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January 6, 2016
Solid Waste Section
Asheville Regional Office

Charah-Brickhaven Moncure Unloading Operations and Ash Transportation



Mission

Charah is a total solutions company providing unparalleled service and innovation.

Vision

Charah is and will continue to be the leader in customer service, safety, and innovation. We do this by hiring and developing great talent and working together to challenge and inspire each other to be the very best.

Values

Customer—exceed expectations

Safety—never compromise

Innovation—rethink routine, identify new solutions

Teamwork—accountable to each other

Integrity—always do the right thing



BRICKHAVEN TEAM'S MISSION

Daily, we will practice the “IM SAFE” protocol and the 8 Core Elements of Site Safety.

8 Core Elements of Site Safety

1. Brother's Keeper
2. PPE at All Times
3. Proper Backing Procedures
4. 3 Part Communication
5. 3 Points of Contact
6. 360 Walk A Round
7. Proper Horn Signals
8. When in doubt.....STOP and ask for help (SITUATIONAL AWARENESS)

I = ILLNESS (Are my team members well)

M = MEDICATION (Are any of my team members taking medication)

S = STRESS (Are any of my team members dealing with challenges)

A = ALCOHOL (Are any of my team members having too many spirits)

F = FATIGUE (Are any of my team members working too many shifts)

E = EATING (Are my team members maintaining healthy eating habits)

We will strive to eliminate

- Rushing – We will not rush, rather plan accordingly
- Frustrations – We will eliminate by communicating then executing our plan.
- Fatigue – We will set goals, then share the load.
- Complacency – “ALERT” will be our daily goal.

Daily Goals for Effective work

- Eyes on Task at all times
- Mind on Task by knowing our roles
- Balance/Grip/Traction to stabilize our actions
- Line of Fire by recognizing and respecting stored energy

Critical error reduction

- Self-trigger for hazardous energy
- Analyze all close calls
- Recognition of trends
- Work habits



Moncure Railcar Unloading Operations Readiness Review

Brickhaven Project

Station: Moncure

Issue:	Date:	Comments:
Rev. 0	12/28/2015	
Rev. 1	01/05/2016	

Amendment No.	Date:	Amendment:	Page(s)

Approvals:

Author: QA/QC Engineer

Approver: Transportation Manager

Approver: VP of Carolinas

1.0 Introduction

The Brickhaven No.2 Mine Tract “A” Structural Fill Project Site is located in Chatham County, NC at 1271 Moncure-Flatwood Road Moncure, NC. The Property owned by Green Meadow, LLC will be developed and operated by Charah, Inc. Formally owned by General Shale and operated as a clay source for the brick industry, the property is currently under development for the purpose of safely and responsibly storing coal combustion products.

This document will illustrate the operating plan for the unloading of railcars at the Moncure station. The Railcar Unloading Operational Plan is established to insure proficiency with unloading movements, incorporating safety, quality and productivity. All visitors and non-workers will stay in compliance with operations manual at all times. To ensure understanding of all area protocols, all visitor and non-workers will complete an orientation and sign off with Charah rail Supervisor. (*Ref: Appendix I*)

1.1 Site Orientation:

Upon arriving at the Brickhaven site, all persons must report through the main gate adjacent to Moncure Flatwood road. The gate will be attended by a Charah employee who can provide directions for entering the site. The following indicates the level of orientation required for site access;

Escorted

1. All persons visiting the site for meetings or observation only must be escorted at all times by a qualified Charah employee or a trained individual that has unescorted privileges. Each visitor will receive a briefing and will be issued proper PPE. Any person without unescorted privileges that is found in a restricted area will be escorted to the office for proper briefing.

Unescorted

2. All persons working with cell operations must complete site specific hazards training and meet MICCS drug screen requirements.
3. Admittance to the railcar unloading area or the rail storage yard will require site specific hazards training, rail safety training, and meet MICCS requirements.
4. All persons performing work in the railcar unloading area and/or the railcar storage area will be required to successfully complete the Intra-Plant Certification Training.

1.2 Definitions

Terminal Manager: Provides over site and directions for all terminal operations

Yardmaster: Person responsible for control of equipment movements in the unloading zone.

Conductor “Groundman”: Rail crew member in charge of the train movement.

Engineer: The operator of a locomotive.

Utility Person: Individual capable of filling a conductor and Engineer role.

Locomotive: A self-propelled unit of equipment, or combination of units operated under a single control, and designed solely for moving other equipment.

