ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

SOLID WASTE DISPOSAL FACILITY *PERMIT*

PERMITTEE:	**Boise White Paper, LLC – Jackson Mill**
FACILITY NAME:	**Boise White Paper, LLC Industrial Waste Landfill**
FACILITY LOCATION:	**Southwest ¼ of Section 16, Township 6 North, Range 2 East, in Clarke County, Alabama. The total permitted area is approximately 70.25 acres with 41 acres for disposal operations.**
PERMIT NUMBER:	**13-05**
PERMIT TYPE:	**Industrial Landfill**
WASTE APPROVED FOR DISPOSAL:	**Non-putrescible and non-hazardous industrial waste, waste lime, boiler ash, woodyard rejects, clarifier solids, water treatment plant backwash solids, mix pond solids, miscellaneous wood waste, black liquor tank bottoms, and waste from the wastepaper recycling plant.**
APPROVED WASTE VOLUME:	**Maximum Average Daily Volume of waste is 600 cubic yards per day**
APPROVED SERVICE AREA:	**Boise White Paper, LLC's Jackson Mill**

In accordance with and subject to the provisions of the Alabama Solid Wastes and Recyclable Materials Management Act, as amended, Code of Alabama 1975, §§ 22-27-1 to 22-27-27 ("SWRMMA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§ 22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to dispose of the above-described solid wastes at the above-described facility location.

ISSUANCE DATE:	**??????????????**
EFFECTIVE DATE:	**??????????????**
EXPIRATION DATE:	**??????????????**

Alabama Department of Environmental Management

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE PERMIT

Permittee:	Boise White Paper, LLC – Jackson Mill 4585 Industrial Rd. Jackson, Alabama 36545
Landfill Name:	Boise White Paper, LLC Industrial Waste Landfill
Landfill Location:	A part of the Southwest ¼ of Section 16, Township 6 North, Range 2 East, in Clarke County, Alabama
Permit Number:	13-05
Landfill Type:	Industrial Landfill

Pursuant to the Alabama Solid Wastes & Recyclable Materials Management Act, Code of Alabama 1975, §§ 22-27-1, *et seq*., as amended, and attendant regulations promulgated thereunder by the Alabama Department of Environmental Management (ADEM), this permit is issued to Boise White Paper, LLC – Jackson Mill (hereinafter called the Permittee), to operate a solid waste disposal facility, known as the Boise White Paper, LLC Industrial Waste Landfill.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions set forth herein (including those in any attachments), and the applicable regulations contained in Chapters 335-13-1 through 335-13-15 of the ADEM Administrative Code (hereinafter referred to as the "ADEM Admin. Code"). Rules cited are set forth in this document for the purpose of Permittee reference. Any Rule that is cited incorrectly in this document does not constitute grounds for noncompliance on the part of the Permittee. Applicable ADEM Administrative Codes are those that are in effect on the date of issuance of this permit or any revisions approved after permit issuance.

This permit is based on the information submitted to the Department October 16, 2018, for permit renewal, and known as the Permit Application (hereby incorporated by reference and hereinafter referred to as the Application). Any inaccuracies found in this information could lead to the termination or modification of this permit and potential enforcement action. The Permittee must inform the Department of any deviation from or changes in the information in the Application that would affect the Permittee's ability to comply with the applicable ADEM Admin. Code or permit conditions.

This permit is effective as of **??????????????????** and shall remain in effect until **??????????????????**, unless suspended or revoked.

_____ _____

Alabama Department of Environmental Management Date Signed

SECTION I. STANDARD CONDITIONS

A. Effect of Permit

The Permittee is allowed to dispose of nonhazardous solid waste in accordance with the conditions of this permit and ADEM Admin. Code Div. 13. Issuance of this permit does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws or regulations. Except for actions brought under Code of Alabama 1975, §§ 22-27-1, *et seq*., as amended, compliance with the conditions of this permit shall be deemed to be compliance with applicable requirements in effect as of the date of issuance of this permit and any future revisions.

B. Permit Actions

This permit may be suspended, revoked or modified for cause. The filing of a request for a permit modification or the notification of planned changes or anticipated noncompliance on the part of the Permittee, and the suspension or revocation does not stay the applicability or enforceability of any permit condition.

C. 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.

D. Definitions

For the purpose of this permit, terms used herein shall have the same meaning as those in ADEM Admin. Code Division 13, unless this permit specifically provides otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

1. "EPA" for purposes of this permit means the United States Environmental Protection Agency.

2. "Permit Application" for the purposes of this permit, means all permit application forms, design plans, operational plans, closure plans, technical data, reports, specifications, plats, geological and hydrological reports, and other materials which are submitted to the Department in pursuit of a solid waste disposal permit.

E. Duties and Requirements

1. Duty to Comply

The Permittee must comply with all conditions of this permit except to the extent and for the duration such noncompliance is authorized by a variance granted by the Department. Any permit noncompliance, other than noncompliance authorized by a variance, constitutes a violation of Code of Alabama 1975, §§ 22-27-1 *et seq*., as amended, and is grounds for enforcement action, permit suspension, revocation, modification, and/or denial of a permit renewal application.

2. Duty to Reapply

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. The renewal application must be submitted to the Department at least 180 days before this permit expires.

3. Permit Expiration

This permit and all conditions therein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application as required by Section I.E.2., and, through no fault of the Permittee, the Department has not made a final decision regarding the renewal application.

4. 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 to maintain compliance with the conditions of this permit.

5. 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.

6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this permit.

7. Duty to Provide Information

If requested, the Permittee shall furnish to the Department, within a reasonable time, any information that the Department may reasonably need to determine whether cause exists for denying, suspending, revoking, or modifying this permit, or to determine compliance with this permit. If requested, the Permittee shall also furnish the Department with copies of records kept as a requirement of this permit.

8. Inspection and Entry

Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the employees of the Department or their authorized representative to:

a. Enter at reasonable times the Permittee's premises where the 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.

d. Sample or monitor, at reasonable times, any substances or parameters at any location for the purposes of assuring permit compliance or as otherwise authorized by Code of Alabama 1975, §§ 22-27-1 *et seq*.

9. Monitoring, Corrective Actions, and Records

a. Samples and measurements taken for the purpose of monitoring or corrective action shall be representative of the monitored activity. The methods used to obtain representative samples to be analyzed must be the appropriate method from Chapter 335-13-4 or the methods as specified in the Application attached hereto and incorporated by reference. Laboratory methods must be those specified in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes

(EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), other appropriate EPA methods, or as specified in the Application. All field tests must be conducted using approved EPA test kits and procedures.

b. The Permittee shall retain records, at the location specified in Section I.I., of all monitoring, or corrective action information, including all calibration and maintenance records, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report or record or for periods elsewhere specified in this permit. These periods may be extended by the request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

c. Records of monitoring and corrective action information shall include.

i. The exact place, date, and time of sampling or measurement.

ii. The individual(s) and company who performed the sampling or measurements.

iii. The date(s) analyses were performed.

iv. The individual(s) and company who performed the analyses.

v. The analytical techniques or methods used.

vi. The results of such analyses.

d. The Permittee shall submit all monitoring and corrective action results at the interval specified elsewhere in this permit.

10. Reporting Planned Changes

The Permittee shall notify the Department, in the form of a request for permit modification, at least 90 days prior to any change in the permitted service area, increase in the waste received, or change in the design or operating procedure as described in this permit, including any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

11. Transfer of Permit

This permit may be transferred to a new owner or operator. All requests for transfer of permits shall be in writing and shall be submitted on forms provided by the Department. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of this permit.

12. Certification of Construction

The Permittee may not commence disposal of waste in any new cell or phase until the Permittee has submitted to the Department, by certified mail or hand delivery, a letter signed by both the Permittee and a professional engineer stating that the facility has been constructed in compliance with the permit.

The Department must inspect the constructed cells or phases before the owner or operator can commence waste disposal unless the Permittee is notified that the Department will waive the inspection.

13. Compliance Schedules

Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule required and approved by the Department shall be submitted no later than 14 days following each schedule date.

14. Other Noncompliance

The Permittee shall report all instances of noncompliance with the permit at the time monitoring reports are submitted.

15. Other Information

If the Permittee becomes aware that information required by the Application was not submitted or was incorrect in the Application or in any report to the Department, the Permittee shall promptly submit such facts or information. In addition, upon request, the Permittee shall furnish to the Department, within a reasonable time, information related to compliance with the permit.

F. Design and Operation of Facility

The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of contaminants (including leachate and explosive gases) to air, soil, groundwater, or surface water, which could threaten human health or the environment.

G. Inspection Requirements

1. The Permittee shall comply with all requirements of ADEM Admin. Code Division 13.

2. The Permittee shall conduct random inspections of incoming loads.

3. Records of all inspections shall be included in the operating record.

H. Recordkeeping and Reporting

1. The Permittee shall maintain a written operating record at the location specified in Section I.I. The operating record shall include:

a. Documentation of inspection and maintenance activities.

b. Daily Volume reports.

c. Personnel training documents and records.

d. Solid/Hazardous Waste Determination Forms for Industrial Wastes, and the associated Department disposal approval correspondence for industrial waste and special waste.

e. Groundwater monitoring records.

f. Explosive gas monitoring records.

g. Surface water and leachate monitoring records.

h. Copies of this Permit and the Application.

i. Copies of all variances granted by the Department, including copies of all approvals of special operating conditions.

2. Quarterly Volume Report

Beginning with the effective date of this permit, the Permittee shall submit, within thirty (30) days after the end of each calendar quarter, a report summarizing the daily waste receipts for the previous (just ended) quarter. Copies of the quarterly reports shall be maintained in the operating record.

3. Monitoring and Corrective Action Reports

The Permittee shall submit reports on all monitoring and corrective activities conducted pursuant to the requirements of this permit, including, but not limited to, groundwater, surface water, explosive gas and leachate monitoring. The groundwater monitoring shall be conducted in March and September of each year, or as directed by the Department, and the reports shall be submitted at least semi-annually, or as directed by the Department. The reports should contain all monitoring results and conclusions from samples and measurements conducted during the sampling period. A variance has been granted reducing the groundwater monitoring frequency to annually. (See Section VIII.3.) Explosive gas monitoring is not required at this time, but if it is determined that monitoring is necessary, the Permittee shall conduct monitoring and submit reports as directed by the Department. Copies of the groundwater and explosive gas monitoring reports shall be maintained in the operating record.

4. Availability, Retention, and Disposition of Records

a. All records, including plans, required under this permit or Division 13 must be furnished upon request, and made available at reasonable times for inspection by any officer, employee, or representative of the Department.

b. All records, including plans, required under this permit or Division 13 shall be retained by the Permittee for a period of at least three years. The retention period for all records is extended automatically during the course of any unresolved enforcement action regarding the facility, or as requested by the Department.

c. A copy of records of waste disposal locations and quantities must be submitted to the Department and local land authority upon closure of the facility.

I. Documents to be maintained by the Permittee

The Permittee shall maintain, at the Boise White Paper, LLC Industrial Waste Landfill office, the following documents and amendments, revisions and modifications to these documents until an engineer certifies closure.

1. Operating record.

2. Closure Plan.

J. Mailing Location

All reports, notifications, or other submissions which are required by this permit should be sent via signed mail (i.e. certified mail, express mail delivery service, etc.) or hand delivered to:

Mailing Address:
Chief, Solid Waste Branch, Land Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463

Physical Address:
Chief, Solid Waste Branch, Land Division
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, Alabama 36110-2400

K. Signatory Requirement

All applications, reports or information required by this permit, or otherwise submitted to the Department, shall be signed and certified by the owner as follows:

1. If an individual, by the applicant.

2. If a city, county, or other municipality or governmental entity, by the ranking elected official, or by a duly authorized representative of that person.

3. If a corporation, organization, or other legal entity, by a principal executive officer, of at least the level of Vice President, or by a duly authorized representative of that person.

L. Confidential Information

The Permittee may claim information submitted as confidential if the information is protected under Code of Alabama 1975, §§ 22-39-18, as amended.

M. State Laws and Regulations

Nothing in this permit shall be construed to preclude the initiation of any legal action or to relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

SECTION II. GENERAL OPERATING CONDITIONS

A. Operation of Facility

The Permittee shall operate and maintain the disposal facility consistent with the Application, this permit, and ADEM Admin. Code Division 13.

B. Open Burning

The Permittee shall not allow open burning without prior written approval from the Department and other appropriate agencies. A burn request should be submitted in writing to the Department outlining why that burn request should be granted. This request should include, but not be limited to, specifically what areas will be utilized, types of waste to be burned, the projected starting and completion dates for the project, and the projected days and hours of operation. The approval, if granted, shall be included in the operating record.

C. Prevention of Unauthorized Disposal

The Permittee shall follow the approved procedures for the detecting and preventing the disposal of free liquids, regulated hazardous waste, PCB's, and medical waste at the facility.

D. Unauthorized Discharge

The Permittee shall operate the disposal facility in such a manner that there will be no water pollution or unauthorized discharge. Any discharge from the disposal facility or practice thereof may require a National Pollutant Discharge Elimination System permit under the Alabama Water Pollution Control Act.

E. Industrial Waste Disposal

The Permittee shall dispose of industrial waste at this landfill.

F. Boundary Markers

The Permittee shall ensure that the facility is identified with a sufficient number of permanent boundary markers that are at least visible from one marker to the next.

SECTION III. SPECIFIC REQUIREMENTS FOR INDUSTRIAL LANDFILLS

A. Waste Identification and Management

1. Subject to the terms of this permit, the Permittee may dispose of the nonhazardous solid wastes listed in III.B. Disposal of any other wastes is prohibited, except waste granted a temporary or one time waiver by the Director.

2. The total permitted area for the Boise White Paper, LLC Industrial Waste Landfill is approximately 70.25 acres, with approximately 41 acres permitted for disposal operations.

3. The maximum average daily volume of waste disposed at the facility shall not exceed 600 cubic yards per day, except as provided under Rule 335-13-5-.06(2)(a)5. The average daily volume shall be computed as specified by Rule 335-13-5-.06(2)(a)5.(i).

B. Waste Streams

The Permittee may accept for disposal non-putrescible and non-hazardous industrial waste, waste lime, boiler ash, woodyard rejects, clarifier solids, water treatment plant backwash solids, mix pond solids, miscellaneous wood waste, black liquor tank bottoms, and waste from the wastepaper recycling plant.

C. Service Area:

The Permittee is allowed to receive for disposal waste from Boise White Paper, LLC's Jackson Mill.

D. Waste Placement, Compaction, and Cover

All waste shall be confined to an area as small as possible and placed onto an appropriate slope not to exceed 4 to 1 (25%) or as approved by the Department. All waste shall be spread in layers two feet or less in thickness and thoroughly compacted weekly with adequate landfill equipment prior to placing additional layers of waste. A minimum of six inches of compacted earth or other alternative cover material approved by the Department shall be added at the conclusion of each week's operation unless a variance is granted in Section VIII. The Permittee is granted a variance to cover at the time of closure.(See Section VIII.1.)

E. Liner Requirements

The Permittee shall be required to install a composite liner system. The composite liner will consist of 24 inches of compacted clay with a soil permeability of 1×10^{-7} cm/sec, 60 mil HDPE liner, 1 foot angular layer and 1 foot select soil layer with a permeability of 1×10^{-3} cm/sec. The base of the landfill shall be a minimum of five (5) feet above the temporal fluctuation of the groundwater table.

F. Security

The Permittee shall provide artificial and/or natural barriers, which prevent entry of unauthorized vehicular traffic to the facility.

G. All Weather Access Roads

The Permittee shall provide an all-weather access road to the dumping face that is wide enough to allow passage of collection vehicles.

H. Adverse Weather Disposal

The Permittee shall provide for disposal activities in adverse weather conditions.

I. Personnel

The Permittee shall maintain adequate personnel to ensure continued and smooth operation of the facility.

J. Environmental Monitoring and Treatment Structures

The Permittee shall provide protection and proper maintenance of environmental monitoring and treatment structures.

K. Vector Control

The Permittee shall provide for vector control as required by ADEM Admin. Code Division 13.

L. Bulk or Noncontainerized Liquid Waste

The Permittee shall not dispose of bulk or noncontainerized liquid waste, or containers capable of holding liquids, unless the conditions of Rule 335-13-4-.23(1)(j) are met.

M. Empty Containers

Empty containers larger than 10 gallons in size must be rendered unsuitable for holding liquids prior to disposal in the landfill unless otherwise approved by the Department.

N. Other Requirements

The Department may enhance or reduce any requirements for operating and maintaining the landfill as deemed necessary by the Land Division.

O. Other Permits

The Permittee shall operate the landfill according to this and any other applicable permits.

P. Scavenging and Salvaging Operations

The Permittee shall prevent scavenging and salvaging operations, except as part of a controlled recycling effort. Any recycling operation must be in accordance with plans submitted and approved by the Department.

Q. Signs

If the landfill is available to the public or commercial haulers, the Permittee shall provide a sign outlining instructions for use of the site. The sign shall be posted and have the information required by Rule 335-13-4-.23(1)(f).

R. Litter Control

The Permittee shall control litter.

S. Fire Control

The Permittee shall provide fire control measures.

SECTION IV. GROUNDWATER MONITORING REQUIREMENTS

A. The Permittee shall install and/or maintain a groundwater monitoring system, as specified below.

1. The permittee shall maintain the groundwater monitoring wells and piezometers identified in Table IV.1. at the locations specified in the Application, and any other groundwater monitoring wells which are added (Section IV.A.3.) during the active life and the post closure care period.

2. The Permittee shall maintain groundwater monitoring well MW-1, MW-7 and MW-8 as the background groundwater monitoring wells for the entire facility.

3. 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 the ADEM Admin. Code.

4. Prior to installing any additional groundwater monitoring wells, the Permittee shall submit a report to the Department with a permit modification request specifying the design, location and installation of any additional monitoring wells. This report shall be submitted within ninety (90) days prior to the installation which, at a minimum, shall include.

   a. Well construction techniques including proposed casing depths, proposed total depth, and proposed screened interval of well(s);

   b. Well development method(s);

   c. A complete analysis of well construction materials;

   d. A schedule of implementation for construction; and

   e. Provisions for determining the lithologic characteristics, hydraulic conductivity and grain-size distribution for the applicable aquifer unit(s) at the location of the new well(s).

5. The Permittee is approved to use an interwell approach for statistical analysis.

B. Groundwater Monitoring Requirements

1. The Permittee shall determine the groundwater surface elevation at each monitoring well and piezometer identified in Table IV.1. each time the well or piezometer is sampled and at least semi-annually throughout the active life and post-closure care period. The Permittee is allowed to perform annual groundwater monitoring. (See Section VIII.3.)

2. The Permittee shall determine the groundwater flow rate and direction in the first zone of saturation at least annually or each time groundwater is sampled and submit as required by ADEM Admin. Code Division 13.

3. Prior to the initial receipt of waste at the facility, the Permittee shall sample, and analyze for the parameters listed in Appendix I of Rule 335-13-4-.27, and/or any other parameters specified by the Department in Table IV. 2., all monitoring wells identified in Section IV.,A.,2. to establish background water quality and/or as directed by Rule 335-13-4-.27(2)(j) and 335-13-4-.27(2)(a)(1).

4. The Permittee shall sample, and analyze all monitoring wells identified in Table IV.1 for the parameters listed in Appendix I of Rule 335-13-4-.27(3), and/or any other parameters specified by the Department in Table IV.3, on a semi-annual basis throughout the active life of the facility and the post- closure care period in accordance with Rule 335-13-4-.27(3). Sampling shall be conducted during March and September of each year, beginning with the effective date of this permit. The records and results of this sampling and analysis activity shall be submitted to the Department, within ninety (90) days of the date of sampling. **Groundwater monitoring shall be conducted according to the groundwater monitoring plan submitted April 17, 2019.**

5. In addition to the requirements of Section IV., B.,1., B.,2., B.,3. and B.,4., the Permittee shall record water levels, mean sea level elevation measuring point, depth to water, and the results of field tests for pH and specific conductance at the time of sampling for each well.

