STATEMENT OF BASIS

PROPOSED RCRA REMEDY SELECTION
FORMER PIG IRON FOUNDRY

ERP COMPLIANT COKE, LLC
BIRMINGHAM, ALABAMA

EPA I. D. NUMBER: ALD 000 823 848
RCRA Docket #: RCRA-04-2016-4250

September 2017

United States Environmental Protection Agency
Region 4

Table of Contents

1. EXECUTIVE SUMMARY

This Statement of Basis (SB) is for the Former Pig Iron Foundry present at ERP Compliant Coke, LLC, a coke manufacturer located at 3500 35th Avenue North, Birmingham, Alabama (Facility). Specifically, this document sets forth the U.S. Environmental Protection Agency (EPA) - Region 4's proposed corrective measures for the Former Pig Iron Foundry, pursuant to a Resource Conservation and Recovery Act (RCRA; pronounced 'rick-ra') Section 3008(h) Administrative Order on Consent (Order; Docket Number: RCRA-04-2016-4250). The Former Pig Iron Foundry is one of the five study areas identified at the Facility and addressed by the Order.

On September 17, 2012, the EPA issued a RCRA Order to Walter Coke. The 2012 Order outlined requirements for Walter Coke to finalize corrective measure studies and implementation at forty-five (45) Solid Waste Management Units (SWMUs) and six (6) Areas of Concern (AOCs). The 2012 Order built upon and closed out a previous 1989 RCRA Section 3008(h) Administrative Order, which triggered numerous environmental studies on-site and off-site over the past 23 years on this ~400-acre Facility.

The Walter Coke facility was purchased by ERP Compliant Coke in February 2016 out of bankruptcy proceedings. As part of the bankruptcy settlement, the new owner assumed the environmental responsibilities identified in the 2012 Order with Walter Coke. On August 11, 2016, the 2012 Order was modified and re-issued to note the ownership change.

Because the SB merely summarizes information that can be found in greater detail in documents contained in the Administrative Record (e.g., investigation and evaluation reports), EPA encourages the interested public to review these documents in order to gain a more comprehensive understanding. Accordingly, these documents are available during the **45-day public comment period**, which runs from October 1, 2017, to November 14, 2017.

Quick SB Fact: The SB provides general background information and summarizes the remedial alternatives evaluation process and identifies the remedy EPA is proposing to protect human health and the environment. This SB has the following four-fold purposes:

- Identify the proposed remedy
- Describe the process of considering remedial options
- Solicit public review
- Provide information on public involvement in remedy selection

During the 45-day public comment period, the EPA will be accepting comments on the proposed remedy, which consists of Land Use Controls, discussed in this SB. The Agency may modify its proposed remedy described herein or select another corrective measure alternative based on new information or on public comments.

Please see Sections 11 and 12 of the SB for the locations of the Administrative Record, how to submit written comments to the EPA, and the upcoming public meeting/hearing.

Upon conclusion of the public comment period, the EPA will issue a final determination and, if comments are received, a Response to Comments.

RCRA's Relation to EPA Superfund Actions: Basically, RCRA is addressing <u>on-site</u> (and directly related offsite) contamination at the ERP Compliant Coke facility. The EPA Superfund Program, through its designation of the 35th Avenue Superfund Site, is addressing contamination <u>within</u> the community.

2. FACILITY BACKGROUND

The roots of the ~400-acre ERP Compliant Coke facility can be traced back to 1881 when Sloss-Sheffield Steel and Iron Company first began producing pig iron in Birmingham, Alabama. In 1920, Sloss-Sheffield Steel and Iron Company built two coke oven batteries to serve its own needs as well as those of other customers. As Birmingham's steel industry grew, so did the need for furnace coke, which prompted the construction of three more batteries at the Facility during the 1950s. Beginning in 1952, the company experienced a series of corporate transactions and restructurings that culminated in the name change to Walter Coke in May 2009. The Walter Coke facility was purchased by ERP Compliant Coke LLC in February 2016 out of bankruptcy proceedings.

The Former Pig Iron Foundry consisted of an iron blast furnace that produced pig iron from iron ore (1958-1981). The blast furnace was decommissioned in 1984. Other product lines produced elsewhere onsite, and now discontinued, included foundry catalyst used in sand cast foundry molds to make iron pipe and other foundry products from the Former Chemical Plant (1948-2002). In addition, a mineral wool plant, which manufactured mineral fiber used in the production of ceiling tile and insulating products, was built in late 1947 and was decommissioned in 2010. Currently, the Facility produces foundry coke and furnace coke in the Coke Manufacturing Plant, located to the southwest of the Former Pig Iron Foundry.

