



Permit No.	Scan Date	DIN
1910-STRUCT-2015	October 6, 2015	25099

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October 6, 2015
Solid Waste Section
Asheville Regional Office

October 5, 2015

Mr. Larry Frost, Environmental Engineer (via electronic mail only)
Permitting Branch, Solid Waste Section
Division of Waste Management, NCDEQ
1646 Mail Service Center
Raleigh NC 27699

APPROVED DOCUMENT
Division of Waste Management
Solid Waste Section
Date October 6, 2015 By

Re: Operations Plan, revised October 2015
Brickhaven No.2 Mine Tract "A", Permit 1910

Digitally signed by
LYF
DN: cn=LYF,
o=DWM, ou=SWS,
email=larry.frost@n
cdeq.gov, c=US
Date: 2015.10.06
10:16:07 -04'00'

Dear Mr. Frost,

On behalf of Green Meadow, LLC and Charah, Inc., HDR provides the attached revised Operations Plan for Permit No. 1910 for the Brickhaven No. 2 Mine Site Tract "A" Structural Fill as requested in your email correspondence dated October 1, 2015.

The attached plan has been revised by the addition of an appendix addressing protection of the northern long-eared bat along with procedures for coal ash transportation, and dust control as required by Permit Condition No. 28.

Should you have any questions, comments, or require additional information, please contact me at 704.338.6843.

Sincerely,
HDR Engineering, Inc. of the Carolinas

Michael D. Plummer, PE
Project Manager

cc: Ed Mussler, NCDEQ (via electronic mail)
Norman Divers, Charah (via electronic mail)
Glenn Amey, PG, Charah (via electronic mail)

Attachments:
Operations Plan, revised October 2015

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Operations Plan

Brickhaven No.2 Mine Tract "A" Structural Fill

Charah, Inc.

Moncure, NC

March 2015
Revised October 2015



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Appendix – Charah Operations Plan, Sept 2015



1 Introduction

1.1 Plan History

The following table provides a brief description of the revisions to the Operations Plan.

Revision	Date of Document	Description of Revisions
Initial Issue	October 15, 2014	Initial issuance of document.
Rev 1	December 31, 2014	Revised per NCDENR Comments DIN 22535
Rev 2	January 14, 2015	Revised per NCDENR Comments DIN 22493

1.2 Purpose

The purpose of this Operations Plan is to provide for the safe and efficient operation of the Brickhaven No. 2 Mine Tract "A" (Brickhaven) Structural Fill. This Operations Plan presents the operational requirements for 1) general facility operations, 2) operations management, 3) erosion and sedimentation control, and 4) vegetation management along with guidance for structural fill closure and required regulatory submittals. The Operations Plan also includes a structural fill life estimate.

The Brickhaven site is located in Chatham County, North Carolina. The site is located at 1149 Moncure-Flatwood Rd., Moncure, NC 27559.

1.3 Contact Information

Correspondence and questions concerning the operation of the Brickhaven site should be directed as follows.

Owner
Green Meadow, LLC
12601 Plantside Drive Louisville, KY 40299
(877) 314-7724
Facility Contact: Mr. Charles E. Price

Operator
Charah, Inc.
12601 Plantside Drive Louisville, KY 40299
(502) 245-1353
Operations Contact: Mr. Scott Sewel

1.4 Safety

Operations at the Brickhaven site were developed considering the health and safety of the facility's operating staff. The operating staff is provided with site-specific safety training prior to operations, and onsite activities are to be conducted according to the applicable sections of the Operator's Health and Safety Plan which shall be written to comply with all applicable OSHA standards. The Operator will prepare an Emergency Action Plan to address potential emergency situations at the site.

1.5 Access and Security Requirements

Security for the site consists of fencing, gates, berms, and wooded buffers. Unauthorized vehicle access to the site is prevented around the property by woodlands, fencing, gates, and stormwater conveyance features.



The access road to the site is of all-weather construction and will be maintained in good condition. Potholes, ruts, and debris on the road(s) will receive immediate attention in order to avoid damage to vehicles.

1.6 Equipment

In accordance with NCGS §130A-309.216 (a) (4) “[e]quipment [will] be provided that is capable of placing and compacting the coal combustion products (CCP) and handling the earthwork required during the periods that CCPs are received at the fill project.” The structural fill site will have sufficient equipment to provide structural fill placement and compaction operations. Where possible, spare or substitute equipment will be provided as needed. If spare or substitute equipment is not available, other equipment may be obtained from other onsite operations. If other equipment is not available after 14 days, arrangements will be made for replacement equipment until the original equipment can be placed back in service.

1.7 Operating Hours

The Brickhaven Site is open for operation between the hours of 7:00 AM and 7:00 PM, Monday through Saturday. It is anticipated that this schedule will continue; however, operational hours may change as the need arises.

1.8 Signs

A sign providing facility name and operating hours will be posted at the site entrance and shall be maintained in good condition. Additional signs may be posted to facilitate facility operations as needed.

1.9 Training

Due to the diversity and nature of job tasks required at the site, personnel shall be adequately trained to handle facility operations and maintenance.

The Site Superintendent shall have a general understanding of all the tasks required for site operations. Individuals performing the various tasks shall have adequate training for the site-specific tasks they are assigned.

Noteworthy operations and maintenance tasks to be addressed in training include:

- Maintaining accurate records of fill loading (quantitative and qualitative)
- Operating requirements for stormwater segregation from exposed CCP material
- Operating and maintaining the leachate collection system (LCS)

1.10 Recordkeeping

An operating record is to be maintained onsite and include the following records.

- Leachate Collection System – Maintenance Documentation & Disposal Records
- Erosion and Sedimentation Control Inspection Logs
- Groundwater Monitoring (and Sampling) Report
- Precipitation Totals

- Daily Operation Record
- Employee Training Records and Materials
- or anything else as indicated in the Operations Plan

The above records are to be kept in the operating record for the active life of the Brickhaven site and the 30-year post-closure period. Information contained in the operating record must be furnished upon request to the North Carolina Department of Environment and Natural Resources (NCDENR). Additional records kept onsite should include the following.

- Facility Permit Application
- Facility permits
- Record of the amount of structural fill placed on a monthly basis
- Regulatory agency inspection reports
- Construction documents
- Employee training records
- As-built drawings and specifications
- Health & Safety Plan
- Emergency Action Plan

1.11 Permit Drawings

Permit drawings are included in the structural fill permit application.

2 Operations Management

The primary objective of operations management at the Brickhaven site is to place structural fill in the form of CCPs in compliance with permit conditions while operating in a safe manner. Prior to placement of CCP in a new cell, new subcell, or portion of a new subcell, the Owner will submit to NCDENR the Construction Quality Assurance documentation for the constructed base liner for review. Should any discrepancies be indicated, NCDENR will contact the Owner for follow up. Placement of CCP in new cell, new subcell, or portion of a new subcell prior to approval by NCDENR will be at the owner's risk.

The structural fill site has been designed to provide separation of contact water from non-contact water. Contact water is defined as water that contacts CCP material within the geomembrane lined limits of structural fill. Contact water will be managed as leachate while non-contact water will be managed as stormwater. Contact water and non-contact water separation are further described in subsequent sections of this plan.

Filling operations will generally proceed from low to high. The working face will be limited to as small an area as practical, at the owner's discretion. Contact water from the active face will be directed to the leachate collection system.

Intermediate cover will be placed as CCP fill reaches final grades to prevent contact water from entering the stormwater control features.

2.1 Structural Fill Placement and Sequencing

2.1.1 Structural Fill Capacity

The total anticipated airspace capacity for the Brickhaven structural fill is approximately 9.2 million cubic yards and is based on a proposed 145-acre fill area.

2.1.2 Structural Fill Acceptance Requirements

In accordance with NCGS §130A-309.216 (a) (2) CCPs shall be collected and transported in a manner that will prevent nuisances and hazards to public health and safety. CCPs shall be moisture conditioned, as necessary, and transported in covered trucks or rail cars to prevent dusting. The Brickhaven structural fill can accept CCPs defined as fly ash, bottom ash, boiler slag, or flue gas desulfurization materials in accordance with NCGS §130A-309.216 (4).