C. 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 Section IV.,A. to provide a reliable indication of the quality of the groundwater.

1. Samples shall be collected, preserved, and shipped (when shipped off-site for analysis) in accordance with the procedures specified in the Application. Monitoring wells shall be bailed or pumped to remove at least three to five times the well volume of water. Slow recharge wells shall be bailed until dry. Wells shall be allowed to recharge prior to sampling.

2. Samples shall be analyzed according to the procedures specified of the Application, Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), or other appropriate methods approved by this Department. All field tests must be conducted using approved EPA test kits and procedures.

3. Samples shall be tracked and controlled using the chain-of-custody and QA\QC procedures specified of the Application.

D. Recordkeeping and Reporting Requirements

1. Recording of Results

For each sample and/or measurement taken pursuant to the requirements of this permit, the Permittee shall record the information required by Section I.,E.,9.,c.

2. Recordkeeping

Records and results of all groundwater monitoring, sampling, and analysis activities conducted pursuant to the requirements of this permit shall be included in the operating record required by Section I.,I.,1.

E. Permit Modification

If at any time the Permittee or the Department determines that the groundwater monitoring system no longer satisfies the requirements of 335-13-4-.14 or Section IV.A. of this permit, the Permittee must, within 90 days, submit an application for a permit modification to make any necessary and/or appropriate changes to the system.

TABLE IV.1.
GROUNDWATER MONITORING WELLS

Monitoring Well Number	Top of Casing (PVC) (feet msl)	Part Monitoring
UPGRADIENT/BACKGROUND MONITORING WELL		
MW-1	188.66	Entire Landfill
MW-7	186.00	Entire Landfill
MW-8	177.20	Entire Landfill
DOWNGRADIENT MONITORING WELLS		
MW-6	34.40	Entire Landfill
MW-10	87.40	Entire Landfill
MW-12	67.70	Entire Landfill

TABLE IV.2.
BACKGROUND GROUNDWATER MONITORING

pH
Conductivity
Alkalinity
Chloride
Sulfate

TABLE IV.3.
SEMI-ANNUAL GROUNDWATER MONITORING PARAMETERS

pH
Conductivity
Alkalinity
Chloride
Sulfate

SECTION V. GAS MONITORING REQUIREMENTS

At this time, gas monitoring is not being required (See Section VIII.2.). If at any time the Department determines that a explosive gas monitoring system is deemed necessary for the protection of human health and the environment, the Permittee must, within 90 days, submit an application for permit modification for the installation of an explosive gas monitoring system that meets the proper regulatory requirements of the Alabama Department of Environmental Management.

SECTION VI. LEACHATE AND SURFACE WATER MANAGEMENT REQUIREMENTS

The Permittee must collect and dispose of any leachate that is generated at the facility, and the leachate must be managed at a facility permitted to treat leachate. The Permittee shall install a leachate collection system designed to maintain less than 12 inches (30 cm) depth of leachate over the liner.

The permittee shall construct and maintain run-on and run-off control structures. Any discharges from drainage control structures shall be permitted through a discharge permit issued by the ADEM Water Division.

SECTION VII. CLOSURE AND POST-CLOSURE REQUIREMENTS

The Permittee shall close the landfill and perform post-closure care of the landfill in accordance with Division 13.

A. Final Cover

The Permittee shall grade final soil cover such that surface water does not pond over the permitted area as specified in the Application. The final cover system shall comply with ADEM Admin. Code Division 13.

B. Vegetative Cover

The Permittee shall establish a vegetative or other appropriate cover within 90 days after completion of final grading requirements in the Application. Preparation of a vegetative cover shall include, but not be limited to, the placement of seed, fertilizer, mulch, and water.

C. Notice of Intent

The Permittee shall place in the operating record and notify the Department of their intent to close the landfill prior to beginning closure.

D. Completion of Closure Activities

The Permittee must complete closure activities of each landfill unit in accordance with the Closure Plan within 180 days of the last known receipt of waste.

E. Certification of Closure

Following closure of each unit, the Permittee must submit to the Department a certification, signed by an engineer, verifying the closure has been completed according to the Closure Plan.

F. Post-Closure Care Period

Post-closure care activities shall be conducted after closure of each unit throughout the life of this permit and continuing for a period of thirty (30) years following closure of the facility. The Department may shorten or extend the post-closure care period applicable to the solid waste disposal facility. The Permittee shall reapply in order to fulfill the post-closure care requirements of this permit.

G. Post-Closure Maintenance

The Permittee shall provide post closure maintenance of the facility to include regularly scheduled inspections. This shall include maintenance of the cover, vegetation, monitoring devices and pollution control equipment and correction of other deficiencies that may be observed by the Department. Monitoring requirements shall continue throughout the post closure period as determined by the Department unless all waste is removed and no unpermitted discharge to waters of the State has occurred.

H. Post-Closure Use of Property

The Permittee shall ensure that post closure use of the property never be allowed to disturb the integrity of the final cover, liner, or any other component of the containment system. This shall preclude the growing of deep-rooted vegetation on the closed area.

I. Certification of Post-Closure

Following post-closure of each unit, the Permittee must submit to the Department a certification, signed by an engineer, verifying the post-closure has been completed according to the Post-Closure Plan.

J. Notice in Deed to Property

The Permittee shall record a notation onto the land deed containing the property utilized for disposal within 90 days after permit expiration, revocation or when closure requirements are achieved as determined by the Department as stated in the Application. This notation shall state that the land has been used as a solid waste disposal facility, the name of the Permittee, type of disposal activity, location of the disposal facility and beginning and closure dates of the disposal activity.

K. Recording Instrument

The Permittee shall submit a certified copy of the recording instrument to the Department within 120 days after permit expiration, revocation, or as directed by the Department as described in the Application.

L. Removal of Waste

If the Permittee, or any other person(s), wishes to remove waste, waste residues, or any liner or contaminated soils, the owner must request and receive prior approval from the Department.

SECTION VIII. VARIANCES

1. A variance is granted from Rule 335-13-4-.23(1)(a) which requires a minimum of six inches of weekly soil cover. The Permittee will be required to cover at the time of closure. (See Section III.D.)

2. A variance is granted from Rule 335-13-4-.16 which requires monitoring of explosive gases. (See Section V.)

3. A variance has been granted reducing the groundwater monitoring frequency to annually. (See SectionIV.B.1.)

4. The Permittee is granted a variance from rule 335-13-4-.12(2)(f) requiring a 100 foot buffer. The variance is granted along the southern boundary of the landfill.

Any variance granted by the Department may be terminated by the Department whenever the Department finds, after notice and opportunity for hearing, that the petitioner is in violation of any requirement, condition, schedule, limitation or any other provision of the variance, or that operation under the variance does not meet the minimum requirements established by state and federal laws and regulations or is unreasonably threatening the public health.

APPLICATION

Boise White Paper, LLC
Alabama Operations
4585 Industrial Road Jackson, AL 36545
T (251) 246-8282 F (251) 246-7643
RandyAbston@BoisePaper.com

October 16, 2018

Russell Kelly, Chief
Permits and Services Division
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, AL 36110

Dear Mr. Kelly:

Please find enclosed three (3) copies of the permit renewal application for Boise White Paper, LLC's Industrial Waste Landfill (Permit No. 13-05). Also attached please find a check payable to ADEM in the amount of $4,075.00 for renewal of the existing solid waste disposal facility permit.

Variances

Permit No. 13-05 currently contains the following variances (Section VIII) that we request to remain in effect in the permit renewal, as follows:

- A variance is granted from Rule 335-13-4-.23(1)(a) which requires a minimum of six inches of weekly soil cover. The Permittee will be required to cover at the time of closure (see Section III.D).
- A variance is granted from Rule 335-13-4-.16 which requires monitoring of explosive gases (see Section V).
- A variance has been granted reducing the groundwater monitoring frequency to annually (see Section IV.B.1).

Requested Modifications to Permit Language

1. The last sentence of Section III.D states that "The Permittee is granted a variance from requiring cover at the time of closure (See Section VIII.1)." To reconcile this statement with the variance provided in Section VIII.1, Boise is requesting to change this sentence to "The Permittee is granted a variance from requiring weekly cover; final cover will be provided at the time of closure (See Section VIII.1)."

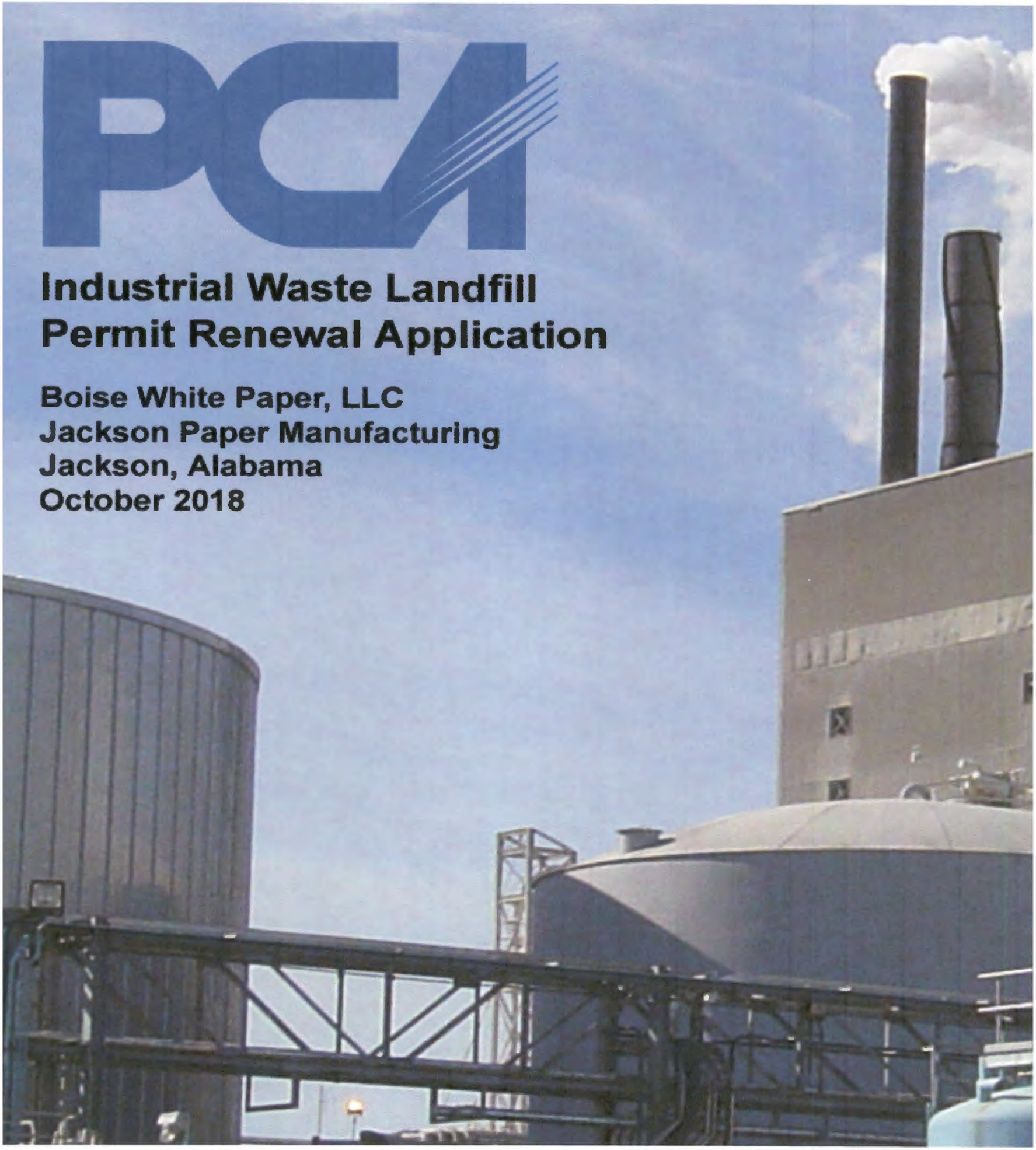
Boise appreciates your consideration of the requested continuance of current variances and of the requested modifications to permit language in Section III.D. If you have any questions, please do not hesitate to contact me at (251) 246-8282.

Sincerely,

Boise White Paper, LLC – Jackson Mill

Jonathan R. Abston
Environmental Manager
Jackson Mill

Enclosure



Industrial Waste Landfill Permit Renewal Application

Boise White Paper, LLC
Jackson Paper Manufacturing
Jackson, Alabama
October 2018

SOLID WASTE DISPOSAL FACILITY
APPLICATION FOR PERMIT RENEWAL
SOLID WASTE FACILITY PERMIT NO. 13-05

Prepared for:

BOISE WHITE PAPER, LLC
JACKSON PAPER MILL
JACKSON, ALABAMA

October 2018

Prepared by:

Spivey
Engineering
Solutions, LLC

Table of Contents

Appendixes

Professional Engineer's Statement

This application for renewal of the Alabama Department of Environmental Management (ADEM) solid waste facility permit No. 13-05 for Boise White Paper, LLC's Jackson Mill Industrial Waste Landfill was prepared under the direct supervision and care of Donald W. Spivey, Alabama Registered Professional Engineer No. 20723. Drawings located in Appendix C were prepared and certified by others and are the sole responsibility of RMT, Inc., design engineer in charge.

Donald W. Spivey

Donald W. Spivey, P.E., Alabama No. 20723
Principal Engineer
Spivey Engineering Solutions, LLC

Section 1. Introduction

Boise White Paper, LLC (Boise), a wholly-owned subsidiary of Packaging Corporation of America (PCA), owns and operates an integrated bleached Kraft pulp and paper mill in Jackson, Alabama, and produces uncoated free sheet fine paper. The Jackson Paper Mill is located on the east bank of the Tombigbee River approximately 60 miles north of Mobile, Alabama.

1.1 Existing Solid Waste Disposal Permit

Boise owns and operates a permitted industrial waste landfill (known as the "Boise White Paper, LLC Industrial Waste Landfill") exclusively for disposal of non-hazardous industrial wastes generated by Jackson Paper Mill operations. The landfill commenced operation in July 1994. The landfill is located in the southwestern quarter of Section 16, Township 6 North, Range 2 East in Clarke County, Alabama. The constructed portion of the landfill comprises approximately 20 acres. The landfill was originally permitted for operation by ADEM on July 11, 1991, under ADEM Permit No. 13-05, and currently accepts the following non-hazardous solid wastes:

- Non-putrescible and non-hazardous industrial waste
- Waste lime
- Boiler ash
- Woodyard rejects
- Clarifier solids
- Water treatment plant backwash solids
- Mix pond solids
- Miscellaneous wood waste
- Waste from the wastepaper recycling plant
- Black liquor tank bottoms

A modification to the original permit was issued by ADEM on November 29, 1993, allowing Boise to dispose of 600 cubic yards of waste per day in the landfill. Permit 13-05 was reissued by the Alabama Department of Environmental Management (ADEM) to Boise's Jackson Mill for continued operations on May 2, 2014 with a minor modification requiring annual groundwater monitoring in lieu of semi-annual groundwater monitoring; a copy of the current permit is located in Appendix A.

1.2 Permit Renewal

This application for renewal of solid waste disposal facility permit No. 13-05, on behalf of Boise White Paper, LLC, is provided in response to the ADEM requirement to submit a solid waste disposal facility permit renewal application at least 180 days prior to expiration of the current permit (May 1, 2019). The renewal application also documents current operating plans and current projected final contours for the landfill.

Other pertinent sections of this renewal application include the following:

- ADEM Solid Waste Disposal Facility Permit Renewal Form (see Section 2);
- Current operation plan for the Boise White Paper, LLC Industrial Waste Landfill (see Appendix B);
- Current permit drawings showing phasing and development, facility boundaries, and final grades (see Appendix C); and
- Current Landfill Operation and Maintenance Manual (see Appendix D).

Should Boise White Paper, LLC elect to expand the current disposal footprint into the remaining facility area west of Cell 4 (Phase III), additional permit drawings and other appropriate components sufficient to modify the permit will be submitted. This expansion plan should not require implementation during the five-year period of permit reissuance, because current volume projections indicate adequate airspace for Boise White Paper, LLC's needs. The area west of Cell 4 is indicated as "future limits of waste boundary" in the Landfill Drainage Redesign – Facility Boundaries drawing (Drawing No. 271-025-1036) located in Appendix C.

1.3 Variance Requests

Boise White Paper, LLC requests that the following variances from the current permit be incorporated into the renewed permit for the solid waste disposal facility:

1. Continuing the existing variance from placement of weekly cover as required under ADEM Administrative Code R. 335-13-4-.23(1)(a); and
2. Continuing the existing variance from monitoring of explosive gases in accordance with ADEM Administrative Code R. 335-13-4-.16.
3. Continuing the existing variance granting annual groundwater monitoring in lieu of semi-annual groundwater monitoring (see Section IV.B.1 of current permit).

1.3.1 Weekly Cover Variance

Boise White Paper, LLC requests that the variance granted from ADEM Administrative Code R. 335-13-4-.23(1)(a) requiring weekly cover in the existing permit be continued in the proposed renewed permit. This variance was first granted in the original (1993) permit for the facility and has been demonstrated to be appropriate based on the types of waste permitted for disposal at the landfill.

1.3.2 Explosive Gas Monitoring Variance

Boise White Paper, LLC requests that the variance granted from ADEM Administrative Code R. 335-13-4-.16 requiring explosive gas monitoring in the existing permit be continued in the proposed renewed permit. This variance was first granted in the original (1993) permit for the facility and has been demonstrated to be appropriate based on the types of waste permitted for disposal at the landfill.

1.3.3 Groundwater Monitoring Variance

Boise White Paper, LLC requests that the variance granted from ADEM Administrative Code R. 335-13-4-.27(3)(b)(1) requiring semi-annual groundwater monitoring be continued in the proposed renewed permit. This variance was first granted in the previous (2014) permit for the facility and has been demonstrated to be appropriate based on the annual groundwater flow of less than 800 feet per year and the approximately 7,000 feet distance to the Tombigbee River.

Section 2. ADEM Permit Renewal Form 439

SOLID WASTE APPLICATION

PERMIT APPLICATION
SOLID WASTE DISPOSAL FACILITY
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
(Submit in Triplicate)

1. **Facility type:**
   - ____ Municipal Solid Waste Landfill (MSWLF)
   - ✓ Industrial Landfill (ILF)
   - ____ Other (explain)_____

2. **Facility Name** Boise White Paper, LLC Industrial Waste Landfill

3. **Applicant:**

   Name: Boise White Paper, LLC - Jackson Mill

   Address: 4585 Industrial Road, Jackson, Alabama 36545

   Telephone: (251) 246-4461

4. **Location: (include county highway map or USGS map)**

   Township 6 North **Range** 2 East
   Section SW 1/4, Sect. 16 **County** Clarke

5. **Land Owner:**

   Name: Boise White Paper, LLC

   Address: 4585 Industrial Road, Jackson, Alabama 36545

   Telephone: (251) 246-4461

(Attach copy of agreement from landowner if applicable.)

