A site cover will be required to allow for restricted residential and commercial use of the site. The site cover may consist of paved surface parking areas, sidewalks, or a soil cover. In areas where soil cover is required the cover will be a minimum of one foot in the commercial re-use area and two feet in the restricted residential re-use area, of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the respective SCOs for cover material for use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

4. Imposition of an institutional control in the form of an environmental easement is required for the controlled property that:

- allows the use and development of the controlled property recognizing two distinct areas for redevelopment. One area will allow for a cleanup to restricted residential re-use and the second, containing the vacant building, will allow for commercial re-use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- requires compliance with the Department approved Site Management Plan; and
- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3.)

5. A Site Management Plan is required, which includes, but not limited to, the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective.

Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.

Engineering Controls: The soil cover discussed in Paragraph 3 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in

areas of remaining contamination;

- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper one foot or two feet of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater quality; and
- a schedule of monitoring and frequency of submittals to the Department.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

**Michael J
Cruden**



Digitally signed by Michael J Cruden
DN: cn=Michael J Cruden, o=DER, ou=RBE,
email=mjcruden@gw.dec.state.ny.us,
c=US
Date: 2017.10.24 11:42:27 -04'00'

Date

Michael Cruden, Director
Remedial Bureau E

DECISION DOCUMENT

Silos at Elk Street Site
Buffalo, Erie County
Site No. C915309
October 2017

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Buffalo & Erie County Public Library
1 Lafayette Square
Buffalo, NY 14203
Phone:

New York State Department OF Environmental Conservation
Attn: Maurice Moore
270 Michigan Avenue
Buffalo, NY 14203
Phone: 716-851-7220

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location:

The 50 Elk Street Site is located in a highly developed residential, commercial, and industrial area of the City of Buffalo. The site sits at the corner of Elk and Fulton Streets. Elk Street wraps around the western and southern portion of the site.

Site Features:

The approximately 1.9 acre, site is improved with a vacant multi-story former industrial building and adjacent asphalt parking lot. The abandoned building is constructed of brick, metal, and concrete. The remainder of the site is a mowed vegetative cover.

Current Zoning and Land Use:

The site is currently vacant and zoned industrial. Land-use surrounding the site includes residential, commercial, and vacant industrial properties.

Past Use of the Site:

From 1889 to about 1899, the site was developed with numerous former residential and commercial buildings in addition to railroad tracks along the eastern portion of the site. Commercial operations include storefronts and taverns. From about 1899 to the 1980s, the site use remained consistent with historic uses adding a malting operation with storage areas, malting floors, a kiln, coal areas, engine rooms, offices, a transformer room, cleaning areas, and grain elevators/silos. Throughout the 1980s surrounding residential and commercial buildings were demolished leaving only the malting facility which from the 1980s has been vacant.

Site Geology and Hydrogeology:

The overburden material is a vegetated lean clay with sand (topsoil) above a greyish white to black ash-fill unit (mostly non-plastic fines, coal fragments, orange brick, glass, ceramic fragments, etc.) underlain by a native, stiff lacustrine clay unit. Also present are distinct areas of stressed vegetation that contain black fine ash/coal-like material and are absent of topsoil.

The Buffalo River is approximately 0.6 miles south of the site. Regional groundwater appears to flow south and west towards the Buffalo River and Lake Erie. Local groundwater, found from approximately 5 to 10 feet below ground surface may be influenced by subsurface features, such

as excavations, utilities and localized fill-conditions.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives that restrict the use of the site to either restricted residential or to commercial use (which allows for industrial use) as described in Part 375-1.8(g) were evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Applicant does not have an obligation to address off-site contamination. However, the Department has determined that this site does not pose a significant threat to public health or the environment; accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

- | | |
|-----------------------|------------------------|
| lead | benzo(a)anthracene |
| arsenic | benzo(b)fluoranthene |
| mercury | benzo[k]fluoranthene |
| benzo(a)pyrene | indeno(1,2,3-CD)pyrene |
| dibenz[a,h]anthracene | benzo(g,h,i)perylene |

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM has been completed at this site based on conditions observed during the RI.

