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AEDC

RLF SUPPLEMENTAL WORK PLAN

FORMER ALLENTOWN METAL WORKS PROPERTY
606 SOUTH TENTH STREET
CITY OF ALLENTOWN, LEHIGH COUNTY, PENNSYLVANIA

EPA ID # Pending

August 2015

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A PROJECT MANAGEMENT

EarthRes Group, Inc. (EarthRes), on behalf of the Allentown Economic Development Corporation (AEDC) as Agent for the Allentown Commercial and Industrial Development Authority (ACIDA), has prepared this Revolving Loan Fund (RLF) Supplemental Work Plan (Work Plan). The Work Plan has been prepared to satisfy the United States Environmental Protection Agency (USEPA) requirements regarding the use of Revolving Loan Funds to complete additional cleanup activities at the former Allentown Metal Works (the Site) located at 606 South Tenth Street in the City of Allentown, Lehigh County, Pennsylvania. The Site Location Map is located in Appendix A – Figure 1.

The information presented in this Work Plan is based on the following sources:

- Phase I Environmental Site Assessment (Phase I ESA) of the Site completed by EarthRes in March 2013;
- Work Plan for Baseline Remedial Investigation completed by EarthRes in December 2013;
- Cleanup Plan & Analysis of Brownfields Cleanup Alternatives completed by EarthRes in August 2014;
- Baseline Remedial Investigation (BRI) completed by EarthRes between December 2013 and July 2014;
- Project Manual for the Removal and Disposal of Waste & Materials at the Former Allentown Metal Works completed by EarthRes in October 2014; and
- Cleanup activities completed at the Site between December 2014 and April 2015.

This Work Plan will be implemented during the planned cleanup activities to be conducted at the Site. Based on our discussions with AEDC, and information obtained during previous investigations and cleanup activities, the scope of work proposed in the Work Plan will make the

Site accessible and more attractive to potential tenants or purchasers by selectively removing Asbestos-Containing Materials (ACM), encapsulating Lead-Based Paint (LBP), and filling open sumps and pits with stone fill. The specific areas subject to this Work Plan are as follows:

- Removal of ACM Pipe Wrap Located in the Tunnel Located Beneath Building B;
- Removal of ACM Floor Tile and Mastic Located in Building B;
- Full or Partial Encapsulation of LBP on Steel I-Beams Located in Building B; and
- The Filling of Open Pits and Sumps Located in Buildings B and C with Crushed Stone.

The Buildings are depicted on Figure 2 – Areas Requiring Cleanup in Appendix A.

This Work Plan will be used in conjunction with the US EPA-approved Generic Quality Assurance Project Plan (QAPP) dated October 2006, which was prepared by Moonstone Environmental, LLC for work performed under LVEDC's USEPA Brownfields Assessment Grants, and the Project Manual for the Removal and Disposal of Waste & Materials at the Former Allentown Metal Works (Project Manual) dated October 13, 2014 which was prepared by EarthRes. Work performed pursuant to the Work Plan will be in accordance with the USEPA, PADEP, and local laws and regulations.

This Work Plan presents a brief history of the Site, a description of the historical investigation and cleanup activities completed for the Site, and a proposed approach for additional cleanup of the Site.

A.1 Site Information and Background

The Site is located at 606 South Tenth Street in the City of Allentown, Lehigh County, Pennsylvania. The subject property consists of two (2) parcels encompassing approximately 19.2 acres in size, and is identified by the Lehigh County Assessment Office as Parcel 549697391312 (1.7 acres of undeveloped land) and Parcel 549697354907 (17.54 acres includes all Site buildings). The Site elevation ranges from approximately 280 feet above mean sea level (amsl) to 250 feet amsl and slopes toward the Little Lehigh Creek, which borders the Site to the north

and west. The Site location and topography are shown on the Site Location Map (USGS 7.5 Minute Quadrangle Map of Allentown East, PA), included in Appendix A as Figure 1. The area is underlain by the Allentown Formation, as determined by review of Map 61 of the Allentown East, Pennsylvania Quadrangle. According to the *Engineering Characteristics of the Rocks of Pennsylvania*, the Allentown Formation is comprised of a medium-gray dolomite and impure limestone.

