



# SOLID WASTE DISPOSAL FACILITY PERMIT

**PERMITTEE:** Alabama Power Company

**FACILITY NAME:** Miller Steam Plant Landfill

**FACILITY LOCATION:** Section 28, Township 16 South, Range 5 West in Jefferson County, Alabama. The facility consists of 9.65 acres with 9.65 acres for disposal.

**PERMIT NUMBER:** 37-16

**PERMIT TYPE:** Industrial Landfill

**WASTE APPROVED FOR DISPOSAL:** Non-hazardous construction and demolition waste such as waste building materials, masonry, wall board, roofing material, wood products, pipe, insulation and similar materials, rubbish such as paper products, cartons, cardboard, pallets, scrap metal, tires, furniture, plastic trash bags, landscaping waste, and similar materials; asbestos containing material; and non-hazardous industrial wastes such as spent anion/cation resins and non-hazardous sandblasting waste.

**APPROVED WASTE VOLUME:** Maximum Average Daily Volume of 10 cubic yards per day

**APPROVED SERVICE AREA:** Wastes generated by Alabama Power Company within the State of Alabama

In accordance with and subject to the provisions of the Alabama Solid Wastes and Recyclable Materials Management Act, as amended, Code of Alabama 1975, SS 22-27-1 to 22-27-27 ("SWRMMA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, SS 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  
SOLID WASTE PERMIT**

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Permittee: Alabama Power Company  
Post Office Box 2641  
Birmingham, Alabama 35291-0830

Landfill Name: Miller Steam Plant Landfill

Landfill Location: 4250 Porter Road SW  
Quinton, Alabama  
Section 28, Township 16 South, Range 5 West  
Jefferson County

Permit Number: 37-16

Landfill Type: Industrial

Pursuant to the Solid Wastes and Recyclable Materials Management Act, Code of Alabama 1975, §§22-27-1, et seq., as amended (the "Act"), and attendant regulations promulgated thereunder by the Alabama Department of Environmental Management (ADEM), this permit is issued Alabama Power Company (hereinafter called the Permittee), to operate a solid waste disposal facility, known as the Miller Steam Plant 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 335-13-1 through 335-13-14 of the ADEM Administrative Code (hereinafter referred to as the "ADEM Admin. Code" or as "335-13"). 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 Admin. 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 ADEM on May 31, 2016 and as amended, for permit renewal and is 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 ADEM 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.

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Alabama Department of Environmental Management

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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 335-13. 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 the Act, 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 335-13, 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 ADEM 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 ADEM. Any permit noncompliance, other than noncompliance authorized by a variance, constitutes a violation of the Act 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 ADEM 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, ADEM 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 ADEM, within a reasonable time, any information that ADEM 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 ADEM 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 ADEM 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 the Act.
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 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 ADEM 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 ADEM, 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 ADEM. 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 ADEM, 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. ADEM must inspect the constructed cells or phases before the owner or operator can commence waste disposal unless the Permittee is notified that ADEM 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 ADEM 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 ADEM, the Permittee shall promptly submit such facts or information. In addition, upon request, the Permittee shall furnish to ADEM, 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 nonsudden 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 335-13.
  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 associated ADEM 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 ADEM, 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 ADEM, and the reports shall be submitted at least semi-annually, or as directed by ADEM. The reports should contain all monitoring results and conclusions from samples and measurements conducted during the sampling period. Explosive gas monitoring must be submitted on a quarterly basis, and the reports should be submitted to ADEM and placed in the operating record within 30 days of the monitoring event. 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 335-13 must be furnished upon request, and made available at reasonable times for inspection by any officer, employee, or representative of ADEM.
  - b. All records, including plans, required under this permit or 335-13 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 ADEM.
  - c. A copy of records of waste disposal locations and quantities must be submitted to ADEM and local land authority upon closure of the facility.
- I. Documents to be Maintained by the Permittee. The Permittee shall maintain, at the Alabama Power Company Miller Steam Plant office located in Quinton, Alabama, the following documents and amendments, revisions and modifications to these documents until an engineer certifies closure of the permitted landfill.
- 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:
1. Mailing Address.  
Chief, Waste Programs Branch  
Alabama Department of Environmental Management  
P.O. Box 301463  
Montgomery, AL 36130-1463
  2. Physical Address.  
Chief, Waste Programs Branch  
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 ADEM, 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 335-13.
- B. Open Burning. The Permittee shall not allow open burning without prior written approval from ADEM and other appropriate agencies. A burn request should be submitted in writing to ADEM 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 as required by 335-13-4-.21(1)(c), and as specified in the Application.

- 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 WASTE LANDFILLS.

- A. Waste Identification and Management.
1. Subject to the terms of this permit, the Permittee may accept for disposal 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 Miller Steam Plant Landfill is approximately 9.65 acres, with a disposal area of 9.65 acres.
  3. The maximum average daily volume of waste disposed at the facility, as contained in the permit application, shall not exceed 10 cubic yards/day. Should the average daily volume exceed this value by 20% or 100 tons/day, whichever is less, for two (2) consecutive quarters the permittee shall be required to modify the permit in accordance with 335-13-5-.06(2)(a)5. The average daily volume shall be computed as specified by 335-13-5-.06(2)(a)5.(i).
- B. Waste Streams. The Permittee may accept for disposal non-hazardous construction and demolition waste such as waste building materials, masonry, wall board, roofing material, wood products, pipe, insulation, and similar materials, rubbish such as paper products, cartons, cardboard, pallets, scrap metal, tires, furniture, plastic trash bags, landscaping waste, and similar materials; asbestos containing material; and non-hazardous industrial wastes such as spent anion/cation resins and non-hazardous sandblasting waste.
- C. Service Area. The service area for this landfill, as contained in the permit application, is wastes generated by Alabama Power Company within the State of Alabama.
- 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%). 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 or placing the monthly cover. A minimum of six inches of compacted earth or other alternative cover material approved by ADEM shall be added by the last Friday of the month (See Section VIII., 1.).
- E. Liner Requirements. At this time, the Permittee shall not be required to install a liner system. 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 335-13.

- 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 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 ADEM.
- N. Other Requirements. ADEM 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 ADEM.
- 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 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.

At this time, groundwater monitoring is not being required. If at any time the Department determines that a groundwater 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 a groundwater monitoring system that meets the proper regulatory requirements of the Alabama Department of Environmental Management

#### SECTION V. GAS MONITORING REQUIREMENTS.

At this time, the Permittee is not required to conduct gas monitoring or install a gas collection system. If the Department determines that monitoring and/or a system is necessary, the Permittee shall submit a proposed plan that would meet the Division 13 regulations (See Section VIII., 2.).

#### SECTION VI. SURFACE WATER MANAGEMENT REQUIREMENTS.

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.

#### SECTION VII. CLOSURE AND POST-CLOSURE REQUIREMENTS.

The Permittee shall close the landfill and perform post-closure care of the landfill in accordance with 335-13.

- 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 be constructed as specified in the application.

- 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 ADEM 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 ADEM 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. ADEM 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 ADEM. Monitoring requirements shall continue throughout the post closure period as determined by ADEM unless all waste is removed and no unpermitted discharge to waters of the State have 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 ADEM 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 ADEM 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 ADEM within 120 days after permit expiration, revocation, or as directed by ADEM 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 ADEM.

#### SECTION VIII. VARIANCES AND SPECIAL CONDITIONS.

1. The Permittee is granted a variance from Rule 335-13-4-.23(1)(a)1. requiring weekly cover. The Permittee shall be required to cover all exposed by the last Friday of each month (See Section III., D.).
2. The Permittee is granted a variance from Rule 335-13-4-.16 requiring explosive gas monitoring (See Section V.).
3. The Permittee is granted a variance from Rule 335-13-4-.12(2)(f) requiring a 100 foot buffer zone.

Any variance granted by ADEM may be terminated by ADEM whenever ADEM 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.

# **Permit Application**

600 North 18<sup>th</sup> Street/12N-0831  
Birmingham, AL 35203



May 27, 2016

Mr. Eric Sanderson, Chief  
Solid Waste Branch  
Land Division  
Alabama Department of Environmental Management  
Post Office Box 301463  
Montgomery, AL 36130-1463

**RE: Industrial Landfill Permit Renewal Application**  
**Alabama Power Company**  
**Miller Steam Plant Landfill**  
**4250 Porter Road Southwest**  
**Quinton, Alabama 35130**

Dear Mr. Sanderson:

Enclosed is the industrial landfill permit renewal application and Landfill Operational Plan for the Alabama Power Company Miller Steam Plant Landfill. This package includes three copies of the completed permit application and associated attachments [Attachment 1 - Solid Waste Profile Sheets (ADEM Form 300) with supporting information and Attachment 2 - Landfill Operational Plan], and a permit renewal fee check in the amount of \$4,075.00.

If you have any questions, please contact Ms. Elizabeth Grinder at (205) 257-4150.

Sincerely,

Mike Godfrey, Manager  
Environmental Compliance

Enclosure





September 23, 2016

Mr. Shane Lovett  
Solid Waste Division  
Alabama Department of Environmental Management  
1400 Coliseum Boulevard  
Montgomery, Alabama 36130-1463

**RE: Alabama Power Company  
Miller Steam Plant  
4250 Porter Road Southwest  
Quinton, Alabama 35130  
Solid Waste Disposal Facility Permit No.: 37-16**

Dear Mr. Lovett:

Alabama Power Company (APC), respectfully submits the following suggested revisions to the Draft Solid Waste Disposal Facility Permit issued by the Alabama Department of Environmental Management (ADEM).

**1. Solid Waste Disposal Facility Permit Cover Page, Approved Service Area**

**Approved Service Area: Miller Steam Plant located in Quinton, Alabama**

**Recommended Revision** – The Approved Service Area should be revised to indicate Alabama Power Company.

**2. Section 1, I – Documents to be Maintained by the Permittee**

**The Permittee shall maintain, at the Alabama Power Company Miller Steam Plant office located in Wilsonville, Alabama, the following documents and amendments, revisions and modifications to these documents until an engineer certifies closure of the permitted landfill.**

**Recommended Revision** – Documents to be maintained by the Permittee should be revised as follows: “The Permittee shall maintain, at the Alabama Power Company Miller Steam Plant office located in Quinton, Alabama, the following documents and amendments, revisions and modifications to these documents until an engineer certifies closure of the permitted landfill.”

**3. Section III, C – Service Area:**

**The service area for this landfill, as contained in the permit application, is Miller Steam Plant located in Quinton, Alabama**

**Recommended Revision** – The service area should be revised to read as follows:  
“The service area for this landfill, as contained in the permit application, is Alabama Power Company.

If you have additional questions regarding the above responses, please do not hesitate to contact me at (205) 257-4150.

Respectfully,



Mike Godfrey, Manager  
Environmental Compliance

cc: Elizabeth Grinder, APC Environmental Affairs  
Jeff Baker, Miller Steam Plant.

# 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)  
                    X   Industrial Landfill (ILF)  
                  \_\_\_\_\_ Other (explain) \_\_\_\_\_

2. Facility Name Miller Steam Plant Landfill, Permit # 37-16

3. Applicant:  
Name: Mr. Mike Godfrey (Physical Address)  
Address: Alabama Power Company Miller Steam Plant  
Post Office Box 2641 4250 Porter Road SW  
Birmingham, Alabama 35291 Quinton, AL 35130

Telephone: (205) 257-6131

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

Township 16-South Range 05-West  
Section 28 County Jefferson

5. Land Owner:  
Name: Alabama Power Company  
Address: Post Office Box 2641  
Birmingham, AL 35291-0830

Telephone: (205) 257-4150

(Attach copy of agreement from landowner if applicable.) Not Applicable

November 1997

6. Contact Person:

Name: Elizabeth Grinder Jeff Baker

Position or Affiliation Environmental Affairs Specialist Compliance Specialist

Address: Post Office Box 2641 4250 Porter Road SW
Birmingham, AL 35291-0831 Quinton, AL 35130

Telephone: (205) 257-4150 (205) 488-2555

7. Size of Facility:

9.65 acres

Size of Disposal Area(s):

9.65 acres

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

The service area for this landfill is limited to waste generated by Alabama Power Company.

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

Tons/Day

10.0

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.):

Construction and demolition waste: including waste building materials, masonry, wall board, roofing material, wood products, pipe, insulation, and similar materials.

Rubbish: paper products, cartons, cardboard, pallets, scrap metal, tires, furniture, and similar materials.

Industrial and Special Wastes:

- Spent anion/cation resins - Low volume/low frequency waste from on-site water treatment plant
Sandblasting Waste - Each lot will be analyzed for TCLP Metals (RCRA-8) to ensure non-hazardous prior to disposal

Handwritten signature in blue ink

SIGNATURE

September 23, 2016

DATE

**ATTACHMENT 1**  
**SOLID WASTE PROFILE SHEETS**  
**(ADEM FORM 300)**

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
**SOLID WASTE PROFILE SHEET**

(Please Print or Type - Black Ink Only)

Check one:  New Certification  Recertification  Modification to a current certification (attach an explanation of the changes)

**GENERAL INFORMATION**

**Generator**

Name: Alabama Power Company  
Location: Miller Steam Plant Landfill  
4250 Porter Road Southwest, Quinton, Alabama 35130  
County: Jefferson County

USEPA ID Number: ALD000615658  
Mailing Address: 600 North 18th Street, 12N-0830  
Birmingham, Alabama 35291

**Contact**

Name: Elizabeth Grinder  
Title: Environmental Affairs Specialist

Telephone: (205) 257-4150  
Email Address: egrinder@southernco.com

Submitted by (if different from above):

**Company**

Name: Same As Above  
Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

**Contact**

Name: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Email Address: \_\_\_\_\_

**WASTE INFORMATION**

Process Generating the Waste:

This waste stream is comprised of damaged off-spec reverse osmosis membranes and water treatment pre-filters used in the treatment of raw water. Product specification attached.

Waste Name:

Reverse Osmosis Membranes and Pre-Filters

If this waste is subject to the corrective action regulations of 40 CFR Part 280 (underground storage tank program), supply the following:

UST Facility Identification # \_\_\_\_\_ UST Incident # UST \_\_\_\_\_

If this is petroleum-contaminated waste, what is the source of the contamination (e.g., gasoline, diesel, hydraulic oil, etc.)? \_\_\_\_\_

Does this waste contain any of the following (give the concentration)?:  PCBs \_\_\_\_\_ppm  Cyanides \_\_\_\_\_ppm  Sulfides \_\_\_\_\_ppm

Annual Volume 10 cubic yards  Remediation Waste  CERCLA Cleanup  Process Waste

**WASTE PROPERTIES**

Physical State:

Solid   
Bladeable Sludge   
Liquid   
Solid/Liquid Combination

If the waste is liquid or contains free liquid:

% Free Liquids: \_\_\_\_\_  
pH: \_\_\_\_\_  
Flash Point: \_\_\_\_\_  
Solidified prior to disposal? \_\_\_\_\_

If yes, please see the instruction page

**WASTE DISPOSITION**

If this is foundry waste, is it disposed (used as fill material) in accordance with ADEM Admin. Code R. 335-13-4-.26(3)? Not Applicable

Proposed Landfill(s): Name: Miller Steam Plant Landfill Permit #: 37-16  
Name: \_\_\_\_\_ Permit #: \_\_\_\_\_

**CERTIFICATION**

I certify under penalty of law that this waste material does not contain regulated medical waste, regulated PCB waste, or hazardous waste which is not conditionally exempt from Division 14 Regulations. I further certify that, at the point of disposal, this waste material will not contain any free liquids. This document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Elizabeth Grinder  
Name (type or print)  
Environmental Affairs Specialist  
Title

Elizabeth J. Grider  
Signature  
May 27, 2016  
Date

Profile Number \_\_\_\_\_

# ROSave.Z\* Depth Cartridge Filters

## For Reverse Osmosis Pretreatment Using Z.Plex\* Technology

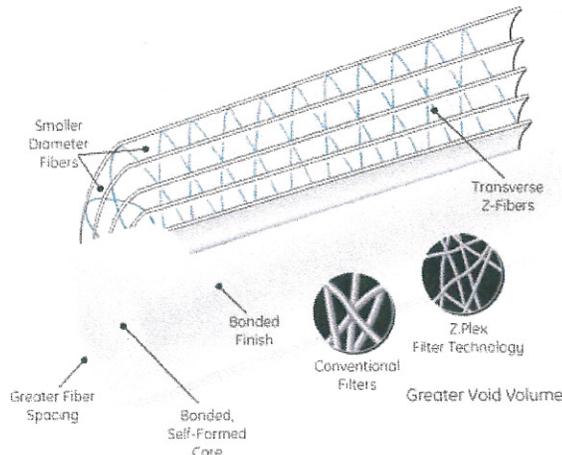


Figure 1: Z.Plex Filter Technology

### Description and Use

ROSave.Z is manufactured using patent pending Z.Plex filter technology (Figure 1) and is engineered for reverse osmosis pretreatment and other pure water applications. ROSave.Zs' proprietary filter matrix provides unmatched performance in these applications.