Hazardous Lead Soil Excavation, Stabilization and Disposal

An IRM was undertaken from August 7 to September 5, 2017 to address several identified Areas of Concern (AOC) at the site that contained greater amounts of contamination (i.e., hotspots), which represented potential source areas.

Lead, ranging from 11 parts per million (ppm) to 35,000 ppm, exceeded the unrestricted soil cleanup objective (USCO) of 63 ppm in 36 of 65 samples and, when compared to the commercial SCO, (CSCO) of 1,000 ppm, exceeded objectives in 24 of 65 samples. Additionally, at AOC 1, identified as an area 20 feet by 20 feet by 0.5 feet located in the southwest portion of the site and AOC 2, identified as an area 65 feet by 15 feet by 2 feet located at the rear of the existing building lead exceeded the Toxicity Characteristic Leaching Procedure (TCLP) regulatory limit of 5 milligrams per liter (mg/L) in 3 samples. TCLP is an analytical procedure designed to determine the mobility of both organic and inorganic analytes (e.g., to determine if a metal has the potential of leaching into the groundwater). Exceeding the regulatory level determines if the media (soil) is considered a hazardous waste.

Ex-situ stabilization was implemented to treat soil in AOC 1 and AOC 2. Ex-situ stabilization is a process that uses a stabilizing agent to decrease the leachability of contamination, eliminating the hazardous characteristic of the contamination and allowing the material to be disposed of as a non-hazardous solid waste (or used beneficially). Under this process the contaminated soils were excavated from AOC 1 and AOC 2 and the soil was mixed with Portland cement as a stabilizing agent prior to being disposed of in an appropriately permitted facility.

The areas to be treated totaled approximately 80 cubic yards which, due to failure of the TCLP for lead. Treated material was disposed of at the Waste Management facility in Lewiston, Niagara County, in a permitted solid waste landfill.

Due to the limited size of the excavations and because it was prudent to excavate all AOCs at the time of equipment mobilization, additional hotspots identified as AOC 3 through AOC 6 were completed at the same time as AOC 1 and AOC 2. These four AOCs were excavated and properly disposed off-site.

AOC 3, AOC 4 and AOC 5 were hotspots that contained levels of lead exceeding the CSCOs, but not exceeding the TCLP threshold. AOC 6 contained a hotspot containing arsenic at 38 ppm, exceeding both the USCO of 13 parts per million (ppm) for arsenic and the CSCO of 16 ppm. All excavations were left open to allow for backfill with available onsite soils.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Based

upon investigations conducted to date, the primary contaminants of concern include; metals including lead, arsenic and mercury. Contaminants of concern to a lesser extent are SVOCs including polycyclic aromatic hydrocarbons (PAHs), such as benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene.

Soil - Results of the investigation show that surface (0 to 2 inches below ground surface (bgs)), near surface soil/fill (0-6 inches bgs) samples did not contain any VOCs or PCBs that exceeded USCOs.

When compared to USCOs and CSCOs sample results exceed for certain metals. The IRM removed areas considered to be source areas but remaining soils still contained lead and arsenic exceeding the commercial SCOs. Additionally, mercury ranging from 0.02 ppm to 4.2 ppm exceeded the USCO of 0.18 ppm in 16 of 30 samples but when compared to the CSCO of 2.8 ppm only 2 samples were exceeded.

Soil also contains SVOCs including certain PAHs, which are mainly products of incomplete combustion typically found in ash, cinders and asphalt material. When compared to SCOs, indeno(1,2,3-cd)pyrene ranged up to 16 ppm, exceeding the USCO of 0.5 ppm in 10 of 30 samples and CSCO of 5.6 ppm in 2 of 30 samples. Both the USCO and the CSCO for benzo(a)pyrene is 1 ppm. When compared to the SCO, benzo(a)pyrene, ranging up to 33 ppm, exceeded both in 7 of 30 samples.