November 1997

6. **Contact Person:**

Name Randy Abston

Position or Affiliation Environmental Manager

Address: 4585 Industrial Road, Jackson, Alabama 36545

Telephone: (251) 246-8282

7. **Size of Facility:** 70.25 **Acres**

Size of Disposal Area(s): 41 ± 1 **Acres**

8. **Identify proposed service area or specific industry that waste will be received from:**

Forest products manufacturing wastes generated on site at Boise White Paper, LLC's Jackson Mill

9. **Proposed maximum average daily volume to be received at landfill (choose one):**

_____ **Tons/Day** 600 **Cubic Yards/Day**

10. **List all waste streams to be accepted at the facility (i.e., household solid waste, wood boiler ash, tires, trees, limbs, stumps, etc.):**

Non-putrescible and non-hazardous industrial waste, waste lime, boiler ash, woodyard rejects, clarifier solids, water treatment plant backwash solids, mix pond solids, miscellaneous wood waste, black liquor tank bottoms, and waste from the wastepaper recycling plant.

SIGNATURE **DATE** 10/15/18

APPENDIX A

ADEM Solid Waste Facility Permit No. 13-05

ADEM
Alabama Department of Environmental Management

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

SOLID WASTE DISPOSAL FACILITY *PERMIT*

PERMITTEE:	**Boise White Paper, LLC – Jackson Mill**
FACILITY NAME:	**Boise White Paper, LLC Industrial Waste Landfill**
FACILITY LOCATION:	**Southwest ¼ of Section 16, Township 6 North, Range 2 East, in Clarke County, Alabama. The total permitted area is approximately 70.25 acres with 41 acres for disposal operations.**
PERMIT NUMBER:	**13-05**
PERMIT TYPE:	**Industrial Landfill**
WASTE APPROVED FOR DISPOSAL:	**Non-putrescible and non-hazardous industrial waste, waste lime, boiler ash, woodyard rejects, clarifier solids, water treatment plant backwash solids, mix pond solids, miscellaneous wood waste, black liquor tank bottoms, and waste from the wastepaper recycling plant.**
APPROVED WASTE VOLUME:	**Maximum Average Daily Volume of waste is 600 cubic yards per day**
APPROVED SERVICE AREA:	**Boise White Paper, LLC's Jackson Mill**

In accordance with and subject to the provisions of the Alabama Solid Wastes and Recyclable Materials Management Act, as amended, Code of Alabama 1975, §§ 22-27-1 to 22-27-27 ("SWRMMA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§ 22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to dispose of the above-described solid wastes at the above-described facility location.

ISSUANCE DATE:	**May 2, 2014**
EFFECTIVE DATE:	**May 2, 2014**
EXPIRATION DATE:	**May 1, 2019**

Alabama Department of Environmental Management

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE PERMIT

Permittee:	Boise White Paper, LLC – Jackson Mill 4585 Industrial Rd. Jackson, Alabama 36545
Landfill Name:	Boise White Paper, LLC Industrial Waste Landfill
Landfill Location:	A part of the Southwest ¼ of Section 16, Township 6 North, Range 2 East, in Clarke County, Alabama
Permit Number:	13-05
Landfill Type:	Industrial Landfill

Pursuant to the Alabama Solid Wastes & Recyclable Materials Management Act, Code of Alabama 1975, §§ 22-27-1, *et seq.*, as amended, and attendant regulations promulgated thereunder by the Alabama Department of Environmental Management (ADEM), this permit is issued to Boise White Paper, LLC – Jackson Mill (hereinafter called the Permittee), to operate a solid waste disposal facility, known as the Boise White Paper, LLC Industrial Waste Landfill.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions set forth herein (including those in any attachments), and the applicable regulations contained in Chapters 335-13-1 through 335-13-14 of the ADEM Administrative Code (hereinafter referred to as the "ADEM Admin. Code"). Rules cited are set forth in this document for the purpose of Permittee reference. Any Rule that is cited incorrectly in this document does not constitute grounds for noncompliance on the part of the Permittee. Applicable ADEM Administrative Codes are those that are in effect on the date of issuance of this permit or any revisions approved after permit issuance.

This permit is based on the information submitted to the Department July 16, 2013, for permit renewal and modification and known as the Permit Application (hereby incorporated by reference and hereinafter referred to as the Application). Any inaccuracies found in this information could lead to the termination or modification of this permit and potential enforcement action. The Permittee must inform the Department of any deviation from or changes in the information in the Application that would affect the Permittee's ability to comply with the applicable ADEM Admin. Code or permit conditions.

This permit is effective as of **May 2, 2014** and shall remain in effect until **May 1, 2019**, unless suspended or revoked.

Alabama Department of Environmental Management

2-May-14
Date Signed

SECTION I. STANDARD CONDITIONS

A. Effect of Permit

The Permittee is allowed to dispose of nonhazardous solid waste in accordance with the conditions of this permit and ADEM Admin. Code Div. 13. Issuance of this permit does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws or regulations. Except for actions brought under Code of Alabama 1975, §§ 22-27-1, *et seq.*, as amended, compliance with the conditions of this permit shall be deemed to be compliance with applicable requirements in effect as of the date of issuance of this permit and any future revisions.

B. Permit Actions

This permit may be suspended, revoked or modified for cause. The filing of a request for a permit modification or the notification of planned changes or anticipated noncompliance on the part of the Permittee, and the suspension or revocation does not stay the applicability or enforceability of any permit condition.

C. 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.

D. Definitions

For the purpose of this permit, terms used herein shall have the same meaning as those in ADEM Admin. Code Division 13, unless this permit specifically provides otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

1. "EPA" for purposes of this permit means the United States Environmental Protection Agency.

2. "Permit Application" for the purposes of this permit, means all permit application forms, design plans, operational plans, closure plans, technical data, reports, specifications, plats, geological and hydrological reports, and other materials which are submitted to the Department in pursuit of a solid waste disposal permit.

E. Duties and Requirements

1. Duty to Comply

The Permittee must comply with all conditions of this permit except to the extent and for the duration such noncompliance is authorized by a variance granted by the Department. Any permit noncompliance, other than noncompliance authorized by a variance, constitutes a violation of Code of Alabama 1975, §§ 22-27-1 *et seq.*, as amended, and is grounds for enforcement action, permit suspension, revocation, modification, and/or denial of a permit renewal application.

2. Duty to Reapply

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. The renewal application must be submitted to the Department at least 180 days before this permit expires.

3. Permit Expiration

This permit and all conditions therein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application as required by Section I.E.2., and, through no fault of the Permittee, the Department has not made a final decision regarding the renewal application.

4. 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 to maintain compliance with the conditions of this permit.

5. 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.

6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this permit.

7. Duty to Provide Information

If requested, the Permittee shall furnish to the Department, within a reasonable time, any information that the Department may reasonably need to determine whether cause exists for denying, suspending, revoking, or modifying this permit, or to determine compliance with this permit. If requested, the Permittee shall also furnish the Department with copies of records kept as a requirement of this permit.

8. Inspection and Entry

Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the employees of the Department or their authorized representative to:

a. Enter at reasonable times the Permittee's premises where the 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.

d. Sample or monitor, at reasonable times, any substances or parameters at any location for the purposes of assuring permit compliance or as otherwise authorized by Code of Alabama 1975, §§ 22-27-1 *et seq.*

9. Monitoring, Corrective Actions, and Records

a. Samples and measurements taken for the purpose of monitoring or corrective action shall be representative of the monitored activity. The methods used to obtain representative samples to be analyzed must be the appropriate method from Chapter 335-13-4 or the methods as specified in the Application attached hereto and incorporated by reference. Laboratory methods must be those specified in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes

(EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), other appropriate EPA methods, or as specified in the Application. All field tests must be conducted using approved EPA test kits and procedures.

b. The Permittee shall retain records, at the location specified in Section I.I., of all monitoring, or corrective action information, including all calibration and maintenance records, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report or record or for periods elsewhere specified in this permit. These periods may be extended by the request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

c. Records of monitoring and corrective action information shall include.

i. The exact place, date, and time of sampling or measurement.

ii. The individual(s) and company who performed the sampling or measurements.

iii. The date(s) analyses were performed.

iv. The individual(s) and company who performed the analyses.

v. The analytical techniques or methods used.

vi. The results of such analyses.

d. The Permittee shall submit all monitoring and corrective action results at the interval specified elsewhere in this permit.

10. Reporting Planned Changes

The Permittee shall notify the Department, in the form of a request for permit modification, at least 90 days prior to any change in the permitted service area, increase in the waste received, or change in the design or operating procedure as described in this permit, including any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

11. Transfer of Permit

This permit may be transferred to a new owner or operator. All requests for transfer of permits shall be in writing and shall be submitted on forms provided by the Department. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of this permit.

12. Certification of Construction

The Permittee may not commence disposal of waste in any new cell or phase until the Permittee has submitted to the Department, by certified mail or hand delivery, a letter signed by both the Permittee and a professional engineer stating that the facility has been constructed in compliance with the permit.

The Department must inspect the constructed cells or phases before the owner or operator can commence waste disposal unless the Permittee is notified that the Department will waive the inspection.

13. Compliance Schedules

Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule required and approved by the Department shall be submitted no later than 14 days following each schedule date.

14. Other Noncompliance

The Permittee shall report all instances of noncompliance with the permit at the time monitoring reports are submitted.

15. Other Information

If the Permittee becomes aware that information required by the Application was not submitted or was incorrect in the Application or in any report to the Department, the Permittee shall promptly submit such facts or information. In addition, upon request, the Permittee shall furnish to the Department, within a reasonable time, information related to compliance with the permit.

F. Design and Operation of Facility

The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of contaminants (including leachate and explosive gases) to air, soil, groundwater, or surface water, which could threaten human health or the environment.

G. Inspection Requirements

1. The Permittee shall comply with all requirements of ADEM Admin. Code Division 13.

2. The Permittee shall conduct random inspections of incoming loads.

3. Records of all inspections shall be included in the operating record.

H. Recordkeeping and Reporting

1. The Permittee shall maintain a written operating record at the location specified in Section I.I. The operating record shall include:

   a. Documentation of inspection and maintenance activities.

   b. Daily Volume reports.

   c. Personnel training documents and records.

   d. Solid/Hazardous Waste Determination Forms for Industrial Wastes, and the associated Department disposal approval correspondence for industrial waste and special waste.

   e. Groundwater monitoring records.

   f. Explosive gas monitoring records.

   g. Surface water and leachate monitoring records.

   h. Copies of this Permit and the Application.

   i. Copies of all variances granted by the Department, including copies of all approvals of special operating conditions.

2. Quarterly Volume Report

Beginning with the effective date of this permit, the Permittee shall submit, within thirty (30) days after the end of each calendar quarter, a report summarizing the daily waste receipts for the previous (just ended) quarter. Copies of the quarterly reports shall be maintained in the operating record.

3. Monitoring and Corrective Action Reports

The Permittee shall submit reports on all monitoring and corrective activities conducted pursuant to the requirements of this permit, including, but not limited to, groundwater, surface water, explosive gas and leachate monitoring. The groundwater monitoring shall be conducted in March and September of each year, or as directed by the Department, and the reports shall be submitted at least semi-annually, or as directed by the Department. The reports should contain all monitoring results and conclusions from samples and measurements conducted during the sampling period. **A variance has been granted reducing the groundwater monitoring frequency to annually. (See Section VIII.3.)** Explosive gas monitoring is not required at this time, but if it is determined that monitoring is necessary, the Permittee shall conduct monitoring and submit reports as directed by the Department. Copies of the groundwater and explosive gas monitoring reports shall be maintained in the operating record.

4. Availability, Retention, and Disposition of Records

a. All records, including plans, required under this permit or Division 13 must be furnished upon request, and made available at reasonable times for inspection by any officer, employee, or representative of the Department.

b. All records, including plans, required under this permit or Division 13 shall be retained by the Permittee for a period of at least three years. The retention period for all records is extended automatically during the course of any unresolved enforcement action regarding the facility, or as requested by the Department.

c. A copy of records of waste disposal locations and quantities must be submitted to the Department and local land authority upon closure of the facility.

I. Documents to be maintained by the Permittee

The Permittee shall maintain, at the Boise White Paper, LLC Industrial Waste Landfill office, the following documents and amendments, revisions and modifications to these documents until an engineer certifies closure.

1. Operating record.

2. Closure Plan.

J. Mailing Location

All reports, notifications, or other submissions which are required by this permit should be sent via signed mail (i.e. certified mail, express mail delivery service, etc.) or hand delivered to:

Mailing Address:
Chief, Solid Waste Branch, Land Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463

Physical Address:
Chief, Solid Waste Branch, Land Division
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, Alabama 36110-2059

K. Signatory Requirement

All applications, reports or information required by this permit, or otherwise submitted to the Department, shall be signed and certified by the owner as follows:

1. If an individual, by the applicant.

2. If a city, county, or other municipality or governmental entity, by the ranking elected official, or by a duly authorized representative of that person.

3. If a corporation, organization, or other legal entity, by a principal executive officer, of at least the level of Vice President, or by a duly authorized representative of that person.

L. Confidential Information

The Permittee may claim information submitted as confidential if the information is protected under Code of Alabama 1975, §§ 22-39-18, as amended.

M. State Laws and Regulations

Nothing in this permit shall be construed to preclude the initiation of any legal action or to relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

SECTION II. GENERAL OPERATING CONDITIONS

A. Operation of Facility

The Permittee shall operate and maintain the disposal facility consistent with the Application, this permit, and ADEM Admin. Code Division 13.

B. Open Burning

The Permittee shall not allow open burning without prior written approval from the Department and other appropriate agencies. A burn request should be submitted in writing to the Department outlining why that burn request should be granted. This request should include, but not be limited to, specifically what areas will be utilized, types of waste to be burned, the projected starting and completion dates for the project, and the projected days and hours of operation. The approval, if granted, shall be included in the operating record.

C. Prevention of Unauthorized Disposal

The Permittee shall follow the approved procedures for the detecting and preventing the disposal of free liquids, regulated hazardous waste, PCB's, and medical waste at the facility.

D. Unauthorized Discharge

The Permittee shall operate the disposal facility in such a manner that there will be no water pollution or unauthorized discharge. Any discharge from the disposal facility or practice thereof may require a National Pollutant Discharge Elimination System permit under the Alabama Water Pollution Control Act.

E. Industrial Waste Disposal

The Permittee shall dispose of industrial waste at this landfill.

F. Boundary Markers

The Permittee shall ensure that the facility is identified with a sufficient number of permanent boundary markers that are at least visible from one marker to the next.

SECTION III. SPECIFIC REQUIREMENTS FOR INDUSTRIAL LANDFILLS

A. Waste Identification and Management

1. Subject to the terms of this permit, the Permittee may dispose of the nonhazardous solid wastes listed in III.B. Disposal of any other wastes is prohibited, except waste granted a temporary or one time waiver by the Director.

2. The total permitted area for the Boise White Paper, LLC Industrial Waste Landfill is approximately 70.25 acres, with approximately 41 acres permitted for disposal operations.

3. The maximum average daily volume of waste disposed at the facility shall not exceed 600 cubic yards per day, except as provided under Rule 335-13-5-.06(2)(a)5. The average daily volume shall be computed as specified by Rule 335-13-5-.06(2)(a)5.(i).

B. Waste Streams

The Permittee may accept for disposal non-putrescible and non-hazardous industrial waste, waste lime, boiler ash, woodyard rejects, clarifier solids, water treatment plant backwash solids, mix pond solids, miscellaneous wood waste, black liquor tank bottoms, and waste from the wastepaper recycling plant.

C. Service Area:

The Permittee is allowed to receive for disposal waste from Boise White Paper, LLC's Jackson Mill.

D. Waste Placement, Compaction, and Cover

All waste shall be confined to an area as small as possible and placed onto an appropriate slope not to exceed 4 to 1 (25%) or as approved by the Department. All waste shall be spread in layers two feet or less in thickness and thoroughly compacted weekly with adequate landfill equipment prior to placing additional layers of waste. A minimum of six inches of compacted earth or other alternative cover material approved by the Department shall be added at the conclusion of each week's operation unless a variance is granted in Section VIII. The Permittee is granted a variance from requiring cover at the time of closure.(See Section VIII.1.)

E. Liner Requirements

The Permittee shall be required to install a composite liner system. The composite liner will consist of 24 inches of compacted clay with a soil permeability of 1×10^{-7} cm/sec, 60 mil HDPE liner, 1 foot angular layer and 1 foot select soil layer with a permeability of 1×10^{-3} cm/sec. The base of the landfill shall be a minimum of five (5) feet above the temporal fluctuation of the groundwater table.

F. Security

The Permittee shall provide artificial and/or natural barriers, which prevent entry of unauthorized vehicular traffic to the facility.

G. All Weather Access Roads

The Permittee shall provide an all-weather access road to the dumping face that is wide enough to allow passage of collection vehicles.

H. Adverse Weather Disposal

The Permittee shall provide for disposal activities in adverse weather conditions.

I. Personnel

The Permittee shall maintain adequate personnel to ensure continued and smooth operation of the facility.

J. Environmental Monitoring and Treatment Structures

The Permittee shall provide protection and proper maintenance of environmental monitoring and treatment structures.

K. Vector Control

The Permittee shall provide for vector control as required by ADEM Admin. Code Division 13.

L. Bulk or Noncontainerized Liquid Waste

The Permittee shall not dispose of bulk or noncontainerized liquid waste, or containers capable of holding liquids, unless the conditions of Rule 335-13-4-.23(1)(j) are met.

M. Empty Containers

Empty containers larger than 10 gallons in size must be rendered unsuitable for holding liquids prior to disposal in the landfill unless otherwise approved by the Department.

N. Other Requirements

The Department may enhance or reduce any requirements for operating and maintaining the landfill as deemed necessary by the Land Division.

O. Other Permits

The Permittee shall operate the landfill according to this and any other applicable permits.

P. Scavenging and Salvaging Operations

The Permittee shall prevent scavenging and salvaging operations, except as part of a controlled recycling effort. Any recycling operation must be in accordance with plans submitted and approved by the Department.

Q. Signs

If the landfill is available to the public or commercial haulers, the Permittee shall provide a sign outlining instructions for use of the site. The sign shall be posted and have the information required by Rule 335-13-4-.23(1)(f).

R. Litter Control

The Permittee shall control litter.

S. Fire Control

The Permittee shall provide fire control measures.

SECTION IV. GROUNDWATER MONITORING REQUIREMENTS

A. The Permittee shall install and/or maintain a groundwater monitoring system, as specified below.

1. The permittee shall maintain the groundwater monitoring wells and piezometers identified in Table IV.1. at the locations specified in the Application, and any other groundwater monitoring wells which are added (Section IV.A.3.) during the active life and the post closure care period.

2. The Permittee shall maintain groundwater monitoring well MW-1, MW-7 and MW-8 as the background groundwater monitoring wells for the entire facility.

3. 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 the ADEM Admin. Code.

4. Prior to installing any additional groundwater monitoring wells, the Permittee shall submit a report to the Department with a permit modification request specifying the design, location and installation of any additional monitoring wells. This report shall be submitted within ninety (90) days prior to the installation which, at a minimum, shall include.

   a. Well construction techniques including proposed casing depths, proposed total depth, and proposed screened interval of well(s);

   b. Well development method(s);

   c. A complete analysis of well construction materials;

   d. A schedule of implementation for construction; and

   e. Provisions for determining the lithologic characteristics, hydraulic conductivity and grain-size distribution for the applicable aquifer unit(s) at the location of the new well(s).

B. Groundwater Monitoring Requirements

1. The Permittee shall determine the groundwater surface elevation at each monitoring well and piezometer identified in Table IV.1. each time the well or piezometer is sampled and at least semi-annually throughout the active life and post-closure care period. **The Permittee is allowed to perform annual groundwater monitoring. (See Section VIII.3.)**

2. The Permittee shall determine the groundwater flow rate and direction in the first zone of saturation at least annually or each time groundwater is sampled and submit as required by ADEM Admin. Code Division 13.

