

**MOSAIC TILE PLANT DUMP SITE  
NORTHERN PARCEL – OU1**

**REMOVAL ACTION WORK PLAN**

Prepared for:

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Mosaic Tile Plant Dump Site – Northern Parcel (OU1)

Removal Action Work Plan

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### **LIST OF APPENDICES**

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## **1.0 Introduction**

### **1.1 Overview**

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The purpose of this Removal Action Work Plan is to present the proposed removal actions to be taken at the Mosaic Tile Plant Dump Site Northern Parcel – OU1, in accordance with the Site Specific Work Plan (SSWP). The SSWP set forth the general requirements for the investigation and removal of lead contamination required of Collins & Aikman Accessory Mat, Inc. specified in the Administrative Order by Consent (AOC) executed April 10, 2003, issued pursuant to Section 106 (a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended. The AOC pertains to the Northern Parcel of property located between Woody Lane and Benjamin Avenue in Zanesville, Ohio ("Mosaic Tile Plant Dump Site Northern Parcel – OU1" or the "Northern Parcel-OU1" or the "Site"). The Removal Action is based on the findings of previous Site investigations as well as correspondence with USEPA.

### **1.2 Site History**

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The Mosaic Tile Plant Dump is comprised of a Northern Parcel owned by Collins & Aikman Accessory Mat, Inc. (Respondent), and a Southern Parcel that is owned by Muskingum Properties. The Mosaic Tile Company historically used both parcels for the disposal of manufacturing wastes. These wastes may be the source of lead contamination in Site soils.

On August 12, 2002, U.S. EPA and Ohio EPA personnel conducted an inspection of the Northern Parcel. The inspection found that the Northern Parcel was not fenced, was accessible, and appeared to be used by trespassers. The Northern Parcel also appeared to contain isolated areas of tile and glazed waste material. The Northern Parcel has since been secured with the installation of a chain link fence. The results of previous investigations were included in the SSWP.

The results of the Site investigations conducted under the AOC and the SSWP were submitted to USEPA. The removal action is designed based on the findings of the Site investigations and correspondence with USEPA.

### **1.3 Site Description – Northern Parcel – OU1**

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The investigation area is located southwest of Zanesville, Ohio near the Muskingum County Fairgrounds (Figure 1). The Northern Parcel–OU1 occupies an area of 3.67 acres situated adjacent to or near approximately 25 residential properties. The Site is currently secured with a fence and locking gate.

### **1.4 Scope of Work**

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The Removal Action Work Plan will address the requirements of the AOC and corresponding SSWP as well as applicable USEPA rules and regulations concerning removal actions. In general, the removal action will consist of excavation and segregation of waste, off-site disposal of waste with total lead concentrations exceeding 1,800 mg/kg, and on-site relocation of other waste. Waste remaining on-site will be covered with an engineered final cover system. Institutional controls such as deed restrictions, groundwater monitoring, and long-term operations and maintenance, will also be implemented at the Site after the removal action is completed.

Once the Removal Action Work Plan is approved, a detailed design will be completed, followed by the preparation of proposed Contract Documents, including drawings and specifications, for the negotiation and award of a contract with a qualified Remediation Contractor. The Contract Documents shall outline the requirements for the excavation, transport, relocation, reconsolidation, stabilization and secure landfill disposal of the lead contaminated materials as well as the placement of the final cover system.

## **2.0 Removal Actions**

### **2.1 Removal Action**

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The removal action shall consist of nine major components. These components are as follows:

- Establish the Proposed Limits of Waste;
- Removal of Site vegetation;
- Relocation of ditch that crosses the northeast side of the Site;
- Excavation, segregation, and disposal/relocation of waste along the Southern property line;
- Excavation, segregation, and disposal/relocation of waste from along Woody Lane and West property line;
- Excavation, segregation, and disposal/relocation of waste from along North property line;
- Excavation, segregation, and disposal/relocation of waste from area along Proposed Limits of Waste on the east;
- Consolidation of relocated waste within the Proposed Limits of Waste;
- Construction of a Final Cover System over waste;
- Restoration of Site.

