RECORD OF DECISION

McKinney Property
Environmental Restoration Project
Syracuse, Onondaga County
Site No. E734086
December 2015

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

DECLARATION STATEMENT - RECORD OF DECISION

McKinney Property
Environmental Restoration Project
Syracuse, Onondaga County
Site No. E734086
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Statement of Purpose and Basis

This document presents the remedy for the McKinney Property site, an environmental restoration 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 McKinney Property site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the above referenced site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) oralternatives analysis (AA). The IRM(s) undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action is the selected remedy. The remedy may include continued operation of a remedial system if one was installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the remedy for the site.

The IRM(s) conducted at the site attained the remediation objectives identified for this site in Section 6.5 for the protection of public health and the environment.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

December 4, 2015
Date

Robert W. Schick, P.E., Director
Division of Environmental Remediation

RECORD OF DECISION

McKinney Property
Syracuse, Onondaga County
Site No. E734086
December 2015

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 resulted in threats to public health and the environment that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2. Contaminants include hazardous wastes and/or petroleum.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRM(s) conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy selected by this Record of Decision (ROD). A No Further Action remedy may include continued operation of any remedial system installed during the IRM and the implementation of any prescribed controls that have been identified as being part of the remedy for the site. This ROD identifies the IRM(s) conducted and discusses the basis for No Further Action.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

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:

NYSDEC Region 7
Attn: Joshua Cook
615 Erie Blvd West
Syracuse, NY 13204
Phone: 315-426-7411

Onondaga County Public Library, Central Library
Attn: Local History & Genealogy Department
The Galleries of Syracuse
447 South Salina Street
Syracuse, NY 13202
Phone: 315-435-1900

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the alternatives analyses (AA) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the propsed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

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 McKinney Property site is an approximately 0.60-acre site located at 1226 McBride Street, on the northwest corner of South McBride Street and Burt Street, in an urban area of the City of Syracuse.

Site Features: The site is developed as a gravel parking lot with a vegetated strip extending along the northern, eastern and southern site perimeter. There are no buildings on the site. It is generally flat, with a gentle slope from northwest to southeast. There is a concrete retaining wall along the north boundary of the site, which supports an elevated rail line.

Current Zoning and Land Use: The majority of the site is a parking lot. It is zoned for commercial use. The surrounding parcels are currently vacant or are used for commercial, industrial or residential purposes. Much of the surrounding area is owned by the Syracuse Housing Authority (SHA), including a large residential apartment building and several townhouses. The site is bordered to the north by an elevated railroad line. A portion of the Syracuse University steam plant facility lies beyond the rail line to the north. The site is bordered to the south by Burt Street. On the south side of Burt Street there are several vacant lots and a parking lot. An electrical substation is located further south, beyond the parking lot. To the east, the site is bordered by South McBride Street, with the elevated rail line and the rest of the Syracuse University steam plant lying beyond. To the west, the site is bordered by a commercial property owned by SHA, with vacant lots and Oakwood Avenue beyond. Beyond Oakwood Avenue are vacant lots and two small commercial properties; a liquor store and a convenience store.

Past Use of the Site: The site was previously occupied by a metal working company and a scrap metal storage/processing business. The metal working/processing operations have led to contamination of the site by metals and oils. Equipment associated with these operations also contributed to contamination, including underground storage tanks, capacitors containing dielectric fluids, an oil/water separator and hydraulic machinery.

Site Geology and Hydrogeology: Unconsolidated deposits in the area have been mapped as lacustrine silt and clay. Soil encountered during the investigation consisted of several feet of fill material, underlain by the lacustrine unit, which consisted of silt and clay with lesser amounts of fine sand. The fill was generally approximately 2 feet thick, but ranged up to 9 feet thick.

The fill unit consisted of fill or reworked native deposits, mixed with gravel, concrete, metal, wood and other anthropogenic materials. The lacustrine unit showed interlaminations of silt, clay and sand, showing the annual cycle of deposition (varves). It is expected the lacustrine unit is underlain by till; however, no till or bedrock were encountered in any boring advanced at the site. Borings were installed to a maximum depth of 22 feet below grade.

Depth to groundwater varied seasonally and ranged from 2.4 feet below grade to 9.6 feet below grade. The predominant direction of groundwater flow at the Site was determined to be south/southwest toward Onondaga Creek.

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 (or an alternative) that restrict(s) the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

No PRPs have been documented to date.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. Syracuse Housing Authority will assist the state in its efforts by providing all information to the state which identifies PRPs. Syracuse Housing Authority will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- air
- groundwater
- soil
- soil vapor

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. The tables found in Exhibit A list the applicable SCG in the footnotes. 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 in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

arsenic	polychlorinated biphenyls (PCB)
barium	benzo(a)pyrene
cadmium	trichloroethene (TCE)
copper	petroleum products
lead	naphthalene
mercury	1,2-dichlorobenzene

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

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 Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM Building Demolition

Two former on-site buildings were demolished in October 2009. One building was a wood and steel garage (garage), and the other was a one-story masonry block and steel building (main building). The main building had been damaged by fire in May 2004. The buildings were deemed unsafe and were condemned in April 2009.

During demolition, a sump containing water and mercury was encountered in the main building. The sump and a small amount of soil from beneath the sump were removed, placed in two 55-gallon drums, and disposed of off-site. The soil excavation was conducted to remove visible liquid mercury contamination. A documentation sample was collected from the endpoint of the excavation and analyzed for the site's primary contaminants of concern, which included volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and metals. No VOCs or PCBs were detected in the sample. SVOCs were detected at levels less than unrestricted soil cleanup objectives (SCOs). Mercury was the only metal detected at a concentration greater than its unrestricted SCO, which is 0.18 parts per million (ppm). It was detected at a concentration of 190 ppm.

The IRM removed the physical hazard posed by the buildings and prevented further contamination of the site by removing the mercury contained in the sump, which was a source of contamination.

IRM Soil Excavation and Cover Construction

An IRM was conducted in 2014 to remove areas of contamination which posed a threat to groundwater quality. Three areas were excavated: an area where trichloroethene (TCE) had been detected in soil and groundwater (Area 1); an area in the northwest portion of the site where non-aqueous phase petroleum was identified in a monitoring well (Area 2); and the area in and around a structure referred to as the crusher pit, which had been identified as containing petroleum (Area 3). A cover system was also constructed across the site to prevent direct contact with contaminated soil. The nature and extent of soil contamination remaining below the cover system is discussed in section 6.3.

A total of approximately 347 cubic yards of soil were excavated and disposed of off-site. The approximate volume of soil removed from each area is as follows: 164.6 cubic yards from Area 1, 82.3 cubic yards Area 2, and 100 cubic yards from Area 3.

Documentation sampling for Area 1 showed TCE remains at the limits of the Area 1 excavation in certain areas at concentrations greater than its SCO for the protection of groundwater (which is 0.47 parts per million [ppm]) but much lower than its SCO for the protection of public health for commercial use (which is 200 ppm). Degradation products of TCE were also detected in certain documentation samples from Area 1; however, the concentrations were less than unrestricted use SCOs. Samples collected from the bottom of the excavation and northern side wall of the excavation contained 6.84 ppm and 2.5 ppm of TCE, respectively. The northern side is the upgradient side of the excavation. TCE was detected in the west sidewall at a concentration

less than its unrestricted SCO and was not detected in samples from the east and south sidewalls. The southern sidewall of the excavation was at or very close to the site boundary.