- Up to twice the life of conventional depth filters
- Up to 50% lower pressure drop
- Up to 100% greater dirt holding capacity
- Superior SDI reduction
- Melt-bonded exterior ensures no media migration
- Provides lower total cost of filtration operations
- NSF 42 certified, FDA compliant

### Typical Applications

Reverse osmosis pretreatment in industries including:

- Bottled water
- Beverage
- Electronics

### General Properties

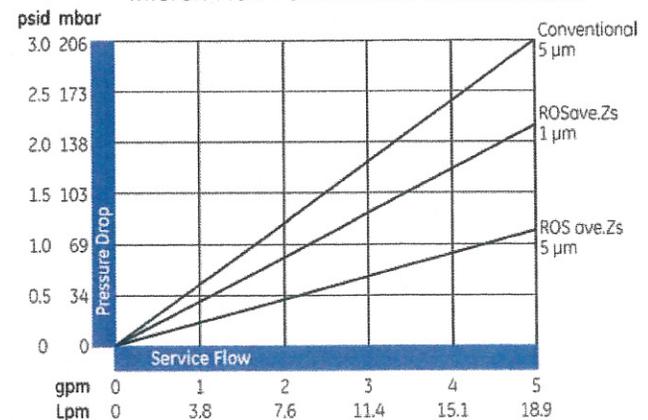
#### Materials of Construction

ROSave.Z filters are made of polypropylene construction. Tables 1 and 2 provide information on dimensions and flow performance.

Table 1: Dimensions

Nominal Outside Diameter	Nominal Inside Diameter
2.75" (6.4 cm)	1" (2.5 cm)

Table 2: ROSave.Z 1 and 5 micron vs. Conventional 5 micron Flow Performance in Clean Water<sup>1</sup>



### Micron Ratings, Lengths and End Adapters

- Micron ratings: 1 and 5 micron nominal
- Standard lengths fit most housings - custom lengths are also available
- Wide range of end adapters including self-sealing spring, 222 and 226 O-rings, and extended cores.

### Additional Information

ROSave.Z cartridge filters are made from thermally-bonded fibers of polypropylene. GE certifies that it uses no resin binders, lubricants, antistatic or re-release agents or other additives in the manufacture of these cartridges, and that the resin used for manufacturing the filter media meets the food contact requirements of U.S. FDA 21CFR regulations. When required, specify only FDA compliant sealing materials and end-adapters.

GE filter cartridges are designed and manufactured for resistance to a wide range of chemical solutions. Conditions will vary with each application and users should carefully verify chemical compatibility. Please contact your GE representative for more information.

The ROSave.Z element is tested and certified by NSF International against NSF/ANSI Standard 61 for material requirements only.

If you are ordering ROSave.Z filters with standard ends (with no adapter on either end), select one designation from each of the first three columns. Your Product Order Number will look like this: RO.Zs 05-40. If you are ordering ROSave.Zs with end adapters, select designations from all applicable columns. Your Product Order Number will look like this: RO.Zs 05-40 XK.

**Table 4: Ordering Information**

Type	Micron Rating, mm	Cartridge Length, Inches (cm)	End #1 Adapter	End #2 Adapter	Material
RO.Zs	01 = 1	9 ¾ (24.8)	L = Extended Core	K = Self seal spring	O-Rings
	05 = 5	9 7/8 (25.4)	E = 222 O-Ring	H = Fin	S = Silicone
I.D. - 1.0		10 (25.4)	F = 226 O-Ring	S = Solid End	E = EPDM
O.D. - 2.5		19 ½ (49.5)	X = Standard ROSave.Zs plain end (non gasket)	X = Standard ROSave.Zs (no gasket)	V = Viton2
		20 (50.8)	Y = Flat Gasket	Y = Flat Gasket	B = Buna
		29 ¼ (74.3)			P = Santoprene (flat gasket only)
		30 (76.2)			
		40 (101.6)			



**LENNTECH**

info@lennotech.com Tel. +31-152-610-900

www.lennotech.com Fax. +31-152-616-289





## OSMO<sup>®</sup> PRO RO Series

### Membrane Elements for General Industrial Applications

The OSMO PRO RO Series membrane elements are the solution for a broad range of industrial water purification applications. They use a proprietary polyamide thin film membrane that offers high salt rejection with operating pressure as low as 200 psi to meet a variety of industrial water treatment requirements. These membrane elements are recommended for brackish water with high salt concentration or when high rejection is necessary.

This series includes two 8" inch diameter elements and a 4" diameter element with a membrane of 365, 400 and 85 sq.ft active area respectively. All elements feature fiberglass (FRP) element casing that offers durability, high rejection performance under high pressure, and chemical tolerance allowing the use of high pH cleaners.

#### Features and Benefits

- > 3 year prorated performance warranty
- > Durable construction
- > Dependability
- > Shipped Wet
- > 100% wet testing quality assurance
- > Competitively priced

#### Applications

- > Pressure boiler make-up water
- > Chemical process steam water
- > Cooling water blowdown
- > 18 Megohm electronic grade water
- > Humidification
- > Rinse water

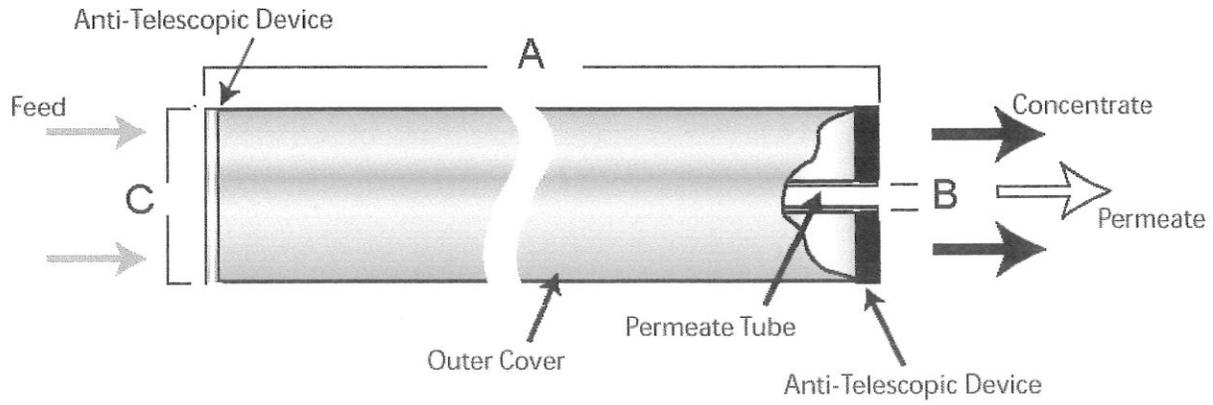
#### Operating and Design Parameters

- > Membrane Type — Thin-Film Membrane (TFM<sup>®</sup>)
- > Typical Applied Pressure — 200 psi (13.8 bar)
- > Typical Operating Process Flux — 10-20 GFD
- > Maximum Applied Pressure — 600 psi (41.4 bar)
- > Maximum Feed Water Temperature — 122°F (50°C)
- > Recommended Operating pH Range — 4.0-11.0
- > Cleaning pH Range — 2.0-11.5
- > Chlorine Tolerance — 1,000 ppm-hours, Dechlorination recommended
- > Recommended Single Element Recovery — <15%
- > SDI — <3
- > Feed Turbidity — <1 NTU

	OSMO PRO RO 365	OSMO PRO RO 400	OSMO PRO RO 4040
Outer Cover Material	FRP	FRP	FRP
Part Number GEB (0-49/50+)	2062101 / 2062409	2062103 / 2062410	2062102/ 2062411
Part Number GEO	1240538	1240678	1240722
Membrane Area in sq. ft. (in m <sup>2</sup> )	365 (33.9)	400 (37.2)	85 (7.9)
Minimum Salt Rejection (NaCl)	99%	99%	99%
Average Salt rejection (NaCl)	99.5%	99.5%	99.5%
Flow in GPD (m <sup>3</sup> /day)	9,600 ( 36.3)	10,500 (39.7)	2,200 (9.1)
Minimum Brine Flow in GPM (m <sup>3</sup> /h)	16 (3.6)	16 (3.6)	8 (1.8)
Maximum Feed Flow in GPM (m <sup>3</sup> /h)	75 (17.0)	75 (17.0)	20 (17.0)

Testing Conditions: 2,000 mg/L NaCl solution at 225 psig operating pressure, 77° F, pH 7.5, and 15% recovery. Stabilization after 24 hours. Individual flux may vary +25% / -15%.

## Dimensions



in inch and (mm)	OSMO PRO LE RO 365	OSMO PRO LE RO 400	OSMO PRO LE RO 4040
A	40 (1016)	40 (1016)	40 (1016)
B	1.125 (29)	1.125 (29)	0.75 (29)
C	7.9 (200)	7.9 (200)	3.9 (99)

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
**SOLID WASTE PROFILE SHEET**

(Please Print or Type - Black Ink Only)

Check one:  New Certification  Recertification  Modification to a current certification (attach an explanation of the changes)

**GENERAL INFORMATION**

**Generator**

Name: Alabama Power Company  
Location: Miller Steam Plant Landfill  
4250 Porter Road Southwest, Quinton, Alabama 35130  
County: Jefferson County

USEPA ID Number: ALD000615658  
Mailing Address: 600 North 18th Street, 12N-0830  
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**Contact**

Name: Elizabeth Grinder  
Title: Environmental Affairs Specialist

Telephone: (205) 257-4150  
Email Address: egrinder@southernco.com

Submitted by (if different from above):

**Company**

Name: Same As Above  
Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

**Contact**

Name: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Email Address: \_\_\_\_\_

**WASTE INFORMATION**

Process Generating the Waste:

This waste stream is comprised of unused, off-specification activated carbon. This material has been contaminated with soil, gravel, or water, or is out-of-date and no longer meets operational specifications.

Waste Name:

Off-Specification Activated Carbon (MSDS attached)

If this waste is subject to the corrective action regulations of 40 CFR Part 280 (underground storage tank program), supply the following:

UST Facility Identification # \_\_\_\_\_ UST Incident # UST \_\_\_\_\_

If this is petroleum-contaminated waste, what is the source of the contamination (e.g., gasoline, diesel, hydraulic oil, etc.)? \_\_\_\_\_

Does this waste contain any of the following (give the concentration)?  PCBs \_\_\_\_\_ppm  Cyanides \_\_\_\_\_ppm  Sulfides \_\_\_\_\_ppm

Annual Volume 200 cubic yards  Remediation Waste  CERCLA Cleanup  Process Waste

**WASTE PROPERTIES**

Physical State:

Solid   
Bladeable Sludge   
Liquid   
Solid/Liquid Combination

If the waste is liquid or contains free liquid:

% Free Liquids: \_\_\_\_\_  
pH: \_\_\_\_\_  
Flash Point: \_\_\_\_\_  
Solidified prior to disposal? \_\_\_\_\_

If yes, please see the instruction page

**WASTE DISPOSITION**

If this is foundry waste, is it disposed (used as fill material) in accordance with ADEM Admin. Code R. 335-13-4-.26(3)? Not Applicable

Proposed Landfill(s): Name: Miller Steam Plant Landfill Permit #: 37-16  
Name: \_\_\_\_\_ Permit #: \_\_\_\_\_

**CERTIFICATION**

I certify under penalty of law that this waste material does not contain regulated medical waste, regulated PCB waste, or hazardous waste which is not conditionally exempt from Division 14 Regulations. I further certify that, at the point of disposal, this waste material will not contain any free liquids. This document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Elizabeth Grinder  
Name (type or print)  
Environmental Affairs Specialist  
Title

Elizabeth J. Grider  
Signature  
May 27, 2016  
Date

Profile Number \_\_\_\_\_



# MATERIAL SAFETY DATA SHEET

Page 1 of 6

## Non Halogenated Series

1. Product and Company Identification	
<b>Supplier</b> ADA Carbon Solutions (Red River), LLC 1460 W. Canal Court Littleton, CO 80120-5632  Telephone Number: 888-843-8416 FAX Number: 303-962-1970	<b>Manufacturer</b> ADA Carbon Solutions (Red River), LLC 1460 W. Canal Court Littleton, CO 80120-5632  Telephone Number: 888-843-8416 FAX Number: 303-962-1970
<b>Supplier Emergency Contacts &amp; Phone Number</b> CHEMTREC: 800-424-9300	<b>Manufacturer Emergency Contacts &amp; Phone Number</b> CHEMTREC: 800-424-9300
Issue Date: 10/08/2014 Product Name: S PAC™, PowerPAC®, FastPAC™, PowerPAC WS™ CAS Number: N/A <b>Product/Material Uses</b> Powdered carbon sorbents for mitigation of emissions in a variety of environments.	

2. Composition/Information On Ingredients			
Ingredient Name	CAS Number		Percent of Total Weight
Carbon, activated	7440-44-0		0-100
This product contains no hazardous ingredients when evaluated by criteria established in the OSHA Hazard Communication Standard (29 CFR 1910.1200).			

**EMERGENCY OVERVIEW**

Wet activated carbon removes oxygen from air and can lower the concentration of oxygen inside vessels and other confined spaces. During combustion, toxic and irritating gases including high levels of carbon monoxide may be produced.

3. Hazards Identification
<b>Primary Routes of Entry</b> Inhalation, skin contact, eye contact
<b>Eye Hazards</b> Dust may cause mild mechanical irritation.
<b>Skin Hazards</b> Prolonged or repeated skin contact may cause irritation, drying, and redness.
<b>Ingestion Hazards</b> May cause mild gastrointestinal tract irritation.
<b>Inhalation Hazards</b> High airborne concentrations of low-toxicity dusts may cause coughing, sneezing, and mild temporary irritation.  Avoid use in confined spaces. Wet activated carbon can absorb and deplete oxygen from the air, causing a severe hazard to workers.



# MATERIAL SAFETY DATA SHEET

Page 2 of 6

## Non Halogenated Series

### Chronic/Carcinogenicity Effects

Activated carbons may contain crystalline silica, which is classified as a potential human carcinogen. Prolonged inhalation of excessive dust may cause pulmonary disorders.

### 4. First Aid Measures

#### Eye

Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops.

#### Skin

Wash affected areas with soap and water. Get medical attention immediately if irritation develops.

#### Ingestion

If person is fully conscious, give one or two cups of water or milk to drink. Get medical attention immediately if large quantities are ingested.

#### Inhalation

Remove person from source of exposure and into fresh air. Get medical attention if irritation or breathing difficulties develop.

