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DECISION DOCUMENT

**FOR THE REMEDIATION OF OPERABLE UNIT 3
DIAMOND SHAMROCK PAINESVILLE WORKS SITE
PAINESVILLE TOWNSHIP, LAKE COUNTY, OHIO**



**Ohio Environmental Protection Agency
Division of Environmental Response and Revitalization
Northeast District Office
November 2015**

Ohio EPA's Division of Environmental Response and Revitalization (DERR) - Assessment, Cleanup & Reuse Section Remedial Response Program			Decision Document For the Remediation of the Operable Unit 3 of the Diamond Shamrock Painesville Works Site Painesville, Lake County, Ohio		
THE REMEDIAL RESPONSE PROCESS					
(1) Preliminary Assessment & Site Inspection	(2) Remedial Investigation & Feasibility Study	(3) Remedy Selection (Preferred Plan & Decision Document)	(4) Remedial Design	(5) Remedial Action	(6) Remedy Operation, Maintenance & Monitoring

Ohio EPA Announces Decision Document

On June 26, 2008, Ohio EPA issued a Preferred Plan that outlined Ohio EPA's preferred alternative to remediate contamination at Operable Unit 3 (OU3) of the Diamond Shamrock Painesville Works Site. Ohio EPA held a public meeting on July 31, 2008 at the Painesville Township Hall, 55 Nye Road, Painesville, Ohio, to explain the Preferred Plan. Oral and written comments were accepted at this meeting and during the comment period which ran from June 26, 2008 through August 8, 2008. Section 8.0, Responsiveness Summary, of this Decision Document summarizes the comments and Ohio EPA's responses.

Based on the Preferred Plan and the consideration of comments received during the comment period, Ohio EPA is issuing this Decision Document identifying the selected remedial alternative for the cleanup of contaminated soils and ground water, as well as to address inhalation risks from soil and ground water to indoor air at OU3, and to provide the rationale for the selection. It also includes summaries of other remedial alternatives evaluated for use at OU3.

Ohio EPA is issuing this Decision Document in a manner consistent with Section 300.430(f)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). It summarizes information found in detail in the remedial investigation and feasibility study reports and other documents contained in the administrative record file for OU3. Ohio EPA encourages the public to review these documents to gain a better understanding of OU3 and the activities that have been conducted at OU3.

ERAC Appeal Period: As a final action of the Director of Ohio EPA, the Decision Document may be appealed to the Environmental Review Appeals Commission (ERAC) pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with ERAC (77 South High Street, 17th Floor, Columbus, Ohio 43215) within thirty (30) days after notice of the Director's action.

Additional Information: Available from (1) Ohio EPA's Northeast District Office, located at 2110 East Aurora Road, Twinsburg, Ohio 44087 (contact Teri Heer at (330) 963-1168 or teri.heer@epa.ohio.gov); and (2) locally from the information repositories located at the Fairport Harbor Public Library (335 Vine Street, Fairport Harbor, Ohio; (440) 354-8191; www.fairport.lib.oh.us) and Morley Public Library (184 Phelps Street, Painesville, Ohio; (440) 352-3383; www.morleylibrary.org). Information is also available at www.dsrrt.com.

DECLARATION

SITE NAME AND LOCATION

Diamond Shamrock Painesville Works Site – OU3
North of 900 Fairport Nursery Road
Painesville Township, Ohio

STATEMENT OF BASIS AND PURPOSE

This Decision Document presents the selected remedial action for OU3 of the Diamond Shamrock Painesville Works Site in Painesville Township, Lake County, Ohio, chosen in accordance with the policies of the Ohio Environmental Protection Agency, statutes and regulations of the State of Ohio, and the N C P, 40 CFR Part 300.

ASSESSMENT OF THE SITE

Actual and threatened releases of hazardous substances at OU3, if not addressed by implementing the remedial action selected in the Decision Document, constitute a substantial threat to public health or safety and are causing or contributing to air or water pollution or soil contamination.

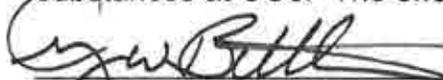
OU3 is part of the former Diamond Shamrock Painesville Works Site, which operated at this location from 1912 through 1977. Diamond Shamrock manufactured a variety of chemicals at the 1,100-acre Site. Access to the former Diamond Shamrock One Acre Site (OU10), a small hazardous waste landfill which accepted wastes from Diamond Shamrock research laboratories, was obtained through OU3.

DESCRIPTION OF THE SELECTED REMEDY

The major components of the selected remedial alternative include: (1) remediation of areas containing contaminated soils through excavation and/or placement of clean soils and (2) establishment of an environmental covenant to ensure appropriate risk-based land use, limit ground water use, prohibit construction within 150' of the OU10 slurry wall and prohibit construction below the applicable minimum points of compliance across OU3.

STATUTORY DETERMINATIONS

The selected remedial action is protective of human health and the environment, complies with legally applicable state and federal requirements, is responsive to public participation and input and is cost-effective. The remedy uses permanent solutions to the maximum extent practicable to reduce toxicity, mobility and volume of hazardous substances at OU3. The effectiveness of the remedy will be reviewed regularly.



Craig W. Butler, Director

DEC 01 2015

Date

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TABLE OF ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirements
BERA	Baseline Ecological Risk Assessment
BHHRA	Baseline Human Health Risk Assessment
CEI	Cleveland Electric Illuminating Company
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC(s)	Contaminant(s) of Concern
DERR	Division of Environmental Response and Revitalization
DFFOs	Director's Final Findings and Orders
EC	Environmental Covenant
ELCR	Excess Lifetime Cancer Risk
ERA	Ecological Risk Assessment
FS	Feasibility Study
HI	Hazard Index
HQ	Hazard Quotient
NCP	National Contingency Plan
O&M	Operation and Maintenance
ORC	Ohio Revised Code
OU(s)	Operable Unit(s)
PCBs	Polychlorinated Biphenyls
POC(s)	Point(s) of Compliance
PPM	Parts Per Million = mg/kg or mg/L
PRG(s)	Preliminary Remediation Goal(s)
PRP	Potentially Responsible Party
RA	Remedial Action
RAO(s)	Remedial Action Objective(s)
RD	Remedial Design
RG(s)	Remediation Goal(s)
RI	Remedial Investigation
RL(s)	Remediation Level(s)
RMP	Risk Management Plan
TDC	Technical Decision Compendium

1.0 EXECUTIVE SUMMARY

On September 27, 1995, Chemical Land Holdings, Inc., Maxus Energy Corporation, Occidental Chemical Corporation, Painesville Township Board of Trustees, Uniroyal Chemical Company, Village of Fairport Harbor, and the Painesville PRP Group entered into Director's Final Findings and Orders ("DFFOs") with Ohio EPA to investigate and develop remedial alternatives for the Diamond Shamrock Painesville Works Site (Site; see **Figure 1, Site Location Map**). Chemical Land Holdings, Inc., Maxus Energy Corporation, Occidental Chemical Corporation, Painesville Township Board of Trustees, Village of Fairport Harbor, and the Painesville PRP Group are also subject to a U.S. District Court Judicial Consent Order ("Consent Order"), effective on October 4, 2005, which required the continued implementation of the DFFOs requirement to investigate contamination at the Site, including OU3. OU3 is subject to both the DFFOs and the Consent Order. Accordingly, the term "Orders" is used to refer to both the DFFOs and the Consent Order.

The Painesville PRP Group developed Phase I Remedial Investigation (RI) and Phase II RI Work Plans, pursuant to the Orders, to determine where contamination exists at the Site and at what concentrations. The Phase I RI Work Plan was approved in August 1997 and the Phase II RI Work Plan was approved in August 2000, to investigate the Site for potential contamination of soil, ground water, surface water and indoor air.

On July 25, 1999 and September 22, 2003, respectively, the Phase I RI and Phase II RI Reports were approved by Ohio EPA. These reports documented the existence of contamination within the Site boundaries that would require clean up.

During the course of RI activities, the Site was divided into 21 land-based and three ground water-based operable units (OUs). This Decision Document applies to OU3, which is located north of 900 Fairport Nursery Road (see **Figure 2, Operable Unit 3 Location Map**).

A ground water divide, which separates ground water flowing north to Lake Erie and ground water flowing south to the Grand River, is located under the southeastern corner of OU3. Ground water north of the divide is included in Operable Unit 1 North-Lake (OU1N-Lake) and ground water south of the divide is included in Operable Unit 1 North-River (OU1N-River). Therefore, OU3 is impacted by ground water from both OU1N-Lake and OU1N-River.

On May 28, 2006, the Painesville PRP Group submitted the Feasibility Study (FS) Report for OU3, which included baseline human health and terrestrial ecological risk assessments. Risk to ecological receptors was slightly in excess of acceptable levels due to the presence of elevated concentrations of aluminum, chromium and vanadium. Human health risks for the child and adult resident, child and adult recreational user, recreational trespasser, construction/excavation worker and commercial/industrial worker were calculated. Carcinogenic risk was exceeded for the child resident, necessitating a remedial action.

A Preferred Plan was issued in June 2008, which presented a range of remedial alternatives for public consideration and comment. The alternatives evaluated in the Preferred Plan are included in **Section 4.0, Summary of Remedial Alternatives**.

Following issuance of the Preferred Plan, ground water contamination was identified in Operable Unit 18 (OU18), located immediately to the south of OU3. As with OU3, both OU1N-Lake and OU1N-River underlie OU18. Due to the proximity of OU3 to OU18 and the potential for ground water to flow from ground water underlying OU18 to that underlying OU3, Ohio EPA halted issuance of the Decision Document for OU3. Once initial investigations were completed for ground water underlying OU18 and documentation was submitted on June 12, 2015 by the Painesville PRP Group, indicating that contaminants in ground water underlying OU18 were not impacting OU3, Ohio EPA proceeded with issuance of the Decision Document for OU3.

All of the documents referenced above can be found in the public repositories identified in **Section 8.0, Responsiveness Summary**.

This Decision Document summarizes information on the range of remedial alternatives evaluated, identifies Ohio EPA's selected remedial alternative, and explains the reasons for selection of the remedial alternative. The Decision Document is based on the Ohio EPA-approved RI and FS reports completed by SECOR, Inc. and Hull & Associates, Inc., on behalf of the Painesville PRP Group.

Ohio EPA's selected remedial alternative should yield a permanent solution for risks associated with the contaminated media at OU3. The expectations for the selected alternative include:

- Reduction of human health risks to within acceptable limits, and protection of human health and the environment from exposure to contaminants of concern (COCs) in soils and ground water, which are above acceptable limits.
- Short and long-term protection of public health and the environment.
- Compliance with applicable or relevant and appropriate requirements (ARARs).
- Cost-effectiveness and limitation of expenses to what is necessary to achieve the selected alternative expectations.

The major components of the selected remedial alternative include remediation of contaminated soils within the southeastern corner of OU3, establishment of an Environmental Covenant (EC) to restrict property and ground water use, and establishment of a Risk Management Plan (RMP) for future construction activities which occur below the applicable 4' minimum point of compliance (POC).

Ohio EPA finds that these measures will protect public health and the environment by reducing risk to acceptable levels once the remedial action objectives (RAOs) have been achieved.

2.0 SUMMARY OF OPERABLE UNIT CONDITIONS

2.1 Operable Unit History

The Diamond Shamrock Painesville Works Site is an approximately 1,100 acre former chemical manufacturing facility located in a mixed industrial/residential area. The Site is situated in the northern portion of Lake County, within the municipalities of the city of Painesville, Painesville Township and the Village of Fairport Harbor. East Street borders the Site to the west, Elm Street to the south and Lake Erie to the north. The Site borders the former Uniroyal Chemical Company and Cleveland Electric Illuminating Company (CEI) property to the east. The Grand River and Fairport Nursery Road bisect the Site from east to west (see **Figure 1, Diamond Shamrock Location Map**).

