



May 11, 2021

Ms. Megan Schuette
USEPA, Region VII
8600 NE Underground Drive,
Pillar 253
Kansas City, MO 64161

Dear Ms. Schuette:

RE: **2021 Post Removal Site Control Plan Corrective Action for
TSCA CAP Resurfacing
Carter Carburetor Site, St. Louis, Missouri; CERCLA 07-2013-0008**

Pursuant to the Administrative Settlement Agreement and Order on Consent for Removal Actions (Order) at the Carter Carburetor Site in St. Louis; Missouri, ACF Industries, LLC (ACF), per Section IX, Paragraph(s) 55, **Post-Removal Site Control**, ACF hereby submits to USEPA for review and approval the 2021 Post Removal Site Control Plan Corrective Action for the TSCA CAP Resurfacing. Specifically, as defined within the Post Removal Site Control Plan - Carter Carburetor Superfund Site (See FINAL REPORT, Appendix L), **Section 5.2 – Corrective Action Approval and Implementation**, ACF is going to implement Alternative 1 – Vegetated Cover of Section 2.3.6 of the **USEPA ARCHIVE DOCUMENT titled “DIE CAST AREA ENGINEERED CONTROL (CAP) WORK PLAN for the CARTER CARBURETOR SUPERFUND SITE”**. The only edits to the Work Plan for Section 2.3.6, Alternative 1 – Vegetated Cover are as follows:

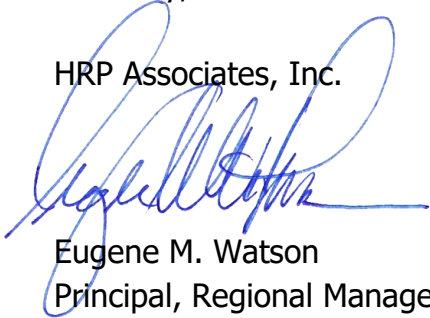
- 1) Instead of a minimum of four inches (4”) of top soil to be graded to mimic the surface of the underlying liner; the cover will include a minimum of eight inches (8”) of top soil that is graded to mimic the surface of the underlying liner; and
- 2) The CAP embankment slopes will be lined with turf reinforcement matting in order to establish vegetative cover.

The Corrective Action plan (updated **USEPA ARCHIVE DOCUMENT “DIE CAST AREA ENGINEERED CONTROL (CAP) WORK PLAN for the CARTER CARBURETOR SUPERFUND SITE”**) can be found in Attachment A, which is attached

to this cover letter. The work is tentively scheduled for Q3 2021, dependent upon successful negotiations with the City of St. Louis, the Boys and Girls Club of Greater St. Louis and the PGA of America. If you have questions or require additional information, please contact me at your convenience.

Sincerely,

HRP Associates, Inc.



Eugene M. Watson
Principal, Regional Manager
ACF Project Coordinator

cc: Mark Crinnion, VP – ACF Industries, LLC
Doug Cohen, Esq. – Brown Rudnick
Kristen Nazar, Esq. – USEPA Region VII
Cathie Chiccine, Esq. – USEPA Region VII

Attachment

U.S. EPA ARCHIVE DOCUMENT

DIE CAST AREA ENGINEERED CONTROL (CAP) WORK PLAN

FOR THE CARTER CARBURETOR SUPERFUND SITE

Prepared for:

ACF Industries LLC
101 Clark Street
St. Charles, Missouri 63301

Prepared by:

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Project No. ACF0001.RA

March 26, 2015

HRP *Associates, Inc.*

IMPORTANT NOTICE

This report was prepared exclusively for ACF Industries, LLC. By HRP Associates, Inc. The quality of information, conclusions and estimates contained herein is consistent with the level of effort involved in HRP's services and based on: i) information available at the time of preparation, ii) data supplied by outside sources and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended to be used by ACF Industries, LLC only, subject to the terms and conditions of its contract with HRP. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

**Die Cast Area Engineered Control (CAP)
Work Plan
for the
Carter Carburetor Superfund Site
St. Louis, Missouri**

REVIEW AND APPROVALS:

Prepared by:



Eric J. Boswell, LEP
Project Manager

3/26/2015

Date

Reviewed by:

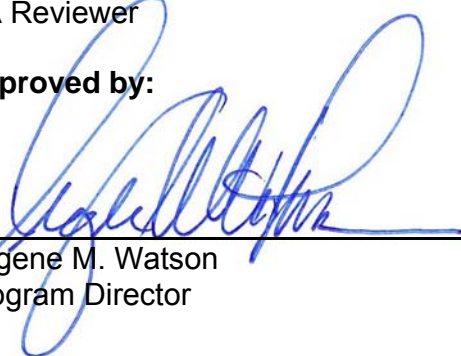


Christopher L. Tedder, RG
QA Reviewer

3/26/2015

Date

Approved by:



Eugene M. Watson
Program Director

3/26/2015

Date

Jeff Weatherford, Project Manager
USEPA, Region 7

Date

DIE CAST AREA ENGINEERED CONTROL WORK PLAN

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DIE CAST AREA CAP WORK PLAN

ABBREVIATIONS AND ACRONYMS

ACF	ACF Industries, LLC
AOC	Administrative Order on Consent
ASA	Administrative Settlement Agreement
BMP	Best Management Practices
CBI	Carter Building, Inc.
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CY	cubic yards
DCA ECWP	Die Cast Area Engineered Control Work Plan
EE/CA	Engineering Evaluation and Cost Analysis
ft	foot (or feet)
ft ²	square feet
HAZWOPER	Hazardous Waste Operations and Emergency Response
HDPE	High-Density Polyethylene
HRP	HRP Associates, Inc.
HASP	Health and Safety Plan
mg/kg	milligrams per kilogram
MoDOT	Missouri Department of Transportation
MSD	Metropolitan St. Louis Sewer District
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
ppm	parts per million
PCB	polychlorinated biphenyl
PE	Professional Engineer
POTW	publicly owned treatment works
PPE	personal protective equipment
RAWP	Removal Action Work Plan
RC	reinforced concrete
RCRA	Resource Conservation and Recovery Act
Site	Carter Carburetor Superfund Site
SOW	Scope of Work
TSCA	Toxic Substances Control Act
TSDF	treatment storage and disposal facility
USEPA	United States Environmental Protection Agency

DIE CAST AREA ENGINEERED CONTROL WORK PLAN

1.0 INTRODUCTION

The purpose of this Die Cast Area Engineered Control Work Plan (DCA ECWP) is to describe in detail the scope of work (SOW) to be executed for construction and installation of an engineered protective cover within the former Die Cast Area of the Carter Carburetor Superfund Site ("the Site"). The protective cover is necessary to allow the beneficial reuse of polychlorinated biphenyls (PCB) impacted concrete debris and site material for fill material at the Site. The beneficial reuse is limited to materials containing less than 100 milligrams per kilogram (mg/kg)/parts per million (ppm) of PCBs and must be placed within the Die Cast Area excavation.

1.1 Regulatory Framework

The DCA ECWP documents the SOW necessary to meet the guidance provided in the Administrative Settlement Agreement (ASA) and Administrative Order on Consent (AOC) CERCLA 07-2013-0008. Specifically, the DCA ECWP was prepared in accordance with Attachment II, Section III Tasks; paragraph A.2 Addendum B – CBI Building Work Plan Addendum and paragraph A.3 Addendum C-Die Cast Area Work Plan Addendum.

The Site is subject to a *Non-Time Critical Removal Action*. This portion of the Removal Action includes the demolition of the WILLCO Building and Carter Building, Inc building (CBI Building) and excavation of soil from the Die Cast Area to address PCBs present in these areas of the Site.

As provided in the ASA AOC Attachment II, Section II, paragraph D; institutional controls, including engineered controls as defined by the ASA AOC, may be used at the Die Cast Area. The required engineered control includes a protective cover, hereinafter referred to as the "Cap" that allows reuse of demolition debris and addresses residual soil that are impacted with PCBs at concentrations greater than 25 ppm and less than 100 ppm. In conjunction with engineered control, deed restrictions will be recorded as part of the institutional control measures to limit use and access to the area.

1.2 Background

As described in Section 2.0 of the "Engineering Evaluation and Cost Analysis (EE/CA) for the Carter Carburetor Site. September 22, 2010", the Die Cast Area and CBI building are impacted with PCBs. PCBs were detected in brick and concrete in the CBI building, the concrete slab at the Die Cast Area, and soil below the former Die Cast Building floor slabs. The selected remedies for the CBI building and Die Cast Area are demolition and excavations, respectively, followed by management of PCB impacted materials. It is important to note that reuse of the material is to occur within the excavation limits of the Die Cast Area.

In addition to the demolition and removal action required under the ASA AOC, demolition of the WILLCO Plastics building will be performed. The WILLCO and CBI Buildings are connected, independent structures. Demolition of the WILLCO building has been included into the project to facilitate demolition of the CBI building and reuse of the site. The WILLCO Building was investigated in 2006 and 2007 and was found to contain PCB impacted materials

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at concentrations less than 10 ppm. The demolition debris from the WILLCO building will be used for backfill within the Die Cast Area excavation.

1.2.1 Site Description

The Site is located in the City of St. Louis and encompasses approximately ten (10) acres. The vicinity of the Site is a historically developed mixed-use urban area and is bounded as follows:

- West: North Spring Avenue (adjacent to CBI Building) and Hyams Avenue;
- South: St. Louis Avenue;
- East: North Grand Boulevard; and
- North: Dodier Street.

Detailed descriptions of the CBI and WILLCO buildings were provided in the respective Demolition Work Plans. A detailed description of the Die Cast Area was provided in the respective Excavation Work Plan. A summary of key building and area features is provided below. The site location and layout is illustrated on Figure 1.

1.2.2 CBI. Building

- Four (4) story reinforced concrete (RC) framed structure;
- Brick exterior;
- First floor footprint is approximately 139,600 square feet (ft²);
- Second floor footprint is approximately 133,200 ft²;
- Third floor footprint is approximately 122,800 ft²;
- Fourth floor footprint is approximately 83,650 ft²;
- Six open areaways/breezeways are located within the building.

1.2.3 WILLCO Plastics Building

- Two (2) story RC framed structure;
- Brick exterior;
- Each floor of the WILLCO Building is approximately 25,350 ft²;
- The WILLCO Building was constructed adjacent to and is connected with the CBI Building, but each building remains an independent structure.

