

**Beazer East, Inc. and Hatchet Creek Leasing, Inc.**  
**Former Koppers Wood Treating Facility**  
**Montgomery, Alabama**  
**EPA I.D. Number ALD004009403**

**FACT SHEET**

A draft modification to the Alabama Hazardous Waste Management and Minimization Act (AHWMMA) permit has been prepared for the Beazer East, Inc. and Hatchet Creek Leasing, Inc. (Former Koppers Wood Treating) facility. This hazardous waste facility is located in Montgomery, Alabama. This fact sheet has been prepared to briefly advise the public of the principal permitting, legal and policy issues of the draft permit.

**I. PERMIT PROCESS**

The purpose of the permitting process is to allow the State and the public to evaluate Beazer East, Inc. and Hatchet Creek Leasing, Inc.'s ability to comply with the hazardous waste management requirements of the AHWMMA, as amended. Beazer East, Inc. and Hatchet Creek Leasing, Inc. must comply with hazardous waste management conditions set forth in the permit during the effective period of the permit, which is ten (10) years from the last permit renewal.

**II. PROCEDURES FOR REACHING A FINAL DECISION**

The Alabama Department of Environmental Management (ADEM or Department) is proposing to issue Beazer East, Inc. and Hatchet Creek Leasing, Inc. a permit modification for post-closure care for the Surface Impoundment which has been closed as a single landfill unit with wastes and/or contaminated soils remaining in-place.

ADEM Admin. Code r. 335-14-8-.08(6)(b)1. requires that the public be given at least a 45-day comment period for each draft permit. The comment period will begin on March 2, 2026, which is the date of publication of the public notice in major local newspaper(s) of general circulation, and will end on April 16, 2026. The public notice will also be broadcast over local radio station(s).

Any person interested in commenting on the application or draft permit must do so within the 45-day comment period discussed above.

All persons wishing to comment on any of the permit conditions or the permit application should submit their comments in writing to the Alabama Department of Environmental Management, Permits and Services Division, 1400 Coliseum Blvd. (zip 36110-2059), P.O. Box 301463 (zip 36130-1463) Montgomery, Alabama, ATTENTION: Mr. Russell A. Kelly.

ADEM will consider all written comments received during the comment period while making a permit decision for this facility. When the Department makes its final permit decision, notice will be given to the applicant and each person who has submitted written comments or requested notice of the final permit decision.

### III. FACILITY DESCRIPTION

Beazer East, Inc. and Hatchet Creek Leasing, Inc. have requested for a permit modification under the requirements of AHWMA for post-closure care including corrective action for groundwater contamination. The site is a former wood treating facility, which managed hazardous waste in the Surface Impoundment. The Surface Impoundment has an approved cap and cover installed over the remaining waste. These actions are intended to mitigate the potential for future groundwater contamination. The permit contains provisions for post-closure care for the Surface Impoundment and corrective action for groundwater contamination.

### IV. SUMMARY OF PROPOSED MODIFICATIONS

- i.) Repair M-02B and abandon and replace monitoring wells M-02C and M-14.
- ii.) Approved surface cover will be restored with an orange-colored geotextile demarcation fabric and a minimum of 6-inch aggregate cover near M-20.

### V. CHANGES TO THE EXISTING PERMIT

The specific changes to the permit are explained below.

Location in Permit	Location in Application	Remove Page(s)	Insert Page(s)	Reason
Cover Page w/ Logo	N/A	Cover Page w/ Logo	Cover Page w/ Logo	<ul style="list-style-type: none"> <li>Updated Major Mod 3 Date</li> </ul>
Signature Page	N/A	Signature Page	Signature Page	<ul style="list-style-type: none"> <li>Added modification dates</li> <li>Updated signature and signature date</li> </ul>
Table of Contents	N/A	Table of Contents	Table of Contents	<ul style="list-style-type: none"> <li>Added permit application modification dates</li> </ul>
Section III.B.1.c.	N/A	Page 2 of 17 M1	Page 2 of 17 M3	<ul style="list-style-type: none"> <li>Updated monitoring well M-02C with replacement well M-02CR</li> </ul>
Section III.E.1.b.	N/A	Page 5 of 17 M1	Page 5 of 17 M3	<ul style="list-style-type: none"> <li>Updated monitoring well M-14 with replacement well M-14R</li> </ul>
Table III.1	N/A	Page 8 of 17 M1	Page 8 of 17 M3	<ul style="list-style-type: none"> <li>Updated monitoring well M-02C with replacement well M-02CR</li> </ul>
Table III.1	N/A	Page 9 of 17	Page 9 of 17 M3	<ul style="list-style-type: none"> <li>Updated monitoring well M-14 with replacement well M-14R</li> </ul>
Table III.1	N/A	Page 13 of 17 M1	Page 13 of 17 M3	<ul style="list-style-type: none"> <li>Added footnote documenting the repair of well M-02B and replacement of wells M-14 and M-02C.</li> </ul>
N/A	Section 4	N/A	N/A	<ul style="list-style-type: none"> <li>Post Closure Requirements revised to include the surface cover improvement activities.</li> </ul>
N/A	Section 4.1	N/A	N/A	<ul style="list-style-type: none"> <li>Closure Plans and Certifications revised with the updated cover system details.</li> </ul>
N/A	Appendix G	N/A	N/A	<ul style="list-style-type: none"> <li>Appendix G revised to reflect changes in surface cover</li> </ul>

## **VI. TECHNICAL CONTACT**

Dr. Ravinder Thaper  
Engineering Services Section  
Industrial Hazardous Waste Branch, Land Division  
Alabama Department of Environmental Management  
1400 Coliseum Blvd (zip 36110-2059)  
P.O. Box 301463 (zip 36130-1463)  
Montgomery, Alabama  
334-270-5679

# *HAZARDOUS WASTE FACILITY PERMIT*

**PERMITTEE:** Hatch Creek Leasing, Inc.  
Beazer East, Inc.

**ADDRESS:** 1415 Louisville Street  
Montgomery, AL 36104-1609

**PERMIT NUMBER:** ALD 004 009 403

**UNITS PERMITTED:** Post Closure Care (1 Unit)  
Surface Impoundment

**ISSUANCE DATE:** September 25, 2018  
May 11, 2021 - Modification 1 – Minor  
February 29, 2024 - Modification 2 – Major  
XXXX XX, 2026 – Modification 3 - Major

**EFFECTIVE DATE:** September 25, 2018

**EXPIRATION DATE:** September 24, 2028

*This Permit is issued pursuant with the Code of Alabama 1975, §§ 22-30-1-et. seq., as amended, and regulations adopted thereunder and the Hazardous Wastes Management and Minimization Act and in accordance with the plans and specifications and applications filed with the Department subject to the conditions appended hereto, all of which are considered a part of this Permit. This Permit shall be subject to all applicable laws of the State of Alabama, rules and regulations and orders of the Department of Environmental Management and shall be effective from the date of issuance.*

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
HAZARDOUS WASTE PERMIT

<u>Permittee:</u>	<u>Permit Number:</u>	<u>ALD 004 009 403</u>
<u>OWNER:</u>	<u>Identification Number:</u>	<u>ALD 004 009 403</u>
<u>Hatchett Creek Leasing, Inc.</u>	<u>Modification 1-May 11, 2021</u>	
<u>PO Box 10</u>	<u>Modification 2 – Feb 29, 2024</u>	
<u>Lineville, Alabama 36266</u>	<u>Modification 3 -xxxx xx, 2026</u>	
<u>Clay County</u>		

OPERATOR:  
Beazer East, Inc.  
1415 Louisville Street  
Montgomery, Alabama 36104  
Montgomery County

Pursuant to the Alabama Hazardous Wastes Management and Minimization Act (AHWMMA), Code of Alabama 1975, Section 22-30-1, et. seq., as amended, and attendant regulations promulgated thereunder by the Alabama Department of Environmental Management (ADEM or the Department), a permit is issued to Beazer East, Inc for the facility located in Montgomery, Alabama, at latitude N 32° 24' 01" and longitude W 86° 19' 26"

The Permittee must comply with all terms and conditions of this permit, which consists of the conditions set forth herein (including those in any attachments), and the regulations applicable to the Permittee's facility contained in Chapters 335-14-1, 335-14-2, 335-14-5, 335-14-8, and 335-14-9 of the ADEM Administrative Code of Regulations (hereinafter referred to as the "ADEM Admin. Code r."). Applicable regulations are those which are in effect on the date of issuance of this permit.

This permit is based on the assumption that the information submitted in the permit application attached to the Permittee's letter dated June 9, 2016, as modified by subsequent amendments dated August 7, 2017, August 1, 2018, July 24, 2023, and May 5, 2025 (hereby incorporated by reference and hereafter referred to as the Application) is accurate and that the facility will be constructed and operated as specified in the Application. Any inaccuracies found in this information could lead to the termination or modification of this permit in accordance with ADEM Admin. Code r. 335-14-8-.04(2), 335-14-8-.04(3), and 335-14-8-.04(4) and could lead to potential enforcement action. The Permittee must inform ADEM of any deviation from or changes in the information provided in the Application that would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit is effective as of September 25, 2018, as modified on May 11, 2021, February 29, 2024 and XXX XX, 2026 and shall remain in effect until September 24, 2028, unless revoked and reissued, or terminated under ADEM Admin. Code r. 335-14-8-.04(2) and 335-14-8-.04(4) or continued in accordance with ADEM Admin. Code r. 335-14-8-.05(2).

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Alabama Department of Environmental Management

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Date Signed

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**Documents Incorporated by Reference:**

Part A and Part B Permit Application submitted on June 9, 2016, as modified by subsequent amendments dated August 7, 2017, August 1, 2018, September 25, 2018, and July 24, 2023 and May 5, 2025.

Monitoring Well M-09B Replacement Plan dated September 30, 2020. Monitoring Well M-09B Replacement Report dated December 4, 2020.

Surface Cover Modification Work Plan and Permit Modification dated May 5, 2025.

Monitoring Wells M-02C and M-14 Abandonment and Replacement Plan dated December 22, 2025.

**PART I****STANDARD AND GENERAL FACILITY CONDITIONS****I.A. EFFECT OF PERMIT**

Issuance of this permit does not authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any action brought under the AHWMMMA, or any other law governing the protection of public health or the environment, for any imminent and substantial endangerment to human health, welfare, or the environment.

**I.B. SEVERABILITY**

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

**I.C. DUTIES AND REQUIREMENTS**

## 1. Duty to Comply

The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of the AHWMMMA, and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

## 2. Duty to Reapply

- a. If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit.
- b. The Permittee must submit an application for a new permit for both post-closure and Solid Waste Management Unit (SWMU) corrective measures at least 180 calendar days before the expiration of this permit. The Permittee must reapply in order to fulfill the 30-year post-closure care period required by ADEM Admin. Code r. 335-14-5-.07(8)(a)1. The Department may shorten or extend the post-closure care period applicable to the hazardous waste facility in accordance with ADEM Admin. Code r. 335-14-5-.07(8)(a)2. and 335-14-8-.03(1)(b).

## 3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate

In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.

5. Proper Operation and Maintenance

The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment, monitoring, and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance (O&M) includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause as specified in ADEM Admin. Code r. 335-14-8-.04(2), 335-14-8-.04(3), and 335-14-8-.04(4). The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay any permit condition.

7. Property Rights

Issuance of this permit does not convey any property rights of any sort, nor any exclusive privilege.

8. Duty to Provide Information

The Permittee shall furnish to the Department, within a reasonable time as determined by the Department, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

9. Inspection and Entry

The Permittee shall allow duly designated officers and employees of the Department or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
- d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the AHWMMMA, any substances or parameters at any location. The Permittee shall have the opportunity to split samples during sampling.

10. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from ADEM Admin. Code r. 335-14-2-Appendix I or the methods specified in Appendix L of the permit application. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846 (latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), Standard Methods for the Examination of Water and Wastewater (latest edition), the methods specified in Appendix L of the permit application, or an alternative method approved by ADEM. [ADEM Admin. Code r. 335-14-8-.03(1)(j)1.]
- b. The Permittee shall maintain at the facility records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, the certification required by ADEM Admin. Code r. 335-14-5-.05(4)(b)9., records of all data used to prepare documents required by this permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the certification, application, sample, measurement, report or record, or until corrective action is completed, whichever date is later. This period may be extended by the Department at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility. [ADEM Admin. Code r. 335-14-5-.05(5)(b) and 335-14-8-.03(1)(j)2.]
- c. The Permittee shall maintain, at the facility, records of all groundwater monitoring wells, piezometers, and associated groundwater surface elevations throughout the post-closure care period. These records shall include the surveyed location, surveyed elevation, surveyed elevation reference point, total depth, screened interval, construction details, well log, and all other pertinent information for each well and piezometer.
- d. Records for monitoring information shall include:
  - i. The date(s), exact place, and times of sampling or measurements;
  - ii. The names of individual(s) who performed the sampling or measurements;
  - iii. The date(s) analyses were performed;

- iv. The names of individual(s) who performed the analyses;
  - v. The analytical techniques or methods used; and,
  - vi. The results of such analyses.
- e. The following documents and information shall be maintained throughout the post-closure care period at the Facility.
- i. Complete copy of this permit and the permit application.
  - ii. Operating record as required by ADEM Admin. Code r. 335-14-5-.05(4) and this permit.
  - iii. Copies of all plans, reports, inspection schedules, inspection logs as required by ADEM Admin. Code r. 335-14-5 and this permit.

#### 11. Signatory Requirements

All applications, reports or information required by this permit and submitted to the Department shall be signed and certified in accordance with ADEM Admin. Code r. 335-14-8-.02(2) and 335-14-8-.03(1)(k).

#### 12. Reporting Requirements

##### a. Planned Changes

The Permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility and any solid waste management units identified under Part IV of this permit.

##### b. Anticipated Noncompliance

The Permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

##### c. Transfer of Permits

This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to ADEM Admin. Code r. 335-14-8-.04(1) or 335-14-8-.04(3)(a)1.(vii). Before transferring ownership or operation of the facility during its post-closure period, the Permittee shall notify the new owner or operator, in writing, of the requirements of ADEM Admin. Code r. 335-14-5 and 335-14-8 and this permit.

##### d. Monitoring Reports

Monitoring results shall be reported at the intervals specified elsewhere in this permit.

e. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted to the Department no later than 14 calendar days following each schedule date.

f. Twenty-Four Hour Reporting

- i. The Permittee shall report to the Department any noncompliance with this permit that may endanger human health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include, but is not limited to, the following:
- (I) Information concerning the release of any hazardous waste which may endanger public drinking water supplies; and,
  - (II) Information concerning the release or discharge of any hazardous waste, or hazardous waste constituents, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.
- ii. The description of the occurrence and its cause shall include:
- (I) Name, address, and telephone number of the owner or operator;
  - (II) Name, address, telephone number, and EPA Identification Number of the facility;
  - (III) Date, time, and type of incident;
  - (IV) Name and quantity of material(s) involved;
  - (V) The extent of injuries, if any;
  - (VI) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and,
  - (VII) Estimated quantity and disposition of recovered material that resulted from the accident.
- iii. A written submission shall also be provided within 5 calendar days of the time that the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance has been corrected, and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

## g. Other Noncompliance

The Permittee shall report to the Department all instances of noncompliance not otherwise required by Permit Conditions I.C.12.d., I.C.12.e., or I.C.12.f. at the time any other reports required by this permit are submitted. The reports shall contain the information required by Permit Condition I.C.12.f.

## h. Other Information

Where the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information. In addition, upon request, the Permittee shall furnish to the Department any information related to compliance with this permit.

## 13. Certification of Construction

The Permittee may not commence treatment, storage or disposal of hazardous waste or contaminated media at any new or modified portion of the facility until the Permittee has submitted to the Department, by certified mail or hand-delivery, a letter (together with the certification by the Construction Quality Assurance (CQA) officer required by ADEM Admin. Code r. 335-14-5-.02(10)(d) and any other certifications required by this permit or ADEM Admin. Code r. 335-14) signed by the Permittee and an Alabama-registered professional engineer, stating that the facility has been constructed or modified in compliance with this permit where appropriate; and,

- a. The Department has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of this permit; or
- b. The Department has either waived the inspection or has not notified the Permittee, within 15 calendar days of the notification from the Permittee, of its intent to inspect. [ADEM Admin. Code r. 335-14-8-.03(1)(1)2.]

## 14. The Permittee shall assure that all measures necessary to maintain and/or achieve compliance with all applicable requirements of ADEM Admin. Code r. 335-14 are taken during the active life of the facility and throughout the post-closure care period, corrective action period, and the term of this permit.

## 15. In the event that circumstances beyond the Permittee's control arise to prevent achievement of any deadline set forth by this permit, the Permittee may immediately, upon the occurrence thereof, request an extension by sending a written request to the Department explaining the need for the extension. The Department may, after consideration of the circumstances, grant the extension. Requests for extensions may require a permit modification pursuant to ADEM Admin. Code r. 335-14-8-.04(2) or (3).

**I.D. DEFINITIONS**

For the purposes of this permit, terms used herein shall have the same meaning as those in ADEM Admin. Code r. 335-14-1, 335-14-2, 335-14-5, and 335-14-8, unless this permit specifically provides otherwise. Where terms are not defined in the regulations or this permit, a standard

dictionary reference or the generally accepted scientific or industrial meaning of the term shall define the meaning associated with such terms.

"Area of concern" (AOC), for the purposes of this permit, includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Department to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and ADEM Admin. Code r. 335-14-8-.03(3)(b)2. in order to ensure adequate protection of human health and the environment.

"Contamination," for the purposes of this permit, refers to the presence of any hazardous constituent in a concentration that exceeds the naturally occurring concentration of that constituent in the immediate vicinity of the facility (*i.e.*, areas not affected by the facility).

"Extent of contamination," for the purposes of this permit, is defined as the horizontal and vertical areas in which the concentrations of hazardous constituents in the environmental media being investigated are above detection limits or background concentrations indicative of the region, whichever is appropriate as determined by the Department.

"Facility," in addition to the definition provided in ADEM Admin. Code r. 335-14-1-.02(1) and for the purpose of this permit, is the Parcel 1 legal boundary as indicated on the figure provided with the Permit Modification Request.

"Hazardous constituents," for the purposes of this permit, are those substances listed in ADEM Admin. Code r. 335-14-2-Appendix VIII and/or ADEM Admin. Code r. 335-14-5-Appendix IX and include hazardous constituents released from solid waste, hazardous waste, and hazardous waste constituents that are reaction by-products.

"Land Use Controls," for the purposes of this permit, is as defined by ADEM Admin. Code r. 335-5-1-.03.

"Method detection limit" (MDL), for the purposes of this permit, means the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

"Mixed waste," for the purposes of this permit, means a solid waste that is a mixture of hazardous waste (as defined in ADEM Admin. Code r. 335-14-2-.01(3)) and radioactive waste (as defined in 10 CFR 61.2). The radioactive component of mixed waste is subject to regulation by the Atomic Energy Act (AEA)/Nuclear Regulatory Commission (NRC). The non-radioactive chemically hazardous component of mixed waste is subject to regulation by the AHWMA and ADEM Admin. Code r. 335-14.

"Operating day," for the purposes of this permit, means any day on which hazardous waste is treated, stored, or disposed of in a unit. For example, each day that a hazardous waste storage unit contains hazardous waste is an operating day; as is each day that a disposal unit contains or receives hazardous waste, or each day that hazardous waste is treated in a treatment unit.

"Release," for the purposes of this permit, includes any spilling, leaking, pouring, emitting, emptying, discharging, injecting, escaping, leaching, pumping, or disposing into the environment of any hazardous waste or hazardous constituent.

"Solid waste management unit" (SWMU), for the purposes of this permit, includes any unit that has been used for the treatment, storage or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. RCRA-regulated hazardous waste management units are also solid waste management units. SWMUs include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (*e.g.*, product or process spills).

"Storm event," for the purposes of this permit, is defined as a 1-year, 24-hour storm event or rainfall that measures 1-inch or greater in 1 hour or less. Rainfall measurements may be taken at the site, or the closest official weather monitoring station may be used.

#### **I.E. EXPIRATION AND CONTINUATION OF PERMIT**

This permit and all conditions herein will remain in effect beyond this permit's expiration date if the Permittee has submitted a new application as required by Permit Condition I.C.2. and, through no fault of the Permittee, the Department has not issued a new permit.

#### **I.F. WASTE MINIMIZATION**

##### **1. Certification Requirements**

Pursuant to ADEM Admin. Code r. 335-14-5-.05(4)(b)9., the Permittee must certify, no less often than annually, that:

- a. The Permittee has a program in place to reduce the volume and toxicity of hazardous waste to the degree determined by the Permittee to be economically practicable; and,
- b. The proposed method of treatment, storage or disposal is the most practicable method available to the Permittee and that it minimizes the present and future threat to human health and the environment.

##### **2. Recording Requirements**

The Permittee shall maintain copies of this certification in the facility operating record as required by ADEM Admin. Code r. 335-14-5-.05(4).

#### **I.G. COST ESTIMATES**

1. The Permittee shall maintain detailed written cost estimates, in current dollars, at the location specified in Permit Condition I.C.10.e. and on file with ADEM in accordance with ADEM Admin. Code r. 335-14-5-.08(3), (5), and (10).

2. All cost estimates must be updated annually as required by ADEM Admin. Code r. 335-14-5-.08(3)(b), 335-14-5-.08(5)(b), and 335-14-5-.08(10)(b).
3. The cost estimate shall be maintained and submitted in the form designated by the Department.
4. The Permittee must update the cost estimate no later than 30 calendar days after the Department has approved a modification to the Closure Plan, Post-Closure Plan, or Corrective Action Plan, or any other plan required or referenced by this permit, if the change in the plan results in an increase in the amount of the cost estimate.

#### **I.H. FINANCIAL ASSURANCE**

1. The Permittee shall demonstrate continuous compliance with ADEM Admin. Code r. 335-14-5-.08 by providing documentation of financial assurance in at least the amount that equals or exceeds the cost estimate. Changes in financial assurance mechanisms must be approved by the Department.
2. The Permittee shall submit itemized statements for all capital expenditures and a complete, revised post-closure cost estimate to the Department when requesting approval for a reduction in the financial assurance mechanism.

#### **I.I. PERMIT MODIFICATIONS**

The Permittee shall request a permit modification whenever changes in operating plans or facility design affect any plan (*e.g.*, closure, groundwater monitoring, post-closure, or corrective action) required or referenced by this permit. The Permittee must submit a written request for a permit modification, pursuant to the requirements of ADEM Admin. Code r. 335-14-8-.04(2), at least 60 calendar days prior to the proposed change in the facility design or operation.

#### **I.J. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DEPARTMENT**

One hard copy and one electronic (an optical character recognition or text-searchable) copy of all reports, notifications, or other submissions that are required by this permit should be sent via certified mail or given to:

Chief, Land Division  
Alabama Department of Environmental Management  
P.O. Box 301463 (Zip 36130-1463)  
1400 Coliseum Boulevard (Zip 36110-2059)  
Montgomery, Alabama

and

Director, RCRA Division  
USEPA Region 4  
Atlanta Federal Center  
61 Forsyth Street SW  
Atlanta, Georgia 30303-3104

**PART II**  
**POST-CLOSURE CARE**

**II.A. POST-CLOSURE CARE PERIOD**

The post-closure care period shall extend for a period of thirty (30) years after the date of issuance of a post-closure permit unless shortened or extended pursuant to ADEM Admin. Code r. 335-14-5-.07(8). The post-closure care period shall automatically extend through the end of the compliance period specified in Part III of this permit.

**II.B. POST-CLOSURE PROCEDURES AND USE OF PROPERTY**

1. Post-Closure Activities

The Permittee shall conduct post-closure care activities, in accordance with Section 4 and Section 5 of the permit application and as required by ADEM Admin. Code r. 335-14-5-.07 and 335-14-5-.14(11)(d), for each hazardous waste management unit listed in Table II.1. Post-closure care shall commence upon the effective date of this permit and shall continue throughout the post-closure care period.

2. Security

The Permittee shall comply with the security provisions of ADEM Admin. Code r. 335-14-5-.02(5) and as described in Section 4.4 of the permit application.

3. Disturbance of Closed Unit(s)

The Permittee shall not allow the disturbance of the integrity of the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems during the post-closure care period for any unit identified in Table II.1.

4. The Permittee shall:

- a. Maintain the integrity and effectiveness of the landfills' final cover, including making repairs to the cap, as necessary, to correct the effects of settling, subsidence, erosion, or other events;
- b. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of ADEM Admin. Code r. 335-14-5-.06 and Part III of this permit;
- c. Prevent run-on and run-off from eroding or otherwise damaging the final cover; and,
- d. Protect and maintain surveyed benchmarks used in complying with the surveying and recordkeeping requirements of ADEM Admin. Code r. 335-14-5-.14(10).

**II.C. INSPECTIONS**

1. The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule as described in Section 4.5 of the permit application, the post-closure care plan as described in Section 4 of the permit application, and as required by ADEM Admin. Code r. 335-14-5-.07.
2. Monitoring and Inspection

The Permittee shall inspect the closed hazardous waste management unit listed in Table II.1 at least quarterly and after storms to detect any evidence of deterioration or improper operation as described in Section 4.5.1 of the permit application and as required under ADEM Admin. Code r. 335-14-5-.07 and 335-14-5-.14. The inspections shall specifically include evaluation of the following items:

- a. Integrity of the final cover (erosion, ponding, subsidence, cracking, *etc.*);
- b. Growth and stabilization of vegetative cover;
- c. Run-on and run-off control system;
- d. Groundwater monitoring wells; and,
- e. Survey benchmarks

**TABLE II.1**  
**POST-CLOSURE CARE UNITS**

UNIT NAME	UNIT DESCRIPTION	CLOSED-IN-PLACE CAPACITY (QUANTITY)	DESCRIPTION OF UNIT*	LOCATION OF UNIT*
SWMU 34	Former Surface Impoundment	0 cubic yards	Section 2.3.1	Figure 2-2

\* Location in permit application containing description (text) and location (figure) of unit.

