NATURAL RESOURCE TECHNOLOGY
ENVIRONMENTAL CONSULTANTS

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Mr. Jeffrey Beaudry
Midwest Generation, LLC
Will County Generating Station
529 E. Romeo Road
Romeoville, IL 60446

July 18, 2014
(2113.1)

RE: Construction Documentation Transmittal
South Ash Pond 2 Liner Replacement
Midwest Generation, LLC Will County Generating Station

Dear Mr. Beaudry:

Natural Resource Technology, Inc. (NRT) has prepared this correspondence to transmit construction record documents for the liner replacement completes in 2013 for the South Ash Pond 2 at the Will County Generating Station.

Documentation of the major construction components, including field reports, laboratory test results, and documentation drawings are attached to this letter.

Please contact NRT if you have any questions or comments regarding this transmittal.

Sincerely,

NATURAL RESOURCE TECHNOLOGY, INC.

Eric J. Tlachac, PE
Senior Engineer

Joseph R. Ridgway, PE
Environmental Engineer

ATTACHMENTS:

Attachment A: Daily Field Reports
Attachment B: Structural Fill
- B1: Borrow Source Samples
- B2: Field Compaction Test Results
- B3: Concrete Mix Design
- B4: Concrete Test Results

Attachment C: Geosynthetic Certifications
- C1: Geomembrane Certification
- C2: Geotextile Certification

Attachment D: Geosynthetics Installer Submittals
- D1: Field Tensiometer Calibration
- D2: Installer Crew Resumes
- D3: Subgrade Acceptance
- D4: Geosynthetic Material Installation Certificate
- D5: Geomembrane Installation Warranties

MWG13-15_34268

EXHIBIT
MWG-510

NATURAL RESOURCE TECHNOLOGY

Attachment E:	Geosynthetics Installation
	E1: Trial Weld Summary
	E2: Panel Placement Summary
	E3: Panel Seaming Summary
	E4: Repair Summary
	E5: Non-Destructive Test Summary
Attachment F:	Liner Integrity Survey Report
Attachment G:	Construction Documentation Drawing Set

ATTACHMENT A

DAILY FIELD REPORTS

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3
Project Names: South Ash Pond 2 Liner Replacement

Date:	July 18, 2013
Work Scope:	Subgrade preparation and drill coring
NRT Staff:	Joseph R. Ridgway
Contractors:	Brieser Construction
Weather:	70s and sunny
Equipment:	Digital camera

Field Comments:	• Arrive onsite around 07:45, check in at guard shack
	• Meet with Jeff Beaudry (MWG) to discuss anticipated poz-o-pac and elevation issues – cores were drilled previous day, despite requests by MWG and NRT for personnel from NRT to be present during work
	• Meet Terry Anderson to discuss cores
	  o Boring 01: 0 – 6" 1st layer of poz-o-pac; 6 – 12" 2nd layer of poz-o-pac; 12" – 36" 3rd layer of poz-o-pac; end of core – Note: bottom of 3rd layer of poz-o-pac not encountered
	  o Boring 02: 0 – 6" 1st layer of poz-o-pac; 6 – 12" 2nd layer of poz-o-pac; 12" – 24" sandy clay fill with gravel; 24" – 36" 3rd layer of poz-o-pac; end of core – Note: bottom of 3rd layer of poz-o-pac not encountered
	• Record locations of boring with GPS unit
	• Discuss excavation options with Jeff – Brieser to remove top 6" layer of poz-o-pac, Jeff will discuss capacity issues with MWG Engineering group to determine how much additional material can be left in place
	• Provide Jeff with guidance for performing Storm Water Pollution Prevent Plan inspections
	• Offsite around 11:30

Scope Changes:	• To be determined based on input received from MWG Engineering group
Site Conditions:	Good condition, dusty along roads

Signature: JRR _____ Date: 07/19/13

Joseph R. Ridgway, PE

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Tuesday, July 23, 2013
Work Scope:	Observe and answer questions on the installation of the HDPE embedment strip for the concrete pad to be poured around the existing concrete pad supporting the ash slurry discharge pipes.
NRT Staff:	Ryan Baeten & Eric Tlachac
Contractors:	Brieser Construction
Weather:	70-80°F Sunny, dry
Equipment:	1 - CAT 963D Track Loader 1 - CAT 320E Excavator w/hammer 1 - CAT 289C Skidsteer
Field Comments:	RJB and EJT met with Terry Anderson (Brieser) to discuss installation of the HDPE embedment strip. The strip was loosely screwed to the concrete forms with the screws entering from the outside of the form. NRT suggested nailing the embedment strips to the forms from the inside of the forms to make a more secure connection. The nails are anticipated to be removed with the forms or using a pliers after the forms are removed. Photos of the embedment strip and other site activities were saved to the project folder: P:\2100\2113\Photos\Will Co 2013 07 23. Brieser was also working on breaking up the Poz-o-Pac liner along the floor of the pond with the excavator. The chunks of Poz-O-Pac were being loaded into tractor-trailer trucks and hauled off-site. NRT confirmed with Terry that the deadman will be a critical anchoring component for the geocell (both short and long-term). The top of the west slope was in need of soil removal and grading. The space below the baffle connected to the weir structure may be limiting for the liner crew to install the geomembrane and batten strip. Terry informed NRT that the 3:1 slopes will be constructed with excess soils from the floor, the anchor trench, and FA-5 cushion layer material. Slope construction will likely occur next week. Geomembrane and geotextile roll numbers were collected from the materials onsite, staged north of the railroad tracks in a gravel parking area. There were nine (9) rolls of geomembrane and 47 rolls of geotextile. The following rolls numbers were recorded: Geomembrane 105167008 105167028 105167024 105167029 105167025 105167033 105167026 105167034 105167027

Geotextile	
29599.1	29599.24
29599.2	29599.25
29599.3	29599.26
29599.4	29599.27
29599.5	29599.28
29599.6	29599.29
29599.7	29599.30
29599.8	29599.31
29599.9	29599.32
29599.10	29599.33
29599.11	29599.34
29599.12	29599.35
29599.13	29599.36
29599.14	29599.37
29599.15	29599.38
29599.16	29599.39
29599.17	29599.40
29599.18	29599.41
29599.19	29599.42
29599.20	29599.43
29599.21	
29599.22	
29599.23	

Scope Changes: None

Site Conditions: Dry and dusty

RJB

Signature: _____ Date: July 23, 2013

Ryan J. Baeten, PE

HDPE embedment strip installed on forms in preparation for concrete placement (looking east).

Excavator with hammer breaking up the Poz-o-Pac in the pond (looking northeast).

West slope prior to grading the soil near the weir (looking north).

Geotextile and geocell staged in a gravel parking lot (looking north).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3
Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date: Thursday, July 25, 2013

Work Scope: Observe concrete pad pour and soft spots in pond floor

NRT Staff: Ryan Baeten

Contractors:
Brieser Construction
1 - Superintendent (Terry Anderson, cell: 815.693.1630)
1 - Foreman (Dan Bobzin, cell: 815.639.2752)
3 - Operators
6 - Laborers

Weather: 70-80°F Sunny, dry

Equipment:
1 - CAT 963D Track Loader
1 - CAT 320E Excavator w/hammer
1 - CAT 289C Skidsteer
1 - CAT CS-433E Smooth Drum

Field Comments:

Observed concrete pour for the pad below the slurry pipes.
Six (6) concrete trucks from Welsch Ready Mix arrived onsite in the following sequence:
8:44 AM concrete truck #20
9:07 AM concrete truck #9
9:30 AM concrete truck #24
9:56 AM concrete truck #121
9:58 AM concrete truck #37 (the estimated difference fell short requiring a few more yards)
11:18 AM concrete truck #125

Approximately 50 cubic yards of concrete was required to complete the concrete pad.

DLZ of Joliet, IL performed field testing on concrete from two of the trucks (#20 and #121) and collected cylinders for laboratory strength testing. The field results were:

	Air Content	Slump
Truck #20	5.5%	3.5 in
Truck #121	7.0%	4.5 in

Concrete was placed from the east end of the forms to the west. Six laborers placed, vibrated, leveled, troweled, and broomed the concrete.

The top of west slope along the concrete weir structure had been graded since the last site visit, exposing more of the concrete surface where the geomembrane will be connected to. I informed Terry that any concrete or metal protrusions that could potentially damage the geomembrane should be removed to provide a smooth surface prior to installation of the geomembrane.

Note: MWG requires contractor personnel to wear long-sleeve shirts while onsite.

Brieser began filling 4-inch diameter concrete deadman pipe with sand. The pipe that will be used is a bell and spigot 4 inch diameter schedule 40 PVC meeting ASTM D2665 and ASTM D1785 standard specifications.

	Terry asked about the cure time needed for the concrete that will be placed in the geocell on the concrete ramp for trucks to travel over. NRT may assess and provide a recommendation. Eric Tlachac suggested using an early high-strength concrete for the ramp to decrease the time between the concrete pour and traveling over the ramp with heavy equipment. Terry will assess the project schedule and needs for using the early high-strength concrete. Further discussions with Terry about placing plastic over the concrete to properly cure it and density testing requirements for the slope fill material revealed that he was not provided a set of specifications for the project (only a drawing set). I asked him to obtain a set of specifications so he is better acquainted with the project requirements. Photos from today's site visit are saved in the project file: P:\2100\2113\Photos\Will Co 2013 07 25
Scope Changes:	None
Site Conditions:	Dry and dusty

Signature: RJB _____ Date: July 25, 2013

Ryan J. Baeten, PE

Placing and finishing concrete pad (looking northwest).

West slope graded in preparation for geosynthetics (looking north).

PVC pipe being filled with sand for use as the geocell deadman in the anchor trench (looking northeast).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3
Project Name: South Ash Pond 2 Liner Replacement

Date:	July 18, 2013
Work Scope:	Subgrade preparation and slope reconstruction
NRT Staff:	Joseph R. Ridgway
Contractors:	Brieser Construction
Weather:	60s/70s, mostly cloudy
Equipment:	Digital camera

Field Comments:	• Arrive onsite around 07:00, check in at guard shack
	• Meet with Dan Bobzin (Brieser) to discuss slope reconstruction
	  o Approximately 24 inches of material has been placed along north slope, although it doesn't appear that compaction has been performed and no compaction testing has been performed
	  o Instruct Dan to remove 6 to 12 inches of material, perform compaction, and request compaction testing technician (DLZ) to test 12" into the slope
	  o If those tests confirm that 90% modified proctor specification has been met, continue with slope reconstruction
	  o Compaction testing confirms that specification is met – Brieser continues with slope reconstruction in 6" lifts, with compaction testing, as specified
	• Brieser begins digging anchor trench along north slope
	• Offsite around 15:00

Scope Changes:	• None
Site Conditions:	Good condition, dusty along roads

Signature: JRR _____ Date: 07/30/13

Joseph R. Ridgway, PE

View of improperly placed material for slope reconstruction, facing west

View of anchor trench excavation, facing west

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3
Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Wednesday, July 31, 2013
Work Scope:	Observe and answer questions related to slope grading, compaction, and preparation of the subgrade for liner installation.
NRT Staff:	Erin Berns (Joseph Ridgway – during the morning)
Contractors:	Brieser Construction
Weather:	70-80°F Overcast, looked as though it would rain but did not
Equipment:	1 - CAT 963D Track Loader 1 - CAT 289C Skidsteer 1 – CAT CS433E Drum Roller
Field Comments:	Erin and Joseph met with Dan (foreman from Brieser) to discuss the use of screening material for slope construction. Upon arrival to the site, the slopes consisted of uneven fill material; some screenings had also been placed on the floor of the ash pond. Three trucks continuously drove from the quarry to the ash pond where they would dump loads of gravel/sand screenings to be used for evening out the slopes at a 3:1 grade. The skidsteer was used to place the screenings along the slope at a thickness no greater than 6 inches per lift. After placement by the skidsteer, the drum roller further compacted the screenings and smoothed the slope. The first lift on the south slope did not meet a modified proctor of 90% and it was necessary to add water to the slope and re-compact with the drum roller. The water was pumped from the adjacent ash pond. Erin questioned Dan and the laborers about the decision to use the water from the pond. Brieser confirmed that because the water truck was receiving maintenance, the water from the pond would be suitable. A hose was used with a pump to bring water from the adjacent ash pond to the south slope. After watering and re-rolling the slope, the density was greater than 90% modified proctor. For the second lift on the south slope, Dan decided that it would be more efficient to add water before rolling. After the skidsteer layed the second lift, the slope was watered (in the same fashion as the first lift), an d the roller further compacted and smoothed the slope. The slope was over 90% modified proctor, therefore the south slope was prepared for a third lift. The first lift was also completed on the north slope. The density was not measured because the roller had not yet been used on the north slope at the end of the day. No water had been added to the slope at the end of the day. Before leaving the site, Erin met with Dan to discuss NRT's recommendations about what should be completed by Monday (August 5th) so the subgrade would be prepared for Monday's liner installation. She emphasized the following: 1.) Should more water be needed for the future lifts to meet 90% modified proctor, the water should NOT be taken from the adjacent ash pond, as this water needs a permit to be discharged.

	2.) All pieces of gravel and concrete greater than 1 in diameter must be removed from the surface. 3.) Sharp corners/edges of the subgrade should be smoothed with screenings. At least one more lift was needed on the south slope and at least two more lifts were needed on the north slope at the end of the day. Photos for the slope grading and subgrade preparation can be found at the hyperlink below: P:\2100\2113\Photos\073113 Grading and Subgrade Prep
Scope Changes:	None
Site Conditions:	Some dust but damp weather kept dust to a minimum

Signature: ECB
Erin Berns, Student Engineering Technician

Date: August 1, 2013

Density testing structural fill along the south slope (looking east).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Monday, August 5th , 2013
Work Scope:	Observe installation of geotextile and geomembrane on prepared subgrade. Document panel placement, seaming, and determine locations of necessary repairs.
NRT Staff:	Erin Berns and Joe Larson (Joseph Ridgway in the morning)
Contractors:	Brieser Construction Clean Air and Water
Weather:	70-80°F Overcast, light rain before lunch and at the end of the day
Equipment:	1 - CAT 963D Track Loader 1 - CAT 289C Skidsteer 1 - CAT CS433E Drum Roller 1 - Lull Fork Lift
Field Comments:	Upon arrival to the site at approximately 8am, the subgrade was still being completed and the anchor trenches were only partially complete. Brieser Construction had been delayed from finishing the subgrade preparation on Friday (August 2nd) due to rain. Joe, Joseph, and Erin met with Dan (Brieser foreman) to discuss a plan for the day. At 11:30AM, the west end of the basin with the weir had geotextile installed. Roll numbers 29599.21, 29599.42, 29599.14, and 29599.13 were used. Following lunch, the geomembrane was installed over the geotextile that had been installed in the morning. Panels 1-6 (see field diagram) were installed using the Lull forklift. It was determined that the large forklift left too large of an indent in the subgrade and after driving on the geotextile to install panel 6, Joe requested that Brieser and Clean Air and Water stop using the Lull forklift because it could potentially damage the geotextile. The remaining panels (7-15) were installed using the skidsteer. Geomembrane roll 7034 was used completely and roll 7025 was partially used. Seams were prepared for testing throughout the day. Around 4:30PM it began raining again and Joe and Erin doubled checked that all panel numbers were visible and all seams had been documented before leaving for the day. Joe and Erin met at 5:30PM to discuss and plan for Tuesday (August 6th).
Scope Changes:	None
Site Conditions:	Some dust Wet in some areas from storm

ECB

Signature: _____ Date: August 5, 2013

Erin Berns, Student Engineering Technician

Brieser preparing subgrade for geosynthetics deployment (looking west).

Geotextile installation on the west end of the pond (looking northwest).

Geomembrane installation on the west end of the pond (looking northeast).

Fusion welding geomembrane seams (looking northeast).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Tuesday, August 6th , 2013
Work Scope:	Observe installation of geotextile and geomembrane on prepared subgrade. Document panel placement, seaming, non-destructive tests, trial welds, and determine locations of necessary repairs.
NRT Staff:	Erin Berns and Joe Larson
Contractors:	Brieser Construction Clean Air and Water
Weather:	Approximately 80°F. Overcast in the morning and sunny in the afternoon.
Equipment:	1 - CAT 963D Track Loader 1 - CAT 289C Skidsteer 1 - CAT CS433E Drum Roller 1 - Lull Fork Lift
Field Comments:	At 7:30 AM Clean Air and Water began laying the geotextile; it was set down from the end of the previous day's work (see August 5th report) up to the concrete island with the inlet piping. Geotextile was also set down in the northeast corner of the basin. Rolls 29599. 37, 40, 38, 28, 5, 34, 31, 41, and 11 were used for this section of geotextile. At approximately 12:00 PM, geomembrane installation began over the central portion of the basin and up the north and south sidewalls. Rolls 7025, 7027, and 7024 were used to cover this area. All panels were fusion welded together and areas that needed repair were marked with a circle (these locations will be labeled tomorrow, 8/7). Non-destructive testing was performed on the majority of the seams. Throughout the day, Brieser Construction completed the anchor trenches on the north and south walls. Activities on site ended at approximately 5:00 PM and scrap materials were removed from the basin. Joe and Erin met at 6:00 PM to discuss and plan for Wednesday (August 7th).
Scope Changes:	None
Site Conditions:	Some dust from digging of anchor trench

Signature: ECB

Erin Berns, Student Engineering Technician

Date: August 6, 2013

Geotextile installation (looking south).

Geomembrane installation (looking south).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3
Project Names: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Wednesday, August 7th , 2013
Work Scope:	Observe installation of geotextile and geomembrane on prepared subgrade. Document panel placement, seaming, non-destructive tests, trial welds, and determine locations of necessary repairs.
NRT Staff:	Erin Berns and Joe Larson
Contractors:	Brieser Construction Clean Air and Water
Weather:	Approximately 75°F. Sunny in the morning and overcast with slight rain in the afternoon.
Equipment:	1 - CAT 963D Track Loader 1 - CAT 289C Skidsteer 1 - CAT CS433E Drum Roller 1 - Lull Fork Lift
Field Comments:	At 7:30 AM Clean Air and Water began laying the geomembrane on the south slope. The geomembrane spanned from the top of the slope to the concrete island structure with the embedment strip. At approximately 8:15 AM, geotextile placement began on the north slope and center portion of the basin terminating at the concrete island. The geomembrane was placed on top of the geotextile starting at approximately 9:45 AM. The region of the basin in the area of the ramp was not covered with geotextile because the subgrade needed improvements (mostly due to water erosion) in this area before the liner could be placed. Following lunch at approximately 1:00 PM, Clean Air and Water began placing the geotextile on the east slope, but the installation of this portion of the geotextile was delayed due to rain. Tong (CAAWS foreman) determined that the liner was too wet to fusion weld and the liner crew left for the day at approximately 2:00 PM. Geotextile rolls 29599.24, 23, 30, 25, 18, 43, and 7 were used throughout the day. Geomembrane rolls 7026, 7028 and 7033 were used to cover the areas of the basin discussed above. Throughout the day, Brieser Construction removed excavated material from the site and prepared a staging area for the concrete and geocell operations. Near the end of the day, Joe spoke with Dan (Brieser foreman) to discuss the improvements that were needed in the basin near the ramp; efforts were made following this conversation to smooth the portions of the basin near the ramp. Activities on site ended at approximately 2:45 PM and Joe and Erin met at 3:30 PM to discuss and plan for Thursday (August 8th).
Scope Changes:	None
Site Conditions:	Dusty especially near roadway around basin.

Signature: _____ Date: August 7, 2013
Erin Berns, Student Engineering Technician

Geomembrane installation on the south slope (looking southeast).

Pipe boot installation on pipe exiting the weir wall (looking northwest).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Names: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Thursday, August 8th , 2013
Work Scope:	Observe installation of geotextile and geomembrane on prepared subgrade. Document panel placement, seaming, non-destructive tests, trial welds, and determine locations of necessary repairs.
NRT Staff:	Erin Berns and Joe Larson
Contractors:	Brieser Construction Clean Air and Water
Weather:	Approximately 80°F and sunny.
Equipment:	1 - CAT 963D Track Loader 1 - CAT 289C Skidsteer 1 - CAT CS433E Drum Roller 1 - Lull Fork Lift
Field Comments:	At approximately 7:30 AM Clean Air and Water continued laying geotextile on the east slope and the area around the ramp. Following the geotextile, these sections of the basin were covered with geomembrane. The region of the slope directly below the inlet piping was not covered with geotextile or geomembrane because Clean Air and Water determined that several small panels and lots of detail work would be necessary to install the liner in this area. Thong (foreman of CAAWS) discussed with NRT his methods to work around the pillars and concrete island that interfere with laying the liners on the east slope below the inlet piping. The methods included wrapping batten strips around the pillars and placing a batten strip across the top surface of the concrete island. Geotextile rolls 29599.7, 26, and 29 and Geomembrane rolls 7033, 7008, and 7029 were used to cover the areas of the basin discussed above. Clean Air and Water did various detail work on the liner throughout the day including: extrusion welding patches over intersections and damage areas, continuing to install batten strips along the weir, marking locations that need repair, and attaching the liner to the embedment strip along the concrete island. Throughout the day, Brieser Construction excavated the remaining area of the trench in front of the entrance ramp to the basin and removed water from the basin using a pump and rubber push brooms. Activities on site ended at approximately 5:15 PM and Joe and Erin met at 6:00 PM to discuss and plan for Friday (August 9th). It is likely that the liner installation will not be complete until Saturday afternoon. Progress is being made on the batten strip along the weir, approximately 97 feet of welding need to be complete along the embedment strip of the concrete island, and many repairs still need to be made. Thong and the liner crew are prepared to work through Saturday to complete work on the liner.
Scope Changes:	None
Site Conditions:	Dusty especially near roadway around basin.

ECB

Signature: _____ Date: August 7, 2013

Erin Berns, Student Engineering Technician

Geotextile installation (looking south).

Extrusion welding geomembrane to HDPE embedment strip in the concrete pad (looking southwest).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

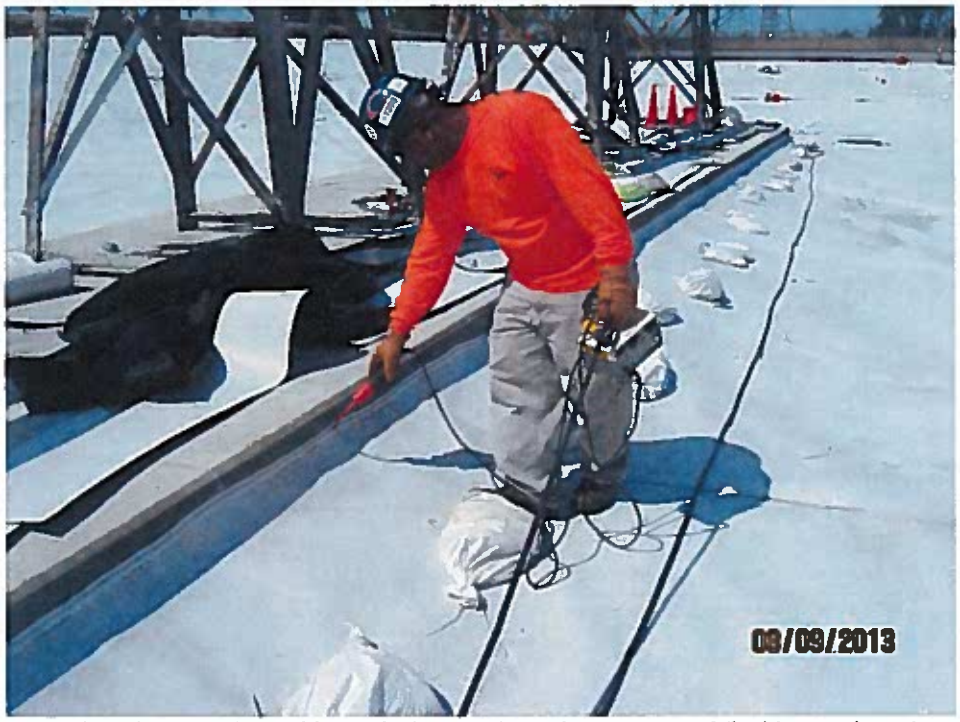
Date:	Friday, August 9th, 2013
Work Scope:	Observe installation of geotextile and geomembrane on prepared subgrade. Document panel placement, seaming, non-destructive tests, trial welds, and determine locations of necessary repairs.
NRT Staff:	Erin Berns and Joe Larson
Contractors:	Brieser Construction Clean Air and Water
Weather:	Approximately 80°F and sunny.
Equipment:	1 - CAT 963D Track Loader 1 - CAT 289C Skidsteer 1 - CAT CS433E Drum Roller 1 - Lull Fork Lift
Field Comments:	At approximately 7:30 AM Clean Air and Water continued repair work. Clean Air and Water determined that several small panels and lots of detail work would be necessary to install the liner on the slope under the pipes. They placed batten strips around the concrete pillars and fabricated pipe boot type liner pieces to go between the line panels and the batten strips. They also placed a batten strip across the top surface of the concrete island to seal the transition from liner to concrete island. Clean Air and Water did various detail work on the liner throughout the day including: extrusion welding patches over intersections and damage areas, continuing to install batten strips along the weir, marking locations that need repair, and attaching the liner to the embedment strip along the concrete island. Throughout the day, Brieser Construction removed water from the basin using a pump and rubber push brooms. Activities on site ended at approximately 5:15 PM. Progress continues on the batten strip along the weir. The last 97 feet of welding was completed along the embedment strip of the concrete island, the weld was spark tested, and repairs completed. The liner repairs and testing were completed. Thong and the liner crew are prepared to work through Saturday to complete work on the weir batten strips, slope tie in under the pipes, and placement of the final geotextile layer.
Scope Changes:	None
Site Conditions:	Dusty especially near roadway around basin.

Signature: JAL

Joe Larson, Environmental Scientist

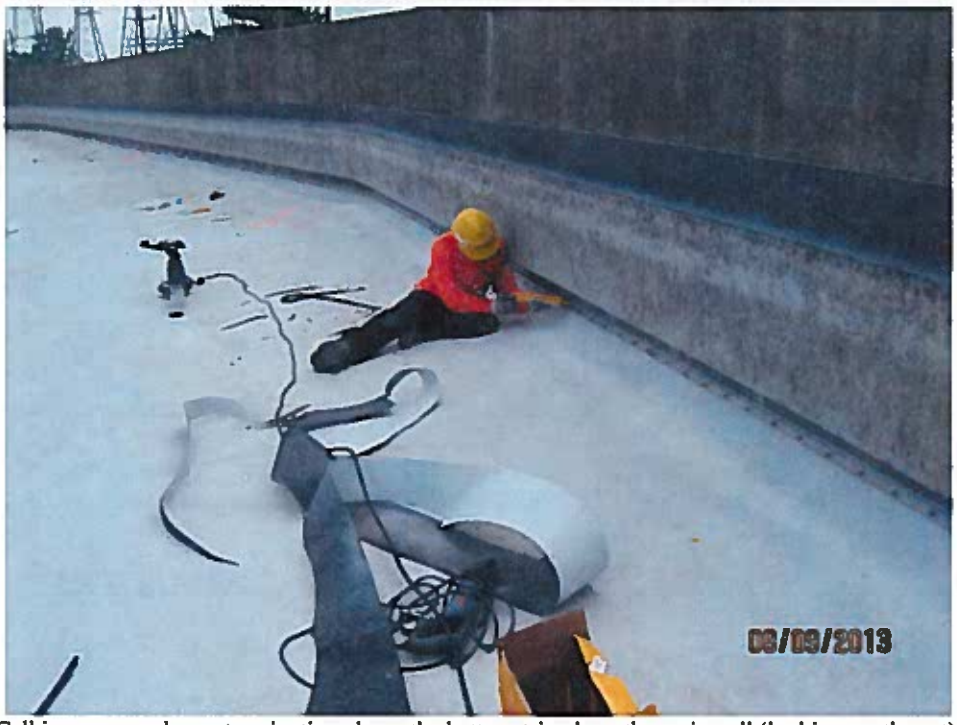
Date: August 9, 2013

Installing geomembrane below pipes on east slope. Surveyor documenting panel seams and repair locations (looking southeast).



Spark testing extrusion weld to embedment strip on the concrete pad (looking southwest).

Vacuum testing geomembrane repair extrusion weld (looking north).



Calking geomembrane termination above the batten strip along the weir wall (looking southwest).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Saturday, August 10th, 2013
Work Scope:	Observe installation of geotextile over geomembrane
NRT Staff:	Joe Larson
Contractors:	Brieser Construction Clean Air and Water
Weather:	Approximately 80°F and sunny.
Equipment:	1 - CAT 963D Track Loader 1 - CAT 289C Skidsteer 1 - CAT CS433E Drum Roller 1- Lull Fork Lift
Field Comments:	At approximately 7:30AM Clean Air and Water started placing geotextile over the liner. The crew had difficulty sewing the seams on the slopes and used the seaming machines to fuse the slope seams instead. The seams at the bottom of the area were heat tacked together. The crew ran short of geotextile and had to substitute fabric that was available on site. The roll of geotextile was a GSE manufactured nonwoven fabric that was 8 oz/sy material. There was enough material to put two layers over the corner to maintain the 16 oz/sy requirements. The geotextile rolls placed were 29599.33,2,17,32,339,3,9,1,4,8,16,10,15,22,35,20,19,27,36,12, and GSE geotextile roll 130342508. Clean Air and Water completed the batten strips along the weir, placed two band clamps on the outlet pipe with the clamping hardware off set 90 degrees. They also completed attaching the liner to the batten strips on the slope side of the concrete island. After the batten strips were bolted to the concrete the area above the batten strips was wire brushed, the dust blown off with air, and caulked. Caulk was also placed between the pipe boot and the outlet pipe below the weir on the west side of the pond. The geotextile placement was completed by approximately 3:15 PM. Clean Air and Water cleaned up the site, loaded up their equipment and left.
Scope Changes:	None
Site Conditions:	Dusty especially near roadway around basin.

Signature: JAL

Joe Larson, Environmental Scientist

Date: August 10, 2013

Installation of upper geotextile layer (installed over the geomembrane) (looking north).

Sewing nonwoven geotextile seam (looking south).

Fusion welding nonwoven geotextile seam (looking north).

