

Permit Fact Sheet

General Information

Permit Number	WI-0050679-08-0
Permittee Name and Address	CONAGRA FOODS PACKAGED FOODS LLC W8880 County Highway X Darien, WI 53114
Permitted Facility Name and Address	CONAGRA FOODS PACKAGED FOODS LLC W8880 County Highway X Darien, WI 53114
Permit Term	April 01, 2025 to March 31, 2030
Discharge Location	Sprayfields south of Interstate 43 and north of County Highway X
Receiving Water	Groundwaters of the Turtle Creek (LR01) Watershed
Stream Flow (Q _{7,10})	N/A
Stream Classification	N/A
Discharge Type	Existing Seasonal Spray Irrigation Discharge

Facility Description

Conagra Foods Packaged Foods operates a food processing facility located in Darien, Wisconsin. The facility operates on a year-round basis, processing fresh vegetables including carrots, beans, sweet potatoes, and packaged meals. Process wastewater at the facility is generated throughout the processing of fresh vegetables, preparation/packaging of intermediate and finished goods, and utilities/sanitation activities. Process wastewater is discharged to wastewater pretreatment units consisting of screening, flow equalization, chemical addition, and dissolved air flotation to reduce organics, solids and oil and grease, prior to discharging to either the North Lagoon (35 MG) or the West Lagoon (27 MG). Vegetable by-product solids that have been removed via an internally fed rotary drum screen and dewatering screw are discharged into semi-tractor trailers for offsite disposal as animal feed. During a typical year, by-product solids are used as animal feed, not land applied. From the storage lagoons, process wastewater is discharged to any of the four spray irrigation fields: Outfall 006 (103-acres), Outfall 007 (31-acres), Outfall 008 (27-acres) and Outfall 009 (19-acres). Each spray irrigation field is surrounded by an individual groundwater monitoring system.

Substantial Compliance Determination

After a desktop review of all discharge monitoring reports, groundwater monitoring reports, land application reports, compliance schedule items, and a site visit on May 16, 2024, this facility has been found to be in substantial compliance with their current permit.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
006	125.3 MG in 2024	OUTFALL: Discharge to the 103-acre center pivot spray irrigation site located at SW 1/4, Sec. 28, T2N, R15E. Continuous flow attained via in-line magnetic flow meter located at the wet well discharge piping to pivot.
007	27.5 MG in 2024	OUTFALL: Discharge to the 31-acre half pivot spray irrigation site located at NW 1/4, NW 1/4, Sec. 33, T2N, R15E. Continuous flow attained via in-line magnetic flow meter located at the wet well discharge piping to pivot.
008	5.4 MG in 2024	OUTFALL: Discharge to the 27-acre half pivot spray irrigation site located primarily in the NE 1/4, SW 1/4, Sec. 32, T2N, R15E. Continuous flow attained via in-line magnetic flow meter located at the wet well discharge piping to pivot.
009	0.8 MG in 2024	OUTFALL: Discharge to the 19-acre center pivot spray irrigation site located at SW 1/4, Sec. 32, T2N, R15E. Continuous flow attained via in-line magnetic flow meter located at the wet well discharge piping to pivot.
010	Not used in 2024	OUTFALL: Vegetable by-product solids landspread on Department approved sites. Representative samples shall be collected at the vehicle used to transport the waste to the approved landspreading site.
013	Not used in 2024	OUTFALL: Sludge from the North Lagoon or West Lagoon. Representative composite samples shall be collected in multiple locations over the entire lagoon sludge layer. Monitoring is only required in years when sludge is removed from the lagoons and landspread. The permittee shall notify the Department prior to initiating a lagoon desludge project.
014	Not used in 2024	OUTFALL: Wastewater stored in the North Lagoon and West Lagoon. Representative samples shall be collected at the tanker vehicle used to transport the waste to the Department approved landspreading site. The permittee shall notify the Department prior to landspreading of wastewater.
015	Not used in 2024	OUTFALL: Dissolved air floatation (DAF) sludge landspread on Department approved sites. Representative samples shall be collected at the loading inlet of the vehicle used to haul sludge to Department approved landspreading sites.
101	Discharge monitored at Outfalls	INPLANT: Process wastewater, stormwater, boiler blowdown,

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
	006 and 007.	cooling tower blowdown, and reverse osmosis reject water. Representative samples shall be collected at the North Lagoon wet well prior to discharge to Outfall 006 or Outfall 007 sprayfields. Samples taken via a 24-hr flow proportional composite sampler.
102	Discharge monitored at Outfalls 008 and 009.	INPLANT: Process wastewater, stormwater, boiler blowdown, cooling tower blowdown, and reverse osmosis reject water. Representative samples shall be collected at the West Lagoon wet well prior to discharge to Outfall 008 or Outfall 009 sprayfields. Samples taken via a 24-hr flow proportional composite sampler.

Permit Requirements

Sample Point Designation For Groundwater Monitoring Systems			
System	Sample Pt Number	Well Name	Comments
Outfall 006, Outfall 007, and North Lagoon	806	B-21 (806)	Downgradient Point of Standards
	817	B-30 (817)	Background Non-Point of Standards
	820	B-31R (820)	Downgradient Point of Standards
	821	B-33 (821)	Downgradient Point of Standards
	823	MW-33P (823)	Downgradient Point of Standards
	824	B-32R (824)	Downgradient Non-Point of Standards
Outfall 008	831	MW-201 (831)	Downgradient Point of Standards
	832	MW-202 (832)	Downgradient Non-Point of Standards
	833	MW-203 (833)	Background Non-Point of Standards
Outfall 009	834	MW-206 (834)	Background Non-Point of Standards
	835	MW-204 (835)	Downgradient Point of Standards
	836	MW-205 (836)	Downgradient Non-Point of Standards
West Lagoon	809	WD-1 (809)	Background Non-Point of Standards
	810	WD-3 (810)	Downgradient Non-Point of Standards
	811	WD-3P (811)	Downgradient Non-Point of Standards
	812	WD-4 (812)	Downgradient Point of Standards
	813	WD-5 (813)	Downgradient Point of Standards

Sample Point Designation For Groundwater Monitoring Systems			
System	Sample Pt Number	Well Name	Comments
	814	WD-6 (814)	Downgradient Point of Standards
	815	WD-6P (815)	Downgradient Point of Standards
	816	WD-8 (816)	Downgradient Point of Standards

1 Inplant - Monitoring

1.1 Sample Point Number: 101- NORTH LAGOON TO 006 & 007 SI and 102- WEST LAGOON TO 008 & 009 SI

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
BOD5, Total		mg/L	1/ 2 Weeks	24-Hr Flow Prop Comp	
Chloride		mg/L	1/ 2 Weeks	24-Hr Flow Prop Comp	
Nitrogen, Total Kjeldahl		mg/L	1/ 2 Weeks	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	1/ 2 Weeks	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	1/ 2 Weeks	Calculated	
Phosphorus, Total		mg/L	1/ 2 Weeks	24-Hr Flow Prop Comp	

1.1.1 Changes from Previous Permit:

Total Phosphorus: Monitoring has been included.

1.1.2 Explanation of Limits and Monitoring Requirements

Monitoring of Total Phosphorus was added to the permit to determine the concentration of phosphorus discharged to the land treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

2 Land Treatment – Monitoring and Limitations

2.1 Sample Point Number: 006- 103-ACRE SITE; 007- 31-ACRE SITE; 008- 27-ACRE SITE, and 009- 19-ACRE SITE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Total Daily	
Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly	Calculated	Effective December through March
Hydraulic Application Rate	Monthly Avg	9,000 gal/ac/day	Monthly	Calculated	Effective April through November
Nitrogen, Max Applied On Any Zone	Annual Total	300 lbs/ac/yr	Annual	Calculated	

2.1.1 Changes from Previous Permit:

The Nitrogen Max Applied on any Zone: limit was reduced from 600 lbs/ac/yr for Outfalls 006 and 007 to 300 lbs/ac/yr.

The Nitrogen Max Applied on any Zone: limit was reduced from 400 lbs/ac/yr for Outfalls 008 and 009 to 300 lbs/ac/yr.

2.1.2 Explanation of Limits and Monitoring Requirements

The Nitrogen Max Applied on any Zone limits were reduced to 300 lbs/ac/yr to be more consistent with the cover crop needs, permittee needs and recent department guidance document “Establishing Nitrogen Limitations in WPDES Permits at Industrial Land Treatment Facilities” 3400-2024-05. See Groundwater Evaluation dated January 27, 2025 for additional information.

3 Groundwater – Monitoring and Limitations

3.1 Groundwater Monitoring System for Outfall 006, Outfall 007, and North Lagoon

Location of Monitoring system: Surrounding Outfall 006, Outfall 007 and North Lagoon

Groundwater Monitoring Well(s) to be Sampled: B-21 (806), B-32R (824), B-30 (817), MW-33P (823), B-33 (821), B-31R (820)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: B-30 (817)

Groundwater Monitoring Well(s) Used for Point of Standards Application: B-31R (820), B-33 (821), MW-33P (823), B-21 (806)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	9.1	10	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly

pH Field	su	8.3	N/A	Quarterly
Dissolved Oxygen	mg/L	N/A	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	5.8	N/A	Quarterly
Solids, Total Dissolved	mg/L	740	N/A	Quarterly
COD, Filtered	mg/L	35	N/A	Quarterly
Iron Dissolved	ug/L	150	300	Quarterly
Manganese Dissolved	ug/L	60	300	Quarterly

3.1.1 Changes from Previous Permit:

Dissolved Oxygen: Monitoring has been included.

3.1.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen was added to the monitoring requirements to aid in assessment of redox conditions. See Groundwater Evaluation dated January 27, 2025 for additional information.

3.2 Groundwater Monitoring System for West Lagoon

Location of Monitoring system: Surrounding the West Lagoon

Groundwater Monitoring Well(s) to be Sampled: WD-1 (809), WD-3 (810), WD-3P (811), WD-4 (812), WD-5 (813), WD-6 (814), WD-6P (815), WD-8 (816)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: WD-1 (809)

Groundwater Monitoring Well(s) Used for Point of Standards Application: WD-8 (816), WD-6P (815), WD-6 (814), WD-5 (813), WD-4 (812)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10.3	10.3	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
pH Field	su	8.3	N/A	Quarterly
Dissolved Oxygen	mg/L	N/A	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	N/A	N/A	Quarterly

Solids, Total Dissolved	mg/L	1,220	N/A	Quarterly
COD, Filtered	mg/L	30	N/A	Quarterly
Iron Dissolved	ug/L	150	300	Quarterly
Manganese Dissolved	ug/L	60	300	Quarterly
Phosphorus, Total Dissolved	mg/L	N/A	N/A	Quarterly

3.2.1 Changes from Previous Permit:

Dissolved Oxygen and Dissolved Phosphorus: Monitoring has been included.

3.2.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen and Dissolved Phosphorus were added to the monitoring requirements to aid in assessment of redox conditions and potential contribution of dissolved phosphorus to groundwater from the treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

3.3 Groundwater Monitoring System for Outfall 008

Location of Monitoring system: Surrounding Outfall 008

Groundwater Monitoring Well(s) to be Sampled: MW-201 (831), MW-202 (832), MW-203 (833)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-203 (833)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-201 (831)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	4.6	N/A	Quarterly
Chloride Dissolved	mg/L	405	405	Quarterly
pH Field	su	8.4	N/A	Quarterly
Dissolved Oxygen	mg/L	N/A	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	4.9	N/A	Quarterly
Solids, Total Dissolved	mg/L	1,245	N/A	Quarterly
COD, Filtered	mg/L	32	N/A	Quarterly
Iron Dissolved	ug/L	150	300	Quarterly
Manganese Dissolved	ug/L	60	300	Quarterly

Phosphorus, Total Dissolved	mg/L	N/A	N/A	Quarterly
-----------------------------	------	-----	-----	-----------

3.3.1 Changes from Previous Permit:

Dissolved Oxygen and Dissolved Phosphorus: Monitoring has been included.

3.3.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen and Dissolved Phosphorus were added to the monitoring requirements to aid in assessment of redox conditions and potential contribution of dissolved phosphorus to groundwater from the treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

3.4 Groundwater Monitoring System for West Lagoon

Location of Monitoring system: Surrounding the West Lagoon

Groundwater Monitoring Well(s) to be Sampled: WD-1 (809), WD-3 (810), WD-3P (811), WD-4 (812), WD-5 (813), WD-6 (814), WD-6P (815), WD-8 (816)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: WD-1 (809)

Groundwater Monitoring Well(s) Used for Point of Standards Application: WD-8 (816), WD-6P (815), WD-6 (814), WD-5 (813), WD-4 (812)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	10.3	10.3	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
pH Field	su	8.3	N/A	Quarterly
Dissolved Oxygen	mg/L	N/A	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	5.0	N/A	Quarterly
Solids, Total Dissolved	mg/L	1,220	N/A	Quarterly
COD, Filtered	mg/L	30	N/A	Quarterly
Iron Dissolved	ug/L	150	300	Quarterly
Manganese Dissolved	ug/L	60	300	Quarterly
Phosphorus, Total Dissolved	mg/L	N/A	N/A	Quarterly

3.4.1 Changes from Previous Permit:

Dissolved Oxygen and Dissolved Phosphorus: Monitoring has been included.

3.4.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen and Dissolved Phosphorus were added to the monitoring requirements to aid in assessment of redox conditions and potential contribution of dissolved phosphorus to groundwater from the treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

3.5 Groundwater Monitoring System for Outfall 009

Location of Monitoring system: Surrounding Outfall 009

Groundwater Monitoring Well(s) to be Sampled: MW-204 (835), MW-205 (836), MW-206 (834)

Groundwater Monitoring Well(s) Used to Evaluate Background Groundwater Quality: MW-206 (834)

Groundwater Monitoring Well(s) Used for Point of Standards Application: MW-204 (835)

Parameter	Units	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	N/A	N/A	Quarterly
Groundwater Elevation	feet MSL	N/A	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Chloride Dissolved	mg/L	160	250	Quarterly
pH Field	su	8.5	N/A	Quarterly
Dissolved Oxygen	mg/L	N/A	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	5.1	N/A	Quarterly
Solids, Total Dissolved	mg/L	695	N/A	Quarterly
COD, Filtered	mg/L	30	N/A	Quarterly
Iron Dissolved	ug/L	150	300	Quarterly
Manganese Dissolved	ug/L	60	300	Quarterly
Phosphorus, Total Dissolved	mg/L	N/A	N/A	Quarterly

3.5.1 Changes from Previous Permit:

Dissolved Oxygen and Dissolved Phosphorus: Monitoring has been included.

3.5.2 Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case-by-case basis.

Monitoring of Dissolved Oxygen and Dissolved Phosphorus were added to the monitoring requirements to aid in assessment of redox conditions and potential contribution of dissolved phosphorus to groundwater from the treatment system. See Groundwater Evaluation dated January 27, 2025 for additional information.

4 Land Application - Sludge/By-Product Solids (industrial only)

4.1 Sample Point Number: 010- Vegetable by-product solids

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Volume		tons/yr	Annual	Total Annual	
Solids, Total		Percent	Monthly	3-Grab Comp	
Chloride		Percent	Monthly	3-Grab Comp	
Nitrogen, Total Kjeldahl		Percent	Monthly	3-Grab Comp	
Phosphorus, Total		Percent	Monthly	3-Grab Comp	
Phosphorus, Water Extractable		% of Tot P	Monthly	3-Grab Comp	
Potassium, Total Recoverable		Percent	Monthly	3-Grab Comp	

4.1.1 Changes from Previous Permit:

Total Phosphorus, Water Extractable Phosphorus, and Total Recoverable Potassium: Monitoring has been included.

4.1.2 Explanation of Limits and Monitoring Requirements

Total Phosphorus, Water Extractable Phosphorus, and Total Recoverable Potassium were added to the monitoring requirements due their impact on nutrient uptake and availability.

4.2 Sample Point Number: 013- Lagoon Sludge

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Once	3-Grab	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
				Comp	
Chloride		Percent	Once	3-Grab Comp	
Nitrogen, Total Kjeldahl		Percent	Once	3-Grab Comp	
Nitrogen, Ammonium (NH4-N) Total		Percent	Once	3-Grab Comp	
Phosphorus, Total		Percent	Once	3-Grab Comp	
Phosphorus, Water Extractable		% of Tot P	Once	3-Grab Comp	
Potassium, Total Recoverable		Percent	Once	3-Grab Comp	
pH Field		su	Once	3-Grab Comp	

4.2.1 Changes from Previous Permit:

Water Extractable Phosphorus: Monitoring has been included.

4.2.2 Explanation of Limits and Monitoring Requirements

Water Extractable Phosphorus was added to the monitoring requirements to provide information on the difference in total phosphorus compared to the amount that is water extractable.

4.3 Sample Point Number: 014- Wastewater

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Volume		gal/yr	Annual	Total Annual	
Nitrogen, Total Kjeldahl		mg/L	1/ 2 Weeks	Grab	
Chloride		mg/L	1/ 2 Weeks	Grab	
Phosphorus, Total		mg/L	1/ 2 Weeks	Grab	
Phosphorus, Water Extractable		% of Tot P	1/ 2 Weeks	Grab	
Potassium, Total		Percent	1/ 2 Weeks	Grab	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Recoverable					
BOD5, Total		mg/L	1/ 2 Weeks	Grab	

4.3.1 Changes from Previous Permit:

Total Phosphorus, Water Extractable Phosphorus, Total Recoverable Potassium and BOD5: Monitoring has been included.

Monitoring Frequency: Updated from 1/ 6 Months to 1/ 2 Weeks.

4.3.2 Explanation of Limits and Monitoring Requirements

Total Phosphorus and BOD5 were added to the monitoring requirements to be consistent with the monitoring requirements for Sampling Points 101 and 102. Water Extractable Phosphorus and Total Recoverable Potassium added for consistency with land application monitoring guidance.

The monitoring frequency was updated from 1/ 6 Months to 1/ 2 Weeks to be consistent with the monitoring frequency for Sampling Points 101 and 102.

4.4 Sample Point Number: 015- DAF Sludge

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Monthly	Grab	
Chloride		Percent	Monthly	Grab	
Nitrogen, Total Kjeldahl		Percent	Monthly	Grab	
Nitrogen, Ammonium (NH4-N) Total		Percent	Monthly	Grab	
Phosphorus, Total		Percent	Monthly	Grab	
Phosphorus, Water Extractable		% of Tot P	Monthly	Grab	
Potassium, Total Recoverable		Percent	Monthly	Grab	
pH Field		su	Monthly	Grab	

4.4.1 Changes from Previous Permit:

Water Extractable Phosphorus: Monitoring has been included.

4.4.2 Explanation of Limits and Monitoring Requirements

Water Extractable Phosphorus was added to the monitoring requirements to provide information on the difference in total phosphorus compared to the amount that is water extractable.

5 Schedules

5.1 Land Treatment Management Plan

A management plan is required for the land treatment system.

Required Action	Due Date
Land Treatment Management Plan: Submit an update to the management plan to optimize the land treatment system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	04/01/2026

5.2 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	04/01/2026

5.3 Land Treatment Annual Report

Required Action	Due Date
Submit Annual Land Treatment Report #1: Submit the Annual Land Treatment Report by January 31 st for the previous calendar year.	01/31/2026
Submit Annual Land Treatment Report #2: Submit the Annual Land Treatment Report by January 31 st for the previous calendar year.	01/31/2027
Submit Annual Land Treatment Report #3: Submit the Annual Land Treatment Report by January 31 st for the previous calendar year.	01/31/2028
Submit Annual Land Treatment Report #4: Submit the Annual Land Treatment Report by January 31 st for the previous calendar year.	01/31/2029
Submit Annual Land Treatment Report #5: Submit the Annual Land Treatment Report by January 31 st for the previous calendar year.	01/31/2030

Attachments

NR 140 Groundwater Evaluation Report dated January 27, 2025.

Prepared By: Zach Watson Hydrogeologist

Date: 01/31/2025

CORRESPONDENCE/MEMORANDUM

DATE: January 27, 2025

FILE REF: FIN 5483

TO: File

FROM: Zach Watson Hydrogeologist - SCR

SUBJECT: Groundwater Evaluation for Conagra Foods Packaged Foods 0050679-07-1

General Information and Treatment System Description

Conagra Foods Packaged Foods operates a food processing facility located in Darien, Wisconsin. The facility operates on a year-round basis, processing fresh vegetables including carrots, beans, sweet potatoes, and packaged meals. Process wastewater at the facility is generated throughout the processing of fresh vegetables, preparation/packaging of intermediate and finished goods, and utilities/sanitation activities. Process wastewater is discharged to wastewater pretreatment units consisting of screening, flow equalization, chemical addition, and dissolved air flotation to reduce organics, solids and oil and grease, prior to discharging to either the North Lagoon (35 MG) or the West Lagoon (27 MG). Vegetable by-product solids that have been removed via an internally fed rotary drum screen and dewatering screw are discharged into semi-tractor trailers. The solids are temporarily stored in tractor trailers for offsite disposal as animal feed. During a typical year by-product solids are used as animal feed, not land applied. From the storage lagoons, process wastewater is discharged to any of the four spray irrigation fields: Outfall 006 (103-acres), Outfall 007 (31-acres), Outfall 008 (27-acres) and Outfall 009 (19-acres). Each spray irrigation field is surrounded by an individual groundwater monitoring system. A site map is provided in **Figure 1**.

Table 1 – Monitoring Requirements and Limitations – Sampling Point 101 (North Lagoon) and 102 (West Lagoon)

Parameter	Current and Proposed Permit WI-0050679-07-1 and WI-0050679-08		
	Limit Type	Limits and Units	Sample Frequency
BOD5, Total		mg/l	1 / 2 weeks
Chloride		mg/l	1 / 2 weeks
Total Kjeldahl Nitrogen		mg/l	1 / 2 weeks
Nitrite+nitrate Nitrogen		mg/l	1 / 2 weeks
Total Nitrogen		mg/l	1 / 2 weeks
*Total Phosphorus		mg/l	1 / 2 weeks

*Recommended changes from current permit

Table 2 – Monitoring Requirements and Limitations – Outfalls 006 (103-acre Sprayfield) and 007 (31-acre Sprayfield)

Parameter	Current and Proposed Permit WI-0050679-07-1 and WI-0050679-08		
	Limit Type	Limits and Units	Sample Frequency
Flow Rate		MGD	Daily
Hydraulic Application Rate	Monthly Avg	9,000 gal/ac/day	Monthly

Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly
Nitrogen, Max Applied on any Zone	Annual Total	*300 lbs/ac/yr	Annual

***Recommended changes from current permit**

Table 3 – Monitoring Requirements and Limitations – Outfalls 008 (27-acre Sprayfield) and 009 (19-acre Sprayfield)

Parameter	Current and Proposed Permit WI-0050679-07-1 and WI-0050679-08		
	Limit Type	Limits and Units	Sample Frequency
Flow Rate		MGD	Daily
Hydraulic Application Rate	Monthly Avg	9,000 gal/ac/day	Monthly
Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly
Nitrogen, Max Applied on any Zone	Annual Total	*300 lbs/ac/yr	Annual

***Recommended changes from current permit**

Table 4 – Groundwater Monitoring System for North Lagoon and Outfalls 006 and 007

Sample Point	Well Name	Current Permit and Proposed WI-0050679-07-1 and WI-0050679-08	
		Well Location	Well Designation
806	B-21	Downgradient	Point of Standards
817	B-30	Background	Non-Point of Standards
820	B-31R	Downgradient	Point of Standards
824	B-32R	Downgradient	Non-Point of Standards
821	B-33	Downgradient	Point of Standards
823	MW-33P	Downgradient	Point of Standards

Table 5 – Groundwater Monitoring System for West Lagoon

Sample Point	Well Name	Current Permit and Proposed WI-0050679-07-1 and WI-0050679-08	
		Well Location	Well Designation
809	WD-1	Background	Non-Point of Standards
810	WD-3	Downgradient	Non-Point of Standards
811	WD-3P	Downgradient	Non-Point of Standards
812	WD-4	Downgradient	Point of Standards
813	WD-5	Downgradient	Point of Standards
814	WD-6	Downgradient	Point of Standards
815	WD-6P	Downgradient	Point of Standards
816	WD-8	Downgradient	Point of Standards

Table 6 – Groundwater Monitoring System for Outfalls 008

Sample Point	Well Name	Current Permit and Proposed WI-0050679-07-1 and WI-0050679-08	
		Well Location	Well Designation
831	MW-201	Sidegradient	Point of Standards
832	MW-202	Downgradient	Non-Point of Standards
833	MW-203	Background	Non-Point of Standards

Table 7 – Groundwater Monitoring System for Outfalls 009

Sample Point	Well Name	Current Permit and Proposed WI-0050679-07-1 and WI-0050679-08	
		Well Location	Well Designation
834	MW-206	Background	Non-Point of Standards
835	MW-204	Downgradient	Point of Standards
836	MW-205	Sidegradient	Non-Point of Standards

Table 8 – Groundwater Standards for Outfall 006, Outfall 007, and North Lagoon

Parameter	Current Permit WI-0050679-07-1		Proposed Permit WI-0050679-08	
	PAL	ES	PAL	ES
Depth to Groundwater	N/A	N/A	N/A	N/A
Groundwater Elevation	N/A	N/A	N/A	N/A
Nitrite+nitrate	9.7 mg/l (ACL)	10 mg/l	*9.1 mg/l (ACL)	10 mg/l
Chloride	125 mg/l	250 mg/l	125 mg/l	250 mg/l
pH Field	6.2 – 8.2 su	N/A	*6.3 – 8.3 su	N/A
*Dissolved Oxygen Field	N/A	N/A	*N/A	*N/A
Ammonia	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Organic Nitrogen	2.1 mg/l	N/A	*5.8 mg/l	N/A
Total Dissolved Solids	690 mg/l	N/A	*740 mg/l	N/A
COD	28 mg/l	N/A	*35 mg/l	N/A
Dissolved Iron	150 µg/l	300 µg/l	150 µg/l	300 µg/l
Dissolved Manganese	60 µg/l	300 µg/l	60 µg/l	300 µg/l

***Recommended changes for upcoming permit**

Table 9 – Groundwater Standards for West Lagoon

Parameter	Current Permit WI-0050679-07-1		Proposed Permit WI-0050679-08	
	PAL	ES	PAL	ES
Depth to Groundwater	N/A	N/A	N/A	N/A
Groundwater Elevation	N/A	N/A	N/A	N/A
Nitrite+nitrate	11.3 mg/l (ACL)	11.3 mg/l (ACL)	*10.3 mg/l (ACL)	*10.3 mg/l (ACL)
Chloride	125 mg/l	250 mg/l	125 mg/l	250 mg/l

pH Field	6.1 – 8.1 su	N/A	*6.3 – 8.3 su	N/A
Ammonia	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
*Dissolved Oxygen Field	N/A	N/A	*N/A	*N/A
Organic Nitrogen	2.1 mg/l	N/A	*5 mg/l	N/A
Total Dissolved Solids	800 mg/l	N/A	*1,220 mg/l	N/A
COD	28 mg/l	N/A	*30 mg/l	N/A
Dissolved Iron	150 µg/l	300 µg/l	150 µg/l	300 µg/l
Dissolved Manganese	60 µg/l	300 µg/l	60 µg/l	300 µg/l
*Dissolved Phosphorus	N/A	N/A	*N/A	*N/A

***Recommended changes for upcoming permit**

Table 10 – Groundwater Standards for Outfall 008

Parameter	Current Permit WI-0050679-07-1		Proposed Permit WI-0050679-08	
	PAL	ES	PAL	ES
Depth to Groundwater	N/A	N/A	N/A	N/A
Groundwater Elevation	N/A	N/A	N/A	N/A
Nitrite+nitrate	7.5 mg/l (ACL)	10 mg/l	*4.6 mg/l (ACL)	10 mg/l
Chloride	125 mg/l	250 mg/l	*405 mg/l (ACL)	*405 mg/l (ACL)
pH Field	6.1 – 8.1 su	N/A	*6.4 – 8.4 su	N/A
*Dissolved Oxygen Field	N/A	N/A	*N/A	*N/A
Ammonia	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Organic Nitrogen	2.1 mg/l	N/A	*4.9 mg/l	N/A
Total Dissolved Solids	1,670 mg/l	N/A	*1,245 mg/l	N/A
COD	31 mg/l	N/A	*32 mg/l	N/A
Dissolved Iron	150 µg/l	300 µg/l	150 µg/l	300 µg/l
Dissolved Manganese	60 µg/l	300 µg/l	60 µg/l	300 µg/l
*Dissolved Phosphorus	N/A	N/A	*N/A	*N/A

***Recommended changes for upcoming permit**

Table 11 – Groundwater Standards for Outfall 009

Parameter	Current Permit WI-0050679-07-1		Proposed Permit WI-0050679-08	
	PAL	ES	PAL	ES
Depth to Groundwater	N/A	N/A	N/A	N/A
Groundwater Elevation	N/A	N/A	N/A	N/A
Nitrite+nitrate	2 mg/l	10 mg/l	2 mg/l	10 mg/l
Chloride	125 mg/l	250 mg/l	*160 mg/l (ACL)	250 mg/l
pH Field	N/A	N/A	*6.5 – 8.5 su	N/A
*Dissolved Oxygen Field	N/A	N/A	*N/A	*N/A
Ammonia	0.97 mg/l	9.7 mg/l	0.97 mg/l	9.7 mg/l
Organic Nitrogen	N/A	N/A	*5.1 mg/l	N/A
Total Dissolved Solids	N/A	N/A	*695 mg/l	N/A
COD	N/A	N/A	*30 mg/l	N/A

Dissolved Iron	150 µg/l	300 µg/l	150 µg/l	300 µg/l
Dissolved Manganese	60 µg/l	300 µg/l	60 µg/l	300 µg/l
*Dissolved Phosphorus	N/A	N/A	*N/A	*N/A

***Recommended changes for upcoming permit**

Geology

Bedrock underlying the land treatment systems is the Ordovician-aged Sinnipee Group Dolomite (Preliminary bedrock geologic map of Walworth County, Wisconsin). Depth to bedrock varies from less than 50 feet (towards the southwest end of the site) up to 150 feet below ground surface (towards the northeast side of the site) (Preliminary depth to bedrock Map of Walworth County, Wisconsin). The soil at Outfalls 006 and 007 is primarily Plano silt loams with a gravelly substratum. The soil at Outfalls 008 and 009 is a combination of various silt loams. These silt layers vary in thickness from approximately 2 – 10 feet below ground surface. Most if not all monitoring wells are screened below this silt in sand to gravel.

Hydrogeology

Regional groundwater flow is west northwest at the site (Water-table map of Walworth County, Wisconsin, 1973). The water table is shallow with most groundwater monitoring wells having a depth to water of less than 15 feet below top of casing with a few outliers of up to 40 feet below top of casing. Groundwater elevations throughout all of the groundwater monitoring wells generally fall between 850 – 890 feet above mean sea level. Groundwater flow at the North Lagoon and Outfalls 006 and 007 is west northwest (**Figure 2**). Groundwater flow at the West Lagoon and Outfalls 008 and 009 is north northwest (**Figure 3**).

Lagoon and Pretreatment Process Upgrades

Between 2019 – 2020, upgrades to the West Lagoon included additional groundwater gradient control trenches, a gas ventilation system, and a 60 mil geomembrane liner. In early 2020, Conagra Foods upgraded the North Lagoon by installing a 60 mil geomembrane liner, a groundwater gradient control system, a gas venting system and additional aerators to improve treatment and reduce odors. In 2023, Conagra Foods replaced their existing screening equipment with two rotary drum screens and their 40,000 gallon equalization tank with a 400,000 gallon equalization tank. The equalization tank upgrade was made to allow for more operational flexibility and to reduce to burden on the lagoons.

Land Treatment Effluent Quality and Loading Rates

The results for BOD5 were variable during the period of 2020 – 2022 and began to decrease and stabilize in 2023. The average concentration of BOD5 in 2023 – 2024 at the North and West Lagoons were 166 and 86 mg/l, respectively (**Figure 4**). Total Kjeldahl nitrogen concentrations are most often lower at the West Lagoon than the North Lagoon. Total kjeldahl nitrogen concentrations ranged up to 76 mg/l. The concentration of chloride varied significantly during the period of 2020 – 2022 (**Figure 5**). The concentration of chloride has remained mostly stable at a 50 – 80 mg/l since late 2022 (**Figure 6**).

Table 12 – Total Annual Hydraulic Loading Rates (MG/yr)

Year	Outfall 006	Outfall 007	Outfall 008	Outfall 009
2020	102.4	9.2	31.4	5.6
2021	87	14.1	14.9	7.9
2022	88.1	18.9	18.9	5.7
2023	88.8	22.3	14.3	8.2

As reported on Land Treatment Annual Reports

Table 13 – Sprayfield Annual Nitrogen Loading Rates (lbs/ac/yr)

Year	Outfall 006	Outfall 007	Outfall 008	Outfall 009
2020	330	99	265	67
2021	191.5	103.3	78.9	59.1
2022	241.5	172.3	72.3	31.1
2023	167.5	139.9	70.6	57.7

As reported on Land Treatment Annual Reports

Table 14 – Sprayfield Annual Chloride Loading Rates (lbs/ac/yr)

Year	Outfall 006	Outfall 007	Outfall 008	Outfall 009
2020	458	137	535	136
2021	613	330	400	302
2022	765	546	626	268
2023	507	423	312	254

Calculated using annual average concentration of chloride from submitted eDMRs and the hydraulic loading rates in Table 12.

Outfalls 006 and 007 and North Lagoon

Background Groundwater Quality

Background groundwater quality is defined by the results from samples collected at monitoring well B-30. The results for chloride at B-30 increased during the prior permit term from approximately 60 mg/l to 100 mg/l (**Figure 8**). The results for nitrite+nitrate have been elevated above the NR 140 PAL over the past decade. The trend over this past ten years is a general decline. The concentration of nitrite+nitrate most often fell between 3 – 5 mg/l (**Figure 9**). The results for nitrogen ammonia, organic nitrogen, chemical oxygen demand, dissolved iron and dissolved manganese are generally non-detect at B-30. The anomalous results for dissolved iron at all groundwater monitoring systems during the period of June 2021 – December 2022 are assumed to be due to incorrect sampling and analysis procedures and these results are disregarded.

Downgradient Groundwater Quality

All of the downgradient monitoring wells are water table wells except for MW-33P which is nested with B-33. The results for chloride at downgradient monitoring wells mirrored the results seen at background monitoring well B-30. The results for nitrite+nitrate are lowest at B-33 where they are most often non-detect. MW-33P has mostly seen non-detect results in the past but recent samples have shown concentrations of up to 1.5 mg/l. B-31R has similar results for nitrite+nitrate ranging from non-detect up to 6 mg/l during this permit. The results for nitrite+nitrate at B-21 and B-32R are higher ranging up to 8 mg/l with significant variability observed between sampling events. The results for ammonia are elevated at monitoring well B-33 where they have remained mostly stable during the past seven years around 2 mg/l (**Figure 10**). Ammonia is non-detect at the other downgradient monitoring wells. Dissolved manganese is reported in analysis of the samples collected at MW-33P, B-33 and B-31R. The results for dissolved manganese at B-31R have steadily declined since 2018, the results at B-33 have remained mostly stable during the past decade and the results at MW-33P are variable falling between 700 – 1,400 µg/l during the prior permit (**Figure 11**). Dissolved iron is reported in analysis of the samples collected at B-33 where concentrations are most often 4,000 – 6,000 µg/l and at MW-33P where concentrations were approximately 4,000 µg/l prior to 2021 and mostly non-detect

since (Figure 12). The results for organic nitrogen and chemical oxygen demand are generally non-detect at the downgradient monitoring wells.

Outfalls 008 and 009 and West Lagoon

Background Groundwater Quality

Background groundwater quality is defined by the results from samples collected at monitoring wells MW-203 (Outfall 008), MW-206 (Outfall 009), and WD-1 (West Lagoon). During the past five years, the results for chloride at MW-203 ranged between 120 – 370 mg/l. The results for chloride at MW-206 were between 5 – 140 mg/l and the results for chloride at WD-1 ranged between 40 – 490 mg/l. The results for nitrite+nitrate at MW-206 are most often non-detect, 0-5 – 5.6 mg/l at MW-203 and non-detect to 9.3 mg/l at WD-1. The results for nitrogen ammonia, organic nitrogen, dissolved manganese and chemical oxygen demand are generally non-detect at the background monitoring wells.

Downgradient Groundwater Quality - Outfalls 008 and 009

Nitrite+nitrate is variable and most often below 3 mg/l at the downgradient monitoring wells (Figure 14). From 2014- 2018 the concentration of nitrogen ammonia at MW-201 was approximately 3 mg/l. The concentration has shown a steady decline down to approximately 1 mg/l since 2019 (Figure 15). Nitrogen ammonia is generally non-detect at the other downgradient monitoring wells. The results for chloride at the monitoring wells downgradient of Outfalls 008 and 009 (i.e., MW-201, MW-202, MW-204, MW-205) are lower and more stable in concentration than those observed at the background groundwater monitoring wells (Figure 16). Dissolved iron has been routinely reported in analysis of samples collected at MW-201 over the past decade. The concentration of dissolved iron has generally declined over this time from approximately 8,000 µg/l to 4,000 µg/l (Figure 17). Dissolved iron is generally non-detect at the other downgradient monitoring wells. Dissolved manganese is reported in samples collected at monitoring wells MW-201 and MW-202 where concentrations averaged 650 µg/l and 340 µg/l, respectively (Figure 18). Dissolved manganese is generally non-detect at the other downgradient monitoring wells. Organic nitrogen and chemical oxygen demand are generally non-detect at the downgradient monitoring wells.

Downgradient Groundwater Quality – West Lagoon

The results for chloride at the monitoring wells downgradient of West Lagoon (i.e., WD-3, WD-3P, WD-4, WD-5, WD-6, WD-6P, and WD-8) are lower and more stable in concentration than those observed at the background groundwater monitoring wells (Figure 20). The concentration of chloride showed a consistent and sharp rise between December 2021 and August 2022 at all downgradient monitoring wells except MW-6P which wasn't sampled during this time. The results for nitrogen ammonia show a decreasing trend over the past decade at monitoring wells WD-3, WD-3P, WD-4 and WD-5 (Figure 21). Nitrogen ammonia has remained essentially non-detect at the other downgradient monitoring wells during this same time. Nitrite+nitrate is quite variable at the downgradient monitoring wells with results ranging between non-detect to 17 mg/l (WD-4). There is no clear trend or distinction to be made at the downgradient monitoring wells regarding nitrite+nitrate (Figure 22). The results for dissolved iron also show a slight decreasing trend at monitoring wells WD-3, WD-3P, WD-4, and WD-5 over the past decade (Figure 23). The rapid drop for all dissolved iron at the monitoring wells beginning in June 2021 through the end of 2022 is assumed to be anomalous and related to sample collection/analysis error. The results for dissolved manganese are mostly stable at monitoring wells WD-3, WD-3P, WD-4 and WD-6P where the results for dissolved manganese at WD-6 and WD-8 are more variable (Figure 24). Chemical oxygen demand and organic nitrogen are generally non-detect at the downgradient monitoring wells.

Treatment System Impact to Groundwater Quality

The concentration of chloride in the discharge to the spray irrigation systems increased in concentration and variability during the period of October 2020 – August 2022 but has since stabilized in the range of 60 - 100

mg/l. The chloride loading rates (**Table 14**) are elevated due to the large volume of wastewater discharged to the sprayfields. There does not appear to be a clear impact from the sprayfield discharge on groundwater chloride concentrations. If concentrations remain below 100 mg/l there should not be any exceedances of the NR 140 chloride PAL at downgradient monitoring wells that are related to the sprayfield discharge.

The nitrogen loading rates at the sprayfields have been below their annual loading limit of 400 and 600 lbs/ac/year during the entire permit term (**Table 13**). The nitrogen loading rates are low enough that the cover crops should process most of the nitrogen and prevent contribution of nitrite+nitrate and ammonia to groundwater. The elevated concentrations of nitrite+nitrate observed throughout the groundwater monitoring systems do not appear to be directly associated with sprayfield discharge or wastewater lagoons.

The elevated concentrations of ammonia, dissolved iron and dissolved manganese at monitoring well B-33, downgradient of the North Lagoon, is likely related to leakage from the North Lagoon.

The elevated ammonia concentrations seen at MW-201 are assumed to be related to the West Lagoon groundwater contamination and not from the sprayfield discharge.

West Lagoon Historical Leakage

The West Lagoon had been leaking wastewater for decades prior to repairs and upgrades made in 2019 and 2020. The 0050679-06-0 permit included a compliance schedule requesting that the permittee submit an action plan for resolving the groundwater ammonia contamination downgradient of the West Lagoon. As part of the compliance schedule, a report written by Foth Infrastructure and Environment, LLC (Foth) dated February 4, 2015 was submitted to the department and concluded that the results for ammonia at monitoring wells downgradient of the West Lagoon were due to leakage of wastewater from the West Lagoon. Per the compliance schedule, the permittee submitted an action plan for repairing the West Lagoon in a letter dated June 4, 2019 and the majority of the required repairs were made in 2019 and 2020. A compilation of these West Lagoon leakage and repair reports is included as **Appendix B**.

The results for ammonia at the West Lagoon downgradient monitoring wells indicate that significant progress has been made since the problem was identified and remediation was initiated (**Figure 21**). It is assumed that the ammonia concentration in downgradient groundwater will continue to decrease as long as the lagoon retains its integrity, and that the permittee continues to enhance their treatment processes.

Indicator Parameter PALs

Indicator Parameter PALs are developed following the procedures described in s. NR 140.20(2), Wis. Adm. Code and “Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Dischargers”. Indicator parameters do not have Enforcement Standards. The PAL for an indicator parameter is a benchmark for evaluating site specific trends. When significant increases in the trends are observed, the facility and the department’s response action under s. NR 140.24 Wis. Adm. Code should be to investigate the source of the compound. The indicator PALs for this facility were calculated using whichever of the two following methods provides a greater PAL.

- $\sum [\text{Background groundwater quality} + (\text{Standard Deviation of results} \times 3)]$
- $\sum [\text{Background groundwater quality} + \text{Minimum Increase (NR 140.20 Table 3)}]$

Indicator parameter PALs for the current permit term were calculated using monitoring data from MW-1 during the prior permit term. The indicator parameter PALs for use in the upcoming permit WI-0050679-08 are presented in **Tables 3** and were calculated using results from B-30, WD-1, MW-203 and MW-206 (January 1, 2020 – December 30, 2024).

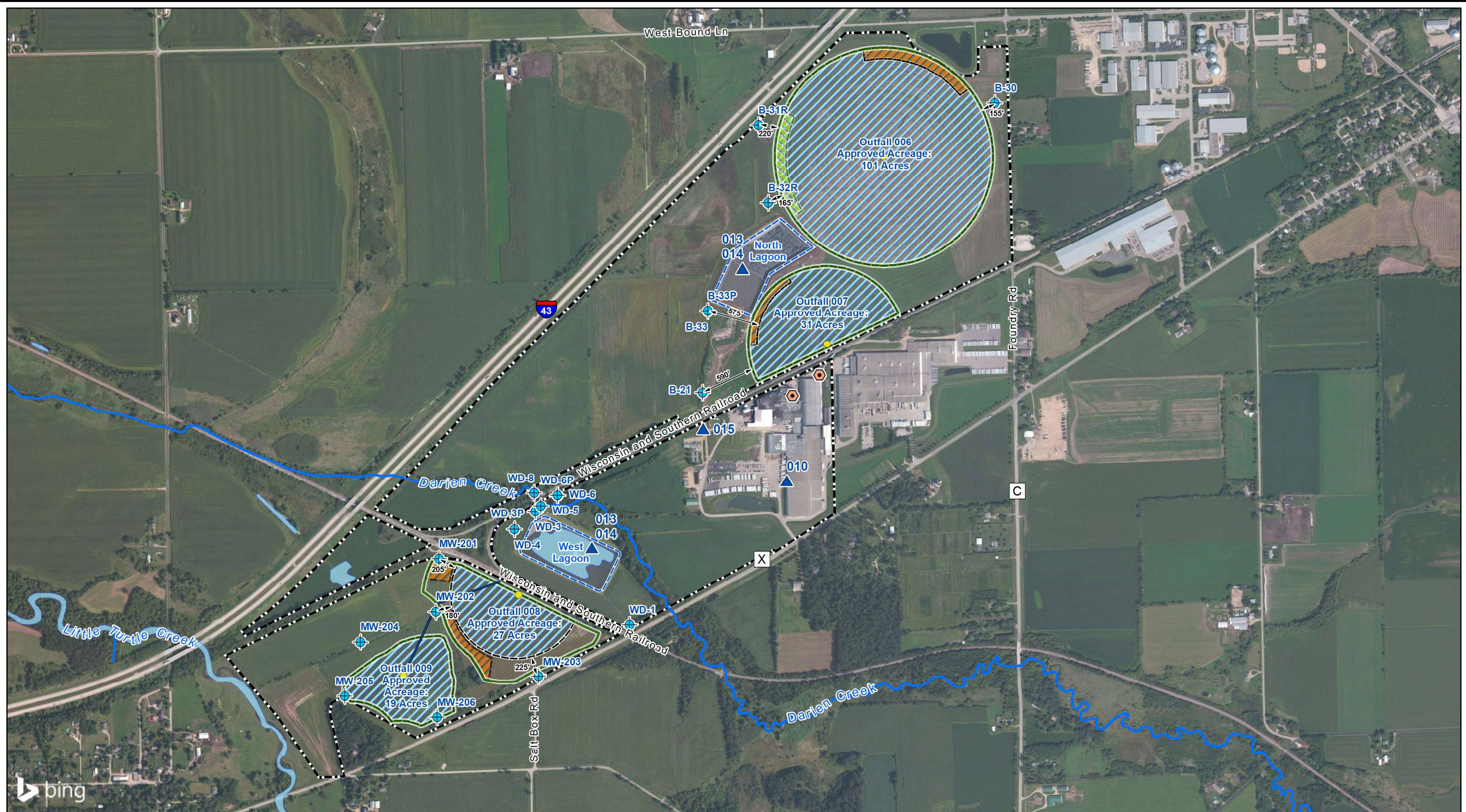
Alternative Concentration Limits

Alternative concentration Limits (ACLs) can be developed and provided for a groundwater monitoring system to replace the PAL or ES (s. NR 140.28, Wis. Adm. Code). ACLs are provided if the conditions at the background monitoring well(s) indicate that it is appropriate. The methodology and considerations for developing and providing ACLs are outlined in the guidance document “Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Dischargers (3400-2024-04)”. ACLs for use in the upcoming permit WI-0050679-08 are presented in **Tables 8, 9, 10 and 11** and were calculated using results from B-30, WD-1, MW-203 and MW-206 (January 1, 2020 – December 30, 2024). The data and calculations of ACLs is provided in **Appendix A**.

Conclusions, Recommendations and Schedule Requirements

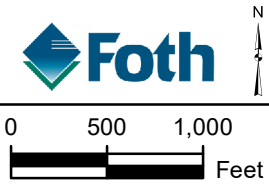
- Reduce the nitrogen loading rate for Outfall 006, Outfall 007, Outfall 008 and Outfall 009 to 300 lbs/ac/yr to be more consistent with the cover crop needs, permittee needs and recent department guidance document “Establishing Nitrogen Limitations in WPDES Permits at Industrial Land Treatment Facilities” 3400-2024-05.
- Due to the proximity of the West Lagoon, Outfall 008 and Outfall 009 to the Little Turtle Creek and Darien Creek, the discharge of wastewater may be contributing dissolved phosphorus to groundwater and subsequently surface water. Therefore, total phosphorus should be added to the monitoring requirements for Sampling Point 101 and 102 and dissolved phosphorus should be added to the groundwater monitoring requirements for the West Lagoon, Outfall 008 and Outfall 009 groundwater monitoring systems.
- Dissolved Oxygen has been added to the monitoring requirements for the groundwater monitoring systems to provide information about the redox conditions in groundwater. Dissolved oxygen should be measured in the field along with pH during sampling.
- Conagra Foods should submit an updated Land Treatment Management Plan and Landspreading Management Plan within one year of permit reissuance.

Figure 1 – Conagra Packaged Foods Darien Site Map



NOTES:
 1. Basemap from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
 2. Hydrographic data from the the WDNR 24K Hydrographic dataset.

LEGEND	
	Outfall Location
	Water Supply Well Location
	Groundwater Monitoring Well Location
	Approved Acreage
	Wetted Acreage
	Reduced Spray Area
	No Spray Area
	Center Pivot Base
	Irrigation Pipeline
	Existing Lagoon
	Birds Eye Property
	Perennial Stream
	Lake/River/Pond



CONAGRA FOODS PACKAGED FOODS, LLC	
FIGURE 1 LANDSPREADING PLAN SPRAY IRRIGATION LAYOUT DARIEN, WI	
Date: JULY 2020	Revision Date:
Drawn By: BJW1	Checked By: SAS1
Project: 20C005	

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

Figure 2 – North Lagoon and Outfalls 006 and 007 Water Table Flow Map – May 31, 2023



Water Table Flow Map (May 31, 2023) - Conagra Foods Packaged Foods North Lagoon and Outfalls 006 and 007

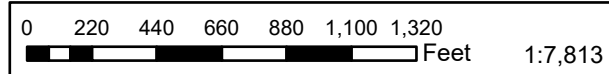
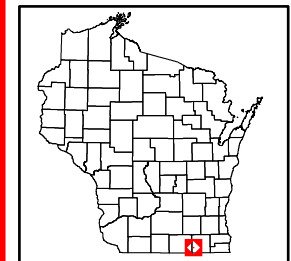


Site Location
Conagra Foods
W8880 County Highway X
Darien, WI 53114

- Legend**
- DMZ
 - Water Table Contour (5/31/2023 - 2' FAMSL)
 - Monitoring Well
 - Groundwater Flow Direction

Notes
Water table contours generated using elevation data collected on May 31, 2023. Water table elevations and contours are presented in feet above mean sea level.

Created By: watsoz
Date: 5/10/2024

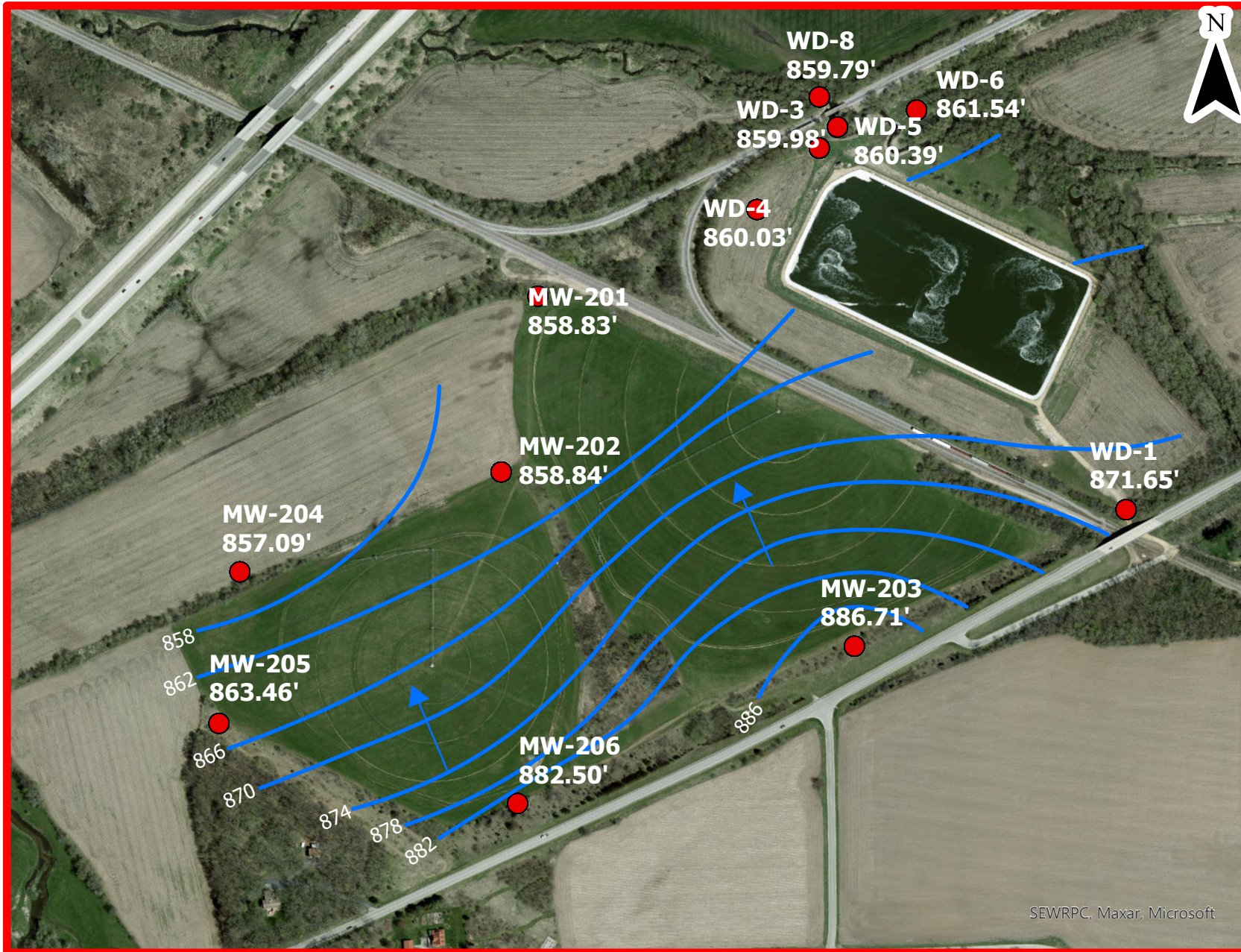


DISCLAIMER: This map is a user generated static output from the Wisconsin Department of Natural Resources. The contents herein are for reference purposes only and may or may not be accurate, current, or otherwise reliable. No liability is assumed for the data delineated herein either expressed or implied by the Wisconsin DNR or its employees. All land application must meet NR 113, NR 204, and NR 214 Wis. Adm. Code.