3. Prior to the initial receipt of waste at the facility, the Permittee shall sample, and analyze for the parameters listed in Appendix I of Rule 335-13-4-.27, and/or any other parameters specified by the Department in Table IV. 2., all monitoring wells identified in Section IV.,A.,2. to establish background water quality and/or as directed by Rule 335-13-4-.27(2)(j) and 335-13-4-.27(2)(a)(1). The records

and results of this sampling and analysis activity shall be submitted to the Department, within sixty (60) days of the date of sampling.

4. The Permittee shall sample, and analyze all monitoring wells identified in Table IV.1 for the parameters listed in Appendix I of Rule 335-13-4-.27(3), and/or any other parameters specified by the Department in Table IV.3, on a semi-annual basis throughout the active life of the facility and the post-closure care period in accordance with Rule 335-13-4-.27(3). Sampling shall be conducted during March and September of each year, beginning with the effective date of this permit.

5. In addition to the requirements of Section IV., B.,1., B.,2., B.,3. and B.,4., the Permittee shall record water levels, mean sea level elevation measuring point, depth to water, and the results of field tests for pH and specific conductance at the time of sampling for each well.

C. 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 Section IV.,A. to provide a reliable indication of the quality of the groundwater.

1. Samples shall be collected, preserved, and shipped (when shipped off-site for analysis) in accordance with the procedures specified in the Application. Monitoring wells shall be bailed or pumped to remove at least three to five times the well volume of water. Slow recharge wells shall be bailed until dry. Wells shall be allowed to recharge prior to sampling.

2. Samples shall be analyzed according to the procedures specified of the Application, Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), or other appropriate methods approved by this Department. All field tests must be conducted using approved EPA test kits and procedures.

3. Samples shall be tracked and controlled using the chain-of-custody and QA\QC procedures specified of the Application.

D. Recordkeeping and Reporting Requirements

1. Recording of Results

For each sample and/or measurement taken pursuant to the requirements of this permit, the Permittee shall record the information required by Section I.,E.,9.,c.

2. Recordkeeping

Records and results of all groundwater monitoring, sampling, and analysis activities conducted pursuant to the requirements of this permit shall be included in the operating record required by Section I.,I.,1.

E. Permit Modification

If at any time the Permittee or the Department determines that the groundwater monitoring system no longer satisfies the requirements of 335-13-4-.14 or Section IV.A. of this permit, the Permittee must, within 90 days, submit an application for a permit modification to make any necessary and/or appropriate changes to the system.

TABLE IV.1.
GROUNDWATER MONITORING WELLS

Monitoring Well Number	Top of Casing (PVC) (feet msl)	Part Monitoring
UPGRADIENT/BACKGROUND MONITORING WELL		
MW-1	188.66	Entire Landfill
MW-7	186.00	Entire Landfill
MW-8	177.20	Entire Landfill
DOWNGRADIENT MONITORING WELLS		
MW-6	34.40	Entire Landfill
MW-10	87.40	Entire Landfill
MW-12	67.70	Entire Landfill

TABLE IV.2.
BACKGROUND GROUNDWATER MONITORING

pH
Conductivity
Alkalinity
Chloride
Sulfate

TABLE IV.3.
SEMI-ANNUAL GROUNDWATER MONITORING PARAMETERS

pH
Conductivity
Alkalinity
Chloride
Sulfate

SECTION V. GAS MONITORING REQUIREMENTS

At this time, gas monitoring is not being required. If at any time the Department determines that a explosive gas monitoring system is deemed necessary for the protection of human health and the environment, the Permittee must, within 90 days, submit an application for permit modification for the installation of an explosive gas monitoring system that meets the proper regulatory requirements of the Alabama Department of Environmental Management.

SECTION VI. LEACHATE AND SURFACE WATER MANAGEMENT REQUIREMENTS

The Permittee must collect and dispose of any leachate that is generated at the facility, and the leachate must be managed at a facility permitted to treat leachate. The Permittee shall install a leachate collection system designed to maintain less than 12 inches (30 cm) depth of leachate over the liner.

The permittee shall construct and maintain run-on and run-off control structures. Any discharges from drainage control structures shall be permitted through a discharge permit issued by the ADEM Water Division.

SECTION VII. CLOSURE AND POST-CLOSURE REQUIREMENTS

The Permittee shall close the landfill and perform post-closure care of the landfill in accordance with Division 13.

A. Final Cover

The Permittee shall grade final soil cover such that surface water does not pond over the permitted area as specified in the Application. The final cover system shall comply with ADEM Admin. Code Division 13.

B. Vegetative Cover

The Permittee shall establish a vegetative or other appropriate cover within 90 days after completion of final grading requirements in the Application. Preparation of a vegetative cover shall include, but not be limited to, the placement of seed, fertilizer, mulch, and water.

C. Notice of Intent

The Permittee shall place in the operating record and notify the Department of their intent to close the landfill prior to beginning closure.

D. Completion of Closure Activities

The Permittee must complete closure activities of each landfill unit in accordance with the Closure Plan within 180 days of the last known receipt of waste.

E. Certification of Closure

Following closure of each unit, the Permittee must submit to the Department a certification, signed by an engineer, verifying the closure has been completed according to the Closure Plan.

F. Post-Closure Care Period

Post-closure care activities shall be conducted after closure of each unit throughout the life of this permit and continuing for a period of thirty (30) years following closure of the facility. The Department may shorten or extend the post-closure care period applicable to the solid waste disposal facility. The Permittee shall reapply in order to fulfill the post-closure care requirements of this permit.

G. Post-Closure Maintenance

The Permittee shall provide post closure maintenance of the facility to include regularly scheduled inspections. This shall include maintenance of the cover, vegetation, monitoring devices and pollution control equipment and correction of other deficiencies that may be observed by the Department. Monitoring requirements shall continue throughout the post closure period as determined by the Department unless all waste is removed and no unpermitted discharge to waters of the State has occurred.

H. Post-Closure Use of Property

The Permittee shall ensure that post closure use of the property never be allowed to disturb the integrity of the final cover, liner, or any other component of the containment system. This shall preclude the growing of deep-rooted vegetation on the closed area.

I. Certification of Post-Closure

Following post-closure of each unit, the Permittee must submit to the Department a certification, signed by an engineer, verifying the post-closure has been completed according to the Post-Closure Plan.

J. Notice in Deed to Property

The Permittee shall record a notation onto the land deed containing the property utilized for disposal within 90 days after permit expiration, revocation or when closure requirements are achieved as determined by the Department as stated in the Application. This notation shall state that the land has been used as a solid waste disposal facility, the name of the Permittee, type of disposal activity, location of the disposal facility and beginning and closure dates of the disposal activity.

K. Recording Instrument

The Permittee shall submit a certified copy of the recording instrument to the Department within 120 days after permit expiration, revocation, or as directed by the Department as described in the Application.

L. Removal of Waste

If the Permittee, or any other person(s), wishes to remove waste, waste residues, or any liner or contaminated soils, the owner must request and receive prior approval from the Department.

SECTION VIII. VARIANCES

1. A variance is granted from Rule 335-13-4-.23(1)(a) which requires a minimum of six inches of weekly soil cover. The Permittee will be required to cover at the time of closure. (See Section III.D.)

2. A variance is granted from Rule 335-13-4-.16 which requires monitoring of explosive gases. (See Section V.)

3. **A variance has been granted reducing the groundwater monitoring frequency to annually. (See SectionIV.B.1.)**

Any variance granted by the Department may be terminated by the Department whenever the Department finds, after notice and opportunity for hearing, that the petitioner is in violation of any requirement, condition, schedule, limitation or any other provision of the variance, or that operation under the variance does not meet the minimum requirements established by state and federal laws and regulations or is unreasonably threatening the public health.

APPENDIX B

Boise White Paper, LLC Landfill Operation Plan

Boise White Paper, LLC's industrial waste landfill operates under Alabama Department of Environmental Management (ADEM) Solid Waste Disposal Facility Permit No. 13-05. The facility is permitted to accept the following wastes generated at Boise White Paper, LLC's Jackson Paper Mill:

- Non-putrescible and non-hazardous industrial waste;
- Waste lime;
- Boiler ash;
- Woodyard rejects;
- Clarifier solids;
- Water treatment plant backwash solids;
- Mix pond solids;
- Miscellaneous wood waste;
- Waste from the wastepaper recycling plant; and
- Black liquor tank bottoms.

Placement and disposal of these wastes are performed according to the following operational requirements specified by ADEM Administrate Code Rules 335-13-4-.21 and 335-13-4-.23, as described below.

General Operations

The operation and use of the industrial waste landfill will be conducted in accordance with Permit No. 13-05. Because the Boise White Paper, LLC Industrial Waste Landfill is permitted to accept only those specified wastes generated by the Jackson Paper Mill, outside source wastes are prohibited unless special approval is requested from, and granted by, ADEM. Updated waste certifications for the wastes described above are not required, because the landfill is exempt pursuant to the requirements of ADEM Administrative Code R. 335-13-4-.21(6).

The landfill is operated such that no water pollution or unauthorized discharges occur. Leachate is contained by the composite base liner system and conveyed to the Jackson Paper Mill for effluent treatment. The facility is equipped with a sufficient number of permanent markers that are visible from one marker to the next, indicating the areal extent of the landfill. Incoming waste loads are measured by cubic yardage as they enter the facility by truck. Daily waste volume records are maintained at the facility, and quarterly volume reports are submitted to ADEM and maintained on file at the facility.

Open burning of solid waste is prohibited at the Boise White Paper, LLC Industrial Waste Landfill. Should emergency conditions prevail that require burning of debris at the landfill, Boise White Paper, LLC will seek approval from ADEM and other appropriate agencies before beginning burning activities. Burning of stumps and trees as a result of clearing will be performed only with permission from ADEM and the Alabama Forestry Commission.

Industrial Waste Landfill Operating Requirements

Wastes are placed and compacted upon delivery to the landfill. Weekly cover is not necessary, because disease vectors, fires, odors, blown litter, and scavenging are not conditions associated with Boise White Paper, LLC's approved waste streams. Placement of wastes is performed on slopes of 4:1 or less.

The landfill is not open to the public or to commercial haulers. The entire facility is secured by fencing and locking gates to prevent unauthorized entry during non-operational hours.

Adequate equipment and operating personnel are maintained to ensure proper operations in accordance with the landfill permit and ADEM regulations, including during adverse weather conditions (during periods of extended severe weather, the Jackson Mill can postpone waste shipments to the landfill until normal operating capabilities are restored).

Bulk or non-containerized liquid waste is not typically accepted at the landfill, although such wastes would be acceptable under ADEM Administrative Code R. 335-13-4-.23(1)(j), because the existing liner and leachate management system are capable of properly containing and removing the resulting leachate from the landfill.

Scavenging, uncontrolled salvaging, disease vectors, and blowing litter do not occur at the Boise White Paper, LLC Industrial Waste Landfill, because of the nature of the wastes entering the facility. Structures required for environmental monitoring (groundwater wells) and control (leachate management system) are maintained in good repair and are easily accessible to authorized personnel.

APPENDIX C

Current Permit Drawings

D-271-025-1036: **Facility Boundaries**

D-271-025-1039: **Phasing and Development Plan**

D-271-025-1038: **Final Grading and Sections**

k:\usr7\civil\7042001c\facility.dgn
MPM 11-30-95

NOTES:

1. GROUND WATER DATA FOR SEPTEMBER 1995 FROM CH2M HILL REPORT TITLED "GROUND WATER DETECTION MONITORING" DATED NOVEMBER 8, 1995.

N-4442.28
E15653.85

N-4492.08
E15070.31

N-4594.94
E13844.44

N-4769.33
E13822.26

N-4971.55
E13742.09

N-4733.25
E14652.76

N-4742.09
E15641.15

N-4824.12
E15749.76

N-5148.49
E15938.70

N-5548.87
E13273.22

N-5738.85
E13237.99

N-5738.63
E14632.02

N-5771.49
E14803.68

N-5672.93
E15662.01

N-5688.74
E15604.86

N-5609.60
E16293.51

N-5779.45
E16373.23

MW-1
MW-2
MW-2-D
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-12

LANDFILL FACILITY BOUNDARY

SEDIMENT BASIN

FUTURE LIMITS OF WASTE BOUNDARY

LIMITS OF WASTE

LANDFILL FACILITY BOUNDARY

100' ADEM BUFFER

SCALE: 1" = 100'

CONCEPTUAL - NOT FOR CONSTRUCTION

NO.	DATE		BY	CK.	APVD.
B	11-16-95	ISSUED FOR REGULATORY APPROVAL	MPM	RKN	
A	11-16-95	ISSUED FOR REGULATORY APPROVAL	MPM	RKN	

BOISE CASCADE
JACKSON MILL
JACKSON ALABAMA

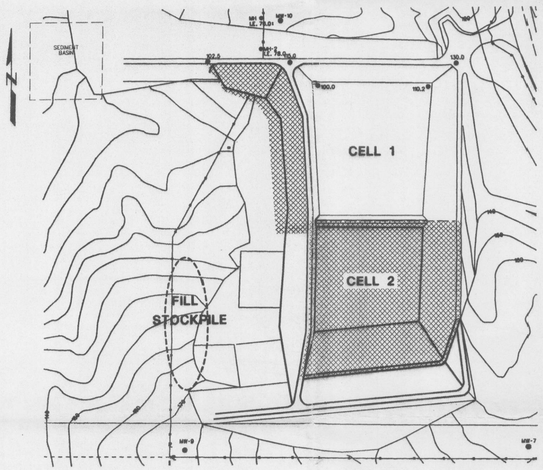
PROJECT MGR:	M. TAYLOR
DESIGNED BY:	K. NILSSON
DRAWN BY:	M. MYERS
CHECKED BY:	
APPROVED BY:	
APPROVED BY:	
APPROVED BY:	
DATE:	NOVEMBER, 1995
JOB NO:	70420.01

RMT, Inc.
100 Verdoe Boulevard
P.O. Box 16778
Greenville, SC 29606
(803) 281-0030

LANDFILL DRAINAGE REDESIGN
FACILITY BOUNDARIES

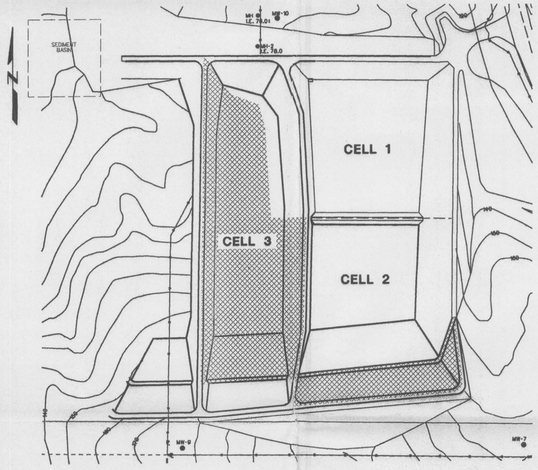
SCALE	DRAWING NO.	REV.
AS SHOWN	D-271-025-1036	B

File: k:\usr6\civil\7042001c\phase.pln
MPM 11-30-95



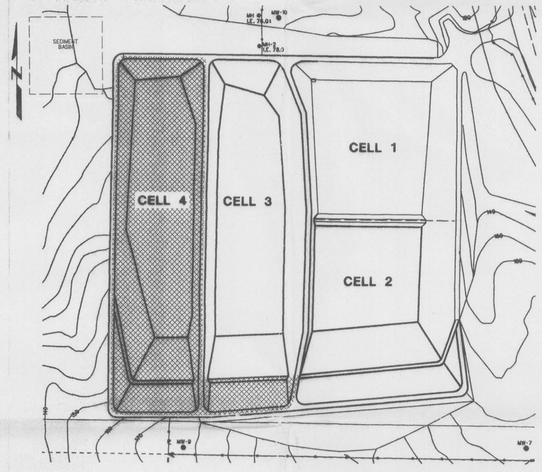
PHASE I - CELL 2 CONSTRUCTION

1. RELOCATE SEDIMENT PONDS.
2. REGRADE WEST BERM OF CELL 1.
3. CONSTRUCT SUBGRADE AND WEST BERM FOR CELL 2.
4. INSTALL LINER SYSTEM: (SHADED AREA)
   - CELL 2 BASE AND EAST INTERIOR SLOPE
   - CELL 2 SOUTH SLOPE UP TO TERRACE
   - CELL 3 EAST AND NORTH INTERIOR SLOPE (UNDER LEACHATE CONVEYANCE PIPE)
5. INSTALL LEACHATE PIPING AND LEACHATE COLLECTION LAYER IN CELL 2.
6. CONSTRUCT DRAINAGE BLANKET AND ASSOCIATED PIPING ON CELL 2 SOUTH SLOPE UP TO TERRACE.
7. INSTALL LEACHATE COLLECTION HEADER AND METERING MANHOLE.
8. ROUGH GRADE NORTH, SOUTH INTERIOR SLOPE OF PHASE 2.
9. STOCKPILE EXCESS FILL.



PHASE II - CELL 3 CONSTRUCTION

1. CONSTRUCT SUBGRADE AND WEST BERM FOR CELL 3..
2. INSTALL LINER SYSTEM: (SHADED AREA)
   - CELL 3 BASE, REMAINDER OF EAST INTERIOR SLOPE, AND WEST INTERIOR SLOPE.
   - CELL 3 SOUTH SLOPE UP TO TERRACE
   - CELL 2 SOUTH SLOPE FROM TERRACE TO TOP OF SLOPE
3. INSTALL LEACHATE PIPING AND LEACHATE COLLECTION LAYER IN CELL 3.
4. TIE LEACHATE COLLECTION INTO EXISTING LEACHATE HEADER.
5. CONSTRUCT DRAINAGE BLANKET AND ASSOCIATED PIPING ON CELL 3 WEST SLOPE, SOUTH SLOPE UP TO TERRACE AND CELL 2 SOUTH SLOPE FROM TERRACE TO TOP OF SLOPE.
6. ROUGH GRADE NORTH, SOUTH INTERIOR SLOPES OF CELL 4.



PHASE II - CELL 4 CONSTRUCTION

1. CONSTRUCT SUBGRADE AND WEST BERM FOR CELL 4.
2. INSTALL LINER SYSTEM: (SHADED AREA)
   - CELL 4 BASE AND ALL INTERIOR SLOPES
   - CELL 3 SOUTH SLOPE FROM TERRACE TO TOP OF SLOPE.
3. INSTALL LEACHATE PIPING AND LEACHATE COLLECTION LAYER IN CELL 4.
4. TIE LEACHATE COLLECTION INTO EXISTING LEACHATE HEADER.
5. CONSTRUCT DRAINAGE BLANKET AND ASSOCIATED PIPING ON CELL 4 WEST SLOPE, SOUTH SLOPE UP TO TERRACE AND CELL 3 SOUTH SLOPE FROM TERRACE UP TO TOP OF SLOPE.