Geotextile deployment. PVC deadman staged along anchor trench (looking east).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3
Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

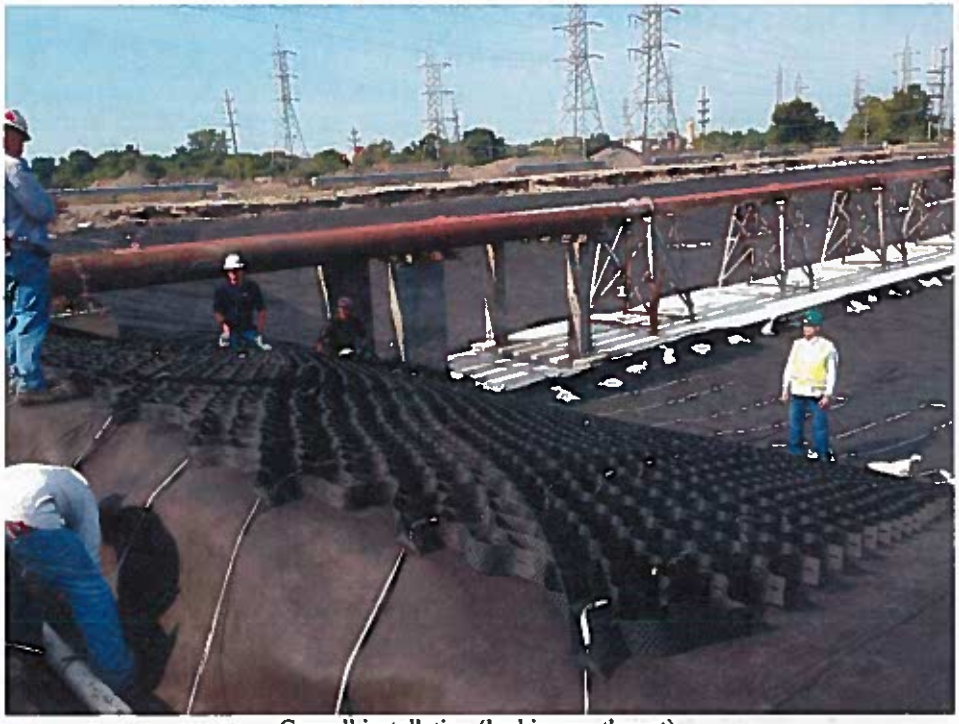
Date:	Monday August 12, 2013
Work Scope:	Observe deployment of geocell, including training from manufacturer
NRT Staff:	Joseph Ridgway
Contractors:	Brieser Construction
Weather:	Approximately 80°F, mostly cloudy
Equipment:	NA

Field Comments:	• Joseph arrives onsite at 07:00 and checks in at Guard Shack.
	• Meet with Terry Anderson of Brieser Construction to discuss project status.
	• Joseph inspects geotextile placement:
	  ○ Sewing performed on slope near weir wall
	  ○ Fusion welding performed on other slopes
	  ○ Lyster used to seem geotextile on floor
	• Brian Ericson of ERO-TEX onsite to train Brieser crew on methods for Geocell deployment
	• Brieser begin Geocell deployment around 09:00.
	• Terry is concerned that not enough Geocell material has been procured to complete the job, he suspects that approximately 30 to 35 more sections will be needed.
	• Joseph informed Terry that Geocell needed to extend to anchor trench and that anchor trench could be backfilled before leak location survey. Also Joseph recommended that Brieser work with Leak Location Subcontractor for direction regarding being prepared for the survey.
	• Joseph left the site around 10:30.

Scope Changes:	None
Site Conditions:	Dusty especially near roadway around basin.

Signature: JRR
Joseph Ridgway, Project Engineer

Date: August 12, 2013



Geocell installation (looking southwest).

Geocell installed on the east slope (looking northeast).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Wednesday August 14, 2013
Work Scope:	Observe concrete pour on Geocell
NRT Staff:	Joseph Ridgway
Contractors:	Brieser Construction
Weather:	Approximately 80°F, mostly cloudy
Equipment:	Digital camera

Field Comments:	• Joseph arrives onsite at 07:00 and checks in at Guard Shack.
	• Meet with Dan Bobzin of Brieser Construction to discuss project status:
	  ○ Concrete placement on Geocell starting today, around 07:30; six truck loads scheduled
	  ○ Using the ¾" aggregate, as opposed to the ¼" that Terry Anderson discussed using previously
	  ○ Planning for 5" slump concrete, which is within specification, for more efficient placement
	  ○ Pour starting at slope north of inlet pipe structure
	  ○ General plan moving forward is to pour concrete in the morning, then deploy Geocell when concrete is finished
	  ○ Backfilling anchor trench with cushion; will add water from water truck then use plate compactor
	  ○ Dan inquires about using tendons in Geocell on slope along weir wall; Joseph confirms that tendons and ATRA clips should be used
	  ○ Dan discusses plan to pour concrete near weir wall – along top of slope first, then finish rest of slope; Joseph confirms that this is a good method
	• Brieser begins concrete pouring at approximately 07:45
	• Joseph notes small section of exposed liner near eastern edge of weir wall on the north slope; Dan will have extra piece of HDPE liner placed there for protection
	• Joseph notes that mixing truck chutes are being rinsed near stockpile at northwestern corner of basin; requests trucks be rinsed so that rinse water flows into anchor trench; Dan is ok with that approach
	• Joseph notes that stockpiles cannot be left open without sediment erosion controls, notifies Dan and Jeff Beaudry
	• Joseph offsite around 09:30

Scope Changes:	Ramp is larger than surveys indicated; additional Geocell deployed to cover this area
Site Conditions:	Dusty especially near roadway around basin.

Signature: JRR

Joseph Ridgway, Project Engineer

Date: August 14, 2013

Concrete placement in geocell on the slope (looking west).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

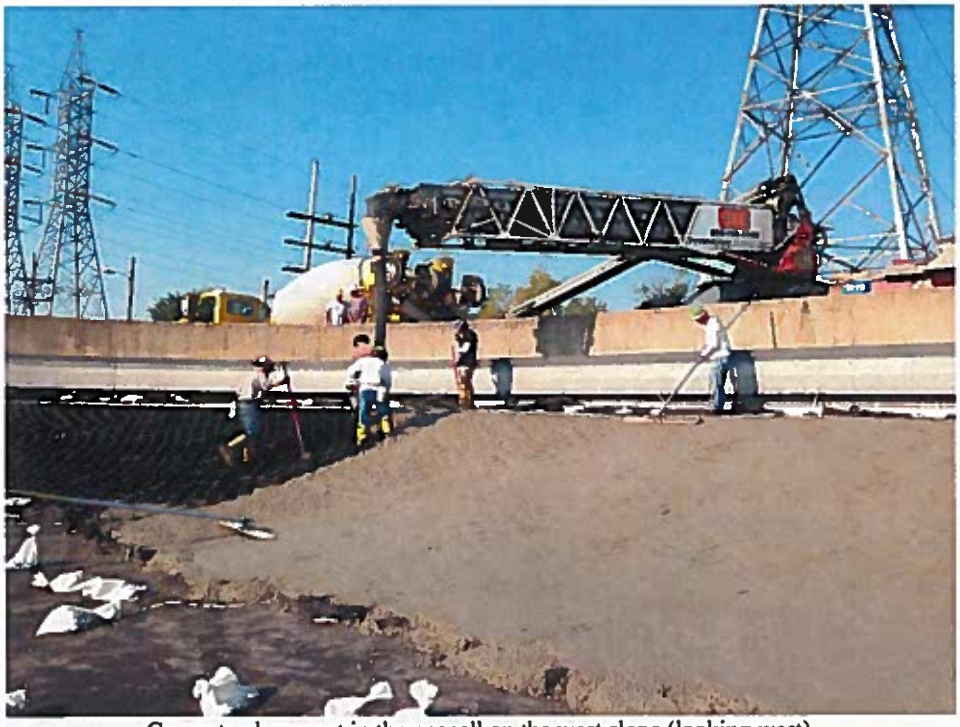
Date:	Wednesday August 19, 2013
Work Scope:	Observe concrete pour on Geocell and placement of cushion material at basin bottom
NRT Staff:	Joseph Ridgway
Contractors:	Brieser Construction
Weather:	High 70s/low 80s F, partly cloudy
Equipment:	Digital camera

Field Comments:	• Joseph arrives onsite at 08:00 and checks in at Guard Shack.
	• Meet with Dan Bobzin of Brieser Construction to discuss project status:
	  ○ Concrete placement on Geocell continuing, finishing up the slope near the weir wall in the morning, and planning to complete half of the southern slope today
	  ○ High early strength concrete was poured on ramp last week and CA-6 has been placed on the ramp
	  ○ Two trucks are bringing in screenings and placing at base of ramp, screenings being placed on basin bottom with skid-steer, elevations being verified with laser level
	• Schedule update: finish pouring concrete on 08/20/13; finish placement of cushion and warning layers on 08/23/13; leak location survey on 08/26/13; guardrail construction sometime next week
	• Joseph offsite around 09:45

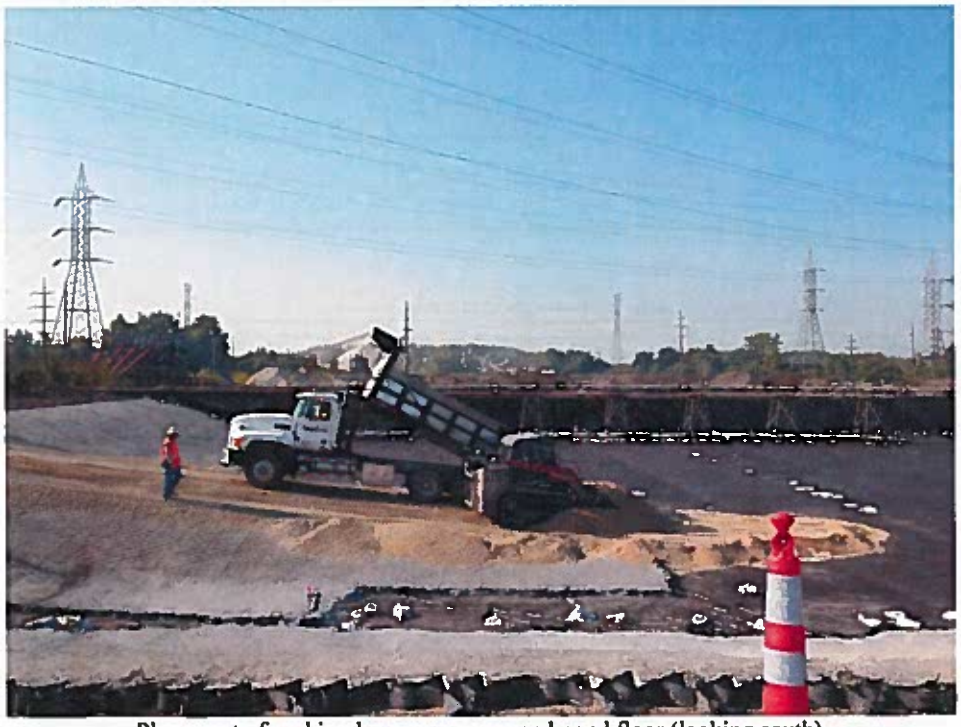
Scope Changes:	None
Site Conditions:	Dusty especially near roadway around basin.

Signature: JRR _____ Date: August 19, 2013

Joseph Ridgway, Project Engineer



Concrete placement in the geocell on the west slope (looking west).



Placement of cushion layer over ramp and pond floor (looking south).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Wednesday August 28, 2013
Work Scope:	Observe liner integrity survey
NRT Staff:	Ryan Baeten
Contractors:	Brieser Construction & Leak Location Services, Inc.
Weather:	65°-83°F, sunny and dry
Equipment:	Leak location equipment
Field Comments:	RJB onsite at 07:07 to observe LLSI perform a liner integrity survey on the recently installed and covered geomembrane. Along the haul road, east of the pond, 18 nylon tendons holding the geocell on the slope were cut off, likely during the removal of the access road. It is likely that the tendons were cut in order to lift the geocell to hydraulically wash the aggregate out of the cells in preparation of the liner integrity survey. Brieser claimed no knowledge of why the tendons were cut. A laborer reconnected the tendons by splicing a small piece between the cut and tied it into place. Thane (LLSI) conducted the liner integrity survey. An artificial leak was set in the NNE part of the pond floor. The grid was laid out to mark 10 foot intervals. A data logger was used to collect electric potential readings along the grid. The liner integrity survey was finished around 12:30 and no leaks were identified. Brieser added moisture to the soil covering the geomembrane to increase the conductivity of the soil medium, required for the survey. Brieser backfilled the anchor trench and compacted the soil with a vibratory plate compactor. Two partial geomembrane rolls onsite: 105167029 (63 wraps) 105167008 (14 wraps)
Scope Changes:	None
Site Conditions:	Good

Signature: RJB

Ryan Baeten, PE

Date: August 28, 2013

Brieser repairing cut geocell tendons along the pond access road (looking southwest).

LLSI laying out a 10 foot grid on the pond floor to help keep track of data collection locations (looking northeast).

Liner integrity survey power supply and other equipment (looking north).

LLSI taking electric potential readings on the pond floor (looking southeast).

Brieser wetting the soil overlying the geomembrane for the liner integrity survey (looking southwest).

Brieser backfilling and compacting soil in the anchor trench (looking west).

FIELD NOTE SUMMARY

Project Number / Task: 2113.1 / 3.3

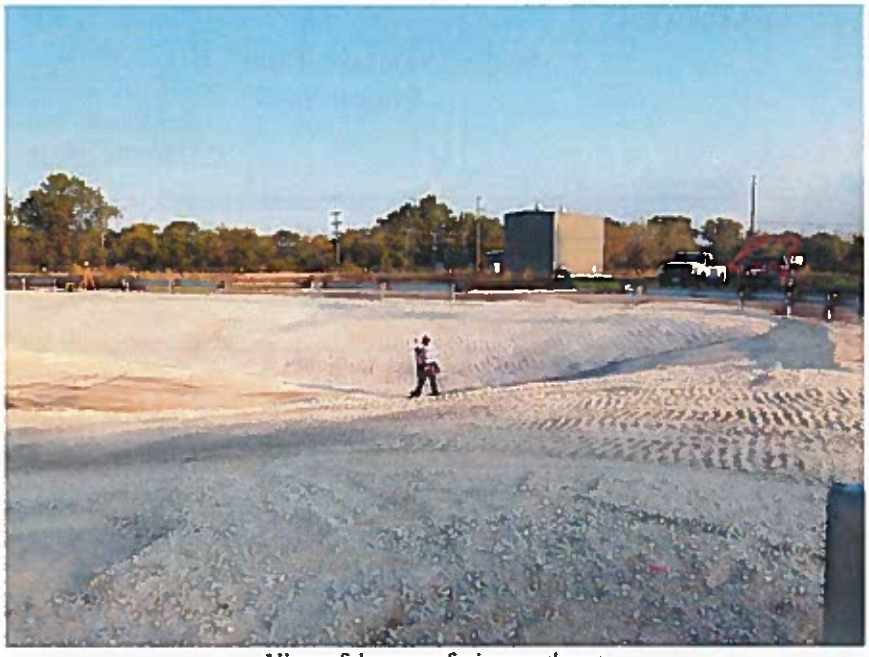
Project Name: South Ash Pond 2 Liner Replacement - Will County Generating Station

Date:	Wednesday September 6, 2013
Work Scope:	As-built survey
NRT Staff:	Joseph Ridgway
Contractors:	Brieser Construction
Weather:	High 50s/low 60s F, partly cloudy
Equipment:	Digital camera
Field Comments:	• Joseph arrives onsite at 06:45 and checks in at Guard Shack. • John from Brieser and surveyor with DLZ onsite at 07:25. • Discuss scope of survey requirements • Inspect final placement of material on basin, geocell, and overall condition of basin • Joseph offsite at 08:15
Scope Changes:	None
Site Conditions:	Good

Signature: JRR

Joseph Ridgway, Project Engineer

Date: September 6, 2013



View of the ramp facing northeast

View of basin from north slope facing southeast

ATTACHMENT B

STRUCTURAL FILL

ATTACHMENT B1

BORROW SOURCE SAMPLES

Hanson
HEIDELBERGCEMENT Group

Gradation Test Report

Plant E588-Romeoville
Product 01400-042,52 CA-06 Grade 8 Stone
Specification CA-06 Grade 8 Stone

1227388728

Sample Information

Sample No 1227388728
Date Sampled 07/09/2013 13:26
Sampled By Mark Mitchell
Type Shipping
Method Stockpile
Location
Process
Ledge
Other
Weather
Temp

Split Sample ☐
Resample ☐
Lot / Sublot
Quad / Quantity

Sequence
Code

Test Note
state split with i-dot

Gradation Results

Date Completed 07/09/2013 13:26
Tested By Mark Mitchell

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
g	5207.50	4997.60	4610.70	4.2	7.7	

Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
1 1/2" (37.5mm)	0.0	0.0	0.0	0.0	100.0		>100	
1" (25mm)	0.0	0.0	0.0	0.0	100.0		90-100	
3/4" (19mm)	473.1	473.1	9.5	9.5	90.5			
5/8" (16mm)	685.8	1158.9	13.7	23.2	76.8			
1/2" (12.5mm)	812.3	1971.2	16.3	39.4	60.6		60-90	
3/8" (9.5mm)	603.8	2575.0	12.1	51.5	48.5			
1/4" (6.3mm)	610.8	3185.8	12.2	63.7	36.3			
#4 (4.75mm)	275.5	3461.3	5.5	69.3	30.7		30-56	
#8 (2.36mm)	456.7	3918.0	9.1	78.4	21.6			
#16 (1.18mm)	257.2	4175.2	5.1	83.5	16.5		10-40	
#40 (0.425mm)	209.6	4384.8	4.2	87.7	12.3			
#200 (75um)	193.1	4577.9	3.9	91.6	8.4		4-12	
Pan	32.8	4610.7	8.4	100.0	0.0			

Cardno ATC
Shaping the Future

www.cardnoatc.com
2224 Industrial Drive, Suite A
Highland, IN 46322
219.922.7235
Fax 219.922.7243

August 16, 2013

Mr. Christopher D'Antonio
DLZ Industrial LLC
316 Tech Drive
Burns Harbor, Indiana 46304

Re: **Laboratory Test Results (Bulk Sample No. 3880)**
Brieser Midwest Generation Station
Cardno ATC Project No. 023.33035.1304 (Task 23007)

Dear Mr. D'Antonio:

As requested, Cardno ATC has completed the laboratory tests on the above referenced bulk sample which was delivered to our laboratory on August 5, 2013. Following tests were performed on the soil sample and the test results are attached.

1. Particle Size Analysis (ASTM D-422)
2. Liquid Limit, Plastic Limit and Plasticity Index of Soils (ASTM D-4318)
3. Classification of Soil (ASTM D-2487)

Based on the above mentioned laboratory test results, the soil is classified as brown silty clayey sand with gravel (SC-SM).

We appreciate the opportunity to provide these services to you. If you have any questions, please feel free to contact us at your convenience.

Respectfully yours,
Cardno ATC

Tahir (Tony) Munawar
Project Engineer
tony.munawar@cardno.com

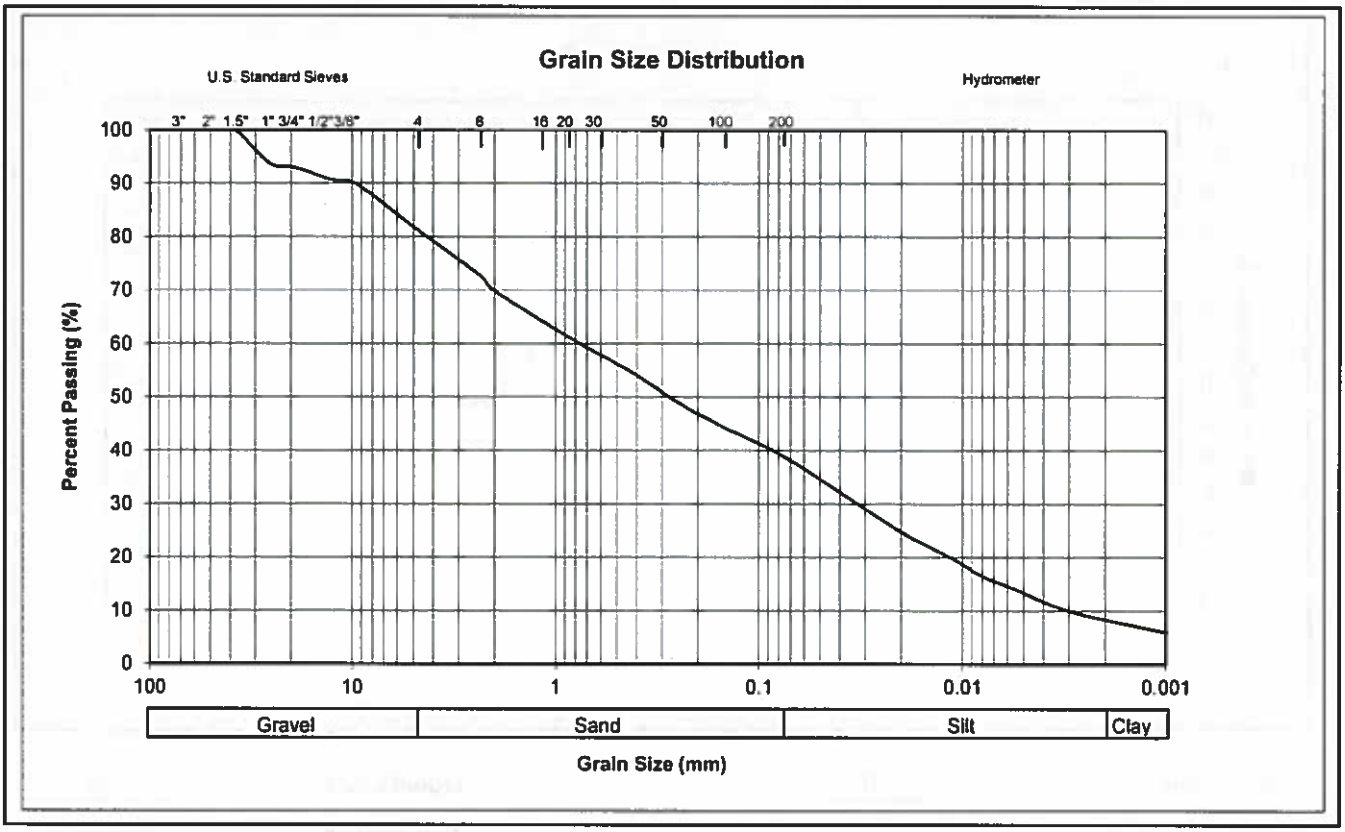
Akhtar (Art) Zaman, PE
Senior Project Engineer
art.zaman@cardno.com

Attachments

Cardno ATC
Shaping the Future
2224 Industrial Drive, Suite A
Highland, Indiana 46322
Phone: 219-922-7235
Fax: 219-922-7243

ASTM D-422
Particle Size Analysis

Project No.	023.333035.1304 (Task 23007)	**Report No.**	PSA-1
Project:	Brieser Midwest Generation Station		
Client:	DLZ Industrial LLC		
Lab No.	3880		
Date Received	8/5/2013	**Date Tested**	8/15/2013
Sample Obtained from:	Bulk Sample, Delivered By Client		
Sample Description:	Brown Silty Clayey Sand with Gravel		



D_{10} =	0.003 mm	Coefficient of Uniformity, $Cu = D_{60} / D_{10}$ =	250.0
D_{30} =	0.032 mm	Coefficient of Curvature, $Cc = D_{30}^2/(D_{10}*D_{60})$ =	0.5
D_{60} =	0.75 mm	USCS Classification:	SC-SM

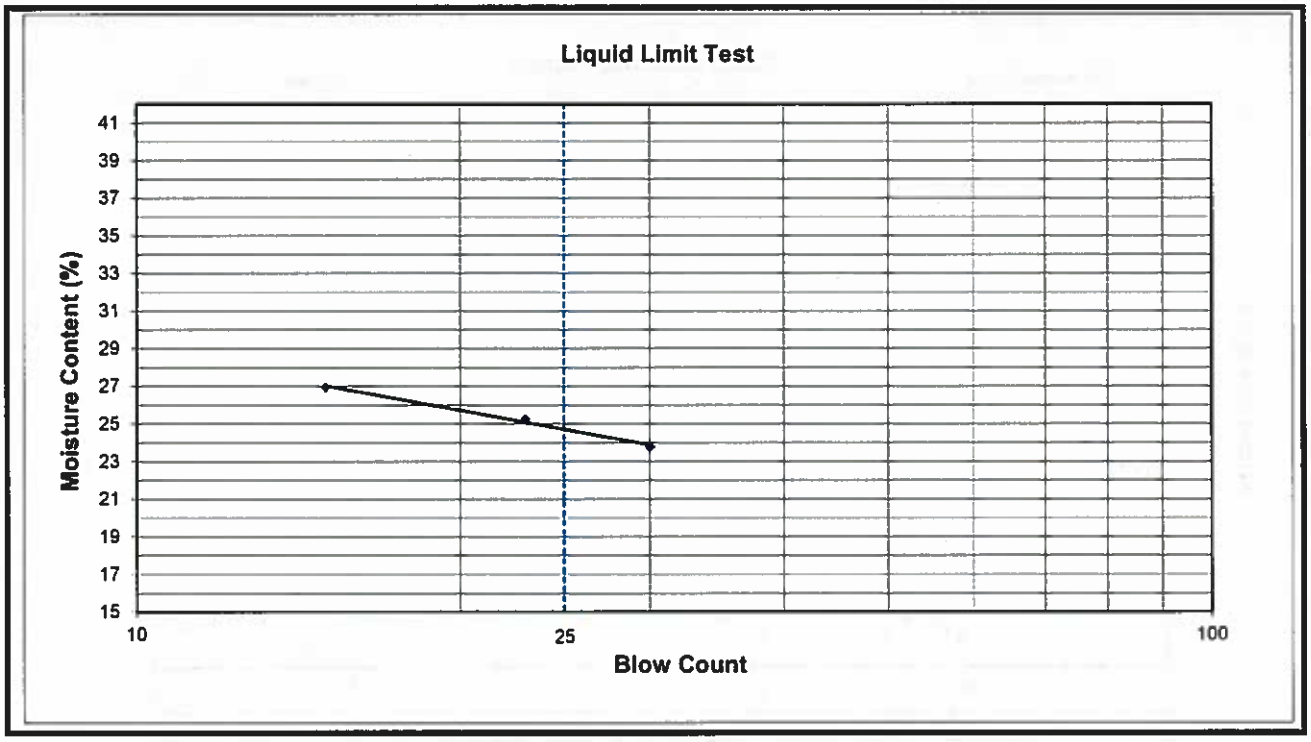
Remarks:

Tested By: TM **Reviewed By:** AZ

Cardno ATC
Shaping the Future
2224 Industrial Drive, Suite A
Highland, Indiana 46322
219-922-7235 Fax: 219-922-7243

Liquid Limit, Plastic Limit and Plasticity Index of Soils Test Method
ASTM D-4318-05

Project No.	23.33035.1304 Tsk. 23007	**Report No.**	PI-1	**Lab No.**	3880
Project:	Brieser Midwest Generation Station				
Tested for:	DLZ Industrial LLC				
Date Received	8/5/2013			**Date Tested**	8/13/2013
Sample Obtained from:	Bulk Sample, Delivered By Client				
Sample Description:	Brown Silty Clayey Sand with Gravel				



Plastic Limit	18	**Liquid Limit**	25
Plasticity Index (PI)	7	**Test Method**	Multipoint
Retained on No. 40 Sieve, %	<10	**USCS Classification**	SC-SM

Remarks: USCS Classification based on Particle Size Analysis as per ASTM D2487-11
Sample was air dried before preparation

Tested Performed By: AO **Reviewed By:** TM

DLZ
SOUTH BEND INDIANAPOLIS BURNS HARBOR
HAMMOND FT. WAYNE CHICAGO

DLZ INDUSTRIAL, LLC
316 Tech Drive Burns Harbor, Indiana 46304
Phone: (219) 764-4700
Fax: (219) 764-4156

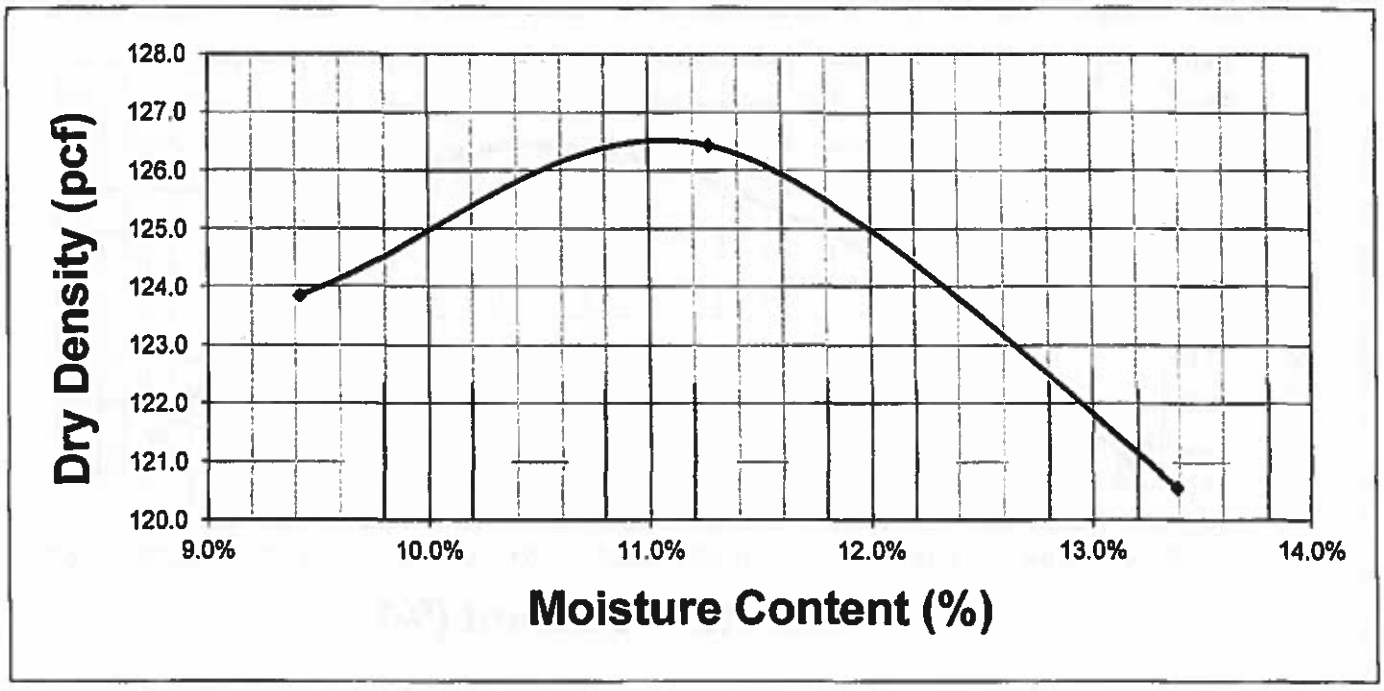
Proctor Type: [ ] ASTM D 698 (Standard)
Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cf)

[X] ASTM D1557 (Modified)
Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cf)

Project: Midwest Gen Romeoville South Ash Pond 2
Project #: 1350-7017-70
Material Description: Brown Sand-Clay

Sample # : 1
Date Tested: 7/26/2013
Date Received: 7/29/2013
Technician: MJ
Report Date: 7/29/2013

Material: Existing Onsite



Maximum Dry Density: 126.5 pcf Optimum Moisture Content: 11.1%

DLZ
SOUTH BEND INDIANAPOLIS BURNS HARBOR
HAMMOND FT. WAYNE CHICAGO

DLZ INDUSTRIAL, LLC
316 Tech Drive Burns Harbor, Indiana 46304
Phone: (219) 764-4700
Fax: (219) 764-4156