Screening conducted during the excavation of Area 1 indicated the heaviest contamination was removed. Screening was conducted using a photoionization detector (PID) and through evaluation of odors. Odors were detected in areas with the highest PID readings. PID readings during excavation reached as high as 100.3 parts per million (ppm) at approximately 5 feet below grade and had fallen to 0.1 ppm at a depth of 8.5 feet. PID readings were also collected from several locations at the limits of the excavation, and ranged from 0.0 ppm to 0.1 ppm.

Documentation sampling for Area 2 identified certain compounds that exceed their SCOs. A few metals were detected at concentrations greater than their unrestricted use SCOs in a few of the samples, but were not detected at concentrations greater than their SCOs for the protection of public health for commercial use. One soil sample collected from the limit of the Area 2 excavation from soil which exhibited petroleum staining and odor contained some polychlorinated biphenyls (PCBs), metals and polycyclic aromatic hydrocarbons (PAHs) at concentrations greater than their unrestricted use SCOs, and one PAH (benzo(a)pyrene) was present at a concentration slightly greater than its SCO for the protection of public health for commercial use. However, this sample was collected from a sidewall and somewhat shallower than the rest of the samples (approximately 2.2 feet below grade), and the results were consistent with the results obtained during the remedial investigation for shallow soil (less than or equal to 2 feet below grade) across the site, and so did not indicate this soil represented an area requiring further excavation. The northern end of this excavation, which is the upgradient end of the excavation, was extended to the concrete retaining wall which supports the rail line and forms the northern site boundary.

Documentation sampling for Area 3 did not identify significant contamination remaining at the limits of the excavation.

A cover system was also constructed as part of this IRM. The cover is a minimum of one foot of imported, clean fill which meets the soil cleanup objectives for cover material as set forth in 6 NYCRR 375-6.7(d) for commercial use. The soil cover was placed over a demarcation layer consisting of a geotextile fabric. A crushed stone parking lot was constructed over most of the site (approximately 0.52 acres), and a vegetated strip, approximately 10 feet wide, was constructed around the northern, eastern and southern perimeter of the site. The vegetated strip was not constructed across two driveways along the south side of the site, which provide access to and from Burt Street.

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.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OU 01.

Certain areas of contamination were excavated and disposed of off-site as interim remedial measures (IRMs). A one-foot clean soil cover system has been installed across the entire site. Contamination at concentrations greater than commercial use soil cleanup objectives (SCOs) remains below the cover system and will be managed under a Site Management Plan.

Nature and Extent of Contamination: The primary contaminants of concern at the site are metals, including arsenic, barium, cadmium, copper, lead, and mercury; polychlorinated biphenyls (PCBs); and semi-volatile organic compounds (SVOCs), specifically polycyclic aromatic hydrocarbons (PAHs), which are a subset of SVOCs. Petroleum was also encountered in certain locations at the site, though the areas with the heaviest known petroleum contamination were excavated and disposed of off-site by the IRMs. Several volatile organic compounds (VOCs) were detected in soil vapor and were also detected above applicable standards, criteria or guidance values (SCGs) in soil and groundwater; however, to a lesser extent than the other contaminants of concern. No site-related contamination was identified off-site.

Soil – Contaminants, including metals, PAHs and, to a lesser extent, PCBs remain in soil below the cover system. These contaminants are primarily present in soil immediately below the cover system, at depths ranging from one foot to approximately three feet below grade.

Mercury is present across the site at elevated concentrations, primarily in the two feet of soil immediately below the cover system (one foot to three feet below grade). It is present at concentrations up to 438 parts per million (ppm) compared to its soil cleanup objective (SCO) for the protection of public health for commercial use of 2.8 ppm. Similarly, other metals are present at elevated concentrations across the site, primarily in the two feet of soil immediately below the cover system. Arsenic; barium; cadmium; copper; and lead were detected at concentrations up to 218; 6,390; 139; 51,100; and 19,200 ppm, respectively, compared to their respective commercial use SCOs of 16; 400; 9.3; 270; and 1,000 ppm.

PAHs are present across the site in the two feet of soil immediately below the cover system, generally at concentrations only slightly exceeding commercial use SCOs, though a couple locations had somewhat higher concentrations. Benzo(a)pyrene, a PAH, exceeded its commercial use SCO more frequently than the other PAHs, and is present at concentrations up to 7.2 ppm, compared to its commercial use SCO of 1 ppm. Concentrations of total PAHs in soils below the cover system range from not detected to 400.8 ppm.

PCBs are present across the site in the two feet of soil immediately below the cover system at concentrations exceeding its commercial use SCO. PCBs are present in soils at concentrations up to 29 ppm, compared to its commercial use SCO of 1 ppm.

Trichloroethene (TCE) is present in subsurface soil in one area of the site at concentrations up to 6.84 ppm, exceeding its SCO for the protection of groundwater of 0.47 ppm.

Groundwater - Groundwater impacts by petroleum were previously noted in a well located at the upgradient edge (northwest corner) of the site. A layer of separate phase petroleum several feet thick was identified in this well. The petroleum contamination in the vicinity of this well was excavated as part of an IRM conducted in 2014.

TCE was detected in groundwater in one well in March 2008 at a concentration of 22 micrograms per liter (ug/L), compared to its groundwater standard of 5 ug/L. It was not detected in that well in October 2010, nor was it detected in any other well in any instance, including an off-site downgradient well. The most heavily contaminated soil in this vicinity was excavated and disposed of off-site as part of an IRM conducted in 2014, though TCE remains in the soil at the limits of the excavation area.

Groundwater results for the rest of the site indicated relatively minor impacts to groundwater quality. The impacts noted were generally only slightly above groundwater standards and/or were not extending off-site.

Soil Vapor - Several VOCs were detected in soil vapor including 1,1,1-trichloroethane (which was detected at 5.66 micrograms per cubic meter [ug/m3]); cis-1,2-dichloroethene (which was detected at 0.443 ug/m3); tetrachloroethene (which was detected at 4.96 ug/m3); and trichloroethene (which was detected at 1.37 ug/m3).

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.*

People are not drinking contaminated groundwater because the area is served by a public water supply that is not affected by site-related contamination. Contact with contaminated soil remaining at the site is unlikely unless people dig below the soil cover system and demarcation layer that exists across the entire site. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because there are no on-site buildings, inhalation of site contaminants in indoor air due to soil vapor intrusion does not represent a concern for the site in its current condition. However, the potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site building development and occupancy. Furthermore, environmental data available for an off-site property indicates that soil vapor intrusion is not a concern.

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.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Remove the source of ground or surface water contamination.

Soil

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.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: SUMMARY OF SELECTED REMEDY

Based on the results of the investigations at the site, the IRMs that have been performed, and the evaluation presented here, the Department has selected No Further Action as the remedy for the site. This No Further Action remedy includes implementation of institutional controls and engineering controls (ICs/ECs) as the selected remedy for the site. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRMs already completed and the institutional and engineering controls are listed below:

1. Building Demolition and Source Removal

Demolition of the on-site buildings and removal of sources of contamination, including a sump which was filled with water and mercury and a limited amount of soil from below the sump which was contaminated by mercury.