As part of the bankruptcy settlement, ERP Compliant Coke assumed the environmental responsibilities identified in a 2012 Order with Walter Coke. On August 11, 2016, the 2012 Order was modified and re-issued to note the ownership change. Like the 2012 Order, the 2016 Order requires finalization of corrective measure studies and implementation at forty-five (45) Solid Waste Management Units (SWMUs) and six (6) Areas of Concern (AOCs). The 2016 Order is designed to be a "roadmap" for accomplishing site-wide clean-up at all on-site SWMUs and AOCs, which have been grouped into five (5) SWMU Management Areas (SMAs) (Table 1, Figure 1).

Table 1. Identified SWMU Management Areas (SMAs)	
SMA 1 - Biological Treatment Facility	SMA 4 - Former Chemical Plant
SMA 2 - Land Disposal Area	SMA 5 - Former Pig Iron Foundry
SMA 3 - Coke Manufacturing Plant	

Each SMA is being studied separately to identify cleanup options and to identify protective cleanup standards. After reviewing the results from past investigations and studies, EPA has determined that some basic corrective measures are necessary at SMA 5 – the Former Pig Iron Foundry, which has four identified units of interest (Table 2). The other 4 SMAs will be addressed via separate Statements of Basis (SB).

Table 2. SWMUs and AOC at SMA 5 – Former Pig Iron Foundry	
SMWU 43 – Pig Machine Slurry Pits	SWMU 45 – Slag Drying Beds
SWMU 44 – Blast Furnace Ash Boiler Pit	AOC C – Former Pig Iron Foundry

3. SUMMARY OF ENVIRONMENTAL SETTING

The Facility is underlain by sedimentary rocks (e.g., limestone). Near SMA 5, industrial fill material is present at thicknesses ranging from 0.5 to 6 feet. The native soil over the bedrock consists of clays. In general, there are three zones of groundwater movement beneath the Facility, including SMA 5:

1) fill/soil (shallow flow zone - ~20 ft or less below ground surface),
2) the soil-bedrock interface or shallow bedrock (intermediate flow zone - ~20 to 50 ft below ground surface), and
3) the deep bedrock (bedrock flow zone – deeper than 50 ft below ground surface).

Due to the complex nature of area soils and bedrock, the rate and direction of groundwater flow varies from one zone to another, as well as within each zone. The intermediate flow zone is much more porous and permeable than the other two zones.

SMA 5 does not contain any aquatic or terrestrial habitats of interest (e.g., ponds, forests).

4. SUMMARY OF NATURE AND EXTENT OF CONTAMINATION (What is Contaminated and Where is the Contamination?)

A brief summary of the nature and extent of contamination is presented below for the environmental media of concern at SMA 5.

- Soil: Soil samples were collected from a total of 10 locations surrounding the units identified in Table 2. Based on the operating history of the Facility, the following categories of constituents were analyzed: volatile organic chemicals (VOCs, e.g., benzene), semi-volatile organic chemicals (SVOCs, e.g., benzo(a)pyrene), metals (e.g., arsenic). Constituents within each of these chemical categories were not found in any distinct or concentrated area(s); rather, these constituents and their amounts were found in noncontiguous and isolated locations throughout the subsurface of SMA 5.
- Groundwater: Groundwater sampling results from monitoring wells around SMA 5 do not indicate that groundwater contamination in excess of the EPA screening values for tap water or drinking water standards comes from the Former Pig Iron Foundry. Groundwater contamination at any of the SMAs surrounding the Former Pig Iron Foundry, that might be later found to affect the Former Pig Iron Foundry area, will be addressed under a separate remedy selection for the other SMA(s).

5. SUMMARY OF FACILITY RISKS (What Risks Exist?)

In general, before establishing the need for remediation and any associated cleanup levels, it must be determined whether the contaminant concentrations pose unacceptable risks to human health or the environment. This risk is evaluated for each potential exposure pathway based on consideration of current and reasonably expected future uses of the Facility and maximum beneficial use of ground water. Once the beneficial uses are determined, cleanup levels to protect those uses are established, which then helps with determining the scope of the remediation.

Investigations at SMA 5 have indicated that soil contains semi-volatile organics (e.g., benzo(a)pyrene) and metals (e.g., arsenic). These detected contaminants were used in the development of a Baseline Risk Assessment where the potential adverse health effects are analyzed. Because the Facility's current use and reasonably expected future use are as an operating industrial facility with restricted access, industrial/commercial workers and constructions workers were the two main groups whose risk was assessed.

