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437114

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

13 AUG 2012

MEMORANDUM

SUBJECT: ACTION MEMORANDUM Determination of Threat to Public Health and the Environment and Selection of Time-Critical Removal Actions at the Kokomo Dump Site, Kokomo, Howard County, Indiana (Site ID # C564)

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 documents the determination of an imminent and substantial threat to public health, welfare, and the environment posed by the presence of uncontrolled hazardous substances, and requests and documents your approval of the time-critical removal actions to be performed at the Kokomo Dump Site (the Site) at 1130 S. Dixon Road in Kokomo, Howard County, Indiana. The 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 city landfill and transfer station. The presence of hazardous substances at the Site has been documented, including arsenic, lead, and polychlorinated biphenyls (PCB).

The time-critical removal actions proposed herein will mitigate the threats by establishing Site security; determining the extent of buried drums and contamination in soil; controlling, containing, and removing drums and highly concentrated contaminated soil; and transporting and disposing hazardous substances, pollutants and contaminants off-site.

These response actions will be conducted in accordance with Section 104(a)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9604(a)(1), and 40 C.F.R. § 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 as a time-critical removal action.

R

There are no nationally significant or precedent setting issues associated with the Site. This Site is not listed on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID:	INN000510728
RCRA ID:	Pending
Category:	Time-Critical Removal Action

The Site occupies approximately 4.5 acres and is owned by the City of Kokomo (the City). The City operated a municipal landfill at the Site from approximately 1963 to the 1970s. According to city officials, the city also operated a large incinerator at the property until the late 1960s (Photo 2).

A. Site Description

1. Removal Site Evaluation

a. Indiana Department of Environmental Management (IDEM)

The Indiana Department of Environmental Management (IDEM) discovered drums in April 2011 exposed in a creek bank at the former landfill (Photo 2) during an oil spill at the neighboring Haynes International property. The drums were in poor condition, leaking contents onto the creek banks. IDEM collected samples from material leaking out of drums and conducted x-ray fluorescence (XRF) screening. XRF results were as high as 41,765 milligrams per kilogram (mg/kg) for lead; 1,600 mg/kg for chromium; 3,370 mg/kg for arsenic; and 30 mg/kg mercury. IDEM requested assistance from EPA in April 2011.

b. EPA

The EPA On-Scene Coordinator (OSC) and the Superfund Technical Assessment and Response Team (START) contractor conducted a Site Assessment on August 19, 2011. Site Assessment activities included drum, surface and subsurface soil sampling. The Site Assessment Report is posted to the Administrative Record for the Site.

EPA documented drums exposed in the creek bank and lying on the ground surface. The drums contents were colorful and resembled paint. The drums were in poor condition and leaking their contents (Photographs 3-5).

During the Site Assessment, three samples were collected from leaking drums and surface soil for total and Toxicity Characteristic Leachate Procedure (TCLP) metals analysis. Analytical results were compared to regional screening levels (RSL) for industrial soil and regulatory limits for toxicity established in the Resource Conservation and Recovery Act (RCRA), 40 Code of Federal Regulations (CFR) § 261.24.

Drum and surface soil sample results indicated:

- Two drum samples exceeded the industrial RSL for arsenic of 1.6 mg/kg at a maximum concentration of 57.9 mg/kg.
- One drum sample and the surface soil sample exceeded the industrial RSL for lead of 800 mg/kg at a maximum concentration of 16,100 mg/kg.
- The surface soil sample exceeded the lead TCLP limit for lead of 5 milligrams per liter (mg/L) at a concentration of 8.35 micrograms per liter (ug/L).

Seven subsurface soil samples were collected to determine if material leaking from the drums had migrated. Samples were analyzed for total and TCLP metals, semi-volatile organic compounds (SVOC), total and TCLP volatile organic compounds (VOC), and PCBs. Results were compared to industrial RSLs and regulatory limits for toxicity.

Subsurface soil sample results indicated:

- Arsenic was above the industrial RSL of 1.6 mg/kg in 6 of 7 samples with a maximum concentration of 39.8 mg/kg at a depth from 6 to 8 feet.
- Lead exceeded the RSL of 800 mg/kg in 3 of 7 samples at a maximum concentration of 1,500 mg/kg at a depth from 6 to 8 feet.
- In two samples collected at depths of 3 to 4 feet, PCBs exceeded the industrial RSL of 740 ug/kg in two samples at maximum concentrations of 5,200 and 1,500 ug/kg, for Aroclor-1248 and Aroclor-1254 respectively, at a depth of 3 to 4 feet.
- VOCs and SVOCs were below industrial RSLs.
- TCLP metals and VOCs were below regulatory limits.

Physical location

The Kokomo Dump Site is located at 1130 S. Dixon Road in Kokomo, Howard County, Indiana, 46901 (see Figures 1, 2, 3). The Site is in an area that is residential, commercial, and industrial. The Site is bounded by a towing and truck repair company to the north, Haynes International and a railroad to the east, a residential property to the south, and Dixon Road to the west. The creek at the Site drains into Wildcat Creek is approximately 500 feet from the northern boundary of the Site. The geographical coordinates for the Site are latitude 40.477° north and longitude 86.165° west.

The OSC screened the area surrounding the Kokomo Dump Site 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. The Kokomo Dump Site is in a census tract with a score of 3 (Attachment II). 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.