0 200 400 600 800
SCALE: 1" = 200'

CONCEPTUAL - NOT FOR CONSTRUCTION

NO.	DATE		BY	CK.	APVD.
B	11-16-95	ISSUED FOR REGULATORY APPROVAL	MPM	RKN	
A	11-14-95	ISSUED FOR CLIENT REVIEW	MPM	RKN	

BOISE CASCADE
JACKSON MILL
JACKSON ALABAMA

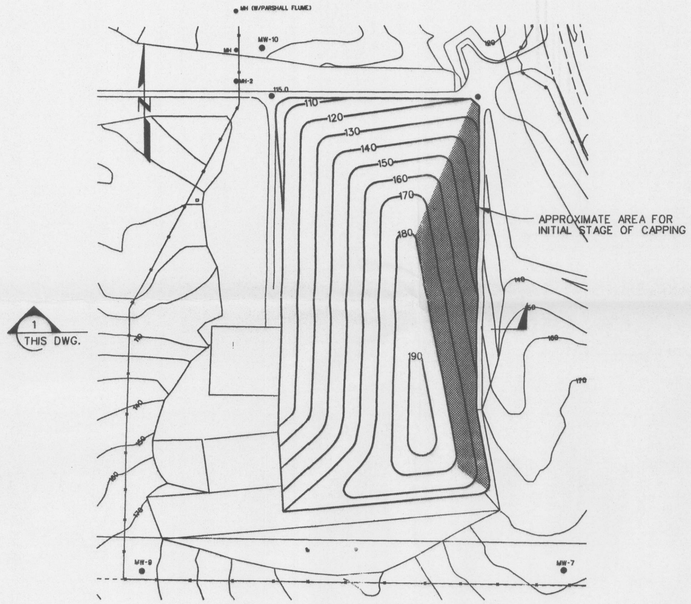
PROJECT MGR:	M. TAYLOR
DESIGNED BY:	K. NILSSON
DRAWN BY:	M. MYERS
CHECKED BY:	
APPROVED BY:	
APPROVED BY:	
APPROVED BY:	
DATE:	NOVEMBER, 1995
JOB NO:	70420.01

RMT, Inc.
100 Verdae Boulevard
P.O. Box 16778
Greenville, SC 29606
(803) 281-0030

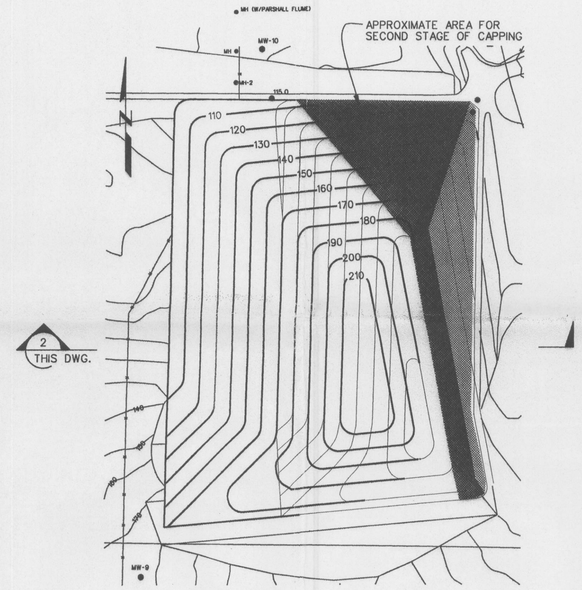
LANDFILL DRAINAGE REDESIGN
PHASING AND DEVELOPMENT PLAN

SCALE	DRAWING NO.	REV.
AS SHOWN	D-271-025-1039	B

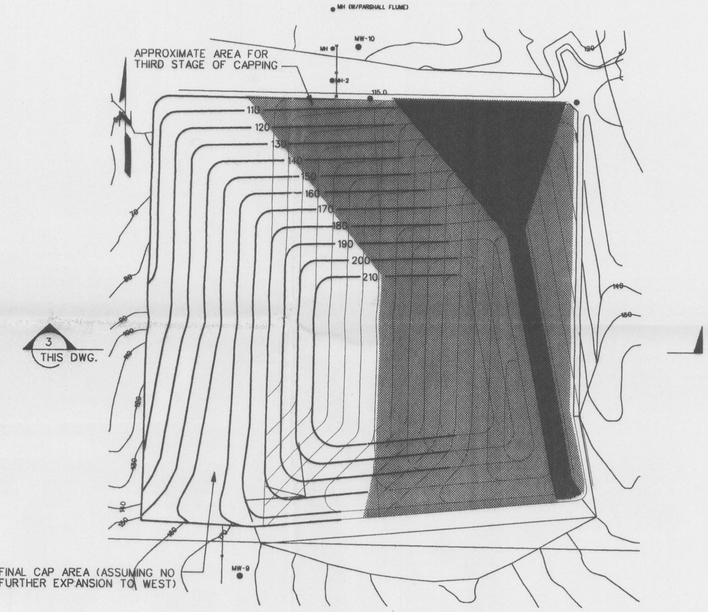
k:\usr6\civil\7042001c\final.gra
MPM 11-30-95



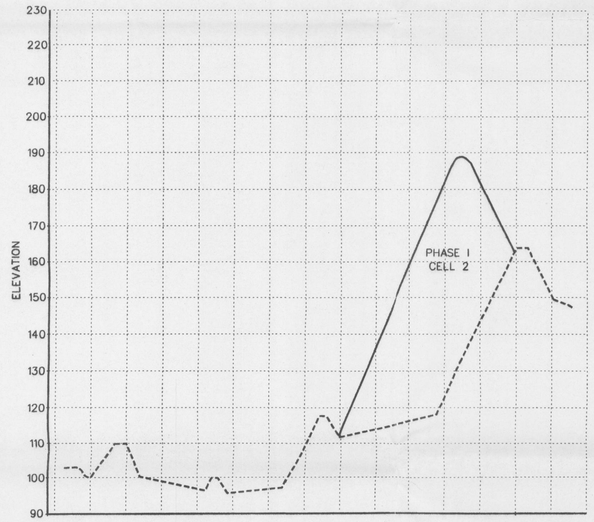
PHASE I - CELLS 1 AND 2
NTS



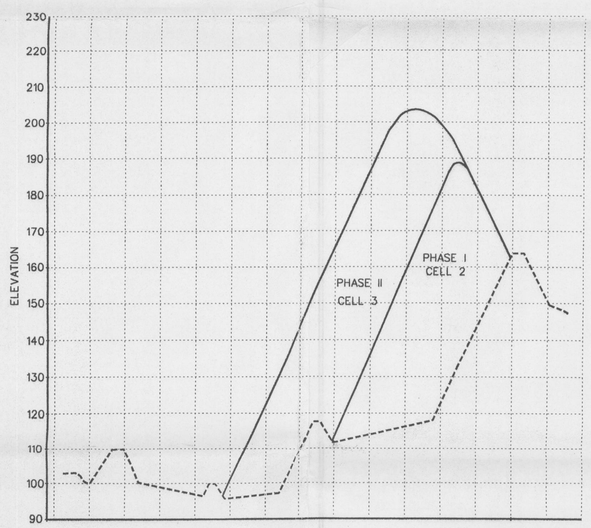
PHASE II - CELL 3
NTS



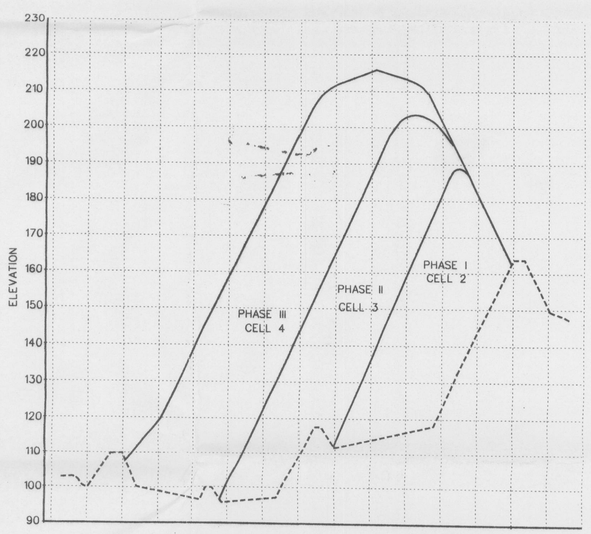
PHASE II - CELL 4
NTS



CROSS SECTION 1 THIS DWG.
NTS



CROSS SECTION 2 THIS DWG.
NTS



CROSS SECTION 3 THIS DWG.
NTS

CONCEPTUAL - NOT FOR CONSTRUCTION

NO.	DATE		BY	CK.	APVD.
B	11-16-95	ISSUED FOR REGULATORY APPROVAL	MPM	RKN	
A	11-14-95	ISSUED FOR CLIENT REVIEW	MPM	RKN	

JACKSON ALABAMA
BOISE CASCADE
JACKSON MILL

PROJECT MGR:	M. TAYLOR
DESIGNED BY:	K. NILSSON
DRAWN BY:	M. MYERS
CHECKED BY:	
APPROVED BY:	
APPROVED BY:	
APPROVED BY:	
DATE:	NOVEMBER, 1995
JOB NO:	70420.01

RMT
100 Verdae Boulevard
P.O. Box 16778
Greenville, SC 29606
(803) 281-0030

LANDFILL DRAINAGE REDESIGN
FINAL GRADING AND SECTIONS

SCALE	DRAWING NO.	REV.
AS SHOWN	D-271-025-1038	B

APPENDIX D

Landfill Operation and Maintenance Manual

OPERATION AND MAINTENANCE MANUAL

Prepared for:

BOISE WHITE PAPER, LLC
INDUSTRIAL WASTE LANDFILL
JACKSON, ALABAMA

Prepared: November 1996
Updated: October 2018

Prepared by:

Boise White Paper, LLC

Table of Contents

Table of Contents (continued)

Section 1. Introduction

The purpose of this manual is to provide guidance to the contractor responsible for the operations and maintenance of the Boise White Paper, LLC – Jackson Mill Industrial Waste Landfill, and to assist them in conducting operations in a manner consistent with federal and local regulations and the engineer's design throughout the life of the facility. The landfill was developed to provide permanent disposal of the plant process wastes, which include waste lime, boiler ash, primary clarifier solids, recycle plant sludge, water treatment backwash, mix pond solids, miscellaneous wood waste, black liquor tank bottoms, and woodyard rejects. The landfill facility will accept no waste generated outside the Jackson Paper Mill.

This document is designed to meet the standards of the Alabama Department of Environmental Management (ADEM) Administrative Code Division 13 – Solid Waste Program (specifically, Rule 335-13-4-.23 relating to industrial landfills). A copy of the current code is provided in Appendix A.

Proper management of this facility requires that the contracted personnel fully understand the regulations pertaining to site operations, record-keeping and reports required by Boise White Paper, LLC (Boise) and ADEM.

1.1 Definitions

Whenever the terms listed below are used, the intent and meaning is to be interpreted as indicated:

ADEM: Alabama Department of Environmental Management

Boise: Boise White Paper, LLC – Jackson Mill

Contract Services Coordinator: The designated Boise representative responsible for the landfill facility.

Contractor: The contractor responsible for the operation and maintenance of the landfill facility.

Department: Alabama Department of Environmental Management

Engineer: Cascade Pacific Engineering, Inc., or designated representative

HDPE: High density polyethylene

Landfill: That portion of the landfill site used to receive solid waste materials from Boise's Jackson Mill. Components included are currently constructed cells and the dump pad/turnaround.

Landfill Facility: The Jackson Mill Industrial Waste Landfill facility. Components included are the landfill site, leachate transfer line and maintenance facility.

Landfill Site: That portion of the landfill facility within and including the perimeter fencing, the soil stockpile area and all areas cleared during the construction of the landfill facility, ditches and their lining systems, rip rap entrance and exit structures, rip rap dissipater dams, culverts and silt fencing. Also included are all underground piping, manholes, and culverts and utilities not included under the maintenance facility category. It does not include the leachate transfer line.

Leachate Transfer Line: The piping system conveying the leachate from the landfill to the Jackson Mill's aerated stabilization basin (ASB). Components include the underground HDPE piping, package flow metering station with solar-powered flow recorder, overhead ductile iron piping and piling support. It does not include the outfall structure.

Maintenance Facility: That portion of the landfill facility within concrete curb and gutter used to maintain, fuel, wash and store equipment used to load, transport, place and compact solid waste materials from the Jackson Mill to the industrial waste landfill. Components include the maintenance building, the fuel storage/containment structure, fenced storage area and fire protection system. The maintenance building contains a 10-ton overhead crane and compressed air system. Also included are paved and striped surfaces, concrete aprons and entrance stoops, catch basins, manholes, grates, associated underground piping and utilities.

Operations Manager: The contractor's on-site representative responsible for overseeing the day-to-day operation of the landfill facility.

O&M: Operations and maintenance

O&M Manual: The governing document providing specific instructions for the operation and maintenance of the landfill facility.

Section 2. Personnel

Proper management and operation of this landfill will require staffing with appropriately-trained personnel. Both management and operations personnel are required for operation of the landfill facility. Section 2.1 describes the typical operating personnel needed to operate the facility on a day-to-day basis.

2.1 Staffing and Functions

Operations and Maintenance Personnel

Four equipment operators

- Operate track loader
- Operate track excavator
- Operate sealed body dump truck
- Operate bulldozer
- Perform equipment maintenance

Management and Administrative Personnel

One operations manager

- Overall landfill management
- Administrative duties
- Reporting
- On-site safety coordinator
- Security

2.2 Personnel Training

On-site training of personnel will be performed to insure the effective and proper operation of this facility. All employees will be adequately trained to perform their jobs in a safe and efficient manner.

In addition to the training on their specific job functions, supplemental training for all employees will also be performed. This supplemental training will include:

- Emergency procedures such as notification protocol, fire response, first aid and CPR;
- An understanding of the leachate system operation;
- Recognition of non-acceptable wastes;
- Filling operations of the cell;
- Preventive maintenance for equipment; and
- Using and inspecting facility emergency equipment.

Section 3. Landfill Safety

Safety is the primary responsibility of every employee on site. The landfill operations manager will insure by inspection, instruction and remedial action that the site is operated in a safe and efficient manner.

A safety coordinator familiar with Boise's safety program and fully trained in landfill facility operations and OSHA requirements will be appointed. His or her responsibilities will include:

- Establishing a landfill facility safety program.
- Training all landfill facility personnel in safety matters.
- Ensuring operating and maintenance equipment is both used and maintained according to manufacturer's safety recommendations.
- Ensuring that all safety equipment is fully operational, periodically inspected, and certified.
- Coordinating activities in the event of an emergency.
- Keeping certification current.
- Maintaining safety and training records.

3.1 General Safety Measures

- All site employees will receive training in safe work practices and they will be encouraged to exercise caution in their work.
- All employees will receive training in basic first aid and CPR.
- First aid kits and fire extinguishers will be maintained and clearly accessible.
- All vehicles and equipment will be operated in accordance with the manufacturer's requirements and appropriate OSHA regulations.
- Engine covers and guards provided around moving parts will not be removed during equipment operation.
- Equipment operators and personnel on the ground must be constantly aware of activity around them. Unsafe practices will be corrected immediately.
- Proper hygiene must be exercised at all times.
- Landfill equipment will be equipped with roll-over protective cabs and fire extinguishers.

The following personal protective equipment will be made available to landfill employees and used when appropriate:

- Hard hats;
- Steel-toed boots;
- Gloves;
- Hearing protection;
- Eye protection;
- Respiratory protection will be made available if deemed necessary by Boise and/or the contractor.

3.2 Enforcement of Landfill Site Rules

Site rules will be posted at the front gate. They will include the following in addition to the name of the contractor:

- Not Open to the Public
- Restricted Access
- Authorized Personnel Only

All employees will have the authority to enforce the posted rules.

Section 4. Equipment and Maintenance

Reliable equipment with manufacturer-approved modifications (as appropriate for landfills) will be used. The contractor shall provide properly equipped, well-maintained vehicles that enhance employee safety and work productivity and minimize operating expenses.

4.1 Operating Equipment

For the purposes of this facility, the following types of equipment are required:

- One general-purpose front-end loader for loading waste into hauling trucks or trailers.
- One general-purpose hydraulic track excavator.
- Sealed body dump trucks, tractors with sealed body trailers or removable drop boxes for hauling the waste from the mill to the landfill.
- One bulldozer, suitable for this type of waste material, properly equipped for landfill use. The bulldozer will be used for pushing waste from the dump pad to the working face and for compacting waste.
- Pick-up truck(s) for general transportation.
- Appropriate site maintenance equipment and tools, such as a backhoe, mowing machine, shovels and rakes.

All vehicles designed for site operations will be equipped with fire extinguishers, first aid kits, roll-over protection and seat belts. Some type of warning device (either visual, audible or both) will be required to indicate when a vehicle is in reverse. Reversible fans, perforated engine enclosures, underbody protection and two-way communications are also recommended for contractor vehicles.

Support facilities are provided for the equipment. These facilities include a maintenance building equipped with an air compressor, pneumatic tools, cutting torch systems, hand tools, water hoses, fuel supply and spare parts. It also includes a fully-equipped office, break room and restrooms.

4.2 Equipment Preventive Maintenance

Preventive maintenance of equipment should be conducted on site by operators whenever possible. This will increase operator familiarity with equipment and reduce maintenance costs. Preventive maintenance is the responsibility of the landfill operations manager.

At a minimum, routine preventive maintenance will consist of the following:

- Visual inspection of tires or tracks for serviceability.
- Check of all fluid levels.

- Visual inspection of all hydraulic hoses for leaks or damage.
- Visual inspection of radiators and coolers for clogging.
- Test of all safety features for proper operation.
- Inspection of fire extinguisher for serviceability.

In addition, the equipment manufacturer's recommended periodic maintenance schedule should be followed. This will include, at a minimum:

- Oil changes;
- Oil sample analyses;
- Filter changes; and
- Transmission, differential and final drive fluid changes.

Oil, hydraulic fluid, antifreeze and fuel must be contained and transported to the maintenance shop for proper disposal if repairs or servicing require that they are drained from a piece of equipment in the landfill area. No free liquids can be disposed of in the landfill. Landfill equipment can be washed down in the landfill.

Section 5. Waste Acceptance

This industrial waste landfill is permitted to deposit only the wastes generated on the Boise White Paper, LLC mill site. These wastes include:

- Waste Lime. Alkaline wastes (waste lime, slaker grits, green liquor dregs, lime mud, and black liquor tank bottoms) are generated in the recausticizing area of the Kraft pulping process. These materials are very fine-grained and can become caustic if wet.
- Boiler Ash. Ash is the residual from firing mill boilers.
- Water Treatment Backwash. Solids from the water treatment system which are backwashed.
- Woodyard Wastes. Wood is generally not considered a waste at the mill. Nearly all bark and wood chips are either burned or processed into paper. Wood waste (woodyard rejects and miscellaneous wood waste) is generated when bark and chips become too wet and too dirty to be burned. Wood waste may be used in the landfill to stabilize other wastes.
- Recycle Plant Sludge. Recycle plant sludge is a byproduct of recycled paper production.
- Clarifier Solids. Solids from the waste clarifier are ran through a screw press before disposal.
- Mix Pond Solids. The dewatered dippings from the Mix Pond.
- Other Industrial Waste. Other industrial wastes are non-putrescible and non-hazardous industrial wastes generated by Boise White Paper, LLC's Jackson mill.

5.1 Excluded Wastes

Wastes excluded by ADEM regulations include:

- Free liquids, including oils;
- Drums, unless rinsed and crushed or punctured;
- Hazardous waste, including lead-acid batteries, mercury thermostats and switches, and mercury vapor lamps;
- Tires;
- Oil-contaminated wastes;
- Medical wastes; and
- Waste materials from outside the Jackson Mill complex.

5.2 Hazardous Contamination Control

Hazardous contamination may be bacteriological, chemical, or radiological. All of these are defined in detail by the U. S. Environmental Protection Agency's (EPA's) hazardous materials definition. Disposal of hazardous waste at this site is not permitted. If contamination of a hazardous nature exists, the operations manager will immediately notify Boise/PCA's environmental department and take steps to control and begin remediation of the hazardous material immediately. The facility's Emergency Response Plan is provided as Appendix B to this document.

Section 6. Waste Handling, Placement and Operating Procedures

The solid industrial waste will be transported by truck to the landfill turnaround and dump pad by way of County Road 15 (Depot Road). Contractors will back their trucks to the edge of the pad and dump the waste materials into the landfill cell.