Dibenzo(a,h)anthracene ranging up to 3.6 ppm, exceeded the USCO of 0.33 ppm and the CSCO of 0.56 ppm in 3 of 30 samples. Benzo(a)anthracene from up to 27 ppm, exceeded the USCO of 1 ppm in 8 of 30 samples; but when compared to the CSCO of 5.6 ppm, only exceeded in 2 of 30 samples. Benzo(b)fluoranthene, up to 35 ppm, exceeded the 1 ppm USCO in 10 of 30 and, when compared to the CSCO of 5.6 ppm, only exceeded in 3 of 30 samples. When compared to USCO of 1 ppm, benzo(k)fluoranthene and chrysene exceeded the SCO in 3 of 30 samples; but when compared to the CSCO of 56 ppm, no sample exceeded the SCO. No VOCs or PCBs were detected in subsurface soils and information gathered leads to conclusion that impacts are onsite fill areas and not suspected to be an off-site issue. Pesticides were not found to exceed residential soil cleanup objectives.

Groundwater - No VOCs, PCBs or pesticides were found in groundwater. No VOCs were found in either soil or groundwater, therefore, no soil vapor sampling was completed. There are minor exceedances of SVOCs including benzo(a)anthracene as high as 0.04 parts per billion (ppb) and benzo(b)fluoranthene as high as 0.05 ppb exceeding the groundwater quality standards of 0.002 ppb. Because the SVOCs were detected close to the existing building and not in wells in the former residential areas of the site and low concentrations, it is not suspected that offsite groundwater is adversely impacted from site contaminants. Groundwater is not used at the site and the use of groundwater as a potable source is prohibited in the City of Buffalo.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

Persons who enter the site could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Soil Consolidation with Site Cover remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program. Green remediation principals and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

2. Backfill: On-site soil which does not exceed the IRM excavation criteria may be used below the cover system described in remedy element 3 to backfill the excavations completed as part of the approved IRM. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to complete the backfilling of the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of the cover system as described in remedy element 3.

3. A site cover will be required to allow for restricted residential and commercial use of the site. The site cover may consist of paved surface parking areas, sidewalks, or a soil cover. In areas where soil cover is required the cover will be a minimum of one foot in the commercial re-use area and two feet in the restricted residential re-use area, of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the respective SCOs for cover material for use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

4. Imposition of an institutional control in the form of an environmental easement is required for the controlled property that:

- allows the use and development of the controlled property recognizing two distinct areas for redevelopment. One area will allow for a cleanup to restricted residential re-use and the second, containing the vacant building, will allow for commercial re-use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
- requires compliance with the Department approved Site Management Plan; and
- requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3.)

5. A Site Management Plan is required, which includes, but not limited to, the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective.

Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.

Engineering Controls: The soil cover discussed in Paragraph 3 above.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 4 above will be placed in any areas where the upper one foot or two feet of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs);
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- monitoring of groundwater quality; and
- a schedule of monitoring and frequency of submittals to the Department.

F:\CAD\Benchmark\Young and Wright Architectural\50 Elk Street\04 - CP Plan\Appendix C: Site Location & Vicinity Map.dwg