2. Site characteristics

The Site is 4.54 acres in size, and contains one small building. The City of Kokomo owns the Site, which is currently operated by Howard County as a yard waste recycling center. The City of Kokomo historically used by the City as a municipal landfill until the 1970's.

The proposed time-critical removal will be the first removal action at the Site by EPA. No other entities are conducting or have conducted efforts to characterize, delineate, monitor, or control contamination at the Site.

3. 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 confirmed the presence of hazardous substances as defined by Section 101(14) of CERCLA including arsenic, lead, and PCBs. START's report documenting these findings is part of the Administrative Record for the Site.

4. NPL status

This Site is not on the NPL. The site has not been proposed for the NPL and has not received a Hazard Ranking Score (HRS). The site is not being referred to the NPL site assessment program.

5. Maps, pictures and other graphic representations

Figure 1 Site Location Map, Figure 2 Site Features Map, Figure 3 Soil Boring Locations and Sample Location Map, Photographs, and Attachment II - Environmental Justice (EJ) analysis are included as attachments.

B. Other Actions to Date

1. Previous actions

No previous actions have been conducted.

2. Current actions

No actions are currently being conducted at the Site.

C. State and Local Authorities' Roles

Jason Sewell of IDEM requested assistance from U.S. EPA on April 6, 2011 (IDEM, 2011). IDEM does not have the resources to mitigate the threat of release. EPA sent the City a General Notice Letter on April 5, 2012, notifying the City of its potential liability at the Site.

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

The conditions present at the Kokomo Dump Site 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;

The Site Assessment documented that hazardous substances, such as lead and arsenic, are present at the Site in surface soil, subsurface soil, and leaking from drums into a small creek, which drains into Wildcat Creek approximately 500 feet north of the Site. The facility is currently operated as a yard waste recycling center, and is open to the public. Additionally, the facility is not fenced completely along the southern, western, and northern property boundaries (Photo 6), potentially allowing access to trespassers. The OSC observed that one of the drums was close to a child's swing set on a neighboring residential property.

Lead, arsenic, and PCBs were detected above RSLs during the Site Assessment, and are identified as hazardous substances as defined by Section 101(14) of CERCLA. Additionally, there is potential for dioxins on-Site as the City operated an incinerator and PCBs were detected in subsurface soil. Municipal waste incineration is the major global source of dioxins because when PCBs are burned, they create dioxin. Dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD]) is also a hazardous substance as defined by Section 101(14) of CERCLA.

The Agency for Toxic Substances and Disease Registry (ATSDR) has studied the health effects of these hazardous substances, and information about each is provided below.

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 (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2], August 2007).

Lead can affect almost every organ and system in the body. The main target for lead toxicity is the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance in some tests that measure functions of the nervous system. It 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 can cause anemia. Exposure to high lead levels 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. DHHS has determined that lead and lead compounds are reasonably anticipated to be human carcinogens and the EPA has determined that lead is a probable human carcinogen (ATSDR, CAS # 7439-92-1, August 2007).

The most commonly observed health effects in people exposed to large amounts of PCBs are skin conditions such as acne and rashes. Studies in exposed workers have shown changes in blood and urine that may indicate liver damage. Few studies of workers indicate that PCBs were associated with certain kinds of cancer in humans, such as cancer of the liver and biliary tract. Rats that ate food containing high levels of PCBs for two years developed liver cancer. DHHS has concluded that PCBs may reasonably be anticipated to be carcinogens. The EPA and the International Agency for Research on Cancer (IARC) have determined that PCBs are probably carcinogenic to humans (ATSDR, February 2001).

The most noted health effect in people exposed to large amounts of 2,3,7,8-TCDD is chloracne. Chloracne is a severe skin disease with acne-like lesions that occur mainly on the face and upper body. Other skin effects noted in people exposed to high doses of 2,3,7,8-TCDD include skin rashes, discoloration, and excessive body hair. Changes in blood and urine that may indicate liver damage also are seen in people. Exposure to high concentrations of CDDs may induce long-term alterations in glucose metabolism and subtle changes in hormonal levels. Several studies suggest that exposure to 2,3,7,8-TCDD increases the risk of several types of cancer in people. Animal studies have also shown an increased risk of cancer from exposure to 2,3,7,8-TCDD (ATSDR, February 1999).

Possible exposure routes to hazardous substance include direct contact with contaminated surface soil or leaking drum contents; direct contact with subsurface soil during excavation activities; and inhalation resulting from wind dispersion of surface contaminants. Possible human receptors include on-site workers, site visitors, trespassers, and nearby residents, including children. Ecological receptors on-Site and in nearby Wildcat Creek, such as mammals and amphibians, could also be exposed to hazardous substances.

Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

Site assessment results documented that there are hazardous substances, such as lead and arsenic, in drums at the Site. The drums were exposed in a creek bank and lying on the ground surface. Contents of several drums were leaking and pose a threat of release.

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

Site assessment results indicated high levels of hazardous substance in surface soil, as high as 16,100 mg/kg for lead. Additionally, sample results from subsurface soils showed that both arsenic and lead have migrated to deeper soils.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

Weather conditions could cause hazardous substances to migrate or be released. High winds could cause dispersion of drum contents and surface soils. Additionally, heavy rains could cause flooding that could reach the level of drums exposed in the creek bank, causing migration through surface water and sediment.