In accordance with NCGS §130A-309.215 (b) (1) d, a Toxicity Characteristic Leaching Procedure (TCLP) analysis has been performed on a representative sample from Duke Energy's Sutton Plant and Riverbend Steam Station CCP sources to be used in the structural fill project. Each was analyzed for, at a minimum, the following constituents: arsenic, barium, cadmium, lead, chromium, mercury, selenium, and silver. The TCLP results are included in the Related Documents section of this application. TCLP tests will be performed on each new ash source and at least annually for each source.

Asbestos containing material will not be placed in the structural fill site. In addition, the removal of CCP structural fill material from the site is prohibited without owner approval. Structural fill will be hauled and placed by dedicated and consistent operators.

2.1.3 Fill Sequencing

The Brickhaven structural fill will be developed in sequence from Phase 1 through Phase 3. CCP product will be placed in three to five foot operational lifts, low to high. A conceptual schematic of fill sequencing from low to high is included in the permit drawings; however, actual fill sequencing and lift heights may be modified at the Owner's discretion. More than one cell may be operational at a time. The cells are also subdivided into subcells.

The following procedure shall be followed to activate an area for leachate collection prior to placing CCP.

- Remove all stormwater (i.e., water that has not contacted ash) ponded within the area. Stormwater may be pumped directly into the perimeter channel.
- Open the leachate valve. Ensure the valve is opened fully.
- Remove the rain flap by cutting above the weld to the sacrificial liner above the primary geomembrane (refer detail 8 on Drawing 01C-08). Visually inspect the area to confirm the integrity of the base liner. If the base liner appears damaged, repair it in accordance with the technical specifications.
- Document on a site plan the location of the subcell where the stormwater valve was closed, the leachate valve was opened, the rain flap was removed, condition of the base liner, and the specifics of any repairs that were made. Place the documentation in the operating record.

2.1.4 Fill Placement

Structural fill placed at the site will be transported to the facility via railcar or highway-rated vehicles. Upon reaching the site, off-road equipment may be utilized, within the facility boundary, to transport material to the active working area. After initial placement, additional operational equipment generally consisting of vibratory smooth drum rollers, sheepsfoot compactors, bulldozers, water trucks, spray trailers, track hoes, and service trucks may be utilized in fill placement.

Fill progression will be maintained to provide controlled drainage of contact water to the leachate collection system and stormwater runoff to the stormwater benches and perimeter ditches. No fill shall be placed in standing water.

2.1.5 Compaction Requirements and Testing

After the bottom liner is placed and approved, CCP placement may begin. The initial CCP lift placed should be two to three feet thick to protect the liner system. The initial lift shall be placed in a manner that minimizes development of folds in the geosynthetics. The surface should be lightly compacted to help avoid potential damage to the liner system.

Subsequent lifts of CCP should be placed in 12-inch thick loose lifts and compacted to at least 95 percent of its Standard Proctor (ASTM D698) maximum dry density. It may be necessary to adjust the moisture content of the CCP fill to achieve the specified compaction.

2.1.5.1 IN-PLACE DENSITY AND MOISTURE CONTENT TESTING

In-place density and moisture content testing shall be performed at a minimum frequency of one test per 10,000 tons placed. CCP shall be compacted to a minimum 95 percent of its Standard Proctor (ASTM D698) maximum dry density. Compacted moisture content shall be within five percent of the material's optimum moisture content as determined by ASTM D698. If field density tests indicate that the relative compaction or moisture content requirements are not met, the material shall be moisture conditioned and/or re-worked and re-tested until the compaction density and moisture requirements are met. The field density testing report should document any failing tests and re-work required to meet testing requirements.

In-place density tests shall be performed using the Sand Cone Method (ASTM D1556), Drive-Cylinder Method (ASTM D2937), or Nuclear Method (ASTM D6938). If the nuclear method is selected, a minimum of one comparison density test using the Sand Cone or Drive Cylinder method shall be performed for every three nuclear density tests, and correlations between the test methods shall be developed and reviewed by the Engineer. A sample of CCP material shall be collected from each density test location and placed in a sealed container for subsequent field and laboratory moisture testing.

A family of Proctor curves shall be developed for the onsite CCP material as standard Proctor moisture-density tests are performed as a reference for the field density testing. Laboratory proctors shall be conducted at one test per 50,000 tons of CCP placed. A minimum of one (1) one-point field Proctor test shall be performed for each week of field density testing or if there is a noticeable change in material. Additional Standard Proctor samples shall be obtained and tested if one-point Proctor testing indicates that the estimated maximum dry density of the



material varies by more than five pounds per cubic foot (pcf) from the nearest representative standard Proctor moisture-density relationship as determined by the one-point Proctor method.

Field moisture content testing shall be performed for each density test using the Direct Heating Method (ASTM D4959). The Nuclear Method (ASTM D6938) shall not be used for moisture content testing on the CCP material. Comparison laboratory moisture content testing shall be performed using the Oven Method (ASTM D2216), at an oven temperature of 60 degrees Celsius. The laboratory moisture content shall control in the event of a discrepancy between laboratory moisture content and in-place moisture content.

2.1.5.2 LABORATORY TESTING

Laboratory moisture content testing shall be performed in conjunction with the field density testing as described above. The laboratory moisture content testing shall be performed using the Oven Method (ASTM D2216), at an oven temperature of 60 degrees Celsius.

2.1.6 Cover Requirements

2.1.6.1 INTERIM COVER SOIL

Interim cover soil should be applied, as needed, for dust control and stormwater management. The interim cover may be applied at a thickness suited to its purpose. For example, the interim cover soil may be applied in thinner layers to provide dust control and it may be applied in thicker layers where protection from surface erosion is desired.

Interim cover layer may be placed on exterior slopes and in areas where final structural fill grades have been reached. Interim cover will be seeded within seven days in accordance with erosion and sediment control requirements. Vegetation shall be removed and the interim cover soil shall be scarified or removed prior to placing any overlying CCP material or final cover system. Interim cover soil is not required, but may be used to protect the CCP materials and segregate contact water from stormwater.

2.1.6.2 FINAL COVER

The final cover consists of a six foot thick system of layers for the top slopes and a four foot thick system of layers for the sideslopes. Each area has two options. Option 1 has a one foot thick drainage soil placed directly above the HDPE geomembrane. Option 2 replaces the drainage layer soils with unclassified soils and has a geocomposite placed immediately above the HDPE geomembrane. See the table below and the details on the drawings for additional information.

Layer	Sideslope Option 1	Top slope Option 1	Sideslope Option 2	Top slope Option 2
Topsoil	6 inches	6 inches	6 inches	6 inches
Low Perm Soil	12 inches	12 inches	NA	12 inches
Unclassified Soil	18 Inches	42 inches	42 inches	54 inches
Drainage Soil	12 inches	12 inches	NA	NA
Geocomposite	Not used	Not used	used	used
HDPE Geomembrane	40 mil	40 mil	40 mil	40 mil



The final cover system construction for the structural fill site will begin 30 working days or 60 calendar days, whichever is less, after CCP placement completion unless otherwise approved by NCDENR.

Please refer to the Closure/Post-Closure Plan included in this Permit Application for final cover specifications and maintenance requirements.

2.1.7 Dust, Litter, Odor, and Vector Control

Litter, odors, and vectors are not anticipated to be concerns. The material placed in the structural fill does not attract vectors, and windblown material is not anticipated to be a problem. Additionally, CCP materials are not typically associated with odors.

2.1.7.1 DUST CONTROL

In accordance with NCGS §130A-309.216 (a) (9) “[t]he structural fill project [will] be operated with sufficient dust control measures to minimize airborne emissions and to prevent dust from creating a nuisance or safety hazard and shall not violate applicable air quality regulations.”

The primary potential source of dust emissions on site is the top deck area and active area of structural fill placement. These areas are at a higher risk for producing dust due to vehicular and equipment traffic and earthwork-like construction. Exterior slopes are less of a dust control concern, as they have interim cover soil which is vegetated.

Dust emissions can be controlled through a variety of methods identified herein. Dust control methods may be characterized as products and/or applications, structural wind breaks and/or covers, and operational methods.

Dust control methods for the facility include the following.