The equipment operator will push the waste to the active working face where it will be thoroughly spread in layers of two feet or less in thickness and compacted prior to placing additional layers of waste.

ADEM requires that all waste placed in the landfill be generated on site by Boise White Paper, LLC's Jackson Mill. No free liquid waste, hazardous waste, or medical waste is permitted in the landfill. No open burning of waste is permitted and wind-blown litter must be controlled. If an unpermitted waste is discovered in the landfill, the operations manager will notify Boise; Boise will in turn notify ADEM in accordance with the terms of the industrial waste landfill permit.

The waste, as previously described, will consist of separate loads of ash, dredgings, sludges and wood wastes. It is important for the equipment operator to mix these wastes as uniformly as possible, trying to avoid pockets of ash dredgings or woodyard rejects, which could cause slides and damage the liner. The first two feet of waste should be selected waste, free from objects that could damage the liner. Large-diameter logs should be placed closer to the bottom of the working face, and adequately covered with smaller waste to reduce the risk of rolling and damaging the liner; long pieces of wood will be reduced in length with a chainsaw. Proper mixing of waste will help stabilize the slopes of the landfill.

All waste should be confined to as small an area as possible and placed onto an appropriate slope of 4:1 (25%), or as approved by the Department. To avoid slides, the waste should be placed in lifts no higher than 20 feet, and progress of the lift should be no steeper than 3:1. It is recommended that the entire cell be covered with a lift before starting with the second lift, and that the second lift completely cover the first lift before starting the third lift, and so forth.

6.1 Hours of Operation

The site will be open for disposal of waste from 7:00 AM to 4:00 PM Monday through Friday (five days per week). This schedule will be subject to adjustments based upon Boise's requirements. The landfill is scheduled to be closed on the following holidays:

- New Year's Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Day

6.2 Safety

Safety is of paramount importance in operating the landfill. The following procedures must be performed to satisfy safety requirements:

- The maximum final slope of waste allowed by ADEM is 4 horizontal to 1 vertical (4:1). The working face slopes may be as steep as 2:1. Should maintenance traffic ever be required on or near these slopes, care **must be** taken to protect personnel from vehicular accident resulting from slope failure. Fill placement must adhere to OSHA guidelines as prescribed in Title 29 *Code of Federal Regulations* Part 1926 Subpart P, Excavations.
- Landfill operations are performed using heavy equipment on surfaces that are occasionally steep or unstable. All equipment operators must be fully trained in the safe operation of heavy equipment.
- The landfill operations manager will insure by inspection, instruction, and remedial action that the site is operated in a safe and efficient manner.
- Landfill equipment will be equipped with roll-over protective cabs and fire extinguishers.
- Equipment operators will be furnished with hard hats and hearing protection.
- A completely stocked first aid kit will be maintained at the site office at all times and will be inspected on a monthly basis for deficiency.

Boise White Paper, LLC's Jackson Mill is committed to safe, efficient solid waste disposal practices that are protective of human health and the environment. The landfill operating requirements in this manual are intended to accomplish the following objectives:

- Maintain a workable waste surface to insure uninterrupted waste disposal operations.
- Establish a structurally stable fill so that final grades can be achieved.
- Control waste materials to prevent releases to the environment.
- Place wastes in a manner that does not damage the liner system.
- Provide a safe working environment for personnel.

In general, these objectives are met by a combination of the following practices:

- Placing waste materials, except sludge, in compacted lifts.
- Grading and shaping the waste to promote run-off to leachate collection systems.
- Proper maintenance of landfill components.
- Mixing of sludge wastes with wood wastes for stable placement.
- Efficient placement of unstable sludges.
- Containment of sludges to allow time for in-place dewatering and consolidation to achieve the long-term stability required to reach final grades.

- Effective surface drainage to minimize re-saturation of the waste materials.

6.3 Equipment Limitations

The landfill design specifications require that a bulldozer of no more than 8.0 pounds per square inch be placed on top of the liner without at least two feet of cover between the machinery and the liner. The facility was built with two feet of sand on top of the liner at all points. The refuse will initially be dumped from the dump pad into the cell. After appreciable accumulation of debris, the operator will then spread the waste into the operating cells of the facility.

The operator will first cover the banks in order to control erosion and then fill in the floor of the cell in accordance with the approved site development plan.

It is recommended that the one-foot thick gravel layer be left uncovered at both the landfill low point and adjacent side slope. In this manner, leachate, if it should collect at the low point, can be aggressively removed via the highly permeable gravel leachate collection layer.

Section 7. Landfill Cover

In accordance with the facility operating permit, no daily or weekly cover is required for the waste type being deposited. At the time of closure, final cover is to be applied in accordance with the Department-approved Site Development Plan and will consist of five major components listed in order from the top of the cover to the top of the waste:

- An erosion control layer;
- Clean water drainage system;
- Top cap liner;
- Gas collection system; and
- A select soil leveling course.

Section 8. Leachate Collection, Transfer and Disposal System

To meet the state and federal requirements relating to groundwater protection design and operation, a leachate collection, transfer, and disposal system has been installed at Boise's Industrial Waste Landfill.

8.1 Leachate Collection System

The leachate collection system is comprised of the following components:

- A washed drain rock layer separated from the soil filter material by geotextile filter fabric;
- Perforated HDPE collection laterals;
- A solid HDPE collection main;
- Three HDPE manholes; and
- A fiberglass packaged flow metering station with Parshall flume, solar powered flow meter, and chart recorder.

All of the piping is designed to direct the leachate to the concrete vault for flow metering.

8.2 Leachate Transfer System

The leachate transfer system is also a combined sewer line for storm water run-off from the impervious surface areas of the maintenance facilities, the building sanitary sewage, and wastewater from the adjacent truck wash pad. The leachate, sewage, and water are conveyed to the Jackson Mill's aerated stabilization basin (ASB) ponds via a 20-inch gravity-draining pipeline system.

The first segment of the pipeline consists of approximately 1,650 feet of 20-inch diameter HDPE piping installed underground, extending from the landfill to a transition vault.

The second segment extends from the transition vault to the outfall structure at the ASB, and consists of approximately 5,200 feet of 20-inch ductile iron (DI) piping supported overhead on timber pile with concrete pile caps, each bent spanning 45 feet. The DI piping has expansion joints and inspection ports at key points along the pipeline.

8.3 Operation and Maintenance

The Industrial Waste Landfill leachate collection and conveying system is an all-gravity system; there are no pumps or valves to monitor or maintain. Maintenance of the system will consist of a periodic inspection of the piping and supports to insure that no damage has

occurred causing leaks or blockage. Inspection can be conducted via the "clean-outs" and manholes.

Section 9. Groundwater Monitoring

This facility is in full compliance with ADEM Administrative Code R. 335-13-4-.27. Twelve groundwater monitoring wells are located at the facility. Water samples from these wells are to be collected by the Jackson Mill Environmental Department (or an approved environmental contractor), analyzed by an approved contract laboratory, and the results reported to the Boise contract services coordinator and the Department throughout the active life and post-closure care period of the landfill as outlined in the site Groundwater Monitoring and Corrective Action Plan.

Section 10. Landfill Gas Control

Due to the inert nature of the waste approved for placement in the landfill, landfill gas generation is not expected to be significant. Consequently, landfill gas generation is not addressed during fill placement operations. The soil conditions, hydrogeological and hydraulic conditions surrounding the site and the lack of structures within 1,000 feet of the facility exclude the requirement of a perimeter and structure gas monitoring program. It is recommended that sumps, manholes, cleanouts, and any underground structure be periodically monitored prior to entrance for routine maintenance for the accumulation of gas.

At the time of closure, however, a passive-type gas collection system will be incorporated into the final cover design. The final cover HDPE flexible membrane liner (FML) is an impermeable barrier to the methane gas generated by degradation of the enclosed waste material. The geonet layer, with geotextile filter fabric on either side, accepts methane gas from the soil leveling course when a pressure differential is created in the venting process. Perforated HDPE gas collection laterals in drain rock trenches are located between the gas collection layer and the final layer HDPE FML at the highest points. The laterals are located to follow the inside ridge lines of the HDPE FML. At the high points, HDPE vent pipes penetrate the final cover and spinner type vent assemblies installed at the top of the vent pipes develop the pressure differential necessary for gas migration and passive gas extraction.

Maintenance of the gas extraction system consists of quarterly inspections of each gas venting assembly to ensure that the venting pipes are not damaged, that the spinner is free to turn, and that the assembly is securely staked.

Section 11. Fire Protection

All employees directly involved in the operation of the landfill facility must be trained in fire response procedures. This training will include the proper use and locations of fire extinguishers, evacuation plans, and notification procedures.

Deliberate burning of solid waste will not be practiced at the facility. The potential for accidental fires will be minimized by proper compaction of waste.

In the event of a major fire, the local volunteer fire department can be contacted for assistance. Their telephone number will be properly posted and maintained with other emergency numbers in the facility office.

Section 12. Landfill Site Security

Only authorized Boise and contract landfill operating personnel will be allowed access to the facility. A six-foot chain link fence has been installed around the perimeter of the landfill site with the main gate across the access road from the highway. All on-site access roads will be maintained and cleaned as required to assure access and minimize dust.

Fuel storage and dispensing facilities available on-site shall be locked and secured when not in use. Lubricants, tools, and small equipment shall be properly secured in storage bins when not in use.

Section 13. Air Quality Control

13.1 Open Burning

No open burning will be permitted at this site. All employees at this facility will be trained to prevent fires.

13.2 Dust

Water may be required to prevent fugitive dust emissions during truck unloading and spreading of the waste.

13.3 Odors

Odors will be controlled by preventing the ponding of water at the landfill and by use of adequate compaction and grading.

Section 14. Animal and Insect Control

Because of the lack of food sources, vectors are not likely to be present in Boise's Industrial Waste Landfill and control may be limited to insects (i.e., mosquitoes). Mosquito populations will be controlled by preventing the accumulation of stagnated water. This can be accomplished through continuous grading of slopes and contours to eliminate water ponding, and spraying insecticides, if required.

Section 15. Facility Inspection and Maintenance

Maintenance activities at Boise's Industrial Waste Landfill may be performed by Boise personnel or by the landfill operations contractor, as determined appropriate by Boise. The maintenance schedule is provided in Table 1.

15.1 Safety

The following safety guidelines should be followed during landfill maintenance activities:

- When entering manholes, proper confined space entry procedures and health and safety procedures should be followed. It is possible that explosive (methane) and toxic (hydrogen sulfide) landfill gases will collect in manholes unless they are displaced. Confined space entry is potentially the most dangerous activity associated with landfill operation and maintenance.

15.2 Drainage Structures, Surface Drainage Pipe, and Leachate Transfer Pipe

Drainage structures, ditches, perimeter berms, and slopes should be inspected periodically for the following adverse conditions:

- Surface drainage crossing roads – the facility has been designed to channel water through ditches and culverts.
- Excessive sedimentation and silting of ditches which might inhibit flow – sedimentation should be removed and free flow re-established.
- Clogged drain inlets – inlets should be inspected and any debris shall be removed which may be impeding flow.

The surface drainage pipes should be inspected at least four times per year to ensure unimpeded flow.

1. Visual inspection is required at both the inlet and outlet for any debris that inhibits flow.
2. Observed debris should be removed as part of regularly scheduled maintenance.

In the event that leachate removal is interrupted for any reason, contingency methods of leachate removal should be implemented. Leachate removal may be performed by pumping to the Jackson Mill's aerated stabilization basin (ASB).

15.3 Roads

Roads should be inspected monthly for erosion and rutting. If either of these should occur, the proper means of repair is to add stone and not scrape away and regrade existing material.

15.4 Site Equipment

When feasible, site operating equipment will be maintained and repaired on site. If major damage or failure of the equipment occurs, the operations manager will secure replacement equipment during the repair period or make other provisions for loading, hauling, and spreading. If adequate provisions cannot be made or if replacement equipment is unavailable within 48 hours, the site manager will reduce or restrict access to the site.

15.5 Fences and Gates

Fences, gates, and locks will be checked for structural integrity on a monthly basis.

15.6 Groundskeeping

All grass must be maintained throughout the facility in order to control erosion of the soil. Grass will be cut whenever necessary and at least twice per year. Silt fences and hay bales will be kept in place and intact. Erosion control systems will be replaced when necessary. Any necessary ground work and improvements will be taken care of in a timely fashion so as to avoid excessive erosion.

Table 1 – Landfill Maintenance Schedule						
Inspection, Maintenance, and Repair Task	**Daily**	**Monthly**	**Annual**	**After Major Storm Event**	**As Necessary**	**Notes**
Landfill						
Gravel Road (top of berms)					X	Reshape, remove rut holes
Vegetated Areas and Drainage Ditches		X		X		Mow and repair erosion
Security Fencing		X				
Trash and Litter Control	X					
Flush Leachate Collection Piping					X	
Maintenance Facility and Office						
Maintenance Facility	X					
Maintenance Building	X					General Housekeeping
Overhead Crane System		X	X			General Housekeeping
Compressed Air System		X				
Catch Basins, Manholes, and Washdown System			X			
Lighting Systems					X	
Plumbing Systems					X	
Pavement					X	
Fuel Storage System		X	X		X	
Fire Protection System		X			X	
Refueling					X	
Leachate Collection and Transfer Systems						
Leachate Transfer Pipeline			X		X	Periodic Visual Inspections
Leachate Collection Pipeline			X			Video Camera Inspection
Manholes		X		X		
Flow Meter Station		X		X		
Flow Meter and Chart Recorder	X			X		
Chart Recorder – Paper and Pens					X	
Operating Equipment						
Light Equipment and Hand Tools					X	
Heavy Equipment	X	X	X	X	X	In accordance with manufacturer's recommendations

Section 16. Reporting and Record–Keeping

The landfill O&M contractor will be required to generate several different reports and logs to document performance and assure that the landfill facility is being operated and maintained in conformance with the ADEM Solid Waste Program and Landfill Permit No. 13-05, the Operations and Maintenance Manual, and Boise's policies and procedures. Records, reports, logs, drawings, and similar documents must be kept on file in the operation manager's office in the maintenance building.

All the documents generated by the operations manager must be maintained electronically on the computer hard drive. A duplicate copy of the electronic files will be sent to the contract services coordinator. A physical copy of the documents will also be given to the contract services coordinator.

The frequency of reporting ranges from daily (i.e., the sign-in and sign-out log) to annually (i.e., industrial landfill facility site inspection with Boise environmental personnel). Copies of the various reports will be transmitted to the contract services coordinator. The contract services coordinator will establish the number of copies necessary and distribute these copies to the appropriate Boise staff and the Department as required. All reports and written correspondence must be completed in a neat and orderly fashion and transmitted in a timely manner. When critical, the contract services coordinator will establish deadlines for certain reports. To be in conformance with the contract, the operations manager must meet these reporting deadlines. Failure to do so can be interpreted by Boise as breach of contract.

IT IS IMPORTANT TO EMPHASIZE THAT SOME OF THESE REPORTS ARE INCLUDED IN MORE COMPREHENSIVE DOCUMENTS TO BE PROVIDED BY BOISE PERSONNEL TO GOVERNMENTAL AGENCIES, OF WHICH FAILURE TO MEET DEADLINES MAY RESULT IN FINES AND/OR OTHER PENALTIES.

The operations manager will attend all meetings deemed necessary by the contract services coordinator.

16.1 Operating Record

The permittee or contractor operating an industrial waste landfill must record and retain in an operating record at the facility or in an alternative location approved by the Department the following information as it becomes available:

- A copy of the Solid Waste Disposal Facility Permit;
- The approved site development plan;
- Site operating plan;
- Landfill gas management plan;
- Final closure plan;
- Post-closure maintenance plan; and

- Any other related document.

All information contained in the operating record will be furnished upon request to the executive director of the Department and will be made available at all reasonable times for inspection by the Department.

16.2 Daily Operating Records

The permittee or contractor must promptly record and retain in the operating record the following information:

- Any and all demonstrations, findings, monitoring, testing, and analytical data relating to groundwater monitoring and corrective action;
- Storm water monitoring and corrective action;
- Copies of all correspondence relating to the operation of the facility, modifications to the permit, approvals, and other matters relating to technical assistance;
- Records of random load inspections performed at the facility; and
- Any other documents as specified by the approved permit or by the Department.

A reporting schedule is provided in Table 2.

16.3 Notifications

The contractor will provide written notification to the executive director for each occurrence that documentation from Subsection 16.1 of this section is placed into or added to the operating record.

16.4 Record Retention Period

The contractor will retain all information contained within the operating record and the different plans required for the facility for the life of the facility, including the post-closure care period of 30 years.

Table 2 – Landfill Reporting Schedule						
Reporting Task	**Daily**	**Weekly**	**Monthly**	**After Event**	**As Requested**	**Notes**
Waste and Leachate Volume Reports						
Haul Volumes	X		X		X	
Leachate Volumes			X		X	
Maintenance Reports						
Landfill Site Work		X			X	
Facility Maintenance Reports		X			X	
Equipment Maintenance Reports			X		X	
Inspection Reports					X	
Safety and Personnel Reports						
Equipment and Staffing Reports	X				X	
Safety Meeting Minutes		X	X		X	
Drug Testing			X	X	X	
Accident Report				X	X	
Operations Reports						
Sign-In and Sign-Out Log		X			X	
Vandalism Investigations				X	X	

Appendix A

Alabama Department of Environmental Management
Administrative Code, Division 13 – Solid Waste Program

(Under Separate Cover)

Appendix B

Emergency Response Plan

Boise White Paper, LLC Industrial Waste Landfill

Table of Contents

Section 1. Introduction

The purpose of this Emergency Response Plan is to minimize possible fires, explosions and unplanned releases of waste or waste constituents to air or water. The provisions of this plan will be carried out immediately upon discovery of any incident or existing situation.

Routine cleanup operations will be performed by operating personnel without implementing this plan.

Section 2. Implementation Criteria

The purpose of this section is to guide the emergency coordinators through decision-making criteria when conditions warrant the need for contingency action response. Emergencies may occur at any time as a result of natural forces, accidents and other situations that disrupt normal operations. The following list summarizes the types and natures of situations that would require implementation of the contingency plan.

The Emergency Response Plan will be implemented if any of the following events occur:

- On-site injury;
- Fire;
- Detection of explosive gases;
- Excessive dust;
- Odor complaints;
- Equipment breakdown;
- Unusual traffic conditions;
- Animal or insect problems;
- Receipt or discovery of unauthorized waste;
- Groundwater or surface water contamination; or
- Fuel tank spills or leaks.

Section 3. Coordination of Emergency Services

3.1 Emergency Coordination

A list of names, addresses, and telephone numbers (office and home) of all individuals qualified to act as an emergency coordinator is provided in Table 1.

Table 1. List of Emergency Coordinators

Notification Priority	Position Title	Employee Name	Telephone Numbers
1	Emergency Coordinator	Randy Abston	(251) 246-8282 (251) 589-5843
2	Operations Manager	Jason Glasscock	(251) 272-0380
3	Security Coordinator		
4	Safety Coordinator		

In the event of an emergency, the emergency coordinator (or designee) will perform the following tasks:

- Assess the extent of the emergency;
- Contact appropriate emergency support agencies;
- Designate someone in charge at incident area to temporarily supervise immediate control action, radio reports to the emergency coordinator for updates on conditions, and notify all personnel;
- Take precautions to prevent spreading of fire or other emergency conditions to other waste disposal areas and secure the area;
- Evacuate non-essential personnel from incident area, particularly during operating hours;
- Assemble all personnel at a designated area for instructions and personnel count. Direct company personnel in responding to fire or explosion, if appropriate, and wait for outside emergency personnel to arrive. Upon their arrival, assist in their efforts as required;
- Prevent additional traffic from entering incident area;
- Clear roads for emergency vehicles and equipment;
- Determine the need to evacuate the site based on evaluation of the following:
    1. The real extent of the incident;
    2. The nature of waste involved;
    3. Weather conditions (especially wind);

4. An estimate of the time required and equipment needed to bring the incident under control;
5. Any other special conditions or factors that may have a bearing on the severity of the incident.

