# INTERIM REMEDIAL MEASURES REPORT

Former C&B Dry Cleaners – Soil Remediation
(NYSDEC Site Number 907028)

NYSDEC STANDBY ENGINEERING CONTRACT
Work Assignment #D007625-16

PREPARED FOR
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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List of Acronyms and Abbreviations

| | |
|---|---|
| ACM | Asbestos Containing Materials |
| bgs | Below Ground Surface |
| COC | Chain-of-Custody |
| COC | Contaminants of Concern |
| DCE | Dichloroethylene |
| ESA | Environmental Site Assessment |
| ft | Feet |
| IRM | Interim Remedial Measures |
| mg/kg | Milligrams per Kilograms |
| NYSDOH | New York State Department of Health |
| PCE | Tetrachloroethene |
| PDI | Pre-Design Investigation |
| PID | Photo Ionization Detector |
| ppb | Parts per Billion |
| ppm | Parts per Million |
| RAO | Remedial Action Objectives |
| RI | Remedial Investigation |
| SCG | Standards, Criteria, & Guidance |
| SCO | Soil Cleanup Objectives |
| TCE | Trichloroethene |
| TCL | Target Compound List |
| TCLP | Toxicity Characteristic Leaching Procedure |

| | |
|---|---|
| $ug/m^3$ | Micrograms per Cubic Meter |
| UST | Underground Storage Tanks |
| VOCs | Volatile Organic Compounds |
| XRF | X-Ray Fluorescence |

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# 1.0 INTRODUCTION

This Interim Remedial Measures (IRM) Report has been prepared by Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) for the Former C&B Dry Cleaners Site (NYSDEC Site # 907028) ("site") in Chautauqua County, New York. This report was prepared to document the actions taken to remediate arsenic-impacted soil located within the northwest area of the site. The remedial action (RA) was conducted in accordance with the Record of Decision (ROD) issued during April 2013, and in accordance with DER-10: Technical Guidance for Site Investigation and Remediation.

The April 2013 ROD outlined the selected remedial alternatives for remediation of impacted on-site soil and groundwater at the on-site and off-site areas. The results of a pre-design investigation (PDI) completed by HDR during early 2015, and documented in HDR's August 2015 PDI report (HDR, 2015), indicate that soil remediation could be limited to only the excavation and off-site disposal of on-site soils impacted by arsenic at concentrations above the Standards, Criteria, and Guidance (SCGs) value for Protection of Groundwater of 16 parts per million (ppm). Therefore, the RA recently completed at the site included the remediation of on-site soil as outlined within the April 2013 ROD.

An electronic copy of this IRM report with all supporting documentation is included as **Appendix A**.

# 2.0 SITE DESCRIPTION AND HISTORY

## 2.1 Site Location and Description

The site is located at 2241 Washington Street in the City of Jamestown, Chautauqua County, New York (**Figure 1**), and encompasses two tax parcels (SBL 109-3-11.2 and 109-3-12.1) (**Figure 2**). It is currently vacant and has not been occupied since at least 1999, when the commercial dry cleaning operations ceased. The site consists of approximately 0.22 acres of land and the remains of a former approximate 2,170 square feet (ft) building that was demolished in July 2003. Building remains include the concrete floors and foundation. Asphalt and gravel access roads and parking areas are located outside the limits of the former building. The site is generally flat.

The site is currently inactive, and is zoned C-M service and highway commercial. Commercial development occurs along the east and west sides of Washington Street in the vicinity of the site. The site is bounded to the east by Washington Street, beyond which is a used automobile dealership and soft drink bottler; to the north by a restaurant (Pal Joey's); to the west by an unpaved parking lot associated with Pal Joey's; and to the south by a commercial building (Swanson Building) that is currently vacant and condemned by the City of Jamestown.

## 2.2 Site Background and History

The site was utilized for commercial dry cleaning operations from approximately 1931 through 1999, when it was closed and abandoned. Chautauqua County acquired the site via tax foreclosure from James and Joann Perry in November 2001. Previous owner/operators of the dry cleaning facility also included Ronald and Janice Hodges; A.F. & A. Maruccia, R. Olson & J. O'Connell; and Carpenter and Bacot. With regard to the former structure located on the site, historical records indicated the following:

- The main portion of the former building was constructed in 1931
- The boiler room at the rear of the former building was constructed in 1936
- An addition on the south side of the building was constructed in 1939

The structure formerly located at the site was demolished in July 2003.

The site has been the subject of previous environmental assessments, investigations and remedial actions. The following paragraphs provide a summary of those investigations.

- **Preliminary Environmental Site Assessment/Emergency Removal Actions**: A Preliminary Environmental Site Assessment (ESA) of the site was completed in 2001. Based on this ESA, it was determined that the site was used almost exclusively for commercial dry cleaning operations until its abandonment in 1999. During the site reconnaissance, miscellaneous debris was observed outside the former building. A subsequent emergency removal action of the materials for off-site disposal was initiated.
- **Underground Storage Tank Investigation/Removal:** The site reconnaissance revealed the presence of several abandoned pipes along the north side of the building and raised suspicion of the existence of Underground Storage Tanks (USTs). The Chautauqua County Department of Public Facilities (CCDPF) completed excavations that revealed two USTs on the western side of the building. A removal action for the USTs was initiated on December 19, 2001. Both USTs and the associated piping were emptied, cleaned and removed.
- **Asbestos Survey**: Prior to demolition of the C&B Dry Cleaners building, a pre-demolition asbestos survey was completed to identify and quantify asbestos-containing materials (ACMs). The demolition of the on-site structures occurred in July 2003.
- **Remedial Investigation/Alternative Analysis:** On behalf of the CCDPF, TVGA Consultants (TVGA) conducted a remedial investigation (RI) at the site from 2005 to 2007 and submitted a Remedial Investigation/Alternatives Analysis report to the NYSDEC in December 2007. Analytical results of soil gas, subsurface soil/fill, surface water, groundwater, and air samples collected during the RI were evaluated to determine the magnitude and extent of potential contamination occurring in the media. The data evaluation conducted based on the RI findings and risk assessments identified contaminants of concerns (COC) which included Tetrachloroethene (PCE), Trichloroethene (TCE), dichloroethylene (DCE), and arsenic. As summarized below, COCs were determined to exceed the applicable SCGs for on-site soil and groundwater, as well as to exceed applicable New York State Department of Health (NYSDOH) indoor air guidance for soil vapor. The detailed field investigation, analytical results and findings of the RI for other media are described in the December 2007 Draft Remedial Investigation/Alternatives Analysis Report prepared by TVGA Consultants (TVGA, 2007).
    - On-site Soil - PCE was detected at concentrations that exceeded the commercial SCGs in two locations. The PCE concentrations detected in soil were 8,000 milligrams per kilograms (mg/kg) and 160 mg/kg exceeding the Protection of Groundwater Soil Cleanup Objectives (SCOs) of 1.3 ppm. Arsenic was also detected at concentrations that exceeded the SCOs in the four on-site soil samples analyzed for TAL metals. Arsenic was detected at concentrations of 109 mg/kg and 85.7 mg/kg respectively, above the Protection of Groundwater and Commercial Use SCO of 16 mg/kg.

- On-site Groundwater - Seven different Target Compound List (TCL) volatile organic compounds (VOCs) were detected in all but one of seven onsite groundwater samples at concentrations that exceeded NYSDEC Class GA Groundwater Standard or Guidance Value. PCE concentrations ranged from 7 to 1,000,000 parts per billion (ppb), with the most significantly elevated concentrations detected in the groundwater sample in the vicinity of the former USTs. The PCE concentrations in a majority of the remaining on-site locations were significantly above the SCG of 5.0 ppb, but none approached the levels near the former USTs. The other VOCs detected at concentrations above the SCGs include 1,1,2,2-tetrachloroethane; 1,1-dichloroethene (1,1-DCE); vinyl chloride; cis-1,2-dichloroethene; isopropylbenzene; and TCE.

- Soil Vapor and Indoor Air - Contaminants from the site have adversely impacted indoor air quality at an adjacent property north of the site which was addressed by an IRM. PCE was detected in the sub-slab soil vapor and in an ambient air sample collected from the basement and the results exceeded the NYSDOH indoor air guidance value for PCE. The concentration of PCE in the sub-slab sample was 190,000 micrograms per cubic meter ($ug/m^3$), and in the ambient air basement sample 2,200 $ug/m^3$.

## 2.3 Site Geology and Hydrogeology

The geology of the site consists of approximately 6 to 8 feet of sand and gravel soil/fill material from an off-site source. The specific source of this soil/fill is not known. A thin layer of peat underlain by soil/fill was observed in 2015 PDI soil boring locations within the western portion of the site close to the nearby wetland area. Native gravelly sand and silt underlie the soil/fill and/or peat. The native soil underlying the fill materials consists of similar grey and brown fine to coarse silty sand with gravel soils. However, its classification varies from mostly sand to well graded gravelly sands. Below this sand and gravel soil, a moist silty gray clay stratum exists at the bottom of the soil borings at approximately 10 to 16 feet below ground surface (ft bgs). This clay unit limits the potential for downward vertical migration of the contamination from the soil and groundwater. Shallow groundwater is present from 5 and 6 ft bgs. Groundwater flow is generally to the south west/south towards the Chadakoin River.