The details for these components are outlined in the following sections. Drawings showing the various components of the Removal Action are included in Appendix A. A schedule for the implementation of this Removal Action is included in Appendix B. Appendix C is reserved for a revised Air Sampling Plan.

#### **2.1.1 Limits of Waste**

It is the intent of the Respondent to excavate and dispose off-site, excavated waste materials with total lead concentrations of greater than 1,800 mg/kg. The remaining waste, and contaminated material, with total lead concentrations greater than 400 mg/kg

but less than 1,800 mg/kg, will be relocated and consolidated on-site, as needed. To facilitate the removal and consolidation of waste, a Proposed Limits of Waste has been established. The Proposed Limits of Waste is designed to be 24 feet from the property line at the north, south and west sides of the Site. This 24-foot offset allows for the three-foot final cover system to tie-in to clean material and the construction of on-site storm water control structures within the property boundary. The Proposed Limit of Waste on the east was set based on an approximated location of the edge of fill material. All waste outside the Proposed Limits of Waste will be excavated and segregated for off-site disposal or on-site relocation within the Proposed Limits of Waste.

### **2.1.2 Site Clearing**

The initial activity at the Site will be the removal of the vegetation within the Proposed Limits of Waste and areas of excavation. Unless otherwise approved by USEPA, all of the vegetation will be transported off-site for disposal. If approved by USEPA, vegetative material may be stockpiled on-site for use as winterization ground cover (should this be necessary) or as a soil amendment for top soil in the protective soil layer of the final cover system.

### **2.1.3 Ditch Relocation**

The ditch that crosses the Site along the northeast corner will be relocated to allow for proper construction of the final cover in that area. This relocation will allow the segregation of storm water that currently crosses the Site and allow long-term storm water control. During the detailed design phase the US Army Corp of Engineers and Ohio EPA – Division of Surface Water will be notified of Rule 38 404/401 activities resulting from this removal action and the ditch relocation. See Section 2.3 for details on Site storm water management.

#### **2.1.4 Southern Property Line**

Along the Site boundary with the Southern Parcel (OU2) is a layer of glaze that extends onto the Northern Parcel. This glaze layer and waste material with a total lead concentration of 1,800 mg/kg or greater will be excavated to the Proposed Limits of Waste (24 feet from property line) and disposed off-site. Any waste that has total lead concentrations of less than 1,800 mg/kg will be excavated for relocation and consolidation on-site within the Proposed Limits of Waste.

Upon removal of the waste, this area will be backfilled with clean soil obtained from an undetermined off-site source. The area of the trench where the final cover system will terminate will be backfilled with recompact clay. The recompact clay will be constructed to have hydraulic conductivity (k) of less than  $1 \times 10^{-7}$  cm/sec. During the excavation of waste along the south property line, efforts will be made to minimize the impact to the clean soil located on the Southern Parcel. Any impact to the Southern Parcel will be repaired.

#### **2.1.5 Western Property Line**

During previous investigations of the Site, tile and waste were documented along the western property line near Woody Lane. All waste and debris along the western property line from the edge of Woody Lane to the Proposed Limits of Waste will be excavated for segregation and off-site disposal or on-site relocation. Waste under Woody Lane will not be excavated and relocated. Upon removal of the waste, this area will be backfilled with clean soil, including recompact clay ( $k = 1 \times 10^{-7}$  cm/sec) for tie-in to the final cover. The area between Woody Lane and the property line will be graded to simulate current grades with reconstruction of the existing drainage swale to Chaps Run.



### **2.1.6 Northern Property Line**

Tile and waste were observed between northern property line and the Proposed Limits of Waste during the Site investigation. All waste and debris between the property line and the Proposed Limits of Waste will be excavated for segregation and disposal or on-site relocation. This area will be backfilled with clean soil, including recompacted clay ( $k = 1 \times 10^{-7}$  cm/sec) for final cover tie-ins once the waste is removed.