2. Excavation

Excavation and off-site disposal of contaminant source areas, including areas where non-aqueous phase liquid was present in the subsurface and an area contaminated by trichloroethene, which were posing a threat to groundwater quality. Approximately 347.8 cubic yards of soil were removed from the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) was brought in to replace the excavated soil and establish the designed grades at the site.

3. Cover System

A site cover was installed and will be maintained to allow for commercial use of the site. The cover consists of a soil cover in areas where the upper one foot of the previously exposed surface soil exceeded the applicable soil cleanup objectives (SCOs). The cover system was installed across the entire site. The soil cover is a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover was placed over a demarcation layer. All fill material brought to the site met the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

4. Groundwater Monitoring Wells

Installation of groundwater monitoring wells to replace former monitoring wells MW-3A and MW-4.

5. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- 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);
- allows the use and development of the controlled property for commercial and industrial uses 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; and
- requires compliance with the Department approved Site Management Plan.

6. Site Management Plan

A Site Management Plan is required, which includes 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 5 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;
- descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- 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 to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories; volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs), and inorganics (metals and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, waste/source materials were identified at the site and are or were impacting soil and were posing a threat to groundwater quality.

Wastes are defined in 6 NYCRR Part 375-1.2(aw) and include solid, industrial and/or hazardous wastes. Source areas are defined in 6 NYCRR Part 375 (au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. Wastes and source areas that were identified at the site during the investigation included: debris which was scattered about the surface and comingled with surface and near-surface soil; an area of petroleum contamination in the northwest portion of the site; and oil within a subsurface structure referred to as the crusher pit.

Debris, which includes metal, slag, ash, wood, glass, concrete, brick, and plastic, was noted in soil which, prior to implementation of an IRM, was present generally at the surface and within the top two feet of soil, though in a few locations the debris extended deeper. In many instances the debris was noted to be “abundant” (*i.e.*, constituting a substantial volume of the matrix). Much of this debris was solid waste. The entire site was covered with one foot of verified clean, imported soil as part of an IRM in 2014.

The crusher pit was located near the southern end of the site and contained petroleum oil. The oil represented a source area. The contents of the crusher pit and the surrounding grossly contaminated soils were excavated and disposed of off-site as part of an IRM in 2014.

Petroleum was identified in a monitoring well in the northwestern quadrant of the site (MW-3) during the RI. The level of petroleum was gauged during the RI over the course of three weeks. During that time the thickness of the petroleum layer varied from a sheen to a maximum thickness of 3.77 feet. Any recoverable petroleum was removed from the well each time it was gauged. The petroleum was encountered at a generally consistent elevation in all instances (5.43 feet below ground surface [bgs] to 5.95 feet bgs). Based on the measurements reported, the changing thickness of the petroleum appears to have been due to fluctuations of the elevation of the groundwater table. The petroleum represented a source area. This area was excavated and disposed of off-site as part of an IRM in 2014. Separate phase petroleum was not identified in other wells, including wells located on-site that are downgradient of MW-3.

Another potential source area was the area in and around MW-4. The soil at MW-4 was impacted by trichloroethene (TCE). TCE was detected in groundwater at MW-4 in March 2008 at 22 micrograms per liter (ug/L), as compared to its groundwater standard of 5 ug/L. However, TCE was not detected in October 2010 at MW-4 nor at a downgradient location. The area surrounding MW-4 was excavated as part of an IRM in 2014 and the most heavily impacted soils were removed; however, TCE remains in soil in this area.

The location of MW-3, MW-4, the crusher pit and the approximate extents of the areas which were excavated as part of the IRM are shown on Figure 5, along with the extent of the cover system constructed.

The waste/source areas identified at the site were addressed by the IRM(s) described in Section 6.2.

Groundwater

Groundwater samples were collected during the investigation from overburden monitoring wells at eight locations. The samples were collected to assess groundwater conditions on-site and to assess if any impacted groundwater may be migrating off-site.

Two monitoring wells were decommissioned and the soils surrounding those wells were excavated as part of an IRM in 2014 (MW-4 and MW-3). As discussed above, MW-4 and MW-3 were identified as source areas or potential source areas. The soils surrounding those wells were excavated and disposed of off-site as part of an IRM conducted in 2014. The results from those wells are not included in the summary table below since the areas were excavated and, as such, the primary source of groundwater contamination in these areas removed.

Iron, manganese and sodium were detected at concentrations greater than their groundwater SCGs in most groundwater samples, including samples from wells on the upgradient side of the site. These appear to be attributable to naturally occurring, background conditions. As such, they are not considered contaminants of concern for the site and so are not included in the table below. Antimony was detected in two locations at a concentration slightly greater than its SCG; however, it was not detected when those locations were re-sampled. Given the limited concentration of the detections and the fact that it was not detected in a subsequent round of sampling, it is not considered a contaminant of concern for the site, and as such, is not included in the summary table below.

Groundwater SCGs were exceeded for several VOCs, SVOCs and metals, which are summarized in Table 1.

Table 1 – Groundwater

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
1,2-Dichlorobenzene	ND – 21	3	2 / 12
Benzene	ND – 2.4	1	1 / 12
Chlorobenzene	ND – 16	5	1 / 12
Methyl tert-butyl ether	ND – 17	10	1 / 12
Xylenes	ND – 8.2	5	1 / 12

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
SVOCs			
Acenaphthene	ND - 36	20	1 / 12
Naphthalene	ND - 600	10	1 / 12
Inorganics			
Cadmium	ND – 5.6	5	1 / 12
Lead	ND – 31.8	25	1 / 12
Magnesium	8390 – 89,400	35,000	3 / 12
Selenium	ND – 11.1	10	3 / 12

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGS 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

Benzene, xylenes, naphthalene and acenaphthene were detected in groundwater at concentrations greater than their SCGs in the first round of sampling (03/2008), but were not detected in samples from the same location in the second round (10/2010), nor were they detected in monitoring wells located on-site and downgradient of the impacted wells in either sampling event. Methyl tert-butyl ether (MTBE) was detected at a concentration greater than its groundwater SCG at one location (MW-1) in 03/2008, but was not detected in 10/2010. Chlorobenzene and 1,2-dichlorobenzene were detected at a concentration greater than their SCGs in one well (MW-6), but were not detected in excess of SCGs in wells located on-site and downgradient of MW-6. The locations of the monitoring wells are depicted on Figure 2.

Selenium was detected in three samples at a concentration only slightly greater than its groundwater SCG. Magnesium also exceeded its SCG in certain groundwater samples. Cadmium and lead were each present in one on-site location in one instance at a concentration greater than its groundwater SCG; however, neither was present in on-site wells located downgradient in excess of its SCG.

As discussed above, slight impacts to groundwater were noted by the RI; however, the results indicate that any impacts were localized and generally confined to the site.

No significant site-related groundwater contamination of concern was identified during the RI. Furthermore, the primary sources of groundwater contamination identified during the RI were addressed during the IRMs described in Section 6.2 and use of on-site groundwater will be restricted. Groundwater monitoring will be conducted to evaluate the effectiveness of the remedy, including in the area of the IRM excavations.

