

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 2

SEP 26 2013

DATE: SEP 26 2013

SUBJECT: Approval and Funding for a Removal Action and Request for Exemption to the 12-Month Statutory Limitation and \$2 Million Limitation at the Canfield, M.C. Sons Co. Site, Newark, Essex County, New Jersey

FROM: Cris D'Onofrio, On-Scene Coordinator  
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THRU: Walter Mugdan, Director  
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TO: Judith A. Enck  
Regional Administrator

Site ID No.: A21T

## I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the selected removal action and exemption to the 12-month statutory limitation and \$2 million limit described herein for the M.C. Canfield & Sons Site (also known as the Canfield, M.C. Sons Co. Site, and "the Site"), located in Newark, Essex County, New Jersey. The removal action will address the threats posed by lead contaminated soil on the residential property located at the Society Hill at University Heights III residential condominium complex which is bounded by Norfolk, Wickliff, West Market and Warren Streets in Newark, Essex County, New Jersey.

The total project ceiling requested in this Action Memorandum is \$2,251,136 of Direct Extramural Funds of which \$1,700,947 is from the Regional Removal Advice of Allowance for mitigation contracting to address the direct contact public health threat posed by lead on the Site. Conditions at the Site meet the criteria for a removal action under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §9601-9675, ("CERCLA") as documented in section 300.415 (b)(2) of the National Contingency Plan.

There are no nationally significant or precedent-setting issues associated with the Site.

## II. SITE CONDITIONS AND BACKGROUND

The Comprehensive Environmental Response, Compensation, and Liability Information System ("CERCLIS") Identification Number for the Site is NJN000206557.

The proposed action is considered a time-critical removal action.

218206



## **A. Site Description**

### **1. Removal site evaluation**

In response to a USA Today inquiry about former lead smelting operations, the New Jersey Department of Environmental Protection ("NJDEP") launched an investigation to verify 31 potential lead smelter facilities that were identified as part of a research project conducted by George Mason University and published in the American Journal of Public Health in 2001. M.C. Canfield & Sons, formerly located at 93 Wilsey Street in Newark, New Jersey, was identified as one of the 31 potential smelter operations. NJDEP performed initial sampling in March 2012 at properties identified as related to the former M.C. Canfield & Sons facility to determine if metal contamination associated with past smelting operation was present in soil above New Jersey's Soil Remediation Standards. NJDEP found elevated lead contamination in surface soils ranging from 753 parts per million ("ppm") to 4,860 ppm.

The Site was referred to EPA by NJDEP on May 9, 2012 (Appendix B). The Site is located within the Society Hill at University Heights III condominium complex which is bounded by Norfolk, Wickliff, West Market and Warren Streets in Newark, Essex County, New Jersey. Maps of the Site are included as Figures 1 and 2 of Appendix A. There is a church directly adjacent to the Site in the center of the northern portion, an unused school on the northeast corner and an abandoned warehouse adjacent to the eastern edge of the Site.

EPA has conducted two rigorous sampling efforts to assess the lead contamination at the Site. The first was conducted during the period August 20, 2012 through August 30, 2012 and was focused on meeting the needs of a removal site evaluation ("RSE") to determine eligibility for a removal action under CERCLA. The second sampling effort, the Phase II removal assessment, was conducted during the period April 22, 2013 through May 3, 2013. This effort was focused on further delineation of the lead contamination at the Site in order to determine an appropriate scope and approach for a removal action.

### **Removal Site Evaluation, Phase I Assessment**

The sampling design for the RSE was based on and is consistent with EPA Superfund Lead-Contaminated Residential Sites Handbook dated August 2003. For this sampling event, the Site was divided into 34 quadrants (P001-SS001 through P001-SS034) and included areas of high use, such as vegetable gardens or children's play areas. Five sample locations were designated within each quadrant. Soil samples from each location were collected from depths of 0 inch (bottom of sod), 0-2 inches, 2-6 inches, 6-12 inches, 12-18 inches, and 18-24 inches. Samples from each depth interval within a quadrant were composited into one sample to make a five point composite sample for each depth interval.

Additional to the composite sampling, discrete samples were collected from the four corners of the townhouse complex property and from the four quadrants within the Site where concentrations of lead were highest (SS012, SS013, SS014 and SS015). The intent of the discrete sampling was to provide better resolution with respect to the potential location of the contaminant source areas than could be obtained through composite sampling alone.

Composite samples were also collected from five off-Site locations. Samples were collected from the Trinity Union American Methodist Episcopal Church, located along the north boundary of the Site, to assess potential impacts due to soil migration from the Site. Samples were also

collected from four other properties located in the vicinity of the Society Hill at University Heights III condominium complex to establish background lead concentrations. Based on elevated lead concentrations found at the Church, additional soil samples were collected from three locations within the drip line of the Church building (6-30 inches from the building edge) to determine whether lead based paint was a potential contamination source at the Church property. During the August 2012 sampling event, a total of 233 composite soil samples and 101 discrete soil samples were collected from the Site, the Church and background locations.

All soil samples were screened for metals on-site using an Innov-X portable x-ray fluorescence instrument. Ten percent of samples collected were submitted to a laboratory for Target Analyte List metals analysis as confirmation of XRF results. The XRF soil screening results for lead are contained in EPA's M.C. Canfield RSE Report dated May 31, 2013. Figure 2 of Attachment A provides a summary of XRF results from the RSE Report.

XRF screening results from composite samples indicated lead at concentrations exceeding EPA's screening level of 400 ppm from 0-6 inches below ground surface ("bgs") in 13 quadrants. Concentrations ranging from 402 ppm to 1561 ppm were detected in the 0-6 inch samples collected from quadrants P001- SS012, SS013, SS014, SS015, SS017, SS019, SS023, SS026, SS027, SS028, SS029, SS030, and SS031.

Discrete samples were collected from quadrants P001-SS012, SS013, SS014 and SS015 as well as the four corners of the townhouse complex in P001-SS001, SS007, SS022 and SS034. Lead was detected in discrete samples in concentrations exceeding EPA's screening level of 400 ppm from 0-6 inches bgs in quadrants P001-SS012, SS013, SS014 and SS015, confirming the composite sampling results from these quadrants. Lead concentrations in the discrete samples from these quadrants were as high as 6,863 ppm.