Figure 3 – West Lagoon and Outfalls 008 and 009 Water Table Flow Map – August 28-29, 2023



Water Table Flow Map (August 28-29, 2023) - Conagra Foods Packaged Foods West Lagoon and Outfalls 008 and 009



Site Location

Conagra Foods
W8880 County Highway X
Darien, WI 53114

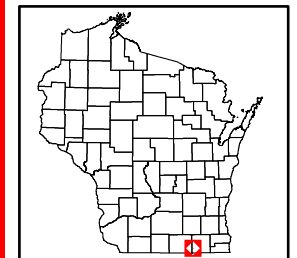
Legend

- Monitoring Well
- Water Table Contour (8/28-29/2023 - 4' FAMSL)
- ← Groundwater Flow Direction

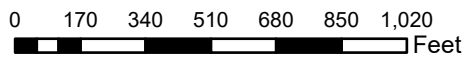
Notes

Water table contours generated using elevation data collected on August 28-29, 2023. Water table elevations and contours are presented in feet above mean sea level.

Created By: watsoz
Date: 11/11/2024



SEWRPC, Maxar, Microsoft



1:6,000

DISCLAIMER: This map is a user generated static output from the Wisconsin Department of Natural Resources. The contents herein are for reference purposes only and may or may not be accurate, current, or otherwise reliable. No liability is assumed for the data delineated herein either expressed or implied by the Wisconsin DNR or its employees. All land application must meet NR 113, NR 204, and NR 214 Wis. Adm. Code.

Figure 4 – Sprayfield BOD

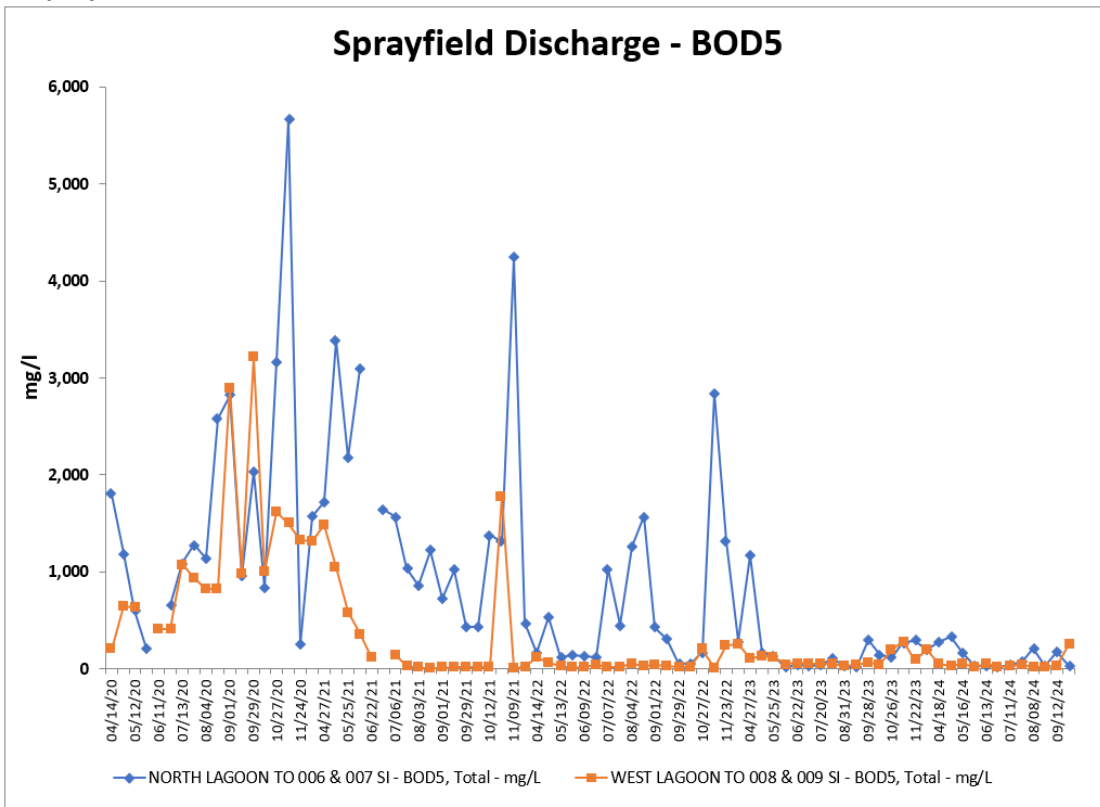


Figure 5 – Sprayfield Total Kjeldahl Nitrogen

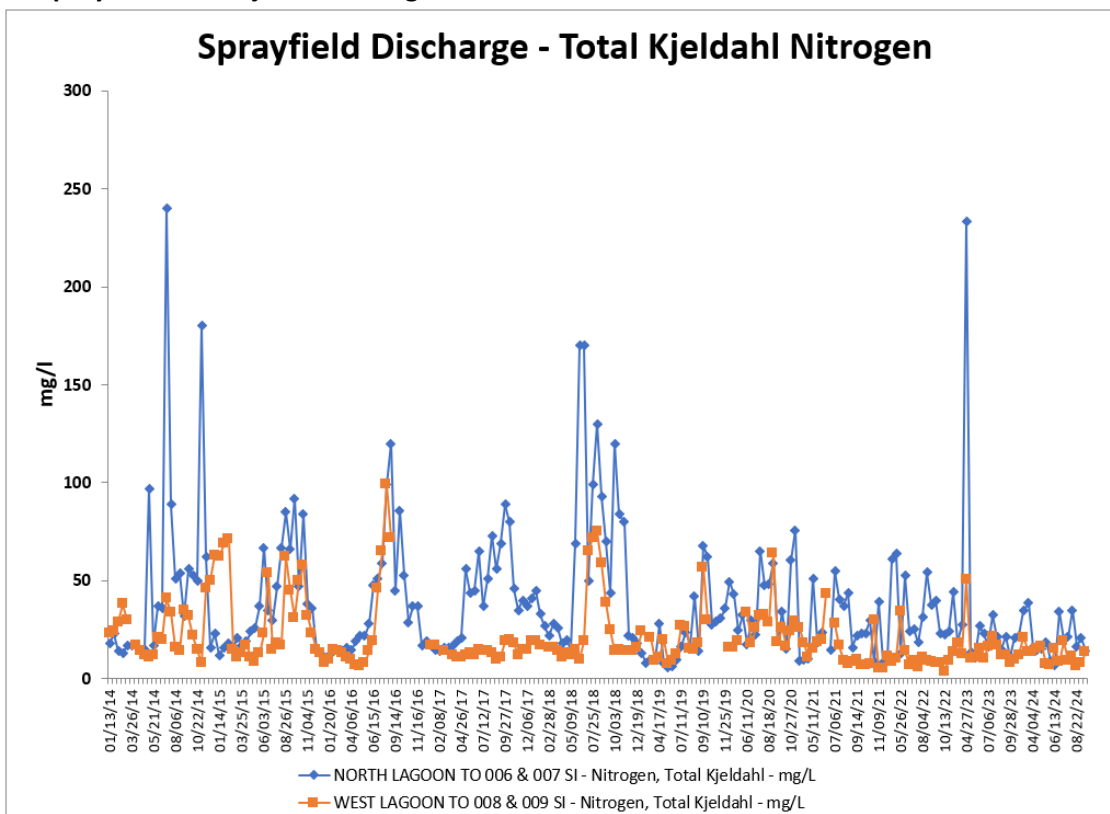


Figure 6 – Spray Irrigation Chloride

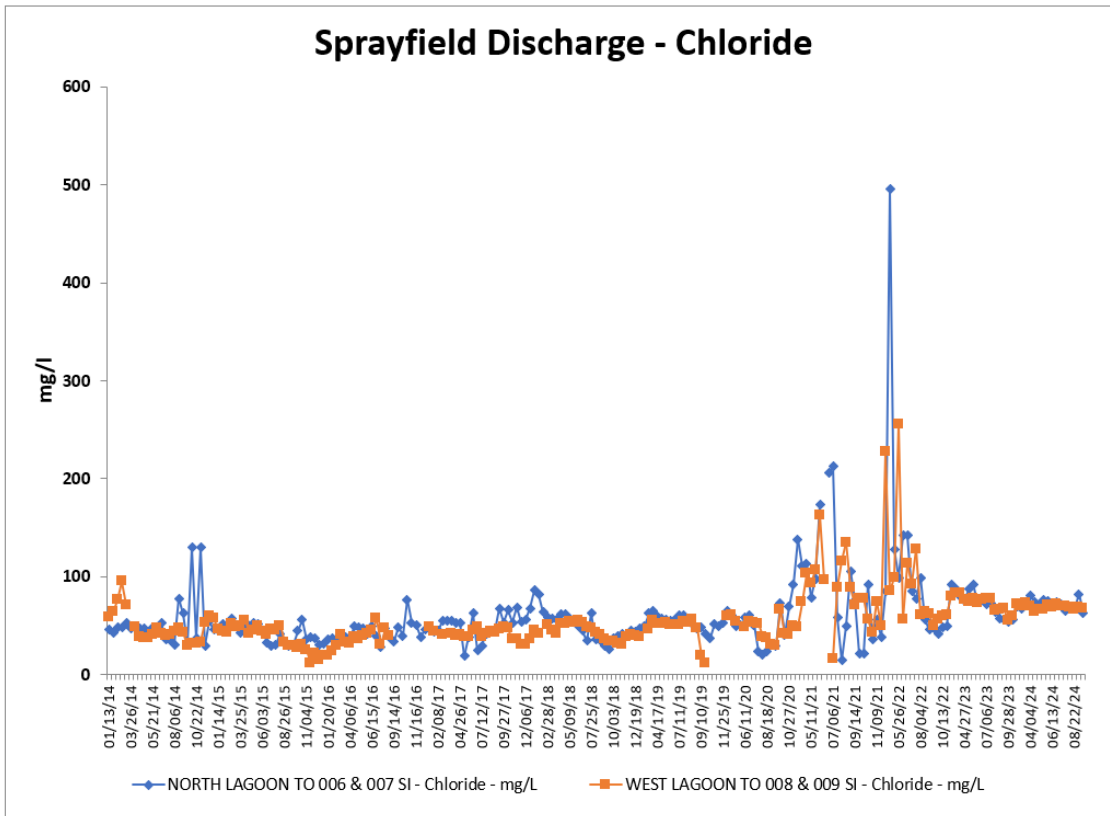


Figure 7 – Outfalls 006 and 007 Groundwater Monitoring System - Groundwater Elevation

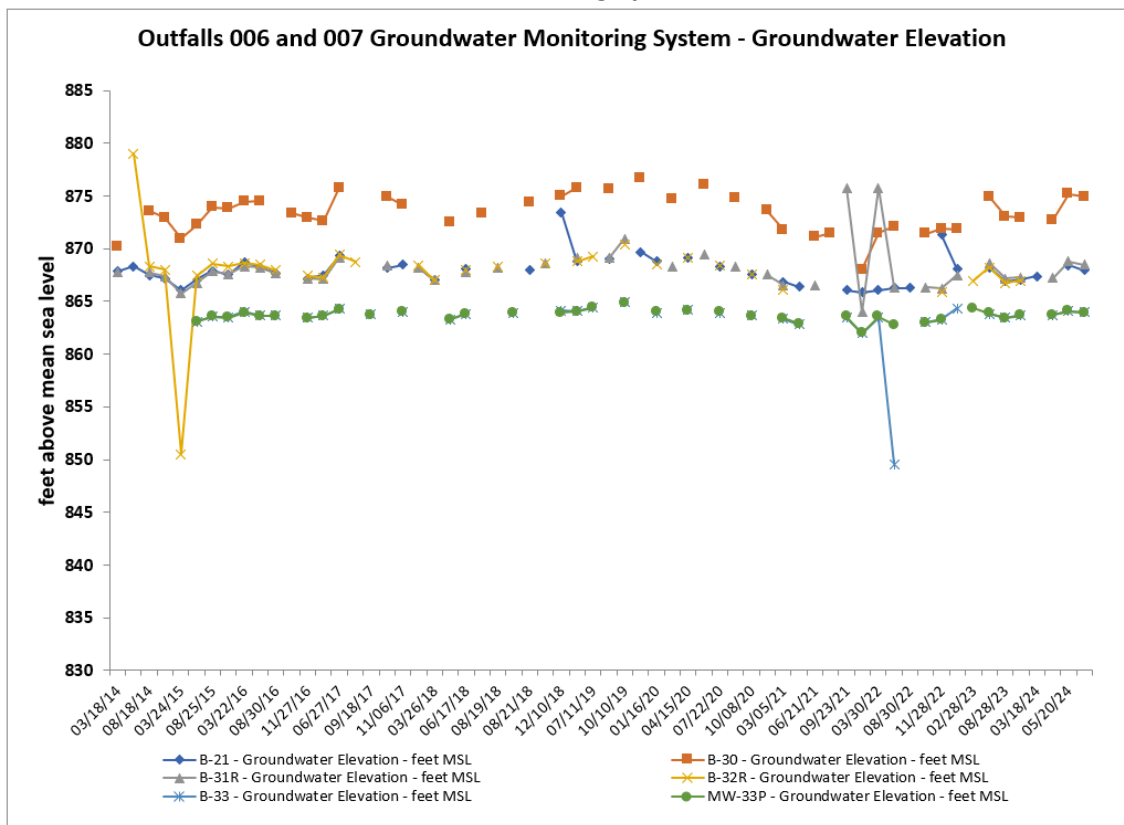


Figure 8 – Outfalls 006 and 007 Groundwater Monitoring System - Chloride

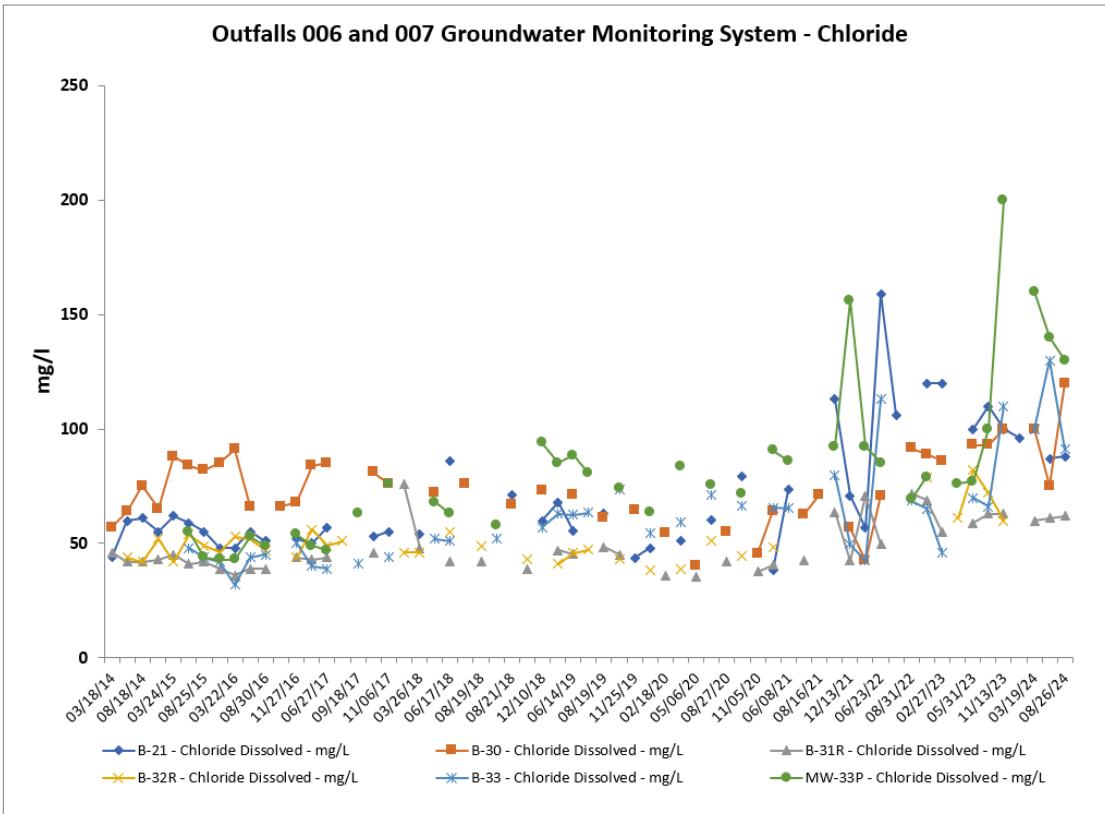


Figure 9 – Outfalls 006 and 007 Groundwater Monitoring System - Nitrite+nitrate

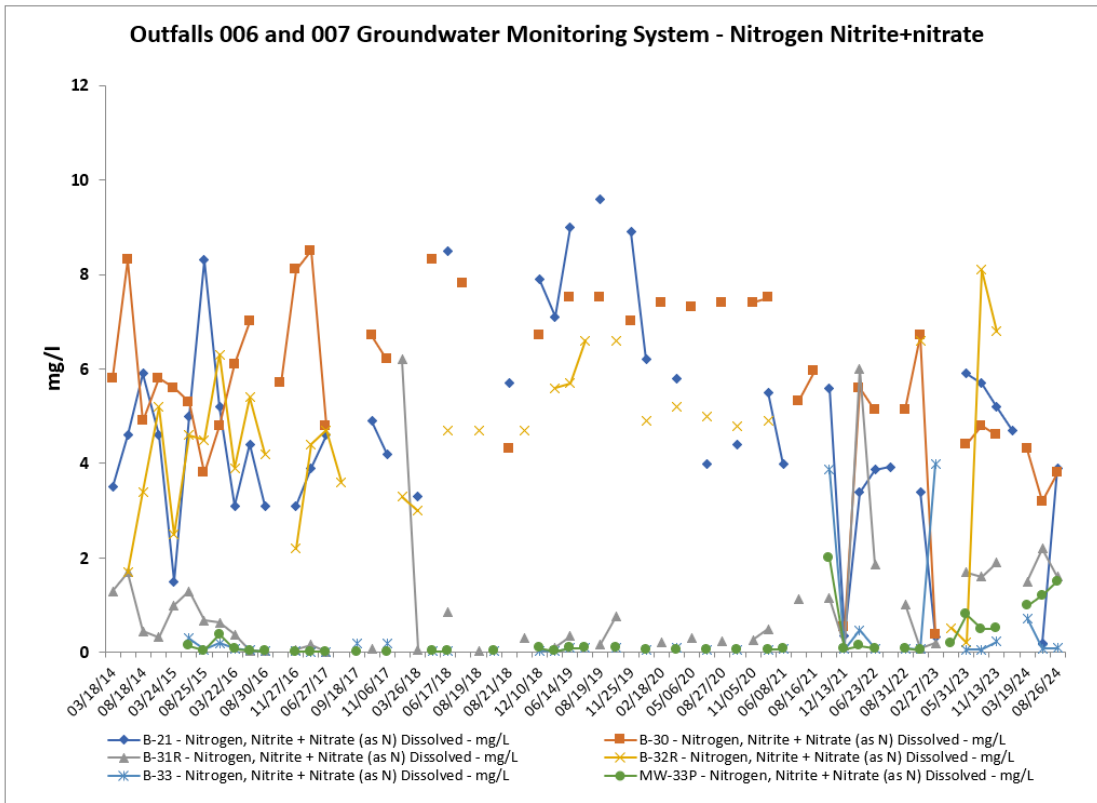


Figure 10 – Outfalls 006 and 007 Groundwater Monitoring System – Nitrogen Ammonia

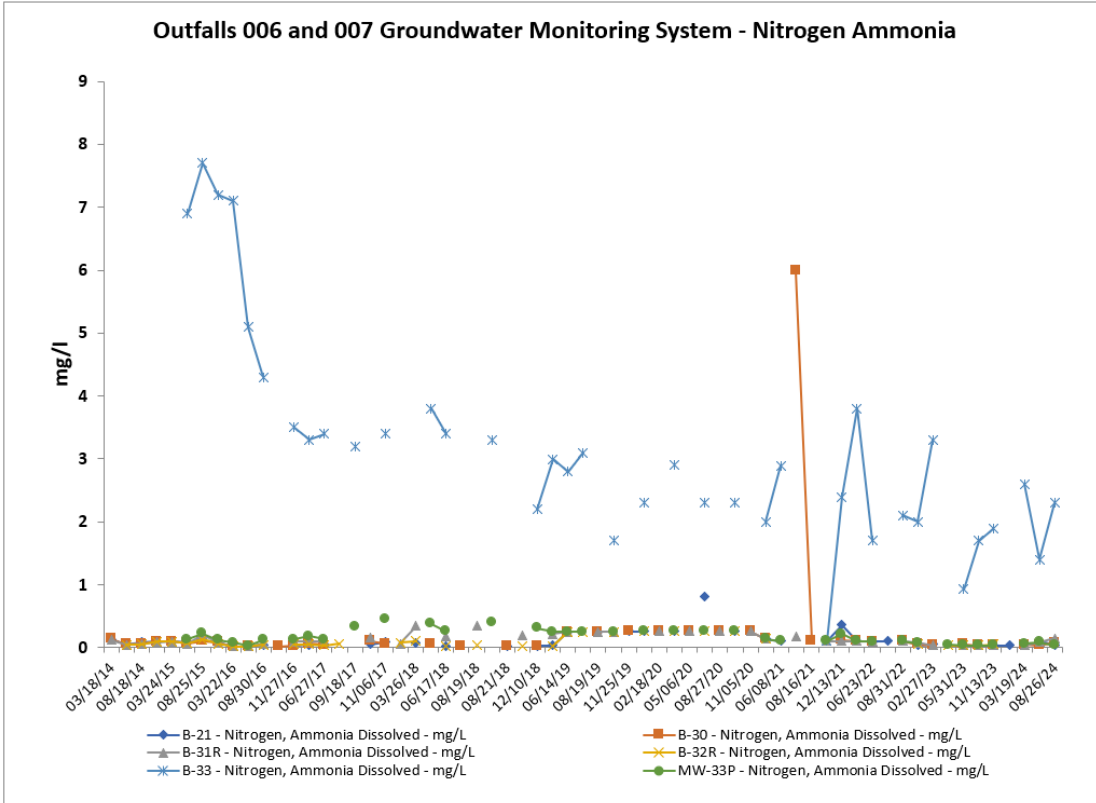


Figure 11 – Outfalls 006 and 007 Groundwater Monitoring System - Dissolved Manganese

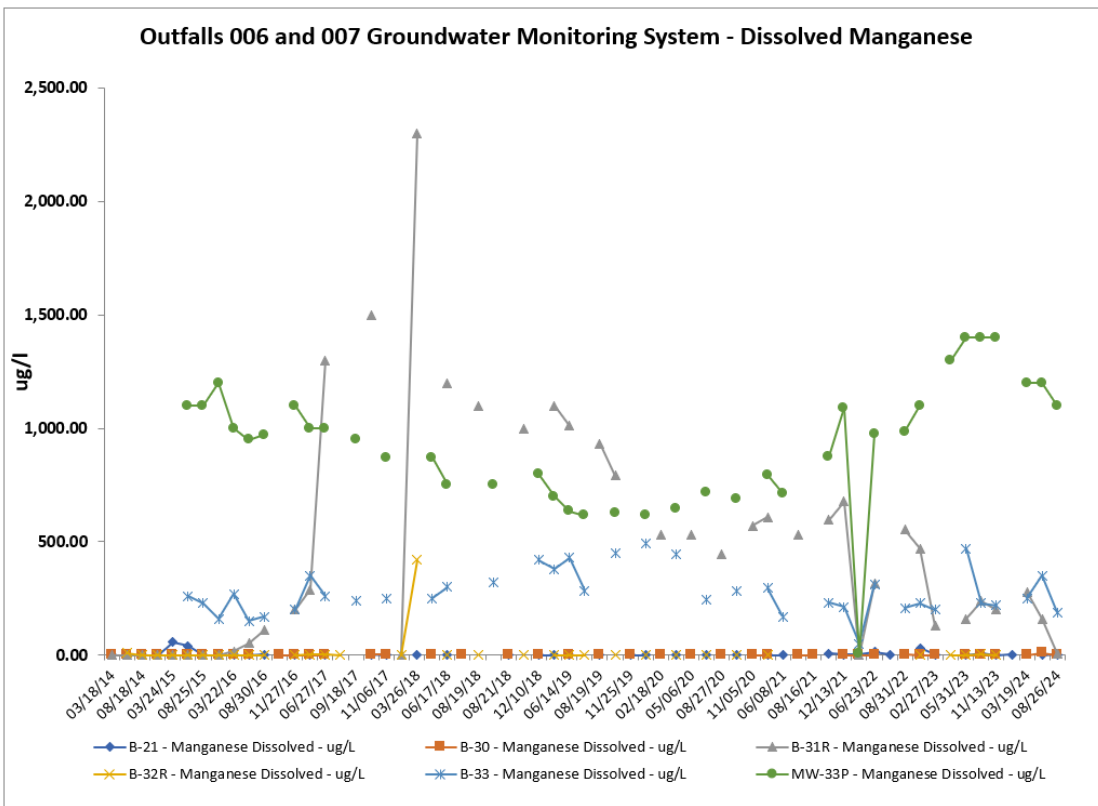


Figure 12 – Outfalls 006 and 007 Groundwater Monitoring System - Dissolved Iron

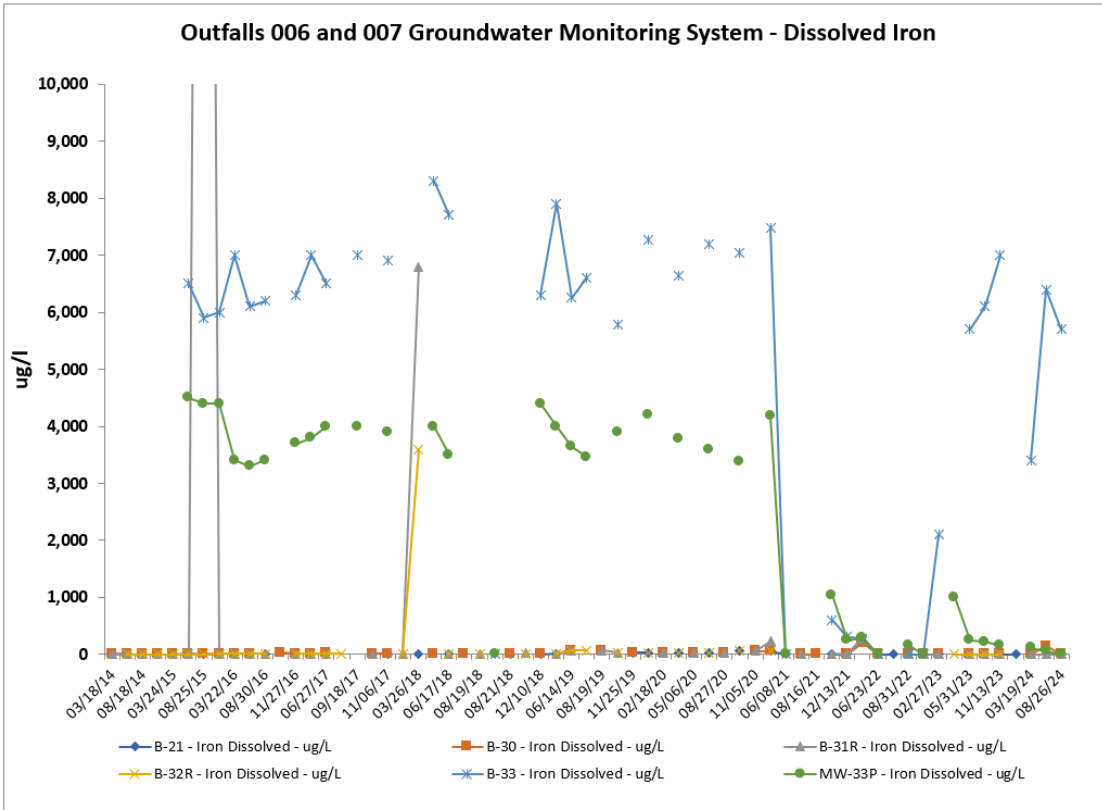


Figure 13 – Outfalls 008 and 009 Groundwater Monitoring System – Groundwater Elevation

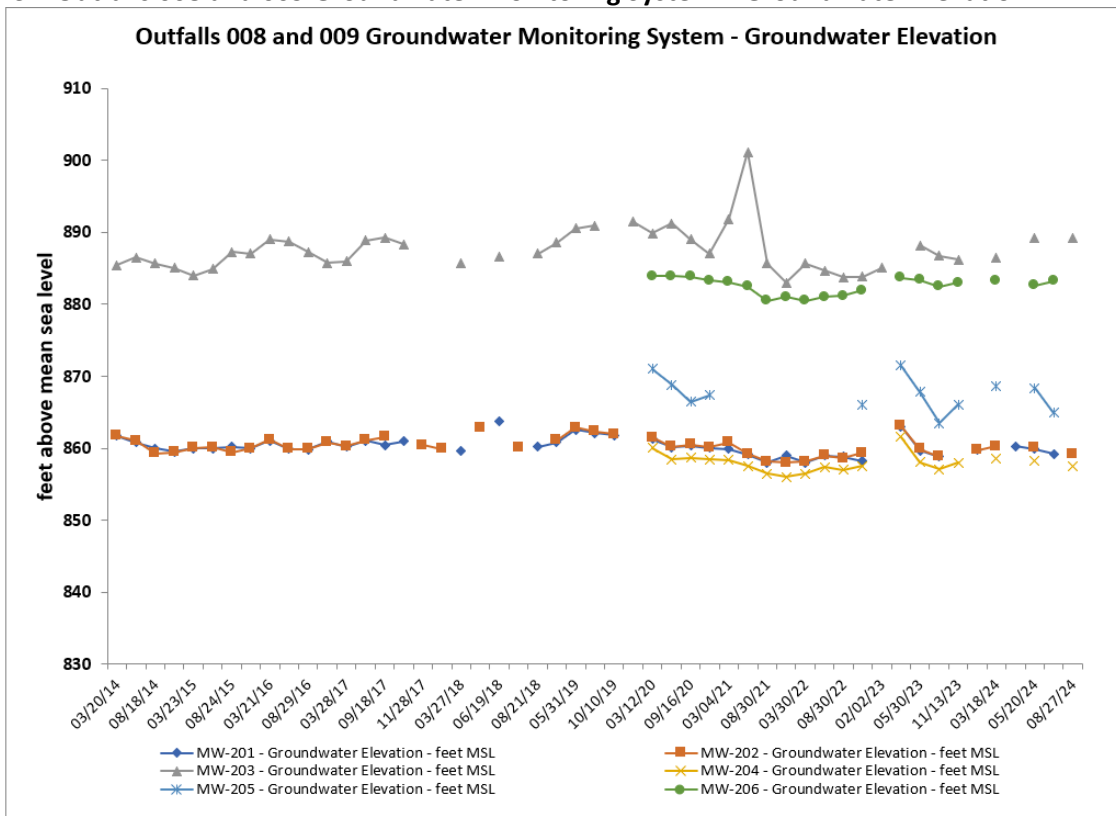


Figure 14 – Outfalls 008 and 009 Groundwater Monitoring System – Nitrite + nitrate

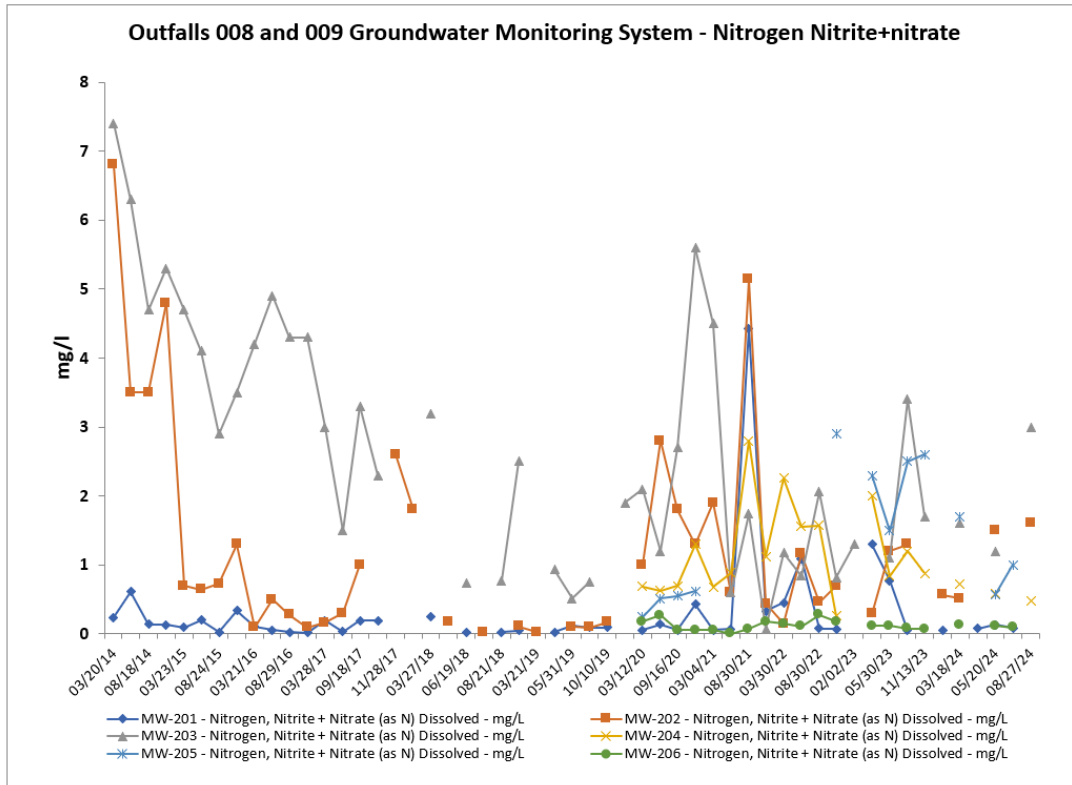


Figure 15 – Outfalls 008 and 009 Groundwater Monitoring System – Nitrogen Ammonia

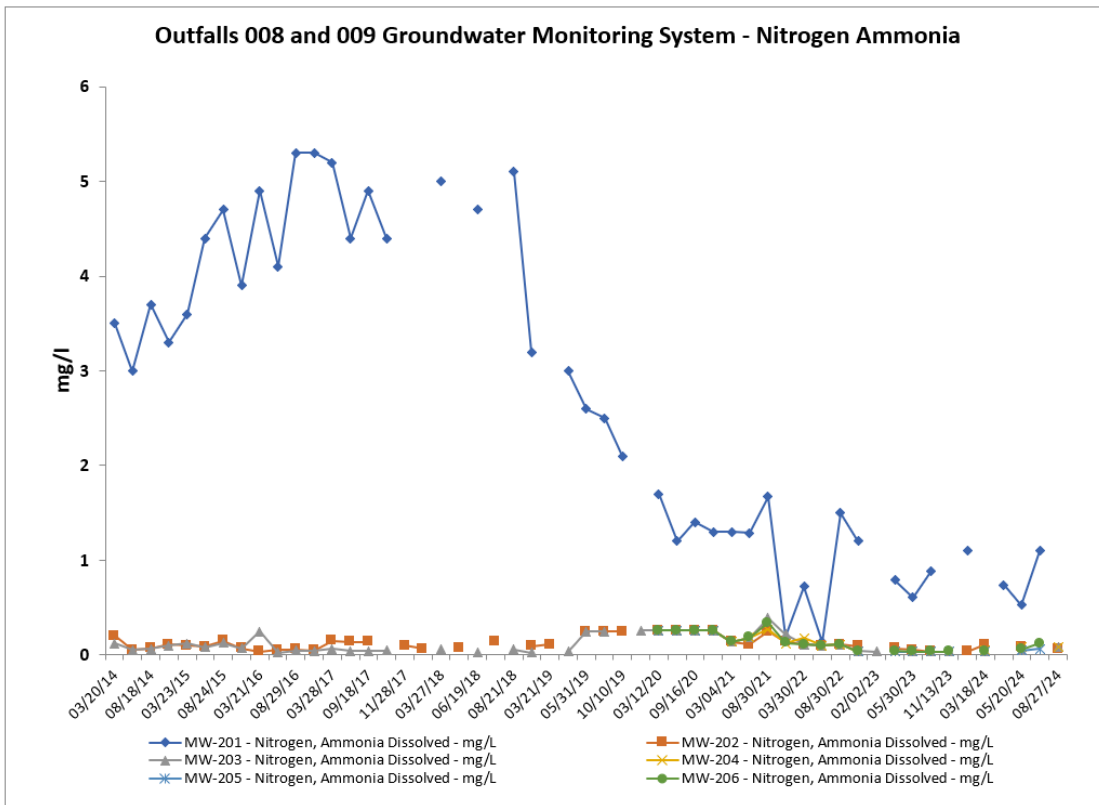


Figure 16 – Outfalls 008 and 009 Groundwater Monitoring System – Chloride

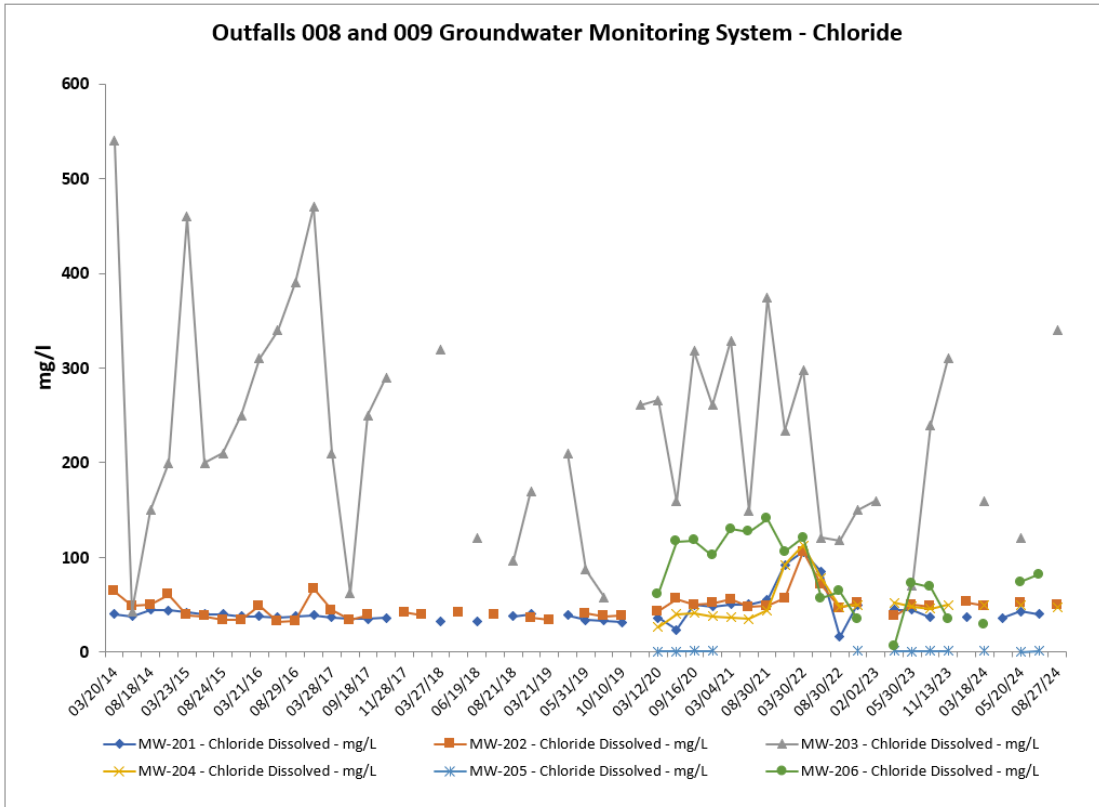


Figure 17 – Outfalls 008 and 009 Groundwater Monitoring System – Dissolved Iron

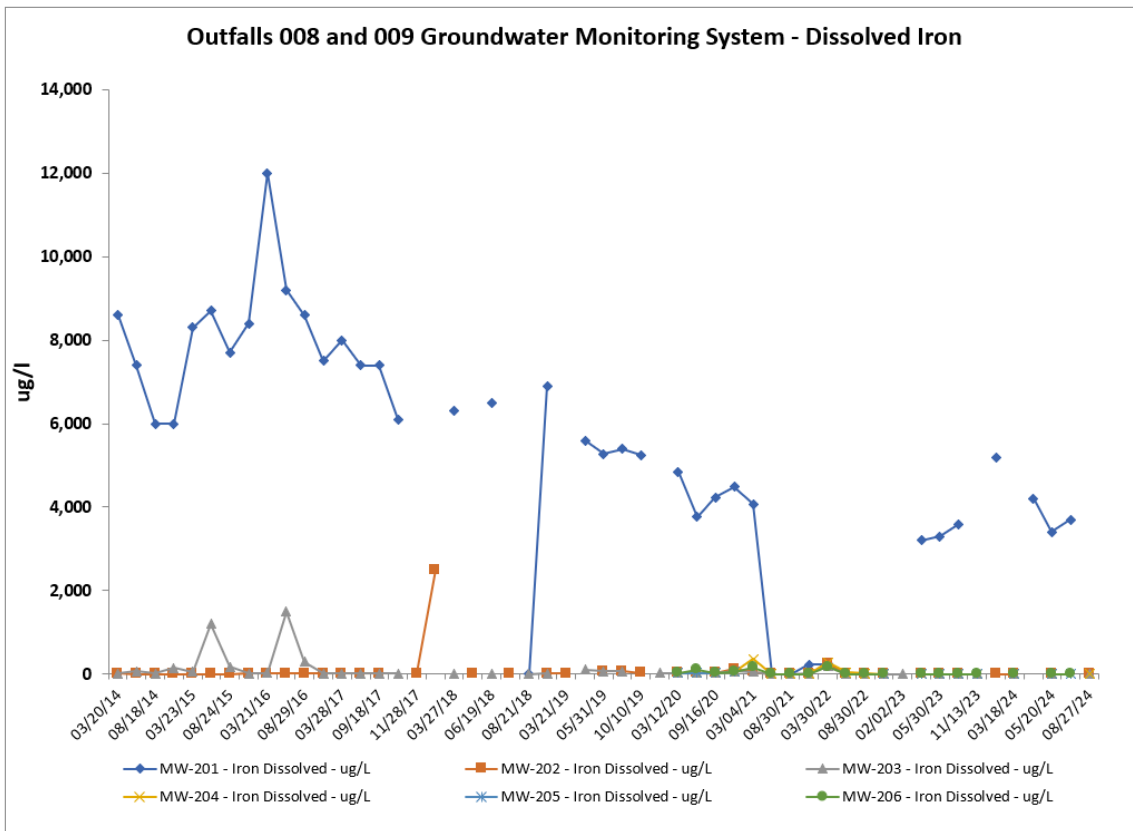


Figure 18 – Outfalls 008 and 009 Groundwater Monitoring System – Dissolved Manganese

