

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 8/19/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1600
<b>Contractor(s):</b>	Ryan Central Inc. Chesapeake	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central) Emiliano Saenz (Chesapeake)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Cloudy	<b>Temperature:</b> 66
<b>Weather (PM):</b> Partly Cloudy	<b>Temperature:</b> 85
<b>Precipitation:</b> None	<b>Wind:</b> E 0-9 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X112OD; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

<b>SUMMARY OF CONSTRUCTION</b>																												
<b>Work performed while Golder was onsite:</b>																												
<b>Ryan Central</b> -1 Foreman, 3 Operators, 2 Laborers																												
<ul style="list-style-type: none"> <li>Regrade of haul roads.</li> <li>Pumping standing water from west side of Pond 2 and hauled to southeast corner of Pond 2.</li> </ul>																												
<b>Chesapeake</b> – 1 Superintendent, 11 Technicians, 1 operator, 2 Laborers																												
<ul style="list-style-type: none"> <li>Chesapeake continued deployment of geotextile in Pond 1.</li> <li>Chesapeake sewed all panels deployed today.</li> <li>Chesapeake made repairs to all defects on geotextile panels deployed.</li> <li>Chesapeake placed sandbags around the outside edges of all deployed geotextile.</li> </ul>																												
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<u>Week 5</u> 06/03/19: 185,365 gal. 06/04/19: 409,662 gal. 06/05/19: 345,122 gal. 06/06/19: 311,007 gal. 06/07/19: 276,790 gal. 06/08/19: 65,064 gal.	<u>Week 6</u> 06/10/19: 175,022 gal. 06/11/19: 184,365 gal. 06/12/19: 178,934 gal. 06/13/19: 147,219 gal. 06/14/19: 13,156 gal. 06/15/19: 142,063 gal.	<u>Week 7</u> 06/17/2019: 247,813 gal. 06/18/2019: 68,510 gal. 06/19/2019: 215,872 gal. 06/20/2019: 207,117 gal. 06/21/2019: 200,874 gal. 06/22/2019: 102,207 gal.	<u>Week 8</u> 06/24/2019: 218,008 gal. 06/25/2019: 208,371 gal. 06/26/2019: 181,215 gal. 06/27/2019: 216,650 gal. 06/28/2019: 208,921 gal. 06/29/2019: 135,907 gal.
<u>Week 9</u> 07/01/19: 175,586 gal. 07/02/19: 129,459 gal. 07/03/19: 13,878 gal. 07/04/19: None 07/05/19: 137,112 gal. 07/06/19: 95,100 gal.	<u>Week 10</u> 07/08/19: 107,894 gal. 07/09/19: 44,007 gal. 07/10/19: 25,922 gal. 07/11/19: 27,943 gal. 07/12/19: 18,335 gal. 07/13/19: None	<u>Week 11</u> 07/15/19: None 07/16/19: 17,852 gal. 07/17/19: 20,293 gal. 07/18/19: None 07/19/19: 20,316 gal. 07/20/19: None	<u>Week 12</u> 07/22/19: 15,890 gal. 07/23/19: 15,310 gal. 07/24/19: 23,572 gal. 07/25/19: None 07/26/19: None 07/27/19: None
<u>Week 13</u> 07/29/19: None 07/30/19: 23,124 gal.	<u>Week 14</u> 08/16/19: 49,780 <b>Total: 13,911,414 gal.</b>		

## GAI CQA ACTIVITIES AND TEST RESULTS

### Construction:

- Golder onsite documenting the construction progress.
- Performed CQA oversight and documentation on geotextile installation.
- Performed CQA oversight and documentation on 8oz. geotextile installed today.
- Golder monitored deployment of 8oz. geotextile.
- Golder observed sewing of all deployed panels on Pond 1.
- Golder observed repairs to damage of geotextile by patch placed over defect by leistering of 8oz. textile patch over defect.

## SUMMARY OF SURVEYOR'S ACTIVITIES

None

## SUMMARY OF PROBLEMS AND RESOLUTIONS

None

## SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)

None

## SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES

None

## SUBMITTED BY GOLDER:

CQA Field Manager: David Hutchinson

Signature:



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Deployment of geotextile in Pond 1, looking northwest.



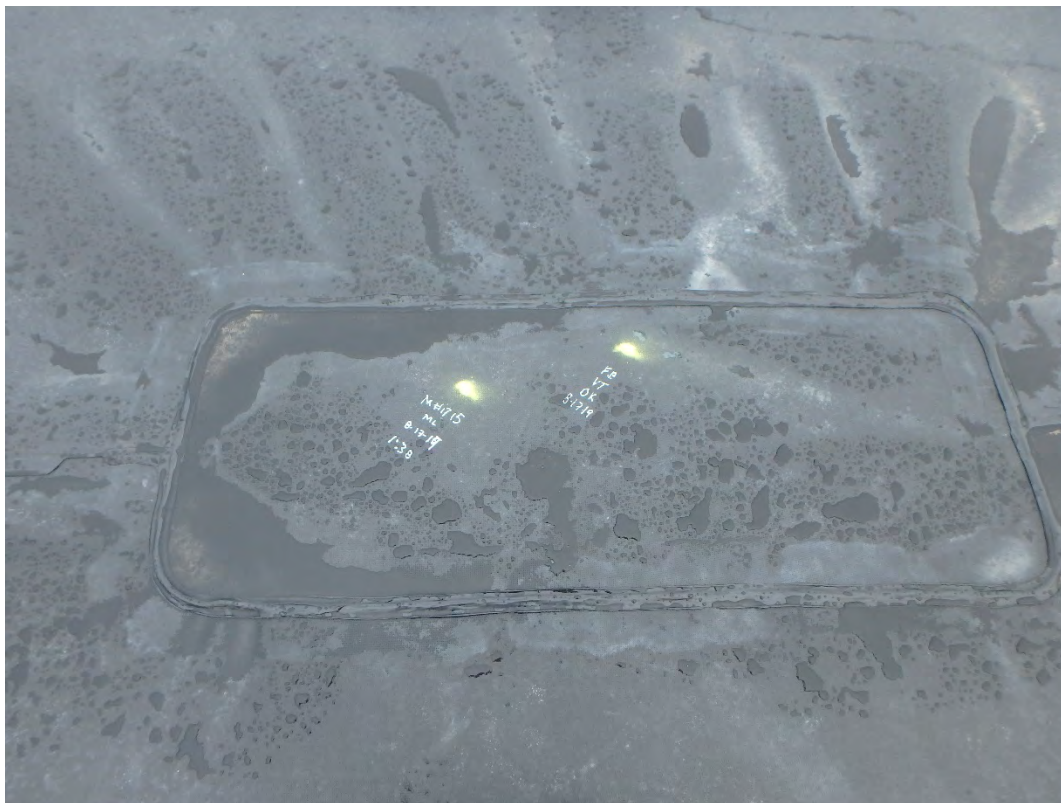
Sewing of geotextile panel seam, looking southwest.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Repaired and vacuum tested defect.



West side of Pond 2 after previous night's rain, looking south.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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<b>Client:</b> Consumers Energy	<b>Site/Location:</b> Erie, MI	
<b>GAI Personnel:</b> David Hutchinson	<b>Arrival/Departure Time:</b> 0630/2000	
<b>Contractor(s):</b> Ryan Central Inc. Chesapeake	<b>Contractor(s) Rep:</b> John Johnson (Ryan Central) Emiliano Saenz (Chesapeake)	

### SITE CONDITIONS

<b>Weather (AM):</b> Partly Sunny	<b>Temperature:</b> 70
<b>Weather (PM):</b> Sunny	<b>Temperature:</b> 86
<b>Precipitation:</b> None	<b>Wind:</b> SE 0-6 mph

### EQUIPMENT ON SITE

1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

### SUMMARY OF CONSTRUCTION

#### Work performed while Golder was onsite:

#### Ryan Central -1 Foreman, 3 Operators, 2 Laborers

- Continued placement of structural fill in Pond 2 in a single 11 to 12 inch loose lift.
- Continued compacting structural fill placed in Pond 2 with an 815 compactor.
- Visual inspection and rock removal for liner deployment in Pond 1.
- Rolled liner sub-grade in Pond 1 with smooth drum roller.
- Import structural fill.
- Pumping standing water from west side of Pond 2 and hauled to southeast corner of Pond 2.

#### Chesapeake – 1 Superintendent, 11 Technicians, 1 operator, 2 Laborers

- Chesapeake continued deployment of geomembrane in Pond 1.
- Chesapeake preformed trial welds for fusion and extrusion prior to any seaming or repairs.
- Chesapeake seamed all panels deployed today using the fusion method.
- Chesapeake preformed air pressure testing of all fusion seams performed today on deployed geomembrane.
- Chesapeake made repairs to all defects on panels P-23 thru P-25 deployed.
- Chesapeake continued vacuum testing of repairs.
- Chesapeake field tested destructs DS-34 thru DS-38 and DX-1.
- Chesapeake continued deployment of geotextile in Pond 1.
- Chesapeake sewed all panels deployed today.

## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

- Chesapeake made repairs to all defects on geotextile panels deployed.
- Chesapeake placed sandbags around the outside edges of all deployed geotextile.

