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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 W. JACKSON BLVD
CHICAGO, IL 60604

22 MAR 2013

MEMORANDUM

SUBJECT: ACTION MEMORANDUM - Request for a Time-Critical Removal Action and Exemption from the 12-Month Statutory Limit at the Kiser Plating Site, Muncie, Delaware County, Indiana (Site ID # B5XK)

FROM: Shelly Lam, On-Scene Coordinator
Emergency Response Branch 1/Response Section 1

THRU: Jason H. El-Zein, Chief
Emergency Response Branch 1

TO: Richard C. Karl, Director
Superfund Division

I. PURPOSE

This memorandum requests and documents your approval to expend up to \$1,021,918 to conduct a time-critical removal action and for an exemption from the 12-month statutory limit at the Kiser Plating Site (the site) in Muncie, Delaware County, Indiana.

The response actions proposed herein are necessary in order to mitigate threats to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances at the site, a former plating shop. The U.S. Environmental Protection Agency's On-Scene Coordinator (OSC) has documented the presence of hazardous substances at the site.

The time-critical removal actions include the following: developing and implementing site plans; removing soil that poses a direct contact threat; backfilling excavated areas; conducting vapor intrusion assessment and mitigation; and transporting and disposing off-site of hazardous substances, pollutants and contaminants.

If responsible parties cannot be found, EPA will conduct these response actions in accordance with Section 104(a)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S. Code (USC) § 9604(a)(1), and 40 Code of Federal Regulations (CFR) § 300.415 of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) to abate or eliminate the immediate threats posed to public health and/or the environment.

The uncontrolled conditions of the hazardous substances present at the site require that this action be classified a time-critical removal action. The project will require approximately 60 working days to complete, including the time to complete excavation and vapor intrusion assessment and mitigation activities.

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

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID: IND984891879
RCRA ID: IND984891879
Category: Time-Critical Removal Action

A. Site Description

1. Removal Site Evaluation

The following sections provide background information on the site. EPA utilized historical data from previous investigations and results from a Site Assessment to determine site conditions.

a. Kiser Plating

Kiser Plating (Photo 1) operated as plating shop from approximately 1911 until 1999. The site operated under the names Muncie Jewelry & Plating Works and J.F. Kiser Company Plating Works. Muncie Heat Light and Power Company, Muncie Electric Light Company, a hay warehouse, and Muncie Bagging Company also operated there prior to the plating shop (Administrative Record [AR] #12). In 2001, the majority of the buildings on the property were destroyed in a fire. The City of Muncie demolished the one remaining building in 2010 or 2011. The site is currently vacant.

b. City of Muncie

In 2008 and 2009, the City of Muncie commissioned Phase I and II Environmental Site Assessments (ESA). The Phase II ESA identified contamination in soil and groundwater. Contaminants included metals such as arsenic, copper, mercury, and nickel; and volatile organic compounds (VOC) such as trichloroethene (TCE) and vinyl chloride (AR #14). Arsenic and mercury were detected above Indiana Department of Environmental Management (IDEM) Industrial Default Closure Levels (IDCL) in near-surface soil (0-2 feet below ground surface [bgs]). VOCs were detected in soil above IDCLs at depths of 6-7 feet bgs. Additionally, TCE, vinyl chloride, arsenic, copper, and nickel were detected in groundwater samples above IDEM IDCLs. Below is a summary of results above IDEM screening levels; these locations are shown in Figure 3.

- Arsenic was detected above the IDEM IDCL of 5.8 milligrams per kilogram (mg/kg) in seven soil samples at a maximum concentration of 9 mg/kg;
- Mercury was detected in one soil sample at a concentration of 75.85 mg/kg, above the IDCL of 32 mg/kg;
- TCE was detected in one subsurface soil sample (6-7 feet bgs) at a concentration of 32.6 mg/kg, well above the IDCL of 0.35 mg/kg;
- cis-1,2-Dichloroethene (DCE) was detected in one subsurface soil sample (6-7 feet bgs) above the IDCL of 0.58 mg/kg at a concentration of 5.39 mg/kg; and
- Vinyl chloride was also detected above the IDCL of 0.027 mg/kg in one subsurface soil sample (6-7 feet bgs) at a concentration of 0.356 mg/kg.

Two groundwater monitoring wells contained VOCs above the IDEM IDCLs and one monitoring well had metals above the IDCLs. Below is a summary of groundwater results above the IDEM screening levels; locations of wells with contamination are shown in Figure 3.

- In monitoring well MW-02, total and dissolved arsenic were above the IDCL of 0.01 milligrams per liter (mg/L) at concentrations of 0.0179 and 0.0149 mg/L, respectively;
- Total and dissolved copper exceeded the IDCL of 4.1 mg/L in MW-02 at concentrations of 351 and 329 mg/L, respectively;
- Total and dissolved nickel were above the IDCL of 2 mg/L in monitoring well MW-02 at concentrations of 18.5 and 15.7 mg/L, respectively;
- TCE was above the IDCL of 0.0072 mg/L at 0.112 mg/L in the sample from MW-10 and 5.12 mg/L in the sample from MW-02; and
- Vinyl chloride was above the IDCL of 0.004 mg/L in the sample from MW-10 at a concentration of 0.0571 mg/L.

c. EPA

At the request of the City of Muncie, EPA conducted a Site Assessment on October 26 and 29, 2012, and collected soil and soil gas samples. The Superfund Technical Assessment and Response Team (START) prepared a report documenting the Site Assessment (AR #18).

EPA collected 11 soil samples from 0 to 4 feet bgs for total and Toxicity Characteristic Leachate Procedure (TCLP) metals, total cyanide, and VOCs. EPA also collected seven soil gas samples for VOC analysis. Analytical results are in Tables 1 and 2 of this Action Memorandum. Sample locations are presented in Figure 3. Photo 2 shows Site Assessment activities.

EPA compared soil results to November 2012 Removal Management Levels (RML) for industrial soil and regulatory levels for toxicity established in Resource Conservation and Recovery Act (RCRA), 40 CFR § 261.24. TCLP cadmium was above the regulatory level of 1 mg/L in the sample from SS-04 at a concentration of 15 mg/L.

Soil gas data were compared to soil gas screening levels for a 10^{-4} cancer risk as established in EPA's Vapor Intrusion Screening Level (VISL) Calculator, which were then converted from

units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to parts per billion by volume (ppbv) using standard atmospheric temperature and pressure and the molecular weight of each chemical constituent. Six of the seven soil gas samples contained VOCs above the VISL screening levels.