The Site currently contains eight (8) structures, consisting of the following: Mack Building/Warehouse (Building "A"); Main Plant (Building "B": Machine Shop, Light Plate Shop, North Pit Assembly, South Pit Assembly, and Cooler Assembly/Receiving are housed in this building); Heavy Plate Shop (Building "C"); Office; Oil House; Power House; Truck/Paint Shop; and Maintenance Building. The location of each building on the Site is depicted on Figure 2 in Appendix A. The southwestern corner of the Site is wooded; including the strip of land located along the Little Lehigh Creek. The area around the Site buildings is asphalt paved and/or gravel covered. Former rail sidings are located within the western and northern portions of the Site. An elevated rail siding is located north of the Heavy Plate Shop and Power House. Locked entrance gates and fencing are located along the eastern perimeter and fencing is located along the southern perimeter of the Site. The Little Lehigh Creek borders the Site to the north and west.

The area surrounding the Site contains industrial and residential properties. An industrial property is located adjacent to the south of the Site. Residential properties are located south of the industrial site. The Little Lehigh Creek borders the Site to the north and west. A municipal park is located north of Little Lehigh Creek. South Tenth Street borders the Site to the east, with the Bridgeworks Industrial Center located east of the road. The Allentown Water Resources facility is located west of the Little Lehigh Creek, west of the Site.

Based upon review of available historical information, the Site was used industrially as early as 1902. This use is based upon information obtained through review of regional newspaper articles regarding the facility, historical aerial photographs, historical topographic maps, and Sanborn® Fire Insurance Maps for the Site. The 1893 USGS Topographic Map and the 1897

Sanborn® Fire Insurance Map show the Site to not contain any structures. A newspaper article from 2008 in The Morning Call indicated the Traylor Engineering and Manufacturing Company opened their facility at the current Site location in 1902. The 1911 Sanborn® Fire Insurance Map indicates the majority of the current Site as owned by Traylor Engineering and Manufacturing Company, with the area of the current Mack Building/Warehouse indicated as owned by Mack Brothers Motor Company. Buildings are shown on the 1939 Aerial Photograph and the 1947 USGS Topographic Map.

As previously described, a Phase I ESA was completed for the Site in March 2013. The findings of the Phase I ESA included the following Areas of Potential Environmental Concern:

- Various containers and drums of unknown substances, petroleum-based products, paints, and solvents were identified around the exterior of the site buildings, as well as within the site buildings;
- The integrity of the existing 1,000-gallon, 6,000-gallon, and 30,000-gallon USTs;
- A historic release in association with the former 10,000-gallon UST at the Site;
- Miscellaneous trash, office furniture, and other debris were observed around the exterior of the site buildings, as well as within the site buildings;
- Aboveground storage tanks (ASTs) located along the western exterior of the South Pit Assembly area. The secondary containment contained what appeared to be Fuel Oil No. 2 at the time of site reconnaissance. The AST was no longer present. Two ASTs were observed under the elevated rail in the North Pit Assembly area. The Mezzanine contained one (1) approximate 275-gallon AST;
- Three (3) transformers were observed along the southern exterior wall of the Power House, within a fenced area. The top of one (1) transformer was open at the time of site reconnaissance, and dielectric fluid and water were observed within the transformer. The eastern-most room of the Power House contained two (2) open transformers filled with dielectric fluid. Tags on the exterior of the transformers indicated the dielectric fluid have been tested for polychlorinated biphenyl (PCB) content and found to contain less than 50 parts per million (ppm) PCB;
- An elevated rail siding is located north of the Heavy Plate Shop and Power House. The historic use of the rail is unknown, but may have been used to transport materials, including various oils, to the facility;

- Open pits and sumps located within the interior of the Site buildings. Some pits contained oil, water and trash;

- Rail sidings within the western and northern portions of the Site. Foundry waste may have been historically generated and used as fill throughout the Site; and

- Based upon the historical use of the Site and adjacent properties for industrial purposes, impacts to groundwater may be present.