Background samples collected from three of four off-Site properties (P005, P007 and P008) indicated lead levels ranging from 120 ppm to 297 ppm. Background samples from one of the four properties (P006) showed slightly higher lead levels ranging from 257 ppm to 425 ppm. The calculated average lead concentration detected in off-Site background samples was 214 ppm.

The RSE soil sampling results indicate that there has been a release of lead, a CERCLA-designated hazardous substance, at the Site in concentrations that pose a threat to the public health, particularly to children living in the townhouse complex. The RSE concluded that a time-critical CERCLA removal action is warranted to mitigate health threats associated with potential exposure to lead in soils at the Site.

Elevated levels of lead were also detected in samples collected from 0-6 inches bgs at the Church. Concentrations ranging from 1061 ppm to 1959 ppm were detected in quadrants P002-SS001 and SS002. To determine whether this contamination is related to the Site contamination or a potential lead based paint issue related to the structure, EPA conducted a XRF screening on the exterior painted surfaces of the Church. Lead was detected in some of the exterior painted surfaces at concentrations greater than five milligrams per square centimeter ("mg/cm<sup>2</sup>"). Four paint chip samples were collected from the exterior of the Church (windows trim, wall and chips from soil) and laboratory analyzed for TAL metals. Lead concentrations ranging from 8,600 ppm to 120,000 ppm were detected in three of the four paint chip samples collected.

Since tin was present in most soft solders manufactured at the time M.C. Canfield & Sons was in operation, EPA used screening results for tin to help determine whether the lead contamination at

the Church could be related to contamination found on-Site. Soil samples with the highest levels of lead, collected from within the footprint of the former smelter, did contain elevated levels of tin. Elevated levels of tin were not found in samples collected from the Church property. Both the absence of elevated levels of tin in the Church property soil samples and the high levels of lead found in paint chips from the Church building exterior suggest that the lead contamination at the Church is not attributable to the former smelting operation, but is instead likely the result of the breakdown of lead-based paint. A comparison of the lead and tin data for the discrete samples, Church composite samples, and Church paint chip samples can be found in EPA's RSE Report dated May 31, 2013.

## **Phase II Removal Assessment**

The RSE concluded that the Site is eligible for a CERCLA time-critical removal action to address the public health threats posed by lead contaminated soil. Based on the results of the RSE, EPA determined that additional sampling was necessary to better define the scope of the removal action. A Phase II Removal Assessment was therefore conducted in April/May 2013 to better define areas that might require excavation and to identify areas that might be suitable for alternative remedial actions such as institutional controls.

In order to meet these objectives, a sampling approach utilizing the collection of discrete samples at various depths was selected. Quadrants to be included in the Phase II Assessment were selected based upon the exceedance of the EPA residential screening level of 400 milligrams per kilogram ("mg/kg") of lead in the 0-6 inch bgs interval as determined by the RSE sampling conducted in August 2012. A total of 13 of the original quadrants established during the RSE were chosen for further delineation: SS012; SS013; SS014; SS015; SS017; SS019; SS023; SS026; SS027; SS028; SS029; SS030; and SS031.

Transects were established in each quadrant in order to provide adequate aerial coverage to meet delineation objectives. Soil samples were collected every 30 feet along each transect. Based on real-time evaluation of field screening results, additional samples were collected in between two sample points within a transect (at the 15' interval) and between transects as needed to provide better contaminant delineation. Additionally, at least one location was sampled from each flower bed. Additional samples from flower beds were collected as needed to provide adequate representation of each area being investigated. Sample locations for the Phase II Removal Assessment are shown in Figure 3, "Phase II Sample Locations with XRF Lead Results."

Sample depths were based on the composite sample results obtained during the RSE sampling event. Samples were collected from the 0-2 inches, 2-6 inches, 6-12 inches, 12-18 inches, and 18-24 inches depth intervals in quadrants SS012, SS013, SS014, SS015, SS023, SS026, and SS031 (see Areas 1 and 2, Figure 3). Samples were collected at 0-2 inches and 2-6 inches in quadrants SS017, SS019, SS027, SS028, SS029, and SS030 (see Area 3, Figure 3) with additional depth intervals being sampled at select locations to confirm the findings of the Phase I RSE. A total of 721 discrete soil samples were collected during the Phase II Removal Assessment.

Soil samples were screened for lead and tin on-Site using an Innov-X portable XRF instrument. For laboratory confirmation, ten percent of the samples were submitted to the EPA Division of Environmental Science and Assessment laboratory for TAL metals. Analytical results can be found in the "Sampling Trip Report – Phase II, M.C. Canfield & Sons Site" dated June 28, 2012.

The results of the Phase II Removal Assessment augmented and were consistent with the findings of the RSE sampling. The major conclusions drawn and described herein were made based on the results

of both sampling efforts. In general, lead contamination is more concentrated in the area immediately within and surrounding the previous footprint of the MC Canfield Smelter (smelter location based on Sanborn Maps utilized to conduct the RSE). Soils in this area (designated Area 1) are relatively more homogenous with respect to lead contamination. Soils in the remaining areas of the Site are relatively more heterogeneous with respect to lead contamination, making clear delineation difficult. Three general areas of concern were identified by EPA's sampling which contain the majority of the contamination and pose the highest risk of exposure to lead contamination at the Site. However, given the heterogeneity of the soil contamination observed, it should be recognized that other areas on the Site may contain lower levels of lead contamination.

The following are the main observations and conclusions made from the Phase II Removal Assessment.