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

On April 6, 2011, IDEM requested assistance from EPA. IDEM does not have the resources to 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, present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The following response actions are required to mitigate threats posed by the presence of hazardous substances at the Kokomo Dump Site:

a. Develop and implement Site plans including a Site-specific Health and Safety Plan, a Site Emergency Contingency Plan, and a Work Plan;

b. Establish Site security;

c. Determine the extent of buried drums and contamination in soil;

d. Develop and implement a plan to control, contain, and/or remove drums and highly concentrated contaminated soil;

e. Perform sampling and analysis to determine disposal options;

f. Consolidate and package hazardous substances, pollutants and contaminants for transportation and off-site disposal in accordance with the EPA Off-Site Rule, 40 C.F.R. § 300.440.

The removal actions will be conducted in a manner not inconsistent with the NCP. The PRP will also initiate planning for provision of post-removal Site control consistent with the provisions of Section 300.415(l) of the NCP.

The threats posed by uncontrolled substances considered hazardous meet the criteria listed in Section 300.415(b)(2) of the NCP, 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 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.

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 March 22, 2012, to Gabriele Hauer and Rex Osborn at IDEM requesting the identification of any applicable state ARARs. On March 26, 2012, IDEM submitted a list of ARARs. EPA will attain ARARs to the extent practicable.

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 C.F.R. § 300.440.

VI. 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 have presented 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.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

The potentially responsible party (PRP) at this Facility is the City of Kokomo, which has expressed interest in performing the time-critical response action. If an appropriate consent order cannot be promptly negotiated, EPA may issue a unilateral administrative order or perform the work.

IX. RECOMMENDATION

This decision document represents the selected removal action for the Kokomo Dump Site located in Kokomo, Howard 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 I).

Conditions at the Site meet the NCP § 300.415(b)(2) criteria for time-critical removal actions. I recommend your approval of the time-critical removal actions. You may indicate your decision by signing below.

APPROVE: _____ DATE: 8/13/2012
for Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Director, Superfund Division

Enforcement Addendum

Figures:

1 Site Location Map
2 Site Features Map
3 Soil Boring Locations and Sample Locations Map
Photo Log

Tables:

1 Drum and Surface Soil Laboratory Analytical Results
2 Subsurface Soil Laboratory Analytical Results

Attachments:

I. Administrative Record Index
II. Region 5 EJ Analysis

cc: Sherry Fielding, U.S. EPA, 5104A
V. Darby, U.S. Department of Interior, w/o Enf. Attachment
(email: valincia_darby@ios.doi.gov)
Lindy Nelson, US. DOI, w/o Enf. Addendum
(email: Lindy_Nelson@ios.doi.gov)
Harry Atkinson, IDEM **w/o Enf. Addendum**
Gabriele Hauer, IDEM **w/o Enf. Addendum**