Pre-Job Brief: Job safety analysis conducted by entire crew prior to work beginning.

Pre-Move Brief: Communication performed by the Conductor to inform the rail crew of planned movements.

Three Part Communication: Consist of the sender delivering the message to the receiver. The receiver repeating back the information to the sender for clarification. The original sender will confirm if the receiver has the message correct. Three Part Communication is required when the operators are exchanging operational information.

Straddle Carrier Operator: A trained employee responsible for safely operating a straddle carrier excavator to efficiently remove material from the railcars and place into off-road trucks for transportation to the storage location.

Telehandler/forklift operator: A trained and licensed operator responsible for safely removing and replacing railcar cover lids from the railcars.

Off-Road Truck Driver: A trained employee who will safely maneuver an off-road truck for proper loading and unloading movements including traveling safety between the unloading zone and the storage area.

Sweeper/Vacuum Operator: A trained employee capable of operating a sweeper (cleaning unit) to safely clean travel surfaces of debris or spillage.

Observer: An individual who has received rail safety orientation from a qualified Charah supervisor. Observers may monitor work, ask questions, make suggestions, or stop work if a safety hazard is recognized. Observers may not perform physical work in regards to railcar operations or railcar unloading, may not direct personnel, or alter work planning without a Charah supervisor's consent.

1.3 Roles and responsibilities

Terminal Manager

Responsible for ensuring employees and sub-contractors adhere to all railcar unloading procedures within compliance for safety and environmental regulations. The terminal manager will provide guidance and leadership to all employees for project controls and scheduling.

Yardmaster

Individual responsible for all rail movements and unloading operations while providing direction to Engineers, Conductors, Utility personnel, and Equipment operators.

Conductor

Individual over seeing all switches, directs the Engineer for movement, positioning of rail cars on storage tracks, and unloading tracks. He conducts all (pre-move briefs). Ensures rail units are properly prepared for movement and transport.

Engineer

Individual controls all locomotive movements, over sees basic maintenance, and inspections of the locomotives for compliance. The Engineer will conduct all three step protection actions.

Utility Person

Employee trained to perform roles of the Engineer or Conductor to assist and will fulfill their duties in their absences.

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 (JHA).

Equipment Operator: (Trucks, Straddle Carrier, Telehandler, Manlift)

Trained employees assigned to safely and efficiently operate designated equipment in performance of a specific task.

Subcontractor and/or vendor:

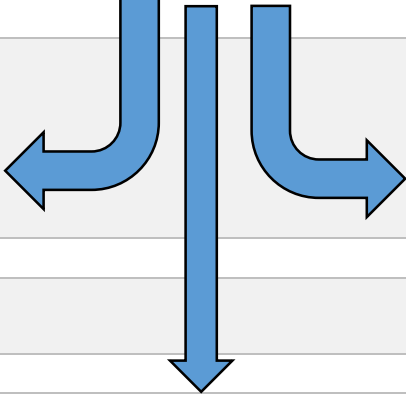


A person or persons trained and authorized to perform specific tasks regarding maintenance, equipment repairs, training, or operation of equipment within the railcar unloading area and the railcar storage area.

2.0 Communication

Site communication between field oversight and project management is presented to explain the internal communication flow between Charah and Duke Management. Contact information for all referenced is provided as well as role and responsibilities.

COMMUNICATION TREE

CONTACT

	Jeff Howell-Charah Construction Manager 704-361-9597 jhowell@charah.com	
		
Erik West - Charah Sr. Project Manager 502-795-4836 (C) ewest@charah.com		Chuck Wilson - Charah Lead Safety Specialist 502-552-8308 (C) cwilson@charah.com
		
Mike Powell - Charah Project Director 502-791-4661 (C) mpowell@charah.com	Glen Amey - Charah Environmental Manager 704-731-2300 (C) gamey@charah.com	David Valentine - Charah Director of Safety 502-548-6449 (C) dvalentine@charah.com
	-	
	Scott Sewell - Charah Chief Operations Officer 502-609-0116 (C) ssewell@charah.com	
	Duncan Brewer - Duke Project Director 704-942-6595 (C) Same Duncan.Brewer@duke-energy.com	Sam Denson - Duke Site Safety 828-713-7352 (C) Same philip.banks@duke-energy.com

In the event of an emergency the communication tree will be activated. Erik West the project manager will initiate the proper response. (Ref. Appendix II)

2.2 Emergency Action Plan

In the event of an incident the Brickhaven Emergency Action Plan will be put into action.
(*Ref: Appendix II*).