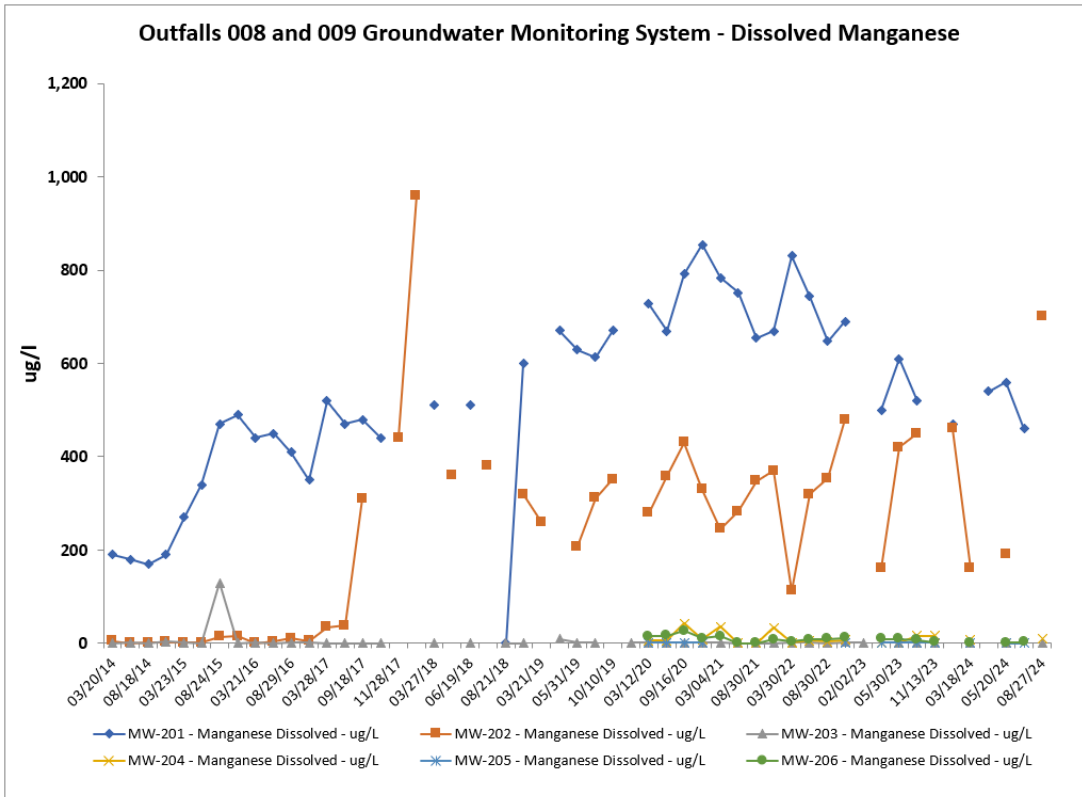


Figure 19 – West Lagoon Groundwater Monitoring System – Groundwater Elevation

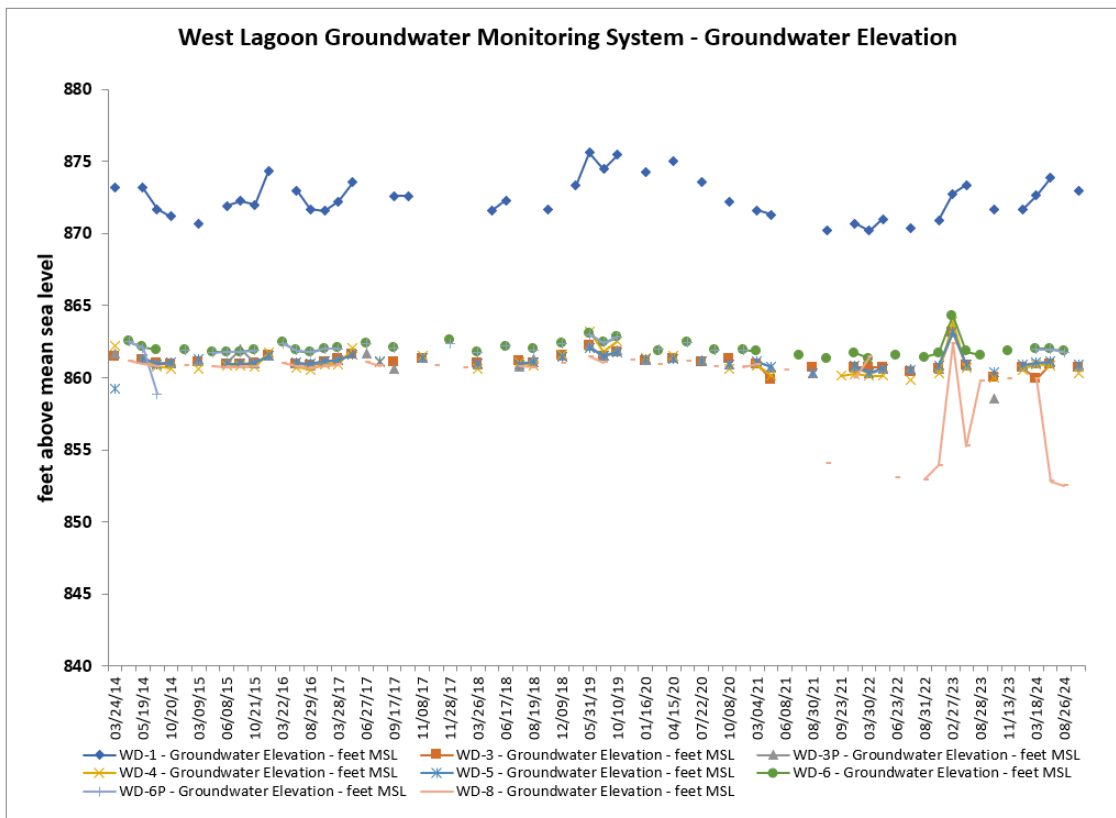


Figure 20 – West Lagoon Groundwater Monitoring System – Chloride

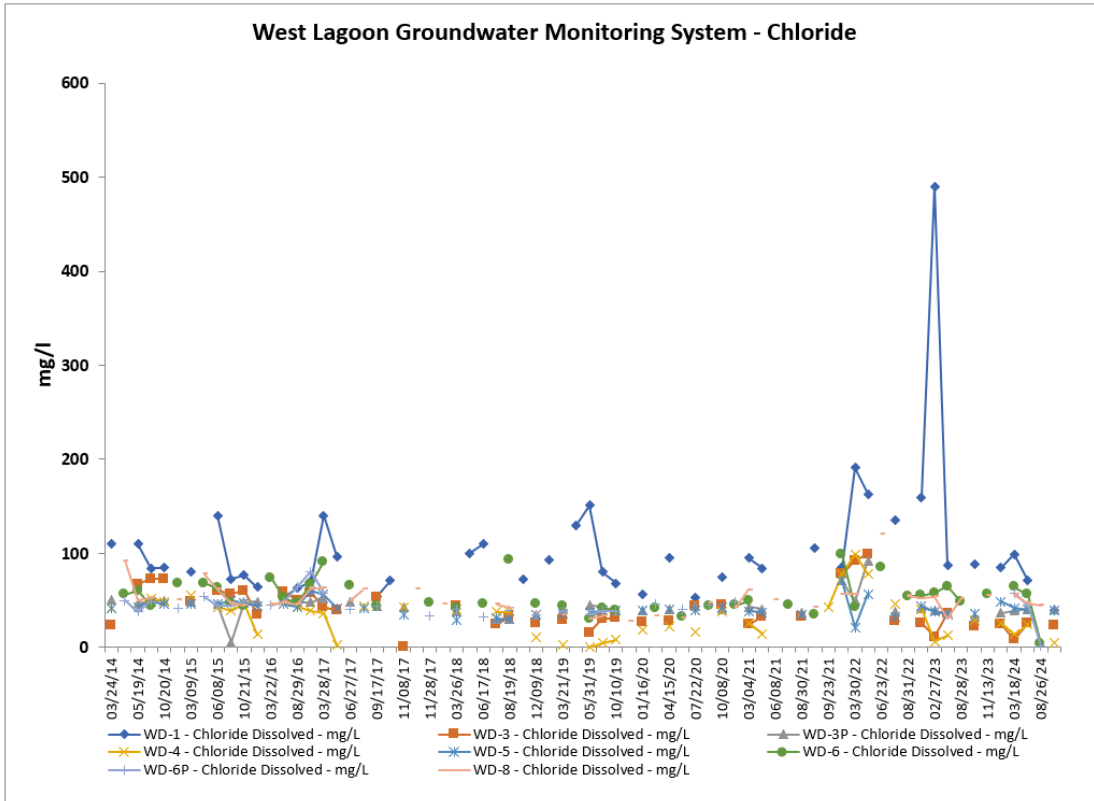


Figure 21 – West Lagoon Groundwater Monitoring System – Nitrogen Ammonia

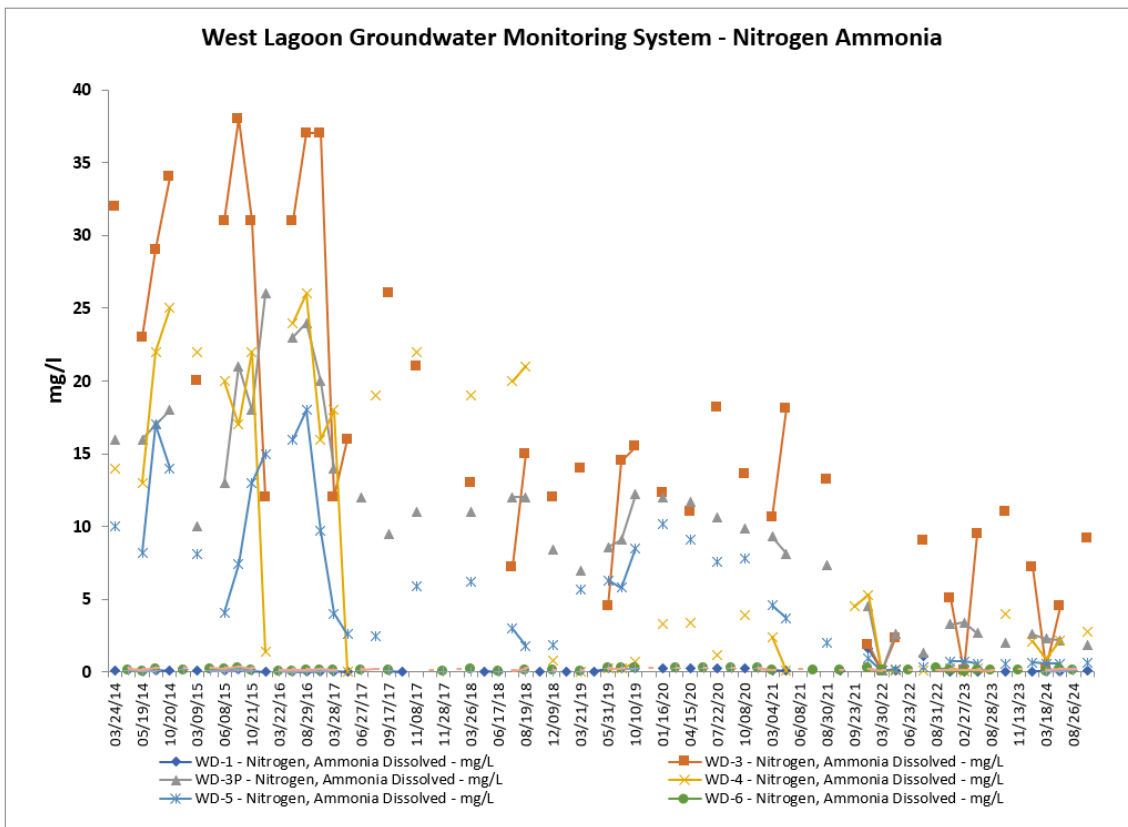


Figure 22 – West Lagoon Groundwater Monitoring System – Nitrite+nitrate

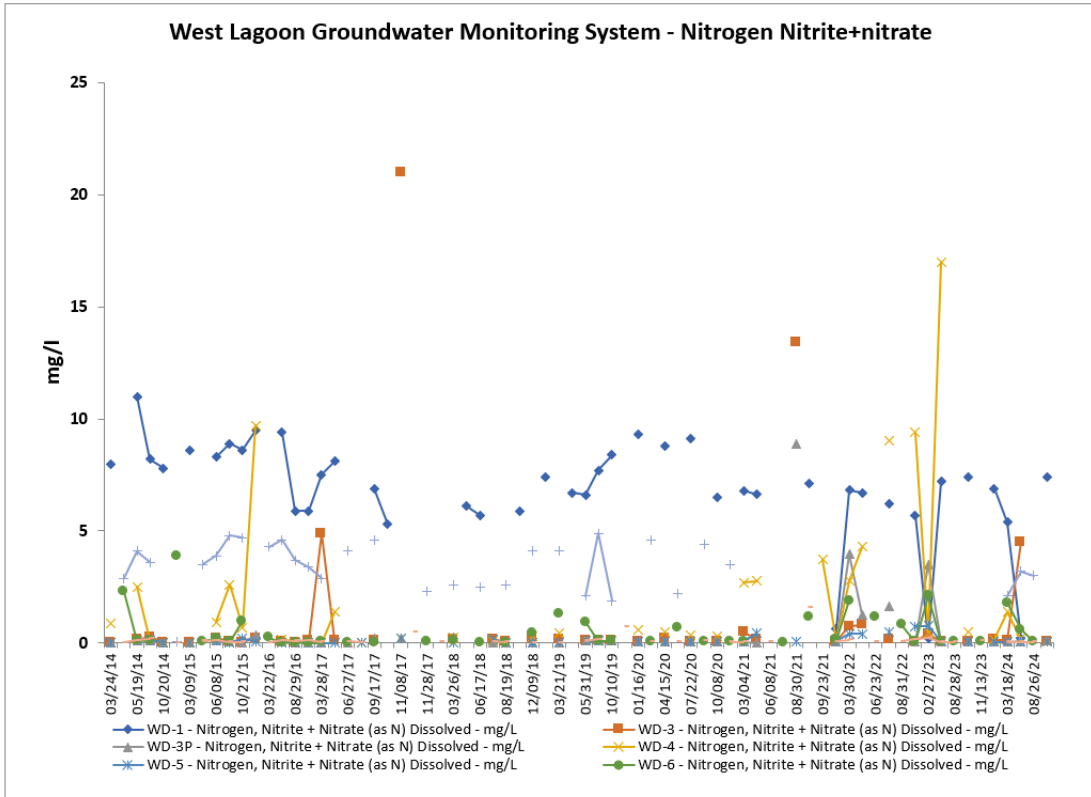


Figure 23 – West Lagoon Groundwater Monitoring System – Dissolved Iron

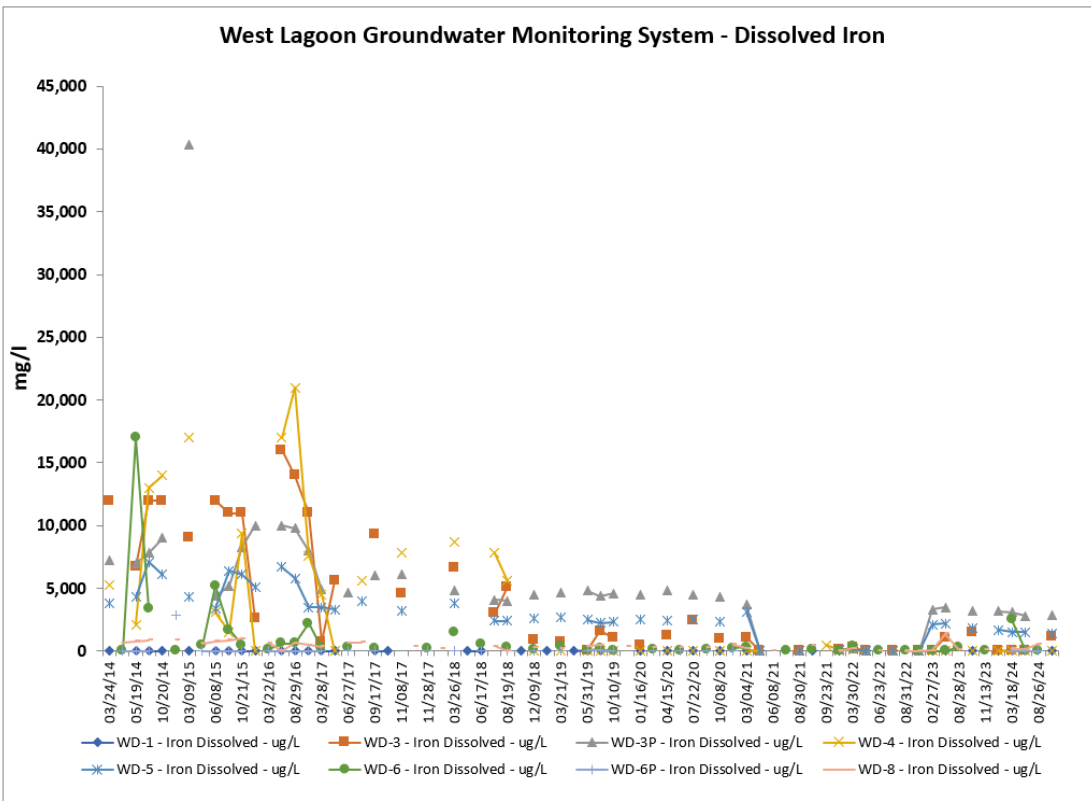
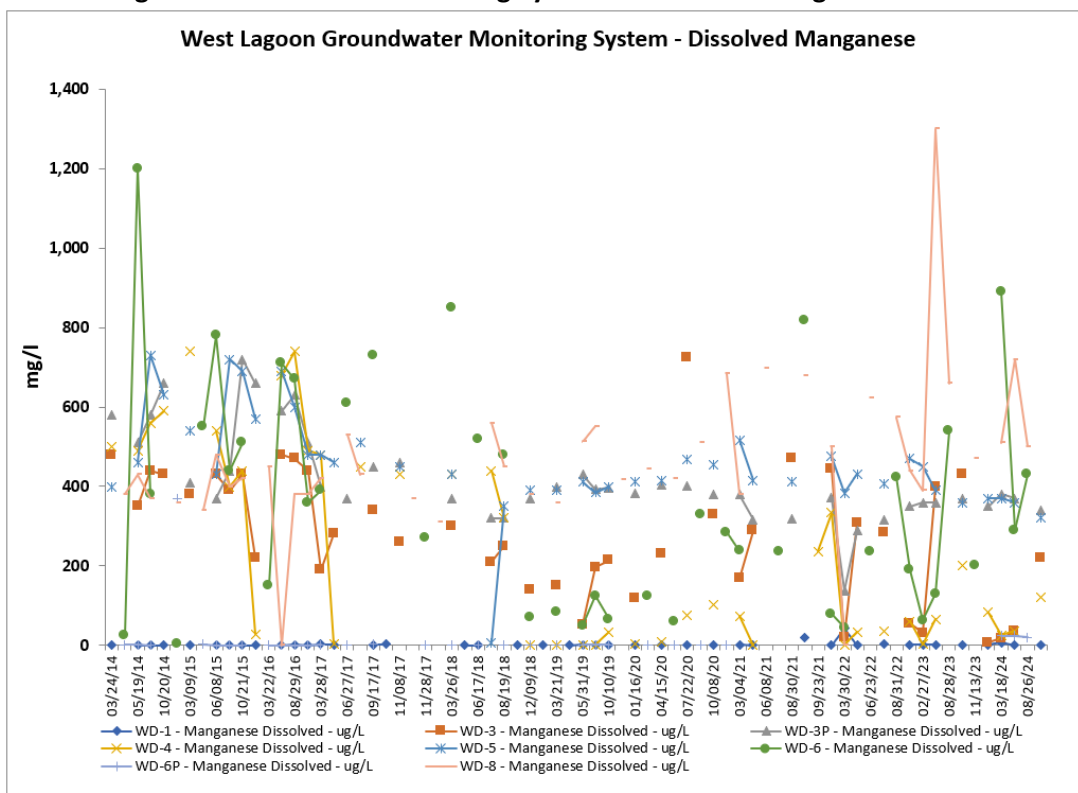


Figure 24 – West Lagoon Groundwater Monitoring System – Dissolved Manganese



Appendix A - Alternative Concentration Limit Data and Calculation for Conagra Foods Packaged Foods 0050679-08

Date	B-30 Nitrite+Nitrate (mg/l)
2/18/20	7.4
5/6/20	7.3
8/27/20	7.4
11/5/20	7.4
3/5/21	7.5
6/21/21	5.31
8/16/21	5.95
12/13/21	0.526
3/30/22	5.6
6/23/22	5.13
8/31/22	5.14
11/28/22	6.7
2/27/23	0.38
5/31/23	4.4
8/28/23	4.8
11/13/23	4.6
3/19/24	4.3
5/20/24	3.2
8/26/24	3.8
10/29/24	3.5

Average	5.02
Standard Deviation	2.03
Calculated ACL	9.1

Date	WD-1 Nitrite+Nitrate (mg/l)
1/16/20	9.3
4/15/20	8.8
7/22/20	9.1
10/8/20	6.5
3/4/21	6.8
6/2/21	6.62
9/22/21	7.1
12/13/21	0.633
3/30/22	6.83
6/22/22	6.69
8/30/22	6.21
11/28/22	5.7
2/27/23	ND
5/30/23	7.2
8/29/23	7.4
11/14/23	6.9
3/18/24	5.4
5/20/24	ND
8/27/24	7.4
10/28/24	5.3

Average	6.66
Standard Deviation	1.83
Calculated ACL	10.3

Date	MW-203 Chloride (mg/l)	MW-203 Nitrite- Nitrate (mg/l)
3/12/20	266	2.1
6/18/20	159	1.2
9/16/20	318	2.7
12/17/20	261	5.6
3/4/21	329	4.5
6/2/21	149	0.599
8/30/21	374	1.74
12/12/21	234	ND
3/30/22	298	1.18
6/22/22	121	0.843
8/30/22	118	2.06
11/28/22	150	0.82
2/2/23	160	1.3
5/30/23	70	1.1
8/28/23	240	3.4
11/13/23	310	1.7
3/18/24	160	1.6
5/20/24	120	1.2
8/27/24	340	3
10/28/24	310	1.7

Average	224.35	2.02
Standard Deviation	89.29	1.28
Calculated ACL	402.9	4.6
Calculated ACL with rounding	405	

Date	MW-206 Chloride (mg/l)
3/12/20	61.2
6/18/20	117
9/16/20	118
12/17/20	102
3/4/21	130
6/2/21	127
8/30/21	141
12/12/21	106
3/30/22	121
6/22/22	56.7
8/30/22	64.1
11/28/22	35
2/27/23	5.7
5/30/23	73
8/28/23	69
11/13/23	35
3/18/24	29
5/20/24	74
8/26/24	82
10/28/24	96

Average	82.14
Standard Deviation	37.27
Calculated ACL	156.7
Calculated ACL with rounding	160

Notes:

ND = No Data

mg/l = milligrams per liter

The data presented here is the data submitted by the permittee on their quarterly groundwater discharge monitoring reports.

Chloride ACLs are rounded up to the nearest 0 or 5. For example, the ACL of 402.9 mg/l is rounded up to 405 mg/l. See WDNR Guidance document "Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Discharges" 3400-2024-04.

Appendix B – West Lagoon Leakage and Repair Related Documents



Green Bay Location

2121 Innovation Court, Suite 300
P.O. Box 5126 • De Pere, WI 54115-5126
(920) 497-2500 • Fax: (920) 497-8516
www.foth.com

August 28, 2014

Ms. Lynn Morrison
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Drive
Milwaukee, WI 53212

Dear Ms. Morrison:

RE: Wastewater Lagoon Groundwater Standard Exceedance Action Plan
Darien, Wisconsin Facility

On behalf of Pinnacle Foods Group, LLC (Pinnacle), Foth Infrastructure & Environment, LLC (Foth) has prepared an action plan for the groundwater standard exceedances occurring downgradient of the secondary lagoon at the Darien facility. This action plan is a requirement of the Wisconsin Pollutant Discharge Elimination System (WPDES) permit WI-0050679-06-0 part 5.2. The compliance schedule in part 5.2 requires an action plan be submitted prior to September 1, 2014. This submittal fulfills that requirement.

Introduction

Ammonia levels in groundwater monitoring wells adjacent to the West Lagoon at the Darien, Wisconsin facility have been exceeding preventative action limits (PALs) set forth in the facility's WPDES permit. Accordingly, the Wisconsin Department of Natural Resources (WDNR) requested an action plan be prepared to identify steps to resolve the PAL exceedances.

Foth was retained by Pinnacle to prepare an action plan for the West Lagoon at the Darien facility. The following report provides background information on the facility, lagoon, and wells, summarizes conclusions from a previous report on the West Lagoon, presents recent groundwater data showing the ammonia exceedances, and identifies an action plan in accordance with WDNR requirements.

Background

Pinnacle operates a frozen food processing facility in Darien, Wisconsin. Wastewater from the facility is routed to an aerated lagoon system for treatment and then discharged to the groundwater using a spray irrigation system. The system consists of two lagoons: the Main Lagoon is used for aerobic treatment and storage of the wastewater, whereas the West Lagoon is used only for storage of wastewater. The lagoons are used to store

wastewater where spray irrigation is not feasible, such as during winter or after heavy rains.

Ammonia levels in groundwater monitoring wells adjacent to the West Lagoon have been exceeding PALs for several years. After reviewing groundwater monitoring reports showing the exceedances, the WDNR requested an action plan be prepared that would identify steps to reduce groundwater ammonia to below the PAL. Groundwater monitoring wells are located adjacent to the West Lagoon and the spray fields east of Darien Creek. Figure 1 shows the location of the wells in relation to the West Lagoon and Darien Creek.

Previous Reports

In April of 2007, Foth prepared a report entitled “Wastewater Lagoon Evaluation” for the Darien, Wisconsin facility in order to investigate the impact of the lagoon on the regional environment. The report was an update to a January 1995 report prepared by Foth entitled “Comprehensive Evaluation of Impacts of the Wastewater Lagoon-Darien Facility”. The 2007 report made the following conclusions:

- ◆ The visual inspection of the lagoon indicates the lagoon is in very good condition. No evidence of erosion or leakage was observed.
- ◆ The groundwater sampling procedures used by Birds Eye [Pinnacle] personnel followed WDNR guidelines.
- ◆ Groundwater flow at the site continues to be to the northwest toward Darien Creek.
- ◆ Wisconsin Administrative Code (Wis. Admin. Code) NR140 groundwater quality exceedances continue to be localized to the water table wells immediately downgradient of the lagoon. Monitoring wells WD-6, WD-6P, and WD-8 located on the north side of Darien Creek continue to suggest that the contaminated groundwater from the lagoon side of the creek is not flowing under the creek. This in turn suggests that the contaminated groundwater is intercepted by Darien Creek.
- ◆ Lagoon water quality sample results are consistent with past results.
- ◆ The sediment thickness in the lagoon ranged from approximately ½ foot to 2¾ feet. The sediment volume was determined to be approximately 13,000 cubic yards in place.
- ◆ Surface water analytical results indicate there has been no change in the surface water quality in Darien Creek as a result of hydrogeologic flow from the lagoon. The surface water values between upstream and downstream were essentially the same in Darien Creek.

The report further concluded that the West Lagoon had no significant adverse impact on the regional environment. Therefore, it recommended that Pinnacle continue to be allowed to operate the lagoon with an exemption from Wis. Admin. Code NR 213 as allowed under NR 213.06.

Existing Data

Ammonia concentrations have consistently exceeded the PAL in certain groundwater monitoring wells near the West Lagoon, whereas concentrations in other wells in this area have remained below the PAL. The PAL for ammonia (NH₃-N) in groundwater at the Darien facility is 0.97 mg/L. Table 1 summarizes groundwater monitoring results from a WDNR groundwater monitoring for samples taken in March of 2014. Well locations are shown on Figure 1.

Table 1
Concentration of NH₃-N in Groundwater Monitoring Wells
Near West Lagoon

Well Number	NH ₃ -N, mg/L ⁽¹⁾
WD-1	0.11
WD-3	32
WD-3P	16
WD-4	14
WD-5	10
WD-6	0.15
WD-6P	0.13

⁽¹⁾ Sample results from March 2014 groundwater monitoring form.

The results shown in the above table indicate that ammonia is leaking from the West Lagoon and flowing to Darien Creek, but is not crossing under the creek. The ammonia concentrations upstream of the lagoon, as measured by well WD-1, and across Darien Creek, as measured by wells WD-6 and WD-6P (same location as WD-6), are well below the PAL. However, the ammonia concentration between the lagoon and Darien Creek, as measured by wells WD-3, WD-3P (same location as WD-3), WD-4, and WD-5, exceed the PAL by a significant margin.

Recommended Action Plan

The recommended action plan to address groundwater exceedances for ammonia downstream of the West Lagoon includes the following steps:

- ◆ Sample sludge in the West Lagoon for ammonia.

- ◆ Sample raw wastewater influent to the lagoon system for ammonia, TKN, and nitrate.
- ◆ Sample wastewater in the Main Lagoon for ammonia, TKN, and nitrate.
- ◆ Sample wastewater in the West Lagoon for ammonia, TKN, and nitrate.
- ◆ Review third quarter groundwater sampling results reported on the groundwater monitoring report for wells shown on Figure 1 (WD-1, WD-3, WD-3P, WD-4, WD-5, WD-6, WD-6P, and WD-8).
- ◆ Sample Darien Creek upstream of the West Lagoon.
- ◆ Sample Darien Creek downstream of the West Lagoon.
- ◆ Evaluate sampling results and propose corrective action, if required.

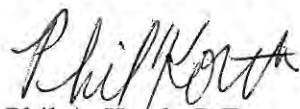
After obtaining results from the preceding sampling schedule, a determination can be made as to the source of ammonia and its impact on Darien Creek. Sampling of sludge and wastewater in the lagoon would indicate whether ammonia is present in, and leaking from, the lagoon and if the source is decomposition of settled sludge on the lagoon floor. Sampling of groundwater monitoring wells around Darien Creek would explain the fate of the leaking ammonia. Sampling of Darien Creek would indicate the impact of the expected ammonia discharge in the creek.

The schedule for the action plan would be to perform the sludge, wastewater, groundwater, and stream sampling in September and October. Sampling results would be summarized, analyzed, and reported to the WDNR in November.

Thank you in advance for your prompt review of the request. Please contact Phil Korth, (920) 497-2500, with any questions or concerns.

Sincerely,

Foth Infrastructure & Environment, LLC



Phil A. Korth, P.E.
Lead Environmental Engineer







Michele L. Frozena, REHS/RS
Senior Client Manager

Attachment

cc: Dan Majorowicz, Pinnacle Foods Group, LLC
Matt Eberhardt, Foth Infrastructure & Environment, LLC



Legend

-  Groundwater Monitoring Location
-  Stream Outfall
-  Approximate Property Boundary
-  Parcels

Source or Notes:

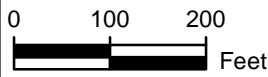
1. Basemap supplied by Bing and Esri data suppliers.



BIRDS EYE FOODS LLC

FIGURE 1
 GROUNDWATER MONITORING LOCATION MAP
 W8880 COUNTY ROAD X
 DARIEN, WISCONSIN

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.



Date: JULY 2014

Revision Date:

Drawn By: DAT

Checked By: TMK1

Scope: 14P055



Green Bay Location

2121 Innovation Court, Suite 300
P.O. Box 5126 • De Pere, WI 54115-5126
(920) 497-2500 • Fax: (920) 497-8516
www.foth.com

February 4, 2015

Ms. Lynn Morrison
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Drive
Milwaukee, WI 53212

Dear Ms. Morrison:

RE: Wastewater Lagoon Groundwater Standard Exceedance Action Plan Implementation
Results
Darien, Wisconsin Facility

On behalf of Pinnacle Foods Group, LLC (Pinnacle), Foth Infrastructure & Environment, LLC (Foth) has prepared this report summarizing the results from enacting the action plan for the groundwater standard exceedances occurring downgradient of the secondary lagoon at the Darien facility. This report along with recommendations for plans and specifications is a requirement of the Wisconsin Pollutant Discharge Elimination System (WPDES) permit WI-0050679-06-0 part 5.2. The compliance schedule in part 5.2 requires plans and specifications be submitted prior to April 1, 2015. This submittal fulfills that requirement.

Introduction

Ammonia levels in groundwater monitoring wells adjacent to the West Lagoon at the Darien, Wisconsin facility have been exceeding preventative action limits (PALs) set forth in the facility's WPDES permit. Accordingly, the Wisconsin Department of Natural Resources (WDNR) requested an action plan be prepared to identify steps to resolve the PAL exceedances.

Foth prepared an action plan for the West Lagoon at the Darien facility. The recommended plan included the following action items:

- ◆ Sample sludge in the West Lagoon for ammonia.
- ◆ Sample raw wastewater influent to the lagoon system for ammonia, Total Kjeldahl Nitrogen (TKN), and nitrate.
- ◆ Sample wastewater in the Main Lagoon for ammonia, TKN, and nitrate.
- ◆ Sample wastewater in the West Lagoon for ammonia, TKN, and nitrate.

- ◆ Review third quarter groundwater sampling results reported on the groundwater monitoring report for wells shown on Figure 1 (WD-1, WD-3, WD-3P, WD-4, WD-5, WD-6, WD-6P, and WD-8).
- ◆ Sample Darien Creek upstream of the West Lagoon.
- ◆ Sample Darien Creek downstream of the West Lagoon.
- ◆ Evaluate sampling results and propose corrective action, if required.

The following report provides a summary of the data collected and evaluates proposed corrective action items.

Background

Pinnacle operates a frozen food processing facility in Darien, Wisconsin. Wastewater from the facility is routed to an aerated lagoon system for treatment and then discharged to the groundwater using a spray irrigation system. The system consists of two lagoons: the Main Lagoon is used for aerobic treatment and storage of the wastewater, whereas the West Lagoon is used only for storage of wastewater. The lagoons are used to store wastewater where spray irrigation is not feasible, such as during winter or after heavy rains.

Ammonia levels in groundwater monitoring wells adjacent to the West Lagoon have been exceeding PALs for several years. After reviewing groundwater monitoring reports showing the exceedances, the WDNR requested an action plan be prepared that would identify steps to reduce groundwater ammonia to below the PAL. Groundwater monitoring wells are located adjacent to the West Lagoon and the spray fields east of Darien Creek. Figure 1 shows the location of the wells in relation to the West Lagoon and Darien Creek.

Previous Reports

In April of 2007, Foth prepared a report entitled “Wastewater Lagoon Evaluation” for the Darien, Wisconsin facility in order to investigate the impact of the lagoon on the regional environment. The report was an update to a January 1995 report prepared by Foth entitled “Comprehensive Evaluation of Impacts of the Wastewater Lagoon-Darien Facility”. The 2007 report made the following conclusions:

- ◆ The visual inspection of the lagoon indicates the lagoon is in very good condition. No evidence of erosion or leakage was observed.
- ◆ The groundwater sampling procedures used by Birds Eye [Pinnacle] personnel followed WDNR guidelines.

- ◆ Groundwater flow at the site continues to be to the northwest toward Darien Creek.
- ◆ Wisconsin Administrative Code (Wis. Admin. Code) NR140 groundwater quality exceedances continue to be localized to the water table wells immediately downgradient of the lagoon. Monitoring wells WD-6, WD-6P, and WD-8 located on the north side of Darien Creek continue to suggest that the contaminated groundwater from the lagoon side of the creek is not flowing under the creek. This in turn suggests that the contaminated groundwater is intercepted by Darien Creek.
- ◆ Lagoon water quality sample results are consistent with past results.
- ◆ The sediment thickness in the lagoon ranged from approximately ½ foot to 2¾ feet. The sediment volume was determined to be approximately 13,000 cubic yards in place.
- ◆ Surface water analytical results indicate there has been no change in the surface water quality in Darien Creek as a result of hydrogeologic flow from the lagoon. The surface water values between upstream and downstream were essentially the same in Darien Creek.

The report further concluded that the West Lagoon had no significant adverse impact on the regional environment. Therefore, it recommended that Pinnacle continue to be allowed to operate the lagoon with an exemption from Wis. Admin. Code NR 213 as allowed under NR 213.06.

In August 2014, an action plan was submitted to WDNR to identify steps to resolve the PAL exceedances. The results of the action plan are included in this report.

Existing Monitoring Well Data

Ammonia concentrations have consistently exceeded the PAL in certain groundwater monitoring wells near the West Lagoon, whereas concentrations in other wells in this area have remained below the PAL. The PAL for ammonia (NH₃-N) in groundwater at the Darien facility is 0.97 milligrams per liter (mg/L). Table 1 summarizes groundwater monitoring results from a WDNR groundwater monitoring for samples taken in September and November of 2014. Well locations are shown on Figure 1.

Table 2
Concentration of NH₃-N in Groundwater Monitoring Wells
Near West Lagoon

Location	Date	NH ₃ – mg/L	TKN – mg/L	NO ₃ - mg/L
Darien Cr. Upstream				
	10-15-14	<0.25	0.52	
	11-25-14	<0.25	0.62	
Darien Cr. Downstream				
	10-15-14	<0.25	<0.50	
	11-25-14	<0.25	<0.50	
Outfall 001				
	10-15-14	8.5	43.9	<0.75
	11-25-14	2.1	14.9	<0.15
West Lagoon				
	10-15-14	3.2	29.5	<0.75
	11-25-14	23.5	35.3	<0.75
Raw Influent				
	10-15-14	<1.5	6.9	<0.75
	11-25-14	2.8	44.6	<1.5

Prepared by: PAK
 Checked by: TMK1

Due to water level conditions in the West Lagoon, sediment thickness was not able to be measured. Sediment samples were collected and had the following results:

The solids concentration of the sediment sample was 31% solids. The TKN was 1.2% by dry weight and the ammonia was 0.1% by dry weight. This result is typical of wastewater sediment containing a mix of organic biological solids and inorganic solids. Attachment A contains the lab results for the October and November sampling events; the November report includes the sediment sample results.

Results of Sampling Plan

1. Nitrogen in Wastewater

Most of the nitrogen in the raw wastewater, in the new lagoon (Outfall 001), and in the West Lagoon is in the form of organic nitrogen. TKN is the sum of organic and ammonia nitrogen. In most wastewater applications, organic nitrogen is broken down to ammonia during wastewater treatment. This did not consistently occur in

the Darien lagoons, and the ammonia concentration in the West Lagoon was not significantly higher than what would normally be expected based on influent wastewater TKN values.

2. Nitrogen in Darien Creek

Water samples were collected from Darien Creek upstream of the West Lagoon and downstream of the West Lagoon. The purpose of the sampling was to determine if the lagoon had any impact on the stream water quality and if the ammonia concentrations in the stream could cause any harm to the stream environment. The water samples were analyzed for TKN, ammonia, and nitrate. The two sampling periods showed the following:

- ◆ The West Lagoon had no impact on water quality in Darien Creek.
- ◆ The ammonia concentrations in Darien Creek was at undetectable levels (less than 0.25 mg/L) and pose no potential harm to the stream environment.

3. Nitrogen in West Lagoon Sediment

Sediment samples showed normal concentrations of TKN and ammonia.

Conclusions

The data collected in the sampling conducted in the fall of 2014 lead to the following conclusions:

- ◆ Raw wastewater from the Pinnacle facility appears to be typical of vegetable processing wastewater with no indication of high ammonia concentrations.
- ◆ The water quality in Darien Creek is unchanged as a result of hydrogeologic flow from the West Lagoon.
- ◆ The ammonia concentrations in Darien Creek are below detection levels and pose no potential harm to the stream environment.
- ◆ While groundwater monitoring consistently shows elevated ammonia concentrations in wells upgradient from Darien Creek, there is no evidence of elevated ammonia concentrations in Darien Creek. There is also no evidence of ammonia in groundwater monitoring wells across Darien Creek which indicates the groundwater is discharging to Darien Creek. The best explanation of the data is the volume of flow in Darien Creek is significantly greater than the groundwater flow from the West Lagoon and the ammonia in the groundwater

from the lagoon is diluted to a level where the ammonia is not observable in Darien Creek.

- ◆ Water level and weather conditions prevented an evaluation of the total mass of sediment in the West Lagoon compared to the previous evaluation in 2007.
- ◆ Nitrogen in the sediment appeared typical for an industrial wastewater lagoon and is a significant mass of nitrogen that could potentially enter the groundwater.

Recommendations

Based on the data collected, no physical changes are recommended to the West Lagoon. The recommendations are:

- ◆ Continue to use the West Lagoon without modification.
- ◆ Continue monitoring the groundwater down gradient of the West Lagoon including groundwater monitoring wells across Darien Creek. Revisit the action plan if groundwater monitoring indicates increasing ammonia levels across Darien Creek.
- ◆ Prepare plans for a flow meter and composite sampler for use when wastewater is sprayed on field 008. Plans should be submitted by April 1, 2015 as required by the WPDES permit.
- ◆ Measure the sediment volume in West Lagoon in 2015 and compare to 2007 report. Consider sediment removal if the volume has increased significantly.
- ◆ Evaluate the sludge for TKN, ammonia, and nitrate and compare to 2007 report. Consider sediment removal if the parameter results has increased significantly.
- ◆ Request a variance for ammonia levels in groundwater monitoring wells WD-3, WD-3P, WD-4, and WD-5.

Ms. Lynn Morrison
Wisconsin Department of Natural Resources
February 4, 2015
Page 8

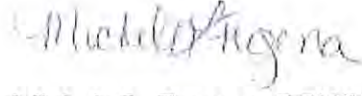
Thank you in advance for your prompt review of the request. Please contact Phil Korth, (920) 497-2500, with any questions or concerns.

Sincerely,

Foth Infrastructure & Environment, LLC



Phil A. Korth, P.E.
Lead Environmental Engineer



Michele L. Frozena, REHS/RS
Senior Client Manager

Attachments

cc: Dan Majorowicz, Pinnacle Foods Group, LLC
Tara Van Hoof, Foth Infrastructure & Environment, LLC
Scott Janssen, Foth Infrastructure & Environment, LLC
Matt Eberhardt, Foth Infrastructure & Environment, LLC

Figure



Legend

- Groundwater Monitoring Location
- Stream Outfall
- Approximate Property Boundary
- Parcels

Source or Notes:
 1. Basemap supplied by Bing and Esri data suppliers.



BIRDS EYE FOODS LLC		
FIGURE 1		
GROUNDWATER MONITORING LOCATION MAP W8880 COUNTY ROAD X DARIEN, WISCONSIN		
Date: JULY 2014	Revision Date:	
Drawn By: DAT	Checked By: TMK1	Scope: 14P055

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.



Attachment A
October and November 2014 Laboratory Results

October 29, 2014

Phil Korth
Foth Infrastructure & Environment
2737 South Ridge Road
Green Bay, WI 54304

RE: Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Dear Phil Korth:

Enclosed are the analytical results for sample(s) received by the laboratory on October 16, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tod Noltemeyer
tod.noltemeyer@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



CERTIFICATIONS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334

New York Certification #: 11888
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40105353001	UPSTREAM	Water	10/15/14 12:30	10/16/14 09:10
40105353002	DOWNSTREAM	Water	10/15/14 13:30	10/16/14 09:10
40105353003	OUTFALL 101	Water	10/15/14 11:10	10/16/14 09:10
40105353004	WEST LAGOON	Water	10/15/14 13:00	10/16/14 09:10
40105353005	RAW INFLUENT	Water	10/15/14 10:50	10/16/14 09:10

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40105353001	UPSTREAM	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	DAW	1	PASI-G
		EPA 351.2	DAW	1	PASI-G
40105353002	DOWNSTREAM	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	DAW	1	PASI-G
		EPA 351.2	DAW	1	PASI-G
40105353003	OUTFALL 101	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	DAW	1	PASI-G
		EPA 351.2	DAW	1	PASI-G
40105353004	WEST LAGOON	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	DAW	1	PASI-G
		EPA 351.2	DAW	1	PASI-G
40105353005	RAW INFLUENT	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	DAW	1	PASI-G
		EPA 351.2	DAW	1	PASI-G

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SUMMARY OF DETECTION

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40105353001	UPSTREAM					
EPA 300.0	Nitrate as N	2.6	mg/L	1.5	10/17/14 11:04	
EPA 351.2	Nitrogen, Kjeldahl, Total	0.52J	mg/L	1.0	10/27/14 14:28	
40105353002	DOWNSTREAM					
EPA 300.0	Nitrate as N	2.6	mg/L	1.5	10/17/14 11:12	
40105353003	OUTFALL 101					
EPA 350.1	Nitrogen, Ammonia	8.5	mg/L	1.0	10/28/14 14:41	
EPA 351.2	Nitrogen, Kjeldahl, Total	43.9	mg/L	4.0	10/27/14 16:02	
40105353004	WEST LAGOON					
EPA 350.1	Nitrogen, Ammonia	3.2	mg/L	1.0	10/28/14 14:42	
EPA 351.2	Nitrogen, Kjeldahl, Total	29.5	mg/L	2.0	10/27/14 14:30	
40105353005	RAW INFLUENT					
EPA 351.2	Nitrogen, Kjeldahl, Total	6.9	mg/L	2.0	10/27/14 14:31	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Method: EPA 300.0
Description: 300.0 IC Anions
Client: FOTH INFRASTRUCTURE & ENVIRONMENT
Date: October 29, 2014

General Information:

5 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/25647

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40105368011

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1065086)
 - Nitrate as N
- MSD (Lab ID: 1065087)
 - Nitrate as N

Additional Comments:

Analyte Comments:

QC Batch: WETA/25647

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- OUTFALL 101 (Lab ID: 40105353003)
 - Nitrate as N
- RAW INFLUENT (Lab ID: 40105353005)
 - Nitrate as N
- WEST LAGOON (Lab ID: 40105353004)
 - Nitrate as N

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Method: EPA 350.1
Description: 350.1 Ammonia, Distilled
Client: FOTH INFRASTRUCTURE & ENVIRONMENT
Date: October 29, 2014

General Information:

5 samples were analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 350.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: WETA/25846

- D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
 - RAW INFLUENT (Lab ID: 40105353005)
 - Nitrogen, Ammonia

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Method: EPA 351.2
Description: 351.2 Total Kjeldahl Nitrogen
Client: FOTH INFRASTRUCTURE & ENVIRONMENT
Date: October 29, 2014

General Information:

5 samples were analyzed for EPA 351.2. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/25817

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 10285454007,40105360001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1070874)
 - Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 1070875)
 - Nitrogen, Kjeldahl, Total

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Sample: UPSTREAM									
Lab ID: 40105353001									
Collected: 10/15/14 12:30									
Received: 10/16/14 09:10									
Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	2.6	mg/L	1.5	0.75	5		10/17/14 11:04	14797-55-8	
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	<0.25	mg/L	0.50	0.25	1	10/28/14 11:45	10/28/14 14:38	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	0.52J	mg/L	1.0	0.50	1	10/27/14 10:20	10/27/14 14:28	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

Sample: DOWNSTREAM Lab ID: 40105353002 Collected: 10/15/14 13:30 Received: 10/16/14 09:10 Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	2.6	mg/L	1.5	0.75	5		10/17/14 11:12	14797-55-8	
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	<0.25	mg/L	0.50	0.25	1	10/28/14 11:45	10/28/14 14:40	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	<0.50	mg/L	1.0	0.50	1	10/27/14 10:20	10/27/14 14:29	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

Sample: OUTFALL 101 Lab ID: 40105353003 Collected: 10/15/14 11:10 Received: 10/16/14 09:10 Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	<0.75	mg/L	1.5	0.75	5		10/16/14 20:31	14797-55-8	D3
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	8.5	mg/L	1.0	0.50	1	10/28/14 11:45	10/28/14 14:41	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	43.9	mg/L	4.0	2.0	2	10/27/14 10:20	10/27/14 16:02	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40105353

Sample: WEST LAGOON Lab ID: 40105353004 Collected: 10/15/14 13:00 Received: 10/16/14 09:10 Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	<0.75	mg/L	1.5	0.75	5		10/16/14 21:03	14797-55-8	D3
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	3.2	mg/L	1.0	0.50	1	10/28/14 11:45	10/28/14 14:42	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	29.5	mg/L	2.0	1.0	1	10/27/14 10:20	10/27/14 14:30	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
 without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Sample: RAW INFLUENT Lab ID: 40105353005 Collected: 10/15/14 10:50 Received: 10/16/14 09:10 Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	<0.75	mg/L	1.5	0.75	5		10/16/14 20:22	14797-55-8	D3
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	<1.5	mg/L	3.0	1.5	1	10/28/14 11:45	10/28/14 14:43	7664-41-7	D3
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	6.9	mg/L	2.0	1.0	1	10/27/14 10:20	10/27/14 14:31	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

QC Batch: WETA/25647 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40105353001, 40105353002, 40105353003, 40105353004, 40105353005

METHOD BLANK: 1065084 Matrix: Water
Associated Lab Samples: 40105353001, 40105353002, 40105353003, 40105353004, 40105353005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	<0.15	0.30	10/16/14 19:25	

LABORATORY CONTROL SAMPLE: 1065085

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	1.5	1.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1065086 1065087

Parameter	Units	1065086		1065087		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40105368011 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Nitrate as N	mg/L	0.30 U	1.5	1.5	0.97	0.98	65	65	90-110	1	20 M0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

QC Batch: WETA/25846 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia, Distilled
Associated Lab Samples: 40105353001, 40105353002, 40105353003, 40105353004, 40105353005

METHOD BLANK: 1071393 Matrix: Water
Associated Lab Samples: 40105353001, 40105353002, 40105353003, 40105353004, 40105353005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.25	0.50	10/28/14 14:19	

LABORATORY CONTROL SAMPLE: 1071394

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	9.5	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1071395 1071396

Parameter	Units	40105302001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Nitrogen, Ammonia	mg/L	<0.50	10	10	10.8	10.7	108	106	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1071397 1071398

Parameter	Units	40105353005 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Result						
Nitrogen, Ammonia	mg/L	<1.5	60	60	64.1	62.5	106	104	90-110	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

QC Batch: WETA/25817 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 40105353001, 40105353002, 40105353003, 40105353004, 40105353005

METHOD BLANK: 1070870 Matrix: Water
Associated Lab Samples: 40105353001, 40105353002, 40105353003, 40105353004, 40105353005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.50	1.0	10/27/14 14:13	

LABORATORY CONTROL SAMPLE: 1070871

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	5	5.0	100	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1070872 1070873

Parameter	Units	10285454007 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	Conc.	Result	Result					
Nitrogen, Kjeldahl, Total	mg/L	ND	5	5	5.5	5.6	101	102	90-110	1 20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1070874 1070875

Parameter	Units	40105360001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	Conc.	Result	Result					
Nitrogen, Kjeldahl, Total	mg/L	214	100	100	330	327	116	113	90-110	1 20 M0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LOD - Limit of Detection.

LOQ - Limit of Quantitation.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40105353

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40105353001	UPSTREAM	EPA 300.0	WETA/25647		
40105353002	DOWNSTREAM	EPA 300.0	WETA/25647		
40105353003	OUTFALL 101	EPA 300.0	WETA/25647		
40105353004	WEST LAGOON	EPA 300.0	WETA/25647		
40105353005	RAW INFLUENT	EPA 300.0	WETA/25647		
40105353001	UPSTREAM	EPA 350.1	WETA/25846	EPA 350.1	WETA/25858
40105353002	DOWNSTREAM	EPA 350.1	WETA/25846	EPA 350.1	WETA/25858
40105353003	OUTFALL 101	EPA 350.1	WETA/25846	EPA 350.1	WETA/25858
40105353004	WEST LAGOON	EPA 350.1	WETA/25846	EPA 350.1	WETA/25858
40105353005	RAW INFLUENT	EPA 350.1	WETA/25846	EPA 350.1	WETA/25858
40105353001	UPSTREAM	EPA 351.2	WETA/25817	EPA 351.2	WETA/25833
40105353002	DOWNSTREAM	EPA 351.2	WETA/25817	EPA 351.2	WETA/25833
40105353003	OUTFALL 101	EPA 351.2	WETA/25817	EPA 351.2	WETA/25833
40105353004	WEST LAGOON	EPA 351.2	WETA/25817	EPA 351.2	WETA/25833
40105353005	RAW INFLUENT	EPA 351.2	WETA/25817	EPA 351.2	WETA/25833

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

(Please Print Clearly)

Company Name: **FORA**
 Branch/Location: **GREEN BK**
 Project Contact: **SCOTT JANSSEN**
 Phone: **980-497-2500**
 Project Number: **149055**
 Project Name: **Pinnacle - Derrin**
 Project State: **WI**
 Sampled By (Print): **SCOTT JANSSEN**
 Sampled By (Sign): *Scott Janssen*
 PO #: _____

Data Package Options (billable)
 EPA Level III
 EPA Level IV
 On your sample (billable)
 NOT needed on your sample

Matrix Codes
 A = Air
 B = Biota
 C = Charcoal
 O = Oil
 S = Soil
 SI = Sludge
 W = Water
 DW = Drinking Water
 GW = Ground Water
 SW = Surface Water
 WW = Waste Water
 WP = Wipe

PACE Analytical
 www.pacestatus.com

CHAIN OF CUSTODY

UPPER MIDWEST REGION
 MN: 612-607-1700 WI: 920-469-2436

Preservation Codes
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Filtered? (YES/NO)
 PRESERVATION (CODE)

PAGE LAB #	CLIENT FIELD ID	DATE	TIME	MATRIX	Analyses Requested			Pick Label
					NH3-N	TKN	NITRATE	
001	UPSTREAM	10/5/14	1230	SW	X	X	X	
002	DOWNSTREAM	10/5/14	1330	SW	X	X	X	
003	OUTFA 11 101	10/5/14	1110	WW	X	X	X	
004	WEST LAKEON	10/15/14	1300	WW	X	X	X	
005	RAW EFFLUENT	10/15/14	1050	WW	X	X	X	

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____

Transmit Prelim Rush Results by (complete what you want):
 Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____

Relinquished By: *Scott Janssen* Date/Time: 10/16/14 0700
 Relinquished By: *Scott Janssen* Date/Time: 10/16/14 0910
 Relinquished By: _____ Date/Time: _____
 Relinquished By: _____ Date/Time: _____

Received By: *Ryan Schuy* Date/Time: 10/16/14 0825
 Received By: *S. Bork* Date/Time: 10/16/14 0915
 Received By: _____ Date/Time: _____
 Received By: _____ Date/Time: _____

Quote #: _____

Mail To Contact: **PAUL KARTHA**

Mail To Company: **FORA**

Mail To Address: **2121 INNOVATION COY
 P.O. BOX 5095
 DERRIN, WI 54115**

Invoice To Contact: **Accounts Payable**

Invoice To Company: **FORA**

Invoice To Address: **As Above**

Invoice To Phone: _____

CLIENT COMMENTS

LAB COMMENTS (Lab Use Only)

Profile #

Receipt Temp = **C** °C

Sample Receipt pH **OK/ Adjusted**

Cooler Custody Seal **Present / Not Present**

Intact / Not Intact **Intact**

PACE Project No. **40105353**



Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Project # WO#: 40105353

Client Name: Feth



Courier: Fed Ex UPS Client Pace Other:

Tracking #:
Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used SK-44 Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ICorr: Biological Tissue is Frozen: yes

Temp Blank Present: yes no

Person examining contents:
Date: 10/16/14
Initials: SB

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Comments:

Table with 15 rows for checklist items: Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution:

If checked, see attached form for additional comments

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: AMH for TV Date: 10/16/14

December 12, 2014

Phil Korth
Foth Infrastructure & Environment, LLC
2121 Innovation Court
Suite 300
De Pere, WI 54115

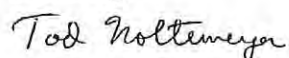
RE: Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Dear Phil Korth:

Enclosed are the analytical results for sample(s) received by the laboratory on November 26, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Tod Noltemeyer
tod.noltemeyer@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334

New York Certification #: 11888
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
US Dept of Agriculture #: S-76505
Wisconsin Certification #: 405132750

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE SUMMARY

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40107663001	UPSTREAM	Water	11/25/14 12:00	11/26/14 16:30
40107663002	DOWNSTREAM	Water	11/25/14 11:00	11/26/14 16:30
40107663003	OUTFALL 101	Water	11/25/14 12:30	11/26/14 16:30
40107663004	WEST LAGOON	Water	11/25/14 10:50	11/26/14 16:30
40107663005	RAW INFLUENT	Water	11/25/14 10:10	11/26/14 16:30
40107663006	WL SEDIMENT	Solid	11/25/14 11:40	11/26/14 16:30

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SAMPLE ANALYTE COUNT

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40107663001	UPSTREAM	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	TMK	1	PASI-G
		EPA 351.2	TMK	1	PASI-G
40107663002	DOWNSTREAM	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	TMK	1	PASI-G
		EPA 351.2	TMK	1	PASI-G
40107663003	OUTFALL 101	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	TMK	1	PASI-G
		EPA 351.2	TMK	1	PASI-G
40107663004	WEST LAGOON	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	TMK	1	PASI-G
		EPA 351.2	TMK	1	PASI-G
40107663005	RAW INFLUENT	EPA 300.0	HMB	1	PASI-G
		EPA 350.1	TMK	1	PASI-G
		EPA 351.2	TMK	1	PASI-G
40107663006	WL SEDIMENT	ASTM D2974-87	MAV	1	PASI-G
		EPA 300.0	HMB	1	PASI-G
		EPA 350.1	TMK	1	PASI-G
		EPA 351.2	TMK	1	PASI-G

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

SUMMARY OF DETECTION

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40107663001	UPSTREAM					
EPA 300.0	Nitrate as N	3.5	mg/L	0.30	11/26/14 20:44	
EPA 351.2	Nitrogen, Kjeldahl, Total	0.62J	mg/L	1.0	12/03/14 13:11	
40107663002	DOWNSTREAM					
EPA 300.0	Nitrate as N	3.4	mg/L	0.30	11/26/14 20:54	
40107663003	OUTFALL 101					
EPA 350.1	Nitrogen, Ammonia	2.1	mg/L	1.0	12/04/14 17:30	
EPA 351.2	Nitrogen, Kjeldahl, Total	14.9	mg/L	2.0	12/03/14 13:31	M0
40107663004	WEST LAGOON					
EPA 350.1	Nitrogen, Ammonia	23.5	mg/L	1.5	12/04/14 17:31	
EPA 351.2	Nitrogen, Kjeldahl, Total	35.3	mg/L	4.0	12/03/14 13:15	
40107663005	RAW INFLUENT					
EPA 350.1	Nitrogen, Ammonia	2.8J	mg/L	3.0	12/04/14 17:31	D3
EPA 351.2	Nitrogen, Kjeldahl, Total	44.6	mg/L	4.0	12/03/14 13:18	
40107663006	WL SEDIMENT					
ASTM D2974-87	Percent Moisture	68.8	%	0.10	12/10/14 14:07	
EPA 350.1	Nitrogen, Ammonia	975	mg/kg	80.1	12/08/14 15:33	
EPA 351.2	Nitrogen, Kjeldahl, Total	12000	mg/kg	1170	12/03/14 13:24	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Method: EPA 300.0
Description: 300.0 IC Anions
Client: FOTH INFRASTRUCTURE & ENVIRONMENT
Date: December 12, 2014

General Information:

6 samples were analyzed for EPA 300.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 300.0 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/26478

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40107551001,40107699002

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1092179)
 - Nitrate as N
- MSD (Lab ID: 1092180)
 - Nitrate as N

Additional Comments:

Analyte Comments:

QC Batch: WETA/26397

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- RAW INFLUENT (Lab ID: 40107663005)
 - Nitrate as N
- WEST LAGOON (Lab ID: 40107663004)
 - Nitrate as N

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Method: EPA 350.1
Description: 350.1 Ammonia
Client: FOTH INFRASTRUCTURE & ENVIRONMENT
Date: December 12, 2014

General Information:

1 sample was analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 350.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Method: EPA 350.1
Description: 350.1 Ammonia, Distilled
Client: FOTH INFRASTRUCTURE & ENVIRONMENT
Date: December 12, 2014

General Information:

5 samples were analyzed for EPA 350.1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 350.1 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/26453

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40107509002,40107663001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1091285)
 - Nitrogen, Ammonia
- MSD (Lab ID: 1091286)
 - Nitrogen, Ammonia

R1: RPD value was outside control limits.

- MSD (Lab ID: 1091286)
 - Nitrogen, Ammonia

Additional Comments:

Analyte Comments:

QC Batch: WETA/26453

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

- RAW INFLUENT (Lab ID: 40107663005)
 - Nitrogen, Ammonia

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

PROJECT NARRATIVE

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Method: EPA 351.2
Description: 351.2 Total Kjeldahl Nitrogen
Client: FOTH INFRASTRUCTURE & ENVIRONMENT
Date: December 12, 2014

General Information:

6 samples were analyzed for EPA 351.2. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: WETA/26425

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40107586001,40107663003

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 1090406)
 - Nitrogen, Kjeldahl, Total
- MSD (Lab ID: 1090407)
 - Nitrogen, Kjeldahl, Total

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

Sample: UPSTREAM		Lab ID: 40107663001	Collected: 11/25/14 12:00	Received: 11/26/14 16:30	Matrix: Water				
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	3.5	mg/L	0.30	0.15	1		11/26/14 20:44	14797-55-8	
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	<0.25	mg/L	0.50	0.25	1	12/04/14 14:40	12/04/14 17:26	7664-41-7	M0,R1
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	0.62J	mg/L	1.0	0.50	1	12/03/14 07:50	12/03/14 13:11	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

Sample: DOWNSTREAM **Lab ID: 40107663002** Collected: 11/25/14 11:00 Received: 11/26/14 16:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	3.4	mg/L	0.30	0.15	1		11/26/14 20:54	14797-55-8	
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	<0.25	mg/L	0.50	0.25	1	12/04/14 14:40	12/04/14 17:29	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	<0.50	mg/L	1.0	0.50	1	12/03/14 07:50	12/03/14 13:12	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..



ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN
 Pace Project No.: 40107663

Sample: **OUTFALL 101** Lab ID: **40107663003** Collected: 11/25/14 12:30 Received: 11/26/14 16:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	<0.15	mg/L	0.30	0.15	1		11/26/14 21:05	14797-55-8	
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	2.1	mg/L	1.0	0.50	1	12/04/14 14:40	12/04/14 17:30	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	14.9	mg/L	2.0	1.0	2	12/03/14 07:50	12/03/14 13:31	7727-37-9	M0

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
 without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Sample: WEST LAGOON Lab ID: 40107663004 Collected: 11/25/14 10:50 Received: 11/26/14 16:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	<0.75	mg/L	1.5	0.75	5		11/26/14 21:15	14797-55-8	D3
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	23.5	mg/L	1.5	0.75	1	12/04/14 14:40	12/04/14 17:31	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	35.3	mg/L	4.0	2.0	1	12/03/14 07:50	12/03/14 13:15	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Sample: RAW INFLUENT Lab ID: 40107663005 Collected: 11/25/14 10:10 Received: 11/26/14 16:30 Matrix: Water									
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions	Analytical Method: EPA 300.0								
Nitrate as N	<1.5	mg/L	3.0	1.5	10		11/26/14 21:26	14797-55-8	D3
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	2.8J	mg/L	3.0	1.5	1	12/04/14 14:40	12/04/14 17:31	7664-41-7	D3
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	44.6	mg/L	4.0	2.0	1	12/03/14 07:50	12/03/14 13:18	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ANALYTICAL RESULTS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

Sample: WL SEDIMENT **Lab ID: 40107663006** Collected: 11/25/14 11:40 Received: 11/26/14 16:30 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	68.8	%	0.10	0.10	1		12/10/14 14:07		
300.0 IC Anions	Analytical Method: EPA 300.0 Preparation Method: EPA 300.0								
Nitrate as N	<4.8	mg/kg	9.7	4.8	1	12/08/14 11:25	12/09/14 14:24	14797-55-8	
350.1 Ammonia	Analytical Method: EPA 350.1 Preparation Method: EPA 350.1								
Nitrogen, Ammonia	975	mg/kg	80.1	40.1	1	12/08/14 12:55	12/08/14 15:33	7664-41-7	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2								
Nitrogen, Kjeldahl, Total	12000	mg/kg	1170	583	2	12/03/14 07:50	12/03/14 13:24	7727-37-9	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

QC Batch: PMST/10729	Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87	Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 40107663006	

SAMPLE DUPLICATE: 1094452

Parameter	Units	40108164004 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	11.1	11.2	1	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

QC Batch: WETA/26478 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40107663006

METHOD BLANK: 1092174 Matrix: Solid
Associated Lab Samples: 40107663006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/kg	<1.5	3.0	12/09/14 13:22	

LABORATORY CONTROL SAMPLE: 1092175

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/kg	15	15.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1092176 1092177

Parameter	Units	40107551001 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Nitrate as N	mg/kg	28.6	26.6	26.4	50.0	50.7	80	84	80-120	1	20

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1092179 1092180

Parameter	Units	40107699002 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Nitrate as N	mg/kg	<17.2	86.1	86.7	<17.2	<17.3	0	0	80-120	20	M0

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

QC Batch: WETA/26397 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Associated Lab Samples: 40107663001, 40107663002, 40107663003, 40107663004, 40107663005

METHOD BLANK: 1089590 Matrix: Water
Associated Lab Samples: 40107663001, 40107663002, 40107663003, 40107663004, 40107663005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate as N	mg/L	<0.15	0.30	11/26/14 13:39	

LABORATORY CONTROL SAMPLE: 1089591

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate as N	mg/L	1.5	1.5	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1089592 1089593

Parameter	Units	40107640001		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	Spike Conc.	Result	% Rec	Result	% Rec				
Nitrate as N	mg/L	<0.15	1.5	1.5	1.5	1.5	100	100	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

QC Batch: WETA/26491 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 40107663006

METHOD BLANK: 1092903 Matrix: Solid
Associated Lab Samples: 40107663006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/kg	<7.5	15.0	12/08/14 15:28	

LABORATORY CONTROL SAMPLE: 1092904

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/kg	300	308	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1092905 1092906

Parameter	Units	40107551001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Nitrogen, Ammonia	mg/kg	12400	531	531	13200	12900	157	86	80-120	3	20	P6

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1092907 1092908

Parameter	Units	40107726001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.								
Nitrogen, Ammonia	mg/kg	<9.7	389	389	388	385	100	99	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

QC Batch: WETA/26453 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia, Distilled
Associated Lab Samples: 40107663001, 40107663002, 40107663003, 40107663004, 40107663005

METHOD BLANK: 1091281 Matrix: Water
Associated Lab Samples: 40107663001, 40107663002, 40107663003, 40107663004, 40107663005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.25	0.50	12/04/14 17:11	

LABORATORY CONTROL SAMPLE: 1091282

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	10	9.7	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1091283 1091284

Parameter	Units	40107509002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.50	10	10	10.4	9.8	104	98	90-110	6 20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1091285 1091286

Parameter	Units	40107663001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Nitrogen, Ammonia	mg/L	<0.25	10	100	17.9	9.6	178	9	90-110	60 20	M0,R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

QC Batch: WETA/26424 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 40107663006

METHOD BLANK: 1090398 Matrix: Solid
Associated Lab Samples: 40107663006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	<50.0	100	12/03/14 12:46	

LABORATORY CONTROL SAMPLE: 1090399

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/kg	500	441	88	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1090400 1090401

Parameter	Units	1090400		1090401		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result							
Nitrogen, Kjeldahl, Total	mg/kg	35.7J	256	256	269	270	91	91	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALITY CONTROL DATA

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

QC Batch: WETA/26425 Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 Analysis Description: 351.2 TKN
Associated Lab Samples: 40107663001, 40107663002, 40107663003, 40107663004, 40107663005

METHOD BLANK: 1090402 Matrix: Water
Associated Lab Samples: 40107663001, 40107663002, 40107663003, 40107663004, 40107663005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.50	1.0	12/03/14 12:59	

LABORATORY CONTROL SAMPLE: 1090403

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	5	4.7	94	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1090404 1090405

Parameter	Units	40107586001 Result	MS		MSD		% Rec		% Rec Limits	Max		Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec		RPD	RPD	
Nitrogen, Kjeldahl, Total	mg/L	15.9	5	5	20.7	20.9	97	100	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1090406 1090407

Parameter	Units	40107663003 Result	MS		MSD		% Rec		% Rec Limits	Max		Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec		RPD	RPD	
Nitrogen, Kjeldahl, Total	mg/L	14.9	5	5	20.9	20.9	119	120	90-110	0	20 M0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

QUALIFIERS

Project: 14P055 PINNACLE-DARIEN
Pace Project No.: 40107663

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LOD - Limit of Detection.

LOQ - Limit of Quantitation.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

P6 Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.,

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 14P055 PINNACLE-DARIEN

Pace Project No.: 40107663

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40107663006	WL SEDIMENT	ASTM D2974-87	PMST/10729		
40107663006	WL SEDIMENT	EPA 300.0	WETA/26478	EPA 300.0	WETA/26494
40107663001	UPSTREAM	EPA 300.0	WETA/26397		
40107663002	DOWNSTREAM	EPA 300.0	WETA/26397		
40107663003	OUTFALL 101	EPA 300.0	WETA/26397		
40107663004	WEST LAGOON	EPA 300.0	WETA/26397		
40107663005	RAW INFLUENT	EPA 300.0	WETA/26397		
40107663006	WL SEDIMENT	EPA 350.1	WETA/26491	EPA 350.1	WETA/26499
40107663001	UPSTREAM	EPA 350.1	WETA/26453	EPA 350.1	WETA/26462
40107663002	DOWNSTREAM	EPA 350.1	WETA/26453	EPA 350.1	WETA/26462
40107663003	OUTFALL 101	EPA 350.1	WETA/26453	EPA 350.1	WETA/26462
40107663004	WEST LAGOON	EPA 350.1	WETA/26453	EPA 350.1	WETA/26462
40107663005	RAW INFLUENT	EPA 350.1	WETA/26453	EPA 350.1	WETA/26462
40107663006	WL SEDIMENT	EPA 351.2	WETA/26424	EPA 351.2	WETA/26442
40107663001	UPSTREAM	EPA 351.2	WETA/26425	EPA 351.2	WETA/26443
40107663002	DOWNSTREAM	EPA 351.2	WETA/26425	EPA 351.2	WETA/26443
40107663003	OUTFALL 101	EPA 351.2	WETA/26425	EPA 351.2	WETA/26443
40107663004	WEST LAGOON	EPA 351.2	WETA/26425	EPA 351.2	WETA/26443
40107663005	RAW INFLUENT	EPA 351.2	WETA/26425	EPA 351.2	WETA/26443

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

(Please Print Clearly)

Company Name: **FTH**
 Branch/Location: **KIPPEN PAUL**
 Project Contact: **SPOT JANSSEN**
 Phone: **9-AD-147-3500**
 Project Number: **140035**
 Project Name: **PUMP&-DAMEN**
 Project State: **WI.**
 Sampled By (Print): **Cody Eberly**
 Sampled By (Sign): *Cody Eberly*
 PO #: **604-684**

Data Package Options
 EPA Level III
 EPA Level IV

MSMSD
 On your sample (billable)
 NOT needed on your sample

Matrix Codes
 A = Air
 B = Sludge
 C = Charcoal
 O = Oil
 S = Soil
 SI = Sludge
 W = Water
 DW = Drinking Water
 GW = Ground Water
 SW = Surface Water
 WW = Waste Water
 WP = Wipe

Regulatory Program:



www.faceanalytics.com

CHAIN OF CUSTODY

Preservation Codes
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED?
 (YES/NO)
PRESERVATION (CODE)*

UPPER MIDWEST REGION

MN: 612-607-1700 WI: 920-469-2436

PAGE LAB #	CLIENT FIELD ID	DATE	COLLECTION TIME	MATRIX	Analyses Requested		Y/N	Pack Label
					NH3-N	TKN		
601	Weststream	11/25/14	12:00	SW	X	X	N	N
002	WANDSTREAM	11/25/14	11:00	SW	X	X	N	N
003	DITFIELD 101	11/25/14	12:30	WW	X	X	N	N
004	WEST LAKEVIEW	11/25/14	10:50	WW	X	X	N	N
005	KIAVA INTERCANT	11/25/14	10:10	WW	X	X	N	N
006	WL SEdiment	11/25/14	11:40	S	X	X	N	N

Quote #:

Mail To Contact: Phil Koehn

Mail To Company: FTH

Mail To Address: 2121 Innovation Court
PO Box 5045
De Pere, WI 54115

Invoice To Contact: Accounts Payable

Invoice To Company: FTH

Invoice To Address: AS ABOVE

Invoice To Phone:

CLIENT COMMENTS

LAB COMMENTS (Lab Use Only)

2-250 ml AC

1-802 ag H

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:
 Email #2:
 Telephone:
 Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By: *Cody Eberly* Date/Time: 11/25/14 18:00

Relinquished By: *Spencer Schmitt* Date/Time: 11/26/14 16:30

Relinquished By: Date/Time:

Relinquished By: Date/Time:

Received By: *Spencer Schmitt* Date/Time: 11/26/14 09:30

Received By: *Spencer Schmitt* Date/Time: 11/26/14 16:30

Received By: Date/Time:

Received By: Date/Time:

Receipt Temp = 3 °C

Sample Receipt pH (OK) Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

FACE Project No. 401071603



Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Client Name: Feth

Project #: WO#: 40107663



Courier: Fed Ex UPS Client Pace Other

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Custody Seal on Samples Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used SR32 Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 3 /Corr: 3 Biological Tissue is Frozen: yes no

Temp Blank Present: yes no

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

Person examining contents:
Date: 11-26-14
Initials: KB

Comments:

Table with 15 rows for Chain of Custody Present, Chain of Custody Filled Out, Chain of Custody Relinquished, Sampler Name & Signature on COC, Samples Arrived within Hold Time, Short Hold Time Analysis (<72hr), Rush Turn Around Time Requested, Sufficient Volume, Correct Containers Used, Containers Intact, Filtered volume received for Dissolved tests, Sample Labels match COC, All containers needing preservation have been checked, All containers needing preservation are found to be in compliance with EPA recommendation, Headspace in VOA Vials (>6mm), Trip Blank Present, Trip Blank Custody Seals Present, Pace Trip Blank Lot # (if purchased).

Client Notification/ Resolution:
Person Contacted: Date/Time:
Comments/ Resolution: If checked, see attached form for additional comments

Project Manager Review: [Signature] Date: 11/26/14



March 27, 2015

Joseph Knapp
W 8800 County Road X
Darien WI 53114

Subject: Birds Eye Foods Lagoon Action Plan

Dear Mr. Knapp:

The Department has reviewed the Lagoon Action Plan submitted by Foth on behalf of Birds Eye Foods in Darien on February 4th, 2015 in accordance with WPDES permit WI-0050679-06.

Recommendations made in the report were as follows:

1. Continue to use the West Lagoon without modification.
2. Continue monitoring the groundwater down gradient of the West Lagoon including groundwater monitoring wells across Darien Creek. Revisit the action plan if groundwater monitoring indicates increasing ammonia levels across Darien Creek.
3. Prepare plans for a flow meter and composite sampler for use when wastewater is sprayed on field 008. Plans should be submitted by April 1, 2015 as required by the WPDES permit.
4. Measure the sediment volume in West Lagoon in 2015 and compare to 2007 report. Consider sediment removal if the volume has increased significantly.
5. Evaluate the sludge for TKN, ammonia, and nitrate and compare to 2007 report. Consider sediment removal if the parameter results have increased significantly.
6. Request a variance for ammonia levels in groundwater monitoring wells WD-3, WD3-P, WD-4, and WD-5.

The report submitted by Foth states that the West Lagoon is leaking and the groundwater is flowing into Darien Creek. It is clear to the Department that some of the groundwater is being intercepted by Darien Creek, but it is not clear that all groundwater is being intercepted. Based on the groundwater well map, groundwater to the northwest of WD-4 beyond the Design Management Zone (DMZ) may not intersect the creek until after it has left Birds Eye's property.

Birds Eye may wish to provide the Department with additional data describing if there are any uses of groundwater (i.e. wells) northwest of well WD-4. Birds Eye could also consider the installation of a piezometer on the opposite side of the creek to better define the fate of the groundwater plume. This piezometer could be nested with MW-8 and installed a bit further downstream. MW-6 and MW-6P appear to be side-gradient to the groundwater flow and may not be fully capturing the quality of the impacted groundwater.

It is not clear how much water is leaking from the lagoon and indirectly discharging to surface water. In accordance with NR 213.10(2)(a), Wis. Adm. Code, exfiltration rate from the lagoon may not exceed 500 gallons per acre per day. Based on aerial photos, the West Lagoon appears to be approximately 11 acres in size. Attempts should be made to quantify the exfiltration rate from the West Lagoon and data shall be submitted to the Department justifying the lagoon leakage.

Additionally, in accordance with NR 213.08(2)(c), Wis. Adm. Code, a minimum separation of 5 feet shall be maintained between the bottom of the lagoon liner or subbase of a storage structure and either bedrock or the groundwater level, whichever is higher. Data shall be submitted to the Department regarding the depth of the West Lagoon and the groundwater or bedrock level when it was installed.

As part of the Lagoon study, stream samples were taken upstream and downstream of the lagoon to determine the effect of the nitrogen on the stream. Stream samples were taken on October 15, 2014 and November 25, 2014. Precipitation data from both Madison and Milwaukee (shown below from the National Weather Service) on the four days leading up to each sample event indicate that stream flow was likely higher than normal and provided additional dilution. If the West Lagoon continues to be used without modification, additional stream monitoring during dry conditions should be reported to the Department. The Department would also suggest that an additional location further downstream be sampled to make sure any ammonia contribution from the lagoon is being measured.

Date	Milwaukee	Madison
10/12/2014	0.04"	0.02"
10/13/2014	1.27"	1.4"
10/14/2014	0.32"	0.63"
10/15/2014	0.14"	0.03"
SUM	1.77"	2.08"

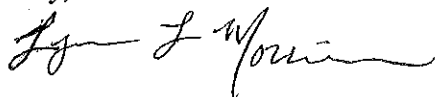
Date	Milwaukee	Madison
11/22/2014	0.1"	0.01"
11/23/2014	0.74"	0.7"
11/24/2014	0.37"	0.38"
11/25/2014	<0.01"	<0.01"
SUM	1.21"	1.09"

Groundwater data from wells WD-3, WD-3P, WD-4, and WD-5 have shown significant ammonia exceedences for the entirety of the Department's electronic record from the facility beginning in 1996. If additional work is done by Birds Eye to prove that no impact on the stream occurs and that there is no groundwater use prior to its interception by Darien Creek, the lagoon may continue to be used. A variance for wells WD-3, WD-3P, WD-4, and WD-5 will not be granted for purposes of increased nitrogen loading above crop needs on sprayfield 008 while the impact of the West Lagoon is being assessed.

If Birds Eye continues to use the West Lagoon unmodified, additional study about its effect on the environment needs to be completed. The Department recommends contacting Luke Roffler, Fisheries Biologist, located in the Richard Bong State Recreational Area at Luke.Roffler@Wisconsin.gov or at 262-822-8164, and Rachel Sabre, Stream Biologist, located in Waukesha Service Center, at Rachel.Sabre@Wisconsin.gov or at 262-574-2133, for confirmation of the impact on the stream and to determine any continued future in-stream sampling that would be required.

A follow-up meeting was requested regarding the Main Lagoon via Kimberly Thomas-Britt. We could discuss additional data needs for the West Lagoon at that meeting as well if you would like.

Sincerely,



Lynn L. Morrison
Wastewater Engineer

Cc: Dan Majorowicz – Birds Eye Foods
Kimberly Thomas-Britt – DNR, Milwaukee
Luke Roffler – DNR, Bong State Recreational Area

Phil Korth – Foth
Rachel Sabre – DNR, Waukesha



Green Bay Location

2121 Innovation Court, Suite 300
P.O. Box 5126 • De Pere, WI 54115-5126
(920) 497-2500 • Fax: (920) 497-8516
www.foth.com

February 5, 2016

Mr. Barton Chapman
Wastewater Specialist
Wisconsin Department of Natural Resources
101 South Webster Street
P.O. Box 7921
Madison, WI 54707-7921

Dear Mr. Chapman:

RE: Birds Eye Foods, Darien, Wisconsin
West Lagoon Preliminary Site Investigation

The purpose of this letter report is to provide the Wisconsin Department of Natural Resources (WDNR) with field and laboratory data collected during soil and groundwater sampling at the Birds Eye Foods (BEF) plant in Darien, Wisconsin (Darien Plant), specifically in the vicinity of the West Lagoon and the North Lagoon. Foth Infrastructure & Environment, LLC (Foth) has prepared these data based on our understanding of the Wisconsin Administrative Code (WAC) Chapters NR 213 and NR 214 and our discussions with the WDNR on January 14, 2016.

It is understood that it is BEF's intention to submit the data for WDNR to review and approve an exemption request to WAC NR 213.08(2)(c) in order to modify the West Lagoon at the Darien Plant. BEF intends to modify and improve the West Lagoon by constructing a new geomembrane liner and potentially increasing its capacity. This letter report includes data collected by Foth and BEF during historical field investigations completed in the vicinity of the West Lagoon and North Lagoon.

Purpose and Scope

The purpose of this letter report is to provide the WDNR with historical information collected by Foth and BEF during field investigations which can be used to approve an exemption request to the following requirements in order to modify the West Lagoon at the Darien Plant.

- ♦ WAC NR 213.08(2)(c) - *A minimum of 5-feet shall be maintained between the bottom of the lagoon and either bedrock or groundwater level whichever is*

higher. Based on Foth's evaluation of the existing data, the separation between the bottom of the lagoon and the historical high groundwater is generally about 4 feet across the West Lagoon, with a minimum separation of approximately 3 feet; therefore, this document requests an exemption to the 5-foot criterion. Foth's evaluation of groundwater elevations with respect to the bottom of the lagoon are discussed in further detail in the Groundwater Elevations section of this report.

- ◆ WAC NR 214.20 (6)(b) - *The treatment system owner or operator shall submit the results of the preliminary site investigation and propose a full scale treatment site investigation plan.* Because the lagoon already exists in this location and sufficient historical data exists, as presented in this Preliminary Site Investigation letter report, Foth requests that a full scale treatment site investigation plan not be required in order for BEF to modify the West Lagoon.

The scope of this report includes the following:

- ◆ Lagoon location, soil survey, and soil nutrient content information per WAC NR 214.20 (6); and
- ◆ Existing soil and groundwater data collected during historical investigations and monitoring events performed in the vicinity of the West Lagoon and the North Lagoon, which may be used to satisfy the requirements of WAC NR 214.20 (6).

Data Sources

Soil and groundwater data compiled for this soil investigation are based on the following historical field investigations and monitoring events:

- ◆ Twenty-one test pits completed in the 27-acre site located to the southwest of the West Lagoon (spray field site for outfall 008, herein called the 27-acre site) (TP-1 through TP-21).
- ◆ Analytical nutrient data for samples collected at selected intervals during completion of test pits TP-4, TP-5, TP-6, TP-9, TP-10, and TP-18.
- ◆ Three groundwater monitoring wells (GWMWs) constructed around the 27-acre site (MW-201, MW-202, and MW-203).
- ◆ Three soil borings and seven GWMWs completed around the West Lagoon including SB-11, SB-12, SB-13, WD-3P, WD-4, WD-5, WD-6, WD-6P, WD-7, and WD-8.

- ◆ Seven soil borings completed at the North Lagoon, north of the plant. Including supplemental information from soil boring logs for wells B-32R, B-32, B-31, and B-30, and soil boring B-7R.
- ◆ Quarterly depths to groundwater at the GWMWs in the vicinity of the West Lagoon (WD-1, WD-3, WD-4, WD-5, WD-6, WD-8, MW-201, MW-202, and MW-203) collected by BEF and retrieved from WDNR Web Access Management System (WAMS) for 2012-2015.
- ◆ Published soils data from the Soil Conservation Service (SCS) Web Soil Survey.

In addition to the historical data discussed above, Foth completed a survey of the West Lagoon, the site GWMWs (ground surface, top of PVC and top of casing elevations), and other relevant features on January 21, 2016. During this survey, the bottom of the lagoon was frozen, and the base elevation was estimated based on hand auger borings completed on the bottom of the lagoon.

Qualifications of Investigators (WAC NR 214.20 (2))

The 21 test pits completed in the 27-acre site and seven soil borings completed at the North Lagoon site were logged by Mr. Jeremy Haynes of Foth's Kansas City, Missouri office. Mr. Haynes is a professional geologist licensed in Kansas and registered in Missouri. Mr. Haynes has seven years of professional experience working as a geologist.

The three GWMWs constructed in the 27-acre site were constructed under the supervision of Mr. Brian Stanul from Foth's Madison, Wisconsin office. Mr. Stanul is a professional engineer licensed in the state of Wisconsin. Mr. Stanul has over ten years of experience in environmental engineering and remediation.

Location – West Lagoon (WAC NR 214.20 (6)(a) and NR 213.08 (1))

The West Lagoon is located in T.2.N-R15E, Town of Darien, Walworth County, Wisconsin in the approximate center of Section 32, specifically the northwest of the southeast quarter, as shown on Figure 1. The total acreage of the West Lagoon is approximately 11.3 acres, which resides southwest of the plant on a parcel bounded on the north by the Wisconsin and Southern Railroad and Darien Creek; on the west and south by the Wisconsin and Southern Railroad; and on the east by Darien Creek and CTH X.

WAC NR 213.08(1) lists the site location criteria for lagoons. These location criteria are paraphrased below in *italics* along with a description of how the proposed lagoon complies with the setback distances which are presented in regular font.

- ◆ NR 213.08(1)(a) 1. - *1,000 feet from a well serving a community public water supply system.* The closest public water supply system is in the village of Darien, which is located approximately 1.5 miles northeast of the West Lagoon.
- ◆ NR 213.08(1)(a) 2. - *250 feet from other private water supply wells.* The closest residence with the potential to have a private water supply well is located approximately 960 feet to the southeast of the West Lagoon (W9005 CTH X). The closest known private water supply well is approximately 2,600 feet to the southwest of the lagoon (W9170 CTH X).
- ◆ NR 213.08(1)(a) 3. - *500 feet from the nearest inhabited dwelling.* No inhabited dwellings are located within 500 feet of the West Lagoon.
- ◆ NR 213.08(1)(b) - *Lagoons may not be located in a floodway.* The FEMA Floodplain Map provided in Attachment 1 shows that the West Lagoon is not located in a floodway. The berms direct flood water around the lagoon.
- ◆ NR 213.08(1)(c) - *Lagoons may not be located within wetlands.* The wetlands map published by the National Wetlands Inventory from the United States Fish and Wildlife Service is included as Attachment 1. This wetlands map indicates that the West Lagoon is not in a wetland. A Freshwater Emergent Wetland is located to the north.
- ◆ NR 213.08(1)(d) - *Lagoons shall be designed to minimize the level of substances in groundwater and prevent the exceedances for groundwater preventive action limits (PAL) to the extent technically and economically feasible.* Proposed improvements to the West Lagoon include a geomembrane liner which will minimize the level of substances in groundwater and prevent the exceedances of groundwater PALs.
- ◆ NR 213.08(2)(c) - *A minimum of 5 feet shall be maintained between the bottom of the lagoon and either bedrock or groundwater level whichever is higher.* Foth's evaluation of groundwater elevations with respect to the bottom of the lagoon are discussed in the Groundwater Elevations section of this report.

Field Methods (WAC NR 214.20 (3) and (6))

Soil Borings and Groundwater Monitoring Well Installation – West Lagoon

On October 25 through 27, 1993, three soil borings and seven GWMWs were completed by WTD Environmental Drilling, Inc. (WTD) under the supervision of a Foth professional. Well WD-8 was completed on December 5, 1996 by Environmental & Foundation Drilling, Inc. The soil borings (SB-11, SB-12, SB-13) and GWMWs (WD-3P, WD-4, WD-5, WD-6, WD-6P, WD-7, WD-8) were completed at locations

shown on Figure 2. Soil borings were completed using hollow stem augers in substantial compliance with the ASTM D 5784 (Guide for use of Hollow-Stem Augers for Geoenvironmental Exploration and Installation of Water-Quality Monitoring Devices). Soil was sampled at 2-foot intervals using a split-spoon sampler in accordance with ASTM D 1586 (Test Method for Penetration Test and Split-Barrel Sampling of Soils). After drilling and sampling was completed, soil borings were abandoned in accordance with WAC NR 141.25 (Abandonment Requirements) and GWMWs were constructed and developed in accordance with WAC NR 141.

Soil boring logs and well construction and development forms are included in Attachment 2.

Test Pits – 27-Acre Site

On September 9 and 10, 2010, 21 backhoe test pits were completed at locations shown on Figure 2. The test pits were logged by Mr. Haynes whose qualifications are previously provided. Mr. Haynes followed the procedures listed below during the test pit excavation work.

- ◆ Test pits were located with a Trimble hand-held GPS.
- ◆ Initially each test pit was dug to depth of ~5 feet
 - ▶ Test pit walls were carefully inspected for restrictive soil layers or mottling;
 - ▶ Test pit log was prepared classifying soils using Unified Soil Classification System (ASTM D2487);
 - ▶ Soil samples were collected of the most restrictive layers; and
 - ▶ Samples of the topsoil (A horizon) were collected for agronomic soil testing.
- ◆ Test pit excavation was continued until groundwater was reached or to a maximum depth of 10 feet.
- ◆ Test pits where shallow groundwater was encountered were excavated 1 or 2 feet into the groundwater.
- ◆ Depth to groundwater from the land surface was measured in each test pit after excavation.
- ◆ Test pits were backfilled after completion and graded.

Test pit logs are provided for reference in Attachment 2.

Soil Borings – North Lagoon

On September 14 through 16, 2010, seven soil borings were completed at locations shown on Figure 2. The soils borings were completed by Midwest Engineering, Inc. of Waukesha, Wisconsin, under the supervision of Mr. Haynes, whose qualifications are previously discussed. Soil borings were completed with a Diedrich D-50 using hollow stem augers in substantial compliance with the ASTM D 5784 (Guide for use of Hollow Stem Augers for Geoenvironmental Exploration and Installation of Water Quality Monitoring Devices). Soil was sampled at 2-foot intervals using a split-spoon sampler in accordance with ASTM D 1586 (Test Method for Penetration Test and Split-Barrel Sampling of Soils). Representative samples obtained from each split-spoon sampler were preserved in glass jars, and bulk samples were obtained of the major soil units for classification testing. After drilling and sampling was completed, each borehole was abandoned in accordance with WAC NR 141.25 (Abandonment Requirements).

Soil boring logs and soil boring abandonment forms are included in Attachment 2.

Groundwater Monitoring Well Construction

On September 27 through 29, 2010, three GWMWs were constructed by Midwest Engineering, Inc. of Waukesha, Wisconsin under the supervision of Mr. Stanul, whose qualifications are previously discussed. Two GWMWs, MW-201 and MW-202, were constructed downgradient of the 27-acre site and one GWMW, MW-203, was constructed upgradient.

Attachment 2 contains the Soil Boring Log Information (WDNR form 4400-122); Monitoring Well Construction (WDNR form 4400-113A); Monitoring Well Development (WDNR form 4400-113B); and the Groundwater Monitoring Well Information Form (WIF) (WDNR form 4400-89). The WIF includes the Unique Well Number assigned to each of the GWMWs.

Soil Investigation Results (WAC NR 214.20 (6) and NR 213.09 (2))

Summary of Soil Profile and Base Grade Soils at the North Lagoon

Based on the seven soil borings completed in and around the North Lagoon, the general soil profile in this area can be described as follows. The uppermost soil layer varies in thickness from 1.5 feet in B-102 to 10.5 feet in B-106 and is classified as clayey silt, Unified Soil Classification System (USCS) - ML or silty sand (SM). Typically the surface horizon is rich in organic matter and commonly referred to as topsoil and varies in thickness from 0.5 feet to 2.5 feet. These upper ML and SM soils are wind-blown glacial soils referred to as loess. The loess is underlain by gravel with sand and silt (GP-GM) or silty sand with gravel (SP-SM), the gravel being subrounded to subangular. The samples examined contained varying amounts of silt with some layers of silty sand (SM) identified in B-105 at 5 to 7 feet and 17.5 to 19.6 feet and B-106 at 5 to 7.5 feet.

The GP-GM and SP-SM soils are likely coarse glacial tills which were deposited by the advancing glacial ice. The glacial till soils were found to be dense, and the 2010 evaluation determined that these soils would provide an adequate foundation to support the geomembrane liner for the North Lagoon.

To supplement this soil boring data in the area of the North Lagoon, included are boring logs from other investigations. The soil boring logs for wells B-32R, B-32, B-31, and B-30, and soil boring B-7R are included in Attachment 2.

Summary of Soil Profile for the 27-Acre Site

Based on the test pit logs and the soil boring logs for MW-201, MW-202, and MW-203, the general soil profile in the upslope areas (i.e., areas on Figure 2 with surface elevations greater than elevation 870) can be described as follows. The upmost soil layer is a 1 to 2-foot thick layer of Lean Clay (USCS) CL or Silty Clay CL-ML which typically includes an upper 10 to 12-inches of Silt with organic matter, the A horizon commonly referred to as Topsoil. These upper CL and CL-ML soils are wind-blown glacial soil referred as loess. The loess is underlain by fine sand with gravel (SP) or Silty fine Sand with gravel (SM). The SP and SM soils are likely glacial till deposited below the advancing glacial ice.

The general soil profile in the mid-slope area (refer to Figure 2 and the test pit logs in Attachment 2 for TP-5, 9, 10, 13, 14, and 15) typically consist of a thicker sequence of loess than in the upslope areas consisting of Lean Clay (CL) and Silty Clay (CL-ML). Loess in the mid-slope area ranges in thickness from 5-feet in TP-13 and TP-15 to 11-feet in TP-5. Soil mottling was observed at the depths noted on the test pit logs in TP-5, 8, 9, 10 and 13. Mottling is believed to be indicative of groundwater temporally saturating these intervals during the wet times of the year such as after spring snow melt. Groundwater was observed at depths greater than 9.5 feet in TP-5, 10, 14 and 15, and at 6 feet, 5 feet, and 8.5 feet respectively in TP-8, 9, and 13.

The general soil profile in the down-slope area (i.e., areas shown on Figure 2 with surface elevation less than elevation 866) are typically loess overlying stream terrace or outwash deposits as shown on the test pit logs for TP-1, 2, 3, 4, and 8. The soil profile consists of one foot or greater thickness of Lean Clay (CL) loess soil overlying sand with subrounded to rounded gravel (SW), or Gravel with sand (GW) which is likely an outwash deposit. Groundwater was observed at a depth of 4 to 7-feet below the ground surface in the down-slope areas.

Summary of Soil Profile at the West Lagoon

Based on the soil boring logs for SB-11, SB-12, SB-13, WD-3P, WD-4, WD-5, WD-6, WD-6P, WD-7, and WD-8, the soils in the vicinity of the West Lagoon generally consist of similar soil profiles to those at the North Lagoon and the 27-acre site: 4-5 feet of silty

clay overlying silty sand, silty sand with gravel and sand with gravel, with varying amounts of clay. Blow counts indicate that the underlying material is generally dense.

Available Results of Soil Laboratory Testing

Classification testing of the soil samples from the North Lagoon and the 27-acre site was completed by CQM Inc. of Green Bay, Wisconsin. Testing included ASTM D 4318 (Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils) for fine-grained soils and ASTM D 422 (Test Method for Particle-Size of Soils) for coarse-grained soils.

Table 1 summarizes the soil classification test data for the samples of the subsoils below the North Lagoon. The uppermost loess soils are typically silty sands (SM) having about 45% passing the No. 200 sieve (P200) with 50 to 60% of the sample being fine sand. The till soils have gravel contents ranging from 40 to 68.9%; sand at 21.7 to 49.1%, and P200 in the 9 to 10% range.

Table 2 summarizes the soil classification test data for the subsoils below the 27-acre site. The upper loess soils are typically USCS Lean Clays (CL) and United States Department of Agriculture (USDA) classification of silty clay loam, silt loam, or loam. The percent silt in the loess ranges from 35.9% to 61.4% and the percent clay ranges from 24.0% to 40.0%. The glacial till has a USCS of Silty Sand (SM) and a USDA classification of sandy loam. The till is non-plastic and has about 32% passing the Number 200 sieve. Attachment 3 contains the raw laboratory data sheets for the classification tests completed for the test pit soils.

Results of Agronomic Soil Nutrient Testing

Topsoil samples were analyzed by A & L Analytical, Inc. of Memphis, Tennessee for soil pH, Phosphorous (P), Potassium (K), Calcium (Ca) Magnesium (Mg), nitrate and percent organic matter. In addition, fertilizer recommendations are provided for Reed Canary Grass which is the cover crop grown on the 27-acre spray irrigation site. The raw laboratory data sheets, which include the test method used, are included in Attachment 3.

The following summarizes the agronomic data measured on the A Horizon or topsoil in the 27-acre site.

- ◆ Soil pH is neutral ranging from 6.9 to 7.4;
- ◆ Phosphorous is optimum to very high ranging from 49 to 181 parts per million (ppm);
- ◆ Potassium is medium to optimal ranging in concentration from 115 to 235 ppm;
- ◆ Calcium is medium ranging from 1168 to 1926 ppm;
- ◆ Manganese is very high ranging from 399 to 734 ppm;
- ◆ Nitrate Nitrogen ranges from 12 to 57 ppm;

- ◆ Potassium to magnesium ratio is low ranging from 0.05 to 0.13;
- ◆ Percent organic matter ranges from 1.8 % to 2.3 %; and
- ◆ Calculated Cation Exchange Capacity ranges from 8.2 to 13.6 milliequivalents per 100 grams (meq/100g).

In addition, Attachment 4 contains tables compiled using the SCS Web Soil Survey which show estimates of some chemical characteristics and features that affect soil behavior for the soil series occurring in the vicinity of the 27-acre site, West Lagoon and North Lagoon. Refer to Table 3 for a list of these soil series.

Soil Conservation Service Soil Series

Figure 3 shows the SCS soil series that occur on the property owned by BEF. Figure 3 also shows the locations of the twenty-one test pits excavated and the seven soil borings completed around the North Lagoon. A table on the figure lists the SCS soil series, map symbol, and a brief description of the dominant soil type. Table 3 lists the SCS soil series, general location of the soil type with respect to key map components, map symbol, and a log of the dominant soil texture taken from the SCS Web Soil Survey table of engineering properties.

Based on the SCS soil series, the West Lagoon resides primarily within the Drummer silt loam with gravelly substratum (Dt), with smaller portions within the St. Charles silt loam with gravelly substratum (SeB and SeA).

The North Lagoon resides in similar soil types, primarily silt loams with gravelly substratum. More specifically, the southwest portion of the North Lagoon resides in the Drummer silt loam with gravel substratum (Dt); the Elburn silt loam with gravelly substratum (EgA) and Warsaw silt loams with sandy and gravelly substratum (WhC2, WhB) run through the central portion of the lagoon (north/south); and the northeast area of the lagoon lies in the Plano silt loam with gravelly substratum (PtA).

The test pit locations reside in essentially two types of soil stratum: silt loam with sand and gravel substratum, and silt loam overlying sand and/clay loam. Test pits TP-1, TP-2, TP-3, TP-4, TP-8, TP-10, TP-13, TP-14, and TP-15 reside in the silt loam with sand and gravel substratum (Drummer [Dt], Matherton [MmA], and St. Charles [SeA] units), which are similar to those soil types wherein the West Lagoon reside.

Attachment 4 contains supplemental data compiled using the SCS Web Soil Survey, which show estimates of some physical characteristics and features that affect soil behavior and engineering classifications and range of engineering properties for the soil series occurring in the vicinity of the 27-acre site, West Lagoon and North Lagoon.

Groundwater Elevations

Based on quarterly groundwater sampling performed by BEF from the first quarter of 2012 through fourth quarter of 2015, the 2014 first quarter depths to groundwater were chosen to represent the overall high water event. Note that in order to ensure that the recent lagoon bottom survey correlated accurately with groundwater contours, the groundwater elevations were calculated using Foth's surveyed elevation of top of PVC and BEF's measured depth to groundwater (refer to Table 4 for adjusted groundwater elevations). Figure 4 shows groundwater contours for groundwater elevations collected from the three GWMWs around the 27-acre site (i.e., MW-201, MW-202, and MW-203), the GWMWs around the West Lagoon including WD-1, WD-3, WD-4, WD-5, WD-6, and WD-8, and two surface water points in Darien Creek. Because there are no GWMWs closer to the West Lagoon on the south side, which made it difficult to accurately contour the groundwater surface under the lagoon, depths to groundwater collected after drilling SB-11 and SB-12 were used as supplemental data. Figure 4 shows that groundwater across the West Lagoon generally flows to the northwest toward Darien Creek with a fairly uniform horizontal gradient of approximately 0.003-0.004 feet/foot.

The high groundwater elevation is fairly consistent across the West Lagoon, ranging from approximately 864 near the southeast corner to 861 near the northwest corner. The bottom of the lagoon slopes in a similar direction to groundwater flow (to the northwest), with an elevation of approximately 868 in the southeast corner and 865 in the northwest corner, as shown on Figure 5 West Lagoon Existing Conditions. Based on these estimates, the average separation between the bottom of the lagoon and high groundwater is approximately 4 feet, with a minimum separation of approximately 3 feet, as shown on the cross-section in Figure 6.

Conclusions and Requested Actions

On behalf of BEF, Foth is requesting an exemption to WAC NR 213.08(2)(c) [*A minimum of 5 feet shall be maintained between the bottom of the lagoon and either bedrock or groundwater level whichever is higher*]. Additionally, BEF requests that a full scale treatment site investigation plan per WAC NR 214.20 (6)(b) not be required. The basis for these requests, as presented in the report, are summarized as follow:

- ◆ BEF intends to improve the operation of the existing West lagoon by constructing a new geomembrane liner in the lagoon.
- ◆ Based on data presented, groundwater is 3 feet or greater beneath the existing and proposed lagoon bottom.
- ◆ Based on the SCS Soil series information and data gathered during completion of test pits, soil borings and GWMWs, it appears that the West Lagoon resides

Mr. Barton Chapman
Wastewater Specialist
Wisconsin Department of Natural Resources
February 5, 2016
Page 11

within similar soil types to the North Lagoon, indicating that proposed improvements to the West Lagoon can be substantiated by the existing data.

- ♦ SCS series, nearby field tests (soil boring, test pits, GWMWs), and long term operation of the existing lagoon show the soils can provide an adequate foundation to support the proposed geomembrane. If BEF proposes an increase in lagoon capacity, completion of additional soil boring(s) may be proposed during the design phase to confirm adequate foundation for increased berm height.

A prompt review of this letter report by the WDNR would be appreciated. BEF would like to complete the construction of the West Lagoon modifications and have it operational by February 2017 to minimize impacts to their business. At the approval by the WDNR of the groundwater separation exemption, BEF will proceed with the design and engineering of the modifications and will submit a complete Engineering Report to the WDNR.

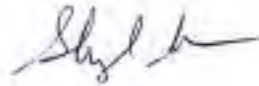
We thank you for your coordination on this matter.

Sincerely,

Foth Infrastructure & Environment, LLC



Tara Van Hoof, P.E.
Project Environmental Engineer



Sheryl Pham
Lead Engineer

cc: Daniel Majorowicz, Birds Eye Foods
Alan Hopfensperger, WDNR Fitchburg
Kimberly Thomas-Britt, WDNR Milwaukee

Attachments

Tables

Table 1
Summary of Soil Classification Tests

Boring #/Sample Depth (ft)	USCS	% Gravel	%Sand	% Silt & Clay
B-105 / 7.0'-8.0'	SM	0.4	54.1	45.5
B-106 / 5.0'-7.5'	SM	0.0	54.3	45.7
B-107 / 27.0'-29'	SP-SM	40	49.1	10.9
B-109 / 7.5'-10.0'	GP-GM	68.9	21.7	9.4
B-109 / 35.0'-37.0'	SP-SM	5.0	88.2	6.8

Notes:

USCS- Unified Soil Classification System

All soil boring samples tested were NP- non-plastic

Prepared by: REM

Checked by: MJPI

Table 2
Summary of Soil Classification Tests

Test Pit #/Sample Depth (ft)	Sample #	USCS/USDA	LL/PL	% Silt	% Clay
TP-4/0-1'	BE-TP-4-1	Lean Clay (CL)/silt loam	33.9/20.6	49.6	29.0
TP-4/1.4-2'	BE-TP-4-2	Lean Clay (CL)/silty clay loam	45.3/21.0	51.2	40.0
TP-5/2-3'	BE-TP-5-1	Lean Clay (CL)/silt loam/silty clay loam	35.4/18.1	53.1	32.5
TP-6/0-1'	BE-TP-6-1	Sandy lean Clay(CL)/Loam	35.1/21.2	40.0	27.0
TP-6/3-4'	BE-TP-6-2	Silty Sand (SM)/sandy loam	NP	19.8	12.0
TP-9/0-1'	BE-TP-9-1	Lean Clay w/sand (CL)/silt loam	32.6/22.0	48.3	25.5
TP-10/0-1'	BE-TP-10-1	Lean Clay (CL)/silty clay loam	40.7/15.7	56.6	39.0
TP-18/0-1'	BE-TP-18-1	Lean Clay (CL)/loam	31.2/18.2	35.9	24.0
TP-18/1-2'	BE-TP-18-2	Lean Clay/(CL)/silt loam	33.2/21.7	61.4	26.0
TP-18/7-8'	BE-TP-18-3	Lean Clay (CL)/silt loam	36.2/19.5	58.6	29.0

Notes:

USCS- Unified Soil Classification System
 USDA- United States Department of Agriculture soil classification
 LL- Liquid Limit
 PL- Plastic Limit
 % Silt- percent silt
 % Clay- percent clay
 NP- non-plastic

Prepared by: REM
 Checked by: MAN

Table 3
Soil Conservation Service Soil Series

Soil Series / Map Symbol	General Locational Information	Dominant USDA Texture (USCS)
North Lagoon Soil Borings		
Drummer / Dt	B-106, Southwest portion of the lagoon	0"-9" Silt loam (ML) 9"-40" Silty clay loam (CL) 40"-60" Sand & gravel (SP-SM)
Elburn / EgA	B-105, Runs through the center of the lagoon (north to south)	0"-12" Silt loam (CL) 12"-36" Silty clay loam, silt loam (CL) 36"-40" Sandy loam (SC-SM) 40"-60" Gravelly coarse sand, sand and gravel (SP-SM)
Warsaw / WhC2	B-107, B-109, Runs through the center of the lagoon (north to south)	0"-10" Silt loam (ML, CL-ML) 10"-36" Sandy clay loam, loam (SC, CL) 36"-79" Stratified sand to gravel (GP-GM)
Warsaw / WhB	B-102, B-108, B-111, Runs through the center of the lagoon (north/south)	0"-13" Silt loam (CL-ML, CL, ML) 13"-30" Sandy clay loam, loam (CL, SC) 30"-79" Stratified sand to gravel (GP, SP, SP-SM, GP-GM)
Plano / PtA	Northeast area of the lagoon	0"-16" Silt loam (ML) 16"-46" Silty clay loam, silt loam (CL) 46"-57" Loam, sandy clay loam, gravelly clay loam (GC, SC, CL) 57"-79" Very gravelly sand, sand, stratified gravelly sand (GP-GM, GP, SP, SP-SM)

Table 3 (Continued)

Soil Series / Map Symbol	General Soil Sample Location	Dominant USDA Texture (USCS)
West Lagoon		
Drummer / Dt	The majority of the lagoon	0"-9" Silt loam (ML) 9"-40" Silty clay loam (CL) 40"-60" Sand & gravel (SP-SM)
St. Charles / SeA	South/southeast portion	0"-11" Silt loam (ML) 11"-42" Silty clay loam (CL) 42"-49" Gravel sandy loam (SM) 49"-60" Sand & gravel (SP-SM)
St. Charles / SeB	Southeast corner	0"-12" Silt loam (CL) 12"-49" Silty clay loam, silt loam (CL) 49"-57" Gravelly clay loam, gravelly sandy clay loam (CL) 57"-79" Gravelly sand, stratified sand to gravel (SM)
27-Acre Site Test Pits		
Drummer / Dt	TP-8	0"-9" Silt loam (ML) 9"-40" Silty clay loam (CL) 40"-60" Sand & gravel (SP-SM)
Matherton / MmA	TP-1, TP-10	0"-15" Silt loam (ML) 15"-27" Silty clay loam (CL) 27"-36" Sandy clay loam (SC) 36"-60" Sand & gravel (GP-GM)
St. Charles / SeA	TP-1, TP-2, TP-3, TP-4, TP-13, TP-14, TP-15	0"-11" Silt loam (ML) 11"-42" Silty clay loam (CL) 42"-49" Gravel sandy loam (SM) 49"-60" Sand & gravel (SP-SM)

Table 3 (Continued)

Soil Series / Map Symbol	General Soil Sample Location	Dominant USDA Texture (USCS)
Miami / MWC ₂ / MWD2	TP-5, TP-6, TP-11, TP-19, TP-20, TP-21	0"-10" Sandy loam or loam (ML) 10"-36" Clay loam (CL) 36"-60" Loam (CL)
Westville / WvC2	TP-6	0"-11" Silt loam (ML) 11"-50" Clay loam & loam (SC) 50"-60" Gravely sandy loam (SM)
Pecatoma / PeB	TP-7	0"-13" Silt loam (ML) 13"-42" Clay loam (CL) 42"-60" Sandy loam (SC)
Flagg / Fg B	TP-9, TP-16, TP-17, TP-18	0"-11" Silt loam (ML) 11"-46" Silty clay loam (CL) 46"-72" Sandy clay loam (SC)
Miami / MyC ₂	TP-12	0"-10" Silty loam or loam (ML) 10"-30" Clay loam (CL) 30"-60" Loam (CL)

Note: Compiled using the Soil Conservation Service Web Soil Survey table of engineering properties (<http://websoilsurvey.nrcs.usda.gov/app/>).