During June of 2013, EarthRes on behalf of LVEDC, AEDC and ACIDA prepared a Work Plan for BRI in accordance with the requirements for a Work Plan for BRI for Special Industrial Areas (SIA) pursuant to the Pennsylvania Department of Environmental Protection (PADEP) Land Recycling Program (Act 2) Technical Guidance Manual, dated June 8, 2002. Submission of that Work Plan to USEPA and PADEP was completed on June 25, 2013. Subsequently, comments were received from PADEP on August 5, 2013, and USEPA on November 19, 2013 and December 4, 2013. A revised Work Plan was submitted to both agencies on December 24, 2013. PADEP approved the revised Work Plan on January23, 2014. EarthRes between December 2013 and July 2014 completed the BRI. PADEP approved the BRI Report on September 8, 2014.

Subsequently, EarthRes completed a Cleanup Plan & Analysis of Brownfields Cleanup Alternatives in August 2014, and EarthRes completed a Project Manual for the Removal and Disposal of Waste & Materials at the Former Allentown Metal Works in October 2014.

Based upon the results of a publically advertised bidding process, BrightFields Environmental, Inc. (BrightFields) was contracted by ACIDA to perform cleanup activities of environmental conditions identified in the Cleanup Plan dated August 2014. Cleanup activities began in December 2014 and concluded in April 2015. Cleanup activities at the Site involved completion of the following activities:

- Removal and disposal of approximately 26 tons of non-hazardous municipal solid waste;

- Removal and disposal of 187 tons of non-hazardous impacted surficial soils;

- Removal and disposal 86 tons of hazardous impacted surficial soils;
- Removal and disposal of three (3) unregulated 275-gallon ASTs, three (3) unregulated USTs (1,000-gallon, 6,000-gallon and 30,000-gallon);
- Removal and disposal of nine (9) PCB-containing transformers or switchgears;
- Removal and disposal 46,000 gallons of oil and waste oil; and
- Removal and disposal 2.7 tons of hazardous wastes containers or drums.

A.2 Project Description

Based on the age of the buildings, a LBP survey was completed for the Site. Although the presence of LBP may not pose an immediate threat to human health and the environment in their current condition, encapsulation will be required based upon future building renovation plans. A properly licensed LBP contractor in accordance with applicable local, state and federal regulations will conduct encapsulation of any LBP. Documentation of the completed activities will be provided at the completion of the project.

The area proposed for encapsulation includes:

- The Painted Steel I-beams located in Building B.

According to the files reviewed during completion of the Phase I ESA, asbestos-containing material (ACM) removal activities (primarily thermal system insulation {TSI}) were completed at the Site in 2001 and 2002. The ACM removal activities took place within the basement and first floor parts storage area of the Main Plant, the facility work areas, Machine Shop/Storage Area, Heavy Plate Shop, vestibule of Light Plate Shop, and Light Plate Shop. Currently, the majority of potential ACMs observed at the Site are non-friable such as roofing material and transite panels. However, suspected friable ACMs were observed in the Main Plant Utility Tunnel, Warehouse and Power House. An asbestos survey has been completed for the Site to identify ACMs. Abatement of any ACM will be conducted by a properly licensed asbestos abatement contractor in accordance with applicable local, state and federal regulations.

Documentation of proper disposal of the ACMs (i.e. manifests) will be provided at the completion of the project.

The area proposed for ACM abatement includes:

- Removal of approximately 520 linear feet of ACM Thermal Pipe Insulation Located in the Utility Tunnel Located Beneath Building B; and
- Removal of approximately 2,000 square feet ACM Floor Tile and Mastic Located in Building B.