### Summary of Dewatering:

<u>Week 1</u>	<u>Week 2</u>	<u>Week 3</u>	<u>Week 4</u>
05/06/19: 281,988 gal.	05/13/19: 399,021 gal.	05/20/19: 328,687 gal.	05/27/19: Holiday
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<u>Week 5</u>	<u>Week 6</u>	<u>Week 7</u>	<u>Week 8</u>
06/03/19: 185,365 gal.	06/10/19: 175,022 gal.	06/17/2019: 247,813 gal.	06/24/2019: 218,008 gal.
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07/01/19: 175,586 gal.	07/08/19: 107,894 gal.	07/15/19: None	07/22/19: 15,890 gal.
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07/04/19: None	07/11/19: 27,943 gal.	07/18/19: None	07/25/19: None
07/05/19: 137,112 gal.	07/12/19: 18,335 gal.	07/19/19: 20,316 gal.	07/26/19: None
07/06/19: 95,100 gal.	07/13/19: None	07/20/19: None	07/27/19: None
<u>Week 13</u>	<u>Week 14</u>		
07/29/19: None	08/16/19: 49,780		
07/30/19: 23,124 gal.	<b>Total: 13,911,414 gal.</b>		

### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder monitored placement of structural fill in Pond 2, Cat D6T with GPS placed material in a single 11 to 12 inch loose lift. Cat 815 sheep foot was used to compact to 9 inches.
- Golder performed Standard test on Troxler 3440 prior to density testing.
- Performed density test's SFDT-66 thru 69 on 9-inch compacted structural fill lift 1 placed in Pond 2 using a Troxler 3440 Nuclear Gauge (see density test map). Compacted and tested structural fill met all specifications.
- Performed CQA oversight and documentation on 40mil HDPE micro-spike geomembrane and 8oz. geotextile deployed today.
- Chesapeake installed approximately 47,520sf of geomembrane on Pond 1 today for a total of 381,150sf to date.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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- Golder monitored deployment of 40mil micro-spike geomembrane panels P-23 thru P-25 and 8oz. geotextile installed.
- Golder monitored and documented trial seams for fusion and extrusion in P.M. preformed prior to seaming or repair activities.
- Golder observed seaming of all deployed panels on Ponds by fusion seaming method using 3 wedges.
- Golder monitored non-destructive testing of all fusion seams by air pressure testing to a minimum of 30psi for 5 minutes with a loss of no more than 4psi in accordance to specifications.
- Golder observed repairs to defects by extrusion method.
- Golder monitored vacuum testing of repairs.
- Golder marked destructive test locations DS-34 thru DS-38 and DX-1 on geomembrane for removal by Chesapeake and destructive field testing onsite.
- Golder monitored field testing of destructs DS-34 thru DS-38 and DX-1 prior to shipping for third party testing.
- Golder monitored deployment of 8oz. geotextile.
- Golder observed sewing of all deployed panels on Pond 1.
- Golder observed repairs to damage of geotextile by patch placed over defect by leistering of 8oz. textile patch over defect.
- Golder shipped destructs DS-34 thru DS-38 and DX-1 to laboratory for testing.

<b>SUMMARY OF SURVEYOR'S ACTIVITIES</b>
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None
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<b>SUMMARY OF PROBLEMS AND RESOLUTIONS</b>
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None
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<b>SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)</b>
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None
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<b>SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES</b>
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None
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<b>SUBMITTED BY GOLDER:</b>
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CQA Field Manager: David Hutchinson
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Signature: 
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Deployment of geotextile in Pond 1, looking northwest.



Sewing of geotextile panel seam, looking southwest.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Preparing trial weld.



Pressure testing of fusion seam.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Removing marked destruct for field testing.



Seaming of geomembrane panels by fusion method.







# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure



# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1800
<b>Contractor(s):</b>	Ryan Central Inc. Chesapeake	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central) Emiliano Saenz (Chesapeake)

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<b>Weather (PM):</b> Sunny	<b>Temperature:</b> 80
<b>Precipitation:</b> None	<b>Wind:</b> W 0-5 mph

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1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler, 1-Volvo A45G Haul Truck

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<ul style="list-style-type: none"> <li>Continued placement of structural fill in Pond 2, material placed in stockpile.</li> <li>Import structural fill.</li> <li>Pumping standing water from west side of Pond 2 and hauled to southeast corner of Pond 2.</li> <li>Erie Road maintenance to allow standing water along road to flow to ditches.</li> <li>Mobilized Volvo A45G haul truck.</li> </ul>																												
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<u>Week 13</u> 07/29/19: None 07/30/19: 23,124 gal.	<u>Week 14</u> 08/16/19: 49,780 <b>Total: 13,911,414 gal.</b>		

**GAI CQA ACTIVITIES AND TEST RESULTS**

**Construction:**

- Golder onsite documenting the construction progress.
- Golder monitored stockpiling of structural fill in Pond 2
- Performed CQA oversight and documentation on 8oz. geotextile deployed today.
- Golder monitored deployment of 8oz. geotextile.
- Golder observed sewing of all deployed panels on Pond 1.
- Golder observed repairs to damage of geotextile by patch placed over defect by leistering of 8oz. textile patch over defect.

**SUMMARY OF SURVEYOR'S ACTIVITIES**

None

**SUMMARY OF PROBLEMS AND RESOLUTIONS**

None

**SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)**

Bi-Weekly construction meeting with CEC, Ryan and Golder.

**SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES**

None

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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**SUBMITTED BY GOLDER:**

CQA Field Manager: David Hutchinson

Signature:



### PHOTOGRAPHS



Overview of Pond 1, looking southwest.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

---



Structural fill import, looking southwest.



Sewing geotextile seam, looking northeast.

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 8/22/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc. ProAct	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central) Guillermo Arredondo (ProAct)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Cloudy	<b>Temperature:</b> 68
<b>Weather (PM):</b> Partly Cloudy	<b>Temperature:</b> 77
<b>Precipitation:</b> None	<b>Wind:</b> E 3-15 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler, 1-Volvo A45G Haul Truck

<b>SUMMARY OF CONSTRUCTION</b>																												
<b>Work performed while Golder was onsite:</b>																												
<b>Ryan Central</b> -1 Foreman, 3 Operators, 2 Laborers																												
<ul style="list-style-type: none"> <li>Continued placement of structural fill in Pond 2, material placed in a 0 to 12 inch loose lift.</li> <li>Excavated trench of French Drain to remove stone and backfill with clay plug.</li> <li>Began excavating west of Pond 2 along the Fore bay, material hauled to Pond 2 for bridging layer.</li> <li>Pumping standing water from west side of Pond 2 and hauled to southeast corner of Pond 2.</li> <li>Import structural fill.</li> </ul>																												
<b>ProAct Services</b> – 1 Foreman																												
<ul style="list-style-type: none"> <li>ProAct onsite at 1000 to begin demobilization of filter system.</li> </ul>																												
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<u>Week 5</u> 06/03/19: 185,365 gal. 06/04/19: 409,662 gal. 06/05/19: 345,122 gal. 06/06/19: 311,007 gal. 06/07/19: 276,790 gal. 06/08/19: 65,064 gal.	<u>Week 6</u> 06/10/19: 175,022 gal. 06/11/19: 184,365 gal. 06/12/19: 178,934 gal. 06/13/19: 147,219 gal. 06/14/19: 13,156 gal. 06/15/19: 142,063 gal.	<u>Week 7</u> 06/17/2019: 247,813 gal. 06/18/2019: 68,510 gal. 06/19/2019: 215,872 gal. 06/20/2019: 207,117 gal. 06/21/2019: 200,874 gal. 06/22/2019: 102,207 gal.	<u>Week 8</u> 06/24/2019: 218,008 gal. 06/25/2019: 208,371 gal. 06/26/2019: 181,215 gal. 06/27/2019: 216,650 gal. 06/28/2019: 208,921 gal. 06/29/2019: 135,907 gal.
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### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder monitored placement of structural fill in Pond 2 in a 10 to 12 inch loose lift for lift 2, no compaction today of placed material.
- Golder observed excavation along the Fore bay west of Pond 2, material was hauled to the southeast corner of Pond 2 and stockpile for later use in bridging layer.
- Golder monitored excavation of the trench running from soft spot in Pond 2 to sump used for dewatering. Stone was removed and a clay plug installed, compaction achieved using bucket of excavator tamping material in place.

### SUMMARY OF SURVEYOR'S ACTIVITIES

None

### SUMMARY OF PROBLEMS AND RESOLUTIONS

None

### SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)

None

### SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES

None

### SUBMITTED BY GOLDER:

CQA Field Manager: David Hutchinson

Signature:



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Excavation of French Drain trench to remove drainage stone and install clay plug, looking west.



Installing clay plug in the French Drain trench, looking west.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

---



Excavating along fore bay west of Pond 2, looking west.



Import of structural fill to Pond 2, looking west.



DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

S.F. LIFT MAP / LIFT 1







# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 8/23/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc. ProAct	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central) Guillermo Arredondo (ProAct)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Sunny	<b>Temperature:</b> 63
<b>Weather (PM):</b> Partly Sunny	<b>Temperature:</b> 75
<b>Precipitation:</b> None	<b>Wind:</b> NE 3-10 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler, 1-Volvo A45G Haul Truck

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<ul style="list-style-type: none"> <li>Continued placement of structural fill in Pond 2, material placed in a 10 to 12 inch loose lift.</li> <li>Continued compaction of structural fill using Cat 815 compactor.</li> <li>Continued excavating west of Pond 2 along the Fore bay, material hauled to Pond 2 for bridging layer.</li> <li>Pumping standing water from west side of Pond 2 and hauled to southeast corner of Pond 2.</li> <li>Import structural fill.</li> <li>Water truck used for dust control and maintain fill moisture.</li> </ul>																												
<b>ProAct Services</b> – 1 Foreman																												
<ul style="list-style-type: none"> <li>ProAct onsite at 0700 to complete demobilization of filter system.</li> </ul>																												
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder monitored placement of structural fill in Pond 2 in a 10 to 12 inch loose lift for lift 2.
- Golder observed compaction of placed structural fill in Pond 2 using a Cat 815 sheep foot compactor.
- Golder performed Standard test on Troxler 3440 prior to density testing.
- Performed density test's SFDT-70 thru 71 on 9-inch compacted structural fill lift 2 placed in Pond 2 using a Troxler 3440 Nuclear Gauge (see density test map). Compacted and tested structural fill met all specifications.
- Golder observed excavation along the Fore bay west of Pond 2, material was hauled to the southeast corner of Pond 2 and stockpiled for use in bridging layer.

### SUMMARY OF SURVEYOR'S ACTIVITIES

None

### SUMMARY OF PROBLEMS AND RESOLUTIONS

None

### SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)

None

### SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES

None

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

---

**SUBMITTED BY GOLDER:**

CQA Field Manager: David Hutchinson

Signature:



### PHOTOGRAPHS



Cleaning out sand pots of filter system for demobilization, looking southwest.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

---



Installing clay cap over cut west of Pond 2 along the fore bay, looking south.



Excavating along fore bay west of Pond 2, looking south.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

---



Installing silt fence west of excavation along fore bay, looking south.



Southeast corner of Pond 2, looking east.



DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

S.F. LIFT MAP / LIFT 1



MATERIAL BALANCE TABLE  
VOLUME (CUBIC YARDS)  
NOTES





# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure



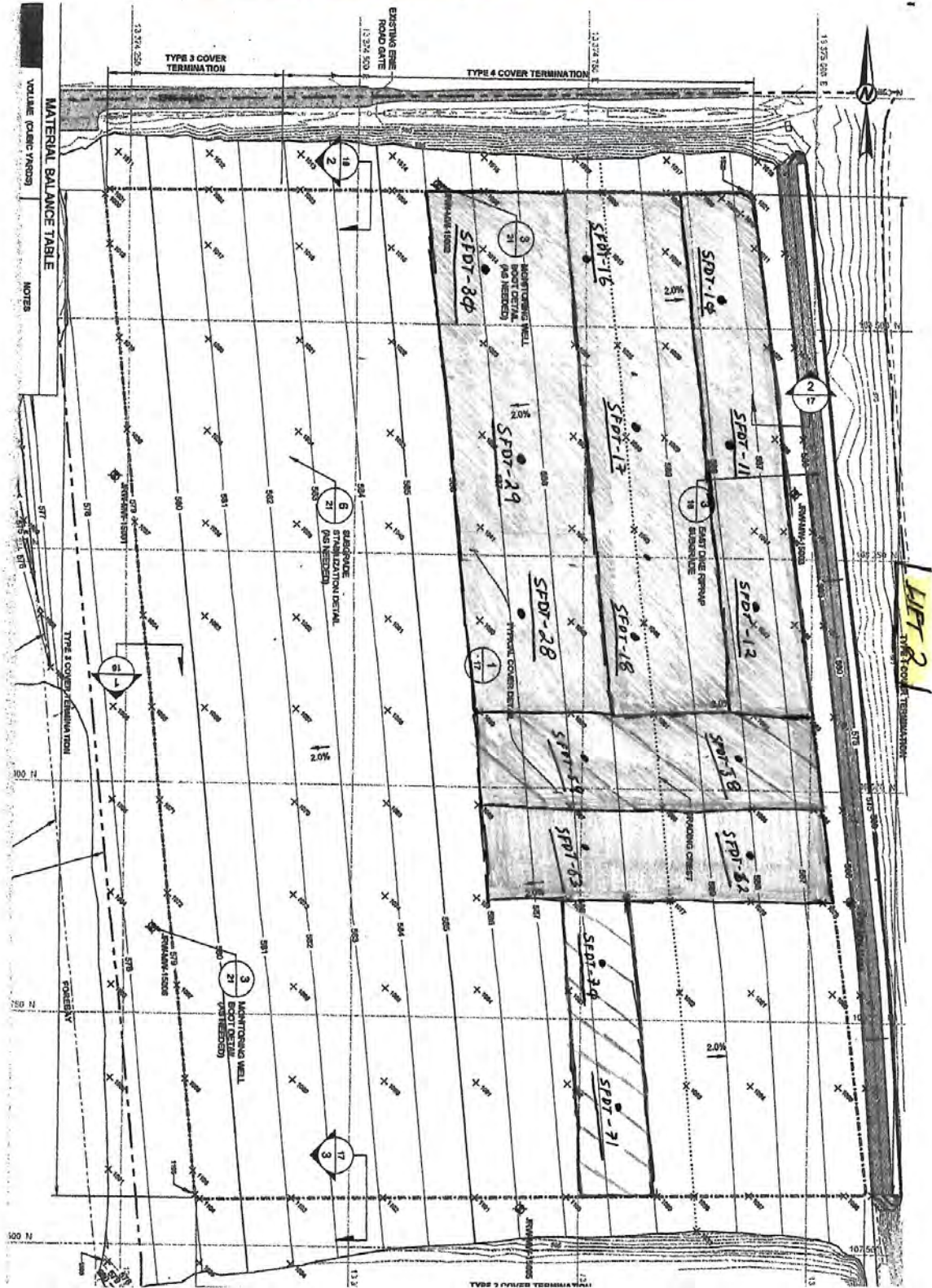
MATERIAL BALANCE TABLE

NOTES

VOLUME (CUBIC YARDS)

DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

DENSITY TEST MAP LIFT 2





# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 8/26/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1700
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Cloudy	<b>Temperature:</b> 63
<b>Weather (PM):</b> Overcast	<b>Temperature:</b> 70
<b>Precipitation:</b> Rain	<b>Wind:</b> S 2-13 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler, 1-Volvo A45G Haul Truck

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Placing lift of structural fill in Pond 2.



Compacting placed lift of structural fill in Pond 2, looking west.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Sealing placed structural fill using towed box-blade with roller, looking south.



Southeast corner of Pond 2, looking north.

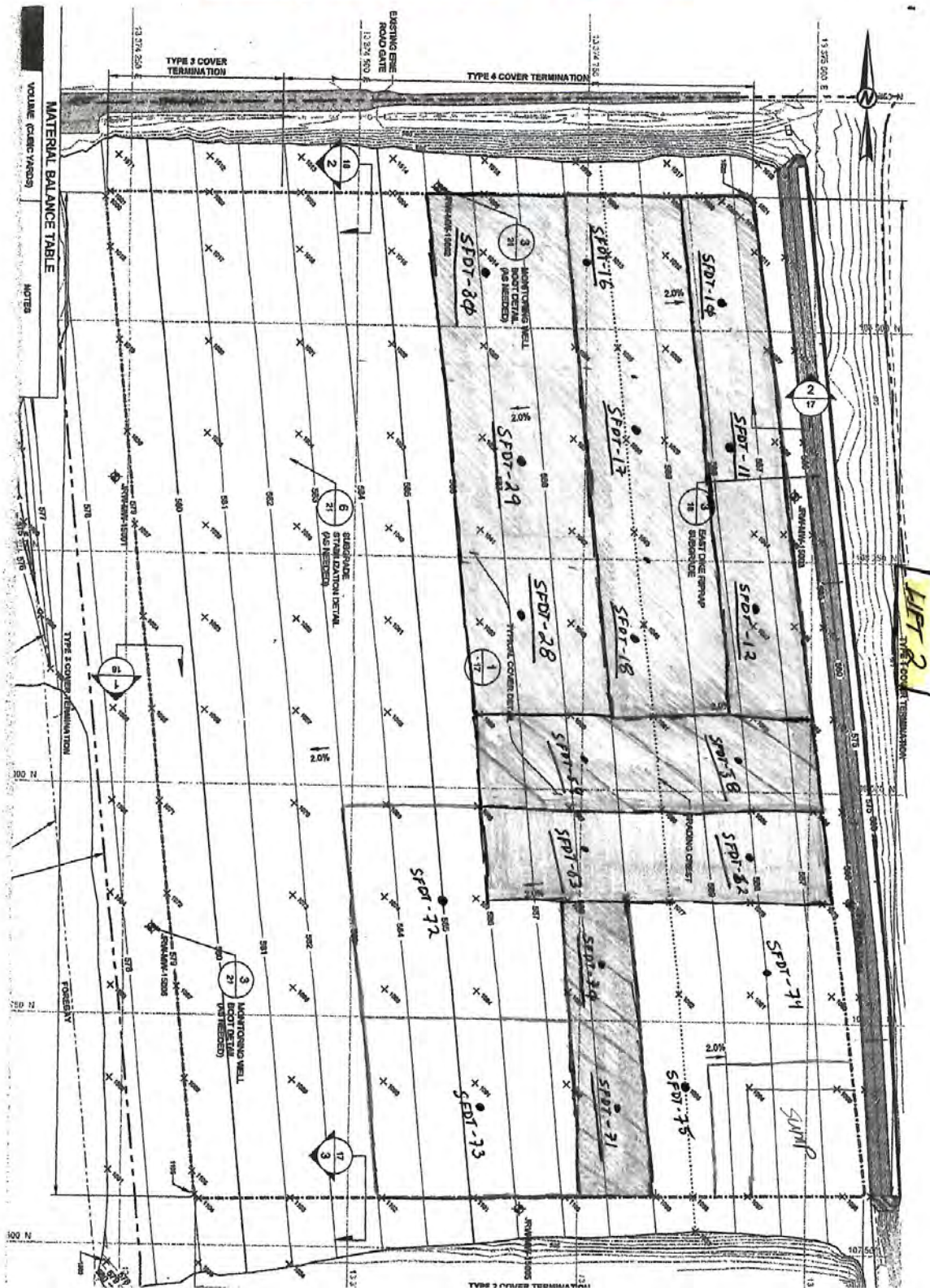






DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

DENSITY TEST MAP LIFT 2





# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 8/28/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Sunny	<b>Temperature:</b> 63
<b>Weather (PM):</b> Partly Cloudy	<b>Temperature:</b> 80
<b>Precipitation:</b> None	<b>Wind:</b> W, 3-12 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler, 1-Volvo A45G Haul Truck

<b>SUMMARY OF CONSTRUCTION</b>																												
<b>Work performed while Golder was onsite:</b>																												
<b>Ryan Central</b> -1 Foreman, 3 Operators, 2 Laborers																												
<ul style="list-style-type: none"> <li>Continued placement of structural fill in Pond 2, material placed in a 10 to 12 inch loose lift.</li> <li>Continued compaction of structural fill using Cat 815 compactor.</li> <li>Continued placing bridging layer in Pond 2.</li> <li>Proof rolled bridging layer in Pond 2.</li> <li>Continued pumping standing water from area west of Pond 2's southwest corner.</li> <li>Continued excavating between Pond 2 and Fore Bay to sub-grade, material hauled to Pond 2 for use in bridging layer.</li> <li>Import structural fill.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> </ul>																												
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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<u>Week 9</u> 07/01/19: 175,586 gal. 07/02/19: 129,459 gal. 07/03/19: 13,878 gal. 07/04/19: None 07/05/19: 137,112 gal. 07/06/19: 95,100 gal.	<u>Week 10</u> 07/08/19: 107,894 gal. 07/09/19: 44,007 gal. 07/10/19: 25,922 gal. 07/11/19: 27,943 gal. 07/12/19: 18,335 gal. 07/13/19: None	<u>Week 11</u> 07/15/19: None 07/16/19: 17,852 gal. 07/17/19: 20,293 gal. 07/18/19: None 07/19/19: 20,316 gal. 07/20/19: None	<u>Week 12</u> 07/22/19: 15,890 gal. 07/23/19: 15,310 gal. 07/24/19: 23,572 gal. 07/25/19: None 07/26/19: None 07/27/19: None
<u>Week 13</u> 07/29/19: None 07/30/19: 23,124 gal.	<u>Week 14</u> 08/16/19: 49,780 gal. 08/22/19: 94,717 gal. <b>Total: 14,006,131 gal.</b>		

### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder monitored placement of structural fill in Pond 2 in a 10 to 12 inch loose lift for lift 2.
- Golder observed compaction of placed structural fill in Pond 2 using a Cat 815 sheep foot compactor.
- Golder observed placement of bridging layer in southeast corner of Pond 2.
- Golder monitored proof roll of bridging layer placed in southeast corner of Pond 2 (see proof roll map below).
- Golder observed excavation of CCR from between Pond 2 and Fore Bay down to sub-grade for structural fill placement, material hauled to the southeast corner of Pond 2 for placement in bridging layer.