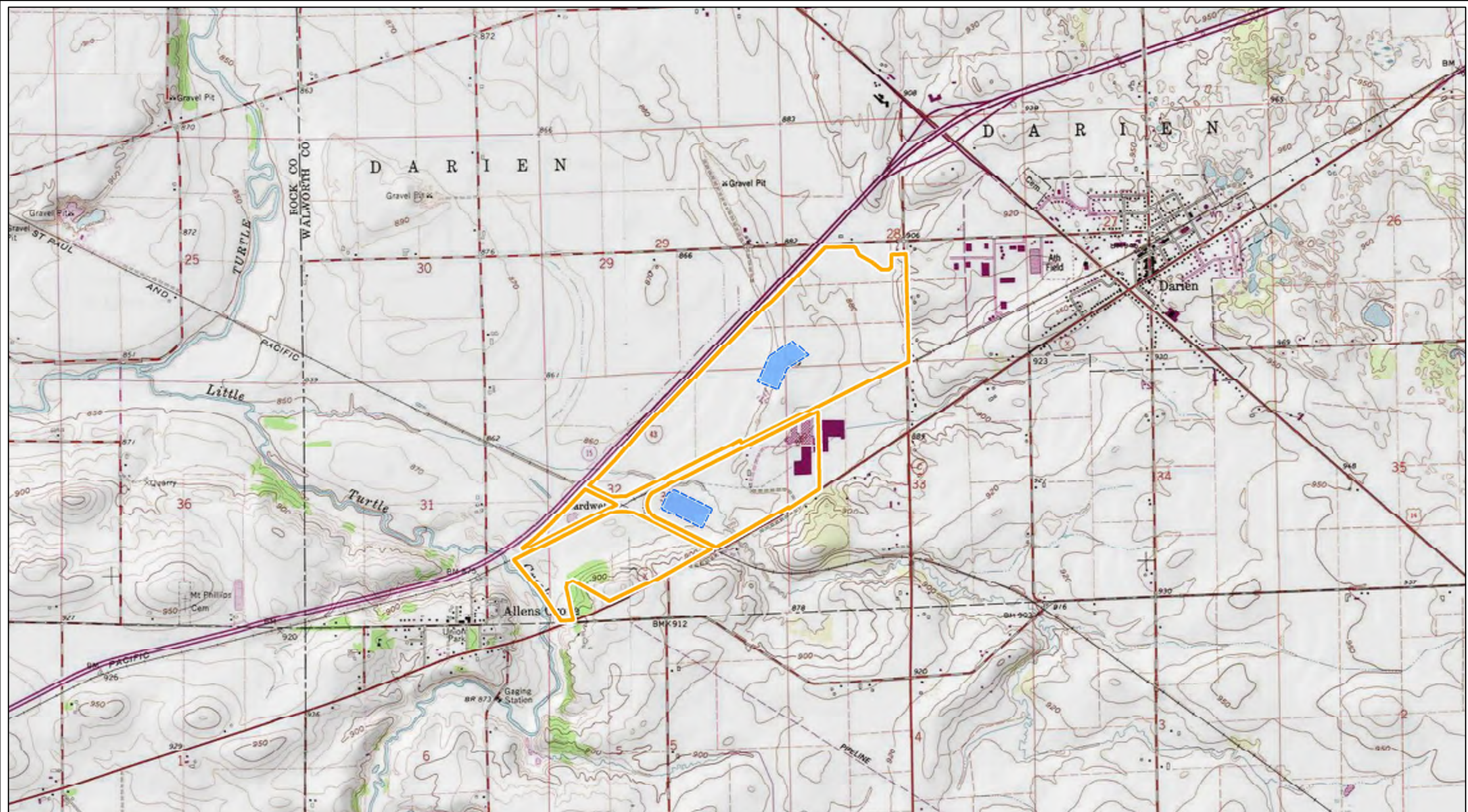
Prepared by: TMK1
Checked by: PAK

**Table 4
Groundwater Data 2012 - 2015**

Well ID	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Top of PVC Elevation (ft)	Ground-water Elevation Q1 2012	Ground-water Depth Q1 2012	Ground-water Elevation Q2 2012	Ground-water Depth Q2 2012	Ground-water Elevation Q3 2012	Ground-water Depth Q3 2012	Ground-water Elevation Q4 2012	Ground-water Depth Q4 2012	Ground-water Elevation Q1 2013	Ground-water Depth Q1 2013	Ground-water Elevation Q2 2013	Ground-water Depth Q2 2013	Ground-water Elevation Q3 2013	Ground-water Depth Q3 2013	Ground-water Elevation Q4 2013	Ground-water Depth Q4 2013	Ground-water Elevation Q1 2014	Ground-water Depth Q1 2014	Ground-water Elevation Q2 2014	Ground-water Depth Q2 2014	Ground-water Elevation Q3 2014	Ground-water Depth Q3 2014	Ground-water Elevation Q4 2014	Ground-water Depth Q4 2014	Ground-water Elevation Q1 2015	Ground-water Depth Q1 2015	Ground-water Elevation Q2 2015	Ground-water Depth Q2 2015	Ground-water Elevation Q3 2015	Ground-water Depth Q3 2015	Ground-water Elevation Q4 2015	Ground-water Depth Q4 2015
WM-201	864.40	866.83	866.41	860.41	6	858.84	7.57	857.53	8.88	858.13	8.28	859.66	6.75	859.06	7.35	858.52	7.89	859.11	7.3	860.99	5.42	860.05	6.36	859.24	7.17	858.73	7.68	859.24	7.17	859.24	7.17	859.41	7	859.20	7.21
WM-202	866.44	868.95	868.54	860.74	7.8	858.94	9.6	857.39	11.15	857.94	10.6	859.72	8.82	859.10	9.44	858.60	9.94	859.07	9.47	861.02	7.52	860.29	8.25	858.59	9.95	858.75	9.79	859.31	9.23	859.39	9.15	858.74	9.8	859.24	9.3
WM-203	912.04	914.40	914.11	886.55	27.56	886.21	27.9	884.42	29.69	884.31	29.8	883.79	30.32	885.87	28.24	888.22	25.89	886.52	27.59	884.70	29.41	885.77	28.34	884.90	29.21	884.27	29.84	883.23	30.88	884.17	29.94	886.51	27.6	886.23	27.88
WD-1	880.35	883.07	882.63	873.52	9.11	871.53	11.1	869.94	12.69	870.05	12.58	871.73	10.9	872.22	10.41	872.03	10.60	871.63	11	872.79	9.84	872.78	9.85	871.30	11.33	870.83	11.8	870.29	12.34	871.53	11.1	871.88	10.75	871.63	11
WD-3	870.24	872.50	872.10	861.10	11	860.20	11.9	859.78	12.32	859.98	12.12	860.49	11.61	860.25	11.85	860.30	11.80	860.50	11.6	860.80	11.3	860.60	11.5	860.34	11.76	860.33	11.77	860.47	11.63	860.30	11.8	860.30	11.8	860.34	11.76
WD-3P	871.01	872.88	872.80	861.10	11.7	860.40	12.4	859.90	12.9	860.11	12.69	860.65	12.15	860.46	12.34	860.47	12.33	860.55	12.25	861.19	11.61	860.80	12	860.50	12.3	860.50	12.3	860.62	12.18	860.50	12.3	861.46	11.34	860.50	12.3
WD-4	865.38	867.81	867.65	851.98	15.67	860.15	7.5	859.17	8.48	859.35	8.3	860.67	6.98	860.24	7.41	860.11	7.54	860.35	7.3	861.68	5.97	860.83	6.82	860.28	7.37	860.14	7.51	860.08	7.57	860.35	7.3	860.31	7.34	860.25	7.4
WD-5	863.89	866.15	865.85	850.76	15.09	860.55	5.3	860.20	5.65	860.22	5.63	860.67	5.18	860.54	5.31	860.54	5.31	860.75	5.1	858.75	7.1	860.83	5.02	860.45	5.4	860.58	5.27	860.85	5	860.49	5.36	860.50	5.35	860.55	5.3
WD-6	865.30	867.64	867.52	862.22	5.3	861.32	6.2	860.72	6.8	861.07	6.45	861.72	5.8	861.42	6.1	861.40	6.12	861.68	5.84	862.12	5.4	861.72	5.8	861.52	6	861.52	6	861.38	6.14	861.37	6.15	861.39	6.13	861.52	6
WD-6P	864.86	867.61	867.39	861.89	5.5	861.24	6.15	860.61	6.78	860.94	6.45	861.59	5.8	861.37	6.02	861.29	6.10	861.59	5.8	861.99	5.4	861.59	5.8	858.39	9	861.39	6	861.25	6.14	861.26	6.13	861.29	6.1	861.39	6
WD-8	865.30	867.89	867.66	860.76	6.9	860.26	7.4	859.96	7.7	860.14	7.52	860.51	7.15	860.23	7.43	860.34	7.32	860.46	7.2	860.69	6.97	860.46	7.2	860.31	7.35	860.34	7.32	860.33	7.33	860.28	7.38	860.26	7.4	860.30	7.36

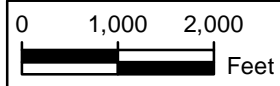
Notes:
Groundwater elevations were calculated using Foth's surveyed elevation of top of PVC and BEF's measured depth to groundwater
Q = Quarter

Figures



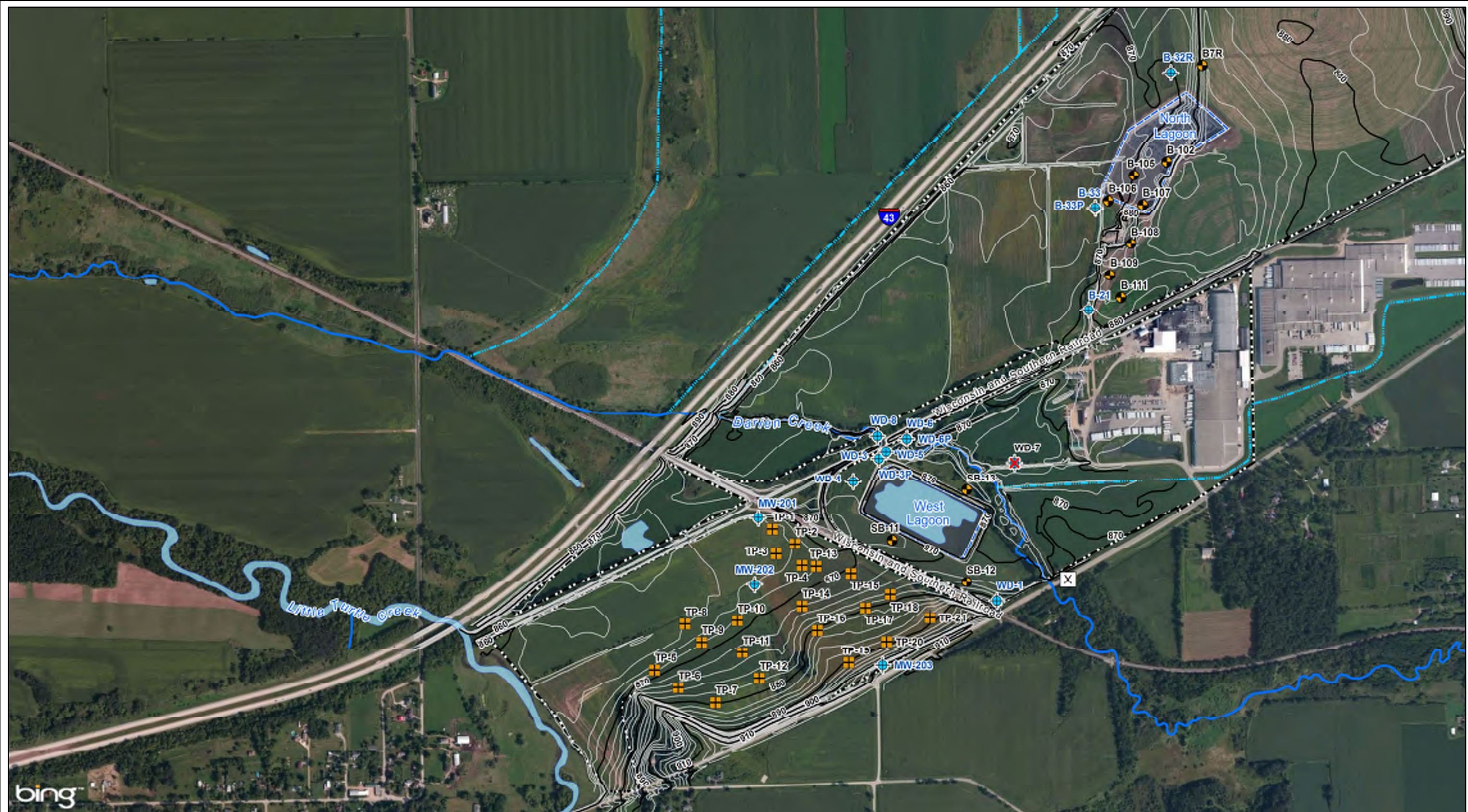
NOTES:
 1. Basemap from esri.com, courtesy of the National Geographic Society and i-cubed.

LEGEND
 Birds Eye Property
 Existing Lagoon



BIRDS EYE FOODS, LLC	
FIGURE 1	
SITE LOCATION MAP	
PRELIMINARY SITE INVESTIGATION	
DARIEN, WI	
Date: FEBRUARY 2016	Revision Date:
Drawn By: BJW1	Checked By: TMK1
Project: 16P023	

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

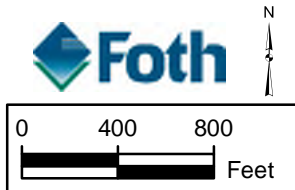


NOTES:

1. Basemap from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
2. Contour data from Walworth County. Contours generated in 1995.
3. Hydrographic data from the the WDNR 24K Hydrographic dataset.

LEGEND

- Groundwater Monitoring Well Location
- Abandoned Groundwater Monitoring Well
- Completed Soil Boring Location
- Completed Test Pit Location
- Existing Lagoon
- Birds Eye Property
- 10' Index Contours
- 2' Elevation Contours
- Intermittent Stream
- Perennial Stream
- Lake/River/Pond

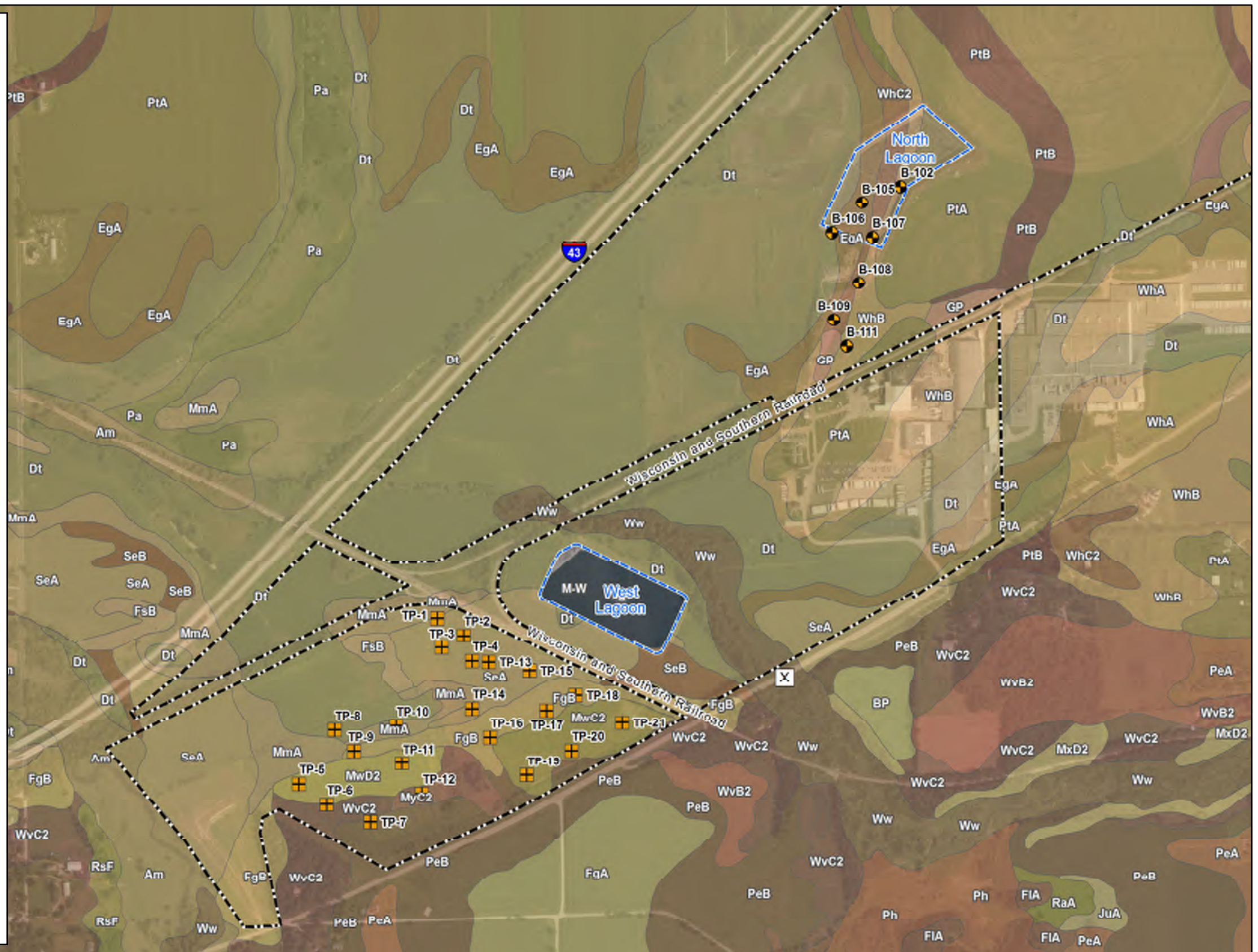


This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

BIRDS EYE FOODS, LLC		
FIGURE 2		
SITE LAYOUT MAP		
PRELIMINARY SITE INVESTIGATION		
DARIEN, WI		
Date: FEBRUARY 2016	Revision Date:	
Drawn By: BJW1	Checked By: TMK1	Project: 16P023

USDA NRCS SSURGO Soils

- Am: Alluvial land
- BP: Borrow pit
- CeC2: Casco loam, 6 to 12 percent slopes, eroded
- CeD2: Casco loam, 12 to 20 percent slopes, eroded
- Dt: Drummer silt loam, gravelly substratum
- EgA: Elburn silt loam, gravelly substratum, 1 to 3 percent slopes
- FgA: Flagg silt loam, 0 to 2 percent slopes
- FgB: Flagg silt loam, 2 to 6 percent slopes
- FIA: Flagg silt loam, mottled subsoil variant, 0 to 3 percent slopes
- FsB: Fox silt loam, 2 to 6 percent slopes
- FsC2: Fox silt loam, 6 to 12 percent slopes, eroded
- GP: Gravel pit
- GsC2: Griswold loam, 6 to 12 percent slopes, eroded
- Ht: Houghton muck
- JuA: Juneau silt loam, 1 to 3 percent slopes
- LyB: Lorenzo loam, 2 to 6 percent slopes
- LzD2: Lorenzo-Rodman complex, 12 to 20 percent slopes, eroded
- MmA: Matherton silt loam, 1 to 3 percent slopes
- MwC2: Miami loam, 6 to 12 percent slopes, eroded
- MwD2: Miami loam, 12 to 20 percent slopes, eroded
- MxD2: Miami loam, sandy loam substratum, 12 to 20 percent slopes, eroded
- MyC2: Miami silt loam, 6 to 12 percent slopes, eroded
- Pa: Palms muck
- PeA: Pecatonica silt loam, 0 to 2 percent slopes
- PeB: Pecatonica silt loam, 2 to 6 percent slopes
- Ph: Pella silt loam
- PtA: Plano silt loam, gravelly substratum, 0 to 2 percent slopes
- PtB: Plano silt loam, gravelly substratum, 2 to 6 percent slopes
- RaA: Radford silt loam, 0 to 3 percent slopes
- RsF: Rodman-Casco complex, 30 to 45 percent slopes
- Ru: Rollin muck, deep
- SeA: St. Charles silt loam, gravelly substratum, 0 to 2 percent slopes
- SeB: St. Charles silt loam, gravelly substratum, 2 to 6 percent slopes
- TxA: Troxel silt loam, 0 to 3 percent slopes
- WhA: Warsaw silt loam, 0 to 2 percent slopes
- WhB: Warsaw silt loam, 2 to 6 percent slopes
- WhC2: Warsaw silt loam, 6 to 12 percent slopes, eroded
- WvB2: Westville silt loam, 2 to 6 percent slopes, eroded
- WvC2: Westville silt loam, 6 to 12 percent slopes, eroded
- Ww: Wet alluvial land



NOTES:

1. Basemap from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
2. USDA NRCS SSURGO soil data downloaded from <http://websoilsurvey.nrcs.usda.gov/>.

LEGEND

- Completed Soil Boring Location
- Completed Test Pit Location
- Existing Lagoon
- Birds Eye Property



BIRDS EYE FOODS, LLC

FIGURE 3

USDA NRCS SSURGO SOIL SERIES MAP
PRELIMINARY SITE INVESTIGATION
DARIEN, WI

Date: FEBRUARY 2016

Revision Date:

Drawn By: BJW1

Checked By: TMK1

Project: 16P023



NOTES:
 1. Basemap from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
 2. Groundwater contours generated with ArcGIS Geostatistical Analyst, using the Empirical Bayesian Kriging interpolation method.
 3. Contour data from Walworth County. Contours generated in 1995.

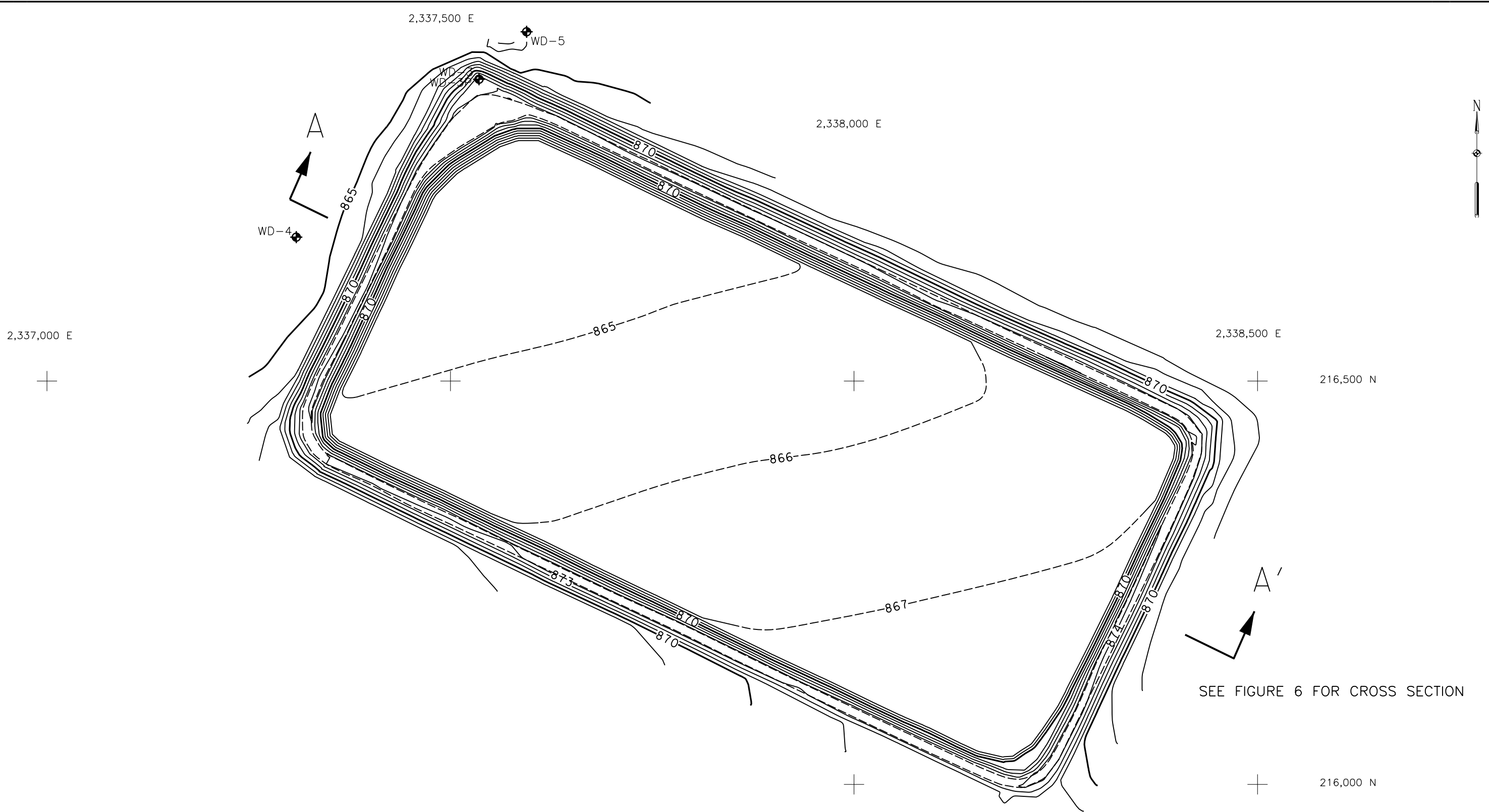
LEGEND

- Groundwater Monitoring Well with Groundwater Elevation
- Stream Water Elevation Recording Location
- Soil Boring with Groundwater Elevation
- Groundwater Contours (2' Contour Interval)
- Existing Lagoon
- Birds Eye Property
- 2' Elevation Contours

0 150 300 Feet

BIRDS EYE FOODS, LLC	
FIGURE 4	
GROUNDWATER CONTOUR MAP PRELIMINARY SITE INVESTIGATION DARIEN, WI	
Date: FEBRUARY 2016	Revision Date:
Drawn By: BJW1	Checked By: TMK1
Project: 16P023	

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

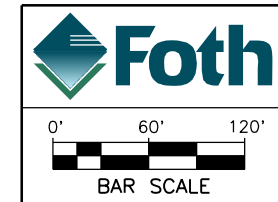


LEGEND

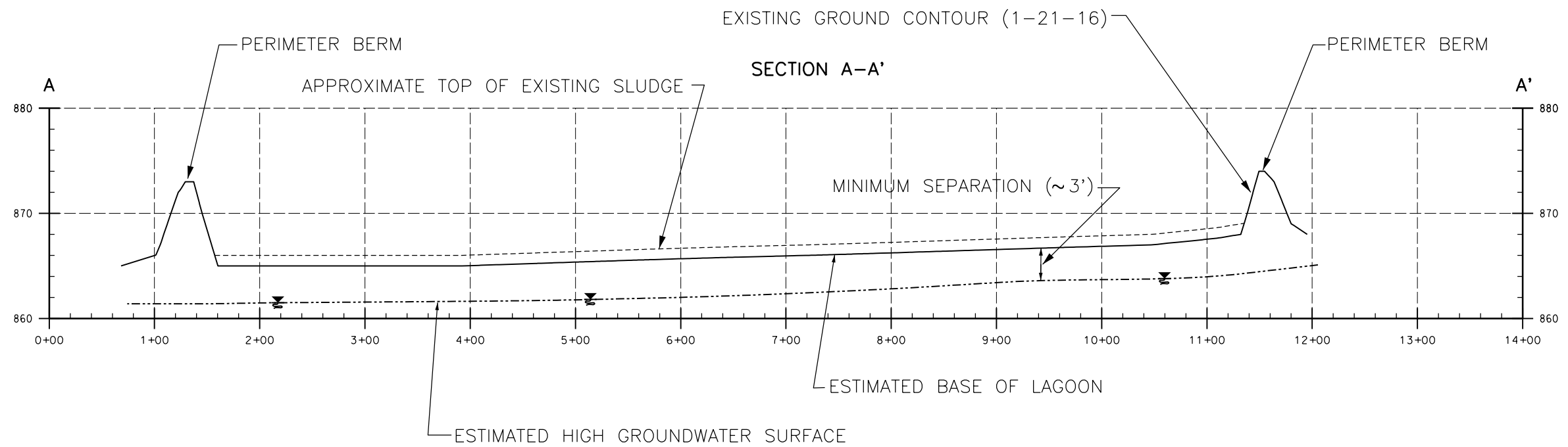
- 870 — EXISTING GROUND CONTOUR
- 867 -- EXISTING GROUND CONTOUR (ESTIMATED)
- EXISTING TOP OF BERM
- WD-4 ◆ EXISTING MONITORING WELL LOCATION AND NUMBER

NOTES:

1. THE HORIZONTAL CONTROL IS REFERENCED TO THE WISCONSIN STATE PLANE SOUTH ZONE (4803). THE VERTICAL CONTROL IS REFERENCED TO NAVD 88 (GEOID 2003).
2. CONTOURS BASED ON FOTH FIELD SURVEY PERFORMED ON JANUARY 21, 2016. BASE OF POND WAS FROZEN AT TIME OF SURVEY. GROUND SURFACE IN BASE OF POND ESTIMATED BASED ON FIELD BORINGS TAKEN AT TIME OF SURVEY.

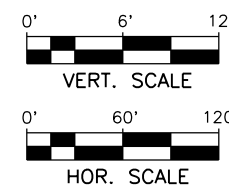


BIRDS EYE FOODS, LLC			
FIGURE 5 WEST LAGOON EXISTING CONDITIONS			
Date:	JAN., 2016	Revision Date:	
Drawn By:	MRS	Checked By:	MRS
Project:		16P023	



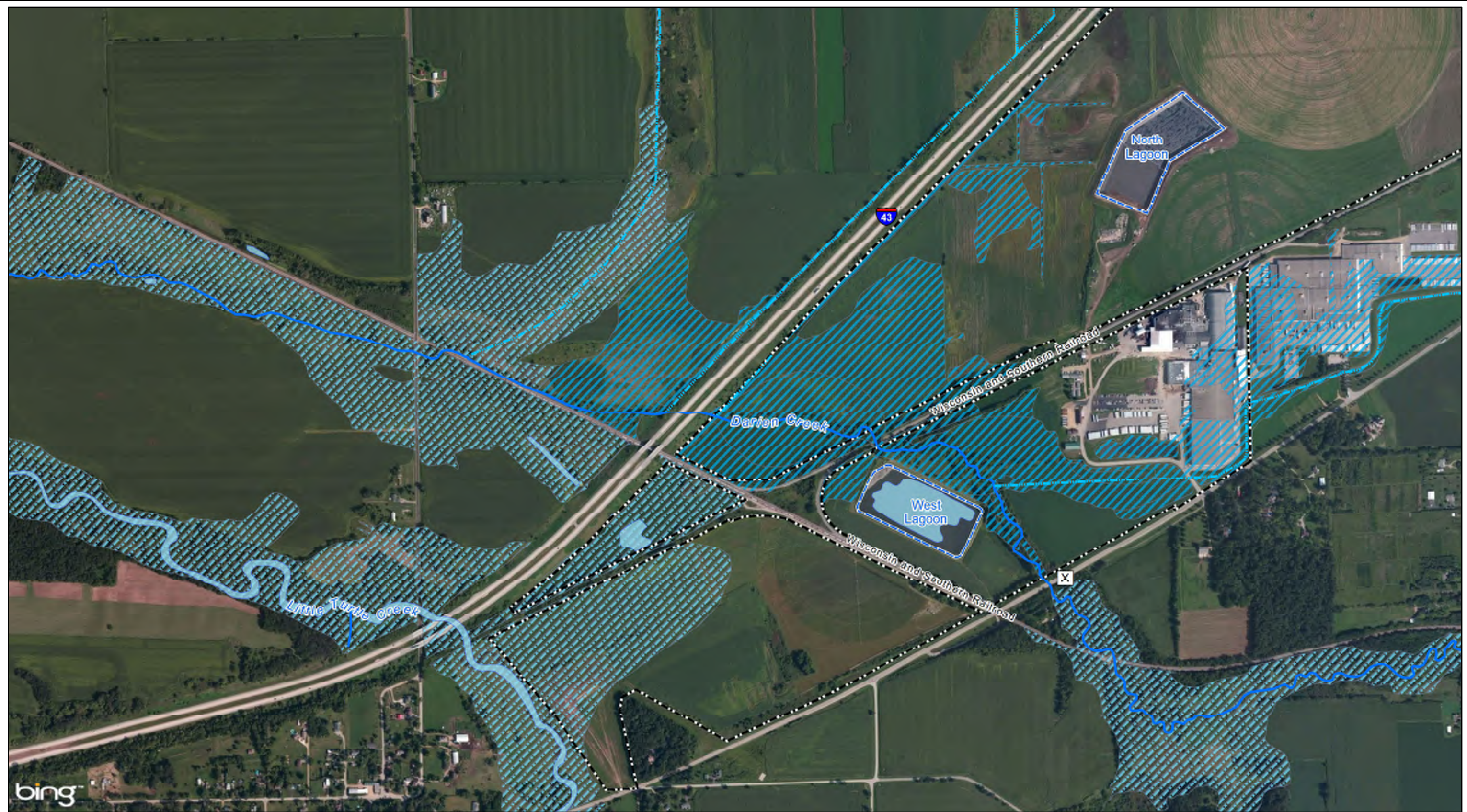
BIRDS EYE FOODS, LLC

FIGURE 6
CROSS SECTION A-A'



Date: JAN., 2016	Revision Date:
Drawn By: MRS	Checked By: MRS
Project: 16P023	

Attachment 1



NOTES:
 1. Basemap from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
 2. Floodplain data downloaded from the FEMA Flood Map Service Center.
 3. Hydrographic data from the the WDNR 24K Hydrographic dataset.

LEGEND	
	Existing Lagoon
	Birds Eye Property
	Intermittent Stream
	Perennial Stream
	Lake/River/Pond
	100 Year Floodplain (Base flood elevations determined)
	100 Year Floodplain (No base flood elevations determined)

0 400 800 Feet

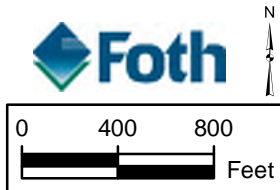
BIRDS EYE FOODS, LLC	
ATTACHMENT 1	
FLOODPLAIN MAP	
PRELIMINARY SITE INVESTIGATION	
DARIEN, WI	
Date: FEBRUARY 2016	Revision Date:
Drawn By: BJW1	Checked By: TMK1
Project: 16P023	

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.



NOTES:
 1. Basemap from esri.com, courtesy of the Microsoft Corporation and its data suppliers.
 2. National Wetlands Inventory (NWI) wetland data from U.S. Fish and Wildlife Service.

LEGEND		NWI Wetlands	
	Existing Lagoon		Freshwater Emergent Wetland
	Birds Eye Property		Freshwater Forested/Shrub Wetland
			Freshwater Pond
			Riverine
			Other



This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

BIRDS EYE FOODS, LLC	
ATTACHMENT 1	
WETLANDS MAP	
PRELIMINARY SITE INVESTIGATION	
DARIEN, WI	
Date: FEBRUARY 2016	Revision Date:
Drawn By: BJW1	Checked By: TMK1
Project: 16P023	

Attachment 2



<p>LOG OF TEST PIT: TP-1</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~865</p> <p>PIT DEPTH: 6' bgs</p> <p>DATE: 9/10/2010</p>
---	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		ML		10 YR 4/2	Silt, some platy structure, firm, moist, dark grayish brown, gradational contact			
	-- 1		SP		10 YR 6/6	Sand with 2-4 cm gravel fine-grained, subrounded to rounded, brownish yellow, thin bedding, medium density			
	-- 2 -- 2.3		SW		10 YR 6/6	Sand trace gravel, well graded fine to coarse, subangular to subrounded, brownish yellow, loose			
	-- 3								
	-- 4					GW at 4' bgs			
	-- 5		GW			Cobbles, gravel, sand, well rounded to rounded			
	-- 6					Bottom of Test Pits - 6' bgs			
	-- 7								
	-- 8								
	-- 9								
	-- 10								

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 4' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: 3' bgs</p>
---	---



Foth Infrastructure & Environment, LLC

<p>LOG OF TEST PIT: TP-2</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~867</p> <p>PIT DEPTH: 7' bgs</p> <p>DATE: 9/9/2010</p>
---	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
-- 0			ML		10 YR 5/4	Silt, trace clay, trace well rounded 2 to 6 cm gravel, loose, yellowish brown, some laminate structure, non-plastic			
-- 1			SW		10 YR 5/3	Sand with gravel trace silt, fine to coarse, subrounded to well rounded. dense, brown, distinct contact			
-- 2			GC		7.5 YR 4/4	Clayey gravel, subrounded to rounded, brown, high plasticity, matrix supported, not continuous through trench			
-- 3			SP		10 YR 6/6	Sand with 1 cm gravel, fine to medium grained brownish yellow, coarse sand bedding, clast-supported			
-- 4									
-- 5			SW		7.5 YR 6/8 w/ 2.5 YR 4/6	Same as above, except color change to reddish yellow with red			
-- 6						GW at 6' bgs			
-- 7						Bottom of Test Pit - 7' bgs			
-- 8									
-- 9									
-- 10									

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 4' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: 2' bgs</p>
---	---



LOG OF TEST PIT: TP-3 CLIENT: Birds Eye Foods PROJECT: Sprayfield Investigation PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004) LOCATION: Darien, Wisconsin	SURFACE ELEVATION: ~865 PIT DEPTH: 6' bgs DATE: 9/9/2010
--	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		ML		10 YR 4/2	Silt, some clay, moist, dense, low plasticity, platy structure, dark grayish brown			
	-- 1		SP		7.5 YR 6/6	Sand with 2 to 4 cm gravel, fine to medium-grained, subrounded to rounded, moist, medium-dense, reddish yellow			
	-- 2								
	-- 2.5		SW		7.5 YR 5/6	Sand with fine to coarse-grained gravel subrounded to rounded, fineing upward, loose, strong brown, cave in			
	-- 3								
	-- 4								
	-- 5					GW at 5' bgs			
	-- 6					Bottom of Test Pit - 6' bgs			
	-- 7								
	-- 8								
	-- 9								
	-- 10								

TEST PIT DATA START DATE: 9/9/2010 COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling	WATER LEVEL INFORMATION (Datum = SURF) DEPTH AT COMPLETION: 5' bgs LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH: 2.5' bgs
---	---



Foth Infrastructure & Environment, LLC

<p>LOG OF TEST PIT: TP-4</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~865</p> <p>PIT DEPTH: 8' bgs</p> <p>DATE: 9/9/2010</p>
---	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0	TP-4 0 - 1	CL- ML		7.5 YR 5/4	Silty clay, trace organic material, brown, stiff, no structure, roots, moist, uneven contact, prismatic structure at contact			
	-- 1		GM		7.5 YR 5/6	Silty gravel with sand, fine-grained, rounded, well graded, moist, strong brown, firm, uneven contact, 1-4" thick			
	-- 1.5	TP-4 1.5 - 2	CL		10 YR 4/3	Lean clay with silt, prismatic structure, well developed, moist, brown, gradational contact			
	-- 2		GM		7.5 YR	Clayey gravel with sand, well graded, medium to coarse-grained sand, rounded, moist, plastic, firm, strong brown, bedded			
	-- 2.75		SW		10 YR	Sand with gravel, well graded, finely bedded,			
	-- 3				7/6	loose, yellow, well rounded, moist			
	-- 3.75		SW- SC		7.5 YR 4/4	Sand with clay and gravel (clay matrix), well graded, moist, plastic, brown			
	-- 4								
	-- 5								
	-- 6								
	-- 7					GW @ 7' bgs			
	-- 8		SW		7.5 YR 4/4	Sand with gravel, well graded, fine to medium-grained, well rounded, brown, matrix supported Bottom of Test Pit - 8' bgs			
	-- 9								
	-- 10								

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION:</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH:</p>
---	---



<p>LOG OF TEST PIT: TP-5</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~867</p> <p>PIT DEPTH: 11' bgs</p> <p>DATE: 9/9/2010</p>
---	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	0	TP-5 2 - 3	CL		10 YR 6/6	Lean clay, some silt, medium-stiff, high plasticity, moist, brownish yellow, mottling, no structure			
	1								
	2								
	3								
	4								
	5								
	6		MH		10 YR 7/4 to 5/2	Silt, trace clay, rock flour, low plasticity, wet, very pale brown.			
	7								
	8								
	9								
	10								
	11					Mottling @ 10 ft, transition to grayish brown No GW observed. Bottom of Test Pit - 11' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION:</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH:</p>
---	---



<p>LOG OF TEST PIT: TP-6</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~875</p> <p>PIT DEPTH: 10' bgs</p> <p>DATE: 9/10/2010</p>
---	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0	TP-6 0 - 1	OL		7.5 YR 4/1	Silty clay, highly organic, blocky structure, moist, medium-stiff, dark gray, low plasticity, gradational contact			
	-- 1		OL/ML		7.5 YR 4/4	Silt, clay, platy structure, crumbly, low plasticity, dry, brown, distinct contact			
	-- 2	TP-6 3 - 4	SP		10 YR 6/6	Sand, fine-grained with trace coarse grains, with gravel & cobbles, matrix supported loose, brownish yellow, loose, rust/iron oxide band at 2.5 & 5', no mottling			
	-- 3								
	-- 4								
	-- 5								
	-- 6								
	-- 7								
	-- 8								
	-- 9								
	-- 10					No GW Observed Bottom of Test Pit - 10' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/10/2010</p> <p>COMPLETION DATE: 9/10/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION:</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH:</p>
--	--



<p>LOG OF TEST PIT: TP-7</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~880</p> <p>PIT DEPTH: 10' bgs</p> <p>DATE: 9/10/2010</p>
---	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		OL/CL		7.5 YR 4/1	Silty clay, organic, blocky structure, moist, medium-stiff, low plasticity, dark gray, gradational contact			
	-- 1		ML		7.5 YR 4/4	Silt, trace clay, low plasticity, platy structure, dry, brown, no mottling, distinct contact			
	-- 2		SP		10 YR 6/6	Sand, poorly sorted, loose, medium matrix, with coarse gravel to cobbles, brownish yellow, oxide banding @ 2-3' bgs in cobbly lenses, distinct contact			
	-- 3								
	-- 4								
	-- 5								
	-- 6								
	-- 6.5		GW		7.5 YR 5/6	Gravel with sand, large cobbles, medium to coarse, rounded to subrounded loose, strong brown, wet,			
	-- 7								
	-- 8					GW @ 8' gbs			
	-- 9								
	-- 10					Bottom of Test - 10' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/10/2010</p> <p>COMPLETION DATE: 9/10/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 8' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: 6.5' bgs</p>
---	---



<p>LOG OF TEST PIT: TP-8</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~864</p> <p>PIT DEPTH: 8' bgs</p> <p>DATE: 9/10/2010</p>
---	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	0		OL		10 YR 3/2	Silt, trace clay, medium stiff, low plasticity, moist, very dark grayish brown, no structure, gradational contact			
	1								
	1.3		CH		10 YR 4/2	Clay, high plasticity, stiff, moist, mottled, dark grayish brown, distinct contact			
	2								
	3								
	4								
	5								
	5.5		GW		10 YR 6/6	Gravel with sand, cobbles, poorly sorted, loose, brownish yellow, fining upward			
	6					GW @ 6' bgs			
	7								
	8					Bottom of Test Pit - 8' bgs			
	9								
	10								

<p>TEST PIT DATA</p> <p>START DATE: 9/10/2010</p> <p>COMPLETION DATE: 9/10/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 6' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: 6' bgs</p>
---	---



<p>LOG OF TEST PIT: TP-9</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~868</p> <p>PIT DEPTH: 6.5' bgs</p> <p>DATE: 9/9/2010</p>
---	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	0	0 - 1	ML		10 YR 5/4	Silt, trace pebbles, low plasticity, prismatic structure, yellowish brown, mottled			
	1								
	1.5								
	2								
	3								
	4								
	5								
	5.5					Tree limbs/logs @ 5.5' (filled area). GW @ 5.5' bgs			
	6								
	6.5					Bottom of Test Pit - 6.5' bgs			
	7								
	8								
	9								
	10								

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 5.5' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: None</p>
---	---



Foth Infrastructure & Environment, LLC

<p>LOG OF TEST PIT: TP-10</p> <p>CLIENT: Birds Eye Foods PROJECT: Sprayfield Investigation PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004) LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~868</p> <p>PIT DEPTH: 10' bgs</p> <p>DATE: 9/10/2010</p>
--	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	0		ML		10 YR 4/3	Silt, some sand, fine-grained, dry, very firm, brown, poorly developed plant structure, gradational contact			
	1								
	1.5		SM		10YR 5/6	Same as above, with 0.5 to 2 cm gravel, no platy structure, yellowish brown, matrix supported, distinct contact			
	2								
	3	TP-10 5 - 6	CH		10 YR 5/4	Fat clay with silt, high plasticity, mottling with 1' discolored zone at top of unit, moist, yellowish brown, very stiff			
	4								
	5								
	6								
	6.5					Mottled at 6.5'			
	7								
	8								
	9								
	10					No GW observed Bottom of Test Pit - 10' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/10/2010 COMPLETION DATE: 9/10/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:</p>
--	--



Foth Infrastructure & Environment, LLC

<p>LOG OF TEST PIT: TP-11</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~873</p> <p>PIT DEPTH: 10' bgs</p> <p>DATE: 9/10/2010</p>
--	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		ML		7.5 YR 4/4	Silt with clay, some gravel, low, firm plasticity, moist, subrounded, matrix supported, platy structure, brown, gradational contact, fining upward, trace fine sand toward bottom			
	-- 1								
	-- 2		SP		7.5 YR 6/8	Sand, fine-grained, trace cobbles with subround 2 to 4 cm gravel, medium dense, moist, no bedding, matrix supported, reddish yellow, lenses of dense silt, notcontinuous @ 3' bgs, dry gradational contact			
	-- 3								
	-- 3.5		SM		10 YR 7/6	Sand with silt, fine-grained, poorly sorted, moist, dense, yellow, trace gravel & cobbles in lenses			
	-- 4								
	-- 5								
	-- 6								
	-- 7								
	-- 8								
	-- 9								
	-- 10					No GW Observed Bottom of Test Pit - 10' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/10/2010</p> <p>COMPLETION DATE: 9/10/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION:</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH:</p>
---	---



Foth Infrastructure & Environment, LLC

<p>LOG OF TEST PIT: TP-12</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~877</p> <p>PIT DEPTH: 7' bgs</p> <p>DATE: 9/10/2010</p>
--	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		CL/ML		10 YR 4/4	Silty clay, low plasticity, moist, slight mottling at contact, medium stiff, dark yellowish brown, trace rounded 2 cm to 4 cm pebbles, distinct contact			
	-- 1								
	-- 1.5		SP		7.5 YR 6/6	Sand with well graded gravel, fine-grained, subrounded, reddish yellow, fining upward, gradational contact			
	-- 2								
	-- 3		SP		7.5 YR 6/6	Sand with gravel, coarse-grained, well graded, subrounded, reddish yellow, fining upward			
	-- 4								
	-- 5					GW at 5' bgs			
	-- 6								
	-- 7					Cobbly at BOH Bottom of Test Pit - 7' bgs			
	-- 8								
	-- 9								
	-- 10								

<p>TEST PIT DATA</p> <p>START DATE: 9/10/2010</p> <p>COMPLETION DATE: 9/10/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 5' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: 4' bgs</p>
---	---



<p>LOG OF TEST PIT: TP-13</p> <p>CLIENT: s Eye Foods</p> <p>PROJECT: ld Investigation</p> <p>PROJECT NUMBER: se 6, Task 61 (4004)</p> <p>LOCATION: n, Wisconsin</p>	<p>SURFACE ELEVATION: ~868</p> <p>PIT DEPTH: 10' bgs</p> <p>DATE: 9/9/2010</p>
--	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	0		ML		10 YR 4/4	Silt, trace clay, prismatic structure, medium dense, dark yellowish brown, gradational contact			
	1								
	1.5		ML		7.5 YR 6/8	Silt with clay, mottled, medium plasticity, dense, reddish yellow, distince contact			
	2								
	3								
	4								
	4.5					Mottling increases at 4.5 - 5'			
	5		GW		10 YR 6/6	Gravel with sand, medium to coarse-grained, subrounded to rounded, massive bedding, loose, brownish yellow			
	6								
	7								
	8								
	8.5					GW at 8.5' bgs			
	9								
	10					Fining upward from cobbles at 10' Bottom of Test Pit - 10' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 8.5' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: 5' bgs</p>
--	--



<p>LOG OF TEST PIT: TP-14</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~872</p> <p>PIT DEPTH: 11' bgs</p> <p>DATE: 9/9/2010</p>
--	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		ML		10 YR 3/3	Silt, moist, low plasticity, dark brown, medium dense			
	-- 1		ML		10 yr 6/4	Silt, some clay, low plasticity, columnar structure, moist, light yellowish brown, medium dense			
	-- 2								
	-- 3								
	-- 4								
	-- 5								
	-- 5.5		CL		10 YR 5/6	Lean clay, trace silt, plastic, yellowish brown, stiff, wet			
	-- 6								
	-- 7		SP		10 YR 7/6	Sand, some 2 mm gravel, fine-grained, moist, yellow, loose to medium dense			
	-- 8								
	-- 9								
	-- 10								
	-- 11					No GW observed Bottom to Test Pit - 11' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION:</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH:</p>
---	---



<p>LOG OF TEST PIT: TP-15</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~871</p> <p>PIT DEPTH: 10.5' bgs</p> <p>DATE: 9/9/2010</p>
--	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	0		ML		10 YR 5/4	Silt, platy structure, dense, moist, yellowish brown, gradational contact			
	1								
	1.3		ML		10 YR 6/4	Silt, massive bedding, light yellowish brown, no structure			
	2								
	3								
	4								
	5		SW		7.5 YR 5/8	Sand with gravel lense on top of fine bedded sand, moist, firm, strong brown			
	6								
	7								
	8								
	8.5		GW		10 YR 6/6	Gravel, some sand, well graded, mottled with black/red banding, brownish yellow			
	9								
	9.5					GW at 9.5' bgs			
	10								
	10.5					Bottom of Test Pit - 10.5' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 9.5' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: 8.5' bgs</p>
---	---



<p>LOG OF TEST PIT: TP-16</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~881</p> <p>PIT DEPTH: 10' bgs</p> <p>DATE: 9/10/2010</p>
--	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		ML		10 YR 3/3	Silt, some clay, low plasticity, platy structure, dark brown, medium stiff, gradational contact			
	-- 1								
	-- 1.5		SM		10 YR 6/4	Silty sand trace clay, fine-grained, some rounded to subrounded gravel and cobbles, very dense, light yellowish brown, some clayey lenses, low plasticity (till)			
	-- 2								
	-- 3								
	-- 3.5					Moist at 3.5' bgs			
	-- 4								
	-- 5								
	-- 6								
	-- 7								
	-- 8								
	-- 9								
	-- 10					No GW observed Bottom of Test Pit - 10' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/10/2010</p> <p>COMPLETION DATE: 9/10/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION:</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH:</p>
---	---



<p>LOG OF TEST PIT: TP-17</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~879</p> <p>PIT DEPTH: 10.5' bgs</p> <p>DATE: 9/10/2010</p>
--	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE #	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	0		ML	10 YR 3/4	Silt, trace clay, medium stiff, platy to blocky structure at 1.5' to 4' bgs, dark yellowish brown, low plasticity, moist, no mottling			
	1							
	2							
	3							
	4							
	5		CL-ML	10 YR 5/4	Silty clay, medium plasticity, moist, yellowish brown, stiff, no mottling			
	6							
	7		SW	10 YR 6/6	Sand with gravel, with 2 cm to 8 cm gravel and cobbles, subrounded, medium dense, moist, brownish yellow, no mottling			
	8							
	9							
	10							
	10.5				No GW observed EOH - 10.5' bgs			

<p>TEST PIT DATA</p> <p>START DATE: 9/10/2010</p> <p>COMPLETION DATE: 9/10/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION:</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH:</p>
---	---



LOG OF TEST PIT: TP-18 CLIENT: Birds Eye Foods PROJECT: Sprayfield Investigation PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004) LOCATION: Darien, Wisconsin	SURFACE ELEVATION: ~875 PIT DEPTH: 10' bgs DATE: 9/9/2010
---	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
-- 0		TP-18 0 - 1	CL		7.5 YR 4/6	Lean clay, some silt, medium plasticity, very stiff, moist, strong brown, no structure, distinct contact			
-- 1		TP-18 1 - 2	ML		10 YR 3/3	Silt, medium dense, moist, dark brown, no structure, distinct contact			
-- 2									
-- 3									
-- 4									
-- 5									
-- 6									
-- 7		TP-18 7 - 8	CL		7.5 YR 5/6	Lean clay, some silt, medium plasticity, medium stiff, moist, strong brown, no structure			
-- 8			SP		10 YR 6/4	Sand, medium-grained clean, poorly graded, moist, loose, light yellowish brown, subrounded, no mottling			
-- 9									
-- 10						No GW observed Bottom of Test Pits - 10' bgs			

TEST PIT DATA START DATE: 9/9/2010 COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling	WATER LEVEL INFORMATION (Datum = SURF) DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:
---	---



<p>LOG OF TEST PIT: TP-19</p> <p>CLIENT: Birds Eye Foods</p> <p>PROJECT: Sprayfield Investigation</p> <p>PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004)</p> <p>LOCATION: Darien, Wisconsin</p>	<p>SURFACE ELEVATION: ~891</p> <p>PIT DEPTH: 8' bgs</p> <p>DATE: 99/2010</p>
--	---

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
-- 0			ML		10 YR 4/3	Silt, medium stiff, plasticity structure, moist, brown, low plasticity gradational			
-- 1									
-- 1.3			SM		7.5 YR 6/6	Silty sand, some gravel, fine-grained, matrix supported, subrounded, medium dense, reddish yellow, platy to 2.5' bgs			
-- 2									
-- 3									
-- 4									
-- 5									
-- 6									
-- 6.5						GW at 6.5' ft bgs			
-- 7						Cobbly from 7'			
-- 8						Bottom of Test Pit - 8' bgs			
-- 9									
-- 10									

<p>TEST PIT DATA</p> <p>START DATE: 9/9/2010</p> <p>COMPLETION DATE: 9/9/2010</p> <p>LOGGED BY: JMH</p> <p>METHOD: Trackhoe</p> <p>CONTRACTOR: Odling</p>	<p>WATER LEVEL INFORMATION (Datum = SURF)</p> <p>DEPTH AT COMPLETION: 6.5' bgs</p> <p>LATER TIME/DEPTH:</p> <p>LATER TIME/DEPTH:</p> <p>CAVE IN DEPTH: 6.5' bgs</p>
---	---



Foth Infrastructure & Environment, LLC

LOG OF TEST PIT: TP-20 CLIENT: Birds Eye Foods PROJECT: Sprayfield Investigation PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004) LOCATION: Darien, Wisconsin	SURFACE ELEVATION: ~889 PIT DEPTH: 10' bgs DATE: 9/9/2010
---	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		ML		10 YR 4/3	Silt, trace clay, blocky structure, moist, medium stiff, brown, low plasticity, gradational contact			
	-- 1		SM		7.5 YR 6/4	Sand with silt, fine to coarse-grained well graded, subrounded to rounded, matrix supported, light brown, blocky structure, firm, gradational contact			
	-- 2								
	-- 3								
	-- 3.5		SM		7.5 YR 6/4	Same as above, moist, no blocky structure, light brown, iron banding at 3.5 to 6' bgs, loose, no mottling			
	-- 4								
	-- 5					Fine sand seam at 5' bgs,			
	-- 6								
	-- 7								
	-- 8								
	-- 9								
	-- 10					No GW observed Bottom of Test Pit - 10' bgs			

TEST PIT DATA START DATE: 9/9/2010 COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling	WATER LEVEL INFORMATION (Datum = SURF) DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:
---	---



LOG OF TEST PIT: TP-21 CLIENT: Birds Eye Foods PROJECT: Sprayfield Investigation PROJECT NUMBER: 09B004, Phase 6, Task 61 (4004) LOCATION: Darien, Wisconsin	SURFACE ELEVATION: ~889 PIT DEPTH: 10' bgs DATE: 9/9/2010
---	--

MSL ELEV	DEPTH FR LND SURF	SAMP DEPTH INTERVAL	TYPE	#	MUNSELL COLOR	DESCRIPTION OF MATERIAL	CLASS	LABORATORY TESTS	SAMPLING NOTES
	-- 0		ML		10 YR 4/3	Silt, medium soft, trace pebbles, poorly developed platy structure, moist, brown, low plasticity, gradational contact			
	-- 1		SM		10 YR 6/4	Silty sand with gravel, fine-grained, matrix supported, subrounded to rounded, loose, moist, light yellowish brown, poorly developed platy structure			
	-- 2								
	-- 2.5		SM		10 YR 6/6	Same as above, moist at 3' bgs, medium dense, brownish yellow, no structure, distinct contact			
	-- 3								
	-- 4								
	-- 5					Fine seam at 5' bgs			
	-- 6		ML		10 YR 6/4	Silt some subrounded gravel, firm, moist, light yellowish brown, matrix-supported, no mottling			
	-- 7								
	-- 8								
	-- 9								
	-- 10					No GW observed Bottom of Test Pit - 10' bgs			

TEST PIT DATA START DATE: 9/9/2010 COMPLETION DATE: 9/9/2010 LOGGED BY: JMH METHOD: Trackhoe CONTRACTOR: Odling	WATER LEVEL INFORMATION (Datum = SURF) DEPTH AT COMPLETION: LATER TIME/DEPTH: LATER TIME/DEPTH: CAVE IN DEPTH:
---	---

Route For: Watershed/Wastewater Waste Management
 Remediation/Revelpment Other

Page 1 of 1

Facility/Project Name BIRDS EYE FOODS - DARIEN			License/Permit/Monitoring Number		Boring Number MW-201
Boring Drilled By: Name of crew chief (first, last) and Firm First Name: PETE Last Name: ROTARU Firm: MIDWEST ENGINEERING SERVICES			Date Drilling Started 09/27/2010	Date Drilling Completed 09/27/2010	Drilling Method HSA
WI Unique Well No. 04965	DNR Well ID No.	Well Name MW-201	Final Static Water Level 859 Feet MSL	Surface Elevation 866 Feet MSL	Borehole Diameter 8 inches
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/> State Plane 416407.0 N 366360.0 E			Lat 0 ' "	Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
NE 1/4 of 38 1/4 of Section 32 , T 2 N, R 15 E		County WALWORTH	County Code 65	Civil Town/City/ or Village TOWN OF DARIEN	

Sample Number and Type	Length At. & Recovered (ft)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
(1)SS	2' @ 1.3'	8,16	5	SILT - Lt. brown, dry, trace sand, gravel, & clay, firm	ML									
(2)SS	2' @ 1.5'	5,5	10	SAND - Lt. brown, coarse, well sorted, some gravel, trace silt, saturated	SW									
(3)SS	2' @ 1.13, 1.2	13, 12	15	SAND & GRAVEL - Lt brown to gray w/ depth, fine gray sand @ 16'. END OF BORING @ 17'	SW									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Brian J. Stanel Firm FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Facility/Project Name BIRDS EYE FOODS - DARIEN	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.		Well Name MW-201
Facility License, Permit or Monitoring No.	Local Grid Origin (estimated: <input type="checkbox"/>) or Well Location <input checked="" type="checkbox"/>	Wis. Unique Well No. 04965	DNR Well ID No.
Facility ID	Lat. " Long. " or " or "	Date Well installed 09/27/2010 m m d d y y y y	Well Installed By: Name (first, last) and Firm PETE ROTARU MIDWEST ENG. SERV.
Type of Well Well Code 11 / MW	St. Plane 471407.0 ft. N. 356360.0 ft. E. S/C/N	Section Location of Waste/Source NE 1/4 of SW 1/4 of Sec. 32, T. 2 N. R. 15 <input checked="" type="checkbox"/> E <input type="checkbox"/> W	
Distance from Waste/Source 1,000 ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Gov. Lot Number	

A. Protective pipe, top elevation	ft. MSL	1. Cap and lock?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation	ft. MSL	2. Protective cover pipe:	
C. Land surface elevation	ft. MSL	a. Inside diameter:	4.0 in.
D. Surface seal, bottom	ft. MSL or 0.0 ft.	b. Length:	5.0 ft.
12. USCS classification of soil near screen: GP <input type="checkbox"/> OM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input checked="" type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CI <input type="checkbox"/> Bedrock <input type="checkbox"/>		c. Material:	Steel <input type="checkbox"/> 04 Other <input type="checkbox"/>
13. Sieve analysis performed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	d. Additional protection?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
14. Drilling method used:	Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	If yes, describe:	
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99		3. Surface seal:	Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		4. Material between well casing and protective pipe:	Bentonite <input checked="" type="checkbox"/> 30 Other <input type="checkbox"/>
17. Source of water (at least analysis, if required):		5. Annular space seal:	a. Granular/Chipped Bentonite <input checked="" type="checkbox"/> 33 b. Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. % Bentonite ... Bentonite-cement grout <input type="checkbox"/> 50 e. Ft ³ volume added for any of the above
E. Bentonite seal, top	ft. MSL or 0.0 ft.	f. How installed:	Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
F. Fine sand, top	ft. MSL or N/A ft.	6. Bentonite seal:	a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 1/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input type="checkbox"/> 32 c. Other <input type="checkbox"/>
G. Filter pack, top	ft. MSL or 3.0 ft.	7. Fine sand material: Manufacturer, product name & mesh size	
H. Screen joint, top	ft. MSL or 3.2 ft.	a. _____ ft ³	
I. Well bottom	ft. MSL or 13.2 ft.	b. Volume added _____ ft ³	
J. Filter pack, bottom	ft. MSL or 15.0 ft.	8. Filter pack material: Manufacturer, product name & mesh size	
K. Borehole, bottom	ft. MSL or 15.0 ft.	a. Native Sand	
L. Borehole, diameter	8.0 in.	b. Volume added _____ ft ³	
M. O.D. well casing	2.0 in.	9. Well casing:	Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
N. I.D. well casing	1.94 in.	10. Screen material: PVC Schedule 40	
		a. Screen type:	Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
		b. Manufacturer _____	
		c. Slot size:	0.010 in.
		d. Slotted length:	10.0 ft.
		11. Backfill material (below filter pack):	None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Brian J. Stavel Firm FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name BIRDS EYE FOODS - DARIEN	County Name WALWORTH	Well Name MW-201
Facility License, Permit or Monitoring Number	County Code 65	Wis. Unique Well Number DY965
		DNR Well ID Number

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other _____
3. Time spent developing well 30 min.
4. Depth of well (from top of well casing) 16.2 ft.
5. Inside diameter of well 1.94 in.
6. Volume of water in filter pack and well casing 1.4 gal.
7. Volume of water removed from well 50 gal.
8. Volume of water added (if any) 0.0 gal.
9. Source of water added N/A
10. Analysis performed on water added? Yes No
(If yes, attach results)

- | | Before Development | After Development |
|---|---|--|
| 11. Depth to Water (from top of well casing) | <u>7.35</u> ft. | <u>7.35</u> ft. |
| Date | <u>09/28/2010</u>
m m d d y y y y | <u>09/28/2010</u>
m m d d y y y y |
| Time | <u>12:40</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m. | <u>13:00</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m. |
| 12. Sediment in well bottom | <u>0.0</u> inches | <u>0.0</u> inches |
| 13. Water clarity | Clear <input type="checkbox"/> 10
Turbid <input checked="" type="checkbox"/> 15
(Describe) <u>Light Brown</u> | Clear <input checked="" type="checkbox"/> 20
Turbid <input type="checkbox"/> 25
(Describe) |
| Fill in if drilling fluids were used and well is at solid waste facility: | | |
| 14. Total suspended solids | _____ mg/l | _____ mg/l |
| 15. COD | _____ mg/l | _____ mg/l |
| 16. Well developed by: Name (first, last) and Firm | | |
| First Name: | <u>PETE</u> | Last Name: <u>ROTARU</u> |
| Firm: <u>MIDWEST ENGINEERING SERVICES</u> | | |

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party

First Name: ERIC Last Name: HUDSON

Facility/Firm: BIRDS EYE FOODS

Street: W8880 COUNTY ROAD X

City/State/Zip: DARIEN, WI 53114

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Brian Stanul

Print Name: BRIAN STANUL

Firm: FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

NOTE: See instructions for more information including a list of county codes and well type codes.