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### PART III

#### GROUNDWATER MONITORING AND CORRECTIVE ACTION

##### III.A. REQUIRED PROGRAM(S)

1. Groundwater monitoring shall consist of the General Groundwater Monitoring Program of Permit Condition III.B. and the Corrective Action Monitoring Program contained in Permit Condition III.E.
2. The Permittee shall commence groundwater monitoring as required by this permit not later than 120 calendar days after the effective date of this permit.

##### III.B. GENERAL GROUNDWATER MONITORING PROGRAM

###### 1. Well Location, Installation and Construction

The Permittee shall install and/or maintain a groundwater monitoring system to comply with the requirements of ADEM Admin. Code r. 335-14-5-.06(8), 335-14-5-.06(9), 335-14-5-.06(10), and 335-14-5-.06(11) as applicable and as specified below:

- a. The Permittee shall maintain all groundwater monitoring wells at the facility as identified in Table III.1. of this permit, at the locations specified on Figure 2-3 of the permit application, and any other groundwater monitoring wells specified by Permit Condition III.B.1.d.
  - i. All groundwater monitoring wells shall be maintained in accordance with the plans and specifications presented in Section 4.5 of the permit application and/or CMI Plan, and in accordance with ADEM Admin. Code r. 335-14-5-.06.
  - ii. A groundwater monitoring well shall not be removed from any monitoring program specified in this permit without an approved permit modification pursuant to Permit Condition III.I.
  - iii. If a groundwater monitoring well is damaged, the Permittee shall immediately notify the Department in writing, which includes a description of the well repair activities to be conducted. The well repair procedures must be approved by the Department prior to implementation. Within 30 calendar days after the well is repaired, the Permittee shall submit a written notification to the Department that the well repair activities were conducted in accordance with the approved procedures.
  - iv. If a groundwater monitoring well is deleted from the monitoring program(s) required by this permit in accordance with Permit Conditions III.B.1.a.ii. and I.I., it shall be abandoned within 90 calendar days after deletion using procedures to be approved by the Department. Within 30 calendar days after the well is abandoned, the Permittee shall submit a

written notification to the Department that the well abandonment activities were conducted in accordance with the approved procedures.

- b. Groundwater monitoring wells M-20A, M-21A, M-21B, M-21C, and M-22A shall define the point of compliance for the Former Surface Impoundment.
- c. The Permittee shall maintain groundwater monitoring wells M-02A, M-02B, and M-02CR as the background monitoring well(s) for the entire facility as specified in Table 5-4 of the permit application.
- d. The Permittee shall install and maintain additional groundwater monitoring wells as necessary to assess changes in the rate and extent of any plume of contamination or as otherwise deemed necessary to maintain compliance with ADEM Admin. Code r. 335-14-5-.06(6), 335-14-5-.06(8), 335-14-5-.06(9), 335-14-5-.06(10), and 335-14-5-.06(11), as applicable. A plan in the form of a permit modification request specifying the design, location and installation of any additional monitoring wells should be submitted to the Department at least 90 calendar days prior to installation which, at a minimum, shall include:
  - i. Well construction techniques including casing depths and proposed total depth of well(s);
  - ii. Well development method(s);
  - iii. A complete description of well construction materials;
  - iv. A schedule of implementation for construction; and,
  - v. Provisions for determining the lithologic characteristics, hydraulic conductivity, grain size distribution, and porosity for the applicable aquifer unit(s) at the location of the new well(s).

## 2. General Groundwater Monitoring Requirements

- a. The Permittee shall determine the groundwater surface elevation from all monitoring wells listed in Table III.1. of this permit at least annually, alternating between wet and dry seasons, and each time a sampling event is conducted. The results of these determinations should be submitted in accordance with Permit Condition III.B.6. Elevation data should be recorded and reported as mean sea level (MSL) and referenced to an appropriate national geodetic vertical datum (NGVD) benchmark.
- b. The Permittee shall determine the groundwater flow rate and direction in the underlying aquifer(s) at least annually and submit the results in accordance with Permit Condition III.B.6.
- c. The Permittee shall determine background concentrations of hazardous constituents and other chemical parameters required to be monitored by this permit in accordance with Section 5.4 of the permit application and ADEM Admin. Code r. 335-14-5-.06(8)(g).

3. Groundwater Protection Standard

- a. The groundwater protection standard, as required under ADEM Admin. Code r. 335-14-5-.06(3), shall consist of Table III.3 of this permit which lists the hazardous constituents and their respective concentration limits.
- b. The groundwater protection standard applies to all hazardous waste or hazardous constituent releases as deemed appropriate by the Department to protect human health and the environment.

4. Compliance Period

- a. The compliance period, during which the groundwater protection standard specified in Permit Condition III.B.3. applies, shall begin at the time of the first sampling event of the compliance monitoring program (Permit Condition III.D.), or the corrective action monitoring program (Permit Condition III.E.), whichever is earlier.
- b. The compliance period shall continue (after beginning pursuant to Permit Condition III.B.4.a.) until the groundwater protection standard as defined by Permit Condition III.B.3.a. has not been exceeded for a period of three consecutive years.
- c. If the Permittee is engaged in a corrective action program pursuant to Permit Condition III.E., then the compliance period shall continue as required by ADEM Admin. Code r. 335-14-5-.06(7)(c) until the groundwater protection standard has not been exceeded for a period of three consecutive years after corrective action has been terminated and this permit has been modified, in accordance with Permit Condition I.I., to implement a compliance monitoring program pursuant to Permit Condition III.D. or a detection monitoring program pursuant to Permit Condition III.C., as required by ADEM Admin. Code r. 335-14-5-.06(11)(f).

5. Sampling and Analysis Procedures

The Permittee shall use the following techniques and procedures when obtaining and analyzing samples from the groundwater monitoring wells described in Permit Condition III.B.1. to provide a reliable indication of the quality of the groundwater as required under ADEM Admin. Code r. 335-14-5-.06(8)(d), (e), and (g):

- a. Samples shall be collected, preserved, and shipped (when shipped off-site for analysis) in accordance with the procedures specified in Appendix L of the permit application.
- b. Samples shall be analyzed according to the procedures specified in Appendix L of the permit application, the most recent edition of SW-846 or other appropriate methods approved by the Department. Analytical method detection limits shall be less than or equal to the concentration limits specified in Table III.2 or III.3, unless otherwise approved in writing by the Department.
- c. Samples shall be tracked and controlled using the chain-of-custody procedures specified in Appendix L of the permit application.

- d. Statistical analyses used to evaluate the groundwater monitoring data shall be as described in Section 5.4.7 of the permit application and ADEM Admin. Code r. 335-14-5-.06(8)(h).
  - e. All samples collected in accordance with this permit shall not be filtered prior to analysis.
6. Recordkeeping and Reporting
- a. The Permittee shall keep and maintain all monitoring, testing, and analytical data obtained in accordance with Permit Conditions III.B., III.C., III.D., and III.E. as required by Permit Condition I.C.10.
  - b. The Permittee shall submit to the Department a written report to include all analytical sampling data, established background values, statistical evaluations, groundwater elevations, associated potentiometric maps, and the annual groundwater flow rate and direction determinations. The analytical method and the method detection limit (MDL) for each constituent must be integrated into all reports of analysis. The report shall be submitted within 60 calendar days after the first sampling event and on an annual basis thereafter. Copies of this report shall be kept at the facility in accordance with Permit Conditions I.C.10.c. and I.C.10.e.
  - c. The Permittee shall submit progress reports to the Department describing implementation of groundwater monitoring and/or corrective action activities at the site as required by Part III of this permit on a quarterly basis. The first progress report shall be submitted to the Department within 90 calendar days after the effective date of this permit. The progress reports shall continue until such time as the required monitoring and/or corrective action systems and activities required by this permit are fully constructed and operational. In the event that additional monitoring and/or corrective action requirements are imposed through a permit modification, in accordance with Permit Condition I.I., the quarterly reporting requirement shall resume, commencing upon the effective date of the permit modification and continuing until the required monitoring and/or corrective action systems and activities are again fully constructed and operational.

### **III.C. DETECTION MONITORING PROGRAM (RESERVED)**

### **III.D. COMPLIANCE MONITORING PROGRAM (RESERVED)**

### **III.E. CORRECTIVE ACTION MONITORING PROGRAM**

The requirements of this Condition are applicable to the Former Surface Impoundment (SWMU 34). Except as specified otherwise in this permit, the Corrective Action Monitoring Program shall be implemented in accordance with Section 5.6 of the permit application and ADEM Admin. Code r. 335-14-5-.06(11).

1. Monitoring Systems

In addition to the point of compliance and background monitoring well systems identified in Permit Conditions III.B.1.b. and III.B.1.c., the Permittee shall:

- a. Maintain groundwater monitoring wells M-09C, M-10A, M-10B, M-10C, M-12B, M-15C, M-17, M-19A, M-19B, M-23C, M-24C, M-25C, M-28C, M-30A, M-30B, M-30C, M-36A, M-36C, CAW-1, CAW-2, CAW-3, and CAW-4 as Category 3 wells as specified in Table III.1. of this permit and as shown on Figure 2-3 of the permit application.
- b. Maintain groundwater monitoring wells M-14R, M-09A, M-09BR, M-12A, M-15A, M-15B, M-23B, M-24B, M-25B, M-40A, M-40B, M-40C, M-41A, M-41B, M-41 C, M-42A, and M-42C as Category 2, effectiveness and boundary wells, as specified in Table III. I. of this permit and as shown on Figure 2-3 of the permit application.
- c. (RESERVED)
- d. Maintain wells M-20A, M-21 A, M-21B, M-21C, and M-22A as point of compliance wells as specified in Table III.1. of this permit and as shown on Figure 2-3 of the permit application.
- c. Maintain wells M-08, M-18, M-19A, M-26C, M-27A, M-30A, M-19B, M-27B, M-30B, M-27C, M-30C, M-39A, M-39B, M-39C as Category 4 wells as specified in Table III.1. of this permit and as shown on Figure 2-3 of the permit application.

2. Corrective Action Program

- a. The Permittee shall conduct a Corrective Action Program, as described in Section 5.6 of the permit application, to remove or treat in place all hazardous constituents that exceed their respective groundwater protection standards as described in Table III.3. of this permit at the point of compliance, between the point of compliance and the down-gradient facility property boundary, and beyond the facility boundary in accordance with ADEM Admin. Code r. 335-14-5-.06(11)(e)2.
- b. Pursuant to ADEM Admin. Code r. 335-14-5-.06(11)(c) and 335-14-5-.06(11)(e)3., the Permittee shall implement the corrective action program as described in Section 5.6 of the permit application within 120 calendar days after the effective date of this permit.
- c. (RESERVED)

3. Monitoring Requirements

In addition to the general groundwater monitoring requirements specified in Permit Condition III.B.2., the Permittee shall:

- a. Sample all background and point of compliance monitoring wells shown in Table III.1. of this permit and analyze for the volatile and semi-volatile constituents listed in Table III.2. of this permit on a semi-annual basis beginning within 120 calendar days of the effective date of this permit and continuing through the end of the compliance period.
- b. Sample all background, point of compliance, and Category 2, effectiveness and boundary wells, shown in Table III.1. of this permit and analyze for the volatile, semi-volatile, and metal constituents listed in Table III.2. of this permit on an annual basis, alternating between wet and dry seasons, beginning within 120 calendar days of the effective date of this permit and continuing through the end of the compliance period.
- c. Sample all background, point of compliance, Category 2, effectiveness and boundary wells, and Category 3, additional effectiveness and boundary wells, shown in Table III.1. of this permit and analyze for all of the constituents listed in Table III.2. of this permit once every five years beginning within 120 calendar days of the effective date of this permit and continuing through the end of the compliance period.
- d. Sample all background, point of compliance, Category 2, effectiveness and boundary wells, and Category 3, additional effectiveness and boundary wells, shown in Table III.1. of this permit and analyze for temperature (degrees F or C), specific conductance (Mhos/cm), and pH (standard units) each time the well is sampled. The data obtained should be submitted as raw data in the reports required by Permit Condition III.B.6.
- e. When evaluating the monitoring results to determine the effectiveness of the corrective measures, in accordance with Permit Condition III.E.4., the Permittee shall:
  - i. Determine if the corrective action system effectively addresses the entire plume of contamination;
  - ii. Determine if the concentration of the hazardous constituents are decreasing (pH increasing or decreasing toward neutrality, as applicable) in the Category 2 wells specified in Permit Condition III.E.1.b;
  - iii. Determine if hazardous waste or hazardous constituents are being released into the environment; and,
  - iv. Determine if hazardous constituents have been detected in the Category 3 wells specified in Permit Condition III.E.1.a.

#### 4. Reporting and Response Requirements

In addition to the recordkeeping and reporting requirements specified in Permit Condition III.B.6.:

- a. The Permittee shall report the effectiveness of the corrective action program annually, as required under ADEM Admin. Code r. 335-14-5-.06(11)(g). These

reports shall be submitted to the Department within 60 calendar days of each annual anniversary of this permit after corrective action is initiated and continue until corrective action is completed. The Permittee must provide data from groundwater monitoring along with an analysis of that data and any conclusions regarding the effectiveness of the program in accordance with Permit Condition III.E.3.e. If the analysis of the data warrants any change to the corrective action program, the Permittee must include these revisions in the annual report, which will be followed-up within 90 calendar days with an application for permit modification in accordance with Permit Condition I.I.

- b. If corrective action is terminated under Permit Condition III.B.4.c., the Permittee must sample all background, point of compliance, Category 2, and Category 3 sampling locations for the compounds listed in ADEM Admin. Code r. 335-14-5-Appendix IX. Based upon the sampling results, the Permittee may petition the Department, in accordance with Permit Condition I.I., for a permit modification to implement either a detection monitoring program or a compliance monitoring program.

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**TABLE III.1**  
**MONITORING WELL DESIGNATIONS**

WELL NUMBER	WELL TYPE	WELL LATITUDE	WELL LONGITUDE	UNITS MONITORED	WELL DEPTH <sup>(1)</sup>		GROUND ELEVATION (ft-NGVD) <sup>(2)</sup>	TOP-OF-RISER ELEVATION (ft-NGVD) <sup>(2)</sup>	SCREENED INTERVAL (ft-NGVD)	MONITORED ZONE
					(ft-BGS)	(ft-BTC)				
M-02A	CAT 1 / BKG	32.400	86.319	All	38.00	40.27	164.70	166.97	136.70 - 126.70	Upper-Upper
M-02B*	CAT 1 / BKG	32.400	86.319	All	51.00	53.10	164.74	166.84	123.74 - 113.74	Intermediate-Upper
M-02CR*	CAT 1 / BKG	-	-	All	-	-	-	-	-	Lower-Upper
M-08	CAT 4	32.399	86.322	All	42.50	44.53	163.35	165.38	130.85 - 120.85	Upper-Upper
M-09A	CAT 2	32.400	86.323	All	43.00	44.89	164.65	166.54	131.65 - 121.65	Upper-Upper
M-09BR	CAT 2	32.400	86.323	All	58.00	60.16	164.82	166.88	116.82 - 106.82	Intermediate-Upper
M-09C	CAT 3	32.400	86.323	All	90.00	93.17	164.65	167.82	84.65 - 74.65	Lower-Upper
M-10A	CAT 3	32.400	86.324	All	43.40	45.50	164.59	166.69	131.19 - 121.19	Upper-Upper
M-10B	CAT 3	32.400	86.324	All	51.70	55.04	164.37	167.71	122.97 - 112.97	Intermediate-Upper
M-10C	CAT 3	32.400	86.323	All	79.60	82.66	164.19	167.25	94.99 - 84.99	Lower-Upper
M-12A	CAT 2	32.401	86.325	All	43.00	45.64	156.93	159.57	123.93 - 113.93	Upper-Upper

TABLE III.1 (cont.)

## MONITORING WELL DESIGNATIONS

WELL NUMBER	WELL TYPE	WELL LATITUDE	WELL LONGITUDE	UNITS MONITORED	WELL DEPTH <sup>(1)</sup>		GROUND ELEVATION (ft-NGVD) <sup>(2)</sup>	TOP-OF-RISER ELEVATION (ft-NGVD) <sup>(2)</sup>	SCREENED INTERVAL (ft-NGVD)	MONITORED ZONE
					(ft-BGS)	(ft-BTC)				
M-12B	CAT 3	32.401	86.325	All	58.00	60.32	156.79	159.11	108.79 - 98.79	Intermediate-Upper
M-14R*	CAT 2	-	-	All	-	-	-	-	-	Upper
M-15A	CAT 2	32.399	86.324	All	39.00	41.49	158.15	160.64	129.15 - 119.15	Upper
M-15B	CAT 2	32.399	86.324	All	54.00	55.57	157.69	159.26	113.69 - 103.69	Intermediate-Upper
M-15C	CAT 3	32.399	86.324	All	88.00	90.45	159.38	161.83	81.38 - 71.38	Lower-Upper
M-17	CAT 3	32.399	86.323	All	42.90	44.86	165.04	167.00	132.14 - 122.14	Upper-Upper
M-18	CAT 4	32.398	86.323	All	43.80	46.46	161.25	163.91	127.45 - 117.45	Upper-Upper
M-19A <sup>(3)</sup>	CAT 3 / CAT 4	32.398	86.322	All	40.30	42.05	160.10	161.85	129.80 - 119.80	Upper-Upper
M-19B <sup>(3)</sup>	CAT 3 / CAT 4	32.398	86.322	All	56.60	58.74	159.83	161.97	113.23 - 103.23	Intermediate-Upper
M-20A <sup>(4)</sup>	CAT 1 / POC	32.400	86.324	All	42.30	44.47	160.33	162.50	128.33 - 118.33	Upper
M-21A	CAT 1 / POC	32.400	86.324	All	41.50	43.69	159.39	161.58	127.89 - 117.89	Upper

TABLE III.1 (cont.)

## MONITORING WELL DESIGNATIONS

WELL NUMBER	WELL TYPE	WELL LATITUDE	WELL LONGITUDE	UNITS MONITORED	WELL DEPTH <sup>(1)</sup>		GROUND ELEVATION (ft-NGVD) <sup>(2)</sup>	TOP-OF-RISER ELEVATION (ft-NGVD) <sup>(2)</sup>	SCREENED INTERVAL (ft-NGVD)	MONITORED ZONE
					(ft-BGS)	(ft-BTC)				
M-21B	CAT 1 / POC	32.400	86.324	All	55.00	57.54	159.40	161.94	114.40 - 104.40	Intermediate-Upper
M-21C	CAT 1 / POC	32.400	86.324	All	78.00	80.38	159.26	161.64	91.26 - 81.26	Lower-Upper
M-22A	CAT 1 / POC	32.400	86.324	All	42.00	44.38	158.43	160.81	126.43 - 116.43	Upper
M-23B	CAT 2	32.400	86.325	All	53.00	56.38	158.64	162.02	115.64 - 105.64	Intermediate
M-23C	CAT 3	32.400	86.325	All	76.00	79.45	158.55	162.00	92.55 - 82.55	Lower
M-24B	CAT 2	32.400	86.324	All	54.20	56.54	158.64	160.98	114.44 - 104.44	Intermediate
M-24C(5)	CAT 3	32.400	86.324	All	79.00	81.89	158.81	161.70	89.93 - 79.93	Lower-Upper
M-25B	CAT 2	32.399	86.324	All	70.00	72.66	162.93	165.59	102.93 - 92.93	Intermediate
M-25C	CAT 3	32.399	86.324	All	87.00	89.96	163.19	166.15	86.19 - 76.19	Lower
M-26C(6)	CAT 4	32.399	86.323	All	95.00	97.79	164.52	167.31	79.52 - 69.52	Lower-Upper
M-27A	CAT 4	32.400	86.323	All	40.00	42.72	163.74	166.46	133.74 - 123.74	Upper-Upper

TABLE III.1 (cont.)

## MONITORING WELL DESIGNATIONS

WELL NUMBER	WELL TYPE	WELL LATITUDE	WELL LONGITUDE	UNITS MONITORED	WELL DEPTH <sup>(1)</sup>		GROUND ELEVATION (ft-NGVD) <sup>(2)</sup>	TOP-OF-RISER ELEVATION (ft-NGVD) <sup>(2)</sup>	SCREENED INTERVAL (ft-NGVD)	MONITORED ZONE
					(ft-BGS)	(ft-BTC)				
M-27B	CAT 4	32.400	86.323	All	55.00	56.32	163.74	165.06	118.74 - 108.74	Intermediate-Upper
M-27C	CAT 4	32.400	86.323	All	83.00	86.04	164.12	167.16	91.12 - 81.12	Lower-Upper
M-28C(7)	CAT 3	32.401	86.325	All	80.00	83.17	157.48	160.65	82.48 - 72.48	Lower-Upper
M-30A(3)	CAT 3 / CAT 4	32.400	86.323	All	42.00	44.48	164.69	167.17	132.69 - 122.69	Upper-Upper
M-30B(3)	CAT 3 / CAT 4	32.399	86.323	All	55.00	57.70	164.67	167.37	119.67 - 109.67	Intermediate-Upper
M-30C(3)	CAT 3 / CAT 4	32.400	86.323	All	85.00	87.69	164.63	167.32	89.63 - 79.63	Lower-Upper
M-36A(8)	CAT 3	32.399	86.324	All	30.00	30.97	137.65	138.62	117.65 - 107.65	Upper-Upper
M-36C	CAT 3	32.399	86.324	All	61.50	64.17	138.32	140.99	87.32 - 77.32	Lower-Upper
M-39A	CAT 4	32.397	86.322	All	40.00	42.79	159.85	162.64	135.35 - 120.35	Upper-Upper
M-39B	CAT 4	32.397	86.322	All	50.00	52.84	159.93	162.77	120.43 - 110.43	Intermediate-Upper
M-39C	CAT 4	32.397	86.322	All	90.00	92.90	159.76	162.66	80.26 - 70.26	Lower-Upper

TABLE III.1 (cont.)

## MONITORING WELL DESIGNATIONS

WELL NUMBER	WELL TYPE	WELL LATITUDE	WELL LONGITUDE	UNITS MONITORED	WELL DEPTH <sup>(1)</sup>		GROUND ELEVATION (ft-NGVD) <sup>(2)</sup>	TOP-OF-RISER ELEVATION (ft-NGVD) <sup>(2)</sup>	SCREENED INTERVAL (ft-NGVD)	MONITORED ZONE
					(ft-BGS)	(ft-BTC)				
M-40A	CAT 2	32.399	86.324	All	43.50	45.99	161.62	164.11	133.62 - 118.62	Upper-Upper
M-40B	CAT 2	32.399	86.324	All	55.50	58.30	161.44	164.24	116.44 - 106.44	Intermediate-Upper
M-40C	CAT 2	32.399	86.324	All	81.00	83.66	161.48	164.14	91.48 - 81.48	Lower-Upper
M-41A	CAT 2	32.401	86.326	All	14.00	17.85	134.71	138.56	130.71 - 120.71	Upper
M-41B	CAT 2	32.401	86.326	All	33.75	37.66	134.64	138.55	110.89 - 100.89	Lower
M-41C	CAT 2	32.401	86.326	All	53.50	57.57	134.54	138.61	91.04 - 81.04	Intermediate
M-42A(4)	CAT 2	32.400	86.325	All	38.50	42.51	134.55	138.56	106.05 - 96.05	Upper
M-42C(4)	CAT 2	32.400	86.325	All	56.00	59.93	134.66	138.59	88.66 - 78.66	Lower
CAW-01	CAT 3	32.400	86.325	All	173.00	175.98	158.60	161.58	-4.40 - -14.40	Confined Aquifer
CAW-02	CAT 3	32.399	86.324	All	170.00	172.90	157.87	160.77	-2.13 - -12.13	Confined Aquifer

TABLE III.1 (cont.)

## MONITORING WELL DESIGNATIONS

WELL NUMBER	WELL TYPE	WELL LATITUDE	WELL LONGITUDE	UNITS MONITORED	WELL DEPTH <sup>(1)</sup>		GROUND ELEVATION (ft-NGVD) <sup>(2)</sup>	TOP-OF-RISER ELEVATION (ft-NGVD) <sup>(2)</sup>	SCREENED INTERVAL (ft-NGVD)	MONITORED ZONE
					(ft-BGS)	(ft-BTC)				
CAW-03	CAT 3	32.400	86.323	All	170.00	173.04	164.64	167.68	4.64 - -5.36	Confined Aquifer
CAW-04(9)	CAT 3	32.401	86.325	All	170.00	173.77	156.86	160.63	-3.97 - -13.97	Confined Aquifer

FT - Feet

BGS - Below ground surface

BTC - Below top of casing

NAD - North American Datum

NGVD - National Geodetic Vertical Datum

BKG - Background Wells

POC - Point of Compliance Wells

CAT 1 - Category 1, Background and Point of Compliance Wells as described in Table 5-4 and shown on Figure 2-3 of the Renewal Application.

CAT 2 - Category 2, Effectiveness and Boundary Wells as described in Table 5-4 and shown on Figure 2-3 of the Renewal Application.

CAT 3 - Category 3, Additional Effectiveness and Boundary Wells as described in Table 5-4 and shown on Figure 2-3 of the Renewal Application.