## 2.4 Nature and Extent of Contamination

As part of the PDI, twenty-one (21) soil borings were advanced to verify arsenic soil contamination results and determine the limits of excavation in the northwest area of the site. As shown in **Figure 3**, soil boring locations, CBSB101, CBSB104, CBSB105 and CBSB106, were advanced in the northwest area of the site to verify the limits of arsenic soil contamination.

Barium and arsenic were the only constituents detected in soil samples at concentrations exceeding the soil SCOs. Arsenic was detected in soil samples collected from the western portion of the site at concentrations above the soil SCOs of 16 mg/kg. Arsenic values ranged between 2.5 to 217 mg/kg with a maximum concentration detected at the CBSB101 location from the depth interval 4-6 feet bgs. CBSB101 is located at the northwest corner of the Former C&B Dry Cleaners property boundary. The 2015 PDI assisted in delineating the horizontal and vertical limits of the arsenic impacted soils at the site. However, the northwestern portion of the soil impacts has not been fully delineated. Specifically, the horizontal and vertical limits have not been delineated to the north of CBSB101 and CBSB106.

Further subsurface soil sampling was conducted by Groundwater & Environmental Services, Inc. (GES) to fully determine the extent of the vertical and horizontal contamination in this area. GES advanced twelve (12) soil borings to determine the limits of excavation in the northwest area of the site. Arsenic values ranged between 10.5 to 210 mg/kg with a maximum concentration detected at the SB-106 location from the depth interval 4 feet bgs. SB-106 is located on the northern boundary of the site. Based on the recent sampling conducted by GES, the estimated limit of the arsenic contamination in soil was revised and shown in **Figure 4**.

## 2.5 Remedial Action Objectives

Based on the findings of the RI, the remedial action objectives (RAOs) for the site were established through the remedy selection process stated in 6 NYCRR Part 375. The RAOs developed for the site include restoring the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy will 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 RAOs are organized by media of concern and specify contaminant type, exposure pathways and SCG which will be used as SCOs that eliminate or mitigate the significant threat to public health and environment.

The remedial action objectives (RAOs) for the on-site include the following:

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

## 2.6 Project Award

Since the total estimated cost of the RA was less than $500,000, a RA contract was awarded to NYSDEC's stand-by contractor, GES of Cheektowaga, New York. Formal bidding process was not implemented for the IRM. Under contract to the NYSDEC, GES implemented the remedial action at the Former C&B Dry Cleaners Site.

## 2.7 Project Organization

GES project personnel had the responsibility and authority for developing, modifying, and implementing the approved RAWP. GES provided sufficiently trained and qualified project personnel with previous experience on similar projects. All project personnel possessed the minimum level of experience and technical training for their given project role and responsibilities.

GES's field team for this project included a Project Manager, and Project Superintendent/Site Safety and Health Officer (SSHO), and excavation subcontractor to GES. All subcontractors, vendors, and suppliers were contracted directly to the GES and were responsible for following the procedures described in the approved work plans.

Each field team member was assigned to satisfy the requirements of the project specifications. The Project Manager for this project was Mr. Eric Popken, and Project Superintendent/Site Safety and Health Officer (SSHO) was Thomas Palmer.

**Site Safety and Health Officer:** Thomas Palmer was the SSHO who performed site-specific training and briefing sessions for employee(s) before the start of field activities at the site and a briefing session each day before starting work in accordance with the SSHP. The SSHO ensured the availability, proper use, and maintenance of specified personal protective equipment, decontamination, and other Safety and Health equipment needed to complete the activities associated with this Work Plan.

## 3.0 SUMMARY OF THE REMEDIAL ACTION

The remedial action consisted of the following major work elements:

- Waste characterization for off-site disposal of contaminated soils;
- Mobilization and site preparation;
- Excavation and off-site disposal of contaminated soils; and,
- Site restoration.

### 3.1 Pre-Construction Activities

- **Site Access**: NYSDEC was responsible for obtaining site access agreements needed to complete the work.

- **Pre-Construction Documentation**: Prior to the start of any site preparation activities, HDR/GES conducted a pre-construction photographic recording of the site. This recording was conducted to document the existing conditions of the site, all adjacent properties that may be affected by site activities, and the local roads adjacent to the site, and any other features of interest on and adjacent to the site.

- **Pre-Construction Mark-outs**: The limits of construction and excavation were marked based on the proposed excavation plan provided in the approved RAWP. Mark-outs were conducted based on the existing physical features of the site.

- **Utility Mark-outs**: Prior to the start of any land disturbance onsite, GES confirmed that utility mark-outs had been completed and that any underground utilities not identified by the Dig Safely New York service had been confirmed prior to starting excavation.

- **Security**: During working hours, GES was responsible for the overall security of the site. All GES personnel were responsible for ensuring that unauthorized personnel did not access the site. All visitors to the site were required to sign the daily site entry/exit log.

- **Pre-Construction Work Plans**: GES submitted the Health and Safety work plan for review and acceptance by HDR and NYSDEC. A Copy of the RA work plan is included in **Appendix B**.

## 3.2 Mobilization and Site Preparation

The mobilization consisted of mobilizing the equipment, personnel, and materials necessary to clear trees and brush, and install the erosion and sediment control measures. The equipment consisted of an excavator (Komatsu® PC210 LC) and a support truck.

- **Soil erosion and sediment controls (SESCs)**: SESCs were installed at the site where necessary to prevent the migration of sediment into non contaminated areas and environmentally sensitive areas.

- **Air Monitoring:** The purpose of the perimeter air monitoring was to provide a measure of protection for the offsite receptors including residences and businesses from potential airborne contaminant releases as a direct result of construction activities. Prior to the start of any land disturbance, the monitoring stations were spaced to the southwest and northeast of the construction area to provide downwind monitoring of the construction in the event of a change in wind direction. The air monitoring locations are shown on **Figure C-1** provided in **Appendix C**. Air monitoring equipment included real-time monitoring for particulates (i.e., dust) and VOCs. The particulate monitoring was performed continuously using real-time monitoring equipment TSI DustTrak 8520. The continuous readings were averaged over a period of 15 minutes for comparison to the site-specific airborne particulate action level. The real-time particulate monitor was equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration was visually assessed during all work activities. There were no recorded exceedances of action levels during the construction activities.

- **Clearing and Grubbing**: Clearing and grubbing was not required for the excavation activities.

- **Decontamination:** Personnel decontamination was performed upon exiting the exclusion zone in accordance with the approved Health and Safety Plan. Exclusion zone was set up surrounding the excavation area, and existing asphalt surface was used as the contamination reduction zone. All construction work was performed in modified level D equipment. Personal protective equipment (PPE) removed during personnel decontamination were combined with the contaminated material and disposed off-site.

  GES proposed an alternate load out procedure which included a use of the existing asphalt parking lot as a load out platform to avoid truck tire contact with contaminated soil. Therefore a decontamination pad was not constructed for a load out platform. The asphalt surface where the trucks were being loaded was covered with a layer of plastic to prevent tracking of the site soils onto Washington Street. Soil that fell on the plastic during the load out process was removed from the plastic and swept back into the excavation. All trucks were visually inspected thoroughly to ensure that all soils and other visible contamination were removed before leaving the site. Solids from within the plastic along with any debris were returned for the next bucket load of excavated material.

- **Dust Control:** Work zone air monitoring was conducted during all intrusive activities. Based on the monitoring, no significant dust or odor control measures needed to be implemented during the remedial activities. Regular rainfall events that occurred during the remedial

activities resulted in relatively wet soil conditions throughout the excavation. Photo Ionization Detector (PID) readings were recorded to determine levels of VOCs related to the observed odors. PID readings above background levels correlated well with the strongest odors within the excavation limits; however, each response noted was transient in nature lasting only a few seconds. There were no odor issues observed outside of the excavation limits during the construction.

- **Noise Control:** GES made an effort to reduce the level of noise produced at the site, though the site was not located in a residential area. There were no complaints related to noise issues during the construction.

- **Traffic Control**: All traffic (i.e. site personnel, subcontractors, truck traffic, and visitors) entering and exiting the site utilized Washington Street from October 19 to 27, 2015. Vehicular traffic was sporadic throughout the day except for early mornings and later in the afternoon. Minimal disturbance of normal traffic patterns resulted from truck traffic entering and exiting the site. Disturbance to the traffic pattern was typically very transient in nature. Overall, no lane closures or formal supplemental equipment (arrow boards, safety zone trucks, cones, additional signage, etc.) were required during the remedial action.