- In the event of fire, consider smoke visibility in off-site areas and advise the responding fire department personnel;
- For occurrences requiring local traffic control, contact the local law enforcement authority to coordinate activities, if necessary;
- Immediately after the incident, make an assessment to determine the need for disposing of recovered waste, contaminated or surface waters, or any other material that results from measures taken to control fire or explosion at the facility; and
- Evaluate the nature of materials (such as fire suppressants, neutralizing agents, waste residuals) in the affected area of the facility to determine if special cleanup efforts must be initiated before operation is resumed.

In the event of an emergency, the permittee or contractor will perform the following tasks:

- Notify the Boise White Paper, LLC contract services coordinator, safety director, and environmental engineer who will confirm that it is safe to resume operations in the affected areas of the facility;
- Note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, the permittee/contractor must submit a written report on the incident to the Department. The report must include the following information:
    1. Name, address, and telephone number of the permittee;
    2. Name, address, and telephone number of the facility;
    3. Date, time, and type of incident (e.g., fire, explosion);
    4. Name and quantity of materials involved;
    5. The extent of injuries, if any;
    6. An assessment of actual or potential hazards to human health or the environment, where applicable; and
    7. Estimated quantity and description of recovered material that resulted from the incident.

3.2 Emergency Response Team

Boise White Paper, LLC's Jackson mill emergency response team will also act as the emergency response team for the landfill facility. The emergency response team has been established to provide incident control and remediation during emergency situations.

3.3 Coordination Agreements with Local Authorities

Boise White Paper, LLC's Jackson Mill will maintain close ties with local police and fire departments, hospitals, contractors, equipment suppliers, and state and local emergency response teams to coordinate emergency services. The Jackson Mill will familiarize local authorities with the layout of the facility; properties of the waste handled and potential hazards; places where facility personnel normally would be working; entrances to and roads inside the facility; and possible evacuation routes. Refer to Table 3 for a list of local emergency contacts.

3.4 Hospitals

The operations manager must identify the two hospitals closest to the facility and alert these facilities as to the nature and extent of emergency and the type of medical service required. The medical facilities servicing this facility are the Vaughan Jackson Medical Center (251-246-9021) located in Jackson, Alabama, and Grove Hill Memorial Hospital (251-275-3877) located in Grove Hill, Alabama. A map is provided in this Emergency Response Plan which shows the locations and easiest routes to these facilities. The location and phone number of the emergency services providers will be maintained on site in a clearly visible and accessible location. The maps to these medical facilities are presented as Figures 1, 2, and 3.

Section 4. Emergency Response Procedures

4.1 Notification Procedures

Should an emergency situation arise, the emergency coordinator or designee will be notified immediately. The emergency coordinator will then contact the appropriate personnel.

- Emergency services can be obtained by contacting Boise security, and dialing 911, if necessary;
- Business numbers are listed in Table 3.

Table 3. Business Numbers for Emergency Assistance

Service Provider	Telephone Number
Boise Main Mill Security	(251) 246-8264
Jackson Police Department	(251) 246-4484
Jackson Fire Department	(251) 246-4483
Vaughan Jackson Medical Center	(251) 246-9021
Grove Hill Memorial Hospital	(251) 275-3877
Hazardous Materials Team	(251) 246-4461
Alabama Department of Environmental Management	Business Hours: (334) 271-7700 After Hours: (800) 843-0699

4.2 On-Site Personal Injury

The primary on-site personal injuries that may occur at the industrial waste landfill are the following:

- Accidents involving the use of heavy equipment;
- Minor cuts, scrapes, and bruises;
- Injuries resulting from slipping and falling;
- Asphyxiation caused by entrance into confined spaces or excavation;
- Injuries resulting from fire or explosion.

Training on the prevention of injuries should help to minimize and prevent many of these injuries. In the event that a serious or potentially serious injury occurs at or near the site, the assisting personnel should make a decision as to whether immediate first aid is required. If confined space is involved, the assisting personnel should not enter the confined space until the situation has been corrected or a corrective action has been taken to assure the health and safety of the assisting personnel.

If immediate first aid is required, it should be given to the injured person. If possible, the assisting person or other available personnel should contact the emergency coordinator for additional help (i.e., ambulance, fire department, etc.) if necessary.

If the injury is not serious and only requires minor first aid, first aid kits are available at designated areas on the site. All injuries, minor or serious, should be reported to the emergency coordinator for instructions and for injury records.

4.3 Fire or Explosion

Upon discovery of a fire or explosion at or near the facility, the emergency coordinator will contact the necessary personnel to fight the fire. This may include employees trained in the proper methods of fire fighting and/or other emergency response personnel. All untrained personnel will be required to leave the area. In addition, the emergency coordinator will direct all cleanup operations, determine the proper level of personal protective equipment and decide on the appropriate cleanup materials.

Regardless of the location of the fire or explosion, the emergency coordinator is responsible for:

- Determination of environmental impact potential;
- Determination of property-threatening potential;
- Determination of life-threatening potential.

On-site fire-fighting equipment that will be used to control fires or explosions in the facility will include:

- Hand-held fire extinguishers; and
- Hydrant and hose stations.

Upon discovery of a fire or explosion, individuals will initiate the fire/explosion action procedure as described below.

4.4 Fire/Explosion Action Procedure

1. Notify the emergency coordinator or designee.

   Office: (251) 246-8282, or Mobile: (251) 589-5843

   The emergency coordinator or designee will subsequently notify the local law enforcement authority and the emergency response team as necessary.

2. Control access to area. Clear all non-essential personnel from area.
3. Extinguish fire with available equipment, if possible, or take other immediate action to mitigate the emergency until emergency response team and/or the local volunteer fire department arrives.
4. Take all reasonable measures necessary to ensure that subsequent fires, explosions, or releases do not occur or spread to other areas. These measures may include but are not limited to the removal of unaffected equipment from the area, separation of affected and unaffected wastes, and dowsing adjacent areas with water.

Cleanup of fire residuals involving waste material is aimed at collecting as much of the waste material as possible for disposal as quickly as possible. Cleanup procedures may require the use of sorbents, portable pumps, tank trucks, and/or removal equipment. Similarly, the level and type of personal protective equipment required depends upon the type of materials involved.

All waste generated from post-fire cleanups involving waste material will be collected and disposed of according to its characteristics. Any equipment used in collected fire residuals involving waste materials will be decontaminated prior to use elsewhere. Any liquid generated from decontamination procedures will be collected for proper disposal.

4.5 Detection of Explosive Gases

The soil conditions, hydrogeological and hydraulic conditions surrounding the site, and the lack of structures within 1,000 feet of the facility exclude the requirement of a perimeter and structure gas monitoring program.

4.6 Unauthorized Wastes

Training of facility personnel will include identification of unauthorized waste. If unauthorized waste is detected prior to disposal, it will be immediately rejected. The facility personnel will then contact the operations manager, identify the source involved and action will be taken to assure that the incident does not recur.

4.7 Release of Hazardous Materials

No bulk liquids will be placed in the waste facility. Unauthorized wastes, including regulated hazardous wastes such as petroleum or organic-based solvents and oil-based paints which may originate at Boise White Paper, LLC's Jackson Mill, are not to be placed in the industrial waste landfill.

In the unlikely event that unauthorized waste is delivered to or spilled at the facility, the following procedures will be implemented:

- The emergency coordinator will be immediately notified of the discharge;
- The Department must be contacted and informed of facility location and spill description;
- If necessary, berms will be constructed to prevent the spill from migrating; and
- All spilled material will be collected and disposed of properly (see General Spill Cleanup Procedures below).

Section 5. General Spill Cleanup Procedures

On-site spill cleanup is aimed at recovering as much of the spilled material as possible for disposal as quickly as possible. There are several techniques available for on-site cleanup. Choice of a cleanup method must be determined at the time of the incident, taking into account the extent of the spill. Some cleanup alternatives include the following.

5.1 Sorbents

Spill scavengers and cleanup agents which absorb the spilled product are the most common method for handling spills or residual product. These agents may be packaged in pillows, large bats or booms which can absorb a large amount of liquid and make disposal easier. For corrosive materials, lime or other neutralizers are practical. Three classes of sorbents are natural products (straw, sawdust, clays and vermiculite); modified natural products (expanded perlite, cloth rags, charcoal, silicone-coated sawdust, surfactant-treated asbestos); and synthetic products (imbiber beads, imbiber bead blankets, and foam products). When using sorbents, it is necessary to dispose of spent products properly unless recoverable sorbents are used.

5.2 Suction

Spills of free liquids may be removed by direct suction pumping into tank trucks.

5.3 Removal

This is an initial, rapid-response method for the removal of a contaminant before it reaches groundwater. Soil that is excavated from a spill site, however, must be properly disposed of.

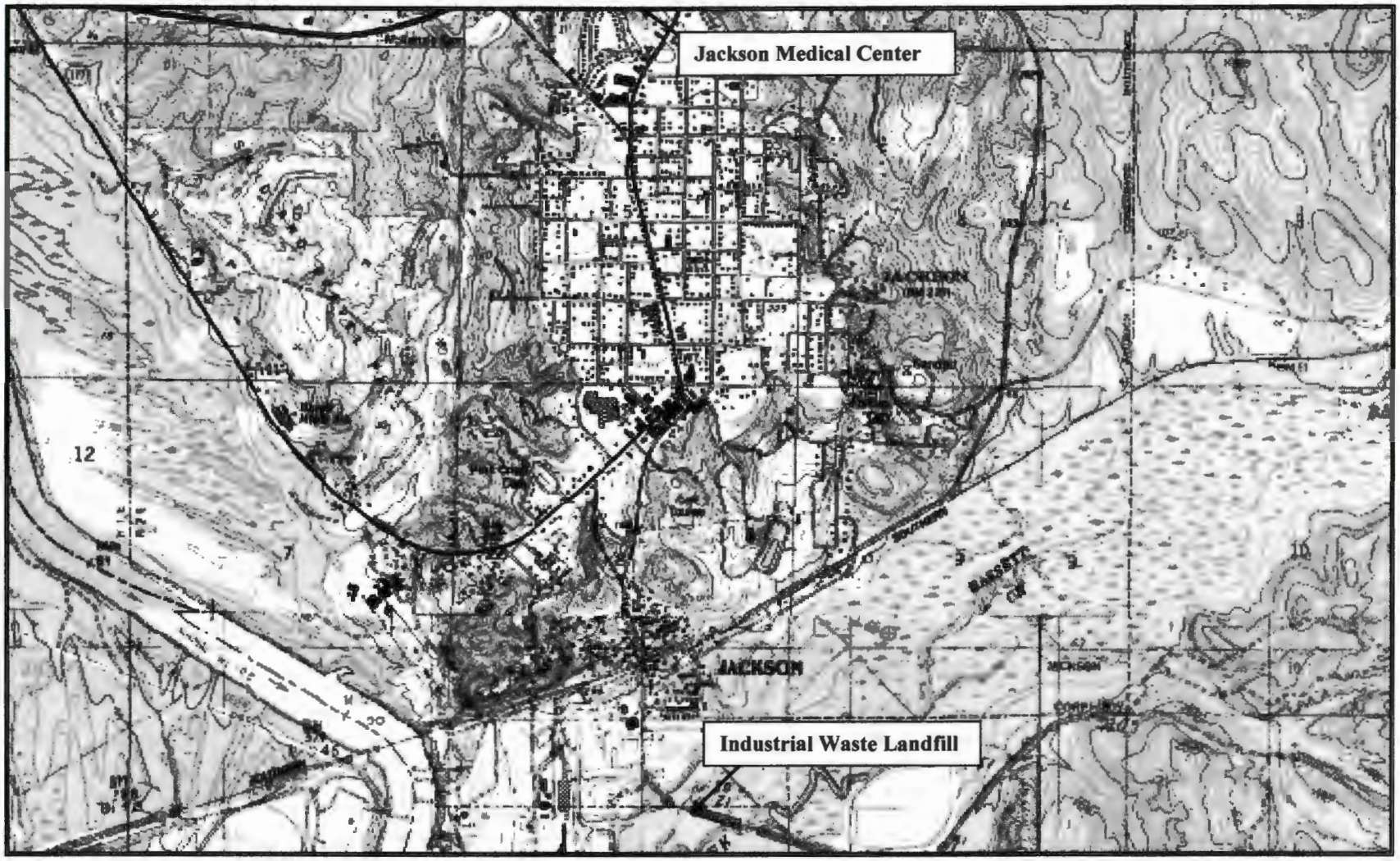


Figure 1. Location of Jackson Medical Center

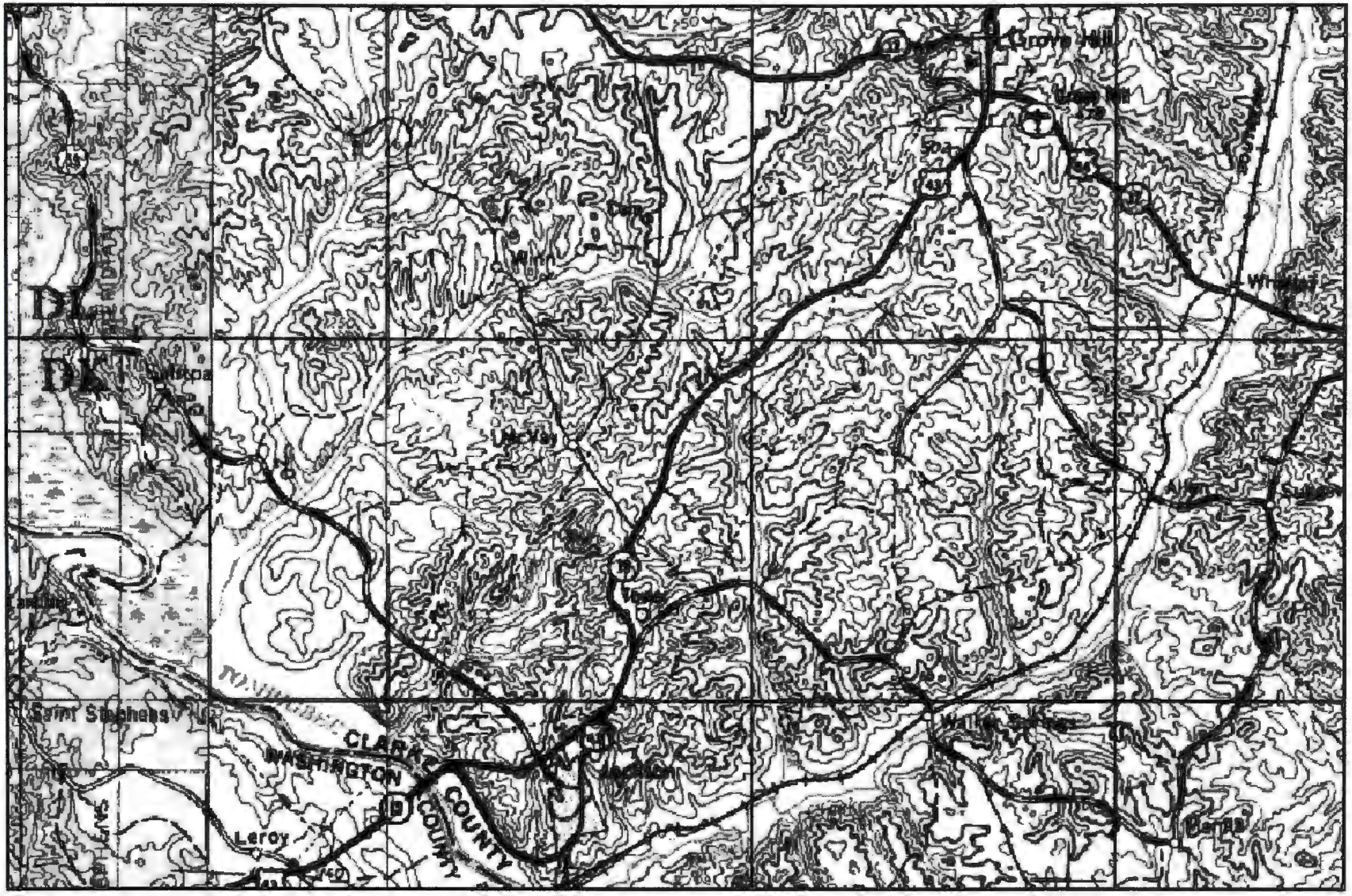


Figure 2. Highway Route from Jackson to Grove Hill

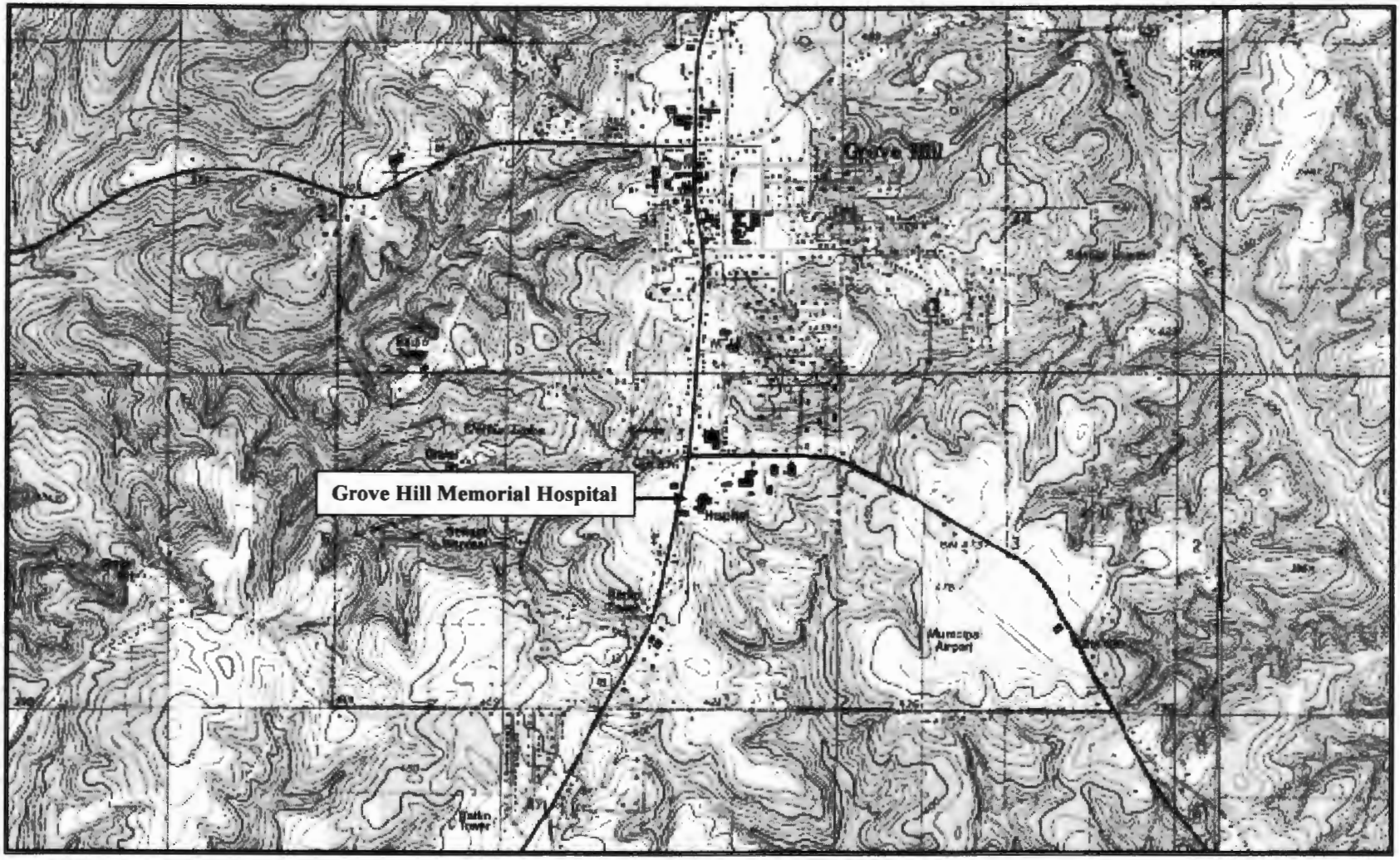


Figure 3. Location of Grove Hill Memorial Hospital

Boise White Paper, LLC
Alabama Operations
4585 Industrial Road Jackson, AL 36545
T (251) 246-8282 F (251) 246-7643
RandyAbston@BoisePaper.com

January 22, 2019

Mr. Blake Holden
Solid Waste Branch – Land Division
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059

Re: Permit Number 13-05

Dear Mr. Holden:

I am writing in response to your January 2, 2019 call concerning the Boise White Paper, LLC Industrial Waste Landfill's permit renewal application.