CAT 4 - Category 4, Program Wells as described in Table 5-4 and shown on Figure 2-3 of the Renewal Application.

1. Total well depth and depth of screen determined from original boring/well construction logs unless noted otherwise.

2. Location/elevation data obtained via 11/2007 survey by Larry F. Speaks & Associates 11-30-2007 and 11-04-2020 (M-09BR). Northing and Easting - State Plane Coordinates, Alabama East, NAD83, NGVD 1929.

3. Well Clusters M-19 and M-30 will be used for both monitoring and hydraulic purposes.

4. Measuring point reference elevation on steel lid.

5. Missing well log. Screen interval is reported as 69-79 ft-bgs in Table 2 of the Phase I RFI Report. It has been assumed that the total well depth is 79 ft-bgs based on this information.

6. Location/elevation data obtained via 03/2015 survey by Goodwyn, Mills, Cawood 3-4-2015. Northing and Easting - State Plane Coordinates, Alabama East, NAD83, NGVD 1929.

7. Missing well log. Total depth and screen depths from From Figure 1.4 cross section or Table 2 of Phase I RFI Report (Dames & Moore, December 1997).

8. Ground surface/top of casing elevation per Table I-1 of the 01/09/2013 Permit Modification Request and Table III.1 of the 12/11/2013 Final Permit Modification Determination.

9. Missing well log. CAW-04 is assumed to have been constructed identically to CAW-02 and CAW-03 (i.e., with a screen from 160-170 ft bgs) which is corroborated by measured depth.

10. Well information for M-09BR is obtained from the Monitoring Well M-09B Replacement Report dated 12-04-2020.

\* Well M-02B to be repaired and wells M-02C and M-14 to be replaced in accordance with the Monitoring Well Abandonment, Replacement, and Repair Plan, dated December 22, 2025.

TABLE III.2

GROUNDWATER QUALITY MONITORING CONSTITUENTS<sup>1</sup>

HAZARDOUS CONSTITUENT	TYPE
Benzene	Volatile
Toluene	Volatile
Acenaphthene	Semi-volatile
Anthracene	Semi-volatile
Benzo(a)anthracene	Semi-volatile
Benzo(b)fluoranthene	Semi-volatile
Benzo(k)fluoranthene	Semi-volatile
Benzo(g,h,i)perylene	Semi-volatile
Benzo(a)pyrene	Semi-volatile
Carbazole	Semi-volatile
2-Chlorophenol	Semi-volatile
Chrysene	Semi-volatile
Dibenzo(a,h)anthracene	Semi-volatile
Dibenzofuran	Semi-volatile
2,4-Dimethylphenol	Semi-volatile
Fluoranthene	Semi-volatile
Fluorene	Semi-volatile
Indeno(1,2,3-cd)pyrene	Semi-volatile
2-Methylnaphthalene	Semi-volatile
4-Methylphenol	Semi-volatile
Naphthalene	Semi-volatile
Pentachlorophenol	Semi-volatile
Phenanthrene	Semi-volatile
Pyrene	Semi-volatile
2,4,6-Trichlorophenol	Semi-volatile
Arsenic	Metal
Chromium	Metal
Iron	Metal
Lead	Metal
Manganese	Metal
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	Dioxin
Heptachlorinated dibenzo-p-dioxin (total)	Dioxin
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	Dioxin
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	Dioxin
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	Dioxin
Hexachlorinated dibenzo-p-dioxin	Dioxin
Octachlorinated dibenzo-p-dioxin	Dioxin
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	Dioxin
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	Furan
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	Furan
Heptachlorinated dibenzofuran (total)	Furan

**TABLE III.2 (cont.)****GROUNDWATER QUALITY MONITORING CONSTITUENTS<sup>1</sup>**

<b>HAZARDOUS CONSTITUENT</b>	<b>TYPE</b>
1,2,3,4,7,8-hexachlorinated dibenzofuran	Furan
Hexachlorinated dibenzofuran	Furan
Octochlorinated dibenzofuran	Furan
Pentachlorinated dibenzofuran	Furan
2,3,7,8-tetrachlorinated dibenzofuran	Furan

<sup>1</sup> The constituents listed herein are the subset of the Groundwater Protection Standard listed in Table III.3 for which monitoring is required.

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**TABLE III.3**  
**GROUNDWATER PROTECTION STANDARD**

<b>HAZARDOUS CONSTITUENT</b>	<b>UNIT<sup>1</sup></b>	<b>CONCENTRATION LIMIT (mg/L)</b>	<b>SOURCE</b>
Benzene	All	0.0050	2
Toluene	All	1.0	2
Acenaphthene	All	0.053	3
Anthracene	All	0.18	3
Benzo(a)anthracene	All	0.000030	3
Benzo(b)fluoranthene	All	0.00025	3
Benzo(k)fluoranthene	All	0.0025	3
Benzo(g,h,i)perylene	All	0.047	4
Benzo(a)pyrene	All	0.00020	2
Carbazole	All	0.0034	4
2-Chlorophenol	All	0.0091	3
Chrysene	All	0.025	3
Dibenzo(a,h)anthracene	All	0.000025	3
Dibenzofuran	All	0.00079	3
2,4-Dimethylphenol	All	0.036	3
Fluoranthene	All	0.080	3
Fluorene	All	0.029	3
Indeno(1,2,3-cd)pyrene	All	0.00025	3
2-Methylnaphthalene	All	0.0036	3
4-Methylphenol [p-Cresol]	All	0.19	3
Naphthalene	All	0.00017	3
Pentachlorophenol	All	0.0010	2
Phenanthrene	All	0.047	4
Pyrene	All	0.012	3
2,4,6-Trichlorophenol	All	0.0012	3
Arsenic	All	0.010	2
Chromium	All	0.10	2
Iron	All	1.4	3
Lead	All	0.015	2
Manganese	All	0.043	3
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	All	0.000003	4
Heptachlorinated dibenzo-p-dioxin (total)	All	0.000003	4
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	All	0.0000003	4
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	All	0.0000003	4
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	All	0.0000003	4
Hexachlorinated dibenzo-p-dioxin	All	0.0000003	4
Octachlorinated dibenzo-p-dioxin	All	0.00003	4
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	All	0.00000003	2
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	All	0.000003	4
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	All	0.000003	4
Heptachlorinated dibenzofuran (total)	All	0.000003	4

TABLE III.3 (cont.)

## GROUNDWATER PROTECTION STANDARD

HAZARDOUS CONSTITUENT	UNIT <sup>1</sup>	CONCENTRATION LIMIT (mg/L)	SOURCE
1,2,3,4,7,8-hexachlorinated dibenzofuran	All	0.0000003	4
Hexachlorinated dibenzofuran	All	0.0000003	4
Octochlorinated dibenzofuran	All	0.00003	4
Pentachlorinated dibenzofuran	All	0.0003	4
2,3,7,8-tetrachlorinated dibenzofuran	All	0.0000003	4

1 Identifies the unit(s) at which the given constituent must be monitored.

2 Maximum Contaminant Level

3 EPA Regional Screening Level

4 ADEM established Alternate Concentration Limit

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**PART IV****SOLID WASTE MANAGEMENT UNIT  
IDENTIFICATION AND EVALUATION****IV.A. APPLICABILITY**

The Conditions of this Part apply to:

1. The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Table IV.1, which require investigation and/or remediation;
2. The SWMUs and AOCs identified in Table IV.2, which require no further action under this permit at this time;
3. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means; and,
4. Contamination beyond the facility boundary, if applicable. The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Department that, despite the Permittee's best efforts, as determined by the Department, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for completion of such off-site corrective action will be required.

**IV.B. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED  
SWMUs AND AOCs**

1. The Permittee shall notify the Department in writing, within 15 calendar days of discovery, of any additional AOC(s) as described under Permit Condition IV.A.3. The notification shall include, at a minimum, the location of the AOC(s) and all available information pertaining to the nature of the release (*e.g.*, media affected, hazardous constituents released, magnitude of release, *etc.*). If the Department determines that further investigation of an AOC is required, the permit will be modified in accordance with ADEM Admin. Code r. 335-14-8-.04(2).
2. The Permittee shall notify the Department in writing, within 15 calendar days of discovery, of any additional SWMUs as described under Permit Condition IV.A.3.
3. The Permittee shall prepare and submit to the Department, within 90 calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Permit Condition IV.B.2. At a minimum, the SAR shall provide the following information:

- a. Location of unit(s) on a topographic map of appropriate scale such as required under ADEM Admin. Code r. 335-14-8-.02(5)(b)19.
  - b. Designation of type and function of unit(s).
  - c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).
  - d. Dates that the unit(s) was operated.
  - e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the wastes.
  - f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).
4. Based upon the results of the SAR, the Department shall determine the need for further investigations at the SWMUs covered in the SAR. If the Department determines that such investigations are needed, the Permittee shall initiate an investigation as outlined in Permit Condition IV.D.1 immediately upon receiving notification of the Department's determination.

#### **IV.C. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUs or AOCs**

1. The Permittee shall notify the Department in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, within 15 calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Permit Condition IV.A.2 or SWMUs or AOCs identified in Permit Condition IV.A.3 for which further investigation was not required.
2. If the Department determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall initiate an investigation as outlined in Permit Condition IV.D.1 immediately upon receiving notification of the Department's determination.

#### **IV.D. RCRA FACILITY INVESTIGATION (RFI)**

1. The Permittee must perform an RFI for any SWMU and AOC identified by the Department in accordance with Permit Conditions IV.A.1, IV.B.4, and IV.C.2.
2. The RFI must completely identify the concentration of hazardous constituents released from each SWMU and AOC and fully delineate the area where such hazardous constituents have come to be located.
3. The RFI must fully characterize the nature and extent of contamination released from each SWMU or AOC under investigation.

4. The RFI must be performed in a manner consistent with the most recent edition of the Alabama Environmental Investigation and Remediation Guidance (AEIRG).
5. Except as provided by Permit Condition IV.D.6., the RFI must be completed within 180 calendar days from the effective date of this permit or, for SWMUs or AOCs identified pursuant to Permit Condition IV.B. and C., within 180 calendar days from the receipt of notification from the Department that an RFI is required. If, prior to the effective date of this permit, the Department has approved a work plan that includes a schedule for completing the RFI, the RFI shall be completed in accordance with the approved schedule.
6. RFI Schedule of Compliance
  - a. For RFIs expected to require greater than 180 calendar days to complete, the Permittee may submit a schedule of compliance subject to Departmental approval and/or modification.
  - b. Submittal of an RFI Schedule of Compliance does not delay or otherwise postpone the Permittee's obligation to initiate the RFI.
  - c. The Schedule of Compliance must include:
    - i. A detailed narrative discussion, which explains why the RFI cannot be completed within 180 days; and,
    - ii. A detailed and chronological listing of milestones with estimated durations that provides sufficient information to track the progress of the investigation.
  - d. The RFI Schedule of Compliance shall be reviewed by the Department in accordance with Permit Condition IV.G.
  - e. The Permittee shall complete the RFI in accordance with the approved RFI Schedule of Compliance.
7. RFI Progress Reports
  - a. For an RFI being conducted in accordance with the approved RFI Schedule of Compliance, the Permittee must submit progress reports on a monthly basis.
  - b. The RFI Progress Reports must include:
    - i. A description of the RFI activities completed during the reporting period;
    - ii. Summaries of any problems or potential problems encountered during the reporting period;
    - iii. Actions taken to rectify problems;
    - iv. Changes in relevant personnel;

- v. Projected work for the next reporting period;
  - vi. Any proposed revisions to the RFI Schedule of Compliance. Modifications of the RFI Schedule of Compliance are subject to approval by the Department; and,
  - vii. A summary of any data collected during the reporting period, including:
    - A. The location of each sampling point identified on a site map;
    - B. The concentration of each hazardous constituent detected at each sampling point; and,
    - C. Submittal of RFI Progress Reports, work plans, or other documents during the RFI does not alter the approved RFI Schedule of Compliance.
8. RFI Reports
- a. The Permittee shall prepare and submit to the Department an RFI Report within 60 calendar days from the completion of investigation activities in accordance with the approved RFI Schedule of Compliance, if applicable.
  - b. The RFI Report must provide a detailed description of all required elements of the investigation as described in the most recent edition of the AEIRG.
  - c. The RFI Report shall be reviewed by the Department in accordance with Permit Condition IV.G.

#### **IV.E. SELECTION OF CORRECTIVE MEASURES AND PERMIT MODIFICATION**

1. The Permittee shall develop and submit to the Department a Corrective Measures Implementation (CMI) Plan for any areas of the Permittee's site where hazardous constituents have come to be located at concentrations exceeding those appropriate for the protection of human health and the environment. The CMI Plan must include all applicable elements of the proposed remedy pursuant to the most recent edition of the AEIRG.
2. The CMI Plan shall be submitted to the Department within 120 calendar days following the Permittee's submittal of the RFI Report indicating that hazardous constituents have come to be located at any area of the Permittee's facility, or beyond the facility, at concentrations exceeding those appropriate for the protection of human health and the environment, or within 120 calendar days following notification from the Department that a CMI Plan is required, whichever occurs earlier.
3. The CMI Plan shall be submitted along with a request for permit modification pursuant to ADEM Admin. Code r. 335-14-8-.04(2), and shall include any applicable fees pursuant to ADEM Admin. Code r. 335-1-6. This modification will serve to incorporate the proposed final remedy, including all procedures necessary to implement and monitor the remedy, into this permit.

4. Within 120 calendar days after this Permit has been modified in accordance with Permit Condition IV.E.3., the Permittee shall demonstrate financial assurance for completing the approved remedy.

#### **IV.F. INTERIM MEASURES (IM)**

1. IM Work Plan(s)
  - a. Upon notification by the Department, the Permittee shall prepare and submit an Interim Measures (IM) Work Plan for any SWMU or AOC that the Department determines is necessary. IM are necessary in order to minimize or prevent further migration of contaminants and limit human and environmental exposure to contaminants while long-term corrective measures are evaluated and, if necessary, implemented. The IM Work Plan shall be submitted within 30 calendar days of such notification and shall include the elements listed in Permit Condition IV.F.1.b. Such IM may be conducted concurrently with investigations required under the terms of this permit. The Permittee may initiate IM by submitting an IM Work Plan for approval and reporting in accordance with the requirements under Permit Condition IV.F.
  - b. The IM Work Plan shall ensure that the IM are designed to mitigate any current or potential threat(s) to human health or the environment and is consistent with and integrated into any long-term solution at the facility. The IM Work Plan shall include: the IM objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.
  - c. The IM Work Plan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the IM Work Plan schedule in the letter approving the IM Work Plan.
  - d. The IM Report shall be reviewed by the Department in accordance with Permit Condition IV.G.
2. IM Implementation
  - a. The Permittee shall implement the IM in accordance with the approved IM Work Plan.
  - b. The Permittee shall give notice to the Department as soon as possible of any planned changes, reductions or additions to the IM Work Plan.
  - c. Final approval of corrective action required under ADEM Admin. Code r. 335-14-5-.06(12), which is achieved through IM, shall be in accordance with ADEM Admin. Code r. 335-14-8-.04(2) and Permit Condition IV.E.
3. IM Reports
  - a. If the time required for completion of IM is greater than one year, the Permittee shall provide the Department with Progress Reports at intervals specified in the

approved work plan. The Progress Reports shall, at a minimum, contain the following information:

- i. A description of the portion of the IM completed;
  - ii. Summaries of any deviations from the IM Work Plan during the reporting period;
  - iii. Summaries of any problems or potential problems encountered during the reporting period;
  - iv. Projected work for the next reporting period; and,
  - v. Copies of laboratory or monitoring data.
- b. The Permittee shall prepare and submit the IM Report to the Department within 90 calendar days of completion of IM conducted under Permit Condition IV.F. The IM Report shall, at a minimum, contain the following information:
- i. A description of IM implemented;
  - ii. Summaries of results;
  - iii. Summaries of all problems encountered;
  - iv. Summaries of accomplishments and/or effectiveness of IM; and,
  - v. Copies of all relevant laboratory or monitoring data, *etc.*, in accordance with Permit Condition I.C.10.

#### **IV.G. SUBMITTALS**

1. All work plans, reports, schedules, and other documents ("submittals") required by this permit shall be subject to approval by the Department to assure that such submittals and schedules are consistent with the requirements of this Permit and with applicable regulations and guidance. The Permittee shall revise all submittals and schedules as directed by the Department.
2. The Department will review all submittals in accordance with the conditions of this permit. The Department will notify the Permittee in writing of any submittal that is disapproved, and the basis therefore. If the Department disapproves a submittal, the Department shall: (1) notify the Permittee in writing of the submittal's deficiencies and specify a due date for submission of a revised submittal, (2) revise the submittal and notify the Permittee of the revisions, or (3) conditionally approve the submittal and notify the Permittee of the conditions. Permit Condition IV.H. shall apply only to submittals that have been disapproved and revised by the Department, or that have been disapproved by the Department, then revised and resubmitted by the Permittee, and again disapproved by the Department.

3. All submittals shall be submitted within the time frame specified by the Department and in accordance with the approved schedule of compliance. Extensions of the due date for submittals may be granted by the Department based on the Permittee's demonstration that sufficient justification for the extension exists.
4. All submittals required by this permit shall be signed and certified in accordance with ADEM Admin. Code r. 335-14-8-.02(2).
5. Two (2) copies of all submittals shall be provided by the Permittee to the Department in accordance with Permit Condition I.J.

#### **IV.H. DISPUTE RESOLUTION**

Notwithstanding any other provision in this permit, in the event the Permittee disagrees, in whole or in part, with the Department's revision of a submittal or disapproval of any revised submittal required by this Part, the following may, at the Permittee's discretion, apply:

1. In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Department in writing within 30 calendar days of receipt of the Department's revision of a submittal or disapproval of a revised submittal. Such notice shall set forth:
  - a. The specific matters in dispute;
  - b. The position the Permittee asserts should be adopted as consistent with the requirements of this permit;
  - c. The basis for the Permittee's position; and,
  - d. Any matters considered necessary for the Department's determination.
2. The Department and the Permittee shall have an additional 30 calendar days from the Department's receipt of the notification provided for in Permit Condition IV.H.1. to meet or confer to resolve any disagreement.
3. In the event agreement is reached, the Permittee shall submit and implement the revised submittal in accordance with and within the time frame specified in such agreement.
4. If agreement is not reached within the 30-day period, the Department will notify the Permittee in writing of the decision on the dispute, and the Permittee shall comply with the terms and conditions of the Department's decision in the dispute. For the purposes of this provision in this permit, the responsibility for making this decision shall not be delegated below the Department's Land Division Chief.
5. With the exception of those conditions under dispute, the Permittee shall proceed to take any action required by those portions of the submission and of this permit that the Department determines are not affected by the dispute.

**Table IV.1**

The following Solid Waste Management Unit(s) (SWMU) and/or Area(s) of Concern (AOC) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report. Where discrepancies exist, the permit will take precedence.

**List of SWMUs and AOCs requiring a RCRA Facility Investigation (RFI) and/or remediation:**

<b>SWMU/AOC NUMBER</b>	<b>SWMU/AOC NAME</b>	<b>UNIT COMMENT</b>	<b>POTENTIALLY AFFECTED MEDIA</b>

There are no required RFI activities at this time

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**Table IV.2**

The following Solid Waste Management Unit(s) (SWMU) and/or Area(s) of Concern (AOC) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report. Where discrepancies exist, the permit will take precedence.

**List of SWMUs and AOCs requiring no further action at this time:**

<b>SWMU/AOC NUMBER</b>	<b>SWMU/AOC NAME</b>	<b>UNIT COMMENT</b>	<b>POTENTIALLY AFFECTED MEDIA</b>
1	Creosote Work Tank	Two above-ground steel tanks used for storing creosote.	Soil, Groundwater
2	Pentachlorophenol Work Tank	Two above-ground steel tanks used for storing pentachlorophenol.	Soil, Groundwater
3	Treatment Basement	140ft x 60ft x 6ft deep concrete sump for leaks and spills in treatment area.	Soil, Groundwater
4	Work Tank Area Concrete Pad	Concrete Pad built upon an excavated contaminated area.	Soil, Groundwater
5	Creosote/Pentachlorophenol Drip Track	500ft x 5ft concrete lined track for staging treated lumber.	Soil, Groundwater
6	Drip Track and Sump Drain	Concrete trench and two in-ground sumps connected by an underground pipe. Contained contaminated liquids are pumped to the WWTP.	Soil, Groundwater
7	Work Tank Area Pipes	Steel pipes connecting work tank area.	Soil, Groundwater
8	Pentachlorophenol Intermediate Work Tank Pit	Unlined pit and associated sump	Soil, Groundwater
9	Centrifuge	Centrifuge for dewatering creosote/pentachlorophenol sludges.	Soil, Groundwater
10	Visual Inspection Tank	Open, steel tanks which handle creosote and pentachlorophenol.	Soil, Groundwater
11	CCA Work Tanks	Two steel tanks which handle CCA	Soil, Groundwater
12	CCA Drip Track Trenches and Sumps	Unbermed drip track and sump.	Soil, Groundwater
13	CCA Dewatering Tank	Open steel tank used for dewatering CCA sludge from treatment cylinder.	Soil, Groundwater
14	CCA Effluent Tanks	Two horizontal steel tanks which store CCA effluent for mixing with fresh 501 CCA.	Soil, Groundwater
16	Hazardous Waste Storage Pad	60 ft x 40 ft concrete pad which stores drummed creosote, penta and CCA sludges.	Soil, Groundwater
19	Stormwater Collection System	Sumps and underground drains which discharge to the Alabama River. Consist of two steel sumps 10ft x 4ft x 2ft deep.	Soil, Groundwater

**List of SWMUs and AOCs requiring no further action at this time (cont.):**

<b>SWMU/AOC NUMBER</b>	<b>SWMU/AOC NAME</b>	<b>UNIT COMMENT</b>	<b>POTENTIALLY AFFECTED MEDIA</b>
20	Drainage Ditches	Unlined ditches that collect surface water runoff and discharge into the Alabama River. Flow is NE-SW.	Soil, Groundwater
21	Concrete Tank	12ft x 8ft x 4ft deep above-ground storage tank storing sludge prior to dewatering in the centrifuge.	Soil, Groundwater
22	Drum Storage in Work Tank	Northern portion of the Work Tank Area used for storing drummed creosote and penta sludge.	Soil, Groundwater
23	Sludge Hopper	Area used for storing creosote/pentachlorophenol.	Soil, Groundwater
24	Fly Ash Disposal Area	Unlined area used for dumping fly ash from boiler. 50ft x 30ft.	Soil, Groundwater
25	Truck Unloading Area Sumps	Two concrete, in-ground sumps that collected diesel spills	Soil, Groundwater
26	CCA Spill Collection	40 ft x 20 ft concrete lined inground sump.	Soil, Groundwater
27	Knock-Out Pots (Vacuum)	Three 200-300 gallon covered cylindrical steel tanks collecting penta/creosote wastewater before pumping to WWTP.	Soil, Groundwater
28	Creosote Surge Tank and Separator	300,000 gallon cylindrical vertical, steel tank receiving creosote wastewater	Soil, Groundwater
29	Pentachlorophenol Separator Tanks	Two cylindrical covered, steel tanks that received penta effluent and used for primary settling.	Soil, Groundwater
30	Oil/Water Separator	100,000 gallon concrete oil/water separator	Soil, Groundwater
31	Dehydrator	6,000 gallon covered cylindrical steel tank receiving solids from oil/water separator.	Soil, Groundwater
32	Final Effluent Tank	202,000 gallon cylindrical steel tank which stores pre-treated effluent before discharging to POTW.	Soil, Groundwater
33	Underground Discharge Pipe	200ft long, 3 in diameter pipes that discharge wastewater.	Soil, Groundwater
35	Old Landfarm Area	Previously used for contaminated soil disposal from work tank area.	Soil, Groundwater
36	Past Hazardous Waste Storage	Drums containing creosote/pentachlorophenol sludges were stored on unprotected ground.	Soil, Groundwater
37	Former Contaminated Area	25ft x 40ft bermed, covered concrete pad.	Soil, Groundwater
38	Cellon Holding Tank	1,500 gallon steel tank	Soil, Groundwater

**List of SWMUs and AOCs requiring no further action at this time (cont.):**

<b>SWMU/AOC NUMBER</b>	<b>SWMU/AOC NAME</b>	<b>UNIT COMMENT</b>	<b>POTENTIALLY AFFECTED MEDIA</b>
39	Catch Basin	Two 1,000 gallon steel tanks	Soil, Groundwater
40	Cellon Flock Tanks	Two 1,000 gallon steel tanks in concrete containment area dismantled in 1984.	Soil, Groundwater
41	Cellon Final Discharge Tanks	17,000 gallon in-ground concrete tank that was dismantled in 1984	Soil, Groundwater
42	Cellon Sand Filter	Abandoned sand filter.	Soil, Groundwater
43	Treating Dumpsters	Steel dumpsters that collected small amounts of waste with minor contamination sent to an unknown landfill.	Soil, Groundwater
44	Fuel Hopper	6ft x 6ft x 10ft deep above-ground steel hopper feeding creosote/penta sludges to the Boiler.	Soil, Groundwater
45	Fly Ash Hopper	300 gallon steel hopper partially enclosed	Soil, Groundwater
46	Laboratory Waste Containers	Small containers for laboratory wastes containing creosote and pentachlorophenol.	Soil, Groundwater
48	Swale	Unlined sump/pit used for collecting runoff from drip track area.	Soil, Groundwater
49	Boiler	Burns sawdust to produce steam for facility. May have been used to burn creosote and sludges in the past.	Soil, Groundwater
AOC B	Diesel Fueling Area No. 2	Aboveground storage tank which held fuels for on-site vehicles	Soil, Groundwater
AOC C	Pentachlorophenol Mix Tank Area	Storage shed which contained solid blocks of raw pentachlorophenol	Soil, Groundwater
AOC E	Spill Area West of Cellon Complex	Spills from cellon operations	Soil, Groundwater

**Table IV.3**

The following Solid Waste Management Unit(s) (SWMU) and/or Area(s) of Concern (AOC) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report. Where discrepancies exist, the permit will take precedence.

