I. Introduction and Statement of Purpose

This decision document presents an Explanation of Significant Differences (ESD) for the Sonford Products Superfund Site (Site), located in Flowood, Rankin County, Mississippi. This ESD has been prepared by the U.S. Environmental Protection Agency to briefly summarize the significant changes to the September 2009 Operable Unit 1 (OU-1) Record of Decision (ROD) and the September 2010 OU-2 ROD. Issues addressed within this ESD are grouped as follows:

- Updates to the Site Layout Map and facility address.
- Increase in OU-1 Remedial Action (RA) cost due to extended period of non-aqueous phase liquid (NAPL) recovery operation and the volume of NAPL extracted from the OU-1 Extraction Area.
- Operating term limit extension for the temporary soil stockpile in OU-2 ROD.

This ESD is issued in accordance with § 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Title 42 United States Code (42 U.S.C.) § 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40 Code of Federal Regulations (40 CFR) § 300.435(c)(2)(i). The Director of the Superfund Division has been delegated the authority to sign this ESD.

This ESD will become part of the Administrative Record for the Sonford Products Superfund Site (40 CFR 300.825(a)(2)), which has been developed in accordance with § 113(k) of CERCLA, 42 U.S.C. § 9613(k).

The Administrative Record is available for review at the G. Chastaine Flynt Memorial Library, 103 Winners Circle, Flowood, MS 39232 and at U.S. EPA Region 4, 9th Floor Library, 61 Forsyth Street SW, Atlanta, Georgia 30303, Monday – Friday, 8:00 a.m. to 4:30 p.m.
II. Site History and Contamination

The former Sonford facility’s address is currently 3600 Payne Drive, Flowood, Rankin County, Mississippi. This parcel is bordered by active railroad tracks to the west, residential area further west, and wooded areas on the north, south, and east. The Site includes portions of multiple parcels as generally depicted in the updated Site Layout Map. Figure 1-2. The Site is bordered by Payne Drive and Flowood Drive to the west, wooded areas to the north and east, and Custom Drive to the south.

From 1972 to 1985, the Site housed two separate chemical processing plants operated by Sonford International and Sonford Products. The operations of both companies involved turning solid pentachlorophenol (PCP) into liquid formulations for protection of wood products. After an inspection by the Mississippi Department of Environmental Quality (MDEQ) in 1980, Sonford Products was considered a Resource Conservation and Recovery Act (RCRA) hazardous waste treatment, storage, or disposal facility which required issuance of a permit due to storage and improper disposal of PCP wastes.

Currently, three acres of the Site are being used for the construction of concrete septic tanks. In 2012, machinery was added for the construction of injection molded plastic septic tanks, however the injection molds are currently not used. The septic tank construction operations are conducted by Lacey’s Wastewater Treatment and Septic. The property currently contains a concrete pad, a shed, a concrete cistern, a building formerly used as the forming area for fiberglass septic tanks, three steel-beam framed structures with metal roofs and sides, and one steel-beam framed structure (Crane Building) with no sides.

The main contaminants of concern (COCs) found at the Site were PCP, dioxins, pesticides, and metals. All of these contaminants are hazardous substances as defined in § 101(14) of CERCLA, 42, U.S.C. § 9601(14), and 40 CFR § 302.4. The EPA placed the Site on the National Priorities List (NPL) in 2007 based on the following factors: contaminated soil, sediment, surface water and groundwater resulting from the plant operations, a fire at the facility in 1983, and past releases (spill in 1985 that resulted in significant removal action).

The Site has been organized into two OUs: OU-1 and OU-2. OU-1 consists of contaminated subsurface media including:

• Subsurface soil deeper than 1 foot (ft.) below land surface (lbs),
• Onsite shallow groundwater and
• Offsite shallow groundwater.

OU-2 consists of contaminated surface media including:

• Onsite surface soil from surface to 1 ft. lbs.
• Offsite surface and subsurface soil associated with residential properties west of the Site property (which was removed, and is now stockpiled onsite in a staging pile).
• Shallow sediment (from surface to 1 ft. lbs) associated with woodland/wetland areas in parcels adjacent to the former operations facility.
• Shallow sediment (from surface to 1 ft. lbs) associated with drainage ditches along the base of a railroad bed that runs parallel to the western boundary of the facility.
• Surface water associated with offsite water features and with the woodland/wetland areas south of the property.