1.2.4 Die Cast Area

- Approximately 31,250 ft² rectangular area;

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- Building foundation remnants (knee walls, slab, footings, etc.) are present from the former Die Cast Buildings;
- Oriented length-wise in an east-west cardinal direction;
- Extends from the CBI building eastward to the sidewalk at North Grand Avenue;
- A limestone gravel cover, serving as a temporary cap, was placed as part of a time-critical action at 36-inches thick. The remaining limestone cover thickness ranges from 4 inches to 24 inches.

1.3 Approach for Removal of PCB-Impacted Soils and Debris

The disposal of PCB remediation waste is addressed under Title 40 CFR Part 761.61(c) of *the PCB Regulations (Mega-Rule)*. This regulatory information is governed by Code of Federal Regulation (CFR) Title 40, Protection of Environment; Chapter I, Environmental Protection Agency (USEPA); Subchapter R, Toxic Substance Control Act (TSCA); Part 761, Polychlorinated Biphenyl (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions; Subpart D, Storage and Disposal; Section 761.61, PCB Remediation Waste; dated July 1, 2011.

The *Die Cast Area Excavation Work Plan* and *CBI Building Demolition Work Plan* contain special handling and disposal considerations for the management of PCB impacted debris as well as workers, equipment, and materials that come into contact with PCB impacted materials within the site. Those same considerations will be used in order to facilitate the installation of the Cap in a timely basis and minimize the numerous project related risks, including, but not limited to:

- Fugitive dust generation,
- Worker exposure,
- Management of PCB impacted storm water runoff,
- Generation of PCB decontamination fluids, and
- Management of PCB impacted soil and demolition debris.

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2.0 DESIGN SUMMARY

The Cap will be designed and constructed to limit infiltration and prevent human exposure to impacted demolition debris and residual impacted site material placed in the Die Cast Area excavation.

The Cap is a physical barrier system to prevent human exposure and limit infiltration to underlying PCB impacted site materials. The Cap will be constructed over the excavation limits of the Die Cast Area where soil was removed to meet the site-specific Removal Action goals. The finished surface will consist of a Vegetated Cover (Alternative 1) or Bituminous Concrete Surface (Alternative 2). The layout of the Cap and construction profiles for both surface finish alternatives are shown on Figure 1.

2.1 Materials

All materials imported to the site for construction of the Cap will be evaluated to determine the potential to contain PCBs. Specifications for manufactured materials, including but not limited to, Safety Data Sheets will be reviewed. Samples of manufactured materials may be collected and analyzed for PCBs. All sources of granular fill will be reviewed and inspected by the ACF Project Coordinator and the USEPA On-Scene Coordinator (OSC). Representative samples of all granular fill imported to the site will be collected and analyzed for PCBs and may be analyzed for additional constituents pending the review of the source.

2.2 Equipment

Construction equipment was listed in the *CBI Building Demolition Work Plan* and *Die Cast Area Excavation Work Plan*. Several pieces of the equipment listed will be used for construction of the Cap. Equipment previously in contact with PCB-impacted materials will be decontaminated using the double-wash double-rinse protocol prior to use for Cap construction.

2.3 Cap Description

The planned Die Cast Area excavation for the PCB Removal Action is rectangular shaped and encompasses approximately 31,250 square feet (ft²), excluding the over excavation area for sidewall stability (i.e. benchout areas and/or side wall slopes). Per the *Die Cast Area Excavation Work Plan*, this excavation area may be backfilled with demolition debris and site materials containing PCBs at levels less than 100 ppm, which will be generated from on-site building demolition and soil removal activities.

The Cap will cover the rectangular planned removal action excavation, which will include the area of impacted backfill materials. The Cap will extend beyond this area, as described below, to prevent exposure to persons excavating proximal to the placed impacted materials.

- The north side toward Dodier Street,
- The west side toward the CBI Building and North Spring Street, and
- The south side toward St. Louis Avenue.

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The planned Cap area will encompass approximately 34,425ft². The east side of the Cap, toward North Grand Boulevard, will extend to the property line. The Cap system will include:

2.3.1 Compacted Clean Fill

The Cap system will include several layers of granular clean fill material. Inclusive of all layers, a minimum of three feet of compacted clean fill will be incorporated into the Cap system. The clean fill will contain less than 1 ppm of PCBs. These layers of fill will serve to prevent direct human exposure to underlying impacted materials during typical commercial site activities.

The fill materials will consist of gravel and other granular materials that will be installed in varying thickness intervals as needed to allow installation of the components of the Cap and liner system, as described below.

- Coarser material containing sand and gravel up to 6-inches in diameter will comprise the majority of the cap volume, and will be used from below the Surface Finish Alternative 1 or 2 to the depth of the liner system.
- As part of the liner system, finer grained granular materials will be installed to protect the liner during Cap construction and for drainage of surface water infiltration. These materials will be installed at minimum thicknesses of 4 inches both above and below (base layer) the HDPE liner.