### SUMMARY OF SURVEYOR'S ACTIVITIES

None

### SUMMARY OF PROBLEMS AND RESOLUTIONS

None

### SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)

None

### SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES

None



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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**SUBMITTED BY GOLDER:**

**CQA Field Manager:** David Hutchinson

**Signature:**



### PHOTOGRAPHS



Structural fill import to Pond 2.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Excavating CCR from area between Pond 2's southwest corner and Fore Bay, looking south.



Overview of Pond 2, looking southwest.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Sump in southeast corner of Pond 2, looking west.



Placing structural fill in Pond 2, looking west.



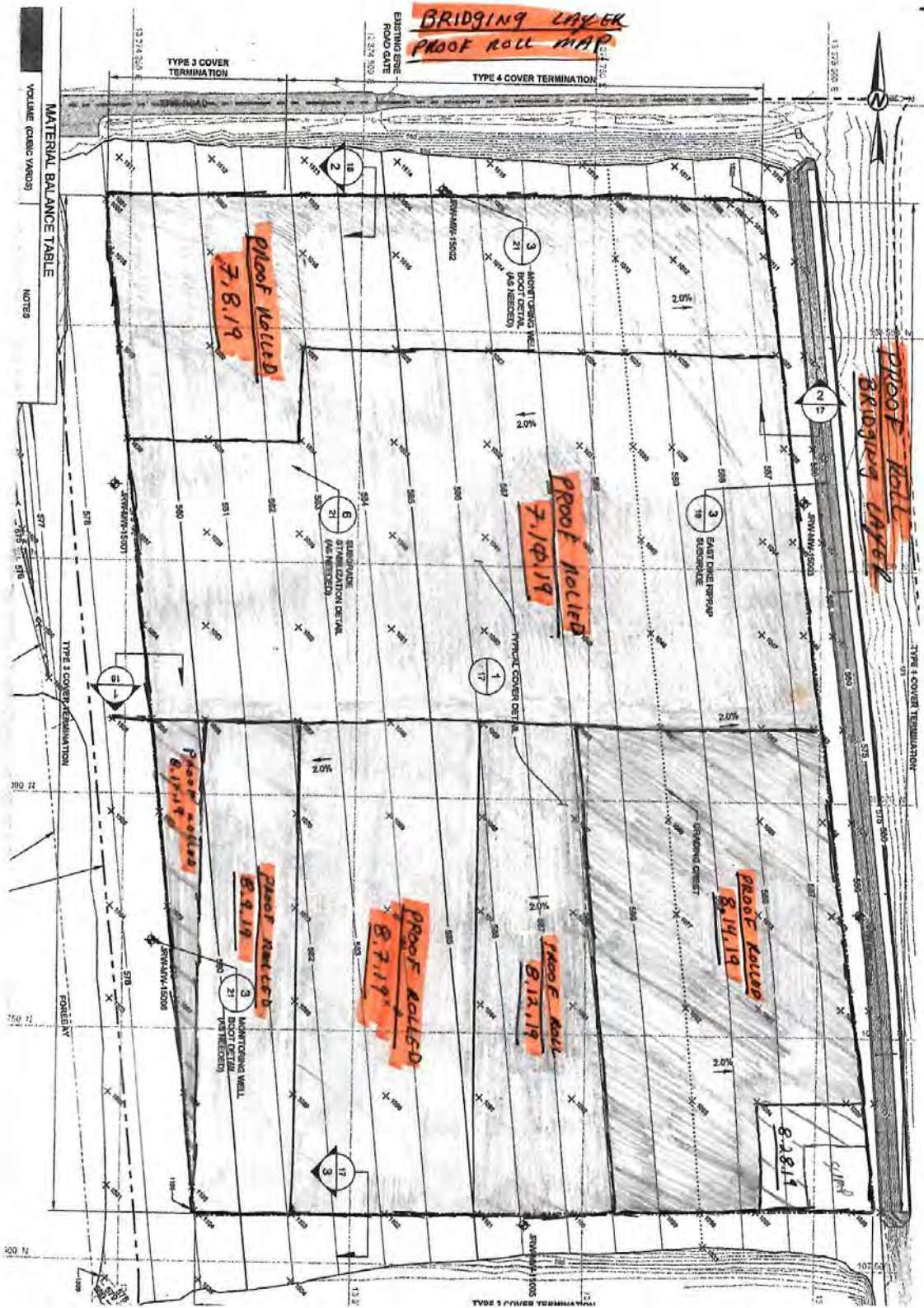








# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure





# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 8/29/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Sunny	<b>Temperature:</b> 61
<b>Weather (PM):</b> Sunny	<b>Temperature:</b> 78
<b>Precipitation:</b> None	<b>Wind:</b> W, 1-8 mph

<b>EQUIPMENT ON SITE</b>
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Structural fill import to Pond 2, looking southeast.



Compaction of structural fill lift in Pond 2, looking southwest.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Placement of structural fill in Pond 2, looking south.



Density testing of placed and compacted structural fill lift in Pond 2, looking east.



DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

S.F. LIFT MAP / LIFT 1





DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure









DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure



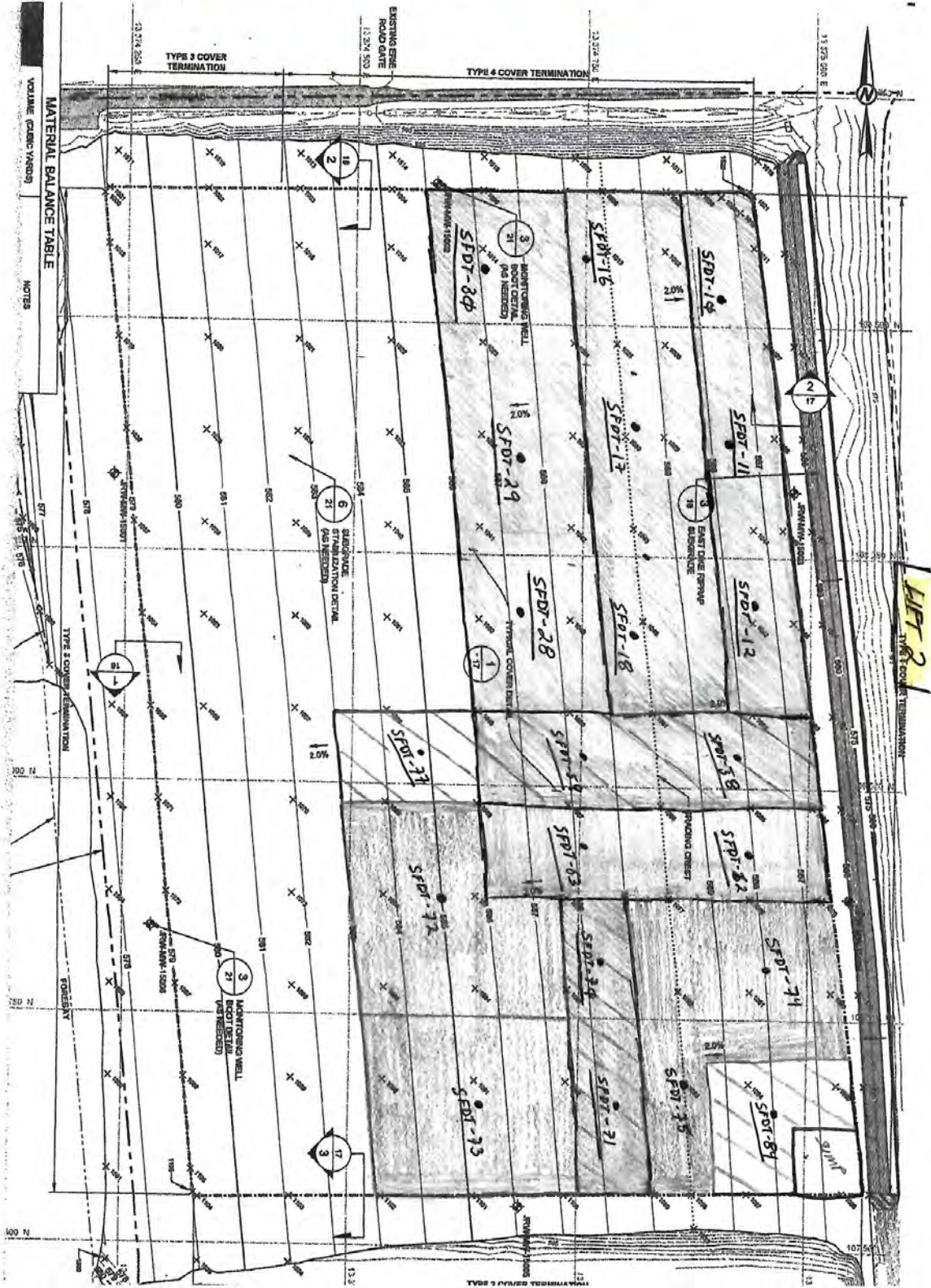






DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

DENSITY TEST MAP LIFT 2











# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 8/30/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Sunny	<b>Temperature:</b> 62
<b>Weather (PM):</b> Partly Cloudy	<b>Temperature:</b> 75
<b>Precipitation:</b> None	<b>Wind:</b> NW, 1-10 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X112OD; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler, 1-Volvo A45G Haul Truck

<b>SUMMARY OF CONSTRUCTION</b>	
<b>Work performed while Golder was onsite:</b>	
<b>Ryan Central</b> -1 Foreman, 3 Operators, 2 Laborers	
<ul style="list-style-type: none"> <li>Continued placement of structural fill in Pond 2, material placed in a 10 to 12 inch loose lift.</li> <li>Continued compaction of structural fill using Cat 815 compactor.</li> <li>Continued bridging layer in southeast corner of Pond 2.</li> <li>Began removing excess CCR west of chemical ponds prior to grading for positive flow.</li> <li>Began placement of protective cover in Pond 1.</li> <li>Import structural fill.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> </ul>	
<u>Summary of Dewatering:</u>	
<u>Week 1</u>	<u>Week 2</u>
05/06/19: 281,988 gal.	05/13/19: 399,021 gal.
05/07/19: 387,165 gal.	05/14/19: 484,537 gal.
05/08/19: 405,104 gal.	05/15/19: 486,473 gal.
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05/10/19: 410,498 gal.	05/17/19: 484,331 gal.
05/11/19: 64,691 gal.	05/18/19: 249,566 gal.
<u>Week 3</u>	<u>Week 4</u>
05/20/19: 328,687 gal.	05/27/19: Holiday
05/21/19: 402,720 gal.	05/28/19: 386,176 gal.
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05/24/19: 484,613 gal.	05/31/19: 161,965 gal.
05/25/19: None	06/01/19: None
<u>Week 5</u>	<u>Week 6</u>
06/03/19: 185,365 gal.	06/10/19: 175,022 gal.
06/04/19: 409,662 gal.	06/11/19: 184,365 gal.
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06/22/2019: 102,207 gal.	06/29/2019: 135,907 gal.