Consideration of possible remedial action (i.e., cleanup actions) is required if the Facility's contamination fails any one of the four standard EPA remediation triggers. As shown in Table 3, none of the remediation triggers have been exceeded at SMA 5, which indicates that conditions at SMA 5 do not warrant remedial action to protect industrial or construction workers.

Table 3. Evaluation of Risk Remediation Triggers

EPA Remediation Trigger	Analysis		Is there an Identified Risk to Assess for Possible Cleanup?
	Receptor	**Baseline Risk Assessment Finding**	
The cumulative excess carcinogenic site risk to an individual exceeds 0.0001 (i.e., 1E-04).[1]	Industrial Worker	Cumulative excess carcinogenic site risk was calculated to be 9.7E-06.	No
	Construction Worker	Cumulative excess carcinogenic site risk was calculated to be 7.7E-06.	No
The non-carcinogenic hazard index is greater than 1 (i.e., 1E 00).[2]	Industrial Worker	Non-carcinogenic hazard index was calculated to be 2.2E-02.	No
	Construction Worker	Non-carcinogenic hazard index was calculated to be 2.3E-01.	No
Site contaminants cause adverse environmental impacts.	No areas of ecological significance exist at SMA 5.		No
Chemical-specific standards are exceeded.	Based on groundwater sampling conducted around SMA 5 during previous investigations, there has been no indication that drinking water standards (aka maximum contaminant levels (MCL)) have been exceeded at SMA 5.		No

6. SCOPE OF CORRECTIVE MEASURES (Where is Cleanup Needed?)

Based on the cumulative site risk established by the Risk Assessment (Section 5), preliminary cleanup standards are usually established. Comparison of these preliminary cleanup standards to the detected concentrations can identify areas where remediation may be needed. In this case, no preliminary cleanup standards were exceeded; hence, cleanup is not needed to address any unacceptable risk based

[1] A risk level of 1E-04 represents an increase of one additional person out of 10,000 developing cancer over the course of a lifetime of exposure. Risks calculated to exceed 1E-04 are deemed to have exceeded a protective level and remedial action is needed. When a facility's cumulative risk exceeds 1E-04, EPA's goal is to reduce the threat from carcinogenic contaminants such that, for any medium, the excess risk of cancer to an individual exposed over a lifetime generally falls within a range from one in ten thousand to one in one million (i.e., 1E-04 to 1E-06).

[2] As the hazard index exceeds 1.0, the potential for adverse health effects increases. Risks calculated to exceed 1.0 are deemed by EPA to have exceeded a protective level and remedial action is needed.

on the current and reasonably expected future land uses (i.e., industrial). In addition, no environmental receptors were identified in the investigation of SMA 5, and no contamination was found to be present at risk levels requiring remedial action under the current and reasonably expected future land uses (i.e., industrial).

7. FACILITY-SPECIFIC CORRECTIVE MEASURE (REMEDY) OBJECTIVES (What Site-Specific Objectives are needed for a Protective Cleanup?)

Facility-Specific Corrective Measure Objectives form the basis for evaluating potential remedial technologies. These objectives are crafted with consideration of the three general Corrective Measure Performance Standards used in remedy evaluation (see Section 8) and are based on an evaluation of the Facility investigation results and the Baseline Risk Assessment, including any preliminary cleanup standards developed in conjunction with the current and reasonably expected land and groundwater uses and their identified routes of exposure to humans and ecological receptors.

Although the risk levels identified in the Baseline Risk Assessment do not exceed the levels the EPA has identified as triggering the need for remediation under current land use (see Table 3), the risk assessment limited its risk analyses to those exposures expected in an industrial setting (i.e., industrial/commercial workers and construction workers). Because constituents will remain at levels exceeding residential risk screening levels, action is needed to ensure that land use does not inadvertently and/or unknowingly become residential in the future. Therefore, the following Facility-specific Corrective Measure Objective is to protect human health from contamination.

- Soil Corrective Measure Objective 1: Maintain, in perpetuity, land use as industrial, a setting that has been found to be protective for the detected soil concentrations.

Although no unacceptable industrial risk was found to exist at SMA 5, the Facility has also chosen to have its Land Use Control Plan also apply to SMA 5 for consistency in implementation and to be overly protective. Therefore, there is a second Facility-specific Corrective Measure Objective at SMA 5.