### 5. Fire-Fighting Measures

**Lower Explosive Limit:** N/A

**Upper Explosive Limit:** N/A

#### Fire and Explosion Hazards

High dust concentrations may form explosive mixtures with air, which can be ignited by spark or flame. Dusts may accumulate a static discharge. Keep dust concentrations low. Explosibility: PowerPAC series : Class K<sub>st</sub>1 (K<sub>st</sub> = 102 bar); FastPAC series: Class K<sub>st</sub>1 (K<sub>st</sub> = 170 bar)

Fire is possible at elevated temperatures or by self-heating when exposed to strong oxidizers. Activated carbon tends to burn slowly without producing smoke or flame. Material allowed to smolder for long periods in enclosed spaces may produce carbon monoxide, which may reach a lower explosive limit for carbon monoxide (12/5%) in air. Wet activated carbon depletes oxygen from the air.

**Warning:** Electrostatic precipitator and baghouse hoppers containing powdered activated carbon or fly ash with activated carbon can autoignite and present a smoldering fire hazard when exposed to elevated temperature and other sources of heat, such as heaters. If activated carbon is present, hoppers should be emptied frequently and particular care should be exercised when hopper heaters are in use. Cutting or welding operations should not be used near this material due to potential for smoldering combustion. This material is not a self-heating material as classified for transportation.

#### Extinguishing Media

In case of fire, use water spray, dry chemical, or CO<sub>2</sub>. Use water to cool fire-exposed containers.

#### Fire-Fighting Instructions

Firefighters should wear self-contained breathing apparatus and full protective gear. Remove product from building to a non-hazardous area, preferably outdoors, if safe to do so.

### 6. Accidental Release Measures

Provide maximum dilution or explosion-proof exhaust ventilation. Avoid generating dust. Pick up released product with appropriate implements and return to original container if reusable, or dispose.



## Non Halogenated Series

### 7. Handling and Storage

#### Handling Precautions

Follow good handling and housekeeping practices. Avoid spills and accumulations of dust, or generation of airborne dust. Do not enter places where bulk material is used or stored until adequately ventilated to prevent asphyxiation.

As with all finely divided materials, precautions should be taken to avoid inhalation and eye contact. Ground all transfer, blending, and dust collecting equipment to prevent static discharge in accordance with NFPA 70, National Electric Code, NFPA 499, "Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas," NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, and OSHA Combustible Dust standards. Remove all ignition sources from material handling, transfer, and processing areas where dust may be present.

#### Storage Precautions

Store in sealed containers in a clean cool, dry, well-ventilated area away from strong oxidizers, ignition sources, combustible materials, and heat. Do not store near, or allow contact with, moisture or strong oxidizers.

**Warning:** Wet activated carbon depletes oxygen, creating oxygen-deficient atmospheres in confined spaces.

#### Work/Hygienic Practices

Wash thoroughly with soap and water after handling.

### 8. Exposure Controls/Personal Protection

#### Engineering Controls

Use with adequate general and local exhaust ventilation to prevent excessive airborne dust concentrations. Local exhaust ventilation should be provided, to maintain exposures below recommended occupational exposure limits. Confined spaces where activated carbon is present should be well ventilated and monitored for oxygen content.

#### Eye/Face Protection

Safety glasses with side shields are recommended as minimum industrial eye protection when handling bulk product or performing spill cleanup.

#### Skin Protection

Protective gloves are recommended to minimize skin contact. Use a lab coat or disposable coveralls to prevent excessive contamination to personal clothing.

#### Respiratory Protection

In case of inadequate ventilation to control dust, use NOISH-approved respirator for particulates (e.g., N95). Supplied air respirators may be needed for entering confined spaces where product is stored or handled to protect against oxygen deficiency.

#### Ingredients – Exposure Limits

Carbon, activated.

OSHA PEL-TWA: 15 mg/m<sup>3</sup>, total dust, as particulates not otherwise specified

OSHA PEL-TWA: 5 mg/m<sup>3</sup>, respirable dust, as particulates not otherwise specified



Non Halogenated Series

**9. Physical and Chemical Properties**

**Appearance**

Grey to black, free-flowing powder

**Odor**

Odorless

**Chemical Type:** Mixture

**Physical State:** Solid

**Specific Gravity:** > 1\*

**Packing Density:** 0.5 to 0.65

**Vapor Pressure:** N/A

**Solubility:** Slightly soluble

**Evaporation Rate:** N/A

\* - Skeletal density (true density without pores)

**10. Stability and Reactivity**

**Stability:** Stable under ordinary conditions of shipment, storage, and use.

**Hazardous Polymerization:** Will not occur.

**Incompatible Materials**

Avoid contact with strong oxidizing agents such as ozone, liquid oxygen, chlorine, permanganate, sulfuric acid, and nitric acid.

**Hazardous Decomposition Products**

Thermal decomposition ("burning") may produce irritating and toxic fumes of carbon (carbon dioxide, carbon monoxide), formaldehyde, ethylene, and acrylic acid. The exact chemicals formed depend on many factors including temperature and heating rate.

**11. Toxicological Information**

**Chronic/Carcinogenicity**

The product is not listed as potentially carcinogenic by NTP, IARC, OSHA, or ACGIH.

May contain trace concentrations of bound silica. Crystalline silica is considered to be a probable human carcinogen.

**Ingredients – Toxicological Data**

Carbon, activated.

LC50 (inhal, rat): > 64,400 mg/m<sup>3</sup>

LD50 (oral, rat): > 10,000 mg/kg

**12. Ecological Information**

**Ecotoxicological Information**

No information available for the product. However, ecotoxicity is expected to be minimal.

This material will increase the conductivity of water by increasing dissolved solids. Used activated carbon may exhibit characteristics of the absorbed material.

**Environmental Fate Information**

No information available.



# MATERIAL SAFETY DATA SHEET

Page 5 of 6

## Non Halogenated Series

### 13. Disposal Considerations

Activated carbon in pure form is not a hazardous material but spent carbon could potentially be a hazardous waste depending on the application. Dispose in accordance with applicable federal, state, and local government regulations.

### 14. Transport Information

#### Additional Shipping Paper Description

Shipping name: Activated Carbon.

This product is NOT considered spontaneously combustible under the "Self-Heating Test for Carbon" protocol listed in the United Nations Manual of Tests and Criteria [33.3.1].

### 15. Regulatory Information

#### U.S. Regulatory Information

Toxic Substance Control Act (TSCA): All ingredients of the product are listed on the TSCA 8(b) Chemical Substance Inventory or are exempt.

Product is not classifiable under any of the five SARA Title III hazard ratings.

Product does not have a CERCLA RQ.

#### SARA Section 313 Notification

This product does not contain any ingredients regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372.

#### Canadian Regulatory Information

Product is not regulated or controlled under WHMIS (Canada). This product is not classifiable as hazardous under the Canadian Hazardous Products Act (HPA).

DSL: 6798

### 16. Other Information

#### NFPA Rating

Health: 1

Fire: 1

Reactivity: 0

#### HMIS Rating

Health: 0

Fire: 0

Reactivity: 0

Personal Protection: B



# MATERIAL SAFETY DATA SHEET

Page 6 of 6

## Non Halogenated Series

### Disclaimer

This information relates to the product designated herein and does not relate to its use in combination with any other material or in any other process. To the best of ADA Carbon Solutions' knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability, and completeness are not guaranteed. Users are responsible to verify this data for their own particular use and they assume all risks of their reliance upon information contained herein. ADA Carbon Solutions, LLC, shall under no circumstances be liable for incidental or consequential damages as a result of reliance upon information contained herein.

**NO WARRANTY:** ADA CARBON SOLUTIONS MAKES NO WARRANTY OF MERCHANTABILITY OR OF ANY OTHER KIND WITH RESPECT TO INFORMATION CONTAINED HEREIN, EITHER EXPRESSED OR IMPLIED. ADA CARBON SOLUTIONS ASSUMES NO LIABILITY WITH RESPECT TO THE USE OF INFORMATION CONTAINED HEREIN.

**LIMIT OF LIABILITY:** ADA Carbon Solutions shall not be liable for, and Buyer assumes responsibility for, personal injury and property damage resulting from the handling, possession, use, storage, or resale of the product, whether used or in combination.

ADA Carbon Solutions, LLC

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
**SOLID WASTE PROFILE SHEET**

(Please Print or Type - Black Ink Only)

Check one:  New Certification  Recertification  Modification to a current certification (attach an explanation of the changes)

**GENERAL INFORMATION**

**Generator**

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Title: Environmental Affairs Specialist

Telephone: (205) 257-4150  
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Submitted by (if different from above):

**Company**

Name: Same As Above  
Mailing Address: \_\_\_\_\_  
\_\_\_\_\_

**Contact**

Name: \_\_\_\_\_  
Telephone: \_\_\_\_\_  
Email Address: \_\_\_\_\_

**WASTE INFORMATION**

Process Generating the Waste:

This waste stream is comprised of spent activated carbon from the flue gas treatment system or the reverse osmosis water treatment system by removing organic material and for dechlorination purposes.

Waste Name:

Spent Activated Carbon [each lot of spent carbon will be analyzed for TCLP metals (RCRA-8) to ensure it is non-hazardous prior to disposal]

If this waste is subject to the corrective action regulations of 40 CFR Part 280 (underground storage tank program), supply the following:

UST Facility Identification # \_\_\_\_\_ UST Incident # UST \_\_\_\_\_

If this is petroleum-contaminated waste, what is the source of the contamination (e.g., gasoline, diesel, hydraulic oil, etc.)? \_\_\_\_\_

Does this waste contain any of the following (give the concentration)?:  PCBs \_\_\_\_\_ppm  Cyanides \_\_\_\_\_ppm  Sulfides \_\_\_\_\_ppm

Annual Volume 200 cubic yards  Remediation Waste  CERCLA Cleanup  Process Waste

**WASTE PROPERTIES**

Physical State:

Solid   
Bladeable Sludge   
Liquid   
Solid/Liquid Combination

If the waste is liquid or contains free liquid:

% Free Liquids: \_\_\_\_\_  
pH: \_\_\_\_\_  
Flash Point: \_\_\_\_\_  
Solidified prior to disposal? \_\_\_\_\_

If yes, please see the instruction page

**WASTE DISPOSITION**

If this is foundry waste, is it disposed (used as fill material) in accordance with ADEM Admin. Code R. 335-13-4-.26(3)? Not Applicable

Proposed Landfill(s): Name: Miller Steam Plant Landfill Permit #: 37-16  
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Elizabeth Grinder  
Name (type or print) \_\_\_\_\_  
Environmental Affairs Specialist  
Title \_\_\_\_\_

Elizabeth J. Diehl  
Signature \_\_\_\_\_  
May 27, 2016  
Date \_\_\_\_\_

Profile Number \_\_\_\_\_

**LANDFILL OPERATIONAL PLAN  
J.H. MILLER STEAM PLANT LANDFILL**

**ALABAMA POWER COMPANY  
J.H. MILLER STEAM PLANT  
4250 PORTER ROAD SOUTHWEST  
QUINTON, ALABAMA**

**ADEM PERMIT NO. 37-16**



## LANDFILL OPERATIONAL PLAN

### 13-4-.01 SITING

The Miller Steam Plant landfill is sited within the fenced boundaries of the plant property. The site is not located in a floodplain. Normal water drainage will not cause washout of any solid waste due to controlled slopes, adequate vegetation, and regular inspections. Any problems such as storm water channeling will be corrected as soon as possible. No known endangered or threatened species of plants, fish, or wildlife are affected by the existing landfill. Water will naturally flow toward the Locust Fork of the Warrior River, following the general topography of the land. The existing landfill will not cause a discharge of dredged or fill material into waters of the State because of the natural topography, the slope of the landfill, and the distance between the landfill and the waters. The Locust Fork of the Warrior River is the closest body of water to the landfill, which is located 1,640 feet from the landfill. The bottom elevation of solid waste will be a minimum of five feet above the seasonal high groundwater table or bedrock. There is no airport runway within 10,000 feet of the landfill. There are no known zones of active faults, sinkholes, or karst zones. There are no archaeological or historically sensitive areas within the boundaries of the landfill. A buffer zone is not necessary because the landfill is located on Alabama Power Company property with no other landowners or any public access within 100 feet.

#### Geological Review

The landfill is located in the eastern portion of the Warrior Basin, which is a structure within the Cumberland Plateau Province. The Warrior Basin consists of a sub maturely to maturely dissected synclinal structure developed on clastic sedimentary Pennsylvanian age rocks. The Sequatchie anticline, which is a northeast striking structure located in the northeastern portion of the Cumberland Plateau, continues as a low line of hills into the basin. Elevations in the basin range from 350 to 700 feet above mean sea level (msl).

The Black Warrior River is the primary drainage feature in the southern half of the Cumberland Plateau Province. The Black Warrior is formed by its two (2) major tributaries; the Locust and Mulberry Forks. Secondary drainage patterns are primarily dendritic and deeply incised. The Warrior Basin is underlain by one (1) geologic unit, the Pottsville Formation. The Pottsville Formation is comprised of a varied sequence of sandstone, siltstone, and shale. Numerous coal seams are dispersed throughout the sequence and are mined intensively in most areas. Both surface open-pit and subsurface mining techniques are used in the area.

#### Site Geology

The Miller Landfill is located in an upland area that is underlain by sandstone and interbedded sandstone and shale. The general trend of the rocks is N20E with a dip of 5 to 10 degrees. Joints at the site are typically inclined 80 degrees to vertical. Three (3) joint sets were mapped during the construction of the steam plant. The primary set strikes N20E while the remaining two (2) sets strike N80W and N50E. Soil cover is generally thin (less than 10 feet) and consists of sandy, silty clays to sandy silts. The soil layer may be underlain by sixteen (16) to twenty (20) feet of highly weathered rock. The thickness' are typically much less in areas underlain by sandstone. Groundwater at the site is typically at or near the

elevation of the Locust Fork of the Warrior River, which is located west of the site. A boring drilled during an investigation for the ash pond (See Attachment A Drilling Logs/Well Diagrams and Attachment B - Figures) which is located southwest of the landfill had a groundwater elevation of 279.8 (msl). Water was encountered in boring number AH-15 which was drilled for the current permit request at a depth of 6.8 feet (elevation 427.5). This is considered to be perched water that drains through the fill material.

The site has been permitted as an industrial landfill since 1981. This has resulted in a large area covered with fill and other areas stripped for borrow. A total of fifteen (15) auger borings were drilled during April 1992 to investigate the top of rock beneath the landfill. These borings indicate that some areas of the site are covered by as much as forty (40) feet of fill material. The depth of bedrock is indicated on each log at the depth of auger refusal.

Surface run-off from the site flows to the west where it eventually enters the Locust Fork of the Warrior River. Run-off must flow approximately 1 mile before it enters the river. This path flows through several abandoned strip-mined areas that have been covered by a heavy growth of trees. These areas are thought to have been mined during the 1950's.

#### **13-4-.12 PLANS REQUIRED**

Alabama Power Company (APCO) will maintain a written operating record at the site. The following information will become a part of that operating record and be kept on file at the facility.

- Documentation of inspection and maintenance activities
- Daily volume reports
- Personnel training records
- Waste Certifications and disposal approvals for Special Wastes, Industrial Wastes, Inc.
- Other pertinent operating, inspection, maintenance, and monitoring information
- Copies of all variances granted by the Department, including copies of all approvals of special operating conditions

APCO will submit Quarterly Volume Reports as specified in Rule 335-13-5-.05 (1)(b)2. All records will be retained for a period of at least three (3) years.

#### **12-4-.14 GROUNDWATER RESOURCES**

##### Monitoring Well Installation and Site Geology

Alabama Power has installed three (3) groundwater monitoring wells to monitor the groundwater at the solid waste landfill at J.H. Miller Steam Plant. One (1) of the wells is installed upgradient for background sampling. The remaining two (2) wells have been installed down-gradient from the site to attempt to monitor potential leachate from the site.