In order to facilitate the Remedial Investigation/ Feasibility Study (RI/FS) and Remedial Design/ Remedial Action (RD/RA) processes, the Site has been divided into 24 OUs – 21 land-based and 3 ground water-based OUs. OU3, which is approximately 25 acres in size, is located in the north-eastern corner of the Site, adjacent to Lake Erie (see **Figure 2, Operable Unit 3 Location Map**) and is also known as Parcel 3A1.

A list of owners, operators and/or disposers that may have contributed to the contamination within OU3 is shown in **Table 1 Owners, Operators and/or Disposers**.

TABLE 1 OWNERS, OPERATORS AND/OR DISPOSERS		
Owners, Operators and/or Disposers	Property Usage	Period
<i>Diamond Alkali / Diamond Shamrock</i>	<i>Access to former One Acre Site (OU10) hazardous waste disposal area.</i>	<i>1912 – Present</i>

OU3, currently owned by Tierra Solutions, Inc., contains a "pocket park" on the northeast corner, which has historically been used for social events, and equipment and clean material storage for other Site-related remedial activities. The remainder of OU3 is currently vacant. Lakeview Bluffs, LLC has entered into a 99-year lease for the majority of the Site, including OU3, and has plans to utilize it for residential development.

Chemical Land Holdings, Inc., Maxus Energy Corporation, Occidental Chemical Corporation, Painesville Township Board of Trustees, Village of Fairport Harbor, and the Painesville PRP Group are subject to the Orders, which require them to investigate contamination at the Site, including OU3.

2.2 Site Characteristics and Investigation

Pursuant to the 1995 DFFOs for the RI/FS, the Painesville PRP Group, on behalf of all of the signatories to the 1995 DFFOs, submitted Phase I RI and Phase II RI and FS reports, which were approved by Ohio EPA, DERR in 1999, 2003, and 2007, respectively. The RI/FS activities identified the nature and extent of contamination in surface and subsurface soils; ground water; surface water and sediments for the volatile

and semi-volatile organic compounds, pesticides, PCBs, and metals; and as necessary, developed alternatives to address the contamination. The investigation also provided a description of Site geology, topography, hydrogeology and other Site characteristics.

Geology at the Site, including OU3, is complex. The subsurface geology consists of a mixture of non-native fill material (including large amounts of Solvay¹ material within the former waste lakes/soup ponds), glacial tills, alluvial deposits, and shale bedrock. Ground water is present across the Site at varying depths. Ground water quality is poor and in the majority of areas yield is very poor, which limits the ability for its use for potable purposes. For these reasons, it was determined that ground water did not need to be evaluated for risk to human health, with the exception of direct contact by future construction workers. However, ground water was evaluated as a potential contributor of contamination to both the Grand River and Lake Erie.

No ground water supply wells are located within the immediate vicinity of the Site and the area is served by public water from Lake Erie. A ground water divide, located north of Fairport Nursery Road (within a portion of OU3), as well as the Grand River and Lake Erie, complicate ground water flow direction and contaminant transport across the Site. One jurisdictional wetland has been identified on the Site and is located within Operable Unit 21 (OU21).

During the majority of the investigation, the Site was zoned industrial, which matched its historical use. In 2003, the Lake County Board of Commissioners and Lakeview Bluffs, LLC received a \$3 million grant from the State of Ohio to perform a voluntary interim action for Operable Unit 15 (OU15), which would upgrade the end use of OU15 from industrial to a mixture of commercial, recreational and residential². In 2006, they received a second \$3 million grant from the State of Ohio for Operable Unit 2 (OU2) and Operable Unit 6 (OU6) to upgrade the end uses of those OUs to a combination of recreational and residential. The majority of the OUs at the Site, including OU3, have been re-zoned to accommodate these end uses. OU3 is bordered by OU6 and OU10 to the west, OU18 to the south, a CEI fly ash disposal facility to the east, and Lake Erie to the north.

2.3 Summary of Site Risks

As part of the RI/FS, a baseline human health and ecological risk assessments (BHHRA and BERA) were conducted, and approved by Ohio EPA on September 5, 2007, to evaluate current and potential future risks to human and ecological receptors as the result of exposure to contaminants present at OU3. The results demonstrated that existing contaminants in environmental media pose or potentially pose unacceptable risks and/or hazards to human and/or ecological receptors sufficient to trigger the need for remedial actions. Additional information on the primary COCs can be found in **Appendix B**.

¹ Solvay material is composed of waste material from the soda ash process and contains calcium carbonate, magnesium carbonate and calcium chloride.

² Since OUs 2, 3 and 15 were zoned industrial, formerly contained industrial manufacturing facilities, and the property owner had no plans to use the property for anything other than industrial purposes, Ohio EPA would have only been able to require that the property be remediated to industrial standards

2.3.1 Risks to Human Health

The risk assessment for human health is an estimate of the likelihood of potential health problems occurring if no remedial actions were taken at a site. To estimate baseline risk, a four-step process is undertaken.

Step 1. Data Collection and Evaluation (of Contamination): The concentrations of contaminants at the site as well as any past scientific studies on the effects these contaminants have had on people are reviewed. Comparisons of site-specific concentrations of COCs and concentrations reported in past studies help determine which contaminants are most likely to pose the greatest threat to human health.

Step 2. Exposure Assessment: The different ways that people might be exposed to the COCs, the concentrations that people might be exposed to, and the potential frequency and duration of exposure are evaluated. A reasonable maximum exposure scenario is calculated, which portrays the highest level of human exposure that could reasonably be expected to occur.

Step 3. Toxicity Assessment (of Potential Health Dangers): The information from Step 2 is combined with data on the toxicity of each COC to assess potential health risks. Two types of risk are considered: excess lifetime cancer risk (ELCR) and non-cancer risk. The likelihood of any kind of cancer resulting from a site is expressed as a probability of 1 in 100,000, or 1×10^{-5} . In other words, for every 100,000 people that could be exposed, one extra case of cancer may occur as a result of exposure to site COCs. For non-cancer health effects, a hazard index (HI) or hazard quotient (HQ) is calculated (quotient refers to the effects of an individual COC, whereas index refers to the combined effects of all of the COCs). The key concept here is that a "threshold level" (measured as an HQ or HI of 1) exists below which non-cancer health effects are not expected to occur to exposed populations or individuals.

Step 4. Risk Characterization: A determination is made as to whether site risks are substantial enough to cause potential health problems for people at or near a site. The potential risks from the individual pathways (e.g., inhalation, direct contact, ingestion, etc.), and individual chemicals as appropriate, are added together to determine the total cumulative risk to human health.

Human health risk assessments for OU3 and the Grand River/Lake Erie were prepared to evaluate potential impacts to human health posed by COCs in soils, sediments, ground water, surface water, air, and fish for the following exposure pathways:

Soils:

Ingestion
Dermal Contact
Particulate Emissions to Outdoor Air

Volatile Emissions to Indoor Air
Volatile Emissions to Outdoor Air

Ground Water:

Source of Contaminants to Grand River and Lake Erie
Volatile Emissions to Indoor Air

Grand River Surface Water, Sediment and Fish:

Ingestion of Fish
Ingestion of Surface Water
Ingestion of Sediment
Dermal Contact with Surface Water
Dermal Contact with Sediment

Human health exposure to contaminants in ground water via ingestion was not determined, due to inability for ground water within the Site, including OU3, to be used for potable purposes, due to low quality and yield. If Site-specific data were not available or were insufficient to modify standard default values, then the standard defaults provided in U.S. EPA guidance were used.

Carcinogenic (cancer) and non-carcinogenic (non-cancer) risks were evaluated for the following receptors: child and adult resident, child and adult recreational user, recreational trespasser, construction/excavation worker and commercial/industrial worker. Results of the risk assessment indicated that only the child resident carcinogenic risk level, calculated to be 3×10^{-5} , exceeded the Site cumulative risk goal of 1×10^{-5} . Child resident non-carcinogenic threshold level (HQ) was below the Site risk goal of 1, as were the carcinogenic and non-carcinogenic risk and threshold levels for all the other receptors evaluated. The elevated child resident carcinogenic risk level indicates that remedial action is necessary for OU3.

2.3.2 Risks to Ecological Receptors

During the Phase II RI, Ohio EPA determined that a BERA was necessary for OU3, in order to evaluate potential risks posed to ecological receptors by OU-related COCs. Although 17 COCs were carried through the BERA, it was determined that minimal ecological risk is posed by contaminants within OU3. These risks were due to aluminum, chromium and vanadium in surface soils (0-4' below ground surface). Elevated risk to receptors is reported as an HQ. Unacceptable HQs are those which are in excess of 1. HQs for American woodcock, meadow vole, and short-tailed shrew ranged between 1.49 to 1.94, which are slightly elevated when compared to the HQ limit of 1. However, it is likely that these risk levels will be reduced once redevelopment begins within OU3.

3.0 REMEDIAL ACTION OBJECTIVES

A FS, to define and analyze appropriate remedial alternatives, was completed with Ohio EPA oversight and was approved in September 2007.

As part of the RI/FS process, RAOs were developed in accordance with Section 300.430 of the NCP, pursuant to the federal Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. §9601 et seq., as amended, and U.S. EPA guidance (*i.e.*, RI/FS Guidance (EPA/540/G-89/004, and others). The RAOs are goals that a remedy should achieve in order to ensure protection of human health and the environment.

The RAOs for OU3 include those listed in **Table 2, Remedial Action Objectives**:

TABLE 2 REMEDIAL ACTION OBJECTIVES	
Ground Water	
Human Health Risk	Prevent ingestion/direct contact of ground water across OU3 containing carcinogens in excess of a total excess lifetime cancer risk (for all contaminants) greater than 1×10^{-5} .
Human Health Risk	Prevent ingestion/direct contact of ground water across OU3 containing non-carcinogens in excess of a HQ or HI greater than 1.
Human Health Risk	Prevent inhalation in future structures of carcinogens (including carbon tetrachloride) in vapors emanating from ground water in excess of a 1×10^{-5} excess lifetime cancer risk.
Soil	
Human Health Risk	Prevent ingestion/direct contact with soil located across OU3, below the applicable minimum POC, containing carcinogens (including volatile and semi-volatile chemicals, pesticide, PCBs and metals) in excess of a total excess lifetime cancer risk greater than 1×10^{-5} .
Human Health Risk	Prevent ingestion/direct contact with soil located across OU3, below the applicable minimum points of compliance, containing non-carcinogens (including volatile and semi-volatile chemicals, pesticide, PCBs and metals) in excess of a HQ or HI greater than 1.
Human Health Risk	Prevent inhalation in future OU3 structures of carcinogens (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h) anthracene, and indeno(1,2,3-cd)pyrene) in vapors emanating from soil in excess of a 1×10^{-5} excess lifetime cancer risk.

In the process of scoping and conducting the RI, generic preliminary remediation goals (PRGs) were established. These PRGs were converted to OU3-specific remediation goals (RGs) following completion of the RI and FS phase of the project. The FS includes a list of RGs for protection of human health, established using the acceptable excess lifetime cancer risk and non-cancer hazard goals identified in the DERR Technical Decision Compendium (TDC) document "Human Health Cumulative Carcinogenic Risk and Non-carcinogenic Hazard Goals for DERR Remedial Response and Federal Facility Oversight," dated August 21, 2009. These goals are given as 1×10^{-5} (*i.e.*, 1 in 100,000) excess lifetime cancer risk and a HQ or HI of 1, and were

established using the default exposure parameters provided by U.S. EPA or OU3-specific information. This TDC can be found at <http://www.epa.ohio.gov/portals/30/rules/riskgoal.pdf>.