3.0 Training

Charah has conducted training for all Charah supervision, rail equipment operators, rail ground personnel, and equipment operators. The training includes all aspects of unloading railcars utilizing specialized equipment in conjunction with earthwork equipment.

Charah has utilized qualified trainers from Caterpillar and SafeDay to properly train all equipment operators.

- Straddle Carrier-Caterpillar
- Telehandler-SafeDay
- Manlift-SafeDay
- Off-Road Trucks-Caterpillar

Each required 8 hours of classroom (85% passing) and field demonstration. A certified instructor from Caterpillar and SafeDay provided the training and issued certificates upon completion. In addition each operator will be observed for a minimum of 40 hours by a qualified Charah supervisor in task specific abilities. All training will be documented and maintained in the office personnel files in addition to training matrix updates.

The employee qualification matrix (*Ref. Appendix X*) is attached and will be updated when new employees are trained or additional training for current employees is completed.

3.1 Work Shifts (*Ref. appendix V*)

We will utilize a 12-hour rotating shift pattern that uses 4 crews and 2 twelve-hour shifts to provide 24/7 coverage. It consists of a 4-week cycle where two crews work a three day work cycle the first week followed by a four day work cycle the next. The other two crews work the opposite; a four day work week followed by a three day work cycle. All four crews will repeat the cycle every two weeks. The crews will work an average of 36 hours one week and 48 hours the next. This will provide more days off, which will allow employees more time to spend with their families and improving their quality of life. Another factor is to reduce fatigue and

complacency, which will maximize and increase production. Employees generally show a greater level of satisfaction with the extra time off.

3.2 Resource

Resource Staffing for Moncure Rail Operations			
		Per-shift	Total X 4 Shifts
Charah	Conductor	2	8
Charah	Engineers	2	8
Charah	Utility Person	1	4
Charah	Straddle Carrier	3	12
Charah	Off Road Truck	6	24
Charah	Off Road Water Truck	1	4
Charah	Telehandlers	2	8
Charah	Yardmaster	1	4
Charah	Landfill Foreman	1	4
Charah	Dozer Operators	2	8
Charah	Roller	1	4
Charah	Safety Supervisor	1	4
Support:			
	Equipment Maintenance*	2	2
	Fueling operations**	2	4

* there will only be a need for 1 mechanic on call for day and 1 for night shift (once night shift begins)

** fueling will occur twice in 24 hours requiring 2 people per crew

***one manlift operator will be available on each shift, which is an additional duty for the telehandler operator

4.0 Execution Plan

The purpose for breaking the 85 car unit train into smaller car unit trains will be to place the smaller train section into the subway cut of the unloading zone for the purpose of excavating ash from the rail cars with the straddle carrier excavator. The excavated material will then be placed in off-road trucks and transported to a lined cell. This process will require continual observations and monitoring for improvements to process and schedule. Scheduled coordination with projects importing material to Brickhaven will require interaction with site management to streamline the process. This is a compliance based plan and is subject to final review at predetermined period in order to finalize standard operational procedures.

4.1 Job Steps

Placement of Equipment in the Unloading Zone

- Before the yardmaster directs the conductor to move a section of railcars into the unloading zone, the yardmaster will direct the operators of all straddle carriers, forklifts, and trucks to place equipment in designated parking positions, secure all ground engagement tools, place machines in “park” mode, and wait for further instructions.
- The unloading area will be subdivided into three work zones. Each zone will span 300 feet in length. These zones can be altered by the yardmaster to meet daily unloading requirements. The east side of the subway cut will be where the telehandlers will operate. Each working zone will span 300 feet in length and 50 feet in width and will be identified by traffic cones. The east side of the subway cut will provide areas for telehandlers to park, place railcar covers, for maintenance, and a travel zone for vehicles proceeding to the office area. These areas will be delineated by the use of traffic cones. No vehicles, except for maintenance vehicles, will be allowed on the unloading platform area during operations. Areas delineated by traffic cones may be marked by paint striping in the future.
- The west side of the subway cut will be for off-road haul trucks. There will be a loading lane and a travel lane. Specified areas for parking the trucks will be designated. The off-road trucks will remain on the west side.
- The straddle carrier excavators will be positioned over the subway cut, straddling the cut to allow locomotives and railcars to pass underneath. In general, there will be three straddle carriers placed in this position at all times however, the yardmaster can alter this configuration.
- During unloading operations and railcar cover removal operations, vehicle access will be restricted to designated travel lanes that will prohibit impeding the unloading process or the movement of the telehandlers. The exception will be for maintenance vehicles which will require Yardmaster approval for movement within the unloading area.
- The unloading zone is captured in an operational staging plan provided.