Soil

Surface, near-surface, and subsurface soil samples were collected at the site during the RI. Surface soil samples were collected from a depth of 0-2 inches to assess direct human exposure. Soil samples were collected from each surface soil sampling location at depths of 0.5-1.0 feet below the ground surface (bgs) and 1.5-2.0 feet bgs in order to assess the depth to which surface impacts extended. Additional sub-surface samples were collected from depths ranging from 2 feet bgs to 11 feet bgs to assess deeper soil quality. Results were compared to

unrestricted use SCOs and commercial use SCOs for the protection of public health. The entire site was subsequently covered with at least one-foot of clean, imported fill, and as such, all sample locations are now sub-surface.

The results indicate applicable SCOs were exceeded in soil that was formerly at the surface and shallow subsurface soil for polycyclic aromatic hydrocarbons (PAHs), metals and PCBs. Unrestricted SCOs were exceeded in deeper subsurface soil for PAHs, metals, PCBs and to a lesser extent VOCs.

Three excavations were conducted as an IRM in 2014. Documentation samples were collected from the limits of each excavation. A limited number of exceedances were noted in these samples. In the excavation surrounding MW-4, TCE was detected in two of the five documentation samples at concentrations greater than its unrestricted use SCO, which is equivalent to its SCO for the protection of groundwater. Prior to implementation of the IRM, TCE was detected in groundwater at MW-4 at 22 ug/L, as compared to its groundwater standard of 5 ug/L. TCE was not detected when MW-4 was re-sampled (which was still prior to the implementation of the IRM) and was not detected in an off-site well downgradient of MW-4. Given the limited level of the maximum concentration of TCE detected on-site, the fact that it was not detected off-site and the excavation that has been performed, the potential for off-site migration is limited.

Figure 3 is a summary of exceedances of commercial use SCOs in surface soil and near surface soil (0 – 2 feet bgs) prior to construction of the cover system in 2014, while Figure 4 depicts exceedances of unrestricted use SCOs in deeper soil (2 feet bgs or greater prior to construction of the cover system in 2014). Table 2 summarizes the range of contamination present in soil along with the number of samples which exceeded SCOs. Samples collected from areas that were subsequently excavated are not included in Table 2, nor are they considered in the discussion below.

Mercury and other metals were detected at elevated concentrations across the site. They were detected at elevated concentrations in soil which was formerly at the surface, but is now present immediately below the cover system. Concentrations of metals generally decreased with increasing depth, and generally were not detected at concentrations greater than commercial use SCOs at depths greater than 2 feet below the cover system (approximately 3 feet below current grade). Mercury was detected at concentrations up to 438 parts per million (ppm), compared to its commercial use SCO of 2.8 ppm, and it was detected in 31 out of 83 samples at concentrations greater than 2.8 ppm. For comparison purposes, it was detected in 23 out of 83 samples at concentrations greater than its industrial use SCO, which is 5.7 ppm, and in 5 out of 83 samples at concentrations greater than 100 ppm. Lead was detected at concentrations up to 19,200 ppm, compared to its commercial use SCO of 1,000 ppm, and it was detected in 29 out of 83 samples at concentrations greater than 1,000 ppm. For comparison purposes, it was detected in 7 out of 83 samples at concentrations greater than its industrial use SCO, which is 3,900 ppm, and in 2 out of 83 samples at concentrations greater than 10,000 ppm.

PCBs were detected across the site, primarily in soil that was formerly at the surface, and which is now immediately below the demarcation layer. PCBs were detected in 14 out of 83 samples at concentrations greater than its commercial use SCO, which is 1 ppm, and in 1 out of 83 samples at concentrations greater than its industrial use SCO of 25 ppm. It was detected in 2 out of 83 samples at concentrations at concentrations greater than 10 ppm; at 10.8 ppm and 29 ppm.

Table 2 – Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Commercial SCG
VOCs					
Trichloroethene	ND – 6.84	0.47[d]	2 / 47	200	0 / 47
SVOCs					
Benzo(a)anthracene	ND – 39	1	33 / 83	5.6	7 / 83
Benzo(a)pyrene	ND – 31	1	31 / 83	1	31 / 83
Benzo(b)fluoranthene	ND – 36	1	37 / 83	5.6	7 / 83
Benzo(k)fluoranthene	ND – 7.2	0.8	26 / 83	56	0 / 83
Chrysene	ND – 39	1	35 / 83	56	0 / 83
Dibenz(a,h)anthracene	ND – 3.9	0.33	17 / 83	0.56	10 / 83
Indeno(1,2,3-c,d)pyrene	ND – 10	0.5	33 / 83	5.6	1 / 83
Naphthalene	ND – 150	12[d]	3 / 83	500	0 / 83
Inorganics					
Arsenic	ND – 128	13	25 / 83	16	21 / 83
Barium	39.8 – 6390	350	29 / 83	400	25 / 83
Cadmium	ND – 139	2.5	44 / 83	9.3	30 / 83
Chromium	6.0 – 3530	30	38 / 83	1500	2 / 83
Copper	9.45 – 51,100	50	52 / 82	270	43 / 82
Lead	5.1 – 19,200	63	54 / 83	1000	29 / 83
Mercury	ND – 438	0.18	58 / 83	2.8	31 / 83
Nickel	9.9 – 781	30	32 / 82	310	9 / 82
Zinc	21.8 – 118,000	109	53 / 82	10,000	11 / 82
Pesticides/PCBs					
PCBs	ND – 29	0.1	32 / 83	1	14 / 83

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.
ND – not detected

Results indicate that metals, PAHs and PCBs are present in soils at concentrations greater than SCOs across the site, especially within soil which, prior to the implementation of the IRMs in 2014, constituted the top two feet of soil. Exceedances of SCOs were detected in some deeper samples as well. SCOs were exceeded at depths greater than two feet, though generally those locations were isolated and at concentrations only slightly greater than unrestricted SCOs.

Soil contamination identified during the RI was addressed during the IRM described in Section 6.2.

Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of soil vapor and ambient air. At this site no buildings were present, so only soil vapor was evaluated.

Several VOCs were detected in soil vapor, including the following: 1,1,1-trichloroethane (which was detected at 5.66 micrograms per cubic meter [ug/m^3]); cis-1,2-dichloroethene (which was detected at 0.443 ug/m^3); tetrachloroethene (which was detected at 4.96 ug/m^3); and TCE (which was detected at 1.37 ug/m^3). TCE was also detected in the ambient air sample at 1.15 ug/m^3. Based on the concentrations of 1,1,1-TCA; cis-1,2-DCE; and PCE which were detected in soil vapor, in comparison to the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York, and given the fact that none of these VOCs were detected in other media at significant concentrations, they are not considered contaminants of concern for the site at this time. TCE is considered a contaminant of concern. It is noted that cis-1,2-DCE is a degradation product of TCE. The selected remedy includes a requirement for continued Site Management. The requirements for site management will include evaluation of the potential for soil vapor intrusion for any future buildings developed on the site, and provisions for implementing actions recommended to address exposures related to soil vapor intrusion.