III. Selected Remedy

In 2009, the EPA issued a (ROD) for OU-1. Remedy components include the following:

• Application of chemical oxidant-based product to onsite subsurface soil, residual non-aqueous phase liquid (NAPL)/source area zones, and both onsite and offsite groundwater. The Remedial Design (RD)
will document the number and location of chemical amendment injection points within the source area and downgradient dissolved plume area. Contact between chemical oxidant and contaminated media would induce chemical degradation of contaminants. Multiple oxidant injection applications will be repeated, if necessary.

- Treatment of offsite shallow groundwater (in-situ) using enhanced bioremediation technology. Amendment(s) injected into the contaminated groundwater zone would enhance the subsurface geochemistry to promote microbial growth and metabolism. The RD will document the number and location of amendment injection points within the downgradient dissolved plume area. Multiple injection applications will be repeated, as necessary.

- The existing monitoring well system can be supplemented (if necessary) with additional monitoring wells to ensure adequate coverage of contaminated groundwater plume.

- Monitoring of onsite and offsite groundwater would provide feedback on the progress of contaminant mass/concentration reduction by the chemical oxidation and in-situ bioremediation process.

- Free-product may be extracted with dedicated extraction wells if free-product NAPL is present at sufficiently large volumes to allow collection.

- Implementation and monitoring of institutional controls.

In 2010, the EPA issued a ROD for OU-2. Remedy components include the following:

- Excavate woodland/wetland sediment in parcels adjacent to the former operations facility to meet cleanup criteria.

- Excavate offsite drainage ditch sediment to residential clean-up criteria

- Transport the excavated sediment back onsite and consolidate into existing onsite surface soil.

- Excavate sub-parcels of offsite residential surface soil to residential clean-up criteria.

- Transport the excavated surface soil back onsite and consolidate into existing onsite surface soil.

- Backfill excavated areas with clean material

- Cover all contaminated solids onsite (surface soil and sediment) with a composite liner system to provide hydraulic isolation (i.e., prevent leaching of contaminants into subsurface soils).

- Monitor surface water from the woodland/wetland area in parcels adjacent to the former operations facility over time to ensure that contaminants are naturally attenuating and will achieve levels protective of the designated surface water uses.

- Institutional controls such as an environmental covenant are required to restrict surface soil/cap disturbance and on-site construction activity without appropriate authorization, and restrict groundwater use.

Because the remedy will result in hazardous substances, pollutants, or contaminants remaining onsite above levels that allow for unlimited use and unrestricted exposure, Five-Year Reviews (FYR) and monitoring activities in support of the FYR are required under CERCLA Section 121(c).

IV. Description of Significant Differences and Basis for the ESD

Issues addressed within this ESD are grouped as follows:

- Updates to the Site Layout Map and facility address.

- Increase in OU-1 RA cost due to extended period of NAPL recovery operation and the volume of NAPL extracted from the
OU-1 Extraction Area.

- Operating term limit extension for the temporary soil stockpile in OU-2 ROD

A. Updates to the Site Map and Facility Address

The current address of the former Sonford facility parcel is 3600 Payne Drive, Flowood, Rankin County, Mississippi. This parcel is bordered by active railroad tracks to the west, residential area further west, and wooded areas on the north, south, and east. The Site includes portions of multiple parcels as generally depicted in the updated Site Layout Map, Figure 1-2. The Site is bordered by Payne Drive and Flowood Drive to the west, wooded areas to the north and east, and Custom Drive to the south.

CERCLA § 101(9) provides that a “facility” includes any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located. Thus, a site may not be limited to the confines of a particular property boundary and site boundaries may change as the full extent of where contamination “has come to be located” is better understood as all necessary studies and remedial work are completed at a site.¹

B. Increase in OU-1 RA cost

An ESD is necessary in order to document the increase of the RA costs for OU-1 (subsurface and groundwater remediation). A review of the August 2009 Feasibility Study comparative analysis of remedial alternatives confirms that continuing NAPL Recovery and ISCO/ISEB remains the preferred cleanup alternative for OU-1. The September 2009 OU-1 ROD estimated the cost of the remedy at $5,665,685. The new cost estimate for OU-1 is $12,386,009, Table 1. The following are some of the factors contributing to the cost increase:

- Extended period of NAPL recovery within the OU-1 Extraction Area,
- Potential adjustments to the Multi-Phase Extraction (MPE) System or NAPL Recovery System (includes an additional carbon unit as an extra filtration step and holding tanks for providing sufficient retention time so that treated water from MPE System can be held for analytical testing prior to discharge),
- The volume of NAPL extracted from the OU-1 Extraction Area is greater than originally estimated (The RD estimated the volume of NAPL was expected to be approximately 2,333 gallons. To date, the EPA has extracted over 10,584 gallons of NAPL) and
- Transportation and disposal costs associated with removal of the NAPL and

¹ "Clarifying the Definition of ‘Site’ Under the National Priorities List”. EPA Publication 9320.2-10FS, EPA 540/F-95/033, May 1996, “A ‘site’ is best defined as that portion of a facility that includes the location of a release (or releases) of hazardous substances and wherever hazardous substances have come to be located. As such, the extent of a site is not limited by property boundaries, and does not include clean areas within a facility’s property boundaries”; see also https://www.epa.gov/fdsys/pkg/FR-2016-09-09/pdf/2016-21626.pdf, where a September 2016 Federal Register Notice proposing sites to the NPL included this explanation about site boundaries: “while geographic terms are often used to designate the site (e.g., the ‘Jones Co. Plant site’)) in terms of the property owned by a particular party, the site, properly understood, is not limited to that property (e.g., it may extend beyond the property due to contaminant migration), and conversely may not occupy the full extent of the property (e.g., where there are uncontaminated parts of the identified property, they may not be, strictly speaking, part of the ‘site’). The ‘site’ is thus neither equal to, nor confined by, the boundaries of any specific property that may give the site its name, and the name itself should not be read to imply that this site is coextensive with the entire area within the property boundary of the installation or plant.”
the unaccounted cost associated with shipping the generated waste to Canada.

C. Operating Term Limit Extension for the Temporary Soil Stockpile in OU-2 ROD

Under CERCLA Section 121(d)(2) and the NCP, remedial actions are expected to comply with federal and more-stringent State environmental laws or regulations that are determined to be ‘applicable’ or relevant and appropriate requirements (ARARs) and identified in an EPA decision document (e.g., ROD or ESD). The terms ‘Applicable requirements’ and Relevant and appropriate requirements’ are defined at 40 CFR Section 300.5. The September 2010 OU-2 ROD table of Action-specific ARARs included important ARARs to be met by this RA including RCRA regulations associated with excavation, characterization, temporary staging and consolidation of dioxin and PCP-contaminated media, some of which is considered contaminated with a RCRA Listed hazardous waste (F021 and F027) due to the production of PCP and documented releases that were addressed by the MDEQ and the EPA in a removal action. Specifically, the action-specific ARARs include RCRA requirements for a staging pile which are performance based in order to prevent releases of RCRA hazardous constituents into the environment and cross media contamination during temporary storage of stockpiled contaminated soil some of which contains RCRA Listed hazardous waste. The staging pile requirements include an initial operational term of 2 years except when an operating term extension under 40 CFR Section 264.554(i) is granted.

The approximate volume of the temporary soil stockpile is 6,341 cubic yards (cy), and it is located at the northeast corner of the Site as well as on an adjacent private property located adjacent to the eastern boundary of the former facility property. On March 20, 2012, the property owner granted authorization to the EPA to have access to the adjacent private property to conduct environmental remediation activities. Between April 16 and July 4, 2012, soils (approximately 5,641 cy) excavated from the identified residential areas in the Payne Drive neighborhood along with sediment from the Western Ditch were placed in a staging pile meeting the RCRA ARARs from the OU-2 ROD. The bottom of the staging pile has been lined with 40 mil linear low density polyethylene (LLDPE). The excavated residential areas exceeded the dioxin cleanup level of 78 parts per trillion (ppt), as defined in the September 2010 OU-2 ROD. After all soils were placed in the staging pile, the staging pile was graded, a gas vent system was installed, and a 40 mil LLDPE cover was installed on September 6-8, 2012. The entire staging pile was fenced on September 11-13, 2012 with a six-foot chain-link fence to prevent un-authorized persons from entering the staging pile area. During Site preparation (between January 9 and April 4, 2014), a debris pile located near the southern boundary of the Site as well as extraction well soils and vent well soils from the OU-1 Extraction Area were added to the end of the stockpile with additional geomembrane liner (approximately 700 cy).

An ESD is necessary for OU-2 to extend the operating term limit for an additional six years on the temporary soil stockpile located on the northeast corner of the Site. The following factors under 40 CFR 264.554(i) are required to be considered by the EPA in order to justify an extension to the initial operating term limit:

- Will not pose a threat to human health and the environment; and
- Is necessary to ensure timely and efficient implementation of RA at the facility.