The contaminants of concern and the RGs, now termed final remediation levels (RLs), for OU3 are shown in **Table 3, Contaminants of Concern / Remediation Levels**.

TABLE 3 CONTAMINANTS OF CONCERN (COCs) / REMEDIATION LEVELS (RLs)		
Medium	COC	RL (mg/kg)
Soils: Human Direct Contact*	Aluminum	73000
	Manganese	2710
	Vanadium	704
	Benzo(a)anthracene	9.16
	Benzo(a)pyrene	0.916
	Benzo(b)fluoranthene	9.16
	Dibenz(a,h)anthracene	0.916
	Indeno(1,2,3-cd)pyrene	9.16

*Only human direct contact with soils exceeded acceptable residential risk-based standards.

4.0 SUMMARY OF REMEDIAL ALTERNATIVES

A total of three (3) remedial alternatives were considered in the FS, as identified in **Table 4, Summary of OU3 Remedial Alternatives**. A brief description of the major features of each of the remedial alternatives follows. More detailed information about these alternatives can be found in the FS report.

TABLE 4 SUMMARY OF OU3 REMEDIAL ALTERNATIVES		
Media	Alternative	Description of Remedial Alternative
Soil		
	S1 ALT OU3-A	No action
	S2 ALT OU3-B	EC limiting property use to industrial with a 2' minimum POC, placing limitations on building construction and location; prohibiting construction of buildings within 150' buffer zone around OU10; and prohibiting excavation unless performed under an RMP.
	S3 ALT OU3-C	EC permitting residential and recreational use of portions of the OU with 4' minimum POC in residential areas and 2' minimum POC in recreational areas, placing limitations on building construction and location; prohibiting construction of buildings within 150' buffer zone around OU10; and prohibiting excavation unless performed under an RMP.

Media	Alternative	Description of Remedial Alternative
Soil		
	S4 ALT OU3-D	Active remediation through excavation and/or covering contaminated area with clean soils to establish a 4' minimum POC. EC permitting residential use with a 4' minimum POC, placing limitations on building construction and location; prohibiting construction of buildings within 150' buffer zone around OU10; and prohibiting excavation unless performed under an RMP.
Ground Water		
	G1	No Action
	G2	EC prohibiting use of ground water for potable and non-potable purposes, with the exception of environmental investigation and remediation.

4.1 No Action Alternatives (S1 and G1)

The "no action alternatives" for soil and ground water have been included in a single section for efficiency. The NCP requires evaluation of a no action alternative to establish a baseline for the comparison of other remedial alternatives. Under this alternative, no remedial activities or monitoring are conducted at OU3 to prevent exposure to contaminated media.

4.2 Soil Alternatives

Alternative S2: ALT OU3-B

This alternative would rely on the establishment of an EC, which includes:

- Prohibiting residential land use and the construction of buildings in a buffer zone within 150 feet of the slurry wall installed on OU10 in accordance with the proposed remedy for OU10;
- Prohibiting residential development of OU3 in the absence of additional remedial activities and restrict the land use to industrial;
- Limiting building construction to slab-on-grade structures within OU3, with no basements or crawl spaces permitted;
- Establishing a 2' minimum POC across OU3; and
- Prohibiting excavation by construction workers below the 2' minimum POC, unless the excavation is performed in accordance with an Ohio EPA-approved RMP. This RMP would address health and safety precautions to be taken by workers excavating below the POCs, as well as how to manage potentially contaminated soils, materials, and ground water.

Alternative S3: ALT OU3-C

This alternative would rely on the establishment of an EC, which includes:

- Prohibiting residential land use and the construction of buildings in a buffer zone within 150' of the slurry wall installed on OU10 in accordance with the proposed remedy for OU10;
- Limiting building construction to slab-on-grade structures within OU3, with no basements or crawl spaces permitted;
- Prohibiting residential development of OU3 in the defined area where residential direct-contact risk goals are exceeded (area will be restricted to recreational use only);
- Establishing a 4' minimum POC in residential areas and a minimum 2' POC in recreational areas; and
- Prohibiting excavation by construction workers unless the excavation is performed in accordance with an Ohio EPA-approved RMP. This RMP would address health and safety precautions to be taken by workers excavating below the POCs, as well as how to manage potentially contaminated soils, materials, and ground water.

Alternative S4: ALT OU3-D

This alternative would require active remediation of OU3, in order to meet residential land use standards. The remediation would use one or both of the components listed below to achieve the required 4' minimum residential POC:

Component D-1: Placement of a minimum of 2' of clean soil cover over the location posing unacceptable risk (since the sample exceeding risk goals was collected at the 2'-3' depth interval), thus achieving a 4' minimum POC for the residential land use scenario.

Component D-2³: Excavation of 0-4' or more of impacted soils, placement of up to 4' of clean soil backfill, as needed to meet the residential risk goal and achieve a 4' minimum POC. Excavated soils would be disposed off-site at a licensed solid waste facility, in accordance with applicable statutes and regulations.

Confirmation sampling would be performed following completion of remedial activities to (1) ensure that the appropriate POC is met within the remedial area, and (2) confirm that the soils remaining on OU3 meet risk-based remediation goals established for the OU.

³ This component was identified as component D-3 in the preferred plan. The original component D-2 was eliminated based on discussions with the Painesville PRP Group.

This alternative would also rely on an EC, which includes:

- Prohibiting residential land use and the construction of buildings in a buffer zone within 150 feet of the slurry wall installed on OU10 in accordance with the proposed remedy for OU10;
- Limiting building construction to slab-on-grade structures within OU3, with no basements or crawl spaces permitted;
- Establishing a 4' minimum POC across OU3; and
- Prohibiting excavation by construction workers unless the excavation is performed in accordance with an Ohio EPA-approved RMP. This RMP would address health and safety precautions to be taken by workers excavating below the POCs, as well as how to manage potentially contaminated soils, materials, and ground water.

4.3 Ground Water Alternative G2: ALT OU3-B, ALT OU3-C, and ALT OU3-D

The ground water RAOs would be satisfied by the establishment of an EC, which includes:

- Prohibiting the extraction of ground water for potable and non-potable use, with the exception of environmental investigation, remediation and monitoring.

4.4 Cost Estimates and Time to Achieve RAOs

Alternative S1/G1 – ALT OU3-A

This baseline alternative has no associated costs, since no remedial activities, including the placement of use restrictions, would be performed. RAOs are not achieved under this alternative.

Alternative S2/G2 – ALT OU3-B

The estimates of cost and time to achieve RAOs for the EC/RMP industrial use alternative are as follows:

Estimated Capital Cost	\$ 30,900
Estimated Annual Reporting Cost	\$ 3,100
Estimated Present Worth Cost	\$ 92,000
Estimated Construction Time	N/A
Estimated Time to Achieve RAOs	60 days

Alternative S3/G2 – ALT OU3-C

The estimates of cost and time to achieve RAOs for the EC/RMP residential/recreational use alternative are as follows:

Estimated Capital Cost	\$ 30,900
Estimated Annual Reporting Cost	\$ 3,100
Estimated Present Worth Cost	\$ 92,000
Estimated Construction Time	N/A
Estimated Time to Achieve RAOs	60 days

Alternative S4/G2 – ALT OU3-D

The estimates of cost and time to achieve RAOs for the EC/RMP residential use alternative are as follows:

Estimated Capital Cost	\$ 107,000 - \$286,000
Estimated Annual Reporting Cost	\$ 6,300
Estimated Present Worth Cost	\$ 231,000 - \$410,000
Estimated Construction Time	4 months
Estimated Time to Achieve RAOs	6 months

5.0 COMPARISON AND EVALUATION OF ALTERNATIVES

5.1 Evaluation Criteria

Ohio EPA considers eight (8) criteria, as outlined in the NCP, to evaluate the various remedial alternatives individually and compare them with each other in order to select a remedy. A more detailed analysis of the remedial alternatives can be found in the FS report. The eight (8) evaluation criteria, including the threshold, balancing and modifying criteria are shown below in **Table 5, Remedial Alternative Evaluation Criteria**.

TABLE 5 REMEDIAL ALTERNATIVE EVALUATION CRITERIA
Threshold Criteria (2)
Overall Protection of Public Health and the Environment - determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, treatment, etc.
Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) - evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.

Balancing Criteria (5)
Long-Term Effectiveness and Permanence – evaluates the ability of an alternative to maintain protection of human health and the environment over time.
Reduction of Toxicity, Mobility, or Volume of Contaminants Through Treatment – evaluates the amount of contamination present, the ability of the contamination to move in the environment, and the use of treatment to reduce harmful effects of the principal contaminants.
Short-Term Effectiveness – evaluates the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
Implementability – evaluates the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.
Cost – includes estimated capital and annual operation and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
Modifying Criterion (1)
Community Acceptance – considers whether the local community agrees with Ohio EPA's analyses and preferred alternative. Comments received on the Preferred Plan are an important indicator of community acceptance.

Evaluation Criteria 1 and 2 are threshold criteria required for acceptance of an alternative. Any acceptable remedy must comply with both of these criteria. Evaluation Criteria 3 through 7 are the balancing criteria used to select the best remedial alternative(s) identified in the Preferred Plan. Evaluation Criteria 8, community acceptance, is evaluated through public comment on the alternatives received during the comment period.

5.2 Analysis of Evaluation Criteria

This section examines how each of the evaluation criteria is applied to each of the remedial alternatives listed in **Section 4.0, Summary of Remedial Alternatives** and compares how the alternatives achieve the evaluation criteria.

Overall Protection of Human Health and the Environment

Evaluation of the overall protectiveness of the alternatives focuses on whether each alternative achieves adequate protection of human health and the environment and identifies how site risks posed through each pathway being addressed are eliminated, reduced or controlled by the alternative. This evaluation also includes consideration of whether the alternative poses any unacceptable short-term or cross-media impacts.

Soil Alternatives: Alternative S1 does not attempt to restrict contact with contaminated soils and therefore is not protective of human health and the environment. Alternatives S2 and S3 provide protection through implementation of an EC only. Alternative S4 provides protection through active remediation of contaminated soils and the implementation of an EC.

Ground Water Alternatives: Ground Water Alternative G1 does not attempt to restrict ground water use and therefore is not protective of human health and the environment. Alternative G2 is proposed for use with all of the soil alternatives. The restriction of ground water use through an EC is protective of human health.

Compliance with ARARs

Soil Alternatives: Alternative S1 does not comply with ARARs because it does not address current or future risks to human health and the environment. Alternatives S2 and S3 meet this criterion as long as the EC is established in compliance with Ohio Revised Code (ORC) §§ 5301.80 through 5301.92 and remains in place. Alternative S4 meets this criterion because it remediates OU3 to residential standards and establishes an EC.

Ground Water Alternatives: Alternative G1 does not comply with ARARs because it does not address current or future risks to human health and the environment. Alternative G2 complies with the ARARs identified for OU3. Under the alternative, use of ground water would be restricted for potable and non-potable use, with the exception of environmental investigations, through an EC. The EC would be established in compliance with ORC §§ 5301.80 through 5301.92.

Because the "no action alternatives" do not meet the two threshold criteria (overall protection of human health and the environment, and compliance with ARARs), they were eliminated from consideration under the remaining criteria.

Long-Term Effectiveness and Permanence

Soil Alternatives: Alternatives S2 and S3 meets the requirements of long-term effectiveness and permanence due to the EC and RMP which would be established for OU3, but they do not directly address contaminated soils. Alternative S4 fully meets the criterion of long-term effectiveness and permanence since it involves actively remediating contaminated soils through removal and/or covering to meet the applicable minimum 4' POC and establishes an EC and RMP.