- Watering
- Establishing vegetative cover
- Mulching
- Structural controls consisting of:
 - Wind breaks (i.e. fencing and/or berms), and
 - Temporary coverings (i.e. tarps)
- Spray applied dust suppressants consisting of, and not limited to:
 - Anionic asphalt emulsion,
 - Latex emulsion,
 - Resin in water,
 - Polymer based emulsion, and
 - Mineral mortar coatings (i.e. posi-shell)
- Calcium chloride
- Soil stabilizers (i.e. soil cements)
- Operational soil cover
- Modifying the active working area
- Modifying operations during dry and windy conditions



The operator may use, and is not limited to, combinations of these dust control methods or any method that is technically sound to control dust for specific site conditions. If the operator intends to use a dust control method not presented above, the proposed dust control method will be evaluated on a case by case basis to assess the effectiveness with specific site conditions. For the purposes of this Operations Plan, interim cover soil will be defined as soil material applied at a suitable thickness to provide dust control.

The effectiveness of the dust control methods implemented should be evaluated through visual observations of dust prone areas. Equipment operators shall continuously observe the active face and other areas within the facility for dust emissions.

If fugitive dust emissions are observed and observations indicate dust control measures are not achieving their intended purpose, then appropriate corrective actions will be taken. Dust control measures should be reapplied, repaired, or added, as necessary, to control dust emissions. The operator will construct, install, apply, and/or repair dust control measures prior to the end of the work day to control dust emissions during non-operating hours. The operator shall also implement dust control measures as preventative controls rather than in response to fugitive dust emissions.

A wheel wash system may be necessary to minimize dust and tracking of CCPs outside the facility.

2.2 Leachate and Contact Water Management

In accordance with NCGS §130A-309.216 (a) (5) “[t]he [CCP] structural fill project [will] be effectively maintained and operated as a nondischarge system to prevent discharge to surface water resulting from the project.”

As previously described, the structural fill site has been designed to provide separation of contact water from non-contact water (stormwater). Contact water will be treated as leachate and conveyed to the LCS. Contact water which contacts exposed CCP material within the lined footprint will be conveyed through the LCS. Stormwater will be routed to onsite sediment basins prior to discharge from the site.

2.2.1 Leachate Collection System

The LCS includes a synthetic composite drainage layer and leachate collection pipes with clean-outs. Leachate generated in each cell drains by gravity via perforated header pipes to a series of sumps and then pumped to a central lift station where it is then pumped into a 1,000,000 gallon storage tank with a secondary containment. Leachate will either be transported to a wastewater treatment plant or discharged directly into a sanitary sewer system.

All loading of leachate tankers will take place on the loading pad next to the storage tank. Prior to loading the operator will insure that the leachate diverter valve is open on the drain pad so any leachate that may be spilled during loading operations will drain back into the lift station.

It will be the responsibility of the tanker operator to ensure that the load is within legal transportable limits. If the load exceeds permissible limits then the tanker operator will:

- Go back to the loading drain pad
- Verify that the leachate diverter valve is open
- Discharge a quantity of leachate sufficient to meet the maximum transport weight capacity

The owner is responsible for the operation of the leachate collection and removal system and for maintaining the system as designed for the life of the structural fill and the post-closure period. The department may allow the constructor or operator to stop managing leachate upon a satisfactory demonstration that leachate from the project no longer poses a threat to human health and the environment. Leachate shall be collected and treated as necessary so that water quality standards and criteria are not violated. A recording rain gauge will be maintained onsite to record precipitation at the structural fill site. Precipitation records are included with the operating record and are maintained and used by the Operator to compare with leachate generation rates.

2.2.2 LCS Maintenance

The maintenance of the leachate collection system's physical facilities (consisting of high-density polyethylene (HDPE) piping and storage unit(s)) and records will be performed by or under the direct supervision of the Owner or Owner's representative. Visual observations of proper LCS performance will be made periodically to verify that the LCS is performing properly.

New leachate collection systems will be water pressure washed and inspected by video recording prior to putting the system into service. Until the structural fill unit is closed, the system will be re-inspected by video once every two years, then cleaned if video indicates a concern. If it becomes apparent that the system is not functioning properly, it may be inspected by video. Records of the collection system cleanings and inspections shall be kept onsite. A report shall document each video and/or cleaning activity and shall include the following details at a minimum.

- General details (a signed letter/report with company name that performed the cleaning/video inspection, dates & time for jet-cleaning/video inspection, any historical issues associated with jet-cleaning/video inspection, etc.)
- Pipe IDs that were jet-cleaned/video inspected; for example: Cleanout 1 was jet cleaned/video inspected
- Length of each pipe jet-cleaned/video inspected; for example: Cleanout 1 was jet cleaned/video inspected for 400' feet
- Any obstruction or unusual situation that occurs during jet-cleaning/video inspection. For example: Cleanout 2 was jet cleaned 20' only as pressure hose did not go beyond
- The maintenance frequency of the LCS may be modified based on consecutive inspection results and observed operating conditions

2.2.3 LCS Recordkeeping and Sampling

. Untreated leachate shall be sampled and analyzed at least semi-annually concurrently with the groundwater sampling. Leachate will be sampled as a composite grab sample from the effluent line of the leachate collection system. The leachate must be analyzed for the same constituents

as the groundwater monitoring wells in the Water Quality Monitoring Plan include with the Design Hydrogeological Report contained in this Permit Application. The results must be submitted to NCDENR with groundwater results.

2.3 Stormwater Management System

The stormwater management system includes slope drains, culverts, perimeter channels, etc., that convey stormwater to the sediment basins. Stormwater that does not come in contact with structural fill will be treated as non-contact water. To improve operations, stormwater should be diverted from the active area. Excessive surface water at the working face creates difficulties for maneuvering equipment and prevents the operator from achieving maximum compaction of structural fill. To divert stormwater runoff away from the working face, temporary diversion berms may be installed as dictated by the direction of grade. In addition, interim soil cover may be placed over structural fill that has reached final grade. This cover will be uniformly graded and compacted to prevent the formation of erosion channels. In the event that channels do form, the cover should be promptly repaired.

Typically, all stormwater runoff that has not contacted structural fill will be drained from the active fill areas and routed to the peripheral drainage channels that surround each working area. The stormwater channels, culverts, and sedimentation ponds are designed to convey, and discharge all stormwater runoff from a 25-year, 24-hour-duration storm event. Within the active portion of the site, all working areas are to be maintained and graded to allow stormwater to flow away from the active face and toward the peripheral drainage channels. Interceptor berms to control the flow of runoff from the surface are to be constructed so that runoff will not be allowed to cascade down the side slopes.

The stormwater management system within the structural fill boundary will be constructed during each phase of partial closure. A series of diversion berms and slope drains to control the flow of runoff from the finished and capped structural fill will be used. These berms and pipes will assist in the prevention of erosion damage to the structural fill's final cover. The stormwater management structures will be in accordance with the closure plan for the full buildout. Minor modifications to the locations of berms, inlet structures, and slope drains may be required depending on the prevailing grades of the structural fill cover at the time of closure due to settlement. If such modifications are needed, an investigation will be performed to confirm that worst case input parameters will not be exceeded. If any of the worst case input parameters exceed the design, original calculations will be revised prior to closure to confirm that original design intent is met.

The stormwater management system outside the structural fill footprint will be constructed along with each cell construction. The stormwater channels are constructed around the perimeter of the site as shown on the closure plan so that stormwater from the closed fill areas will flow into these ditches and then into the stormwater detention ponds. The stormwater detention areas are designed to control all runoff from this nearly impervious final cover cap.

Stormwater collection and conveyance measures will be inspected and maintained in accordance with the current Erosion and Sediment Control Plan.

The following shall be performed on all permitted systems.

- Removal of debris, if any
- Inspection of inlets, outlets and culverts
- Removal of sediments when the storage volume or conveyance capacity of the system is below design level or when the system is rendered ineffective on account of clogging/sedimentation of the pond bottom
- Any breach of the system's integrity shall be immediately repaired. Whenever erosion is detected, measures shall be taken to stabilize and protect the affected area
- Mowing and removal of grass clippings

2.3.1 Stormwater Discharge

The stormwater system at the site was designed to assist in preventing the discharge of pollutants. Structural fill operation shall not cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirement of the Clean Water Act, including but not limited to NPDES requirements, pursuant of Section 402. In addition, under the requirements of Section 404 of the Clean Water Act, the discharge of dredge or fill material into waters of the state that would be a violation of the requirements shall not be allowed.

Operations of the site shall not cause the discharge of a non-point source of pollution to waters of the United States, including wetlands, that violates any requirements of an area-wide or statewide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.