The clean fill cover material will be installed in lifts not to exceed 12-inches thick and compacted to 95% relative density with relation to the standard Proctor (ASTM D698)

2.3.2 Warning Burial Tape/Witness Barrier

Although institutional control measures (e.g. deed restrictions) will be implemented/recorded to restrict access to the area, a physical warning system is necessary to protect the liner system. In addition to risks associated with approved and planned future site redevelopment, a risk of unauthorized construction or excavation activities occurring at the site is recognized. To prevent construction worker exposure to underlying materials and reduce the risk of damage to the Cap liner, a buried warning system will be installed. Detectable burial tape, similar to that used for buried utilities, and orange construction fence (a.k.a. snow fence) will be installed below grade over the Cap area.

The warning tape and fence will provide a warning to any construction workers that may perform excavation activities over the Cap area. The burial tape and fence will be placed at a minimum depth of 2 feet below the finished surface, and a minimum of 1 foot above the HDPE liner system. The burial tape will contain metal and be detectable from the surface during pre-excavation buried utility clearance. The tape's

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grid pattern will be square with tape lines approximately 10 feet apart. The grid orientation and tape lines will be parallel to North Grand Boulevard and Dodier Street. Since this type of material is commercially available and pre-marked with standard utilities, tape marked as "Sewer" or "Storm" will be used. Construction fence will be placed directly over the burial tape, and will provide a contiguous visible marker over the entire Cap. The brightly colored fence and reflective tape will serve as a witness barrier.

2.3.3 HDPE Geomembrane Liner

A geomembrane liner and drainage system will be installed at the bottom of the Cap. The geomembrane liner will consist of a black High-Density Polyethylene (HDPE) liner, with 40 mil thickness. This type of liner is a durable material, chemically resistant, and has a very low permeability (estimated coefficient of permeability at 10^{-13} cm/sec). Given this very low permeability, the liner exceeds the performance of compacted clay caps by several orders of magnitude and will reliably limit surface water infiltration to underlying materials. Geotextile and finer grained clean granular fill will be placed below and above the liner to prevent punctures from larger diameter gravel and concrete debris included in the overlying compacted fill and underlying impacted materials, respectively.

2.3.4 Liner Drainage System

Since the liner will prevent infiltration to the underlying materials, surface infiltrate will require management to prevent accumulation of liquids on top of the liner, differential settlement and erosion over the Cap area. An integrated passive drainage system will be constructed with the liner (Figure 1). The underlying bedding material for the liner will be graded with a high point ridge parallel with Dodier Street, which is the longer axis of the Cap, and then sloping evenly away from the ridge. The liner will be installed following these same contours. The geotextile placed over the liner will include geocomposite drainage net to provide a pathway for flow of infiltrate. Gravel (open stone) filled trenches, wrapped in geotextile, will be installed along the down-slope sides and along the west end of the Cap. The trenches will be configured to receive flow from the drainage layer and direct away from the liner.

2.3.5 Land Survey Markers

Survey boundary markers will be installed at the corners of the Cap. The survey markers will be iron pins or similar that will be driven into the ground and flush to the final surface grade. The markers will be surveyed by a licensed land surveyor for incorporation into land records. The survey markers will facilitate determining the horizontal extent of the cap during future site activities.

2.3.6 Surface Finish

Following construction of the Cap, the ground surface over the Cap will be finished with a Vegetated Cover or Bituminous Concrete Surface depending on the final

DIE CAST AREA ENGINEERED CONTROL WORK PLAN

selection by the PRP. The Vegetated Cover Alternative (Alternative 1) is preferred for its lower long-term maintenance requirements.

~~Alternative 1 – Vegetated Cover~~

~~The Vegetated Cover will have a final surface that will be grass. The cover will include a minimum of 4 inches of top soil that is graded to mimic the surface of the underlying liner. The Cap area will then be hydro seeded with a perennial grass seed mixture.~~

Alternative 2 – Bituminous Concrete Surface

The Bituminous Concrete surface will be designed and constructed to support commercial parking activities. The pavement profile will include compacted sub-base aggregate materials consistent with MoDOT specifications. The paved surface will be graded to direct runoff north toward Dodier Street. A gravel filled trench drain will be located along the north side of the pavement to receive stormwater runoff. The trench drain will provide limited stormwater storage, infiltration capacity, and absorb energy from sheet flow.

Alternative 1 - Vegetated Cover

The Vegetated Cover will have a final surface that will be graass. The cover will include a minimum of 8 inches of top soils that is graded to mimic the surace of the underlying liner. The CAP embankment slopes will be lined with turf reinforcement matting in order to establish Vegatative Cover.

Inserted by HRP
EM Watson
11 May 2021

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3.0 SEQUENCE OF OPERATIONS

This section provides an overall strategy for the construction of the Cap. Work will be sequenced and executed in a safe and efficient manner and according to all applicable regulations, including but not limited to, OSHA and 29 CFR Parts 1910 and 1926.

3.1 Planning

Cap construction can be initiated following completion of prerequisite Removal Action activities (i.e. building demolition, soil excavation, concrete processing, etc.). Preliminary project schedule estimates that the Cap can be completed within six (6) to eight (8) weeks after the area has been rough graded. At the completion of the Cap, an institutional control plan will be developed and implemented.

Several site tasks that are integral to the Removal Action must be completed prior to construction of the Cap. These Removal Action tasks include, but are not limited to:

- ACM Abatement and Universal Waste removal from site buildings;
- Demolition of the WILLCO Plastics building;
- Demolition of the CBI building;
- Demolition and Excavation of the Die Cast Area;
- Processing of demolition debris;
- Confirmation that PCB Removal Action goals were achieved (see Section 5.2 of the Die Cast Area Excavation Work Plan for detail); and
- Backfilling and rough grading of the Die Cast Area excavation.