**List of SWMUs and AOCs regulated by Parts I, II, III, IV, V, and VI of this permit.**

<b>SWMU/AOC NUMBER</b>	<b>SWMU/AOC NAME</b>	<b>UNIT COMMENT</b>	<b>POTENTIALLY AFFECTED MEDIA</b>
34	Closed Lagoon	Former Surface Impoundment	Soil, Groundwater

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**PART V**

**CORRECTIVE MEASURES IMPLEMENTATION**

**V.A. APPLICABILITY**

The conditions of this Part apply to SWMUs and AOCs identified in Table V.1.

**V.B. GENERAL CONDITIONS**

- 1. The Permittee is required to perform corrective measures for the SWMUs and AOCs identified in Condition V.A. The approved remedy for these defined units, waterway areas, or land parcels, includes any and all actions set forth in this permit and in the approved Interim Measures Plans, Corrective Measures Studies (CMSs), and Corrective Measures Implementation (CMI) Plans approved by the Department, as noted below:

Applicable SWMU/AOC	CMS/CMI	Approval Date
SWMU 34	Permit Application Section 5.6	*

\* The corrective measures for SWMU 34 were approved as a part of the permit renewal process. Therefore, the approval date for the corrective measures is the issuance date of this permit.

- 2. Remedial Cleanup Levels  
Upon approval, pursuant to Section 5.6 of the permit application designating applicable cleanup level(s), the cleanup level(s) for the areas specific to Section 5.6 will be deemed to be a condition of this permit.

- 3. Groundwater Monitoring and Remediation  
Where required pursuant to Conditions V.B.1. and V.C. of this permit, the Permittee shall comply with the general groundwater monitoring requirements of Part III of this permit.

- 4. Land Use Controls  
Where required pursuant to Conditions V.B.1. and V.C. of this permit, the Permittee shall establish appropriate land use controls to achieve protection of human health and the environment. The Permittee shall comply with Conditions V.B.5. and V.B.6. of this permit when implementing corrective measures requiring land use controls. In the event an off-site property owner does not allow an environmental covenant to be imposed, the Permittee shall notify the Department within 14 calendar days of receipt of such written notification of the refusal by the off-site property owner. If the property owner does not provide a written refusal of the request to allow an environmental covenant to be imposed, the Permittee shall notify the Department within 14 days of delivery of the request to the off-site property owner. In such cases, the

Department may allow the Permittee to propose an alternate area-specific land use control in accordance with ADEM Admin. Code r. 335-5-1-.02(i), subject to the Department's review and approval.

5. Survey Plat

For corrective measures where residual concentrations of contaminants will remain in-place at levels greater than those appropriate for unrestricted land use, or for corrective measures that rely on land use controls, the Permittee must:

- a. Within 90 calendar days following the effective date of a permit modification addressing remedy selection, submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Department, a survey plat indicating the location and dimensions of the SWMUs, AOCs, and capped or partially remediated areas with respect to permanently surveyed benchmarks, the locations of sampling points, and the concentrations of hazardous constituents detected. This plat must be prepared and certified by a professional land surveyor registered in the State of Alabama. The plat must be filed with the local zoning authority or the authority with jurisdiction over local land use and must contain a note, prominently displayed, which states the Permittee's obligation to limit the property to the specified restricted uses.
- b. Maintain the survey plat as described in Condition V.B.5.a. of this permit and in the CMS Report until the Permittee has demonstrated, to the satisfaction of the Department, that the levels of hazardous constituents in all contaminated media are within limits appropriate for unrestricted land uses.

6. Environmental Covenant

No later than the submission of the survey plat required in Condition V.B.5., the Permittee must:

- a. Record in the probate judges office of the county in which the property is located or a portion thereof an environmental covenant in accordance with ADEM Admin. Code r. 335-5 that will in perpetuity notify any potential purchaser of the property that:
  - i. The land is contaminated with hazardous constituents in concentrations that exceed unrestricted use standards;
  - ii. The use of the property is restricted by this permit for certain residential, municipal, or industrial purposes and may lead to an increased risk of exposure to hazardous constituents depending upon the activities initiated at the site. Such activities may yield an increased level of human health risk to the owner;

- iii. The potential purchaser or entity that desires to work in the contaminated area should notify the Permittee before mobilizing to the area covered by the land use control.
- b. Submit to the Department a certification, signed by the Permittee in accordance with Permit Condition I.C.11., that the environmental covenant specified in this part has been performed. This certification must include a copy of the document in which the notation has been placed.
- c. Maintain the environmental covenant described in Permit Condition V.B.6. until the Permittee has demonstrated, to the satisfaction of the Department, that the levels of hazardous constituents in all contaminated media are within limits appropriate for unrestricted land uses.
- d. Submit fees in accordance with ADEM Admin. Code R. 335-5-1-.06 to provide the Department with the funds required to implement the provisions of the Alabama Uniform Environmental Covenants Act.

7. Security

Security measures, where required by Conditions V.B.1. and V.C. of this permit, will be conducted in accordance with ADEM Admin. Code r. 335-14-5-.02(5) and as prescribed in Section 4.4 of the permit application..

8. Inspection

Where corrective measures addressed in Conditions V.B.1. include provisions to cap in place or partially remediate properties or land areas, whether owned or not owned by the Permittee, the Permittee shall specify inspection protocols on a scheduled basis to ensure continued integrity of the remedy and to ensure that land use remains appropriately restricted per the environmental covenant established pursuant to Permit Condition V.B.6. Inspection provisions shall be as prescribed in Section 4.4 of the permit application.

**V.C. AREA SPECIFIC CONDITIONS (RESERVED)**

**V.D. CORRECTIVE MEASURES IMPLEMENTATION (CMI) REPORTS**

1. CMI Progress Reports

If the time required to complete implementation of a specific set of corrective measures, as described in the Department-approved CMI Plan, is greater than 180 calendar days, the Permittee shall provide ADEM with progress reports according to the schedule in the ADEM-approved CMI Plan. If no schedule has been approved as part of the associated plan, progress reports shall be

submitted at least quarterly. The progress reports shall, at a minimum, contain the following information:

- a. A description of the portion of CMI Plan completed;
- b. Summaries of and deviations from the approved CMI Plan during the reporting period;
- c. Summaries of current and potential problems, including recommended solutions and alternatives as well as corrective actions undertaken;
- d. Any monitoring data (soil, air, dust, water) collected for any reason during the construction period for the purposes of monitoring potential for human and ecological exposure; and,
- e. Projected work for the next period and impacts to the approved schedule.

## 2. Final CMI Reports

Upon completion of construction of corrective measures systems, implementation of land use controls, interim removal actions, or other short-term activities required by this permit and/or the approved CMI Plan, the Permittee shall submit to the Department a Final CMI Report containing, at a minimum, the following:

- a. A description of activities completed;
- b. For cap and cover remedies, as-built construction drawings presenting the final in-place three-dimensional location of contaminated material. A plan view of the remediated areas shall be presented in addition to a cross section of the in-place capped areas;
- c. Hazardous waste manifests indicating the handling of any excavated material that has been shipped off-site to a Department-approved, certified landfill;
- d. For remedies involving land use controls, a copy of the survey plat and environmental covenant required by Condition V.B. of this permit;
- e. Monitoring data (soil, air, dust, water) collected for any reason during the construction period for the purposes of monitoring potential for human and ecological exposure; and
- f. Certification, prepared in accordance with ADEM Admin. Code r. 335-14-8-02 (2)(d) by the Permittee and an independent professional engineer registered in the State of Alabama, that the corrective measures implementation phase (*i.e.*, construction) required by this permit is complete and that the approved system and/or facilities are ready for operation in accordance with the intended design (*i.e.*, CMI Plan).

### 3. Corrective Measures (CM) Effectiveness Reports

- a. For corrective measures that have been fully implemented and where the corrective measures system must operate for a period of time to achieve cleanup goals or levels, the Permittee shall submit CM Effectiveness Reports annually, unless otherwise approved by the Department, beginning 180 calendar days following the Department's approval of the Final CMI Report for the initial Corrective Measures system subject to this permit condition. The overall CM Effectiveness Reports shall include, at a minimum, the following information for each SWMU and/or AOC included in the report:
  - i. A detailed narrative presenting an evaluation of the effectiveness of the selected remedy;
  - ii. Summaries of compliance with and progress toward achieving cleanup goals;
  - iii. Any significant revisions, adjustments, or proposed modifications to the selected remedy;
  - iv. Tabulated environmental sampling and monitoring data including, but not limited to, groundwater quality, elevation data, and a graphical representation of all constituents detected during each sampling event from recovery wells, monitoring wells, drinking water wells, and other locations;
  - v. Chain of custody, field reports, and laboratory data sheets to include the date of collection, the date the sample was extracted, and the date of sample analysis for samples collected during the reporting period;
  - vi. Any monitoring data (soil, air, dust, water) collected for any reason during the post-construction period for the purposes of monitoring potential for human and ecological exposure;
  - vii. Isoconcentration maps depicting the distribution of parameters for each sampling event;
  - viii. RESERVED;
  - ix. RESERVED;
  - x. RESERVED;
  - xi. Potentiometric surface maps;
  - xii. Description of land use during the reporting period at the designated area requiring corrective measures; and,
  - xiii. Findings of the Permittee's investigation into the continued effectiveness of land use controls per Condition V.B.

- b. If, at any time, the Permittee determines that any remedy selection specified in Condition V.B or V.C. of this permit no longer satisfies the applicable requirements of ADEM Admin. Code r. 335-14-5-.06(12) or this permit for releases of hazardous waste or hazardous constituents originating from SWMUs or AOCs, the Permittee must, within 90 calendar days, submit an application for a permit modification, pursuant to Permit Condition I.I, to make any appropriate changes to the CMI Plan.
  - c. The application for changes in the CMI Plan, including changes in inspection and monitoring provisions of the CMI Plan, shall be submitted as an application for a permit modification pursuant to the requirements of ADEM Admin. Code r. 335-14-8-.04.
4. Final Report of Corrective Measures

Within 90 calendar days following attainment of cleanup levels or goals as outlined in this Permit and the approved CMI Plan, the Permittee shall submit to the Department a Final Report of Corrective Measures (FRCM). The FRCM shall contain a certification by the Permittee and an Alabama-registered independent professional engineer that all remedial measures required by this permit and the approved CMI Plan have been completed. The FRCM shall outline any procedures and schedules for dismantling of corrective measures systems, groundwater monitoring or recovery systems, removal of land use controls, and any other remedial systems or controls required by this permit or the approved CMI Plan.

**Table V.1.**

The following Solid Waste Management Unit(s) (SWMUs) and/or Area(s) of Concern (AOCs) numbers and descriptions correspond with those noted in the RCRA Facility Assessment (RFA) Report. Where discrepancies exist, the permit will take precedence.

**List of SWMUs and AOCs requiring Corrective Measures.**

<b>SWMU/AOC NUMBER</b>	<b>SWMU/AOC NAME</b>	<b>UNIT COMMENT</b>	<b>POTENTIALLY AFFECTED MEDIA</b>
SWMU 34	Closed Surface Impoundment		Groundwater

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**PART VI****SUMMARY OF DEADLINES**

The summary information provided herein is intended only as a guide to the requirements of this permit. It is not intended to be all inclusive, nor is it intended to be used as a substitute for the full text of this permit.

<b>PERMIT CONDITION</b>	<b>ITEM</b>	<b>DUE DATE</b>
I.C.2.b.	Reapply for a renewal	180 calendar days before the expiration of the current permit.
I.C.12.	Give notice to the Department of any planned physical alterations or additions to the permitted facility and any solid waste management units.	As soon as possible
I.C.12.	Report any noncompliance with this permit that may endanger human health or the environment.	Orally within 24 hours from the time the Permittee becomes aware of the circumstances. Written submission shall also be provided within 5 calendar days of the time that the Permittee becomes aware of the circumstances
I.F.	Waste Minimization Certification	Annually
I.G.	Update cost estimates	No later than 30 calendar days after the Department has approved a modification to the Closure Plan, Post-Closure Plan, or Corrective Action Plan, or any other plan required or referenced by this permit, if the change in the plan results in an increase in the amount of the cost estimate and annually as required by ADEM Admin. Code r. 335-14-5-.08(3)(b), (5)(b), and (10)(b)
I.I.	Submit a written request for a permit modification pursuant to the requirements of ADEM Admin. Code r. 335-14-8-.04(2).	At least 60 calendar days prior to a proposed change in facility design or operation.
II.C.2	Inspect closed unit(s).	At least quarterly, after storms, and in accordance with the inspection schedule.
III.B.1 a.iii.	Notification of damaged groundwater monitoring wells.	Immediately in writing. The well must be repaired within 30 calendar days of damage, and repair report must be submitted within 30 calendar days of repair.
III.B.1.d.	Install additional groundwater monitoring wells	As necessary to assess changes in the rate and extent of any plume of contamination, or as otherwise deemed necessary. Note: a permit modification request must be submitted within 90 calendar days prior to installation of additional groundwater monitoring well(s).

<b>PERMIT CONDITION</b>	<b>ITEM</b>	<b>DUE DATE</b>
III.B.2.a.	Determine groundwater surface elevation.	At least annually and each time a well is sampled.
III.B.2.b.	Determine groundwater flow rate and direction.	At least annually.
III.B.6.b.	Submit groundwater monitoring report	Within 60 calendar days of the first sampling event and annually thereafter.
III.B.6.c.	Submit progress reports.	Within 90 calendar days after the effective date of this permit and quarterly thereafter. See permit condition for start/stop/resume provisions.
III.E.2.b.	Implement corrective action plan	No later than 120 calendar days after the effective date of this permit.
III.E.3.a.	Sample all background and point of compliance wells and analyze for the volatile and semi-volatile constituents listed in Table III.2. of this permit.	Semi-annually beginning within 120 calendar days of the effective date of this permit.
III.E.3.b.	Sample all background, point of compliance, and Category 2 wells and analyze for the volatile, semi-volatile, and metal constituents listed in Table III.2. of this permit.	Beginning within 120 calendar days of the effective date of this permit and annually thereafter, alternating between wet and dry seasons.
III.E.3.c.	Sample all background, point of compliance, Category 2, and Category 3 wells and analyze for all constituents listed in Table III.2. of this permit.	Every five years beginning within 120 calendar days of the effective date of this permit.
III.E.3.d.	Sample and analyze for temperature (degrees F or C), specific conductance (Mhos/cm), and pH (standard units), at all background, point of compliance, Category 2, and Category 3 well locations.	Each time the well is sampled.
III.E.4.a.	Submit corrective action effectiveness reports.	Annually within 60 calendar days of each annual anniversary of this permit after corrective action is initiated and until corrective action is completed.
IV.B.1.	Notify the Department, in writing, of the discovery of any additional AOCs	Within 15 calendar days of discovery
IV.B.2.	Notify the Department, in writing, of the discovery of any additional SWMUs	Within 15 calendar days of discovery
IV.B.3.	Submit a SWMU Assessment Report (SAR) for each SWMU identified under IV.B.2.	Within 90 calendar days of notification.

PERMIT CONDITION	ITEM	DUE DATE
IV.C.1.	Notify the Department, in writing, of any newly discovered release(s) of hazardous waste or hazardous constituents from SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means.	Within 15 calendar days of discovery
IV.D.7.	Submit RFI Progress Reports.	Monthly beginning in the second month following the initiation of the RFI
IV.D.8.	Submit RFI Report	Within 60 calendar days from the completion of investigation activities.
IV.E.2.	Submit CMI Plan	Within 120 calendar days following the Permittee's submittal of the RFI Report indicating that hazardous constituents have come to be located at any area of the Permittee's facility, or beyond the facility, at concentrations exceeding those appropriate for the protection of human health and the environment, or within 120 calendar days following notification from the Department that a CMI Plan is required, whichever occurs earlier.
IV.E.4.	Demonstrate financial assurance for completing the approved remedy.	Within 120 calendar days after this Permit has been approved.
IV.F.1.	Submit IM Work Plan	Within 30 calendar days upon notification by the Department.
IV.F.3.	Submit IM Report	Within 90 calendar days of completion of IM.
V.B.5.a.	Submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Department, a survey plat indicating the location and dimensions of the SWMUs, AOCs, and capped or partially remediated areas with respect to permanently surveyed benchmarks, the locations of sampling points, and the concentrations of hazardous constituents detected	Within 90 calendar days following the effective date of a permit modification addressing remedy selection.
V.B.6.a.	Record environmental covenant	No later than the submission of the survey plat required in Condition V.B.5.
V.B.6.b.	Submit to the Department a certification that the environmental covenant has been performed.	No later than the submission of the plat required in Condition V.B.5.
V.B.6.d.	Submit fees in accordance with ADEM Admin. Code r. 335-5-1-.06	No later than the submission of the survey plat required in Condition V.B.5.

<b>PERMIT CONDITION</b>	<b>ITEM</b>	<b>DUE DATE</b>
V.D.3.	Submit Corrective Measures Effectiveness Reports	Annually beginning 180 calendar days following the Department's approval of the Final CMI Report
V.D.4.	Submit a Final Report of Corrective Measures (FRCM)	Within 90 calendar days following attainment of cleanup levels or goals

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May 5, 2025

Ravinder Thaper  
Engineering Services Section  
Industrial Hazardous Waste Branch  
Land Division  
Alabama Department of Environmental Management  
Post Office Box 301463  
Montgomery, Alabama 36130-1463

**Subject: Former Koppers Wood Treating Facility – Montgomery, AL  
Surface Cover Modification Work Plan and Permit Modification  
EPA Identification Number ALD004009403  
Permit No. ALD 004 009 403**

Dear Mr. Thaper,

Key Environmental, Inc. (KEY), on behalf of Beazer East, Inc. (Beazer), hereby submits this Permit Modification Request and Work Plan to address proposed modifications to the cover system at the Former Koppers Facility in Montgomery, Alabama (the Facility). This submittal is provided in response to the Alabama Department of Environmental Protection's (ADEM's) concerns expressed in the December 4, 2024 letter to Beazer and co-permittee, Hatchet Creek Leasing Co. (HCL), regarding soils placed by HCL atop a preexisting approved concrete surface cover located at the western end of the Facility's Former Process Area soil cover system.

Beazer and KEY look forward to your review of our submittal. If you would like to discuss in greater detail, please feel free to contact me at (412) 708-1775.

Sincerely,

**Key Environmental, Inc.**



Yajie Guo, P.E.  
Project Engineer

cc\:  
Kurt Paschl - Beazer  
Rodney Walker – HCL  
Austin Pierce (ADEM)  
Mark Lahr – KEY  
Hank Pappert – FTS

**SURFACE COVER MODIFICATION WORK PLAN  
AND PERMIT MODIFICATION**

**EPA IDENTIFICATION NUMBER ALD004009403**

**PERMIT No. ALD 004 009 403**

**FORMER KOPPERS WOOD TREATING FACILITY  
MONTGOMERY, AL**

*Prepared for:*

**Beazer East, Inc.**

*Prepared by:*

**Key Environmental, Inc.**  
200 Third Avenue  
Carnegie, Pennsylvania 15106

**MAY 2025**

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## **1.0 INTRODUCTION**

### **1.1. Document Purpose and Contents**

The purpose of this Corrective Measures Implementation Work Plan (CMIWP) is to (A) provide information necessary to support a Permit Modification request and (B) provide details regarding the actions that will be taken to implement cover construction consistent with the modified Permit requirements. Section 2 of the CMIWP describes the Permit modification request. Section 3 presents the surface cover design, implementation tasks overview, and project schedule. Section 4 identifies reporting associated with this effort.

### **1.2. Site Background**

The former Koppers Inc. wood treatment plant (Facility) is located in a non-residential area ~1 mile north of the City of Montgomery, Alabama, and bordered on the west by the Alabama River (Figure 1). The Facility operated as a wood treatment plant between 1926 and 2005. Historically, the operations conducted preservative treating of wood products using creosote, pentachlorophenol, and metals (copper, chromium, arsenic, and zinc).

A 2013 subdivision of the real property upon which the Facility historically operated resulted in the definition of two (2) separate parcels: Parcel I of approximately 18 acres and Parcel II of approximately 74 acres, each encumbered by and subject to an Environmental Covenant recorded in the Office of the Judge of Probate for Montgomery County, Alabama. Parcel I encompasses the Closed RCRA Surface Impoundment (SI) and the Process Area surface cover (Figure 2). Parcel I also includes the areas downgradient of the SI and the Former Process Area, thus, the majority of the impacted groundwater extent lies within the Parcel I limits. Hatchet Creek Leasing Inc. (HCL) has fee simple ownership of Parcel I. Beazer and HCL are co-permittees for the Hazardous Waste Facility Permit (permit) that applies to Parcel I.

The Final Corrective Measures Implementation Plan – Revision 2 (CMI), dated August 14, 2009, indicated that the potential risks to surface and shallow subsurface soils will be managed by eliminating direct contact with the soils within the risk management areas. A target area for placement of the surface cover was identified in the CMI. An Addendum to the January 9, 2013 Permit Modification Request was submitted to ADEM on January 18, 2013. The Addendum presented a residual risk assessment that revised the target surface cover limits and identified portions within the target area that were already covered with a soil cover (over the closed former surface impoundment) and existing asphalt / concrete slabs. On February 19, 2014, ADEM approved the Final Corrective Measures Implementation Report Surface Cover Construction that included the requirement of inspection of the surface cover, which consisted of either gravel, soil, or asphalt/concrete.

Field and Technical Services, LLC (FTS) conducts the annual inspection and reports on the condition of the surface covers. During the March 9, 2023 Annual Surface Cover Inspection, FTS observed and noted that soil had been placed over portions of the existing concrete cover system,

located within quadrangles 4, 5, and 7. The newly placed soil was reported to have originated from an unimpacted area on adjacent property allegedly owned by HCL.

### **1.3. ADEM Letter and Responses**

On December 4, 2024, ADEM issued a Warning Letter requesting a response to several items identified during an Operations and Maintenance Inspection conducted by ADEM on March 19, 2024, at the Facility. On January 2, 2025, FTS responded by letter on behalf of Beazer East, Inc. (Beazer) to address the items. On February 10, 2025, ADEM representatives Mr. Ricky Minor and Mr. Craig Schimmer informed FTS that the Permittees' actions to date had not resolved ADEM's concerns regarding Permit Condition II.C.1 and the conditions at the concrete cover near M20. ADEM was requesting either: (i) the concrete cover near M20 that had been covered by earth be restored to a condition that conforms with the Permit; or (ii) the affected area be improved to a condition where it conforms with approved Corrective Measures Implementation (CMI) cover system types and a permit modification made to memorialize the changes to the cover system.

Accordingly, a Revised Response Letter was submitted on February 27, 2025, pursuant to which Beazer and HCL proposed that, subject to ADEM approval with a proposed Permit Modification, (i) to restore the Facility to conditions that conform with the Permit, or (ii) to improve the cover system and modify the Permit.

## **2.0 PERMIT MODIFICATION REQUEST**

### **2.1. Overview**

Co-Permittees propose to modify the Permit to allow improvement of the surface cover system to conform with the approved CMI. Co-Permittees propose to modify Section 4 and Appendix G of the Permit to reflect the proposed changes, as follows.

### **2.2. Revised Section 4**

The following parts of Section 4 in the existing permit application have been revised for this permit modification.

#### Section 4.0 Post-Closure Requirements

ORIGINAL:

*This section discusses the activities performed in closing the regulated surface impoundment, the inspection and maintenance activities to be performed for the closed surface impoundment, and the surface cover for the other SWMUs and AOCs during this permit period. The information presented in this section satisfies the applicable requirements governing closure of waste management units, pursuant to ADEM Administrative Code 335-14-5.*

REVISED:

*This section discusses the activities performed in closing the regulated surface impoundment, **the activities to be performed in improving the surface cover, and the inspection and maintenance activities to be performed for the closed surface impoundment and the surface cover for the other SWMUs and AOCs during this permit period.** The information presented in this section satisfies the applicable requirements governing closure of waste management units, pursuant to ADEM Administrative Code 335-14-5.*

Section 4.1 Closure Plans and Certifications

ORIGINAL:

*Closure activities for the surface impoundment were completed in 1983. Final closure of the impoundment was approved by ADEM on January 10, 1984. A copy of the closure certification document is provided as Appendix D.*

REVISED:

*Closure activities for the surface impoundment were completed in 1983. Final closure of the impoundment was approved by ADEM on January 10, 1984. A copy of the closure certification document is provided as Appendix D.*

***Additional closure activities to be performed include restoring the approved surface cover by placing orange-colored geotextile demarcation fabric and a minimum of 6-inch aggregate cover in the areas depicted on Figure 3 - Proposed Cover System Plan. Upon the completion of the closure activities, a Final Corrective Measures Implementation (Final CMI) Plan will be submitted to ADEM for approval.***

**2.3. Revised Appendix G**

Figure 1 Surface Cover Inspection Quadrants in Appendix G was revised to reflect the changes in surface cover type in the affected area.