- 1,1-DCE was detected in one sample at a concentration of 660 ppbv, which was above the screening level of 521 ppbv;
- trans-1,2-DCE was detected in three samples above the screening level of 156 ppbv. Concentrations above the screening level ranged from 10,000 to 120,000 ppbv;
- Ethylbenzene was above the screening level of 220 ppbv in one sample at a concentration of 970 ppbv;
- Tetrachloroethene (PCE) was detected in one sample above the screening level of 59 ppbv at a concentration of 85 ppbv;
- TCE was detected above the screening level of 3.8 ppbv in six samples with values ranging from 4.5 to 82,000 ppbv;
- 1,2,4-Trimethylbenzene was detected in two samples above the screening level of 14.6 ppbv at a maximum concentration of 110 ppbv;
- Vinyl chloride was detected in two samples above the screening level of 62 ppbv with the highest concentration at 20,000 ppbv; and
- m,p-Xylene was detected in two samples above the screening level of 226 ppbv at concentrations of 290 and 1,500 ppbv.

2. Physical location

Kiser Plating is located at 401 E. Howard Street in Muncie, Delaware County, Indiana, 47305 (see Figures 1 and 2 and Photo 1). It is located on the southeast portion of downtown Muncie in an area that is a mixture of commercial, residential, and industrial properties. Based on 2010 census data, approximately 10,000 people live within one mile of the site. The geographical coordinates are latitude 40.1902° north and longitude 85.3832° west.

A residential building is located north of Kiser Plating across Howard Street; a warehouse and former industrial property are to the east across an alley; a commercial building is located to the south; and residential properties are located to the west (Photo 3).

The OSC screened the area surrounding Kiser Plating for Environmental Justice (EJ) concerns using Region 5's EJ Assist Tool (which applies the interim version of the national EJ Strategic Enforcement Assessment Tool (EJSEAT)). Census tracts with a score of 1, 2, or 3 are high-priority potential EJ areas of concern according to EPA Region 5. Kiser Plating is in a census tract with a score of 2 (Attachment III). Therefore, Region 5 considers this site to be a high-priority potential EJ area of concern. Please refer to the attached analysis for additional information.

3. Site characteristics

The site is 0.69 acres in size. The City of Muncie demolished the remaining building in 2010 or 2011. The site is vacant, but was operated as a plating shop beginning in 1911. The site is open and access is unrestricted. The proposed time-critical removal would be the first EPA removal action there.

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

A release or threat of release of hazardous substances, pollutants, or contaminants is present at the site. EPA documented the presence of hazardous substances as defined by section 101(14) of CERCLA including arsenic, cadmium, copper, 1,1-dichloroethene, trans-1,2-dichloroethene, ethylbenzene, mercury, nickel, PCE, TCE, vinyl chloride, and xylene. The Site Assessment Report documenting these findings is part of the Administrative Record for the Site.

Hazardous substances are present in soil and soil vapor. Possible exposure routes for hazardous substances include dermal contact with contaminated soil and inhalation of contaminated air that has migrated through subsurface soil and groundwater (i.e. vapor intrusion). Potential human receptors include trespassers, future workers and nearby residents.

5. NPL status

The OSC does not anticipate that IDEM will propose this site for the NPL.

6. Maps, pictures and other graphic representations

The following figures are attached to this memorandum.

Figure 1 Site Location Map
Figure 2 Site Layout Map
Figure 3 Sample Location and Proposed Excavation Map
Photographs of the Site, and
Attachment III - Environmental Justice (EJ) analysis

B. Other Actions to Date

1. Previous actions

The City of Muncie demolished one building and conducted Phase I and II environmental site assessments.

2. Current actions

No actions are currently being conducted at the site.

C. State and Local Authorities' Roles

The City of Muncie verbally requested assistance from EPA in assessing the site. In an e-mail dated January 4, 2013, Steve Yeary of IDEM's Site Investigation Section requested EPA assistance at the site (AR #15). IDEM does not have resources to immediately mitigate the threat of release.

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

The conditions present at Kiser Plating present an imminent and substantial threat to the public health, or welfare, and the environment based upon the factors set forth in NCP § 300.415(b)(2). These factors include, but are not limited to, the following:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

Analytical results from the Phase II ESA and EPA's site assessment indicated that hazardous substances, as defined by CERCLA § 101(14), pollutants, and contaminants are present and represent an actual or potential exposure threat to nearby human populations. Concentrations of hazardous substances exceed relevant screening or regulatory levels.

Possible exposure routes include dermal contact with contaminated soil due to unrestricted site access; and inhalation of contaminated air that has migrated through subsurface soil and groundwater (i.e. vapor intrusion). Potential human receptors include trespassers, future site workers and nearby residents.

Hazardous substances identified during the Phase II ESA and site assessment include arsenic, cadmium, copper, 1,1-dichloroethene, trans-1,2-dichloroethene, ethylbenzene, mercury, nickel, PCE, TCE, vinyl chloride, and xylene. The Agency for Toxic Substances and Disease Registry (ATSDR) has studied toxicological effects of the hazardous substances, and information about each is provided below and referenced in the Administrative Record (Attachment II).

Arsenic: Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening of the skin and the appearance of small "corns" or "warts" on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen. The International Agency for Research on Cancer (IARC) has determined that inorganic arsenic is carcinogenic to humans (AR #11).

Cadmium: Breathing high levels of cadmium can severely damage the lungs. Eating food or drinking water with very high levels severely irritates the stomach, leading to vomiting and diarrhea. Long-term exposure to lower levels of cadmium in air, food, or water leads to a buildup of cadmium in the kidneys and possible kidney disease. Other long-term effects are lung damage and fragile bones. DHHS has determined that cadmium and cadmium compounds are known human carcinogens (AR #13).

Copper: High levels of copper can be harmful. Breathing high levels of copper can cause irritation of your nose and throat. Ingesting high levels of copper can cause nausea, vomiting, and diarrhea. Very-high doses of copper can cause damage to the liver and kidneys, and can even cause death (AR #7).

1,1-Dichloroethene: The main effect from breathing high levels of 1,1-dichloroethene is on the central nervous system. Some people lost their breath and fainted after breathing high levels of the chemical. Breathing lower levels of 1,1-dichloroethene in air for a long time may damage the nervous system, liver, and lungs. Workers exposed to 1,1-dichloroethene have reported a loss in liver function, but other chemicals were present. EPA has determined that 1,1-dichloroethene is a possible human carcinogen (AR #1).

trans-1,2-Dichloroethene: Breathing high levels of 1,2-DCE can cause nausea, drowsiness, and tiredness; breathing very high levels can be fatal. Animals that ingested extremely high doses of cis- or trans-1,2-DCE died. The long-term (365 days or longer) human health effects after exposure to low concentrations of 1,2-DCE are not known. One animal study suggested that an exposed fetus may not grow as quickly as one that has not been exposed (AR #2).

Ethylbenzene: Exposure to high levels of ethylbenzene in air for short periods can cause eye and throat irritation. Exposure to higher levels can result in dizziness. Irreversible damage to the inner ear and hearing has been observed in animals exposed to relatively low concentrations of ethylbenzene for several days to weeks. Exposure to relatively low concentrations of ethylbenzene in air for several months to years causes kidney damage in animals. The IARC has determined that ethylbenzene is a possible human carcinogen (AR #3).