ENFORCEMENT ADDENDUM

KOKOMO DUMP SITE
KOKOMO, HOWARD COUNTY, INDIANA

AUGUST 2012

ENFORCEMENT CONFIDENTIAL
NOT SUBJECT TO DISCOVERY

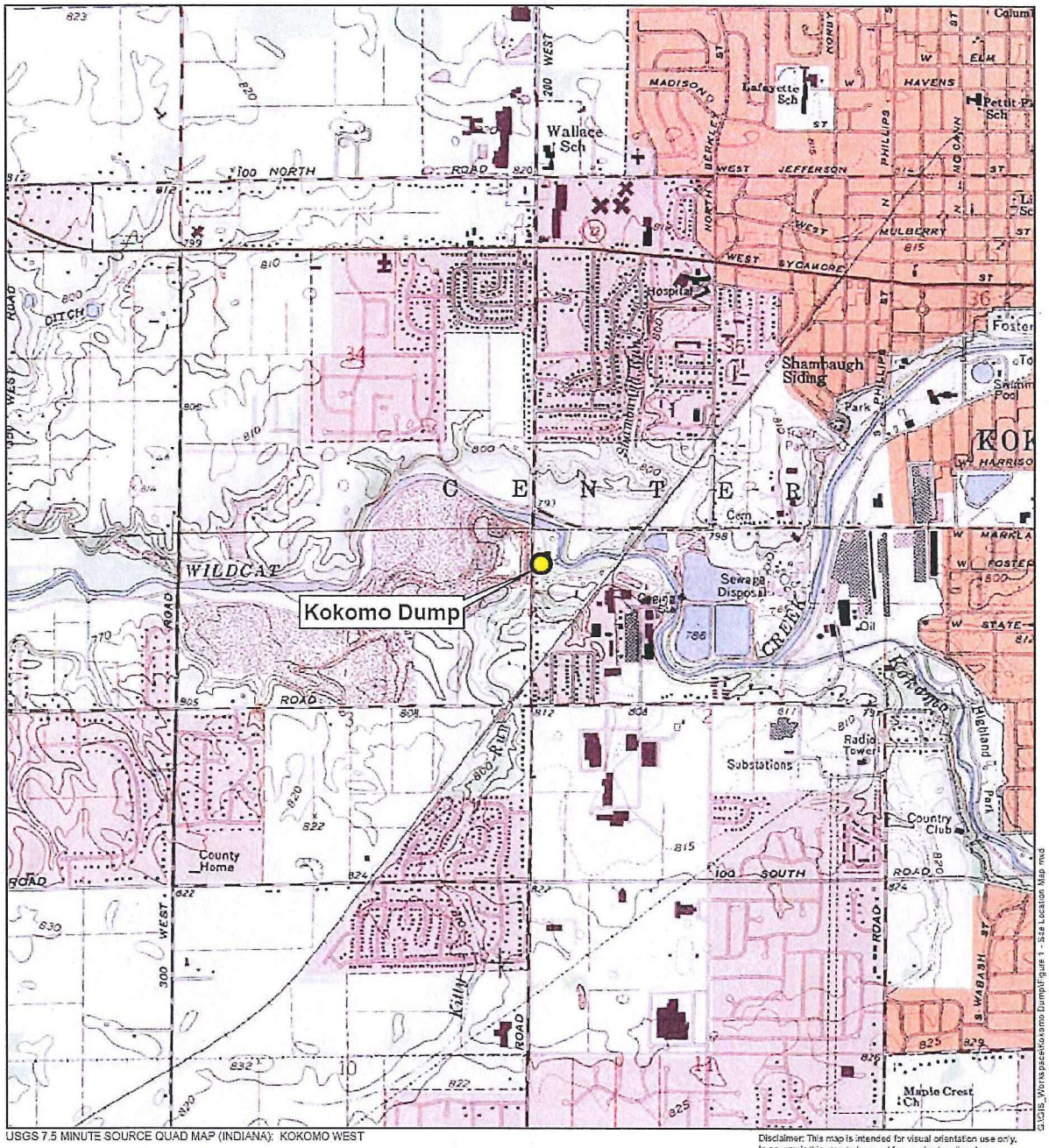
FOIA EXEMPT

(REDACTED 3 PAGES)

ENFORCEMENT CONFIDENTIAL
NOT SUBJECT TO DISCOVERY

FIGURE 1

SITE LOCATION MAP



USGS 7.5 MINUTE SOURCE QUAD MAP (INDIANA): KOKOMO WEST

Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

G:\GIS_Workspace\Kokomo Dump\Figure 1 - Site Location Map.mxd

Legend

Site Location

N

0 2,000 4,000 Feet

United States Environmental Protection Agency

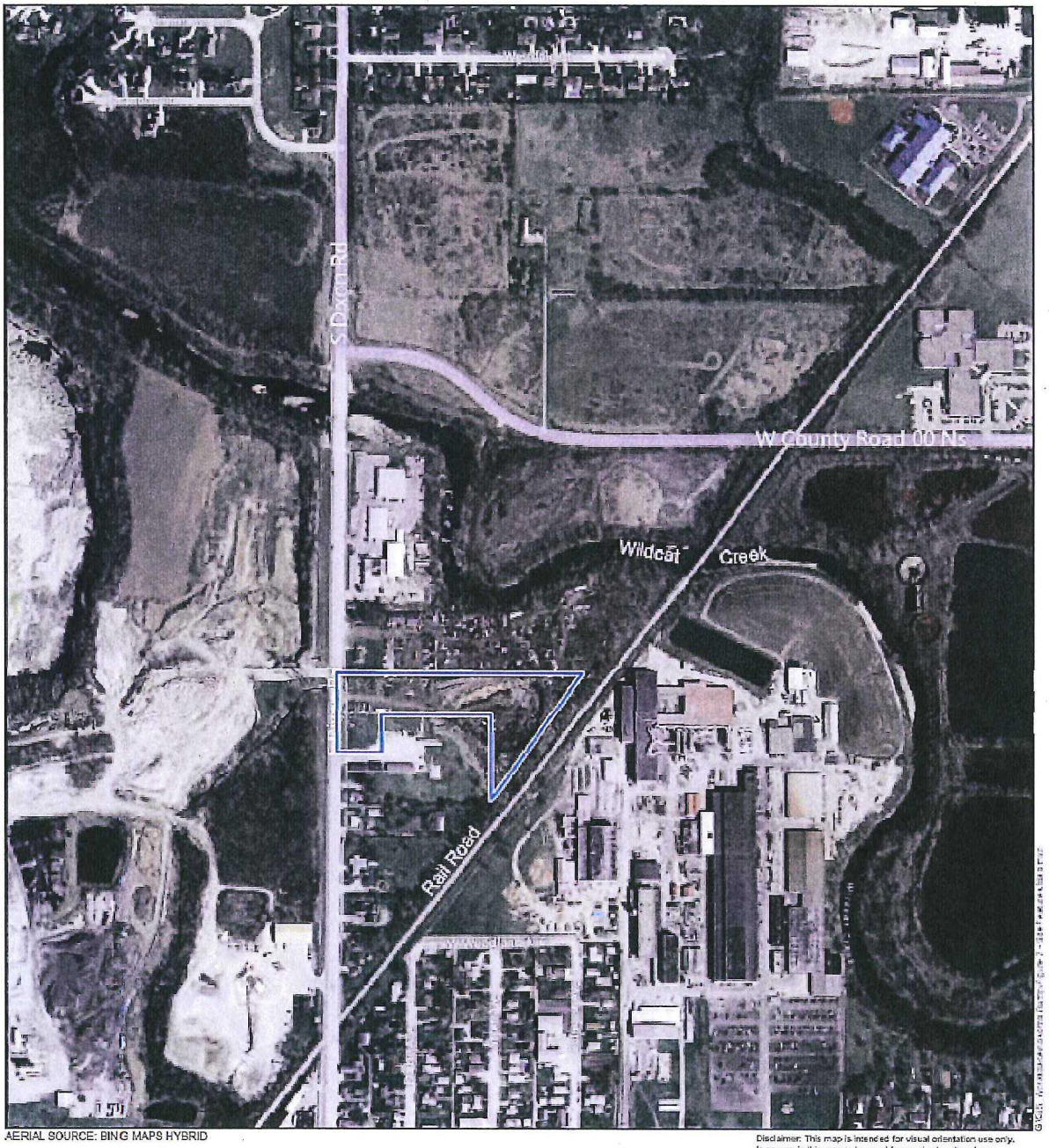
KOKOMO DUMP
SITE ASSESSMENT
KOKOMO, HOWARD COUNTY, INDIANA
TDD No. TO-01-11-08-0018