- Field screening XRF results indicated lead at concentrations ranging from 44 ppm to 8,290 ppm and tin ranging from non-detect to 9,842 ppm. Laboratory analytical results indicated lead in concentrations as high as 13,000 mg/kg and tin as high as 12,000 mg/kg. XRF results are provided in Figure 3 of Appendix A. Analytical summary tables are also available in Weston Solution's Phase II Sampling Trip Report dated June 28, 2013.
- **Area 1:** The highest concentrations of lead were found in the quadrants at and adjacent to the location of the previous M.C. Canfield & Sons smelter. This area is defined by quadrants SS-012, SS-013, SS-014 and SS-015 and is referred to as Area 1 (Figure 4). Concentrations of lead exceeding EPA residential screening level of 400 mg/kg were found in Area 1 in a significant majority of the samples from 0 – 2' bgs. Lead concentrations in these quadrants range from background levels to 13,000 mg/kg and tend to increase with depth, suggesting that Area 1 contains the main source of lead contamination at the Site. The highest lead concentration of 13,000 mg/kg was detected in quadrant SS-015 in Area 1 at a depth of 18-24" (Sample No. P001-SS015-l-1824.001).
- **Area 2:** Area 2 is defined by quadrants SS-023, SS-026 and SS-031 and is directly north and east of the pool (Figure 4). Based on screening and analytical results, lead contamination is present but is not uniformly distributed in this area. Thirty-one of forty-four locations sampled in Area 2 contained lead levels in excess of the 400 mg/kg residential screening level with concentrations ranging from background to 2,163 mg/kg. Lead in excess of the residential screening level was found sporadically in each of the intervals sampled throughout the 0-24" bgs depth. Soil erosion where turf coverage has been compromised by foot traffic is evident in some portions of Area 2, creating a direct pathway for contaminant migration and exposure to lead contaminated soils.
- **Area 3:** Area 3 consists of quadrants SS-017, SS-019, SS-027, SS-028, SS-029 and SS-030. Results of the Phase II Removal Assessment confirmed the original findings of the RSE that lead contamination was largely confined to the 0-6" bgs depth within Area 3. Phase II results indicated lead concentrations ranging from background to 855 ppm. Sixty-nine of the eighty-seven sample locations in Area 3 showed lead concentrations in excess of the 400 mg/kg residential screening level in at least one of the depth intervals sampled. In general, the turf in Area 3 is in good condition, provides a barrier to direct contact, and retards erosion of contaminated soils.
- Lead concentrations in Area 3 are generally an order of magnitude lower than those found in the source area (Area 1). Both the distribution of lead in the top six inches of soil and the relatively lower concentrations of lead in Area 2 suggest that contaminated soils from Area 1

(the former smelter location) were likely spread and mixed with cleaner soils by mechanical means (such as bulldozing) during past construction activities.

## **2. Physical location**

The Site is located within the Society Hill at University Heights III condominium complex which is bounded by Norfolk, Wickliff, West Market and Warren Streets in Newark, Essex County, New Jersey. Maps of the Site are included as Figures 1 and 2 of Appendix A. There is a church directly adjacent to the Site in the center of the northern portion, an unused school on the northeast corner and an abandoned warehouse adjacent to the eastern edge of the Site.

The area is an urban, mixed residential, light industrial neighborhood and is located adjacent to the University Heights District that includes the Rutgers University, New Jersey Institute of Technology, the University of Medicine and Dentistry and the Essex County College campuses. The Essex County Vocational-Technical High School borders the southeast corner of the Site.

Topographically, the Site is located at approximately 108 feet above sea level and is located at 40° 44' 29.47" N latitude, 74°10' 58.97"W longitude. According to the New Jersey State Climatologist, the average annual precipitation for the Newark, New Jersey area ranges between 43 to 47 inches.

## **3. Site characteristics**

M.C. Canfield & Sons was a lead solder and babbitt metal manufacturer that operated at 93 Wilsey Street and 196 Newark Street from at least 1907 to approximately 1970. M.C. Canfield & Sons transferred ownership of the Site to Salem Trucking, Inc. in March 1974. The City of Newark foreclosed on the property encompassing the Site in September 1976 for nonpayment of taxes. The former M.C. Canfield & Sons Site was redeveloped for residential use during the early 1990's by K. Hovnanian at Newark, Urban Renewal Corporation II, Inc. ("K. Hovnanian"). The City of Newark transferred ownership to K. Hovnanian in December 1993. Ownership of a number of other surrounding lots was also transferred to K. Hovnanian and the Site was redeveloped into a residential condominium complex known as Society Hill at University Heights III circa 1993. The condominiums were sold to individual owners as single family residences, but the complex, including the outdoor grounds, is managed by Impac Property Management. A portion of Wilsey Street in Newark was renamed during the redevelopment and is now known as Cornerstone Lane. A copy of the current City of Newark Tax Map for Society Hill at University Heights III is included in Appendix A.

According to historical Sanborn Maps, the former M.C. Canfield & Sons facility would have occupied a portion of what is now Block 406, Lot 1 in the approximate area of Society Hill Building 25 (units 25.01, 25.02, 25.03, 25.10, 25.11 and 25.12). Prior to redevelopment, the M.C. Canfield & Sons facility was located at Block 409, Lots 22 & 31.

The Trinity Union American Methodist Episcopal Church, located on the corner of Cornerstone Lane and Warren Street at 226-230 Warren Street to the north of the Site, has been in that location since approximately 1922. The vacant school located at 200 Warren Street on the corner of Warren and Wickliff Streets previously housed the American History Public High School. This property has been owned by the City of Newark since at least 1892. The vacant warehouse located at 2-10 School Street has housed the Nite-Kraft Corporation, which made sleeping

garments during the 1950s and Artley Exhibits and Displays, which made signs and displays from the 1970s until at least 2003.

The Site is currently well maintained by the Society Hill at University Heights Condominium Association and is well landscaped with ornamental trees, shrub and flower plantings, and good grass cover in most areas. Some turf damage in a very few areas of high foot traffic has led to soil erosion and loss of integrity to what is normally a protective turf cover.

This is the first EPA removal action to be conducted at the Site.

**4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant**

Sampling and analysis conducted at the Site during EPA's RSE and Phase II Removal Assessment identified significant concentrations of lead in site soils. Lead is a CERCLA hazardous substance as defined in section 101(14) of CERCLA, 42 U.S.C. § 9601(14). The Site constitutes a "facility" within the meaning of section 101(9) of CERCLA, 42 U.S.C. § 9601(9), and the presence of lead in the soil at the Site constitutes a "release," as defined in section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

**Hazardous Substances**

**Statutory Source for Designation Under CERCLA**

Lead  
(D008)

Clean Water Act 307(a), Clean Air Act Section 112, RCRA 3001

The highest concentrations of lead were found in the area of the previous M.C. Canfield & Sons smelter (referred to as Area 1). A significant majority of the samples from Area 1 indicate concentrations of lead exceeding the EPA residential screening level of 400 mg/kg. Lead concentrations in this area ranged from background to 13,000 mg/kg and tend to increase with depth, suggesting that Area 1 contains the main source of lead contamination at the Site.