### **2.1.7 East Limit of Waste**

The east limit of waste was set based on an approximate location of the actual limits of fill placement. All waste outside this limit will be removed. It is anticipated that along the southern half of the east side only a surface layer (<1 foot) of waste and debris will be encountered. The limits of this relocation will extend east and south to the property line and north to the ditch. All waste materials in this area will be excavated and segregated for off-site disposal or on-site relocation.

The northern half of the east side runs along the ditch. Waste in this area is not anticipated to extend far from the Proposed Limits of Waste. All waste material located outside the Proposed Limits of Waste will be excavated and segregated for disposal or on-site relocation.

There is some miscellaneous concrete debris and non-tile waste east of the ditch. This waste and debris will be segregated and taken off-site for disposal (most likely as non-hazardous waste based on waste characterization to be conducted). Non-tile waste and debris that is located on the surface of the existing waste pile will also be segregated and taken off-site for disposal as non-hazardous waste.

### **2.1.8 Waste Segregation**

After the Site is cleared, but prior to excavation of waste materials, the investigation grid will be re-surveyed and the Site will be walked to visually identify areas of exposed glaze waste that can be readily excavated, along with field screening of other waste with an x-ray fluorescence (XRF) analyzer to identify additional -hot spots-. Excavation of surface glaze and hot spots will be limited to a maximum depth of four feet or less depending on the magnitude of the waste material.

As excavation and material handling progresses, waste materials will be segregated based on total lead concentrations as determined in the field using an XRF analyzer. Waste materials with total lead concentrations of greater than 1,800 mg/kg will be staged for eventual off-site disposal. Waste materials with total lead concentrations of less than 1,800 mg/kg will be relocated and consolidated on-site.

The segregation of waste materials for off-site disposal or on-site relocation may be done prior to and during excavation. Stabilization of waste for off-site disposal may occur on-site or off-site based on the most economical method as determined by the Contractor.

### **2.1.9 Waste Volumes**

All waste within the Proposed Limits of Waste (existing or relocated) will be graded to a maximum 3:1 slope to a maximum waste elevation of 774.1 ft above mean sea level. An access road will be placed along the slope to provide access for long-term maintenance. Waste relocated to within the Proposed Limits of Waste will be recompact to ensure stability. Current estimates indicate that the maximum elevation provides for more waste than will be available to be relocated on site. If during the project it is determined that insufficient materials will remain on-site to reach the maximum elevations, the grades will be adjusted to limit the maximum height of the waste pile.

A cut/fill analysis of the waste pile using AutoCAD indicates that there is approximately 7,100 cubic yards (cy) of cut and 11,800 cy of fill within the Proposed Limits of Waste to achieve the Proposed Top of Waste surface. The 7,100 cy of cut material will be excavated from the waste pile and handled to achieve proper slopes and limits. This material will be segregated and screened. Material with total lead concentrations of greater than 1,800 mg/kg will be disposed off-site. For planning purposes, it is estimated that 20% of the 7,100 cy (1,420 cy) will require off-site disposal.

The following is an estimation of waste below grade to be excavated and handled. It is estimated that approximately 2,500 cy of material will be excavated from along the south property line to the Limits of Waste placement. For planning purposes, it is estimated that approximately 90% of this material (2,250 cy) will be disposed off-site. On the west side, along Woody Lane, it is estimated that 2,500 cy of material will be excavated and segregated for off-site disposal or on-site relocation. For planning purposes, it is estimated that 20% of this material (500 cy) will be required to be disposed off-site. Along the north side and the northeast side of the Proposed Limits of Waste, it is estimated that 1,250 cy of material will be required to be excavated and segregated. For planning purposes, it is estimated that 20% of this material (250 cy) will require off-site disposal. Along the eastern portion of the Site, between the waste limits and Benjamin Avenue, it is estimated that approximately 1,000 cy of material will be excavated and it is anticipated that this material will remain on-site.