Ground Water Alternatives: Alternative G2 meets the long-term effectiveness and permanence criteria by restricting ground water usage across OU3. Under the alternative, use of ground water would be restricted for potable and non-potable use, with the exception of environmental investigations, through an EC. In addition, ground water yield and quality across the Site are low, limiting use for potable purposes and further solidifying the permanence of this alternative.

Reduction of Toxicity, Mobility or Volume by Treatment

Soil Alternatives: None of the alternatives result in a reduction of toxicity, mobility or volume through treatment. Alternative S4 is the only alternative which involves active

remediation; however, it would result in contaminated soils being removed from OU3 or covered in place. Treatment would not be performed.

Ground Water Alternatives: Alternative G2 does not result in a reduction of toxicity, mobility or volume by treatment, since it relies strictly on an EC to restrict ground water use.

Short-Term Effectiveness

Soil Alternatives: Alternatives S2 and S3 are equivalent in short-term effectiveness. Alternatives S2 and S3 would become effective immediately upon filing of the EC. Neither of these alternatives impact the community, OU3 workers or the environment. Alternative S4 is an active remedy, which would take one to four months to complete. Alternative S4 poses a slight risk to the community due to increased traffic, but does not pose an increased risk due to exposure. Potential storm water impacts must be managed.

Ground Water Alternatives: Alternative G2 would become effective immediately upon recording the EC.

Implementability

Soil Alternatives: Alternatives S2 and S3 are easily implemented, since both involve execution of an EC, but no physical remediation. Alternative S4 is the most difficult to implement, since it involves the excavation and/or covering of contaminated soils within OU3, in addition to execution of an EC.

Ground Water Alternatives: Minimal obstacles also exist for implementation of Alternative G2. The owner is in agreement with placing an EC on OU3, and has already done so on other OUs within the Site.

Cost

Soil and Ground Water Alternatives: The estimated present worth cost (2015 value) for each remedial alternative, including implementation of Alternative G2 and operation and maintenance is as follows:

Alternative	Description	Estimated Cost (2015)
S1/G1	No Action Alternative	\$0
S2/G2	Industrial Alternative	\$92,000
S3/G2	Residential/Recreational Alternative	\$92,000
S4/G2	Residential Alternative	\$231,000-\$410,000

Community Acceptance

Ohio EPA received comments from interested parties at the public meeting held on July 31, 2008, at the Painesville Township Hall and during the public comment period, which ran between June 26, 2008 and August 8, 2008. Those comments and Ohio EPA's responses are included in **Section 8.0, Responsiveness Summary**, of this Decision

Document. A copy of the OU3 public hearing transcript is located in **Appendix C** of this document.

5.3 Summary of Evaluation Criteria

A summary of the evaluation of the OU3 remedial alternatives is included in **Table 6, Evaluation of OU3 Remedial Alternatives**.

TABLE 6 EVALUATION OF OU3 REMEDIAL ALTERNATIVES								
Remedial Alternatives	Threshold Criteria		Balancing Criteria				Modifying Criteria	
	1. Protects Human Health & Environment	2. Compliance with ARARs	3. Long Term Effectiveness	4. Reduces T, M and/or V by Treatment	5. Short Term Effectiveness	6. Implementable	7. Costs	8. Community Acceptance
Soil								
S1 (ALT OU3-A) "No Action"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S2 (ALT OU3-B)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
S3 (ALT OU3-C)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
S4 (ALT OU3-D)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ground Water								
G1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> = Fully Meets Criteria <input checked="" type="checkbox"/> = Partially Meets Criteria <input type="checkbox"/> = Does Not Meet Criteria								

6.0 OHIO EPA'S SELECTED ALTERNATIVE

Ohio EPA's selected remedial alternative for OU3 is a combination of Soil Alternative S4 (ALT OU3-D), and Ground Water Alternative G2.

Based on information presently available, it is Ohio EPA's current judgment that the selected remedial alternative best satisfies the criteria defined in **Table 6, Evaluation of OU3 Remedial Alternatives**. The elements of the selected remedial alternative are as follows:

- **Remediation of SB-3A1-25**

Soils in the area around location SB-3A1-25 (see **Figure 3, Area of Contamination that Currently Exceeds Risk**) would be remediated to achieve

residential risk based standards and a minimum 4' POC. This minimum POC would be obtained through performance of one or both of the following:

Component D-1

A minimum of 2' of clean soil would be placed over the contaminated area in order to reach the required minimum 4' POC (only 2' would be needed, since the contamination is located at least 2' below the current ground surface).

Component D-2

Contaminated soils would be excavated and up to 4' of clean soils would be placed in the area in order to meet the minimum 4' POC. These soils would be disposed off-site in accordance with applicable State and Federal statutes and regulations.

Performance Standard

The performance standard is met when documentation is submitted that soils within the 4' minimum POC of OU3, including those in the vicinity of SB-3A1-25, do not exceed the following OU3-specific RLs:

Medium	COC	RL (mg/kg)
Soils: Human Direct Contact	Aluminum	73000
	Manganese	2710
	Vanadium	704
	Benzo(a)anthracene	9.16
	Benzo(a)pyrene	0.916
	Benzo(b)fluoranthene	9.16
	Dibenz(a,h)anthracene	0.916
	Indeno(1,2,3-cd)pyrene	9.16

• **Establishment of an EC**

The EC would:

- (1) Prohibit residential land use and the construction of buildings in a buffer zone within 150' of the slurry wall installed on OU10 (One Acre Site) in accordance with the recommended remedy for OU10;
- (2) Prohibit the construction of sub-grade habitable structures (i.e., basements and/or crawl spaces) within OU3;
- (3) Prohibit the extraction of ground water for potable and non-potable use, with the exception of environmental investigation, monitoring and treatment;

- (4) Establish a 4' minimum POC across OU3; and
- (5) Prohibit excavation by construction workers unless the excavation is performed in accordance with an Ohio EPA-approved RMP. This RMP would address health and safety precautions to be taken by workers excavating below the POCs, as well as how to manage potentially contaminated soils, materials, and ground water.

Performance Standards:

- The performance standard is met when documentation is provided to Ohio EPA demonstrating that the EC, including the restrictions identified in Section 6.0, has been recorded in the Lake County Recorder's Office.
- The performance standard is met when the restrictions identified in the EC are continually enforced, such that the RAOs (see Section 3.0) for the various media are met, until such institutional controls are no longer necessary.
- The performance standard is met when the property owner submits annual reports describing compliance with the EC.

7.0 Documentation of Significant Changes

Following the issuance of the Preferred Plan for OU3, significantly elevated levels of contaminants were found in ground water within OU18, located immediately south of OU3. In order to ensure that contaminants from OU18 were not impacting OU3, additional ground water investigations were conducted by the Painesville PRP Group. Based on those investigations, the boundary between OU3 and OU18 was relocated to provide an additional buffer between contamination in OU18 and OU3. The new position is approximately 100' north of the original OU3/OU18 boundary (see **Figure 4, Revised Operable Unit 3 Boundary Map**).

The new boundary bisects SB-3A1-25, which requires remediation under the selected remedy. Contamination in the vicinity of SB-3A1-25, which is located within OU3, north of the new boundary, will be remediated as specified in this Decision Document. The current property owner, Tierra Solutions, Inc., may or may not choose to remediate the contaminated portion of SB-3A1-25 located within OU18, south of the new boundary, during implementation of the OU3 remedy.

Three components for potential remediation of soils in the SB-3A1-25 area were included in the Preferred Plan. The Painesville PRP Group indicated during an August 3, 2015 discussion with Ohio EPA that the original component D-2, which provided the option of beneficial re-use of contaminated soils within non-residential portions of OU3, will not be utilized. Therefore, Ohio EPA has removed that component from the OU3 Decision Document. The remediation of OU3 will be performed using one or both of the remaining components, as specified in future Ohio EPA-approved RD/RA documents

and outlined in **Section 6.0, Ohio EPA's Selected Alternative**. The decision will be determined, in part, by restrictions posed by Dominion East Ohio, since the northern boundary of the high-pressure gas main right-of-way bisects location SB-3A1-25.

Ohio EPA has also determined that it would be more appropriate to maintain the applicable minimum POC across OU3 through an EC, rather than through an Operation and Maintenance (O&M) Agreement, as was proposed in the OU3 Preferred Plan. Under the EC, the property owner would be required to submit an annual report describing compliance with the EC, including the 4' minimum POC. Excavation below the 4' minimum POC would be prohibited unless performed in accordance with an Ohio EPA-approved RMP, in order to protect workers and ensure appropriate management of contaminated soils, materials and ground water.

8.0 Responsiveness Summary

On July 31, 2008, Ohio EPA presented the Preferred Plan for OU3 and OU15 at a public information session and hearing at the Painesville Township Hall. Oral and written comments were accepted at this meeting and during the comment period which ran from June 26, 2008 through August 8, 2008.

One technical and two non-technical comments regarding the OU3 Preferred Plan were received during the public comment period. The comments and Ohio EPA's responses are provided below:

Comment #1

This was not a legal public hearing, because: information about OU3 and OU15 in the Local Public Document Rooms (LPDRs, in Morley Library and Fairport Library) was not kept up to date, and the required thirty day notice was not given.

Ohio EPA Response:

The OU3 and OU15 hearing was public noticed and carried out in accordance with Ohio's rules and regulations.

Copies of the OU3 and OU15 Preferred Plan documents were provided directly to staff in both Morley Library and Fairport Library by Ohio EPA prior to issuance of the public notice.

As required, Ohio EPA published a public notice at least 30 days prior to the public hearing. On June 30, 2008, a public notice appeared in The News Herald, which is the largest local newspaper of general circulation in the Painesville, Ohio area. This public notice announced the July 31, 2008 public information session and hearing and provided a brief Site history and summary of the preferred plans for both OU3 and OU15. The notice also was published in Ohio EPA's Weekly Review.

In addition, two weeks before the public hearing, Ohio EPA's Public Interest Center issued a news release and citizen advisory to interested parties.

Comment #2

It is not proper to consider OU3, which surrounds OU10 on three sides apart from OU10, for two reasons:

1 – The millions of pounds of Persistent, Bio accumulative and Toxic (PBT) chemical waste that Diamond Shamrock reported burying in OU10 is being ignored. It may pass through OU3 on its way down gradient to Lake Erie, where it would create hazards.

2 – OU10 has increased groundwater flow through OU3 (and OU6), making the ground in OU3 and OU6 less stable. The known instability of this ground has increased the chance of a rapid release of large volumes of PBT waste into Lake Erie. That could be disastrous!

Ohio EPA's Response:

OU3 does not surround OU10 on three sides. Prior to issuance of the OU3 Preferred Plan, boundary maps were revised to eliminate a narrow piece of property between the OU10 landfill and Lake Erie, which was erroneously included as part of OU3. The updated boundary map was included in the OU3 Preferred Plan (see **Figure 2, Operable Unit 3 Location Map**).

While it is true that the landfill within OU10 contains contaminants which are considered to be persistent, bioaccumulative and toxic, those contaminants are contained within the landfill slurry walls and are currently being addressed by the Painesville PRP Group and Ohio EPA.

The current OU10 property owner, Tierra Solutions, Inc., has recently performed additional investigations which have documented that contamination has been contained by the slurry wall surrounding the OU10 landfill and that the OU10 ground water extraction system, which maintains an inward hydraulic gradient, is working. **Figure 5, Operable Unit 10 Ground Water Contour Map** of the Decision Document presents the current ground water contours for OU10, which indicate contamination is not migrating from OU10 onto OU3 and OU6. In addition, the stability of OU3 and OU6 are not impacted by OU10.