- **Reporting**: Accurate and comprehensive records of the RA construction activities were maintained throughout the project. A summary of all the reporting documents is provided below:
    - Daily Observation Report: A Daily Observation Report for all site activities was prepared for each day by GES and HDR. Pertinent information regarding personnel present on the Site, weather conditions, health and safety, major equipment used at the Site, imported material used at the Site, problems encountered and corrective actions taken, and site activities were recorded on a daily basis. Daily observation reports are provided in **Appendix D**. It should be noted that an HDR representative could not be present during the final day of site restoration (October 27, 2015), and a daily report was not prepared by HDR for this day.
    - Project Progress Photographs: Progress of the site activities was photographically documented on a daily basis and four to five photographs representing the major site activities were submitted to the NYSDEC along with the Daily Observation Report. Additional photographs are provided in **Appendix E**.

- **Health and Safety:** Over 50 man-hours were worked over the course of approximately 7 days without any lost time due to injury. As required by the HASP, GES provided oversight for on-site health and safety (H&S) and tailgate meetings were conducted when relevant issues were encountered. HDR conducted work according to the NYSDEC Standby Engineering Contract Generic Health and Safety plan. Special H&S considerations such as slip, trip, and fall hazards/prevention, excavation/trenching safety, and safety while working in the vicinity of heavy equipment (excavators, bulldozers, and dump trucks) were discussed as they pertained to the daily activities. General site workers were required to be trained and medically monitored for Hazardous Waste Operations and Emergency Response in accordance with 20 CFR 1919.120, including for excavation. Individuals involved with shipping of hazardous materials were required to receive the appropriate Department of

Transportation (DOT) training. All work was conducted in modified Level D PPE. Work zone and perimeter air monitoring were performed throughout the period of construction. No recordable accidents occurred during the construction activities.

## 3.3 Waste Characterization Sampling and Analyses

Soil waste characterization sampling was performed prior to excavation to characterize soil in-situ for the disposal purposes. As shown in **Figure 2**, waste characterization samples were collected from in-situ soils representing one sample per approximately 560 tons of material. Three soil samples were collected from twelve (12) soil borings (SB-101 to SB-112) conducted on August 31, 2015 by GES and composited from approximately 1 to 4 ft bgs. Samples for VOC analysis were transferred directly into the sample container, and for the remaining analyses, sub-volumes from each depth interval were homogenized in a bowl and then transferred into the sample containers. Three waste characterization samples were collected and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) analyses for select VOCs, SVOCs, metals, ignitability, percent moisture, and pH. A summary of all the samples collected to characterize the waste, and associated analytical results are provided in **Table 1** and laboratory data report is provided in **Appendix F**.

## 3.4 Excavation

As shown on the contract drawings, soil located within the limit of excavation was excavated and transported off-site for disposal. Progress had been made in delineating the horizontal and vertical limits of the arsenic impacted soils at the site; however, the northern portion of the northwestern corner of the soil impacts was not fully delineated. Specifically, the horizontal and vertical limits were delineated to the north of SB-106. During the excavation, an X-ray fluorescence (XRF) unit was utilized to measure the arsenic concentrations in soil to determine the horizontal and vertical limits of the excavation.

The field screening for arsenic in soil was conducted using an X-MET 7500 XRF unit with a 1 ppm detection limit for arsenic. HDR operated the XRF unit and directed GES on the limits of the excavation. Soil excavation was initiated based on the proposed excavation limits shown on **Figure 2**. During excavation, the XRF unit was utilized to measure arsenic concentrations so that the limits of excavation could be expanded, if necessary, to establish a “clean” horizontal limit at the edge of the excavation prior to collecting confirmatory samples. XRF measurements collected during the excavation are provided on **Figure 5** as well as in **Table 2**. At the northwest corner of the parking lot, arsenic concentrations were measured to be 38 ppm, 46 ppm and 22 ppm at locations CBSC-1, CBSC-2 and CBSC-3, respectively. Based on these elevated measurements, the horizontal limit of the excavation was extended further west and north until arsenic concentrations were measured to be 0 ppm at locations WA-1, WA-2 and CBSC-4. Confirmatory sample WA-1 was subsequently collected for laboratory analysis. Similarly, at the southern corner of the parking lot, arsenic concentrations were measured to be 15 ppm, 126 ppm, 56 ppm and 38 ppm at locations CBSC-18, CBSC-21, CBSC-22 and CBSC-24, respectively. Based on these elevated measurements, the horizontal limit of the excavation was extended further south until arsenic concentrations were measured to be 0 ppm at locations CBSC-19, CBSC-23, CBSC-25 and CBSC-26. Confirmatory samples WA-6 and WA-10 were subsequently collected for laboratory analysis. This process was repeated before collecting confirmatory samples WA-2, WA-4, WA-7, WA-8 and WA-9. The rest of

the excavation boundary was generally in accordance with the proposed excavation limits established prior to this work.

GES conducted excavation of contaminated soils starting from the northwest side of the property and working progressively toward the southeast end of the property where Washington Street is located. Excavation was conducted using a Komatsu® PC210 LC excavator. As discussed with the NYSDEC Project Manager, soil was excavated down to the groundwater table as confirmed by HDR. No signs of staining, odors or elevated PID levels, were observed during excavation. Groundwater was encountered at a depth of between 4 and 5.5 feet below ground surface.

GES utilized D&L Trucking, etc. and KW Excavating etc. to transport contaminated soils to the Chautauqua County Landfill located in Jamestown, New York. All drivers were properly licensed; trucks were Part 364 permitted, registered, properly marked, manifested and placarded. No soil was permitted to track off site.

Based on the final excavation depth survey, a total of approximately 880 cubic yards of soil was excavated as part of the remedial action. The excavation as-built drawing located in **Figures 3** depicts the pre-excavation elevations and final excavation depths and limits. The excavation was completed by October 22, 2015, and restoration activities were completed on October 27, 2015.

## 3.5 Post-Excavation Sampling

Once GES achieved the depth and limit of excavation based on the XRF screening, HDR inspected the bottom and sidewalls for evidence of contamination. HDR collected the sidewall confirmation samples once there was no evidence of contamination (XRF reading at non-detect level). The field screening arsenic results measured by the XRF unit is provided in **Table 2**. Confirmation samples were collected using disposable spoons and bowls. As per NYSDEC approval, bottom samples were not collected as the soil was excavated down to groundwater table. Sidewall samples were collected every 30 linear feet along the perimeter of the excavation from approximately 0 to 3 inches below the surface layer, which will was approximately four to six inches below the ground surface. Soil samples were shipped to a NYSDOH Environmental Laboratory Approval Program (ELAP) certified stand by laboratory (Test America) under chain of custody (COC) protocol, via overnight delivery for arsenic analysis only. The excavation was backfilled with certified clean bank run material immediately following the completion of excavation activities and the collection of post-excavation samples to permit use of the parking area by the adjacent restaurant (Pal Joey's) and minimize potential impacts to the establishment.

All of the post-excavation sidewall confirmatory soil sample locations are shown on **Figure 3**. The arsenic results of the confirmatory samples are summarized on **Figures 4** as well as in **Table 3**. The laboratory data report of the confirmatory samples is located in **Appendix F**.

As shown on **Figure 4**, the results of post-excavation sampling indicated that 7 of 11 samples contained arsenic at concentrations slightly greater than the SCG of 16 mg/kg for commercial use. Concentrations in post-excavation samples ranged from 8.7 mg/kg to 27.1 mg/kg.

## 3.6 Backfill

The excavation was backfilled with clean imported material (bank run) meeting the requirements of 6NYCRR Part 375 Table 375-6.8(b) for a commercial use. Backfill was not sampled by GES since the source of the material was an approved source of clean fill. GES arranged transportation of the approved soil and backfilled the excavated area. Backfill was conducted by tamping soil using the excavator bucket and repeated tracking over the area using the excavator placed using a maximum of 12 inch lifts and compacting between lifts. A total of 2,029 tons of backfill material and 133 tons of pea-stone were used to backfill the excavation. Pea-stone were utilized to backfill the southwest corner of the excavation area to prevent water ponding.

## 3.7 Waste Management and Transportation

As presented in Section 3.3, waste characterization sampling was conducted to classify the soils removed during excavation remedial activities. Classification of the soils was required prior to shipping to the approved disposal facility. Waste minimization, storage, handling, and load out procedures were conducted during the remedial action. A waste disposal application from GES to a disposal facility and the acceptance letter from the disposal facility owner are attached in **Appendix G**.

A total of 1678 tons of non-hazardous soil was excavated and transported off site for disposal to Chautauqua County Landfill located in Jamestown, New York. Manifests and disposal documentation, including a daily truck log of exported material, are included in electronic format as **Appendix H**.

GES kept a daily and running Truck Log in Microsoft XLS showing the following fields:

- Date
- Manifest /BOL #
- Landfill Truck No
- Transporter
- Driver Name
- Time Out
- LF Weight

GES provided the Truck Log to NYSDEC at the end of the excavation activities. Trucks drivers used their own truck-internal scaling system to ensure they are within their legal weight limits prior to leaving the site. However, for payment purposes, the certified scales at the disposal facility were used and submitted.