Route To: Watershed/Wastewater Waste Management
Remediation/Revolpment Other

Facility/Project Name BIRDS EYE FOODS - DARIEN		License/Permit/Monitoring Number		Boring Number MW-202	
Boring Drilled By: Name of crew chief (first, last) and Firm First Name: PETE Last Name: ROTARU Firm: MIDWEST ENGINEERING SERV.		Date Drilling Started 09/27/2010 m m d d y y y y	Date Drilling Completed 09/27/2010 m m d d y y y y	Drilling Method HSA	
WI Unique Well No. DY866	DNR Well ID No.	Well Name MW-202	Final Static Water Level 858 Feet MSL	Surface Elevation 867 Feet MSL	Borehole Diameter 8 inches
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location # State Plane 476232.1 N. 356344.5 E SW 1/4 of SW 1/4 of Section 32 , T 2 N, R 15 E		Lat 0 ' 0 "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
Facility ID		County WALWORTH	County Code 65	Civil Town/City/ or Village TOWN OF DARIEN	

Sample Number and Type	Length An. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					ROD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
(1)SS	2 1/2'	3,3	5	CLAY - Gray, stiff, moist, trace silt & sand, mottled.	CL									
(2)SS	2 1/1'	7,9	10	GRAVEL - Brown, some silt & sand, saturated	GW									
(3)SS	2 1/1'	5,9	15	SAND - Brown, coarse, some gravel and cobble, well sorted, saturated END OF BORING @ 17'	SW									

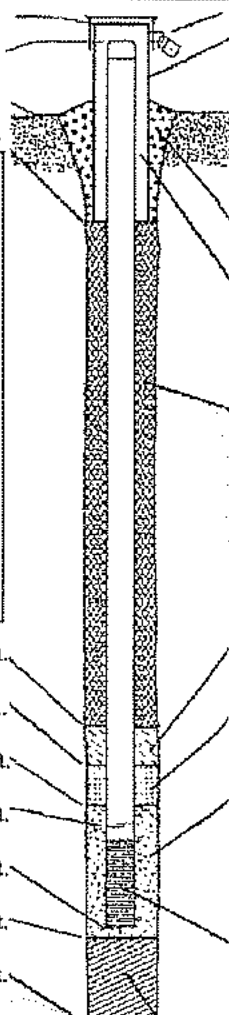
I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Brian J. Stanul Firm FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Facility/Project Name BIRDS EYE FOODS - DARIEN	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.	Well Name MW-202
Facility License, Permit or Monitoring No.	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Well Location <input checked="" type="checkbox"/> Lat. " Long. " or "	Wis. Unique Well No. DY966 DNR Well ID No.
Facility ID	St. Plane 4716282.1 ft. N. 356344.5 ft. E. S/C/N	Date Well Installed 09/27/2010 m m d d y y y y
Type of Well Well Code 11 / MW	Section Location of Waste/Source NE 1/4 of SW 1/4 of Sec. 32 T. 2 N. R. 15 <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm PETE ROTARU MIDWEST ENG. SERV.
Distance from Waste/Source 700 ft. Apply <input type="checkbox"/>	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidogradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation ----- ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation ----- ft. MSL	2. Protective cover pipe: a. Inside diameter: 4.0 in. b. Length: 5.0 ft. c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
C. Land surface elevation ----- ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom ----- ft. MSL or 0.0 ft.	3. Surface seal: Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input checked="" type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input checked="" type="checkbox"/> 30 Other <input type="checkbox"/>
13. Sieve analysis performed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: a. Granular/Chipped Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite ... Bentonite-cement grout <input type="checkbox"/> 50 e. _____ Ft ³ volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: a. Bentonite granules <input checked="" type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input type="checkbox"/> 32 c. Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name & mesh size a. _____ <input checked="" type="checkbox"/> 34 b. Volume added _____ ft ³
Describe _____	8. Filter pack material: Manufacturer, product name & mesh size a. Native Sand <input type="checkbox"/>
17. Source of water (attach analysis, if required):	b. Volume added _____ ft ³
E. Bentonite seal, top ----- ft. MSL or 0.0 ft.	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
F. Fine sand, top ----- ft. MSL or N/A ft.	10. Screen material: PVC Schedule 40 <input type="checkbox"/>
G. Filter pack, top ----- ft. MSL or 4.0 ft.	a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
H. Screen joint, top ----- ft. MSL or 5.7 ft.	b. Manufacturer _____
I. Well bottom ----- ft. MSL or 15.7 ft.	c. Slot size: 0.010 in.
J. Filter pack, bottom ----- ft. MSL or 15.7 ft.	d. Slotted length: 10 ft.
K. Borehole, bottom ----- ft. MSL or 15.7 ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
L. Borehole, diameter 8.0 in.	
M. O.D. well casing 2.0 in.	
N. I.D. well casing 1.94 in.	



I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: *Brian J. Stamm* Firm: FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

Please complete both forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name BIRDS EYE FOODS - DARIEN	County Name WALWORTH	Well Name MW-20Z
Facility License, Permit or Monitoring Number	County Code 65	Wis. Unique Well Number 0Y966
		DNR Well ID Number _____

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other _____
3. Time spent developing well _____ **15** min.
4. Depth of well (from top of well casing) _____ **18.7** ft.
5. Inside diameter of well _____ **1.94** in.
6. Volume of water in filter pack and well casing _____ **1.5** gal.
7. Volume of water removed from well _____ **35** gal.
8. Volume of water added (if any) _____ **0.0** gal.
9. Source of water added _____
10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 9.53 ft.	9.55 ft.
Date	b. 09/28/2010 m m d d y y y y	09/28/2010 m m d d y y y y
Time	c. 13:10 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	13:25 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	0.0 inches	0.0 inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) lt. Brown	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l
16. Well developed by: Name (first, last) and Firm	First Name: PETE Last Name: ROTARU Firm: MIDWEST ENGINEERING SERVICES	

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party

First Name: **ERIC** Last Name: **HUDSON**

Facility/Firm: **BIRDS EYE FOODS**

Street: **W8880 COUNTY ROAD X**

City/State/Zip: **DARIEN, WI 5314**

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: **Brian Stanul**

Print Name: **BRIAN STANUL**

Firm: **FITH INFRASTRUCTURE & ENVIRONMENT, LLC**

NOTE: See instructions for more information including a list of county codes and well type codes.

Route To: Watershed/Wastewater Waste Management
 Remediation/Revelopment Other

Page 1 of 1

Facility/Project Name BIRDS EYE FOODS - DARIEN			License/Permit/Monitoring Number		Boring Number MW-203
Boring Drilled By: Name of crew chief (first, last) and Firm First Name: PETE Last Name: ROTARU			Date Drilling Started 09/28/2010	Date Drilling Completed 09/29/2010	Drilling Method HSA
Firm: MIDWEST ENGINEERING SERVICES			Final Static Water Level 883 Feet MSL	Surface Elevation 912 Feet MSL	Borehole Diameter 8 inches
WI Unique Well No. 04967	DNR Well ID No.	Well Name MW-203	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input checked="" type="checkbox"/>		
State Plane 4716004.3 N 356675.1 E		Lat 0 ' 0 "	Local Grid Location		
NE 32 1/4 of SW 1/4 of Section 32 , T 2 N, R 15 E		Long 0 ' 0 "	<input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> Feet <input type="checkbox"/> S <input type="checkbox"/> Feet <input type="checkbox"/> W		
Facility ID	County WALWORTH	County Code 65	Civil Town/City/ or Village TOWN OF DARIEN		

Sample Number and Type	Length, Alt. & Recovered (in)	Blow Counts	Depth in Feet (Before ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					ROD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
(1)SS	2/0.7' 3,3	5		SILT - Lt. brown, trace sand & gravel, dry, very firm.	ML									
(2)SS	2/1.3' 2,2	10		SILT - as above.	ML									
(3)SS	2/1.7' 2,7	15		SILT - as above.	ML									
(4)SS	2/1' 2,2	20		SILT - as above.	ML									
(5)SS	2/0.8' 5,5	25		SILT - as above.	ML									
(6)SS	2/1.7' 3,4	30		SILT - as above.	ML									
(7)SS	2/0.8' 5,10	35		SAND - Brown, fine to medium, iron stained, some gravel and cobble, saturated.	SW									
(8)SS	2/1.7' 2,25	40		SILT - Brown, some sand and gravel, saturated. END OF BORING @ 42'.	MH									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Brian J. Starnul Firm FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Facility/Project Name BIRDS EYE FOODS - DARLEN		Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. <input type="checkbox"/> S. <input type="checkbox"/> W.		Well Name MW-203	
Facility License, Permit or Monitoring No.		Local Grid Origin (estimated: <input type="checkbox"/>) or Well Location <input checked="" type="checkbox"/>		Wis. Unique Well No. DY 967 DNR Well ID No.	
Facility ID		St. Plane 4716004.3 ft. N, 356675.1 ft. E. S/C/N		Date Well Installed 09/29/2010 m m d d y y y y	
Type of Well Well Code 11 / MW		Section Location of Waste/Source NE 1/4 of SW 1/4 of Sec. 32, T. 2 N, R. 15 E W		Well Installed By: Name (first, last) and Firm PETE ROTARU	
Distance from Waste/Source 600 ft.		Location of Well Relative to Waste/Source u <input checked="" type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known		Gov. Lot Number	
Enf. Sids. Apply <input type="checkbox"/>				MIDWEST ENG. SERV.	

A. Protective pipe, top elevation	ft. MSL	1. Cap and lock?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation	ft. MSL	2. Protective cover pipe:	
C. Land surface elevation	ft. MSL	a. Inside diameter:	4.0 in.
D. Surface seal, bottom	ft. MSL or D.D. ft.	b. Length:	5.0 ft.
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input checked="" type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>		c. Material:	Steel <input type="checkbox"/> 04 Other <input type="checkbox"/>
13. Sieve analysis performed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		d. Additional protection?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>		If yes, describe: _____	
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99		3. Surface seal:	Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		4. Material between well casing and protective pipe:	
Describe _____		Native Soil	
17. Source of water (attach analysis, if required):		5. Annular space seal:	
E. Bentonite seal, top	ft. MSL or 16.0 ft.	a. Granular/Chipped Bentonite <input checked="" type="checkbox"/> 33	
F. Fine sand, top	ft. MSL or N/A ft.	b. Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35	
G. Filter pack, top	ft. MSL or 27.0 ft.	c. Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31	
H. Screen joint, top	ft. MSL or 29.7 ft.	d. % Bentonite ... Bentonite-cement grout <input type="checkbox"/> 50	
I. Well bottom	ft. MSL or 39.7 ft.	e. Ft ³ volume added for any of the above	
J. Filter pack, bottom	ft. MSL or 39.7 ft.	f. How installed:	Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
K. Borehole, bottom	ft. MSL or 39.7 ft.	6. Bentonite seal:	
L. Borehole, diameter	8.0 in.	a. Bentonite granules <input checked="" type="checkbox"/> 33	
M. O.D. well casing	2.0 in.	b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input type="checkbox"/> 32	
N. I.D. well casing	1.94 in.	c. _____ Other <input type="checkbox"/>	
		7. Fine sand material: Manufacturer, product name & mesh size	
		a. _____ N/A	
		b. Volume added _____ ft ³	
		8. Filter pack material: Manufacturer, product name & mesh size	
		a. Native Sand	
		b. Volume added _____ ft ³	
		9. Well casing:	
		Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23	
		Flush threaded PVC schedule 80 <input type="checkbox"/> 24	
		Other <input type="checkbox"/>	
		10. Screen material: PVC Schedule 40	
		a. Screen type:	
		Factory cut <input checked="" type="checkbox"/> 11	
		Continuous slot <input type="checkbox"/> 01	
		Other <input type="checkbox"/>	
		b. Manufacturer _____	
		c. Slot size: 0.010 in.	
		d. Slotted length: 10 ft.	
		11. Backfill material (below filter pack):	
		None <input checked="" type="checkbox"/> 14	
		Other <input type="checkbox"/>	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: Brian J. Starnul Firm: POTH INFRASTRUCTURE & ENVIRONMENT, LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name BIRDS EYE FOODS - DARIEN	County Name WALWORTH	Well Name MW-203
Facility License, Permit or Monitoring Number	County Code 65	Wis. Unique Well Number DY967
		DNR Well ID Number

1. Can this well be purged dry? Yes No

2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other _____ --

3. Time spent developing well 55 min.

4. Depth of well (from top of well casing) 42.7 ft.

5. Inside diameter of well 1.94 in.

6. Volume of water in filter pack and well casing 2.3 gal.

7. Volume of water removed from well 25 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

17. Additional comments on development:

11. Depth to Water Before Development After Development

a. 20.91 ft. 34.43 ft.
(from top of well casing)

b. 09/29/2010 09/29/2010
m m d d y y y y m m d d y y y y

c. 12:40 a.m. p.m. 13:35 a.m. p.m.

12. Sediment in well bottom 0.0 inches 0.0 inches

13. Water clarity Clear 10 Turbid 20
Turbid 15 Turbid 25
(Describe) (Describe)
Lt. Brown

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids _____ mg/l _____ mg/l

15. COD _____ mg/l _____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: PETE Last Name: ROTARU

Firm: MIDWEST ENGINEERING SERVICES

Name and Address of Facility Contact/Owner/Responsible Party

First Name: ERIC Last Name: HUDSON

Facility/Firm: BIRDS EYE FOODS

Street: WEBBO COUNTY ROAD X

City/State/Zip: DARIEN, WI 53114

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Brian Stanull

Print Name: BRIAN STANULL

Firm: FOTH INFRASTRUCTURE & ENVIRONMENT, LLC

NOTE: See instructions for more information including a list of county codes and well type codes.

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location	Country <u>WALWORTH</u>	Original Well Owner (If Known) <u>THE LARSEN COMPANY</u>	
<u>NW</u> 1/4 of <u>SE</u> 1/4 of Sec. <u>32</u> ; T. <u>2</u> N.R. <u>15</u>	<input checked="" type="checkbox"/> E <input type="checkbox"/> W	Present Well Owner	
(If applicable)	Gov't Lot _____ Grid Number _____	Street or Route	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code	
Civil Town Name <u>DARIEN</u>		Facility Well No. and/or Name (If Applicable) <u>SB-11</u>	WI Unique Well No. _____
Street Address of Well		Reason for Abandonment <u>COMPLETION OF SOIL BORING</u>	
City, Village <u>DARIEN</u>		Date of Abandonment <u>OCTOBER 27, 1993</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION	
(3) Original Well/Drillhole/Borehole Construction Completed On (Date) <u>OCTOBER 27, 1993</u>	(4) Depth to Water (Feet) <u>6</u>
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If No, Explain <u>DRILL CASING REMOVED</u>
Construction Report Available? <input type="checkbox"/> Yes <input type="checkbox"/> No <u>NA</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Did Sealing Material Rise to Surface? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Did Material Settle After 24 Hours? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Was Hole Retopped? <u>NA</u> <input type="checkbox"/> Yes <input type="checkbox"/> No
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____	(5) Required Method of Placing Sealing Material
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock <u>BOREHOLE</u> <u>30</u> <u>BOREHOLE</u> <u>8.3</u> Total Well Depth (ft.) (From ground surface) Casing Diameter (ins.)	<input checked="" type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____
Casing Depth (ft.) <u>NA</u>	(6) Sealing Materials
Was Well Annular Space Grouted? <u>NA</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet	For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Bentonite - Cement Grout <input checked="" type="checkbox"/> Chipped Bentonite

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>NATIVE SOIL</u>	<u>Surface</u>	<u>0.5</u>		
<u>3/8" CHIPPED BENTONITE (HOLEPLUG)</u>	<u>0.5</u>	<u>30</u>		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work <u>WTD ENVIRONMENTAL DRILLING, INC.</u> Signature of Person Doing Work _____ Date Signed _____ Street or Route <u>101 ALDERSON</u> City, State, Zip Code <u>SCHOFIELD WI</u>	(10) FOR DNR OR COUNTY USE ONLY	
	Date Received/Inspected _____	District/County _____
	Reviewer/Inspector _____	
	Follow-up Necessary _____	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location	County <u>WALWORTH</u>	Original Well Owner (If Known) <u>THE LARSEN COMPANY</u>	
<u>NW 1/4 of SE 1/4 of Sec. 32 ; T. 2 N.R. 15</u> (If applicable)	Grid Location ft. <input type="checkbox"/> N. <input type="checkbox"/> S., <input type="checkbox"/> E. <input type="checkbox"/> W.	Present Well Owner	
Gov't Lot	Grid Number	Street or Route	
Civil Town Name <u>DARIEN</u>	Street Address of Well	City, State, Zip Code	
City, Village <u>DARIEN</u>	Facility Well No. and/or Name (If Applicable) <u>SB-12</u>	WI Unique Well No.	
	Reason For Abandonment <u>COMPLETION OF SOIL BORING</u>	Date of Abandonment <u>OCTOBER 27, 1993</u>	

WELL/DRILLHOLE/BOREHOLE INFORMATION	
(3) Original Well/Drillhole/Borehole Construction Completed On (Date) <u>OCTOBER 27, 1993</u>	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input type="checkbox"/> Yes <input type="checkbox"/> No <u>NA</u>
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Other (Specify) _____	<input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock	Total Well Depth (ft.) <u>30</u> (From ground surface)
	Borehole Casing Diameter (ins.) <u>8.3</u>
	Casing Depth (ft.) <u>NA</u>
Was Well Annular Space Grouted? <u>NA</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet	
(4) Depth to Water (Feet) <u>6</u>	
Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If No, Explain _____	
Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Did Sealing Material Rise to Surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Was Hole Retopped? <u>NA</u> <input type="checkbox"/> Yes <input type="checkbox"/> No	
(5) Required Method of Placing Sealing Material	
<input checked="" type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
(6) Sealing Materials	
<input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input checked="" type="checkbox"/> Chipped Bentonite	
For monitoring wells and monitoring well boreholes only: <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Cement Grout	

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>NATIVE SOIL</u>	<u>Surface</u>	<u>0.5</u>		
<u>3/8" CHIPPED BENTONITE (HOLEPLUG)</u>	<u>0.5</u>	<u>30</u>		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work <u>WTD ENVIRONMENTAL DRILLING, INC.</u>		(10) FOR DNR OR COUNTY USE ONLY	
Signature of Person Doing Work	Date Signed	Date Received/Inspected	District/County
Street or Route <u>101 ALDERSON</u>	Telephone Number <u>(715) 359-7090</u>	Reviewer/Inspector	
City, State, Zip Code <u>SCHOFIELD WI</u>		Follow-up Necessary	

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location	County <u>WALWORTH</u>	Original Well Owner (If Known) <u>THE LARSEN COMPANY</u>	Present Well Owner
<u>NW</u> 1/4 of <u>SE</u> 1/4 of Sec. <u>32</u> ; T. <u>2</u> N. R. <u>15</u>	<input type="checkbox"/> E <input type="checkbox"/> W	Street or Route	
(If applicable)	Gov't Lot _____ Grid Number _____	City, State, Zip Code	
Grid Location _____ ft. <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		Facility Well No. and/or Name (If Applicable) <u>SB-13</u>	WI Unique Well No. _____
Civil Town Name <u>DARIEN</u>		Reason For Abandonment <u>COMPLETION OF SOIL BORING</u>	Date of Abandonment <u>OCTOBER 27, 1993</u>
Street Address of Well			
City, Village <u>DARIEN</u>			

WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) Depth to Water (Feet) <u>6</u>	
(3) Original Well/Drillhole/Borehole Construction Completed On (Date) <u>OCTOBER 27, 1993</u>		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Casing Left in Place? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If No, Explain <u>DRILL CASINGS REMOVED</u>	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input checked="" type="checkbox"/> Borehole	Construction Report Available? <input type="checkbox"/> Yes <input type="checkbox"/> No <u>NA</u>	Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Did Sealing Material Rise to Surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Was Hole Retopped? <u>NA</u> <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____	Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock <u>BOREHOLE</u> <u>BOREHOLE</u> Total Well Depth (ft.) <u>34</u> Casing Diameter (ins.) <u>8.3</u> (From ground surface)	(5) Required Method of Placing Sealing Material <input checked="" type="checkbox"/> Conductor Pipe-Gravity <input checked="" type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
Casing Depth (ft.) <u>NA</u> Was Well Annular Space Grouted? <u>NA</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? _____ Feet	(6) Sealing Materials For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Clay-Sand Slurry <input checked="" type="checkbox"/> Granular Bentonite / GEL <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Bentonite - Cement Grout <input checked="" type="checkbox"/> Chipped Bentonite		

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
<u>NATIVE SOIL</u>	<u>Surface</u>	<u>0.5</u>		
<u>3/8" CHIPPED BENTONITE AND GRANULAR / GEL GROUT</u>	<u>0.5</u>	<u>34</u>		

(8) Comments: _____

(9) Name of Person or Firm Doing Sealing Work <u>WTD ENVIRONMENTAL DRILLING, INC.</u>	
Signature of Person Doing Work	Date Signed
Street or Route <u>ALDERSON</u>	Telephone Number <u>(715) 359-7090</u>
City, State, Zip Code <u>SCHOFIELD WI</u>	

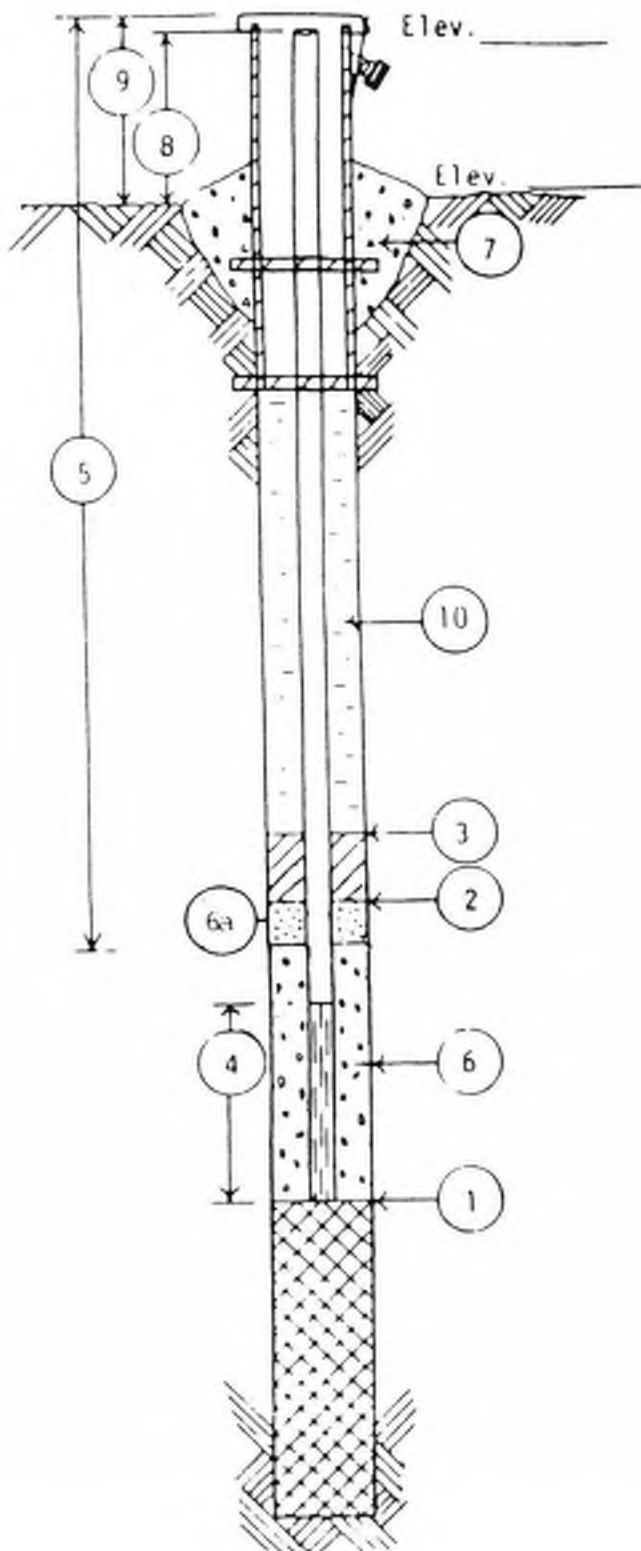
(10) FOR DNR OR COUNTY USE ONLY	
Date Received/Inspected	District/County
Reviewer/Inspector	
Follow-up Necessary	

WELL DETAIL INFORMATION SHEET



JOB NO. 5797
 BORING NO. MW-PI WD-3P
 DATE 10-26-93
 CHIEF BZ
 LOCATION Darien, WI

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- ① DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 30.0 FEET.
- ② DEPTH OF BOTTOM OF SEAL (if installed) 21.0 FEET.
- ③ DEPTH TO TOP OF SEAL (if installed) 0.0 FEET.
- ④ LENGTH OF WELL POINT, PVC WELL SCREEN (Sch 40/Sch 80), OR SLOTTED PIPE 5.0 FEET. (Circle One)
- ⑤ TOTAL LENGTH OF PIPE 32.0 FEET @ 2 IN. DIAMETER.
- ⑥ TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE #30 Sand.
- ⑥a LENGTH OF FINE SAND 2.0 FEET.
- ⑦ CONCRETE CAP, YES NO (Circle One)
- ⑧ HEIGHT OF WELL CASING ABOVE GROUND 2.0 FEET.
- ⑨ PROTECTIVE CASING? YES NO (Circle One)
 HEIGHT ABOVE GROUND 2.0 FEET.
- LOCKING CAP? YES NO (Circle One)
- BUMPER POST? YES NO (Circle One)
- ⑩ TYPE OF BACKFILL: Holeplug

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

MONITORING WELL DEVELOPMENT

WELL NUMBER ~~MW-P1~~ WO-3P
WELL DIAMETER 2"
TOTAL DEPTH 30.0'
DEPTH TO WATER BEFORE DEVELOPMENT 10.2'
DEPTH TO WATER AFTER DEVELOPMENT 10.2'

PROJECT NO. 5797
DATE 10-26-93
DEVELOPED BY KK

DESCRIPTION OF DEVELOPMENT METHOD

B-K Hand Pump

VOLUME OF WATER REMOVED FROM WELL 66 gallons
CLARITY OF WATER IN WELL BEFORE DEVELOPMENT Gray/Brown
CLARITY OF WATER IN WELL AFTER DEVELOPMENT Cloudy
VOLUME OF WATER ADDED TO WELL --
SOURCE OF WATER ADDED TO WELL --
TIME SPENT FOR DEVELOPMENT 30 mins.

COMMENTS:



ENVIRONMENTAL DRILLING
WTD
A DIVISION OF LONGYEAR COMPANY

MONITORING WELL DEVELOPMENT

WELL NUMBER WD-4

WELL DIAMETER 2"

TOTAL DEPTH 14.0'

DEPTH TO WATER BEFORE DEVELOPMENT 4.2'

DEPTH TO WATER AFTER DEVELOPMENT 5.6'

PROJECT NO. 5797

DATE 10-26-93

DEVELOPED BY KK

DESCRIPTION OF DEVELOPMENT METHOD

B-K Hand Pump

VOLUME OF WATER REMOVED FROM WELL 40 gallons

CLARITY OF WATER IN WELL BEFORE DEVELOPMENT Gray

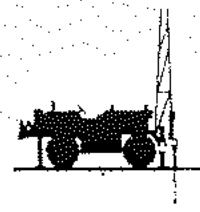
CLARITY OF WATER IN WELL AFTER DEVELOPMENT Cloudy

VOLUME OF WATER ADDED TO WELL --

SOURCE OF WATER ADDED TO WELL --

TIME SPENT FOR DEVELOPMENT 15 mins.

COMMENTS:



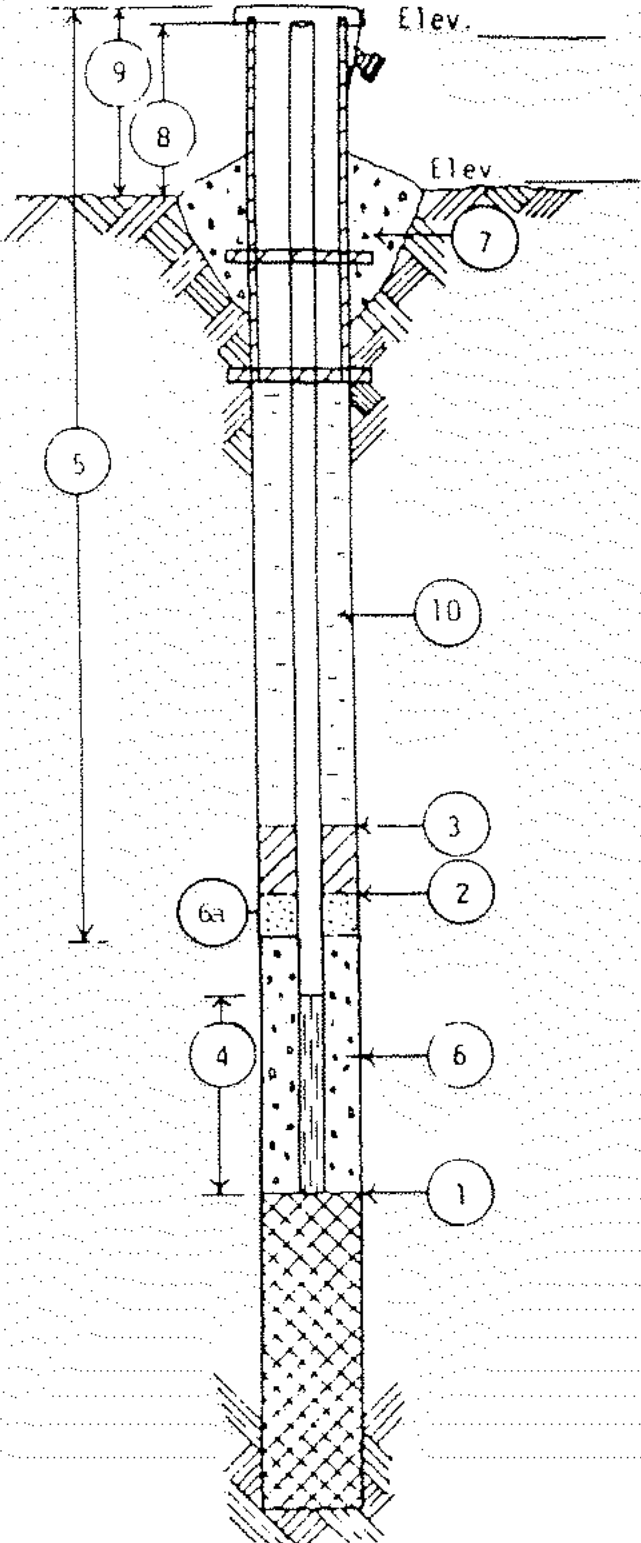
ENVIRONMENTAL DRILLING
WTD
A DIVISION OF LONGYEAR COMPANY

WELL DETAIL INFORMATION SHEET



JOB NO. 5797
 BORING NO. WD-5
 DATE 10-25-93
 CHIEF BZ
 LOCATION Darien, WI

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- ① DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 13.0 FEET.
- ② DEPTH OF BOTTOM OF SEAL (if installed) 2.6 FEET.
- ③ DEPTH TO TOP OF SEAL (if installed) 0.0 FEET.
- ④ LENGTH OF WELL POINT, PVC WELL SCREEN (Sch 40/Sch 80), OR SLOTTED PIPE 10.0 FEET. (Circle One)
- ⑤ TOTAL LENGTH OF PIPE 15.6 FEET @ 2 IN. DIAMETER.
- ⑥ TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE #30 Sand.
- ⑥a LENGTH OF FINE SAND .5 FEET.
- ⑦ CONCRETE CAP, YES NO (Circle One)
- ⑧ HEIGHT OF WELL CASING ABOVE GROUND 2.6 FEET.
- ⑨ PROTECTIVE CASING? YES NO (Circle One)
 HEIGHT ABOVE GROUND 2.6 FEET.
- LOCKING CAP? YES NO (Circle One)
- BUMPER POST? YES NO (Circle One)
- ⑩ TYPE OF BACKFILL: Benseal

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

MONITORING WELL DEVELOPMENT

WELL NUMBER WD-5

WELL DIAMETER 2"

TOTAL DEPTH 13.0'

DEPTH TO WATER BEFORE DEVELOPMENT 3.1'

DEPTH TO WATER AFTER DEVELOPMENT 3.1'

PROJECT NO. 5797

DATE 10-26-93

DEVELOPED BY KK

DESCRIPTION OF DEVELOPMENT METHOD

B-K Hand Pump

VOLUME OF WATER REMOVED FROM WELL 40 gallons

CLARITY OF WATER IN WELL BEFORE DEVELOPMENT Gray

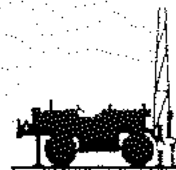
CLARITY OF WATER IN WELL AFTER DEVELOPMENT Cloudy

VOLUME OF WATER ADDED TO WELL ---

SOURCE OF WATER ADDED TO WELL ---

TIME SPENT FOR DEVELOPMENT 15 mins.

COMMENTS:



ENVIRONMENTAL DRILLING
WTD
A DIVISION OF LONGYEAR COMPANY

WELL DETAIL INFORMATION SHEET



JOB NO. 5797

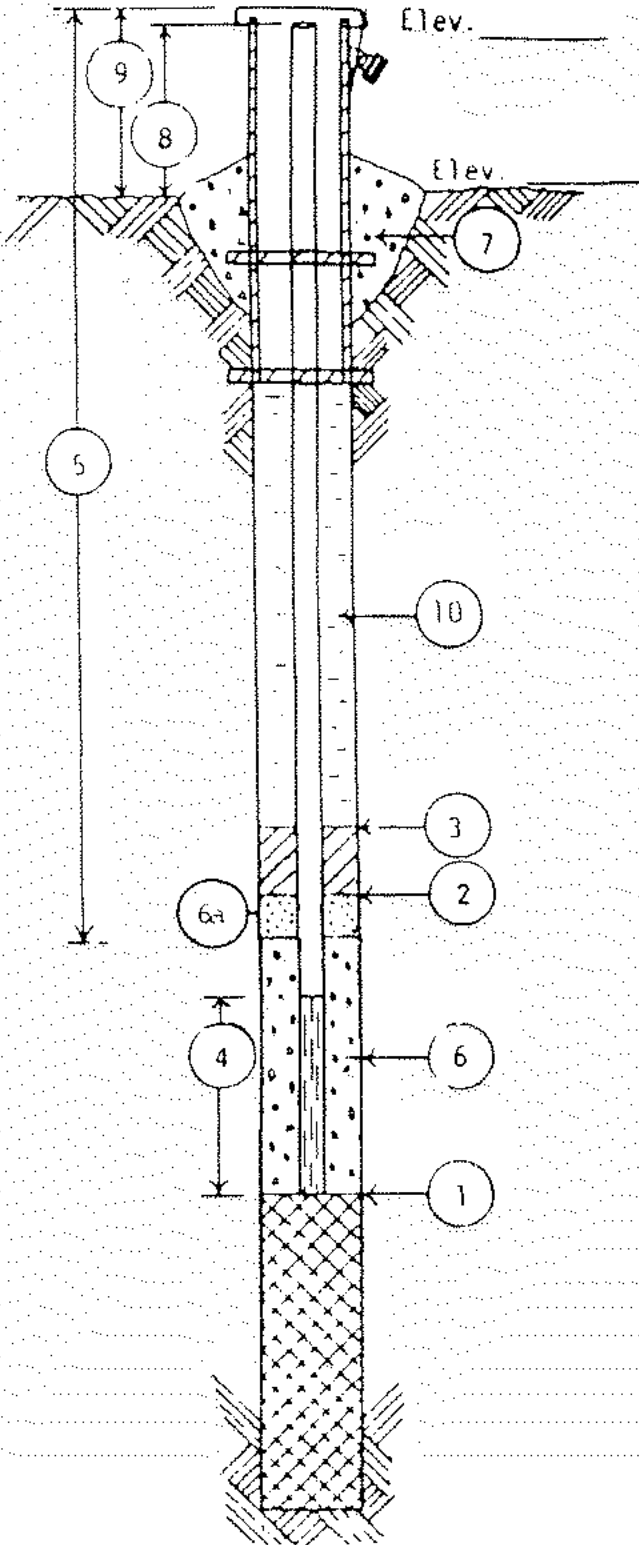
BORING NO. WD-6

DATE 10-26-93

CHIEF DT

LOCATION Darien, WI

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- ① DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 12.5 FEET.
- ② DEPTH OF BOTTOM OF SEAL (if installed) 2.3 FEET.
- ③ DEPTH TO TOP OF SEAL (if installed) 0.0 FEET.
- ④ LENGTH OF WELL POINT, PVC WELL SCREEN (Sch 40/Sch 80), OR SLOTTED PIPE 10.0 FEET. (Circle One)
- ⑤ TOTAL LENGTH OF PIPE 5.0 FEET @ 2 IN. DIAMETER.
- ⑥ TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE #30 Flint.
- ⑥a LENGTH OF FINE SAND --- FEET.
- ⑦ CONCRETE CAP, YES NO (Circle One)
- ⑧ HEIGHT OF WELL CASING ABOVE GROUND 2.5 FEET.
- ⑨ PROTECTIVE CASING? YES NO (Circle One)
HEIGHT ABOVE GROUND 2.6 FEET.
- LOCKING CAP? YES NO (Circle One)
- BUMPER POST? YES NO (Circle One)
- ⑩ TYPE OF BACKFILL: Benseal

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

MONITORING WELL DEVELOPMENT

WELL NUMBER WD-6

WELL DIAMETER 2"

TOTAL DEPTH 13.0'

DEPTH TO WATER BEFORE DEVELOPMENT 3.5'

DEPTH TO WATER AFTER DEVELOPMENT 4.7'

PROJECT NO. 5797

DATE 10-26-93

DEVELOPED BY KK

DESCRIPTION OF DEVELOPMENT METHOD

B-K Hand Pump

VOLUME OF WATER REMOVED FROM WELL 40 gallons

CLARITY OF WATER IN WELL BEFORE DEVELOPMENT Brown

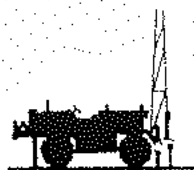
CLARITY OF WATER IN WELL AFTER DEVELOPMENT Cloudy

VOLUME OF WATER ADDED TO WELL --

SOURCE OF WATER ADDED TO WELL --

TIME SPENT FOR DEVELOPMENT 15 mins.

COMMENTS:



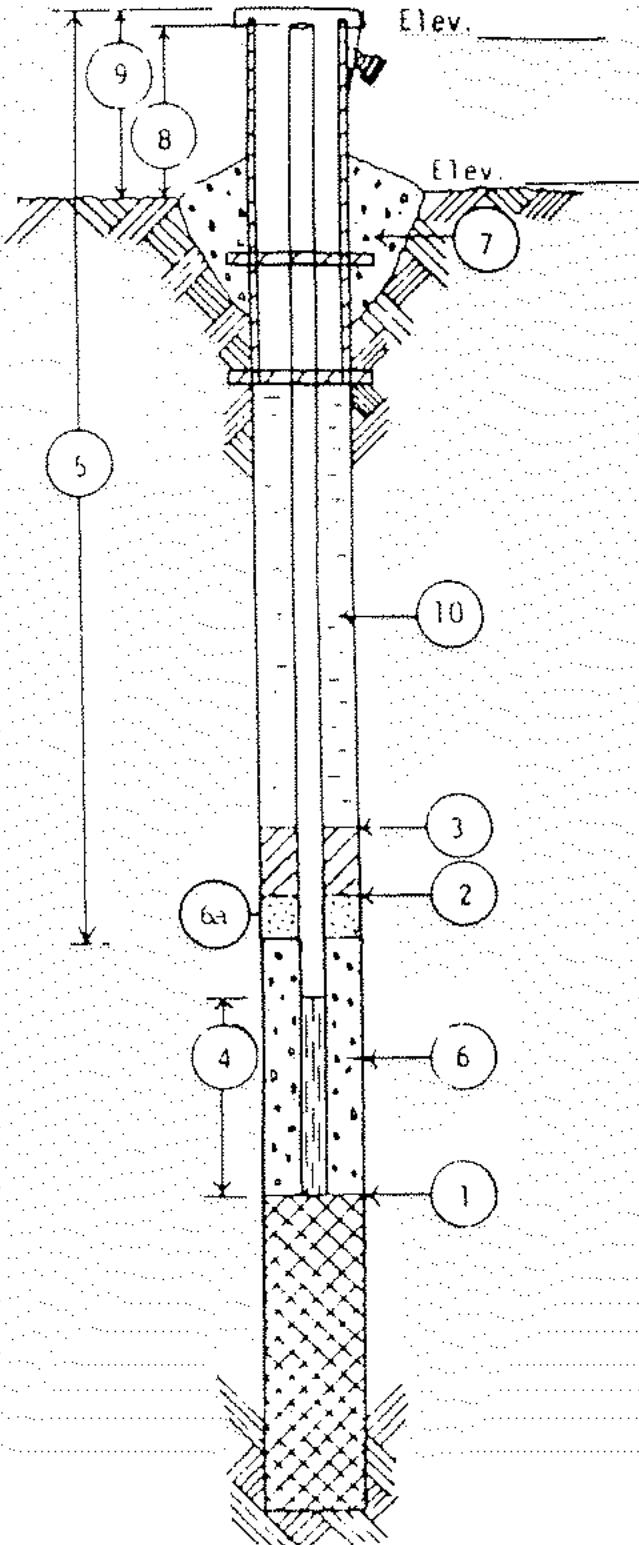
ENVIRONMENTAL DRILLING
WTD
A DIVISION OF LONGYEAR COMPANY

WELL DETAIL INFORMATION SHEET



JOB NO. 5797
 BORING NO. WD-6P
 DATE 10-26-93
 CHIEF DT
 LOCATION Darien, WI

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- ① DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 22.0 FEET.
- ② DEPTH OF BOTTOM OF SEAL (if installed) 15.0 FEET.
- ③ DEPTH TO TOP OF SEAL (if installed) 0.0 FEET.
- ④ LENGTH OF WELL POINT, PVC WELL SCREEN (Sch 40/Sch 80), OR SLOTTED PIPE 5.0 FEET, (Circle One)
- ⑤ TOTAL LENGTH OF PIPE 19.5 FEET @ 2 IN. DIAMETER.
- ⑥ TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE #30 Flint.
- ⑥a LENGTH OF FINE SAND 1.0 FEET.
- ⑦ CONCRETE CAP, YES NO (Circle One)
- ⑧ HEIGHT OF WELL CASING ABOVE GROUND 2.5 FEET.
- ⑨ PROTECTIVE CASING? YES NO (Circle One)
 HEIGHT ABOVE GROUND 2.6 FEET.
- LOCKING CAP? YES NO (Circle One)
- BUMPER POST? YES NO (Circle One)
- ⑩ TYPE OF BACKFILL: Holeplug

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

MONITORING WELL DEVELOPMENT

WELL NUMBER WD-6P

WELL DIAMETER 2"

TOTAL DEPTH 22.0'

DEPTH TO WATER BEFORE DEVELOPMENT 3.3'

DEPTH TO WATER AFTER DEVELOPMENT 3.6'

PROJECT NO. 5797

DATE 10-27-93

DEVELOPED BY DM

DESCRIPTION OF DEVELOPMENT METHOD

B-K Hand Pump

VOLUME OF WATER REMOVED FROM WELL 80 gallons

CLARITY OF WATER IN WELL BEFORE DEVELOPMENT Dark Brown

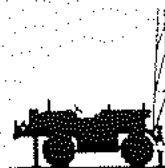
CLARITY OF WATER IN WELL AFTER DEVELOPMENT Cloudy

VOLUME OF WATER ADDED TO WELL --

SOURCE OF WATER ADDED TO WELL --

TIME SPENT FOR DEVELOPMENT 1 hour

COMMENTS:



ENVIRONMENTAL DRILLING
WTD
A DIVISION OF LONGYEAR COMPANY

WELL DETAIL INFORMATION SHEET



JOB NO. 5797

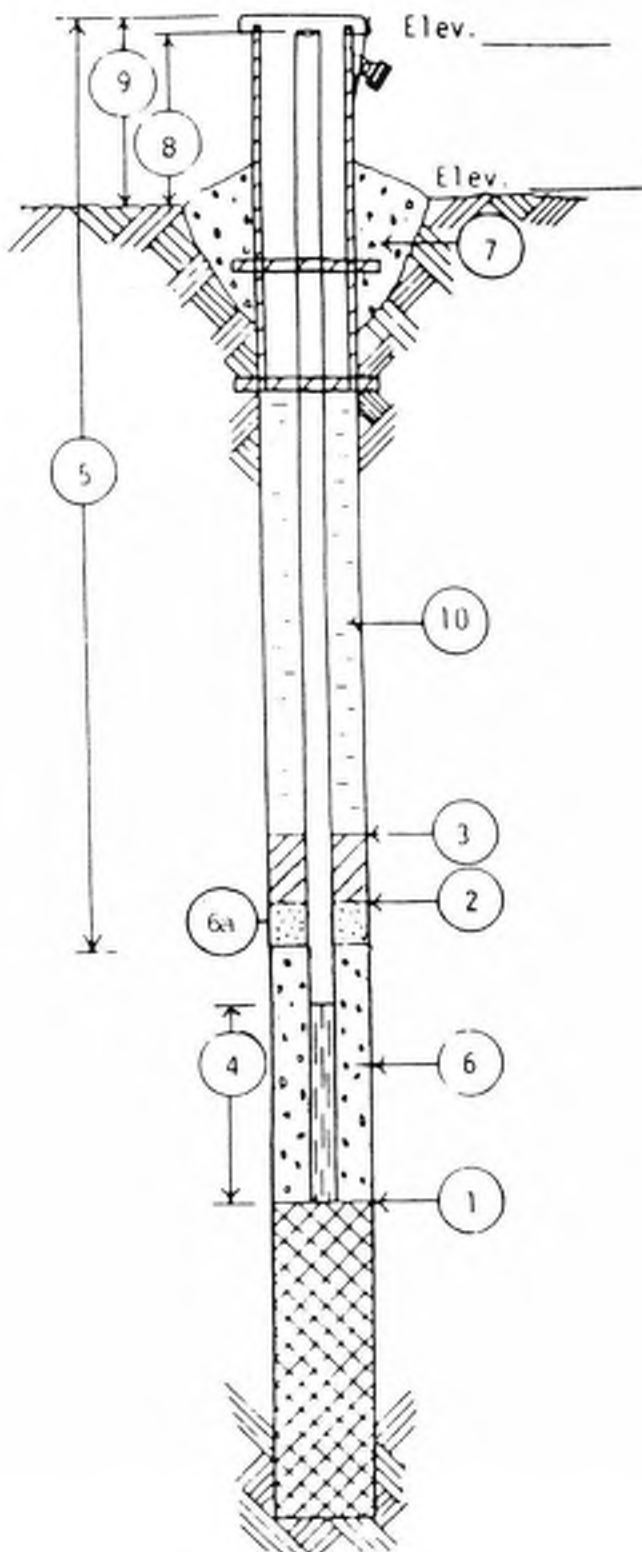
BORING NO. DW-7

DATE 10-26-93

CHIEF BZ

LOCATION Darien, WI

All depth measurements of well detail assumed to be from ground surface unless otherwise indicated.



- ① DEPTH TO BOTTOM OF WELL POINT OR SLOTTED PIPE 13.0 FEET.
- ② DEPTH OF BOTTOM OF SEAL (if installed) 2.6 FEET.
- ③ DEPTH TO TOP OF SEAL (if installed) 0.0 FEET.
- ④ LENGTH OF WELL POINT, PVC WELL SCREEN (Sch 40) Sch 80, OR SLOTTED PIPE 10.0 FEET. (Circle One)
- ⑤ TOTAL LENGTH OF PIPE 15.6 FEET @ 2 IN. DIAMETER.
- ⑥ TYPE OF FILTER MATERIAL AROUND WELL POINT OR SLOTTED PIPE #30 Sand.
- ⑥a LENGTH OF FINE SAND .5 FEET.
- ⑦ CONCRETE CAP, YES NO (Circle One)
- ⑧ HEIGHT OF WELL CASING ABOVE GROUND 2.6 FEET.
- ⑨ PROTECTIVE CASING? YES NO (Circle One)
HEIGHT ABOVE GROUND 2.6 FEET.
- LOCKING CAP? YES NO (Circle One)
- BUMPER POST? YES NO (Circle One)
- ⑩ TYPE OF BACKFILL: Benseal

WATER LEVEL CHECKS

*From top of casing, if protective casing higher, take measurement from top of protective casing.