Removal and Inspection of the Railcar Covers

- The yardmaster, after verifying the unit train is properly prepared for unloading, will instruct the telehandlers to leave their designated parking area and position themselves to begin removing the railcar covers. The telehandler operator will place the lifting device

onto the cover, ensure the locks are engaged for proper release action. Upon the locks releasing, the operator will lift directly up until the cover clears the rail car. The operator will reverse the machine moving the machine and cover in a easterly direction for approximately 15 feet. The operator will then set the cover down carefully and release the locks from the spreader bars. The operator will secure the machine, exit the machine, and advance toward the cover for the purpose of inspecting the cover. The operator will inspect for holes, defects, cracks, deficiencies that could impair a proper seal when placed back onto the railcar. If problems are noted, the operator will inform the yardmaster for further inspection. The yardmaster will make the final determination for removing the cover from operation and replace with additional covers staged on site, or continue to leave the cover in operation if deemed fit for duty. After removing the railcar cover and placing it safely on the platform deck, the railcar is now ready for the straddle carrier to advance for unloading.

Implementing the Straddle Carrier Excavator for Unloading Ash from Railcars

- The telehandler operator will signal by hand or by radio to the straddle carrier operator that the railcar is ready for unloading. The straddle carrier operator will position the straddle carrier over the railcar. This positioning will be evaluated and determined by the operator for proper excavating of the car and final displacement into the haul truck. The straddle carrier operator will signal or contact the haul truck by radio approving the haul truck to move from the specified parking area into the loadout lane. The haul truck will position itself as directed by the straddle carrier operator providing the best unloading angle for bucket placement. Excavated ash will be placed in the truck bed. This cycle will continue until the truck has been filled to the appropriate quantity at which time the straddle carrier operator will signal the truck to pull away into the travel lane. The straddle carrier operator will reposition as necessary, signal the second truck to approach and position. This cycle will continue until the railcar is empty. After completely excavating the first railcar, the straddle carrier operator can proceed to the next railcar. The goal for excavation of the railcars will be to remove, 100% of the mechanical capability of the machine, all ash from the railcars leaving will have less than approximately 1000 lbs. of ash.

Haul Trucks operating in the Unloading Area

- The haul trucks, commonly referred to as end dumps or off-road trucks, will transport ash that has been loaded into the bed of the truck from the unloading platform to the designated cell location. The trucks will use the south ramp to exit the unloading area and the north ramp to enter the unloading area. Trucks will follow the directions for parking and movement issued by the straddle carrier operator. The Yardmaster is the only employee that can override the straddle carrier when directing truck movements. The speed limit in the unloading area will not exceed 10mph. The speed on the haul roads outside of the

unloading area will not exceed 15mph. All haul truck drivers will be task trained for the trucks. Instructions for parking, gear selection, movements, backing, and dumping will all be covered in the task specific training for haul truck drivers.

Haul Routes and Roads from Unloading Area to Cell

- The straddle carriers will be positioned over the subway cut facing due south. Haul trucks will enter the unloading area by utilizing the northern ramp. Haul trucks will proceed down the ramp and stop at the entrance to the unloading area. The haul trucks will receive directions from the straddle carrier for proceeding. The haul truck will advance along the travel lane to the open straddle carrier at which time he will move into the loadout lane; positioning the truck as directed by the straddle carrier operator for loading. When loading operations are complete, the straddle carrier operator will direct the haul truck to proceed to the travel lane and exit the loading area by way of the southern ramp. The haul trucks will use the identified haul route to proceed to the cell.
- Haul routes outside of the unloading area will be stone base roads that will be maintained by road equipment. Haul routes will receive additional stone base as needed to provide a safe traveling surface. Haul routes will utilize a portion of the planned ring road for maneuvering to the cell. Haul roads will be graded to the prescribed plan alignment and grade noted on the Brickhaven No. 2 Mine Tract “A” Structural Fill drawings. Temporary haul roads may be constructed to facilitate future construction.
- Due to the amount of traffic predicted for using the ring road, site supervision, site safety, and haul truck drivers will make random daily checks to ensure road integrity remains high for the safe use of these routes. Any failure in the road surface will be reported and repair as soon as possible.
- Haul trucks will enter the cell at prescribed points for entry. Haul trucks will maneuver inside of the cell after proper base of ash has been placed by dumping ash into the cell from a provided area. Dozer operators working inside the cell under the landfill supervisors’ direction will place ash in structured lifts providing level travel surfaces for all haul units. Trucks will be spotted for placement by the dozer operator and directed to dump their load. After successfully dumping their load, drivers will lower their bed and travel to the exit point of the cell.