Edited by JPC
11-12-2014

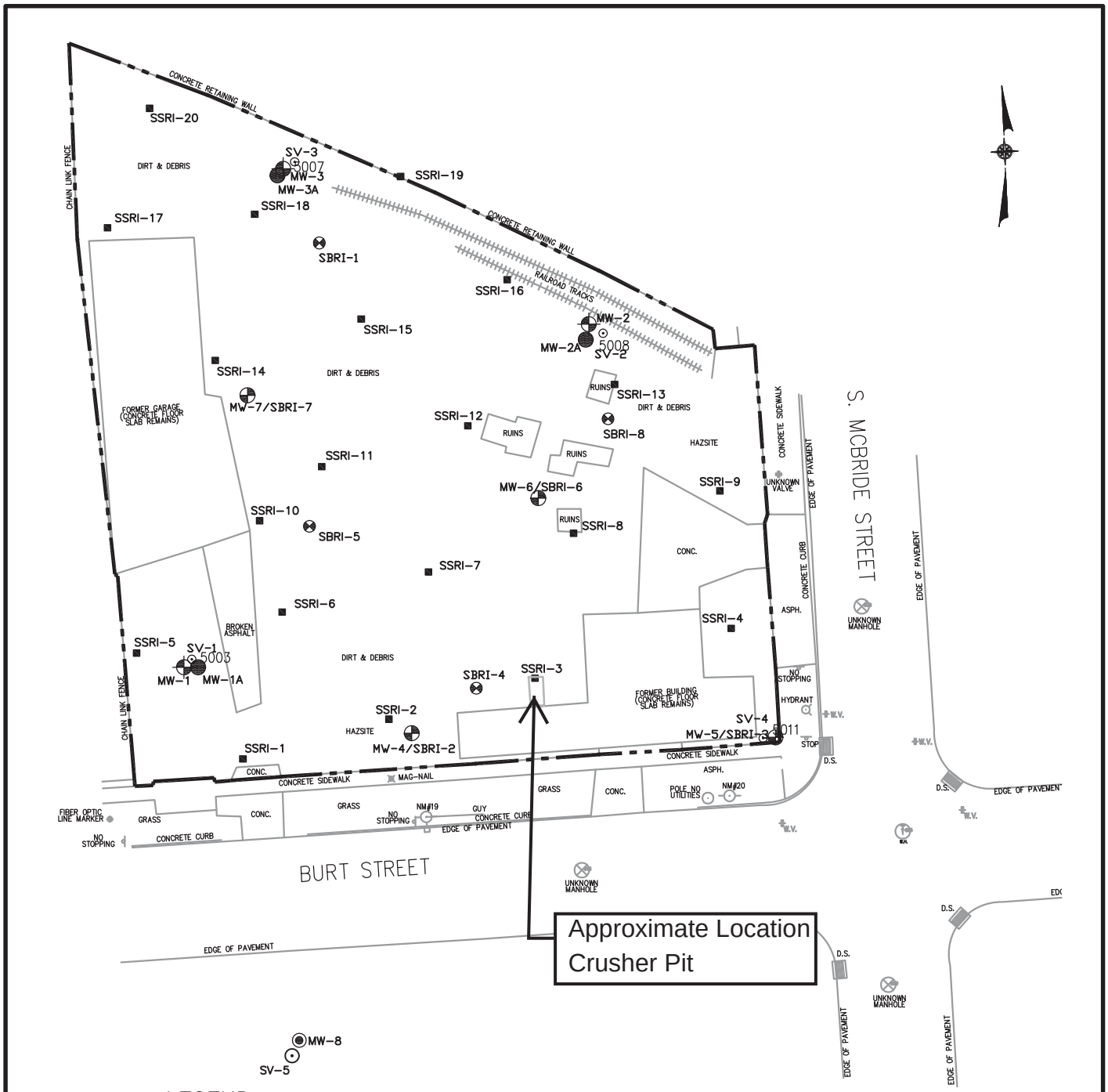
McKINNEY PROPERTY SITE
SYRACUSE, NEW YORK

SITE LOCATION MAP

Dvirka and Bartilucci
Consulting Engineers

FIGURE 1

SEP 5, 2006 SEP C:\2576\2576-siteloc.dwg



Dvirka and Bartilucci
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

SYRACUSE HOUSING AUTHORITY
McKINNEY PROPERTY SITE E734086

SAMPLE LOCATION MAP

Edited by JPC
11-12-2014

FIGURE 2

F:\2576\2576-FIG-1.dwg, FIG 4-1, 12/3/2010 10:53:05 AM, KSaul

SSRI-20			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)anthracene	---	---	6.3
Benzo(b)fluorathene	---	---	6.9
Benzo(a)pyrene	---	1.2	5.6
Pest/PCBs			
Aroclor-1248	---	---	5.0
Aroclor-1260	---	---	5.8
INORGANICS			
Arsenic	---	---	30.4
Barium	---	---	3,490
Cadmium	---	---	56.7
Copper	322	---	2,240
Lead	---	---	19,200
Mercury	10.1	---	38.1
Zinc	---	---	16,100

SSRI-18			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	1.2	---	3.0
Pest/PCBs			
Aroclor-1248	---	1.0	---
Aroclor-1260	---	1.3	---
INORGANICS			
Arsenic	20.4	---	25
Barium	671	---	1,090
Cadmium	31.7	21.1	10.6
Copper	2,310	1,880	1,090
Lead	1,800	1,060	2,510
Mercury	40	45.2	---
Zinc	---	---	12,600

SSRI-19			
DEPTH	0-0.1	0.5-1	1.5-2
INORGANICS			
Arsenic	23.3	29.5	---
Barium	---	413	---
Cadmium	10.9	21.4	---
Chromium	1,560	3,530	---
Copper	6,680	3,660	---
Lead	1,380	2,280	---
Mercury	8	5.2	---
Nickel	472	781	---
Zinc	---	11,000	---

SSRI-16			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)anthracene	---	---	6.66
Benzo(a)pyrene	2.5	1.1	2.6
INORGANICS			
Cadmium	21.9	---	---
Copper	51,100	1,180	---
Lead	4,200	---	---
Mercury	16.4	---	---

SSRI-15			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)anthracene	6.1	7.1	13.0
Benzo(b)fluorathene	8.3	7.0	8.6
Benzo(a)pyrene	6.1	5.3	7.0
Pest/PCBs			
Aroclor-1254	1.3	---	---
INORGANICS			
Arsenic	29.9	22.6	---
Barium	1,320	2,880	710
Cadmium	48.1	62.5	21.1
Copper	9,520	5,590	2,620
Lead	3,710	4,790	1,680
Mercury	29.5	3.5	3.2
Nickel	---	635	338
Zinc	11,800	20,600	---

SSRI-17			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	---	---	1.9
Pest/PCBs			
Aroclor-1248	---	3.8	---
Aroclor-1260	1.4	4.4	---
INORGANICS			
Barium	513	---	---
Cadmium	9.5	21.8	---
Copper	596	1,230	4,950
Lead	1,210	1,550	1,350
Mercury	7.5	4.5	---