BORING #	DATE	TIME	DEPTH TO WATER	REMARKS

MONITORING WELL DEVELOPMENT

WELL NUMBER DW-7

WELL DIAMETER 2"

TOTAL DEPTH 13.0'

DEPTH TO WATER BEFORE DEVELOPMENT 3.5'

DEPTH TO WATER AFTER DEVELOPMENT 4.5'

PROJECT NO. 5797

DATE 10-26-93

DEVELOPED BY KK

DESCRIPTION OF DEVELOPMENT METHOD

B-K Hand Pump

VOLUME OF WATER REMOVED FROM WELL 65 gallons

CLARITY OF WATER IN WELL BEFORE DEVELOPMENT Brown

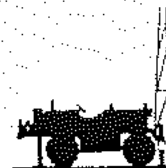
CLARITY OF WATER IN WELL AFTER DEVELOPMENT Cloudy

VOLUME OF WATER ADDED TO WELL --

SOURCE OF WATER ADDED TO WELL --

TIME SPENT FOR DEVELOPMENT 30 mins.

COMMENTS:



ENVIRONMENTAL DRILLING
WTD
A DIVISION OF LONGYEAR COMPANY

Facility/Project Name Dean Foods Vegetable Company/Darien		License/Permit/Monitoring Number 0050679		Boring Number WD-8	
Boring Drilled by (Firm name & name of crew chief) Brandon Powers/Matthew Hood Environmental & Foundation Drilling, Inc.		Date Drilling Started 12 / 05 / 96 M M D D Y Y	Date Drilling Completed 12 / 05 / 96 M M D D Y Y	Drilling Method 4.25" HSA	
DNR Facility Well No	WI Unique Well No	Common Well Name MW-8	Final Static Water Level 860.58 Feet Level	Surface Elevation 865.6 Feet MSL	Borehole Diameter 8.3 inches
Boring Location State Plane 217,067.8 N, 2,337,557.4 E S/CN Lat _____ SW 1/4 of NE 1/4 of Section 32, T 2 N, R 15 E/W Long _____			Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> Feet <input type="checkbox"/> S <input type="checkbox"/> Feet <input type="checkbox"/> W		
County Walworth		DNR County Code	Civil Town/City/Village Town of Darien		

Sample Number	Length Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties				RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit		P 200
				-Fill-										
1	24	2,3,3,2	0-3.8	Black layers of silt, sandy silt & silty clay topsoil.	ML									
			3.8-5.2	Gray organic silty clay. (mottled)	ML									
2	10	3,8,9,11	5.2-10	Gray layers of F-M & F-C sand, little gravel, trace silt.	SP									
3	10	4,5,9,18	10-15.0	End of boring.	SP									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Matthew J. Hood

Firm
Environmental & Foundation Drilling, Inc.

This form is authorized by Chapters 144.47 & 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 & 162.06, Wis. Stats.



Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name Dean Foods Vegetable Company/Darien	County Name Walworth	Well Name WD-8
Facility License, Permit or Monitoring Number 0050679	County Code	DNR Well Number

		Before Development	After Development
1. Can this well be purged dry?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
2. Well development method		11. Depth of Water (from top of well casing)	
surged with bailer and bailed	<input type="checkbox"/> 4 1	a. <u>6</u> - <u>3</u> ft.	<u>7</u> - <u>8</u> ft.
surged with bailer and pumped	<input checked="" type="checkbox"/> 6 1	Date	b. <u>12/05/96</u>
surged with block and bailed	<input type="checkbox"/> 4 2		<u>12/05/96</u>
surged with block and pumped	<input type="checkbox"/> 6 2		m m d d y y
surged with block, bailed and pumped	<input type="checkbox"/> 7 0		m m d d y y
compressed air	<input type="checkbox"/> 2 0		<input type="checkbox"/> a.m.
bailed only	<input type="checkbox"/> 1 0		<input type="checkbox"/> a.m.
pumped only	<input type="checkbox"/> 5 1		c. <u>4</u> : <u>4</u> - <u>5</u> <input checked="" type="checkbox"/> p.m.
pumped slowly	<input type="checkbox"/> 5 0		<u>6</u> : <u>0</u> - <u>0</u> <input checked="" type="checkbox"/> p.m.
Other _____	<input type="checkbox"/> _____	12. Sediment in well bottom	<u>0</u> - <u>0</u> inches
3. Time spent developing well	<u>7</u> - <u>5</u> min.	13. Water Clarity	Clear <input type="checkbox"/> 1 0
4. Depth of well (from top of well casing)	<u>1</u> - <u>6</u> - <u>5</u> ft.		Turbid <input checked="" type="checkbox"/> 1 5
5. Inside diameter of well	<u>2</u> - <u>0</u> - <u>3</u> in.		(Describe) <u>Grayish brown</u>
6. Volume of water in filter pack and well casing	<u>1</u> - <u>1</u> gal./ft.		_____
7. Volume of water removed from well	<u>2</u> - <u>0</u> - <u>0</u> gal.		_____
8. Volume of water added (if any)	<u>0</u> - <u>0</u> gal.		_____
9. Source of water added _____			_____
10. Analysis performed on water added? (If yes, attach results)	<input type="checkbox"/> Yes <input type="checkbox"/> No	14. Total suspended solids	_____ mg/l
		15. COD	_____ mg/l
16. Additional comments on development:			

Well developed by: Person's Name and Firm Name: <u>Brandon Powers</u> Firm: <u>Environmental & Foundation Drilling, Inc.</u>	I hereby certify that the above information is true and correct to the best of my knowledge. Signature: <u>Matthew J. Hood</u> Print Initials: <u>M J H</u> Firm: <u>Environmental & Foundation Drilling, Inc.</u>
--	---

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.



Facility/Project Name Dean Foods Vegetable Co./Darien	Local Grid Location of Well <input type="checkbox"/> N. <input type="checkbox"/> E. _____ ft. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> W.	Well Name WD-8
City License, Permit or Monitoring Number _____	Grid Origin Location Lat. _____ Long. _____ or _____	Wis. Unique Well Number _____ DNR Well Number _____
Type of Well Water Table Observation Well <input checked="" type="checkbox"/> 11 Piezometer/Gas Probe <input type="checkbox"/> 12	St. Plane 217,067.8 ft. N. 2337,557.4 E	Date Well Installed 12/05/96
Distance Well Is From Waste/Source Boundary 210 ft.	Section Location of Waste/Source <input type="checkbox"/> E. <input type="checkbox"/> W. 1/4 of 1/4 of Sec. __, T. __ N, R. __ W.	Well Installed By: (Person's Name & Firm) Brandon Powers/Matthew Hood Environmental & Foundation Drilling, Inc.
Is Well A Point of Enforcement Std. Application? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective Pipe, top elevation ... 2.7 ft. MSL.		1. Cap & lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation ... 2.5 ft. MSL.		2. Protective cover pipe: a. Inside diameter: 4.0 in. b. Length: 5.0 ft. c. Material: Steel <input checked="" type="checkbox"/> 0 4 Other <input type="checkbox"/>
C. Land surface elevation _____ ft. MSL.		d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or 2.0 ft.		3. Surface seal: Bentonite <input checked="" type="checkbox"/> 3 0 Concrete <input type="checkbox"/> 0 1 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input checked="" type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>		4. Material between well casing & protective pipe: Bentonite <input type="checkbox"/> 3 0 Annular space seal <input type="checkbox"/>
13. Sieve analysis attached? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 3 3 b. _____ Lbs/gal mud weight..... Bentonite-sand slurry <input type="checkbox"/> 3 5 c. _____ Lbs/gal mud weight..... Bentonite slurry <input type="checkbox"/> 3 1 d. _____ % Bentonite..... Bentonite-cement grout <input type="checkbox"/> 5 0 e. 65 Ft ³ volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 0 1 Tremie pumped <input type="checkbox"/> 0 2 Gravity <input checked="" type="checkbox"/> 0 8
14. Drilling method used: Rotary <input type="checkbox"/> 5 0 Hollow Stem Auger <input checked="" type="checkbox"/> 4 1 Other <input type="checkbox"/>		6. Bentonite seal: a. Bentonite granules <input checked="" type="checkbox"/> 3 3 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 3 2 c. _____ Other <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 0 2 Air <input type="checkbox"/> 0 1 Drilling Mud <input type="checkbox"/> 0 3 None <input checked="" type="checkbox"/> 9 9		7. Fine sand material: Manufacturer, product name and mesh size a. Badger Mining Silica Sand #70-90 b. Volume added 15 Ft ³
Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe _____		8. Filter pack material: Manufacturer, product name and mesh size a. Badger Mining #45-55 b. Volume added 300 Ft ³
17. Source of water (attach analysis): _____		9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 2 3 Flush threaded PVC schedule 80 <input type="checkbox"/> 2 4 Other <input type="checkbox"/>
E. Bentonite seal, top _____ ft. MSL or 0.5 ft.	10. Screen Material: PVC a. Screen Type: Factory Cut <input checked="" type="checkbox"/> 1 1 Continuous slot <input type="checkbox"/> 0 1 Other <input type="checkbox"/>	
F. Fine sand, top _____ ft. MSL or 3.0 ft.	b. Manufacturer Boart Longyear	
G. Filter pack, top _____ ft. MSL or 3.5 ft.	c. Slot size: 0.010 in.	
H. Screen joint, top _____ ft. MSL or 4.0 ft.	d. Slotted Length: 2.6 ft.	
I. Well bottom _____ ft. MSL or 14.0 ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 1 4 Other <input type="checkbox"/>	
J. Filter pack, bottom _____ ft. MSL or 15.0 ft.		
K. Borehole, bottom _____ ft. MSL or 15.0 ft.		
L. Borehole, diameter 8.25 in.		
M. O.D. well casing 2.35 in.		
N. I.D. well casing 2.03 in.		

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Matthew Hood Firm Environmental & Foundation Drilling, Inc.

Use complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by ch. 144, Wis. Stats. and 19m Wis. Stats. and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$1,000 nor more than \$3000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.





Client: Birds Eye Foods Project ID: 09B004
 Project: Lagoon Investigation
 Prepared by: JMH Date: 9/14-16/2010
 Checked by: TMK1 Date: 09/18/10

Contractor: MES							Drilling Method: HSA										Boring ID: B-102			
Operator: Pete							Sampling Method: Split Spoon 2'										Boring Location:			
Rig Type: Diedrich D-50							Boring Diameter: 6"													
Start Date: 9/16/2010							Total Depth: 27'													
End Date: 9/16/2010							Water Level: 5.75'													
							Course Grained Soils Only			Fine Grained Soils Only				All Soils						
Depth	Sample Interval	Recovery (ft.)	1-Group Symbol	1-Group Name	2-Color	3-Content	4-Grain Size	5-Grain Angularity	6-Particle Shape	7-Dilatancy	8-Toughness	9-Plasticity	10-Dry Strength	11-Odor	12-Moisture	13-Sheen	14-Consistency	15-Structure	16, 17-Additional Comments	Blow Counts/6 inches
0	0-2	1.5	ML	Clayey Silt	7.5YR3/2	70% Silt	-	-	-	-	M	LP	M	N	M	N	D	H	Photo down hole, silt/clay	4/6/6/6
5	5-7	1.5																	Same as above	
5.5	5-7	1.5	GW/SW	Sand & Gravel	7.5YR3/2	40% Gravel, 40% Sand, 10% Silt	F-C	SR-SA	FE	-	-	-	-	N	W	N	L	H	Wet at 6.5' bgs, some clay	4/15/18/11
7.5	7.5-9.5	0																	No recovery	7/10/10/9
10	10-12	0.5																	Same as above	7/8/8/9
12.5	12.5-14.5	0.5																	Same as above	7/10/7/6
15	15-17	0.5																	Same as above	6/4/6/7
17.5	17.5-19.5	0.5																	Same as above	x/9/9/13
20	20-22	0.5																	Same as above	5/5/7/7
22.5	22.5-24.5	1																	Same as above	x/4/5/9
25-27	25-27	0.75																	End of Boring at 27' bgs	9/9/10/9

Refer to the Unconsolidated Soil Logging Standard Operating Procedure (SOP) for definitions. Numbers correspond to SOP.

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling



Client:	Bads Eye Foods	Project ID.:	09B004
Project:	Lagoon Investigation		
Prepared by:	JMH	Date:	9/14-16/2010
Checked by:	TMKI	Date:	09/18/10

Contractor: MES							Drilling Method: HSA							Boring ID: B-105											
Operator: Pete							Sampling Method: Split Spoon 2'							Boring Location:											
Rig Type: Diedrich D-50							Boring Diameter: 6"																		
Start Date: 9/16/2010							Total Depth: 23'																		
End Date: 9/16/2010							Water Level: 5.5'																		
							Course Grained Soils Only			Fine Grained Soils Only				All Soils											
Depth	Sample Interval	Recovery (ft.)	1-Group Symbol	1-Group Name	2-Color	3-Content	4-Grain Size	5-Grain Angularity	6-Particle Shape	7-Dilatancy	8-Toughness	9-Plasticity	10-Dry Strength	11-Odor	12-Moisture	13-Sheen	14-Consistency	15-Structure	16, 17-Additional Comments	Blow Counts/6 inches					
0	0-2	1	ML	Clayey Silt	10YR5/3	70% Silt	-	-	-	-	M	LP	M	N	M	N	D	H	1' topsoil, clayey silt/silt	2/3/4/4					
5	5-7	1																	Same as above						
6.5	5-7	1	SM	Silty Sand	10YR6/6	70% Sand	F	SR	FE	S	L	NP	L	N	W	N	L	H	Wet at 6.5' bgs, Sample B105 7-8	2/5/3/8					
7.5	7.5-9.5	1																	Same as above	3/2/8/10					
10	10-12	1.5																	Same as above, gray mottling	6/7/7/9					
12.5	12.5-14.5	1.5	SW	Well graded sand	10YR5/6	80% Sand	F-M	SR	E	-	-	-	-	N	W	N	L	H		7/7/9/10					
15	15-17	1																	Same as above	6/6/7/7					
17.5	17.5-19.5	1.5	SM	Silty Sand	10YR6/2	70% Sand	F	SR	FF	S	L	NP	L	N	W	N	L	H	Blowing sand	6/7/9/14					
20	20-22	1																	Same as above						
21			SW	Well graded sand	10YR6/2	70% Sand w/gravel	M-C	SA-SR	E/F	-	-	-	-	N	W	N	L	H	Same as above, cobble zone	6/10/20/18					
22	22-23	1																	Same as above, End of Boring at 23' bgs	15/16					

Refer to the Unconsolidated Soil Logging Standard Operating Procedure (SOP) for definitions. Numbers correspond to SOP.



Client:	Birds Eye Foods	Project ID.:	09B004
Project:	Lagoon Investigation		
Prepared by:	JMH	Date:	9/14-16/2010
Checked by:	TMKI	Date:	09/18/10

Contractor: MES							Drilling Method: HSA							Boring ID: B-106										
Operator: Pete							Sampling Method: Split Spoon 2'							Boring Location: X = 234.54 m AMSL										
Rig Type: Diedrich D-50							Boring Diameter: 6"																	
Start Date: 9/16/2010							Total Depth: 22'																	
End Date: 9/16/2010							Water Level: 5.3'																	
							Course Grained Soils Only			Fine Grained Soils Only				All Soils										
Depth	Sample Interval	Recovery (ft.)	1-Group Symbol	1-Group Name	2-Color	3-Content	4-Grain Size	5-Grain Angularity	6-Particle Shape	7-Dilatancy	8-Toughness	9-Plasticity	10-Dry Strength	11-Odor	12-Moisture	13-Sheen	14-Consistency	15-Structure	16, 17-Additional Comments	Blow Counts/6 inches				
0	0-2	0.5																	Topsoil	3/3/4/6				
2.5	2.5-4.5																		Topsoil	3/3/4/4				
3.5		1.5	SM	Sandy silt	2.5YR5/1	80% silt, 20% sand	F	-	-	-	M	NP	M	N	M	N	D	H	Silt, trace fine sand					
5	5-7														W				Wet at 6.5' bgs, Same as above	5/6/8/10				
6.5		1	SM	Sandy silt	10YR6/2	80% silt, 20% sand	F	-	-	-	M	NP	M	N	W	N	D	H	Gray mottling					
7.5	7.5-9.5	1																	Same as above	5/7/5/5				
10	10-12		SW	Well graded sand	10YR6/3		F-M	SR	FE	-	-	-	-	N	W	N	L	H		5/4/4/4				
12.5	12.5-14.5																		Same as above	6/6/7/10				
																			Blown sands - flush hole					
15	15-17																		Same as above	5/5/7/8				
16.5			SW	Well graded sand	10YR6/5		M-C	SR	FE	-	-	-	-	N	W	N	L	H	Fining upward F-C sand					
17.5	17.5-19.5																		Same as above	4/5/5/7				
20	20-22																		Same as above, End of Boring at 22' bgs	6/6/9/9				

Refer to the Unconsolidated Soil Logging Standard Operating Procedure (SOP) for definitions. Numbers correspond to SOP.



Client:	Birds Eye Foods	Project ID.:	09B004
Project:	Lagoon Investigation		
Prepared by:	JMH	Date:	9/14-16/2010
Checked by:	TMKI	Date:	09/18/10

Contractor: MES							Drilling Method: HSA										Boring ID: B-107			
Operator: Pete							Sampling Method: Split Spoon 2'										Boring Location: X = 231.56 m AMSL			
Rig Type: Diedrich D-50 Turbo							Boring Diameter: 6.5"													
Start Date: 9/16/2010							Total Depth: 29.5'													
End Date: 9/16/2010							Water Level: 8'													
							Course Grained Soils Only			Fine Grained Soils Only				All Soils						
Depth	Sample Interval	Recovery (ft.)	1-Group Symbol	1-Group Name	2-Color	3-Content	4-Grain Size	5-Grain Angularity	6-Particle Shape	7-Dilatancy	8-Toughness	9-Plasticity	10-Dry Strength	11-Odor	12-Moisture	13-Sheen	14-Consistency	15-Structure	16, 17-Additional Comments	Blow Counts/6 inches
0	0-2	0.5	ML	Clayey silt	7.5YR3/2	70% silt	-	-	-	-	M	LP	M	N	M	N	D	H	Topsoil	8/10/6
5	5-7	0.5																	Same as above/slough/fill	6/8/10/11
7.5	7.5-9.5	1.5	GW/SW	Sandy gravel	7.5YR7/6	50% sand, 50% gravel	F-C	SR-SA	E, FE	-	-	-	-	N	W	N	L	H	Sand and gravel at 8' bgs, Wet at 8.5' bgs	7/20/21/14
10	10-12	0																	No recovery	11/11/9/12
12.5	12.5-14.5	0.5																	Same as above	x/6/6/7
15	15-17	0.5																	Same as above	6/8/9/9
17.5	17.5-19.5	0																	Same as above	5/3/5/8
20	20-22	0.5	GW/SW	Sand & gravel	10YR5/2	50% sand, 50% gravel	F-C	SR-SA	E, FE	-	-	-	-	N	W	N	L	H		3/5/5/5
22.5	22.5-25.5	0.5																	Same as above	7/6/8/8
25-27		1																	Same as above	10/9/10/11
27.5	27.5-29.5	0.5																	Same as above, Sample B107 27-29	10/13/14/19
																			End of Boring at 29.5' bgs	

Refer to the Unconsolidated Soil Logging Standard Operating Procedure (SOP) for definitions. Numbers correspond to SOP.

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling



Client:	Bads Eye Foods	Project ID.:	09B004
Project:	Lagoon Investigation		
Prepared by:	JMH	Date:	9/14-16/2010
Checked by:	TMKI	Date:	09/18/10

Contractor: MES							Drilling Method: HSA							Boring ID: B-108										
Operator: Pete							Sampling Method: Split Spoon 2'							Boring Location:										
Rig Type: Diedrich D-50 Mobile Track							Boring Diameter: 8.25"																	
Start Date: 9/15/2010							Total Depth: 32'																	
End Date: 9/15/2010							Water Level: 18.5'																	
							Course Grained Soils Only			Fine Grained Soils Only				All Soils										
Depth	Sample Interval	Recovery (ft.)	1-Group Symbol	1-Group Name	2-Color	3-Content	4-Grain Size	5-Grain Angularity	6-Particle Shape	7-Dilatancy	8-Toughness	9-Plasticity	10-Dry Strength	11-Odor	12-Moisture	13-Sheen	14-Consistency	15-Structure	16, 17-Additional Comments	Blow Counts/6 inches				
0	0-2	0.25	ML	Silt	10YR5/4	80% silt	-	-	-	-	L	NP	W	N	D	N	H	H	Topsoil w/fill	15/15/16/10				
5	5-7	1	SW	Gravelly sand	7.5YR6/6	80% sand	F-C	SA-SR	E-R	-	-	-	-	N	D	N	L	H	Natural sand & gravel - no fill	15/18/16/20				
10	10-12	0.5																	Same as above	18/12/8/7				
12.5	12.5-14.5	1													D				Same as above	47/29/32/22				
15	15-17	0.5																	Same as above	26/13/9/13				
17	17.5-19.5	0.5	GW	Sandy gravel	7.5YR6/6	80% gravel	S-C	SR	E	-	-	-	-	N	W	N	L	H	Wet at 19' bgs, broken gravel cobbles	17/9/9/8				
20	20-22	0.3																	Same as above	x/8/5/6				
22.5	22.5-24.5	1	SW	Gravelly sand	7.5YR6/6	80% sand	M-C	SR	E-R	-	-	-	-	N	W	N	L	H		x/10/11/36				
25	25-27	1																	Same as above	24/27/31/50/3"				
27.5	27.5-29.5	1																	Same as above, auger hung up on cobble	50/4"				
30	30-32	0.5																	Same as above, End of Boring at 32' bgs	7/8/11				

Refer to the Unconsolidated Soil Logging Standard Operating Procedure (SOP) for definitions. Numbers correspond to SOP.

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling



Client:	Birds Eye Foods	Project ID.:	09B004
Project:	Lagoon Investigation		
Prepared by:	JMH	Date:	9/14-16/2010
Checked by:	TMK1	Date:	09/18/10

Contractor: MES							Drilling Method: HSA			Boring ID: B-109										
Operator: Pete							Sampling Method: Split Spoon 2'			Boring Location: 233.09 m AMSL										
Rig Type: Diedrich D-50 Mobile Track							Boring Diameter: 4.5"													
Start Date: 9/14/2010							Total Depth: 39.5'													
End Date: 9/14/2010							Water Level: 18'													
							Course Grained Soils Only			Fine Grained Soils Only				All Soils				16, 17-Additional Comments	Blow Counts/6 inches	
Depth	Sample Interval	Recovery (ft.)	1-Group Symbol	1-Group Name	2-Color	3-Content	4-Grain Size	5-Grain Angularity	6-Particle Shape	7-Dilatancy	8-Toughness	9-Plasticity	10-Dry Strength	11-Odor	12-Moisture	13-Sheen	14-Consistency			15-Structure
0-2.5	0-2	1	ML	Clayey silt	7.5YR3/2	70% silt, 10% clay	F	SR	R	-	L	NP	L	N	D	N	MD	N	Silt, some fine sand, trace clay	3/5/5/7
4.5	2.5-4.5	1	SW	Well graded sand w/gravel	7.5YR6/6	70% sand, 30% gravel	F-M	R-SA	R	-	-	-	-	N	D	N	L	N	Sample B109 2.5-4.5	11/14/11/10
5-7.5	5-7	0.5																	Same as above	10/7/11/13
7.5-10	8-10	1	SW	Well graded sand	7.5YR6/6	80% sand, 20% gravel	M-C	SA-SR	E	-	-	-	-	N	D	N	L	N	Sand w/rounded gravel, Sample B109 7.5-10	22/18/18/15
10-12							M-C	SA											Same as above, cobbles	31/22/22/17
12.5-14.5		0																	Same as above	50/52
15-17		0																		24/15/10/7
17.5-19.5		0.5													W				Same as above, Wet at ~ 17.5' bgs	7/9/12/18
20-22		1													W				Same as above	9/7/7/7
22.5-24.5		1													W				Same as above	7/10/9/9
25-27		0.5	SP	Poorly graded sand	7.5YR6/2	90% sand	F	SA-SR	R					N	W	N	MD	N	Fine w/trace medium grains, some 1-2 cm gravel, rounded	4/7/8/6
27.5-29.5		1																	Same as above	x/7/9/13
30-32		1																	Same as above	x/6/9/12
32.5-34.5		1.5																	Same as above	13/10/22/18
35-37		0.5																	Same as above, Sample B109 35-37	3/4/9/11
37.5-39.5																			Same as above, End of Boring at 39.5' bgs	x/5/8/10

Refer to the Unconsolidated Soil Logging Standard Operating Procedure (SOP) for definitions. Numbers correspond to SOP.

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling



Client:	Birds Eye Foods	Project ID.:	09B004
Project:	Lagoon Investigation		
Prepared by:	JMH	Date:	9/14-16/2010
Checked by:	TMKI	Date:	09/18/10

Contractor: MES							Drilling Method: HSA										Boring ID: B-111			
Operator: Pete							Sampling Method: Split Spoon 2'										Boring Location:			
Rig Type: Diedrich D-50 Mobile Track							Boring Diameter: 8.5"													
Start Date: 9/15/2010							Total Depth: 39.5'													
End Date: 9/15/2010							Water Level: 16.5'													
							Course Grained Soils Only			Fine Grained Soils Only				All Soils						
Depth	Sample Interval	Recovery (ft.)	1-Group Symbol	1-Group Name	2-Color	3-Content	4-Grain Size	5-Grain Angularity	6-Particle Shape	7-Dilatancy	8-Toughness	9-Plasticity	10-Dry Strength	11-Odor	12-Moisture	13-Sheen	14-Consistency	15-Structure	16, 17-Additional Comments	Blow Counts/6 inches
2.5-4		1.5	CH	Inorganic clay	10YR5/4	50% clay/silt	-	-	-	-	M	MP	H	N	M	N	H	H	Rust-colored mottling	3/4/3/3
5	5-7	1	SW	Gravely sand	7.5YR6/6	50-70% sand	F-C	SR-SA	E-R	-	-	-	-	N	D	N	L	H		10/14/17/22
10	10-12	0.5																	Same as above	12/20/24/20
15	15-17	1.5													M				Same as above	17/19/28/28
17.5	17.5-19.5	0.5													W				Same as above	50/3
18	20-22	0.5	SW	Well graded sand	7.5YR6/2	80% sand/gravel	F-C	SR	E-R	-	-	-	-	N	W	N	L	H	Trace gravel	14/16/19/22
22.5	22.5-24.5	1																		11/11/21/22
25	25-27	1																	Same as above	x/9/13/16
27.5	27.5-29.5	1																	Same as above	8/11/20/14
30	30-32	1.5																	Same as above	5/5/6/9
32.5	32.5-34.5	1.5																	Same as above	x/6/8/16
35	35-37	1.5																	Same as above	10/12/19/23
37.5	37.5-39.5	1.5																	Same as above, End of Boring at 39.5' bgs	2/7/12/17

Refer to the Unconsolidated Soil Logging Standard Operating Procedure (SOP) for definitions. Numbers correspond to SOP.

x = Floating sampling spoon to prevent blowback of flowing sands in 1st 6" of sampling

Facility/Project Name Dean Foods/Irrigation Facility/Darien		License/Permit/Monitoring Number 0050679		Boring Number 7R
Boring Drilled by (Firm name & name of crew chief) Matthew Hood Environmental & Foundation Drilling, Inc.		Date Drilling Started 05/15/95 M M D D Y Y	Date Drilling Completed 05/15/95 M M D D Y Y	Drilling Method 4.25" I.D. HSA
DNR Facility Well No.	WI Unique Well No.	Common Well Name 7R	Final Static Water Level 22.16 Feet Level	Surface Elevation 886.3 Feet MSL
Boring Location State Plane 220295.3 N, 2340.335.5 E S/C/N Lat SW 1/4 of SW 1/4 of Section 28, T 2 N, R 15 W Long		Local Grid Location (If applicable) <input type="checkbox"/> N <input type="checkbox"/> E Feet <input type="checkbox"/> S Feet <input type="checkbox"/> W		
County Walworth	DNR County Code	Civil Town/City/or Village Town of Darien		

Sample Number	Length Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					ROD/Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200	
1	18	3,10,14	1.8	Black silt.	ML									
			4.0	Brown clayey silt.	ML									
2	10	8,13,17	10											
3	13	15,20,20	15	Light brown F-C sand, some gravel, trace silt, occasional cobble.	SW									
4	17	7,10,11	20											
			25											
			26.0											
			30	End of boring.										
			35											
			40											
			45											
			50											
			55											
			60											

FILE COPY

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature Matthew Hood Firm Environmental & Foundation Drilling, Inc.

This form is authorized by Chapters 144.147 & 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 & 162.06, Wis. Stats.

Facility/Project Name Birds Eye Foods			Seymour Project Number			License/Permit/Monitoring Number B-31						
Boring Drilled by Badger State Drilling (Jim Rech)			Date Installed 5/6/2004									
Boring or Well Number B-31			WI Unique Well Number (assigned by DNR) PL414			Borehole Diameter 8		Surface Elevation 18				
$\frac{1}{4}$ of NE $\frac{1}{4}$ of Section 30 T 2 N R 15 E			Grid Location (if applicable)									
County Walworth		County Code 65		Civil Town Darlen								
S A M P L E	R E C O V E R Y	D E P T H (ft)	SOIL/ROCK DESCRIPTION	D I U R S T L A M	W E L L L I N E	S T A B L E O V E R L A Y M (yppt)	Soil Properties					Blow Count
							q	W	LL	PL	P200	
1	12	0	Grass									5
		2	8-inches black organic topsoil									9, 12
			Gravelly sand, f-m grained			SW						9
2	12	4	Well graded sand, increasing			SW						10, 26
			Coarse content									
3	12	6	Sandy gravel, well graded									9
			Dense, sub angular gravel			GW						16, 50
		8										9
4	6		Medium dense gravel (very			GW						12
		10	little recovery-drove through									13
			a cobble)									
5	13	12	Same as above, cobble sized									13
		14	Rocks in cuttings, dense			GW						22
		16										26
6	10	18	▽ Hit water									6
		20	Change to gravelly sand			SW						8
		22	Change to gravel and cobbles									11
			Very little sand			GW						
		24										
		26										
		28										
		30										
		32										
		34										
Signature				Firm: Seymour Environmental Services, Inc.								

**WELL INSTALLATION AND ABANDONMENT
DOCUMENTATION REPORT
BIRDS EYE FOODS
W8880 COUNTY ROAD X
DARIEN, WISCONSIN**

Prepared For:

Mr. Eric Hudson
Birds Eye Foods
W8880 County Road X
Darien, Wisconsin 53114

Prepared By:

Seymour Environmental Services, Inc.
2531 Dyreson Road
McFarland, Wisconsin 53558

June 2004

SEYMOUR ENVIRONMENTAL SERVICES, INC.

P.O. Box 398, 2531 Dyreson Road, McFarland, Wisconsin 53558
Telephone: 608-838-9120 Fax: 608-838-9121

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Project Information	1
2.0	FIELD ACTIVITIES NARRATIVE	1
2.1	Well Materials and Installation	1
2.2	Well Development	2
2.3	Well Abandonment	3
3.0	SIGNATURE	3

FIGURES

Figure 1 Site Location Map

APPENDICES

Appendix A Soil Boring Logs
Appendix B Well Construction and Development Forms
Appendix C Well Abandonment Forms

The new monitoring wells were constructed using two inch inside diameter rigid schedule 40 Polyvinyl Chloride (PVC). Each well screen is finished with a factory cut 0.010-inch slot. All PVC materials conform to the national sanitation foundation standard 14 and ASTM D1785 specifications. The PVC pipes have flush-threaded joints sealed with "O" rings. The well casings and well screens are centered within the boreholes. The well casing and screen specifications abide by NR 141.07 and 141.09. The monitoring wells were constructed with screens that are 15 feet in length and the screens were placed so that approximately 8-10 feet of the screen was below the water table.

The filter pack material is well-sorted silica based sand (Ohio #5). The filter packs are installed in accordance with NR 141.11. Each well is constructed with a filter pack seal, annular space seal and a bentonite ground surface seal. The filter pack and annular space seals in the water table monitoring wells were placed by gravity. The filter pack and annular space seals were installed in accordance with NR 141.13 (1) and (2). The ground surface seal extends a minimum of 60 inches below the surface and the top slopes away from the well casing. The ground surface seals were covered with native soil to prevent drying out. The ground surface seals were installed in accordance with NR 141.13 (3) (a).

A four-inch diameter metal protective cover was placed around each well casing. These protective covers are installed in accordance with NR 141.13 (3) (b). The covers have a provision for padlock security. In addition, three steel barrier posts are placed around each well. The barrier posts extend approximately three feet above the ground and set in concrete four feet below grade.

Each well was given a unique well identification number. The identification number for each well was stenciled onto the outside of each protective well cover. The wells were also given a Wisconsin unique well number. The sticker was placed inside the protective casing. The Wisconsin unique well numbers are on the attached soil boring logs and well construction forms.

2.2 Well Development

Each of the wells was developed in accordance with NR 141.21 (1) (a). Each well was surged with a pump and then pumped slowly to develop the well. Each well was developed for 60 minutes and between 55 and 58 gallons of groundwater was removed from the each well. A total of 168 gallons of development water was removed from the wells. The development water was discharged on the ground surface adjacent to the wellhead. The well development forms (DNR Form 4400-113B) are included in Appendix B.

2.3 Well Abandonment

Each of the wells to be abandoned had the protective cover removed. The casing was removed from all of the abandoned wells except B-20 and the resulting borehole filled with bentonite chips. Monitoring well B-20 was abandoned by filling the casing with bentonite chips. The chips were placed with a tremie pipe by gravity. During the abandonment there was no evidence the seals of the existing wells were not intact. The wells were abandoned in accordance with NR 141.25. The well abandonment forms (DNR Form 330-5B) are included as Appendix C.

3.0 SIGNATURE

Any question about this report should be directed to either Mr. Mark Garwick of Badger State Drilling or Ms. Robyn Seymour at Seymour Environmental Services.

"I, Robyn Seymour, hereby certify that I am a Professional Geologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

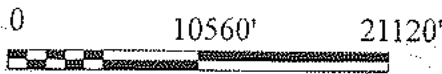
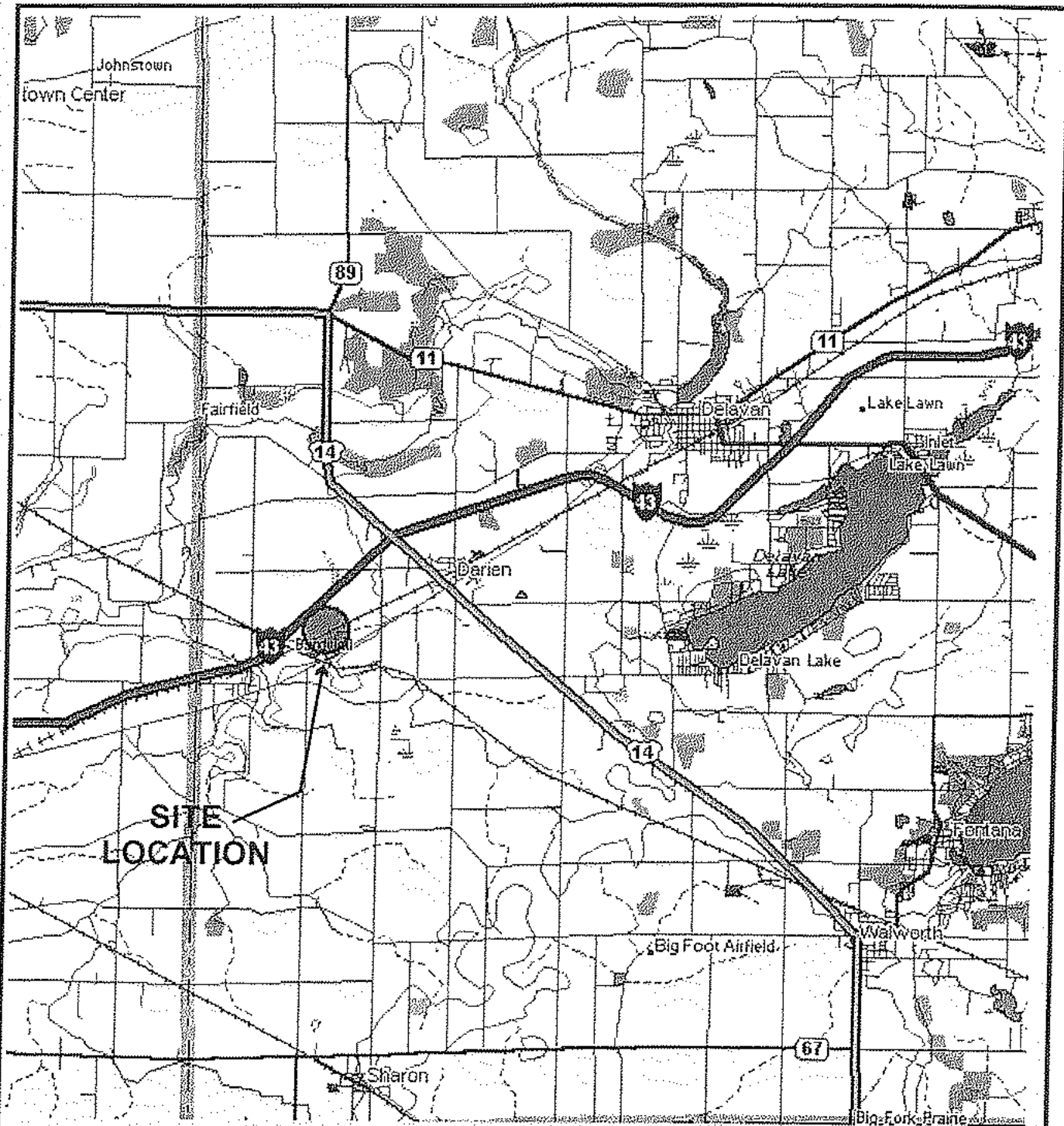
Robyn Seymour Professional Geologist G-1060

Signature and Title

June 15, 2003

Date

FIGURES



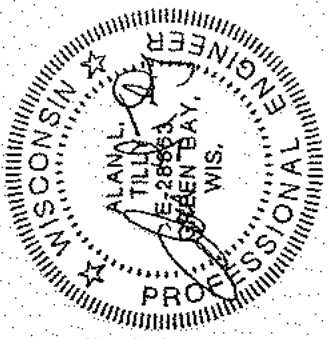
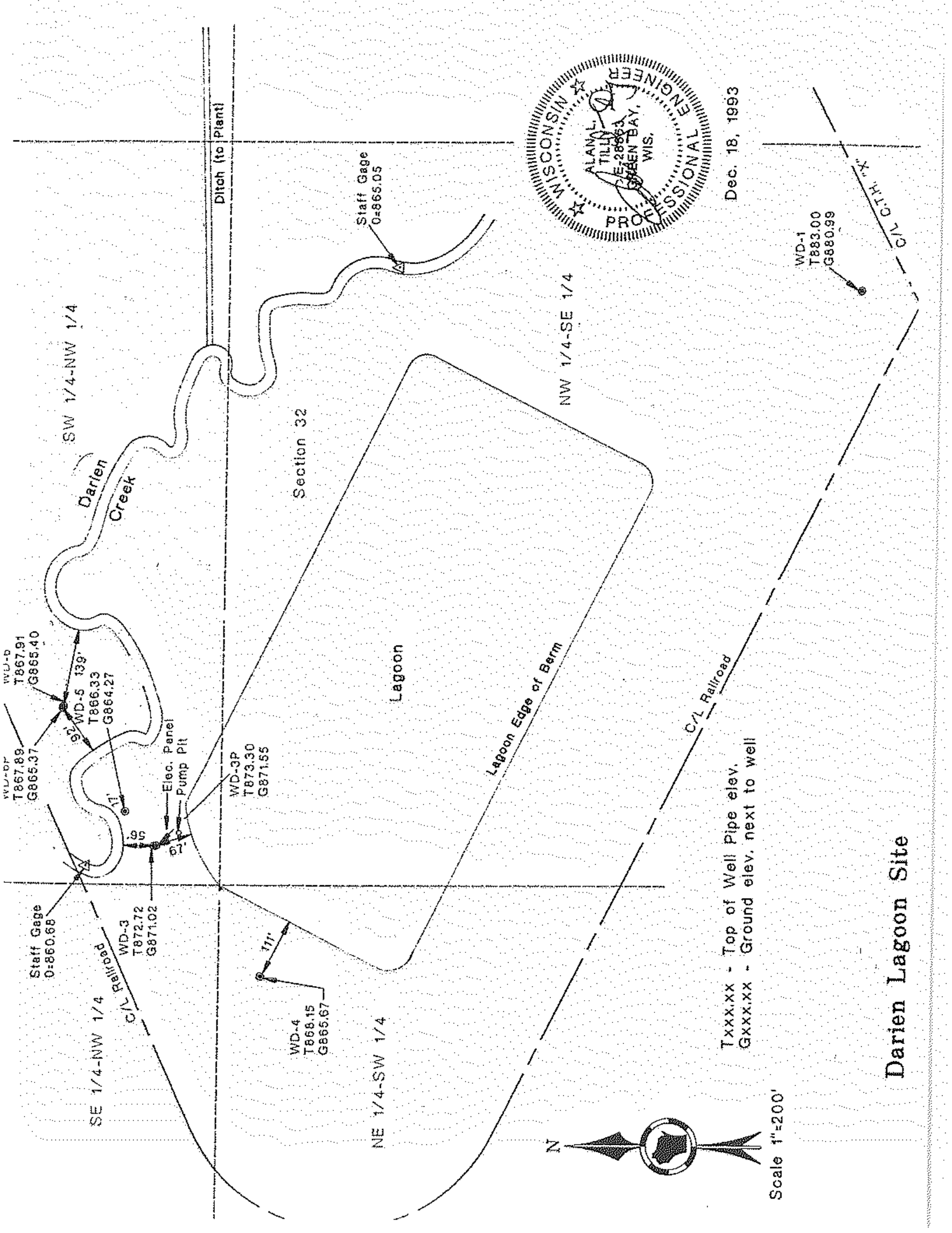
1 INCH = 2 MILES
SCALE IS APPROXIMATE

FILE/PATH: D:\PROJECTS\BIRDEYE
Sitelocation.cdr
DATE: 06/15/2004
PREPARED: MDF APPROVED:
SOURCE:
FIELD MEASUREMENTS

SEYMOUR
ENVIRONMENTAL
SERVICES, INC.

SITE LOCATION
BIRDS EYE FOOD
W8880 CTH X
Darien, Wisconsin

FIGURE
1



Dec. 18, 1993

Scale 1"=200'

Txxx.xx - Top of Well Pipe elev.
Gxxx.xx - Ground elev. next to well

Darien Lagoon Site

NW 1/4-SE 1/4

SW 1/4-NW 1/4

Section 32

Lagoon

Lagoon Edge of Berm

C/L Railroad

Ditch (to Plant)

Staff Gage
0-860.68

Staff Gage
0-865.05

WD-1
T883.00
G880.99

WD-4
T868.15
G865.67

WD-3
T872.72
G871.02

WD-3P
T873.30
G871.55

WD-5
T866.33
G864.27

WD-6P
T867.89
G865.40

SE 1/4-NW 1/4

NE 1/4-SW 1/4

C/L CTH. 70



APPENDIX A
SOIL BORING LOGS

Facility/Project Name Birds Eye Foods		Seymour Project Number		License/Permit/Monitoring Number B-30	
Boring Drilled by Badger State Drilling (Jim Rech)				Date Installed 5/6/2004	
Boring or Well Number B-30		WI Unique Well Number (assigned by DNR) PL416		Borehole Diameter 8	Water Level 41
1/4 of NE 1/4 of Section 30 T 2 N R 15 E		Grid Location (if applicable)			
County Walworth		County Code 65		Civil Town Darien	

S A M P L E	R E C O V E R Y	D E P T H (ft)	SOIL/ROCK DESCRIPTION	D I A M E T E R	U S E C L A S S	R Q D	Stab. O V M (vppm)	Soil Properties				Blow Count
								W	LL	PL	P200	
1	12	0	Grass		SC							2
		2	Sandy topsoil with clay and slight gravel, med. brown									4, 4
2	18	4	Same as above, less clay (till)		SW							2
												5, 7
3	18	6	Same as above, gravel-igneous and limestone, well-graded		SW							6
		8										8, 12
4	18	10	Same as above, some sandstone gravel									9
		12										15
5	18	14	Medium dense brown fine Sand (well sorted)		SP							15
		16										17
6	16	18	Change to v.f to f grained Sand, dry, slight (<10%)		SP							19
		20	Coarse sand									6
7	16	22			SP							13
		24	Fine sand to 24 ft									18
8	16	26	Change to fine to coarse sand, Slight gravel, dense, trace fines		SW							31
		28	v.f. sand, dry dense trace									12
9	16	30	Coarse sand to pea gravel		SW							16
		32										21
		34	Well graded sand, v fine to Coarse with trace pea gravel dry		SW							12
												15
Signature												27

Firm: Seymour Environmental Services, Inc.

Route To:

Solid Waste Haz. Waste

Env. Response & Repair Underground Tanks

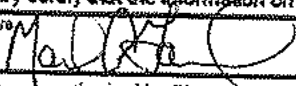
Wastewater Water Resources

Other _____

Facility/Project Name Birds Eye Foods		License/Permit/Monitoring Number		Boring Number 30
Boring Drilled By (Firm name and name of crew chief) Jim Rech		Date Drilling Started 5 6 2004 MM DD YY		Date Drilling Completed 5 6 2004 MM DD YY
Badger State Drilling, Inc.		Final Static Water Level ____ Feet MSL		Surface Elevation ____ Feet MSL
DNR Facility Well No.	WI Unique Well No.	Common Well Name	Borehole Diameter 8 inches	
Boring Location State Plane _____ N, _____ E S/C/N 1/4 of _____ 1/4 of Section _____, T _____ N, R _____ E/W		Lat _____ N	Local Grid Location (if applicable) <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
County Walworth		DNR County Code	Civil Town/ City/ or Village W8880 County Rd. X Darien, WI	

Sample Number	Length Recovered (ft.)	Blow Counts	Depth in feet	Soil/Rock Description And Geologic Origin Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments		
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	P 200			
1	10	8	2	Topsoil												
2	18	12	4	Loose brown fine sand, trace fine gravel, little silt occ. cobbles & stone chips												
3	16	20	6	Medium-dense brown fine sand, trace fine gravel, little silt, occ. cobbles & stone chips												
4	18	30	10													
5	18	36	15													
6	18	31	20	Medium-dense brown fine sand, trace silt												
7	16	50	25	Medium-dense brown fine sand, trace silt												
8	16	37	30													
9	16	42	35													
10	18	31	40													
			55	E.O.B. 50'												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature:  Firm: **Badger State Drilling, Inc.**

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

Facility/Project Name Birds Eye Foods	Local Grid Location of Well ft. <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W	Well Name 32
Facility License, Permit or Monitoring Number	Grid Origin Location Lat. W8880 County Rd. X Long. _____ or _____	Wis. Unique Well Number DNR Well Number PL415
Type of Well Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane Darien, WI, N ft. E.	Date Well Installed 05 / 10 / 04 m m d d y y
Distance Well Is From Waste/Source Boundary ft.	Section Location of Waste/Source 1/4 of 1/4 of Sec. T. N, R. <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: (Person's Name and Firm) Jim Rech
Is Well A Point of Enforcement Sid. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Badger State Drilling

A. Protective pipe, top elevation 873.40 ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation 872.90 ft. MSL	2. Protective cover pipe: a. Inside diameter: 4.0 in. b. Length: 5.0 ft. c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
C. Land surface elevation 870.90 ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or 6.0 ft.	3. Surface seal: Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> Sand <input checked="" type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite Bentonite-cement grout <input type="checkbox"/> 50 e. 1.8 Ft ³ volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. Bentonite Chips Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe _____	7. Fine sand material: Manufacturer, product name & mesh size a. Ohio 40-60 b. Volume added .6 ft ³
17. Source of water (attach analysis): _____	8. Filter pack material: Manufacturer, product name and mesh size a. Ohio #5 b. Volume added 5.14 ft ³
E. Bentonite seal, top _____ ft. MSL or 0.0 ft.	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
F. Fine sand, top _____ ft. MSL or 6.0 ft.	10. Screen material: PVC a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
G. Filter pack, top _____ ft. MSL or 8.0 ft.	b. Manufacturer Monoflex
H. Screen joint, top _____ ft. MSL or 10.0 ft.	c. Slot size: 0.010 in.
I. Well bottom _____ ft. MSL or 25.0 ft.	d. Slotted length: 15.0 ft.
J. Filter pack, bottom _____ ft. MSL or 28.0 ft.	11. Backfill material (below filter pack): None <input type="checkbox"/> 14 Other <input checked="" type="checkbox"/>
K. Borehole, bottom _____ ft. MSL or 28.0 ft.	
L. Borehole, diameter 8.0 in.	
M. O.D. well casing 2.38 in.	
N. I.D. well casing 2.00 in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [Signature] Firm: **Badger State Drilling, Inc.**

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other _____

Facility/Project Name Birds Eye Foods	County Name Walworth	Well Name 32
Facility License, Permit or Monitoring Number _____	County Code _____	Wis. Unique Well Number PL415
		DNR Well Number _____

1. Can this well be purged dry? Yes No
2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other _____ _____
3. Time spent developing well _____ 60 min.
4. Depth of well (from top of well casing) _____ 27.35 ft.
5. Inside diameter of well _____ 2.00 in.
6. Volume of water in filter pack and well casing _____ gal.
7. Volume of water removed from well _____ 55.0 gal.
8. Volume of water added (if any) _____ gal.
9. Source of water added _____
10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. _____ 17.24 ft.	_____ 17.24 ft.
Date	b. <u>05</u> / <u>10</u> / <u>04</u> m m d d y y	<u>05</u> / <u>10</u> / <u>04</u> m m d d y y
Time	c. <u>12</u> : <u>15</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>1</u> : <u>15</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ 0.1 inches	_____ 0.0 inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) <u>Dark yellow</u> <u>brown</u>	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

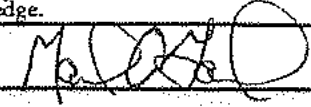
16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Jim Rech

Firm: Badger State Drilling, Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Initials: MAB

Firm: Badger State Drilling, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking Water Watershed/Wastewater Waste Management Remediation/Redevelopment Other

(1) GENERAL INFORMATION		(2) FACILITY/OWNER INFORMATION	
WI Unique Well No.	DNR Well ID No.	County	Facility Name
		Walworth	Birds Eye Foods
Common Well Name	Gov't Lot (If applicable)	Facility ID	License/Permit/Monitoring No.
B-20			
Grid Location	Street Address of Well	City, Village, or Town	
1/4 of 1/4 of Sec. ; T. N; R. <input type="checkbox"/> E <input type="checkbox"/> W	County Hwy X @ County Hwy C	Darien, WI	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Well Location <input type="checkbox"/>	Present Well Owner	Original Owner	
Lat. " Long " or " " " "	Street Address or Route of Owner		
St. Plane ft. N. ft. E. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Zone	City, State, Zip Code		
Reason For Abandonment	WI Unique Well No. of Replacement Well		
No Longer Needed			

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date _____

Monitoring Well
 Water Well
 Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
 Drilled Driven (Sandpoint) Dug
 Other (Specify) _____

Formation Type:
 Unconsolidated Formation Bedrock

Total Well Depth (ft.) 30.0 Casing Diameter (in.) 2.38
(From ground surface) Casing Depth (ft.) 32.42

Lower Drillhole Diameter (in.) _____

Was Well Annular Space Grouted? Yes No Unknown
If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 26.51

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed? Yes No Not Applicable
Liner(s) Removed? Yes No Not Applicable
Screen Removed? Yes No Not Applicable
Casing Left in Place? Yes No

Was Casing Cut Off Below Surface? Yes No
Did Sealing Material Rise to Surface? Yes No
Did Material Settle After 24 Hours? Yes No
If Yes, Was Hole Retopped? Yes No

Required Method of Placing Sealing Material
 Conductor Pipe-Gravity Conductor Pipe-Pumped
 Screened & Poured (Bentonite Chips) Other (Explain) _____

Sealing Materials For monitoring wells and monitoring well boreholes only

Neat Cement Grout
 Sand-Cement (Concrete) Grout Bentonite Chips
 Concrete Granular Bentonite
 Clay-Sand Slurry (11 lb./gal. wt.) Bentonite - Cement Grout
 Bentonite-Sand Slurry " " Bentonite - Sand Slurry
 Bentonite Chips

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	(Circle One)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	32.42	1 Sack		

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work: Badger State Drilling Co., Inc. Date of Abandonment: 5-10-2004

Signature of Person Doing Work: [Signature] Date Signed: 5/12/04

Street or Route: 360 Business Park Cr. Telephone Number: (608) 877-9770

City, State, Zip Code: Stoughton, WI 53589

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	

Route To:

Solid Waste Haz. Waste

Env. Response & Repair Underground Tanks


Wastewater Water Resources

Other _____

Facility/Project Name Birds Eye Foods		License/Permit/Monitoring Number		Boring Number 31	
Boring Drilled By (Firm name and name of crew chief) Jim Rech		Date Drilling Started 5 7 2004 MM DD YY		Date Drilling Completed 5 7 2004 MM DD YY	
Badger State Drilling, Inc.		Final Static Water Level		Drilling Method 4 1/4 HSA	
DNR Facility Well No.	WI Unique Well No.	Common Well Name	Feet MSL	Surface Elevation	Borehole Diameter
Boring Location			Feet MSL	Feet MSL	8 inches
State Plane N, E S/C/N			Local Grid Location (if applicable)		
1/4 of 1/4 of Section T N, R E/W			<input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W		
County Walworth			Civil Town/City/Village W8880 County Rd X Darien WI		

Sample Number	Length Recovered (in.)	Blow Counts	Depth in feet	Soil/Rock Description And Geologic Origin Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plastic Limit	p 200		
1	12	21	2	Topsoil											
			4	Medium-dense brown fine sand, trace fine gravel, trace silt, occ. cobbles & stone chips											
2	12	36	6												
3	12	31	8												
4	6	27	10												
5	13	48	15												
6	10	17	20												
			25	E.O.B. 28'											
			30												
			35												
			40												
			55												

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 

Firm
Badger State Drilling, Inc.