FIGURE 1
SITE LOCATION MAP

OTIE

FIGURE 2

SITE FEATURES MAP



AERIAL SOURCE: BING MAPS HYBRID

Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

Legend

Property Boundary

N

0 500 1,000 Feet

United States Environmental Protection Agency

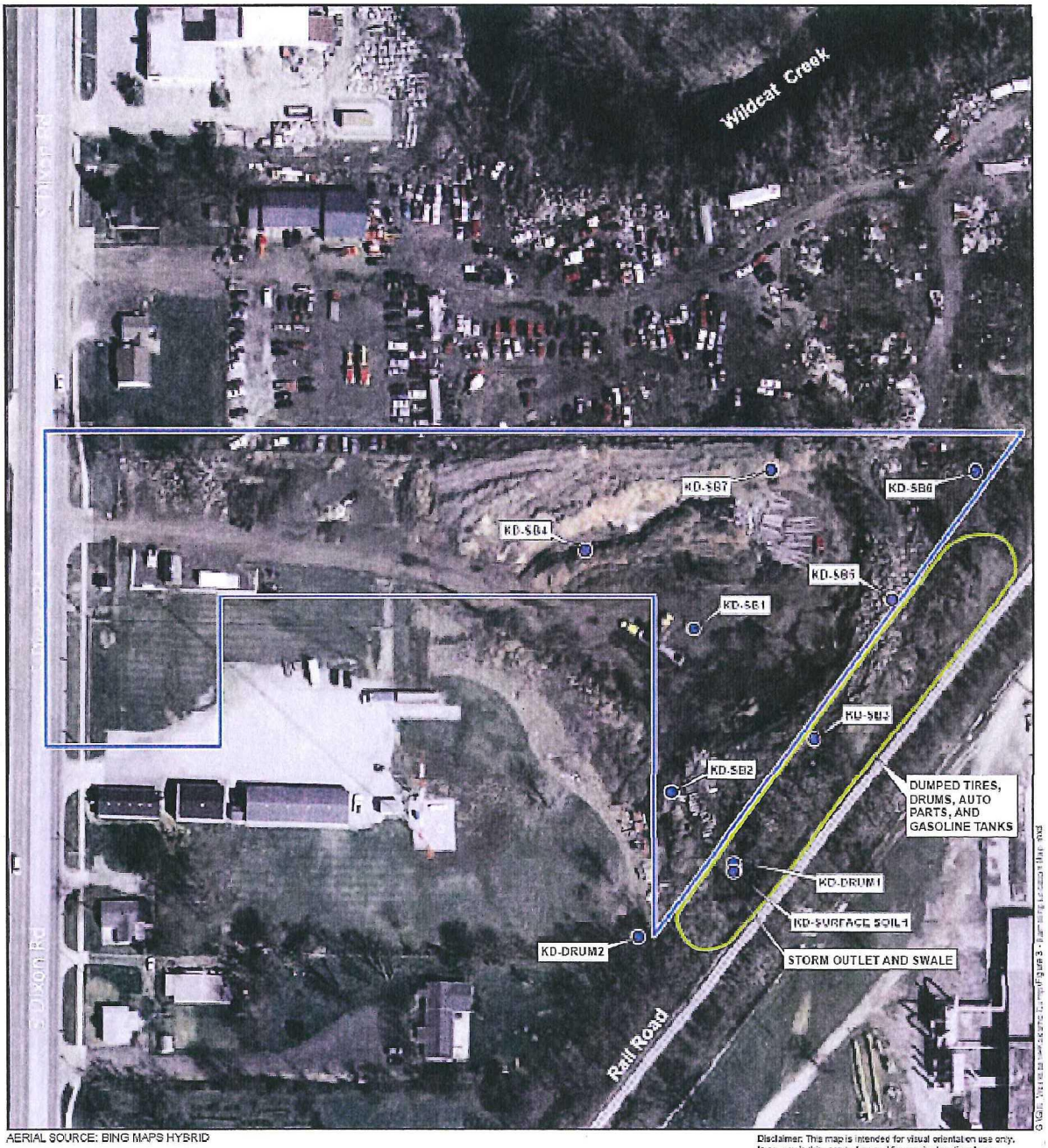
KOKOMO DUMP
SITE ASSESSMENT
KOKOMO, HOWARD COUNTY, INDIANA
TDD No. TO-01-11-08-0018

FIGURE 2
SITE FEATURES MAP

OTIE

FIGURE 3

SOIL BORING AND SAMPLE LOCATIONS MAP



AERIAL SOURCE: BING MAPS HYBRID

Disclaimer: This map is intended for visual orientation use only. In no way is this map to be used for precise locational use.