Mercury: The nervous system is sensitive to metallic mercury. Exposure to very high levels of metallic mercury vapor can cause brain, kidney, and lung damage and may seriously harm a developing fetus. Exposure to mercury vapor concentrations high enough to produce such serious effects might also cause coughing, chest pains, nausea, vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation. Exposure to lower levels of airborne mercury for prolonged periods of time would produce more subtle effects, such as irritability, sleep disturbances, excessive shyness, tremors, coordination problems, changes in vision or hearing, and memory problems (AR #5).

Nickel: The most common harmful health effect of nickel in humans is an allergic reaction. Approximately 10-20% of the population is sensitive to nickel. People can become sensitive to nickel when jewelry or other things containing it are in direct contact with the skin for a long

time. Once a person is sensitized to nickel, further contact with the metal may produce a reaction. The most common reaction is a skin rash at the site of contact. The skin rash may also occur at a site away from the site of contact (AR #8).

Tetrachloroethene: High concentrations of PCE can cause dizziness, headache, sleepiness, confusion, nausea, difficulty in speaking and walking, unconsciousness, and death. Irritation may result from repeated or extended skin contact with it. These symptoms occur almost entirely in work (or hobby) environments when people have been accidentally exposed to high concentrations or have intentionally used PCE to get a "high." DHHS has determined that PCE may reasonably be anticipated to be a carcinogen. PCE has been shown to cause liver tumors in mice and kidney tumors in male rats (AR #4).

Trichloroethene: Breathing small amounts of TCE may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating. Breathing large amounts of TCE may cause impaired heart function, unconsciousness, and death. Breathing it for long periods may cause nerve, kidney, and liver damage. Drinking large amounts of TCE may cause nausea, liver damage, unconsciousness, impaired heart function, or death. Drinking small amounts of TCE for long periods may cause liver and kidney damage, impaired immune system function, and impaired fetal development in pregnant women, although the extent of some of these effects is not yet clear. Skin contact with TCE for short periods may cause skin rashes. Some studies of people exposed over long periods to high levels of TCE in drinking water or in workplace air have found evidence of increased cancer (AR #6).

Vinyl Chloride: Breathing high levels of vinyl chloride can cause dizziness or sleepiness. Breathing very high levels can cause one to pass out, and breathing extremely high levels can cause death. Some people who have breathed vinyl chloride for several years have changes in the structure of their livers. Some people who work with vinyl chloride have nerve damage and develop immune reactions. The lowest levels that produce liver changes, nerve damage, and immune reaction in people are not known. Some workers exposed to very high levels of vinyl chloride have problems with the blood flow in their hands. Their fingers turn white and hurt when they go into the cold. DHHS has determined that vinyl chloride is a known carcinogen. Studies in workers who have breathed vinyl chloride over many years showed an increased risk of liver, brain, lung cancer, and some cancers of the blood have also been observed in workers (AR #9).

Xylene: High levels of exposure to xylenes for short or long periods can cause headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Exposure of people to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties; stomach discomfort; and possibly changes in the liver and kidneys. It can cause unconsciousness and even death at very high levels (AR #10).

High levels of hazardous substances, pollutants, or contaminants in soils largely at or near the surface that may migrate;

Cadmium, arsenic, and mercury were detected in near-surface soils above screening or regulatory levels. Cadmium is present at or near the surface at a concentration of 15 mg/L, which is fifteen times higher than the TCLP level of 1 mg/L. At this concentration, cadmium is leachable and may migrate through the soil into groundwater. Additionally, arsenic, copper, and nickel were detected in groundwater samples indicating that metals have migrated into groundwater.

TCE and vinyl chloride were detected in deeper soil (6-7 feet bgs) and groundwater, indicating that migration from soil to groundwater is occurring. Shallow groundwater likely flows to the north or northwest toward the White River, which is approximately 2700 feet away.

Hazardous substances, including PCE, TCE, 1,1-DCE, trans-1,2-DCE, ethylbenzene, vinyl chloride, and xylene, were documented in soil gas above screening levels. Volatilization of hazardous substances in the soil and groundwater may be a threat to nearby residents based on concentrations in soil gas samples collected by EPA. During the site assessment, the OSC followed the "Multiple Lines of Evidence Approach" outlined in the *Region 5 Vapor Intrusion Guidebook* (EPA, 2010) by using existing groundwater results and then collecting soil gas samples to determine if vapor intrusion was a potential problem. The analytical results indicated that the vapor intrusion pathway is partially completed and there is need for additional assessment at nearby residences. Vapor intrusion may cause potential exposure to hazardous substances by migrating to nearby human populations. Residential properties are located directly north and west of the site, along the direction of anticipated groundwater flow.

Per the VISL Calculator, several of the hazardous substances detected in soil gas exceed the target concentrations for soil gas. For example, the screening level for TCE is 3.8 ppbv. TCE was detected in a soil gas sample (KPS-SG03-102912) at a concentration of 82,000 ppbv, over 20,000 times greater than the screening level. As discussed above, TCE is a hazardous substance with the potential to cause cancer in humans.

The availability of other appropriate federal or State response mechanisms to respond to the release;

IDEM requested written assistance from EPA to investigate and address the potential threats posed by Kiser Plating. IDEM does not have resources to immediately mitigate the threat of release.

IV. ENDANGERMENT DETERMINATION

Given the site conditions, the nature of the known and suspected hazardous substances on site, and the potential exposure pathways described in Sections II and III, actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response actions

selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

Analytical data documented that soil and soil gas exceed relevant screening or regulatory levels. Historical soil results from the Phase II ESA showed high levels of metals in near-surface soil above IDEM's screening levels for industrial properties. Additionally, soil gas data exceeded screening levels established in the VISL Calculator. These conditions document the need for soil excavation, installation of an impermeable cover to protect receptors from the direct contact threat, and the need for additional vapor intrusion assessment.

V. EXEMPTIONS FROM STATUTORY LIMITS

Emergency Exemption:

Section 104(c) under CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA), limits a Federal response action to 12 months unless three criteria are met. The Region 5 *Vapor Intrusion Guidebook* recommends that post-installation proficiency sampling occur 30 days, 180 days, and one year after mitigation system installation. As such, the OSC anticipates that post-installation proficiency sampling may exceed the 12-month statutory limit. The conditions present at the Kiser Plating site warrant the 12-month exemption based on the following criteria:

- A. Continued response actions are immediately required to prevent, limit, or mitigate an emergency;

The high concentrations of VOCs in soil gas constitute an imminent threat to human health. Response actions are immediately required to mitigate exposure to nearby residents to hazardous substances through the vapor intrusion pathway.