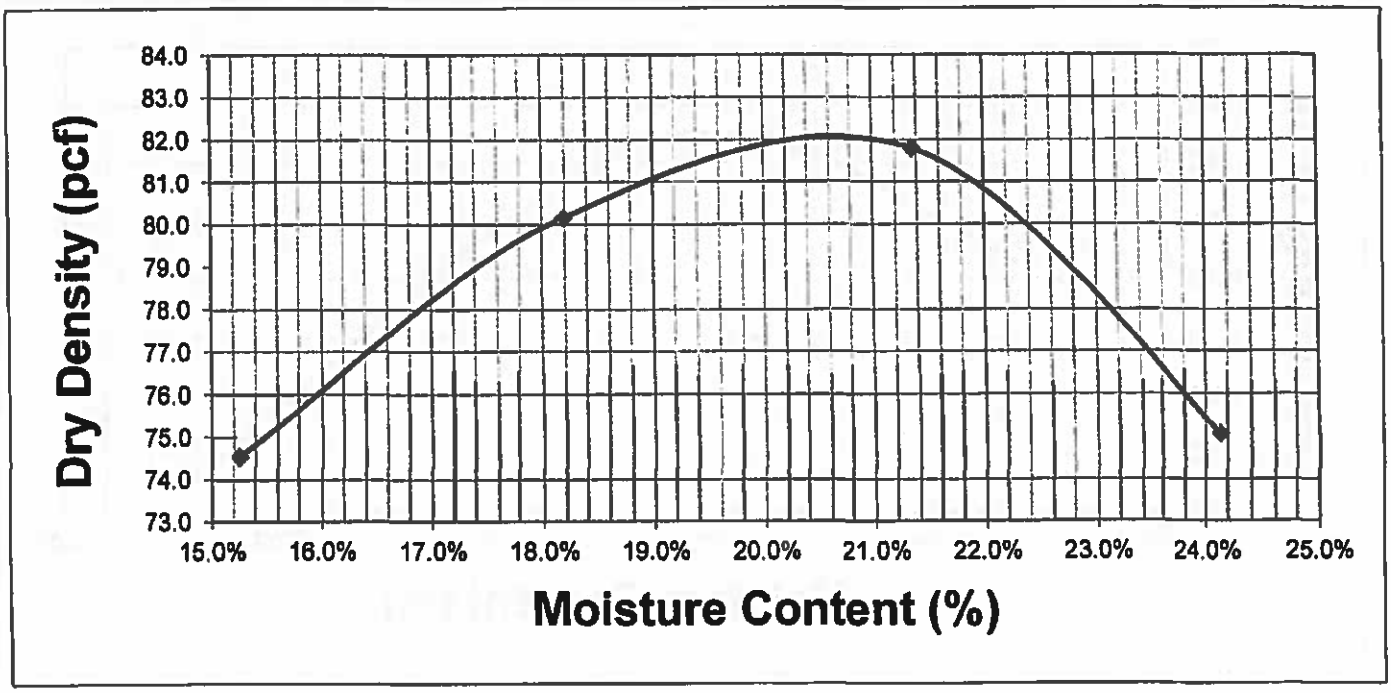
Proctor Type: [ ] ASTM D 698 (Standard)
Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cf)

[X] ASTM D1557 (Modified)
Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cf)

Project: Brieser Construction
Project #: 1350-7017-70
Material Description: Black Cinder-Sand-Flyash

Sample # : 2
Date Tested: 7/26/2013
Date Received: 7/27/2013
Technician: MJ
Report Date: 7/30/2013

Material Source: Existing Site Material



Maximum Dry Density: 82.1 pcf Optimum Moisture Content: 20.6%

MWG13-15_34317

DLZ
SOUTH BEND INDIANAPOLIS BURNS HARBOR
HAMMOND FT. WAYNE CHICAGO

DLZ INDUSTRIAL, LLC
316 Tech Drive Burns Harbor, Indiana 46304
Phone: (219) 764-4700
Fax: (219) 764-4156

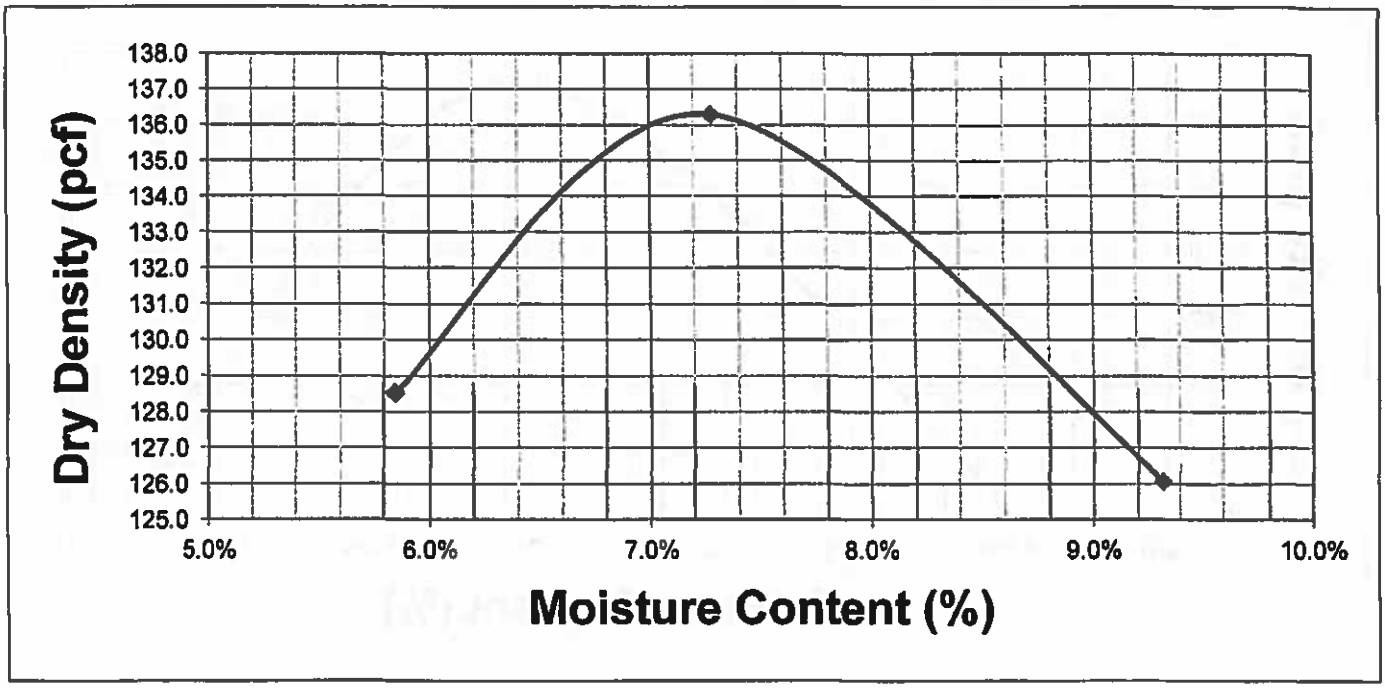
Proctor Type: [ ] ASTM D 698 (Standard)
Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cf)

[X] ASTM D1557 (Modified)
Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cf)

Project: Midwest Gen Romeoville South Ash Pond 2
Project #: 1350-7017-70
Material Description: Limestone screenings-Heavy Fines

Sample # : 3
Date Tested: 7/30/2013
Date Received: 7/29/2013
Technician: MJ
Report Date: 7/29/2013

Material: Unkown



Maximum Dry Density: 136.3 pcf Optimum Moisture Content: 7.3%

MWG13-15_34318

DLZ

SOUTH BEND INDIANAPOLIS BURNS HARBOR
HAMMOND FT. WAYNE CHICAGO

DLZ INDUSTRIAL, LLC

316 Tech Drive Burns Harbor, Indiana 46304
Phone: (219) 764-4700
Fax: (219) 764-4156

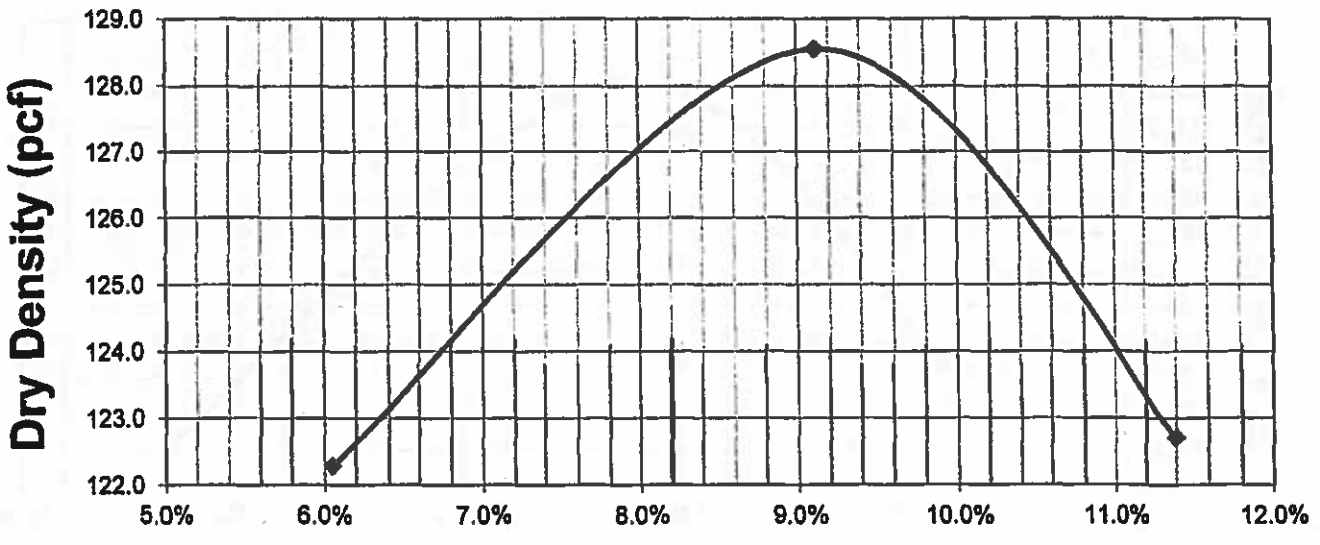
Proctor Type: [ ] ASTM D 698 (Standard)
Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cf)

[X] ASTM D1557 (Modified)
Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cf)

Project: Midwest Gen Romeoville South Ash Pond 2
Project #: 1350-7017-70
Material Description: Limestone screenings-More Course Screening than fines

Sample # : 3A
Date Tested: 7/30/2013
Date Received: 7/29/2013
Technician: MJ
Report Date: 7/29/2013

Material: Unkown



Maximum Dry Density: 128.5 pcf Optimum Moisture Content: 9.1%

MWG13-15_34319

Hanson
HEIDELBERGCEMENT Group

Gradation Test Report

Plant E588-Romeoville
Product 01321-Screenings 016FA-05
Specification Screenings 016FA-05

1701182068

Sample Information

Sample No 1701182068
Date Sampled 08/24/2012 13:29
Sampled By Mark Mitchell
Type Production
Method Stockpile
Location
Process
Ledge
Other
Weather
Temp

Split Sample ☐
Resample ☐
Lot / Sublot
Quad / Quantity

Sequence
Code

Test Note
FA-5 for Ozinga

Gradation Results

Date Completed 08/24/2012 13:29
Tested By Mark Mitchell

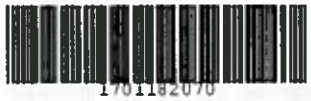
Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
g	584.70	569.60	450.60	2.7	20.9	

Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
3/8" (9.5mm)	0.0	0.0	0.0	0.0	100.0		>100	
1/4" (6.3mm)								
#4 (4.75mm)	22.8	22.8	4.0	4.0	96.0		84-100	
#8 (2.36mm)								
#16 (1.18mm)								
#50 (0.3mm)								
#100 (0.15mm)	399.3	422.1	70.1	74.1	25.9		0-40	
#200 (75um)	23.0	445.1	4.0	78.1	21.9		0-30	
Pan	5.5	450.6	1.0	100.0	0.0			

Hanson
HEIDELBERGCEMENT Group

Gradation Test Report

Plant E588-Romeoville
Product 01321-Screenings 016FA-05
Specification Screenings 016FA-05



Sample Information

Sample No 1701182070
Date Sampled 08/24/2012 13:32
Sampled By Mark Mitchell
Type Production
Method Stockpile
Location
Process
Ledge
Other
Weather
Temp

Split Sample ☐
Resample ☐
Lot / Sublot
Quad / Quantity

Sequence
Code

Test Note
FA-6 for ozinga

Gradation Results

Date Completed 08/24/2012 13:32
Tested By Mark Mitchell

Unit	Moist Mass	Dry Mass	Wash Mass	Moisture %	Wash Loss %	Procedure
g	574.90	563.20	516.50	2.1	8.3	

Sieve	Mass Retained	Cum Mass Retained	Ind % Retained	% Retained	% Passing	Target	Specification	Comment
3/8" (9.5mm)	0.0	0.0	0.0	0.0	100.0		>100	
1/4" (6.3mm)								
#4 (4.75mm)	36.3	36.3	6.4	6.4	93.6		84-100	
#8 (2.36mm)								
#16 (1.18mm)								
#50 (0.3mm)								
#100 (0.15mm)	466.3	502.6	82.8	89.2	10.8		0-40	
#200 (75um)	12.3	514.9	2.2	91.4	8.6		0-30	
Pan	1.6	516.5	0.3	100.0	0.0			

ATTACHMENT B2

FIELD COMPACTION TEST RESULTS

DLZ
SOUTH BEND INDIANAPOLIS BURNS HARBOR
HAMMOND FT WAYNE CHICAGO

DLZ INDUSTRIAL, LLC
[illegible] TECH DRIVE, BURNS HARBOR, IN 46304
PHONE 219 764-[illegible] FAX 219 764-[illegible]

NUCLEAR DENSITY TEST REPORT

PROJECT NAME	Midwest Gen Romeo S Pond 2	WEATHER	Sunny	DLZ REPORT NO	1
DLZ PROJECT NO	1350-7017-78	TEMP AM	63 Degrees F	DLZ PROJECT NO	1
DLZ CLIENT	Brewer Construction	TEMP PM	79 Degrees F		
REQUISITION NO	N/A	WIND	N/A	Equipment Information	
		HUMIDITY	N/A	Nuclear Gauge #	90505001
DATE SAMPLED	7/29/2013	TYPE OF WORK	Earthwork	MS	6291
SAMPLED BY	Brian Burton	DIVISION SPEC	02300	DS	33153
TYPE OF MATERIAL	Brown Sand w/ Clay & Stone	Comments	Proctor - 126.5pcf @ 11.1% Opt M +/-2%		
SOURCE OF MATERIAL	On Site				

LOCATION of TESTING		TEST NO.	DEPTH OF TEST (inches)	WET DENSITY ASTM D6938	DRY DENSITY ASTM D6938	% MOISTURE ASTM D6938	PROCTOR LBS/CUFT	% DENSITY READING	% DENSITY REQUIRED	RESULTS PASS or FAIL
North Bank, East to West every 25'	582.2	1	12	N/A	117.6	8.3	126.5	93.0	90%	PASS
North Bank, East to West every 25'	582.2	2	12	N/A	114.9	9.6	126.5	90.8	90%	PASS
North Bank, East to West every 25'	582.2	3	12	N/A	115.2	9.1	126.5	91.1	90%	PASS
North Bank, East to West every 25'	582.2	4	12	N/A	121.2	9.2	126.5	95.8	90%	PASS
North Bank, East to West every 25'	582.2	5	12	N/A	117.7	9.6	126.5	93.0	90%	PASS
North Bank, East to West every 25'	582.2	6	12	N/A	118.2	10.2	126.5	93.4	90%	PASS
North Bank, East to West every 25'	582.2	7	12	N/A	120.5	9.2	126.5	95.3	90%	PASS
North Bank, East to West every 25'	582.2	8	12	N/A	116.5	8.4	126.5	92.1	90%	PASS
South Bank, West to East every 25'	582.2	9	12	N/A	119.2	8.3	126.5	94.2	90%	PASS
South Bank, West to East every 25'	582.2	10	12	N/A	126.5	10.6	126.5	100.0	90%	PASS
South Bank, West to East every 25'	582.2	11	12	N/A	114.2	11.6	126.5	90.3	90%	PASS
South Bank, West to East every 25'	582.2	12	12	N/A	125.9	9.1	126.5	99.5	90%	PASS
South Bank, West to East every 25'	582.2	13	12	N/A	121.3	9.1	126.5	95.9	90%	PASS
South Bank, West to East every 25'	582.2	14	12	N/A	123.0	9.5	126.5	97.2	90%	PASS
South Bank, West to East every 25'	582.2	15	12	N/A	120.2	8.4	126.5	95.0	90%	PASS
South Bank, West to East every 25'	582.2	16	12	N/A	118.1	12.7	126.5	93.4	90%	PASS
South Bank, West to East every 25'	582.2	17	12	N/A	117.1	9.7	126.5	92.6	90%	PASS
South Bank, West to East every 25'	582.2	18	12	N/A	118.6	9.6	126.5	93.7	90%	PASS
North Bank, East to West every 25'	582.7	19	4	N/A	121.3	9.2	126.5	95.9	90%	PASS
North Bank, East to West every 25'	582.7	20	4	N/A	114.5	10.2	126.5	90.5	90%	PASS
North Bank, East to West every 25'	582.7	21	4	N/A	123.4	9.6	126.5	97.5	90%	PASS
North Bank, East to West every 25'	582.7	22	4	N/A	120.0	9.6	126.5	94.8	90%	PASS
North Bank, East to West every 25'	582.7	23	4	N/A	119.6	9.4	126.5	94.5	90%	PASS
North Bank, East to West every 25'	582.7	24	4	N/A	114.9	9.6	126.5	90.8	90%	PASS
North Bank, East to West every 25'	582.7	25	4	N/A	118.1	9.1	126.5	93.4	90%	PASS
North Bank, East to West every 25'	582.7	26	4	N/A	121.3	9.9	126.5	95.9	90%	PASS
South Bank, West to East every 25'	582.7	27	4	N/A	120.3	9.8	126.5	95.1	90%	PASS
South Bank, West to East every 25'	582.7	28	4	N/A	120.7	9.3	126.5	95.4	90%	PASS
South Bank, West to East every 25'	582.7	29	4	N/A	122.7	9.5	126.5	97.0	90%	PASS
South Bank, West to East every 25'	582.7	30	4	N/A	124.0	9.3	126.5	98.0	90%	PASS
South Bank, West to East every 25'	582.7	31	4	N/A	123.2	9.1	126.5	97.4	90%	PASS
South Bank, West to East every 25'	582.7	32	4	N/A	116.2	9.2	126.5	91.9	90%	PASS
South Bank, West to East every 25'	582.7	33	4	N/A	118.8	9.1	126.5	93.9	90%	PASS
South Bank, West to East every 25'	582.7	34	4	N/A	120.1	9.2	126.5	94.9	90%	PASS
South Bank, West to East every 25'	582.7	35	4	N/A	116.8	9.4	126.5	93.9	90%	PASS
South Bank, West to East every 25'	582.7	36	4	N/A	117.8	9.5	126.5	93.1	90%	PASS
North Bank, East to West every 25'	583.2	37	4	N/A	116.5	9.3	126.5	92.1	90%	PASS
North Bank, East to West every 25'	583.2	38	4	N/A	124.9	8.9	126.5	98.7	90%	PASS
North Bank, East to West every 25'	583.2	39	4	N/A	117.9	9.3	126.5	93.2	90%	PASS
North Bank, East to West every 25'	583.2	40	4	N/A	119.2	10.2	126.5	94.2	90%	PASS
North Bank, East to West every 25'	583.2	41	4	N/A	115.7	10.1	126.5	91.5	90%	PASS
North Bank, East to West every 25'	583.2	42	4	N/A	114.5	10.5	126.5	90.5	90%	PASS
North Bank, East to West every 25'	583.2	43	4	N/A	115.1	9.5	126.5	91.0	90%	PASS
North Bank, East to West every 25'	583.2	44	4	N/A	120.0	9.3	126.5	94.9	90%	PASS
South Bank, West to East every 25'	583.2	45	4	N/A	118.8	8.8	126.5	93.9	90%	PASS
South Bank, West to East every 25'	583.2	46	4	N/A	118.8	9.2	126.5	93.9	90%	PASS
South Bank, West to East every 25'	583.2	47	4	N/A	116.1	9.3	126.5	91.8	90%	PASS
South Bank, West to East every 25'	583.2	48	4	N/A	119.7	9.1	126.5	94.6	90%	PASS
South Bank, West to East every 25'	583.2	49	4	N/A	121.2	8.8	126.5	95.8	90%	PASS
South Bank, West to East every 25'	583.2	50	4	N/A	123.9	9.4	126.5	97.9	90%	PASS
South Bank, West to East every 25'	583.2	51	4	N/A	114.8	9.1	126.5	90.8	90%	PASS
South Bank, West to East every 25'	583.2	52	4	N/A	118.0	9.5	126.5	93.3	90%	PASS
South Bank, West to East every 25'	583.2	53	4	N/A	117.3	9.2	126.5	92.7	90%	PASS
South Bank, West to East every 25'	583.2	54	4	N/A	119.9	8.3	126.5	94.8	90%	PASS

Comments

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Tim Jenkins
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NUCLEAR DENSITY TEST REPORT

PROJECT NAME	[illegible] Pond 2	WEATHER	Sunny	DLZ REPORT NO	2
DLZ PROJECT NO	1360-2017-70	TEMP AM	63 Degrees F	DLZ PROJECT NO	2
DLZ CLIENT	[illegible] Construction	TEMP PM	75 Degrees F		
REGULATION NO	N/A	WIND	N/A	Equipment Information	
		HUMIDITY	N/A	Nuclear Gauge #	30488
DATE SAMPLED	10/2?/2013	TYPE OF WORK	Earthwork	MS	881
SAMPLED BY	Brian Burton	DIVISION SPEC	02300	DS	2081
TYPE OF MATERIAL	Brown Sand w/ Clay & Stone	Comments	Proctor - 126.5 pcf @ 11.1% Opt M +-2%		
SOURCE OF MATERIAL	On Site				

LOCATION of TESTING		TEST NO	DEPTH OF TEST (inches)	WET DENSITY ASTM D6938	DRY DENSITY ASTM D6938	% MOISTURE ASTM D6938	PROCTOR LBS/CUFT	% DENSITY READING	% DENSITY REQUIRED	RESULTS PASS or FAIL
North Bank, East to West every 25'	983.7	1	4	N/A	124.5	9.7	126.5	98.4	90%	PASS
North Bank, East to West every 25'	983.7	2	4	N/A	123.1	9.3	126.5	97.3	90%	PASS
North Bank, East to West every 25'	983.7	3	4	N/A	121.0	9.7	126.5	95.7	90%	PASS
North Bank, East to West every 25'	983.7	4	4	N/A	119.0	9.8	126.5	94.1	90%	PASS
North Bank, East to West every 25'	983.7	5	4	N/A	122.8	9.5	126.5	97.1	90%	PASS
North Bank, East to West every 25'	983.7	6	4	N/A	122.0	9.9	126.5	96.4	90%	PASS
North Bank, East to West every 25'	983.7	7	4	N/A	118.5	9.5	126.5	93.7	90%	PASS
North Bank, East to West every 25'	983.7	8	4	N/A	115.5	9.3	126.5	91.3	90%	PASS
South Bank, West to East every 25'	983.7	9	4	N/A	114.0	9.1	126.5	90.0	90%	PASS
South Bank, West to East every 25'	983.7	10	4	N/A	121.8	9.3	126.5	96.3	90%	PASS
South Bank, West to East every 25'	983.7	11	4	N/A	122.2	9.9	126.5	96.6	90%	PASS
South Bank, West to East every 25'	983.7	12	4	N/A	117.2	9.5	126.5	92.6	90%	PASS
South Bank, West to East every 25'	983.7	13	4	N/A	121.8	9.0	126.5	96.3	90%	PASS
South Bank, West to East every 25'	983.7	14	4	N/A	123.7	9.5	126.5	97.8	90%	PASS
South Bank, West to East every 25'	983.7	15	4	N/A	120.4	9.2	126.5	95.2	90%	PASS
South Bank, West to East every 25'	983.7	16	4	N/A	121.9	9.4	126.5	96.4	90%	PASS
South Bank, West to East every 25'	983.7	17	4	N/A	123.8	9.1	126.5	97.9	90%	PASS
South Bank, West to East every 25'	983.7	18	4	N/A	114.3	9.2	126.5	90.4	90%	PASS
North Bank, East to West every 25'	984.2	19	4	N/A	117.6	10.8	126.5	93.0	90%	PASS
North Bank, East to West every 25'	984.2	20	4	N/A	123.8	9.4	126.5	97.9	90%	PASS
North Bank, East to West every 25'	984.2	21	4	N/A	115.8	10.1	126.5	91.5	90%	PASS
North Bank, East to West every 25'	984.2	22	4	N/A	120.3	10.1	126.5	95.1	90%	PASS
North Bank, East to West every 25'	984.2	23	4	N/A	119.5	9.4	126.5	94.5	90%	PASS
North Bank, East to West every 25'	984.2	24	4	N/A	125.7	9.1	126.5	99.4	90%	PASS
North Bank, East to West every 25'	984.2	25	4	N/A	118.3	9.4	126.5	93.5	90%	PASS
North Bank, East to West every 25'	984.2	26	4	N/A	126.4	11.4	126.5	99.9	90%	PASS
South Bank, West to East every 25'	984.2	27	4	N/A	124.6	10.6	126.5	98.5	90%	PASS
South Bank, West to East every 25'	984.2	28	4	N/A	123.0	10.5	126.5	97.2	90%	PASS
South Bank, West to East every 25'	984.2	29	4	N/A	117.4	9.6	126.5	92.8	90%	PASS
South Bank, West to East every 25'	984.2	30	4	N/A	121.2	10.8	126.5	95.8	90%	PASS
South Bank, West to East every 25'	984.2	31	4	N/A	124.4	10.4	126.5	98.3	90%	PASS
South Bank, West to East every 25'	984.2	32	4	N/A	126.5	10.9	126.5	100.0	90%	PASS
South Bank, West to East every 25'	984.2	33	4	N/A	114.0	9.1	126.5	90.1	90%	PASS
South Bank, West to East every 25'	984.2	34	4	N/A	115.5	9.3	126.5	91.3	90%	PASS
South Bank, West to East every 25'	984.2	35	4	N/A	122.2	11.4	126.5	96.6	90%	PASS
South Bank, West to East every 25'	984.2	36	4	N/A	125.1	11.2	126.5	98.9	90%	PASS
North Bank, East to West every 25'	984.7	37	4	N/A	115.8	9.1	126.5	91.5	90%	PASS
North Bank, East to West every 25'	984.7	38	4	N/A	116.1	9.4	126.5	91.8	90%	PASS
North Bank, East to West every 25'	984.7	39	4	N/A	116.8	9.7	126.5	92.3	90%	PASS
North Bank, East to West every 25'	984.7	40	4	N/A	119.4	10.5	126.5	94.4	90%	PASS
North Bank, East to West every 25'	984.7	41	4	N/A	118.6	10.4	126.5	93.8	90%	PASS
North Bank, East to West every 25'	984.7	42	4	N/A	116.8	10.2	126.5	92.3	90%	PASS
North Bank, East to West every 25'	984.7	43	4	N/A	121.5	9.3	126.5	96.0	90%	PASS
North Bank, East to West every 25'	984.7	44	4	N/A	120.2	9.4	126.5	95.0	90%	PASS
South Bank, West to East every 25'	984.7	45	4	N/A	121.8	9.2	126.5	96.3	90%	PASS
South Bank, West to East every 25'	984.7	46	4	N/A	122.7	9.1	126.5	97.0	90%	PASS
South Bank, West to East every 25'	984.7	47	4	N/A	113.9	9.8	126.5	90.0	90%	PASS
South Bank, West to East every 25'	984.7	48	4	N/A	121.3	9.2	126.5	95.9	90%	PASS
South Bank, West to East every 25'	984.7	49	4	N/A	117.1	9.8	126.5	92.6	90%	PASS
South Bank, West to East every 25'	984.7	50	4	N/A	115.9	10.3	126.5	91.6	90%	PASS
South Bank, West to East every 25'	984.7	51	4	N/A	123.8	11.3	126.5	97.9	90%	PASS
South Bank, West to East every 25'	984.7	52	4	N/A	121.8	9.5	126.5	96.3	90%	PASS
South Bank, West to East every 25'	984.7	53	4	N/A	122.9	9.3	126.5	97.2	90%	PASS
South Bank, West to East every 25'	984.7	54	4	N/A	121.9	9.8	126.5	96.4	90%	PASS
North Bank, East to West every 25'	985.2	55	4	N/A	115.7	9.5	126.5	91.5	90%	PASS
North Bank, East to West every 25'	985.2	56	4	N/A	113.9	9.1	126.5	90.0	90%	PASS
North Bank, East to West every 25'	985.2	57	4	N/A	119.1	10.4	126.5	94.2	90%	PASS
North Bank, East to West every 25'	985.2	58	4	N/A	120.0	9.5	126.5	94.9	90%	PASS
North Bank, East to West every 25'	985.2	59	4	N/A	118.6	9.8	126.5	93.8	90%	PASS
North Bank, East to West every 25'	985.2	60	4	N/A	122.8	9.4	126.5	97.1	90%	PASS
North Bank, East to West every 25'	985.2	61	4	N/A	119.1	10.1	126.5	94.2	90%	PASS
North Bank, East to West every 25'	985.2	62	4	N/A	120.8	10.6	126.5	95.5	90%	PASS
South Bank, West to East every 25'	985.2	63	4	N/A	120.2	9.8	126.5	95.0	90%	PASS
South Bank, West to East every 25'	985.2	64	4	N/A	121.5	9.4	126.5	96.0	90%	PASS
South Bank, West to East every 25'	985.2	65	4	N/A	116.7	9.5	126.5	92.3	90%	PASS
South Bank, West to East every 25'	985.2	66	4	N/A	122.3	9.3	126.5	96.7	90%	PASS
South Bank, West to East every 25'	985.2	67	4	N/A	120.2	9.2	126.5	95.0	90%	PASS
South Bank, West to East every 25'	985.2	68	4	N/A	124.5	9.8	126.5	98.4	90%	PASS
South Bank, West to East every 25'	985.2	69	4	N/A	121.3	9.7	126.5	95.9	90%	PASS
South Bank, West to East every 25'	985.2	70	4	N/A	121.4	10.4	126.5	96.0	90%	PASS
South Bank, West to East every 25'	985.2	71	4	N/A	116.1	10.3	126.5	91.8	90%	PASS
South Bank, West to East every 25'	985.2	72	4	N/A	124.4	9.7	126.5	98.3	90%	PASS

Comments

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MWG13-15_34324

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NUCLEAR DENSITY TEST REPORT

PROJECT NAME	Midwest Gen Romeo S Pond 2	WEATHER	Cloudy	DLZ REPORT NO	3
DLZ PROJECT NO	1350-7017-70	TEMP AM	66 Degrees F	DLZ PROJECT NO	3
DLZ CLIENT	Briese Construction	TEMP PM	79 Degrees F		
REQUISITION NO	N/A	WIND	N/A	Equipment Information	
		HUMIDITY	N/A	Nuclear Gauge #	30456
DATE SAMPLED	7/31/2013	TYPE OF WORK	Earthwork	MB	660
SAMPLED BY	Brian Burton	DIVISION SPEC.	02300	DS	2055
TYPE OF MATERIAL	Brown Sand w/ Clay & Stone	Comments:	Proctor- 126.5pcf @ 11.1% Opt M +/-2%		
SOURCE OF MATERIAL	On Site				