3.2 Pre-Construction Activities

At the completion of the prerequisite Removal Action tasks, the following activities must be completed by a selected specialty contractor prior to beginning of installation of the Cap:

- Preparation of a final design for the installation of the HDPE liner. This design will include all OSHA compliant safety measures.
- Provide a site specific health and safety plan, which will include employee HAZWOPER and other OSHA training documentation.
- Mobilize Personnel, Materials and Equipment.

All equipment planned for installation of the Cap that has been used elsewhere on the Site as part of the PCB Removal Action will be required to be de-contaminated following the double wash-double rinse protocol, as described and referenced in the *CBI Building Demolition Work Plan* (Section 5.6.3) and *Die Cast Area Excavation Work Plan* (Section 4.4.1) prior to Cap construction.

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3.3 Planned Construction Sequence

Construction of the Cap will commence following pre-construction activities. The generalized sequence of construction work is listed chronologically below:

1. Place, compact and grade base layer for liner system;
2. Install liner system (geotextiles, HDPE liner, geocomposite drainage net, drainage trenches, etc.)
3. Place, compact, and grade bedding material over liner system;
4. Install compacted granular fill to achieve a minimum of 3-feet of cover, and place warning burial tape/witness barrier;
5. Complete vegetated cover; and
6. Install and survey boundary markers.

Following installation of the base layer for the liner, workers will be not be in contact with backfill materials containing PCBs at levels greater than 1 ppm. The base layer shall be placed in manner that equipment does not come into contact with the placed backfilled materials that may contain PCBs at levels greater than 1 ppm. Personnel will minimize contact with PCB impacted materials during installation of the base layer, and will follow decontamination procedures including changing of any personal protective equipment (PPE) prior to proceeding with installation of other Cap system components.

3.4 Post Construction Activities

Several administrative and documentation activities are necessary following Cap construction. These activities include:

- Survey of Cap boundary markers;
- Develop a closure report;
- Develop an institutional control plan; and
- Record deed restrictions.

3.5 Control Measures

The following is a list of control measures that were detailed in several sections of the *CBI Building Demolition Work Plan* and *Die Cast Area Excavation Work Plan*. These control measures will continue to be observed during installation of the Cap (described in Section 4):

- Entry and Exit Procedures;
- Dust Control;
- Dust Suppression and Surface Water Runoff Management;
- Safety Controls to protect the Work Site and Traveling Public

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4.0 QUALITY ASSURANCE PLAN

4.1 Documentation and Reporting

The Site Supervisor will oversee the implementation of the *Die Cast Area Engineered Control Work Plan*; prepare, maintain and document a complete record of construction activities performed at the Site; and ensure that the project is completed in accordance with the specifications of the Die Cast Area work plans, the HASP, and generally accepted industry/engineering standards.

4.2 Field Records

The Site Supervisor will maintain a daily field log of all activities associated with construction progress. The following specific documentation and reporting requirements including, but not limited to, will be the responsibility of the Site Manager and Site Supervisor.

- Daily inspection(s) of the construction progress;
- Inspection of each Cap component, as required;
- Review all quantitative testing results from the liner seams and verify within performance specifications;
- Ensure compliance with provisions of the HASP, including completion of all logs;
- Ensure proper management of PCB impacted materials and wastes; including excavating, relocating, stockpiling, loading for transport, etc.;
- Maintain an accurate accounting of all materials/equipment entering and exiting the Site, including PCB impacted debris/material, other materials, and placement of each type of backfill material on the site;
- Document Cap installation activities including; all drawings, photographic and video logs;
- Document sampling of materials, including copies of chain of custodies, a log of cooler temperatures, measurements of sample locations in reference to fixed Site features;
- Document and report of spills, leaks, or other discharges occurring at the Site during implementation and continuous construction activities;
- Document and report disruption/damage to utilities.
- Document and report disruption/damage to the sidewalks, curbing and roadway of the public right-of way.

4.3 Equipment Mobilization

Equipment will be mobilized on an as needed basis due to the limited area of the Site. Equipment may be stored on the west side of North Spring Avenue inside the fenced area, if

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approved in advance by the Site Supervisor. Heavy equipment mobilization for the Cap installation must be coordinated with the Site Supervisor to minimize impact to local businesses and traffic. Some equipment may require assembly on-site if approved in advance by the Site Supervisor. Assembled equipment will be inspected and tested by the operator or contractor supervisor to ensure a safe working condition and that all safety apparatus' are in place and functioning as designed. Equipment operators will be competent, experienced and properly trained.

4.4 Entry and Exit Procedures

Site Access Control is discussed in detail in Section 5.6 of the RAWP. General site access will continue to be controlled to prevent unauthorized access to the Site in accordance with the RAWP and subsequent approvals by the USEPA OSC and ACF Project Coordinator.

4.4.1 Exclusion Zone

The area of the site where Cap installation activity will occur (i.e. equipment staging areas, materials stockpiles, etc) will be considered part of the HAZWOPER designated Exclusion Zone. The Exclusion Zone will be delineated in the field with high visibility construction fencing with signage indicating that it is an Exclusion Zone. The entire area will remain the exclusion zone until the Cap is completed.