SSRI-13			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	---	1.6	1.3
INORGANICS			
Barium	1,130	---	457
Cadmium	80.5	---	---
Copper	6,300	---	---
Mercury	8.5	---	---
Nickel	610	---	---

SSRI-14			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	1.4	---	---
INORGANICS			
Barium	628	---	---
Cadmium	57	32.3	22.7
Copper	14,400	2,660	1,120
Lead	2,780	---	---
Mercury	9.5	4.9	4.1
Zinc	11,200	---	---

SSRI-12			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	2.0	2.1	---
Pest/PCBs			
Aroclor-1254	29.0	1.1	---
INORGANICS			
Arsenic	27.5	72.7	---
Barium	1,100	6,390	1,700
Cadmium	39.6	139	33.2
Copper	3,700	7,230	500
Lead	3,250	8,770	3,910
Mercury	438	4.7	4.8
Zinc	---	118,000	14,000

SSRI-11			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	2.0	---	---
Pest/PCBs			
Aroclor-1254	1.1	---	---
INORGANICS			
Arsenic	19.4	20.7	19
Barium	806	1,120	678
Cadmium	33.5	21.9	---
Copper	1,940	666	---
Lead	2,250	4,040	1,970
Mercury	22	---	---

SSRI-10			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	1.9	---	---
INORGANICS			
Arsenic	---	128	36.7
Barium	---	---	833
Cadmium	---	23.5	33.7
Copper	1,730	11,300	5,920
Lead	---	---	2,180
Mercury	5.8	28.3	---
Zinc	---	13,500	13,100

SSRI-9			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)anthracene	---	---	39.0
Benzo(b)fluoranthene	---	---	36.0
Benzo(a)pyrene	---	---	31.0
Indeno(1,2,3-cd)pyrene	---	---	10.0
INORGANICS			
Copper	1,340	---	---
Mercury	3.7	---	---

SSRI-8			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)fluorathene	---	8.3	---
Benzo(a)pyrene	---	5.7	3.0
INORGANICS			
Cadmium	17.8	13	---
Copper	2,900	501	---
Mercury	73.7	---	5.6

SSRI-7			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	3.0	1.7	1.5
Pest/PCBs			
Aroclor-1254	---	1.4	---
INORGANICS			
Arsenic	35.1	114	24.2
Barium	1,220	875	921
Cadmium	15.2	22.6	---
Copper	3,870	50,600	436
Lead	1,780	2,980	1,790
Mercury	184	16.7	---
Nickel	---	504	---

SSRI-5			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	1.7	---	---
Pest/PCBs			
Aroclor-1242	4.1	---	1.6
INORGANICS			
Arsenic	---	---	17.5
Barium	---	---	404
Cadmium	---	---	18.2
Copper	607	2,580	22,800
Lead	---	---	1,510
Mercury	---	---	14.5
Nickel	---	---	312
Zinc	---	---	14,400

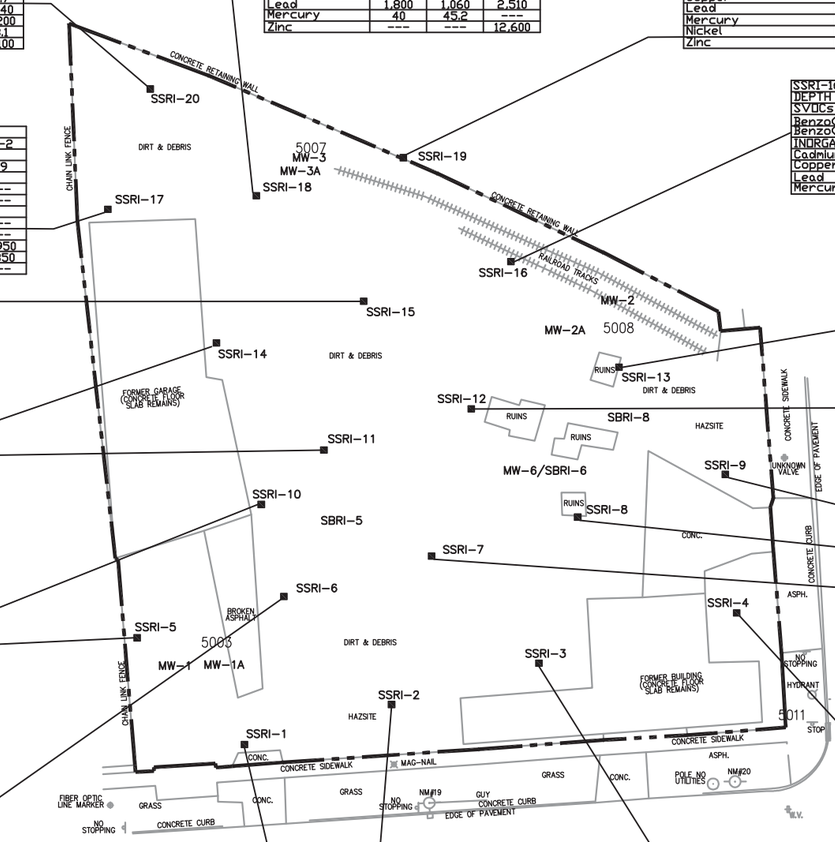
SSRI-6			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	2.2	2.1	---
Pest/PCBs			
Aroclor-1242	3.6	---	---
Aroclor-1254	1.8	---	---
INORGANICS			
Arsenic	29.3	54.3	---
Barium	674	551	---
Cadmium	17.9	---	---
Copper	28,000	8,800	---
Lead	2,240	---	---
Mercury	110	---	---
Nickel	467	---	---

SSRI-1			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)anthracene	---	10.0	---
Benzo(b)fluorathene	---	11.0	---
Benzo(a)pyrene	---	8.9	4.2
INORGANICS			
Cadmium	---	---	10.6
Copper	581	2,970	8,750
Lead	---	1,220	1,680
Mercury	9.3	---	---

SSRI-2			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	3.0	1.1	---
Pest/PCBs			
Aroclor-1254	13.0	---	---
INORGANICS			
Arsenic	40.6	21.2	---
Barium	2,550	970	---
Cadmium	34.8	23.9	---
Copper	4,260	25,000	---
Lead	3,640	2,830	---
Mercury	230	31.4	16.3
Zinc	10,300	12,700	---

SSRI-3			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	2.5	---	---
INORGANICS			
Cadmium	61	---	---
Copper	681,000	350	---
Lead	19,100	---	---
Mercury	26.8	---	---
Zinc	389,000	---	---

SSRI-4			
DEPTH	0-0.1	0.5-1	1.5-2
SVOCs			
Benzo(a)pyrene	1.4	---	---
INORGANICS			
Barium	691	---	---
Copper	3,730	---	277
Lead	1,490	---	---



Analyte	SCG
Benzo(a)anthracene	5.6
Benzo(b)flouranthene	5.6
Benzo(a)pyrene	1.0
Indeno(1,2,3-cd)pyrene	5.6
Aroclor-1242	1.0
Aroclor-1248	1.0
Aroclor-1254	1.0
Aroclor-1260	1.0
Arsenic	16
Barium	400
Cadmium	9.3
Chromium	1,500
Copper	270
Lead	1,000
Mercury	2.8
Nickel	310
Zinc	10,000
Cyanide	27

LEGEND:

— - - — SITE BOUNDARY

SSRI-1 ■ SURFACE SOIL SAMPLE

NOTES:

SAMPLES COLLECTED FEBRUARY 2008
ALL CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (MG/KG).
VOCS – VOLATILE ORGANIC COMPOUNDS.
SVOCS – SEMI-VOLATILE ORGANIC COMPOUNDS.
PEST/PCB – PESTICIDES/POLYCHLORINATED BIPHENYLS.
SCG – 6 NYCRR PART 375 – RESTRICTED USE SCOS: COMMERCIAL.
DEPTH IN FEET BELOW GRADE.