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

SITE LOCATION & VICINITY MAP
CITIZEN PARTICIPATION PLAN

PROJECT NO.: 0381-016-002

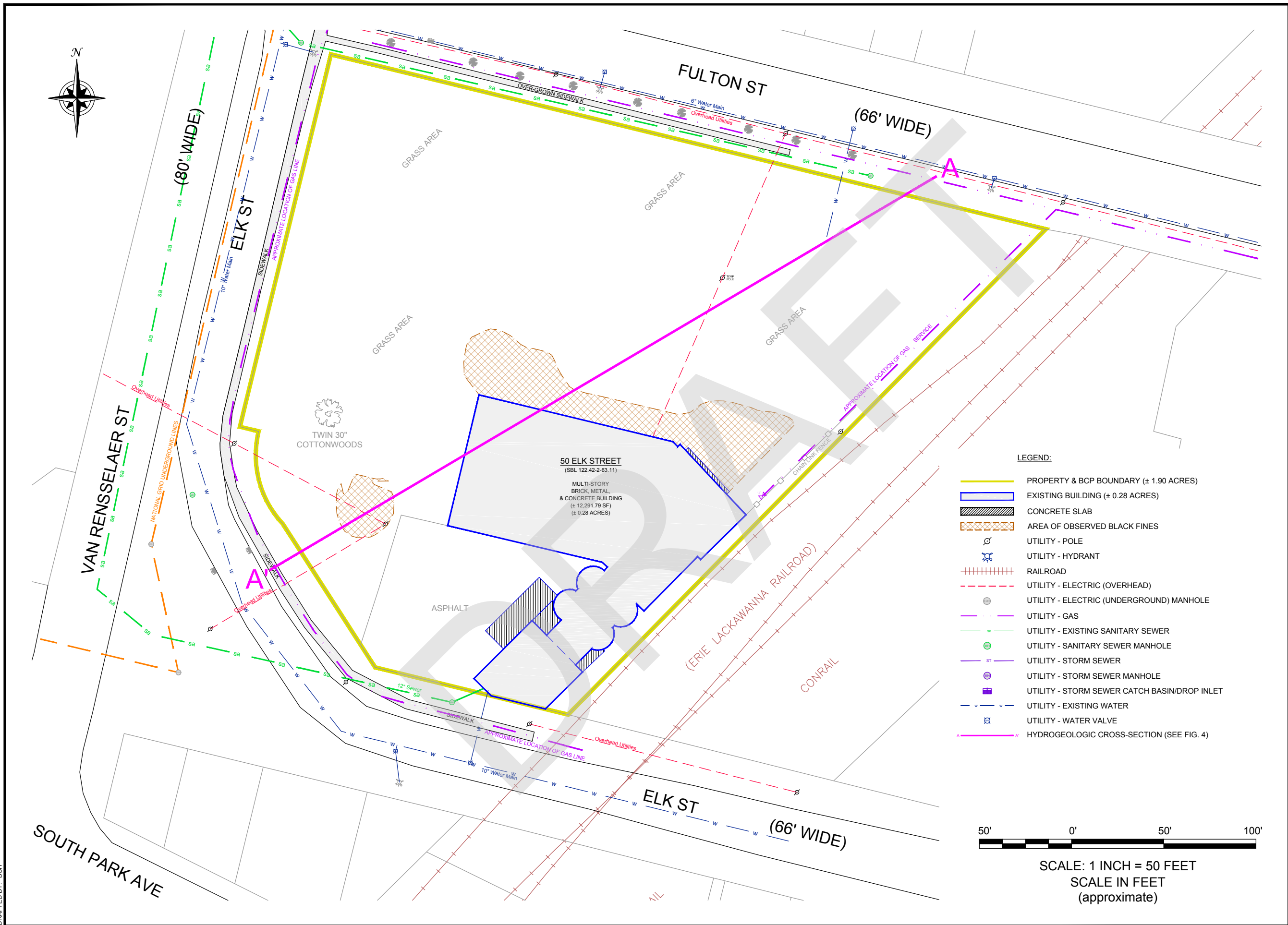
DATE: FEBRUARY 2017

DRAFTED BY: BCH

SILOS AT ELK STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
SILOS AT ELK STREET, LLC

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.