##### General Site Geology

An exploratory investigation was performed at the site in April 1992 to determine the depth to bedrock. Fifteen (15) auger borings were drilled at the site to auger refusal (See Attachment A Drilling Logs/Well Diagrams). Soils at the site primarily consisted of sandy clayey silts which graded vertically to

decomposed sandstone and shale. The entire site is underlain by the Pennsylvanian age Pottsville Formation. A large portion of the area is covered by a thick sequence of solid waste fill from the permitted landfill that has been operated at the site for several years. The majority of the borings were dry and did not contain groundwater. Only one (1) boring, AH-15, which was drilled in the lowest area of the site, encountered any water. This water is perched and probably results from water migrating along the contact of the valley walls and the fill material. The landfill is located in an elevated area and the groundwater level should occur very deep. The groundwater gradient should be to the west.

#### Groundwater Monitoring

Groundwater monitoring has not been included as a permit requirement since 2001.

#### **13-4-.15 COVER**

Soil will be utilized for intermediate cover. As the frequency and volume of waste placed in the landfill varies greatly, the active face of the landfill will be covered at least monthly. As each cell is closed, 2' of top soil will be placed on the cell and suitable vegetative growth will be established. Vegetative growth will be in accordance with Alabama Department of Transportation specifications, presented in Attachment C.

#### **13-4-.16 EXPLOSIVE GAS**

The Alabama Department of Environmental Management (ADEM) granted APCO a variance of Section 13-4-.16 relating to methane gas testing. This variance was based on the distance of the landfill from adjacent property owners and enclosed structures and the types of wastes being disposed of in the landfill. Attached is the letter dated October 29, 1990, in Attachment D.

#### **3-4-.17 DRAINAGE**

The existing landfill site is the highest elevation relative to the surrounding land so that there will be no off-site surface drainage passing over the disposal site. The existing site is designed so that incident precipitation from the disposal site does not pond within the area of disposal of wastes. A stormwater run-off point was added to the Miller Steam Plant NPDES Permit, #AL 0027146, DSN 012. Drainage will take place through a stand pipe to prevent any silt from leaving the site. As the lower elevation fills, additional lengths of pipe will be added to the standpipe.

#### **13-4-.19 ACCESS**

The landfill is located on APCO property that is enclosed within a fence. There are two gates to enter the landfill, which are kept locked. Signs are posted on the gates entering APCO property stating that this is APCO property and that all visitors must register with security. Security is present on-site 24-hours and monitors the plant property.

#### **13-4-.20 CLOSURE**

Closure will be such that surface water does not pond over the disposal facility. A two-foot soil cover will be placed on the landfill as each cell is completed. The slope will be graded to less than 25% but greater than or equal to 5%. Slopes longer than 25 feet will be terraced to prevent erosion. Each cell will

be graded within 60 days after landfilling. Vegetative growth will be established within 30 days after the completion of final grading. The vegetative growth will be in accordance with the Alabama Department of Transportation specifications provided in Attachment C. The vegetative growth will be maintained as necessary to ensure adequate growth. Post closure maintenance will include annual inspections and any problems will be corrected in a timely manner. All eroded areas will be filled and re-seeded. Cover will be maintained as solid and will not allow ponding. Post-closure use of the property will never be allowed to disturb the integrity of the final cover. Current plans do not include any post-closure use of the property. Within 90 days after closure or permit expiration, APCO will record a notation onto the land deed stating the property was utilized as a solid waste disposal facility. Signs will be placed at all boundaries indicating that this area was used as a landfill and that no activity is to be conducted within the landfill areas. Vector control shall be conducted to prevent any problems.

#### **13-4-.21 GENERAL OPERATIONAL STANDARDS**

No unpermitted open burning is conducted at any APCO facility. No open burning will be conducted at the landfill site. Typical wastes that will be accepted at the landfill include construction and demolition waste, rubbish, and low volume/frequency industrial wastes such as asbestos containing materials (friable and non-friable), anion/cation resin, and sandblast waste. No hazardous waste will be accepted and routine inspections will be conducted to ensure that no hazardous waste is placed in the landfill. Miller Steam Plant has a separate program in place for the management of hazardous waste. Any infectious waste generated on-site is contracted for off-site disposal. Only waste that is generated by Alabama Power Company will be disposed of in the landfill. No out-of-state waste is accepted. The landfill boundaries will be identified with a sufficient number of permanent markers which are visible from one marker to the next. Drawing number D-376603, sheets 1-5 show the general layout, topography, and estimated final elevations of the landfill and are presented in Attachment E.

An untreated wood recycling area is located within the permitted boundary of the landfill. The location is on the southwest corner of the permitted area, away from the active face. Wood products that cannot be recycled or re-used are transferred to the active cell for disposal.

#### **13-4-.23 SPECIFIC REQUIREMENTS FOR LANDFILL**

A minimum of six inches of compacted soil will be placed on the active cell as intermediate cover. As the frequency and volume of waste placed in the landfill varies greatly, the active face of the landfill will be covered at least monthly. Final grading of each cell will be conducted within 60 days after landfilling is complete for that cell. Final earth cover shall be a minimum of two feet of compacted soil. The slope will be graded to less than 25% but greater than or equal to 5%. Slopes longer than 25 feet will be terraced to prevent erosion. Each cell will be graded within 60 days after landfilling. Vegetative growth will be established within 30 days after the completion of final grading for each completed cell. The vegetative growth will be in accordance with the Alabama Department of Transportation specifications (See Attachment C). The vegetative cover will be maintained as necessary to ensure adequate growth. The waste will be dumped at the top of each cell in a confined area and will be compacted in layers no more than two feet thick. As the operator inspects the active cell, these layers will be compacted by the landfill equipment prior to placing additional waste on the active face of the cell. As the frequency and volume of waste placed in the landfill varies greatly, the active face of the landfill will be covered at least monthly.

No material is allowed to be removed once placed in the landfill. Litter control will be conducted by the landfill operator. A fire brigade crew is on-site and available should the need arise. The site is located on APCO property that has 24 hour surveillance. Disposal can be postponed if weather does not permit the use of the road to the landfill. The road is not heavily traveled, so it should remain passable at all times.

### **13-4-.26 SPECIAL WASTES**

#### Spent Anion/Cation Resin

- Spent anion/cation resins are used in the on-site water treatment plant. The resins are disposed of when they fail to meet operational specifications. This waste stream is a low volume/frequency waste.

#### Sandblast Waste

- This waste results from the surface preparation of equipment or structures prior to painting. Each lot of this waste is analyzed for TCLP metals to ensure it is non-hazardous prior to disposal.

#### Asbestos Containing Materials

- Asbestos waste generated at the plant is resulting from an on-going asbestos abatement program. The asbestos is placed wet in double 6 mil polyethylene bags that are labeled as “asbestos waste.” The bagged material is taken to a designated area that is appropriate for asbestos material. At the end of each working day that asbestos is placed in the landfill, it is covered with a minimum of 12 inches of earth. Special precautions are given to all personnel handling the bagged asbestos material and to the landfill operator to ensure that the bags are not ruptured prior to applying the required daily earth cover.

**ATTACHMENT A**  
**DRILLING LOGS / WELL DIAGRAMS**

Alabama Power 

# DRILLING LOG #2

2-9-89

Hole No. #2

Page 1 of 9

SITE Miller Steam Plant Ash Pond Dike Investigation SURF. ELEV. 469.1 TOTAL DEPTH 265.0  
Storage Yard.

LOCATION Southwest end of Power Delivery COORDINATES N 1,314,779.61 E 631,959.70

ANGLE NA BEARING NA CONTRACTOR APCo DRILL NO. 11

OVERBURDEN DEPTH 13.8 NO. PENT. TESTS NA NO. U.D. SAMPLES NA

CASING SIZE 6" pvc LENGTH 20.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH 189.3 ELEV. 279.8 TIME AFTER COMP 20 Hours DATE TAKEN 2/14/89

TYPE GROUT NA QUANTITY NA MIX NA DRILLING DATE START 2/09/89

DRILLER H.D. Rigsby RECORDER H. D. Rigsby APPROVED HDR DRILLING DATE COMP. 2/13/89

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	ROD
				From To	Blows	N				
0.0	0	469.1	Ground surface.							
1.5	1	467.6	Reddish -yellow sandy clay.  Soft yellow weathered sandstone.							
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
13.8	14	455.3	Hard gray sandstone with layers of soft weathered sandstone.							
15										
16										
17										
18										
19.5	19	449.6	Note: Set 20.0' of 6" pvc casing.  Hard gray sandstone with intermittent layers of softer gray sandy shale.							
	20									
	21									
	22									
	23									
	24									

# DRILLING LOG #2

2-9-89

Note No. #2

Page 2 of 9

Site Miller Steam Plant Ash Pond Dike Investigation SURF. ELEV. 469.1 TOTAL DEPTH 265.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCO
				From To	Blows	N				
	25		Hard gray sandstone with layers of sandy shale.							
	26									
	27									
	28									
	29									
	30									
	31									
	32									
	33									
	34									
	35									
	36									
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	49									
	50									
	51									
	52									
	53									
	54									
	55									
	56									

site Miller Steam Plant Ash Pond Dike Investigation SURF. ELEV. 469.1 TOTAL DEPTH 265.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	57		Hard gray sandstone with layers of softer gray sandy shale.							
	58									
	59									
	60									
	61									
	62									
	63									
	64									
	65									
	66									
	67									
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	70									
	71									
	72									
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	81									
	82									
	83									
	84									
	85									
	86									
	87									
	88									

site Miller Steam Plant Ash Pond Dike Investigation SURF. ELEV. 469.1 TOTAL DEPTH 265.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Cng. %	Rec. %	ROD
				From To	Blows	N				
	89		Hard gray sandstone with layers of softer gray sandy shale.							
	90									
	91									
	92									
	93									
	94									
	95									
	96									
	97									
	98									
	99									
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	114									
	115									
	116									
	117									
	118									
	119									
	120									

Site Miller Steam Plant Ash Pond Dike Investigation SURF. ELEV. 469.1 TOTAL DEPTH 265.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chd. %	Rec. %	RQD
				From To	Blows	N				
	121		Hard gray sandstone with layers of softer gray sandy shale.							
	122									
	123									
	124									
	125									
	126									
	127									
	128									
	129									
	130									
	131									
	132									
	133									
	134									
	135									
	136									
	137									
	138									
	139									
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	143									
	144									
	145									
	146									
	147									
	148									
	149									
	150									
	151									
	152									

# DRILLING LOG #2

Note No. #2

2-9-89

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site Miller Steam Plant Ash Pond Dike Investigation SURF. ELEV. 469.1 TOTAL DEPTH 265.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	153		Hard gray sandstone with layers of softer gray sandy shale.							
	154									
	155									
	156									
	157									
	158									
	159									
	160									
	161									
	162									
	163									
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	175									
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	177									
	178									
	179									
	180									
	181									
	182									
	183									
	184									

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	185									
	186									
	187									
	188									
	189									
	190		Hard gray sandstone with layers of softer gray sandy shale.							
	191									
	192									
	193									
	194									
	195									
	196									
	197									
	198									
	199									
	200									
	201									
	202									
	203									
	204									
	205									
	206									
206.5		262.6								
	207		Coal seam-smut.							
208.0		261.1								
	209									
	210		Soft dark gray shale with layers of harder gray sandy shale.							
	211									
	212									
	213									
	214									
	215									
	216									

# DRILLING LOG #2

2-9-89

Well No. #2

Page 8 of 9

Site Miller Steam Plant Ash Pond Dike Investigation SURF. ELEV. 469.1 TOTAL DEPTH 265.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	217		Soft dark gray shale with layers of harder gray sandy shale.							
	218									
	219									
	220									
	221									
	222									
	223									
	224									
	225									
	226									
	227									
	228									
	229									
	230									
	231									
	232									
	233									
	234									
	235									
	236									
	237									
	238									
	239									
	240									
	241									
	242									
	243									
	244									
	245									
	246									
	247									
	248									

SITE Miller Steam Plant Ash Pond Dike Investigation SURF. ELEV. 469.1 TOTAL DEPTH 265.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	249		Soft dark gray shale with layers of harder gray sandy shale.							
	250									
	251									
	252									
	253									
	254									
	255									
	256									
257.0	257	212.1								
	258		Coal seam w/smut.							
	259									
	260									
	261									
	262									
262.5	263	206.6	Gray sandy shale.							
	264									
265.0	265	204.1	Bottom of the hole							
	266									
	267		Note: Hit approximately 3 g.p.m. water in last coal seam, hole was dry before that.							
	268									
	269									
	270									
	271									
	272									
	273									
	274									
	275									
	276									
	277									
	278									
	279									
	280									

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 525.4 TOTAL DEPTH 9.0

LOCATION Landfill COORDINATES N 1317625.26 E 633256.512

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 9.0 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH NA CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN 04/27/92

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED *DMF* DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	525.4	Surface of ground.							
	1		Light red (2.5YR6/6), stiff, sandy, clayey silt.							
	2	523.4	Pale olive (5Y6/3), sandy silt. (Highly decomposed sandstone.)							
	3									
	4									
	5									
	6									
	7									
	8	517.4	Dark grayish brown (2.5Y4/2), sandy silt. (Highly decomposed sandstone.)							
	9		Bottom of hole.							
	10		Auger refusal on weathered rock.							
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

# DRILLING LOG #1

Hole No. AH-2

4-27-92

Page 1 of 1

SITE J. H. Miller Steam Plant SURF. ELEV. 523.5 TOTAL DEPTH 4.0

LOCATION Landfill COORDINATES N 1317739.392 E 633212.416

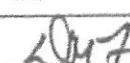
ANGLE Vertical BEARING NA CONTRACTOR APGo DRILL NO. #17

OVERBURDEN DEPTH 4.0 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH NA CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN 04/27/92

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED  DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RCD
				From To	Blows	N				
	0	523.5	Surface of ground.							
	1		Reddish yellow (5YR7/6), sandy, silty clay.							
	2		Pinkish gray (5YR7/2) to pink (5YR7/4), slightly clayey, silty sand. (Highly decomposed sandstone.)							
	3									
	4	519.5								
	4.0		Bottom of hole.							
	5		Auger refusal on weathered rock.							
	6									
	7									
	8									
	9									
	10									
	11									
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	14									
	15									
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	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

# DRILLING LOG #1

Hole No. AH-3  
Page 1 of 1

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 524.8 TOTAL DEPTH 1.0

LOCATION Landfill COORDINATES N 1317651.840 E 633092.288

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 1.0 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN NA

TYPE GROUT \_\_\_\_\_ QUANTITY \_\_\_\_\_ MIX \_\_\_\_\_ DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED *DMF* DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description. Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
0.0	0	524.8	Surface of ground.							
1.0	1	523.8	Yellowish brown (10YR5/4), silty sand. (highly decomposed sandstone.							
	2		Bottom of hole.							
	3									
	4		Auger refusal on weathered rock.							
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

SITE J. H. Miller Steam Plant SURF. ELEV. 509.3 TOTAL DEPTH 8.5  
 LOCATION Landfill COORDINATES N 1317819.008 E 633114.304  
 ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17  
 OVERBURDEN DEPTH 8.5 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0  
 CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA  
 WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN 04/27/92  
 TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/27/92  
 DRILLER R. Hill RECORDER D.M. Frings APPROVED *DMF* DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	509.3	Surface of fill.							
	1	508.3	Reddish-brown (5YR5/3) silty clay fill.							
	2		Dark grayish-brown (2.5Y4/2) clay with wood and paper debris.							
	3									
	4									
	5									
	6									
	7									
	8									
	8.5	500.8	Bottom of hole.							
	9									
	10		Auger refusal on sandstone.							
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 508.2 TOTAL DEPTH 12.5

LOCATION Landfill COORDINATES N 1317930.880 E 633159.552

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 12.5 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN NA

TYPE GROUT NA QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED DMF DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	508.2	Surface of fill.							
	1		Reddish-brown (5YR5/3) silty clay fill. ?							
	2									
	2.5	505.7	Dark grayish-brown (2.5Y4/2) clay with wood and paper debris.							
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	12.5	495.7	Bottom of hole.							
	13		Auger refusal on weathered rock.							
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 507.2 TOTAL DEPTH 11.0