Thirty-one of forty-four locations sampled in Area 2 contained lead levels in excess of the 400 mg/kg residential screening level with concentrations ranging from background to 2,163 ppm (via XRF). Soil erosion where turf coverage has been compromised by foot traffic is evident in some portions of Area 2, creating a direct pathway for exposure to lead contaminated soils.

Lead concentrations in Area 3 were detected ranging from background to 855 ppm. Sixty-nine of the eighty-seven sample locations in Area 3 showed lead concentrations in excess of the 400 mg/kg residential screening level in at least one of the depth intervals sampled.

**5. NPL Status**

The Site is not on the National Priorities List ("NPL"), nor is it expected to be listed on the NPL.

**6. Maps, pictures and other graphic representations**

Please see the figures in Appendix A attached to this Action Memorandum.



## **A. Other Actions to Date**

### **1. Previous actions**

The Site was referred to EPA by NJDEP in May 2012. There have been no other removal activities taken by other government or private parties prior to this request.

### **2. Current actions**

There are no current or ongoing removal activities being taken by other government or private parties on the Site.

## **B. State and Local Authorities' Roles**

### **1. State and local actions to date**

In response to USA Today's inquiry about former lead smelting operations, NJDEP performed initial soil sampling in March 2012 to determine if metal contamination associated with past smelting operations was present in soil above New Jersey's Soil Remediation Standards. Elevated lead contamination was found in surface soil samples ranging from 753 ppm to 4,860 ppm. Based on the results of their initial investigation, NJDEP referred the Site to EPA in May 2012. No further actions have been taken by NJDEP at the Site.

### **2. Potential for continued state/local response**

There are no actions planned by state or local government agencies to address the contamination at the Site.

## **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT AND STATUTORY AND REGULATORY AUTHORITIES**

EPA has identified conditions at the Site that meet the requirements of section 300.415(b) (2) of the National Oil and Hazardous Substances Pollution Contingency Plan, which indicate that a removal action is necessary. The potential for release of hazardous substances from the Site present a threat to the public health and welfare as defined by section 300.415(b) (2) of the NCP. Specific site conditions that correspond to factors that provides a basis for a removal action under section 300.415 (b) (2) of the NCP include:

### ***(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants***

There is a potential for exposure to a hazardous substance to nearby populations or the food chain. The historic footprint of the M.C. Canfield & Sons smelter and the adjoining properties that now make-up the Society Hill at University Heights III condominium complex is a residential property that has been shown to contain elevated levels of lead in the surface and subsurface soils. Lead was detected at concentrations exceeding the EPA residential soil screening level of 400 mg/kg in surface soil samples (0-6" bgs) in 13 of the 34 quadrants at the townhouse complex. The highest concentration of lead in soil, found near the former M.C. Canfield & Sons facility, is 13,000 mg/kg (sample no. P001-SS015-L-18244-001).



Direct contact with the contaminated soil may occur through common outdoor activities that occur on the residential property, or by tracking lead contaminated soil into residences. Contact with the lead contaminated soils may present a health risk to the residents that occupy the complex. Young children and women of child bearing age currently reside in the Society Hill at University Heights III condominium complex.

The effects of exposure to lead are the same whether it enters the body through breathing or swallowing. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults to lead has resulted in decreased performance in some tests that measure functions of the nervous system. Lead exposure may also cause weakness in fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people, and may cause anemia. At high levels of exposure, lead can severely damage the brain and kidneys in adults or children and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriage. High-level exposure in men can damage the organs responsible for sperm production.

Lead is a cumulative poison; increasing amounts can build up in the body eventually reaching a point where symptoms and disability occur. Particularly sensitive populations are children and women of child-bearing age, due to the fetal transfer properties of lead. Cognitive deficits are associated with fetal and childhood exposures. Effects on the kidney, nervous system and heme-forming elements are also associated with increasing blood lead concentrations, both in children and adults. Other symptoms include: decreased physical fitness, fatigue, sleep disturbance, aching bones, abdominal pains, and decreased appetite. In adults, an increase in blood pressure is the most sensitive adverse health effect from lead exposure.

The relationship between soil lead concentrations and the consequent impact on blood levels in children has been examined through numerous epidemiological studies. Based on the results of such studies, it is generally believed that persistent exposure to soil-borne lead results in an increase in blood lead levels in children of 1 to 9 microgram per deciliter ("ug/dl") per 1,000 ppm lead in soil. Although this relationship may become less robust as exposure durations decrease and soil lead levels increase, it nonetheless provides compelling evidence of the potential hazard associated with the excessive lead concentrations found in the soil at the Site.

The Department of Health and Human Services has determined that lead and lead compounds are reasonably anticipated to be human carcinogens based on limited evidence from studies in humans and sufficient evidence from animal studies. EPA has determined that lead is a probable human carcinogen.

The presence of lead at the Society Hill at University Heights III residential property poses a significant risk to human health because of the potential for contact with and ingestion of lead-contaminated soils by residents, especially children. In addition, indoor residential contamination could result from foot traffic on and through soils containing elevated levels of lead. The potential for increased exposure to lead exists when residents perform gardening or work in flowerbeds, especially in areas with bare soil.

- (iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate***

Analytical data from the soil samples indicates that elevated levels of lead have been detected in the top two feet of soil of the condominium complex property as high as 13,000 mg/kg. Lead

contaminated soil at the Site can potentially become airborne and/or migrate when disturbed under dry conditions and may migrate during heavy rain events. Failure of the sprinkler system which caused soil erosion into the adjacent streets has been observed by EPA during site investigations.