The initial Site characterization, conducted in 2003, indicates that approximately thirteen, 50' x 50' grids will require some amount of hot spot removal. Using a 2-foot deep hot spot excavation, this will result in approximately 2,400 cy of material potentially requiring off-site disposal. Combining the hot spot removal and the segregated wastes mentioned above, it is estimated that as much as 6,800 cy of material may require off-site

disposal. Note that this is only a projection; the actual volume may be higher or lower based on Site conditions

#### **2.1.10 Final Cover System**

An Engineered Final Cover system will be installed over the top of waste pile to prevent direct contact with waste, airborne migration of waste, surface migration of waste, and infiltration into ground water. The Final Cover system will consist of 6" engineered subgrade, Geosynthetic Clay Liner (GCL), Flexible Membrane Liner (FML), Geocomposite drainage layer, and 30" of protective soil. The Protective Soil will include a top soil layer to allow vegetation to be established. The final cover system will tie-in to native soil, where appropriate, or into recompacted clay, that has been placed where waste has been excavated. The recompacted clay soil shall be constructed to have a hydraulic conductivity of less than  $1 \times 10^{-7}$  cm/sec

#### **2.1.11 Protection of Work**

To limit uncontrolled migration of lead and lead contaminated materials, synthetic tarps and covers shall be placed over areas where final grades have not been achieved and over work areas during non-working hours. As final grades are achieved, the 6" engineered subgrade will be installed over the waste during construction. As large areas reach final waste grades, erosion control blankets will be placed over the engineered subgrade to prevent erosion of this layer.

Work may be suspended if it appears that installation of the final cover system can not be completed before winter weather prohibits further construction. If work is suspended and all waste materials have been removed or relocated and final top of waste grades are achieved, then the engineered subgrade shall be placed and erosion control blankets installed. If final waste grades have not been achieved before work is suspended, then six

inches of soil cover shall be placed over the waste and covered with erosion control blankets. Once the weather turns favorable again, erosion control blankets will be removed and the project will continue.

#### **2.1.12 Site Restoration**

Upon completion of Site grading and installation of the final cover system, all disturbed soil surfaces will be graded to properly drain and seeded with grass, unless otherwise covered with a protective material (i.e. stone on roadways). Any temporary structures or facilities will be removed from the Site. All perimeter fencing that is removed during construction will be reinstalled. The fence along Benjamin Avenue will be installed 80 feet west of the property line. Trees will be planted where space permits, particularly along Benjamin Avenue. All temporary storm water control devices (i.e. silt fence) may be left on-site until vegetation has been established.

#### **2.1.13 Site Remediation Verification Sampling**

Confirmation sampling and chemical analysis will occur as the removal action proceeds. Areas outside the Limits of Waste shall have all visible evidence of waste material removed. Confirmation sampling will be conducted using sampling nodes on a 25 ft grid. Additional, sampling may be performed as situations dictate and at the direction of USEPA or their Representative. In general, the extent of lead contaminated waste removal shall be considered complete when all samples taken outside the Limits of Waste are confirmed to be below the residential action level of 400 mg/kg for lead.

### **2.2 Site Access and Security**

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During the removal action, the Site will be accessed using both Benjamin Avenue and Woody Lane. Heavy truck access to the Site will be restricted to Woody Lane to the maximum extent possible. Benjamin Avenue will only be used for support vehicles, as much as possible. Support facilities (field trailers, etc) may be located on the east side of

the Site or at another appropriate location in the immediate vicinity of the Site. Efforts will be made to limit the use of Benjamin Avenue during the Project.

The removal action will require the temporary removal of the perimeter fence to allow excavation and grading along the north, south, and west property lines. Temporary fencing will be used to secure the Site overnight and for extended periods during different phases of construction. Access agreements will need to be obtained with the adjoining properties to the North and South to allow the excavation of waste and regrading along those property lines. Notification and any approvals will also need to be obtained for work in the public right-of-way along Woody Lane.