**3.0 REMEDY DESIGN AND IMPLEMENTATION SCHEDULE**

Upon receiving ADEM's approval of the Work Plan and Permit Modification Request, Co-Permittees will prepare a final design. Details of the major design tasks and implementation components are discussed in this section.

**3.1. Review of Site Conditions**

A visual inspection and survey of the current surface conditions will be completed to aid in the preparation of a grading plan and establishment of limits for placement of a demarcation fabric layer and subsequent placement of a 6-inch-thick gravel cover. Figure 3 presents an aerial site image (2024) with the approximate limits of the proposed cover system.

### 3.2. Cover System Requirements

Consistent with the permit and the approved CMI the cover system will consist of a demarcation fabric (orange colored geotextile material) over the existing subgrade soils and a six-inch-thick crushed stone conforming to the requirements of the Alabama Department of Transportation (ALDOT) Standard Specifications for Highway Construction (ALDOT, 2009) and the Center for Environmental Excellence by the American Association of State Highway and Transportation Officials (AASHTO). Figure 4 presents a detail of the proposed cover system.

### 3.3. Conceptual Design

Survey data from the affected area will be reviewed and utilized to design the closure plan for the affected area, which will include grading plans for the soil subgrade and final grade of the gravel cover, and limits of demarcation fabric layer and subsequent 6-inch-thick gravel cover.

### 3.4. Project Implementation Schedule

Figure 5 presents the Project Implementation Schedule, which consists of the following major tasks:

- ADEM reviews Permit Modification request and prepares a draft permit. ADEM issues public notice of the preparation of a draft permit, required under 335-14-8-.08(6)(a), and allows at least 45 days for public comment. If applicable, public notice of a public hearing shall be given at least 30 days before the hearing.
- ADEM issues approval of the Permit Modification and Work Plan
- Beazer prepares other permits:
  - The anticipated land disturbance will be under one acre, therefore, a General NPDES Permit is not required, unless directed by ADEM.
  - Submit Floodplain Development Permit Application (FDP) to the City of Montgomery.
- Beazer prepares Remedial Design package, including design report, drawings, specifications, and reference materials, within two weeks of ADEM's approval of the Permit Modification.
- Beazer conducts contractor procurement following the completion of the Remedial Design.
- Construction of the Remedial Design occurs.
- Beazer conducts a final survey to prepare as-built surface cover construction Figures for inclusion in the construction certification, which will be submitted to ADEM for review.
- Beazer prepares Final CMI Report and submits to ADEM for review.

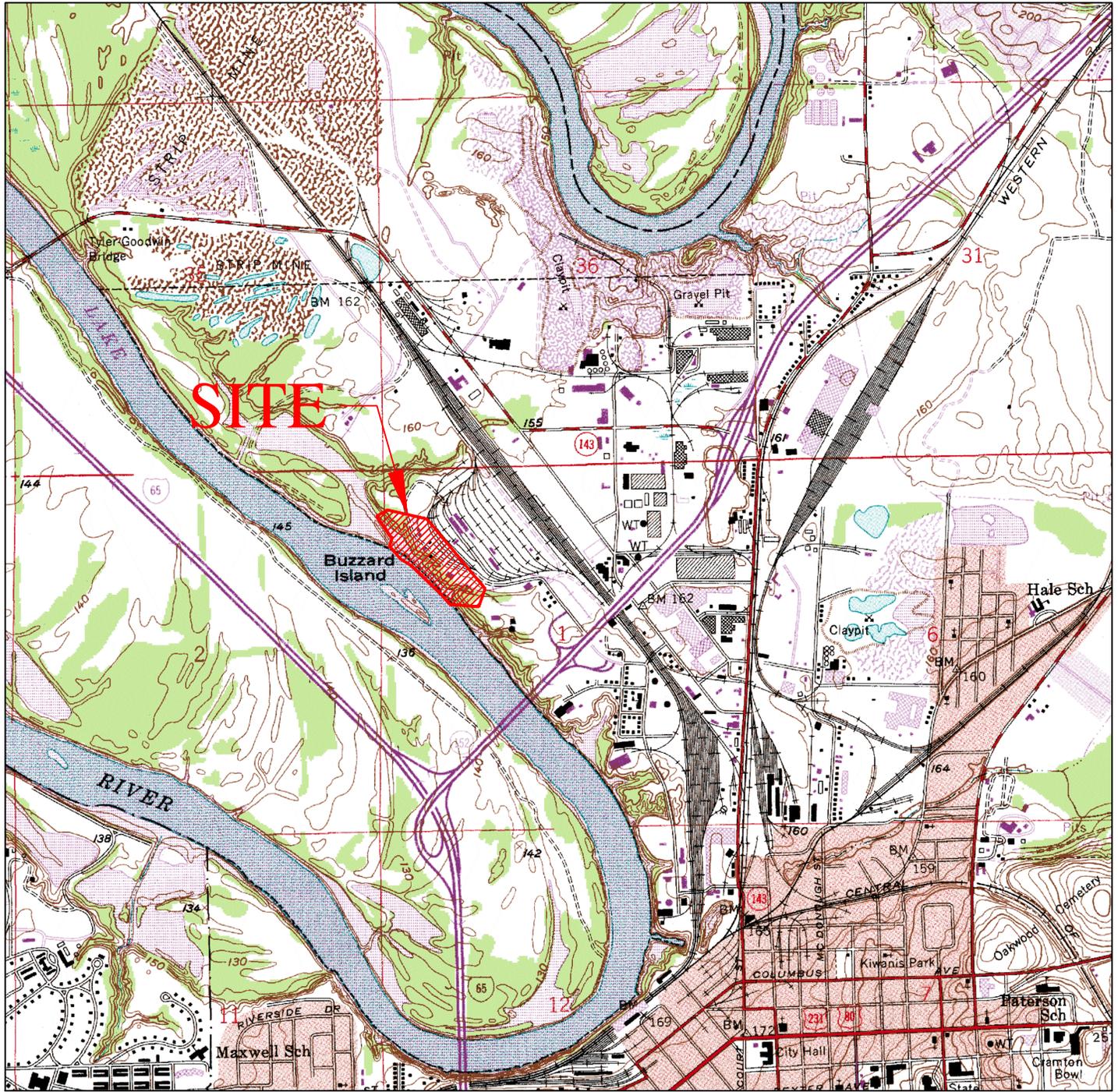
## **4.0 REPORTING**

### **4.1. Final Corrective Measures Implementation Report**

Upon the completion of the closure activities, a Final CMI Report will be prepared and submitted to ADEM for review. Following approval, the Final CMI Report will be incorporated into the permit file.

## **FIGURES**

q:\projects\beazer\_projects\montgomery\cadd\cmi\_work\_plan\figure 1 site location.dwg Last Saved By: SComer 4/17/2025 11:54 AM Plotted By: Shelly Comer 5/1/2025 11:05 AM Scale: 1:1



REFERENCE: U.S. GEOLOGICAL SURVEY MONTGOMERY NORTH QUADRANGLE MAP

BEAZER EAST, INC.  
PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 05/01/25
CHKD: YG	DATE: 05/01/25
APPD: MRL	DATE: 05/01/25
SCALE: 1"=2000'	
ISSUE DATE:	



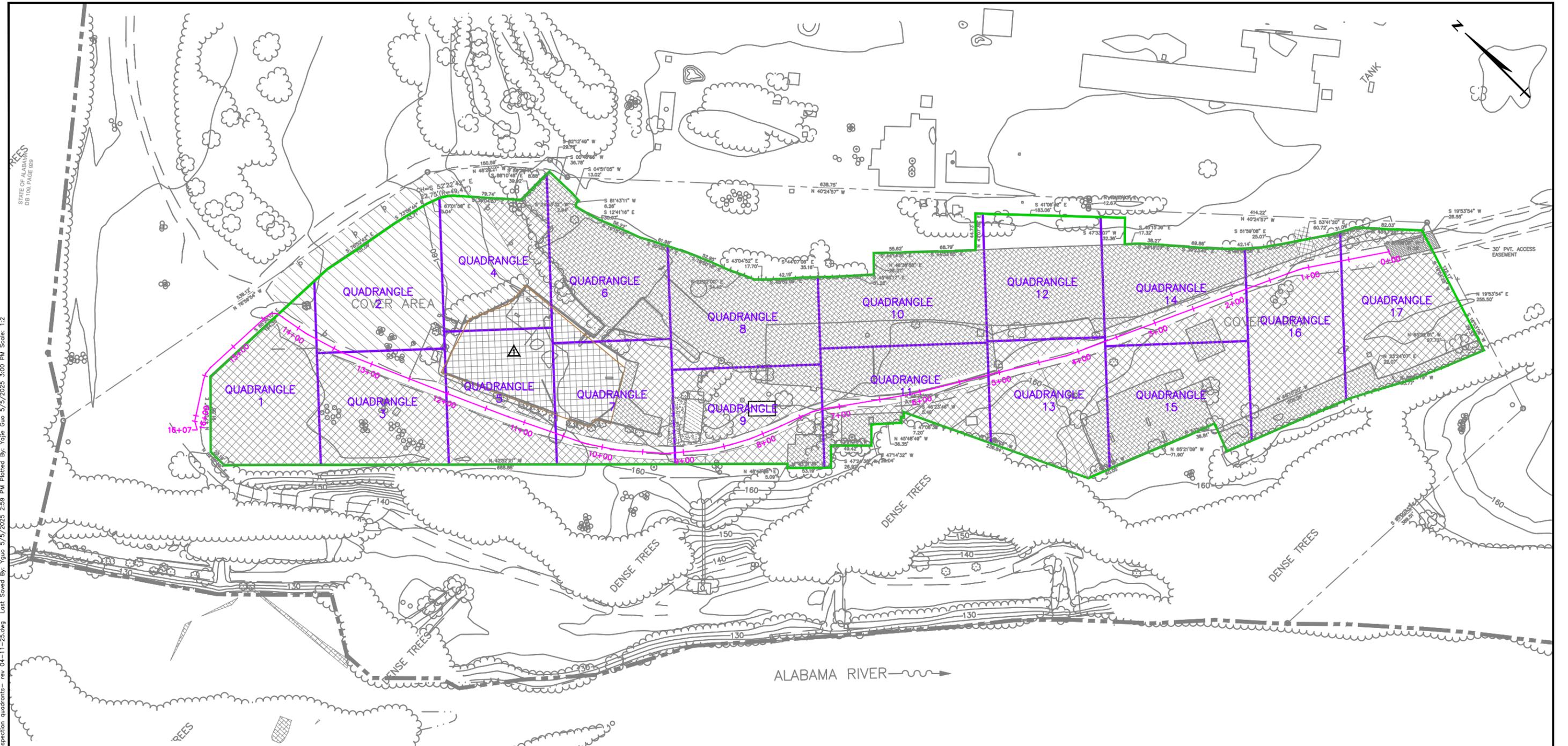
FIELD & TECHNICAL  
SERVICES, LLC  
200 THIRD AVENUE  
CARNEGIE, PA 15106

FORMER KOPPERS INC. FACILITY  
MONTGOMERY, ALABAMA

SITE LOCATION

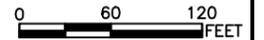
PROJECT NO: T0049225-01  
DRAWING NUMBER  
FIGURE 1

V:\montgomery\14-820\production\drawings\inspection\figures\1 - surface cover inspection quadrants- rev 04-11-25.dwg Last Saved By: Yajie Guo 5/5/2025 2:59 PM Plotted By: Yajie Guo 5/5/2025 3:00 PM Scale: 1:2



**LEGEND**

- PROPOSED COVER AREA  
(EXISTING ASPHALT, EXISTING GRAVEL, AND NEW GRAVEL)
- 150- EXISTING GROUND CONTOURS
- EXISTING ASPHALT/CONCRETE SURFACE
- EXISTING SOIL COVER OVER CLOSED SURFACE IMPOUNDMENT
- HAZARDOUS WASTE BUILDING
- AGGREGATE COVER
- GRAVEL COVER
- EXISTING DENSE TREES



**BEAZER EAST, INC.**  
 PITTSBURGH, PENNSYLVANIA

DRWN: ERM	DATE: 05/01/25
CHKD: YG	DATE: 05/01/25
APPD: MRL	DATE: 05/01/25
SCALE: AS SHOWN	



INSPECTION PLAN  
 FORMER KOPPERS INC. FACILITY  
 MONTGOMERY, ALABAMA

ISSUE DATE:  
  
 KEY ENVIRONMENTAL, INC.  
 200 THIRD AVENUE  
 CARNEGIE, PA 15106

SURFACE COVER  
 INSPECTION QUADRANGLES

PROJECT No: 14-820  
**FIGURE 1**

REFERENCE: BASE MAP BY GOODWYN, MILLS, CAWOOD SURVEY.  
 ALL CMP REFERENCED DRAWINGS WERE PDF FILES. THEREFORE, LOCATION ACCURACY IS UNCERTAIN.  
 RESIDUAL RISK ASSESSMENT COMPLETED FOR LOCATIONS BEYOND COVER LIMITS TO DEMONSTRATE ATTAINMENT  
 OF TARGET CUMULATIVE CANCER RISK OF 1x10<sup>-5</sup> SEE SECTION \_\_\_\_\_.

▲			
▲	05/01/25	REVISED SURFACE COVER TYPE	MRL
▲	REV #	DATE	DESCRIPTION
▲			APPD



**LEGEND**

- - - PROPERTY BOUNDARY
- APPROXIMATE LIMIT OF SOIL PLACEMENT



BEAZER EAST, INC.  
PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 05/01/25
CHKD: YG	DATE: 05/01/25
APPD: MRL	DATE: 05/01/25
SCALE: AS SHOWN	
ISSUE DATE:	



FIELD & TECHNICAL SERVICES, LLC  
200 THIRD AVENUE  
CARNEGIE, PA 15106

FORMER KOPPERS INC. FACILITY  
MONTGOMERY, ALABAMA

SITE AERIAL IMAGE

PROJECT NO: T0049225-01  
DRAWING NUMBER  
**FIGURE 2**

c:\projects\beazer\_projects\montgomery\cadd\cmt\work\_plan\figure\_2\_site\_aerial\_image.dwg Last Saved By: SComer 5/1/2025 11:05 AM Plotted By: Shelly\_Comer 5/1/2025 11:05 AM Scale: 1:1

REV #	DATE	DESCRIPTION	APPD

REFERENCE: BASE MAP WAS PROVIDED BY EMS

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### LEGEND

- PARCEL I BOUNDARY
- EXISTING OR FORMER BUILDINGS
- EXISTING OR FORMER RAILROADS
- EXISTING ROADS
- FORMER/CLOSED IMPOUNDMENT
- WELL LOCATION
- APPROXIMATE LIMIT OF PROPOSED SURFACE COVER



BEAZER EAST, INC.  
PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 05/01/25
CHKD: YG	DATE: 05/01/25
APPD: MRL	DATE: 05/01/25
SCALE: AS SHOWN	
ISSUE DATE:	



FIELD & TECHNICAL SERVICES, LLC  
200 THIRD AVENUE  
CARNEGIE, PA 15106

FORMER KOPPERS INC. FACILITY  
MONTGOMERY, ALABAMA

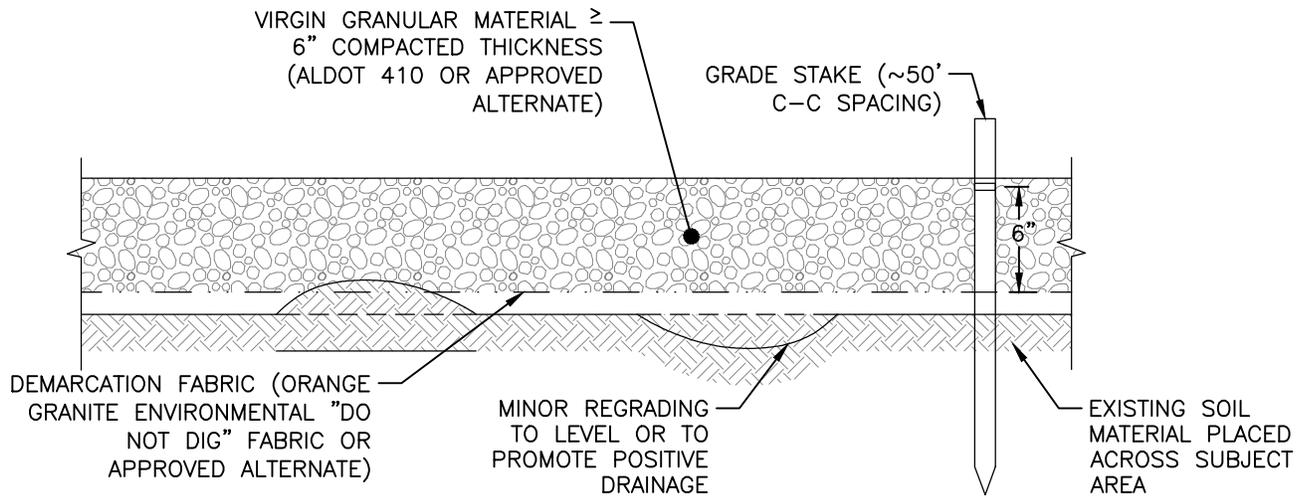
PROPOSED COVER SYSTEM PLAN

PROJECT NO: T0049225-01  
DRAWING NUMBER  
**FIGURE 3**

REFERENCE: BASE MAP WAS PROVIDED BY EMS

REV #	DATE	DESCRIPTION	APPD

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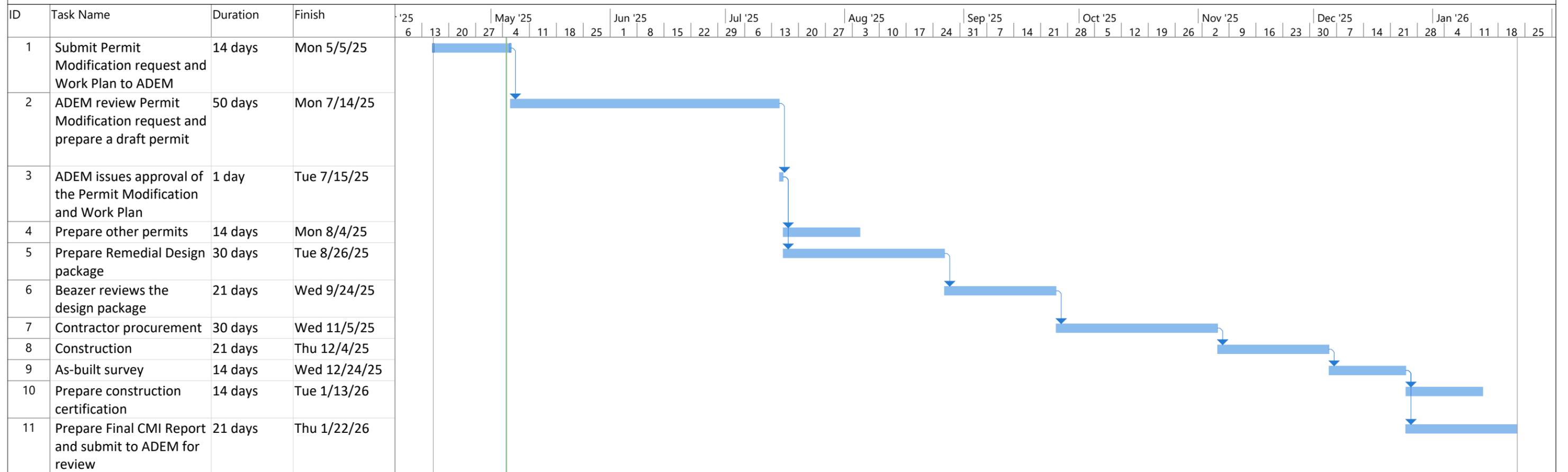
**NOTES:**

1. CUT VEGETATION (AS NECESSARY) AND LEVEL GROUND SURFACE/MINOR REGRADING.
2. INSTALL DEMARCATION FABRIC.
3. INSTALL GRADE STAKES FOR CONTROL OF GRANULAR MATERIAL PLACEMENT.
4. DAMP, SPREAD, AND COMPACT GRANULAR MATERIAL TO A FINAL COMPACTED THICKNESS  $\geq$  6 INCHES.

REFERENCE:

<b>BEAZER EAST, INC.</b> PITTSBURGH, PENNSYLVANIA		
DRWN: SCC CHKD: YG APPD: MRL SCALE: AS SHOWN ISSUE DATE:	DATE: 05/01/25 DATE: 05/01/25 DATE: 05/01/25	 <p style="font-size: small;">FIELD &amp; TECHNICAL SERVICES, LLC 200 THIRD AVENUE CARNEGIE, PA 15106</p>
FORMER KOPPERS INC. FACILITY MONTGOMERY, ALABAMA		
PROPOSED COVER SYSTEM DETAIL	PROJECT NO: T0049225-01 DRAWING NUMBER <b>FIGURE 4</b>	

**Figure 5 Project Implementation Schedule**



Project: Implementation Sched Date: Mon 5/5/25	Task		Project Summary		Manual Task		Start-only		Deadline	
	Split		Inactive Task		Duration-only		Finish-only		Progress	
	Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks		Manual Progress	
	Summary		Inactive Summary		Manual Summary		External Milestone			

December 22, 2025

Dr. Ravinder Thaper,  
Alabama Department of Environmental Management  
Engineering Services Section  
Industrial Hazardous Waste Branch, Land Division  
1400 Coliseum Boulevard  
Montgomery, AL 36110-2059  
Email: [ravinder.thaper@adem.alabama.gov](mailto:ravinder.thaper@adem.alabama.gov)

**RE: Monitoring Well Abandonment, Replacement, and Repair Plan  
Former Koppers Inc. Facility (Facility)  
1415 Louisville Street  
Montgomery, Alabama 36104-1609  
USEPA I.D. Number ALD 004 009 403**

Dear Dr. Thaper:

On behalf of Beazer East, Inc. (Beazer) and Hatchett Creek Leasing, Inc. (HCL), Key Environmental, Inc. (KEY) hereby provides to the Alabama Department of Environmental Management (ADEM) this *Monitoring Well Abandonment, Replacement and Repair Plan* for the former Koppers Inc. Facility located in Montgomery, Alabama (Facility). The location of the Facility is shown on Figure 1. This letter work plan also serves as a request for modification of the Post Closure Permit (Permit) for the Facility, as necessitated by the monitoring well abandonment and replacement activities. Table 1 presents the proposed changes to the existing Permit language. This plan contains background information, a discussion of the proposed methodologies, and a schedule. This plan is also supported by two tables, seven figures, and an attachment that consists of the original well construction logs for the subject wells (M-02B, M-02C, and M-14).

## **PROJECT BACKGROUND**

On June 17, 2025, KEY submitted the *Monitoring Well M-14 Abandonment and Replacement Plan* to ADEM. A conference call took place between ADEM, Beazer, Field & Technical Services, LLC (FTS), and KEY on June 17, 2025, during which the abandonment and replacement of monitoring well M-02C was discussed and recommended in addition to the abandonment and replacement of monitoring well M-14. Abandonment and replacement of both M-02C and M-14 were further discussed during a conference call between ADEM, Beazer, FTS, and KEY on August 7, 2025.

On September 16, 2025, KEY was contacted by ADEM Hydrogeologist Mr. Wade Reeves, who had questions regarding the over-drilling process and borehole diameter for the abandonment of monitoring well M-14. KEY responded that the PVC well pipe will be pulverized during the over-drilling process using the Rotasonic method and will be removed from the borehole along with

annular well materials (grout, bentonite seal and sand pack). With regard to the over-drill borehole diameter, the 8-inch casing diameter being used with the Rotasonic method will be sufficient to remove all the well materials. The construction log for well M-14 is attached to this work plan, and while it does not specify a borehole diameter for monitoring well M-14, it does indicate that the well screen and casing are comprised of 2-inch diameter PVC. A 2-inch diameter well would have been installed in a 6-inch diameter borehole; therefore, KEY is confident the larger 8-inch diameter over-drilling will remove existing well materials. On September 19, 2025, ADEM indicated that their questions had been adequately addressed and requested that the responses to ADEM's questions be incorporated into this plan.

### **Condition of Monitoring Well M-14**

Monitoring well M-14 is classified in the Permit as a Category 2 effectiveness and boundary monitoring well. Monitoring well M-14 was completed on June 12, 1985, and its geologic log and well construction details are attached for reference. The location of the existing well targeted for abandonment (M-14) is 32°23'58.92891" North latitude, 86°19'25.26893" West longitude (Figure 2), which places the well in the general vicinity of the former wood treatment process area. This well was completed in unconsolidated deposits and has a constructed total depth of 43 feet below ground surface (ft-bgs) and 45.3 feet below the top of the well casing. Monitoring well M-14 was completed with a 2-inch diameter, 10-foot long slotted PVC well screen and 2-inch diameter PVC riser pipe as shown on the attached well construction log.

During the recent gauging and sampling event (March 2025), structural integrity issues with the PVC casing in well M-14 were encountered at a depth of approximately 25 feet below the top of casing (approximately 20 feet above the bottom of the well). Following discovery of the issue, a downhole camera inspection was performed in M-14 on March 20, 2025, and confirmed that structural integrity of the PVC inner casing was compromised. ADEM was formally notified of the damage to well M-14 via a letter dated April 1, 2025. This formal notification was followed by the submittal of the *Monitoring Well M-14 Abandonment and Replacement Plan* to ADEM on June 17, 2025.