Returning the Railcar Covers onto the Railcar

- After excavation of the rail car is complete, the conductor will inspect the west side of the railcar and the telehandler will inspect the east side of the railcar for spillage. If spillage is noted, the conductor and telehandler operator will oversee the proper disposal. The conductor and telehandler operator will verify the car has been excavated properly and no damage has occurred to the railcar. This will be performed by visual inspection using an extended convex mirror. Upon completing this inspection, the telehandler will reattach to the cover lid, and move forward placing the cover onto the railcar. The operator will then detach the spreader bar from the cover lid, raise the spreader bar for proper clearance, place the machine in reverse, and stop when proper clearance is achieved. The telehandler will visually inspect for proper locking on the east side and the conductor will visually inspect the locks on the west side of the railcar. This process will be repeated on every car. Once all cover lids are replaced, the conductor will prepare the train for movement.

(Ref: Appendix XXX)

Ash Spillage Response

- During operational movements ash maybe spilled on the platform area. If this occurs the following actions will be taken.
 - Ash maybe cleaned up by utilizing a ride on vacuum type sweeper
 - Ash may be collected by using a broom and shovel
 - Impacted areas on the platform maybe cleaned by pressure washing surfaces utilizing collected contact water. Utilized contact water will be directed to allow for collection and storage in the contact water detention facility.
 - Ash that has been collected from the unloading platform surface can be placed in railcar that has not yet been unloaded.
 - Ash collected on railcar sides or couplings will be vacuumed and collected for reintroduction into loaded railcar.
 - All SPCC procedures will be followed.

5.0 Environmental Risk and Operational Safety Matrix

In effort to distinguish specific risk for our operations, we have utilized our teams' resources to determine what risk pose the greatest dangers or will have undesirable impacts to the site. Included with this investigation is information enabling us to prevent or mitigate these potential events.

5.1 Environmental Risk Matrix

The matrix identifies potential issues with probabilities and impact assignments for each of the risks. Identified risks which initially fell in the red and yellow areas of the matrix were further vetted to minimize probability and/or impacts. The goal was to reduce all risks to green areas. The matrix displays post mitigation probability and impacts.

1. Environmental spill when storing equipment (i.e. hydraulic fluid, oil, fuel, etc.)
2. Environmental spill when operating equipment (i.e. hydraulic fluid, oil, fuel, etc.)
3. Environmental spill when fueling equipment
4. Fugitive Dust
5. Leachate Spill
6. Ash spill outside of structural fill limits.
7. Permit adherence

		Probability					Impact
		Very High (>=90%)	High (66%-)	Moderate (34%-)	Low (11%-33%)	Very Low (<=10%)	
	Minimal	Green	Yellow	Red	Red	Red	
	Moderate	Green	Yellow	Yellow	Red	Red	
	Significant	Green	Green	Yellow	Yellow	Red	
	Severe	2,3,5	Green	Green	Yellow	Yellow	
	Critical	1,4,6	Green	Green	7	Yellow	

The vertical leg of the matrix ranks potential probability and was divided into five categories as listed below.

- Very High Probability: >= 90%
- High Probability: 66% to 89%
- Moderate Probability: 34% to 65%
- Low Probability: 11% to 33%
- Very Low Probability: <= 10%

The horizontal leg of the matrix ranks potential impacts and was divided into five categories as listed below.