2.3.2 Contact and Stormwater Maintenance Requirements

All drainage features (i.e., diversion ditches, berms, risers, discharge pipes, etc.) will be inspected and maintained in accordance with the current E&SC Plan and documented for signs of damage, settlement, clogging, silt buildup, or washouts. If necessary, repairs to drainage control features will be made as early as practical. The stormwater controls and/or erosion control measures shall be employed to correct any erosion which exposes CCP or causes malfunction of the stormwater management system. Such measures shall be implemented within three days of occurrence. If the erosion cannot be corrected within seven days of occurrence the structural fill site operator shall notify the Department and propose a correction schedule.

2.4 Water Quality Monitoring Requirements and Management

In accordance with NCGS §130A-309.216 (a) (6) "[t]he structural fill project [will] be effectively maintained and operated to ensure no violations of groundwater standards adopted by the Commission pursuant to Article 21 of Chapter 143 of the General Statutes due to the project." Groundwater and surface water will be monitored in accordance with the Water Quality Monitoring Plan which can be found in the facility permit application.

Groundwater monitoring wells are located around the facility's perimeter. A readily accessible, unobstructed path shall be maintained so that monitoring wells may be accessed using four-wheel drive vehicles. Care must be taken to prevent any damage to the wells.

3 Erosion and Sedimentation Control

Erosion and sedimentation control (E&SC) during filling operations will consist of monitoring and repairing E&SC stormwater conveyance features and surface erosion as defined in this Operations Plan and the current E&SC plan. Monitoring and maintenance of the E&SC system will be in accordance with the current E&SC Plan.

4 Vegetation Management

Vegetation will be established to minimize erosion and to ensure no visible CCP migration to adjacent properties. Temporary and permanent seeding will be applied as required. Temporary and permanent seeding will be applied in accordance with the Seeding Technical Specification (02485) in the permit application.

5 Site Closure

The Brickhaven structural fill will be closed in accordance with the design drawings and Closure/Post-Closure Plan. The Closure/Post-Closure Plan outlines the sequence for closing the site and the post-closure maintenance activities. Closure is designed to minimize the need for long-term maintenance and to control the post-closure release of contaminants. Closure activities may be revised as appropriate for materials, specifications, technology advancements, or changes in regulations at the time the site is closed or in post-closure. In general, the site development is designed so that final cover can be established as soon as practical.

6 Required Regulatory Submittals

Water Quality Monitoring Reports will be submitted to NCDENR in accordance with the Water Quality Monitoring Plan included in the Design Hydrogeologic Report included in this Permit Application.



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Appendix – Charah
Operations Plan, Sept 2015

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OPERATIONS PLAN

**BRICKHAVEN MINE SITE
STRUCTURAL FILL PERMIT
NO. 1910-STRUCT-2015**

**SEPTEMBER 3, 2015
REVISED September 11, 2015**



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1.0 Long-Eared Bat Compliance Plan

1.1 Introduction and Purpose

Charah and the United States Fish and Wildlife Service have agreed that a moratorium on all tree felling services in support of site preparation for the Brickhaven Mine Site in Moncure, North Carolina will occur between May 15 and August 15 of the corresponding year. This agreement is stated in correspondence dated March 20, 2015 and subsequent emails on August 22, 2015.

Project Execution Plans will define and demonstrate the activities to be employed by Charah and/or its subcontractors in order to accomplish the defined scope of work. Utilizing a thorough thought process and drawing from past experience, Charah will accomplish the work as defined below. Work activities will be performed in accordance with Charah's policies and procedures, including Charah's Site Health and Safety Plan.

1.2 Work Sequence / Methods

Work will proceed upon completion of a review of the Project Execution Plan which will specifically state the dates that tree felling activities may take place. No tree felling will be performed at night.

Measures are in place should a situation arise that would create the need for a change to the proposed scope of work. These measures will begin with stopping work and leaving the work area in a safe condition. All pertinent personnel will be gathered to discuss the situation and the possible change of scope. If a solution can be resolved onsite with personnel present, then appropriate changes will be made to the Job Hazard Analysis (JHA) and the Safe Start (SS) and discussed among all personnel involved with the work before implementing the change. If a solution cannot be resolved onsite with personnel present, then the proposed change will be carried up to the level of supervision needed to determine if the change can be approved.

2.0 Ash Transportation Plan

2.1 Truck Unloading Procedures

2.1.1 Purpose

To receive ash by truck and prevent injuries, incidents, and environmental incidents during truck unloading operations on our jobsites, the following measures are to be implemented by contractors, subcontractors, vendors, and project personnel when unloading ash.

The procedure is designed to keep truck drivers and project personnel safe while ash is being unloaded at the structural fill.

2.1.2 Definitions

Operator – an authorized person who is trained to operate the material handling equipment being used and understands the requirements of this procedure.

Safe Zone – area that is clear of any potential caught in/struck by hazards or falling objects. This is the area where all pedestrians will remain while material handling equipment is being operated. This is where truck drivers, spotters, and/or other personnel will stay during and unloading operations.

Spotter – a person who provides direction through the use of hand signals and/or voice commands to material handling equipment operators and keeps pedestrians away from the Exclusion Area/NO GO Zone. Spotters are required when mobile equipment is traveling in reverse, being operated in a congested area, and/or used near plant equipment.

Exclusion Area/NO GO Zone – provides sufficient area for the operator to safely unload materials.

Contract Hauler – subcontracted outside hauling company hired to haul ash from origination point to Brickhaven

2.1.3 Roles and Responsibilities

2.1.3.1 Supervision

Responsible for ensuring contractors and employees are adhering to the Truck Unloading Procedure. The site construction manager may delegate responsibilities, as needed, to ensure that compliance is achieved.

Ensure employees and contractors have received training and necessary resources are available to fully implement and follow the requirements of this procedure

2.1.3.2 Contract Hauler

Contract hauler is responsible for ensuring trucks arrive at Brickhaven safely and in compliance with NCDOT standards. Contractor driver is responsible for providing site security a weight ticket upon

arrival. Contractor driver is responsible for retracting tarp prior to dumping ash within the designated structural fill area by either manual or automated means and methods.

2.1.3.3 EHS Professionals

Responsible for providing comments to and/or discussing issues/ deficiencies with Project Management/Supervision to help ensure potential hazards and safe work practices/control methods are adequately addressed in job plans and contractor Job Hazard Analyses (JHAs).

Communicate Truck & Unloading Procedure requirements (i.e., site orientation) to appropriate personnel (e.g., contractors and vendors) and affected persons (e.g., employees and visitors) to help ensure Exclusion Areas/NO GO Zones are established and pedestrians do not enter these restricted areas and remain in a Safe Zone while trucks are being or unloaded by material handling equipment.

Monitor, evaluate, and help improve truck and unloading work practices based on field observations, near misses or incidents, and changing company requirements.

Provide Project Management/Supervision with the information needed regarding non-compliance and unsafe conditions or at-risk behaviors regarding procedural violations.

2.1.3.4 Material Handling Equipment Operator

Shall be trained to operate the type and size of equipment being used. They must understand the requirements of this procedure and follow them.

Responsible for conducting a 360-degree, pre-task inspection of material handling equipment, and work location to safely perform the work task.

Material handling equipment operator must STOP if an unauthorized person or vehicle enters the Exclusion Area/NO GO Zone, communication is broken with the spotter, or something unexpected occurs the unloading process.

Ultimately has control and authority of the unloading operation (i.e., similar to a crane operator who is responsible for the crane and lift).

Material handling operator may also serve as the spotter during structural fill operations.

2.1.3.5 Spotter

Must be trained as a spotter and understand the requirements of this procedure.

3.5.2 Spotter will either be an individual on the ground or the designated material handling operator.

Provides direction to the material handling equipment operator through the use of hand signals and/or voice commands.

Responsible for monitoring the work location to help ensure pedestrians and vehicular traffic stay clear of the Exclusion Area/NO GO Zone and ensure affected personnel remain in the SAFE ZONE.

Immediately alerts or warns the material handling equipment operator if a potential hazard or problem is detected, such as a shifting load, approaching vehicles, or an unauthorized person enters the Exclusion Area/NO GO Zone.

2.1.3.6 Site Workers and Visitors

Individuals shall comply with the requirements of the Charah site safety policy.

All individuals are required to follow the rules and expectations regarding Exclusion Areas/NO GO Zones and stay out of these areas while material handling equipment is being operated, unless the mobile equipment has stopped and authorization has been granted.