In addition, during completion of the cleanup activities in early 2015, numerous machine pits and sumps were cleaned by removing the liquids and solids. Subsequently, the pits and sumps were steam cleaned. The currently open sumps and pits located in Buildings B and C will be filled with clean, crushed stone.

A.3 Data Quality Objective Process

The data quality objective (DQO) process involves the use of specified quality assurance and quality control measures that will promote the correct precision and accuracy of the results obtained during the investigation to achieve the project objectives. Quality Assurance and Quality Control are described as follows:

- Quality Assurance is the total integrated program for assuring reliability of monitoring and measurement data; and
- Quality Control is the routine application of procedures for obtaining prescribed standards of performance and measurement process.

The decision process throughout the investigation will be contingent upon the adherence of the investigation results to the DQO. The DQO are based on the projected or proposed end use of the data that reflects the end use of the Site. For this phase of the investigation, the DQO for the project will be to:

- Confirm by visual inspection and potentially wipe samples that LBP encapsulation activities have been completed; and
- Confirm by visual inspection and air samples that ACM abatement activities have been completed.

The DQO will be met using standardized procedures during sample collection, handling, measurement, analysis and reporting as presented in the USEPA-approved Generic QAPP, dated October 2006, and the Project Manual dated October 2014.

A.4 Project Schedule

The progress of the project will be tracked from its inception through implementation to ensure all sampling and analytical activities are performed in a proper and cost-effective manner. Each step of this process will be scheduled in an objective, realistic timeframe to assure that adequate attention is devoted to the minimization of effort, and the maximization of information obtained. The project is expected to be completed within 90 business days from receipt of approval of this Work Plan. Table 1 provides a project schedule and estimated duration to complete each task.

TABLE 1
Project Schedule
Former Allentown Metal Works Property
City of Allentown, Lehigh County, Pennsylvania

Task	Start Date*	Completion Date*
Remove ACM	November 2, 2015	December 2, 2015
Encapsulate LBP	November 2, 2015	January 8, 2016
Fill Pits/Sumps with Stone	January 8, 2016	February 2, 2016

* Subject to change based upon site and weather conditions.

A.5 Estimated Costs

The estimated cost to complete the cleanup activities presented in Section A2 of this Work Plan is **$376,200**.

A.6 Measurement Quality Objectives

The laboratory measurement quality indicators for this project have been previously presented in the Project Manual dated October 2014. The measurement quality objectives of the analysis will be for the laboratory reporting limits (RL) and/or method detection limits (MDL) to meet the lowest applicable remediation standard for the matrix being analyzed.

B. MEASUREMENT AND DATA ACQUISITION

B1. Sampling Design

The sampling design is based on the characteristics of the identified APECs, the projected Site end-use, and Site conditions. A specific sampling design for the Site APECs is presented in the Project Manual.

In accordance with OSHA Regulations CFR 1910.120, a site-specific Health and Safety Plan will be developed for the proposed cleanup activities. The Health and Safety Plan (HASP) will include descriptions of procedures to be followed, potential physical and chemical hazards associated with each task, and the duties of various site personnel. The HASP will also identify the key health and safety personnel for the project, present personnel training and medical surveillance requirements to work on the project, and explain the personal protective equipment that will be used during the project implementation. Site controls will be discussed to convey the importance of work zones, the buddy system, safe work practices and site security. A map showing directions to the nearest medical assistance facility will be included in the HASP and will be posted at the site. Decontamination procedures and emergency response measures to be followed in the event of an emergency will also be explained. A copy of the HASP will be available onsite during all field activities.

Level D personal protection (hard hat, steel toe shoes, safety glasses) will be utilized for general work tasks while higher levels of protection will be required for ACM abatement activities.

B2. Site Restoration

After cleanup activities are completed, the building areas will be cleaned to remove any produced trash or debris. ACM materials will be properly contained and disposed.

B3. Sampling Methods Requirements

The specific details of these sampling methods and procedures are described in the QAPP and in the Project Manual.

B4. Analytical Methods Requirements

The analytical method requirements, analytical QA/QC procedures, and corrective action are presented in the Project Manual (PM).