- Soil Corrective Measure Objective 2: Control exposure of industrial/commercial workers, construction workers, and trespassers to unacceptable levels of soil contaminates.

8. SUMMARY OF REMEDIAL ALTERNATIVES AND REMEDY EVALUATION (What Cleanup Approaches were Considered, and How were they Evaluated?)

Remedial alternatives are combinations of technologies designed to meet the Facility-specific Corrective Measure Objectives (Section 7). The technologies retained from the technology screening process at SMA 5 were assembled to create alternatives for remedy consideration. For SMA 5, other than the “no action” alternative (Alternative 1),[3] only one other remedial action was considered necessary to maintain an industrial setting - Institutional Controls - and this general response action is contained in the proposed remedy (Alternative 2) (Table 4).

[3] The "no action" alternative may be thought of in terms of continuing with the present conditions unchanged. In this context, “no action" is the alternative where no action is taken to address identified risk from contamination.

Table 4. List of Considered Alternatives	
Alternative No.	**Description**
1	No Action
2	Physical, Legal, and Administrative Barriers (Land Use Controls)

These alternatives were then evaluated (screened) against the following three EPA generated Corrective Measure Performance Objectives (aka remedy threshold criteria).

- Protect human health and the environment,
- Attain media cleanup standards, and
- Control sources of releases to reduce or eliminate further releases that might pose threats to human health or the environment.

Based on the screening process, the retained alternative is listed in the Table 5.

Table 5. List of Retained Alternatives	
Alternative No.	**Description**
2	Physical, Legal, and Administrative Barriers (Land Use Controls)

To further assess Alternative 2, the following balancing criteria were also considered:

- Long-term Reliability and Effectiveness;
- Reduction of Toxicity, Mobility, or Volume;
- Short-term Effectiveness;
- Implementability; and
- Cost.

9. PROPOSED REMEDY – Alternative 2 (Land Use Controls)

Based on the remedy alternative development and evaluation process summarized above, in EPA's estimation, the Facility-recommended Alternative 2 is the preferred corrective measure approach for SMA 5 in that it meets the Facility-specific Corrective Measure Objectives (Section 7), meets the EPA generated and standard Corrective Measure Performance Objectives (Section 8), and can be effective in both the short and long terms. Therefore, EPA proposes that the remedy for SMA 5 be Alternative 2 – Land Use Controls.

Because the key to Alternative 2 is controlling land use by creating a barrier, be that physical, legal or administrative barrier, to minimize the potential for human exposure to contamination by limiting the use of the land and groundwater, the Institutional Controls for SMA-5 are to be contained in both a Land Use Control Plan (LUCP) developed by the Facility (and overseen by EPA) and an Environmental Covenant secured under the Alabama Uniform Environmental Covenants Act, Ala. Code §§ 35-19-1 to 35-19-14 (2007 Cum. Supp.).

The Land Use Controls will add a layer of protection beyond that needed to address the level of risk from soil contaminants identified in the SMA 5. The Land Use Controls will also be consistent with land use controls necessary to deal with contamination requiring remediation at the other 4 SMAs, and protective of higher levels of contamination, if any, that may not have been detected by sampling within SMA 5.

10. CLEANUP STANDARDS – Alternative 2 (Land Use Controls)

The EPA evaluated the cleanup standards recommended by the Facility to determine its conformance with the EPA's boundary conditions for establishing cleanup standards. The Facility recommended cleanup standards were found to meet these criteria and are listed below as non-numeric cleanup standards for the proposed remedy (Table 6).

Table 6. Narrative (Non-Numeric) Cleanup Standards for Alternative 2 – Land Use Controls

Cleanup Standard	Comment on Cleanup Standard	Implementation Technique / Mechanism	Components	Point of Compliance
Institutional Controls	The risk levels identified in the risk assessment did not exceed levels the EPA has identified as triggering the need for remediation to occur under current land use (i.e., industrial; see Table 3). Therefore, no numerical cleanup standards are needed. However, the risk assessment limited its risk analyses to people expected at an industrial setting (i.e., industrial/commercial workers and construction workers). Because environmental contamination will remain at levels exceeding residential risk screening levels, and Environmental Covenant will ensure that land use does not inadvertently and/or unknowingly become residential in the future.	Environmental Covenant	An Environmental Covenant shall be secured under the Alabama Uniform Environmental Covenants Act, Ala. Code §§ 35-19-1 to 35-19-14 (2007 Cum. Supp.). The Environmental Covenant shall be entered with the intent of providing clear and enforceable rules for the perpetual care of the Facility's real estate in light of the selected remedy. The Environmental Covenant shall list components of the LUCP that best reside long term with the land as opposed to specific operating procedures at the Facility (e.g., deed restriction to limit site to industrial land use only; deed restriction to limit use of groundwater, etc.).	Throughout the SMA
Institutional Controls	Although the risk levels identified in the risk assessment did not exceed levels the EPA has identified as triggering the need for remediation to occur under current land use, the Facility-wide LUCP is being applied to SMA 5. This extra coverage will add consistency to LUCP implementation at the Facility as a whole and will add a layer of protection beyond that needed to address the level of risk from soil	Corporate Land Use Plan (LUCP)	The LUCP, at a minimum, shall: 1. Acquire a deed restriction on land and groundwater use through securing an Environmental Covenant. 2. Explain the land use controls to be used to protect workers, contractors, public from exposure to contaminated environmental media (e.g., permits to perform	Throughout the SMA