## 3.8 Site Restoration

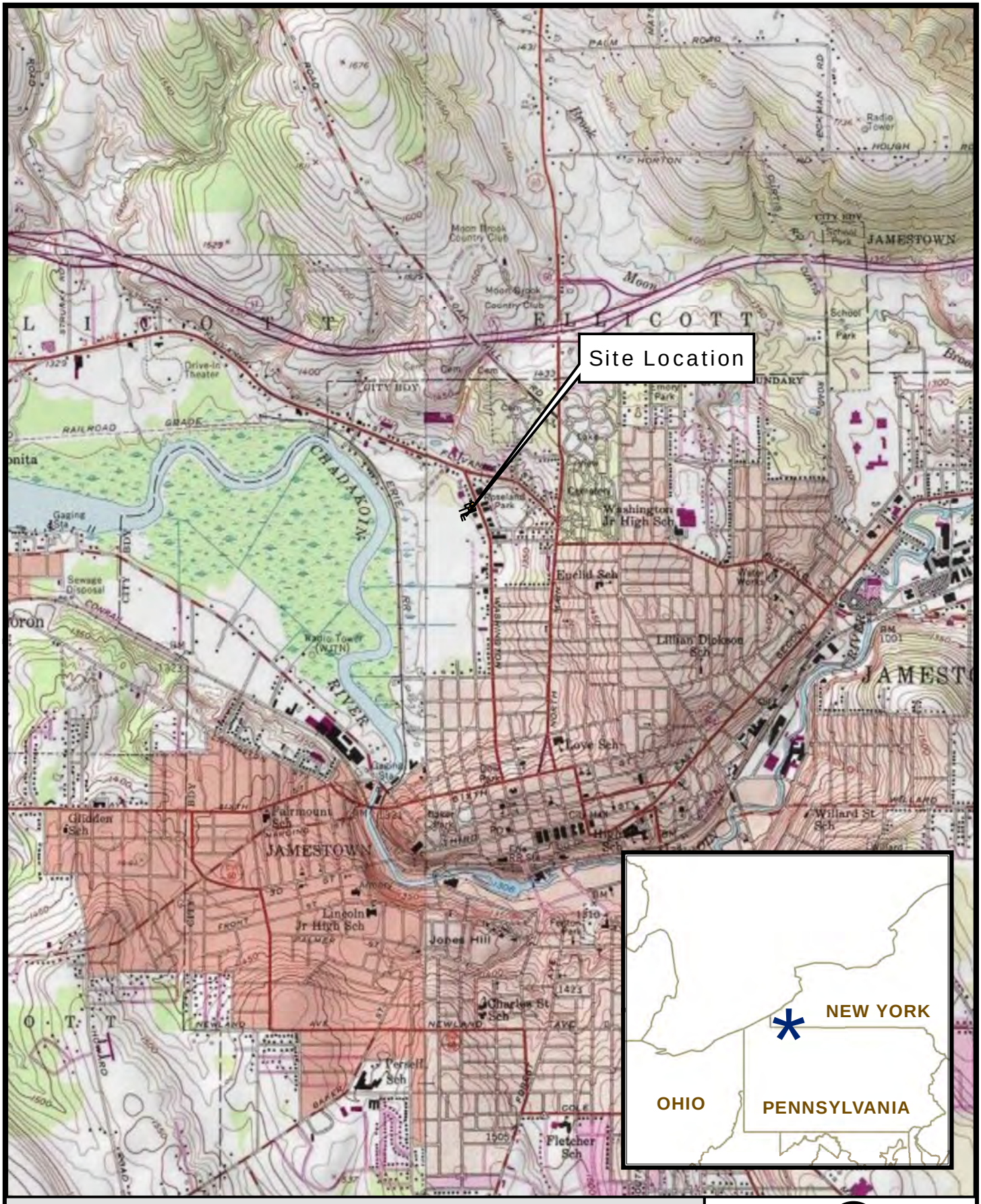
Upon completion of the excavation activities, the Site was backfilled with clean, approved, fill material. The final grading of the site matched, as closely as possible, the existing drainage patterns preventing storm water from ponding on Site. Final survey of the Site was conducted on October 23, 2015. Final restoration was documented by an as-built drawing. The drawing included the location of the gravel and vegetative caps, the location of all soils removed indicating the surveyed limits of

the excavation and location of all confirmation samples. Information was certified by a NYS licensed Engineer.

## 4.0 REFERENCES

New York State Department of Environmental Conservation. Record of Decision for Former C&B Dry Cleaners, Environmental Restoration Project, Jamestown, Chautauqua County, Site No. E907028 – April 2013.

TVGA Consultants. Draft remedial investigation/alternatives analysis report – December 2007.



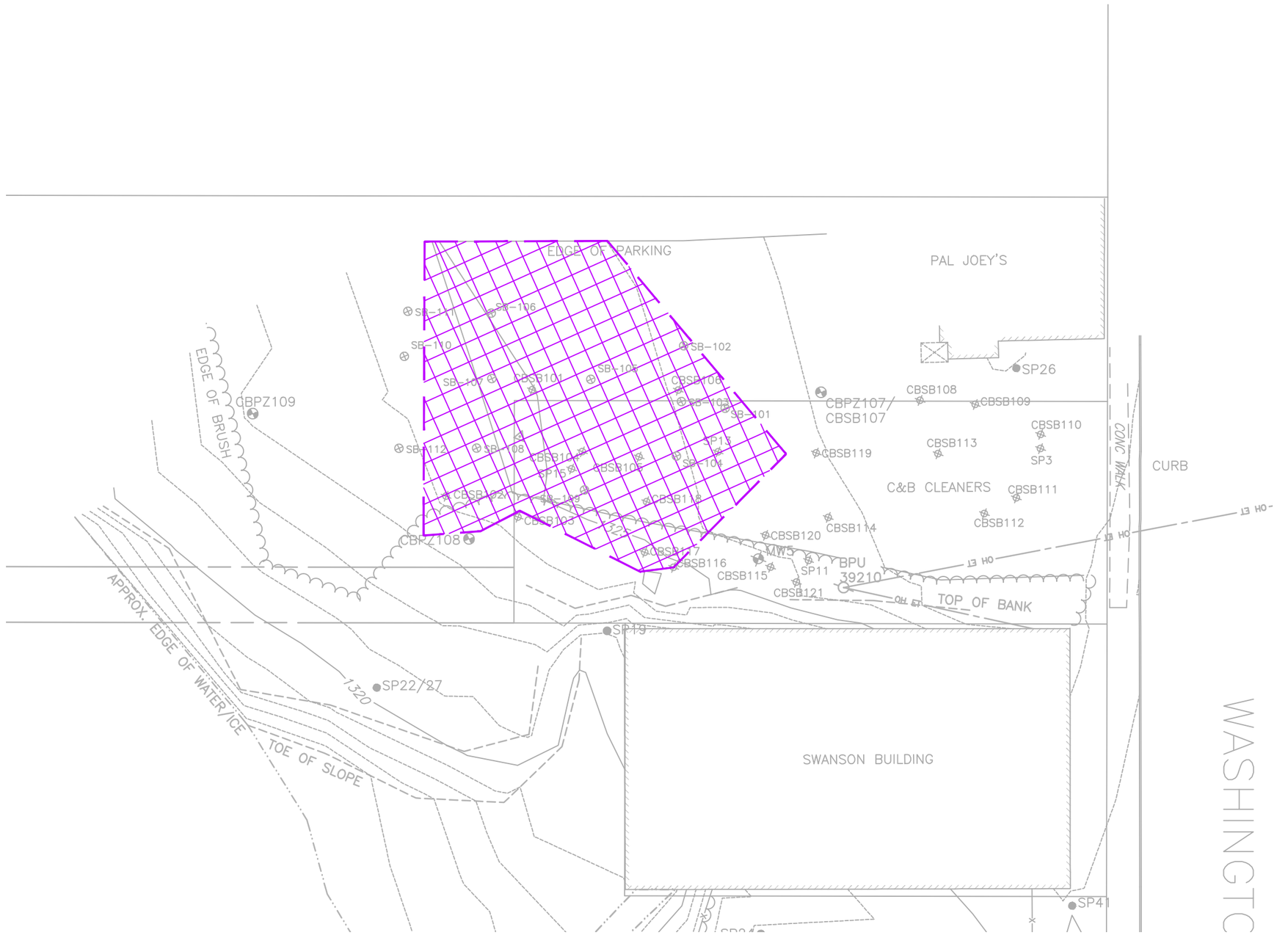

4,000 2,000 0 4,000 Feet

Source: United States Geological Survey Topographic Map. For more information on this map, visit http://goto.arcgisonline.com/maps/NGS_Topo_US_2D

NOT TO SCALE

**Site Location Map**
**Former C&B Dry Cleaners Site**
**City of Jamestown, New York**

| Job No. | Date | Figure No. |
|---|---|---|
| 230036 | 07/2016 | 1 |





LEGEND:

- EXISTING CONTOUR LINE
- CHAIN LINK FENCE
- OVERHEAD WIRE
- FIRE HYDRANT
- UTILITY POLE
- LIGHT POLE
- PRE-DESIGN INVESTIGATION SOIL BORING
- EXISTING SAMPLING POINT
- PRE-DESIGN PIEZOMETER WELL
- EXISTING MONITORING WELL
- PRE-REMEDIAL ACTION SOIL BORING LOCATION (BY GES)
- PROPOSED EXCAVATION AREA

NOTES:

1. SURVEY INFORMATION IS BASED ON A FIELD SURVEY COMPLETED BY FISHER ASSOCIATES, P.E., L.S., L.A., D.P.C. IN JANUARY AND OCTOBER 2015 AND HAD 6"–8" SNOW COVER DURING FIELDWORK WHICH MAY HAVE OBSCURED TOPOGRAPHIC AND/OR PHYSICAL FEATURES.
2. CBSB114 LOCATION WAS DETERMINED BY FIELD MEASUREMENT.