LOCATION Landfill COORDINATES N 1318038.400 E 633198.848

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 11.0 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN NA

TYPE GROUT NA QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED *DMF* DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	507.2	Surface of fill.							
	1		Reddish-brown (5YR5/3), silty clay fill.							
	2									
	3	505.2								
2.5	4		Very dark gray (N-3), clay with wood and paper debris.							
	5									
	6									
	7									
	8									
	9									
	10		Augers are wet from 9.0 (498.2) to 11.0 (496.2).							
11.0	11	496.2								
	12		Bottom of hole.							
	13		Auger refusal on weathered rock.							
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

# DRILLING LOG #1

4-27-92

Well No. AH-7

Page 1 of 2

SITE J. H. Miller Steam Plant SURF. ELEV. 490.2 TOTAL DEPTH 30.0

LOCATION Landfill COORDINATES N 1318097.024 E 632962.752

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 29.0 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 GORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN NA

TYPE GROUT NA QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED  DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	ROD
				From	To	Blows				
	0	490.2	Surface of fill.							
	1		Reddish-brown (5YR5/3) silty clay fill.							
	1.5	488.7								
III	2		Very dark gray (N-3) clay fill with wood, paper, and metal debris.							
	3									
	4									
	5									
	6									
III	7		Note; Fill becomes moist and clayey at 8.0 (482.2).							
	8									
	9									
	10									
	11									
	12									
	13									
III	14									
	15									
	16									
	17									
	18									
	19									
III	20									
	21									
	22									
	23									
	24									

SITE J. H. Miller Steam Plant

SURF. ELEV. 490.2

TOTAL DEPTH 30.0

30.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCO
				From To	Blows	N				
	25		Very dark gray (N-3) clay fill with wood, paper and metal debris.							
	26									
	27									
	28									
	29									
	30	460.2								
	31		Bottom of hole.							
	32		Auger refusal on weathered rock.							
	33									
	34									
	35									
	36									
	37									
	38									
	39									
	40									
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									
	51									
	52									
	53									
	54									
	55									
	56									

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 492.7 TOTAL DEPTH 28.0

LOCATION Landfill COORDINATES N 1318000.640 E 632949.952

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH \_\_\_\_\_ NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN NA

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED *DMF* DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	492.7	Surface of fill.							
	1		Reddish-brown (5YR5/3) silty clay fill. ,							
	2	490.7								
	3		Very dark gray (N-3) clay fill with wood, paper, and metal debris.							
	4									
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

28.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RQD
				From To	Blows	N				
	25		Very dark gray (N-3) clay fill with wood, paper, and metal debris.							
	26									
	27									
	28	464.7								
	29		Bottom of hole.							
	30		Auger refusal on weathered rock.							
	31									
	32									
	33									
	34									
	35									
	36									
	37									
	38									
	39									
	40									
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									
	51									
	52									
	53									
	54									
	55									
	56									

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 491.8 TOTAL DEPTH 7.0

LOCATION Landfill COORDINATES N 1317899.776 E 632938.304

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 7.0 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN 04/27/92

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED *DMF* DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	491.8	Surface of fill.							
	1	490.8	Reddish-brown (5YR5/3) silty clay fill.							
	2		Very dark gray (N-3) clay fill with wood, paper, and metal debris.							
	3									
	4									
	5									
	6									
	7	484.8								
	8		Bottom of hole.							
	9		Auger refusal on weathered rock.							
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

SITE J. H. Miller Steam Plant SURF. ELEV. 477.0 TOTAL DEPTH 15.0

LOCATION Landfill COORDINATES N 1318083.456 E 632839.680

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 15.0 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN NA

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED  DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	477.0	Surface of fill.							
	1		Brown (7.5YR5/2) clay fill with wood, paper, and metal debris.							
	2									
	3									
III	4									
	5									
	6									
	7									
	8									
	9									
III	10									
	11									
	12									
	13									
III	14									
	15	462.0	Bottom of hole.							
	16		Auger refusal on weathered rock.							
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 480.3 TOTAL DEPTH 40.5

LOCATION Landfill COORDINATES N 1317976.704 E 632854.080

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

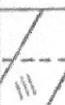
OVERBURDEN DEPTH 40.5 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN NA

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED  DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RCD
				From To	Blows	N				
	0	480.3	Surface of fill.							
	1		Reddish-brown (5YR5/3), silty clay fill.							
	2									
	3									
	4	476.8								
	5		Very dark gray (N-3) clay fill with wood, paper, and metal debris.							
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23		Fill becomes moist at 25.0 (455.3).							
	24									

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROO
				From To	Blows	N				
	25		Very dark gray (N-3) clay fill with wood, paper, and metal debris.							
	26									
	27									
	28									
	29									
	30									
	31									
	32									
	33									
	34									
	35									
	36									
		37								
38										
	39									
	40									
40.5	40	439.8								
	41		Bottom of hole.							
	42		Did not reach auger refusal.							
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									
	51									
	52									
	53									
	54									
	55									
	56									

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 478.9 TOTAL DEPTH 18.5

LOCATION Landfill COORDINATES N 1317901.952 E 632850.560

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 18.5 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN 04/27/92

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/27/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED DMF DRILLING DATE COMP. 04/27/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RCD
				From To	Blows	N				
	0	478.9	Surface of fill.							
	1		Reddish-brown (5YR5/3) silty clay fill.							
	2									
	3									
	3.5	475.4	Very dark gray (N-3) clay fill with wood, paper, and metal debris.							
	4									
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13	465.9	Top of residual soil.							
	14		Brownish-yellow (10YR6/6), slightly silty, sandy clay.							
	15									
	16									
	17									
	18									
	18.5	460.4	Bottom of hole.							
	20		Auger refusal.							
	21									
	22									
	23									
	24									

SITE J. H. Miller Steam Plant SURF. ELEV. 459.0 TOTAL DEPTH 20.5

LOCATION Landfill COORDINATES N 1318007.936 E 632778.304

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 20.5 NO. PENT. TESTS 0 NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN 04/28/92

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/28/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED *DMF* DRILLING DATE COMP. 04/28/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RCD
				From To	Blows	N				
	0	459.0	Surface of fill.							
	1		Reddish-brown (5YR5/3), silty clay fill.							
	1.5	457.5								
	2		Brown (10YR5/3) clay with wood and paper debris. (Fill material)							
	3									
	4									
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	20.5	438.5								
	21		Bottom of hole.							
	22		Auger refusal on weathered rock.							
	23									
	24									

4-27-92

SITE J. H. Miller Steam Plant SURF. ELEV. 457.8 TOTAL DEPTH 27.5

LOCATION Landfill COORDINATES N 1317956.864 E 632787.456

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 26.5 NO. PENT. TESTS \_\_\_\_\_ NO. U.D. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH Dry ELEV. NA TIME AFTER COMP NA DATE TAKEN 04/28/92

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/28/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED *DMF* DRILLING DATE COMP. 04/28/92

Graphic Log	Depth	Elev.	Material Description. Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	457.8	Surface of fill.							
///	1		Reddish-brown (5YR5/3), silty clay fill.							
	2	455.8								
///	3		Brown (10YR5/3) clay with wood and paper debris. (Fill material)							
///	4									
///	5									
///	6									
///	7									
///	8									
///	9									
///	10									
///	11									
///	12									
///	13									
///	14									
///	15									
///	16									
///	17									
///	18									
///	19									
///	20									
///	21									
///	22									
///	23									
///	24									

SITE J. H. Miller Steam Plant SURF. ELEV. 457.8 TOTAL DEPTH 27.5

27.5

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCD
				From To	Blows	N				
III	25		Brown (10YR5/3) clay with wood and paper debris. (Fill material)							
	26									
	27									
	28	430.3								
	28		Bottom of hole.							
	29									
	30		Note: Auger refusal on highly weathered sandstone and shale.							
	31									
	32									
	33									
	34									
	35									
	36									
	37									
	38									
	39									
	40									
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									
	51									
	52									
	53									
	54									
	55									
	56									

# DRILLING LOG #1

4-27-92

Hole No. AH-15

Page 1 of 1

SITE J. H. Miller Steam Plant SURF. ELEV. 434.3 TOTAL DEPTH 8.5

LOCATION Landfill COORDINATES N 1317987.712 E 632692.800

ANGLE Vertical BEARING NA CONTRACTOR APCo DRILL NO. #17

OVERBURDEN DEPTH 8.0 NO. PENT. TESTS 0 NO. U.O. SAMPLES 0

CASING SIZE NA LENGTH 0.0 CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH 6.8 ELEV. 427.5 TIME AFTER COMP 1 hr. DATE TAKEN 04/28/92

TYPE GROUT Soil QUANTITY NA MIX NA DRILLING DATE START 04/28/92

DRILLER R. Hill RECORDER D.M. Frings APPROVED DMF DRILLING DATE COMP. 04/28/92

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	ROD
				From	To	Blows				
	0	434.3								
	1		Reddish-brown (5YR5/3) sandy clay fill.							
	2									
	3									
	3.5	430.8								
	4		Brown (7.5YR5/2), sandy clay.							
	5									
	6									
	7									
	8.0	426.3	Top of weathered rock.							
	8.5	425.8	Brown (7.5YR5/2), highly weathered sandstone and shale.							
			Bottom of hole.							
	10		Auger refusal.							
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

ATTACHMENT C  
**DRILLING LOG**  
#3

SITE Miller Steam Plant Monitoring Wells SURF. ELEV. 522.2 TOTAL DEPTH 227.0  
 LOCATION East end of landfill site COORDINATES N 1317847.75 E 633327.60  
 ANGLE Vert. BEARING NA CONTRACTOR APCo DRILL NO. 20  
 OVERBURDEN DEPTH 2.8 ft. NO. PENT. TESTS NA NO. U.D. SAMPLES NA  
 CASING SIZE 6" LENGTH 20.0 ft. CORE SIZE NA TOTAL % REC. NA  
 WATER TABLE DEPTH \_\_\_\_\_ ELEV. \_\_\_\_\_ TIME AFTER COMP \_\_\_\_\_ DATE TAKEN \_\_\_\_\_  
 TYPE GROUT Neat Cement QUANTITY 8 bags MIX 1 to 1 DRILLING DATE START 01/06/93  
 DRILLER T. Sillmon RECORDER H. D. Rigsby APPROVED DR7 DRILLING DATE COMP. 01/11/93

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	ROD
				From To	Blows	N				
	0	522.2	Note: Drilled overburden w/a 10 5/8" percussion bit. Surface.							
	1		Reddish-brown clayey sand.							
	2									
	2.8	519.4								
	4		Soft gray sandy shale w/numerous brown weathered zones.							
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
	14									
	14.5	507.7								
	16		Harder gray sandy shale.							
	17									
	18									
	19									
	20	502.2	Set 20.0 ft. of 6" P.V.C. and grouted it in with 8 bags of 1 to 1 mix. Continued from this point with a 6" percussion bit.							
	21									
	22									
	23	499.2	Soft gray sandy shale w/numerous brown weathered zones.							
	24									

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 522.2

TOTAL DEPTH 227.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROQ
				From To	Blows	N				
	25		Soft gray sandy shale w/numerous brown weathered zones.							
	26									
	27									
	28									
	29									
	30									
	31									
	32									
	33									
	34									
	35									
	36									
	37									
	38	484.2								
	39		Hard gray sandy shale.							
	40									
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									
	51									
	52									
	53									
	54									
	55									
	56									

38.0

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells SURF. ELEV. 522.2 TOTAL DEPTH 227.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCO
				From To	Blows	N				
	57		Hard gray sandy shale.							
	58									
	59									
	60									
	61									
	62									
	63									
	64									
	65									
	66									
	67									
	68									
	69									
	70									
	71									
	72									
	73									
	74									
	75									
	76									
	77									
	78									
	79									
	80									
	81									
	82									
	83									
	84									
	85									
	86									
	87									
	88									

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 522.2

TOTAL DEPTH 227.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Ctg. %	Rec. %	RQD
				From To	Blows	N				
	89		Hard gray sandy shale.							
	90									
	91									
	92									
	93									
	94									
	95									
	96									
	97									
	98									
	99									
	100									
	101									
	102									
	103									
	104									
	105									
	106									
	107									
	108									
	109									
	110									
	111									
	112									
	113									
	114									
	115									
	116									
	117									
	118									
	119									
	120									

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 522.2

TOTAL DEPTH 227.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RQD
				From To	Blows	N				
	121		Hard gray sandy shale.							
	122									
	123									
	124									
	125									
	126									
	127									
	128									
	129									
	130									
	131									
	132									
	133									
	134									
	135									
	136									
	137									
	138									
	139									
	140									
	141									
	142									
	143									
	144									
	145									
	146									
	147									
	148									
	149									
	150									
	151									
	152									

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 522.2

TOTAL DEPTH 227.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCD
				From To	Blows	N				
	153		Hard gray sandy shale.							
	154									
	155									
	156									
	157									
	158									
	159									
	160									
	161									
	162									
	163									
	164									
	165									
	166									
	167									
	168									
	169									
	170									
	171									
	172									
	173									
	174									
	175									
	176									
	177									
	178									
	179									
	180									
	181									
	182									
	183									
	184									

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 522.2

TOTAL DEPTH 227.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RQD
				From To	Blows	N				
	185		Hard gray sandy shale.							
	186									
	187									
	188									
	189									
	190									
	191									
	192									
	193									
	194									
	195									
	196									
	197									
<u>198.0</u>	198	<u>324.2</u>		<u>Hit app. 10 G.P.M. water.</u>						
	199									
	200									
	201									
	202									
	203									
	204									
	205									
	206									
	207									
	208									
	209									
	210									
	211									
	212									
	213									
	214									
	215									
	216									



# DRILLING LOG

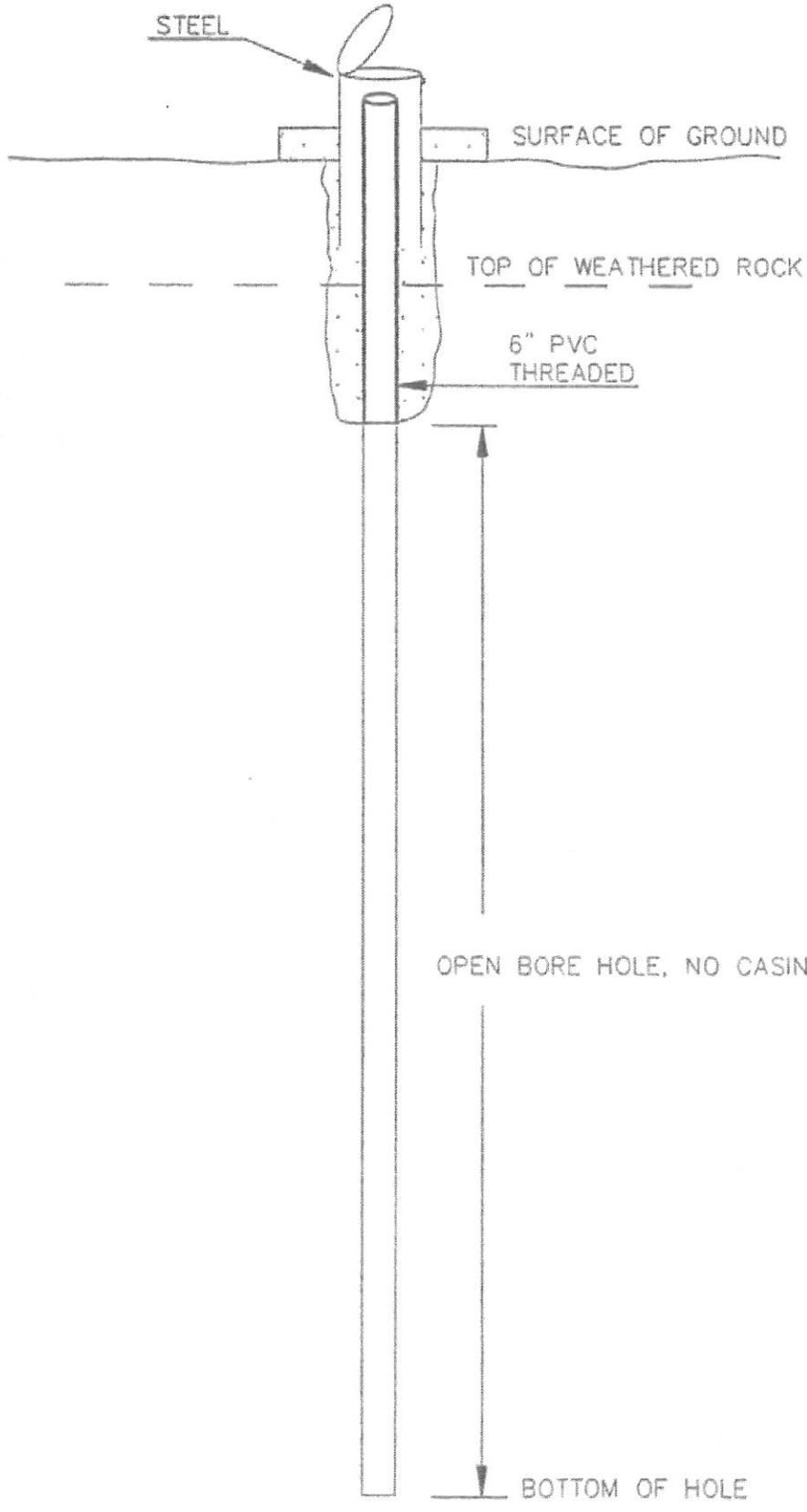
Site Miller Steam Plant Monitoring Wells