LOCATION of TESTING		TEST NO	DEPTH OF TEST (inches)	WET DENSITY ASTM D6938	DRY DENSITY ASTM D6938	% MOISTURE ASTM D6938	PROCTOR LBS/CUFT	% DENSITY READING	% DENSITY REQUIRED	RESULTS PASS or FAIL
North Bank, East to West every 25'	585.7	1	4	N/A	117.7	9.1	126.5	93.0	90%	PASS
North Bank, East to West every 25'	585.7	2	4	N/A	120.9	9.6	126.5	95.6	90%	PASS
North Bank, East to West every 25'	585.7	3	4	N/A	116.6	10.4	126.5	92.2	90%	PASS
North Bank, East to West every 25'	585.7	4	4	N/A	121.3	9.7	126.5	95.9	90%	PASS
North Bank, East to West every 25'	585.7	5	4	N/A	124.8	10.0	126.5	98.7	90%	PASS
North Bank, East to West every 25'	585.7	6	4	N/A	115.7	9.8	126.5	91.5	90%	PASS
North Bank, East to West every 25'	585.7	7	4	N/A	118.4	10.1	126.5	93.6	90%	PASS
North Bank, East to West every 25'	585.7	8	4	N/A	122.8	10.8	126.5	97.1	90%	PASS
South Bank, West to East every 25'	585.7	9	4	N/A	120.0	10.7	126.5	94.9	90%	PASS
South Bank, West to East every 25'	585.7	10	4	N/A	117.6	11.1	126.5	93.0	90%	PASS
South Bank, West to East every 25'	585.7	11	4	N/A	117.8	9.8	126.5	93.1	90%	PASS
South Bank, West to East every 25'	585.7	12	4	N/A	116.1	9.7	126.5	91.8	90%	PASS
South Bank, West to East every 25'	585.7	13	4	N/A	122.6	9.1	126.5	96.9	90%	PASS
South Bank, West to East every 25'	585.7	14	4	N/A	115.4	9.8	126.5	91.2	90%	PASS
South Bank, West to East every 25'	585.7	15	4	N/A	115.0	10.5	126.5	90.9	90%	PASS
South Bank, West to East every 25'	585.7	16	4	N/A	126.0	10.2	126.5	99.6	90%	PASS
South Bank, West to East every 25'	585.7	17	4	N/A	116.6	10.1	126.5	92.2	90%	PASS
South Bank, West to East every 25'	585.7	18	4	N/A	120.4	10.4	126.5	95.2	90%	PASS
South Bank, West to East every 25'	586.2	19	BS	N/A	115.7	8.0	126.5	91.5	90%	PASS
South Bank, West to East every 25'	586.2	20	BS	N/A	122.0	7.9	126.5	96.4	90%	PASS
South Bank, West to East every 25'	586.2	21	BS	N/A	119.5	7.8	126.5	94.5	90%	PASS
South Bank, West to East every 25'	586.2	22	BS	N/A	119.8	9.9	126.5	94.7	90%	PASS
South Bank, West to East every 25'	586.2	23	BS	N/A	119.3	9.9	126.5	94.3	90%	PASS
South Bank, West to East every 25'	586.2	24	BS	N/A	116.3	8.9	126.5	91.9	90%	PASS
South Bank, West to East every 25'	586.2	25	BS	N/A	122.7	11.0	126.5	97.0	90%	PASS
South Bank, West to East every 25'	586.2	26	BS	N/A	119.0	9.1	126.5	94.1	90%	PASS
South Bank, West to East every 25'	586.2	27	BS	N/A	117.6	10.1	126.5	93.0	90%	PASS
South Bank, West to East every 25'	586.2	28	BS	N/A	117.6	10.0	126.5	93.0	90%	PASS
South Bank, West to East every 25'	586.2	29	BS	N/A	116.9	9.3	126.5	92.4	90%	PASS
South Bank, West to East every 25'	586.7	30	BS	N/A	120.3	7.9	126.5	95.1	90%	PASS
South Bank, West to East every 25'	586.7	31	BS	N/A	123.2	8.4	126.5	97.4	90%	PASS
South Bank, West to East every 25'	586.7	32	BS	N/A	122.7	8.7	126.5	97.0	90%	PASS
South Bank, West to East every 25'	586.7	33	BS	N/A	127.7	8.4	126.5	100.9	90%	PASS
South Bank, West to East every 25'	586.7	34	BS	N/A	121.9	10.6	126.5	96.4	90%	PASS
South Bank, West to East every 25'	586.7	35	BS	N/A	124.4	9.2	126.5	98.3	90%	PASS
South Bank, West to East every 25'	586.7	36	BS	N/A	123.5	9.9	126.5	97.6	90%	PASS
North Bank, East to West every 25'	586.7	37	BS	N/A	126.4	11.1	126.5	99.9	90%	PASS
North Bank, East to West every 25'	586.7	38	BS	N/A	121.4	8.3	126.5	96.0	90%	PASS
North Bank, East to West every 25'	586.7	39	BS	N/A	122.4	10.0	126.5	96.8	90%	PASS
North Bank, East to West every 25'	586.7	40	BS	N/A	126.2	9.3	126.5	99.8	90%	PASS
North Bank, East to West every 25'	586.7	41	BS	N/A	115.7	8.2	126.5	91.5	90%	PASS

Comments

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DLZ INDUSTRIAL, LLC

Chris D'Antonio
Materials Testing Manager
DLZ INDUSTRIAL, LLC

Tim Jenkins
Project Quality Engineer
DLZ INDUSTRIAL, LLC

MWG-15_34325

DLZ
SOUTH BEND INDIANAPOLIS BURNS HARBOR
HAMMOND FT WAYNE CHICAGO

DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, IN 46304
PHONE 219/764-4300 FAX 219/764-4156

NUCLEAR DENSITY TEST REPORT

PROJECT NAME	Midwest Gen Romeo S Pond 2	WEATHER	Sunny	DLZ REPORT NO	4
DLZ PROJECT NO	1350-7017-70	TEMP AM	60 Degrees F	DLZ PROJECT NO	4
DLZ CLIENT	Bineser Construction	TEMP PM	79 Degrees F		
REQUISTION NO	N/A	WIND	N/A	Equipment Information	
		HUMIDITY	N/A	Nuclear Gauge #	30456
DATE SAMPLED	8/1/2013	TYPE OF WORK	Earthwork	MS	657
SAMPLED BY	Brian Burton	DIVISION SPEC	02300	DS	2056
TYPE OF MATERIAL	FA-5	Comments:	Proctor- 128.5pcf @ 9.1% Opt M +/-2%		
SOURCE OF MATERIAL	On Site				

LOCATION of TESTING		TEST NO	DEPTH OF TEST (inches)	WET DENSITY ASTM D6938	DRY DENSITY ASTM D6938	% MOISTURE ASTM D6938	PROCTOR LBS/CUFT	% DENSITY READING	% DENSITY REQUIRED	RESULTS PASS or FAIL
North Bank, East to West every 25'	586.2	1	BS	N/A	116.8	7.2	128.5	90.9	90%	PASS
North Bank, East to West every 25'	586.2	2	BS	N/A	118.3	7.4	128.5	92.1	90%	PASS
North Bank, East to West every 25'	586.2	3	BS	N/A	117.1	8.5	128.5	91.1	90%	PASS
North Bank, East to West every 25'	586.2	4	BS	N/A	119.6	8.0	128.5	93.1	90%	PASS
North Bank, East to West every 25'	586.2	5	BS	N/A	121.6	7.6	128.5	94.6	90%	PASS
North Bank, East to West every 25'	586.2	6	BS	N/A	124.9	9.0	128.5	97.2	90%	PASS
North Bank, East to West every 25'	586.2	7	BS	N/A	118.4	8.0	128.5	92.1	90%	PASS
North Bank, East to West every 25'	586.2	8	BS	N/A	122.5	9.7	128.5	95.3	90%	PASS
North Bank, East to West every 25'	586.2	9	BS	N/A	117.4	7.5	128.5	91.4	90%	PASS
North Bank, East to West every 25'	586.2	10	BS	N/A	119.5	7.6	128.5	93.0	90%	PASS
North Bank, East to West every 25'	586.7	11	BS	N/A	123.0	9.5	128.5	95.7	90%	PASS
North Bank, East to West every 25'	586.7	12	BS	N/A	120.0	10.2	128.5	93.4	90%	PASS
North Bank, East to West every 25'	586.7	13	BS	N/A	116.3	8.3	128.5	90.5	90%	PASS
North Bank, East to West every 25'	586.7	14	BS	N/A	121.4	9.4	128.5	94.5	90%	PASS
North Bank, East to West every 25'	586.7	15	BS	N/A	119.3	9.9	128.5	92.8	90%	PASS
North Bank, East to West every 25'	586.7	16	BS	N/A	117.9	7.9	128.5	91.8	90%	PASS
North Bank, East to West every 25'	586.7	17	BS	N/A	123.5	9.5	128.5	96.1	90%	PASS
North Bank, East to West every 25'	586.7	18	BS	N/A	119.9	10.0	128.5	93.3	90%	PASS
North Bank, East to West every 25'	586.7	19	BS	N/A	117.4	9.3	128.5	91.4	90%	PASS
North Bank, East to West every 25'	586.7	20	BS	N/A	122.1	8.9	128.5	95.0	90%	PASS
North Bank, East to West every 25'	587.2	21	BS	N/A	118.0	7.5	128.5	91.8	90%	PASS
North Bank, East to West every 25'	587.2	22	BS	N/A	121.9	7.9	128.5	94.9	90%	PASS
North Bank, East to West every 25'	587.2	23	BS	N/A	119.5	8.8	128.5	93.0	90%	PASS
North Bank, East to West every 25'	587.2	24	BS	N/A	123.1	9.5	128.5	95.8	90%	PASS
North Bank, East to West every 25'	587.2	25	BS	N/A	118.7	8.4	128.5	92.4	90%	PASS
North Bank, East to West every 25'	587.2	26	BS	N/A	124.8	9.3	128.5	97.1	90%	PASS
North Bank, East to West every 25'	587.2	27	BS	N/A	120.3	9.8	128.5	93.6	90%	PASS
North Bank, East to West every 25'	587.2	28	BS	N/A	123.7	10.0	128.5	96.3	90%	PASS
North Bank, East to West every 25'	587.2	29	BS	N/A	122.2	8.5	128.5	95.1	90%	PASS
North Bank, East to West every 25'	587.2	30	BS	N/A	118.3	8.1	128.5	92.1	90%	PASS
North Bank, East to West every 25'	587.7	31	BS	N/A	119.8	8.9	128.5	93.2	90%	PASS
North Bank, East to West every 25'	587.7	32	BS	N/A	119.4	7.9	128.5	92.9	90%	PASS
North Bank, East to West every 25'	587.7	33	BS	N/A	117.1	7.4	128.5	91.1	90%	PASS
North Bank, East to West every 25'	587.7	34	BS	N/A	121.6	9.6	128.5	94.6	90%	PASS
North Bank, East to West every 25'	587.7	35	BS	N/A	123.2	10.1	128.5	95.9	90%	PASS
North Bank, East to West every 25'	587.7	36	BS	N/A	119.0	9.9	128.5	92.6	90%	PASS
North Bank, East to West every 25'	587.7	37	BS	N/A	120.5	8.1	128.5	93.8	90%	PASS
North Bank, East to West every 25'	587.7	38	BS	N/A	123.1	8.6	128.5	95.8	90%	PASS
North Bank, East to West every 25'	587.7	39	BS	N/A	118.2	9.0	128.5	92.0	90%	PASS
North Bank, East to West every 25'	587.7	40	BS	N/A	126.1	10.8	128.5	98.1	90%	PASS

Comments:

Brian Burton
Technician
DLZ INDUSTRIAL, LLC

Chris D'Antonio
Materials Testing Manager
DLZ INDUSTRIAL, LLC

Jim Jenkins
Project Quality Engineer
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ATTACHMENT B3

CONCRETE MIX DESIGN

WELSCH READY MIX, INC.

SINCE 1920

10175 Vans Drive, Frankfort, IL 60423

TOLL FREE: 866-469-8432 • PHONE: 815-469-8432

FAX: 815-464-4743

DATE	July 23, 2013
CONTRACTOR	BRIESER CONSTRUCTION
PROJECT	MIDWEST GEN
LOCATION	
CONTACT	ARON YAKIMA

Welsch MIX NUMBER		6096B						
IDOT MIX NUMBER								
Strength	PSI	4000						
Slump Range	Inches	4"+-1"						
Air Content	Percent	6+-1.5						
W/C Ratio		0.43						
USAGE		EXTERIOR FLATWORK						

Cement	lbs.	ASTM C-150	Type I	564							
Fly Ash	lbs.	ASTM C-618	Class C								
GGBFS (Slag)	lbs	ASTM C-989	120								
Coarse Agg	lbs	ASTM C-33	CM1101	1750							
Fine Aggregate	lbs.	ASTM C-33	FM02	1380							
CA 16 3/8 chips	lbs.	ASTM C-33	CM1601								
Pea Gravel	lbs.	ASTM C-33									
Water	lbs.	ASTM C-94	City	242							
Water Reducer 110	fl. oz.	ASTM C-494	Type A,F								
Water Reducer 82	fl. oz.	ASTM C-494	Type A								
High Range WR	fl. oz.	ASTM C-494	Type F								
Air Entraining Agent	fl. oz.	ASTM C-260		as needed							
1.5" Crushed Limestone		ASTM C-33	CM05								
Light Weight	lbs.	ASTM C-330									
Trap Rock	lbs	ASTM C-33									
Silica Fume	lbs.	ASTM C-1157									

LABORATORY TRIAL MIX DATA								
Physical Properties of Mix								
Slump	Inches	4"+-1"						
Air Content	Percent	4.5-7.5						
Weight per Cubic Foot	PCF	145.8						
Yield	CuFt							

Please forward cylinder break results to our Quality Control Department. Thank you.

AGGREGATE DATA

Sieve Size	Inches	1.5	1	3/4	5/8	1/2	3/8	1/4	#4	#8	#16	#30	#40	#50	#100	#200
Fine Aggregate	% Passing						100		100	96	75	53		21	4	1.2
Lightweight Aggregate	% Passing					100	86		23	7	4					0
Coarse Aggregate 16	% Passing					100	100	64	32	3	2					1.0
Coarse Aggregate 11	% Passing		100	86	66	38	18	4	3	3	2					1.3
Coarse Aggregate 05	% Passing	100	46	9	5	4			3							1.7

Lightweight Aggregate Fineness Modulus (F.M.)	5.73
Fine Aggregate Fineness Modulus (F.M.)	2.51
Dry Rodded Weight Coarse Aggregate CM1601	94
Dry Rodded Weight Coarse Aggregate CM1101	98

MWG13-15_34328

WELSCH READY MIX, INC.
SINCE 1920
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4000 PSI Statistical Analysis

ACI 318, 5.3.2 7/18/13 12 months to date.
Includes mix's: **6096B**

28 DAY COMPRESSIVE STRENGTH (PSI)

SET NO.			AVERAGE
1	5215	5145	5180
2	4710	4790	4750
3	4890	4910	4900
4	5020	4640	4830
5	5055	5085	5070
6	4780	5000	4890
7	5160	5250	5205
8	5430	5490	5460
9	5450	5440	5445
10	5380	5420	5400
11	5360	5320	5340
12	4980	4830	4905
13	5655	5915	5785
14	4790	4800	4795
15	4975	4910	4943
16	5780	5880	5830
17	5345	5425	5385
18	5125	5135	5130
19	5320	5568	5444
20	5230	5120	5175
21	5150	4980	5065
22	5650	5609	5630
23	5590	5630	5610
24	4810	4963	4887
25	5225	5277	5251
26	5100	5164	5132
27	5505	5471	5488
28	4865	4900	4883
29	5245	5295	5270
30	5485	5435	5460

Mean Value	**psi**	**5218**
Standard Deviation	**psi**	**300**
P. Standard Deviation	**psi**	**295**
Coefficient of Variation	**per cent**	**5.7**

MWG13-15_34329

ATTACHMENT B4

CONCRETE TEST RESULTS

DLZ
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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 1

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 1
DATE POURED: 7/25/2013
LOCATION: Piperack slab at South Ash Pond 2

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 48

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
1	1 A	8/1/2013	7	58,702	4670	4.00	12.57	N/A	SHEAR
2	1 B	8/22/2013	28	69,512	5530	4.00	12.57	PASS	SHEAR
3	1 C	8/22/2013	28	70,643	5620	4.00	12.57	PASS	SHEAR
4	1 D	8/22/2013	28	74,289	5910	4.00	12.57	PASS	SHEAR
5	1 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		71481	5687				

TRUCK: 20

Slump (inches) ASTM C 143: 3.5

PERCENT AIR ASTM C231: 5.5

CONCRETE TEMPERATURE (ASTM C1064): 75

AIR TEMPERATURE: 66

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34331

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 1

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 1
DATE POURED: 7/25/2013
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STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 48

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
6	2 A	8/1/2013	7	53,674	4270	4.00	12.57	N/A	SHEAR
7	2 B	8/22/2013	28	60,587	4820	4.00	12.57	PASS	SHEAR
8	2 C	8/22/2013	28	70,266	5590	4.00	12.57	PASS	SHEAR
9	2 D	8/22/2013	28	71,900	5720	4.00	12.57	PASS	SHEAR
10	2 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		67585	5377				

TRUCK: 24

Slump (inches) ASTM C 143: 4.5

PERCENT AIR ASTM C231: 7

CONCRETE TEMPERATURE (ASTM C1064): 78

AIR TEMPERATURE: 68

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34332

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 2

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 2
DATE POURED: 8/14/2013
LOCATION: South Ash Pond 2- East Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 54

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
11	3 A	8/21/2013	7	39,847	3170	4.00	12.57	N/A	SHEAR
12	3 B	9/11/2013	28	52,794	4200	4.00	12.57	PASS	SHEAR
13	3 C	9/11/2013	28	57,696	4590	4.00	12.57	PASS	SHEAR
14	3 D	9/11/2013	28	58,325	4640	4.00	12.57	PASS	SHEAR
15	3 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		56272	4477				

TRUCK: 37

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 7.4

CONCRETE TEMPERATURE (ASTM C1064) : 73

AIR TEMPERATURE: 57

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 2

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 2
DATE POURED: 8/14/2013
LOCATION: South Ash Pond 2- East Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 54

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
16	4 A	8/21/2013	7	51,286	4080	4.00	12.57	N/A	SHEAR
17	4 B	9/11/2013	28	55,559	4420	4.00	12.57	PASS	SHEAR
18	4 C	9/11/2013	28	55,937	4450	4.00	12.57	PASS	SHEAR
19	4 D	9/11/2013	28	57,445	4570	4.00	12.57	PASS	SHEAR
20	4 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		56314	4480				

TRUCK: 37

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 7.4

CONCRETE TEMPERATURE (ASTM C1064) : 73

AIR TEMPERATURE: 57

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES:

* FIELD CURE

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MWG13-15_34334

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 2

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 2
DATE POURED: 8/14/2013
LOCATION: South Ash Pond 2- East Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 54

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
11	3 A	8/21/2013	7	41,732	3320	4.00	12.57	N/A	SHEAR
12	3 B	9/11/2013	28	50,029	3980	4.00	12.57	PASS	SHEAR
13	3 C	9/11/2013	28	55,811	4440	4.00	12.57	PASS	SHEAR
14	3 D	9/11/2013	28	56,942	4530	4.00	12.57	PASS	SHEAR
15	3 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		54261	4317				

TRUCK: 34

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 7.4

CONCRETE TEMPERATURE (ASTM C1064): 75

AIR TEMPERATURE: 66

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 2

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 2
DATE POURED: 8/14/2013
LOCATION: South Ash Pond 2- East Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 54

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
16	4 A	8/21/2013	7	52,166	4150	4.00	12.57	N/A	SHEAR
17	4 B	9/11/2013	28	56,062	4460	4.00	12.57	PASS	SHEAR
18	4 C	9/11/2013	28	56,691	4510	4.00	12.57	PASS	SHEAR
19	4 D	9/11/2013	28	56,816	4520	4.00	12.57	PASS	SHEAR
20	4 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		56523	4497				

TRUCK: 34

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 7.4

CONCRETE TEMPERATURE (ASTM C1064) : 75

AIR TEMPERATURE: 66

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

A FIELD CURE

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 3

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 3
DATE POURED: 8/15/2013
LOCATION: South Ash Pond 2- Northeast Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 99

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
21	5 A	8/22/2013	7	56,942	4530	4.00	12.57	N/A	SHEAR
22	5 B	9/12/2013	28	68,004	5410	4.00	12.57	PASS	SHEAR
23	5 C	9/12/2013	28	68,507	5450	4.00	12.57	PASS	SHEAR
24	5 D	9/12/2013	28	71,775	5710	4.00	12.57	PASS	SHEAR
25	5 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		69428	5523				

TRUCK: 37

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 7.4

CONCRETE TEMPERATURE (ASTM C1064) : 73

AIR TEMPERATURE: 57

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34337

DLZ
SOUTH BEND INDIANAPOLIS BURNS HARBOR
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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 3

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 3
DATE POURED: 8/15/2013
LOCATION: South Ash Pond 2- Northeast Grid Wall
STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 99

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
26	6 A	8/22/2013	7	65,113	5180	4.00	12.57	N/A	SHEAR
27	6 B	9/12/2013	28	69,261	5510	4.00	12.57	PASS	SHEAR
28	6 C	9/12/2013	28	69,512	5530	4.00	12.57	PASS	SHEAR
29	6 D	9/12/2013	28	70,266	5590	4.00	12.57	PASS	SHEAR
30	6 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		69680	5543				

TRUCK: 37
Slump (inches) ASTM C 143: 5
PERCENT AIR ASTM C231: 7.4

CONCRETE TEMPERATURE (ASTM C1064): 73
AIR TEMPERATURE: 57

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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MWG13-15_34338

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CONCRETE COMPRESSIVE STRENGTH REPORT

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PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
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PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
31	7 A	8/22/2013	7	55,308	4400	4.00	12.57	N/A	SHEAR
32	7 B	9/12/2013	28	68,381	5440	4.00	12.57	PASS	SHEAR
33	7 C	9/12/2013	28	68,884	5480	4.00	12.57	PASS	SHEAR
34	7 D	9/12/2013	28	70,266	5590	4.00	12.57	PASS	SHEAR
35	7 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		69177	5503				

TRUCK: 34

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 7.4

CONCRETE TEMPERATURE (ASTM C1064): 75

AIR TEMPERATURE: 66

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34339

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 3

CONTRACTOR: Brieser Construction
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PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

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STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 99

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
36	8 A	8/22/2013	7	59,708	4750	4.00	12.57	N/A	SHEAR
37	8 B	9/12/2013	28	68,255	5430	4.00	12.57	PASS	SHEAR
38	8 C	9/12/2013	28	70,643	5620	4.00	12.57	PASS	SHEAR
39	8 D	9/12/2013	28	70,266	5590	4.00	12.57	PASS	SHEAR
40	8 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		69722	5547				

TRUCK: 34

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 7.4

CONCRETE TEMPERATURE (ASTM C1064) : 75

AIR TEMPERATURE: 66

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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MWG13-15_34340

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 4

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 7072B

POUR NUMBER: 4
DATE POURED: 8/15/2013
LOCATION: South Ash Pond 2- Ramp

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 54

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
41	9 A	8/18/2013	3	70,518	5810	4.00	12.57	N/A	SHEAR
42	9 B	8/22/2013	7	76,426	6080	4.00	12.57	N/A	SHEAR
43	9 C	9/12/2013	28	85,350	6790	4.00	12.57	PASS	SHEAR
44	9 D	9/12/2013	28	85,727	6820	4.00	12.57	PASS	SHEAR
45	9 E	9/12/2013	28	89,876	7150	4.00	12.57	PASS	SHEAR
46	9 F	RESERVE CYLINDER							
		STRENGTH AVERAGE		86984	6920				

TRUCK: 129

Slump (inches) ASTM C 143: 4.5

PERCENT AIR ASTM C231: 5.4

CONCRETE TEMPERATURE (ASTM C1064): 74

AIR TEMPERATURE: 57

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34341

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 4

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 7072B

POUR NUMBER: 4
DATE POURED: 8/15/2013
LOCATION: South Ash Pond 2- Ramp

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 54

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
47	10 A	8/18/2013	3	81,831	6510	4.00	12.57	N/A	SHEAR
48	10 B	8/22/2013	7	88,116	7010	4.00	12.57	N/A	SHEAR
49	10 C	9/12/2013	28	86,356	6870	4.00	12.57	PASS	SHEAR
50	10 D	9/12/2013	28	90,755	7220	4.00	12.57	PASS	SHEAR
51	10 E	9/12/2013	28	93,269	7420	4.00	12.57	PASS	SHEAR
52	10 F	RESERVE CYLINDER							
		STRENGTH AVERAGE		90127	7170				

TRUCK: 129

Slump (inches) ASTM C 143: 4.5

PERCENT AIR ASTM C231: 5.4

CONCRETE TEMPERATURE (ASTM C1064): 74

AIR TEMPERATURE: 57

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 4

CONTRACTOR: Brieser Construction
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PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 7072B

POUR NUMBER: 4
DATE POURED: 8/15/2013
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STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 54

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
53	11 A	8/18/2013	3	63,856	5080	4.00	12.57	N/A	SHEAR
54	11 B	8/22/2013	7	66,621	5300	4.00	12.57	N/A	SHEAR
55	11 C	9/12/2013	28	79,442	6320	4.00	12.57	PASS	SHEAR
56	11 D	9/12/2013	28	84,093	6690	4.00	12.57	PASS	SHEAR
57	11 E	9/12/2013	28	89,121	7090	4.00	12.57	PASS	SHEAR
58	11 F	RESERVE CYLINDER							
		STRENGTH AVERAGE		84219	6700				

TRUCK: 129

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 5.5

CONCRETE TEMPERATURE (ASTM C1064) : 76

AIR TEMPERATURE: 68

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34343

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 4

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PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 7072B

POUR NUMBER: 4
DATE POURED: 8/15/2013
LOCATION: South Ash Pond 2- Ramp

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 54

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
59	12 A	8/18/2013	3	57,445	4570	4.00	12.57	N/A	SHEAR
60	12 B	8/22/2013	7	86,230	6860	4.00	12.57	N/A	SHEAR
61	12 C	9/12/2013	28	85,476	6800	4.00	12.57	PASS	SHEAR
62	12 D	9/12/2013	28	84,973	6760	4.00	12.57	PASS	SHEAR
63	12 E	9/12/2013	28	86,859	6910	4.00	12.57	PASS	SHEAR
64	12 F	RESERVE CYLINDER							
		STRENGTH AVERAGE		85769	6823				

TRUCK: 129

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 5.5

CONCRETE TEMPERATURE (ASTM C1064): 76

AIR TEMPERATURE: 68

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES:

FIELD CURE

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 5

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 5
DATE POURED: 8/16/2013
LOCATION: South Ash Pond 2- Northwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 108

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
65	13 A	8/23/2013	7	54,302	4320	4.00	12.57	N/A	SHEAR
66	13 B	9/13/2013	28	70,392	5600	4.00	12.57	PASS	SHEAR
67	13 C	9/13/2013	28	72,026	5730	4.00	12.57	PASS	SHEAR
68	13 D	9/13/2013	28	74,289	5910	4.00	12.57	PASS	SHEAR
69	13 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		72236	5747				

TRUCK: 120

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 6.4

CONCRETE TEMPERATURE (ASTM C1064) : 74

AIR TEMPERATURE: 57

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34345

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 5

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 5
DATE POURED: 8/16/2013
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STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 108

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
70	14 A	8/23/2013	7	53,045	4220	4.00	12.57	N/A	SHEAR
71	14 B	9/13/2013	28	71,272	5670	4.00	12.57	PASS	SHEAR
72	14 C	9/13/2013	28	73,786	5870	4.00	12.57	PASS	SHEAR
73	14 D	9/13/2013	28	75,671	6020	4.00	12.57	PASS	SHEAR
74	14 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		73576	5853				

TRUCK: 120

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 6.4

CONCRETE TEMPERATURE (ASTM C1064): 74

AIR TEMPERATURE: 57

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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MWG13-15_34346

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 5

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 5
DATE POURED: 8/16/2013
LOCATION: South Ash Pond 2- Northwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 108

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
75	15 A	8/23/2013	7	45,252	3600	4.00	12.57	N/A	SHEAR
76	15 B	9/13/2013	28	62,599	4980	4.00	12.57	PASS	SHEAR
77	15 C	9/13/2013	28	57,319	4560	4.00	12.57	PASS	SHEAR
78	15 D	9/13/2013	28	64,736	5150	4.00	12.57	PASS	SHEAR
79	15 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		61551	4897				

TRUCK: 20

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 6.6

CONCRETE TEMPERATURE (ASTM C1064): 73

AIR TEMPERATURE: 71

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

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MWG13-15_34347

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 5

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 5
DATE POURED: 8/16/2013
LOCATION: South Ash Pond 2- Northwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 108

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
80	16 A	8/23/2013	7	53,800	4280	4.00	12.57	N/A	SHEAR
81	16 B	9/13/2013	28	57,948	4610	4.00	12.57	PASS	SHEAR
82	16 C	9/13/2013	28	66,747	5310	4.00	12.57	PASS	SHEAR
83	16 D	9/13/2013	28	68,004	5410	4.00	12.57	PASS	SHEAR
84	16 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		64233	5110				

TRUCK: 20

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 6.6

CONCRETE TEMPERATURE (ASTM C1064): 73

AIR TEMPERATURE: 71

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

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MWG13-15_34348

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 5

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 5
DATE POURED: 8/16/2013
LOCATION: South Ash Pond 2- Northwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 108

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
85	17 A	8/23/2013	7	45,881	3650	4.00	12.57	N/A	SHEAR
86	17 B	9/13/2013	28	62,096	4940	4.00	12.57	PASS	SHEAR
87	17 C	9/13/2013	28	62,724	4990	4.00	12.57	PASS	SHEAR
88	17 D	9/13/2013	28	64,233	5110	4.00	12.57	PASS	SHEAR
89	17 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		63018	5013				

TRUCK: 9

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 6.6

CONCRETE TEMPERATURE (ASTM C1064) : 77

AIR TEMPERATURE: 75

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

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MWG13-15_34349

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 5

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 5
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STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 108

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
90	18 A	8/23/2013	7	45,126	3590	4.00	12.57	N/A	SHEAR
91	18 B	9/13/2013	28	64,107	5100	4.00	12.57	PASS	SHEAR
92	18 C	9/13/2013	28	64,358	5120	4.00	12.57	PASS	SHEAR
93	18 D	9/13/2013	28	65,993	5250	4.00	12.57	PASS	SHEAR
94	18 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		64819	5157				

TRUCK: 9

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 6.6

CONCRETE TEMPERATURE (ASTM C1064): 77

AIR TEMPERATURE: 75

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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MWG13-15_34350