30 0 30 60

SCALE: 1" = 30'

PROJECT TITLE
FORMER C & B DRY CLEANER
CHAUTAUQUA COUNTY, NEW YORK

SHEET TITLE
# PRE-DESIGN INVESTIGATION SAMPLE LOCATIONS

PROJECT NUMBER

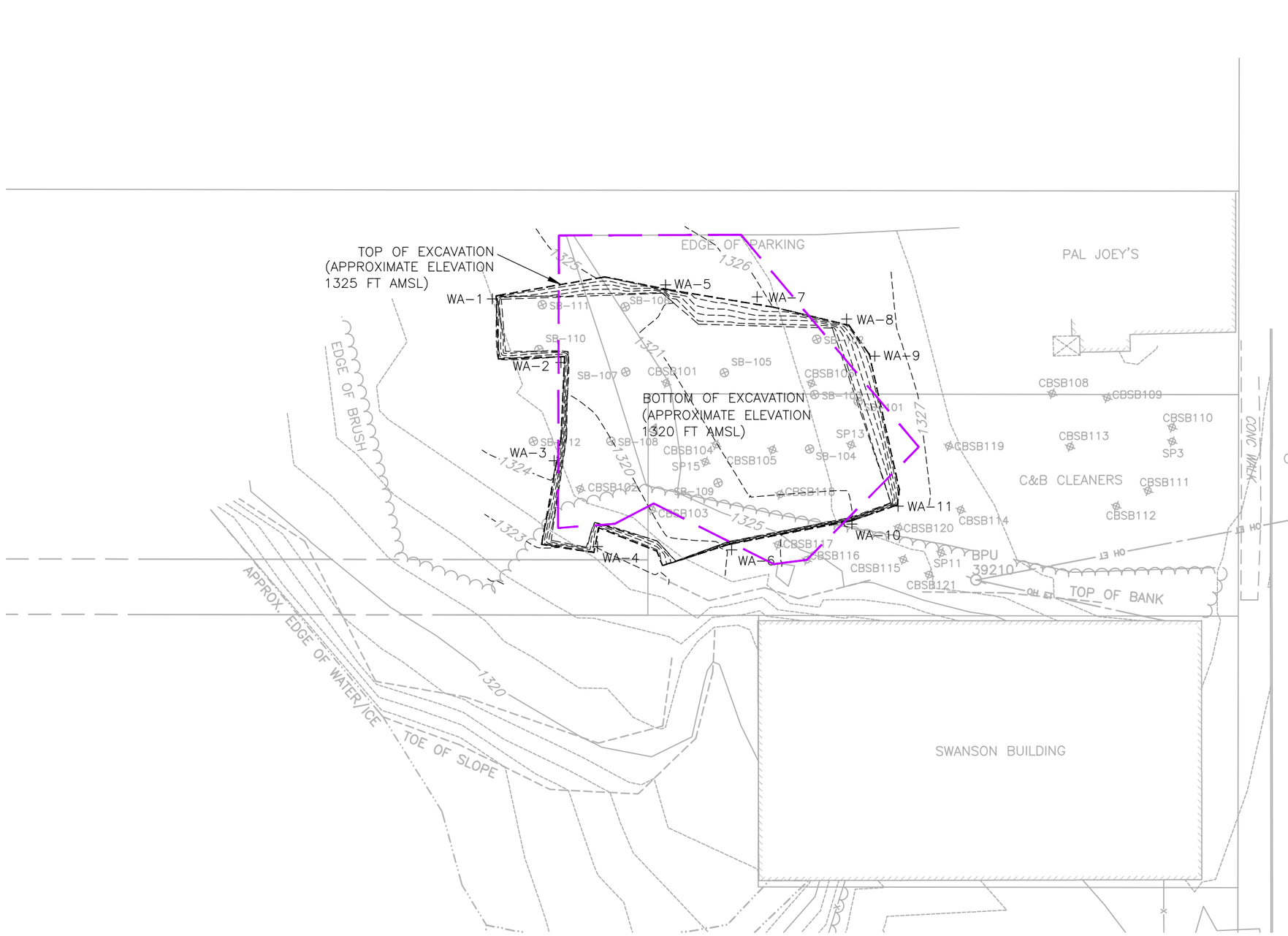
PROJECT MANAGER
E. ZIMMERMAN

DATE
07/2016

REFERENCE SHEET

SCALE
1"= 30'

FIGURE
2




LEGEND:

- AS-BUILT LIMITS OF EXCAVATION
- EXCAVATION PIT CONTOUR LINE
- EXISTING CONTOUR LINE
- CHAIN LINK FENCE
- OVERHEAD WIRE
- FIRE HYDRANT
- UTILITY POLE
- LIGHT POLE
- PRE-DESIGN INVESTIGATION SOIL BORING
- +WA-1 CONFIRMATORY SAMPLE LOCATION (SIDEWALL SAMPLE)
- PRE-REMEDIAL ACTION SOIL BORING LOCATION (BY GES)
- PROPOSED EXCAVATION AREA
- AMSL ABOVE MEAN SEA LEVEL (FT)

NOTES:

1. SURVEY INFORMATION IS BASED ON A FIELD SURVEY COMPLETED BY FISHER ASSOCIATES, P.E., L.S., L.A., D.P.C. IN JANUARY AND OCTOBER 2015 AND HAD 6"-8" SNOW COVER DURING FIELDWORK WHICH MAY HAVE OBSCURED TOPOGRAPHIC AND/OR PHYSICAL FEATURES.
2. CBSB114 LOCATION WAS DETERMINED BY FIELD MEASUREMENT.
3. AS-BUILT LIMIT OF EXCAVATION WAS SURVEYED BY FISHER ASSOCIATES, P.E., L.S., L.A., D.P.C., ON OCTOBER 23, 2015.

30 0 30 60

SCALE: 1" = 30'