0 40
SCALE: 1"=40'

F:\2576\2576-FIG-1.dwg

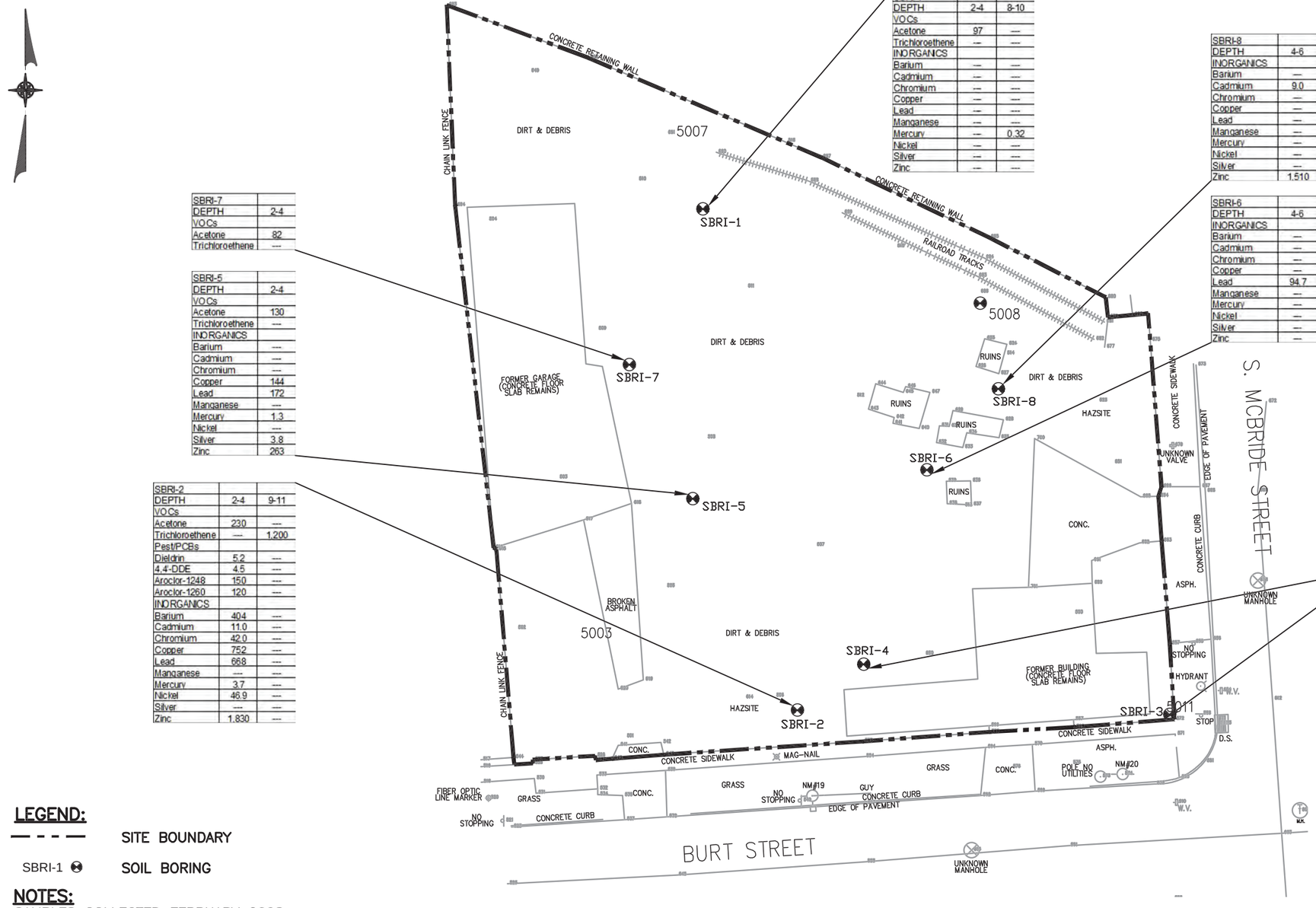
Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

SYRACUSE HOUSING AUTHORITY
McKINNEY PROPERTY SITE E734086

EXCEEDANCES OF COMMERCIAL USE SOIL CLEANUP OBJECTIVES IN SURFACE SOIL AND SHALLOW SUBSURFACE SOIL PRIOR TO 2014 INTERIM REMEDIAL MEASURES

Edited by JPC
11-12-2014

FIGURE 3



SBRI-1		
DEPTH	2-4	8-10
VOCs		
Acetone	97	---
Trichloroethene	---	---
INORGANICS		
Barium	---	---
Cadmium	---	---
Chromium	---	---
Copper	---	---
Lead	---	---
Manganese	---	---
Mercury	---	0.32
Nickel	---	---
Silver	---	---
Zinc	---	---

SBRI-9	
DEPTH	4-6
INORGANICS	
Barium	---
Cadmium	9.0
Chromium	---
Copper	---
Lead	---
Manganese	---
Mercury	---
Nickel	---
Silver	---
Zinc	1,510

SBRI-6	
DEPTH	4-6
INORGANICS	
Barium	---
Cadmium	---
Chromium	---
Copper	---
Lead	94.7
Manganese	---
Mercury	---
Nickel	---
Silver	---
Zinc	---

SBRI-7	
DEPTH	2-4
VOCs	
Acetone	82
Trichloroethene	---

SBRI-5	
DEPTH	2-4
VOCs	
Acetone	130
Trichloroethene	---
INORGANICS	
Barium	---
Cadmium	---
Chromium	---
Copper	144
Lead	172
Manganese	---
Mercury	1.3
Nickel	---
Silver	3.8
Zinc	263

SBRI-2		
DEPTH	2-4	9-11
VOCs		
Acetone	230	---
Trichloroethene	---	1,200
Pest/PCBs		
Dieldrin	5.2	---
4,4'-DDE	4.5	---
Aroclor-1248	150	---
Aroclor-1260	120	---
INORGANICS		
Barium	404	---
Cadmium	11.0	---
Chromium	42.0	---
Copper	752	---
Lead	668	---
Manganese	---	---
Mercury	3.7	---
Nickel	46.9	---
Silver	---	---
Zinc	1,830	---

SBRI-4		
DEPTH	2-4	8-10
VOCs		
Acetone	130	60
Trichloroethene	---	---
INORGANICS		
Barium	---	---
Cadmium	---	---
Chromium	---	---
Copper	---	---
Lead	---	---
Manganese	---	---
Mercury	0.25	0.20
Nickel	32.1	---
Silver	---	---
Zinc	---	---