DATE: MAY 2017
DRAFTED BY: BCH



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

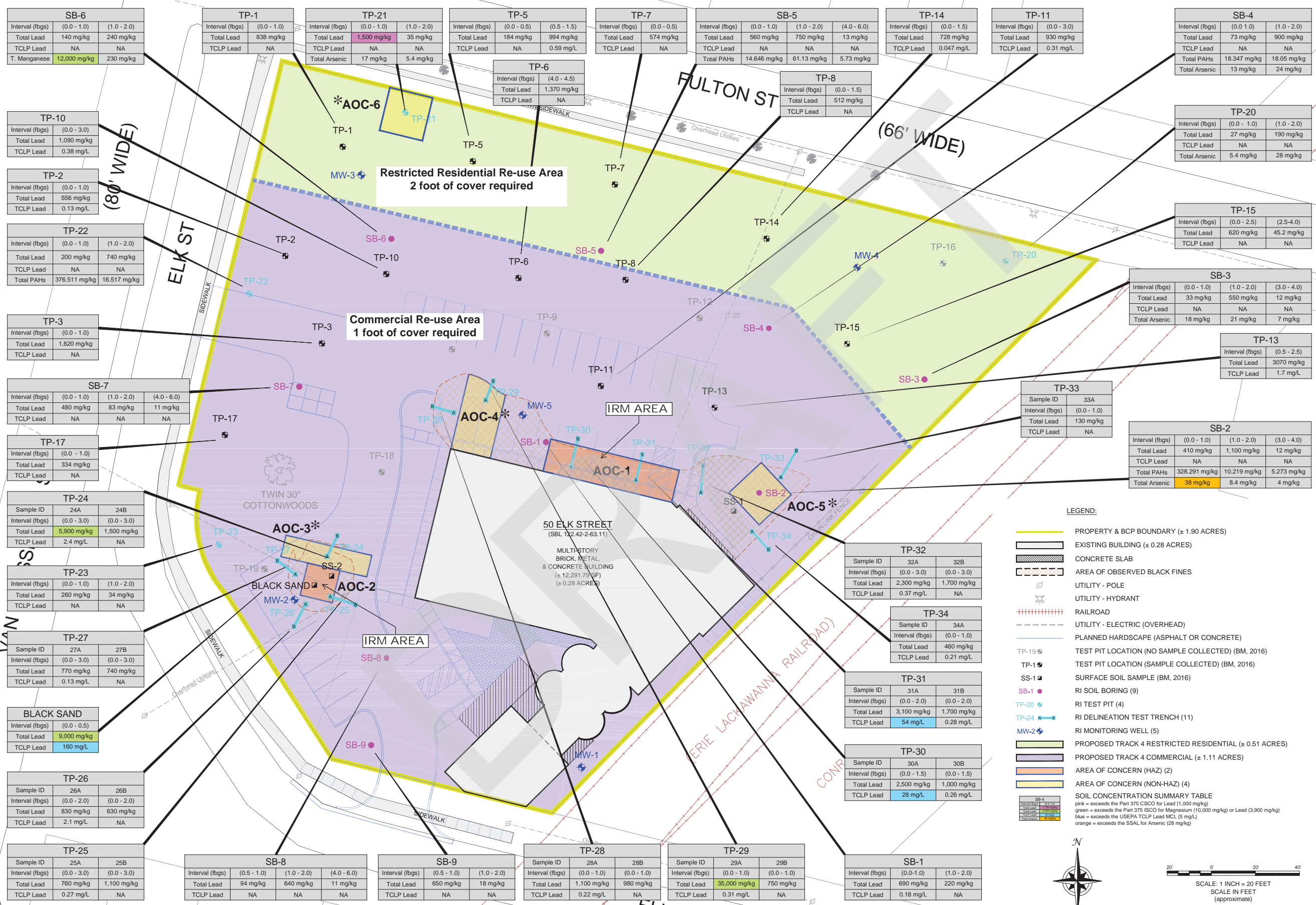
JOB NO.: 0381-017-004

SITE PLAN
R/IAA REPORT

SILOS AT ELK STREET SITE
BUFFALO, NEW YORK
PREPARED FOR
SILOS AT ELK STREET, LLC

FIGURE 2

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.



Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)
SB-6	Total Lead	140 mg/kg	240 mg/kg
	TCLP Lead	NA	NA
	T. Manganese	12,000 mg/kg	230 mg/kg

Sample ID	Interval (fbs)	(0.0 - 3.0)
TP-10	Total Lead	1,090 mg/kg
	TCLP Lead	0.38 mg/L

Sample ID	Interval (fbs)	(0.0 - 1.0)
TP-2	Total Lead	556 mg/kg
	TCLP Lead	0.13 mg/L

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)
TP-22	Total Lead	200 mg/kg	740 mg/kg
	TCLP Lead	NA	NA
	Total PAHs	376.511 mg/kg	16.517 mg/kg