PROJECT TITLE: FORMER C & B DRY CLEANER
CHAUTAUQUA COUNTY, NEW YORK

SHEET TITLE: AS-BUILT LIMIT OF EXCAVATION

PROJECT NUMBER

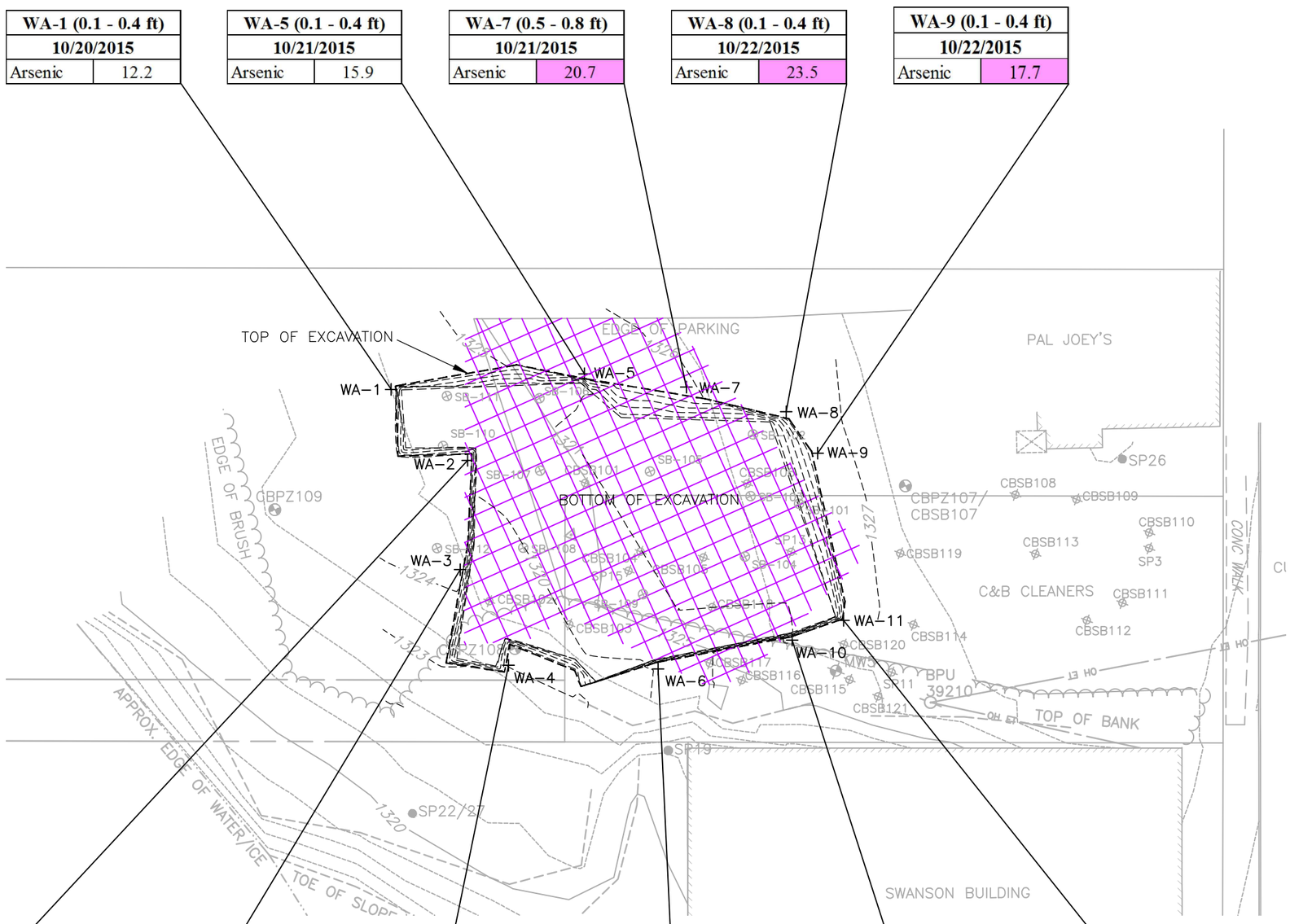
PROJECT MANAGER: E. ZIMMERMAN

DATE: 07/2016

REFERENCE SHEET

SCALE: 1"= 30'

FIGURE: 3




LEGEND:

- AS-BUILT LIMITS OF EXCAVATION
- EXCAVATION PIT CONTOUR LINE
- EXISTING CONTOUR LINE
- CHAIN LINK FENCE
- OVERHEAD WIRE
- FIRE HYDRANT
- UTILITY POLE
- LIGHT POLE
- PRE-DESIGN INVESTIGATION SOIL BORING
- EXISTING SAMPLING POINT
- PRE-DESIGN PIEZOMETER WELL
- EXISTING MONITORING WELL
- WA-1 CONFIRMATORY SAMPLE LOCATION (SIDEWALL SAMPLE)
- PRE-REMEDIAL ACTION SOIL BORING LOCATION (BY GES)

SAMPLE IDENTIFICATION
SAMPLE DEPTH OR INTERVAL

| WA-2 (0.1 - 0.4 ft) | |
|---|---|
| 10/20/2015 | |
| Arsenic | 24.0 |

SAMPLE DATE
ANALYTICAL RESULT MG/KG (PINK HIGHLIGHT INDICATES CONCENTRATION GREATER THAN RESTRICTED COMMERCIAL SCO)
ANALYTICAL PARAMETER

| Restricted Use Commercial Soil Cleanup Objectives | |
|---|---|
| Contaminant | (mg/kg) |
| Arsenic | 16 |

NOTES:

1. SURVEY INFORMATION IS BASED ON A FIELD SURVEY COMPLETED BY FISHER ASSOCIATES, P.E., L.S., L.A., D.P.C., IN JANUARY AND OCTOBER 2015 AND HAD 6"-8" SNOW COVER DURING FIELDWORK WHICH MAY HAVE OBSCURED TOPOGRAPHIC AND/OR PHYSICAL FEATURES.
2. CBSB114 LOCATION WAS DETERMINED BY FIELD MEASUREMENT.
3. AS-BUILT LIMIT OF EXCAVATION WAS SURVEYED BY FISHER ASSOCIATES, P.E., L.S., L.A., D.P.C., ON OCTOBER 23, 2015.

30 0 30 60

SCALE: 1" = 30'

PROJECT TITLE
FORMER C & B DRY CLEANER
CHAUTAUQUA COUNTY, NEW YORK

SHEET TITLE
# SUMMARY OF SOIL CONFIRMATORY SAMPLE RESULTS - ARSENIC

PROJECT NUMBER

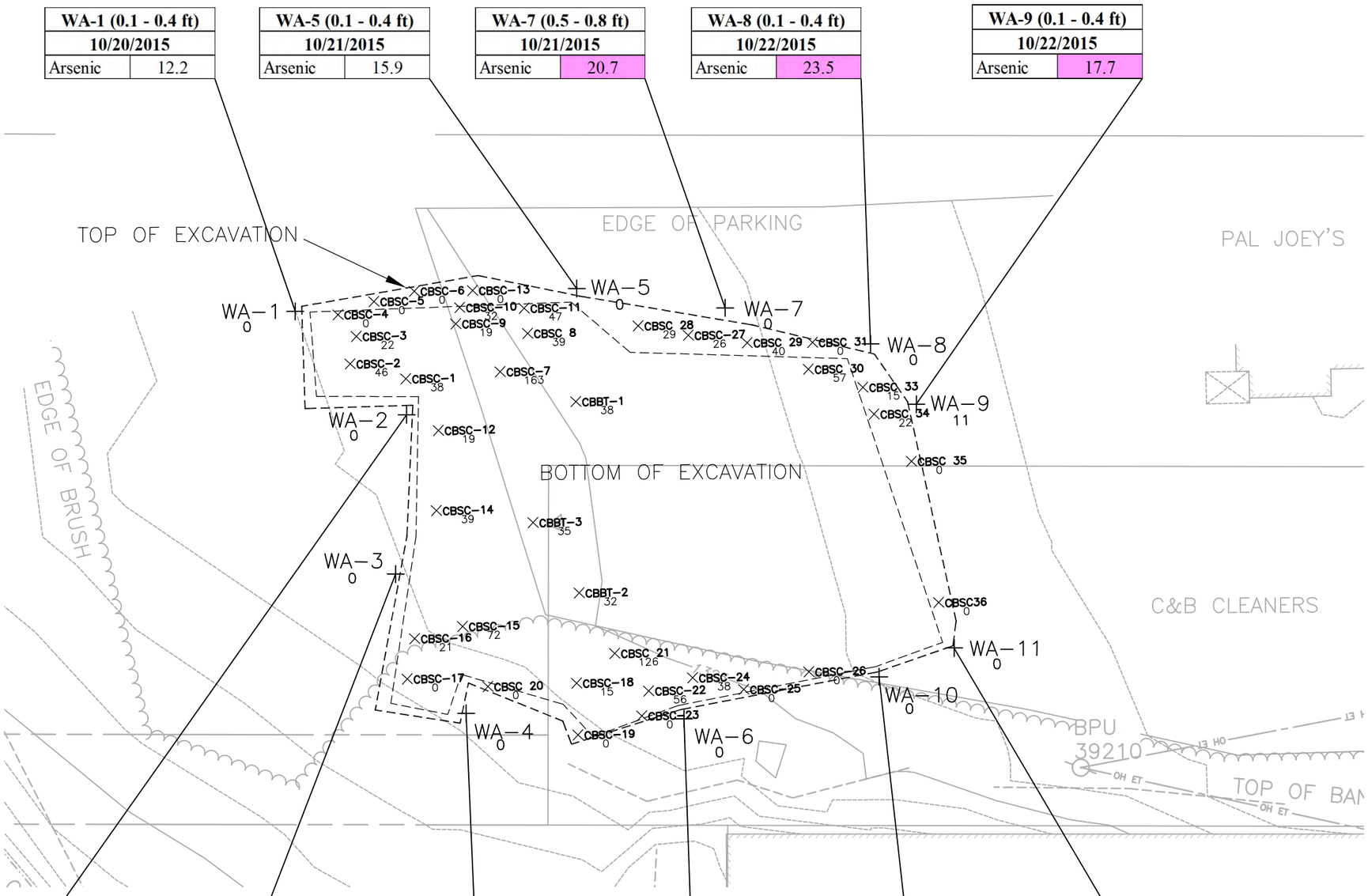
PROJECT MANAGER
E. ZIMMERMAN

DATE
07/2016

REFERENCE SHEET

SCALE
1"= 30'

FIGURE
4




LEGEND:

- AS–BUILT LIMITS OF EXCAVATION
- EXISTING CONTOUR LINE
- CHAIN LINK FENCE
- OVERHEAD WIRE
- FIRE HYDRANT
- UTILITY POLE
- LIGHT POLE
- WA–1 / 0 — CONFIRMATORY SAMPLE LOCATION (SIDEWALL SAMPLE); ARSENIC XRF RESULT (MG/KG)
- CBSC–1 / 38 — FIELD SCREENING SOIL SAMPLE; ARSENIC XRF RESULT (MG/KG)

SAMPLE IDENTIFICATION
SAMPLE DEPTH OR INTERVAL

| WA-2 (0.1 - 0.4 ft) | |
|---|---|
| 10/20/2015 | ← SAMPLE DATE |
| Arsenic | 24.0 ← ANALYTICAL RESULT MG/KG (PINK HIGHLIGHT INDICATES CONCENTRATION GREATER THAN RESTRICTED COMMERCIAL SCO) |

ANALYTICAL PARAMETER

| Restricted Use Commercial Soil Cleanup Objectives | |
|---|---|
| Contaminant | (mg/kg) |
| Arsenic | 16 |

NOTES:

1. SURVEY INFORMATION IS BASED ON A FIELD SURVEY COMPLETED BY FISHER ASSOCIATES, P.E., L.S., L.A., D.P.C., IN JANUARY AND OCTOBER 2015 AND HAD 6"–8" SNOW COVER DURING FIELDWORK WHICH MAY HAVE OBSCURED TOPOGRAPHIC AND/OR PHYSICAL FEATURES.
2. CBSB114 LOCATION WAS DETERMINED BY FIELD MEASUREMENT.
3. AS–BUILT LIMIT OF EXCAVATION WAS SURVEYED BY FISHER ASSOCIATES, P.E., L.S., L.A., D.P.C., ON OCTOBER 23, 2015.