Based on the information presented in the above bullet points, it is appropriate to evaluate OU3 separately from OU10.

Comment #3

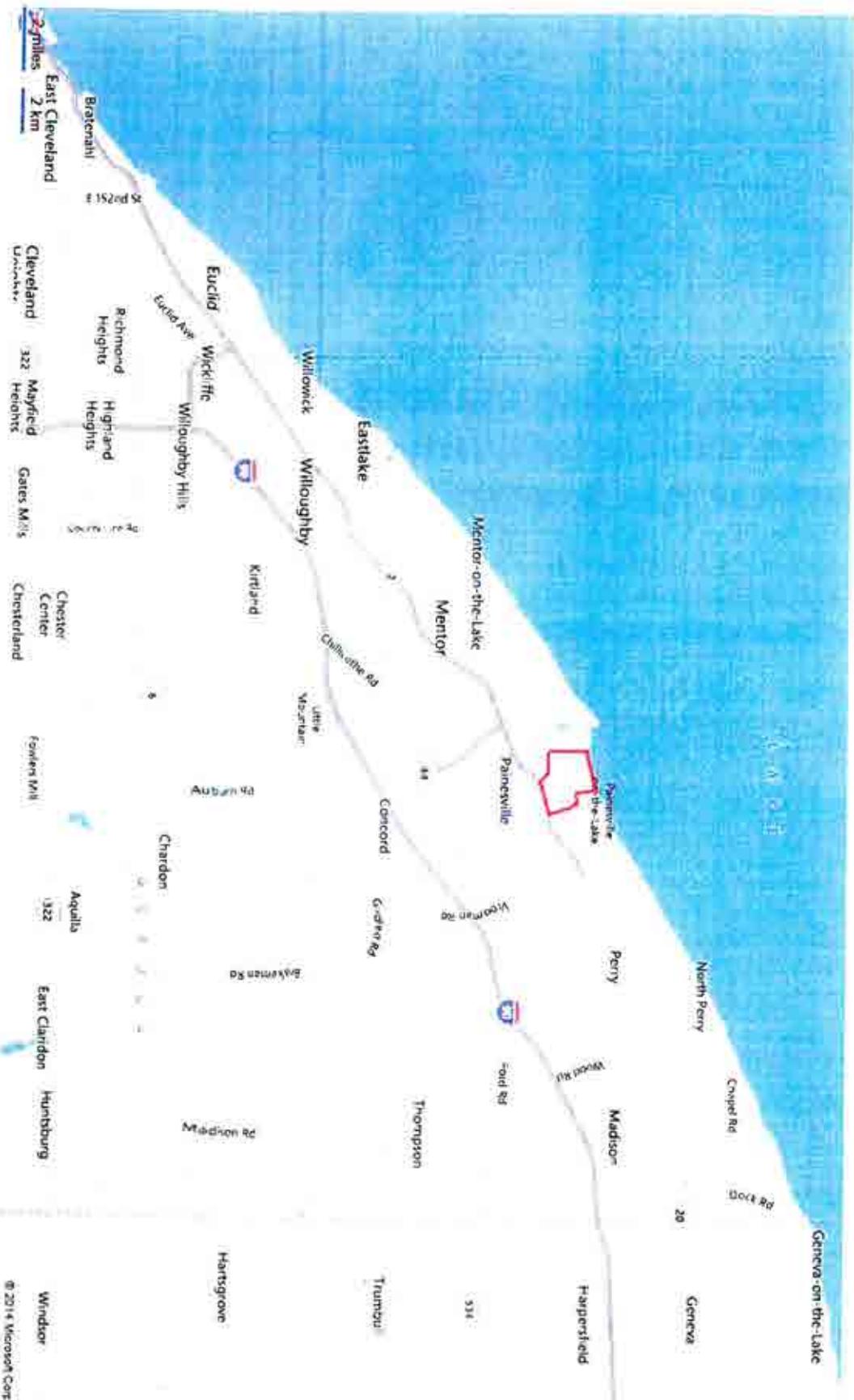
"Will the Ohio EPA be held accountable for any and all health concerns that may occur if the plan is approved? "

Ohio EPA Response:

Upon completion of remediation under a future Remedial Design/Remedial Action (RD/RA) Order, OU3 will meet residential and commercial/recreational standards and will be protective of human health and the environment. Compliance with these risk-based standards will rely, in part, on an Environmental Covenant (EC) to restrict land and ground water use, as well as maintain minimum points of compliance (POCs) across OU3. The EC will contain an annual reporting requirement to ensure that the minimum applicable POCs are maintained.

All written comments received during the public comment period are available for review at Ohio EPA's Northeast District Office, located at 2110 East Aurora Road, Twinsburg, Ohio, and at the Site's public document repositories, located at the Morley Public Library (184 Phelps St., Painesville, Ohio) and the Fairport Harbor Public Library (335 Vine St., Fairport Harbor, Ohio). A stenographic record of the public hearing portion of the meeting is located in **Appendix C, Operable Units 3 and 15 Public Hearing Transcript**.

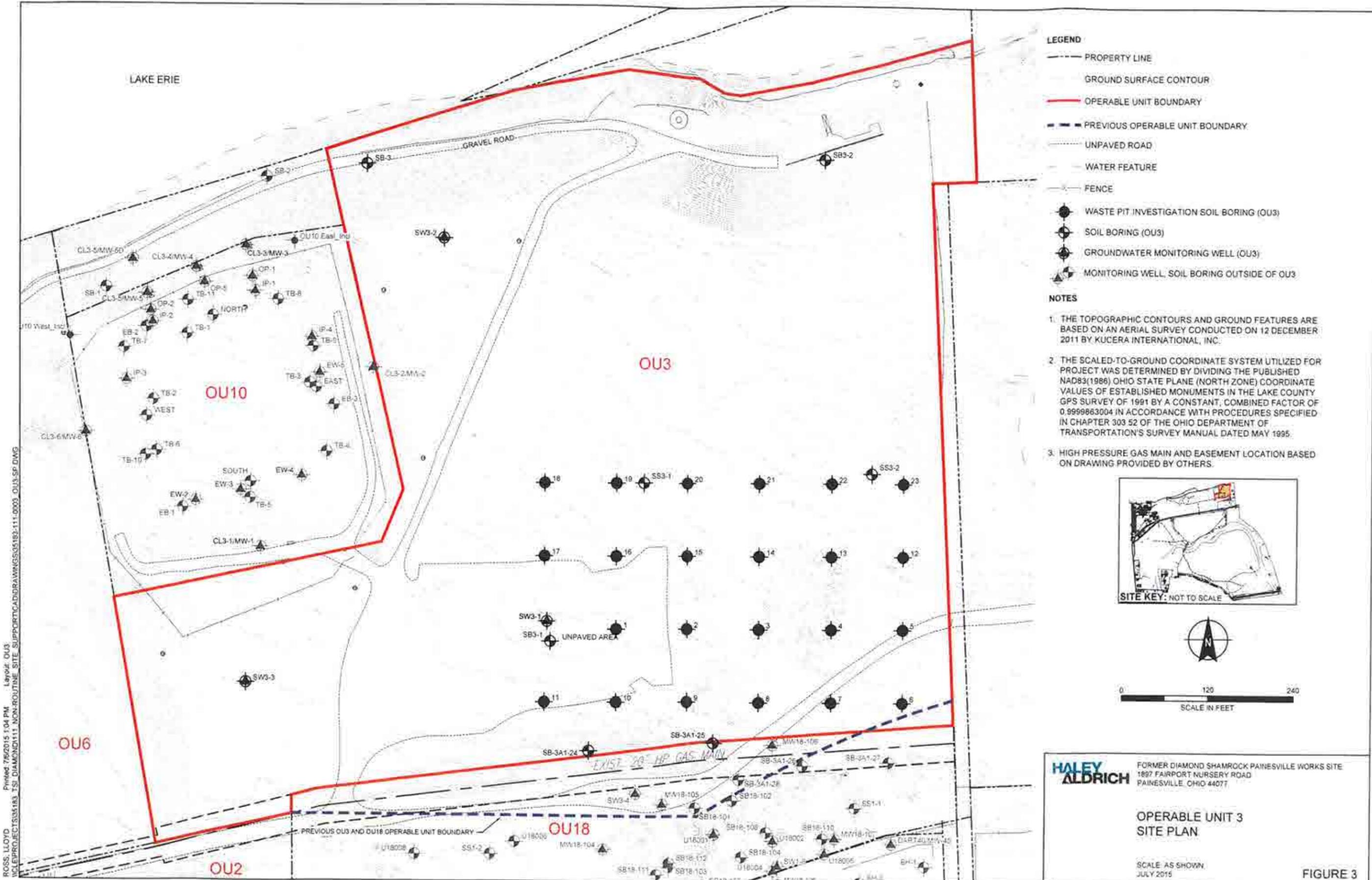
FIGURE 1
Diamond Shamrock Location Map



DIAMOND SHAMROCK PAINESVILLE WORKS SITE – LAKE COUNTY, OHIO

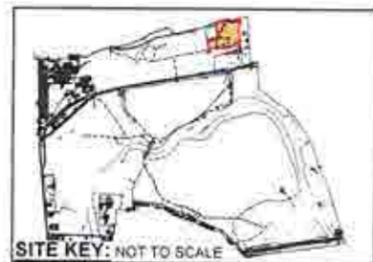
(Map modified from Bing Maps, www.bing.com, 2014)

FIGURE 2
Operable Unit 3 Location Map



- LEGEND**
- PROPERTY LINE
 - GROUND SURFACE CONTOUR
 - OPERABLE UNIT BOUNDARY
 - - - PREVIOUS OPERABLE UNIT BOUNDARY
 - UNPAVED ROAD
 - WATER FEATURE
 - FENCE
 - WASTE PIT INVESTIGATION SOIL BORING (OU3)
 - SOIL BORING (OU3)
 - GROUNDWATER MONITORING WELL (OU3)
 - ▲ MONITORING WELL, SOIL BORING OUTSIDE OF OU3

- NOTES**
1. THE TOPOGRAPHIC CONTOURS AND GROUND FEATURES ARE BASED ON AN AERIAL SURVEY CONDUCTED ON 12 DECEMBER 2011 BY KUCERA INTERNATIONAL, INC.
 2. THE SCALED-TO-GROUND COORDINATE SYSTEM UTILIZED FOR PROJECT WAS DETERMINED BY DIVIDING THE PUBLISHED NAD83(1986) OHIO STATE PLANE (NORTH ZONE) COORDINATE VALUES OF ESTABLISHED MONUMENTS IN THE LAKE COUNTY GPS SURVEY OF 1991 BY A CONSTANT, COMBINED FACTOR OF 0.9999863004 IN ACCORDANCE WITH PROCEDURES SPECIFIED IN CHAPTER 303.52 OF THE OHIO DEPARTMENT OF TRANSPORTATION'S SURVEY MANUAL DATED MAY 1995.
 3. HIGH PRESSURE GAS MAIN AND EASEMENT LOCATION BASED ON DRAWING PROVIDED BY OTHERS.