- B. There is an immediate risk to public health or welfare or the environment;

Concentrations of hazardous substances in soil gas represent an immediate risk to public health through vapor intrusion. EPA documented trans-1,2-DCE as high as 120,000 ppbv and TCE as high as 82,000 ppbv. For TCE, concentrations in soil gas are more than 20,000 times higher than the screening level.

- C. Assistance will not otherwise be provided on a timely basis.

In an e-mail dated January 4, 2013, IDEM requested assistance from EPA to address the potential threats posed by Kiser Plating. IDEM does not have resources to immediately mitigate the threat of release. IDEM has been affected by state budget cuts, and does not have adequate financial resources to commit to the cleanup.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The OSC proposes to undertake the following response actions to mitigate threats posed by the presence of hazardous substances at Kiser Plating. The response actions described in this memorandum directly address actual or potential releases of hazardous substances on site, which may pose an imminent and substantial endangerment to public health, or welfare, or the environment.

- a. Develop and implement site plans, including a Work Plan, Health and Safety Plan, and Air Monitoring Plan;
- b. Remove approximately 1,500 cubic yards of contaminated soil based on Phase II ESA and site assessment analytical results. Sample results documented that the majority of hazardous substances posing a direct contact threat are located within the top 2 feet of soil. Figure 3 shows the proposed excavation boundaries;
- c. Backfill excavated areas with clean impermeable fill;
- d. Conduct vapor intrusion assessment at up to 50 nearby properties within ¼ mile of the site;
- e. Perform vapor intrusion mitigation at residential properties where assessment results show that relevant indoor air action levels are exceeded in accordance with current EPA guidance. This task may include installation of vapor mitigation systems and post-installation proficiency sampling in accordance with most current Region 5 and national vapor intrusion guidance. Based on experience at other vapor intrusion sites, the OSC has estimated that approximately one half of properties assessed may require mitigation systems.
- f. Consolidate and package hazardous substances, pollutants and contaminants for transportation and off-site disposal in accordance with the EPA Off-Site Rule, 40 CFR § 300.440;

The OSC will conduct removal actions in a manner not inconsistent with the NCP. The OSC will initiate planning for provision of post-removal site control consistent with the provisions of NCP § 300.415(I).

The threats posed by uncontrolled substances considered hazardous meet the criteria listed in NCP § 300.415(b)(2), and the response actions proposed herein are consistent with any long-term remedial actions which may be required. Elimination of hazardous substances, pollutants

and contaminants that pose a substantial threat of release is expected to minimize substantial requirements for post-removal site controls.

The estimated costs to complete the activities outlined above are summarized below. These activities will require an estimated 60 on-site working days to complete; this includes time for assessing and mitigating vapor intrusion threats to include post-installation proficiency sampling.

Detailed cleanup contractor costs are presented in Attachment I.

2. Contribution to remedial performance

The proposed action should not impede future actions based on available information.

3. Engineering Evaluation/Cost Analysis (EE/CA)

Not Applicable

4. Applicable or relevant and appropriate requirements (ARAR)

The OSC sent a letter on January 8, 2013, to Gabriele Hauer and Rex Osborn at IDEM requesting the identification of any applicable State ARARs (AR #16). IDEM submitted ARARs for the site on January 9, 2013 (AR #17). ARARs IDEM identified included containing fugitive dust during excavation and management of solid and hazardous waste. After a review of the ARARs, the OSC determined that they were practicable. In addition, the OSC utilized IDEM industrial default closure levels as ARARs.

All hazardous substances, pollutants or contaminants removed off-site pursuant to this removal action for treatment, storage and disposal shall be treated, stored, or disposed at a facility in compliance, as determined by EPA, with the EPA Off-Site Rule, 40 CFR § 300.440.

B. Removal Project Ceiling Estimate – Extramural Costs:

<u>Regional Removal Allowance Costs:</u>	
Total Cleanup Contractor Costs (Includes a 20% contingency)	\$745,080
<u>Other Extramural Costs Not Funded from the Regional Allowance</u>	
Total START, including multiplier costs	\$143,544
Subtotal, Extramural Costs	\$888,624
Extramural Costs Contingency (15% of Subtotal, Extramural Costs)	\$133,294
TOTAL REMOVAL ACTION PROJECT CEILING	\$1,021,918

The response actions described in this memorandum directly address the actual or threatened release of hazardous substances, pollutants, or contaminants at the site which may pose an imminent and substantial endangerment to public health or welfare or to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

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

Given the site conditions, the nature of the hazardous substances documented on-site, and the potential exposure pathways to nearby populations described in Sections II and III above, actual or threatened release of hazardous substances from the site, if not addressed by implementing the time-critical actions described in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment. Delayed or no action concerning the remaining hazardous substances, pollutants and contaminants at the site will result in increased potential of the toxic and hazardous substances to release, thereby threatening the environment and the health and welfare of nearby residents and other persons who are in proximity to the site.

VIII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this site is contained in the Confidential Enforcement Addendum.

The total EPA costs of this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be \$1,732,326.¹

$$(\$1,021,918 + \$50,000) + (61.61\% \times \$1,071,918) = \$1,732,326$$

X. RECOMMENDATION

This decision document represents the selected removal actions for the Kiser Plating Site located in Muncie, Delaware County, Indiana. This document has been developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site (see Attachment II).

Conditions at the Site meet the NCP § 300.415(b)(2) criteria for a time-critical removal action and the CERCLA section 104(c) contingency exemption from the 12-month limitations. The total project ceiling, if approved, will be \$1,021,918. Of this, as much as \$878,374 comes from the Regional removal allowance. I recommend your approval of the proposed removal action and 12-month exemption. You may indicate your decision by signing below.

APPROVE: Richard C. Kell DATE: 3-22-13
Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Director, Superfund Division

Enforcement Addendum

Figures:

- 1 Site Location Map
- 2 Site Layout Map
- 3 Sample Location and Proposed Excavation Map

¹ 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 2, 2000. These estimates do not include pre-judgement 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 total costs from this estimate will affect the United States right to cost recovery.