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HAMMOND NILES, MICHIGAN

DLZ INDUSTRIAL, LLC
316 Tech Drive Burns Harbor, Indiana 46304
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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 6

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 6
DATE POURED: 8/19/2013
LOCATION: South Ash Pond 2- Southwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 144

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
95	19 A	8/26/2013	7	51,788	4120	4.00	12.57	N/A	SHEAR
96	19 B	9/16/2013	28	66,495	5290	4.00	12.57	PASS	SHEAR
97	19 C	9/16/2013	28	66,998	5330	4.00	12.57	PASS	SHEAR
98	19 D	9/16/2013	28	67,878	5400	4.00	12.57	PASS	SHEAR
99	19 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		67124	5340				

TRUCK: 121

Slump (inches) ASTM C 143: 4.5

PERCENT AIR ASTM C231: 6.5

CONCRETE TEMPERATURE (ASTM C1064): 76

AIR TEMPERATURE: 61

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34351

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 6

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 6
DATE POURED: 8/19/2013
LOCATION: South Ash Pond 2- Southwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 144

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
100	20 A	8/26/2013	7	53,423	4250	4.00	12.57	N/A	SHEAR
101	20 B	9/16/2013	28	60,210	4790	4.00	12.57	PASS	SHEAR
102	20 C	9/16/2013	28	66,747	5310	4.00	12.57	PASS	SHEAR
103	20 D	9/16/2013	28	70,392	5600	4.00	12.57	PASS	SHEAR
104	20 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		65783	5233				

TRUCK: 121

Slump (inches) ASTM C 143: 4.5

PERCENT AIR ASTM C231: 6.5

CONCRETE TEMPERATURE (ASTM C1064): 76

AIR TEMPERATURE: 61

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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MWG13-15_34352

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 6

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 6
DATE POURED: 8/19/2013
LOCATION: South Ash Pond 2- Southwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 144

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
105	21 A	8/26/2013	7	38,590	3070	4.00	12.57	N/A	SHEAR
106	21 B	9/16/2013	28	53,045	4220	4.00	12.57	PASS	SHEAR
107	21 C	9/16/2013	28	54,680	4350	4.00	12.57	PASS	SHEAR
108	21 D	9/16/2013	28	56,439	4490	4.00	12.57	PASS	SHEAR
109	21 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		54721	4353				

TRUCK: 4

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 6.7

CONCRETE TEMPERATURE (ASTM C1064): 77

AIR TEMPERATURE: 72

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34353

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 6

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 6
DATE POURED: 8/19/2013
LOCATION: South Ash Pond 2- Southwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 144

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
110	22 A	8/26/2013	7	40,098	3190	4.00	12.57	N/A	SHEAR
111	22 B	9/16/2013	28	53,674	4270	4.00	12.57	PASS	SHEAR
112	22 C	9/16/2013	28	54,680	4350	4.00	12.57	PASS	SHEAR
113	22 D	9/16/2013	28	57,696	4590	4.00	12.57	PASS	SHEAR
114	22 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		55350	4403				

TRUCK: 4

Slump (inches) ASTM C 143: 5

PERCENT AIR ASTM C231: 6.7

CONCRETE TEMPERATURE (ASTM C1064): 77

AIR TEMPERATURE: 72

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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MWG13-15_34354

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 6

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 6
DATE POURED: 8/19/2013
LOCATION: South Ash Pond 2- Southwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 144

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
115	23 A	8/26/2013	7	49,149	3910	4.00	12.57	N/A	SHEAR
116	23 B	9/16/2013	28	67,124	5340	4.00	12.57	PASS	SHEAR
117	23 C	9/16/2013	28	68,507	5450	4.00	12.57	PASS	SHEAR
118	23 D	9/16/2013	28	69,009	5490	4.00	12.57	PASS	SHEAR
119	23 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		68213	5427				

TRUCK: 20

Slump (inches) ASTM C 143: 3.5

PERCENT AIR ASTM C231: 6.7

CONCRETE TEMPERATURE (ASTM C1064): 78

AIR TEMPERATURE: 76

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY:

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MWG13-15_34355

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 6

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 6
DATE POURED: 8/19/2013
LOCATION: South Ash Pond 2- Southwest Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 144

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
120	24 A	8/26/2013	7	54,428	4330	4.00	12.57	N/A	SHEAR
121	24 B	9/16/2013	28	66,370	5280	4.00	12.57	PASS	SHEAR
122	24 C	9/16/2013	28	67,250	5350	4.00	12.57	PASS	SHEAR
123	24 D	9/16/2013	28	61,342	4880	4.00	12.57	PASS	SHEAR
124	24 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		64987	5170				

TRUCK: 20

Slump (inches) ASTM C 143: 3.5

PERCENT AIR ASTM C231: 6.7

CONCRETE TEMPERATURE (ASTM C1064) : 78

AIR TEMPERATURE: 76

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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MWG13-15_34356

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 7

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 7
DATE POURED: 8/20/2013
LOCATION: South Ash Pond 2- Southeast Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 81

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
125	25 A	8/27/2013	7	52,920	4210	4.00	12.57	N/A	SHEAR
126	25 B	9/17/2013	28	63,856	5080	4.00	12.57	PASS	SHEAR
127	25 C	9/17/2013	28	65,364	5200	4.00	12.57	PASS	SHEAR
128	25 D	9/17/2013	28	67,124	5340	4.00	12.57	PASS	SHEAR
129	25 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		65448	5207				

TRUCK: 123

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 6.6

CONCRETE TEMPERATURE (ASTM C1064): 76

AIR TEMPERATURE: 66

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

LABORATORY

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MWG13-15_34357

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 7

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 7
DATE POURED: 8/20/2013
LOCATION: South Ash Pond 2- Southeast Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 81

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
130	26 A	8/27/2013	7	57,696	4590	4.00	12.57	N/A	SHEAR
131	26 B	9/17/2013	28	61,844	4920	4.00	12.57	PASS	SHEAR
132	26 C	9/17/2013	28	64,736	5150	4.00	12.57	PASS	SHEAR
133	26 D	9/17/2013	28	65,113	5180	4.00	12.57	PASS	SHEAR
134	26 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		63898	5083				

TRUCK: 123

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 6.6

CONCRETE TEMPERATURE (ASTM C1064): 76

AIR TEMPERATURE: 66

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 7

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 7
DATE POURED: 8/20/2013
LOCATION: South Ash Pond 2- Southeast Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 81

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
135	27 A	8/27/2013	7	46,509	3700	4.00	12.57	N/A	SHEAR
136	27 B	9/17/2013	28	49,652	3950	4.00	12.57	FAIL	SHEAR
137	27 C	9/17/2013	28	51,663	4110	4.00	12.57	PASS	SHEAR
138	27 D	9/17/2013	28	54,051	4300	4.00	12.57	PASS	SHEAR
139	27 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		51788	4120				

TRUCK: 71

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 6.9

CONCRETE TEMPERATURE (ASTM C1064): 78

AIR TEMPERATURE: 75

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

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MWG13-15_34359

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CONCRETE COMPRESSIVE STRENGTH REPORT

PROJECT NUMBER: 7

CONTRACTOR: Brieser Construction
PROJECT: Midwest Generation Ash Pond 2
PROJECT #: 1350410770
SUPPLIER: Welsch
MIX DESIGN: 60968

POUR NUMBER: 7
DATE POURED: 8/20/2013
LOCATION: South Ash Pond 2- Southeast Grid Wall

STRENGTH REQUIRED: 4000 PSI @ 28 DAYS
CUBIC YARDS: 81

PAGE 1

DLZ CYLINDER #	CLIENT CYLINDER #	DATE TESTED	AGE (DAYS)	LOAD (POUNDS) ASTM C39	COMPRESSIVE STRENGTH (PSI) ASTM C39	DIAMETER (INCHES) ASTM C39	AREA (INCHES) ASTM C39	PASS OR FAIL	FAILURE TYPE
140	28 A	8/27/2013	7	52,794	4200	4.00	12.57	N/A	SHEAR
141	28 B	9/17/2013	28	55,057	4380	4.00	12.57	PASS	SHEAR
142	28 C	9/17/2013	28	57,445	4570	4.00	12.57	PASS	SHEAR
143	28 D	9/17/2013	28	57,948	4610	4.00	12.57	PASS	SHEAR
144	28 E	RESERVE CYLINDER							
		STRENGTH AVERAGE		56816	4520				

TRUCK: 71

Slump (inches) ASTM C 143: 4

PERCENT AIR ASTM C231: 6.9

CONCRETE TEMPERATURE (ASTM C1064): 78

AIR TEMPERATURE: 75

SPECIFICATION COMPLIANCE: YES/NO
PROJECT SPECIFICATION: 03300

NOTES: _____

FIELD CURE

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MWG13-15_34360

ATTACHMENT C

GEOSYNTHETICS CERTIFICATIONS

ATTACHMENT C1

GEOMEMBRANE CERTIFICATION

GSE Roll Allocation

Order SO-070001
Customer Clean Air and Water Systems, LLC
Project Name Will County Station

Roll#	Resin Lot	Product Code	Mfg Date	Length
105167008	H8231659	HDT-060AE-WBB-B-W0	4/30/2013	520
105167024	H8231659	HDT-060AE-WBB-B-W0	5/1/2013	520
105167025	H8231659	HDT-060AE-WBB-B-W0	5/1/2013	520
105167026	H8231659	HDT-060AE-WBB-B-W0	5/1/2013	520
105167027	H8231659	HDT-060AE-WBB-B-W0	5/1/2013	520
105167028	H8231659	HDT-060AE-WBB-B-W0	5/1/2013	520
105167029	H8231659	HDT-060AE-WBB-B-W0	5/1/2013	520
105167033	H8231659	HDT-060AE-WBB-B-W0	5/1/2013	520
105167034	H8231659	HDT-060AE-WBB-B-W0	5/1/2013	520

GSE Environmental, LLC

ROLL TEST DATA REPORT

Report Date: May/2/2013

Sales Order No.	Customer Name	Project Location	Product Name	BOL Number
SO-070001	Clean Air and Water Systems, LLC	Romeoville IL US	HDT-060AE-WBB-B-W0	

Roll Number	Average Thickness ASTM D5994 (mils)	Minimum Thickness ASTM D5994 (mils)	Yield Strength ASTM D6693 (ppi) MD	Yield Strength ASTM D6693 (ppi) TD	Yield Elongation ASTM D6693 (%) MD	Yield Elongation ASTM D6693 (%) TD	Break Strength ASTM D6693 (ppi) MD	Break Strength ASTM D6693 (ppi) TD	Break Elongation ASTM D6693 (%) MD	Break Elongation ASTM D6693 (%) TD	Tear Resistance ASTM D1004 (lbs) MD	Tear Resistance ASTM D1004 (lbs) TD	Puncture Resistance ASTM D4833 (lbs)	Density ASTM D1505 (g/cc)	Carbon Black Content ASTM D4218 (%)	Carbon Black Dispersion ASTM D5596 (Views in Cat1-Cat2)	Asperity Height GRI GM12 (mils) Side A	Asperity Height GRI GM12 (mils) Side B
105167008	61	58	156	159	17	16	247	215	637	629	55	51	151	0.945	2.49	10	20	20
105167024	62	58	143	150	17	16	222	206	646	639	51	47	144	0.943	2.24	10	25	30
105167025	61	57	143	150	17	16	222	206	646	639	51	47	144	0.943	2.24	10	21	24
105167026	61	54	143	150	17	16	222	206	646	639	51	47	144	0.943	2.24	10	21	24
105167027	63	60	143	150	17	16	222	206	646	639	51	47	144	0.943	2.24	10	21	24
105167028	62	57	156	162	16	16	212	175	580	490	56	53	151	0.944	2.39	10	21	25
105167029	61	59	156	162	16	16	212	175	580	490	56	53	151	0.944	2.39	10	21	25
105167033	62	58	156	162	16	16	212	175	580	490	56	53	151	0.944	2.39	10	21	23
105167034	61	57	156	158	17	16	222	193	610	572	55	50	154	0.944	2.40	10	22	25

Laboratory Manager

GSE ENVIRONMENTAL™

Quality Assurance Laboratory Test Results

Job Name: Will County Station
Sales Order: 70001

Required Testing: ASTM D 3895 -- Standard Test Method for Oxidative Induction Time of Polyolefins by Differential Scanning Calorimetry
ASTM D 5397 -- Standard Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test

Specification: D 3895 - >100 Minutes
D 5397 - >300 Hours

Product Code	Resin Lot Number	Test Results
HDT-060AE-WBB-B-W0	H8231659	PASS

Approved By:	Debra Gortemiller
Date Approved:	May 2, 2013

MWG13-15_34365

GSE ENVIRONMENTAL™

Quality Assurance Laboratory Test Results

Job Name: Will County Station
SO Number: 70001

The table below summarizes additive performance of GSE Houston products as perceived by OIT retention after UV and Oven Aging per GRI Test Method GM13:

		Oven Aging @ 85° C (ASTM D 5721)				UV Resistance per GRI GM11			
		90 days per ASTM D 3895				1600 hours UV Aging per ASTM D 5885			
Product Type	**Formulation**	Initial HP OIT (min)	Final HP OIT (min)	Retained (%)	GRI Criteria (%)	Initial HP OIT (min)	Final HP OIT (min)	Retained (%)	GRI Criteria (%)
HDPE Geomembrane	Chevron Phillips Marlex® K306 + Carbon Black	697	661	94	80	697	565	81	50

GSE ENVIRONMENTAL™

Quality Assurance Laboratory Test Results

Approved By: Debra Gortemiller

Date: May 2, 2013

CoA Date: 04/05/2013

Certificate of Analysis

Shipped To: GSE ENVIRONMENTAL, LLC
19103 GUNDLE ROAD
WESTFIELD TX 77090
USA

Recipient: Gibbs
Fax:

Delivery #: 88629002
PO #: 03-072384
Weight: 185100 LB
Ship Date: 04/05/2013
Package: BULK
Mode: Hopper Car
Car #: CHVX890506
Seal No: 298788

Product:
MARLEX POLYETHYLENE K306 BULK

Lot Number: H8231659

Property	Test Method	Value	Unit
Melt Index	ASTM D1238	0.1	g/10mi
HLMI Flow Rate	ASTM D1238	11.8	g/10mi
Density	D1505 or D4883	0.938	g/cm3
Production Date		02/03/2013	

The data set forth herein have been carefully compiled by Chevron Phillips Chemical Company LP (CPChem). **However, there is no warranty of any kind, either expressed or implied, applicable to its use, and the user assumes all risk and liability in connection therewith.**

Troy Griffin
Quality Systems Coordinator

For CoA questions contact Customer Service Representative at 800-231-1212

MWG13-15_34368

ATTACHMENT C2

GEOTEXTILE CERTIFICATION

SKAPS Industries (Nonwoven Division)
335, Athena Drive
Athens, GA 30601 (U.S.A.)
Phone (706) 354-3700 Fax (706) 354-3737
E-mail: info@skaps.com

Sales Office:
Engineered Synthetic Product Inc.
Phone: (770)564-1857
Fax: (770)564-1818

June 12, 2013
Clean Air & Water Systems
P.O. Box 337
Dousman, WI 53118
Ref : Midwest Generation / Will County Station
PO : 1022-13

Dear Sir/Madam:

This is to certify that SKAPS GE116 is a high quality needle-punched nonwoven geotextile made of 100% polypropylene staple fibers, randomly networked to form a high strength dimensionally stable fabric. SKAPS GE116 resists ultraviolet deterioration, rotting, biological degradation. The fabric is inert to commonly encountered soil chemicals. Polypropylene is stable within a pH range of 2 to 13. SKAPS GE116 conforms to the property values listed below:

PROPERTY	TEST METHOD	UNITS	M.A.R.V. Minimum Average Roll Value
Weight	ASTM D 5261	oz/sy (g/m^2)	16.00 (543)
Thickness*	ASTM D 5199	mils (mm)	175 (4.45)
Grab Tensile	ASTM D 4632	lbs (kN)	425 (1.89)
Grab Elongation	ASTM D 4632	%	50
Trapezoidal Tear	ASTM D 4533	lbs (kN)	150 (0.67)
Puncture Resistance	ASTM D 4833	lbs (kN)	240 (1.07)
Mullen Burst Strength	ASTM D 3786	psi (kPa)	800 (5516)
Permittivity*	ASTM D 4491	sec^{-1}	0.57
Permeability*	ASTM D 4491	cm/sec	0.25
Water Flow*	ASTM D 4491	gpm/ft^2(l/min/m^2)	45 (1834)
AOS*	ASTM D 4751	US Sieve (mm)	100 (0.15)
UV Resistance	ASTM D 4355	%/hrs	70/500

Notes:
* At the time of manufacturing. Handling may change these properties.

PALAK PATEL
QUALITY CONTROL MANAGER

Product : GE116-180

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 16.00	THICKNESS D5199 (mils) 175	MD TENSILE D4632 lbs. 425	MD ELONG D4632 % 50	XMD TENSILE D4632 lbs 425	XMD ELONG D4632 % 50	MD TRAP D4533 lbs. 150	XMD TRAP D4533 lbs 150	PUNCTURE D4833 lbs. 240	MULLEN D3786 psi 800	AOS D4751 US Sieve 100	WATER FLOW D4491 gpm/ft^2 45	PERMEAB-ILITY D4491 cm/sec 0.25	PERMITT-IVITY D4491 sec^{-1} 0.57
29599.01	16.66	182	436	78	462	90	159	166	247	809	100	47	0.29	0.63
29599.02	16.66	182	436	78	462	90	159	166	247	809	100	47	0.29	0.63
29599.03	16.66	182	436	78	462	90	159	166	247	809	100	47	0.29	0.63
29599.04	16.66	182	436	78	462	90	159	166	247	809	100	47	0.29	0.63
29599.05	16.13	177	431	72	453	83	159	166	247	809	100	47	0.29	0.63
29599.06	16.13	177	431	72	453	83	159	166	247	809	100	47	0.29	0.63
29599.07	16.13	177	431	72	453	83	159	166	247	809	100	47	0.29	0.63
29599.08	16.13	177	431	72	453	83	159	166	247	809	100	47	0.29	0.63
29599.09	16.13	177	431	72	453	83	159	166	247	809	100	47	0.29	0.63
29599.10	16.52	184	439	76	459	88	152	163	242	803	100	47	0.29	0.63
29599.11	16.52	184	439	76	459	88	152	163	242	803	100	47	0.29	0.63
29599.12	16.52	184	439	76	459	88	152	163	242	803	100	47	0.29	0.63
29599.13	16.52	184	439	76	459	88	152	163	242	803	100	47	0.29	0.63
29599.14	16.52	184	439	76	459	88	152	163	242	803	100	47	0.29	0.63
29599.15	16.21	175	434	74	455	80	152	163	242	803	100	47	0.29	0.63
29599.16	16.21	175	434	74	455	80	152	163	242	803	100	47	0.29	0.63
29599.17	16.21	175	434	74	455	80	152	163	242	803	100	47	0.29	0.63
29599.18	16.21	175	434	74	455	80	152	163	242	803	100	47	0.29	0.63
29599.19	16.21	175	434	74	455	80	152	163	242	803	100	47	0.29	0.63
29599.20	16.47	181	437	80	464	86	156	170	245	807	100	47	0.29	0.63
29599.21	16.47	181	437	80	464	86	156	170	245	807	100	47	0.29	0.63
29599.22	16.47	181	437	80	464	86	156	170	245	807	100	47	0.29	0.63
29599.23	16.47	181	437	80	464	86	156	170	245	807	100	47	0.29	0.63
29599.24	16.47	181	437	80	464	86	156	170	245	807	100	47	0.29	0.63
29599.25	16.33	178	432	71	452	82	156	170	245	807	100	47	0.29	0.63
29599.26	16.33	178	432	71	452	82	156	170	245	807	100	47	0.29	0.63
29599.27	16.33	178	432	71	452	82	156	170	245	807	100	47	0.29	0.63
29599.28	16.33	178	432	71	452	82	156	170	245	807	100	47	0.29	0.63
29599.29	16.33	178	432	71	452	82	156	170	245	807	100	47	0.29	0.63
29599.30	16.69	183	440	77	461	89	154	161	240	801	100	47	0.29	0.63
29599.31	16.69	183	440	77	461	89	154	161	240	801	100	47	0.29	0.63
29599.32	16.69	183	440	77	461	89	154	161	240	801	100	47	0.29	0.63
29599.33	16.69	183	440	77	461	89	154	161	240	801	100	47	0.29	0.63
29599.34	16.69	183	440	77	461	89	154	161	240	801	100	47	0.29	0.63
29599.35	16.20	176	435	75	456	84	154	161	240	801	100	47	0.29	0.63

*All values are MARV.

MWG13-15_34371

Product : GE116-180

ROLL # ASTM METHOD UNITS TARGET	WEIGHT D5261 oz/sq yd 16.00	THICKNESS D5199 (mils) 175	MD TENSILE D4632 lbs. 425	MD ELONG D4632 % 50	XMD TENSILE D4632 lbs 425	XMD ELONG D4632 % 50	MD TRAP D4533 lbs. 150	XMD TRAP D4533 lbs 150	PUNCTURE D4833 lbs. 240	MULLEN D3786 psi 800	AOS D4751 US Sieve 100	WATER FLOW D4491 gpm/ft^2 45	PERMEAB-ILITY D4491 cm/sec 0.25	PERMITT-IVITY D4491 sec^{-1} 0.57
29599.36	16.20	176	435	75	456	84	154	161	240	801	100	47	0.29	0.63
29599.37	16.20	176	435	75	456	84	154	161	240	801	100	47	0.29	0.63
29599.38	16.20	176	435	75	456	84	154	161	240	801	100	47	0.29	0.63
29599.39	16.20	176	435	75	456	84	154	161	240	801	100	47	0.29	0.63
29599.40	16.55	185	438	79	463	87	158	167	248	810	100	47	0.29	0.63
29599.41	16.55	185	438	79	463	87	158	167	248	810	100	47	0.29	0.63
29599.42	16.55	185	438	79	463	87	158	167	248	810	100	47	0.29	0.63
29599.43	16.55	185	438	79	463	87	158	167	248	810	100	47	0.29	0.63

*All values are MARV.

ATTACHMENT D

GEOSYNTHETICS INSTALLER SUBMITTALS

ATTACHMENT D1

FIELD TENSIOMETER CALIBRATION

Demtech Services, Inc.

Placerville, California, USA

CALIBRATION CERTIFICATE

Clean Air and Water

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell
Range: 0 - 750 lbs. Tension
Model No: M2405-750#
Serial No: 668204

Calibration Apparatus:
Pro-Cal unit, model TC-0100/A

A/D Module Model No: T-029
A/D Module Serial No: 2911668204
Channel No: N/A

Dead Weight:		Reference Cell:	
W1	2	R1	2
W2	152	R2	152
W3	302	R3	302

Indicator reading with no load: 0

Offset: 2.675813 Scale: 3.178533

Applied Force lbs.	Cell Response:	Deviation Error:
2	2	0.00
52	52	0.00
102	102	0.00
152	152	0.00
202	202	0.00
252	252	0.00
302	302	0.00

Total Deviation Error (%): 0.00%

Temperature at time of calibration: 73 degrees F
Exitation Voltage: 5 V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

AH Date: 06/05/13

MWG13-15_34375

Demtech Services, Inc.

Placerville, California, USA

CALIBRATION CERTIFICATE

Clean Air and Water

Tensiometer Model: Pro-Tester T-0100

Device Calibrated: S-Type load cell
Range: 0 - 750 lbs. Tension
Model No: M2405-750#
Serial No: **681558**

Calibration Apparatus:

Pro-Cal unit, model TC-0100/A

A/D Module Model No: T-029
A/D Module Serial No: 2212681558
Channel No: N/A

Dead Weight:

W1	2
W2	152
W3	302

Reference Cell:

R1	2
R2	152
R3	302

Indicator reading with no load: 0

Offset: **1.624357** Scale: **3.179799**

Applied Force lbs.	Cell Response:	Deviation Error:
2	2	0.00
52	52	0.00
102	102	0.00
152	152	0.00
202	202	0.00
252	252	0.00
302	302	0.00

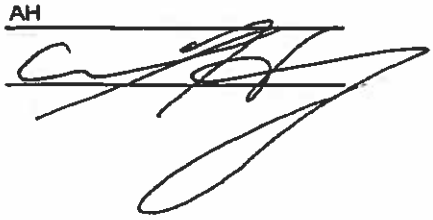
Total Deviation Error (%): 0.00%

Temperature at time of calibration: 73 degrees F
Exitation Voltage: 5 V DC

This calibration conforms to the standards set by ASTM E4 and is traceable to NIST standards

Note: A/D Module and load cell above have been systems calibrated and are considered a matched pair. In general, calibrated A/D Modules and load cells are not interchangeable.

AH



Date: 06/05/13

MWG13-15_34376

ATTACHMENT D2

INSTALLER CREW RESUMES

RESUME FOR: Thong Ingels

Thong has been a Superintendent in the flexible membrane liner industry for >20 years. Below is his combined total square footage of flexible membrane liners installed under his management.

EXPERIENCE: Combined Square Footage: >100,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- CPR/First Aid Certified – American Heart Association Heartsaver Course
- 40 Hour HAZMAT - OSHA 29 CFR1910.120 & 1926.65
- OSHA 8 hour refresher (annual)
- 40 Hour MSHA Training
- Hertz Heavy Equipment Training

FIELD RESUME FOR: Sengratana Sengsay

Sengratana's main duty for CAAW Systems, LLC is as Quality Control Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is his combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field QC Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: Pheth Vongphrachanh

Pheth's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is his combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: So Khanthavong

So's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is his combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: Phouvanh Xaysana

Phouvanh's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is his combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: Khammy Kounnorath

Khammy's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is his combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: Heum NLN

Heum's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is his combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: Ketsana Vongphanchan

Ketsana's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is his combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: Moon Kala

Moon's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is his combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: Bounloth Lounnarath

Bounloth's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is her combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field QC Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

FIELD RESUME FOR: Detphongsone Outhaaphay

Detphongsone's main duty for CAAW Systems, LLC is as a Technician, and has been in the Flexible Membrane Liner industry for over 10 years. Below is her combined total square footage of Flexible Membrane Liners installed, this number may not include previous employment square footage.

EXPERIENCE: Combined Square Footage: >10,000,000

LININGS INSTALLED: HDPE, LLDPE, Polypropylene, Hypalon, PVC, Geonet, Composites, Geosynthetic Clay, Geotextiles and XR-5.

TYPES OF PROJECTS: Heap Leach Pads, Landfills, Ponds, Landfill Caps, Secondary Containment Structures, Underliners and Methane Barriers.

EQUIPMENT KNOWLEDGE: Has extensive knowledge in maintaining and/or operating the following equipment:

- Wedge Welder
- Extrusion Welder
- Sewing Machines
- Tensiometer

TRAINING:

- In-Field QC Training
- 40 Hr HAZMAT - OSHA 20CFR1910.120

ATTACHMENT D3

SUBGRADE ACCEPTANCE

Natural Resource Technology, Inc
Certificate of Acceptance
of Prepared Subgrade

NATURAL RESOURCE TECHNOLOGY

GEOSYNTHETICS CONTRACTOR

NAME: Thong Ingels
ADDRESS: 1313 Elm St
Douglas WI 53118

PROJECT

LOCATION: Romeo VII, IL
PROJECT: Midwest Geh

I, Thong Ingels, a duly authorized representative of CAA Inc, have visually inspected the subgrade surface described above and found the surface to be acceptable for installation of the geomembrane. I do hereby accept the soil subgrade area as described below and shall be responsible for its integrity for suitability, installation, and future containment performance in accordance with these specifications from this date to completion and acceptance of the installation. This certification is based on observations of the surface of the subgrade only.

Area Accepted: All

SUBGRADE RELEASED BY:

GENERAL CONTRACTOR
DATE: 8/5/13

AUTHORIZED REPRESENTATIVE:
SIGNATURE:
NAME: Terry Anderson
TITLE: Superintendent

SUBGRADE ACCEPTED BY:

GEOSYNTHETICS CONTRACTOR
DATE: 8/5/13

AUTHORIZED REPRESENTATIVE:
SIGNATURE:
NAME: Thong Ingels LS
TITLE: Supt

SUBGRADE OBSERVED BY:

CQA CONSULTANT
DATE: 8/5/13

AUTHORIZED REPRESENTATIVE:
SIGNATURE:
NAME: Joseph A Larson
TITLE: Environmental Scientist

CERTIFICATE OF ACCEPTANCE OF SUBGRADE SURFACE PREPARATION FOR GEOMEMBRANE INSTALLATION

PROJECT NAME: Midwest Gen Will County - South Ash Pond 2

LOCATION: Romeoville, IL

JOB NUMBER: 201324 CLIENT:

AREA ACCEPTED: 92,767 sqft

COMMENTS:

INSTALLER: The undersigned authorized representative of CAAW Systems certifies that he or she has visually inspected the subgrade surface of the area described above and has found the surface to be acceptable for installation of the geosynthetic materials.

CAAW Systems shall be responsible for the integrity of finished geosynthetic material until completion of the installation or demobilization from site.

This certification is based on observations of the subgrade surface conditions only. CAAW Systems has made no subterrain inspections or tests and makes no representations or warranties as to the conditions that may exist below the surface of the subgrade.

CERTIFICATE APPROVED BY:

Installers Acceptance		Inspectors Acceptance	
Company:	Clean Air And Water Systems, LLC	Company:	Natural Resource Technology
By:	[signature]	By:	[signature]
Title:	QAQC	Title:	Environmental Scientist
Date:	8-5-13	Date:	8-5-13

MWG13-15_34391

ATTACHMENT D4

GEOSYNTHETIC MATERIAL INSTALLATION CERTIFICATE

November 20, 2013

Midwest Generation, LLC
Will County Generating Station
529 E. 135th Street
Romeoville, IL 60446

RE: Geosynthetic material installation certification

To Whom It May Concern

The HDPE geomembrane and geotextiles installed in the South Ash Pond 2 were installed in accordance with the project specifications and manufactures recommendations.

Sincerely,

Matt Albert

Matt Albert
Project Estimator
CAAW Systems, LLC.

MWG13-15_34393

ATTACHMENT D5

GEOMEMBRANE INSTALLATION WARRANTIES

INSTALLATION WARRANTY- GEOMEMBRANE LINERS

PROJECT NAME: Will County Generating Station

Subject to the terms and conditions set forth below, Clean Air And Water Systems, LLC warrants to Purchaser, _Midwest Generation, LLC_, that the _60 mil HDPE White Textured Geomembrane_ installed in the _South Ash Pond 2_, was installed by Clean Air And Water Systems, LLC, in accordance with the specifications in a good and workmanlike manner and that the installation of the liner is free from defects in workmanship for a period of two (2) years from the date upon which the material was installed.