SURF. ELEV. 522.2

TOTAL DEPTH 227.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCD
				From To	Blows	N				
	217		Hard gray sandy shale.							
	218									
	219									
	220									
	221									
	222									
	223									
	224									
	225									
	226									
	227	295.2		Bottom of the hole-making app. 10 G.P.M.						
227.0			Note: Set a 5.0 ft. protector pipe and poured a concrete pad at top of hole.							
	228									
	229									
	230									
	231									
	232									
	233									
	234									
	235									
	236									
	237									
	238									
	239									
	240									
	241									
	242									
	243									
	244									
	245									
	246									
	247									
	248									

MW-1



DEPTH	ELEVATION
0.0	522.2
2.8	519.4
20.0	502.2
227.0	295.2

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells SURF. ELEV. 452.1 TOTAL DEPTH 252.0

LOCATION West side of ash pond roadway COORDINATES N 1317910.23 E 632371.35

ANGLE Vert. BEARING NA CONTRACTOR APCo DRILL NO. 20

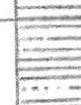
OVERBURDEN DEPTH 3.5 ft. NO. PENT. TESTS NA NO. U.D. SAMPLES NA

CASING SIZE 6" LENGTH 35.0 ft. CORE SIZE NA TOTAL % REC. NA

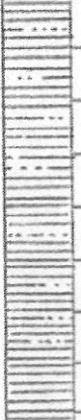
WATER TABLE DEPTH \_\_\_\_\_ ELEV. \_\_\_\_\_ TIME AFTER COMP \_\_\_\_\_ DATE TAKEN \_\_\_\_\_

TYPE GROUT Neat Cement QUANTITY 13 bags MIX 1 to 1 DRILLING DATE START 01/05/93

DRILLER T. Sillmon RECORDER H. D. Rigsby APPROVED DM7 DRILLING DATE COMP. 01/11/93

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	RQD
				From To	Blows	N				
	0	452.1	Note: Drilled overburden w/a 10 5/8" percussion bit. Surface.							
	1		Reddish-brown clayey sand.							
	2									
	3									
	3.5	448.6								
	4									
	5		Soft gray shale w/numerous brown weathered zones.							
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18.0	434.1								
	19		Very soft reddish-brown weathered shale.							
	20									
	21									
	22.0	430.1								
	22		Soft gray sandy shale w/numerous brown weathered zones.							
	23									
	24									

SITE Miller Steam Plant Monitoring Wells SURF. ELEV. 452.1 TOTAL DEPTH 252.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	25		Soft gray sandy shale w/numerous brown weathered zones.							
	26									
	27									
	28									
	29									
	30									
	31									
	32									
	33.0	33		419.1						
		34			Hard gray sandy shale w/some weathered zones.					
35.0	35	417.1	Set 35.0 ft of 6" P.V.C. casing and grouted it in with 13 bags of 1 to 1 mix. Continued from this point with a 6" percussion bit.							
	36									
	37									
	38									
39.0	39	413.1								
	40		Hard gray sandy shale.							
	41									
	42									
	43									
	44									
	45									
	46									
	47									
	48									
	49									
	50									
	51									
	52									
	53									
	54									
	55									
	56									

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 452.1

TOTAL DEPTH 252.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCD
				From To	Blows	N				
	57		Hard gray sandy shale.							
	58									
	59									
	60									
	61									
	62									
	63									
	64									
	65									
	66									
	67									
	68									
	69									
	70									
	71									
	72									
	73									
	74									
	75									
	76									
	77									
	78									
	79									
	80									
	81									
	82									
	83									
	84									
	85									
	86									
	87									
	88									

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 452.1

TOTAL DEPTH 252.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RQP
				From To	Blows	N				
	89		Hard gray sandy shale.							
	90									
	91									
	92									
	93									
	94									
	95									
	96									
	97									
	98									
	99									
	100									
	101									
	102									
	103									
	104									
	105									
	106									
	107									
	108									
	109									
	110									
	111									
	112									
	113									
	114									
	115									
	116									
	117									
	118									
	119									
	120									

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 452.1

TOTAL DEPTH 252.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	121		Hard gray sandy shale.							
	122									
	123									
	124									
	125									
	126									
	127									
	128									
	129									
	130									
	131									
	132									
	133									
	134									
135.0	135	317.1								
	136		Coal seam.							
	137									
138.0	138	314.1								
	139		Soft gray fire clay.							
140.0	140	312.1								
	141									
141.8	142	310.1	Coal seam.							
	143		Hard gray sandy shale.							
	144									
	145									
	146									
	147									
	148									
	149									
	150									
	151									
	152									

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 452.1

TOTAL DEPTH 252.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RQD
				From To	Blows	N				
	153		Hard gray sandy shale.							
	154									
	155									
	156									
	157									
	158									
	159									
	160									
	161									
	162									
	163									
	164									
	165									
	166									
	167									
	168									
	169									
	170									
	171									
	172									
	173									
	174									
	175									
	176									
	177									
	178									
	179									
	180									
	181									
	182									
	183									
	184									

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 452.1

TOTAL DEPTH 252.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCD
				From To	Blows	N				
	185		Hard gray sandy shale.							
	186									
	187									
	188									
	189									
	190									
	191									
	192									
	193									
	194									
	195									
	196									
	197									
	198									
	199									
	200									
	201									
	202									
	203									
	204									
	205									
	206									
	207									
	208									
	209									
	210									
	211									
	212									
	213									
	214									
	215									
	216									

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 452.1

TOTAL DEPTH 252.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCD
				From To	Blows	N				
	217		Hard gray sandy shale.							
	218									
	219									
	220									
	221									
	222									
	223									
	224									
	225									
	226									
	227									
	228									
	229									
	230									
	231									
	232									
	233									
	234									
	235									
	236									
	237									
	238									
	239									
	240									
	241									
	242									
	243									
	244									
	245									
	246									
	247									
	248									

# DRILLING LOG

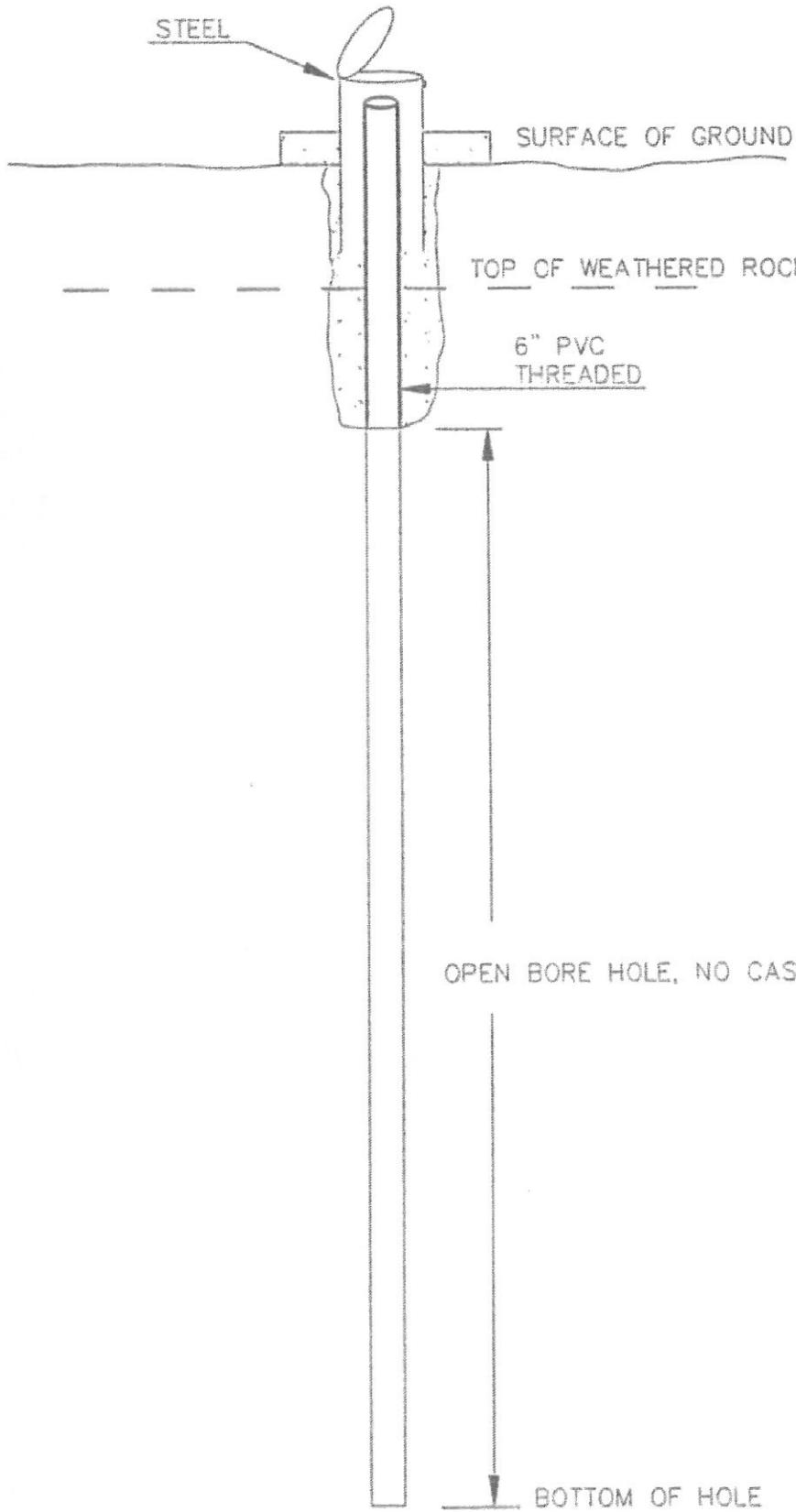
SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 452.1

TOTAL DEPTH 252.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	249		Hard gray sandy shale.							
	250									
	251									
	252	200.1	Bottom of the hole - no water.							
	253		Note: Set 5.0 ft. protector pipe and poured a concrete pad at top of hole.							
	254									
	255									
	256									
	257									
	258									
	259									
	260									
	261									
	262									
	263									
	264									
	265									
	266									
	267									
	268									
	269									
	270									
	271									
	272									
	273									
	274									
	275									
	276									
	277									
	278									
	279									
	280									

MW-2



DEPTH	ELEVATION
0.0	452.1
3.5	448.6
35.0	419.1
252.0	200.1

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells SURF. ELEV. 451.8 TOTAL DEPTH 152.0

LOCATION West side of ash pond roadway COORDINATES N 1317744.17 E 632469.58  
South of landfill

ANGLE Vert. BEARING NA CONTRACTOR APCo DRILL NO. 20

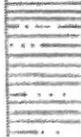
OVERBURDEN DEPTH 3.5 ft. NO. PENT. TESTS NA NO. U.O. SAMPLES NA

CASING SIZE 6" LENGTH 25.0 ft. CORE SIZE NA TOTAL % REC. NA

WATER TABLE DEPTH \_\_\_\_\_ ELEV. \_\_\_\_\_ TIME AFTER COMP \_\_\_\_\_ DATE TAKEN \_\_\_\_\_

TYPE GROUT Cement QUANTITY 9 bags MIX 1 to 1 DRILLING DATE START 01/05/93

DRILLER T. Sillmon RECORDER H. D. Rigsby APPROVED DM7 DRILLING DATE COMP. 01/07/93

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Penetration Test			Sample No.	Fluid Chg. %	Rec %	ROD
				From To	Blows	N				
	0	451.8	Note: Drilled overburden w/a 10 5/8" percussion bit. Surface.							
	1		Reddish-brown clayey sand.							
	2									
	3									
	3.5	448.3	Soft grayish weathered shale w/numerous brown weathered zones.							
	4									
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21	430.8	Harder gray sandy shale.							
	22									
	23									
	24									

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells SURF. ELEV. 451.8 TOTAL DEPTH 152.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	25	426.8	Set 25.0 ft. of 6" P.V.C. casing - continued drilling from this point with a 6" percussion bit.							
	26		Note: Grouted the casing in with 9 bags of 1 to 1 mix.							
	27									
	27.5	424.3	Firm gray sandy shale.							
	28									
	29									
	30		Grayish sandy shale w/numerous brown weathered zones.							
	31									
	32									
	33									
	34									
	35									
	36									
	37									
	38									
	39									
	40									
	41									
	42									
	43									
	44	407.8								
	45									
	46		Hard gray sandy shale.							
	47									
	48									
	49									
	50									
	51									
	52									
	53									
	54									
	55									
	56									

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 451.8

TOTAL DEPTH 152.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	ROD
				From To	Blows	N				
	57		Hard gray sandy shale.							
	58									
	59									
	60									
	61									
	62									
	63									
	64									
	65									
	66									
	67									
	68									
	69									
	70									
	71									
	72									
	73									
	74									
	75									
	76									
	77									
	78									
	79									
	80									
	81									
	82									
	83									
	84									
	85									
	86									
	87									
	88									

# DRILLING LOG

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 451.8

TOTAL DEPTH 152.0

Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCD
				From To	Blows	N				
	89		Hard gray sandy shale.							
	90									
	91									
	92									
	93									
	94									
	95									
	96									
	97									
	98									
	99									
	100									
	101									
	102									
	103									
	104									
	105									
	106									
	107									
	108									
	109									
	110									
	111									
	112									
	113									
	114									
	115									
	116									
	117									
	118									
	119									
	120									