Photo Log

Tables:

- 1 Soil Analytical Results
- 2 Soil Gas Analytical Results

Attachments:

- I. Detailed Cleanup Contractor Cost Estimate
- II. Administrative Record Index
- III. Region V EJ Analysis
- IV. Independent Government Cost Estimate

cc: Sherry Fielding, U.S. EPA, 5104A
Valencia Darby, U.S. DOI, **w/o Enf. Addendum**
Lindy Nelson, U.S. DOI, **w/o Enf. Addendum**
Harry Atkinson, IDEM **w/o Enf. Addendum**
Rex Osborn, IDEM **w/o Enf. Addendum**

BCC PAGE HAS BEEN REDACTED

NOT RELEVANT TO SELECTION OF

REMOVAL ACTION

ENFORCEMENT ADDENDUM

ENFORCEMENT SENSITIVE - DO NOT RELEASE -

NOT SUBJECT TO DISCOVERY - FOIA EXEMPT

KISER PLATING SITE

401 E HOWARD STREET, MUNCIE, DELAWARE
COUNTY, INDIANA

MARCH 2013

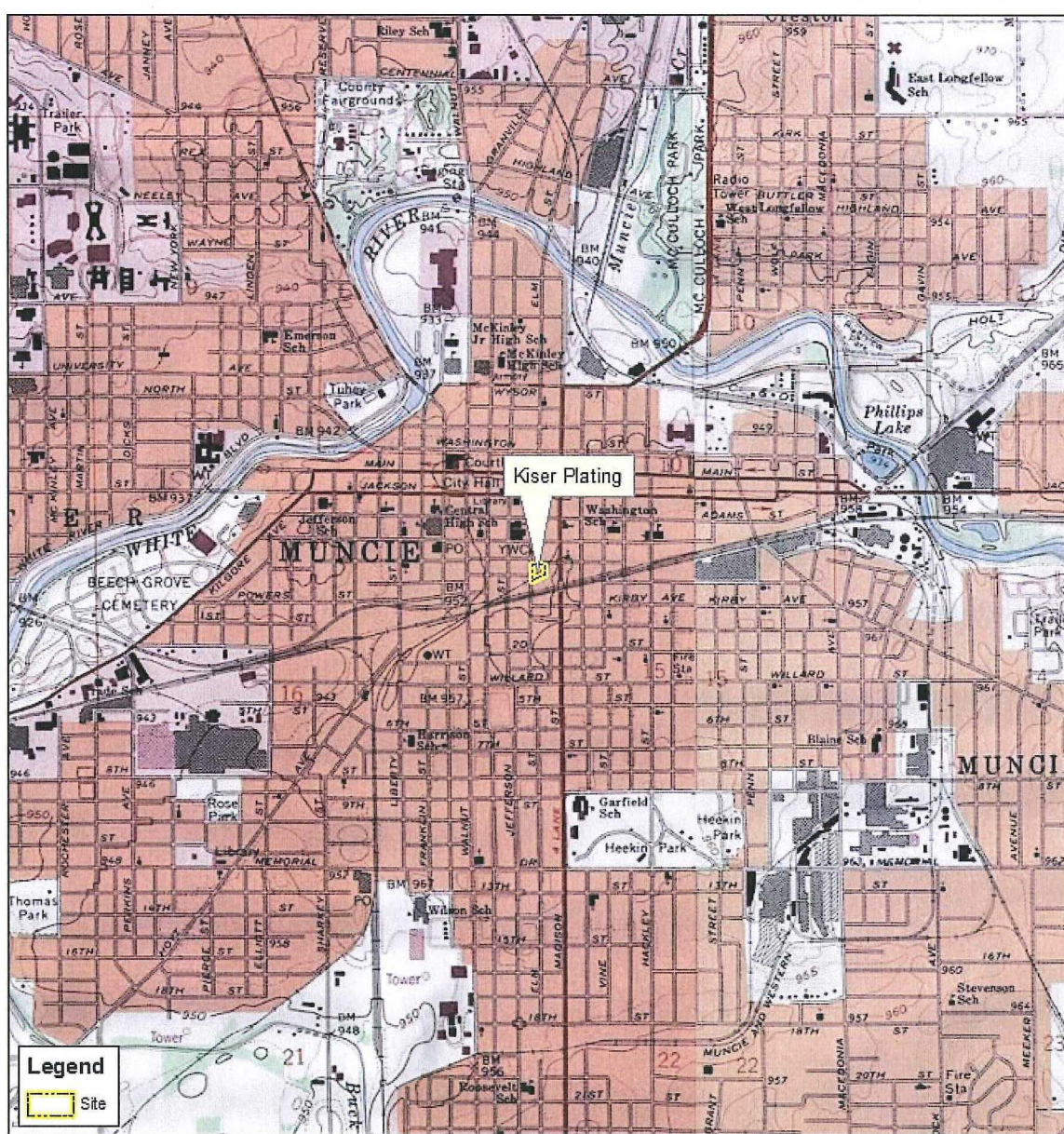
HAS BEEN REDACTED

TWO PAGES

ENFORCEMENT SENSITIVE

NOT APPLICABLE TO DISCOVERY

NOT RELEVANT TO SELECTION OF REMOVAL ACTION



Legend



FIGURE 1
SITE LOCATION MAP
KISER PLATING
401 E. HOWARD STREET
MUNCIE, DELAWARE COUNTY, INDIANA



This map presents land cover imagery for the world and detailed topographic maps for the United States. The map includes the National Park Service (NPS) Natural Earth physical map at 1:24,000 scale for the world and at 1:24,000 scale for the contiguous United States. The map also includes the National Geographic TOPO 1:250,000-scale maps for the contiguous United States at medium scale, and National Geographic TOPO 1:100,000 and 1:24,000-scale maps (1:24,000 and 1:24,000 in Alaska) for the United States at large scale. The TOPO 1:24,000-scale maps are seamless, scanned images of United States Geological Survey (USGS) paper topographic maps.