This warranty covers only defects in workmanship occurring during the installation of the liner. This warranty does not cover ay damage to, or defects in the liner found to have been a result of misuse, abuse or conditions existing after it was installed, including, but not limited to, rough handling; malicious mischief; vandalism; sabotage; fire; acts of God; acts of the public enemy; acts of war, public rebellion, severe weather conditions of all types; damage due to ice; excessive stress from any source; floating debris; damage due to machinery; foreign objects or animals. Nor does this warranty cover any defects which are found to have been a result of improper or defective design or engineering unless the design or engineering was performed by Clean Air And Water Systems, LLC. In the event circumstances are found to exist which purchaser believes may give rise to a claim under this warranty, the following procedure shall be followed:

a) Purchaser shall give Clean Air And Water Systems, LLC written notice of the facts and circumstances of said claim within ten (10) days of becoming aware of said facts and circumstances. Said notice shall be by registered or certified mail, return receipt requested, postage prepaid, addressed to Member, Clean Air And Water Systems, LLC, 123 Elm Street, PO Box 337, Dousman, Wisconsin 53118. The words "WARRANTY CLAIM" shall be clearly marked on the face of envelope in the lower right hand corner. Said notice shall contain, at a minimum, the name and address of the owner, the name and address of the installation, the name and address of the installer, the date upon which the material was purchased and the facts known to Purchaser upon which the claim is based. Failure to strictly comply with all the requirements of this paragraph shall void this warranty.

b) Within twenty days after receipt of the notice described in paragraph a., above, Clean Air And Water Systems, LLC shall notify Purchaser either that it will send a representative to inspect the allegedly defective liner or that it does not wish to do so. Purchaser shall pay the expenses incurred by Clean Air And Water Systems, LLC in making the inspection, including current per diem rates for personnel involved in making the inspection, in the event Clean Air And Water Systems, LLC determines that the claim is not covered by this warranty.

c) Purchaser SHALL NOT REPAIR, REPLACE, REMOVE, ALTER OR DISTURB ANY LINER, NOR SHALL Purchaser ALLOW ANYONE ELSE TO REPAIR, REPLACE, REMOVE, ALTER, OR DISTURB ANY LINER PRIOR TO SUCH INSPECTION OR RECEIPT OF CLEAN AIR AND WATER SYSTEMS, LLC.'S NOTICE THAT IT ELECTS NOT TO INSPECT. A FAILURE TO STRICTLY COMPLY WITH THIS PARAGRAPH SHALL VOID THIS WARRANTY OR MAY LEAD TO A DETERMINATION THAT THE ALLEGED DEFECTS ARE NOT WITHIN THE SCOPE OF THIS WARRANTY.

d) If Clean Air And Water Systems, LLC determines that the alleged defects are covered by this warranty, Clean Air And Water Systems, LLC shall, in its sole discretion, either repair the defective liner or provide Purchaser with replacement liner. THE REMEDIES PROVIDED HEREIN ARE THE EXCLUSIVE REMEDIES AVAILABLE UNDER THIS WARRANTY. Any determination as to whether a particular defect is covered by this warranty will be made by Clean Air And Water Systems, LLC in its sole and complete discretion.

e) Purchaser agrees that it shall provide Clean Air And Water Systems, LLC with clean, dry and unobstructed access to the liner in order for Clean Air And Water Systems, LLC to perform the inspections and warranty work which may be required pursuant to this warranty.

THE REMEDIES PROVIDED TO Purchaser HEREIN ARE THE EXCLUSIVE REMEDIES AVAILABLE UNDER THIS WARRANTY AND ARE INTENDED FOR THE SOLE BENEFIT OF Purchaser. NEITHER THIS WARRANTY NOR ANY RIGHTS HEREUNDER SHALL BE ASSIGNABLE. CLEAN AIR AND WATER SYSTEMS, LLC SHALL HAVE NO LIABILITY UNDER THIS WARRANTY TO THIRD PARTIES OR STRANGERS TO THIS AGREEMENT. THE WARRANTY SET FORTH ABOVE IS THE ONLY WARRANTY APPLICABLE TO THE LINER AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL CLEAN AIR AND WATER SYSTEMS, LLC BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES FOR, RESULTING FROM, OR IN CONNECTION WITH, ANY LOSS RESULTING FROM THE USE OF THE LINER. IN THE EVENT THE EXCLUSIVE REMEDY PROVIDED HEREIN FAILS IN ITS ESSENTIAL PURPOSE, AND IN THAT EVENT ONLY, Purchaser SHALL BE ENTITLED TO RETURN OF THE PURCHASE PRICE FOR SO MUCH OF THE MATERIAL AS CLEAN AIR AND WATER SYSTEMS, LLC DETERMINES IN ITS SOLE DISCRETION, TO HAVE VIOLATED THE WARRANTY PROVIDED HEREIN. EXCEPT FOR THE WARRANTY SET FORTH ABOVE, NO REPRESENTATION OR WARRANTY MADE BY ANY SALES OR OTHER REPRESENTATIVE CLEAN AIR AND WATER SYSTEMS, LLC, OR ANY OTHER PERSON, CONCERNING THE LINER SHALL BE BINDING UPON CLEAN AIR AND WATER SYSTEMS, LLC.

Any waiver of the terms and conditions of this warranty shall be in writing signed by CLEAN AIR AND WATER SYSTEMS, LLC the failure to insist upon strict compliance with any of the terms and conditions contained herein shall not act as a waiver of strict compliance with all of the remaining terms and conditions or this warranty and shall not operate as a waiver as to any of the terms and conditions of this warranty as to future claims under this warranty.

CLEAN AIR AND WATER SYSTEMS, LLC

Brian McKeown

BY:_____

Brian K. McKeown/ Member

I have read and agree to be bound by the terms and conditions of the foregoing warranty.

By: _____

Title: _____

Company: _____

Date: _____

ATTACHMENT E

GEOSYNTHETICS INSTALLATION

ATTACHMENT E1

TRIAL WELD SUMMARY

Trial Weld Summary

NATURAL RESOURCE TECHNOLOGY

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Project Specifications: Fusion Peel: 91 ppi Extrusion Peel: 78 ppi Shear: 120 ppi

Test No.	Date	Time	Weather (Cloudy/ Sunny)	Amb. Temp. (°F)	Welder I.D.	Machine Number	Temp. Setting/ Speed	Weld Type	PEEL (ppi)						SHEAR (ppi)			Test Result (P/F)	Comments
									Outside Weld			Inside Weld							
									1	2	3	1	2	3	1	2	3		
T1	8/5/2013	13:48	Cloudy	75	HN	69	850/5.3	Fus	132	135	130	141	136	139	160	165	165	P	
T2	8/5/2013	14:00	Cloudy	75	KK	140	850/4.5	Fus	140	132	122	134	129	113	160	161	162	P	
T3	8/6/2013	12:18	Pt Cloudy	80	HN	69	850/5.3	Fus	103	116	118	109	107	111	156	154	147	P	
T4	8/6/2013	12:15	Pt Cloudy	80	KK	140	850/5.0	Fus	123	118	113	117	126	121	143	149	156	P	
T5	8/7/2013	7:20	Cloudy	75	KK	140	850/5.0	Fus	118	105	103	104	103	114	158	149	162	P	
T6	8/7/2013	7:30	Cloudy	75	HN	69	850/5.3	Fus	110	118	124	118	118	115	163	155	157	P	
T7	8/7/2013	7:30	Cloudy	75	VP	10	500/500	Ext	–	–	–	110	104	112	163	170	164	P	
T8	8/8/2013	8:00	Pt Cloudy	75	KK	140	850/5.0	Fus	131	130	132	141	132	136	166	161	160	P	
T9	8/8/2013	8:16	Pt Cloudy	75	HN	69	850/5.3	Fus	121	120	132	138	132	143	186	172	180	P	
T10	8/8/2013	10:55	Pt Cloudy	80	VK	46	515/400	Ext	–	–	–	98	102	104	158	158	180	P	
T11	8/8/2013	7:30	Pt Cloudy	75	VP	88	500/500	Ext	–	–	–	103	106	111	159	162	162	P	
T12	8/8/2013	11:10	Pt Cloudy	80	BL	10	515/500	Ext	–	–	–	99	110	105	171	168	161	P	
T13	8/8/2013	13:30	Pt Cloudy	80	VK	46	515/400	Ext	–	–	–	111	116	98	158	158	163	P	
T14	8/8/2013	13:10	Pt Cloudy	80	VP	88	500/500	Ext	–	–	–	99	106	107	180	166	174	P	
T15	8/8/2013	13:15	Pt Cloudy	80	BL	10	515/500	Ext	–	–	–	106	136	124	168	177	169	P	
T16	8/9/2013	7:30	Pt Cloudy	75	VK	46	515/400	Ext	–	–	–	93	103	108	168	171	164	P	
T17	8/9/2013	7:40	Pt Cloudy	75	BL	10	515/500	Ext	–	–	–	114	112	114	121	168	169	P	
T18	8/9/2013	13:30	Pt Cloudy	80	VK	46	515/400	Ext	–	–	–	124	118	119	168	177	169	P	
T19	8/9/2013	13:30	Pt Cloudy	80	BL	10	515/500	Ext	–	–	–	140	111	109	178	171	174	P	

MWG13-15_34399

ATTACHMENT E2

PANEL PLACEMENT SUMMARY

Panel Placement Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Panel Number	Date	Time	Roll Number	Mat. Id.	Final Length (Feet)	Width	Thickness (mils)					Final Area (Sq. Ft.)	COMMENTS
P1	8/5/2013	13:52	*7034	HDPE	66	22	75	80	78	71	82	1,452	
P2	8/5/2013	14:03	*7034	HDPE	38	22	65	75	78	74	72	836	
P3	8/5/2013	14:10	*7034	HDPE	31	22	83	80	62	73	69	682	
P4	8/5/2013	14:15	*7034	HDPE	29	22	81	80	78	88	65	638	
P5	8/5/2013	14:30	*7034	HDPE	17	8	70	75	67	84	74	136	
P6	8/5/2013	14:35	*7034	HDPE	72	22	72	74	71	76	75	1,584	
P7	8/5/2013	15:01	*7034	HDPE	71	22	84	66	71	77	80	1,562	
P8	8/5/2013	15:07	*7034	HDPE	75	22	75	70	--	--	--	1,650	
P9	8/5/2013	15:17	*7034	HDPE	71	22	75	77	84	--	--	1,562	
P10	8/5/2013	15:36	*7025	HDPE	67	22	72	81	65	70	75	1,474	
P11	8/5/2013	15:44	*7025	HDPE	60	22	80	77	71	--	--	1,320	
P12	8/5/2013	15:50	*7025	HDPE	56	22	75	68	65	--	--	1,232	
P13	8/5/2013	15:57	*7025	HDPE	25	22	70	75	80	--	--	550	
P14	8/5/2013	16:01	*7025	HDPE	20	22	71	75	--	--	--	440	
P15	8/5/2013	16:05	*7025	HDPE	12	10	74	84	82	--	--	120	
P16	8/6/2013	12:20	*7025	HDPE	212	22	78	82	68	73	76	4,664	
P17	8/6/2013	12:30	*7025	HDPE	36	22	64	85	--	--	--	792	
P18	8/6/2013	12:48	*7027	HDPE	213	22	80	70	72	79	75	4,686	
P19	8/6/2013	13:17	*7027	HDPE	216	22	88	67	78	--	--	4,752	
P20	8/6/2013	13:54	*7027	HDPE	92	22	77	72	80	--	--	2,024	
P21	8/6/2013	14:08	*7024	HDPE	118	22	80	72	75	78	70	2,596	
P22	8/6/2013	14:39	*7024	HDPE	207	22	81	85	86	--	--	4,554	
P23	8/6/2013	15:00	*7024	HDPE	188	22	85	84	72	78	--	4,136	
P24	8/6/2013	15:49	*7026	HDPE	35	22	70	72	80	78	75	770	
P25	8/6/2013	15:56	*7026	HDPE	35	22	80	75	88	--	--	770	
P26	8/6/2013	16:00	*7026	HDPE	40	22	80	62	--	--	--	880	
P27	8/6/2013	16:04	*7026	HDPE	42	22	78	75	--	--	--	924	
P28	8/6/2013	16:11	*7026	HDPE	57	22	80	72	63	--	--	1,254	
P29	8/7/2013	7:30	*7026	HDPE	67	22	80	78	72	64	75	1,474	
P30	8/7/2013	7:37	*7026	HDPE	63	22	68	75	--	--	--	1,386	
P31	8/7/2013	7:44	*7026	HDPE	63	22	64	80	--	--	--	1,386	
P32	8/7/2013	7:50	*7026	HDPE	61	22	68	76	--	--	--	1,342	
P33	8/7/2013	7:57	*7026	HDPE	52	22	78	69	--	--	--	1,144	
P34	8/7/2013	9:45	*7028	HDPE	184	22	82	76	--	--	--	4,048	
P35	8/7/2013	10:07	*7028	HDPE	186	22	81	74	--	--	--	4,092	
P36	8/7/2013	10:20	*7028	HDPE	12	4	88	72	--	--	--	48	
P37	8/7/2013	10:25	*7028	HDPE	64	22	78	72	--	--	--	1,408	
P38	8/7/2013	10:30	*7028	HDPE	9	22	71	78	--	--	--	198	
P39	8/7/2013	10:36	*7028	HDPE	60	22	67	64	--	--	--	1,320	
P40	8/7/2013	10:42	*7028	HDPE	25	22	82	72	--	--	--	550	
P41	8/7/2013	10:56	*7033	HDPE	181	22	82	78	72	82	79	3,982	
P42	8/7/2013	11:12	*7033	HDPE	177	22	74	76	72	--	--	3,894	
P43	8/7/2013	11:31	*7033	HDPE	36	22	70	78	--	--	--	792	
P44	8/7/2013	11:41	*7033	HDPE	39	15	75	72	--	--	--	585	
P45	8/8/2013	7:58	*7033	HDPE	83	22	83	78	--	--	--	1,826	

MWG13-15_34401

Panel Placement Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Panel Number	Date	Time	Roll Number	Mat. Id.	Final Length (Feet)	Width	Thickness (mils)					Final Area (Sq. Ft.)	COMMENTS
P46	8/8/2013	8:15	*7008	HDPE	83	22	75	70	69	72	70	1,826	
P47	8/8/2013	8:24	*7008	HDPE	85	22	77	69	--	--	--	1,870	
P48	8/8/2013	8:32	*7008	HDPE	85	22	78	85	--	--	--	1,870	
P49	8/8/2013	8:39	*7008	HDPE	103	22	70	68	--	--	--	2,266	
P50	8/8/2013	8:50	*7008	HDPE	79	22	77	63	--	--	--	1,738	
P51	8/8/2013	8:57	*7008	HDPE	46	22	72	74	--	--	--	1,012	
P52	8/8/2013	9:32	*7008	HDPE	47	22	82	78	--	--	--	1,034	
P53	8/8/2013	9:45	*7008	HDPE	41	22	80	75	--	--	--	902	
P54	8/8/2013	9:50	*7029	HDPE	87	22	70	82	--	--	--	1,914	
P55	8/8/2013	10:00	*7029	HDPE	91	22	68	75	--	--	--	2,002	
P56	8/8/2013	10:11	*7029	HDPE	34	22	80	72	75	--	--	748	
												94,697	

ATTACHMENT E3

PANEL SEAMING SUMMARY

Panel Seaming Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Date Seamed	Final Seam Length (Feet)	Welder Id.	Weld Type	Machine Number	Machine Temp/ Speed or Preheat	Time		Ambient Temp. (°F)	Seam End Destructive Results	Comments
							Start	Stop			
P1 / P2	8/5/2013	22	HN	Fus	69	850/5.3	14:42	14:45	75		
P1 / P3	8/5/2013	22	HN	Fus	69	850/5.3	14:45	14:48	75		
P1 / P4	8/5/2013	22	HN	Fus	69	850/5.3	14:48	14:52	75		
P1 / P5	8/5/2013	8	HN	Fus	69	850/5.3	14:52	14:54	75		
P1 / P6	8/5/2013	72	KK	Fus	140	850/4.5	14:50	15:00	75		
P1 / P16	8/6/2013	22	HN	Fus	69	850/5.3	13:20	13:23	80		
P2 / P3	8/5/2013	31	KK	Fus	140	850/4.5	14:20	14:30	75		
P2 / P16	8/6/2013	38	HN	Fus	69	850/5.3	13:16	13:20	80		
P3 / P4	8/5/2013	31	HN	Fus	69	850/5.3	14:24	14:28	75		
P4 / P5	8/5/2013	17	HN	Fus	69	850/5.3	14:36	14:40	75		
P6 / P7	8/5/2013	71	HN	Fus	69	850/5.3	15:02	15:12	75		
P6 / P16	8/6/2013	22	HN	Fus	69	850/5.3	13:23	13:25	80		
P7 / P8	8/5/2013	75	KK	Fus	140	850/4.5	15:15	15:30	75		
P7 / P16	8/6/2013	22	HN	Fus	69	850/5.3	13:25	13:28	80		
P8 / P9	8/5/2013	71	HN	Fus	69	850/5.3	15:29	15:41	75		
P8 / P16	8/6/2013	22	HN	Fus	69	850/5.3	13:28	13:30	80		
P9 / P10	8/5/2013	67	KK	Fus	140	850/4.5	15:45	16:00	75		
P9 / P16	8/6/2013	22	HN	Fus	69	850/5.3	13:30	13:32	80		
P10 / P11	8/5/2013	60	HN	Fus	69	850/5.3	15:50	16:00	75		
P10 / P16	8/6/2013	22	HN	Fus	69	850/5.3	13:32	13:35	80		
P11 / P12	8/5/2013	56	HN	Fus	69	850/5.3	16:02	16:12	75		

Panel Seaming Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Date Seamed	Final Seam Length (Feet)	Welder Id.	Weld Type	Machine Number	Machine Temp/ Speed or Preheat	Time		Ambient Temp. (°F)	Seam End Destructive Results	Comments
							Start	Stop			
P11 / P16	8/6/2013	22	HN	Fus	69	850/5.3	13:35	13:37	80		
P12 / P13	8/5/2013	22	HN	Fus	69	850/5.3	16:14	16:17	75		
P12 / P14	8/5/2013	22	HN	Fus	69	850/5.3	16:17	16:20	75		
P12 / P15	8/5/2013	13	HN	Fus	69	850/5.3	16:20	16:22	75		
P12 / P16	8/6/2013	15	HN	Fus	69	850/5.3	13:37	13:39	80		
P12 / P17	8/6/2013	7	HN	Fus	69	850/5.3	13:39	13:41	80		
P13 / P14	8/5/2013	19	KK	Fus	140	850/4.5	16:05	16:10	75		
P13 / P17	8/6/2013	29	HN	Fus	69	850/5.3	13:41	13:42	80		
P14 / P15	8/5/2013	15	KK	Fus	140	850/4.5	16:13	16:15	75		
P16 / P17	8/6/2013	22	HN	Fus	69	850/5.3	12:37	12:42	80		
P16 / P18	8/6/2013	212	KK	Fus	140	850/5.0	13:00	13:40	80		
P17 / P24	8/6/2013	35	KK	Fus	140	850/5.0	15:55	16:00	80		
P18 / P19	8/6/2013	215	KK	Fus	140	850/5.0	13:45	14:20	80		
P18 / P24	8/6/2013	22	HN	Fus	69	850/5.3	16:38	16:42	80		
P19 / P20	8/6/2013	91	HN	Fus	69	850/5.3	14:13	14:31	80		
P19 / P21	8/6/2013	117	HN	Fus	69	850/5.3	14:31	14:55	80		
P19 / P25	8/6/2013	22	HN	Fus	69	850/5.3	16:35	16:38	80		
P20 / P21	8/6/2013	22	HN	Fus	69	850/5.3	14:17	14:23	80		
P20 / P22	8/6/2013	91	KK	Fus	140	850/5.0	14:50	15:05	80		
P21 / P22	8/6/2013	17	KK	Fus	140	850/5.0	15:05	15:25	80		
P21 / P26	8/6/2013	22	HN	Fus	69	850/5.3	16:32	16:35	80		

Panel Seaming Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Date Seamed	Final Seam Length (Feet)	Welder Id.	Weld Type	Machine Number	Machine Temp/ Speed or Preheat	Time		Ambient Temp. (°F)	Seam End Destructive Results	Comments
							Start	Stop			
P22 / P23	8/6/2013	188	HN	Fus	69	850/5.3	15:13	15:38	80		
P22 / P27	8/6/2013	22	HN	Fus	69	850/5.3	16:29	16:32	80		
P22 / P28	8/6/2013	20	KK	Fus	140	850/5.0	16:20	16:25	80		
P23 / P28	8/6/2013	22	HN	Fus	69	850/5.3	16:24	16:29	80		
P23 / P29	8/7/2013	67	KK	Fus	140	850/5.0	9:00	9:10	75		
P23 / P34	8/7/2013	121	KK	Fus	140	850/5.0	10:00	10:15	75		
P24 / P25	8/6/2013	35	HN	Fus	69	850/5.3	15:57	16:13	80		
P25 / P26	8/6/2013	34	KK	Fus	140	850/5.0	16:03	16:10	80		
P26 / P27	8/6/2013	40	HN	Fus	69	850/5.3	16:15	16:23	80		
P27 / P28	8/6/2013	41	KK	Fus	140	850/5.0	16:25	16:30	80		
P28 / P34	8/7/2013	56	KK	Fus	140	850/5.0	10:15	10:25	75		
P29 / P30	8/7/2013	62	KK	Fus	140	850/5.0	8:45	8:55	75		
P29 / P34	8/7/2013	18	HN	Fus	69	850/5.3	10:01	10:05	75		
P29 / P36	8/7/2013	5	HN	Fus	69	850/5.3	10:09	10:10	75		
P30 / P31	8/7/2013	62	KK	Fus	140	850/5.0	7:55	8:05	75		
P31 / P32	8/7/2013	61	HN	Fus	69	850/5.3	7:57	8:06	75		
P32 / P33	8/7/2013	52	KK	Fus	140	850/5.0	8:10	8:20	75		
P32 / P38	8/7/2013	8	KK	Fus	140	850/5.0	10:45	10:47	75		
P33 / P37	8/7/2013	52	KK	Fus	140	850/5.0	10:52	11:00	75		
P33 / P38	8/7/2013	22	KK	Fus	140	850/5.0	10:40	10:45	75		
P34 / P35	8/7/2013	184	HN	Fus	69	850/5.3	10:16	10:38	75		

Panel Seaming Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Date Seamed	Final Seam Length (Feet)	Welder Id.	Weld Type	Machine Number	Machine Temp/ Speed or Preheat	Time		Ambient Temp. (°F)	Seam End Destructive Results	Comments
							Start	Stop			
P34 / P36	8/7/2013	10	HN	Fus	69	850/5.3	10:10	10:12	75		
P35 / P41	8/7/2013	181	HN	Fus	69	850/5.3	11:14	11:27	75		
P37 / P38	8/7/2013	8	KK	Fus	140	850/5.0	10:50	10:52	75		
P37 / P39	8/7/2013	60	KK	Fus	140	850/5.0	11:05	11:15	75		
P39 / P40	8/7/2013	22	HN	Fus	69	850/5.3	11:53	11:55	75		
P39 / P43	8/7/2013	22	HN	Fus	69	850/5.3	11:55	11:58	75		
P39 / P44	8/7/2013	12	HN	Fus	69	850/5.3	11:58	12:01	75		
P40 / P43	8/7/2013	25	HN	Fus	69	850/5.3	11:39	11:43	75		
P41 / P42	8/7/2013	177	KK	Fus	140	850/5.0	11:20	11:50	75		
P42 / P49	8/8/2013	103	HN	Fus	69	850/5.3	9:00	9:24	75		
P42 / P50	8/8/2013	78	HN	Fus	69	850/5.3	9:24	9:36	75		
P43 / P44	8/7/2013	36	HN	Fus	69	850/5.3	11:45	11:50	75		
P45 / P46	8/8/2013	82	HN	Fus	69	850/5.3	8:27	8:39	75		
P45 / P49	8/8/2013	22	KK	Fus	140	850/5.0	9:15	9:18	75		
P46 / P47	8/8/2013	82	KK	Fus	140	850/5.0	8:30	8:45	75		
P46 / P49	8/8/2013	22	KK	Fus	140	850/5.0	9:18	9:21	75		
P47 / P48	8/8/2013	84	HN	Fus	69	850/5.3	8:43	8:57	75		
P47 / P49	8/8/2013	22	KK	Fus	140	850/5.0	9:21	9:24	75		
P48 / P49	8/8/2013	22	KK	Fus	140	850/5.0	9:24	9:28	75		
P48 / P54	8/8/2013	84	KK	Fus	140	850/5.0	10:10	10:25	75		
P49 / P50	8/8/2013	22	KK	Fus	140	850/5.0	9:00	9:05	75		

Panel Seaming Summary

NATURAL RESOURCE TECHNOLOGY

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Date Seamed	Final Seam Length (Feet)	Welder Id.	Weld Type	Machine Number	Machine Temp/ Speed or Preheat	Time		Ambient Temp. (°F)	Seam End Destructive Results	Comments
							Start	Stop			
P49 / P54	8/8/2013	13	KK	Fus	140	850/5.0	10:27	10:29	75		
P50 / P51	8/8/2013	46	KK	Fus	140	850/5.0	9:35	9:40	75		
P50 / P54	8/8/2013	8	KK	Fus	140	850/5.0	10:29	10:32	75		
P50 / P55	8/8/2013	22	KK	Fus	140	850/5.0	10:32	10:35	75		
P51 / P52	8/8/2013	46	KK	Fus	140	850/5.0	9:45	9;50	75		
P51 / P55	8/8/2013	22	KK	Fus	140	850/5.0	10:35	10:37	75		
P52 / P53	8/8/2013	40	HN	Fus	69	850/5.3	9:46	9:52	75		
P52 / P55	8/8/2013	22	KK	Fus	140	850/5.0	10:37	10:40	75		
P53 / P55	8/8/2013	22	KK	Fus	140	850/5.0	10:40	10:43	75		
P53 / P56	8/8/2013	33	HN	Fus	69	850/5.3	10:23	10:28	75		
P54 / P55	8/8/2013	87	HN	Fus	69	850/5.3	10:18	10:21	75		
P55 / P56	8/8/2013	15	KK	Fus	140	850/5.0	10:43	10:50	75		

ATTACHMENT E4

REPAIR SUMMARY

Repair Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Repair Number	Date	Oper./Mach.	Repair Location North East	Description	Size of Repair (ft)	Date Vacuum Tested	Vac. Test Results (P/F)
R1	8/8/2013	VP/88	NW corner of P13	Patch at corner of batten	1.5x1	8/9/2013	P
R2	8/8/2013	VP/88	4' S of NW corner of P13	Patch at corner of batten	2.0x1	8/9/2013	P
R3	8/8/2013	VP/88	Intersection P14/P15 @ weir	Joint Patch	1x1	8/9/2013	P
R4	8/8/2013	VP/88	P15/P12 @ weir	Joint Patch	1.5x1	8/9/2013	P
R5	8/8/2013	BL/10	P12/P14/P15	Joint Patch	1.5x1	8/9/2013	P
R6	8/8/2013	BL/10	P12/P13/P14	Joint Patch	2x1	8/9/2013	P
R7	8/8/2013	BL/10	P12/P13/P17	Joint Patch	1.5x1	8/9/2013	P
R8	8/8/2013	BL/10	P12/P16/P17	Joint Patch	2x1	8/9/2013	P
R9	8/8/2013	BL/10	P11/P12/P16	Joint Patch	1.5x1	8/9/2013	P
R10	8/8/2013	BL/10	9' E of W weir wall @ P11/P12	Patch over folded section	4x1	8/9/2013	P
R11	8/8/2013	VP/88	SW corner P12	Patch @ pipe inlet	3.5x1	8/9/2013	P
R12	8/8/2013	VP/88	P10/P11 @ weir	Joint Patch	2.5x1	8/9/2013	P
R13	8/8/2013	BL/10	13' E of weir @ P10/P11	Patch over folded section	2x1	8/9/2013	P
R14	8/8/2013	BL/10	P10/P11/P16	Joint Patch	1.5x1	8/9/2013	P
R15	8/8/2013	BL/10	P9/P10/P16	Joint Patch	1.5x1	8/9/2013	P
R16	8/8/2013	BL/10	12' E of weir @ P9/P10	damage patch	4x1	8/9/2013	P
R17	8/8/2013	VP/88	Intersection P9/P10 @ weir	Joint Patch	1.5x1	8/9/2013	P
R18	8/8/2013	VP/88	Intersection P8/P9 @ weir	Joint Patch	1x1	8/9/2013	P
R19	8/8/2013	BL/10	P8/P9/P16	Joint Patch	3.5x1	8/9/2013	P
R20	8/8/2013	BL/10	P7/P8/P16	Joint Patch	3x1	8/9/2013	P
R21	8/8/2013	VP/88	Bend in weir @ edge P8	extrusion weld	2x12	8/9/2013	P
R22	8/8/2013	VP/88	Intersection P6/P7 @ weir	extrusion weld	2	8/9/2013	P

PT = Pressure Test

MWG13-15_34410

Repair Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Repair Number	Date	Oper./Mach.	Repair Location North East	Description	Size of Repair (ft)	Date Vacuum Tested	Vac. Test Results (P/F)
R23	8/8/2013	VP/88	1' E of weir @ P1/P6	damage patch	1.5x1	8/9/2013	P
R24	8/8/2013	BL/10	P6/P7/P16	Joint Patch	1.5x1	8/9/2013	P
R25	8/8/2013	BL/10	P1/P6/P16	Joint Patch	1.5x1	8/9/2013	P
R26	8/9/2013	BL/10	P1/P2/P16	Joint Patch	1.5x1	8/9/2013	P
R27	8/9/2013	BL/10	P1/P2/P3	Joint Patch	1.5x1	8/9/2013	P
R28	8/9/2013	BL/10	P1/P3/P4	Joint Patch	1.5x1	8/9/2013	P
R29	8/9/2013	BL/10	P1/P4/P5	Joint Patch	1.5x1	8/9/2013	P
R30	8/8/2013	VP/88	Intersection P1/P5 @ weir	extrusion weld	1	8/9/2013	P
R31	8/8/2013	VP/88	Intersection P4/P5 @ weir	Joint Patch	1.5x1	8/9/2013	P
R32	8/8/2013	VP/88	S edge P4 (east 1/2)	damage patch	12x1	8/9/2013	P
R33	8/8/2013	VP/88	S edge P3 @ end of weir	Patch @ corner of batten	5x1	8/9/2013	P
R34	8/8/2013	VP/88	Intersection P2/P3 @ batten	Patch across 2 corners of weir	12x1	8/9/2013	P
R35	8/9/2013	BL/10	Intersection P2/P16 @ anchor trench	Patch end of pressure test	2.5x1	8/9/2013	P
R36	8/9/2013	BL/10	7' S of intersection P1/P2/P16	Patch over PT and fold	4x1	8/9/2013	P
R37	8/8/2013	BL/10	Int. P16/P18, 82' N of anchor trench	Skidsteer damage	2x30	8/9/2013	P
R38	8/8/2013	BL/10	P16/P17/P18/P24	Tee	4x1	8/9/2013	P
R39	8/8/2013	BL/10	6.5' N P18/P24, 2' W P24/P25	damage patch	1.5x1	8/9/2013	P
R40	8/8/2013	BL/10	P18/P19/P24/P25	Joint Patch	1.5x1	8/9/2013	P
R41	8/9/2013	BL/10	57' N of S anchor trench P18/P19	damage patch	1x1	8/9/2013	P
R42	8/9/2013	BL/10	Int. P19/P20 @ anchor trench	PT hole	2x1	8/9/2013	P
R43	8/9/2013	BL/10	Int. P19/P20/P21	Joint Patch	1.5x1	8/9/2013	P
R44	8/8/2013	BL/10	Int. P19/P21/P25/P26	Joint Patch	1.5x1	8/9/2013	P