Legend

- Sample Locations
- Property Boundary

N

0 125 250 Feet

United States Environmental Protection Agency

KOKOMO DUMP
SITE ASSESSMENT
KOKOMO, HOWARD COUNTY, INDIANA
TDD No. TO-01-11-08-0018

FIGURE 3
SOIL BORING LOCATIONS AND SAMPLE LOCATIONS MAP

OTIE

PHOTO LOG

Number	1
Description	Yard Waste Recycling Center (Kokomo Dump)
Photographer	S. Lam
Date	4/6/2011

Number	2
Description	Drums exposed in creek bank at Kokomo Dump
Photographer	S. Lam
Date	9/22/2011

Number	3
Description	Drums in creek bank with leaking contents
Photographer	S. Lam
Date	4/6/2011

Number	4
Description	Yellow material leaking from drum
Photographer	S. Lam
Date	4/6/2011

Number	5
Description	EPA sampling drum
Photographer	T. Johnson
Date	8/19/2011

Number	6
Description	Kokomo Dump Site, looking west. Northern property boundary (right) is partially fenced
Photographer	S. Lam
Date	4/6/2011

TABLE 1
LABORATORY ANALYTICAL RESULTS
DRUMS AND SURFACE SOIL
KOKOMO DUMP SITE

Analyte			KD-Drum-1		KD-Drum-2		KS-SS-01	
Metals	EPA RSL for Industrial Soil (mg/kg) [1,2]	TCLP Limit (mg/L) [3]	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)
Arsenic	1.6[c]	5	**2.01**	ND [4]	**57.9**	ND	ND	ND
Barium	190,000	100	14,700	6.6	44	0.401	900	3.33
Cadmium	800	1	6.66	0.0231 J [5]	441	0.836	0.769	0.0126 J
Chromium	1,500,000	5	44.2	0.00815 J	792	0.0168 J	3980	0.0282 J
Copper	41,000	NA [6]	ND	ND	ND	ND	ND	ND
Lead	800	5	**2,360**	1.18	**108**	ND	**16,100**	**8.35**
Mercury	43	0.2	0.0922	0.0922	0.0191 J	ND	0.115	ND
Selenium	5,100	1	4.11	ND	ND	ND	ND	ND
Silver	5,100	5	ND	ND	2.19	0.00747 J	0.294 J	ND
Zinc	310,000	NA	ND	ND	ND	ND	ND	ND

Notes:

1. Industrial Soil Screening level is calculated based on noncancer hazard index unless otherwise noted with c in which case the screening level is calculated based on a 1 in a million cancer risk.
2. mg/kg - milligrams per kilogram
3. mg/L - milligrams per liter
4. ND - Not detected
5. J - Results is less than the reporting limit but greater than or equal to the method detection limit. The concentration is an approximate value.
6. NA - Not applicable
7. Bolded results indicate concentrations above screening levels.

TABLE 2
SUBSURFACE SOIL
LABORATORY ANALYTICAL RESULTS
KOKOMO DUMP SITE

Analyte	EPA RSL for Industrial Soil (mg/kg) [1,2]	TCLP Limit (mg/L) [3]	KD-SB-1 16-16.5'		KD-SB-2 11-12'		KD-SB-2 6-8'		KD-SB-3 10-12'		KD-SB-6 3-4'		KB-SB-7 4-6'		KD-SB-9 3-4'	
			Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)
Metals																
Arsenic	**1.6**[c]	**5**	**5.66**	ND [4]	ND	ND	**39.8**	ND	**23.9 J** [5]	ND	**13.4**	ND	**12**	ND	**8.24**	ND
Barium	**190,000**	**100**	506	3.68	356	0.593	632	0.802	485	0.898	58.6	0.746	97.4	0.493	47.9	0.0162 J
Cadmium	**800**	**1**	0.817	0.00886 J	60.3	ND	21.6	0.0626	23.2 E [6]	0.0300 J	0.0609	ND	0.361 J	0.00756 J	0.574 J	ND
Chromium	**1,500,000**	**5**	14.1	0.0110 J	4,030	0.0574 J	150	0.0106 J	109 J	0.0136 J	20.6	0.0111 J	25	ND	18.6	ND
Lead	**800**	**5**	54.2	0.0877 J	**828**	0.0507 J	**1,500**	2.84	**1,380**	0.138 J	28.6	0.0712 J	38.6	0.0485 J	30	ND
Mercury	**43**	**0.2**	0.0264	ND	0.251	ND	0.294	ND	0.706 J	ND	0.282	ND	0.0603	ND	0.221	ND
Selenium	**5,100**	**1**	ND	ND	1.60 J	ND	1.12 J	ND	3.85	ND	ND	ND	1.00 J	ND	ND	ND
Silver	**5,100**	**5**	ND	0.00603 J	14.5	0.00759 J	7	ND	10.5	ND	ND	ND	ND	ND	ND	0.00982 J
Semi-Volatile Organic Compounds (SVOC)																
Benzo(a)anthracene	2.1 [c]	NA [7]	ND	NA	0.732 J	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA
Benzo(g,h,i)perylene	NA	NA	ND	NA	0.523 J	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA
Bis(2-ethylhexyl) phthalate	NA	NA	ND	NA	4	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA
Chrysene	210 [c]	NA	ND	NA	0.757 J	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA
Fluoranthene	22,000	NA	ND	NA	1.9 J	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA
2-Methylnaphthalene	4,100	NA	ND	NA	0.691 J	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA
Naphthalene	18 [c]	NA	ND	NA	2.02 J	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA
Phenanthrene	NA	NA	1.19 J	NA	2.32 J	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA
Pyrene	17,000	NA	ND	NA	1.62 J	NA	NA	NA	NA	NA	ND	NA	ND	NA	ND	NA