1:24,000

0 1,000 2,000 3,000 4,000 Feet

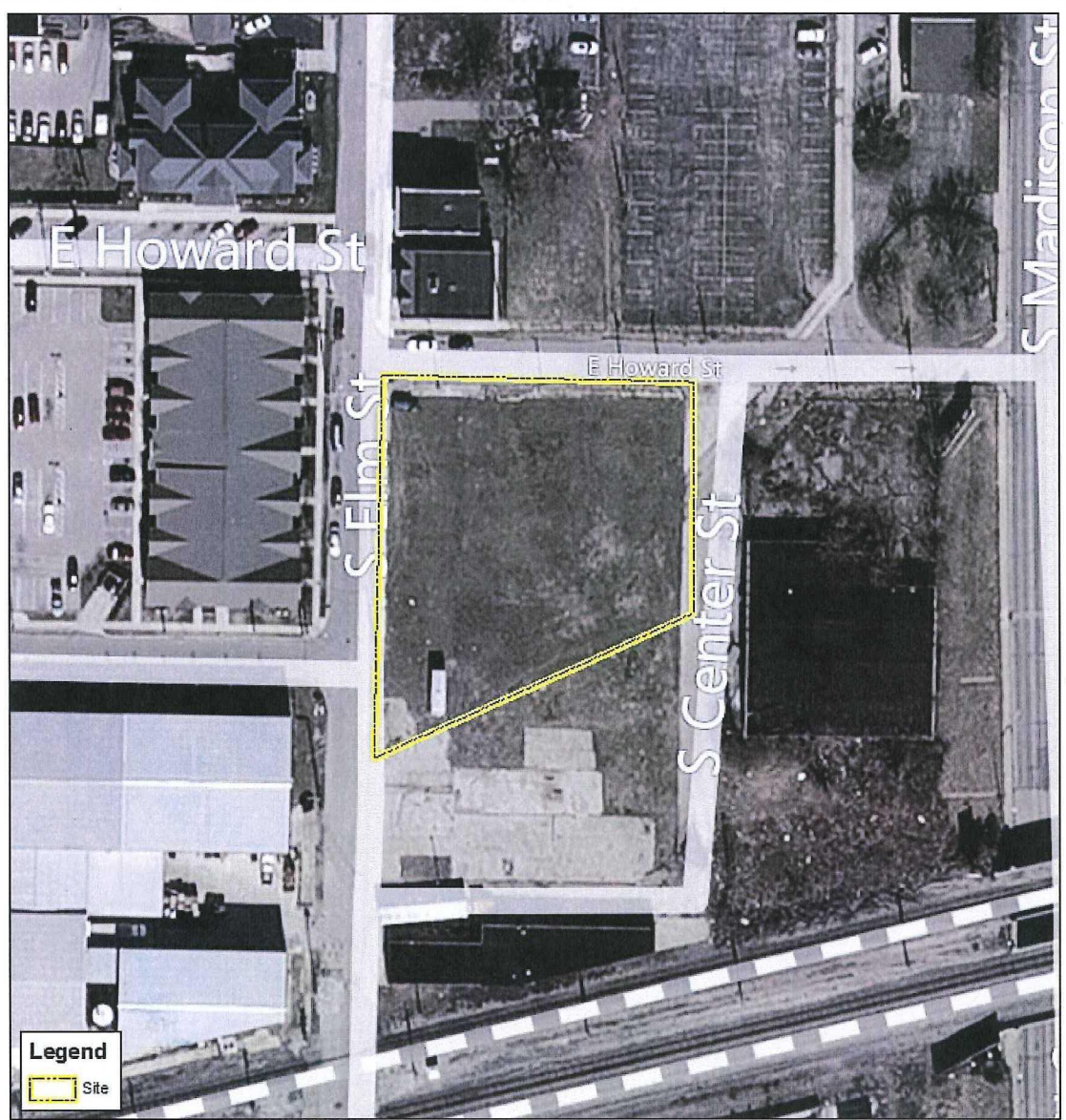


FIGURE 2
SITE MAP
KISER PLATING
401 E. HOWARD STREET
MUNCIE, DELAWARE COUNTY, INDIANA



This map presents land cover imagery for the word and detailed topographic maps for the United States. The map includes the National Data Service (NDS) National. Each physical map at 1:24,000 scale for the word and small scales. Included are 1:250,000-scale maps for the contiguous United States at medium scales and National Geographic TOPO 1:100,000 and 1:250,000-scale maps (1:250,000 and 1:500,000 in Alaska) for the United States at large scales. The TOPO maps are seamless, scanned images of United States Geological Survey (USGS) paper topographic maps.

1:1,000

0 50 100 150 200 Feet

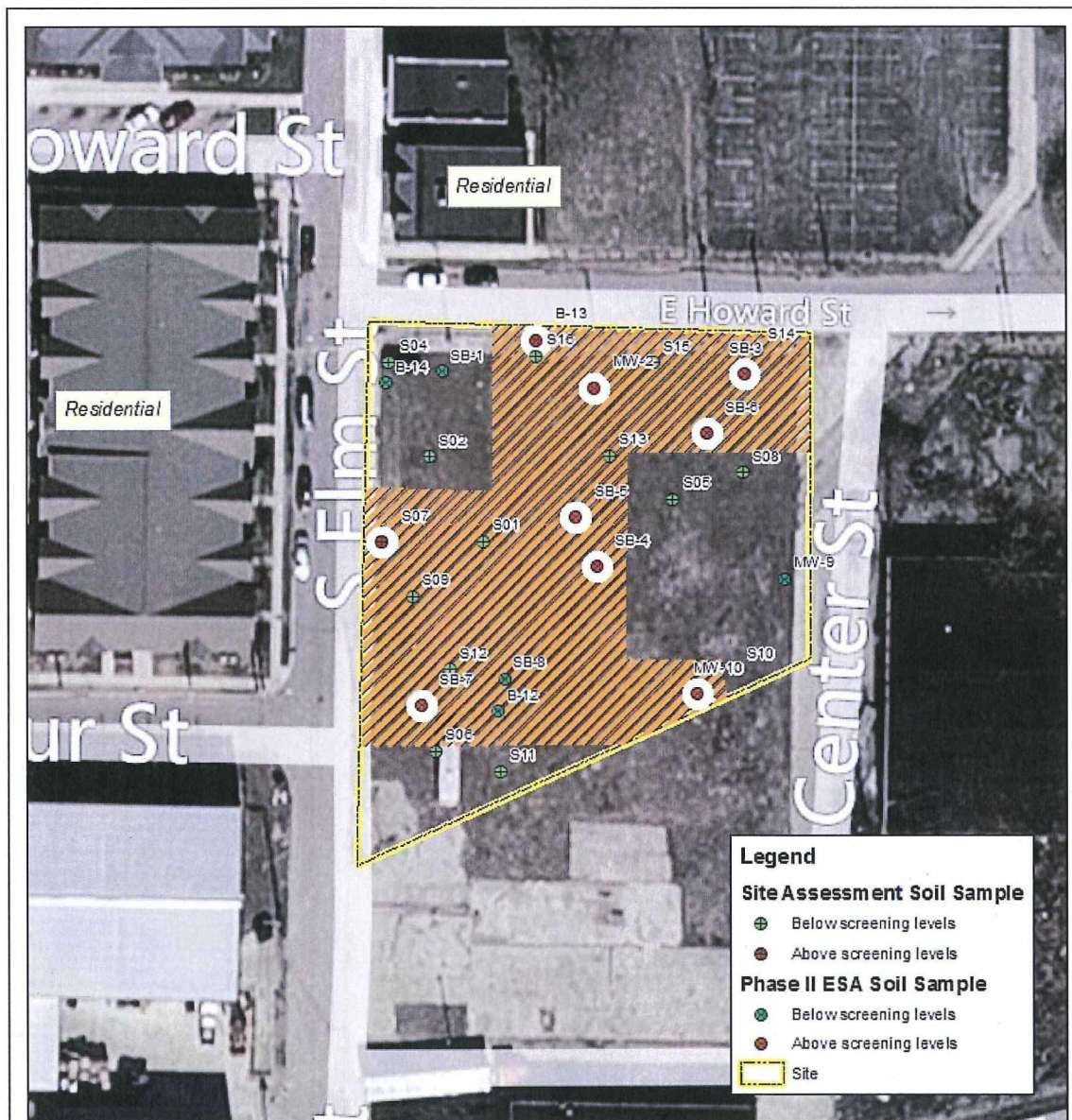


FIGURE 3
SAMPLE LOCATION AND PROPOSED EXCAVATION MAP
KISER PLATING
401 E. HOWARD STREET
MUNCIE, DELAWARE COUNTY, INDIANA





This map presents land cover imagery for the site and detailed geographic maps for the United States. The map includes the National Park Service (NPS) Natural Science map (1:250,000 scale) for the conterminous United States, the National Geographic TOPO (1:100,000 scale) for the conterminous United States, and the National Geographic TOPO (1:100,000 scale) for Alaska and Hawaii. The TOPO maps are scanned images of United States Geological Survey (USGS) paper topographic maps.