4.4.2 Contaminant Reduction Zone

The second area of the Site for Cap installation, outside of the Exclusion Zone, will be designated a Contaminant Reduction Zone. Within this area, HAZWOPER approved decontamination and PPE protocols will be applied. The Contaminant Reduction Zone will have a decontamination strategy which will identify, establish and determine:

- 1) Procedures to prevent contamination of clean areas;
- 2) The appropriate decontamination methods;
- 3) Methods and procedures to minimize worker contact with contaminants during removal of personal PPE;
- 4) The decontamination equipment required;
- 5) The number and layout of the decontamination stations; and
- 6) Methods for disposing of clothing and equipment that are not completely decontaminated when completed for a work shift.

4.4.3 Decontamination and PPE

All personnel entering the exclusion zone will be required to wear the appropriate PPE as designated by the Site Health and Safety Officer prior to entry and continuously, while in the exclusion zone. The required PPE during all phases of work will include:

DIE CAST AREA ENGINEERED CONTROL WORK PLAN

- High visibility shirts, vests, or similar garment(s);
- Hard hat;
- Eye protection;
- Hearing protection; and
- Steel-toed boots.

When PCBs are present in the work areas at levels greater than 25 ppm, the following additional PPE may be required within the exclusion zone, as deemed necessary by the Site Health and Safety Officer:

- Boot covers
- Respirator;
- Tyvek chemical resistant suits; and
- Chemical resistant gloves.

Single use disposable PPE will be used to the maximum extent. While impacted materials are exposed, used PPE will be containerized and transported off-site for disposal as TSCA regulated waste (greater than 50 ppm). After the base layer is completed, used PPE will be containerized and characterized for disposal.

Durable PPE and all other durable equipment that may have potentially been in contact with PCB impacted materials will be cleaned using the double wash and double rinse method consistent with Subpart S of the PCB Regulations prior to exiting the exclusion zone. Decontamination of personnel and equipment will be performed on an appropriately sized and constructed (i.e. sufficient to contain and clean the largest equipment) decontamination pad located within the contaminant reduction zone. The decontamination pad will be configured such that all wash-waters will be contained and can be easily collected. The used wash-waters will be containerized and transferred to the on-site process wastewater treatment system.

4.5 Dust Control

A fugitive dust suppression program will be implemented in accordance with the project specifications to prevent the off-site migration of particulate matter and/or dust resulting from excavation, loading, transportation, and filling operations associated with site materials as described in the *CBI Building Demolition Work Plan* (Sections 5.9 and 7.3). The following measures will be implemented continuously during site activities:

- 1) The construction/demolition contractor will supervise and maintain fugitive dust control measures;

DIE CAST AREA ENGINEERED CONTROL WORK PLAN

- 2) The Site Supervisor will monitor, document and report airborne particulate matter (visual and metered); and
- 4) The ACF Project Coordinator will coordinate with the USEPA for the results of perimeter air monitoring and impact on installation activities, if any.

The area of the Site to be used for vehicle traffic, dry excavation surfaces, and backfill surfaces that contain fine materials and cause dust will be wetted as needed to contain airborne fugitive dust. The travel paths on-site will be swept on a weekly basis and wetted as needed to prevent airborne dust. It is the intent of the dust control actions to avoid any airborne fugitive dust generated by Site activities from leaving the Site.

4.6 Surface Water Runoff Management

Surface water management will be controlled utilizing a series of Best Management Practices (BMPs) such as seeding, sodding, soil roughening, geotextiles, slit fences, etc combined with Site Specific Water Runoff Controls such as strategically placed berms, a process water collection tank and process/stormwater treatment system to ensure the Site can meet the local POTW requirements prior to discharge. Site specific water runoff controls that are available include, but are not limited to, the following:

- Land grading to help control surface runoff, soil erosion and sedimentation (with the potential for COC transport mechanisms);
- Semi-permanent diversions (berms) which can be constructed by creating channels with supporting earthen ridges on the bottom sides of the slopes to collect storm water runoff and to deflect the runoff to acceptable outlets that convey it without erosion;
- Stabilized construction entrances to minimize the amount of sediment leaving the Site (gravel pad over filter cloth) in conjunction with vehicle/tire wash station;
- Filter berms made up of a temporary loose gravel ridge on the roadway that diverts storm water flow from an open traffic area and acts as an efficient form of sediment control (intended for gentle slopes, have a short life span, and require maintenance due to clogging from mud/soil on tires); and
- Dust control management with a dust control plan (*CBI Building Demolition Work Plan* Sections 6.2 and 7.3).

All measures will be taken on-site to insure that all surface water, process water, and storm water is captured, collected, treated and released to the POTW in accordance with the Metropolitan Sewer District (MSD) and United States Environmental Protection Agency standards.

DIE CAST AREA ENGINEERED CONTROL WORK PLAN

4.7 Visual Inspection

Visual inspections will be necessary to verify materials imported to the site and construction activities are in conformance with approvals and work plans. At the time of delivery, trucks and their respective loads shall be inspected to ensure materials are consistent with those approved for Site use. Each component of the Cap will be inspected by HRP and USEPA for final approval and use prior to final implementation of the Cap.