C. DATA VALIDITY AND USABILITY

Data validation is a systematic procedure of reviewing a body of data against a set of criteria to provide a specified level of assurance of its validity prior to its intended use. It requires that the techniques utilized be applied to the body of the data in a systematic and uniform manner. The process of data validation must be close to the origin of the data, independent of the data production and objective in its approach.

C1. Reconciliation with User Requirements

The purpose of this Work Plan is to complete cleanup activities at the Site. As specified in the PM, third party data validation by a certified data validation contractor won't be completed on the data generated in this type of investigation. However, the laboratory will follow their QA/QC and validation procedures as specified in their QA Manual. In addition, EarthRes will complete an internal QA/QC check on the laboratory data. This QA/QC check will include a general systematic review of the data deliverable. Any deviation or discrepancy identified in the data deliverable will be brought to the attention of the laboratory for explanation and/or correction. Items included in the QA/QC check will consist of but not be limited to the following:

- **Verifying holding times have not expired prior to analysis;**
- **Verifying samples contain the correct nomenclature;**
- **Verifying correct analytical methods were used;**
- **Verifying RLs and MDLs are below acceptable; and**
- **Verifying laboratory QA/QC control limits were met.**

1.3 Analysis of Brownfields Cleanup Alternatives

The Cleanup Plan was prepared after consideration of various Brownfields Cleanup Alternatives had been completed. The three (3) remedial alternatives considered were: 1) no action; 2) remediation of threats deemed to pose immediate, direct or imminent threats to human health and the environment; 3) remediation of threats deemed to pose immediate, direct or imminent threats to human health, secure the site, the environment and abatement of building materials that may require demolition and demolition of functionally obsolete structures. The cost estimate for each alternative was based on budgetary numbers provided by waste transportation and disposal contractor and on Earthres' familiarity with similar projects recently completed in the region. An evaluation of the remedial alternatives indicated that remediation of threats deemed to pose immediate, direct or imminent threats to human health and the environment (Alternative 2) provided the best balance of financial feasibility, safety, and timeliness.

1.3.1 Alternative 1: No Action

Leaving the Site in its current condition poses a threat to the environment and to human health. The Site contains several hazardous and potentially hazardous conditions including the presence drums and containers, liquid-filled sumps and pits, transformers, ASTs and USTs, etc. The "No Action" alternative was rejected based on its failure to remedy existing and potential environmental conditions at the Site.

1.3.2 Alternative 2: Remediation of Threats Deemed to Pose Immediate, Direct or Imminent Threats to Human Health and the Environment

The completion of these tasks will accomplish the goal of remediating threats deemed to pose immediate, direct or imminent threats to human health and the environment. This alternative addresses the threats posed by the presence of drums and containers, sumps and pits, ASTs, USTs, trash and debris, transformers and impacted surface soils. This alternative is considered protective of human health and the environment, while being feasible within the time and budgetary constraints of the project. This alternative was selected as the most effective cleanup plan for the Site at this time. ***ESTIMATED COST: $268,000***

1.3.3 Alternative 3: Remediation of Threats Deemed to Pose Immediate, Direct or Imminent Threats to Human Health and the Environment, Secure the Site, Abatement of Building Materials that may require Demolition and Possible Demolition of Functionally Obsolete Structures

Securing the buildings and the abatement of hazardous or potentially hazardous building materials such as lead -based paint and ACM, performed in addition to remediation of threats deemed to pose immediate, direct or imminent threats to human health and the environment, would provide an additional measure of protection for human health and the environment. However, the abatement of building materials can be better evaluated and managed once the final reuse of the Site is established. Also, demolition of site buildings may be required to facilitate these abatement activities including the removal of the 30,000-gallon UST and, or demolition may be required to remove functionally obsolete structures. The completion of the previously described remediation activities, abatement of building materials and, demolition activities are premature at this stage of redevelopment and were therefore rejected as a remedial alternative. ***ESTIMATED COST: $482,000 or To Be Determined***