The EPA re-affirms in this decision document that the RCRA staging pile requirements are necessary to prevent contamination from being released into the environment while being stored on the facility and adjacent property for up to six years from the date of issuing this ESD. The EPA has also determined that an extension to the original operational term of two years is necessary to ensure the timely and efficient implementation of remedial action for OU-2 and that due to continued monitoring and maintenance of the pile,
if necessary, that the staging pile will not pose a threat to human health and the environment as specified in 40 CFR 40 264.554(i)(1)(i) and (ii).

During the extended operational term of six years, the EPA and the MDEQ will perform the following activities as part of the remedy in order to verify that the staging pile is functioning as intended and will not pose a threat to the human health and the environment:

- The MDEQ will perform quarterly inspections of the synthetic liner used to contain the soil and assess its overall performance,
- The MDEQ and the EPA will inspect the fence and signage located around the pile to ensure they are maintained; and
- The EPA will perform annual groundwater monitoring adjacent to the pile to determine whether there are any releases from the bottom of the pile.

In order to ensure protectiveness, adjustments (such as repairs and replacement of the liner cover) to the temporary soil stockpile will be considered if it is determined during the inspections that the temporary soil stockpile is not functioning as intended and releases of hazardous substances are possible. After completing the groundwater remediation (OU-1) including NAPL Recovery and ISCO treatment at the Site, as part of the ongoing RA for OU-2, the wastes within temporary soil stockpile will be transferred to the main facility area for consolidation and containment with installation of a final cap system cover as specified in the OU-2 ROD. The staging pile will then be closed in accordance with ARARs in the OU-2 ROD.

V. Support Agency Involvement

In accordance with the NCP §300.435(c)(2), the EPA consulted with the MDEQ prior to the issuance of this ESD. The EPA also provided the MDEQ with the opportunity to comment on the draft ESD. The MDEQ supports the issuance of this ESD and provided comments on an earlier draft. Their comments have been incorporated into this version.

VI. Statutory Determinations

The EPA has determined that these significant changes comply with the statutory requirements of CERCLA §121, 42 U.S.C. §9621, are protective of human health and the environment, comply with Federal and State environmental requirements that are applicable or relevant and appropriate to the remedial action, are cost-effective, and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable.

VII. Public Participation

The public participation requirements set out in the NCP §300.435(c)(2) will be met by publishing this ESD, making it available to the public in the Administrative Record, and publishing a notice summarizing the ESD in a major local newspaper.

VIII. Authorizing Signature

I have determined the remedy for the Site, as modified by this ESD, is protective of human health and the environment, and will remain so provided the actions presented in this report are implemented as described above. This ESD documents the significant changes related to the remedy at the Site.

U.S. Environmental Protection Agency

By:

Franklin E. Hill, Director
Superfund Division

Date: 7/13/17
Table 1: OU-1 Cost Items

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<tr>
<th>Description</th>
<th>Estimate at Completion</th>
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<tr>
<td><strong>Phase 1 Remediation - NAPL Recovery/Multi-phase Extraction (MPE) Capital Costs</strong></td>
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<td>Installation and Operation of NAPL Recovery/ MPE System</td>
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LIST OF ABBREVIATIONS

ARAR  Applicable or Relevant and Appropriate Requirements
bls  below land surface
CERCLA  Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR  Code for Regulation
COC  Contaminants of Concern
cy  cubic yards
EPA  United States Environmental Protection Agency
ESD  Explanation of Significant Differences
ft.  feet
LLDPE  Linear Low Density Polyethylene
MDEQ  Mississippi Department of Environmental Quality
MPE  Multi-phase Extraction
NAPL  Non-aqueous Phase Liquid
NCP  National Oil and Hazardous Substances Pollution Contingency Plan
NPL  National Priorities List
OU-1  Operable Unit 1
OU-2  Operable Unit 2
PCP  pentachlorophenol
ppt  parts per trillion
RA  Remedial Action
RCRA  Resource Conservation and Recovery Act
RD  Remedial Design
ROD  Record of Decision
SARA  Superfund Amendments and Reauthorization Act of 1986
Site  Sonford Products Superfund Site
CONCURRENCE PAGE FOR THE
SONFORD PRODUCTS SUPERFUND SITE
EXPLANATION OF SIGNIFICANT DIFFERENCES

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