There is physical and analytical evidence that contamination has migrated from the location of the former M.C. Canfield & Sons property onto neighboring residential areas, possibly during construction of the condominium complex. The most highly impacted residential areas are directly adjacent to the footprint of the former M.C. Canfield & Sons facility. If the soils in these areas are not addressed, the migration of the lead contaminated soils may continue.

**(v) *Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released***

Weather conditions may cause hazardous substances to migrate or to be released particularly through surface water run-off from precipitation, potentially contaminating adjacent properties or portions of the Site that have not yet been significantly impacted by lead contamination. Under dry conditions, exposed soil can potentially become airborne and/or migrate when disturbed, potentially impacting residential and public areas.

**(vii) *The availability of other appropriate federal or state response mechanisms to respond to the release***

Neither NJDEP nor the local government agencies currently have the resources available to conduct a time-critical removal action at the Site.

#### **IV. ENDANGERMENT DETERMINATION**

Actual and/or threatened release from the Site of lead, a CERCLA hazardous substance, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

#### **V. EXEMPTION FROM STATUTORY LIMITS**

Conditions at the Site meet the criterion for an exemption from the statutory limitations.

##### **A. Emergency Exemption:**

Section 104 (c)(1) of CERCLA, as amended, limits federal emergency response to 12 months and \$2 million, unless the criteria are met for an emergency exemption. The immediate risks to human health, welfare and the environment posed by the lead-contaminated soil found at the Site warrant the 12-month and \$2 million exemption as follows:

##### **1. There is an immediate risk to public health, or welfare, or the environment**

Lead identified in surface soil at concentrations as high as 13,000 mg/kg pose the risk of direct contact for residents of the area. Exposure to lead is likely, through routine play and outdoor maintenance activities such as gardening, landscaping, and grass cutting. The potential for increased exposure to lead exists and is a health concern when children place their hands or other

objects covered with lead contaminated dust/soil into their mouth. The threat is increased when bare soil is present. The potential for contamination of residential indoor areas may result from foot traffic on and through lead-contaminated soils.

**2. Continued response actions are immediately required to prevent, limit or mitigate an emergency**

The elevated levels of lead pose a public health threat to anyone who may come in contact with contaminated soil on the residential properties. Lead levels in surface soils were detected as high as 2,851 mg/kg in the 0-2" depth interval and 4,044 mg/kg in the 2-6" depth interval. Failure to complete the recommended response action would result in a continuing health threat to the children and the residents of the condominium properties as well as visitors to the properties. In addition, contaminated soils may migrate to off-Site locations impacting other portions of the residential property or adjacent properties.

**3. Assistance will not otherwise be provided on a timely basis**

There are no other federal, state or local government entities with sufficient resources to accomplish the required removal activities.

**VI. PROPOSED ACTIONS AND ESTIMATED COSTS**

**A. Proposed Actions**

**1. Proposed action description**

The objectives of the removal action at the M.C. Canfield & Sons Site are as follows:

- Prevent human exposure to lead in the residential area through direct dermal contact with and incidental ingestion of soil; and
- Prevent the potential migration of lead from contaminated Site soils to other areas of the Site or adjacent properties.

The following are the major activities to be implemented to achieve the removal action objectives:

- Conduct a complete inventory of landscape plants, shrubs, and trees in all areas to be excavated and ultimately restored. Additionally, document and photograph the landscape planting bed and sod areas in those locations to be excavated (as defined below) to provide a reference for Site restoration.
- Protect all underground utilities by disconnecting and restoring utility service as required to safely conduct excavation activities. Temporary utilities will be provided as needed to ensure continual service to residents through completion of the removal action.
- Removal of trees/shrubs, landscaping and any structures such as fencing as necessary.
- Excavation of lead contaminated soil in Area 1 (previously occupied by and adjacent to the former smelter). Area 1 is defined as quadrants SS-012, SS-013, SS-014 and SS-015

as shown in Figure 4, "Areas of Concern." Soil will be removed until the site cleanup criterion of 400 ppm on residential properties is attained or to a maximum depth of one foot below grade.

- Excavation of lead contaminated soils in portions of Area 2 (quadrants SS-026 and SS-031) that show evidence of high foot traffic and are therefore prone to poor grass cover and erosion. Soil will be removed until the Site cleanup criterion of 400 ppm on residential properties is attained or to a maximum depth of one foot below grade.
- Excavation of lead contaminated "hot spot" areas in quadrant SS-023 (Part of Area 2, see Figure 4, "Proposed Excavation Areas") where lead concentrations at or near the surface are above the 400 ppm cleanup criteria. Soil will be removed until the site cleanup criterion of 400 ppm on residential properties is attained or to a maximum depth of one foot below grade.
- Conduct perimeter air monitoring for particulates during soil removal activities to determine the effectiveness of dust suppression.
- Characterize and dispose of lead contaminated soil. Contaminated soil will be segregated as feasible according to its hazardous/non-hazardous character, loaded and transported off-Site for disposal at a facility which complies with the EPA Off-Site Rule.
- **Post Excavation Sampling.** Post excavation sampling will be conducted prior to backfilling as necessary to document lead concentrations in soils being left in place and to provide adequate documentation of the nature and extent of any lead contamination being left behind.
- **Backfill.** All excavated areas will be backfilled with certified clean fill. Fill material will be adequately graded and tamped to restore pre-excavation site grades and prevent unacceptable settlement.
- **Site Restoration.** Site restoration will include repair and/or installation of the sprinkler system, installation of flower beds, shrub, flower and tree plantings and establishing turf in a manner that is in keeping with the existing landscape at the Society Hill at University Heights III property. All restored areas will be maintained with respect to turf and landscape plantings to guarantee survival and erosion prevention for a period of one year after site restoration.
- **Institutional Controls and Education.** Contaminated soil in Area 3 will be left in place and addressed through institutional controls and public education. In concert with the Society Hill at University Heights III condominium association, EPA will develop and execute a plan for maintaining institutional controls and implementing a sustained public education effort that ensures the protection of public health related to lead contaminated soils remaining on-Site.

## **2. Contribution to remedial performance**

The response measures proposed in this Action Memorandum will address the threat to the public of direct contact with lead. The proposed action will contribute to any long-term remedial action with respect to the release or threatened release of hazardous substances at the Site.