You will find a copy of the latest version of Boise White Paper, LLC Industrial Waste Landfill's Groundwater Monitoring Plan enclosed with this letter.

On the sediment pond's ability to contain a 25 year, 24 hour rainfall event:

Using the 25 year, 24 hour rainfall event for the landfill found in *Technical Paper No. 40, Rainfall Frequency Atlas of the United States* by the U.S. Department of Commerce and U.S. Weather Bureau, the Rational Method was used to calculate the maximum rate of runoff for the area discharging into the sediment pond. The rate of runoff was then used to calculate the total volume of water discharging to the sediment pond over a 24 hour period.

Combining the runoff volume with the volume of water directly falling on the sediment pond gives the maximum volume of water the sediment pond would need to contain in the occurrence of a 25 year, 24 hour rainfall event.

The sediment pond capacity, found in the "As Constructed" landfill drawings, was compared to the total calculated 25 year, 24 hour water volume and was found to be adequate, with approximately 20% capacity to spare. A summary of the calculation results is attached.

If you have any questions concerning the enclosed or attached information, please contact me at (251) 246-8282.

Sincerely,

Jonathan R. Abston
Environmental Manager
Boise White Paper, LLC – Jackson Mill

Attachment
Enclosure

Cc: File

Summary of Landfill Sediment Pond Volumes
(Based on 25 Year, 24 Hour Rainfall Event)

25 Year, 24 Hour Rainfall Event
9 inches over a 24 hour period

Sediment Pond and Runoff Drainage Areas

Sediment Pond	1.21 ac
Grassy Sloped Drainage Area	2.63 ac
Wooded Drainage Area	3.39 ac

Rainfall Volume during a 25 Year, 24 Hour Rainfall Event
$\frac{9\ in.}{24\ hr}$ yields 244,388 $\frac{gal}{ac}$ of water
Average Rainfall Intensity = $\frac{9\ in.}{24\ hr}$ = 0.03125 $\frac{ft}{hr}$

Rainfall Volume Directly into Sediment Pond
1.21 ac* 244,388 $\frac{gal}{ac}$ = 295,709 gal

Rational Method
$$Q = \frac{CIA}{Z}$$
Z = 1 for English Units

Rainfall Volume Discharging to Sediment Pond from Grassy Sloped Drainage Area

Runoff Coefficient (C)	0.70
Average Rainfall Intensity (I)	0.03125 ft/hr
Drainage Area (A)	2.63 ac
Maximum Rate of Runoff (Q)	0.058 $\frac{ac*ft}{hr}$
Runoff Volume to Pond	449,919 gal

Rainfall Volume Discharging to Sediment Pond from Wooded Drainage Area

Runoff Coefficient (C)	0.45
Average Rainfall Intensity (I)	0.03125 ft/hr
Drainage Area (A)	3.39 ac
Maximum Rate of Runoff (Q)	0.048 $\frac{ac*ft}{hr}$
Runoff Volume to Pond	372,814 gal

Total Volume to Sediment Pond during 25 Year, 24 Hour Rainfall Event
295,709 gal + 449,919 gal + 372,814 gal = **1,118,442** gal

Sediment Pond Capacity
4.31 $ac * ft$ = **1,404,418** gal

Boise White Paper, LLC
Alabama Operations
4585 Industrial Road Jackson, AL 36545
T (251) 246-8282 F (251) 246-7643
RandyAbston@BoisePaper.com

February 11, 2019

Russell Kelly, Chief
Permits and Services Division
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, AL 36110

Dear Mr. Kelly:

Please find enclosed a check payable to ADEM in the amount of $1,460 for a requested variance of the permit for Boise White Paper, LLC's Industrial Waste Landfill (Permit No. 13-05).

Boise White Paper, LLC submitted the permit renewal applications to the Department in October 2018. The enclosed check is for a requested variance from ADEM Administrative Code R. 335-13-4-.12(2)(f) which requires a buffer zone of a minimum width of 100 feet, measured in the horizontal plane, around the perimeter of the landfill.

As constructed, the Boise White Paper, LLC Industrial Landfill contains a minimum buffer zone of 100 feet between the facility boundary and the property boundary; however, there are points that lack a buffer zone of 100 feet between the facility boundary and the waste boundary. It is for this reason that Boise White Paper, LLC requests the variance described above.

Boise White Paper, LLC appreciates your consideration of the requested variance. If you have any questions, please do not hesitate to contact me at (251) 246-8282.

Sincerely,

Boise White Paper, LLC

Jonathan R. Abston
Environmental Manager
Jackson Mill

Enclosure

C: Blake Holden/ADEM Land Division

Boise White Paper, LLC
Alabama Operations
4585 Industrial Road Jackson, AL 36545
T (251) 246-8282 F (251) 246-7643
RandyAbston@BoisePaper.com

April 15, 2019

Mr. Blake Holden
Solid Waste Branch – Land Division
Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059

Re: Permit Number 13-05

Dear Mr. Holden:

I am writing in response to your call concerning the Boise White Paper, LLC Industrial Waste Landfill's Groundwater Monitoring Plan.

Per the Department's request, we have revised the Groundwater Monitoring Plan to include an additional section addressing the statistical analysis performed on data collected from the groundwater sampling and analysis.

You will find a copy of the latest version of Boise White Paper, LLC Industrial Waste Landfill's Groundwater Monitoring Plan enclosed with this letter.

If you have any questions concerning the enclosed information, please contact Trent Singley at (251) 246-8277.

Sincerely,

Jonathan R. Abston
Environmental Manager
Boise White Paper, LLC – Jackson Mill

Enclosure

Cc: File

GROUNDWATER MONITORING PLAN

Prepared for:

BOISE WHITE PAPER, LLC
INDUSTRIAL WASTE LANDFILL
JACKSON, ALABAMA

Prepared: January 2019
Updated: April 2019

Prepared by:
Boise White Paper, LLC

1) Introduction

Boise White Paper, LLC – Jackson Mill operates an industrial waste landfill in the southwest ¼ of Section 16, Township 6 North, Range 2 East, in Clarke County, Alabama. The facility consists of approximately 70.25 acres with 41 acres for disposal operations, approximately 10 acres of which are currently being utilized.

The waste stream for the Boise White Paper, LLC Industrial Waste Landfill is non-putrescible and non-hazardous industrial waste, waste lime, boiler ash, woodyard rejects, clarifier solids, waste treatment plant backwash solids, mix pond solids, miscellaneous wood waste, black liquor tank bottoms, and waste from the wastepaper recycling plant. The service area of the Boise White Paper, LLC Industrial Waste Landfill is the Boise White Paper, LLC – Jackson Mill.

The Alabama Department of Environmental Management (ADEM) requires annual groundwater monitoring and testing of the Boise White Paper, LLC Industrial Waste Landfill according to the requirements set forth in Permit 13-05 (Reissued 05/02/14).

2) Sampling Wells

Boise White Paper, LLC maintains six groundwater monitoring wells used for annual compliance sampling and testing, as required in Section IV.A.1 of Permit 13-05. Three of these wells are upslope wells (MW-1, MW-7, and MW-8), and three of these wells are downslope wells (MW-6, MW-10, and MW-12). See Figure 1 for the location and elevation of these wells.

3) Parameters Monitored

As required in Table IV.2 of Permit 13-05, the upslope, background wells are tested in the field for pH and specific conductance. Collected samples are transported to the lab for further testing of alkalinity, chloride, and sulfate. The water level, mean sea level elevation measuring point, and depth to water are recorded at the time of sampling for each well, as required by Section IV.B.5 of Permit 13-05.

As required in Table IV.3 of Permit 13-05, the downslope wells are tested in the field for pH and specific conductance. Collected samples are transported to the lab for further testing of alkalinity, chloride, and sulfate. The water level, mean sea level elevation measuring point, and depth to water are recorded at the time of sampling for each well, as required by Section IV.B.5 of Permit 13-05.

In addition to the parameters mentioned above, the groundwater flow rate and direction in the first zone of saturation is determined annually, as required in Section IV.B.2 of Permit 13-05.

4) Sampling and Analysis Procedure

Sampling and analysis of groundwater for the parameters listed above must be conducted in the manner set forth in Section IV.C of Permit 13-05 and in general conformity with the requirements set forth by 40CFR Part 136. Samples also must be collected, preserved, and shipped (for off-site analysis) according to ADEM approved procedures.

Monitoring wells must be bailed or pumped to remove at least three to five times the well volume of water, and slow recharging wells must be bailed until dry. Wells must then be allowed to recharge prior to sampling.

All field tests must be conducted using approved EPA test kits and procedures.

All samples must be tracked and controlled using a chain-of-custody or other ADEM approved QA/QC procedure.

Samples must be analyzed following the procedures found in the latest edition of *Standard Methods for the Examination of Water and Wastewater*, *Methods for Chemical Analysis of Water and Wastes*, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, or according to other methods approved by ADEM.

Hydraulic conductivity must be determined in accordance with test methods approved by ADEM.

5) Recordkeeping and Reporting Requirements

For each sample and/or measurement taken in agreement with the requirements of Permit 13-05, the following information must be recorded:

a) The exact place, date, and time of sampling or measurement.

b) The individual(s) and company who performed the sampling or measurements.

c) The date(s) analyses were performed.

d) The individual(s) and company who performed the analysis.

e) The analytical techniques or methods used.

f) The results of such analyses.

Records and results of all groundwater monitoring, sampling, and analysis activities conducted in agreement with the requirement of Permit 13-05 must be included in the operating record required by Section I.I.1 of Permit 13-05.

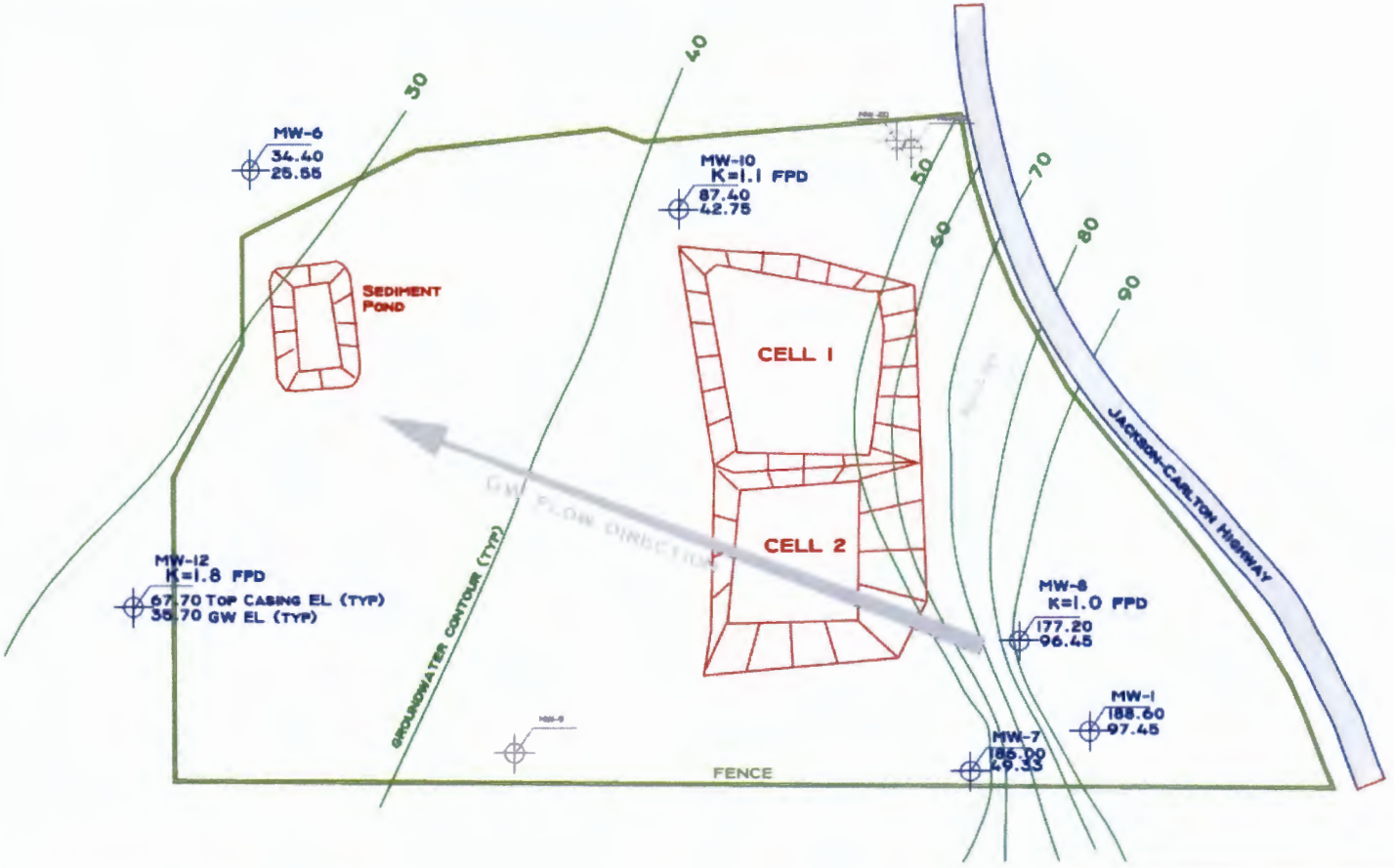
6) Statistical Procedures

Statistical analysis must be performed on the groundwater data for each annual monitoring event. This statistical analysis must be performed in accordance to ADEM Administrative Code R. 335-13-4-.27(2)(l).

In particular, analytical results from each sampling event will be reviewed and compared to the upper tolerance limit (UTL) established from historical data collected from the network of upslope (background) wells (MW-1, MW-7, and MW-8). As an alternative, other statistical methods referenced in the *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance, U.S. EPA, 2009 Office of Resource Conservation and Recovery Program Implementation and Information Division: Washington, D.C.* may be used.

Along with comparison to the UTL, analytical results are also compared to the historical data for each monitoring well. Historical data for the parameters listed in Table IV.2 of Permit 13-05 is available for the upslope wells MW-1, MW-7, and MW-8, dating back to 1992. Historical data for the parameters listed in Table IV.3 of Permit 13-05 is available for the downslope wells MW-6, MW-10, and MW-12, dating back to 1992. Additional data from April 1989 is available for two wells, MW-1 and MW-6.

FIGURE 1
GROUNDWATER ELEVATION MAP



1"=300'

MONITORING WELL LOCATION/ELEVATIONS

(BASED ON READINGS 3/15/2018

ENERGY TECHNICAL SERVICES, LLC

BOISE WHITE LANDFILL PERMIT 13-05

04/02/2018

Boise White Paper, LLC
A Division of Packaging Corporation of America
4585 Industrial Road Jackson, AL 36545
T 251 246 4461 F 251 246 7643
RandyAbston@BoisePaper.com

June 14, 2019

Mr. C. Blake Holden
Alabama Department of Environmental Management
Land Division, Solid Waste Branch
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2059

RE: Draft Solid Waste Disposal Facility Permit Comments
Boise White Paper, LLC - Permit Number 13-05

Dear Mr. Holden:

We have reviewed the draft Solid Waste Disposal Facility Permit for the Boise White Paper, LLC, Jackson, Alabama Mill – Permit number 13-05. Comments on the contents of the draft permit are listed below. Two additional documents have been included:

- Attachment I- A "marked-up" copy of the draft permit for your convince.
- Attachment II- The "Landfill Drainage Redesign Facility Boundaries" from 1995.

Comments:

1. **Section VIII, page 14 of 14. Variance 4**. ADEM Administrative Code R. 335-13-4-.12(2)(f) states, "Buffer zones around the perimeter of the landfill unit shall be a minimum of 100-feet in width measured in a horizontal plane." The landfill was designed to meet this criterion by establishing a 100-foot boundary between the property line and the Landfill Facility Boundary; therefore, implementation of the variance as presently written will effectively establish a 200' buffer. We request that the variance allow the permittee to continue to dispose of waste in the 'Limits of Waste' shown on Attachment II.

If you have any questions concerning the comment noted above or in the attached document, please contact me at (251) 246-8282.

Sincerely,

Jonathan R. Abston
Environmental Manager

Attachments
Cc: PCA – Environmental File

Attachment I

"Marked Up" Draft Permit

DWG No.	REV
D-271-025-1036	B

NOTES:

1. GROUND WATER DATA FOR SEPTEMBER 1995 FROM CHEM HILL REPORT TITLED 'GROUND WATER DETECTION MONITORING' DATED NOVEMBER 8, 1995

N-4594.94 E13844.44

N-4769.33 E13822.26

N-4971.55 E13742.09

N-5548.87 E13273.22

N-5738.95 E13237.99

N-4492.08 E15070.31

N-4442.28 E15633.85

N-4742.09 E15641.15

N-4824.12 E15745.76

N-5148.45 E15938.70

N-5468.74 E15634.86

N-5672.93 E15662.01

N-5603.60 E16293.51

N-5779.45 E16313.23

N-4733.25 E14652.76

N-5738.63 E14632.02

N-5771.49 E14803.68

LANDFILL FACILITY BOUNDARY

SEDIMENT BASIN

FUTURE LIMITS OF WASTE BOUNDARY

LIMITS OF WASTE

LANDFILL FACILITY BOUNDARY

100' ADEM BUFFER

LEGEND

MONITORING WELL
GROUNDWATER ELEVATION
SEPTEMBER 1995

GROUNDWATER POTENTIOMETRIC CONTOUR

GROUNDWATER FLOW DIRECTION

SCALE: 1" =100'

CONCEPTUAL - NOT FOR CONSTRUCTION

NO	DATE		BY	CK	APVD
B	11-16-95	ISSUED FOR REGULATORY APPROVAL	MPM	RKN	
A	11-16-95	ISSUED FOR REGULATORY APPROVAL	MPM	RKN	

BOISE CASCADE
JACKSON MILL
JACKSON ALABAMA

PROJECT MGR:	M. TAYLOR
DESIGNED BY:	K. NILSSON
DRAWN BY:	M. MYERS
CHECKED BY:	
APPROVED BY:	
APPROVED BY:	
APPROVED BY:	
DATE:	NOVEMBER, 1995
JOB NO:	70420.01

RMI
100 Verdae Boulevard
P.O. Box 16778
Greenville, SC 29606
(803) 281-0030

LANDFILL DRAINAGE REDESIGN FACILITY BOUNDARIES

SCALE	DRAWING NO	REV
AS SHOWN	D-271-025-1036	B

CADD No. D-271-025-1036.DWG