DIE CAST AREA ENGINEERED CONTROL WORK PLAN

5.0 CLOSURE ACTIVITIES

5.1 Institutional Control Plan

A draft preliminary Institutional Control Plan (ICP) will be submitted to USEPA a minimum of thirty (30) days prior to the estimated completion date of the Die Cast Area Engineered Control for review and approval. The ICP will include details of the land use restrictions necessary to ensure the continued long-term effectiveness of the Removal Actions at the Die Cast Area, including the Engineered Control. If Environmental Covenants are necessary, the ICP will include a process for developing and implementing such. The ICP will conform to all applicable USEPA guidance documents.

5.2 Post Removal Site Control

A draft preliminary Post-Removal Control Plan (PRCP) will be prepared and submitted to USEPA for review and approval consistent with Section 300.415(1) of the NCP and OSWER Directive No. 9360.2-02. The draft PRCP will be submitted a minimum of thirty (30) days prior to the estimated completion date of the Die Cast Area Engineered Control. The plan will include:

- Details of the completed Engineered Control;
- Maintenance requirements for the Institutional Controls; and
- Monitoring requirements for the Institutional Controls.

5.3 Closure Report

A detailed closure report will be prepared following completion of the Die Cast Area Engineered Control. Within one hundred twenty (120) days after completions of all Work as required by the Order, ACF shall submit for USEPA review and approval a final report summarizing the actions taken to comply with the Settlement Agreement. The final report will conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP entitled "OSC Reports", and shall be prepared in compliance with "Superfund Removal Procedures: Removal Response Reporting – POLREPS and OSC Reports" (OSWER Directive No. 936.3-03, June 1, 1994). The final report will include a listing of quantities and types of materials removed off-Site or managed on-Site, a discussion of the removal and disposal options notifying Respondent of the deficiencies and USEPA's decision to modify or develop the required deliverable. The final report will include the following:

- Narrative discussing construction activities;
- Photographic documentation for all phases of the construction;
- Testing results for seams;
- As-built drawings; and
- Land survey data.

The closure report will be submitted to the USEPA for review and approval.

Figures

Diagram illustrating the cross-section of a Die Cast Engineered Control (a/k/a CAP) trench. The structure consists of a central common fill area flanked by stone anchors and a drainage mat layer extending to the edge of the stone trench with a minimum 6" overhang.

Key Components and Labels:

- DIE CAST EXCAVATION AREA: 125± FT
- PROPOSED FINISHED GRADE: SEE PLAN VIEW DETAIL
- 1% SLOPE
- COMMON FILL
- STONE ANCHOR: SEE NOTES, SEE ALT-1-A DETAIL
- LIMIT OF ENGINEERED CONTROL
- DRAINAGE MAT LAYER EXTENDS TO THE EDGE OF THE STONE TRENCH WITH A MIN. 6" OVERHANG
- CONTAMINATED FILL & SOIL
- END GEOCOMPOSITE DRAINAGE LAYER AT EDGE OF STONE TRENCH FOR FULL PERIMETER
- GEOTEXTILE: SEE STONE TRENCH NOTES
- 1% SLOPE
- 2'
- 69.5± FT
- 139± FT

SECTION B-B

DIE CAST ENGINEERED CONTROL (a/k/a CAP)

NTS

Diagram illustrating the cross-section of a landscaped section (grass surface) showing various layers and materials. The diagram includes the following components and dimensions:

- TOPSOIL WITH VEGETATIVE COVER (GRASS)** - SEE NOTES FOR SEED MIX REQUIREMENTS
- COMMON FILL** - MEETING THE REQUIREMENTS OF SECTION 203 OF THE GUIDE FOR 90% COMPACTION
- DETECTABLE BURIAL WARNING TAPE** (SEE PLAN VIEW FOR CONFIGURATION)
- WITNESS BARRIER** (aka ORANGE CONSTRUCTION FENCE SAME EXTENT AS DETECTABLE BURIAL WARNING TAPE)
- GEOCOMPOSITE DRAINAGE LAYER**
- 40 MIL HIGH DENSITY POLYETHYLENE GEOMEMBRANE**
- 10 OZ. NON-WOVEN GEOTEXTILE**
- 3/8-INCH MINUS BEDDING MATERIAL** - PLACEMENT AND COMPACTION SHALL BE IN ACCORDANCE WITH SECTION 304 OF THE MoDOT EPG
- CONTAMINATED FILL & SOIL** - PLACED AND COMPACTED IN ACCORDANCE WITH SECTIONS 209 & 210 OF THE MoDOT EPG
- 4" MIN. BEDDING MATERIAL**
- CAP MATERIALS**
- 4" MIN. BEDDING MATERIAL**
- 12" MIN COMMON FILL**
- 4" MIN. BEDDING MATERIAL**
- 2'-8" MIN.**
- 3' MIN.**
- 4" MIN.**
- 16" MIN.**

LANDSCAPED SECTION (GRASS SURFACE)
NTS

NORTH

0 25' 50'