SITE Miller Steam Plant Monitoring Wells

SURF. ELEV. 451.8

TOTAL DEPTH 152.0

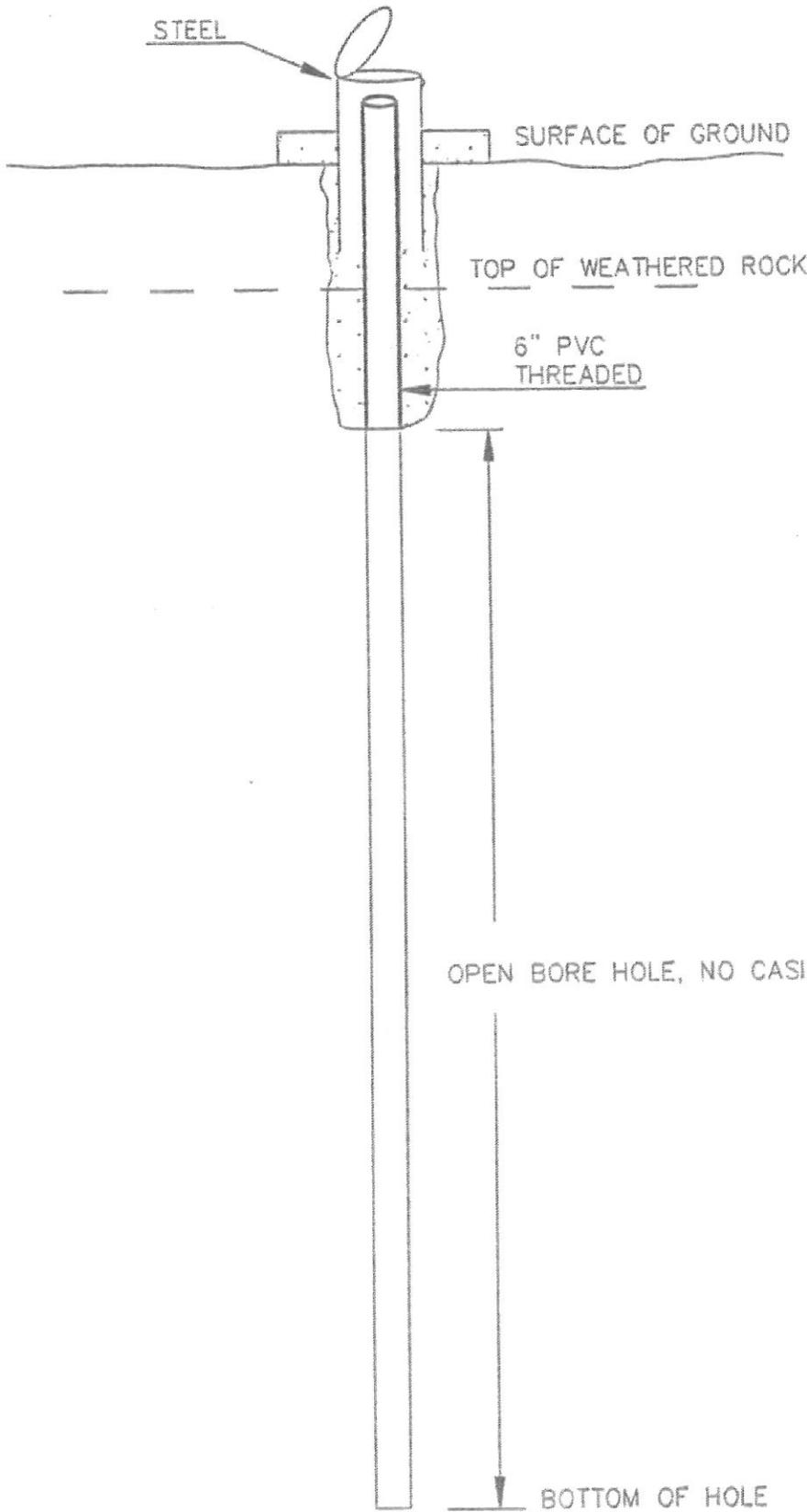
Graphic Log	Depth	Elev.	Material Description, Classification and Remarks	Standard Pen. Test			Sample No.	Fluid Chg. %	Rec. %	RCD
				From To	Blows	N				
	121		Hard gray sandy shale.							
	122									
	123									
	124									
	125									
	126									
	127	324.8	Hit app. 2 G.P.M. water.							
	128		Hard gray sandy shale.							
	129									
	130									
	131									
	132									
	133									
	134									
	135									
	136									
	137									
	138									
	139									
	140									
	141									
	142									
	143									
	144									
	145									
	146									
	147									
	148									
	149									
	150									
	151									
	152	299.8	Bottom of the hole-making app. 2 G.P.M.							

127.0

152.0

Note: Set 5.0 ft. protector pipe and poured a concrete pad at top of hole.

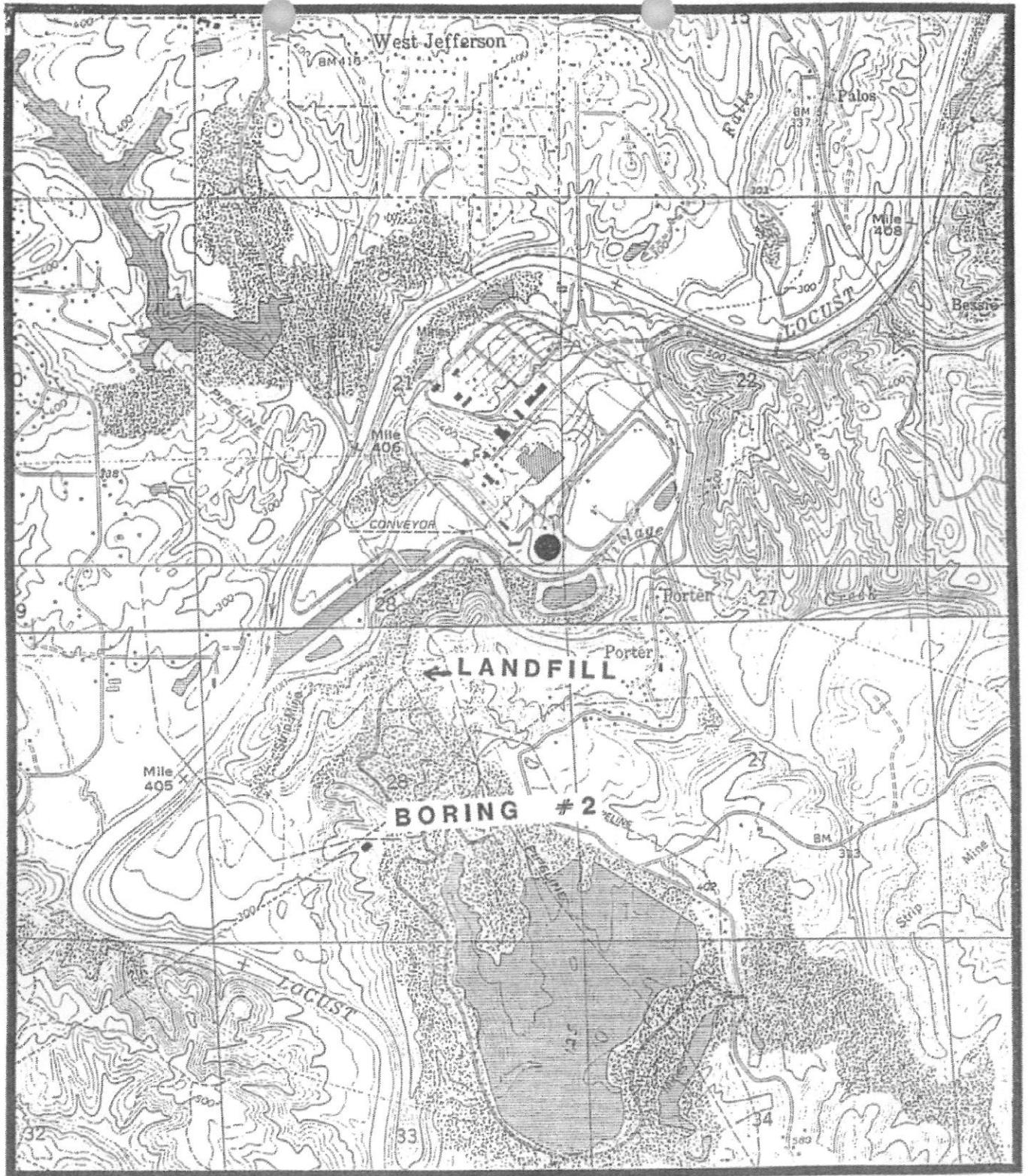
MW-3



DEPTH	ELEVATION
0.0	451.8
3.5	448.3
25.0	426.8
152.0	299.8

**ATTACHMENT B**

**FIGURES**



MILLER LANDFILL

FIGURE 1

**ATTACHMENT C**  
**ALDOT SPECIFICATIONS FOR VEGETATIVE COVER**

## SECTION 857 TEMPORARY TRAFFIC MARKING MATERIALS

### 857.01 General.

The Department has established a list of products approved for use through field tests. These products can be found on List V-3, Temporary Traffic Marking Materials. Information concerning this list is given in Subarticle 106.01(f) and ALDOT-355. The Contractor may choose from any of these products, unless otherwise noted. Although the product durability has been approved, acceptance of the material will still be based on laboratory testing as outlined in List V-3 and the Department's Testing Manual.

## SECTION 860 ROADSIDE IMPROVEMENT MATERIALS

### 860.01 Seed.

#### (a) PURE SEEDINGS.

##### 1. TESTING AND CERTIFICATION.

Seeds shall be certified by an Official Seed Certifying Agency. Seeds shall have been tested within nine months prior to use. Each kind of seed shall be separately packed and delivered to the project in a seed-tight bag. Each bag shall bear a tag or label bearing the seal of the Official Seed Certifying Agency.

The analysis of the seed (% pure seed, % germination, date tested, etc.) shall be attached to each bag. Seed shall be at least 95 % pure seed of the required type. Seed for lespedezas shall have a minimum germination rate of 80 %. Seed for all other species shall have a minimum germination rate of 85 %.

##### 2. SAMPLING AND VERIFICATION TESTING.

Samples of seeds may be taken at any time by the Engineer. Tags or labels that have the analysis of the seeds will be placed with the samples taken by the Engineer. The samples will be stored by the Engineer until a satisfactory stand of grass is obtained. If it is apparent that germination or other problems exist in the establishment of the ground cover, the samples will be submitted to the Alabama Department of Agriculture for testing.

##### 3. HULLED AND SCARIFIED SEEDS.

Bermudagrass may be either hulled or unhulled as shown in the table of seed mixes.

Sericea Lespedeza shall be hulled and scarified.

Annual Lespedeza (Kobe), White Dutch Clover, and Reseeding Crimson Clover shall be hulled.

##### 4. COATED SEEDS.

Coated seeds will not be accepted for planting unless noted otherwise on the plans.

#### (b) SEED MIXES DESIGNATED FOR AREAS OF FREQUENT MOWING.

Some seed mixes are designated for "AREAS SUBJECT TO FREQUENT MOWING". Areas subject to frequent mowing are roadway shoulders, medians and front slopes flatter than 3:1 extending 60 feet beyond the edge of pavement or to the toe of the front slope whichever is less. All other areas designated for seeding shall be considered to be "AREAS NOT SUBJECT TO FREQUENT MOWING".

#### (c) PLANTING ZONES.

The State of Alabama is divided into three planting zones as shown in the following table:

SECTION 860  
ROADSIDE IMPROVEMENT MATERIALS

ZONE 1		ZONE 2		ZONE 3	
Blount	Lauderdale	Autauga	Marengo	Baldwin	Monroe
Calhoun	Lawrence	Bibb	Montgomery	Barbour	Pike
Cherokee	Limestone	Bullock	Perry	Butler	Washington
Clay	Madison	Chambers	Pickens	Clarke	
Cleburne	Marion	Chilton	Russell	Coffee	
Colbert	Marshall	Choctaw	Sumter	Conecuh	
Cullman	Morgan	Coosa	Tallapoosa	Covington	
Dekalb	Randolph	Dallas	Tuscaloosa	Crenshaw	
Etowah	Shelby	Elmore	Wilcox	Dale	
Fayette	St. Clair	Greene		Escambia	
Franklin	Talladega	Hale		Geneva	
Jackson	Walker	Lee		Henry	
Jefferson	Winston	Lowndes		Houston	
Lamar		Macon		Mobile	

(d) SEED MIXES.

Seed mixes shall be mixtures of the types of seeds shown in the following tables. The required weight shown in the chart is the actual seed weight as delivered and takes into account the minimum required percentage of pure seeds and minimum required germination rates.

ZONE 1 - AREAS SUBJECT TO FREQUENT MOWING			
REQUIRED POUNDS PER ACRE {KILOGRAMS PER HECTARE} OF PURE LIVE SEED			
Date of Planting	Aug. 16 to Feb. 29	Mar. 1 to May 15	May 16 to August 15
Annual Ryegrass	10 {11}	25 {28}	
Hulled Bermudagrass			18 {20}
Unhulled Bermudagrass	30 {34}		12 {13}
Annual Lespedeza (Kobe)			38 {43}
White Dutch Clover	5 {6}		6 {7}
Notes	1	2	
Required Permanent Plant	Bermudagrass		
1. During this season Ryegrass, Bermudagrass and Clover are required where vegetation must be established within an area no further than 15 feet {3 m} from the edge of mainline pavement. (This is usually required for short duration work that is done on pavement resurfacing projects.)			
2. Annual Ryegrass is required where vegetation must be established within an area that extends further than 15 feet {3 m} from the edge of mainline pavement. Seeding in stubble for the establishment of permanent vegetation is required during the following month of March.			

ZONE 1 - AREAS NOT SUBJECT TO FREQUENT MOWING				
REQUIRED POUNDS PER ACRE {KILOGRAMS PER HECTARE} OF PURE LIVE SEED				
Date of Planting	Jan. 1 to Feb. 29	Mar. 1 to August 15	Aug. 16 to Nov. 15	Nov. 16 to Dec. 31
Annual Ryegrass	15 {17}			15 {17}
Hulled Bermudagrass		18 {20}		
Unhulled Bermudagrass	35 {39}	12 {13}	18 {20}	35 {39}
Tall Fescue	35 {39}	35 {39}	35 {39}	35 {39}
Weeping Lovegrass		2 {2}		
Hulled Sericea Lespedeza		38 {43}	38 {43}	
Unhulled Sericea Lespedeza	38 {43}			38 {43}
Reseeding Crimson Clover			29 {33}	
Required Permanent Plant	Mixed			

**ATTACHMENT D**  
**ADEM CORRESPONDENCE – OCTOBER 29, 1990**

**ADEM**

**ALABAMA  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

October 29, 1990

Guy Hunt  
Governor

Leigh Pegues, Director

175T Cong. W. L.  
Dickinson Drive  
Montgomery, AL  
36130  
205/271-7700

**Mr. John D. Grogan, Manager  
Environmental Compliance  
Alabama Power Company  
P. O. Box 2641  
Birmingham, AL 35291**

Field Offices:

Unit 806, Building 8  
225 Oxmoor Circle  
Birmingham, AL  
35209  
205/942-6168

P.O. Box 953  
Decatur, AL  
35602  
205/353-1713

2204 Perimeter Road  
Mobile, AL  
36615  
205/479-2336

Dear Mr. Grogan:

This is in response to your request of October 16, 1990, to Mr. Honeycutt of the Solid Waste Branch for a variance of Section 13-4-16 of Division 13 Regulations relating to methane gas testing at the steam plant landfills operated by Alabama Power.

The purpose of testing methane gas is to minimize the fire hazard should gas accumulate as the result of decaying waste. Your request for a variance is based on the distance of the landfill from adjacent property owners and enclosed structures. We concur that due to the distance involved and the type waste disposed, methane gas should not be a problem at the landfill. We are, therefore, granting your variance request.

If you have any questions, please contact the Solid Waste Branch at (205) 271-7726.

Sincerely,

*Leigh Pegues*  
Leigh Pegues  
Director

LP/JH/bbg#3472

**ATTACHMENT E**  
**LANDFILL MAPS**

JEFFERSON COUNTY  
SECTION 28  
T-16-S, R-05-W

MILLER STEAM PLANT  
INERT LANDFILL  
SITE MAP



State of Alabama  
I, the undersigned, Donald S. Bicknell, Surveyor for Jefferson County, do hereby certify that the foregoing plat of land shown in Jefferson County, Alabama contains 9.34 acres of land as shown thereon, and that the same is the property of the Alabama Power Company, as shown thereon, and that the same is being offered for sale to the public by the Alabama Power Company, as shown thereon, and that the same is being offered for sale to the public by the Alabama Power Company, as shown thereon, and that the same is being offered for sale to the public by the Alabama Power Company, as shown thereon.