Sample ID	Interval (fbs)	(0.0 - 1.0)
TP-3	Total Lead	1,620 mg/kg
	TCLP Lead	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)	(4.0 - 6.0)
SB-7	Total Lead	480 mg/kg	83 mg/kg	11 mg/kg
	TCLP Lead	NA	NA	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)
TP-17	Total Lead	334 mg/kg
	TCLP Lead	NA

Sample ID	Interval (fbs)	(0.0 - 3.0)	(0.0 - 3.0)
TP-24	Total Lead	5,900 mg/kg	1,500 mg/kg
	TCLP Lead	2.4 mg/L	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)
TP-23	Total Lead	260 mg/kg	34 mg/kg
	TCLP Lead	NA	NA

Sample ID	Interval (fbs)	(0.0 - 3.0)	(0.0 - 3.0)
TP-27	Total Lead	770 mg/kg	740 mg/kg
	TCLP Lead	0.13 mg/L	NA

Sample ID	Interval (fbs)	(0.0 - 0.5)
BLACK SAND	Total Lead	9,000 mg/kg
	TCLP Lead	160 mg/L

Sample ID	Interval (fbs)	(0.0 - 2.0)	(0.0 - 2.0)
TP-26	Total Lead	830 mg/kg	630 mg/kg
	TCLP Lead	2.1 mg/L	NA

Sample ID	Interval (fbs)	(0.0 - 3.0)	(0.0 - 3.0)
TP-25	Total Lead	760 mg/kg	1,100 mg/kg
	TCLP Lead	0.27 mg/L	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)
TP-1	Total Lead	838 mg/kg
	TCLP Lead	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)
TP-21	Total Lead	1,500 mg/kg	35 mg/kg
	TCLP Lead	NA	NA
	Total Arsenic	17 mg/kg	5.4 mg/kg

Sample ID	Interval (fbs)	(0.0 - 0.5)	(0.5 - 1.5)
TP-5	Total Lead	184 mg/kg	994 mg/kg
	TCLP Lead	NA	0.59 mg/L

Sample ID	Interval (fbs)	(0.0 - 0.5)
TP-7	Total Lead	574 mg/kg
	TCLP Lead	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)	(4.0 - 6.0)
SB-5	Total Lead	560 mg/kg	750 mg/kg	13 mg/kg
	TCLP Lead	NA	NA	NA
	Total PAHs	14.646 mg/kg	61.13 mg/kg	5.73 mg/kg

Sample ID	Interval (fbs)	(0.0 - 1.5)
TP-14	Total Lead	728 mg/kg
	TCLP Lead	0.047 mg/L

Sample ID	Interval (fbs)	(0.0 - 3.0)
TP-11	Total Lead	930 mg/kg
	TCLP Lead	0.31 mg/L

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)
SB-4	Total Lead	73 mg/kg	900 mg/kg
	TCLP Lead	NA	NA
	Total PAHs	18.347 mg/kg	18.05 mg/kg
	Total Arsenic	13 mg/kg	24 mg/kg

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)
TP-20	Total Lead	27 mg/kg	190 mg/kg
	TCLP Lead	NA	NA
	Total Arsenic	5.4 mg/kg	28 mg/kg

Sample ID	Interval (fbs)	(0.0 - 2.5)	(2.5 - 4.0)
TP-15	Total Lead	620 mg/kg	45.2 mg/kg
	TCLP Lead	NA	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)	(3.0 - 4.0)
SB-3	Total Lead	33 mg/kg	550 mg/kg	12 mg/kg
	TCLP Lead	NA	NA	NA
	Total Arsenic	18 mg/kg	21 mg/kg	7 mg/kg

Sample ID	Interval (fbs)	(0.5 - 2.5)
TP-13	Total Lead	3070 mg/kg
	TCLP Lead	1.7 mg/L

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)	(3.0 - 4.0)
SB-2	Total Lead	410 mg/kg	1,100 mg/kg	12 mg/kg
	TCLP Lead	NA	NA	NA
	Total PAHs	328.291 mg/kg	10.219 mg/kg	5.273 mg/kg
	Total Arsenic	38 mg/kg	8.4 mg/kg	4 mg/kg