TABLE 2
SUBSURFACE SOIL
LABORATORY ANALYTICAL RESULTS
KOKOMO DUMP SITE

Analyte	EPA RSL for Industrial Soil (ug/kg) [1,8]		KD-SB-1 16-16.5'		KD-SB-2 11-12'		KD-SB-2 6-8'		KD-SB-3 10-12'		KD-SB-6 3-4'		KB-SB-7 4-6'		KD-SB-9 3-4'	
			Total (ug/kg)		Total (ug/kg)		Total (ug/kg)		Total (ug/kg)		Total (ug/kg)		Total (ug/kg)		Total (ug/kg)	
Polychlorinated Biphenyls (PCB)																
Aroclor-1248	740	NA	ND		NA		NA		NA		**5,200**		NA		**3,700**	
Aroclor-1254	740	NA	280		NA		NA		NA		**1,500**		NA		**1,000**	
Volatile Organic Compounds (VOC)																
Analyte	**EPA RSL for Industrial Soil (ug/kg) [1,8]**	**TCLP Limit (mg/L) [3]**	**KD-SB-1 16-16.5'**		**KD-SB-2 11-12'**		**KD-SB-2 6-8'**		**KD-SB-3 10-12'**		**KD-SB-6 3-4'**		**KB-SB-7 4-6'**		**KD-SB-9 3-4'**	
			Total (ug/kg)	TCLP (mg/L)	Total (ug/kg)	TCLP (mg/L)	Total (ug/kg)	TCLP (mg/L)	Total (ug/kg)	TCLP (mg/L)	Total (ug/kg)	TCLP (mg/L)	Total (ug/kg)	TCLP (mg/L)	Total (ug/kg)	TCLP (mg/L)
1,3,5-Trimethylbenzene	10,000	NA	0.0945	NA	0.902	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
1,4,-Dichlorobenzene	25,000	NA	0.0228 J	NA	ND	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
4-Isopropyltoluene	NA	NA	ND	NA	0.433	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Benzene	5.4 [c]	0.5	ND	ND	0.0271 J	0.0025 J	NA	NA	NA	NA	ND	NA	NA	NA	ND	ND
Chlorobenzene	1,400	100	ND	ND	0.0831	ND	NA	NA	NA	NA	ND	NA	NA	NA	ND	ND
cis-1,2-Dichloroethene	2,000	NA	ND	NA	1	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Ethylbenzene	27 [c]	NA	0.0601 J	NA	0.172 J		NA	NA	NA	NA	0.0066	NA	NA	NA	0.0055	NA
Isopropylbenzene	NA	NA	0.0923	NA	0.658	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Methylene Chloride	53 [c]	NA	ND	NA	ND	NA	NA	NA	NA	NA	0.018	NA	NA	NA	0.0385	NA
m,p-Xylene	2,500	NA	ND	NA	0.235	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Naphthalene	18 [c]	NA	0.187 B [9]	NA	1.4 B	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
n-Butylbenzene	51,000	NA	ND	NA	4	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
n-Propylbenzene	21,000	NA	0.151	NA	1	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA

TABLE 2
SUBSURFACE SOIL
LABORATORY ANALYTICAL RESULTS
KOKOMO DUMP SITE

Analyte	EPA RSL for Industrial Soil (ug/kg) [1,8]	TCLP Limit (mg/L) [3]	KD-SB-1 16-16.5'		KD-SB-2 11-12'		KD-SB-2 6-8'		KD-SB-3 10-12'		KD-SB-6 3-4'		KB-SB-7 4-6'		KD-SB-9 3-4'	
			Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)	Total (mg/kg)	TCLP (mg/L)
Volatile Organic Compounds (VOC)																
o-Xylene	3,000	NA	0.0325 J	NA	0.267	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
sec-Butylbenzene	NA	NA	0.351	NA	0.267	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
tert-Butylbenzene	NA	NA	ND	NA	0.147	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Tetrachloroethene	2.6 [c]	0.7	ND	ND	0.43	ND	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Toluene	45,000	NA	ND	NA	0.268	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
trans-1,2-Dichloroethene	690	NA	ND	NA	0.358	NA	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA
Trichloroethene	6.4 [c]	0.5	ND	ND	0.95	0.0036 J	NA	NA	NA	NA	ND	NA	NA	NA	ND	NA

Notes:
1. Industrial Soil Screening level is calculated based on noncancer hazard index unless otherwise noted with c in which case the screening level is calculated based on a 1 in a million cancer risk
2. mg/kg - milligrams per kilogram
3. mg/L - milligrams per liter
4. ND - Not detected
5. J - Results is less than the reporting limit but greater than or equal to the method detection limit. The concentration is an approximate value.
6. E - Exeeded calibration range of instrument
7. NA - Not applicable
8. ug/kg - micrograms per kilogram
9. Detected in blank sample
10. Bolded results indicate concentrations above screening levels.