SBRI-3		
DEPTH	2-4	7-9
INORGANICS		
Barium	---	---
Cadmium	---	---
Chromium	---	---
Copper	---	86.6
Lead	---	---
Manganese	---	---
Mercury	---	---
Nickel	35.6	---
Silver	---	---
Zinc	---	---

Analyte	SCG
VOCs	
Acetone	50
Trichloroethene	470
Pest/PCBs	
Dieldrin	5
4,4-DDE	3.3
Aroclor-1248	100
Aroclor-1260	100
INORGANICS	
Barium	350
Cadmium	2.5
Chromium	30
Copper	50
Lead	63
Manganese	1,600
Mercury	0.18
Nickel	30
Silver	2
Zinc	109

LEGEND:

— - - — SITE BOUNDARY

SBRI-1 ⊗ SOIL BORING

NOTES:

SAMPLES COLLECTED FEBRUARY 2008
ALL ORGANIC CONCENTRATIONS IN MICROGRAMS PER KILOGRAM (UG/KG)
ALL INORGANIC CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (MG/KG).
VOCS – VOLATILE ORGANIC COMPOUNDS.
SVOCS – SEMI–VOLATILE ORGANIC COMPOUNDS.
PEST/PCB – PESTICIDES/POLYCHLORINATED BIPHENYLS.
SCG – 6 NYCRR PART 375 – UNRESTRICTED USE SCOs.
DEPTH IN FEET BELOW GRADE.

0 30
SCALE: 1"=30'

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

SYRACUSE HOUSING AUTHORITY
McKINNEY PROPERTY SITE E734086

EXCEEDANCES OF UNRESTRICTED USE SOIL CLEANUP OBJECTIVES IN DEEPER SUBSURFACE SOIL PRIOR TO 2014 IRM

Edited by JPC
11-12-2014
FIGURE 4

F:\2576\2576-12-12-11\2576-FIG1-8 12-12-11.dwg, 12/12/2011 2:09:17 PM, AStrauss

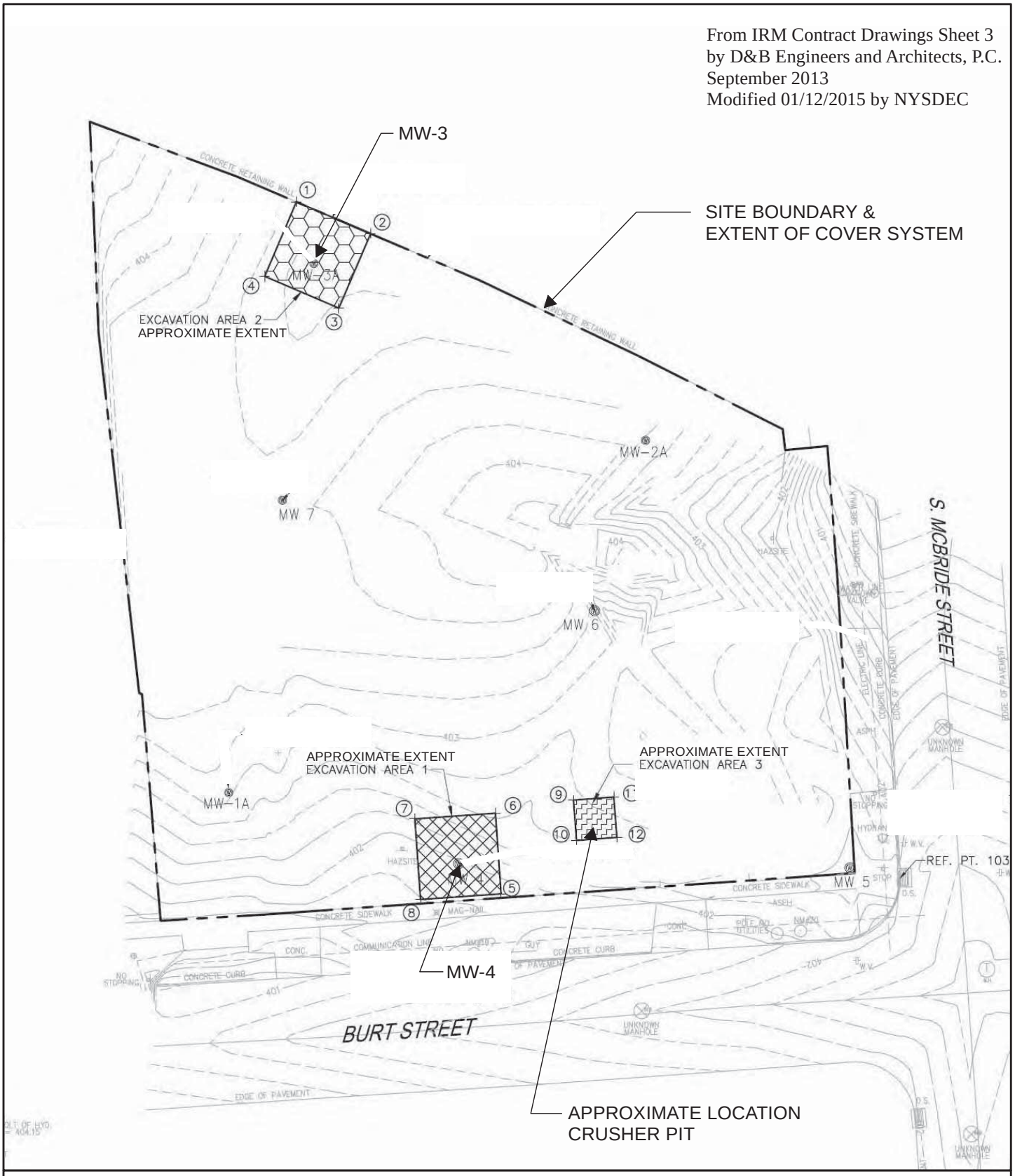


Figure 5 - Completed Interim Remedial Measures

McKinney Property
Site ID E734086
City of Syracuse, Onondaga County, New York

2015-01-12
JPC

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

McKinney Property
Environmental Restoration Project
City of Syracuse, Onondaga County, New York
Site No. E734086

The Proposed Remedial Action Plan (PRAP) for the McKinney Property site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on September 25, 2015. The PRAP outlined the remedial measures proposed for the contaminated soil, groundwater and soil vapor at the McKinney Property site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on October 19, 2015. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. Any comments received would have become part of the Administrative Record for this site. The public comment period for the PRAP ended on November 9, 2015. There were no comments received.

APPENDIX B

Administrative Record

Administrative Record

McKinney Property
Environmental Restoration Project
City of Syracuse, Onondaga County, New York
Site No. E734086

1. Proposed Remedial Action Plan for the McKinney Property site, dated September 2015, prepared by the Department.

2. State Assistance Contract (SAC), Contract No. C302977, June 5, 2006.

3. SAC No. C302977 Amendments 1 and 2.

4. Site Investigation Report, dated November 2011, prepared by Dvirka and Bartilucci, Consulting Engineers.

5. Remedial Alternatives Analysis Report, dated December 2011, prepared by Dvirka and Bartilucci, Consulting Engineers.

6. Interim Remedial Measures Construction Completion Report, dated August 2015, prepared by D&B Engineers & Architects, P.C.