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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Placing lift of structural fill in Pond 2, looking south.



Placing bridging layer in Pond 2, looking north.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Removal of CCR from area west of chemical ponds, looking south.



Performing standard test on density gauge prior to testing, looking northwest.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Placement of protective cover in Pond 1, looking southwest.



Protective cover being placed atop geosynthetics in Pond 1, looking west.















# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/3/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Sunny	<b>Temperature:</b> 67
<b>Weather (PM):</b> Mostly Cloudy	<b>Temperature:</b> 82
<b>Precipitation:</b> None	<b>Wind:</b> SW, 5-12 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

<b>SUMMARY OF CONSTRUCTION</b>																																																								
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<b>Ryan Central</b> -1 Foreman, 3 Operators, 2 Laborers																																																								
<ul style="list-style-type: none"> <li>Continued bridging layer in southeast corner of Pond 2.</li> <li>Continued placement of protective cover in Pond 1.</li> <li>Began installing the above-cap drain pipe in Pond 1.</li> <li>Removed saturated CCR from southeast corner of Pond 2 and placed in thin lift for drying.</li> <li>Import protective cover.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> <li>Demobilized Volvo A45G haul truck.</li> </ul>																																																								
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Placement of protective cover over Pond 1 geosynthetics, looking west.



Ramp built using protective cover over Pond 1 geosynthetics, looking north.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Overview of structural fill placed in Pond 2, looking northwest.



Saturated CCR removed from southeast corner of Pond 2, looking southeast.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Performing standard test on density gauge prior to testing, looking northwest.



Above-cap drain pipe placed in Pond 1, looking east.



Above-cap drain pipe wye's in Pond 1.



# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/4/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Sunny	<b>Temperature:</b> 66
<b>Weather (PM):</b> Mostly Cloudy	<b>Temperature:</b> 73
<b>Precipitation:</b> None	<b>Wind:</b> NW, 3-9 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X112OD; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

<b>SUMMARY OF CONSTRUCTION</b>	
<b>Work performed while Golder was onsite:</b>	
<b>Ryan Central</b> -1 Foreman, 4 Operators, 2 Laborers	
<ul style="list-style-type: none"> <li>Continued placement of protective cover in Pond 1.</li> <li>Continued installing the above-cap drain pipe in Pond 1.</li> <li>Began finish grading of liner sub-grade in Pond 2.</li> <li>Import protective cover.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> </ul>	
<u>Summary of Dewatering:</u>	
<u>Week 1</u>	<u>Week 2</u>
05/06/19: 281,988 gal.	05/13/19: 399,021 gal.
05/07/19: 387,165 gal.	05/14/19: 484,537 gal.
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<u>Week 3</u>	<u>Week 4</u>
05/20/19: 328,687 gal.	05/27/19: Holiday
05/21/19: 402,720 gal.	05/28/19: 386,176 gal.
05/22/19: 487,716 gal.	05/29/19: 468,094 gal.
05/23/19: 408,516 gal.	05/30/19: 357,569 gal.
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05/25/19: None	06/01/19: None
<u>Week 5</u>	<u>Week 6</u>
06/03/19: 185,365 gal.	06/10/19: 175,022 gal.
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Finish grading of Pond 2's liner sub-grade, looking south.



2<sup>nd</sup> ramp built using protective cover over Pond 1 geosynthetics, looking west.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Installation of the above-cap drain pipe in Pond 1, looking north.



Overview of Pond 1 with above-cap drain pipe, looking north.



# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/5/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Cloudy	<b>Temperature:</b> 60
<b>Weather (PM):</b> Partly Cloudy	<b>Temperature:</b> 72
<b>Precipitation:</b> None	<b>Wind:</b> E, 1-7 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

## **SUMMARY OF CONSTRUCTION**

**Work performed while Golder was onsite:**

**Ryan Central** -1 Foreman, 4 Operators, 2 Laborers

- Continued placement of protective cover in Pond 1.
- Continued installing the above-cap drain pipe in Pond 1.
- Continued finish grading of liner sub-grade in Pond 2.
- Placed 10oz. textile under Pond 1 non-perforated above-cap drain pipe
- Pumped standing water from southeast corner of Pond 2 into baker tank.
- Import protective cover and 6AA.
- Water truck used for dust control and to maintain fill moisture.

Summary of Dewatering:

<u>Week 1</u>	<u>Week 2</u>	<u>Week 3</u>	<u>Week 4</u>
05/06/19: 281,988 gal.	05/13/19: 399,021 gal.	05/20/19: 328,687 gal.	05/27/19: Holiday
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**DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure**

<u>Week 9</u>	<u>Week 10</u>	<u>Week 11</u>	<u>Week 12</u>
07/01/19: 175,586 gal.	07/08/19: 107,894 gal.	07/15/19: None	07/22/19: 15,890 gal.
07/02/19: 129,459 gal.	07/09/19: 44,007 gal.	07/16/19: 17,852 gal.	07/23/19: 15,310 gal.
07/03/19: 13,878 gal.	07/10/19: 25,922 gal.	07/17/19: 20,293 gal.	07/24/19: 23,572 gal.
07/04/19: None	07/11/19: 27,943 gal.	07/18/19: None	07/25/19: None
07/05/19: 137,112 gal.	07/12/19: 18,335 gal.	07/19/19: 20,316 gal.	07/26/19: None
07/06/19: 95,100 gal.	07/13/19: None	07/20/19: None	07/27/19: None
<u>Week 13</u>	<u>Week 14</u>		
07/29/19: None	08/16/19: 49,780 gal.		
07/30/19: 23,124 gal.	08/22/19: 94,717 gal.		
	<b>Total: 14,006,131 gal.</b>		

**GAI CQA ACTIVITIES AND TEST RESULTS**

**Construction:**

- Golder onsite documenting the construction progress.
- Golder monitored placement of protective cover for haul road atop liner of Pond 1 working west to east. Protective cover was placed to a minimum thickness of 4 foot above liner to allow import trucks to drive over liner.
- Golder observed installation of the above-cap drain pipe using 4 inch non-perforated and perforated with sock ADS pipe.
- Golder observed finish grading of Pond 2's liner sub-grade working from west to east.
- Golder observed placement of 10oz. geotextile under northern run of solid ADS above-cap drain pipe in Pond 1.
- Golder observed pumping of standing water from the southeast corner of Pond 2 into baker tank using 3 inch pump.
- Golder collected protective cover sample PC-2 for gradation testing in accordance of specifications requiring a minimum of 1 sample per 3000cy placed.
- Golder collected sample of 6AA for conformance to MDOT 902.01.11.

**SUMMARY OF SURVEYOR'S ACTIVITIES**

None

**SUMMARY OF PROBLEMS AND RESOLUTIONS**

None

**SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)**

None

**SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES**

None



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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**SUBMITTED BY GOLDER:**

**CQA Field Manager:** David Hutchinson

**Signature:**



### PHOTOGRAPHS



Protective cover import to Pond 1, looking northwest.

**DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure**



Pumping water from the southeast corner of Pond 2, looking northeast.



Non-perforated ADS pipe connection on above-cap drain pipe in Pond 1.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Overview of Pond 2, looking southwest



Overview of Pond 2's southeast corner, looking southeast.

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/6/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/2000
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Partly Cloudy	<b>Temperature:</b> 55
<b>Weather (PM):</b> Mostly Cloudy	<b>Temperature:</b> 74
<b>Precipitation:</b> None	<b>Wind:</b> SE, 1-6 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

<b>SUMMARY OF CONSTRUCTION</b>																																																								
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<b>Ryan Central</b> -1 Foreman, 2 Operators, 2 Laborers																																																								
<ul style="list-style-type: none"> <li>Continued placement of protective cover in Pond 1.</li> <li>Removing perimeter fence south and west of chemical ponds.</li> <li>Import protective cover.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> </ul>																																																								
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Placement of protective cover for construction of 4 foot haul road in Pond 1, looking west.



End caps on socked ADS perforated pipe, looking north.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Import of protective cover to Pond 1, looking southwest.



Overview of Pond 2's southeast corner, looking north.

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/7/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1600
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Cloudy	<b>Temperature:</b> 61
<b>Weather (PM):</b> Partly Sunny	<b>Temperature:</b> 70
<b>Precipitation:</b> None	<b>Wind:</b> N, 0-6 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

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<ul style="list-style-type: none"> <li>Continued placement of protective cover in Pond 1.</li> <li>Removing saturated CCR from southeast area of Pond 2 and spreading into thin lift to dry.</li> <li>Completed removal of fence south of chemical ponds.</li> <li>Pumped water from southeast corner of Pond 2.</li> <li>Import protective cover.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> </ul>																																																								
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Water truck for dust control and maintain fill moisture, looking west.



Removing saturated CCR from southeast corner of Pond 2, looking south.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Pumping standing water from southeast corner of Pond 2 into baker tank, looking west.