Provide management/supervision with information regarding unsafe conditions or at-risk behaviors associated with procedural violations.

2.1.4 Pre-Task Discussion and Inspection

Drivers or other personnel shall not remove tie down straps, tarps, or locking devices until the truck has reached the final area or spot where it will be unloaded.

Prior to commencement of unloading activities, the material handling operator, spotter, and any other associated personnel shall perform the following: (Drivers are not included in pre-job brief at the Brickhaven site. Drivers are controlled by signage, spotters, and bulldozer operator directed while onsite.)

A Pre-Job Brief and/or Task Safety Analysis (TSA) will be performed and written to document what was discussed and capture all potential hazards and control methods (See Attachment 1).

The Pre-Job Brief or TSA should be completed daily and conducted by the supervisor assigned to the truck unloading operation.

All Charah personnel associated with the activity will discuss how the material will be unloaded.

Ensure the operation is performed on level ground to prevent shifting/ rolling materials.

Only stable or safely arranged loads should be handled. Unstable loads will be removed from the truck with the use of an excavator to remove sufficient material to provide stability. Material removed in this circumstance will be placed in an empty truck or directly in the fill if the truck is close enough to the dump site. Excavator components in contact with the ash shall be cleaned at the truck wash or manually within the cell.

Ensure the material handling operator is present during the entire or unloading operation.

Operator and/or spotter will place traffic cones or other barricades to establish and delineate the Exclusion Area/NO GO Zone. In other words, a clearly defined Exclusion Area/NO GO Zone will be set up where only material handling equipment operators are permitted inside while mobile equipment is moving and/or /unloading operations are occurring.

Operator shall instruct the truck driver to stay out of the Exclusion Area/NO GO Zone and discuss what the SAFE ZONE is and where it's located.

The spotter will assist the operator to help ensure all pedestrians and vehicular traffic stay clear of the Exclusion Area/NO GO Zone and ensure affected personnel remain in a SAFE ZONE.

Simple and effective communication rules (e.g., hand signals and/or radio communication) are to be established prior to commencement of all unloading activities to determine the following:

- Clear/OK
- Proceed (Forward/Backward)
- Stop

If something unexpected or unanticipated occurs, unloading activities must STOP, the situation shall be assessed, and the plan forward will be discussed between all associated personnel with changes made to the Pre-Job Brief form and/or Task Safety Analysis before work may resume.

2.1.5 Execution Plan

This plan outlines the procedure of receiving ash by truck from the entrance of the Brickhaven No. 2 Mine Tract "A" Structural Fill site to leaving the site.

Job Steps:

Ash Truck Arrival at Site Entrance:

- Ash Trucks will enter Brickhaven mine site through the access gate off Moncure-Flatwood Road. Haul trucks will be stopped at the gate and the following actions will commence:
 - *Truck Operators will provide truck tickets to Charah site security.*
 - *Truck will be inspected by Charah site security.*
 - *Brickhaven site security will inspect the visible portion of the truck tarp and the tailgate and tailgate seal for integrity at this time. If integrity cannot be verified the truck will be directed to a safe location on the entry road and site supervision will be contacted for safe disposition of the load to prevent and ash spillage on site.*
 - *Truck Operator will be notified that the use of alternate haul routes is prohibited.*
 - *Truck Operator will be directed to follow the site haul route as indicated on the site signage and approved haul route.*
- Charah site security will notify the designated Charah operations superintendent via radio that the ash truck has been inspected and is proceeding into the site. (Charah operations personnel at the cell who need to communicate with the ash truck driver will have radios issued. Communication with ash trucks on site will be by radio.)
- Ash Trucks will proceed towards the structural fill following the posted signs utilizing the approved haul route.

Initial Construction of Structural Fill Ramp into Cell:

- During initial establishment of the coal ash roads and ramps in the structural fill the driver will be directed by the Charah spotter to initiate a turn to back up to the designated dump spot. Haul

truck operators will utilize proper horns signals when backing. Horn signals will ensure all personnel are aware of the backing equipment.

- A suitable physical barrier in addition to the spotter will be present to prevent the driver from entering the structural fill area during initial deliveries. When sufficient ash has been deposited that the truck can safely approach the edge of the liner for Cell 1A the physical barrier will not be required.
- Haul truck operators will utilize proper horns signals when backing operations are required. Horn signals will ensure all personnel are aware of the backing equipment.
- Once permission is granted, the haul truck will enter the structural fill and designated inspector will release turnbuckles on tailgate dog locks upon confirming with full time spotter that procedure is safe to perform. Truck operator will take the truck out of gear and set the brake before spotter will allow inspector to approach the rear of the truck. While inspector is releasing turnbuckles, haul truck operator will retract tarp. Dozer operator will direct haul truck into dumping area using 3 part communication.
- Ash truck will pull into the designated inspection zone under the direction of the designated spotter adjacent to the structural fill exit which will be clearly delineated. The ash truck will be inspected by the designated Charah inspector as outlined below in "Ash Truck Seal Inspection"
- Once the bed is emptied the spotter will advise the driver to exit the dump area to the left, drive parallel to the cell and execute a right turn to enter the truck wash runway. Signage will be posted to assist this direction.

Unloading:

- Upon completion of the entrance and exit ramps for the structural fill, the following unloading procedures will take place:
- When the haul truck has reached the entrance ramp to the structural fill, the truck driver will stop and request permission to enter the structural fill.
- Dozer operator will direct haul truck to proceed or hold until traffic has cleared.
- Once permission is granted, the haul truck will enter the structural fill and designated inspector will release turnbuckles on tailgate dog locks upon confirming with full time spotter that procedure is safe to perform. Truck operator will take the truck out of gear and set the brake before spotter will allow inspector to approach the rear of the truck. While inspector is releasing turnbuckles, haul truck operator will retract tarp. Dozer operator will direct haul truck into dumping area using 3 part communication.
- Haul truck operators will utilize proper horns signals when backing operations are required. Horn signals will ensure all personnel are aware of the backing equipment.
- Once the haul truck has dumped and pulled forward two truck lengths, the dozer operator will verify and provide confirmation that the load has fully dumped. This includes verification that no more than a wheel barrow of ash is stuck in the bed of the truck prior to structural fill departure, if so, the dozer operator will signal to the haul truck operator to actuate bed vibration and remove remaining ash. Tailgates will not be banged against truck bed to facilitate ash removal.

Ash Truck Seal Inspection:

- Truck operator will communicate with dozer operator that they will be lowering bed and heading to designated inspector to perform an inspection of the truck's tailgate seal.
- Trucks will not exit the structural fill until tailgate seal inspection has been performed and documented.
- Ash truck operator will pull into designated inspection zone under the direction of a designated spotter adjacent to the structural fill exit which will be clearly marked. The location will allow for

other operational traffic to safely enter and exit structural fill without impeding seal inspection process.

- Once truck is at a complete stop, the operator will lift the bed allowing the tailgate to swing freely open and balanced about its center of gravity, allowing clear view of the tailgate seal.
- Ash Truck operator will take the truck out of gear and set the brake before inspector approaches the side of the truck. The inspector will place the safety bed lockout pins to prevent the bed from falling in the event of a hydraulic failure. Once pins are placed, truck driver will turn off ignition and inspector will collect haul truck ignition keys from operator and approach rear of truck to perform tailgate seal inspection. The inspector will perform the visual and hands on inspection of the tailgate seal as outlined in Appendix A. The inspector will also utilize a GoPro camera when performing visual inspection.
- Upon completion of seal inspection, inspector will return keys to operator and have engine started. Inspector will remove safety bed lockout pins and instruct operator to lower truck bed. The truck will not be in motion while the bed is being lowered.
- Once bed is lowered, inspector will lock tailgate dog locks. During this operation, ash truck operator covers bed with tarp. Upon securing tailgate inspector will provide clearance to operator to place truck in gear and communicate with dozer operator via CB radios that they are preparing to exit the structural fill.
- Once permission to exit the structural fill is granted, the truck driver will utilize the onsite truck wash to remove all CCP debris from the wheels, undercarriage and body of the truck.
- Per ***Brickhaven Mine Operations Plan***, the initial CCP lift placed should be two to three feet thick to protect the liner system. The initial lift shall be placed in a manner that minimizes development of folds in the geosynthetics. The surface should be lightly compacted by dozer operator to help avoid potential damage to the liner system. Subsequent lifts of CCP should be placed in 12-inch thick loose lifts and compacted to at least 95 percent of its Standard Proctor (ASTM D698) maximum dry density by vibratory wheeled drum roller.