- Minimal: small or negligent effect on safety, the environment, schedule, or cost
- Moderate: schedule, minor environmental exposure (fuel oil, filling spills) or minor cost impacts
- Significant: safety, incremental environmental exposure
- Severe: major schedule delays and/or cost overrun
- Critical: major environmental exposure

RISK #1	DESCRIPTION: Environmental spill when storing equipment		
PRE-MITIGATION PROBABILITY	Low	PRE-MITIGATION IMPACT:	Moderate
MITIGATION:	<ul style="list-style-type: none"> • Each locomotive has a sump located under the engine to catch leaks. • Maintain daily equipment inspection sheets and detailed maintenance logs. • Railcar Inspections: After loading and replacing the lid, Charah will conduct and document an initial inspection of each railcar to ensure it is ready for transport. If Charah identifies a railcar that doesn't meet the specification, Charah will set that car aside on the alternate track and will notify DukeEnergy. • Maintenance will be performed on the equipment in accordance with the manufacturer's recommendations. • Maintenance and repairs will be performed on-site. • Fueling will be handled in accordance with the attached Charah fueling plan. • Rail car is set aside if there is equipment failure/breakdown on a designated alternate track. • Equipment operators will immediately contain and respond to a spill. They will notify Charah environmental who will notify Duke environmental and management. • All employees are trained in spill response. 		
POST-MITIGATION PROBABILITY:	Verylow	POST-MITIGATION IMPACT:	Minimal

RISK #2	DESCRIPTION: Environmental spill when operating equipment		
PRE-MITIGATION PROBABILITY	Moderate	PRE-MITIGATION IMPACT:	Minimal
MITIGATION:	<ul style="list-style-type: none"> • If equipment is leaking, operators will shut down the equipment immediately. • Maintain daily equipment inspection sheets and detailed maintenance logs. • Maintenance will be performed on the equipment in accordance with the manufacturer's recommendations. • Maintenance and repairs will be performed on-site. • A railcar is set aside if there is equipment failure/breakdown on a designated alternate track. • Equipment operators will immediately contain and respond to a spill. They will notify Charah environmental who will notify Duke environmental and management. • All operators are trained in spill response. • All equipment will have a on board spill kit. 		
POST-MITIGATION PROBABILITY:	Low	POST-MITIGATION IMPACT:	Minimal

RISK #3	DESCRIPTION: Environmental spill when fueling equipment		
PRE-MITIGATION PROBABILITY	Moderate	PRE-MITIGATION IMPACT:	Moderate
MITIGATION:	<ul style="list-style-type: none"> • If equipment is leaking, operators will shut down the equipment immediately. • Maintain daily equipment 360 walk around inspection sheets and detailed maintenance logs. • Maintenance will be performed on the equipment in accordance with the manufacturer's recommendations. • Maintenance and repairs will be performed on-site. Fueling will be handled in accordance with the attached Charah fueling plan. • Equipment operators will contain and immediately respond to a spill. They will notify Charah environmental who will notify Duke environmental and management. • All employees are trained under Charah's fueling policy. • All equipment will have a on board spill kit. 		
POST-MITIGATION PROBABILITY:	Low	POST-MITIGATION IMPACT:	Minimal

RISK #4	DESCRIPTION: Fugitive Dust		
PRE-MITIGATION PROBABILITY	Low	PRE-MITIGATION IMPACT:	Moderate
MITIGATION:	<ul style="list-style-type: none"> • Watering by using a water truck with sprayers • Establishing vegetative cover • Operational soil cover • Modifying the active work area • Modifying operations during dry weather and windy conditions • Approved chemical dust suppressants • Daily monitoring of weather • Direct observations by supervision and operators of equipment movements • Reductions in speed by rolling equipment 		
POST-MITIGATION PROBABILITY:	Verylow	POST-MITIGATION IMPACT:	Minimal

RISK #5	DESCRIPTION: Leachate Spill		
PRE-MITIGATION PROBABILITY	Moderate	PRE-MITIGATION IMPACT:	Moderate
MITIGATION:	<ul style="list-style-type: none"> • If equipment is leaking, operators will shut down the equipment immediately. • Maintain daily equipment inspection sheets and detailed maintenance logs. • Equipment operators will immediately contain and respond to a spill. They will notify Charah environmental who will notify Duke environmental and management. • All operators are trained in spill response. • All equipment will have a on board spill kit. • Detention system for leachate water will be monitored with a direct measuring device prior to predicted rain events and after each rain events. • Estimated capacity of the system is known to be approximately 400,000 gallons 		
POST-MITIGATION PROBABILITY:	Low	POST-MITIGATION IMPACT:	Minimal