1:700

0 15 30 45 60
 Feet

PHOTO LOG

	Number	1
	Description	Former Kiser Plating, looking east
	Photographer	S. Lam
	Date	6/1/2010
	Number	2
	Description	Geoprobe collecting soil sample, looking northeast
	Photographer	S. Lam
	Date	10/26/2012



Number	3
Description	Residential properties west of the site
Photographer	S. Lam
Date	10/26/2012

TABLE 1
SOIL ANALYTICAL RESULTS
KISER PLATING

Chemical	Location	SS-01	SS-02		SS-03	SS-04	SS-05	SS-06	SS-07	SS-08	SS-09	SS-10
	Sampling Depth	3.5'	0-4'		0-4'	0-4'	0-4'	3'	0-4'	0-4'	0-4'	0-4'
	Field Sample ID	KPS-SS01-3.5-102612	KPS-SS02-04-102612	KPS-SS02D-04-102612	KPS-SS03-04-102612	KPS-SS04-04-102612	KPS-SS05-04-102612	KPS-SS06-3-102612	KPS-SS07-04-102612	KPS-SS08-04-102612	KPS-SS09-04-102612	KPS-SS10-04-102612
	Screening Leve											
Metals (mg/Kg) ^{1,2}												
Arsenic	160	ND (5.7) ³	16	8.9	ND (5.5)	6.2	9.0	9.3	7.8	ND (5.3)	8.9	ND (5.2)
Barium	570,000	28	160	87	37	95	53	69	86	70	17	52
Cadmium	2400	ND (1.1)	8.1	ND (1.1)	ND (1.1)	160	ND (1.1)	ND (1.1)	2.5	ND (1.1)	ND (1.1)	1.5
Chromium	560	61	27	15	53	390	11	9.2	140	110	6.4	42
Lead	800	ND (5.7)	23	33	ND (5.5)	10	15	22	84	9.4	5.7	27
Mercury	130	ND (0.36)	ND (0.35)	ND (0.36)	ND (0.33)	ND (0.33)	ND (0.35)	ND (0.36)	ND (0.35)	ND (0.34)	ND (0.33)	ND (0.28)
Selenium	15,000	ND (3.4)	ND (3.5)	ND (3.4)	ND (3.3)	ND (3.3)	ND (3.2)	ND (3.4)	ND (3.4)	ND 3.2)	ND (3.2)	ND (3.1)
Silver	15,000	ND (1.1)	1.9	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.1)	1.6	ND (1.1)	ND (1.1)	ND (1.0)
TCLP ⁴ Metals (mg/L) ^{5,6}												
Arsenic	5.0	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Barium	100.0	0.77	ND (0.10)	0.83	1.3	1.5	0.97	0.93	0.78	0.57	0.32	1.1
Cadmium	1.0	ND (0.10)	0.56	0.11	ND (0.10)	15 ⁷	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Chromium	5.0	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	0.12	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Lead	5.0	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Mercury	0.2	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
Selenium	1.0	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Silver	5.0	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)
Total Cyanide (mg/Kg) ²												
Cyanide	410	11	1.5	1.4	12	200	5.7	ND (1.2)	ND (1.2)	ND (1.2)	1.3	1.4

Notes:

1. mg/kg - milligrams per liter
2. Screening levels are based on EPA's Removal Management Levels (EPA, 2012).
3. ND (5.7) - Not detected at a reporting limit of 5.7 mg/kg.
4. TCLP - Toxicity Characteristic Leachate Procedure
5. mg/L - milligrams per liter
6. Screening level based on 40 CFR Part 261.24.
7. Shaded values exceed screening levels.

TABLE 2
SOIL VAPOR RESULTS
KISER PLATING

Chemical	Screening Levels	KPS-SG02-102912	KPS-SG03-102912	KPS-SG04-102912	KPS-SG05-102912	KPS-SG06-102912	KPS-SG08-102912	KPS-SG10-102912
Volatile Organic Compounds (ppbv)^{1,2}								
Acetone	132,534	38	ND (2500) ³	ND (6000)	ND (32)	120	ND (2600)	ND (20)
Benzene	95	87	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	3.5
Carbon disulfide	2,306	44	ND (990)	ND (2400)	ND (13)	ND (26)	1,200	ND (7.8)
Cumene	841	ND (2.4)	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	5
Cyclohexane	18,007	4.5	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	ND (2)
1,2-Dichlorobenzene	344	ND (2.4)	ND (250)	ND (600)	ND (3.2)	8	ND (260)	ND (2)
1,1-Dichloroethene	521	ND (2.4)	660	ND (600)	ND (3.2)	ND (6.6)	360	ND (2)
cis-1,2-Dichloroethene	No value	7	71,000	35,000	7.4	ND (6.6)	39,000	26
trans-1,2-Dichloroethene	156	4.9	78,000	120,000	ND (3.2)	ND (6.6)	10,000	ND (2)
Ethanol	No value	ND (9.5)	ND (990)	ND (2400)	20 J	ND (26)	ND (1100)	ND (7.8)
Ethylbenzene	220	42	ND (250)	970	ND (3.2)	ND (6.6)	ND (1100)	ND (2)
4-Ethyltoluene	No value	7.9	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	30
Heptane	No value	56	ND (250)	ND (600)	ND (3.2)	37	ND (260)	4.3
Hexane	2,038	47	ND (250)	ND (600)	ND (3.2)	37	ND (260)	ND (2)
Propylbenzene	2,001	4.8	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	20
Tetrachloroethene	59	85	ND (250)	ND (600)	ND (3.2)	9	ND (260)	39
Tetrahydrofuran	No value	2.8	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	ND (2)
Toluene	13,577	580	1,500	2,200	4.7	22	690	13
Trichloroethene	3.8	130	82,000	18,000	4.5	ND (6.6)	44,000	400
1,2,4-Trimethylbenzene	14.6	16	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	110
1,3,5-Trimethylbenzene	No value	5.4	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	81
2,2,4-Trimethylpentane	No value	24	ND (250)	ND (600)	ND (3.2)	29	ND (260)	4
Vinyl chloride	62	3	ND (250)	20,000	7	ND (6.6)	2,600	ND (2)
m,p-Xylene	226	150	ND (250)	1,500	ND (3.2)	7.3	290	7.8
o-Xylene	226	36	ND (250)	ND (600)	ND (3.2)	ND (6.6)	ND (260)	5.3

Notes:

1. ppbv - parts per billion by volume
2. Screening levels are based on EPA's Vapor Intrusion Screening Level Spreadsheet for a 10^{-4} target risk concentration (EPA, 2011).
3. ND (2500) - Not detected at a reporting limit of 2500 ppbv.