20 0 20 40

SCALE: 1" = 20'

HDR

PROJECT TITLE
FORMER C & B DRY CLEANER
CHAUTAUQUA COUNTY, NEW YORK

SHEET TITLE
# FIELD SCREENING ARSENIC RESULTS (MEASURED BY XRF)

PROJECT NUMBER

PROJECT MANAGER
E. ZIMMERMAN

DATE
07/2016

REFERENCE SHEET

SCALE
1"= 20'

FIGURE
5

Table 1
Soil Waste Characterization Sample Results
Former C Dry Cleaners - Interim Remedial Measures Report
(NYSDEC Site Number 907028)

| Sample ID | Maximum Concentration for Toxicity Characteristic (ppm) | DISPOSAL_083115_1 | | DISPOSAL_083115_2 | | DISPOSAL_083115_3 | |
|---|---|---|---|---|---|---|---|
| **Sampling Date** | | **8/31/2015** | | **8/31/2015** | | **8/31/2015** | |
| Chemical Name | | Results (ppm) | Qual | Results (ppm) | Qual | Results (ppm) | Qual |
| **Maximum Concentration of Contaminants for Toxicity Characteristic (the D List)** | | | | | | | |
| 1,1-Dichloroethene | 0.7 | 0.01 | U | 0.01 | U | 0.01 | U |
| 1,2-Dichloroethane | 0.5 | 0.01 | U | 0.01 | U | 0.01 | U |
| 2-Butanone | 200 | 0.05 | U | 0.05 | U | 0.05 | U |
| Benzene | 0.5 | 0.01 | U | 0.01 | U | 0.01 | U |
| Carbon Tetrachloride | 0.5 | 0.01 | U | 0.01 | U | 0.01 | U |
| Chlorobenzene | 100 | 0.01 | U | 0.01 | U | 0.01 | U |
| Chloroform | 6 | 0.01 | U | 0.01 | U | 0.01 | U |
| Tetrachloroethylene(PCE) | 0.7 | 0.01 | U | 0.01 | U | 0.0048 | J |
| Trichloroethene (TCE) | 0.5 | 0.01 | U | 0.01 | U | 0.01 | U |
| Vinyl Chloride | 0.2 | 0.01 | U | 0.01 | U | 0.01 | U |
| 1,4-Dichlorobenzene | 7.5 | 0.01 | U | 0.01 | U | 0.01 | U |
| 2,4,5-Trichlorophenol | 400 | 0.005 | U | 0.005 | U | 0.005 | U |
| 2,4,6-Trichlorophenol | 2 | 0.005 | U | 0.005 | U | 0.005 | U |
| 2,4-Dinitrotoluene | 0.13 | 0.005 | U | 0.005 | U | 0.005 | U |
| 2-Methylphenol (O-Cresol) | 200 | 0.005 | U | 0.005 | U | 0.005 | U |
| 3-Methylphenol | 200 | 0.01 | U | 0.01 | U | 0.01 | U |
| Hexachlorobenzene | 0.13 | 0.005 | U | 0.005 | U | 0.005 | U |
| Hexachlorobutadiene | 0.5 | 0.005 | U | 0.005 | U | 0.005 | U |
| Hexachloroethane | 3 | 0.005 | U | 0.005 | U | 0.005 | U |
| Nitrobenzene | 2 | 0.005 | U | 0.005 | U | 0.005 | U |
| Pentachlorophenol | 100 | 0.01 | U | 0.01 | U | 0.01 | U |
| Pyridine | 5 | 0.025 | U | 0.0025 | J | 0.025 | U |
| Chlordane | 0.03 | 0.002 | U | 0.002 | U | 0.002 | U |
| Endrin | 0.02 | 0.0002 | U | 0.0002 | U | 0.0002 | U |
| Heptachlor | 0.008 | 0.0002 | U | 0.0002 | U | 0.0002 | U |
| Methoxychlor | 10 | 0.0002 | U | 0.0002 | U | 0.0002 | U |
| Toxaphene | 0.5 | 0.002 | U | 0.002 | U | 0.002 | U |
| Arsenic | 5 | 0.015 | U | 0.0059 | J | 0.015 | U |
| Barium | 100 | 0.11 | J | 0.17 | J | 0.2 | J |
| Cadmium | 1 | 0.0019 | J | 0.0016 | J | 0.0014 | J |
| Chromium, Total | 5 | 0.02 | U | 0.02 | U | 0.02 | U |
| Lead | 5 | 0.02 | U | 0.02 | U | 0.018 | J |
| Selenium | 1 | 0.025 | U | 0.025 | U | 0.025 | U |
| Silver | 5 | 0.006 | U | 0.006 | U | 0.006 | U |
| Mercury | 0.2 | 0.0002 | U | 0.0002 | U | 0.0002 | U |
| **Other Analytical Parameters** | | | | | | | |
| Ph | | 5.67 | | 6.68 | | 6.51 | |
| Flash Point | | 0 | U | 0 | U | 0 | U |
| Fuel Oil #2 | | 20 | U | 19 | U | 18 | U |
| Gasoline Components | | 8.1 | U | 7.6 | U | 7.4 | U |
| Kerosene | | 20 | U | 19 | U | 18 | U |
| Motor Oils | | 61 | | 75 | | 47 | |
| Phc As Heavy/Residual Fuel Oils Fuel Oils #4,#5,#6 | | 20 | U | 19 | U | 18 | U |
| Unknown Hydrocarbons With Highest Conc. | | 42 | | 52 | | 34 | |
| Aroclor 1016 | | 0.27 | U | 0.28 | U | 0.21 | U |
| Aroclor 1221 | | 0.27 | U | 0.28 | U | 0.21 | U |
| Aroclor 1232 | | 0.27 | U | 0.28 | U | 0.21 | U |
| Aroclor 1242 | | 0.27 | U | 0.28 | U | 0.21 | U |
| Aroclor 1248 | | 0.27 | U | 0.28 | U | 0.21 | U |
| Aroclor 1254 | | 0.27 | U | 0.28 | U | 0.21 | U |
| Aroclor 1260 | | 0.27 | U | 0.28 | U | 0.21 | U |
| Gamma BHC (Lindane) | | 0.0002 | U | 0.0002 | U | 0.0002 | U |
| Heptachlor Epoxide | | 0.0002 | U | 0.0002 | U | 0.0002 | U |
| 2,4-D (Dichlorophenoxyacetic Acid) | | 0.002 | U | 0.002 | U | 0.002 | U |
| Silvex (2,4,5-Tp) | | 0.002 | U | 0.002 | U | 0.002 | U |
| 4-Methylphenol (P-Cresol) | | 0.01 | U | 0.01 | U | 0.01 | U |