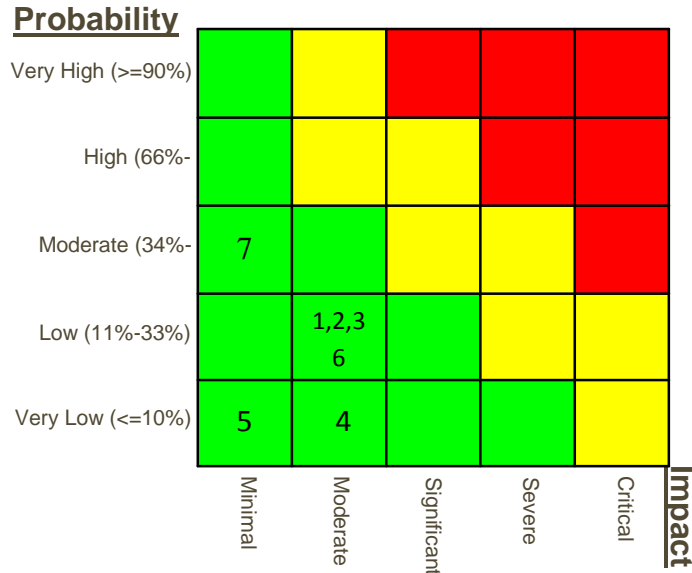
RISK #6	DESCRIPTION: Ash spill outside of structural fill limits		
PRE-MITIGATION PROBABILITY	Very Low	PRE-MITIGATION IMPACT:	Moderate
MITIGATION:	<ul style="list-style-type: none"> • Maintain daily equipment inspection sheets and detailed maintenance logs. • Gondola Inspections: After loading and replacing the lid, Charah will conduct and document an initial inspection of each gondola to ensure it is ready for transport. Charah will conduct a final inspection on the gondolas prior to transport. If Charah identifies a gondola that doesn't meet the specification, Charah will set that car aside on the alternate track. • Maintenance and repairs will be performed on-site. • Charah will conduct tabletop exercises on a monthly basis to improve operational awareness. • Off-road trucks will not exceed 15MPH on site. • All operators will use three part communication. 		
POST-MITIGATION PROBABILITY:	Very Low	POST-MITIGATION IMPACT:	Minimal

RISK #7	DESCRIPTION: Permit Adherence		
PRE-MITIGATION PROBABILITY	Very Low	PRE-MITIGATION IMPACT:	Critical
MITIGATION:	<ul style="list-style-type: none"> • Identify permits and permit requirements Structural Fill Permit—1910 STRUCT—2015 Mining Permit—19-25 Chatham County E&SC Permit NPDES General Permit NCG010000 NPDES Permit NCG020354 Industrial User Permit—City of Sanford DEQ—Leachate Pump and Haul Permit 401-404 Permit • Conduct a review of the permit requirement matrix prior to starting inaugural railcar unloading operations and prior to a change in the permitted operating plan. • Conduct a pre-job brief with all representatives of regulatory agencies prior to beginning work. 		
POST-MITIGATION PROBABILITY:	Verylow	POST-MITIGATION IMPACT:	Severe

5.2 Operational Safety Matrix

The matrix identifies potential issues with probabilities and impact assignments for each of the risks. Identified risks which initially fell in the red and yellow areas of the matrix were further vetted to minimize probability and/or impacts. The goal was to reduce all risks to green areas. The matrix displays post mitigation probability and impacts.

1. Working From Elevated Platform
2. Truck Roll Over
3. Backing Equipment
4. Suspended Load
5. Swing Radius
6. Adverse Weather
7. Area Congestion



The vertical leg of the matrix ranks potential probability and was divided into five categories as listed below.

- Very High Probability: >= 90%
- High Probability: 66% to 89%
- Moderate Probability: 34% to 65%
- Low Probability: 11% to 33%
- Very Low Probability: <= 10%

The horizontal leg of the matrix ranks potential impacts and was divided into five categories as listed below.

- Minimal: small or negligent effect on safety, the environment, schedule, or cost
- Moderate: schedule, minor environmental exposure (fuel oil, filling spills) or minor cost impacts
- Significant: safety, incremental environmental exposure
- Severe: major schedule delays and/or cost overrun
- Critical: major environmental exposure

5.3 Storm Water Pollution Prevention Plan. (Ref: Appendix III)

Site specific storm water pollution prevention plan implemented and monitored by site and corporate environmental specialist to ensure compliance to all local, state, and federal regulatory agencies.