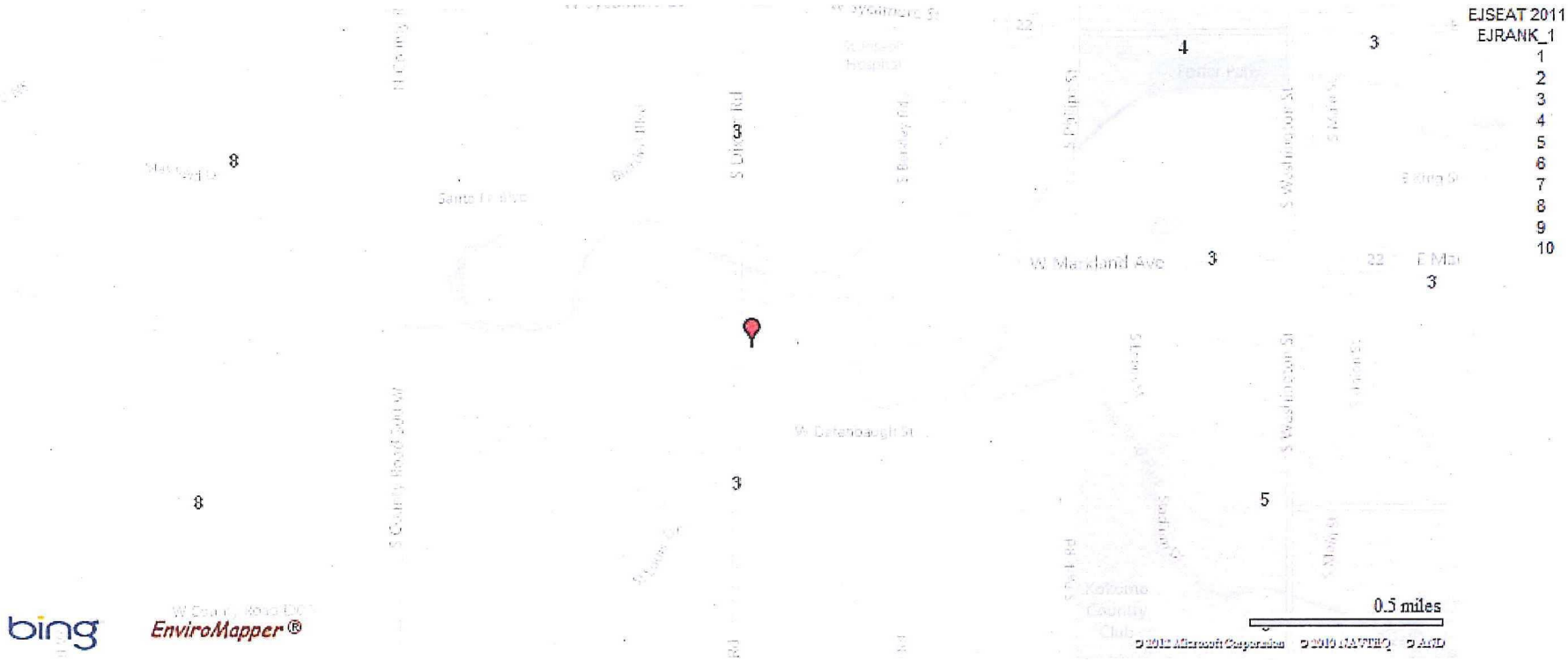
ATTACHMENT I

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
KOKOMO DUMP SITE
KOKOMO, HOWARD COUNTY, INDIANA
JULY 2012

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	02/00/99	ATSDR	File	ToxFAQs Sheet for Chlorinated Dibenzo-p-Dioxins(CDDs)	2
2	02/00/01	ATSDR	File	ToxFAQs Sheet for Poly-chlorinated Biphenyls	2
3	08/00/07	ATSDR	File	ToxFAQs Sheet for Arsenic CAS #7440-38-2	2
4	08/00/07	ATSDR	File	ToxFAQs Sheet for Lead CAS #7439-92-1	2
5	04/08/11	IDEM	File	TEMPO Record re: Buried Drums at the Old City Dump	3
6	03/22/12	Lam, S., U.S. EPA	Hauer, G., IDEM	Letter re: Request for IDEM to Identify any ARARs for the Kokomo Dump Site	2
7	03/26/12	Andrews, S., IDEM	Lam, S., U.S. EPA	Letter re: ARARs for Proposed Removal Action at the Kokomo Dump Site	2
8	02/17/12	OTIE	U.S. EPA	Site Assessment Report for the Kokomo Dump Site w/Cover Letter	29
9	08/01/12	Jaworski, M., IDEM	Gebien, C., U.S. EPA	Letter re: Kokomo Dump request for assistance	2
10	00/00/00	Lam, S., U.S. EPA		Action Memorandum: Kokomo Dump Site **(PENDING)**	

ATTACHMENT II

REGION 5 EJ ANALYSIS

Kokomo Dump - EJ Assessment