Table 6. Narrative (Non-Numeric) Cleanup Standards for Alternative 2 – Land Use Controls				
Cleanup Standard	**Comment on Cleanup Standard**	**Implementation Technique / Mechanism**	**Components**	**Point of Compliance**
	contaminants identified in the SMA 5.		any digging activities and the proper personal protective equipment (PPE), fences/signs as necessary to prevent unauthorized access, etc.). 3. Include all necessary information or structure necessary to implement the LUCP (e.g., points-of-contact; monitoring program; notification procedures for LUCP violations, pending sale/lease of property, etc.; and reporting).	

11. PUBLIC COMMENT PERIOD – OCTOBER 1 TO NOVEMBER 14, 2017

Before issuing a final decision, EPA may modify the proposed corrective measure described herein or select another corrective measure alternative based on new information or on public comments. Specifically, Section XI (Remedy Selection) of the 2016 Order states the following:

> *"EPA will provide the public with an opportunity to review and comment on its selection of the proposed final corrective measure(s), including the detailed written description and justification for its selection in the Statement of Basis. Following the public comment period, EPA will select the final corrective measure(s), and will notify the public and Respondent of the decision and rationale in a written Final Decision and Response to Comments (RTC). The RTC will include EPA's detailed reasons for selecting the corrective measure(s) and for rejecting the other proposed corrective measure(s)."*

During the public comment period, the public is encouraged to provide the EPA contact listed in Table 7 with any comments arising from their review of the proposed remedy. The comment period will begin on October 1, 2017, which is the date of publication of the public notice in major local newspapers of general circulation, and will end on November 14, 2017.[4]

To further aid the public in understanding the Facility and the proposed remedy, the Administrative Record, which contains all of the documents, correspondence, data and other information that the EPA considered in preparing the Statement of Basis, is available for public review at the locations listed in Table 7.

[4] There is no set timeframe for the comment period for orders. In establishing the comment period for the 2016 Order, the EPA is choosing to follow 40 CFR §124.10, which requires a 45-day comment period for draft RCRA permits.

Table 7. Viewing Locations for the Administrative Record		
Local Repository	**EPA**	**Web**
North Birmingham Regional Branch Library 2501 31st Ave, North Birmingham, Alabama 35207	US EPA – Region 4 Sam Nunn Atlanta Federal Center 61 Forsyth Street, SW Atlanta, GA 30303 Contact: Wesley Hardegree RCRA Cleanup and Brownfields Branch (404) 562-9629 Hardegree.wes@epa.gov	go.usa.gov/xNHKx https://www.epa.gov/foia/outreach-information-erp-compliant-coke-llc

12. PUBLIC MEETING/HEARING

To help the community understand the proposed remedy, EPA is scheduling a public meeting, to be followed by a public hearing where comments will be received, at the following location.

Bethel Baptist Church
3200 28th Ave N.
Birmingham, Alabama 35207
November 2, 2017
4:00 PM – 5:30 PM: Open House (Informal Meet and Greet Session)
6:00 PM – 8:00 PM: Public Meeting/Hearing

13. POST PUBLIC COMMENT PERIOD

Pursuant to the 2016 Order, after EPA's consideration of the public comments that are received, they will be summarized and responses will be provided in a Response to Comments (RTC) document. The RTC document will be drafted after the conclusion of the public comment period and will be incorporated into the Administrative Record. The final decision shall become effective immediately upon signature by the Division Director for EPA – Region 4's Resource Conservation and Restoration Division.

FIGURE 1. Facility Location, SWMU Management Area (SMA), including SMA 5 - Former Pig Iron Foundry