### 3. Engineering evaluation/cost analysis

Due to the time-critical nature of this removal action, an EE/CA will not be prepared.

### 4. Applicable or relevant and appropriate requirements

ARARs within the scope of this removal action, including the RCRA and the Hazardous Materials Transportation Uniform Safety Act regulations that pertain to the disposal of hazardous wastes, will be met to the extent practicable. The Occupational Safety and Health Act regulations that pertain to health and safety will also be met to the extent practicable.

### 5. Project schedule

The proposed removal activities can be implemented immediately upon approval of this Action Memorandum and augmentation of the Site access agreement. The action will require 13 to 15 months to complete and takes into account a seven month construction season per year and a one year maintenance program to address issues associated with restoration. Additionally, the mitigation activities being implemented under this Action Memorandum will require development of a long-term public education program and institutional controls.

### B. Estimated Costs

The estimated costs for the completion of this project are summarized below. A detailed confidential Independent Government Cost Estimate is also included as Appendix C.

Extramural Costs:	Proposed Costs
Regional Removal Allowance Costs:	\$1,479,084
Total Cleanup Contractor Costs (This cost category includes estimates for ERRS, subcontractors, Notices to Proceed, and Interagency Agreements with Other Federal Agencies.	
Cleanup Contractor Cost Contingency (20%)	\$221,863
Total Cleanup Contractor Costs (ERRS)	\$1,700,947
Other Extramural Costs Not Funded from the Regional Allowance:	
Total RST, including multiplier costs	\$150,000
Total ERT, including multiplier costs	\$5,000
Total CLP	\$20,000
Subtotal	\$175,000
Subtotal Extramural Costs	\$1,875,947
Extramural Costs Contingency (20% of Subtotal, Extramural Costs rounded to nearest thousand)	\$375,189
TOTAL REMOVAL ACTION PROJECT CEILING	\$2,251,136

## **VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN**

Should the proposed actions described in this Action Memorandum not be implemented; the exposure threats posed by the lead will persist. Lead levels in soils at or near the surface of the Site present the potential for migration to further contaminate the environment and pose a threat to nearby residents.

## **VIII. OUTSTANDING POLICY ISSUES**

There are no known outstanding policy issues associated with the Site at the present time.

## **IX. ENFORCEMENT**

EPA is currently in the process of identifying all potentially responsible parties for the Site. Should the schedule allow, EPA will give the PRPs an opportunity to assume responsibility for the work outlined in the Action Memorandum. If EPA uses federal funds to perform the removal action, the On-Scene Coordinator will work with the Office of Regional Counsel to recover clean-up costs from any viable PRPs.

Based on full cost accounting practices, the total EPA costs for this removal action that will be eligible for cost recovery are estimated to be \$3,108,731. The following chart describes the costs which EPA believes are eligible for cost recovery as part of this response action.

Cost Type	Funding Requested in this Action Memorandum
Direct Extramural Costs	\$2,251,136
Direct Intramural Costs	\$ 200,000
Subtotal, Direct Costs	\$2,456,136
Indirect Costs (Indirect Regional Cost Rate (26.57%))	\$ 652,595
Estimated EPA Costs Eligible for Cost Recovery	\$3,108,731

Note: Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 1, 2004. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual costs from this estimate will affect the United States' right to cost recovery.

## **X. RECOMMENDATION**

This decision document represents the selected removal action for the Site which is located at the Society Hill at University Heights III residential condominium complex located at One Cornerstone Lane in Newark, Essex County, New Jersey, developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision document is based on the Administrative Record for the Site.

Conditions at the Site continue to meet the NCP Section 300.415(b)(2) criteria for a removal action and I recommend your formal approval of this Action Memorandum. The total project ceiling requested in this Action Memorandum provides \$2,251,135 of Direct Extramural funding, of which \$1,700,947 is from the Regional Removal Advice of Allowance. There are sufficient funds in our Advice of Allowance for this project.

Please indicate your formal approval of the removal action, 12-month exemption and \$2 million exemption proposed for the M.C. Canfield & Sons Site, as per current Delegation of Authority, by signing below.

Approved: Judith A. Enck  
Judith A. Enck  
Regional Administrator

Date: 9/26/13

Disapproved: \_\_\_\_\_  
Judith A. Enck  
Regional Administrator

Date: \_\_\_\_\_

Attachments  
cc: (after approval)

G. Pavlou, DRA  
W. Mugdan, ERRD-D  
J. LaPadula, ERRD-DD  
J. Rotola, ERRD-RAB  
D. Harkay, ERRD-RAB  
B. Grealish, ERRD-RAB  
C. Petersen, ERRD-NJRB  
D. Karlen, ORC-NJSFB  
J. Rooney, ORC-NJSFB  
W. Reilly, ORC-NJSFB

M. Mears, PAD  
K. Giacobbe, OPM-GCMB  
D. Pace, OPM-FMB  
M. Fiore, OIG  
R. Worley, 5202G  
R. Craig, RST  
I. Kropp, NJDEP  
A. Raddant, USDOJ  
L. Rosman, NOAA