ATTACHMENT 1

**DETAILED CLEANUP CONTRACTOR AND COST
ESTIMATE
INDEPENDENT GOVERNMENT CLEANUP CONTRACTOR
ESTIMATE**

**KISER PLATING SITE
MUNCIE, DELAWARE COUNTY, INDIANA**

HAS BEEN REDACTED

ONE PAGE

**NOT TO RELEVANT TO SELECTION OF
REMOVAL
ACTION**

ATTACHMENT II

U.S. ENVIRONMENTAL PROTECTION AGENCY REMOVAL ACTION

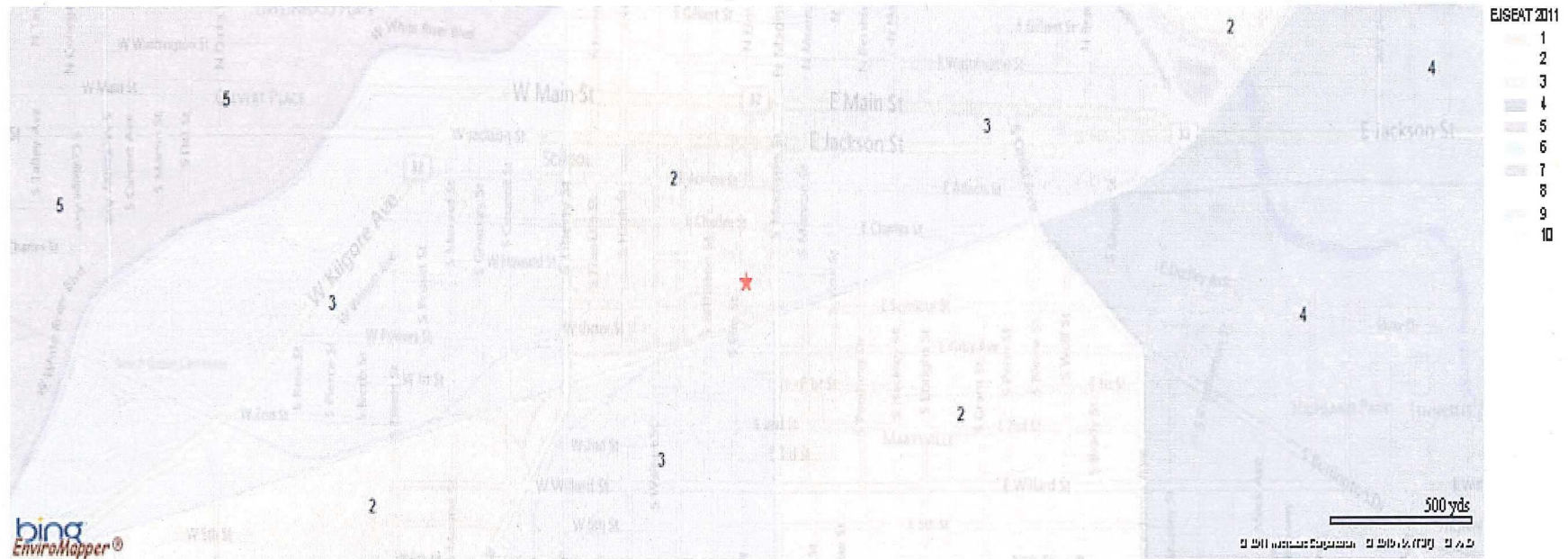
ADMINISTRATIVE RECORD FOR KISER PLATING SITE MUNCIE, DELAWARE COUNTY, INDIANA FEBRUARY 2013

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	09/00/95	ATSDR	File	ToxFAQs Sheet for 1,1-Dichloroethene, CAS #75-35-4	2
2	09/00/97	ATSDR	File	ToxFAQs Sheet for 1,2-Dichloroethene, CAS #540-59-0, 156-59-2, and 156-60-5	2
3	09/00/97	ATSDR	File	ToxFAQs Sheet for Ethylbenzene, CAS #100-41-4	2
4	09/00/97	ATSDR	File	ToxFAQs Sheet for Tetrachloroethylene, CAS #127-18-4	2
5	03/00/01	ATSDR	File	ToxFAQs Sheet for Metallic Mercury	3
6	07/00/03	ATSDR	File	ToxFAQs Sheet for Trichloroethylene, CAS #71-09-6	2
7	09/00/04	ATSDR	File	ToxFAQs Sheet for Copper, CAS #7440-50-8	2
8	08/00/05	ATSDR	File	ToxFAQs Sheet for Nickel, CAS #7440-02-0	2
9	07/00/06	ATSDR	File	ToxFAQs Sheet for Vinyl Chloride, CAS #75-01-4	2
10	08/00/07	ATSDR	File	ToxFAQs Sheet for Xylenes, CAS #1330-20-7	2
11	08/00/07	ATSDR	File	ToxFAQs Sheet for Arsenic, CAS #7440-38-2	2

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
12	06/23/08	Symbiont	City of Muncie	Phase I Environmental Site Assessment, Former Kiser Plating, 401 East Howard Street, Muncie, IN 47305	447
13	09/00/08	ATSDR	File	ToxFAQs Sheet for Cadmium, CAS #7440-43-9	2
14	04/23/09	Symbiont	City of Muncie	Phase II Environmental Site Assessment, Former Kiser Plating, 401 East Howard Street, Muncie, IN 47305	171
15	01/04/13	Yeary, S., IDEM	Lam, S., U.S. EPA	E-mail: Kiser Plating; Request for Further Assistance	1
16	01/08/13	Lam, S., U.S. EPA	Hauer G, and R. Osborn, IDEM	Letter re: Request for Applicable or Relevant and Appropriate Requirements, For the Kiser Plating Site, 401 E. Howard Street, Muncie, Delaware County, Indiana	2
17	01/09/13	Fliss, J., IDEM	Lam, S., U.S. EPA	Letter re: Applicable or Relevant and Appropriate Requirements (ARSRs), Kiser Plating Site Removal Action, Muncie, IN	2
18	02/13/13	Weston Solutions	U.S. EPA	Site Assessment Report for the Kiser Plating Site, Muncie, Delaware County, Indiana, Site ID No. B5XK	96
19	00/00/00	Lam, S., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Kiser Plating (PENDING)	

ATTACHMENT III REGION 5 EJ ANALYSIS

Kiser Plating EJ Assessment



ATTACHMENT IV

**INDEPENDENT GOVERNMENT COST ESTIMATE
KISER PLATING SITE
MUNCIE, DELWARE COUNTY, INDIANA**

MARCH 2013

HAS BEEN REDACTED

THREE PAGES

ENFORCEMENT SENSITIVE

NOT RELEVANT TO SELECTION OF

REMOVAL ACTION