PT = Pressure Test

Repair Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Repair Number	Date	Oper./Mach.	Repair Location North East	Description	Size of Repair (ft)	Date Vacuum Tested	Vac. Test Results (P/F)
R45	8/8/2013	BL/10	P21/P22/P26/P27	Joint Patch	1.5x1	8/9/2013	P
R46	8/9/2013	BL/10	P20/P21/P22	Joint Patch	1.5x1	8/9/2013	P
R47	8/9/2013	BL/10	26' N of trench on P20/P22	fold and PT hole	3x1	8/9/2013	P
R48	8/9/2013	BL/10	20' N of S trench on P20/P22	burn out	1.5x1	8/9/2013	P
R49	8/9/2013	BL/10	Int. P22/P23 @ anchor trench	PT hole	2x1	8/9/2013	P
R50	8/8/2013	BL/10	P22/P23/P28	Joint Patch	3.5x1	8/9/2013	P
R51	8/8/2013	BL/10	P22/P27/P28	Joint Patch	2.5x1	8/9/2013	P
R52	8/8/2013	BL/10	P23/P28/P34	Joint Patch	1.5x1	8/9/2013	P
R53	8/9/2013	BL/10	P23/P29/P34	Joint Patch	2x1	8/9/2013	P
R54	8/8/2013	VK/46	P29/P30/P36	Joint Patch	2x1	8/9/2013	P
R55	8/8/2013	VK/46	P24/P34/P36	Joint Patch	1.5x1	8/9/2013	P
R56	8/8/2013	VK/46	P34/P35/P36	Joint Patch	1.5x1	8/9/2013	P
R57	8/9/2013	VK/46	Edge of P32 @ concrete island	Panels too short	1x18	8/9/2013	P
R58	8/9/2013	VK/46	P32/P33/P38	Joint Patch	3.5x1	8/9/2013	P
R59	8/9/2013	VK/46	P33/P37/P38	Joint Patch	3.5x1	8/9/2013	P
R60	8/9/2013	VK/46	Int. P37/P39 @ concrete island	Joint Patch & PT	1x1	8/9/2013	P
R61	8/9/2013	VK/46	Int. P39/P40 @ anchor trench	PT hole	2x1	8/9/2013	P
R62	8/9/2013	VK/46	P39/P40/P43	Joint Patch	1.5x1	8/9/2013	P
R63	8/9/2013	VK/46	P39/P43/P44	Joint Patch	1.5x1	8/9/2013	P
R64	8/9/2013	BL/10	P45/P46/P49	Joint Patch	1.5x1	8/9/2013	P
R65	8/9/2013	BL/10	P46/P47/P49	Joint Patch	1.5x1	8/9/2013	P
R66	8/9/2013	BL/10	P47/P48/P49	Joint Patch	1.5x1	8/9/2013	P

PT = Pressure Test

Repair Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Repair Number	Date	Oper./Mach.	Repair Location North East	Description	Size of Repair (ft)	Date Vacuum Tested	Vac. Test Results (P/F)
R67	8/9/2013	BL/10	P48/P49/P54	Joint Patch	2x1	8/9/2013	P
R68	8/9/2013	BL/10	P49/P50/P54	Joint Patch	1.5x1	8/9/2013	P
R69	8/9/2013	BL/10	P42/P49/P50	Joint Patch	1.5x1	8/9/2013	P
R70	8/9/2013	BL/10	P50/P54/P55	Joint Patch	2x1	8/9/2013	P
R71	8/9/2013	BL/10	P50/P51/P55	Joint Patch	2.5x1	8/9/2013	P
R72	8/9/2013	BL/10	P51/P52/P55	Joint Patch	1.5x1	8/9/2013	P
R73	8/9/2013	BL/10	P52/P53/P55	Joint Patch	1.5x1	8/9/2013	P
R74	8/9/2013	BL/10	P53/P55/P56	Joint Patch	1.5x1	8/9/2013	P
R75	8/9/2013	BL/10	Int. P55/P56 @ anchor trench	PT hole	3.5x1	8/9/2013	P
R76	8/9/2013	BL/10	P48/P54 @ anchor trench	PT hole	1.5x1	8/9/2013	P
R77	8/9/2013	BL/10	20' W of E anchor trench P48/P54	damage/fold	2x10	8/9/2013	P
R78	8/9/2013	BL/10	1' E of weir on P7/P8	damage patch	1x1	8/9/2013	P
R79	8/9/2013	BL/10	SW corner of P2	damage patch	1x1	8/9/2013	P
R80	8/9/2013	BL/10	NW corner of P10	damage patch	1x1	8/9/2013	P
R81	8/9/2013	VK/46	Int. P39/P44 @ concrete island	joint patch	1.5x1	8/9/2013	P
R82	8/9/2013	VK/46	Embedment @ batten on concrete island P44	joint patch	1x1	8/9/2013	P
R83	8/9/2013	VK/46	Batten around S pillar of concrete island	pillar penetrating liner	2x3	8/9/2013	P
R84	8/9/2013	VK/46	P45 embedment @ batten of concrete island	pillar penetrating liner	1x1	8/9/2013	P
R85	8/9/2013	VK/46	N corner of concrete inlet pipe E wall	corner of batten tie-in under pipes	1x4	8/9/2013	P
R86	8/9/2013	VK/46	S corner of concrete inlet pipe E wall	corner of batten tie-in under pipes	2x15	8/9/2013	P
R87	8/9/2013	VK/46	Int. P40/P43 @ E anchor trench	PT hole	6x6	8/9/2013	P
R88	8/9/2013	VK/46	E edge of liner adjacent to N side of pipe	tie-in under pipes	1x1	8/9/2013	P

PT = Pressure Test

ATTACHMENT E5

NON-DESTRUCTIVE TEST SUMMARY

Non-Destructive Test Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Distance/ Location	Air Test: 27-30 psi for 5 min, < 3 psi loss						Vacuum Test		Comments
		Date Air Tested	Air Pressure				Air Test Results	Date Vacuum Tested	Vac. Test Results (P/F)	
			Start		End					
			PSI	Time	PSI	Time				
P1 / P2	BOS-EOS	8/6/2013	30	7:52	30	7:57	P			
P1 / P3	BOS-EOS	8/6/2013	30	7:35	30	7:40	P			
P1 / P4	BOS-EOS	8/6/2013	30	8:07	28	8:12	P			
P1 / P5	BOS-EOS	8/6/2013	30	8:09	30	8:14	P			
P1 / P6	BOS-EOS	8/6/2013	30	8:17	30	8:22	P			
P1 / P16	BOS-EOS	8/6/2013	30	15:05	30	15:10	P			
P2 / P3	BOS-EOS	8/6/2013	30	7:34	30	7:39	P			
P2 / P16	30'-R36 to trench	8/6/2013	30	15:07	30	15:12	P			
P2 / P16	8'-R36 to P1/P2/P16	8/6/2013	30	15:06	30	15:11	P			
P3 / P4	BOS-EOS	8/6/2013	30	7:54	30	7:59	P			
P4 / P5	BOS-EOS	8/6/2013	30	8:08	30	8:13	P			
P6 / P7	BOS-EOS	8/6/2013	30	8:18	30	8:23	P			
P6 / P16	BOS-EOS	8/6/2013	30	14:42	30	14:47	P			
P7 / P8	BOS-EOS	8/6/2013	30	8:19	30	8:24	P			
P7 / P16	BOS-EOS	8/6/2013	30	14:41	30	14:46	P			
P8 / P9	BOS-EOS	8/6/2013	30	8:28	29	8:33	P			
P8 / P16	BOS-EOS	8/6/2013	30	14:40	30	14:45	P			
P9 / P10	42'-R16 W to weir	8/6/2013	30	8:29	30	8:34	P			
P9 / P10	25'-R16 E to P16	8/6/2013	30	8:38	30	8:43	P			
P9 / P16	BOS-EOS	8/6/2013	30	14:30	30	14:35	P			

BOS: Beginning of Seam
EOS: End of Seam

Non-Destructive Test Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Distance/ Location	Air Test: 27-30 psi for 5 min, < 3 psi loss						Vacuum Test		Comments
		Date Air Tested	Air Pressure				Air Test Results	Date Vacuum Tested	Vac. Test Results (P/F)	
			Start		End					
			PSI	Time	PSI	Time				
P10 / P11	47'-R13 E to P16	8/6/2013	30	8:39	30	8:44	P			
P10 / P11	13'-R13 W to EOS	8/6/2013	30	8:40	30	8:45	P			
P10 / P16	BOS-EOS	8/6/2013	30	14:29	28	14:34	P			
P11 / P12	46'R10 E to P16	8/6/2013	30	8:58	29	9:03	P			
P11 / P12	10'-R10 W to EOS	8/6/2013	30	8:59	30	9:04	P			
P11 / P16	BOS-EOS	8/6/2013	30	14:28	30	14:33	P			
P12 / P13	BOS-EOS	8/6/2013	30	9:17	28	9:22	P			
P12 / P14	BOS-EOS	8/6/2013	30	9:03	30	9:08	P			
P12 / P15	BOS-EOS	8/6/2013	30	9:02	30	9:07	P			
P12 / P16	BOS-EOS	8/6/2013	30	14:17	28	14:22	P			
P12 / P17	BOS-EOS	8/6/2013	30	14:16	30	14:21	P			
P13 / P14	BOS-EOS	8/6/2013	30	9:16	30	9:21	P			
P13 / P17	BOS-EOS	8/6/2013	30	14:15	30	14:20	P			
P14 / P15	BOS-EOS	8/6/2013	30	9:00	30	9:05	P			
P16 / P17	BOS-EOS	8/7/2013	30	9:18	30	9:23	P			
P16 / P18	R37 N to P17	8/7/2013	30	9:26	29	9:31	P			
P16 / P18	R37 S to trench	8/7/2013	30	10:10	30	10:15	P			
P17 / P24	BOS-EOS	8/7/2013	30	9:41	30	9:46	P			
P18 / P19	60'-R41 S to trench	8/7/2013	30	10:02	30	10:07	P			
P18 / P19	155'-R41 N to P24	8/7/2013	30	9:16	30	9:21	P			

BOS: Beginning of Seam
EOS: End of Seam

MWG13-15_34416

Non-Destructive Test Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Distance/ Location	Air Test: 27-30 psi for 5 min, < 3 psi loss						Vacuum Test		Comments
		Date Air Tested	Air Pressure				Air Test Results	Date Vacuum Tested	Vac. Test Results (P/F)	
			Start		End					
			PSI	Time	PSI	Time				
P18 / P24	BOS-EOS	8/7/2013	30	9:17	28	9:22	P			
P19 / P20	BOS-EOS	8/7/2013	30	10:01	30	10:06	P			
P19 / P21	BOS-EOS	8/7/2013	30	9:01	30	9:06	P			
P19 / P25	BOS-EOS	8/7/2013	30	9:02	30	9:07	P			
P20 / P21	BOS-EOS	8/7/2013	30	10:00	30	10:05	P			
P20 / P22	BOS-EOS	8/7/2013	30	9:59	30	10:04	P			
P21 / P22	BOS-EOS	8/7/2013	30	8:59	30	9:04	P			
P21 / P26	BOS-EOS	8/7/2013	30	9:00	29	9:05	P			
P22 / P23	BOS-EOS	8/7/2013	30	8:45	30	8:50	P			
P22 / P27	BOS-EOS	8/7/2013	30	8:48	29	8:53	P			
P22 / P28	BOS-EOS	8/7/2013	30	8:47	28	8:52	P			
P23 / P28	BOS-EOS	8/7/2013	30	8:46	30	8:51	P			
P23 / P29	BOS-EOS	8/7/2013	30	11:19	30	11:24	P			
P23 / P34	BOS-EOS	8/8/2013	30	8:55	30	9:00	P			
P24 / P25	BOS-EOS	8/7/2013	30	9:42	29	9:47	P			
P25 / P26	BOS-EOS	8/7/2013	30	9:42	30	9:47	P			
P26 / P27	BOS-EOS	8/7/2013	30	9:43	30	9:48	P			
P27 / P28	BOS-EOS	8/7/2013	30	9:50	30	9:55	P			
P28 / P34	BOS-EOS	8/8/2013	30	8:56	30	9:01	P			
P29 / P30	BOS-EOS	8/7/2013	30	11:27	30	11:32	P			

BOS: Beginning of Seam
EOS: End of Seam

Non-Destructive Test Summary

NATURAL RESOURCE TECHNOLOGY

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Distance/ Location	Air Test: 27-30 psi for 5 min, < 3 psi loss						Vacuum Test		Comments
		Date Air Tested	Air Pressure				Air Test Results	Date Vacuum Tested	Vac. Test Results (P/F)	
			Start		End					
			PSI	Time	PSI	Time				
P29 / P34	BOS-EOS	8/7/2013	30	11:20	30	11:25	P			
P29 / P36	BOS-EOS	8/7/2013	30	11:26	28	11:31	P			
P30 / P31	BOS-EOS	8/7/2013	30	11:28	30	11:33	P			
P31 / P32	BOS-EOS	8/7/2013	30	11:35	30	11:40	P			
P32 / P33	BOS-EOS	8/7/2013	30	11:45	30	11:50	P			
P32 / P38	BOS-EOS	8/7/2013	30	11:44	28	11:49	P			
P33 / P37	BOS-EOS	8/8/2013	30	7:41	29	7:46	P			
P33 / P38	BOS-EOS	8/7/2013	30	11:46	29	11:51	P			
P34 / P35	BOS-EOS	8/8/2013	30	8:51	30	8:56	P			
P34 / P36	BOS-EOS	8/7/2013	30	11:21	29	11:26	P			
P35 / P41	BOS-EOS	8/8/2013	30	8:50	30	8:55	P			
P37 / P38	BOS-EOS	8/8/2013	30	7:40	30	7:45	P			
P37 / P39	BOS-EOS	8/8/2013	30	7:42	30	7:47	P			
P39 / P40	BOS-EOS	8/8/2013	30	8:02	30	8:07	P			
P39 / P43	BOS-EOS	8/8/2013	30	7:51	28	7:56	P			
P39 / P44	BOS-EOS	8/8/2013	30	7:50	30	7:55	P			
P40 / P43	BOS-EOS	8/8/2013	30	8:01	30	8:06	P			
P41 / P42	BOS-EOS	8/8/2013	30	8:49	30	8:54	P			
P42 / P49	BOS-EOS	8/8/2013	30	10:08	30	10:13	P			
P42 / P50	BOS-EOS	8/8/2013	30	10:09	30	10:14	P			

BOS: Beginning of Seam
EOS: End of Seam

MWG13-15_34418

Non-Destructive Test Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Distance/ Location	Air Test: 27-30 psi for 5 min, < 3 psi loss						Vacuum Test		Comments
		Date Air Tested	Air Pressure				Air Test Results	Date Vacuum Tested	Vac. Test Results (P/F)	
			Start		End					
			PSI	Time	PSI	Time				
P43 / P44	BOS-EOS	8/8/2013	30	7:52	30	7:57	P			
P45 / P46	BOS-EOS	8/8/2013	30	9:37	30	9:42	P			
P45 / P49	BOS-EOS	8/8/2013	30	9:36	30	9:41	P			
P46 / P47	BOS-EOS	8/8/2013	30	9:49	29	9:54	P			
P46 / P49	BOS-EOS	8/8/2013	30	9:38	28	9:43	P			
P47 / P48	BOS-EOS	8/8/2013	30	9:53	30	9:58	P			
P47 / P49	BOS-EOS	8/8/2013	30	9:52	30	9:57	P			
P48 / P49	BOS-EOS	8/8/2013	30	9:54	28	9:59	P			
P48 / P54	BOS-EOS	8/8/2013	30	10:41	30	10:46	P			
P49 / P50	BOS-EOS	8/8/2013	30	10:35	28	10:40	P			
P49 / P54	BOS-EOS	8/8/2013	30	10:36	28	10:41	P			
P50 / P51	BOS-EOS	8/8/2013	30	11:26	30	11:31	P			
P50 / P54	BOS-EOS	8/8/2013	30	11:10	28	11:15	P			
P50 / P55	BOS-EOS	8/8/2013	30	11:12	30	11:17	P			
P51 / P52	BOS-EOS	8/8/2013	30	11:28	30	11:33	P			
P51 / P55	BOS-EOS	8/8/2013	30	11:27	29	11:32	P			
P52 / P53	BOS-EOS	8/8/2013	30	11:38	28	11:43	P			
P52 / P55	BOS-EOS	8/8/2013	30	11:37	30	11:42	P			
P53 / P55	BOS-EOS	8/8/2013	30	11:39	28	11:44	P			
P53 / P56	BOS-EOS	8/8/2013	30	11:46	28	11:51	P			

BOS: Beginning of Seam
EOS: End of Seam

Non-Destructive Test Summary

Project Number: 2113.1 Will County South Ash Pond 2 Liner Replacement

Seam Number	Distance/ Location	Air Test: 27-30 psi for 5 min, < 3 psi loss						Vacuum Test		Comments
		Date Air Tested	Air Pressure				Air Test Results	Date Vacuum Tested	Vac. Test Results (P/F)	
			Start		End					
			PSI	Time	PSI	Time				
P54 / P55	BOS-EOS	8/8/2013	30	11:11	30	11:16	P			
P55 / P56	BOS-EOS	8/8/2013	30	11:47	30	11:52	P			

BOS: Beginning of Seam
EOS: End of Seam

ATTACHMENT F

LINER INTEGRITY SURVEY REPORT

LEAK LOCATION SERVICES, INC.

16124 UNIVERSITY OAK • SAN ANTONIO, TEXAS 78249 • (210) 408-1241 / FAX (210) 408-1242

September 10, 2013

Aron Yakima
Brieser Construction
24101 South Municipal Drive
Channahon, IL 60410

Email: Ayakima@brieserconstruction.com

Subject: Report for "Geomembrane Leak Location Survey of the South Ash Pond No.2 in the Will County Generating Station near Romeoville, Illinois;" LLSI Project 1952

Dear Mr. Yakima:

On August 28, 2013 Thane Hefley of Leak Location Services, Inc. (LLSI) conducted a geomembrane leak location survey of the South Ash Pond No.2 near Romeoville, Illinois. The ash pond has an area of approximately 32,000 square feet. The floor area of the ash pond is lined from the bottom up with prepared subgrade, 16 ounce nonwoven geotextile, 60-mil HDPE geomembrane, and with a 6-inch thick warning layer. The side slopes of the pond are lined from the bottom up with a prepared subgrade, 16 ounce nonwoven geotextile, 60-mil HDPE white textured geomembrane, 16 ounce nonwoven geotextile, and a geocell. The geocell extends approximately 5 feet from the inside toe of slope to the floor and is covered with concrete. This report documents the results of the survey.

I. RESULTS

A. Survey of South Ash Pond No.2

No leaks were found during the survey of the South Ash Pond No.2. The leak location equipment and survey procedures were demonstrated to be capable of detecting a 0.25 inch diameter artificial leak. The artificial leak was buried under the drainage material and placed on the top of the primary geomembrane. The other end of the wire was connected to an electrode between the geomembranes. Leak location survey measurements were made on the drainage material to determine the distance that the artificial leak can be detected. Figure 1 shows a plot of the data taken with the artificial leak. The leak detection distance was more than 10 feet. So the leak location survey lines could have been spaced 20 feet apart. However, for thoroughness, the survey was conducted on survey lines spaced 5 feet apart.

II. TECHNIQUE

A. General

The electrical leak location method detects electrical paths through the liner caused by water or moisture in the leaks. A voltage is connected to one electrode in the material covering the liner and to an electrode in contact with a conductive media under the geomembrane. Electrical current flowing through the leaks in the liner produces localized anomalous areas of high current

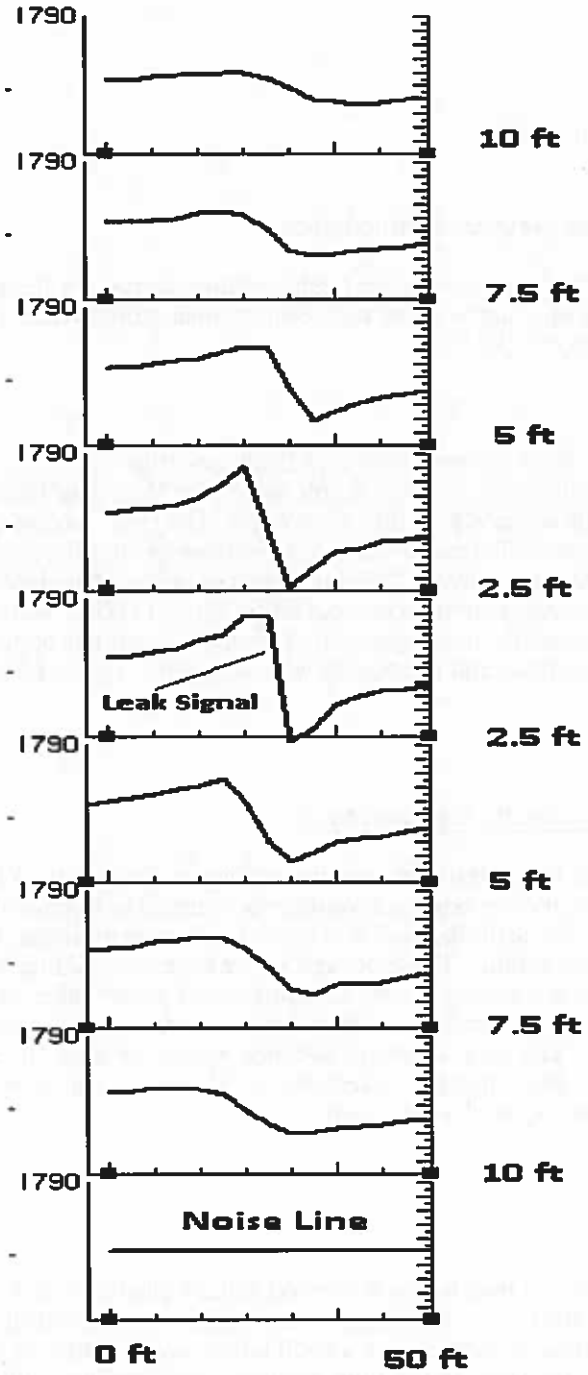


FIGURE 1. PLOT OF DATA TAKEN WITH A 0.25-INCH ARTIFICIAL LEAK

density near the leaks. These areas are located by making electrical potential measurement scans on the material on the geomembrane.

Surveys with material covering the liner are conducted by making point-by-point potential measurements using special electrodes and a portable digital data acquisition system. The potential measurements are made along survey lines with a fixed measurement electrode separation. The data is downloaded to a computer for storage and plotting. When a suspect area is located, manual measurements are made to further isolate the leak.

B. Soil-Covered Survey

A high voltage isolated DC power supply was used to impress a voltage across the geomembrane using one electrode placed in the 6-inch thick warning layer located on top of the primary geomembrane and a second electrode placed in contact with earth ground. Therefore, the geomembrane liner provides an electrical barrier between the electrodes except where there are holes in the geomembrane. Electrical current flowing through the holes in the geomembrane produces localized anomalous areas of high current density near the holes. This electrical current path is provided by electrically conducting material such as water, sand, rock or soil.

The survey of the South Ash Pond No.2 was conducted by making potential gradient measurements on the moist warning layer with measurement electrodes spaced approximately 3 feet apart. These measurements were made approximately every 3 feet along numbered survey lines that were spaced approximately 5 feet apart. A portable digital data logger was used to collect the data. The data was then downloaded into a portable computer for display, plotting, and analysis.

C. Concrete-Lined Slopes

The electrical leak location method is to detect the points of high current density where electrical current flows through any leaks. This is done by making potential gradient measurements on the surface of the earth materials. The current flowing near the surface produces a potential gradient on the surface. When the current flows through a leak, a characteristic anomaly in the potential is measured.

For the slopes of the South Ash Pond No.2 the concrete on the surface provides a high resistivity. And the matrix of the geocell, being a very good insulator, further insulates the current from flowing through the concrete. If the geotextile is dry, that would have further insulated any current from flowing through any leaks. If the geotextile under the concrete had moisture, any current would be confined to the geotextile, and the overlying layers would insulate the measurements on the surface from the current in the geotextile. So it is technically impractical in this application to detect leaks through a concrete layer. This has been confirmed by several evaluations conducted by LLSI on other projects. So the work plan submittal for the project was to make the measurements on the surface of the soil-covered geomembrane.

The resistivity of concrete is strongly related to the moisture, and hence the permeability of the concrete. Although the resistivity of the concrete might have been reduced a little by flooding the concrete with water, the resulting resistivity was judged to remain at a very high level than the wet geotextile under the concrete. And the insulation of the geocell matrix would continue to insulate current from flowing through the concrete. It is for these reasons that the survey could not be performed on top of the concrete.

If there are any questions regarding leak location surveys or this report, please contact us at (210) 408-1241. We appreciate this opportunity to have been of service to Brieser Construction Company on this important service requirement.

Approved by:

Glenn J. Darilek

for Matthew Kemnitz
Senior Project Manager

Respectfully,

Edgar Barraza

Edgardo Barraza
Project Manager

ATTACHMENT G

CONSTRUCTION DOCUMENTATION DRAWING SET

SOUTH ASH POND 2 LINER REPLACEMENT
WILL COUNTY GENERATING STATION
MIDWEST GENERATION
ROMEOVILLE, WILL COUNTY, ILLINOIS

LIST OF DRAWINGS

RECORD DRAWING LEGEND

PREPARED

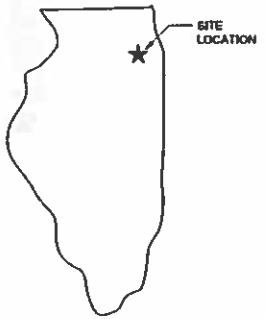
PRE-CONSTRUCTION

CROSSED OUT TEXT INDICATES CHANGES FROM THE FINAL DESIGN TO RECORD CONSTRUCTION

UNDERLINED TEXT INDICATES ADDITIONS AND COMMENTS AND DOCUMENTS CHANGES FROM THE FINAL DESIGN TO RECORD CONSTRUCTION

"CLOUDS" DOCUMENT ADDITIONS AND/OR CHANGES FROM THE FINAL DESIGN TO RECORD CONSTRUCTION

"CROSS OUT" DOCUMENT OBJECTS REMOVED FROM THE FINAL DESIGN TO RECORD CONSTRUCTION



ILLINOIS

JULY 2014

PREPARED FOR:

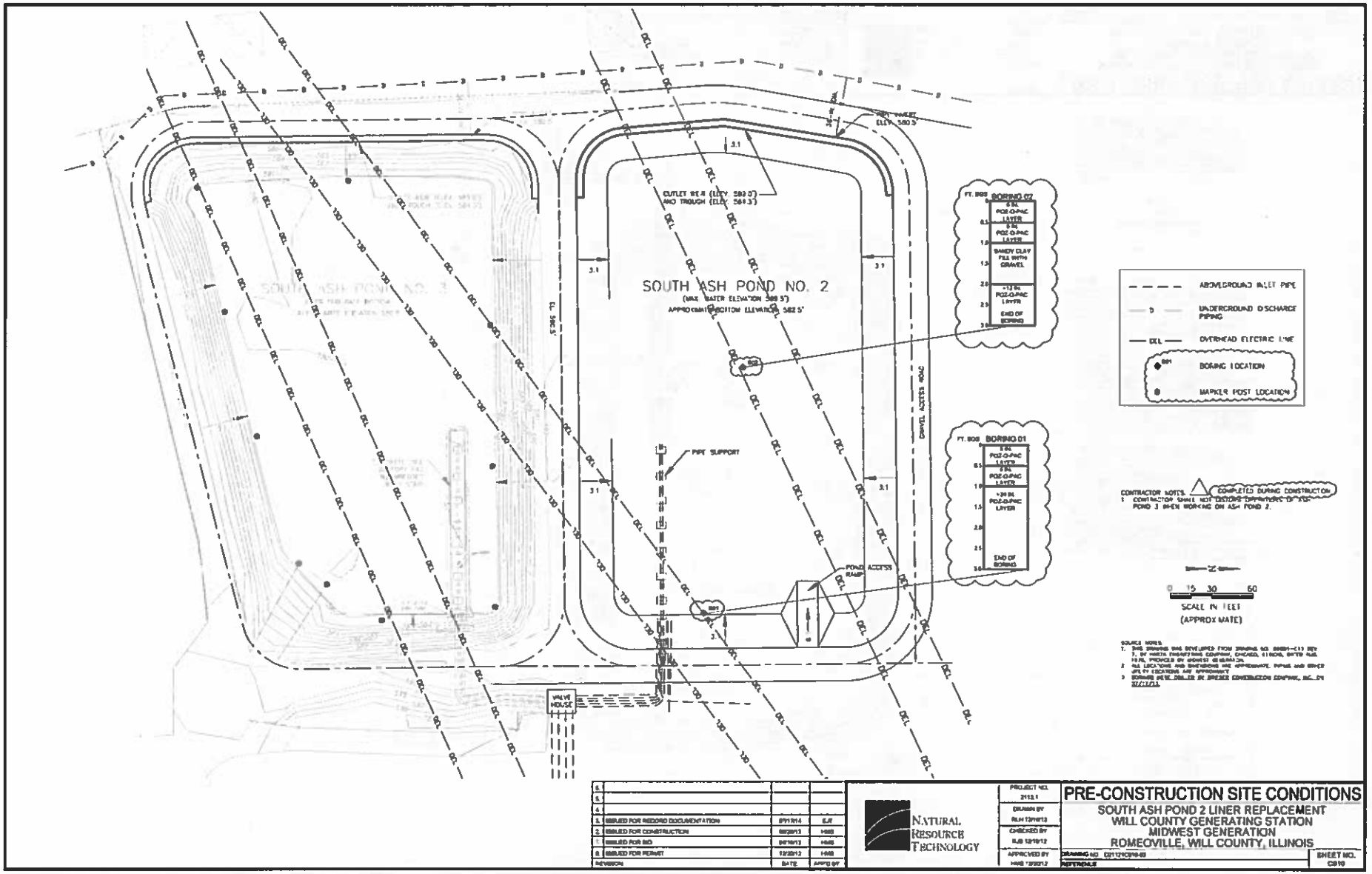
MIDWEST GENERATION, LLC
528 E. 135TH STREET
ROMEOVILLE, IL 60446