Placement of protective cover over geosynthetics in Pond 1, looking northwest.

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/9/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1930
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Cloudy	<b>Temperature:</b> 60
<b>Weather (PM):</b> Mostly Sunny	<b>Temperature:</b> 72
<b>Precipitation:</b> None	<b>Wind:</b> E, 2-7 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

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<ul style="list-style-type: none"> <li>Continued placement of protective cover in Pond 1.</li> <li>Re-Worked CCR removed previous work day to assist in drying.</li> <li>Began covering above-cap perforated drain pipe with protective cover in Pond 1.</li> <li>Pumped water from southeast corner of Pond 2.</li> <li>Import protective cover.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> </ul>																																																								
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Pumping of standing water from southeast corner of Pond 2 to baker tank, looking northeast.



Protective cover placed atop the 4 inch ADS perforated drain pipe in Pond 1, looking northeast.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Import of protective cover to Pond 1, looking north.



Placement of protective cover over geosynthetics in Pond 1, looking northwest.

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/10/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1930
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Sunny	<b>Temperature:</b> 64
<b>Weather (PM):</b> Partly Cloudy	<b>Temperature:</b> 88
<b>Precipitation:</b> None	<b>Wind:</b> S, 2-10 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

<b>SUMMARY OF CONSTRUCTION</b>	
<b>Work performed while Golder was onsite:</b>	
<p><b>Ryan Central</b> -1 Foreman, 4 Operators, 2 Laborers</p> <ul style="list-style-type: none"> <li>Continued placement of protective cover in Pond 1.</li> <li>Re-Worked CCR removed last week to assist in drying.</li> <li>Continued covering above-cap perforated drain pipe with protective cover in Pond 1.</li> <li>Continue placement of CCR for bridging layer in Pond 2.</li> <li>Excavated two soft spots in Pond 2 bridging layer.</li> <li>Performed proof roll of bridging layer in Pond 2.</li> <li>Continued placement of structural fill in Pond 2.</li> <li>Pumped water from southeast corner of Pond 2.</li> <li>Pumped remaining baker tanks to tanker for transport offsite for disposal.</li> <li>Import protective cover.</li> <li>Import structural fill.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> <li>Demobilized two of four baker tanks.</li> </ul>	
<u>Summary of Dewatering:</u>	
<u>Week 1</u>	<u>Week 2</u>
05/06/19: 281,988 gal.	05/13/19: 399,021 gal.
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<u>Week 5</u> 06/03/19: 185,365 gal. 06/04/19: 409,662 gal. 06/05/19: 345,122 gal. 06/06/19: 311,007 gal. 06/07/19: 276,790 gal. 06/08/19: 65,064 gal.	<u>Week 6</u> 06/10/19: 175,022 gal. 06/11/19: 184,365 gal. 06/12/19: 178,934 gal. 06/13/19: 147,219 gal. 06/14/19: 13,156 gal. 06/15/19: 142,063 gal.	<u>Week 7</u> 06/17/2019: 247,813 gal. 06/18/2019: 68,510 gal. 06/19/2019: 215,872 gal. 06/20/2019: 207,117 gal. 06/21/2019: 200,874 gal. 06/22/2019: 102,207 gal.	<u>Week 8</u> 06/24/2019: 218,008 gal. 06/25/2019: 208,371 gal. 06/26/2019: 181,215 gal. 06/27/2019: 216,650 gal. 06/28/2019: 208,921 gal. 06/29/2019: 135,907 gal.
<u>Week 9</u> 07/01/19: 175,586 gal. 07/02/19: 129,459 gal. 07/03/19: 13,878 gal. 07/04/19: None 07/05/19: 137,112 gal. 07/06/19: 95,100 gal.	<u>Week 10</u> 07/08/19: 107,894 gal. 07/09/19: 44,007 gal. 07/10/19: 25,922 gal. 07/11/19: 27,943 gal. 07/12/19: 18,335 gal. 07/13/19: None	<u>Week 11</u> 07/15/19: None 07/16/19: 17,852 gal. 07/17/19: 20,293 gal. 07/18/19: None 07/19/19: 20,316 gal. 07/20/19: None	<u>Week 12</u> 07/22/19: 15,890 gal. 07/23/19: 15,310 gal. 07/24/19: 23,572 gal. 07/25/19: None 07/26/19: None 07/27/19: None
<u>Week 13</u> 07/29/19: None 07/30/19: 23,124 gal.	<u>Week 14</u> 08/16/19: 49,780 gal. 08/22/19: 94,717 gal. <b>Total: 14,006,131 gal.</b>		

### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder monitored placement of protective cover for haul road atop liner of Pond 1 working west to east. Protective cover was placed to a minimum thickness of 4 foot above liner to allow import trucks to drive over liner.
- Golder observed re-working of saturated CCR removed from the southeast of Pond 2 last week to facilitate drying.
- Golder monitored covering of the 4 inch ADS perforated pipe in Pond 1 with protective cover.
- Golder observed placement of bridging layer in southeast corner of Pond 2 using CCR.
- Golder observed excavation of two soft spots in southeast corner of Pond 2.
- Golder monitored proof roll of bridging layer in southeast corner of Pond 2 using empty Volvo water truck.
- Golder monitored placement of single 12 inch loose lift of structural fill in southeast corner of Pond 2. No compaction of placed loose lift today.
- Golder observed pumping of waster from baker tanks into a tanker for transport to waste water treatment plant.
- Golder observed pumping of standing water from southeast corner of Pond 2 into baker tank using 2 inch pump.

### SUMMARY OF SURVEYOR'S ACTIVITIES

None

### SUMMARY OF PROBLEMS AND RESOLUTIONS

None

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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<b>SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)</b>
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None
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<b>SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES</b>
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None
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<b>SUBMITTED BY GOLDER:</b>
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CQA Field Manager: David Hutchinson

Signature:



### PHOTOGRAPHS



Demobilization of Baker Tank from Pond 2, looking south.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Tanker used to transport contact water from Pond 2 to treatment facility, looking east.



Soft spot excavated in Pond 2 bridging layer, looking southwest.



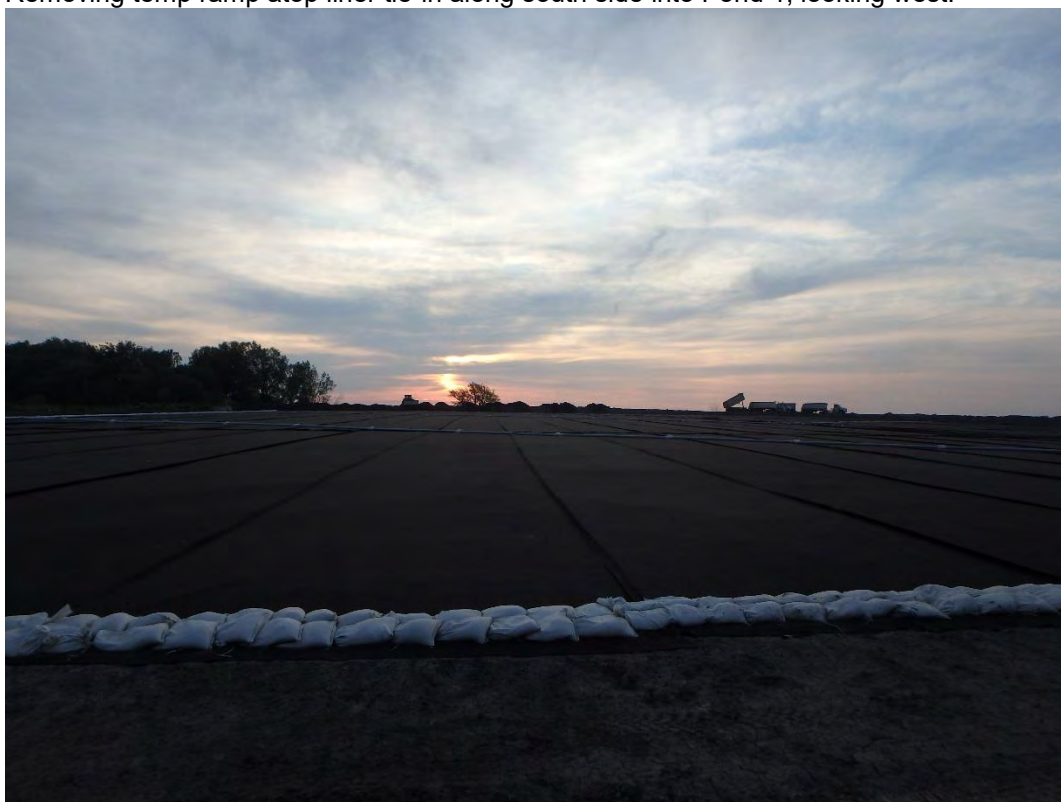
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Removing temp ramp atop liner tie-in along south side into Pond 1, looking west.



Overview of Pond 1, looking east.







# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure





# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/11/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1800
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Sunny	<b>Temperature:</b> 67
<b>Weather (PM):</b> Mostly Cloudy	<b>Temperature:</b> 86
<b>Precipitation:</b> Rain	<b>Wind:</b> S, 2-15 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Pumping baker tanks into tanker for transport to treatment facility, looking east.



Import and placement of structural fill in Pond 2, looking east.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Compaction of placed structural fill in Pond 2, looking north.



Rowe surveyor shooting sub-grade certification points in Pond 2, looking east.







# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure







## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/16/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1930
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Cloudy	<b>Temperature:</b> 68
<b>Weather (PM):</b> Partly Sunny	<b>Temperature:</b> 75
<b>Precipitation:</b> None	<b>Wind:</b> N, 0-6 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler, Cat 326F Excavator

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

06/06/19: 311,007 gal.	06/13/19: 147,219 gal.	06/20/2019: 207,117 gal.	06/27/2019: 216,650 gal.
06/07/19: 276,790 gal.	06/14/19: 13,156 gal.	06/21/2019: 200,874 gal.	06/28/2019: 208,921 gal.
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<u>Week 9</u>	<u>Week 10</u>	<u>Week 11</u>	<u>Week 12</u>
07/01/19: 175,586 gal.	07/08/19: 107,894 gal.	07/15/19: None	07/22/19: 15,890 gal.
07/02/19: 129,459 gal.	07/09/19: 44,007 gal.	07/16/19: 17,852 gal.	07/23/19: 15,310 gal.
07/03/19: 13,878 gal.	07/10/19: 25,922 gal.	07/17/19: 20,293 gal.	07/24/19: 23,572 gal.
07/04/19: None	07/11/19: 27,943 gal.	07/18/19: None	07/25/19: None
07/05/19: 137,112 gal.	07/12/19: 18,335 gal.	07/19/19: 20,316 gal.	07/26/19: None
07/06/19: 95,100 gal.	07/13/19: None	07/20/19: None	07/27/19: None
<u>Week 13</u>	<u>Week 14</u>		
07/29/19: None	08/16/19: 49,780 gal.		
07/30/19: 23,124 gal.	08/22/19: 94,717 gal.		
	<b>Total: 14,006,131 gal.</b>		

### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder observed finish grading of the geomembrane sub-grade in Pond 2.
- Golder observed removal of saturated CCR from the sump area of Pond 2, material placed in thin lift adjacent to sump for drying.
- Golder monitored placement of dry CCR material for bridging layer in the sump area of Pond 2.
- Golder monitored placement of structural fill in the Chemical Pond work area, fill placed in 12 inch loose lifts and compacted using a Cat 815 compactor.
- Golder observed pumping of waster from baker tanks into a tanker for transport to waste water treatment plant.

### SUMMARY OF SURVEYOR'S ACTIVITIES

None

### SUMMARY OF PROBLEMS AND RESOLUTIONS

None

### SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)

None

### SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES

None

### SUBMITTED BY GOLDER:

CQA Field Manager: David Hutchinson

Signature:



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Finish grading of structural fill in Pond 2, looking north.



Saturated CCR removed from the sump area of Pond 2, looking west.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Placing CCR in sump area of Pond 2 for bridging layer, looking northwest.



Structural fill being placed in the Chemical Ponds work area, looking south.

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/17/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1530
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Cloudy	<b>Temperature:</b> 64
<b>Weather (PM):</b> Mostly Sunny	<b>Temperature:</b> 78
<b>Precipitation:</b> None	<b>Wind:</b> E, 2-8 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X112OD; 1-CAT Water Truck; 1-CAT 349F Excavator; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers, 1-John Deere 9520 Tractor, 1-Cat TL1055D Tele-Handler, Cat 326F Excavator

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Finish grading of structural fill in Pond 2, looking South.



Overview of Pond 2, looking southwest.



# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/18/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1930
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Sunny	<b>Temperature:</b> 68
<b>Weather (PM):</b> Sunny	<b>Temperature:</b> 74
<b>Precipitation:</b> None	<b>Wind:</b> E, 4-10 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers; 1-John Deere 9520 Tractor; Cat 326F Excavator

<b>SUMMARY OF CONSTRUCTION</b>	
<b>Work performed while Golder was onsite:</b>	
Ryan Central -1 Foreman, 3 Operators, 1 Laborers	
<ul style="list-style-type: none"> <li>Continued finish grading of structural fill in Pond 2.</li> <li>Completed placement of imported structural fill in Chemical Ponds.</li> <li>Compacted structural fill placed in Chemical Ponds.</li> <li>Continued bridging layer in southeast corner of Pond 2.</li> <li>Proof roll of bridging layer in southeast corner of Pond 2.</li> <li>Excavated bridging layer and saturated material in area of Pond 2's southeast corner that failed proof roll to allow material to dry.</li> <li>Import structural fill.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> <li>Demobilized Cat 349F Excavator.</li> </ul>	
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder observed finish grading of the geomembrane sub-grade in Pond 2.
- Golder monitored placement of structural fill in the Chemical Pond work area, fill placed in 12 inch loose lifts and compacted using a Cat 815 compactor.
- Golder observed placement of bridging layer in southeast corner of Pond 2 using imported structural fill.
- Golder monitored proof roll of bridging layer placed in southeast corner of Pond 2 using empty water truck, proof roll failed in a 25 foot wide strip running northwest to southeast of area filled.
- Golder observed excavation of bridging layer and saturated material from the area that failed proof roll in the southeast corner of Pond 2. Saturated material spread in thin lift adjacent to excavation to dry for reuse in bridging layer.

### SUMMARY OF SURVEYOR'S ACTIVITIES

None

### SUMMARY OF PROBLEMS AND RESOLUTIONS

None

### SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)

Bi-Weekly construction meeting with CEC, Ryan and Golder.

### SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES

None



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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**SUBMITTED BY GOLDER:**

CQA Field Manager: David Hutchinson

Signature:



### PHOTOGRAPHS



Overview of Pond 2's geomembrane sub-grade ready for survey, looking west.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Finish grading of geomembrane sub-grade in Pond 2, looking west.



Placement of bridging layer in southeast corner of Pond 2, looking west.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

---



Water truck used for proof roll of bridging layer in Pond 2, looking east.



Excavating area of bridging layer in Pond 2 that failed proof roll, looking southeast.

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/19/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1530
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Mostly Sunny	<b>Temperature:</b> 64
<b>Weather (PM):</b> Mostly Sunny	<b>Temperature:</b> 73
<b>Precipitation:</b> None	<b>Wind:</b> SE, 3-12 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers; 1-John Deere 9520 Tractor; Cat 326F Excavator

<b>SUMMARY OF CONSTRUCTION</b>	
<b>Work performed while Golder was onsite:</b>	
Ryan Central -1 Foreman, 3 Operators, 1 Laborers	
<ul style="list-style-type: none"> <li>Continued finish grading of structural fill in Pond 2.</li> <li>Continued placement of structural fill outside Pond 2's south liner limits.</li> <li>Continued placement of protective cover in Pond 1.</li> <li>Import structural fill.</li> <li>Import protective cover.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> </ul>	
<u>Summary of Dewatering:</u>	
<u>Week 1</u>	<u>Week 2</u>
05/06/19: 281,988 gal.	05/13/19: 399,021 gal.
05/07/19: 387,165 gal.	05/14/19: 484,537 gal.
05/08/19: 405,104 gal.	05/15/19: 486,473 gal.
05/09/19: 404,705 gal.	05/16/19: 481,499 gal.
05/10/19: 410,498 gal.	05/17/19: 484,331 gal.
05/11/19: 64,691 gal.	05/18/19: 249,566 gal.
<u>Week 3</u>	<u>Week 4</u>
05/20/19: 328,687 gal.	05/27/19: Holiday
05/21/19: 402,720 gal.	05/28/19: 386,176 gal.
05/22/19: 487,716 gal.	05/29/19: 468,094 gal.
05/23/19: 408,516 gal.	05/30/19: 357,569 gal.
05/24/19: 484,613 gal.	05/31/19: 161,965 gal.
05/25/19: None	06/01/19: None
<u>Week 5</u>	<u>Week 6</u>
06/03/19: 185,365 gal.	06/10/19: 175,022 gal.
06/04/19: 409,662 gal.	06/11/19: 184,365 gal.
06/05/19: 345,122 gal.	06/12/19: 178,934 gal.
06/06/19: 311,007 gal.	06/13/19: 147,219 gal.
06/07/19: 276,790 gal.	06/14/19: 13,156 gal.
06/08/19: 65,064 gal.	06/15/19: 142,063 gal.
<u>Week 7</u>	<u>Week 8</u>
06/17/2019: 247,813 gal.	06/24/2019: 218,008 gal.
06/18/2019: 68,510 gal.	06/25/2019: 208,371 gal.
06/19/2019: 215,872 gal.	06/26/2019: 181,215 gal.
06/20/2019: 207,117 gal.	06/27/2019: 216,650 gal.
06/21/2019: 200,874 gal.	06/28/2019: 208,921 gal.
06/22/2019: 102,207 gal.	06/29/2019: 135,907 gal.



## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<u>Week 9</u>	<u>Week 10</u>	<u>Week 11</u>	<u>Week 12</u>
07/01/19: 175,586 gal.	07/08/19: 107,894 gal.	07/15/19: None	07/22/19: 15,890 gal.
07/02/19: 129,459 gal.	07/09/19: 44,007 gal.	07/16/19: 17,852 gal.	07/23/19: 15,310 gal.
07/03/19: 13,878 gal.	07/10/19: 25,922 gal.	07/17/19: 20,293 gal.	07/24/19: 23,572 gal.
07/04/19: None	07/11/19: 27,943 gal.	07/18/19: None	07/25/19: None
07/05/19: 137,112 gal.	07/12/19: 18,335 gal.	07/19/19: 20,316 gal.	07/26/19: None
07/06/19: 95,100 gal.	07/13/19: None	07/20/19: None	07/27/19: None
<u>Week 13</u>	<u>Week 14</u>		
07/29/19: None	08/16/19: 49,780 gal.		
07/30/19: 23,124 gal.	08/22/19: 94,717 gal.		
	<b>Total: 14,006,131 gal.</b>		

### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder observed finish grading of the geomembrane sub-grade in Pond 2.
- Golder observed placement of structural fill outside Pond 2's south liner limits and compacted with 815 compactor.
- Golder observed placement of protective cover in Pond 1 in minimum 18 inch loose lift using D6T LGP dozer.
- Golder observed Rowe surveyor shoot Pond 1 above-cap drain pipe every 100 feet and Pond 2 certification points 1064 thru 1087.

### SUMMARY OF SURVEYOR'S ACTIVITIES

Rowe onsite to shoot the above-cap drain pipe in Pond 1 and certification points in Pond 2. Rowe also shot MW-15006 top of well casing.

### SUMMARY OF PROBLEMS AND RESOLUTIONS

None

### SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)

None

### SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES

None

### SUBMITTED BY GOLDER:

CQA Field Manager: David Hutchinson

Signature:



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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### PHOTOGRAPHS



Trench excavated in southeast corner of Pond 2's bridging layer, looking southeast.



Placement of structural fill outside Pond 2 liner limits, looking southwest.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Import of structural fill to Pond 2, looking southeast.



Finish grading of liner sub-grade in Pond 2, looking east.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Water truck used for dust control and moisture conditioning of prepared sub-grade, looking north.



# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/20/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1930
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Sunny	<b>Temperature:</b> 66
<b>Weather (PM):</b> Mostly Sunny	<b>Temperature:</b> 80
<b>Precipitation:</b> None	<b>Wind:</b> S, 1-6 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers; 1-John Deere 9520 Tractor; 1-Cat 326F Excavator; 1-Cat 299D Skid Steer; 1-JLG 10054 Sky-Trak.