**(SEE ATTACHED)**

**Appendix A**

**Figure 1: Site Location Map**

**Figure 2: Sample Locations with XRF Results from the RSE Report, August 2012**

**Figure 3: Phase II Sample Locations with XRF Lead Results**

**Figure 4: Areas of Concern**

**Figure 5: City of Newark Tax Map, Society Hill Block 406, Lot 1, at University Heights III**

**Appendix B**

**NJDEP Referral Letter**

**Appendix C**

**Independent Government Cost Estimate for MC Canfield & Sons Site**

## **Electronic File of Appendix A**

**Figure 1: Site Location Map**

**Figure 2: Sample Locations with XRF Results from the RSE Report, August 2012**

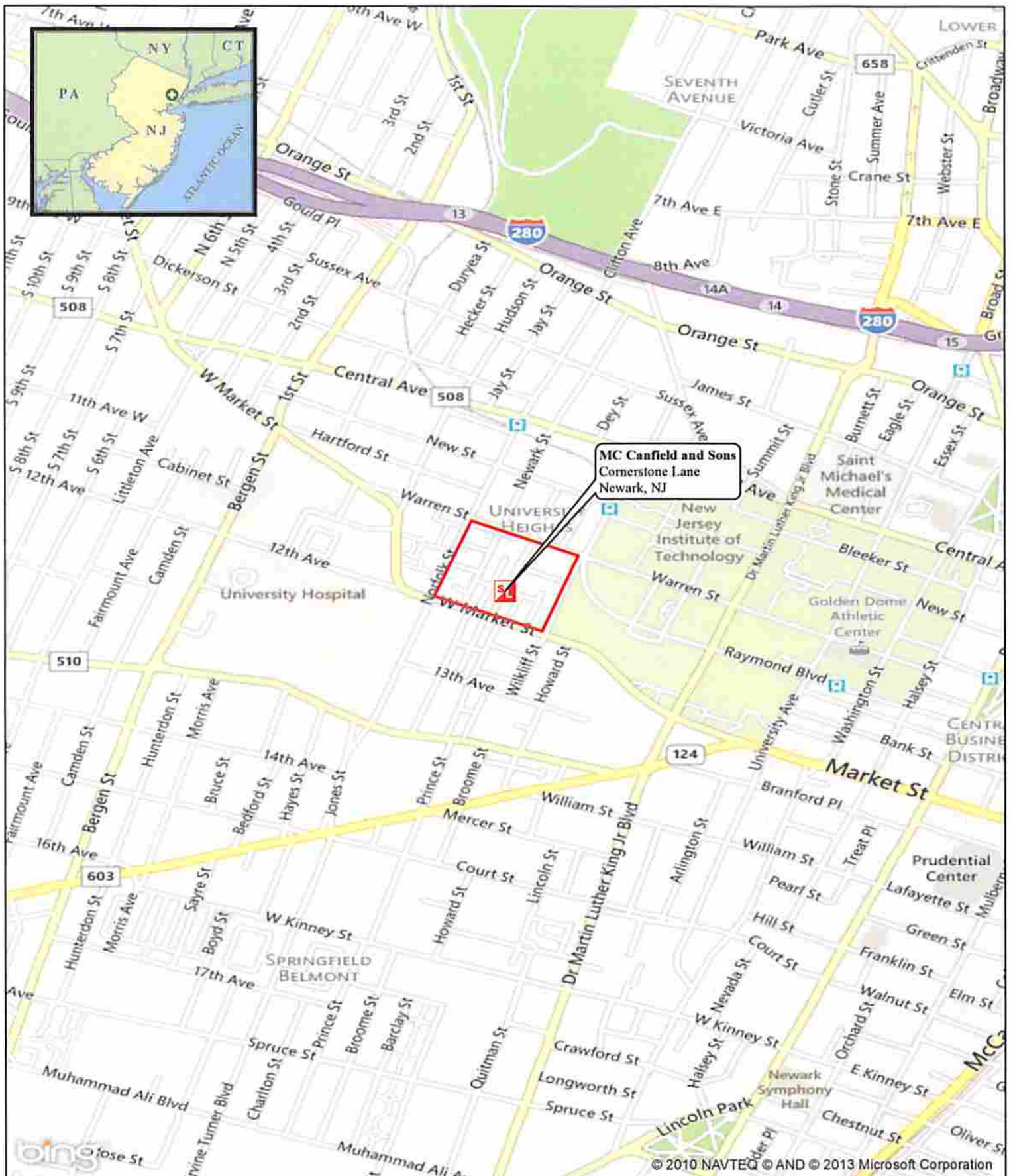
**Figure 3: Phase II Sample Locations with XRF Lead Results**

**Figure 4: Areas of Concern**



**Figure 5: City of Newark Tax Map, Society Hill Block 406, Lot 1, at University Heights III**

## **Appendix A**

### **Figure 1: Site Location Map**



## Legend

-  Site Location
-  Site Boundary



0 40 80 160 240 320 Miles



**Weston Solutions, Inc.**  
East Division

In Association With  
Avatar Environmental, LLC.,  
H & S Environmental, Inc. and  
Scientific and Environmental Associates, Inc.

## Figure 1: Site Location Map

McCanfield and Sons, Inc.  
Newark, New Jersey

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL SUPPORT TEAM 2  
CONTRACT # EP-W46-072