0 120 240
SCALE IN FEET

HALEY ALDRICH FORMER DIAMOND SHAMROCK PAINESVILLE WORKS SITE
1897 FAIRPORT NURSERY ROAD
PAINESVILLE, OHIO 44077

**OPERABLE UNIT 3
SITE PLAN**

SCALE AS SHOWN
JULY 2015

ROSS, LLOYD Printed: 7/6/2015 1:04 PM Layout: OU3
 MCLEPROJETS\35183_TSI_DIAMOND\111_NON-ROUTINE_SITE_SUPPORT\CADD\DRAWINGS\35183-111-0003_OU3-SP.DWG

FIGURE 3

FIGURE 3
Area of Contamination that Currently Exceeds Risk

SW3-1 12/15/99		
METALS	0-2	4-10
ALUMINUM	1500	14300
ANTIMONY	—	<1.3
MANGANESE	493	558
THALLIUM	—	3.6
VANADIUM	25.6	27
PAHs	ND	ND

SW3-2 12/14/99		
METALS	0-2	2-10
ALUMINUM	1500	12800
ANTIMONY	—	0.98
MANGANESE	493	510
THALLIUM	—	<0.91
VANADIUM	15.6	16.4
PAHs	ND	ND

SS3-1 08/27/97		
METALS	0-2	2-40
ALUMINUM	13400	—
MANGANESE	1430	—
VANADIUM	22.5	—
PAHs	ND	—

SB3-2 08/26/97		
METALS	0-2	2-40
ALUMINUM	15000	13100
ANTIMONY	—	1.3
MANGANESE	450	401
THALLIUM	—	<0.78
VANADIUM	18.9	17
PAHs	ND	ND

SS3-2 08/27/97		
METALS	0-2	2-40
ALUMINUM	9650	—
MANGANESE	434	—
VANADIUM	98.2	—
PAHs	ND	—

SB-3A1-25 01/13/04		
METALS	0-2	2-3
ALUMINUM	9300	—
ANTIMONY	—	—
MANGANESE	232	—
THALLIUM	—	11.9
VANADIUM	—	—
PAHs	—	—
BENZO(A)ANTHRACENE	1.85	—
BENZO(A)PYRENE	1.45	—
BENZO(B)FLUORANTHENE	2.2	—
DIBENZO(A,H)ANTHRACENE	0.565	—
INDENO(1,2,3-CD)PYRENE	1.17	—

SW3-3 12/14/99		
METALS	0-2	4-10
ALUMINUM	16800	12300
ANTIMONY	—	1.2
MANGANESE	309	530
THALLIUM	—	<0.69
VANADIUM	74	15.5
PAHs	ND	ND

SW3-4 10/01/97		
METALS	0-2	2-34
ALUMINUM	13700	12300
ANTIMONY	—	0.68
MANGANESE	401	372
THALLIUM	—	<1.3
VANADIUM	24.3	12.7
PAHs	—	—
BENZO(A)ANTHRACENE	0.049	<0.039
BENZO(A)PYRENE	0.047	<0.039
BENZO(B)FLUORANTHENE	0.056	<0.039
DIBENZO(A,H)ANTHRACENE	<0.037	<0.039
INDENO(1,2,3-CD)PYRENE	<0.037	<0.039

SW3-4 12/15/99		
METALS	0-2	4-10
ALUMINUM	9070	13300
ANTIMONY	—	1.4
MANGANESE	381	394
THALLIUM	—	3.1
VANADIUM	17.7	24.8
PAHs	ND	ND



LEGEND

- SB3-2 } PHASE I RI SOIL BORINGS
- ◇ SS3-1 } PHASE I RI SOIL BORINGS
- W1-1 } PHASE II RI MONITORING WELL
- 22 } WASTE PIT INVESTIGATION SOIL BORINGS
- SH-3A1-27 } WASTE PIT INVESTIGATION SOIL BORINGS
- EXCEEDS CUMULATIVE HAZARD RISK GOALS FOR RESIDENTIAL USE (0'-4" SOILS)
- PAHs POLYNUCLEAR AROMATIC HYDROCARBONS
- ND NOT DETECTED
- CHEMICAL IS NOT A COC FOR THE SURFACE SOIL DATASET

NOTES:

1. OPERABLE UNIT 3 COMPRISES THE ENTIRETY OF PARCEL 3A1 AND PARCEL 3B1 MINUS THE ONE ACRE SITE (OPERABLE UNIT 10). REFER TO TEXT FOR AN EXPLANATION.
2. SOIL SAMPLES FROM BORINGS 1 THROUGH 23 WERE NOT SUBMITTED FOR LABORATORY ANALYSIS. REFER TO TEXT FOR AN EXPLANATION.
3. ANALYTICAL DATA IS AVAILABLE FOR THE FOLLOWING SOIL SAMPLE LOCATIONS: SB3-1, SB3-2, SS3-1, SW3-1, SW3-4, SW3-2, SW3-3 AND SB-3A1-25.
4. ALL ANALYTICAL DATA PRESENTED IN PG/KG.
5. ONLY CHEMICALS RETAINED AS COCs FOR THE DIRECT CONTACT EXPOSURE PATHWAY ARE PRESENTED. REFER TO TEXT FOR CHEMICALS IN SOIL RETAINED FOR THE INDOOR AIR EVALUATION.
6. A FIELD DUPLICATE WAS COLLECTED AT SB-3A1-25. CONCENTRATIONS ARE REPORTED AS AVERAGE VALUES.
7. THE FIGURE WAS ORIGINALLY PREPARED BY HULL AND ASSOCIATES. HALEY & ALDRICH UPDATED THE OPERABLE UNIT BOUNDARY TO REFLECT THE REVISED BOUNDARY DESCRIBED IN A LETTER FROM THE PAINESVILLE PRP GROUP DATED 8 JULY 2015.

ONE ACRE SITE (OPERABLE UNIT 10)

OU10

3A1

STUDY AREA 3

SB3-2

SS3-1

SS3-2

3B1

SB3-1

SW3-4

Hull
& Associates, Inc.

ENGINEERS | GEOLOGISTS | IDENTIFIERS | PLANNERS
6161 COCHRAN ROAD, SUITE D, SOLON, OHIO 44139
PHONE: (440) 519-2555 FAX: (440) 519-2560 www.hullinc.com

BASELINE HUMAN HEALTH RISK ASSESSMENT
OPERABLE UNIT 3

**FIGURE 3
SOIL AND RISK SUMMARY MAP**

FORMER DIAMOND SHAMROCK PAINESVILLE WORKS SITE
PAINESVILLE, LAKE COUNTY, OHIO

PROJECT NO.: TIE003	SUBMITTAL DATE: AUGUST 2015
CAD DWG FILE: TIE003.600.0005	PLOT DATE: 8/26/2015

FIGURE 4
Revised Operable Unit 3 Boundary Map

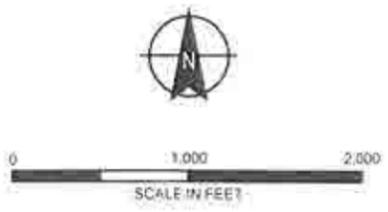


LEGEND:

- OPERABLE UNIT BOUNDARY
- - - - - OU1N-LAKE, OU1N-RIVER AND OU1S BOUNDARY
- ← SURFACE WATER FLOW DIRECTION

NOTES:

- 1 THE SCALED-TO-GROUND COORDINATE SYSTEM UTILIZED FOR THIS PROJECT AS DETERMINED BY DIVIDING THE PUBLISHED NAD83(1986) OHIO STATE PLANE (NORTH ZONE) COORDINATE VALUES OF ESTABLISHED MONUMENTS IN THE LAKE COUNTY GPS SURVEY OF 1991 BY A CONSTANT, COMBINED FACTOR OF 0.9999863004 IN ACCORDANCE WITH PROCEDURES SPECIFIED IN CHAPTER 313.52 OF THE OHIO DEPARTMENT OF TRANSPORTATION'S SURVEY MANUAL DATED MAY, 1995
- 2 OPERABLE UNIT 1 IS GROUNDWATER BENEATH CERTAIN LAND BASED OPERABLE UNITS. OU1 IS SUBDIVIDED INTO OU1N-LAKE, OU1N-RIVER AND OU1-SOUTH
- 3 OU1N-LAKE IS GROUNDWATER BENEATH OU3 AND OU10 AS WELL AS PORTIONS OF OU17 AND OU18
- 4 OU1N-RIVER IS GROUNDWATER BENEATH OU18 AND OU20 AS WELL AS PORTIONS OF OU17 AND OU18
- 5 OU1-SOUTH IS GROUNDWATER BENEATH OU4, OU11, OU13 AND OU14



HALEY ALDRICH FORMER DIAMOND SHAMROCK PAINESVILLE WORKS SITE
 1897 FAIRPORT NURSERY ROAD
 PAINESVILLE, OHIO 44077

OPERABLE UNITS

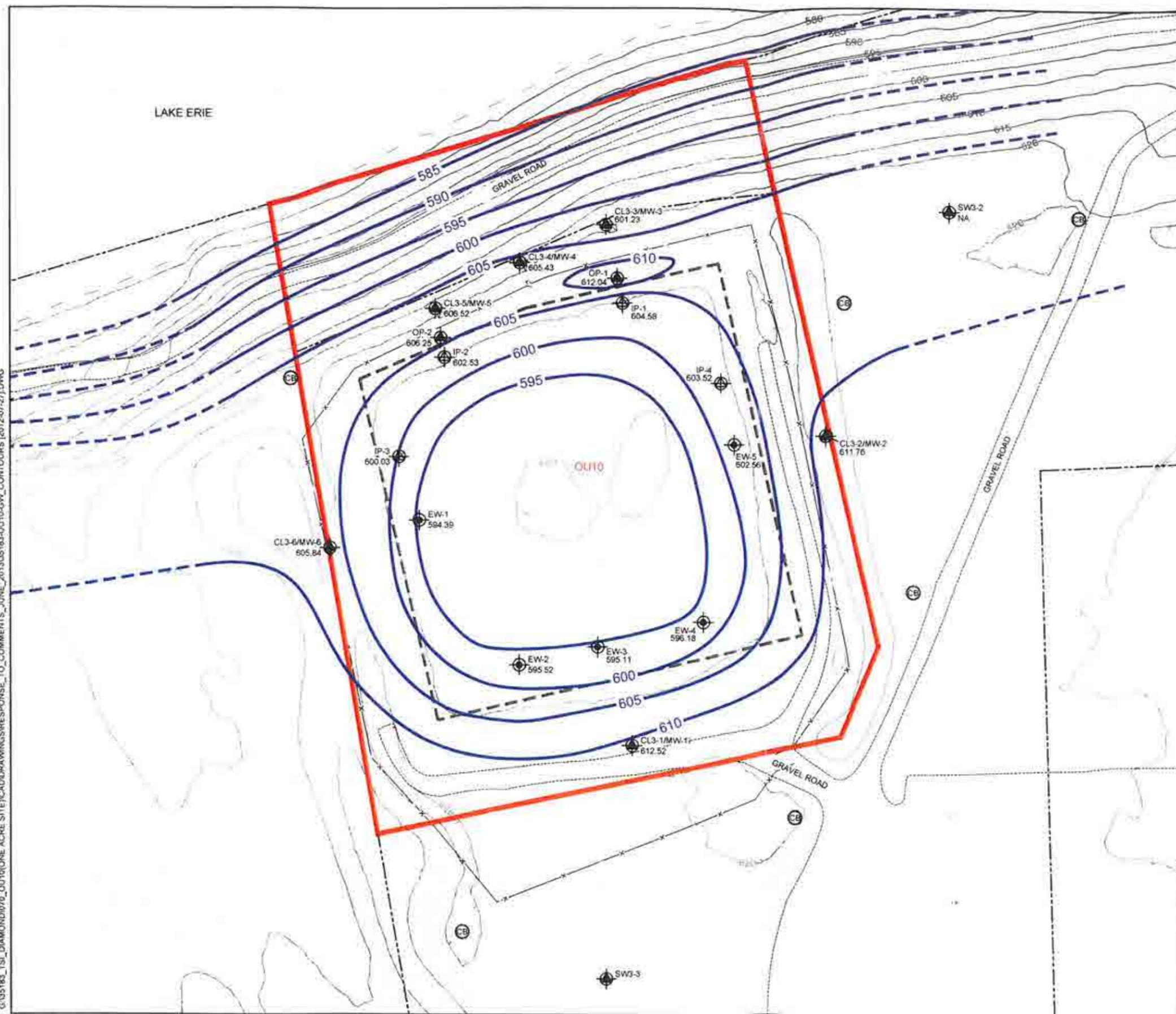
SCALE AS SHOWN
 AUGUST 2015

FIGURE 2

ROSS, LLOYD
 PROJECT: 04/2015 9:56 AM
 LAYOUT: 11X17 (B)
 FILE: C:\COMMON\PROJECTS\05183_TSI_DIAMOND\GLOBAL\CAD\FIGURE TEMPLATE\505183-SITE_MDE_OUS_AUG-2015.DWG