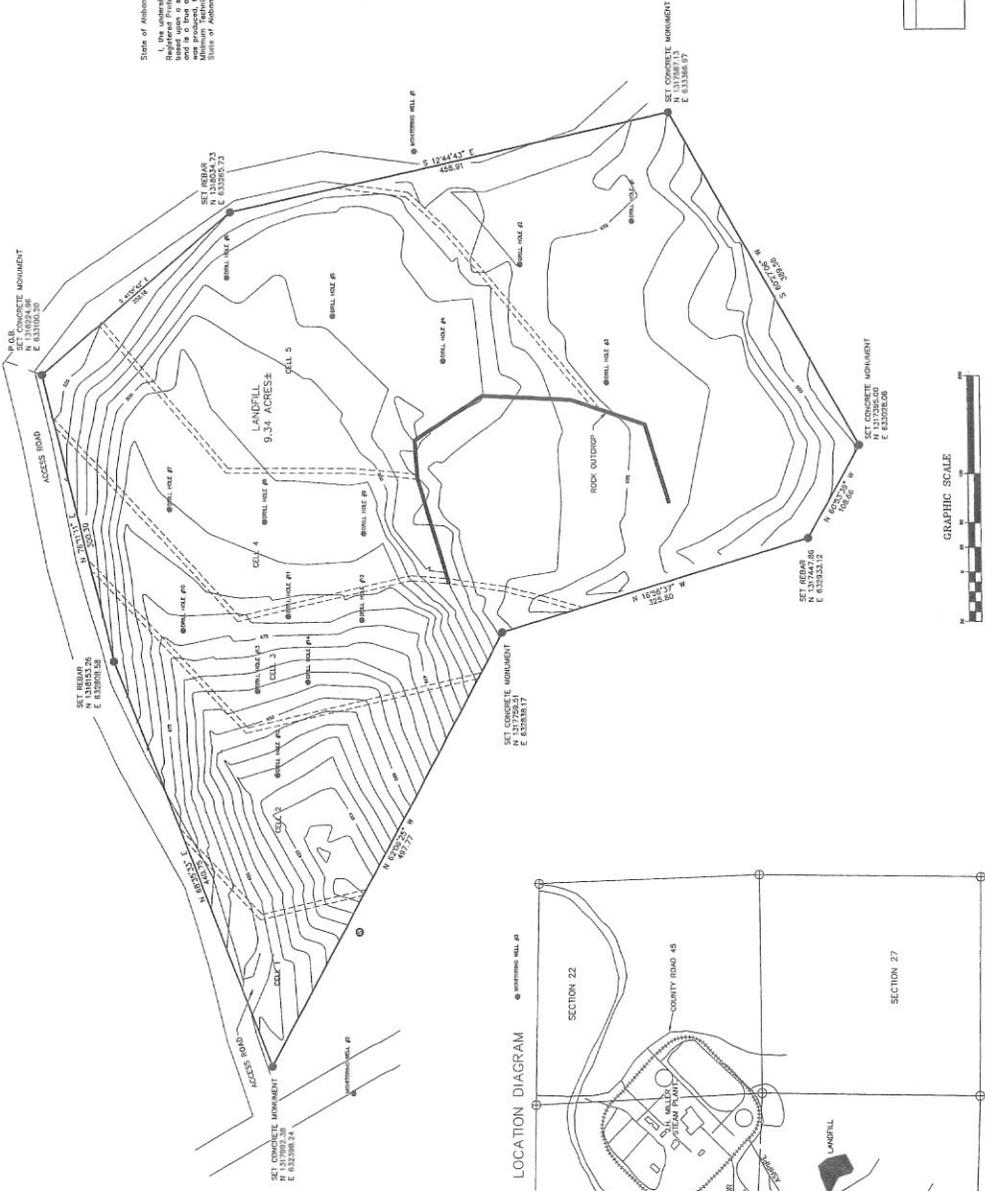
Alabama Power Company

*Donald S. Bicknell*  
Donald S. Bicknell  
Alabama Registrar No. 15101

Boundary Description  
J.N. Miller Steam Plant, Locality  
Jefferson County, Alabama

This plat is a true and correct plat of land shown in Jefferson County, Alabama containing 9.34 acres of land as shown thereon, and that the same is the property of the Alabama Power Company, as shown thereon, and that the same is being offered for sale to the public by the Alabama Power Company, as shown thereon, and that the same is being offered for sale to the public by the Alabama Power Company, as shown thereon.

CORNER CORNER FOR  
SECTION 28  
T-16-S, R-05-W  
E 632617.50  
N 1318743.50



LEGEND  
● SET MONUMENT  
○ DRILL HOLE  
○ SURVEY POINT



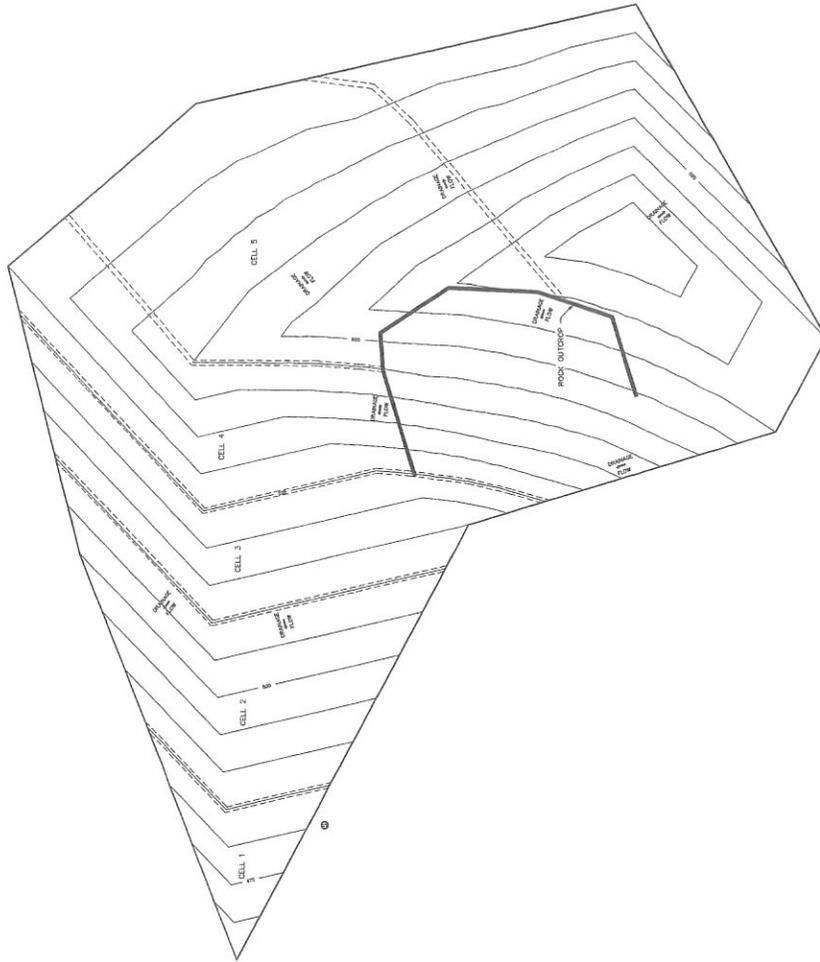
PRODUCED BY: ALABAMA POWER COMPANY  
SURVEYING ENGINEER  
SCIENCE - ONE

ALABAMA POWER COMPANY  
500 NORTH 16th STREET  
MOBILE, ALABAMA  
BY: J.N. MILLER, SURVEYOR  
J.N. MILLER, SURVEYOR  
J.N. MILLER, SURVEYOR

SCALE: AS SHOWN  
SHEET 1 OF 5 SHEETS  
D-376603

DESIGNED BY	DATE
DRAWN	CHECKED
APPROVED	DATE
FIELD SURVEY	DATE
REVISIONS	DATE
REVISION 1: REVISED AND ADDED ACCESS ROAD AND RELATED CELLS TO BE A PART OF CROSS SECTION	01-21-93
REVISION 2: REVISED AND ADDED ACCESS ROAD AND RELATED CELLS TO BE A PART OF CROSS SECTION	01-21-93

MILLER STEAM PLANT  
 INERT LANDFILL  
 PROPOSED TOPOGRAPHY WITH  
 DRAINAGE INDICATORS



PRODUCED BY ALABAMA POWER COMPANY  
 POWER GENERATION TECHNICAL  
 SERVICES - GTR

ALABAMA POWER COMPANY  
 1000 POWER BUILDING  
 MOBILE, ALABAMA 36688  
 JOB: J.H. MILLER STEAM PLANT  
 DETAIL: LANDFILL TOPOGRAPHY

SCALE: AS SHOWN 0/1/1  
 SHEET 2 OF 5 SHEETS  
 SUPERSEDES: D-376603

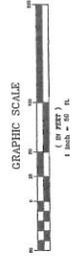
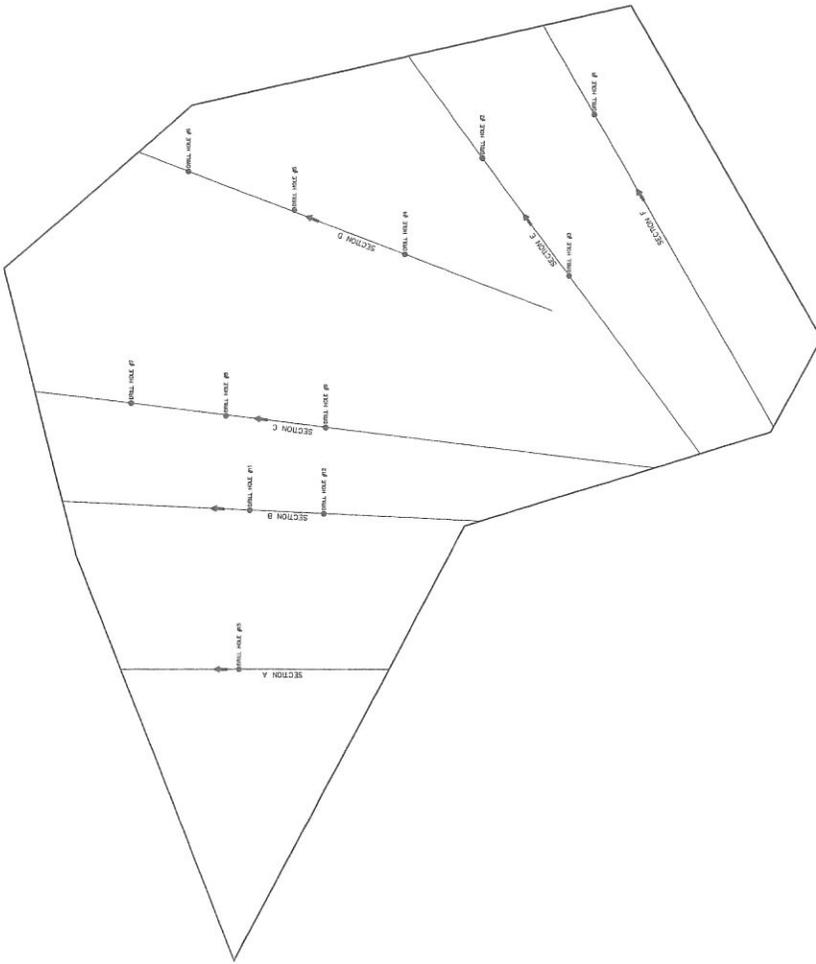
DATE: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 FIELD SURVEY: \_\_\_\_\_

DATE: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_

REVISION 1: 08-10-04  
 AND  
 STAMPED - CHANGED LOC.  
 OF CROSS SECTION

REVISION 2: 01-27-04  
 SELECTED CELLS 6, 7,  
 AND  
 MOVED CELL 5 BOUNDARY

MILLER STEAM PLANT  
INERT LANDFILL  
CROSS SECTION DELINEATION



PRODUCED BY ALABAMA POWER COMPANY  
DESIGNED BY GEORGE W. HARRIS, P.E.  
CHECKED BY JAMES W. HARRIS, P.E.

ALABAMA POWER COMPANY  
100 NORTH VERA STREET  
BIRMINGHAM, ALABAMA

PROJECT: MILLER STEAM PLANT  
JOB NO.: 100-100-100-100-100-100

SCALE: AS SHOWN DATE: 8/11/88

SHEET 3 OF 5 SHEETS

SUPERSEDES: D-376603

DESIGNED BY: JAMES W. HARRIS, P.E.  
DATE: 8/11/88

CHECKED BY: JAMES W. HARRIS, P.E.  
DATE: 8/11/88

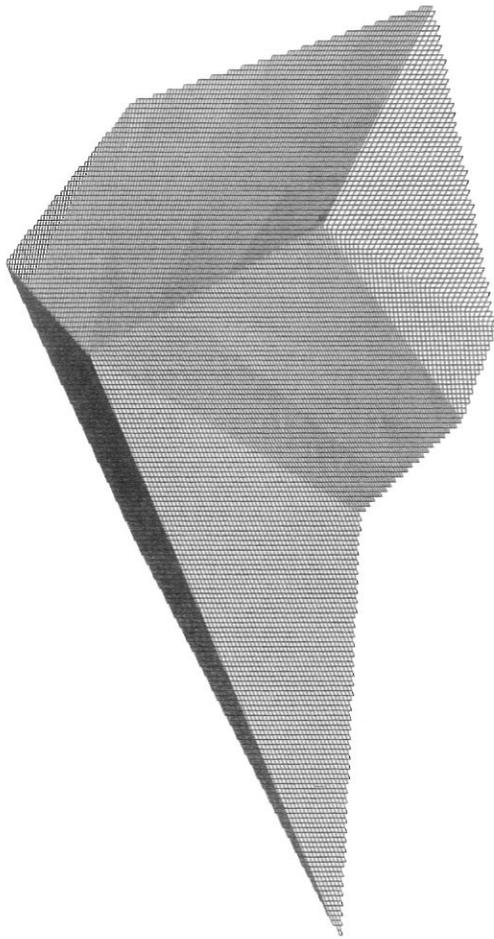
APPROVED BY: JAMES W. HARRIS, P.E.  
DATE: 8/11/88

REVISIONS:  
NO. 1: AS SHOWN  
NO. 2: AS SHOWN  
NO. 3: AS SHOWN  
NO. 4: AS SHOWN  
NO. 5: AS SHOWN

REVISIONS:  
NO. 1: AS SHOWN  
NO. 2: AS SHOWN  
NO. 3: AS SHOWN  
NO. 4: AS SHOWN  
NO. 5: AS SHOWN

REVISIONS:  
NO. 1: AS SHOWN  
NO. 2: AS SHOWN  
NO. 3: AS SHOWN  
NO. 4: AS SHOWN  
NO. 5: AS SHOWN

MILLER STEAM PLANT  
 INERT LANDFILL  
 PROPOSED 3D DRAWING



PREPARED BY ALABAMA POWER COMPANY  
 POWER GENERATION TECHNICAL  
 SERVICES - ONE

ALABAMA POWER COMPANY  
 1000 W. WASHINGTON AVENUE  
 MOBILE, ALABAMA 36688  
 JOB - J.L. MILLER STEAM PLANT  
 SERIAL LANDFILL DESIGN #376603

SCALE AS SHOWN 0/1/1  
 SHEET 5 OF 5 SHEETS  
 SUPERSEDES D-376603

DRAWN \_\_\_\_\_ CHECKED \_\_\_\_\_ DATE \_\_\_\_\_  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 FIELD SURVEY \_\_\_\_\_ DATE \_\_\_\_\_

REVISIONS  
 01-10-74  
 01-10-74

REVISIONS TO BE MADE AND  
 STAMPED, CHANGED LOG,  
 OR CROSS REFERRED.