**Notes:**

U - Analytical Non-Detect Value

J - Analyte detected below quantitation

● Values that are **bold and highlighted** exceed Maximum

for example: **110**

Table 2
Field Screening Arsenic Results (Measured by XRF)
Former C & B Dry Cleaners - Interim Remedial Measures Report
(NYSDEC Site Number 907028)

| Point ID | Date | Time | Duration (seconds) | Arsenic Concentration (mg/kg) |
|---|---|---|---|---|
| cbbt 1 | 10/20/2015 | 11:30:40 | 20.5 | 38 |
| cbbt 2 | 10/20/2015 | 13:30:29 | 20.5 | 32 |
| cbbt 3 | 10/20/2015 | 15:13:11 | 20.5 | 35 |
| cbsc 1 | 10/20/2015 | 9:43:40 | 20.5 | 38 |
| cbsc 10 | 10/20/2015 | 10:13:49 | 20.5 | 32 |
| cbsc 11 | 10/20/2015 | 11:06:11 | 20.534 | 47 |
| cbsc 12 | 10/20/2015 | 11:14:28 | 20.5 | 26 |
| cbsc 13 | 10/20/2015 | 11:23:31 | 20.5 | 0 |
| cbsc 14 | 10/20/2015 | 12:02:15 | 20.5 | 39 |
| cbsc 15 | 10/20/2015 | 12:59:07 | 20.5 | 72 |
| cbsc 16 | 10/20/2015 | 13:09:54 | 20.5 | 21 |
| cbsc 17 | 10/20/2015 | 13:19:07 | 20.5 | 0 |
| cbsc 18 | 10/20/2015 | 13:23:31 | 20.5 | 15 |
| cbsc 19 | 10/21/2015 | 7:45:34 | 20.5 | 0 |
| cbsc 2 | 10/20/2015 | 9:44:59 | 20.5 | 46 |
| cbsc 20 | 10/21/2015 | 8:24:49 | 20.5 | 0 |
| cbsc 21 | 10/21/2015 | 8:33:00 | 20.5 | 126 |
| cbsc 22 | 10/21/2015 | 8:43:34 | 20.5 | 56 |
| cbsc 23 | 10/21/2015 | 9:05:04 | 20.5 | 0 |
| cbsc 24 | 10/21/2015 | 13:27:02 | 20.5 | 38 |
| cbsc 25 | 10/21/2015 | 13:29:42 | 20.5 | 0 |
| cbsc 26 | 10/21/2015 | 13:37:28 | 20.5 | 0 |
| cbsc 27 | 10/22/2015 | 9:19:47 | 20.5 | 26 |
| cbsc 28 | 10/22/2015 | 9:20:26 | 20.536 | 29 |
| cbsc 29 | 10/22/2015 | 9:26:45 | 20.5 | 40 |
| cbsc 3 | 10/20/2015 | 9:51:22 | 20.5 | 22 |
| cbsc 30 | 10/22/2015 | 9:27:28 | 20.5 | 57 |
| cbsc 31 | 10/22/2015 | 9:34:46 | 20.537 | 0 |
| cbsc 33 | 10/22/2015 | 11:41:40 | 20.5 | 15 |
| cbsc 34 | 10/22/2015 | 11:42:20 | 20.5 | 22 |
| cbsc 35 | 10/22/2015 | 11:51:55 | 20.532 | 0 |
| cbsc 36 | 10/22/2015 | 13:46:14 | 20.5 | 0 |
| cbsc 4 | 10/20/2015 | 9:55:18 | 20.532 | 0 |
| cbsc 5 | 10/20/2015 | 10:01:19 | 20.5 | 0 |
| cbsc 6 | 10/20/2015 | 10:02:00 | 20.532 | 0 |
| cbsc 7 | 10/20/2015 | 10:04:56 | 20.5 | 163 |
| cbsc 8 | 10/20/2015 | 10:08:41 | 20.5 | 39 |
| cbsc 9 | 10/20/2015 | 10:13:04 | 20.5 | 19 |
| cbwa 1 | 10/20/2015 | 14:41:52 | 20.5 | 0 |
| cbwa 10 | 10/22/2015 | 13:47:14 | 20.531 | 0 |
| cbwa 11 | 10/22/2015 | 15:17:08 | 20.5 | 0 |
| cbwa 2 | 10/20/2015 | 15:08:43 | 20.5 | 0 |
| cbwa 3 | 10/20/2015 | 14:51:09 | 20.5 | 0 |
| cbwa 4 | 10/20/2015 | 15:29:45 | 20.5 | 0 |
| cbwa 5 | 10/21/2015 | 7:58:15 | 20.5 | 0 |
| cbwa 6 | 10/21/2015 | 10:11:57 | 20.537 | 0 |
| cbwa 7 | 10/21/2015 | 13:33:58 | 20.5 | 0 |
| cbwa 8 | 10/22/2015 | 9:37:30 | 20.531 | 0 |
| cbwa 9 | 10/22/2015 | 12:18:59 | 20.5 | 11 |

**Notes:**
XRF - X-ray fluorescence
Point IDs starting with cbwa represent confirmatory

Table 3
Soil Sample Analytical Results - Arsenic
Former C & B Dry Cleaners - Interim Remedial Measures Report
(NYSDEC Site Number 907028)

| Location ID | Sample ID | Sample Date | Arsenic (ppm) | Qual |
|---|---|---|---|---|
| **Pre-Design Investigation: Soil Sample Analytical Results** | | | | |
| CBSB101 | CBSB101-4.0-6.0-20150106 | 1/6/2015 | **217** | **J** |
| CBSB102 | CBSB102-4.0-6.0-20150105 | 1/5/2015 | **21.8** | **J** |
| CBSB103 | CBSB103-4.0-6.0-20150105 | 1/5/2015 | 9.1 | J |
| CBSB104 | CBSB104-4.0-6.0-20150106 | 1/6/2015 | **16.9** | **J** |
| CBSB105 | CBSB105-4.0-6.0-20150106 | 1/6/2015 | 12.7 | J |
| CBSB106 | CBSB106-2.0-4.0-20150106 | 1/6/2015 | **27.9** | **J** |
| CBSB107 | CBSB107-4.0-6.0-20150108 | 1/8/2015 | 9.2 | J |
| CBSB108 | CBSB108-4.0-6.0-20150108 | 1/8/2015 | 8.9 | J |
| CBSB109 | CBSB109-2.0-4.0-20150106 | 1/6/2015 | 9 | J |
| CBSB110 | CBSB110-2.0-4.0-20150106 | 1/6/2015 | 9.4 | J |
| CBSB111 | CBSB111-4.0-6.0-20150106 | 1/6/2015 | 7.2 | J |
| CBSB112 | CBSB112-2.0-4.0-20150106 | 1/6/2015 | 4.8 | J |
| CBSB113 | CBSB113-6.0-8.0-20150110 | 1/10/2015 | 11.9 | J |
| CBSB114 | CBSB114-4.0-6.0-20150110 | 1/10/2015 | 10.8 | J |
| CBSB115 | CBSB115-4.0-6.0-20150110 | 1/10/2015 | 9.8 | |
| CBSB116 | CBSB116-6.0-8.0-20150106 | 1/6/2015 | 11.8 | J |
| CBSB117 | CBSB117-2.0-4.0-20150106 | 1/6/2015 | **16.5** | **J** |
| CBSB118 | CBSB118-6.0-8.0-20150106 | 1/6/2015 | **20.5** | **J** |
| CBSB119 | CBSB119-6.0-8.0-1-20150110 (DUP) | 1/10/2015 | 2.5 | UJ |
| CBSB119 | CBSB119-6.0-8.0-20150110 | 1/10/2015 | 7.6 | J |
| CBSB120 | CBSB120-6.0-8.0-20150110 | 1/10/2015 | 9.7 | J |
| CBSB121 | CBSB121-4.0-6.0-1-20150110 (DUP) | 1/10/2015 | 8.5 | J |
| CBSB121 | CBSB121-4.0-6.0-20150110 | 1/10/2015 | 8.4 | J |
| **Pre-Remedial Action Soil Investigation: Soil Sample Analytical Results (conducted by GES)** | | | | |
| SB-106 | SB-106-4.0-20150903 | 9/3/2015 | **210** | |
| SB-110 | SB-110-4.0-20150903 | 9/3/2015 | 9.9 | |
| SB-111 | SB-111-4.0-20150903 | 9/3/2015 | 10.5 | |
| SB-112 | SB-112-4.0-20150903 | 9/3/2015 | 12.8 | |
| **Post-Excavation Confimatory Sampling: Soil Sample Analytical Results** | | | | |
| CBWA-1 | CBWA-1-0.1-0.4-20151020 | 10/20/2015 | 12.2 | |
| CBWA-10 | CBWA-10-0.1-0.3-20151022 | 10/22/2015 | **16.2** | |
| CBWA-11 | CBWA-11-0.1-0.3-1-20151022 (DUP) | 10/22/2015 | 8.7 | |
| CBWA-11 | CBWA-11-0.1-0.3-20151022 | 10/22/2015 | 6.2 | |
| CBWA-2 | CBWA-2-0.1-0.4-20151020 | 10/20/2015 | **24** | |
| CBWA-3 | CBWA-3-0.1-0.4-20151020 | 10/20/2015 | 11.8 | |
| CBWA-4 | CBWA-4-0.1-0.4-20151020 | 10/20/2015 | **27.1** | |
| CBWA-5 | CBWA-5-0.1-0.4-20151021 | 10/21/2015 | 15.9 | |
| CBWA-6 | CBWA-6-0.1-0.4-20151021 | 10/21/2015 | **16.1** | |
| CBWA-7 | CBWA-7-0.5-0.8-20151021 | 10/21/2015 | **20.7** | |
| CBWA-8 | CBWA-8-0.1-0.4-20151022 | 10/22/2015 | **23.5** | |
| CBWA-9 | CBWA-9-0.1-0.4-20151022 | 10/22/2015 | **17.7** | |

**Notes:**

U - Analytical Non-Detect Value

J - Analyte detected below quantitation

● Values that are **bold and highlighted** exceed Maximum Concentration of Contaminants for Toxicity Characteristic, for example: **110**