## **2.3 Storm Water Management**

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Efforts will be made to control storm water run-off and its impacts downstream. Part of this effort will be the relocation of the ditch on the northeast corner of the Site to keep storm water from being affected by on-site discharges. Temporary and permanent storm water channels and structures will be constructed to handle storm water during construction and after the Site is restored. During construction temporary structures will be placed to limit off-site storm water from impacting the Site. Temporary storm water controls will also be used to limit storm water from leaving the Site. This will include collection of storm water in a storm water basin located at the northeast corner of the Site. During construction, storm water may also be required to be collected in tanks. Storm water collected during construction, will be required to be tested before release and possibly taken off-site for disposal. The Remediation Contractor will be required to prepare a storm water management plan for Construction Activities. Sampling and testing of storm water after construction will be included in the Operations and Maintenance plan discussed in Section 2.6.

Permanent storm water controls will include perimeter storm water channels and a storm water basin. Storm water channels will be located around the perimeter of the waste pile at the toe of slope and will direct all storm water run-off to the storm water basin. The storm water basin will be designed to limit the discharge from the Site. Long-term storm water management will be addressed in the final design and in an Operations and Maintenance Plan.

## **2.4 Decontamination**

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The Contractor will be required to set-up a decontamination area to clean equipment and vehicles that contact the waste. The decontamination area(s) will be appropriately located to prevent tracking of waste materials off-site. Waste and wastewater shall be collected at the decontamination area, characterized, and disposed as appropriate.

## **2.5 Groundwater Monitoring Program**

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A groundwater monitoring program will be implemented to monitor the potential for leaching of contaminants from the waste. It is understood that Ohio EPA will be involved with this activity and the details of the groundwater monitoring program will be established following approval of this Removal Action Plan.

## **2.6 Institutional Controls**

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### **2.6.1 Deed Restrictions**

Deed restrictions will be drawn up to limit the potential land uses of the Site. Upon approval from USEPA, these deed restrictions will be recorded with the Muskingum County Records Office, as part of the deed for the Site. Documentation of the recorded restrictions will be submitted to USEPA with the Final Report.

Deed restrictions are intended to limit the uses of the Site and related resources. At this time it is proposed that the deed restriction will cover the use of groundwater from the Site and the general use of the property. Specifically the deed restrictions will limit the use of the Site to non-residential purposes. The details of the deed restrictions will be developed with Respondent's legal counsel and USEPA after approval of this Removal Action Work Plan. The deed restrictions will be recorded after completion of the Removal Action.

### **2.6.2 Long-Term Monitoring**

Long-term monitoring of the Site will include the groundwater monitoring program, surface water monitoring and periodic inspections of the final cover. As described above, the groundwater monitoring is intended to ensure that the Site is not significantly impacting the groundwater on-site. Periodic inspections will be implemented for the Site to monitor the integrity of the final cover system and general site security. A detailed Operating and Maintenance Plan will be developed with input from USEPA and Ohio EPA to address the long-term care and maintenance of the Site.