### **Condition of Monitoring Well M-02C**

Monitoring well M-02C is classified in the Permit as a Category 1 background and Point of Compliance (POC) monitoring well. Monitoring well M-02C was completed on October 30, 1991, and its geologic log and well construction details are attached for reference purposes. The location of the existing well targeted for abandonment (M-02C) is 32°24'01.10237" North latitude, 86°19'09.89320" West longitude (Figure 2), which places the well along the northeastern former Facility boundary and to the east of the current Facility boundary. This well was completed in unconsolidated deposits and has a constructed total depth of 91.0 ft-bgs and 94.28 feet below the top of the well casing. Monitoring well M-02C was completed with a 4-inch diameter, 10-foot long PVC slotted well screen and 4-inch diameter PVC riser pipe as shown on the attached well construction log.

During a downhole video inspection event (June 2020), approximately 80% of the well screen of M-02C was found to be occluded. Redevelopment of M-02C was attempted on June 16, 2020, but resulted in minimal change to total depth. As noted in the *ADEM Operation and Maintenance Inspection Response Letter* sent from ADEM to FTS on November 21, 2012, well screen occlusion of 20% or more is identified as a trigger for further evaluation and potential corrective action. Abandonment and replacement of M-02C was discussed during conference calls between ADEM, Beazer, FTS, and KEY on June 17, 2025 and August 7, 2025.

### **Condition of Monitoring Well M-02B**

A crack in the PVC casing of well M-02B was noted during a September 2025 video inspection of the well and requires repair. Well M-02B is designated as a Category 1 background and POC monitoring well. Monitoring well M-02B was completed on December 27, 1980, and its geologic log and well construction details are attached for reference. The location of the existing well targeted for repair (M-02B) is 32°23'01.44834" North latitude, 86°19'10.16752" West longitude (Figure 2), which places the well along the northeastern former Facility boundary and to the east of the current Facility boundary. This well was completed in unconsolidated deposits and has a constructed total depth of 51.0 ft-bgs and 53.10 feet below the top of the well casing. Monitoring well M-02B was completed with a 2-inch diameter, 10-foot long PVC slotted well screen and 2-inch diameter PVC riser pipe as shown on the attached well construction log.

### **PURPOSE**

The aforementioned monitoring well damage notifications, this work plan, and the proposed abandonment and replacement of monitoring wells M-02C and M-14 are required per Part III of ADEM's September 25, 2018 Final Permit Determination pertaining to maintaining groundwater monitoring systems. As specified in Permit Condition III.B.1.d, this plan includes the specifications for the design, location, and installation of replacement monitoring wells M-02CR and M-14R. The specific information required by Permit Condition III.B.1.d includes descriptions of well development methods, well construction materials, and a schedule of implementation for construction and is discussed in the following sections titled "Methodology" and "Project Schedule". The "Methodology" section is supported by five figures (Figures 3, 4, 5, 6, and 7). Figures 3 and 4 present the proposed locations for replacement wells M-14R and M-02CR, respectively, as well as the latitude and longitude for the proposed replacement well locations. Figures 5 and 6 present schematics of the proposed construction details for replacement monitoring wells M-14R and M-02CR, respectively. Figure 7 presents the proposed repairs to be conducted regarding well M-02B.

### **METHODOLOGY**

Monitoring wells M-14 and M-02C will be abandoned by an Alabama-licensed well driller. The well abandonment and replacement well installation work will be supervised by a KEY geologist

or engineer. The KEY supervising personnel will measure the depth to groundwater and total depth of the well prior to the start of the abandonment process. The protective casing and concrete pad will then be removed by the drilling subcontractor and set aside for repurposing, recycling, or disposal.

### **Monitoring Well M-14 Abandonment and Replacement**

Monitoring well M-14, which is located near the former process area, will be abandoned using over-drilling methods to remove the well casing, well screen, and annular well materials (filter pack, bentonite, and grout), followed by tremie grouting to seal the cleared wellbore. The Rotasonic drill will be equipped with a nominal 8-inch outside diameter core barrel and will be advanced to the elevation of the original wellbore to ensure the well construction materials are completely removed. These well materials will be collected and containerized for subsequent transport offsite by approved haulers to an approved waste management facility. The resulting borehole will then be tremie grouted from its base to two ft-bgs using a cement-bentonite grout that is mixed to a ratio of 94 lbs of Portland cement to 5 lbs of powdered bentonite to 8.3 gallons of water for a target density range of 13.4 to 14.5 lbs per gallon. A two-foot-thick concrete plug will then be installed on top of the grout column that will function as a surface seal.

Replacement monitoring well M-14R will be located within 20 feet of the abandoned well (Figure 3), with a goal of installing the replacement well as close to the original well as feasibly possible. Replacement well M-14R will be constructed as shown on Figure 5. Replacement well M-14R will be constructed with 2-inch inside diameter stainless steel riser pipe and a 10-foot long, 0.010-inch slotted stainless steel well screen. The rationale for using stainless steel well materials is to ensure compatibility with the possible presence of dense non-aqueous phase liquids (DNAPL) that may be present in the overburden, as identified on the attached M-14 boring log from June 1985. A coarse sand filter pack will be placed in the annular space from the bottom of the boring to a height of no less than two feet above the top of the stainless steel screen. A bentonite seal having a minimum thickness of two feet will be placed above the filter pack and hydrated. After allowing time for adequate hydration of the bentonite pellets, the remaining annulus will be sealed with the previously specified cement/bentonite grout mixture. The grout will be placed from the bottom of the annular space to within 0.5 feet of the surface using tremie pipe methods.

### **Monitoring Well M-02C Abandonment and Replacement**

Background monitoring well M-02C will be abandoned via tremie grouting of the well casing in place. Over-drilling of existing well M-02C to facilitate well abandonment is not necessary, as no groundwater contamination exists at this background location, as demonstrated by the 2025 background analytical data included in Table 2. As the groundwater quality data for shallower wells M-02A and M-02B show no evidence of impact either, there is no potential for degradation of the deeper C-Zone groundwater via downward vertical migration from the A-Zone and B-Zone at this background location. Furthermore, monitoring well M-02C is installed in the uppermost aquifer beneath the Site, as demonstrated by the potentiometric surface elevations measured in the

three wells installed at the M-02 well cluster location. The 2025 potentiometric surface elevations measured in wells M-02A, M-02B and M-02C were as follows:

- M-02A – 129.39 ft-msl
- M-02B – 129.45 ft-msl
- M-02C – 129.63 ft-msl

The similarity in the potentiometric surface elevations measured in the wells at the M-02 location is a clear indication that the three wells are screened in the same aquifer.

Following removal of the protective casing and concrete pad, the PVC riser will be cut to an elevation of two ft-bgs. Then, the well will be sealed by filling the well casing with cement-bentonite grout from the base of the well to the top of the PVC riser. A two-foot-thick concrete plug will then be installed on top of the grout column that will function as a surface seal.

Replacement monitoring well M-02CR will be located within 20 feet of the abandoned well (Figure 4), with a goal of installing the replacement well as close to the original well as feasibly possible. Replacement well M-02CR will be constructed as shown on Figure 6. Replacement well M-02CR will be constructed with 4-inch diameter PVC riser pipe and a 10-foot long, 0.010-inch slotted PVC well screen similar to the original well. A coarse sand filter pack will be placed in the annular space from the bottom of each boring to a height of no less than two feet above the top of the screen section. A bentonite seal having a minimum thickness of two feet will be placed above the filter pack and hydrated. After allowing time for adequate hydration of the bentonite pellets, the remaining annulus will be sealed with the previously specified cement/bentonite grout mixture. The grout will be placed from the top of the hydrated bentonite seal to within 0.5 feet of the surface using tremie pipe methods.

### **Well M-02B Repair**

Near-surface damage to the PVC riser was noted in well M-02B during a downhole video inspection completed in September 2025. The repair process will consist of excavating to a depth below the damage and cutting the damaged PVC section free from the remainder of the well casing. A coupling will be placed around the existing riser, and a new piece of PVC will be inserted into the coupling to extend the riser to an approximate elevation of two feet above the ground surface. After repairs are completed, the excavation area will be backfilled with cement/bentonite grout. The schematic of the proposed repair is depicted in Figure 7.

### **Well Completion, Development, and Survey**

Replacement wells M-14R and M-02CR, and repaired well M-02B, will each be completed with an approximately two-foot stick-up. A concrete pad will be installed around each well to serve as a surface plug and to minimize the presence of standing surface water. A locking protective steel

casing will be installed around the stickup of each well to protect from inadvertent damage or vandalism.

Well development of replacement wells M-14R and M-02CR will be initiated as soon as practicable after the installations of M-02CR and M-14R have been completed. Well development will be completed using pump and surge methods. Well development will continue until the return liquids are visually free of sand and silt-sized particles, to the extent practicable, as determined by field turbidity measurements and water quality field parameters such as pH, temperature, and specific conductance have stabilized. All development liquids will be captured and containerized in clean 55-gallon drums. All cuttings, well materials, and decontamination liquids will be captured, segregated, and containerized in clean 55-gallon steel drums. The outside of these drums will be cleaned, appropriately labeled, and temporarily staged on wooden pallets for subsequent transport by an approved waste hauler to an approved waste management facility.

All drilling, well removal, well replacement, and well repair work will be performed by a driller licensed in the State of Alabama. The drilling, well removal, well installation, and well development work will be overseen by a KEY geologist or engineer. The onsite KEY geologist or engineer will document and maintain records of the field procedures and conditions, including measurements of total depth, static water levels, depth of well materials, and predicted versus actual volume of grout used for the abandonment and installation efforts. The number of bags of cement/bentonite consumed and volume of potable water used will also be maintained throughout this event.

The elevations of the tops of replacement well casings and their XY locations will be surveyed once the drilling and installation effort is completed. The surveying services will be provided by an Alabama professional licensed surveyor. The location of replacement wells M-02CR and M-14R will be referenced to the North American Datum of 1983. The surveyed locations for M-02CR and M-14R will be reported in feet and referenced to the Alabama East State Plane Coordinate System. Location data will also be reported in degrees, minutes, and seconds and referenced to geographic coordinates (latitude and longitude) as requested by ADEM. The elevation of the ground surface and the top of the well casing at all three locations will be referenced to the North American Vertical Datum of 1988, and results reported to the nearest 100<sup>th</sup> of a foot.

## **PROJECT SCHEDULE**

The field work will begin within three weeks of receipt of ADEM's written acceptance of this letter work plan. It is estimated that the removal and replacement of M-02C and M-14, along with the repair of M-02B, will require approximately two weeks to complete. It is planned that well development and surveying will occur during the same mobilization. A letter report that provides a summary of methods, observations, and well construction details will be issued to ADEM within 30 days of demobilization from the field in accordance with Permit Condition III.B.1.a.iii.

---

## CLOSING

KEY appreciates ADEM's attention to the matter. If you have any questions regarding this submittal, please contact me at 412-428-9387 or Mr. Robert Venczel, agent for Beazer, at 412-742-8956.

Sincerely,

### Key Environmental, Inc.



James Zubrow, P.G.  
Principal Hydrogeologist

cc:

- A. Pierce – ADEM (Electronic)
- Chief RCRA Program Branch USEPA Region 4 (Hard Copy and Electronic)
- R. Venczel - Beazer (Electronic)
- R. Walker – HCL (Electronic)
- A. Gatchie – FTS (Electronic)

## **TABLES**

**Table 1**  
**Requested Permit Modifications**

<b>Permit Section</b>	<b>Page Number</b>	<b>Requested Modification</b>	<b>Modification Rationale</b>
III.B.1.c	2 of 17	Change M-02C to M-02CR	Well to be Abandoned and Replaced
III.E.1.b	5 of 17	Change M-14 to M-14R	Well to be Abandoned and Replaced
Table III.1	8 of 17	Change Well Depth (ft-BTC) to measured depth of Repaired Well M-02B	Well to be repaired by replacing damaged casing with new casing
Table III.1	8 of 17	Change Top of Riser Elevation to that of Replaired Well M-02B	Well to be repaired by replacing damaged casing with new casing
Table III.1	8 of 17	Change M-02C to M-02CR	Well to be Abandoned and Replaced
Table III.1	8 of 17	Change Latitude and Longitude to that of Replacement Well M-02CR	Replacement Well Survey
Table III.1	8 of 17	Change Well Depth (ft-BTC) to measured depth of Replacement Well M-02CR	Replacement Well Survey
Table III.1	8 of 17	Change Ground Surface Elevation to that of Replacement Well M-02CR	Replacement Well Survey
Table III.1	8 of 17	Change Top of Riser Elevation to that of Replacement Well M-02CR	Replacement Well Survey
Table III.1	8 of 17	Change M-02CR Screened Interval Based on Elevation Results M-02CR	Replacement Well Survey
Table III.1	9 of 17	Change M-14 to M-14R	Well to be Abandoned and Replaced
Table III.1	9 of 17	Change Latitude and Longitude to that of Replacement Well M-14R	Replacement Well Survey
Table III.1	9 of 17	Change Well Depth (ft-BTC) to measured depth of Replacement Well M-14R	Replacement Well Survey
Table III.1	9 of 17	Change Ground Surface Elevation to that of Replacement Well M-14R	Replacement Well Survey
Table III.1	9 of 17	Change Top of Riser Elevation to that of Replacement Well M-14R	Replacement Well Survey
Table III.1	9 of 17	Change M-14R Screened Interval Based on Elevation Results M-14R	Replacement Well Survey
Table III.1	13 of 17	Change the first sentence of footnote 2 to include dates of installation of M-02CR and M-14R before the period.	Replacement Well Survey

**Table 2**  
**Summary of 2025 Background Groundwater Analytical Results**  
**Former Koppers Inc. Facility**  
**Montgomery, Alabama**

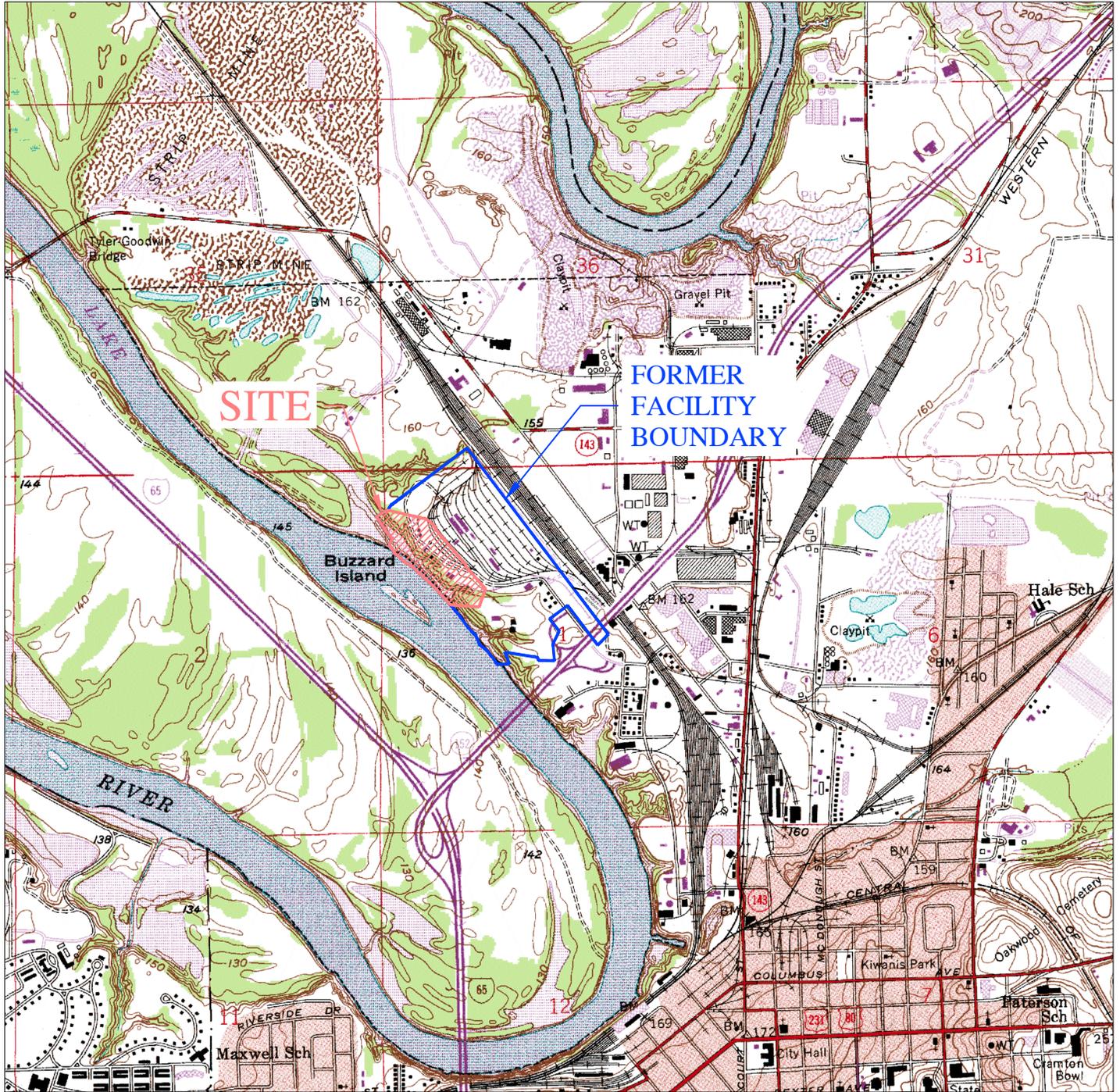
MW Designations Location ID Sample Date	GPS	MDL	CAT 1 - BKG M-02A		CAT 1 - BKG M-02B		CAT 1 - BKG M-02C		
			3/11/2025	9/9/2025	3/11/2025	9/9/2025	3/12/2025	9/9/2025	DUP
			<b>Metals (Method 6020B), mg/l</b>						
ARSENIC, TOTAL	0.01	0.00068	0.00068 U	-	0.00068 U	-	0.0019 J	-	-
CHROMIUM, TOTAL	0.1	0.00055	0.0016 J	-	0.00072 J	-	0.0034	-	-
IRON, TOTAL	1.4	0.02	0.088	-	0.031 J	-	0.034 J	-	-
LEAD, TOTAL	0.015	0.00012	0.00012 U	-	0.0005 U	-	0.0023	-	-
MANGANESE, TOTAL	0.043	0.00095	0.39	-	0.26	-	0.002 U	-	-
<b>VOC (Method 8260D), ug/l</b>									
BENZENE	5	0.3	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
TOLUENE	1000	0.3	1 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U
<b>SVOC (Method 8270E LL), ug/l</b>									
2,4,6-TRICHLOROPHENOL	1.2	0.22	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U	0.23 U	0.22 U
2,4-DIMETHYLPHENOL	36	0.59	0.59 U	0.61 U	0.59 U	0.61 U	0.59 U	0.61 U	0.56 U
2-CHLOROPHENOL	9.1	0.23	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.22 U
2-METHYLNAPHTHALENE	3.6	0.062	0.062 U	0.2 U	0.062 U	0.68 J+	0.062 U	0.21 U	0.18 U
4-METHYLPHENOL	190	0.37	0.37 U	0.39 U	0.37 U	0.39 U	0.37 U	0.57 J	0.96
ACENAPHTHENE	53	0.065	0.065 U	0.068 U	0.065 U	0.2 J+	0.077 J	0.2 U	0.26 J+
ANTHRACENE	180	0.049	0.049 U	0.051 U	0.049 U	0.051 U	0.099 J	0.12 J	0.093 J
BENZO(A)ANTHRACENE	0.03	0.075	0.075 U	0.078 U	0.075 U	0.078 U	0.075 U	0.078 U	0.072 U
BENZO(A)PYRENE	0.2	0.053	0.053 U	0.055 U	0.053 U	0.055 U	0.053 U	0.055 U	0.051 U
BENZO(B)FLUORANTHENE	0.25	0.097	0.097 U	0.1 U	0.097 U	0.1 U	0.097 U	0.1 U	0.093 U
BENZO(G,H,I)PERYLENE	47	0.069	0.069 U	0.072 U	0.069 U	0.072 U	0.069 U	0.072 U	0.066 U
BENZO(K)FLUORANTHENE	2.5	0.088	0.088 U	0.092 U	0.088 U	0.092 U	0.088 U	0.092 U	0.085 U
CARBAZOLE	3.4	0.051	0.051 U	0.053 U	0.051 U	0.053 U	0.12 J	0.2 U	0.18 U
CHRYSENE	25	0.081	0.081 U	0.084 U	0.081 U	0.084 U	0.081 U	0.084 U	0.078 U
DIBENZO(A,H)ANTHRACENE	0.025	0.072	0.072 U	0.075 U	0.072 U	0.075 U	0.072 U	0.075 U	0.069 U
DIBENZOFURAN	0.79	0.19	0.19 U	0.2 U	0.19 U	0.2 J	0.19 U	0.2 U	0.18 J
FLUORANTHENE	80	0.06	0.06 U	0.063 U	0.06 U	0.064 J	0.06 U	0.065 J	0.074 J
FLUORENE	29	0.069	0.069 U	0.072 U	0.069 U	0.2 U	0.069 U	0.2 U	0.18 J+
INDENO(1,2,3-CD)PYRENE	0.25	0.085	0.085 U	0.089 U	0.085 U	0.089 U	0.085 U	0.089 U	0.082 U
NAPHTHALENE	0.17	0.059	0.059 U	0.43 U	0.059 U	2.9 J+	0.31	1.3 J+	1 J+
PENTACHLOROPHENOL	1	0.85	0.85 U	0.88 U	0.85 U	0.88 U	0.85 U	0.88 U	0.81 U
PHENANTHRENE	47	0.16	0.16 U	0.16 U	0.16 U	0.19 J	0.16 U	0.18 J	0.24
PYRENE	12	0.054	0.054 U	0.056 U	0.054 U	0.056 U	0.054 U	0.056 U	0.053 J
TOTAL SVOCs	--	--	0	0	0	4.234	0.606	2.235	3.04

**Notes:**

- mg/l = milligrams per liter
- ug/l = micrograms per liter
- J = Indicates an estimated value
- J+ = Indicates an estimated value biased high
- U = Nondetect result
- GPS = Groundwater Protection Standard
- MDL = Method Detection Limit
- BKG = Category 1 Background Well

## **FIGURES**

y:\montgomery\25-062\letter work plan\abandonment and replacement m-14 m-02c m02b figure 1 site location.dwg Last Saved By: SComer 12/5/2025 9:20 AM Plotted By: Shelly Comer 12/17/2025 9:49 AM Scale: 1:1



**BEAZER EAST, INC.**  
**PITTSBURGH, PENNSYLVANIA**

DRWN: SCC	DATE: 12/08/25
CHKD: DK	DATE: 12/08/25
APPD: JSZ	DATE: 12/08/25
SCALE: NOT TO SCALE	

LETTER WORK PLAN  
 FORMER KOPPERS INC. FACILITY  
 MONTGOMERY, ALABAMA

REFERENCE: U.S. GEOLOGICAL SURVEY MONTGOMERY NORTH QUADRANGLE MAP

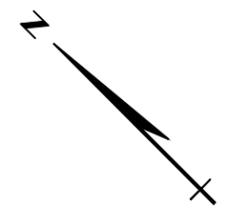
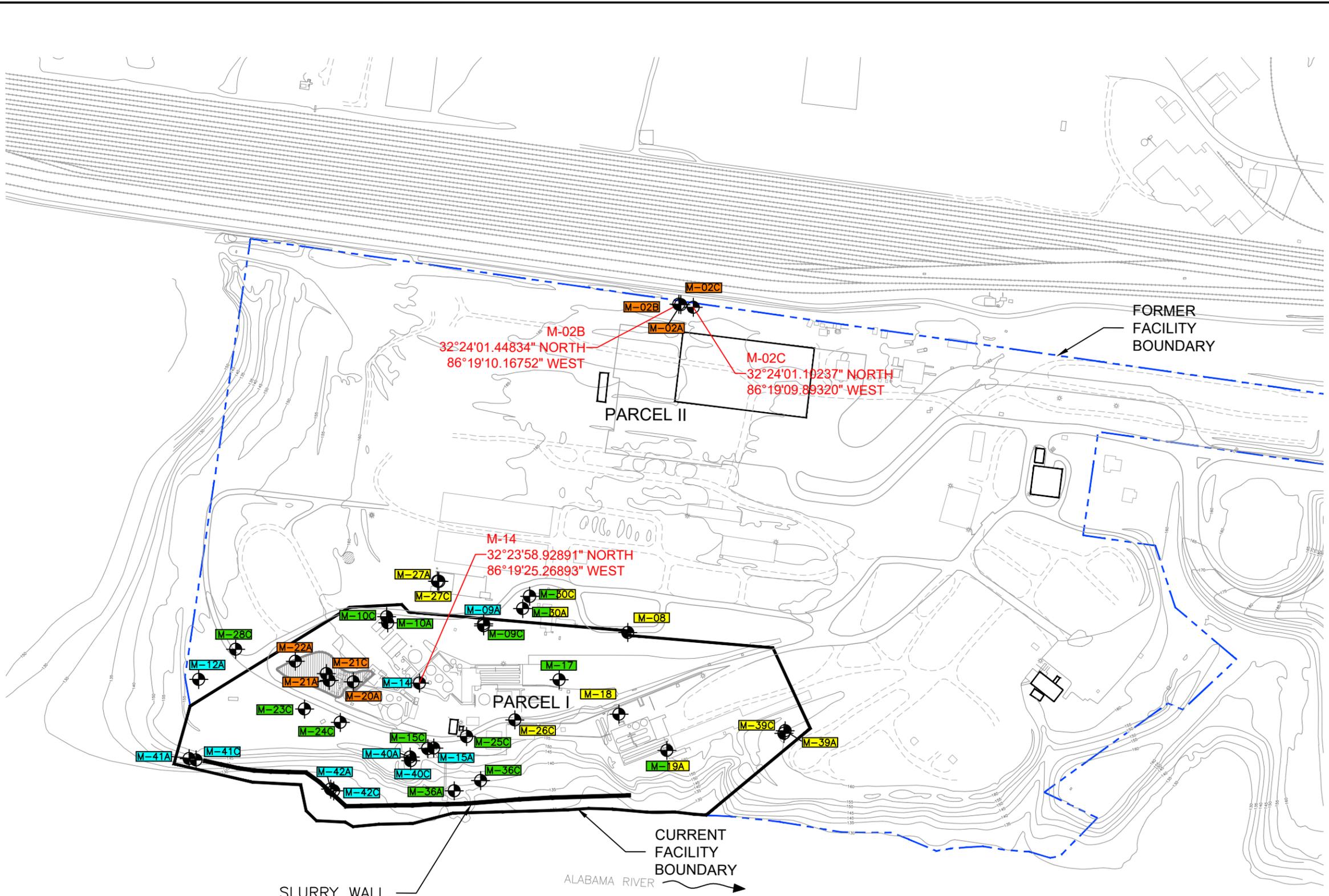
ISSUE DATE:

KEY ENVIRONMENTAL, INC.  
 200 THIRD AVENUE  
 CARNEGIE, PA 15106

SITE LOCATION

PROJECT NO: 25062-02  
**FIGURE 1**

v:\montgomery\25-062\letter work plan\abandonment and replacement m-14 m-02c m02b\figure 2 well m02b repair.dwg Last Saved By: SComer 12/17/2025 10:32 AM Plotted By: Shelly Comer 12/17/2025 10:32 AM Scale: 1:1



### LEGEND

- EXISTING OR FORMER BUILDINGS
- EXISTING OR FORMER RAILROADS
- EXISTING ROADS
- FORMER/CLOSED IMPOUNDMENT
- WELL LOCATION
- CATEGORY 1
- CATEGORY 2
- CATEGORY 3
- CATEGORY 4

NOTE:  
WELLS M-19B AND M-30B WILL BE USED FOR BOTH MONITORING AND HYDRAULIC PURPOSES. MORE THAN ONE CATEGORY CAPTURED IN WELL COLOR CODING.