Wheel Wash:

- Haul trucks will enter wheel wash one at a time to be washed.
- As haul trucks approach wheel system the wash cycle is automated by a proximity sensor.
- Wash attendants will be in marked, identified safe zone while truck wash is in operation.
- Wheel wash attendant will direct haul truck to inspection location and wash attendant will verify haul truck is clean of all CCB debris. During inspections the haul truck must be parked and have the engine shut off.
- Once employee confirms cleanliness of haul truck, truck will be cleared to exit wheel wash and head to gate.
- Maintenance of the truck wash water will be conducted as needed or semi-annually. All truck wash water and materials removed from the system will be disposed of in the structural fill cell.

2.1.6 Site Logistics Plans

Overall Site:



Tailgate Seal – Inspection Procedure

Haul truck operator will assess surroundings for fixed objects, overhead lines, other vehicles, equipment, pedestrians, etc. and park within designated inspection zone (marked with high visibility cones).

Designated spotter will confirm with operator that truck is out of gear and brake is set before directing designated inspector to approach truck.

Both spotter and inspector will have proper personal protective equipment (PPE) on before starting inspection.

Operator will raise the truck's bed so that the tailgate swings open freely and is balanced about its center of gravity.

Once bed is raised, the designated inspector will secure the bed by placing safety bed lockout pins to prevent the bed from falling in the event of a hydraulic failure.

Once secured, the inspector will acquire the ignition keys from the haul truck operator and begin the tailgate seal inspection process. (Haul truck will be shut off before performing inspection behind the truck)

Inspection is performed outside of trucks tailgate closing radius, therefore the inspector will never be caught between haul truck bed and tailgate.

Visually ensure rubber seal is not cut, torn and is properly adhered to tailgate. A GoPro camera with extension will be available to assist in visual inspection process to ensure inspector does not get between the tailgate and truck.

Physical inspection will be by hand while wearing no-cut EH58 gloves to inspect integrity of the seal during the 360° walk around inspection process.

Physically confirm integrity of seal by feeling along perimeter of tailgate with hand.

Document inspection process on Manifest

Haul truck operator will lower the truck's bed.

Inspector will secure dog locks (turnbuckles) and once completed, the inspector will move to the operator's side of the truck and signal to spotter that truck is clear to leave.

Any issues noted during inspection will result in truck being taken out of service (DO NOT LOAD). Contact Dispatch immediately with instructions for repairs and direct truck to Hilco maintenance facility.

TAILGATE SEAL INSPECTION QUICK REFERENCE NEVER POSITION BODY BETWEEN TAILGATE AND TRUCK BED. ALWAYS WEAR EH58 NO-CUT GLOVES

2.2 Coal Ash Release Incident Plan

Coal Combustion Products / Residuals (CCPs/CCRs) are to be transported to the Brickhaven Mine Site structural fill site by both on-the-road trucks and railcars during the duration of the structural fill project. The Brickhaven Mine Site structural fill project is currently scheduled to only accept CCP/CCR material for placement in a structural fill; however, the relationship and reporting requirements for inbound shipment of CCP/CCR materials is important to site operations at the Brickhaven Mine Site as well as knowledge of the internal reporting, external reporting, and to whom to report is contained in the Coal Ash Release Incident Plan.

2.2.1 Incident Response Plan

After an off-site incident has occurred, the driver or conductor of the vehicle involved in the off-site incident is considered to be the “First Responder” to the incident. The first responder is responsible for assessing the incident for the following items:

1. Incident site safety
2. Location of Incident
3. Parties involved in the Incident
4. Status of CCP/CCR load

If the off-site incident resulted in injury to the first responder or other parties, the first responder is to immediately call 911.

In compliance with the third party transporter’s own safety and incident management protocols, the first responder should report the incident to their incident management contact with their company and report as required.

If an off-site incident that resulted in no major injuries to the first responder or other involved parties, the driver is to immediately contact the last point of contact at the CHARAH CCP load out facility as directed on the pocket communications card that is to be provided to each driver that transports CCPs from a CHARAH Site pond closure site.

Communication from the CCP load-out point will then immediately proceed to the CHARAH Senior Project Manager. The CHARAH Senior Project Manager will then assess the situation and involve CHARAH support personnel and Regional Management as necessary.

A communication plan pocket card is to be prepared for each CHARAH operation that has a CCP load out facility for third party transporters. This card is to be printed and given to each third party transporter driver to use in the event of an off-site incident. An example of a pocket communications card is presented below:

HOW TO RESPOND		OFF SITE TRANSPORTER INCIDENT
<p>TRANSPORTATION ACCIDENT INVOLVING BODILY INJURY</p> <ul style="list-style-type: none"> CALL 911 CALL COMPANY CONTACT AND REPORT INCIDENT CONTACT ASH-VENTURES, LLC SITE OPERATIONS MANAGER AT: (XXX) XXX-XXXX 	<p>APPROACHED BY MEDIA OUTLET FOR COMMENT</p>	<p>DIRECT ANY REQUESTS FOR COMMENTS TO:</p> <p>JOHN DOE Communications Director Charah, Inc. (XXX) XXX-XXXX EMAIL: JDOE@CHARAH.COM</p>
<p>TRANSPORTATION ACCIDENT <u>NOT</u> INVOLVING INJURY</p> <ul style="list-style-type: none"> CALL COMPANY CONTACT AND REPORT INCIDENT CONTACT ASH-VENTURES, LLC SITE OPERATIONS MANAGER AT: (XXX) XXX-XXXX CALL LOCAL AUTHORITIES TO MAKE A REPORT 		

This card is to have the following information at a minimum:

1. Contact name and phone number for the last point of contact that is to be communicated in the event of an off-site incident.
2. Name, title, and phone number of CHARAH contact to direct any requests for comment from the public or media. Under no circumstance shall first responders speak directly to the media or the public regarding the transportation of CCPs from CHARAH Operational Sites.

Additionally, a load securing pocket card will be prepared and given to each third party transporter to provide direction on how to immediately secure a release of CCPs in the event of an off-site incident before the third party transporter can address the incident with the appropriate response. CHARAH or its sub-contractors are not responsible for the cost or cleanup of the incident. The load securing pocket card is to only provide suggestions on how to temporarily secure the CCPs in the immediate time frame of a release of CCPs from the transport vehicle. An example load securing pocket card is provided below:

HOW TO SECURE LOAD	OFF SITE TRANSPORTER INCIDENT
INFORMATION TO RECORD FOR REPORTING INCIDENT	STEPS TO SECURE A CCP INCIDENT SITE
<p><u>LOCATION OF INCIDENT</u></p> <p><u>NEAREST INTERSECTION</u></p> <p><u>GPS COORDINATES</u></p> <p>WAS A COAL COMBUSTION PRODUCT (CCP) RELEASED FROM THE TRANSPORT CONTAINER DURING THE INCIDENT?</p> <p><u>WAS A CCP MATERIAL RELEASED TO:</u></p> <p><u>ROAD OR GROUND SURFACE?</u></p> <p><u>WATERWAY OR STORM DRAIN?</u></p> <p><u>ESTIMATED AMOUNT OF CCP RELEASED IN TONS?</u></p>	<ul style="list-style-type: none"> • CALL 911 IF INJURIES ARE PRESENT • ENSURE CCP LOAD IS COVERED WITH TARP OR OTHER TYPE OF WEATHERPROOF COVER • CALL COMPANY REPRESENTATIVE TO REPORT INCIDENT

2.2.2 Incident Reporting Requirements

In the event of an off-site incident involving an off-site release of CCPs/CCRs, clear, concise, and immediate communication is to occur between the responsible party/parties and CHARAH. All communication is to be internal in accordance with CHARAH's Environmentally Sensitive Communication Policy. No other communication is to occur outside of CHARAH and all incident communication must follow the following plan:

COAL ASH RELEASE INCIDENT REPORTING COMMUNICATION CHART

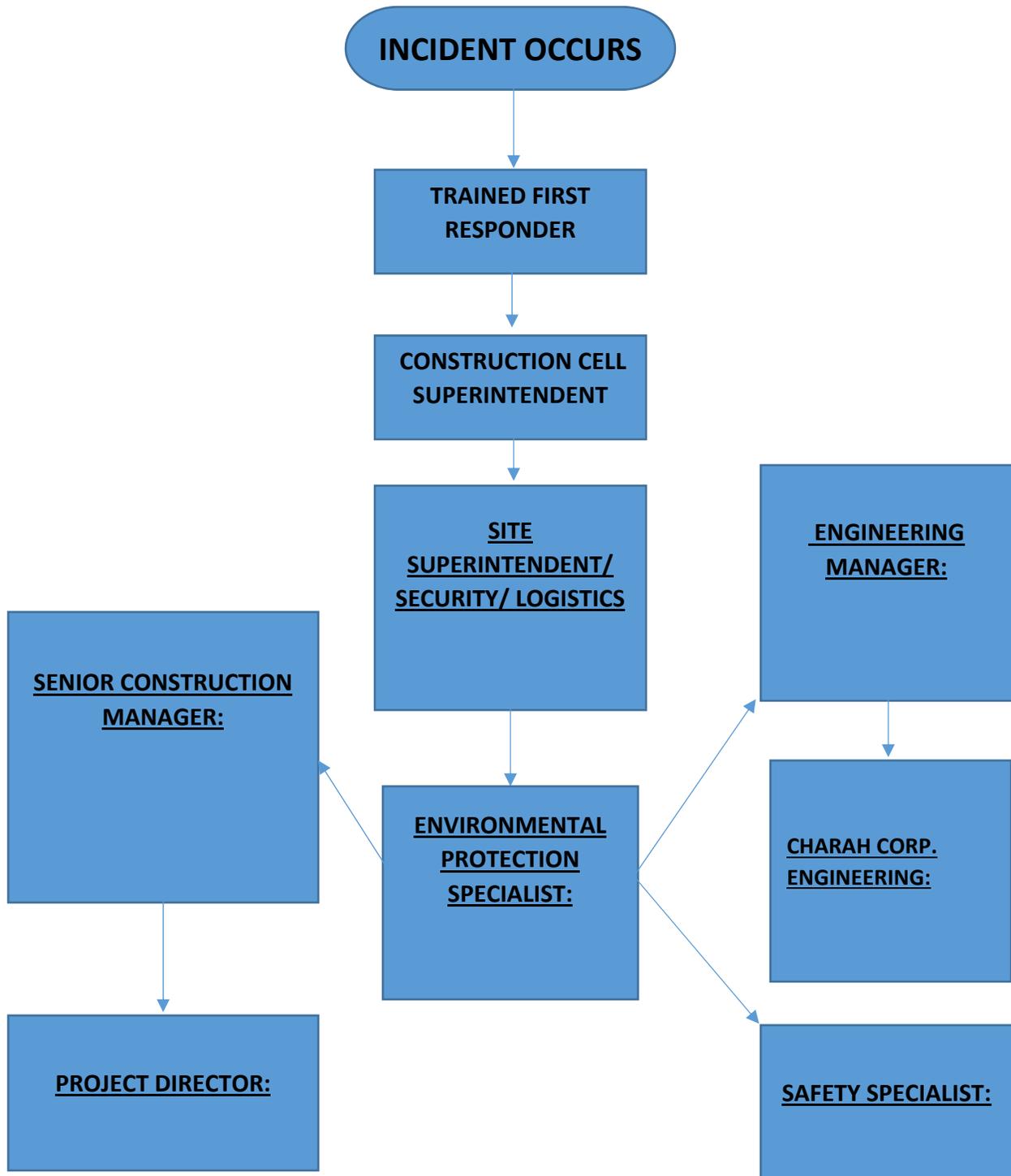


Figure 1 – Coal Ash Release Incident Reporting Communication Chart

2.2.3 Record Keeping

All off-site releases of CCPs/CCRs will be kept at the prescribed load out facility as part of the operating record of documentation. Any required inspections, certifications, or regulatory documentation requirements will be kept at the source of the CCP/CCR load-out.

2.3 Spill Response Plan

2.3.1 Purpose

Chemical and oil spills are regulated by the US Environmental Protection Agency and typically the State Department of Environmental Protection or equal. This document outlines requirements, guidelines and responsibilities for the clean-up of chemical and oil spills at Charah. Observing the requirements and guidelines outlined in this document will promote safety, and ensure timely clean-up and reporting of a spill event.

Additional information on clean-up of chemical and oil spills is available in the following Charah documents: 1) Hazard Communication Program; 2) Integrated Contingency Plan; 3) EHS 1001-04-00 Trash Containment for Oily Wastes; 4) EHS 1001-06-00 Spill Kit Requirements, and 5) Spill Prevention, Control, and Countermeasure Plan.

2.3.2 Responsibilities

Contractors – Contractors are responsible for handling, using, storing, and disposing of hazardous substances in a safe manner. Contractors must also call 911 when large spills occur. Disposal of hazardous materials must be coordinated through the Charah Engineering & Environmental Compliance (E&E) Office.

Engineering and Environmental Compliance Office – The E&E Office is responsible for: 1) assisting in the means and methods for responding to spills to ensure that they are managed properly; 2) assisting with spill clean-up procedures; 3) assisting with spill disposal arrangements; 4) assisting in contacting emergency response as requested, regulatory agencies and waste disposal contractors for certain spills as requested; 5) assistance to ensure that adequate spill control inventories are maintained; and 6) inspecting work areas to ensure that hazardous materials are handled, used, stored, and disposed of properly.

Employees – Employees are responsible for handling, using, storing, and disposing of chemicals in a safe manner. When spills occur, employees must observe the protocol outlined in Section IV.

Supervisors – Supervisors are responsible for ensuring that their employees handle, use, store, and dispose of hazardous materials safely. Supervisors must also ensure that: 1)

inventories for small spills are maintained; and 2) employees observe the protocol for spills as outlined in Section 4.

2.3.3 Definitions

Absorbents and Neutralizing Agents – Materials used to soak-up, confine or neutralize chemical or oils spills. These materials include booms, socks, and absorbent materials.

Corrosive Substances - Any solid, liquid, or gas that burns, irritates, or destroys tissues such as the skin, lungs, and stomach. Corrosives can also destroy metals and other building materials. Corrosive substances include acids and bases.

Flammable Liquids – Liquids with flash points below 100 degrees Fahrenheit.

Spill Kits – Packaged supplies of absorbent materials for responding to spills of solvents, acids, bases, and other substances.

2.3.4 Spill Clean-Up Procedures

(a) Protecting Health and Well-Being

Whenever spills occur, regardless of size, health and well-being are the primary focus. Do not attempt to clean up any spills unless properly trained/experienced, to the extent practical and safe to do so. Since eye and skin contact exposures are possible, it is important to become familiar with the location of the nearest emergency eyewash/shower unit. When eye contact exposures occur, flush the eyes for 15 minutes in an eyewash unit and then seek medical attention. For skin contact exposures, immediately remove clothing and flush the affected area(s) of the skin under an emergency shower unit for 15 minutes and then seek medical attention.

Additionally, remember to report all occupational injuries and calling the Accident Reporting System at your particular site.

Use of personal protective equipment (PPE) is also important during spill clean-up. Minimum PPE for any spill remediation efforts will include goggles and impervious gloves. These PPE items should be maintained with the spill kits. Depending on the size and nature of the spilled material, a face shield, apron or impervious clothing, impervious shoe covers, and a respirator might also be necessary.

Employees are strongly encouraged to contact the E&E Office for assistance with selection of personal protective equipment.

During a spill, assistance from a fellow employee will likely be necessary; therefore, it is also very crucial to avoid working alone.

A fellow employee will be helpful for: 1) contacting emergency response personnel; 2) assisting with spill clean-up; and, 3) assisting with the use of an emergency eyewash/shower unit. The spill affected area shall not be left unattended until the remediation efforts have completed and the area is deemed environmentally sound for continued site operations.

Adherence to Charah's Work Alone policy is crucial during these types of events.

(b) Small Spills

Small spills involve quantities of spilled material less than 1 gallon. If the spilled material is highly toxic, reactive or flammable, or if the spill involves a fire or other emergency, the following protocol should be observed:

1. Evacuate any building or piece of equipment that may be involved in the fire.
2. Once you have evacuated the equipment and/or building, inform emergency response personnel about: 1) the identity, location, and hazard(s) of the spill; or 2) the location and type of emergency. Comply with all Charah Safety Emergency procedures including contacting all parties as required including the E&E Office.