### **3.0 SUMMARY**

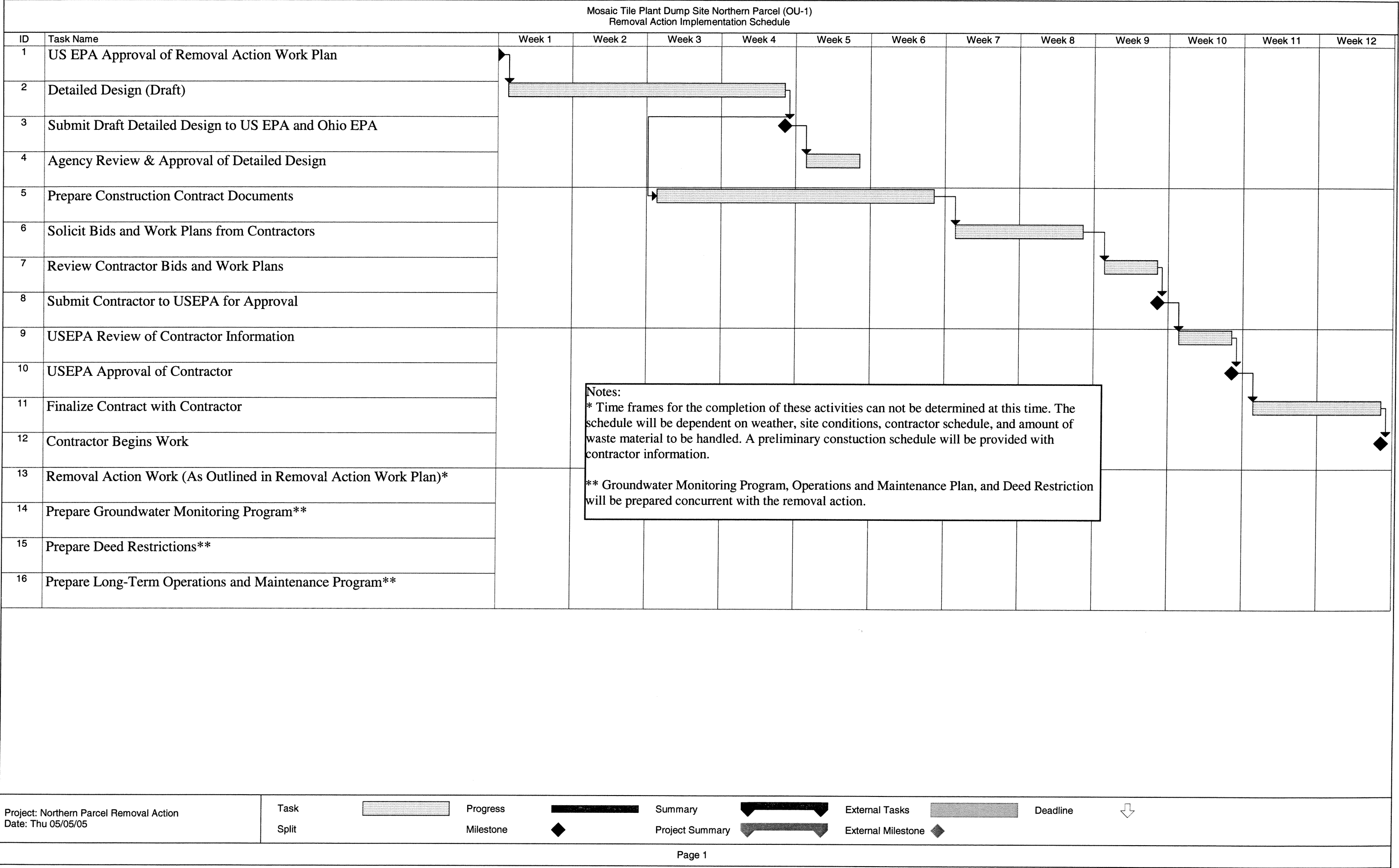
This Removal Action Work Plan outlines the activities to be taken by the Respondent to address the environmental issues at the Mosaic Tile Plant Dump Site – Northern Parcel (OU1). The primary objective of the removal action is removal of contaminated wastes with total lead concentrations exceeding 1,800 mg/kg, and on-site relocation of other waste. The Proposed Limits of Waste that defines this footprint will provide approximately a 24-foot wide buffer around the Site. The glaze that extends from the Southern Parcel will be excavated and segregated for off-site disposal. All other excavated wastes will be segregated for off-site disposal or on-site relocation. A remediation verification program will be utilized to ensure that all waste and contaminated material are removed from the perimeter of the Site.

Material within the Proposed Limits of Waste will be graded to 3:1 slopes with a maximum waste elevation of 774.1 ft mean sea level. A final cover system containing two impermeable layers, a drainage layer and protective soil will be installed over the waste. Upon completion of work, the Site will be graded to facilitate drainage and seeded with grass to establish a vegetative cover.

Institutional controls, including deed restrictions, will be implemented to control future use of the Site. A program will be implemented to monitor for leaching of lead into groundwater. A long-term operations and maintenance program will be developed to ensure the long-term integrity of the final cover.

**Appendix A**  
**Preliminary Construction Drawings**

**Appendix B**  
**Removal Action Implementation Schedule**



**Appendix C**  
**Air Sampling and Monitoring Plan**  
**(Reserved)**