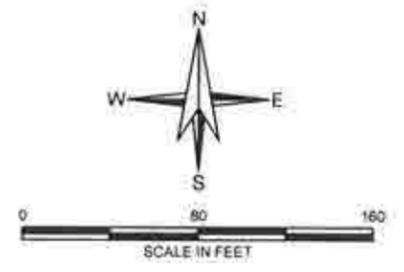
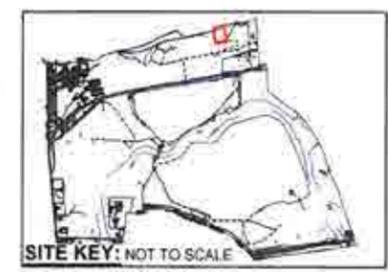
FIGURE 5
Operable Unit 10 Ground Water Contour Map

G:\35183_TSI_DIAMOND\070_OU10\ONE ACRE SITE\CAD\DRAWINGS\RESPONSE_TO_COMMENTS_JUNE_2013\35183-OU10-GW_CONTOURS [2012-07-27].DWG



- LEGEND:**
- PROPERTY LINE
 - GROUND SURFACE CONTOUR
 - OPERABLE UNIT BOUNDARY
 - UNPAVED ROAD
 - WATER FEATURE
 - GROUNDWATER CONTOUR
 - X- FENCE
 - ⊙ APPROXIMATE CATCH BASIN LOCATION
 - ⊕ PIEZOMETER (INSIDE CONTAINMENT)
 - ⊕ MONITORING WELL/PIEZOMETER (OUTSIDE CONTAINMENT)
 - ⊕ EXTRACTION WELL

- NOTES:**
- 1 THE TOPOGRAPHIC CONTOURS AND GROUND FEATURES ARE BASED ON AN AERIAL SURVEY CONDUCTED ON 12 DECEMBER 2011 BY KUCERA INTERNATIONAL, INC.
 - 2 THE SCALED-TO-GROUND COORDINATE SYSTEM UTILIZED FOR THIS PROJECT WAS DETERMINED BY DIVIDING THE PUBLISHED NAD83(1998) OHIO STATE PLANE (NORTH ZONE) COORDINATE VALUES OF ESTABLISHED MONUMENTS IN THE LAKE COUNTY GPS SURVEY OF 1991 BY A CONSTANT, COMBINED FACTOR OF 0.9999863004 IN ACCORDANCE WITH PROCEDURES SPECIFIED IN CHAPTER 303.52 OF THE OHIO DEPARTMENT OF TRANSPORTATION'S SURVEY MANUAL DATED MAY, 1995.



HALEY & ALDRICH FORMER DIAMOND SHAMROCK PAINESVILLE WORKS SITE
 1897 FAIRPORT NURSERY ROAD
 PAINESVILLE, OHIO 44077

**OPERABLE UNIT 10
 POTENTIOMETRIC SURFACE
 CONTOURS 26 JULY 2012.**

SCALE: AS SHOWN
 JUNE 2013

FIGURE 10

Appendix A Glossary of Terms

<p>Applicable or Relevant and Appropriate Requirements (ARARs): Those rules that strictly apply to remedial activities at the site or those rules whose requirements would help achieve the remedial goals for the site.</p>
<p>Baseline Risk Assessment: An evaluation of the risks to humans and the environment posed by a site in the absence of any remedial action, which also determines the extent of cleanup needed to reduce potential risk levels to within acceptable ranges.</p>
<p>Carcinogen: A chemical that causes cancer.</p>
<p>CERCLA: Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq. A federal law that regulates cleanup of hazardous substances sites under the U.S. EPA Superfund Program.</p>
<p>Contaminants of Concern (COCs): Chemicals identified at the site that are present in concentrations that may be harmful to human health or the environment.</p>
<p>Decision Document: A statement issued by the Ohio EPA giving the director's selected remedy for a site and the reasons for its selection.</p>
<p>Ecological Receptor: Animals or plant life exposed or potentially exposed to chemicals released from a site.</p>
<p>Environmental Covenant (EC): A servitude arising under an environmental response project that imposes activity and use limitations and that meets the requirements established in ORC Section 5301.82.</p>
<p>Exposure Pathway: Route by which a chemical is transported from the site to a human or ecological receptor.</p>
<p>Feasibility Study (FS): A study conducted to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy can be selected.</p>
<p>Hazardous Substance: A chemical that may cause harm to humans or the environment.</p>
<p>Hazardous Waste: A waste product listed or defined by RCRA that may cause harm to humans or the environment.</p>
<p>Human Receptor: A person/population exposed to chemicals released at a site.</p>
<p>Monitoring Well: A well installed to collect ground water samples for the purpose of physical, chemical, or biological analyses to determine the amounts, types, and distribution of contaminants in ground water beneath a site.</p>
<p>NCP: National Oil and Hazardous Substances Pollution Contingency Plan, codified at 40 C.F.R. Part 300 (1990), as amended. A framework for remediation of hazardous substance sites specified in CERCLA.</p>
<p>Operation and maintenance (O&M): Long-term measures taken at a site, after the initial remedial actions, to assure that a remedy remains protective of human health and the environment.</p>
<p>Performance Standard: Measures by which Ohio EPA determines if RAOs are being met.</p>
<p>Preferred Plan: The plan that evaluates the preferred remedial alternative chosen by Ohio EPA to remediate the site in a manner that best satisfies the evaluation criteria.</p>

<p>Present Worth Cost: Estimated current cost, or value, of the future remedial costs to be expended, typically discounted at the current market rate. Provides a solid basis for comparing costs of each of the remedial alternatives.</p>
<p>RCRA: Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 et seq. A federal law that regulates the handling of hazardous wastes.</p>
<p>Remedial Action Objectives (RAO): Specific remedial goals for reducing risks posed by the site.</p>
<p>Remedial Investigation (RI): A study conducted to collect information necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives.</p>
<p>Responsiveness Summary: A summary of all comments received concerning the Preferred Plan and Ohio EPA's response to the comments.</p>
<p>Risk-based Remedial Goal: Final cleanup levels identified in the Decision Document along with the RAOs and performance standards</p>
<p>Sediment: Topsoil, sand and minerals washed from the land into water, usually after rain or snow melt.</p>
<p>Water Quality Criteria: Chemical, physical and biological standards that define whether a body of surface water is unacceptably contaminated. These standards are intended to ensure that a body of water is safe for fishing, swimming and as a drinking water source. These standards can be found in OAC Chapter 3745-1.</p>

Appendix B Primary Contaminants of Concern

A total of five (5) primary COCs have been identified that pose the greatest potential risk to human health and the environment at OU3. Additional details on each primary COC (from the Agency for Toxic Substances and Disease Registry (ATSDR Toxicological Profiles) are provided below.

Aluminum is the most abundant metal in the earth's crust. It is always found combined with other elements such as oxygen, silicon, and fluorine. Aluminum as the metal is obtained from aluminum-containing minerals. Small amounts of aluminum can be found dissolved in water. Aluminum is used for beverage cans, pots and pans, airplanes, siding and roofing, and foil. Aluminum is often mixed with small amounts of other metals to form aluminum alloys, which are stronger and harder. Individuals who breathe large amounts of aluminum dusts can have lung problems, such as coughing or abnormal chest X-rays. Some workers who breathe aluminum dusts or aluminum fumes have decreased performance in some tests that measure functions of the nervous system. Some people with kidney disease store a lot of aluminum in their bodies and sometimes develop bone or brain diseases which may be caused by the excess aluminum. The Department of Health and Human Services (DHHS) and the EPA have not evaluated the carcinogenic potential of aluminum in humans. Aluminum has not been shown to cause cancer in animals.

Manganese occurs naturally in many kinds of rocks and in its pure form is silver in color. Elemental manganese does occur by itself in nature, but is combined with substances such as oxygen, sulfur or chlorine. It is used in steel production and gasoline as an additive. Manganese is considered an essential nutrient, meaning that manganese must be included in small amounts in your diet in order for you to be healthy. Manganese is naturally found in grains, beans, nuts, and other foods, as well as in drinking water and nutritional supplements. Exposure to high levels of manganese, which is more common when performing certain occupational duties such as welding or working in a steel mill, can lead to changes to the nervous system, causing individuals to become slow and clumsy. High levels of manganese in the air have been related to lung irritation and reproductive problems. Manganese has been determined not to be a human carcinogen.

Polycyclic Aromatic Hydrocarbons (PAHs; including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances. Some PAHs are manufactured. PAHs are primarily found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides. Animal studies have shown that PAHs can cause harmful effects on the skin, body fluids, and the immune system after both short and long term exposure. Some PAHs have caused lung, stomach and skin cancer in laboratory animals during inhalation, ingestion or direct contact. The U.S. Department of Health and Human Services has determined that some PAHs may reasonably be expected to be human carcinogens.

Vanadium is a compound that occurs in nature as a white-to-gray metal, and is often found as crystals. Pure vanadium has no smell. It usually combines with other elements such as oxygen, sodium, sulfur, or chloride. Vanadium and vanadium compounds can be found in the earth's crust and in rocks, some iron ores, and crude petroleum deposits. Vanadium is mostly combined with other metals to make special metal mixtures called alloys. Vanadium in the form of vanadium oxide is a component in special kinds of steel that is used for automobile parts, springs, and ball bearings. Most of the vanadium used in the United States is used to make steel. Vanadium oxide is a yellow-orange powder, dark-gray flakes, or yellow crystals. Vanadium is also mixed with iron to make important parts for aircraft engines. Small amounts of vanadium are used in making rubber, plastics, ceramics, and other chemicals. Excess levels of vanadium can affect the cardiovascular, gastrointestinal, renal, reproductive and respiratory systems. Exposure to vanadium does not appear to cause cancer.

APPENDIX C
Operable Units 3 and 5 Public Hearing Transcript

OHIO ENVIRONMENTAL PROTECTION AGENCY
PUBLIC HEARING

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In Re: :
Draft Preferred Plans for :
Cleanup Operable Units 3 and 15 :
Diamond Shamrock Painesville Works :
- - - - - :

Transcript of proceedings before the
Ohio Environmental Protection Agency, taken at
Painesville Town Hall, 55 Nye Road, Painesville,
Ohio 44077, on Thursday, July 31, 2008, commencing
at 6:30 p.m.

APPEARANCES:

Darla Peelle, Ohio EPA Public
Involvement Coordinator

Teri Heer, Ohio EPA, Site Coordinator

RECEIVED
SEP 11 2008
OHIO EPA NEDO

1 MS. PEELLE: The purpose of this
2 public hearing is to accept comments on the
3 official record regarding two draft plans to
4 clean up operable units 3 and 15 -- two of 24
5 operable units or parcels comprising of the
6 1,100-acre Diamond Shamrock property in
7 Painesville, Ohio.