BEAZER EAST, INC.  
PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 12/08/25
CHKD: ECL	DATE: 12/08/25
APPD: JSZ	DATE: 12/08/25
SCALE:	AS SHOWN



LETTER WORK PLAN  
FORMER KOPPERS INC. FACILITY  
MONTGOMERY, ALABAMA

WELL ABANDONMENT AND REPAIR  
LOCATION MAP

PROJECT NO: 25062-02  
FIGURE 2

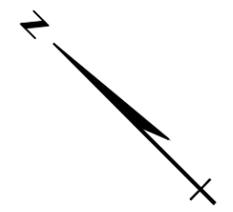
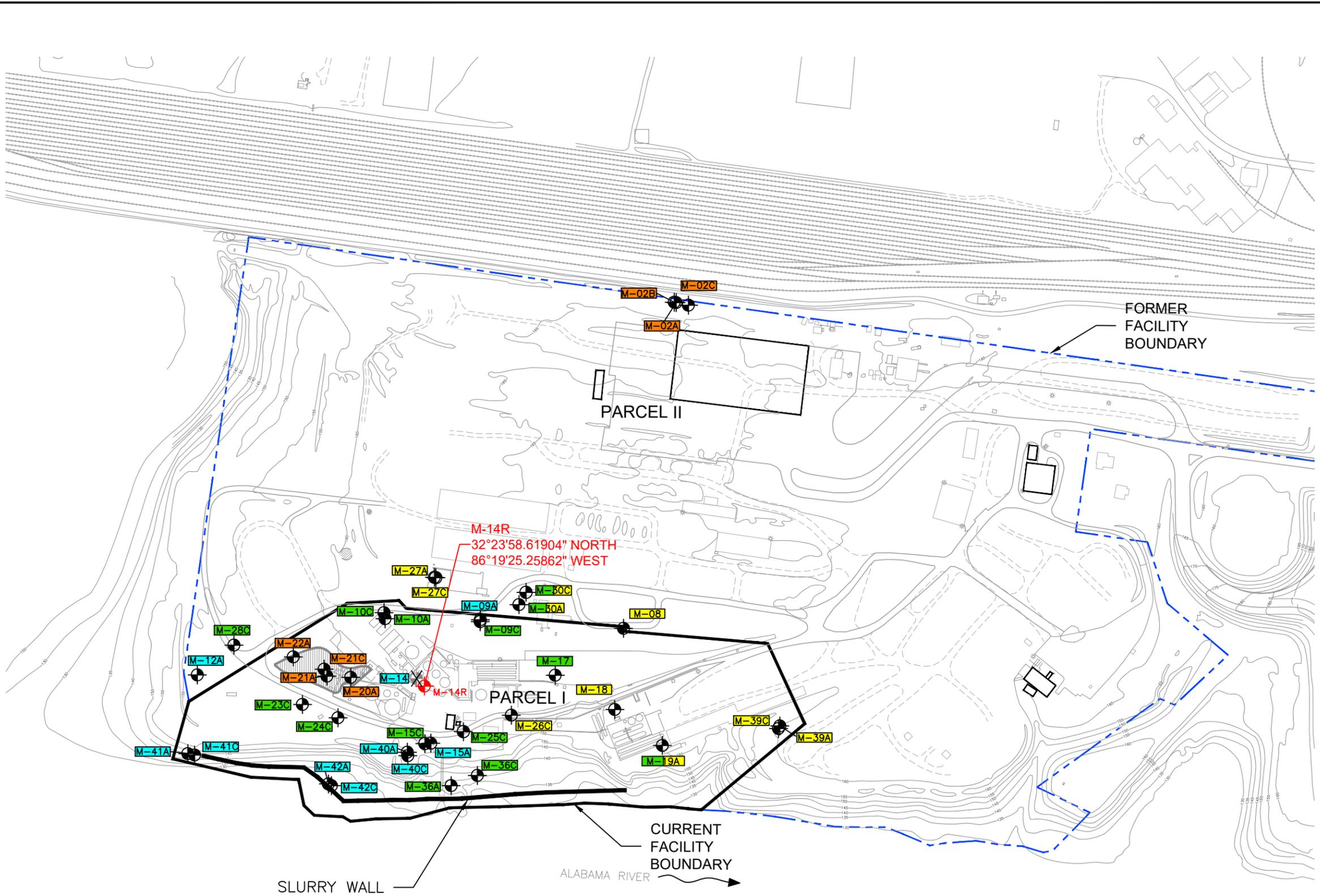
REFERENCE: BASE MAP WAS PROVIDED BY EMS UPDATED ELEVATION INFORMATION OBTAINED FROM NOVEMBER 2007 SURVEY DATA.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.  
200 THIRD AVENUE  
CARNEGIE, PA 15106

REV #	DATE	DESCRIPTION	APPD

v:\montgomery\25-062\letter work plan\abandonment and replacement m-14 m-02c m02b\figure\_3\_replacement m-14 r well location map.dwg Last Saved By: SComer 12/17/2025 10:33 AM Plotted By: Shelly Comer 12/17/2025 10:33 AM Scale: 1:1



**LEGEND**

- EXISTING OR FORMER BUILDINGS
- EXISTING OR FORMER RAILROADS
- EXISTING ROADS
- FORMER/CLOSED IMPOUNDMENT
- WELL LOCATION
- ABANDONMENT WELL LOCATION
- REPLACEMENT WELL LOCATION
- CATEGORY 1
- CATEGORY 2
- CATEGORY 3
- CATEGORY 4

NOTE:  
 WELLS M-19B AND M-30B WILL BE USED FOR BOTH MONITORING AND HYDRAULIC PURPOSES. MORE THAN ONE CATEGORY CAPTURED IN WELL COLOR CODING.



BEAZER EAST, INC.  
 PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 12/08/25
CHKD: DK	DATE: 12/08/25
APPD: JSZ	DATE: 12/08/25
SCALE:	AS SHOWN



LETTER WORK PLAN  
 FORMER KOPPERS INC. FACILITY  
 MONTGOMERY, ALABAMA

REPLACEMENT WELL M-14R  
 LOCATION MAP

PROJECT NO: 25062-02  
**FIGURE 3**

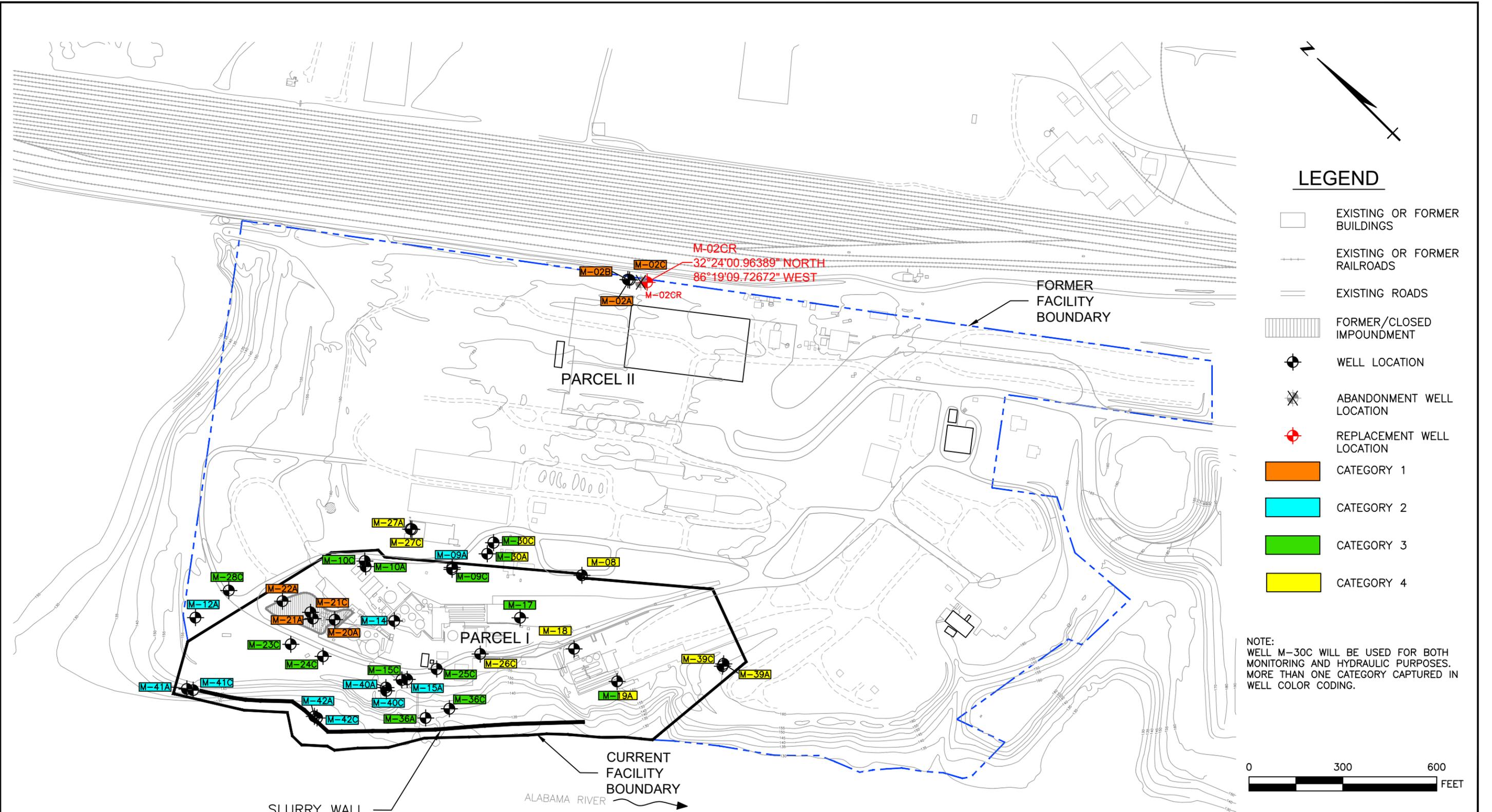
REFERENCE: BASE MAP WAS PROVIDED BY EMS UPDATED ELEVATION INFORMATION OBTAINED FROM NOVEMBER 2007 SURVEY DATA.

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 CARNEGIE, PA 15106

REV #	DATE	DESCRIPTION	APPD

v:\montgomery\25-962\water work plan\abandonment and replacement m-14 m-02c.mxd\figure 4 replacement well m-02cr location map.dwg  
 Last Saved By: SComer 12/17/2025 10:33 AM  
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 Scale: 1:1



### LEGEND

-  EXISTING OR FORMER BUILDINGS
-  EXISTING OR FORMER RAILROADS
-  EXISTING ROADS
-  FORMER/CLOSED IMPOUNDMENT
-  WELL LOCATION
-  ABANDONMENT WELL LOCATION
-  REPLACEMENT WELL LOCATION
-  CATEGORY 1
-  CATEGORY 2
-  CATEGORY 3
-  CATEGORY 4

NOTE:  
 WELL M-30C WILL BE USED FOR BOTH MONITORING AND HYDRAULIC PURPOSES. MORE THAN ONE CATEGORY CAPTURED IN WELL COLOR CODING.

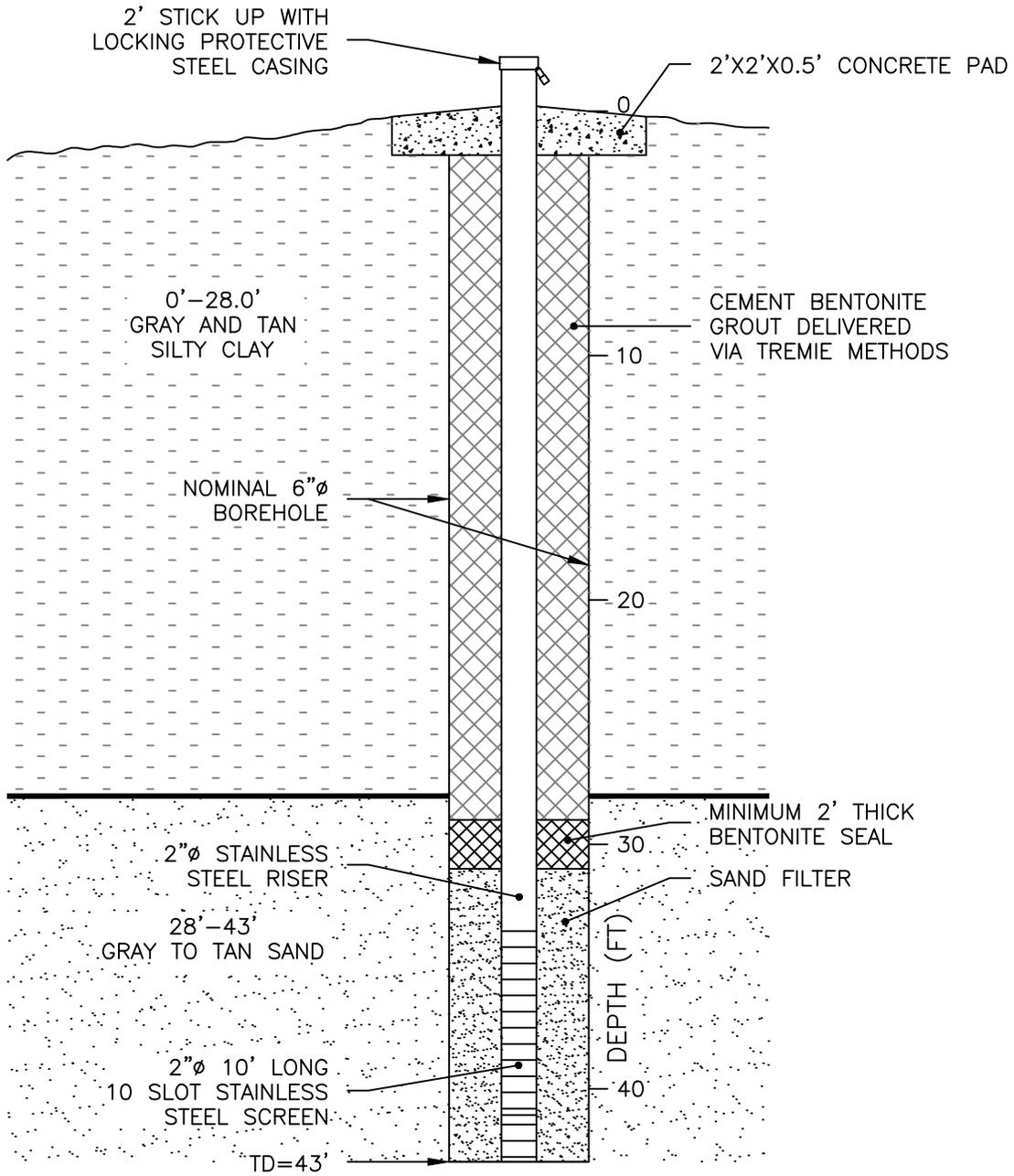


BEAZER EAST, INC. PITTSBURGH, PENNSYLVANIA	
DRWN: SCC	DATE: 12/08/25
CHKD: DK	DATE: 12/08/25
APPD: JSZ	DATE: 12/08/25
SCALE: AS SHOWN	
LETTER WORK PLAN FORMER KOPPERS INC. FACILITY MONTGOMERY, ALABAMA	
REPLACEMENT WELL M-02CR LOCATION MAP	PROJECT NO: 25062-02 FIGURE 4

REFERENCE: BASE MAP WAS PROVIDED BY EMS  
 UPDATED ELEVATION INFORMATION OBTAINED FROM NOVEMBER 2007 SURVEY DATA.

REV #	DATE	DESCRIPTION	APPD

y:\montgomery\25-062\letter work plan\abandonment and replacement m-14 m-02c m02b Figure 5 schematic of proposed replacement well m-14r.dwg Last Saved By: SComer 12/5/2025 7:52 AM Plotted By: Shelly Comer 12/17/2025 10:33 AM Scale: 1:1



**NOTE:**  
 WELL TO BE CONSTRUCTED IN ACCORDANCE WITH THE  
 2017 VERSION OF THE ALABAMA ENVIRONMENTAL  
 INVESTIGATION & REMEDIATION GUIDANCE DOCUMENT.

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.  
 200 THIRD AVENUE  
 CARNEGIE, PA 15106

BEAZER EAST, INC.  
 PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 12/08/25
CHKD: DK	DATE: 12/08/25
APPD: JSZ	DATE: 12/08/25
SCALE: NOT TO SCALE	

**KEY** ENVIRONMENTAL  
 INCORPORATED

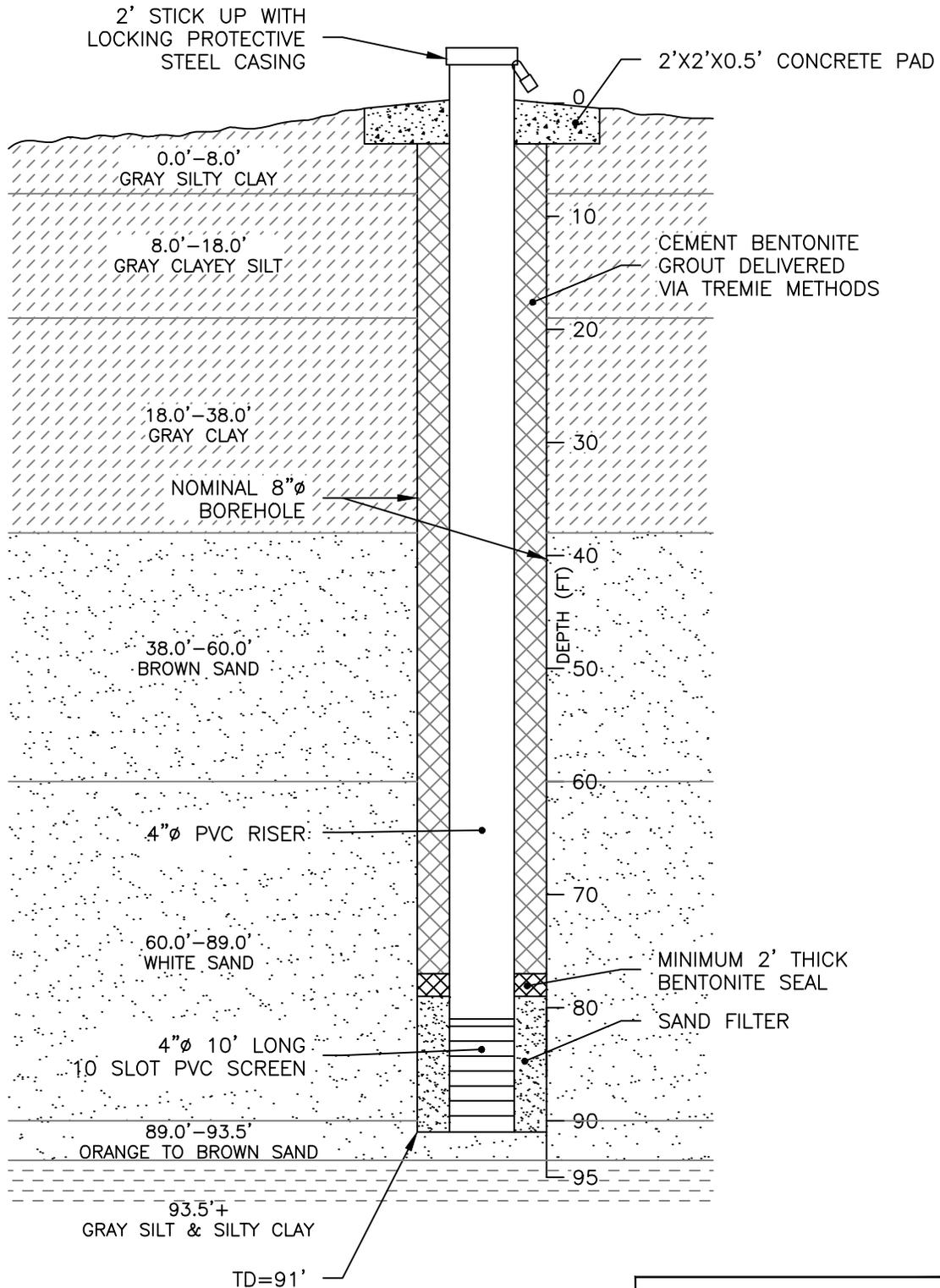
LETTER WORK PLAN  
 FORMER KOPPERS INC. FACILITY  
 MONTGOMERY, ALABAMA

SCHEMATIC OF PROPOSED  
 REPLACEMENT WELL M-14R

PROJECT NO: 25062-02

FIGURE 5

Y:\montgomery\25-062\letter work plan\abandonment and replacement m-14 m-02c m02b Figure 6 schematic of proposed replacement well m-02cr.dwg Last Saved By: SComer 12/5/2025 7:52 AM Plotted By: Shelly Comer 12/17/2025 10:33 AM Scale: 1:1



**NOTE:**  
 WELL TO BE CONSTRUCTED IN ACCORDANCE WITH THE 2017 VERSION OF THE ALABAMA ENVIRONMENTAL INVESTIGATION & REMEDIATION GUIDANCE DOCUMENT.