<b>SUMMARY OF CONSTRUCTION</b>																												
<b>Work performed while Golder was onsite:</b>																												
<b>Ryan Central</b> -1 Foreman, 3 Operators, 2 Laborers																												
<ul style="list-style-type: none"> <li>Continued finish grading of structural fill in Pond 2.</li> <li>Continued placement of protective cover in Pond 1.</li> <li>Backfilled trench in the southeast corner of Pond 2 using 1x3 inch stone, CCR and structural fill.</li> <li>Import protective cover.</li> <li>Import structural.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> <li>Mobilized one Cat 299D skid steer and one JLG 10054 Sky-Trak.</li> </ul>																												
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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<u>Week 5</u> 06/03/19: 185,365 gal. 06/04/19: 409,662 gal. 06/05/19: 345,122 gal. 06/06/19: 311,007 gal. 06/07/19: 276,790 gal. 06/08/19: 65,064 gal.	<u>Week 6</u> 06/10/19: 175,022 gal. 06/11/19: 184,365 gal. 06/12/19: 178,934 gal. 06/13/19: 147,219 gal. 06/14/19: 13,156 gal. 06/15/19: 142,063 gal.	<u>Week 7</u> 06/17/2019: 247,813 gal. 06/18/2019: 68,510 gal. 06/19/2019: 215,872 gal. 06/20/2019: 207,117 gal. 06/21/2019: 200,874 gal. 06/22/2019: 102,207 gal.	<u>Week 8</u> 06/24/2019: 218,008 gal. 06/25/2019: 208,371 gal. 06/26/2019: 181,215 gal. 06/27/2019: 216,650 gal. 06/28/2019: 208,921 gal. 06/29/2019: 135,907 gal.
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<u>Week 13</u> 07/29/19: None 07/30/19: 23,124 gal.	<u>Week 14</u> 08/16/19: 49,780 gal. 08/22/19: 94,717 gal. <b>Total: 14,006,131 gal.</b>		

### GAI CQA ACTIVITIES AND TEST RESULTS

#### Construction:

- Golder onsite documenting the construction progress.
- Golder observed finish grading of the geomembrane sub-grade in Pond 2.
- Golder observed placement of protective cover in Pond 1 in minimum 18 inch loose lift using D6T LGP dozer.
- Golder monitored backfill of the trench excavated in the bridging layer at the southeast corner of Pond 2. Ryan placed 10oz. textile across bottom of trench then placed 2 feet of 1x3 inch stone atop of the textile, second sheet of textile placed atop of the stone to encase. Ryan completed backfill of trench using CCR removed during excavation and capped with 6 inch lift of structural fill to cap. Ryan used box blade to seal area, proof roll to be done following week.
- Golder collected protective cover sample PC-5 and PC-6 for gradation testing in accordance of specifications requiring a minimum of 1 sample per 3000cy placed.

### SUMMARY OF SURVEYOR'S ACTIVITIES

None

### SUMMARY OF PROBLEMS AND RESOLUTIONS

None

### SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)

None

### SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES

None



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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**SUBMITTED BY GOLDER:**

**CQA Field Manager:** David Hutchinson

**Signature:**



### PHOTOGRAPHS



Protective cover import to Pond 1, looking north.

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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Placement of protective cover in Pond 1, looking northwest.



Placing 1x3 inch stone in trench excavated in southeast corner of Pond 2's bridging layer, looking north.



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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

---



Backfilling trench in southeast corner of Pond 2, looking north.



Overview of liner sub-grade in Pond 2, looking west.

## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

<b>PROJECT OVERVIEW</b>			
<b>Project Title:</b>	J.R. Whiting Ponds 1 and 2 Closure CQA	<b>Project Number:</b> 1788523	<b>Date:</b> 9/23/2019
<b>Client:</b>	Consumers Energy	<b>Site/Location:</b>	Erie, MI
<b>GAI Personnel:</b>	David Hutchinson	<b>Arrival/Departure Time:</b>	0630/1630
<b>Contractor(s):</b>	Ryan Central Inc.	<b>Contractor(s) Rep:</b>	John Johnson (Ryan Central)

<b>SITE CONDITIONS</b>	
<b>Weather (AM):</b> Partly Sunny	<b>Temperature:</b> 70
<b>Weather (PM):</b> Mostly Sunny	<b>Temperature:</b> 78
<b>Precipitation:</b> None	<b>Wind:</b> S, 3-9 mph

<b>EQUIPMENT ON SITE</b>
1-Kubota RTV X1120D; 1-CAT Water Truck; 1-CAT A200 LGP Dozer; 1-John Deere 644G Loader; 1-Cat CS56B Smooth Drum Roller; 1-Cat D6T Dozers; 1-John Deere 9520 Tractor; 1-Cat 326F Excavator; 1-Cat 299D Skid Steer; 1-JLG 10054 Sky-Trak.

<b>SUMMARY OF CONSTRUCTION</b>																																																								
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<ul style="list-style-type: none"> <li>Completed placement of structural fill in Pond 2.</li> <li>Continued placement and compaction of protective cover in Pond 1.</li> <li>Backfilled trench in the southeast corner of Pond 2 using 1x3 inch stone, CCR and structural fill.</li> <li>Removed 24 inch pipe southeast of Pond 2 running toward the southeast.</li> <li>Import structural and protective cover.</li> <li>Water truck used for dust control and to maintain fill moisture.</li> </ul>																																																								
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05/10/19: 410,498 gal.	05/17/19: 484,331 gal.	05/24/19: 484,613 gal.	05/31/19: 161,965 gal.																																																					
05/11/19: 64,691 gal.	05/18/19: 249,566 gal.	05/25/19: None	06/01/19: None																																																					
<u>Week 5</u>	<u>Week 6</u>	<u>Week 7</u>	<u>Week 8</u>																																																					
06/03/19: 185,365 gal.	06/10/19: 175,022 gal.	06/17/2019: 247,813 gal.	06/24/2019: 218,008 gal.																																																					
06/04/19: 409,662 gal.	06/11/19: 184,365 gal.	06/18/2019: 68,510 gal.	06/25/2019: 208,371 gal.																																																					
06/05/19: 345,122 gal.	06/12/19: 178,934 gal.	06/19/2019: 215,872 gal.	06/26/2019: 181,215 gal.																																																					
06/06/19: 311,007 gal.	06/13/19: 147,219 gal.	06/20/2019: 207,117 gal.	06/27/2019: 216,650 gal.																																																					
06/07/19: 276,790 gal.	06/14/19: 13,156 gal.	06/21/2019: 200,874 gal.	06/28/2019: 208,921 gal.																																																					
06/08/19: 65,064 gal.	06/15/19: 142,063 gal.	06/22/2019: 102,207 gal.	06/29/2019: 135,907 gal.																																																					



**DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure**

<u>Week 9</u>	<u>Week 10</u>	<u>Week 11</u>	<u>Week 12</u>
07/01/19: 175,586 gal.	07/08/19: 107,894 gal.	07/15/19: None	07/22/19: 15,890 gal.
07/02/19: 129,459 gal.	07/09/19: 44,007 gal.	07/16/19: 17,852 gal.	07/23/19: 15,310 gal.
07/03/19: 13,878 gal.	07/10/19: 25,922 gal.	07/17/19: 20,293 gal.	07/24/19: 23,572 gal.
07/04/19: None	07/11/19: 27,943 gal.	07/18/19: None	07/25/19: None
07/05/19: 137,112 gal.	07/12/19: 18,335 gal.	07/19/19: 20,316 gal.	07/26/19: None
07/06/19: 95,100 gal.	07/13/19: None	07/20/19: None	07/27/19: None
<u>Week 13</u>	<u>Week 14</u>		
07/29/19: None	08/16/19: 49,780 gal.		
07/30/19: 23,124 gal.	08/22/19: 94,717 gal.		
	<b>Total: 14,006,131 gal.</b>		

**GAI CQA ACTIVITIES AND TEST RESULTS**

**Construction:**

- Golder onsite documenting the construction progress.
- Golder observed placement of protective cover in Pond 1 in minimum 18 inch loose lift using D6T LGP dozer.
- Golder observed placement of structural fill in southeast corner of Pond 2 in single lift and compacted using Cat 815.
- Golder performed Standard test on Troxler 3440 prior to density testing.
- Performed density test's SFDT-97 on 9-inch compacted structural fill lift 1 placed in Pond 2 using a Troxler 3440 Nuclear Gauge (see density test map). Compacted and tested structural fill met all specifications.
- Golder observed removal of a 30 foot section of 24 inch pipe found outside of Pond 2's southeast corner running from northwest to southeast. Pipe removed and trench backfilled with material removed during excavation, no further pipe sections found at either end of removed section.
- Golder observed survey of certification points in Pond 2 and structural fill in Chemical Ponds.

**SUMMARY OF SURVEYOR'S ACTIVITIES**

Rowe shot remaining certification points in Pond 2 within liner limits, Rowe also shot Chemical Ponds structural fill.

**SUMMARY OF PROBLEMS AND RESOLUTIONS**

None

**SUMMARY OF MEETINGS/DISCUSSIONS HELD (ATTENDEES AND ISSUES)**

None

**SUMMARY OF INCIDENTS / ACCIDENTS / HEALTH AND SAFETY ISSUES**

None

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## DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

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**SUBMITTED BY GOLDER:**

**CQA Field Manager:** David Hutchinson

**Signature:**



### PHOTOGRAPHS



Protective cover import and placement in Pond 1, looking north.



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**DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure**

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Removal of 24 inch pipe southeast of Pond 2, looking southeast.



Proof roll of bridging layer in southeast corner of Pond 2, looking northeast.



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**DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure**

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Rip-Rap along shoreline east of Pond 2, looking south.



Overview of liner sub-grade in Pond 2, looking southeast.







DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

S.F. LIFT MAP / LIFT 1





# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

**DENSITY TEST MAP**  
**LIFT 1**



MATERIAL BALANCE TABLE  
VOLUME (CUBIC YARDS)  
NOTES

= PREVIOUSLY TESTED

# DAILY FIELD FORM – J.R. Whiting Ponds 1 and 2 Closure