8 Operable Unit 3 is a 25-acre parcel on
9 the northeast corner of the property and is
10 adjacent to Lake Erie. Sampling throughout
11 the parcel found high concentrations of
12 polycyclic aromatic hydrocarbons, also known
13 as PAHs, in one location. Ohio EPA's
14 preferred cleanup plan calls for removing
15 these contaminated soils, covering with clean
16 soils to prevent direct contact and
17 restricting future use of the portions of
18 Operable Unit 3.

19 Operating Unit 15 is a 100-acre parcel
20 located in the center the property and borders
21 the Grand River and Lake Erie. An earlier
22 cleanup removed soils contaminated with
23 metals, volatile organic compounds and semi
24 volatile organic compounds; however, two areas
25 of contaminated soils remain. Ohio EPA's

1 preferred plan proposes to excavate
2 contaminated soils, replace with clean soils
3 and place restrictions on future use.

4 Written and oral comments received as a
5 part of the official record are reviewed by
6 Ohio EPA prior to a final action of the
7 Director. To be included in the official
8 record, written comments must be received by
9 Ohio EPA by the close of business on
10 August 8, 2008. Comments received after this
11 date will not be considered as part of the
12 official record for this hearing but may be
13 reviewed as the opportunity arises.

14 Written comments can be filed with us
15 this evening or submitted to Teri Heer, Site
16 Coordinator, Ohio EPA's Northwest District
17 office -- I'm sorry, Northeast -- 2110 East
18 Aurora Road, Twinsburg, Ohio 44087 or by
19 e-mail. This information also can be found in
20 the agenda and in the presentation.

21 It is important for you to know that
22 all comments, whether received this evening or
23 provided in writing are given the same
24 consideration.

25 I ask that all exhibits referred to in

1 your testimony be submitted to us this evening
2 as part of the official record. This will
3 help us ensure the accuracy of your testimony.

4 Questions and comments made at the
5 public hearing will be responded to in a
6 responsiveness summary. The Director, after
7 taking into consideration the recommendations
8 of the program staff and comments presented by
9 the public, may issue or deny these plans.
10 Once a final decision is made by the Director,
11 the decision, along with the responsiveness
12 summary, will be sent to the applicant, all
13 persons who have submitted comments and all
14 persons who have signed in for this evening's
15 meeting.

16 Final actions of the Director are
17 appealable to the Environmental Review Appeals
18 commission also known as ERAC; the board is
19 separate from Ohio EPA and reviews cases in
20 accordance with Ohio's environmental laws and
21 rules. Any ERAC decision is appealable to the
22 Franklin County Court of Appeals. Any order
23 of the Court of Appeals is appealable to the
24 Supreme Court of Ohio.

25 This evening, each individual may

1 testify only once and speak for five minutes.
2 Ohio EPA representatives cannot respond to
3 comments or questions during the hearing;
4 hearings afford citizens an opportunity to
5 provide input. An Ohio EPA representative may
6 ask clarifying questions of speakers to ensure
7 that the record is as complete as possible.

8 If you have a question that was not
9 asked or responded to during the information
10 session, please ask it on the record and it
11 will be addressed in writing in the
12 responsiveness summary.

13 Because of the size of the attendance
14 this evening, rather than fill out cards, I'm
15 going to ask that if you wish to provide
16 testimony, raise your hand. I will call upon
17 you; when you are recognized, if you will
18 stand toward the front of the room for the
19 stenographer's benefit, state your name, spell
20 it for the record and then proceed with your
21 testimony.

22 Does anyone wish to provide testimony?

23 MR. BIMBER: I have a draft
24 version of my comments. I wish to send you a
25 final version later by e-mail.

1 MS. PEELLE: If you could state
2 and spell your name, sir.

3 MR. BIMBER: Sure. I'm Russell M.
4 Bimber.

5 MS. PEELLE: Spell your last name,
6 Mr. Bimber.

7 MR. BIMBER: B-i-m-b-e-r.

8 MS. PEELLE: Thank you.

9 MR. BIMBER: A couple of pages
10 from the back of my testimony, I have
11 attached, on this draft version an e-mail I
12 sent to a few people to try to encourage
13 attendance here.

14 I was a research chemist for Diamond
15 Alkali and successor companies, Diamond
16 Shamrock, SDS Biotech, and Ricerca for 40
17 years starting in 1952. I now live at 156
18 Kendal Drive, Oberlin, Ohio -- that's Kendal
19 in Oberlin. My e-mail address is
20 randcbim@juno.com My phone number is
21 (440) 774-6175.

22 First, I would like to inform you that
23 they have copies of the DSCRT newsletters
24 here. The official document room on the
25 third-floor of Morley Public Library did not

1 have issues 11 and 12 of that newsletter and
2 they did not even have a copy of the public
3 notice of this meeting. And as I understand
4 it, it is required that you provide the public
5 notice, published in the local newspapers, 30
6 days in advance of any public meeting. I do
7 not believe this was done. The public
8 document room did not even have a copy of a
9 July 18th news release, which I found with
10 Mike Settles' name on it on the Ohio EPA web
11 site, and it was dated, July 18th. If it was
12 placed in any newspapers, it was probably some
13 time on or after that date, so it would seem
14 as though it is too early to be holding this
15 meeting. But anyway, I expect we will proceed
16 anyway.

17 If a legal notice was published, I
18 should have received a mailed copy because
19 I've repeatedly signed up to get any EPA
20 notices concerning Diamond, and I have had
21 significant involvement with the EPA's
22 litigation of Diamond for more than a decade,
23 this included the 1998 appeal of the Ohio EPA
24 Director's Final Findings and Orders, DFFO, on
25 the Painesville Works, that's Case Number EBR

1 43392, that stands for Environmental Board of
2 Review, which was before renaming to the
3 Environmental Review Appeals Commission, ERAC,
4 which they now use.

5 EBR Number 433921, that appeal was
6 dismissed as being too late because I waited
7 for the Director's Final Findings and Orders
8 to appear in the local public document room
9 and I had to keep insisting to Teri that it be
10 placed there, for a long time before I
11 achieved the placement in the local public
12 repositories. After that time, I think I
13 should have been allowed time from that date,
14 but I wasn't. I was too late. I mailed in
15 testimony on Operable Unit 6 for a public
16 hearing on July 7, 2005, which I could not
17 attend and, even though I was not a member of
18 the DSCRT, I've attended several of their
19 meetings, even after moving at Oberlin.
20 That's about 140 miles west -- excuse me 70,
21 140 round-trip.

22 The Diamond Shamrock Community
23 Relations Team Newsletter 12, citing this
24 meeting, was mailed to me postmarked July 11,
25 afternoon. The DSCRT web site, at that time,

1 had been completely revised and updated by the
2 time I got the newsletter. Now it includes
3 newsletter 12, Summer of 2008. Newsletter 11,
4 Fall of 2007, which I did not get, minutes of
5 DSCRT meetings and other interesting
6 information.

7 I checked the web site during the week
8 ended June 28, and it had not been updated
9 since November, 2006.

10 Today, I checked Ohio EPA's web site
11 and found an EPA news release about this
12 meeting, dated July 18. Isn't a 30-day notice
13 still required for public meetings?

14 Second. I think it is not proper to
15 consider Operable Unit 3, which surrounds
16 Operable Unit 10 on three sides, apart from
17 Operable Unit 10, because of the large amount
18 of toxic waste buried in Operable Unit 10.

19 Over 3,000,000 pounds of hazardous
20 chemicals, including more than 100,000 gallons
21 of Persistent Bio-accumulative, and Toxic
22 liquids in tanks of 10 to 18,000 gallons were
23 buried in Operable Unit 10. The chlorinated
24 solvents in these tanks are much denser than
25 water, well above the Lake and so close, they

1 could get into Lake Erie very quickly, perhaps
2 moving through Operable Units 3 or 6.

3 This process could be analogous to the
4 horizontal flow of large wedge shaped pieces
5 of earth, both east and west of Operable Unit
6 10 that were flushed into Lake Erie more than
7 a decade ago when water from melting snow on
8 the top of the bluff was temporarily dammed by
9 ice frozen on the north face of the bluff then
10 broke loose. This left a lot of fine clay on
11 top of the ice on the lake hundreds of feet
12 from shore and a temporary sandy gravel beach
13 10 to 25 feet wide, which a friend and I both
14 walked on. It was a very long length of sandy
15 gravel beach.

16 MS. PEELLE: You have one minute
17 Mr. Bimber.

18 MR. BIMBER: Sure.

19 MS. PEELLE: Thank you.

20 You have one minute.

21 MR. BIMBER: Okay. All right.

22 I better skip on then. The last couple
23 of pages I mention some references that could
24 be useful to some of these other people here.

25 The important thing I wanted to say is

1 I believe it is still possible to recover
2 about 100,000 gallons of hazardous chlorinated
3 solvents from Operable Unit 10 simply by
4 pumping out whatever liquids remain in about
5 10 large tanks. If this were done, it would
6 make the other hazardous wastes there, which
7 might otherwise not be likely to migrate, much
8 safer.

9 The Persistent Bio-accumulative Toxic
10 liquids in large tanks were impure chlorinated
11 solvents; carbon tetrachloride, usually called
12 Carbon Tet, hexachlorobenzene, known also as
13 HCB, dissolved in Hexachlorobutadiene, HCBd.
14 These and the chlorinated paraffins and
15 chlorothalonil fungicide, which are major
16 contaminants in this OP OU 10, are all known
17 or suspected human carcinogens, in addition to
18 damaging the liver and kidneys and showing
19 other toxic properties.

20 The exact nature of these wastes was
21 detailed extensively in a letter from John
22 Licata of Diamond Shamrock to Ohio EPA in 1981
23 and then ODNR protested the existence of so
24 many hazardous waste so close to the edge of
25 the Lake in 1982 and that's what led to the

1 Woodward Kline study of 1986. These documents
2 are all contained in Ohio EPA's Twinsburg
3 headquarters. People who want to view these
4 documents have to make an appointment to go
5 there and see them.

6 Portions of some of this information
7 that is most important, may be available, sort
8 of hidden in these extensive documents, in the
9 local public document rooms. But if you make
10 an appointment to view certain records and can
11 identify what record you want to see, Ohio EPA
12 will dig them out and you can go there to view
13 them and copy what you need.

14 Thank you.

15 MS. PEELLE: Thank you,
16 Mr. Bimber.

17 Would someone else like to provide
18 testimony?

19 My son-in-law us an auctioneer and I
20 usually say going once, going twice. All
21 right. If there are no further requests to
22 present testimony we will end the hearing.

23 Remember that written comments will be
24 accepted through the close of business on
25 August 8, 2008. Again, these can be sent to

1 Teri Heer listed at the address on the agenda.

2 Thank you for participating in Ohio
3 EPA's decision-making process. It was good to
4 see all of you here this evening. The time is
5 now 7:32 and this hearing is adjourned. Thank
6 you.

7 (Hearing concluded.)

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1 State of Ohio,)
2 County of Cuyahoga.) SS:

3
4 C E R T I F I C A T E

5 This certifies that the foregoing is a true
6 and correct transcript of the proceedings had
7 before the State of Ohio, Environmental
8 Protection Agency, at the Painesville
9 Township Hall, on Thursday, July 31, 2008,
10 commencing at 6:30 p.m.

11
12 In Re:

13 Diamond Shamrock Draft Preferred Plans
14 To Clean up Operable Units 3 and 15

15
16
17
18 
19 COURT REPORTER

20 FINCUN-MANCINI COURT REPORTERS
21 1801 East Ninth Street
22 Suite 1720
23 Cleveland, Ohio 44114
24 (216) 696-2272
25 (216) 696-2275 FAX