EX. CBI BUILDING

257± FT

498.07 x

x 496.3

FINISHED GRADE
SLOPE TO DRAIN
1%

P.R. FINISHED GRADE
ELEVATION

2.0 FT

5.0 FT

STONE ANCHOR

2.0 FT

5.0 FT

2.0 FT

x 493.79

x 494.6

x 495.6

x 496.3

DODIER STREET

APPROXIMATED 175LF± PROPOSED SHORING.
-SEE DETAILS

EXISTING GRADE AT BACK OF SIDEWALK

139± FT

NORTH GRAND AVENUE

EXTEND ENGINEERED CONTROL OVER SHORING -SEE DETAILS

- IRON PIN OR SIMILAR AT FOUR CORNERS MIN-TYPICAL
- SUBSURFACE STONE TRENCH -SEE SECTION B-B (BASE BID)
- ANTICIPATED LIMIT OF DIE CAST EXCAVATION AREA (125± LF X 250± LF)
- ANTICIPATED LIMIT OF DIE CAST CONTROLS -SEE DETAILS, SHEET 18
- ANTICIPATED LIMIT OF EXCAVATION BENCHING AT THE DIE CAST EXCAVATION AREA
- DETECTIBLE WARNING TAPE 10FT O.C. MAX. SPACING

NOTE:
THE LIMITS OF THE CAP ARE TO BE MARKED
WITH IRON PINS. AT MINIMUM, PINS ARE TO BE
PLACED AT EACH OF THE FOUR CORNERS.

The diagram illustrates a cross-section of a landfill liner system. The layers, from top to bottom, are:

- 1 3/4" HMA BP-1** (PER SECTION 400 OF THE MoDOT EPG)
- 2" HMA BP-1** (PER SECTION 400 OF THE MoDOT EPG)
- TACK COAT** (PER SECTIONS 407 & 450 OF THE MoDOT EPG)
- DETECTABLE BURIAL WARNING TAPE** (SEE PLAN VIEW FOR CONFIGURATION)
- WITNESS BARRIER** (8x8 ORANGE CONSTRUCTION FENCE) SAME EXTENT AS DETECTABLE BURIAL WARNING TAPE
- GEOCOMPOSITE DRAINAGE LAYER**
- 40 MIL HIGH DENSITY POLYETHYLENE GEOMEMBRANE**
- 10 OZ. NON-WOVEN GEOTEXTILE**
- 3/8-INCH MINUS BEDDING MATERIAL** (PLACEMENT AND COMPACTION SHALL BE IN ACCORDANCE WITH SECTION 304 OF THE MoDOT EPG)
- CONTAMINATED FILL & SOIL** (PLACED AND COMPACTED IN ACCORDANCE WITH SECTIONS 209 & 210 OF THE MoDOT EPG)
- 4" MIN. BEDDING MATERIAL**
- CAP MATERIALS**
- 4" MIN. BEDDING MATERIAL**
- 12" MIN. COMMON FILL**
- COMMON FILL - SUBGRADE** (PER SECTION 209 OF THE MoDOT EPG)
- 4" MIN. TYPE 1 AGGREGATE STONE** (PER SECTION 304 OF THE MoDOT EPG)

Dimensions on the left side of the diagram:

- 2'-8" MIN.** (Total height of the top three layers: 1 3/4" HMA BP-1, 2" HMA BP-1, and TACK COAT)
- 3' MIN.** (Total height of the middle three layers: COMMON FILL - SUBGRADE, 12" MIN. COMMON FILL, and 4" MIN. BEDDING MATERIAL)
- 3 3/4" MIN.** (Total height of the bottom three layers: 4" MIN. BEDDING MATERIAL, CAP MATERIALS, and 4" MIN. BEDDING MATERIAL)

BITUMINOUS CONCRETE SURFACE

NTC

EX. CBI BUILDING
 257± FT
 495.18 x
 495.3
 2.0 FT
 5.0 FT
 5.0 FT
 SOIL ANCHOR
 2.0 FT
 2.0 FT
 5.0 FT
 FINISHED GRADE
 SLOPE TO 1"RAIN
 1%
 PR. FINISHED GRADE
 ELEVATION
 494.6 x
 494.8
 494.89
 STONE TRENCH
 TOP ELEV. = 494.8
 495.3
 495.6
 495.3
 496.3
 496.34
 495.65
 495.33
 139± FT
 EXISTING GRADE AT
 BACK OF SIDEWALK
 EXTEND ENGINEERED
 CONTROL OVER SHORING
 -SEE DETAILS
 DODIER STREET
 NORTH GRAND AVENUE
 NORTH
 0 25' 50'
 IRON PIN OR SIMILAR AT FOUR CORNERS MIN.
 -TYPICAL
 STONE TRENCH ON SURFACE
 257± LF
 -SEE SECTION B-B
 ANTICIPATED LIMIT OF DIE CAST EXCAVATION AREA
 (125± LF X 250± LF)
 ANTICIPATED LIMIT OF DIE CAST CONTROLS
 AND SURFACE PAVEMENT
 -SEE DETAILS
 ANTICIPATED LIMIT OF EXCAVATION
 BENCHING AT THE DIE CAST
 EXCAVATION AREA
 DETECTIBLE WARNING TAPE
 10FT O.C. MAX. SPACING
 APPROXIMATED 175LF± PROPOSED SHORING
 -SEE DETAILS

NOTE:
THE LIMITS OF THE CAP ARE TO BE MARKED
WITH IRON PINS. AT MINIMUM, PINS ARE TO BE
PLACED AT EACH OF THE FOUR CORNERS.