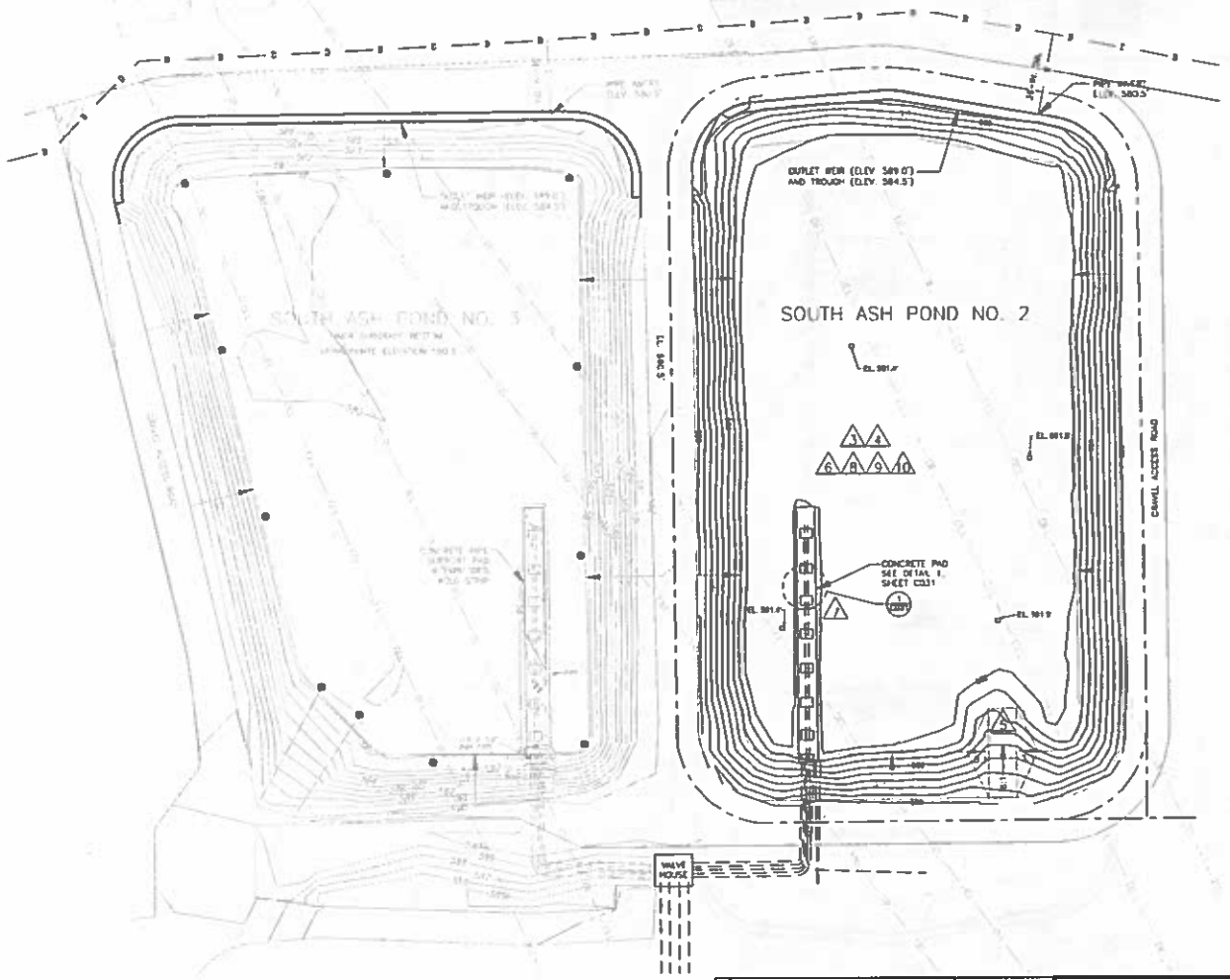
TITLE SHEET
SOUTH ASH POND 2 LINER REPLACEMENT
WILL COUNTY GENERATING STATION
MIDWEST GENERATION
ROMEOVILLE, WILL COUNTY, ILLINOIS

PROJECT NO. 21131
DRAWN BY: RJH 12/19/12
CHECKED BY: RJH 12/19/12
APPROVED BY: HAB 12/28/12
DRAWING NO. 021131T0-03
SHEET NO. T0

NATURAL RESOURCE TECHNOLOGY

NO.	DESCRIPTION	DATE	APP'D BY
1	ISSUED FOR RECORD DOCUMENTATION	07/02/14	EJT
2	ISSUED FOR CONSTRUCTION	08/29/13	HAB
3	ISSUED FOR BID	04/19/13	HAB
4	ISSUED FOR PERMIT	12/28/12	HAB
5			
6			


SOUTH ASH POND NO. 2
(MAX WATER ELEVATION 588.5')
APPROXIMATE BOTTOM ELEVATION 582.5'
OUTLET WEIR (ELEV. 582.0')
AND TROUGH (ELEV. 581.5')
PIPE SUPPORT
POND ACCESS RAMP
VALVE HOUSE
GRAVEL ACCESS ROAD
BORING 02
BORING 01
FT. MSL
ABOVEGROUND INLET PIPE
UNDERGROUND DISCHARGE PIPING
OVERHEAD ELECTRIC LINE
BORING LOCATION
MARKER POST LOCATION
CONTRACTOR NOTES:
COMPLETED DURING CONSTRUCTION
SCALE IN FEET
(APPROXIMATE)
NATURAL RESOURCE TECHNOLOGY
PRE-CONSTRUCTION SITE CONDITIONS
SOUTH ASH POND 2 LINER REPLACEMENT
WILL COUNTY GENERATING STATION
MIDWEST GENERATION
ROMEOVILLE, WILL COUNTY, ILLINOIS



MAJOR CONTOUR LINE
MINOR CONTOUR LINE
EXISTING CONTOUR
ABOVEGROUND INLET PIPE
EXISTING FENCE
UNDERGROUND DISCHARGE PIPING
OVERHEAD ELECTRIC LINE
MARKER POST LOCATION
CONCRETE

CONTRACTOR NOTES: (COMPLETED DURING CONSTRUCTION)

1. CONTRACTOR SHALL STORE [illegible] SUBGRADE MATERIALS IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS
2. CONTRACTOR SHALL STORE AND STAGE EQUIPMENT AT LOCATION APPROVED BY MWMES' GENERATION.
3. PROTECT ALL CONCRETE AND UTILITY STRUCTURES THROUGHOUT PROJECT DURATION.
4. CONTRACTOR SHALL REMOVE ALL VEGETATION, ROOTS, AND OTHER DEBRIS GREATER THAN 1" INCH IN SIZE FROM POND SUBGRADE AND DISPOSE OF IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS
5. CONTRACTOR SHALL CLEAN OFF THE RAMP CONCRETE SURFACE TO THE EXTENT PRACTICAL TO REMOVE ROCKS THAT MAY POSE A HAZARD TO GEOMEMBRANE, AS APPROVED BY GEOMEMBRANE INSTALLER, ENGINEER AND/OR MWG.
6. [illegible]
7. CONTRACTOR SHALL CONSTRUCT CONCRETE PAD IN ACCORDANCE WITH THE CONTRACT DOCUMENTS (SEE DETAIL 1 ON SHEET C031)
8. CONTRACTOR SHALL PLACE 10 CY/SY NONWOVEN GEOTEXTILE OVER THE PREPARED SUBGRADE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS
9. SUBGRADE SHALL BE APPROVED BY MWG AND/OR ENGINEER PRIOR TO INSTALLATION OF GCL/GEOMEMBRANE.
10. CONTRACTOR SHALL PROVIDE MEANS TO PROTECT SUBGRADE FROM EROSION, STORM WATER, AND HEAVY EQUIPMENT TRAFFIC. DAMAGE TO SUBGRADE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

N

0 15 30 60
SCALE IN FEET
(APPROXIMATE)

SOURCE NOTES:
1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]

REVISION	DATE	APPD BY
3. ISSUED FOR RECORD DOCUMENTATION	9/11/14	EJT
2. ISSUED FOR CONSTRUCTION	6/6/2013	HMB
1. ISSUED FOR BID	04/19/13	HMB
0. ISSUED FOR PERMIT	1/30/2013	HMB

NATURAL RESOURCE TECHNOLOGY

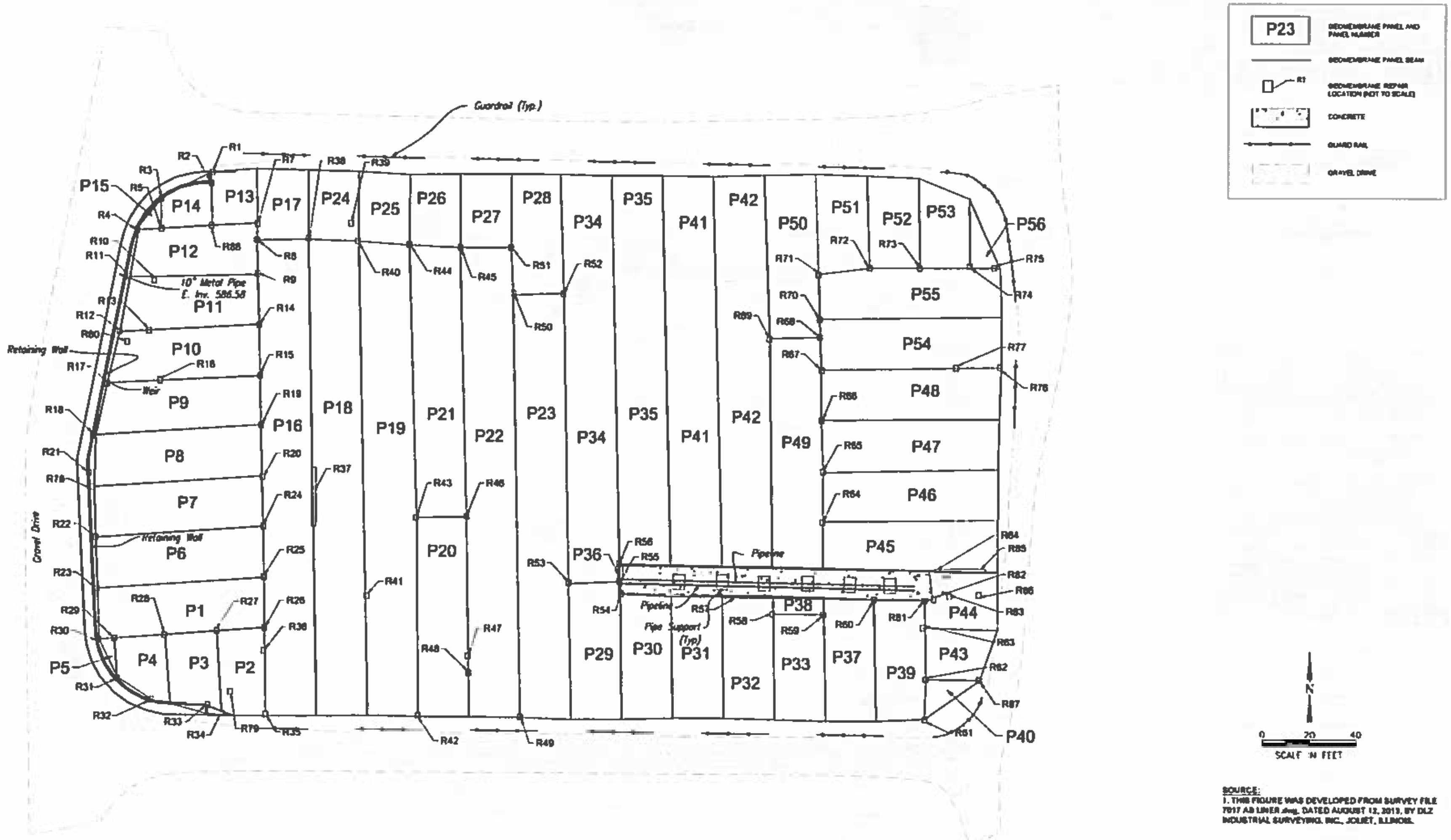
PROJECT NO. 2713.1
DRAWN BY RLH 12/19/12
CHECKED BY RJE 12/19/12
APPROVED BY HMB 1/30/2013

LINER SUBGRADE PREPARATION

SOUTH ASH POND 2 LINER REPLACEMENT
WILL COUNTY GENERATING STATION
MIDWEST GENERATION
ROMEOVILLE, WILL COUNTY, ILLINOIS

DRAWING NO. [illegible]
REFERENCE

SHEET NO. C030



SOURCE:
1. THIS FIGURE WAS DEVELOPED FROM SURVEY FILE 7017 AB LINER.dwg, DATED AUGUST 12, 2013, BY DLZ INDUSTRIAL SURVEYING, INC., JOLIET, ILLINOIS.

0	ISSUED FOR RECORD DOCUMENTATION		SJF
REVISION		DATE	APP'D BY

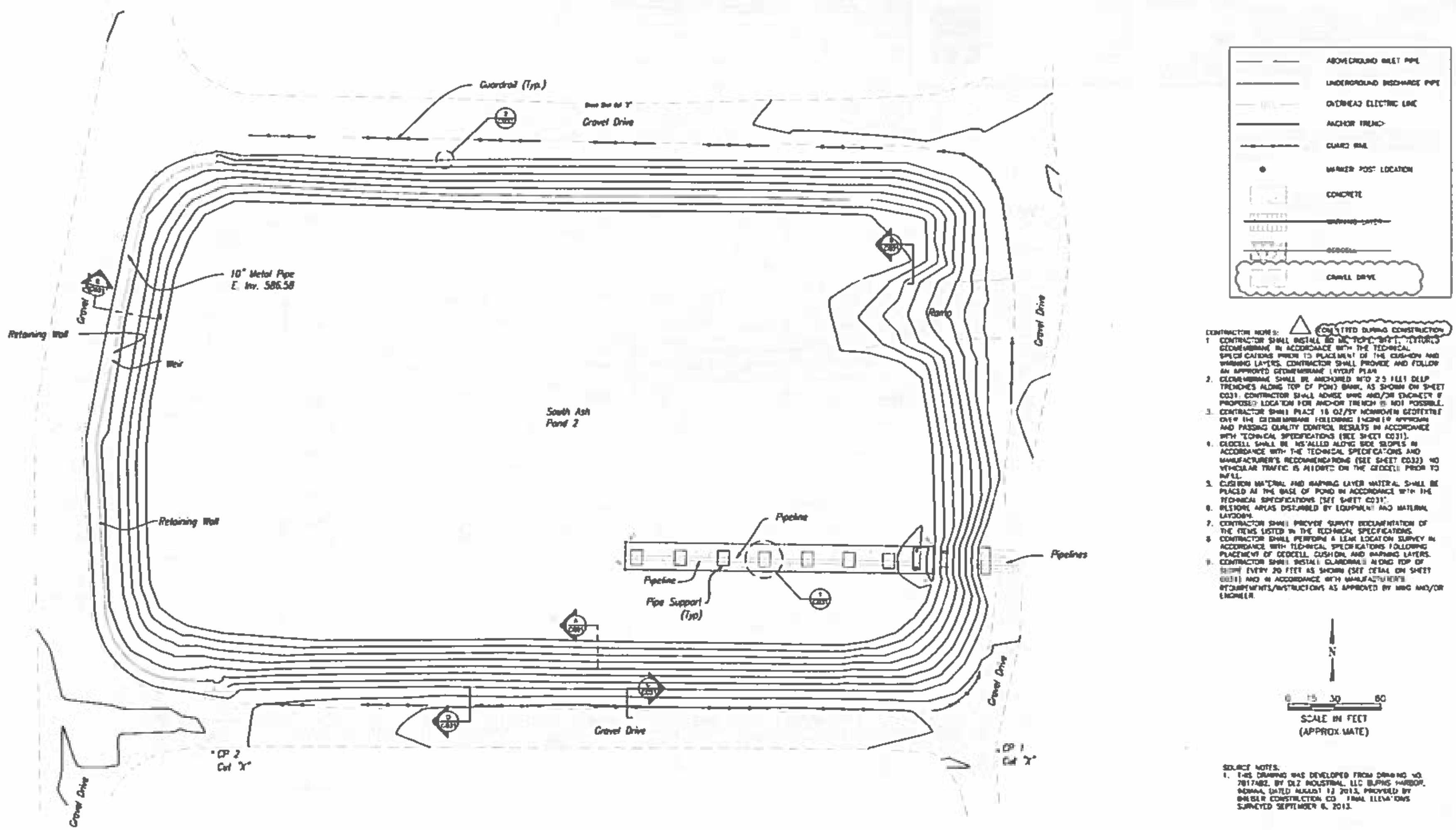
NATURAL RESOURCE TECHNOLOGY

PROJECT NO. 2115.1

GEOMEMBRANE PANEL LAYOUT

SOUTH ASH POND 2 LINER REPLACEMENT
WILL COUNTY GENERATING STATION
MIDWEST GENERATION
ROMEOVILLE, WILL COUNTY, ILLINOIS

SHEET NO. C021



CONTRACTOR NOTES: (△ ...TED DURING CONSTRUCTION)

1. CONTRACTOR SHALL INSTALL 80 MIL TEXTURED GEOMEMBRANE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS PRIOR TO PLACEMENT OF THE CUSHION AND WARNING LAYERS. CONTRACTOR SHALL PROVIDE AND FOLLOW AN APPROVED GEOMEMBRANE LAYOUT PLAN.
2. GEOMEMBRANE SHALL BE ANCHORED INTO 2.5 FEET DEEP TRENCHES ALONG TOP OF POND BANK, AS SHOWN ON SHEET C031. CONTRACTOR SHALL ADVISE MWG AND/OR ENGINEER IF PROPOSED LOCATION FOR ANCHOR TRENCH IS NOT POSSIBLE.
3. CONTRACTOR SHALL PLACE 16 OZ/SY NONWOVEN GEOTEXTILE OVER THE GEOMEMBRANE FOLLOWING ENGINEER APPROVAL AND PASSING QUALITY CONTROL RESULTS IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS (SEE SHEET C031).
4. GEOCELL SHALL BE INSTALLED ALONG SIDE SLOPES IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS (SEE SHEET C032). NO VEHICULAR TRAFFIC IS ALLOWED ON THE GEOCELL PRIOR TO INFILL.
5. CUSHION MATERIAL AND WARNING LAYER MATERIAL SHALL BE PLACED AT THE BASE OF POND IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS (SEE SHEET C031).
6. RESTORE AREAS DISTURBED BY EQUIPMENT AND MATERIAL LAYDOWN.
7. CONTRACTOR SHALL PROVIDE SURVEY DOCUMENTATION OF THE ITEMS LISTED IN THE TECHNICAL SPECIFICATIONS.
8. CONTRACTOR SHALL PERFORM A LEAK LOCATION SURVEY IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS FOLLOWING PLACEMENT OF GEOCELL, CUSHION, AND WARNING LAYERS.
9. CONTRACTOR SHALL INSTALL GUARDRAILS ALONG TOP OF SLOPE EVERY 20 FEET AS SHOWN (SEE DETAIL ON SHEET C031) AND IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS/INSTRUCTIONS AS APPROVED BY MWG AND/OR ENGINEER.

SOURCE NOTES:

1. THIS DRAWING WAS DEVELOPED FROM DRAWING NO. 7017A82, BY DLZ INDUSTRIAL, LLC BURNS HARBOR, INDIANA, DATED AUGUST 12 2013, PROVIDED BY GREISER CONSTRUCTION CO. FINAL ELEVATIONS SURVEYED SEPTEMBER 6, 2013.

REVISION		DATE	APP'D BY
6			
5			
4			
3	ISSUED FOR RECORD DOCUMENTATION	9/17/14	EJT
2	ISSUED FOR CONSTRUCTION	10/2013	HMB
1	ISSUED FOR BID	8/03/13	HMB
0	ISSUED FOR PERMIT	12/20/12	HMB

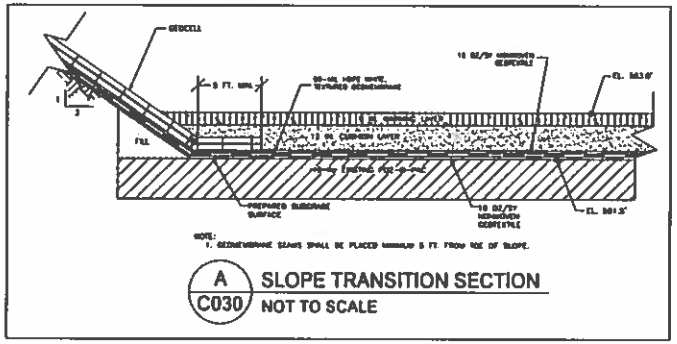
NATURAL RESOURCE TECHNOLOGY

PROJECT NO. 2113.1
DRAWN BY RLH 12/18/12
CHECKED BY RJB 12/19/12
APPROVED BY HMB 12/20/12

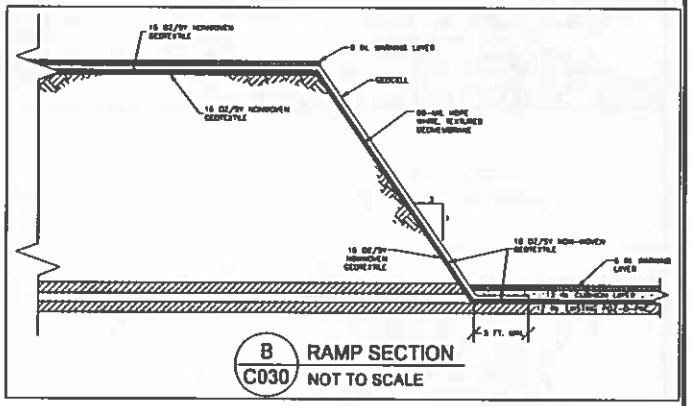
GEOCELL AND WARNING LAYER PLAN

SOUTH ASH POND 2 LINER REPLACEMENT
WILL COUNTY GENERATING STATION
MIDWEST GENERATION
ROMEOVILLE, WILL COUNTY, ILLINOIS

DRAWING NO. D2113C030-02
REFERENCE
SHEET NO. C030



A / C030 SLOPE TRANSITION SECTION
NOT TO SCALE



B / C030 RAMP SECTION
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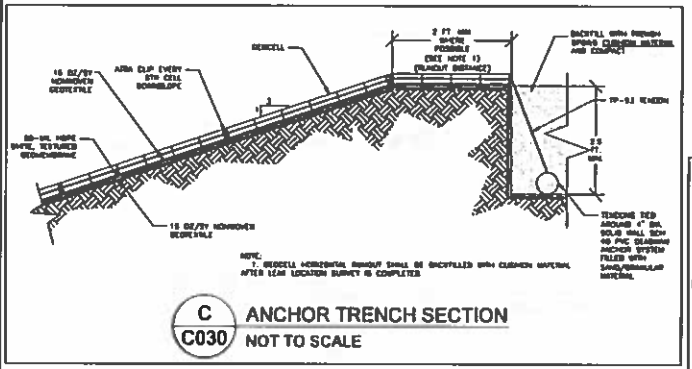

C / C030 ANCHOR TRENCH SECTION
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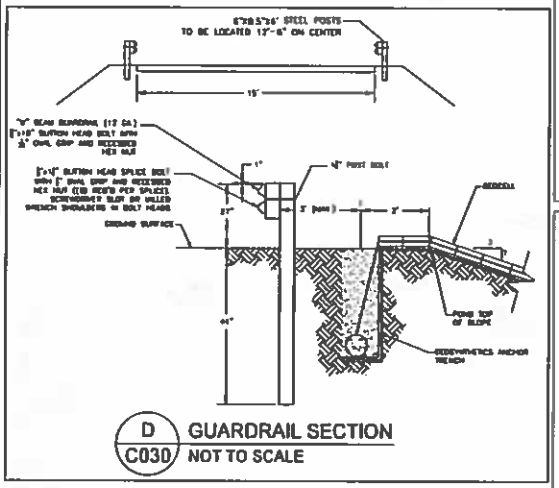
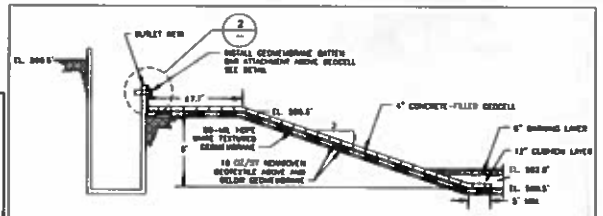


D / C030 GUARDRAIL SECTION
NOT TO SCALE



E / C030 WEIR AND GEOCELL SECTION
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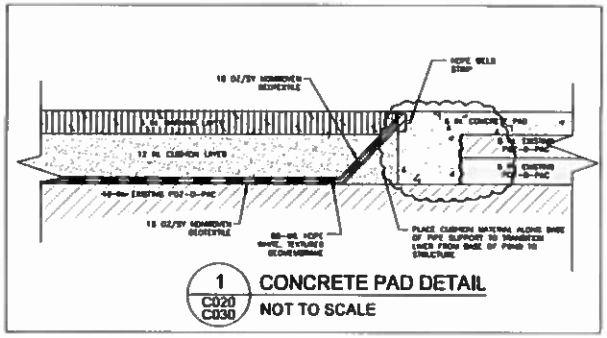

1 / C020 C030 CONCRETE PAD DETAIL
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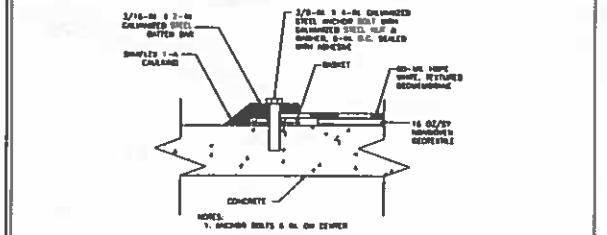


2 / — BATTEN BAR ATTACHMENT
NOT TO SCALE

REVISION	DATE	APPD BY
6		
5		
4		
3	ISSUED FOR RECORD DOCUMENTATION	07/17/14
2	ISSUED FOR CONSTRUCTION	07/29/13
1	ISSUED FOR BID	03/07/13
0	ISSUED FOR PERMIT	12/20/12

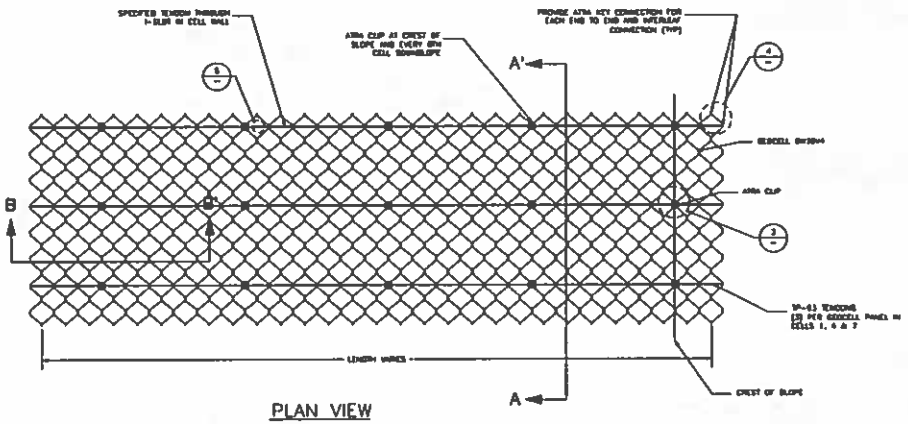
NATURAL RESOURCE TECHNOLOGY

PROJECT NO. 2113.1
DRAWN BY RJH 12/19/12
CHECKED BY KJB 12/19/12
APPROVED BY HAS 12/20/12

DETAILS AND SECTIONS

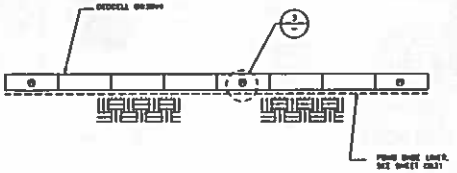
SOUTH ASH POND 2 LINER REPLACEMENT
WILL COUNTY GENERATING STATION
MIDWEST GENERATION
ROMEOVILLE, WILL COUNTY, ILLINOIS

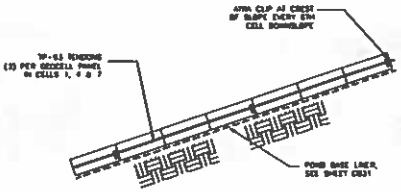
DRAWING NO. 02113\C031-03
REFERENCE
SHEET NO. C031

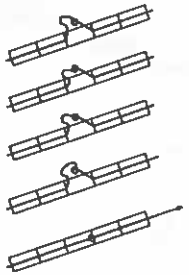


PLAN VIEW

2 / C030 GEOCELL PANEL AND CONNECTIONS DETAIL
NOT TO SCALE







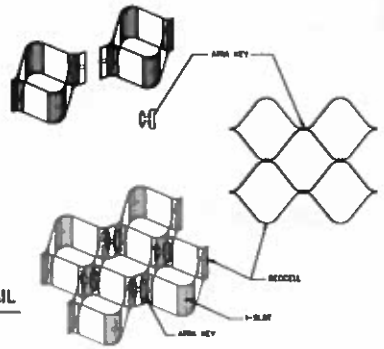
STEPS:

1. PLACE THE TENDON UNDER THE ARM OF THE ATRA CLIP.
2. DIAGONALLY CROSS THE TENDON OVER THE TOP OF THE ATRA CLIP.
3. PLACE THE TENDON UNDER THE OPPOSITE ARM AND PULL TIGHT TO REMOVE SLACK.
4. DIAGONALLY CROSS THE TENDON BACK OVER THE TOP OF THE ATRA CLIP AND PLACE TENDON UNDER THE FIRST ARM.
5. PULL THE TENDON TIGHT TO REMOVE SLACK.
6. ATRA CLIP SHALL BE TIGHT AGAINST THE UPPER CELL WALL AFTER SECURING.
7. PULL TENDON TIGHT AT LOCATION OF NEXT ATRA CLIP.

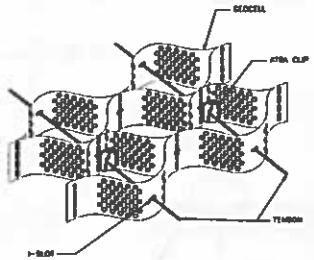
3 / – ATRA® CLIP INSTALLATION DETAIL
NOT TO SCALE

ATRA KEY CONNECTION DETAIL

GEOCELL CONNECTION NOTES:
1. THE TOP EDGES OF ADJACENT CELL WALLS SHALL BE FLUSH WHEN CONNECTING.
2. ALIGN THE T-SLOTS FOR SIDE-BY-SIDE AND END TO END CONNECTIONS.
3. THE GEOCELL PANELS SHALL BE CONNECTED WITH ATRA KEYS AT EACH SIDE-BY-SIDE AND END TO END CONNECTION



4 / – GEOCELL SIDE AND END CONNECTION DETAIL
NOT TO SCALE



5 / – TENDON DETAIL
NOT TO SCALE

REVISION	DATE	APPD BY
6.		
5.		
4.		
3. ISSUED FOR RECORD DOCUMENTATION	6/18/14	EJF
2. ISSUED FOR CONSTRUCTION	6/2/2013	HMS
1. ISSUED FOR BID	5/10/2013	HMS
0. ISSUED FOR PERMIT	12/2012	HMS

NATURAL RESOURCE TECHNOLOGY

PROJECT NO. 2113.1
DRAWN BY RLH 12/12/12
CHECKED BY KJB 12/12/12
APPROVED BY HMS 12/2012

GEOCELL DETAILS AND SECTIONS

SOUTH ASH POND 2 LINER REPLACEMENT
WILL COUNTY GENERATING STATION
MIDWEST GENERATION
ROMEOVILLE, WILL COUNTY, ILLINOIS

DRAWING NO. C0112C032-00
REFERENCE
SHEET NO. C032