REFERENCE:

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 200 THIRD AVENUE  
 CARNEGIE, PA 15106

BEAZER EAST, INC.  
 PITTSBURGH, PENNSYLVANIA

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CHKD: DK	DATE: 12/08/25
APPD: JSZ	DATE: 12/08/25
SCALE: NOT TO SCALE	

**KEY ENVIRONMENTAL**  
**INCORPORATED**

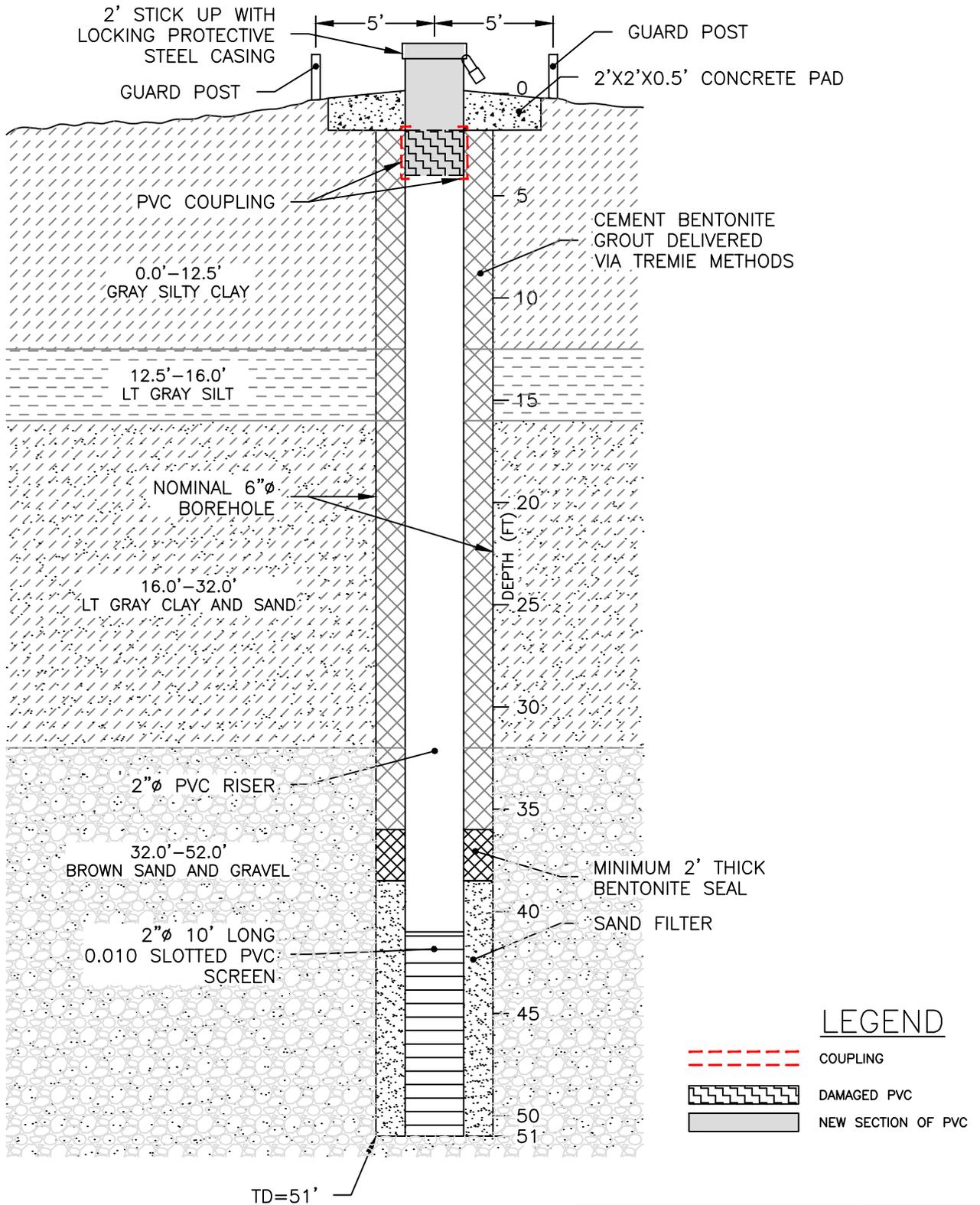
LETTER WORK PLAN  
 FORMER KOPPERS INC. FACILITY  
 MONTGOMERY, ALABAMA

SCHEMATIC OF PROPOSED  
 REPLACEMENT WELL M-02CR

PROJECT NO: 25062-02

FIGURE 6

Y:\montgomery\25-062\letter work plan\abandonment and replacement m-14 m-02c m02b Figure 7 schematic of proposed replacement well m-02b.dwg Last Saved By: SComer 12/17/2025 12:48 PM Plotted By: Shelly Comer 12/17/2025 10:34 AM Scale: 1:1



**NOTES:**

1. WELL TO BE REPAIRED IN ACCORDANCE WITH THE 2017 VERSION OF THE ALABAMA ENVIRONMENTAL INVESTIGATION & REMEDIATION GUIDANCE DOCUMENT.
2. DAMAGED SECTION OF PVC PIPE WILL BE REPAIRED WITH COUPLING AND NEW SECTION OF PVC PIPE.

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.  
200 THIRD AVENUE  
CARNEGIE, PA 15106

BEAZER EAST, INC.  
PITTSBURGH, PENNSYLVANIA

DRWN: SCC	DATE: 12/08/25
CHKD: ECL	DATE: 12/08/25
APPD: JSZ	DATE: 12/08/25
SCALE: NOT TO SCALE	



LETTER WORK PLAN  
FORMER KOPPERS INC. FACILITY  
MONTGOMERY, ALABAMA

SCHEMATIC OF PROPOSED  
REPAIR WELL M-02B

PROJECT NO: 25062-02

FIGURE 7

**ATTACHMENT**  
**GEOLOGIC AND CONSTRUCTION LOGS OF WELLS INCLUDED IN**  
**WORK PLAN**

# LOG OF BORING M-2C

Location: N 6389.8825 E 3798.7651  
 Elevation: 157.47 ft  
 Job No: 18804-129-186

Date: 10-29-91  
 Approved: *[Signature]*

DEPTH IN FEET	SAMPLE NUMBER	SYMBOL	BLOW COUNT OR POCKET PEN. (tsf)	LABORATORY TESTS					DESCRIPTION OF STRATUM
				COMPRESSIVE STRENGTH (tsf)	DRY DENSITY (pcf)	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX	
0.0									
5.0	1	[Symbol]							Medium stiff, brown gray, low plastic, micaceous silty clay with iron staining. (CL)
10.0	2	[Symbol]							Medium stiff, gray, micaceous, clayey silt (ML) with mottled iron staining.
15.0	3	[Symbol]							...with very fine grain sand.
20.0	4	[Symbol]							Gray, high plastic clay iron staining and nodules along vertical and horizontal fractures. (CH)
25.0	5	[Symbol]							Stiff to hard, low plastic clay interbedded with very fine grain micaceous sands and silt. (ML-SM)
30.0	6	[Symbol]							
35.0	7	[Symbol]	n=61						
	8	[Symbol]	n=100						Very dense, light to red brown, medium coarse grained well graded sand with gravel. (SM) continued

**NOTES:**

NR = NO RECOVERY; N = BLOWS PER FOOT

UNIFIED SOIL CLASSIFICATIONS BASED ON FIELD VISUAL OBSERVATIONS AND LIMITED LABORATORY TESTING

PROJECT: Beazer East, Inc.  
 Koppers Industries, Inc.  
 Montgomery, Alabama

# LOG OF BORING M-2C

Location: N 6389.8825 E 3798.7651  
 Elevation: 157.47 ft  
 Job No: 18804-129-186

Date: 10-30-91  
 Approved: *[Signature]*

DEPTH IN FEET	SAMPLE NUMBER	SYMBOL	BLOW COUNT OR POCKET PEN. (tsf)	LABORATORY TESTS					DESCRIPTION OF STRATUM
				COMPRESSIVE STRENGTH (tsf)	DRY DENSITY (pcf)	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX	
40.0									
	9		n=75						Very dense, red-brown, medium to coarse sand with gravel. (SM)
45.0									
	10		n=47						
50.0									
	11		n=43						Very dense, light brown, medium grained sand (SP) with black mineral sand.
55.0									
	12		n=81						Very dense, white, fine grained sand (SP).
60.0									
	13		n=55						
65.0									
	14		n=51						Dense, white fine grained sand with trace of mica and black mineral sands. (SM)
70.0									
	15		n=48						
75.0									
	16		n=56						

continued

**NOTES:**

NR = NO RECOVERY; N = BLOWS PER FOOT

UNIFIED SOIL CLASSIFICATIONS BASED ON FIELD VISUAL OBSERVATIONS AND LIMITED LABORATORY TESTING

PROJECT: Beazer East, Inc.  
 Koppers Industries, Inc.  
 Montgomery, Alabama

# LOG OF BORING M-2C

Location: N 6389.8825 E 3798.7651  
 Elevation: 157.47 ft  
 Job No: 18804-129-186

Date: 10-30-91  
 Approved: *[Signature]*

DEPTH IN FEET	SAMPLE NUMBER	SYMBOL	BLOW COUNT OR POCKET PEN. (tsf)	LABORATORY TESTS					DESCRIPTION OF STRATUM
				COMPRESSIVE STRENGTH (tsf)	DRY DENSITY (pcf)	MOISTURE CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX	
80.0									
85.0									Fine grained sand with trace of mica and black mineral sands. (SM) Poor recovery chasing gravel.
90.0									Orange brown medium to coarse grained very dense sand with interbedded layers of gray clay (SM)
95.0									Gray very dense silt and silty clay. (ML-CL) Boring terminated at 95 feet below land surface.
100.0									
105.0									
110.0									
115.0									

**NOTES:**

NR = NO RECOVERY; N = BLOWS PER FOOT

UNIFIED SOIL CLASSIFICATIONS BASED ON FIELD VISUAL OBSERVATIONS AND LIMITED LABORATORY TESTING

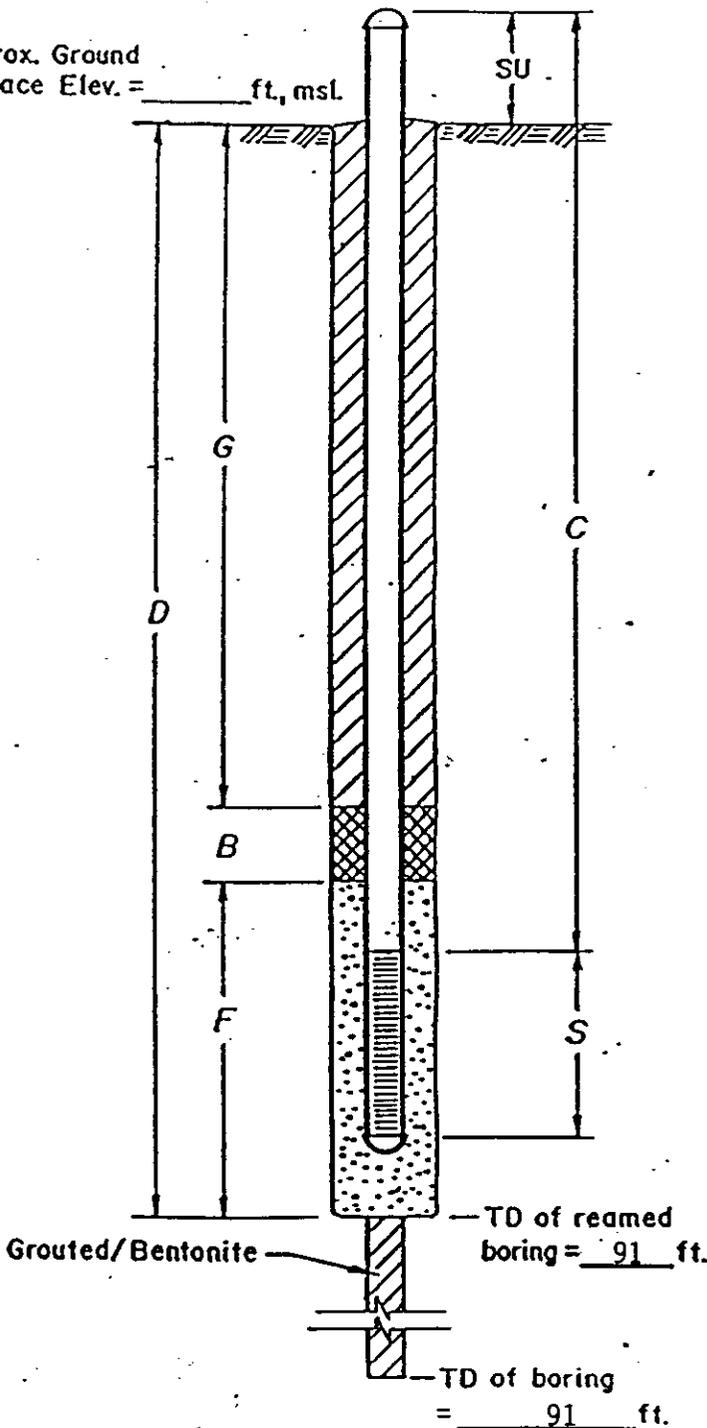
PROJECT: Beazer East, Inc.  
 Koppers Industries, Inc.  
 Montgomery, Alabama

Beazer Montgomery  
 PROJECT: Supplemental Wells WELL No. M-2C DRILLER: Layne Environmental Services

18804-129-186  
 Borehole diameter 8 in. Total of boring 91 ft.  
 Date started 10-29-91 Finished 10-30-91

Approx. Top of Casing Elev. = \_\_\_\_\_ ft., msl.

Approx. Ground Surface Elev. = \_\_\_\_\_ ft., msl.



Casing: (C)

Type Sch 40 PVC  
 Length 84 ft. I.D. 4 in.

Well Screen: (S)

Type Sch 40 PVC 0.001" slotted  
 Length 10 ft. I.D. 4 in.  
 Screen from 81 to 91 ft.

Sand Filter (F)

Type 20-30 Mesh  
 Sand from 79 to 91 ft.  
 Approx. bags of sand 7

Bentonite Seal: (B)

Seal from 77 to 79 ft.  
 Buckets of pellets 1

Grout: (G)

Grout seal from 0 to 77 ft.  
 Approx. bags of cement Truck  
 Approx. bags of bentonite \_\_\_\_\_  
 Volume 225 gallons

Other Appurtenances:

Caps: PVC Point, Locking Well cap  
 Couplings: \_\_\_\_\_  
 Centralizers: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Remarks:

Development Methods: \_\_\_\_\_  
Submersible Pump  
developed 250 gallons  
 \_\_\_\_\_  
 \_\_\_\_\_

D & M Representative(s)

John F Nelson Salvino  
Paul Arenth

**PIEZOMETER/WELL COMPLETION REPORT**

MONITORING WELL LOG

PROJECT Montgomery, Alabama

WELL NO. M-14

DRILLING METHOD Mud Rotary

GEOLOGIST C. A. Cramer

DRILLER Law Engineering

DATE 6-12-85

GROUND ELEVATION \_\_\_\_\_

GROUND WATER DEPTH (ft):

TOP OF WELL 164.90

AT COMPLETION \_\_\_\_\_

DEPTH OF WELL (ft) 43'

AFTER \_\_\_\_\_ HOURS \_\_\_\_\_

GRAVEL PACK  
BENTONITE  
BACK FILL  
CONCRETE  
SCREEN



CASING MATERIAL 2" PVC

SCREEN 10' 0.010" slotted PVC

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
1		Brown cf SAND and GRAVEL (fill); wet.	
		Light Gray and Tan Silty CLAY rust colored silt pockets, moist.	
5		Creosote stains and odor at 1.5-3.0', 11.5'- 20.5'	
10			
15			
20			
25			
30		Lt. gray and tan cf SAND, trace gravel, wet	
		Tan cf SAND and mf GRAVEL, wet	
35			
40		Tan cf SAND, with dark mineral grains, wet	



GEORGIA GULF CORPORATION  
 EVALUATED BY: PAUL ARENTH  
 EVALUATED FOR: \_\_\_\_\_  
 EVALUATION DATE: 12/27/90  
 WELL NO.: M-14

MONITORING WELL  
 PIEZOMETER  
 WELL COORDINATES  
 S 164.90  
 W 36.78  
 DATE INSTALLED: 6/12/85  
 INSTALLED BY: LAW ENGINEERING S.U. 4.5'

PREPARED BY DAMES & MOORE

WELL CONSTRUCTION DETAIL

TYPICAL WELL DETAIL

FIGURE 1

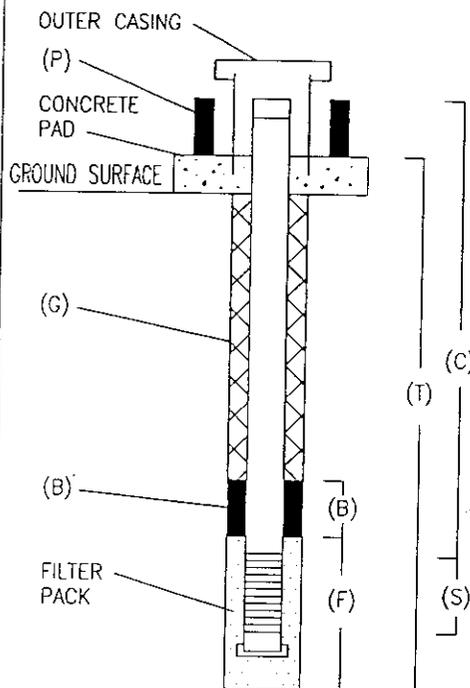
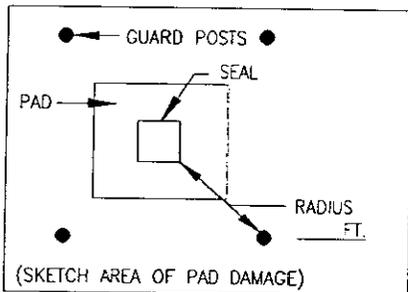


FIGURE 2 N.T.S.



① CASING (C)  
 ● TYPE 2" PVC  
 ● CAP TYPE \_\_\_\_\_

② WELL SCREEN (S)  
 ● TYPE 0.010" SL PVC

③ SAND FILTER (F)  
 ● TYPE \_\_\_\_\_

④ BENTONITE SEAL (B)  
 \_\_\_\_\_

⑤ GROUT (G)  
 ● CEMENT/BENTONITE  
 \_\_\_\_\_

⑥ GUARD POSTS (P)  
 NONE  
 \_\_\_\_\_

● DESCRIBE N/A

⑦ PAD  
 ● TYPE PART OF  
 ● DEPTH CATCH BASIN

⑧ TOTAL DEPTH (GROUND SURFACE)  
43'

⑨ SURFACE ELEVATION (MSL)  
 \_\_\_\_\_

WELL CONDITIONS CHECKLIST  
 (describe item in blanks)

- ① WELL VENTS. . . . YES NO  
 ● HEIGHT \_\_\_\_\_  
 ● DESIGN HOLE IN CAP
- ② WELL PAD. . . . YES NO (FIG.2)  
 ● RADIUS \_\_\_\_\_  
 ● GROUT UNDER PAD ?  
 ● SEAL AT CASING GOOD  
 ● CONCRETE PAD CONDITIONS: \_\_\_\_\_  
PART OF A CATCH BASIN  
EXCESSIVE VEGETATIVE GROWTH . . . YES . NO
- ③ PROTECTIVE GUARD . . . YES NO  
 ● LOCK AND KEY. . . . YES NO  
 ● COND.TONS (PAINT, RUST, HINGE, ETC.)  
FAIR-LIGHT-TIGHT
- ④ GUARD POSTS . . . . . YES NO  
 ● POST CONDITONS (FIG.2) N/A  
 \_\_\_\_\_  
 ● DISTANCE FROM CASING \_\_\_\_\_
- ⑤ WELL DEPTH 45'  
 ● SEDIMENT BUILD UP . . . YES NO
- ⑥ WELL CAP  
 ● TYPE 2" THREADED  
 ● CONDITION GOOD (HOLE FOR VENT)

FIELD RECOMMENDATIONS (CHECK ITEMS)

- NEED VENTS IN GUARD
- WELL VENT REPAIR AND UPGRADE
- WELL PAD REPAIR AND UPGRADE
- PROTECTIVE GUARD REPAIR AND UPGRADE
- GUARD POST REPAIR AND UPGRADE (INSTALL)
- WELL CASING REPAIR AND UPGRADE
- DEVELOPMENT OF MONITORING WELL

WELL NO. <u>M-14</u>	C FEET	S FEET	F FEET	B FEET	P FEET	T FEET
CONSTRUCTION DETAIL	33'	10'	13'	2'	N/A	43'

MONITORING WELL INFORMATION REPORT

ADDITIONAL COMMENTS: BAILER GOES TO BOTTOM EASY, WATER CLOUDY AND TURBID.



DAMES & MOORE

MONITORING WELL LOG

PROJECT Montgomery, Alabama

WELL NO. M-2B

DRILLING METHOD Mud Rotary

GEOLOGIST C. Cramer

DRILLER Law Engineering

DATE 5/21/85

GROUND ELEVATION \_\_\_\_\_

GROUND WATER DEPTH (ft):

TOP OF WELL 166.54

AT COMPLETION \_\_\_\_\_

DEPTH OF WELL (ft) 51.0

AFTER \_\_\_\_\_ HOURS \_\_\_\_\_

GRAVEL PACK  
BENTONITE  
BACK FILL  
CONCRETE  
SCREEN



CASING MATERIAL 2" PVC

SCREEN 10' 0.010" Slotted PVC

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
5		Tan to light gray silty CLAY with rust colored silt pockets, moist	[Cross-hatched pattern]
10			
15		Lt gray to rust SILT, little sand, moist	
20		Lt gray to rust CLAY and SILT to SILTY CLAY, rust colored pockets; some organics, moist	
25			[Cross-hatched pattern]
30			
35		Brown cm SAND and GRAVEL, wet	[Cross-hatched pattern]
40			[Cross-hatched pattern]

MONITORING WELL LOG

PROJECT Montgomery, Alabama

WELL NO. M-2B

DRILLING METHOD Mud Rotary

GEOLOGIST C. Cramer

DRILLER Law Engineering

DATE 5/21/85

GROUND ELEVATION \_\_\_\_\_

GROUND WATER DEPTH (ft):

TOP OF WELL 166.54

AT COMPLETION \_\_\_\_\_

DEPTH OF WELL (ft) 51.0

AFTER \_\_\_\_\_ HOURS \_\_\_\_\_

GRAVEL PACK  
BENTONITE  
BACK FILL  
CONCRETE  
SCREEN



CASING MATERIAL 2" PVC

SCREEN 10' 0.010" Slotted PVC

STRATA DEPTH	SAMPLE DEPTH	DESCRIPTION	CONSTRUCTION
		Brown cm SAND and GRAVEL, wet	
45			
50			
		Tan m SAND, tr heavy mineral grains, tr silt, wet	
55			
60			

GEORGIA GULF CORPORATION  
 EVALUATED BY: PAUL ARENTH  
 EVALUATED FOR: \_\_\_\_\_  
 EVALUATION DATE: 12/27/980  
 WELL NO.: M-2B

MONITORING WELL WELL COORDINATES  
 PIEZOMETER S 166.54  
 W 38.15  
 DATE INSTALLED: 5/21/85  
 INSTALLED BY: LAW ENGINEERING S.O. 2.5

PREPARED BY DAMES & MOORE

WELL CONSTRUCTION DETAIL

TYPICAL WELL DETAIL

FIGURE 1

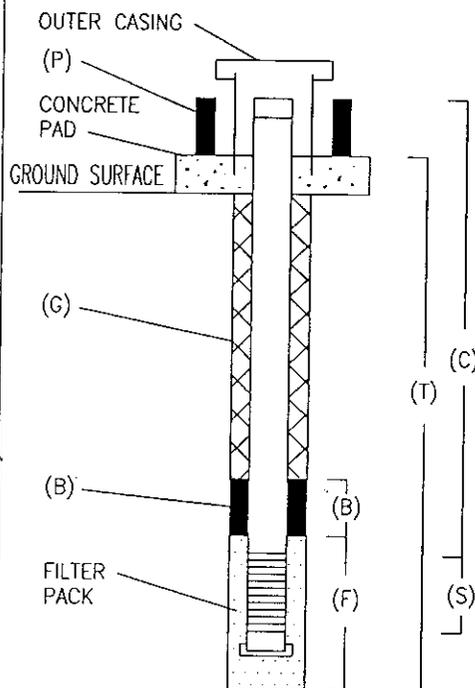
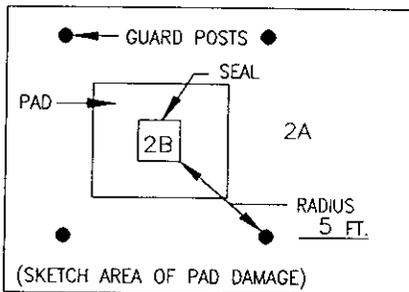


FIGURE 2 N.T.S.



① CASING (C)  
 ● TYPE 2" PVC  
 ● CAP TYPE 2" THRD.

② WELL SCREEN (S)  
 ● TYPE 0.010 PVC

③ SAND FILTER (F)  
 ● TYPE \_\_\_\_\_

④ BENTONITE SEAL (B)  
 \_\_\_\_\_

⑤ GROUT (G)  
 ● CEMENT/BENTONITE

⑥ GUARD POSTS (P)  
2

● DESCRIBE 3"  
STEEL W/CONCRETE  
AROUND BASE

⑦ PAD  
 ● TYPE ROUND  
 ● DEPTH ?

⑧ TOTAL DEPTH (T)  
 (GROUND SURFACE)  
51.0'

⑨ SURFACE  
 ELEVATION (MSL)  
 \_\_\_\_\_

WELL CONDITIONS CHECKLIST

(describe item in blanks)

- ① WELL VENTS. . . . YES NO  
 ● HEIGHT \_\_\_\_\_  
 ● DESIGN HOLE IN PLUG
- ② WELL PAD. . . . YES NO (FIG.2)  
 ● RADIUS 1.5'  
 ● GROUT UNDER PAD ?  
 ● SEAL AT CASING GOOD  
 ● CONCRETE PAD CONDITIONS: GOOD  
GROUND AROUND PAD BADLY ERODED  
EXCESSIVE VEGETATIVE GROWTH .YES..NO
- ③ PROTECTIVE GUARD . . YES NO  
 ● LOCK AND KEY. . . . YES NO  
 ● CONDITIONS (PAINT, RUST, HINGE, ETC.)  
BAD-LIGHT-TIGHT
- ④ GUARD POSTS . . . . YES NO  
 ● POST CONDITIONS (FIG.2) 2  
2B,2A RUSTED BUT TIGHT  
 ● DISTANCE FROM CASING 5'
- ⑤ WELL DEPTH >51'  
 ● SEDIMENT BUILD UP . . . YES NO
- ⑥ WELL CAP  
 ● TYPE 2" THREADED PLUG  
 ● CONDITION GOOD (HOLE FOR VENT)

FIELD RECOMMENDATIONS (CHECK ITEMS)

- NEED VENTS IN GUARD
- WELL VENT REPAIR AND UPGRADE
- WELL PAD REPAIR AND UPGRADE
- PROTECTIVE GUARD REPAIR AND UPGRADE
- GUARD POST REPAIR AND UPGRADE
- WELL CASING REPAIR AND UPGRADE
- DEVELOPMENT OF MONITORING WELL

WELL NO. <u>M-2B</u>	C FEET	S FEET	F FEET	B FEET	P FEET	T FEET
CONSTRUCTION DETAIL	31'	10'	12'	2.5'	4.5'	51'

MONITORING WELL INFORMATION REPORT

ADDITIONAL COMMENTS: BAILOR GOES TO BOTTOM. ALOT OF SEDIMET CAME UP WITH VERY SILTY TURBID WATER.



DAMES & MOORE