Appendix A

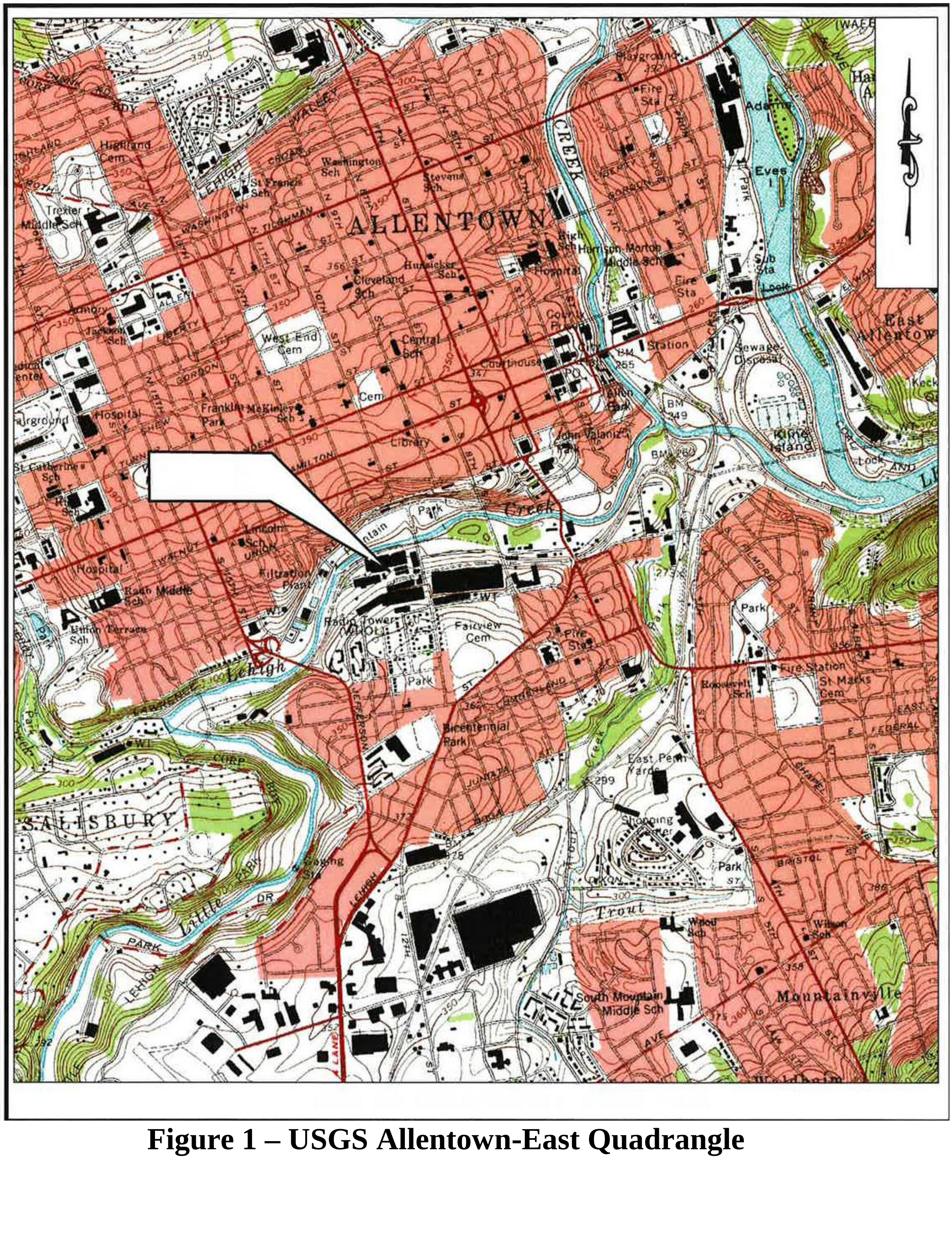

Figure 1 – USGS Allentown-East Quadrangle

Figure 2 – Site Plan