Sample ID	Interval (fbs)	(0.0 - 1.0)
TP-33	Total Lead	130 mg/kg
	TCLP Lead	NA

Sample ID	Interval (fbs)	(0.0 - 3.0)	(0.0 - 3.0)
TP-32	Total Lead	2,300 mg/kg	1,700 mg/kg
	TCLP Lead	0.37 mg/L	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)
TP-34	Total Lead	460 mg/kg
	TCLP Lead	0.21 mg/L

Sample ID	Interval (fbs)	(0.0 - 2.0)	(0.0 - 2.0)
TP-31	Total Lead	3,100 mg/kg	1,700 mg/kg
	TCLP Lead	54 mg/L	0.28 mg/L

Sample ID	Interval (fbs)	(0.0 - 1.5)	(0.0 - 1.5)
TP-30	Total Lead	2,500 mg/kg	1,000 mg/kg
	TCLP Lead	28 mg/L	0.26 mg/L

Sample ID	Interval (fbs)	(0.0 - 1.0)	(0.0 - 1.0)
TP-28	Total Lead	1,100 mg/kg	980 mg/kg
	TCLP Lead	0.22 mg/L	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)	(0.0 - 1.0)
TP-29	Total Lead	35,000 mg/kg	750 mg/kg
	TCLP Lead	0.31 mg/L	NA

Sample ID	Interval (fbs)	(0.0 - 1.0)	(1.0 - 2.0)
SB-1	Total Lead	690 mg/kg	220 mg/kg
	TCLP Lead	0.18 mg/L	NA

Sample ID	Interval (fbs)	(0.5 - 1.0)	(1.0 - 2.0)	(4.0 - 6.0)
SB-8	Total Lead	94 mg/kg	640 mg/kg	11 mg/kg
	TCLP Lead	NA	NA	NA

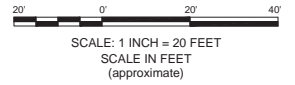
Sample ID	Interval (fbs)	(0.5 - 1.0)	(1.0 - 2.0)
SB-9	Total Lead	650 mg/kg	18 mg/kg
	TCLP Lead	NA	NA

LEGEND:

- PROPERTY & BCP BOUNDARY (± 1.90 ACRES)
- EXISTING BUILDING (± 0.28 ACRES)
- CONCRETE SLAB
- AREA OF OBSERVED BLACK FINES
- UTILITY - POLE
- UTILITY - HYDRANT
- RAILROAD
- UTILITY - ELECTRIC (OVERHEAD)
- PLANNED HARDSCAPE (ASPHALT OR CONCRETE)
- TEST PIT LOCATION (NO SAMPLE COLLECTED) (BM, 2016)
- TEST PIT LOCATION (SAMPLE COLLECTED) (BM, 2016)
- SURFACE SOIL SAMPLE (BM, 2016)
- RI SOIL BORING (9)
- RI TEST PIT (4)
- RI DELINEATION TEST TRENCH (11)
- RI MONITORING WELL (5)
- PROPOSED TRACK 4 RESTRICTED RESIDENTIAL (± 0.51 ACRES)
- PROPOSED TRACK 4 COMMERCIAL (± 1.11 ACRES)
- AREA OF CONCERN (HAZ) (2)
- AREA OF CONCERN (NON-HAZ) (4)

SOIL CONCENTRATION SUMMARY TABLE

pink = exceeds the Part 375 CSCQ for Lead (1,500 mg/kg)
 green = exceeds the Part 375 ISCO for Magnesium (10,000 mg/kg) or Lead (3,900 mg/kg)
 blue = exceeds the USEPA TCLP MCL (5 mg/L)
 orange = exceeds the SSAL for Arsenic (28 mg/kg)



NO.	BY	DATE	REMARKS

DRAWN BY:	DATE:	CHECKED BY:	APPROVED BY:

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Elements of the Remedy

SILOS AT ELK STREET SITE
 BUFFALO, NEW YORK

PREPARED FOR:
 SILOS AT ELK STREET, LLC

FIGURE 3

*AOC 1 & 2
 IRM Excavation, Stabilization
 Remove and Dispose

*AOC 3, 4, 5 & 6
 Removal and Disposal