GIS ANALYST:	F CAMPBELL
EPA OSC:	C DONOFRI
RST SPM:	J PELTY
FILENAME:	SITE LOCATION MAP

## **Appendix A**

**Figure 2: Sample Locations with XRF Results  
from the RSE Report, August 2012**

## **Appendix A**

**Figure 3: Phase II Sample Locations with XRF Lead Results**

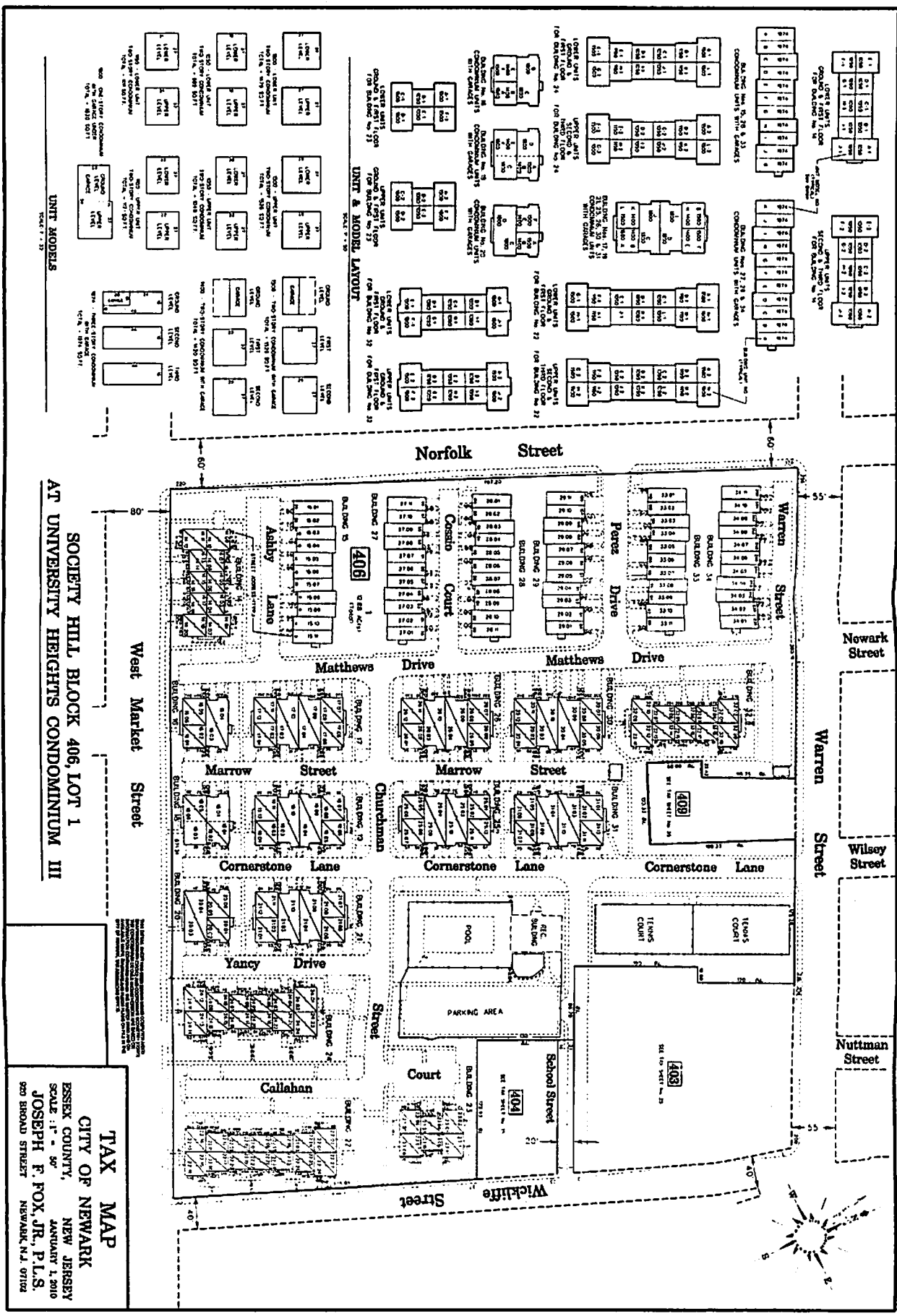
## **Appendix A**

Figure 4: Areas of Concern



## **Appendix A**

**Figure 5: City of Newark Tax Map, Society Hill  
Block 406, Lot 1, at University Heights III**



## **Appendix B**

### **NJDEP Referral Letter**



## State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF THE COMMISSIONER

Mail Code 401-07

P.O. Box 402

Trenton, NJ 08625-0402

TEL (609) 292-2885

FAX (609) 292-7695

CHRIS CHRISTIE  
*Governor*

KIM GUADAGNO  
*Lt. Governor*

BOB MARTIN  
*Commissioner*

Walter Mugdan, Director  
Emergency and Remedial Response Division  
United States Environmental Protection Agency  
Region II  
290 Broadway  
New York, New York 10007-1866

Re: Removal Action Site Submission  
M.C. Canfield & Sons site in Newark, Essex County  
Marrow Street and Cornerstone Lane (formerly 93 Wilsey Street)  
Newark, Essex County  
NJDEP/SRP PI# 562176

Dear Mr. Mugdan:

The New Jersey Department of Environmental Protection (DEP) submits the former M.C. Canfield & Sons site in Newark, Essex County for removal action consideration under the federal Comprehensive Environmental Response and Cleanup Liability Act (CERCLA). Elevated levels of lead contamination detected in soil at residential properties associated with the former M.C. Canfield & Sons site require further action to protect public health.

DEP performed initial sampling March 15, 2012 at properties identified as related to the former M.C. Canfield & Sons site to determine if metal contamination associated with past smelting operations was present in soil above New Jersey's Soil Remediation Standards. Elevated lead contamination in surface soil samples was found ranging from 753 parts per million (ppm) to 4,860 ppm collected from vegetated areas on Cornerstone Lane and Marrow Street and a common area of a condominium complex. The results indicate that the properties were impacted by the former smelting company. DEP believes the site warrants action by the U.S. Environmental Protection Agency's (EPA) Removal Action Branch to delineate and remove soil contaminated above both agencies 400 ppm lead remediation standard. Elevated levels of copper, zinc and arsenic also were detected with the lead contamination.

DEP has been in contact with a condominium association manager to discuss the results preliminarily and advise residents to take necessary precautions to avoid contact with the

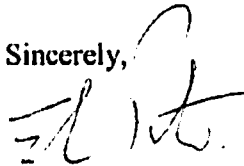
contaminated soil. DEP also provided Newark officials information about the former smelter site and this referral to your agency.

The former M.C. Canfield & Sons site was redeveloped for residential use during the late 1980s or early 1990s. A portion of Wilsey Street in Newark was renamed and is now known as Cornerstone Lane. Smelter operations at the former M.C. Canfield & Sons site likely occurred from approximately 1892 to 1989, according to an ongoing DEP screening of past operations in the area. The former M.C. Canfield & Sons site first appears in historical records in 1927.

Further, this is the second site where DEP sampling has identified significantly elevated levels of soil contamination associated with a former smelting operation. DEP's Site Remediation Program will continue to provide EPA with any additional contamination concerns identified at other smelter locations as information becomes available.

DEP already supplied background information about the former M.C. Canfield & Sons site to your Removal Action Branch to expedite a response. If you have any questions or would like to discuss these issues in further detail, please contact me or Fred Mumford, Superfund coordinator in the Site Remediation Program, at (609) 984-9769.

Sincerely,



Ed Putnam  
Assistant Director  
Publicly Funded Remediation Element  
Site Remediation Program

**Enclosures**

C: Dave Sweeney, Assistant Commissioner, DEP, Site Remediation Program  
Ken Kloo, Director, DEP, Site Remediation Program  
Fred Mumford, Section Chief, DEP, Site Remediation Program  
Joseph Rotola, Branch Chief, Removal Action Branch, EPA Region II  
Mel Hauptman, Section Chief, Special Projects Branch, EPA Region II

18MAY 2:10PM