If the spilled material is not highly toxic, reactive or flammable, or if the spill does not involve a fire or other emergency, observe these practices:

1. Whenever it is possible, first stop the source of the spill. For example, turn off a valve or return a container to an upright position.
2. Determine the nature of the spilled material. If you are not comfortable cleaning up a small spill for any reason, contact the Site Manager for assistance.
3. Put on appropriate personal protective equipment, isolate the affected area from pedestrian and equipment traffic, and retrieve a spill kit.
4. Apply an appropriate absorbent material to the spill or neutralize the spill with a suitable absorbent from a spill kit. Distribute the absorbent over the affected area by working from the outside of the spill, circling to the inside. Exercise care to contain the spill to the smallest area possible and protect any drainage feature or storm drains.

5. When the spill has been absorbed or neutralized: 1) use a brush and pan to pick up the material; 2) place the material in a bag that is supplied with the spill kit; 3) close the bag; and 4) place the bag in a secondary container.
6. Decontaminate affected surfaces with a mild detergent and water as necessary.
7. Contact the proper waste disposal service to pick up materials used to clean up the spill.

(c) Large Spills

Large spills involve quantities of spilled material greater than 1 gallon. These spills include spilled material from large storage vessels (e.g., vehicles, 55 gallon drums and above ground storage tanks). Large spills have the potential to significantly impact the work area or environment; therefore, it is imperative that prompt action be taken.

Protocol for large spills is summarized as follows:

Substances with Low to Moderate Hazards:

1. Whenever it is possible, first stop the source of the spill. For example, turn off a valve or return the container to an upright position.
2. If it is necessary, protect drainage features and/or storm drains and storm sewers with absorbent pads.
3. Contact the E&E Office for any assistance. Be prepared to indicate the size and nature of the spill. Additionally, site management should contact their Plant Direct Report (DR), plant environmental and the plant control room. In addition, site management should follow safety protocols regarding reporting the spill event to Charah executive management. If the spill affects equipment and/or pedestrian traffic, notify the plant control room and advise that the local fire department should be contacted.

Highly Toxic, Reactive or Flammable Substances:

1. Evacuate any building or piece of equipment that may be involved in the fire.

2. Once you have evacuated the equipment and/or building, inform emergency response personnel about: 1) the identity, location, and hazard(s) of the spill; or 2) the location and type emergency. Comply with all Charah Safety Emergency procedures including contacting all parties as required including the E&E Office.

3.0 Dust Control Plan

3.1 Purpose

This procedure provides the definition of fugitive dust and a plan for managing fugitive dusting that may occur on ancillary industrial working areas that include: gypsum handling and storage areas, fly ash and bottom ash handling and storage areas, landfills and supporting roadway and shop areas.

Common causes of fugitive dust:

- A natural instability of the soil
- Construction activities disturbing the land
- The wind picking up particulates and transporting them

Sources of Fugitive Dust:

Fugitive dust could be generated directly from site traffic and construction activity. The following construction activities have been identified as having the potential for generating fugitive dust:

- vehicle and motorized equipment movement on paved and unpaved access roads
- vegetation removal
- clearing and grading
- topsoil removal
- cutting and filling
- trenching
- backfilling
- track-out onto roads
- bulk material unloading, use of material storage piles, use of parking, staging, and storage areas

3.2 Responsibilities

3.2.1 Site Managers

The Site Manager is responsible to maintain a fugitive dust plan that is specific to that site providing for the control of dusting in the areas identified and ensure that a fugitive dusting event does not occur. He will also be required to train his staff, Charah employees, on fugitive dusting identification and controls.

3.2.2 Employees

The employee is responsible to work in a manner to minimize fugitive dusting based on their training and experience working onsite. They will also be responsible to identify any fugitive

dusting that may occur and report it to the Site Manager for proper controls to be put in place as needed.

3.3 Definitions

Coal Combustion Residuals - Coal combustion residuals (CCRs), commonly referred to as coal ash, are the materials that remain after burning coal for electricity. CCRs include:

- Fly ash;
- Bottom ash;
- Boiler slag; and
- Flue gas desulfurized gypsum (FGD Gypsum)

Dust Control - Dust control consists of applying water, cover material, or other dust palliatives to prevent or alleviate dust nuisance.

Fugitive Dust - Any material, while being produced, handled, transported or stockpiled, creating particulate matter that becomes airborne and may affect the ambient air quality of a given area.

Fugitive Dusting Event - Visible emissions from the areas noted above that exceed more than 20 percent opacity (objects partially obscured) when averaged over a six (6) minute period during any hour at any time during the daily operations. The emissions must reach the property line to be considered a formal fugitive dusting event.

Soil Cement - Any material that may be applied that will provide a cohesive bond between particulate matter and the subgrade material(s). Typical sources for soil cement may include Gorilla Snout™ or Eco- Green™.

3.4 Procedures

Dust control is a factor that has to be considered and is a component of daily operations. On a routine basis and according to weather conditions, a water truck adds moisture to the subject ancillary industrial operations as noted in Section 1.0 to suppress dust. As described below, cover practices are an integral component of any dust control plan.

As the stockpiles increase in elevation and aerial extent, operations should construct berms to break prevailing winds. Berms constructed as wind breaks can be constructed with Coal Combustion Residual (CCR) fill with a temporary soil cover.

According to applicable performance criteria, temporary soil cover practices may be allowed and are designed for both stormwater compliance and dust control. Accordingly, soil cover practices are intended to vary from the standard operating requirements and are specific to CCR Landfills.

As CCRs are characterized by soil properties, soil amendments will be utilized to create suitable layers for temporary and intermediate cover. On a routine basis, a water truck will add moisture to the CCRs and haul road surfaces for compaction and dust control. Intermediate cover requirements vary according to the time period in which specific areas will be inactive. Soil cement or other alternative soil amendments will be applied to intermediate slope areas as necessary to minimize surface erosion. As a standard practice and according to demonstrated performance life of cover alternatives, at least 6 inches of native soil will be incorporated in the intermediate cover application for fill areas that remain inactive for a period greater than 12 months.

Temporary soil cover may also be applied to perimeter slopes and interim cap surfaces as needed to create "clean" stormwater draining from the fill area as well as mitigate dusting from these surfaces. The soil provides the needed separation from the CCRs whereby eliminating the creation of leachate and can be discharged to the perimeter erosion control devices as allowed by the construction NPDES permit.

ATTACHMENT 1

Truck Unloading Checklist and Pre-Job Brief

Date & Time: _____ Location / Work Description: -----

Carrier/Hauling Company: ----- Cargo Type: _____

Equipment Operator: _____ Spotter: -----

Material Handling Equipment Used			
Forklift	Telescoping Handler	Crane	Aerial Work Platform
Other: _____			
Personal Protective Equipment (PPE)		General EHS Hazards	
Hard Hats		Caught In or Struck By / Against	Heavy Objects / Ergonomic Hazards
Safety Glasses		Sharp Objects	Heat Stress / Cold
Steel-Toed Boots		Slip / Trip / Fall on Same Elevation	Noise
High Visibility Vests		Fall From Elevation	Fire or Explosion
Leather or Cut Resistant Gloves		Mechanical Failure	Chemical Exposure
Other:		Hazardous Energy	Biological Hazards

Truck and Barricades

- Ensure the unloading operations are conducted on level ground to prevent the shifting and/or rolling of equipment and materials.
- Use a ladder or an approved device to access trucks and trailers. Do not climb on or jump from trailers and equipment. Maintain 3-points of contact.
- Inspect the load to ensure it has not shifted during transport. Check the condition of tarps, tie-downs, and locking devices. Discuss the safe removal of these devices and possible pinch points.
- Perform 360-degree, walk around inspection of the truck and Work area.
- Place traffic cones or other barricades to establish clearly defined Exclusion Areas / NO GO Zones where equipment will be operated. Ensure Exclusion Areas are large enough for the load and equipment.
- Discuss the location of SAFE ZONES. Pedestrians must remain inside SAFE ZONES while material handling equipment is moving.
- Material handling equipment must stop if pedestrians enter the Exclusion Area / NO GO Zone. Authorization must be first granted by the operator.
- Wear high-visibility vests and PPE as required.

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