This form is authorized by Chapters 144.147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than \$10 nor more than \$5000 for each violation. Fined not less than \$10 or more than \$100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.06, Wis. Stats.

APPENDIX B

**WELL CONSTRUCTION FORMS
WELL DEVELOPMENT FORMS**

Facility/Project Name Birds Eye Foods	Local Grid Location of Well ft. <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W	Well Name 30
Facility License, Permit or Monitoring Number	Grid Origin Location Lat. W8880 Countyng Rd. X or	Wis. Unique Well Number DNR Well Number PL416
Type of Well Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane Darien, WI ft. E.	Date Well Installed 05 / 10 / 04 m m d d y y
Distance Well Is From Waste/Source Boundary ft.	Section Location of Waste/Source 1/4 of 1/4 of Sec. T. N, R. <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: (Person's Name and Firm) Jim Rech
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Badger State Drilling

A. Protective pipe, top elevation 922.04 ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation 921.54 ft. MSL	2. Protective cover pipe: a. Inside diameter: 4.0 in. b. Length: 5.0 ft. c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
C. Land surface elevation 919.54 ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe:
D. Surface seal, bottom 29.0 ft. MSL or 29.0 ft.	3. Surface seal: Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/> Sand <input checked="" type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. 8.76 Lbs/gal mud weight... Bentonite-sand slurry <input type="checkbox"/> 35 c. 8.76 Lbs/gal mud weight... Bentonite slurry <input type="checkbox"/> 31 d. 8.76 % Bentonite... Bentonite-cement grout <input type="checkbox"/> 50 e. 8.76 Ft ³ volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. Bentonite Chips Other <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	7. Fine sand material: Manufacturer, product name & mesh size a. Ohio 40-60 b. Volume added .6 ft ³
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe	8. Filter pack material: Manufacturer, product name and mesh size a. Ohio #5 b. Volume added 5.44 ft ³
17. Source of water (attach analysis):	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
E. Bentonite seal, top 0.0 ft. MSL or 0.0 ft.	10. Screen material: PVC a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
F. Fine sand, top 29.0 ft. MSL or 29.0 ft.	b. Manufacturer Monoflex c. Slot size: 0.010 in. d. Slotted length: 15.0 ft.
G. Filter pack, top 31.2 ft. MSL or 31.2 ft.	11. Backfill material (below filter pack): None <input type="checkbox"/> 14 Other <input checked="" type="checkbox"/>
H. Screen joint, top 33.8 ft. MSL or 33.8 ft.	
I. Well bottom 48.8 ft. MSL or 48.8 ft.	
J. Filter pack, bottom 48.8 ft. MSL or 48.8 ft.	
K. Borehole, bottom 50.0 ft. MSL or 50.0 ft.	
L. Borehole, diameter 8.0 in.	
M. O.D. well casing 2.38 in.	
N. I.D. well casing 2.00 in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature [Signature] Firm **Badger State Drilling, Inc.**

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name Birds Eye Foods	County Name Walworth	Well Name 30
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number PL416
		DNR Well Number

1. Can this well be purged dry? Yes No

2. Well development method
- surged with bailer and bailed 41
 - surged with bailer and pumped 61
 - surged with block and bailed 42
 - surged with block and pumped 62
 - surged with block, bailed and pumped 70
 - compressed air 20
 - bailed only 10
 - pumped only 51
 - pumped slowly 50
 - Other

3. Time spent developing well 60 min.

4. Depth of well (from top of well casing) 51.3 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 550 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>41.3</u> ft.	<u>41.3</u> ft.
Date	b. <u>05 / 10 / 04</u> m m d d y y	<u>05 / 10 / 04</u> m m d d y y
Time	c. <u>1:31</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	<u>2:31</u> <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	<u>0.1</u> inches	<u>0.0</u> inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) <u>Dark yellow</u> <u>brown</u>	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids _____ mg/l _____ mg/l

15. COD _____ mg/l _____ mg/l

16. Additional comments on development:

Well developed by: Person's Name and Firm

Name: Jim Rech

Firm: Badger State Drilling, Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [Signature]

Print Initials: MAB

Firm: Badger State Drilling, Inc.

Facility/Project Name Birds Eye Foods	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name 31
Facility License, Permit or Monitoring Number	Grid Origin Location Lat. W8880 County Rd. X Long. _____ or _____	Wis. Unique Well Number DNR Well Number PL414
Type of Well Water Table Observation Well <input type="checkbox"/> 11 Piezometer <input type="checkbox"/> 12	St. Plane Darien, WI ft. N. _____ ft. E. _____	Date Well Installed 05 / 10 / 04 m m d d y y
Distance Well Is From Waste/Source Boundary ft. _____	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N. R. _____ <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Installed By: (Person's Name and Firm) Jim Rech Badger State Drilling
Is Well A Point of Enforcement Std. Application? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	

A. Protective pipe, top elevation _____ 895.28 ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation _____ 894.78 ft. MSL	2. Protective cover pipe: a. Inside diameter: _____ 4.0 in. b. Length: _____ 5.0 ft. c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
C. Land surface elevation _____ 892.78 ft. MSL	d. Additional protection? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe: _____
D. Surface seal, bottom _____ ft. MSL or _____ 8.0 ft.	3. Surface seal: Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 30 Annular space seal <input type="checkbox"/>
13. Sieve analysis attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal: a. Granular Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite ... Bentonite-cement grout <input type="checkbox"/> 50 e. <u>2.42</u> Ft ³ volume added for any of the above
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite pellets <input type="checkbox"/> 32 c. <u>Bentonite Chips</u> Other <input type="checkbox"/>
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7. Fine sand material: Manufacturer, product name & mesh size a. <u>Ohio 40-60</u>
Describe _____	b. Volume added <u>.6</u> ft ³
17. Source of water (attach analysis):	8. Filter pack material: Manufacturer, product name and mesh size a. <u>Ohio #5</u>
E. Bentonite seal, top _____ ft. MSL or _____ 0.0 ft.	b. Volume added <u>5.44</u> ft ³
F. Fine sand, top _____ ft. MSL or _____ 8.0 ft.	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
G. Filter pack, top _____ ft. MSL or _____ 10.0 ft.	10. Screen material: <u>PVC</u>
H. Screen joint, top _____ ft. MSL or _____ 12.1 ft.	a. Screen type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
I. Well bottom _____ ft. MSL or _____ 27.1 ft.	b. Manufacturer <u>Monoflex</u>
J. Filter pack, bottom _____ ft. MSL or _____ 28.0 ft.	c. Slot size: _____ 0.010 in.
K. Borehole, bottom _____ ft. MSL or _____ 28.0 ft.	d. Slotted length: _____ 15.0 ft.
L. Borehole, diameter _____ 8.0 in.	11. Backfill material (below filter pack): None <input type="checkbox"/> 14 <u>Sand</u> Other <input checked="" type="checkbox"/>
M. O.D. well casing _____ 2.38 in.	
N. I.D. well casing _____ 2.00 in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.
Signature: [Signature] Firm: **Badger State Drilling, Inc.**

Please complete both sides of this form and return to the appropriate DNR office listed at the top of this form as required by chs. 144, 147 and 160, Wis. Stats., and ch. NR 141, Wis. Ad. Code. In accordance with ch. 144, Wis. Stats., failure to file this form may result in a forfeiture of not less than \$10, nor more than \$5000 for each day of violation. In accordance with ch. 147, Wis. Stats., failure to file this form may result in a forfeiture of not more than \$10,000 for each day of violation. NOTE: Shaded areas are for DNR use only. See instructions for more information including where the completed form should be sent.

Route to: Solid Waste Haz. Waste Wastewater
Env. Response & Repair Underground Tanks Other

Facility/Project Name Birds Eye Foods	County Name Walworth	Well Name 31
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number PL414
		DNR Well Number

1. Can this well be purged dry? Yes No

2. Well development method

surged with bailer and bailed	<input type="checkbox"/>	41
surged with bailer and pumped	<input type="checkbox"/>	61
surged with block and bailed	<input type="checkbox"/>	42
surged with block and pumped	<input type="checkbox"/>	62
surged with block, bailed and pumped	<input type="checkbox"/>	70
compressed air	<input type="checkbox"/>	20
bailed only	<input type="checkbox"/>	10
pumped only	<input type="checkbox"/>	51
pumped slowly	<input checked="" type="checkbox"/>	50
Other	<input type="checkbox"/>	

3. Time spent developing well 60 min.

4. Depth of well (from top of well casing) 29.53 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 58.0 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. <u>17.93</u> ft.	<u>17.94</u> ft.
Date	b. <u>05 / 10 / 04</u> m m d d y y	<u>05 / 10 / 04</u> m m d d y y
Time	c. <u>9:45</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	<u>10:45</u> <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.
12. Sediment in well bottom	<u>0.1</u> inches	<u>0.0</u> inches
13. Water clarity	Clear <input type="checkbox"/> 10 Turbid <input checked="" type="checkbox"/> 15 (Describe) <u>Dark yellow</u> <u>brown</u>	Clear <input checked="" type="checkbox"/> 20 Turbid <input type="checkbox"/> 25 (Describe)
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Additional comments on development:

27.1' Ground Surface

Well developed by: Person's Name and Firm

Name: Jim Rech

Firm: Badger State Drilling, Inc.

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: [Signature]

Print Initials: MAA

Firm: Badger State Drilling, Inc.

NOTE: Shaded areas are for DNR use only. See instructions for more information including a list of county codes.

APPENDIX C

WELL ABANDONMENT FORMS

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking Water Watershed/Wastewater Waste Management Remediation/Redevelopment Other

(1) GENERAL INFORMATION

WI Unique Well No. _____ DNR Well ID No. _____ County Walworth

Common Well Name B-7 Gov't Lot (If applicable) _____

Grid Location _____ 1/4 of _____ 1/4 of Sec. _____; T. _____ N; R. _____ E W

_____ ft. N. S. _____ ft. E. W.

Local Grid Origin (estimated:) or Well Location

Lat. _____ Long _____ or _____

St. Plane _____ ft. N. _____ ft. E. Zone

(2) FACILITY/OWNER INFORMATION

Facility Name Birds Eye Foods

Facility ID _____ License/Permit/Monitoring No. _____

Street Address of Well County Hwy X @ County Hwy C

City, Village, or Town Darien, WI

Present Well Owner _____ Original Owner _____

Street Address or Route of Owner _____

City, State, Zip Code _____

Reason For Abandonment
No Longer Needed

WI Unique Well No. _____
of Replacement Well _____

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION

Original Construction Date _____

Monitoring Well
 Water Well
 Borehole / Drillhole

If a Well Construction Report is available, please attach.

Construction Type:
 Drilled Driven (Sandpoint) Dug
 Other (Specify) _____

Formation Type:
 Unconsolidated Formation Bedrock

Total Well Depth (ft.) 25.0 Casing Diameter (in.) 2.38
(From ground surface) Casing Depth (ft.) 27.67

Lower Drillhole Diameter (in.) _____

Was Well Annular Space Grouted? Yes No Unknown
If Yes, To What Depth? _____ Feet

Depth to Water (Feet) 22.04

(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL

Pump & Piping Removed? Yes No Not Applicable

Liner(s) Removed? Yes No Not Applicable

Screen Removed? Yes No Not Applicable

Casing Left in Place? Yes No

Was Casing Cut Off Below Surface? Yes No

Did Sealing Material Rise to Surface? Yes No

Did Material Settle After 24 Hours? Yes No

If Yes, Was Hole Retopped? Yes No

Required Method of Placing Sealing Material
 Conductor Pipe Gravity Conductor Pipe-Pumped
 Screened & Poured (Bentonite Chips) Other (Explain) _____

Sealing Materials

<input type="checkbox"/> Neat Cement Grout	For monitoring wells and monitoring well boreholes only
<input type="checkbox"/> Sand-Cement (Concrete) Grout	
<input type="checkbox"/> Concrete	
<input type="checkbox"/> Clay-Sand Slurry (11 lb./gal. wt.)	
<input type="checkbox"/> Bentonite-Sand Slurry " "	
<input checked="" type="checkbox"/> Bentonite Chips	

Bentonite Chips
 Granular Bentonite
 Bentonite - Cement Grout
 Bentonite - Sand Slurry

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks, Sealant or Volume	(Circle One)	Mix Ratio or Mud Weight
<u>3/8" Bentonite Chips</u>	<u>Surface</u>	<u>25.0</u>	<u>2 Sacks</u>		

(6) Comments: _____

(7) Name of Person or Firm Doing Sealing Work Badger State Drilling Co., Inc. Date of Abandonment 5-10-2004

Signature of Person Doing Work _____ Date Signed 5/12/04

Street or Route 360 Business Park Cr. Telephone Number (608) 877-9770

City, State, Zip Code Stoughton, WI 53589

FOR DNR OR COUNTY USE ONLY

Date Received _____ Noted By _____

Comments _____

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking Water Watershed/Wastewater Waste Management Remediation/Redevelopment Other

(1) GENERAL INFORMATION		(2) FACILITY/OWNER INFORMATION	
WI Unique Well No.	DNR Well ID No.	County	Facility Name
		Walworth	Birds Eye Foods
Common Well Name	B-9	Gov't Lot (if applicable)	Facility ID
			License/Permit/Monitoring No.
Grid Location	1/4 of 1/4 of Sec. ; T. N; R. <input type="checkbox"/> E <input type="checkbox"/> W		Street Address of Well
	ft. <input type="checkbox"/> N. <input type="checkbox"/> S. ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		County Hwy X @ County Hwy C
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Well Location <input type="checkbox"/>	Lat. " Long " or		City, Village, or Town
	St. Plane ft. N. ft. E. <input type="checkbox"/> S <input type="checkbox"/> C <input type="checkbox"/> N Zone		Darien, WI
Reason For Abandonment	WI Unique Well No.	Present Well Owner	
No Longer Needed	of Replacement Well	Original Owner	
		Street Address or Route of Owner	
		City, State, Zip Code	

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL	
Original Construction Date		Pump & Piping Removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
<input checked="" type="checkbox"/> Monitoring Well	If a Well Construction Report is available, please attach.	Liner(s) Removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Water Well		Screen Removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
<input type="checkbox"/> Borehole / Drillhole		Casing Left in Place?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Construction Type:		Was Casing Cut Off Below Surface?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug		Did Sealing Material Rise to Surface?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Other (Specify)		Did Material Settle After 24 Hours?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Formation Type:		If Yes, Was Hole Retopped?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Required Method of Placing Sealing Material	
Total Well Depth (ft.) 40.0 Casing Diameter (in.) 2.38		<input checked="" type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped	
(From ground surface) Casing Depth (ft.) 42.28		<input type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain)	
Lower Drillhole Diameter (in.)		Sealing Materials	For monitoring wells and monitoring well boreholes only
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown		<input type="checkbox"/> Neat Cement Grout	<input type="checkbox"/> Bentonite Chips
If Yes, To What Depth? Feet		<input type="checkbox"/> Sand-Cement (Concrete) Grout	<input type="checkbox"/> Granular Bentonite
Depth to Water (Feet) 34.93		<input type="checkbox"/> Concrete	<input type="checkbox"/> Bentonite - Cement Grout
		<input type="checkbox"/> Clay-Sand Slurry (11 lb./gal. wt.)	<input type="checkbox"/> Bentonite - Sand Slurry
		<input type="checkbox"/> Bentonite-Sand Slurry " "	
		<input checked="" type="checkbox"/> Bentonite Chips	

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks, Sealant or Volume	(Circle One)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	40.0	2.5 Sacks		

(6) Comments:

(7) Name of Person or Firm Doing Sealing Work		Date of Abandonment	
Badger State Drilling Co., Inc.		5-10-2004	
Signature of Person Doing Work	Date Signed		
<i>[Signature]</i>	5/12/04		
Street or Route	Telephone Number		
360 Business Park Cr.	(608) 877-9770		
City, State, Zip Code			
Stoughton, WI 53589			

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking Water Watershed/Wastewater Waste Management Remediation/Redevelopment Other

(1) GENERAL INFORMATION		(2) FACILITY/OWNER INFORMATION	
WI Unique Well No.	DNR Well ID No.	County Walworth	
Common Well Name <u>B-10-R</u>		Gov't Lot (If applicable)	
Grid Location <u>1/4 of 1/4 of Sec. ; T. N; R. <input type="checkbox"/> E <input type="checkbox"/> W</u>		Facility Name Birds Eye Foods	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Well Location <input type="checkbox"/>		Facility ID	
Lat. " " " " Long " " " " or " " " "		License/Permit/Monitoring No.	
St. Plane ft. N. ft. E. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Zone		Street Address of Well County Hwy X @ County Hwy C	
Reason For Abandonment No Longer Needed		City, Village, or Town	
WI Unique Well No. of Replacement Well		Present Well Owner	
		Original Owner	
		Street Address or Route of Owner	
		City, State, Zip Code	

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL	
Original Construction Date _____		Pump & Piping Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	
<input checked="" type="checkbox"/> Monitoring Well		Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	
<input type="checkbox"/> Water Well		Screen Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	
<input type="checkbox"/> Borehole / Drillhole		Casing Left in Place? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug		Was Casing Cut Off Below Surface? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Did Sealing Material Rise to Surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Total Well Depth (ft.) <u>20.10</u> Casing Diameter (in.) <u>2.38</u>		Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
(From ground surface) Casing Depth (ft.) <u>22.7</u>		If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Lower Drillhole Diameter (in.) _____		Required Method of Placing Sealing Material	
Was Well Annular Space Grouted? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown		<input checked="" type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped	
If Yes, To What Depth? _____ Feet		<input type="checkbox"/> Screened & Poured (Bentonite Chlps) <input type="checkbox"/> Other (Explain)	
Depth to Water (Feet) <u>15.18</u>		Sealing Materials	
		<input type="checkbox"/> Neat Cement Grout	
		<input type="checkbox"/> Sand-Cement (Concrete) Grout	
		<input type="checkbox"/> Concrete	
		<input type="checkbox"/> Clay-Sand Slurry (11 lb./gal. wt.)	
		<input type="checkbox"/> Bentonite-Sand Slurry " "	
		<input checked="" type="checkbox"/> Bentonite Chips	
		For monitoring wells and monitoring well boreholes only	
		<input type="checkbox"/> Bentonite Chips	
		<input type="checkbox"/> Granular Bentonite	
		<input type="checkbox"/> Bentonite - Cement Grout	
		<input type="checkbox"/> Bentonite - Sand Slurry	

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	(Circle One)	Mix Ratio or Mud Weight
3/8" Bentonite Chips	Surface	20.0	2 Sacks		

(6) Comments:

(7) Name of Person or Firm Doing Sealing Work Badger State Drilling Co., Inc.		Date of Abandonment 5-10-2004
Signature of Person Doing Work <i>[Signature]</i>	Date Signed 5/12/04	
Street or Route 360 Business Park Cr.	Telephone Number (608) 877-9770	
City, State, Zip Code Stoughton, WI 53589		

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	

WELL INFORMATION FORMS

Well Name	Well No	DNR Well ID Number	Well Location	Dir. N/S	Date Established	Well Casing Diam. Type	Top of Well Casing Elevations	Ground Surface Elevations	Reference	Screen Top	Initial Groundwater Depth	Well Depth	Screen Length	Well Type	Well Status	Ent. Sids.	Grad. Dist.
Birds Eye Foods																	
Facility Name	Birds Eye Foods				0050679												
Well Name	B-7R		220295.3M		5-15-95	203 P	888.43	886.3	✓			25.0	10	OW	W/A	N	D
Well Name	B-10R		221238.7M		5-15-95	203 P	881.54	879.3	✓			20.0	10	OW	W/A	N	D
Well Name	B-20		219485.0M		1986		892.37	889.41	✓						W/A	N	D
Well Name	B-21		228159.0M		1986		883.58	881.6	✓						A	N	D
Well Name	B-9		2339388.6E		1977		902.90	900.4	✓						W/A	N	U
Well Name	B-30		220837.0M														
Well Name	B-31		2342558.6E														
Well Name	B-32		221282.84M		5/10/04	200 P	921.54	919.54	✓	33.8	41.3	51.3	15	OW	A	N	U
Well Name	B-32		234010.23E		5/10/04	200 P	894.78	892.78	✓	12.1	17.93	29.53	15	OW	A	N	D
Well Name	B-32		219829.09M		5/10/04	200 P	872.90	870.90	✓	10.0	17.24	27.35	15	OW	A	N	D
Well Name	B-32		2340218.69E														

Location Coordinates Ave:
 State Plane Coordinate System
 Northern
 Central
 Southern
 Local Grid System

Grid Origin Location: (Check if estimated:)
 Lat. _____ N
 Long. _____ W
 St. Plane _____ N, _____ E, S/C/N Zone _____

Remarks: * N/A - These wells are abandoned

Completion of this form is mandatory under s. NR 307.14 and NR 110.25 Wis. Adm. Code. Failure to file this form may result in forfeiture of well fees than \$1.0 per meter from \$5,000 for each day of violation. Reasonably identifiable information provided is intended to be used by the Department for the purposes related to the waste management program.

Well No	Well Name	DNR Well ID Number	Well Location	Dir. E/W	Date Established	Well Casing		Elevations		Reference	Screen Top	Depths		Screen Length	Well Type	Well Status	Ent. Sids.	Grad. Tent.	Distance to Waste
						Diam.	Type	Top of Well Casing	Ground Surface			Initial Groundwater	Well Depth						
WD-1			2156337M		7/17/91	2.07	P	883.00	880.99	✓	3.0	17.99	9.9	OW	A	Y	U		
			2338594E																
*WD-2					7/18/91	2.0	S	870.30	867.42	✓	3.0	10.12	5.0	OW	N/A	Y	S		
			216868.8M		7/18/91	2.07	P	872.72	871.02	✓	3.0	17.88	9.8	OW	A	N	D		
			23375725E																
WD-3P			216865.8M		10/26/93	2.06	P	873.30	871.55	✓		32.30	5.0	Piez	A	N	D		
			23375727E																
WD-4			216670.2M		10/25/93	2.06	P	868.15	865.67	✓	3.0	16.20	1.0	OW	A	Y	D		
			2337346.2E																
WD-5			216924.8M		10/26/93	2.06	P	866.33	864.3	✓	3.0		1.0	OW	A	Y	D		
			23371251E																
WD-6			217091.4M		10/26/93	2.06	P	867.91	865.4	✓	3.0	14.99	1.0	OW	A	Y	D		
			2337815.6E																
WD-6P			217091.24M		10/26/93	2.06	P	867.89	865.57	✓		24.52	5	Piez	A	Y	D		
			23378124E																
*WD-7					10/26/93	2.06	P	870.07	867.77	✓	3.0	15.62	1.0	OW	N/A	Y	S		
			217067.8M																
WD-8			23375574E		12/5/96	2.03	P	868.13	866.0	✓	3.0	14.00	1.0	OW	A	Y	D		
			217201.4M																
WD-9			2337716.6E		11/1/96	2.03	P	866.52	864.2	✓		12.5	1.0	OW	*	Y	D		

Location Coordinates are: State Plane Coordinate System Local Grid System

Grid Origin Location: (Check if estimated:)

St. Plane _____ N. E. S/C/N Zone _____

Remarks: **Abandoned 12/5/96**
***Mouthpiece of this well is not required**
IN WPDOS Permit

Completion of this form is mandatory under s. NR 307.14 and NR 310.25 Wis. Admin. Code. Failure to file this form may result in a violation of not less than \$10 nor more than \$5,000 for each day of violation. Potentially identifiable information provided is restricted to be used by the Department for the purposes related to the waste management program.

Well Unique Well No	Well Name	DNR Well ID Number	Well Location	Dir. N/S E/W	Date Established	Well Casing		Elevations		Reference MSL CA	Site Diagram	Screen Top	Depths		Screen Length	Well Type	Well Status	Ent. Grad. Sits Int.	Distance to Waste
						Diam.	Type	Top of Well Casing	Ground Surface				Initial Groundwater	Well Depth					
L-1			220903J 23397386E	N	5/15/95	1.02	P	879.15	877.3	✓			6.0	3	OW	N/A	N		
L-2			2202413 2340079.0E	N	5/15/95	1.02	P	872.75	870.0	✓			6.0	3	OW	N/A	N		
L-3			2173553 23381283E	N	5/15/95	1.02	P	865.72	864.2	✓			6.0	3	OW	A	N		
L-4			2174651 2337419.5E	N	5/15/95	1.02	P	865.50	864.0	✓			6.0	3	OW	A	N		
L-5			2176781 23365984E	N	5/15/95	1.02	P	864.09	862.5	✓			6.0	3	OW	A	N		
L-6			2188958 2338118.4E	N	5/15/95	1.02	P	866.73	865.1	✓			6.0	3	OW	A	N		
L-7			2164911 233556.2E	N	5/15/95	1.02	P	862.77	861.1	✓			6.0	3	OW	A	N		
L-8			216410.9 23362029E	N	5/14/95	1.02	P	863.84	862.3	✓			6.0	3	OW	A	N		

Location Coordinates Ave: State Plane Coordinate Local Grid System Northern Central Southern

Ordn. Origin Location: (Check if estimated:)
 Lat. _____ N. _____ W. _____
 Long. _____ E. _____ W. _____
 S. Plane _____ N. N. _____ N. E. SIGN Zone _____

Remarks: *Wells installed for monitoring water table levels around landspreading sites*
** L-1, L-2 No Redwood - No longer required (11-11-97)*

Completion of this form is mandatory under s. NR 407.14 and NR 110.23 Wis. Adm. Code. Failure to file this form may result in forfeiture of bond less than \$5,000 for each day of violation. Personally identifiable information provided is intended to be used by the Department for the purposes related to the water management program.

**WELL INSTALLATION AND ABANDONMENT
DOCUMENTATION REPORT
BIRDS EYE FOODS
W8880 COUNTY ROAD X
DARIEN, WISCONSIN**

Prepared For:

Mr. Eric Hudson
Birds Eye Foods
W8880 County Road X
Darien, Wisconsin 53114

Prepared By:

Seymour Environmental Services, Inc.
2531 Dyreson Road
McFarland, Wisconsin 53558

November 2011

SEYMOUR ENVIRONMENTAL SERVICES, INC.

P.O. Box 398, 2531 Dyreson Road, McFarland, Wisconsin 53558
Telephone: 608-838-9120 Fax: 608-838-9121

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	Project Information	1
2.0	FIELD ACTIVITIES NARRATIVE	1
2.1	Well Abandonment	1
2.2	Well Development	2
2.3	Well Abandonment	3
3.0	SIGNATURE	3

FIGURES

Figure 1 Well Location Map

APPENDICES

Appendix A Well Abandonment Form
Appendix B Soil Boring Log
Appendix C Well Construction Form
Appendix D Well Development Form

1.0 INTRODUCTION

1.1 Project Information

This report documents the fieldwork performed at the Birds Eye Foods plant in Darien Wisconsin during the period from May 4 to October 28, 2011. This report summarizes the abandonment of monitoring well MW-32 and the installation and development of replacement monitoring well MW-32R. The site location is shown on Figure 1.

1.2 Project Information

Facility: Birds Eye Foods
W8880 County Road X
Darien, Wisconsin 53114
Contact: Mr. Eric Hudson. (262) 724-3266

Consultant: Seymour Environmental Services, Inc.
2531 Dyreson Road
McFarland, Wisconsin 53558
Contact: Ms. Robyn Seymour (608) 838-9120

Drilling Company: Badger State Drilling
360 Business Park Circle
Stoughton, Wisconsin 53589
Contact: Mr. Mark Garwick (608) 877-9770

2.0 FIELD ACTIVITIES NARRATIVE

2.1 Well Abandonment

Monitoring well MW-32 was abandoned since it was located within the planned lagoon. We removed the protective cover and filling the casing with bentonite chips. The chips were placed by gravity. The well was abandoned in accordance with NR 141.25. The well abandonment form (DNR Form 330-5B) is included as Appendix A.

2.2 Well Installation and Materials

Eric Hudson of Birds Eye Foods identified the location of the monitoring well MW-32R that was installed to replace the abandoned monitoring well. We sampled with a Macro Core™ to characterize the soil then augered to set the well. Soil samples were described in the field. The boring was then reamed larger using hollow-stem augering methods. The boring log (DNR form 4400-122) is included in Appendix A.

The new monitoring well was constructed using two inch inside diameter rigid schedule 40 Polyvinyl Chloride (PVC). The well screen is finished with a factory cut 0.010-inch slots. All PVC materials conform to the national sanitation foundation standard 14 and ASTM D1785 specifications. The PVC pipes have flush-threaded joints sealed with "O" rings. The well casings and well screens are centered within the borcholes. The well casing and screen specifications abide by NR 141.07 and 141.09. The monitoring well was constructed with a 15-foot screen.

The filter pack material is well-sorted silica based sand (Ohio #5). The filter pack was installed in accordance with NR 141.11. The well is constructed with a filter pack seal, annular space seal and a bentonite ground surface seal. The filter pack and annular space seal were placed by gravity. The filter pack and annular space seal were installed in accordance with NR 141.13 (1) and (2). The ground surface seal was covered with native soil to prevent drying out. The ground surface seal was installed in accordance with NR 141.13 (3) (a).

A four-inch diameter metal protective cover was placed around the well casing. This protective cover was installed in accordance with NR 141.13 (3) (b). The cover has a provision for padlock security. The construction form is included as Appendix C.

2.3 Well Development

The well was developed in accordance with NR 141.21 (1) (a). The well was surged with a pump and then bailed to develop the well. The well was developed for 60 minutes and approximately 55 gallons of groundwater was removed from the well. The development water was discharged on the ground surface adjacent to the wellhead. The well development form is included in Appendix D.

3.0 SIGNATURE

Any question about this report should be directed to either Mr. Mark Garwick of Badger State Drilling or Ms. Robyn Seymour at Seymour Environmental Services.

"I, Robyn Seymour, hereby certify that I am a Professional Geologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

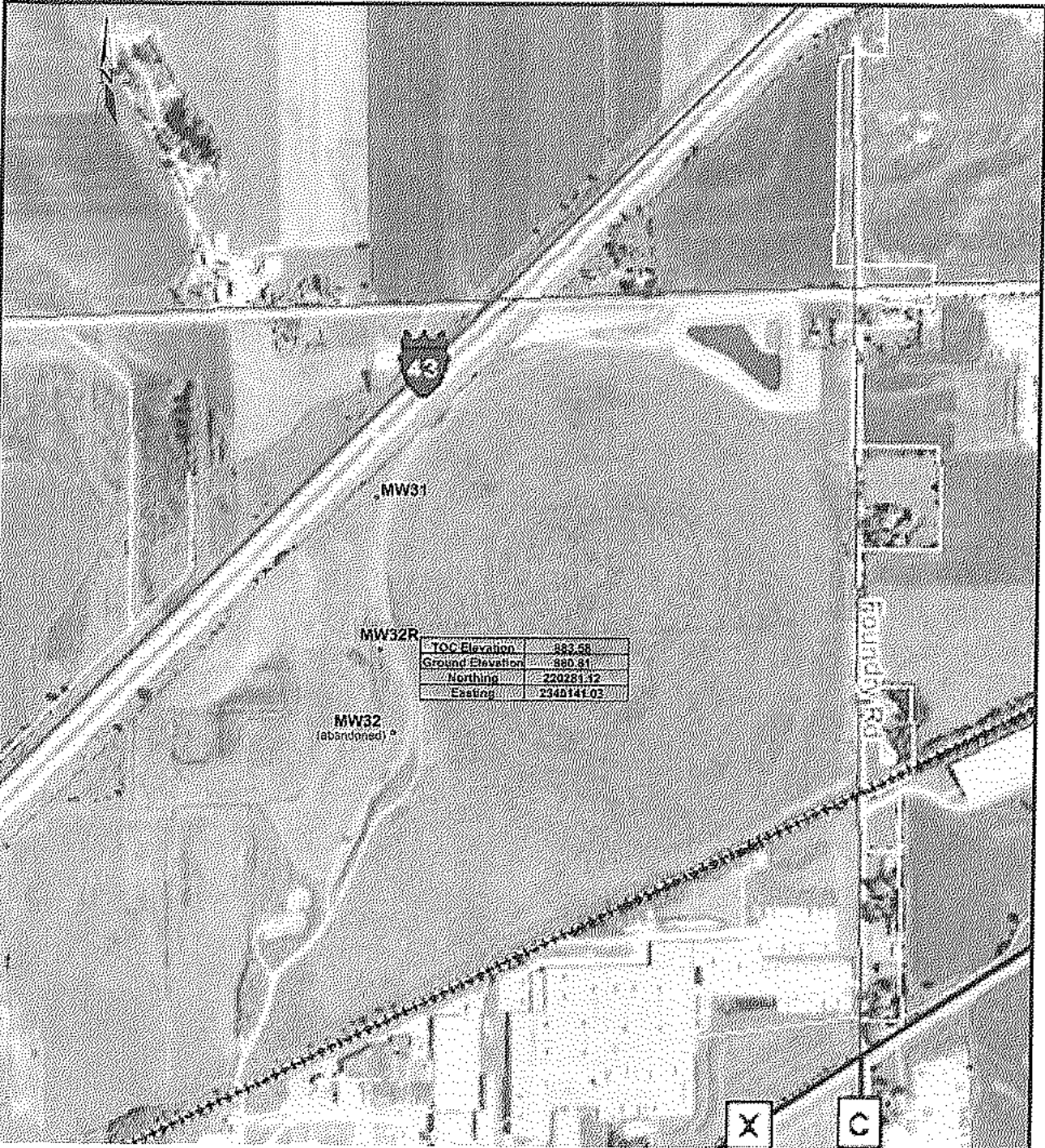
Robyn Seymour

November 15, 2011

Signature and Title

Date

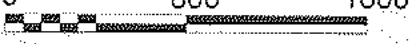
FIGURE



LEGEND

MW-2
 - Monitoring Well

0 800' 1600'



1 INCH = 800 FEET
 SCALE IS APPROXIMATE

FILE/PATH: D:\PROJECTS\Bres.Eye1
 -basemap.cdr
 DATE: 11/11/2011
 PREPARED: MDF APPROVED:
 SOURCE:
 FIELD MEASUREMENTS

**SEYMOUR
 ENVIRONMENTAL
 SERVICES, INC.**

Center-Pivot Waste Disposal Area
 Birdseye Foods Property
 W8880 County Road X
 Darien, Wisconsin

**FIGURE
 1**

APPENDIX A

WELL ABANDONMENT FORM

Notice: Please complete Form 3300-5P and return it to the appropriate DNR office and bureau. Completion of this report is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See the instructions for more information.

Route to: Drinking Water Watershed/Wastewater Waste Management Remediation/Redevelopment Other

(1) GENERAL INFORMATION		(2) FACILITY/OWNER INFORMATION	
WI Unique Well No.	DNR Well ID No.	County	Facility Name
		Waukesha	Birds Eye
Common Well Name	Gov't Lot (if applicable)	Facility ID	License/Permit/Monitoring No.
MW-32			
1/4 of 1/4 of Sec. ; T. N; R.	Grid Location	Street Address of Well	City, Village, or Town
		CH 2	Thornville, WI
Local Grid Origin	Present Well Owner	Original Owner	
St. Plane	City, State, Zip Code		
Reason For Abandonment	WI Unique Well No. of Replacement Well		
Sampled			

(3) WELL/DRILLHOLE/BOREHOLE INFORMATION		(4) PUMP, LINER, SCREEN, CASING, & SEALING MATERIAL	
Original Construction Date	Monitoring Well	Pump & Piping Removed?	Liner(s) Removed?
7	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable
Construction Type:	Water Well	Screen Removed?	Casing Left in Place?
<input checked="" type="checkbox"/> Drilled	<input type="checkbox"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Borehole / Drillhole	<input type="checkbox"/>	Was Casing Cut Off Below Surface?	Did Sealing Material Rise to Surface?
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Formation Type:	Other (Specify)	Did Material Settle After 24 Hours?	If Yes, Was Hole Retopped?
<input checked="" type="checkbox"/> Unconsolidated Formation		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Total Well Depth (ft.)	Casing Diameter (in.)	Required Method of Placing Sealing Material	
24.9	2"	<input type="checkbox"/> Conductor Pipe-Gravity	<input type="checkbox"/> Conductor Pipe-Pumped
Casing Depth (ft.)		<input checked="" type="checkbox"/> Screened & Poured (Bentonite Chlgs)	<input type="checkbox"/> Other (Explain)
27.9		Sealing Materials	
Lower Drillhole Diameter (in.)	Was Well Annular Space Grouted?	<input type="checkbox"/> Neat Cement Grout	<input type="checkbox"/> Bentonite Chips
	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	<input type="checkbox"/> Sand-Cement (Concrete) Grout	<input type="checkbox"/> Granular Bentonite
Depth to Water (Feet)	If Yes, To What Depth?	<input type="checkbox"/> Concrete	<input type="checkbox"/> Bentonite - Cement Grout
12.9	Feet	<input type="checkbox"/> Clay-Sand Slurry (11 lb/gal. wt.)	<input type="checkbox"/> Bentonite - Sand Slurry
		<input type="checkbox"/> Bentonite-Sand Slurry	<input checked="" type="checkbox"/> Bentonite Chlgs

(5) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	Mix Ratio or Mud Weight
3/8 Bent chips	Surface	24.9	2 Bags	100/165

(6) Comments: Removed Protop & 2 4'x7' Buffer Posts

(7) Name of Person or Firm Doing Sealing Work		Date of Abandonment	
Badger State Drilling Co., Inc.		5-4-11	
Signature of Person Doing Work	Date Signed		
Robert Dymowski	5/4/2011		
Street or Route	Telephone Number		
360 Business Park Cr.	(608) 877-9770		
City, State, Zip Code			
Stoughton, WI 53589			

FOR DNR OR COUNTY USE ONLY	
Date Received	Noted By
Comments	

APPENDIX B
SOIL BORING LOG

Route To: Watershed/Wastewater Waste Management
Remediation/Revelpoment Other

Page 1 of 1

Facility/Project Name Birds Eye Foods		License/Permit/Monitoring Number JU 115		Boring Number MW-32R
Boring Drilled By: Name of crew chief (first, last) and Firm First Name: mark Last Name: manthey		Date Drilling Started 10/28/2011	Date Drilling Completed 10/28/2011	Drilling Method Hollow Stem Auger
Firm: Geo Serv		Final Static Water Level 5.29 Feet MSL		Surface Elevation 880.81 Feet MSL
WI Unique Well No.	DNR Well ID No.	Well Name	Borehole Diameter 8 inches	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/>		State Plane N E S/C/N		Local Grid Location
1/4 of SW 1/4 of Section 28 , T 2 N, R 15 E/W		Lat 0 ' "	Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> Feet <input type="checkbox"/> S <input type="checkbox"/> Feet <input type="checkbox"/> W	
Facility ID	County walworth	County Code	Civil Town/City/ or Village Racine	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth in Foot (below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			0	Grass	ol										
			5	silty topsoil with organic clay	cl										
			5	change to slightly silty brown dense clay	cl										
			10	wet sandy coarse sand to cobble sized gravel wet	GW										
			10	same as above	GW										
			15	no recovery	GW										
			15	well graded medium coarse sand to cobble sized gravel	GW										
			20	same as above	GW										
			23	EOB - 23 ft											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Robyn Sumner Firm Seymour Environmental Services Inc.

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

APPENDIX C

WELL CONSTRUCTION FORM

Facility/Project Name <u>Birds Eye Foods</u>	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> S. <input type="checkbox"/> E. <input type="checkbox"/> W.	Well Name <u>MW-32R</u>
Facility License, Permit or Monitoring No. <u>MW-32R</u>	Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Well Location <input type="checkbox"/> Lat. _____ " Long. _____ " or	Wis. Unique Well No. <u>JUL15</u> DNR Well ID No. _____
Facility ID	St. Plane <u>Parisien</u> ft. N. _____ ft. E. S/C/N	Date Well Installed <u>10/28/2011</u> m m d d y y v v
Type of Well Well Code <u>1</u>	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N, R. _____ <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm <u>Mark Mantney</u> <u>Geo Serv</u>
Distance from Waste/Source _____ ft.	Enf. Stds. Apply <input type="checkbox"/>	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known
		Gov. Lot Number _____

A. Protective pipe, top elevation _____ ft. MSL	1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation <u>383.58</u> ft. MSL	2. Protective cover pipe: a. Inside diameter: <u>4.0</u> in.
C. Land surface elevation <u>380.81</u> ft. MSL	b. Length: <u>5.0</u> ft.
D. Surface seal, bottom _____ ft. MSL or <u>3.5</u> ft.	c. Material: Steel <input type="checkbox"/> 04 Other <input checked="" type="checkbox"/>
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input checked="" type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>	d. Additional protection? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____
13. Sieve analysis performed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3. Surface seal: Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
14. Drilling method used: Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	4. Material between well casing and protective pipe: <u>Sand</u> Bentonite <input type="checkbox"/> 30 Other <input type="checkbox"/>
15. Drilling fluid used: Water <input type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input checked="" type="checkbox"/> 99	5. Annular space seal: a. Granular/Chipped Bentonite <input type="checkbox"/> 33 b. _____ Lbs/gal mud weight ... Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight ... Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite ... Bentonite-cement grout <input type="checkbox"/> 50 e. <u>2</u> Ft ³ volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input checked="" type="checkbox"/> 08
16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe _____	6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input type="checkbox"/> 32 c. <u>Bentonite Chips</u> Other <input type="checkbox"/>
17. Source of water (attach analysis, if required): _____	7. Fine sand material: Manufacturer, product name & mesh size a. <u>Onio 40-60</u> b. Volume added <u>.6</u> ft ³
E. Bentonite seal, top _____ ft. MSL or <u>0.0</u> ft.	8. Filter pack material: Manufacturer, product name & mesh size a. <u>Onio #5</u> b. Volume added <u>1.5</u> ft ³
F. Fine sand, top _____ ft. MSL or <u>3.5</u> ft.	9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/>
G. Filter pack, top _____ ft. MSL or <u>3</u> ft.	10. Screen material: <u>PVC</u> a. Screen type: Factory cut <input type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/>
H. Screen joint, top _____ ft. MSL or <u>5</u> ft.	b. Manufacturer <u>Monofix</u> c. Slot size: <u>0.01</u> in.
I. Well bottom _____ ft. MSL or <u>20.00</u> ft.	d. Slotted length: <u>15</u> ft.
J. Filter pack, bottom _____ ft. MSL or _____ ft.	11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/>
K. Borehole, bottom _____ ft. MSL or <u>20.0</u> ft.	
L. Borehole, diameter <u>8.0</u> in.	
M. O.D. well casing <u>2.38</u> in.	
N. I.D. well casing <u>2.00</u> in.	

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Robert Sumner Firm Seymour Environmental

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

APPENDIX D

WELL DEVELOPMENT FORM

Route to: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name <u>Birds Eye Foods</u>	County Name <u>Walworth</u>	Well Name <u>MW-32R</u>
Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number <u>JV 115</u>
		DNR Well ID Number

1. Can this well be purged dry? Yes No

2. Well development method

- 41 surged with bailer and bailed
- 61 surged with bailer and pumped
- 42 surged with block and bailed
- 62 surged with block and pumped
- 70 surged with block, bailed and pumped
- 20 compressed air
- 10 bailed only
- 31 pumped only
- 50 pumped slowly
- Other

3. Time spent developing well 55 min.

4. Depth of well (from top of well casing) 22.6 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing _____ gal.

7. Volume of water removed from well 55.0 gal.

8. Volume of water added (if any) _____ gal.

9. Source of water added _____

10. Analysis performed on water added? Yes No
(If yes, attach results)

17. Additional comments on development:

11. Depth to Water Before Development After Development

(from top of well casing) a. 5.28 ft. 5.30 ft.

Date b. 10/28/2011 10/28/2011
m m d d y y y y m m d d y y y y

Time c. 09:50 a.m. p.m. 10:45 a.m. p.m.

12. Sediment in well bottom 0.1 inches 0 inches

13. Water clarity Clear 10 Turbid 15
(Describe) (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids _____ mg/l _____ mg/l

15. COD _____ mg/l _____ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: _____ Last Name: _____

Firm: _____

Name and Address of Facility Contact /Owner/Responsible Party

First Name: _____ Last Name: _____

Facility/Firm: Birds Eye Foods

Street: w8880 County Road X

City/State/Zip: Darien WI 53114

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: Robyn Seymour

Print Name: Robyn Seymour

Firm: Seymour Environmental

093004
REM, MASTER FILE 14000
Darien WI - New LAG

Well / Drillhole / Borehole Filling & Sealing

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to:

Drinking Water Watershed/Wastewater Remediation/Redevelopment
 Waste Management Other: _____

1. Well Location Information				2. Facility/Owner Information			
County Walworth	WI Unique Well # of Removed Well B-102	Hicap #		Facility Name Birds Eye Foods	Facility ID (FID or PWS) NA		
Latitude / Longitude (Degrees and Minutes) 42° 35' N 88° 44' W		Method Code (see instructions) GPS008		License/Permit/Monitoring # NA			
1/4 NE	1/4 NE	Section 32	Township N 15	Range E	Original Well Owner Birds Eye Foods		
or Gov't Lot #		Well Zip Code 53114		Present Well Owner Same			
Well Street Address W8880 County Road X				Mailing Address of Present Owner W8880 County Road X			
Well City, Village or Town Darien		City of Present Owner Darien		State WI	Zip Code 53114		
Subdivision Name		Lot #					

3. Well / Drillhole / Borehole Information		4. Pump/Liner/Screen/Casing & Sealing Material	
Reason For Removal From Service Boring complete	WI Unique Well No. of Replacement Well	Pump and piping removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Monitoring Well	Original Construction Date (mm/dd/yyyy) 09/16/2010	Liner(s) removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Water Well	If a Well Construction Report is available, please attach.	Screen removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> Borehole / Drillhole		Casing left in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify): _____		Was casing cut off below surface?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Did sealing material rise to surface?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Total Well Depth From Groundsurface (ft.) 27	Casing Diameter (in.) NA	Did material settle after 24 hours?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Lower Drillhole Diameter (in.) 8	Casing Depth (ft.) NA	If yes, was hole retopped?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Was well annular space grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown		If bentonite chips were used, were they hydrated with water from a known safe source?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
If yes, to what depth (feet)? 6.5	Depth to Water (feet) 6.5	Required Method of Placing Sealing Material <input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain): _____	

5. Material Used to Fill Well / Drillhole		6. Comments	
1/2 In. Chipped Bentonite	Surface to 6	No. Yards / Sacks Sealed or Filled	Mix Ratio or Mud Weight
		1.2	1.2

6. Comments

7. Supervision of Work				DNR Use Only	
Name of Person or Firm Doing Filling & Sealing Midwest Engineering Services, Inc.	License #	Date of Filling & Sealing (mm/dd/yyyy) 09/16/2010	Date Filled	Filled By	
Street or Route 821 Corporate Court, Suite 102	Telephone Number (262) 521-2125	County		Date Signed 11-8-10	
City Waukesha	State WI	Zip Code 53189	Signature of Person Doing Work <i>[Signature]</i>		

Well / Drillhole / Borehole Filling & Sealing
Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 288, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 288, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to:

Drinking Water Watershed/Wastewater Remediation/Redevelopment
 Waste Management Other: _____

1 Well Location Information				2 Facility/Owner Information			
County Walworth	WI Unique Well # of Removed Well B-105	Hicap #		Facility Name Birds Eye Foods			
Latitude / Longitude (Degrees and Minutes) 42° 35' 08" N 88° 44' 30" W		Method Code (see instructions) GPS008		Facility ID (FID or PWS) NA			
1/4 NE		Section 32	Township N	Range 15	License/Permit/Monitoring # NA		
or Gov't Lot #		Well Street Address W8880 County Road X		Original Well Owner Birds Eye Foods			
Well City, Village or Town Darlen		Well Zip Code 53114		Present Well Owner Same			
Subdivision Name		Well Lot #		Mailing Address of Present Owner W8880 County Road X			
Reason For Removal From Service Boring complete		WI Unique Well No. of Replacement Well		City of Present Owner Darlen			
				State WI		Zip Code 53114	

3 Well/Drillhole/Borehole Information				4 Pump/Liner/Screen/Casing & Sealing Material			
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input checked="" type="checkbox"/> Borehole / Drillhole		Original Construction Date (mm/dd/yyyy) 09/16/2010		Pump and piping removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify): _____		If a Well Construction Report is available, please attach.		Liner(s) removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock				Screen removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Total Well Depth From Groundsurface (ft.) 23		Casing Diameter (in.) NA		Casing left in place? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Lower Drillhole Diameter (in.) 8		Casing Depth (ft.) NA		Was casing cut off below surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Was well annular space grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown				Did sealing material rise to surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
If yes, to what depth (feet)?		Depth to Water (feet) 8.5		Did material settle after 24 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
				If yes, was hole retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
				If bentonite chips were used, were they hydrated with water from a known safe source? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			

5 Required Method of Placing Sealing Material				6 Material Used to Fill Well / Drillhole			
<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped		<input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips)		Other (Explain): _____		Form (ft.) Surface	
Sealing Materials: <input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Clay-Sand Slurry (11 lb/gal wt) <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite-Sand Slurry * * <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Bentonite Chips		For Monitoring Wells and Monitoring Well Boreholes Only: <input checked="" type="checkbox"/> Bentonite Chips <input type="checkbox"/> Bentonite - Cement Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry		No. Yards (Borehole Sealant or Grout) (circle one) 1.4		Mixture of Material R ² R ²	

6. Comments

7 Supervision of Work				DNR Use Only			
Name of Person or Firm Doing Filling & Sealing Midwest Engineering Services, Inc.		License #	Date of Filling & Sealing (mm/dd/yyyy) 09/16/2010	Date Received		No. of Wells	
Street or Route 821 Corporate Court, Suite 102		Telephone Number (262) 521-2125		City		County	
City Waukesha	State WI	Zip Code 53189	Signature of Person Doing Work <i>Ted A. Gray</i>	Date Signed 11-8-10			

Well / Drillhole / Borehole Filling & Sealing
Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 261, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 261, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

<input type="checkbox"/> Verification Only of Fill and Seal		Route to:		<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Watershed/Wastewater	<input type="checkbox"/> Remediation/Redevelopment
		<input type="checkbox"/> Waste Management		<input type="checkbox"/> Other:		
1. Well Location Information				2. Facility/Owner Information		
County Walworth	WI Unique Well # of Removed Well B-106	Hicap #		Facility Name Birds Eye Foods		
Latitude / Longitude (Degrees and Minutes) 42° 35' 44" N 88° 44' 29" W		Method Code (see instructions) GPS008		Facility ID (FID or PWS) NA		
1/4 1/4 NE		Section 32	Township 2 N	Range 15 E	License/Permit/Monitoring # NA	
or Gov't Lot #				Original Well Owner Birds Eye Foods		
Well Street Address W8880 County Road X				Present Well Owner Same		
Well City, Village or Town Darlen		Well Zip Code 53114		Mailing Address of Present Owner W8880 County Road X		
Subdivision Name		Lot #		City of Present Owner Darlen	State WI	Zip Code 53114
Reason For Removal From Service Boring complete		WI Unique Well No. of Replacement Well		3. Pump, Liner, Screen, Casing & Sealing Material		
<input type="checkbox"/> Monitoring Well		Original Construction Date (mm/dd/yyyy) 09/16/2010		Pump and piping removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
<input type="checkbox"/> Water Well		If a Well Construction Report is available, please attach.		Liner(s) removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
<input checked="" type="checkbox"/> Borehole / Drillhole				Screen removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Construction Type:				Casing left in place? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
<input checked="" type="checkbox"/> Drilled		<input type="checkbox"/> Driven (Sandpoint)		Was casing cut off below surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
<input type="checkbox"/> Other (specify):				Did sealing material rise to surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Formation Type:				Did material settle after 24 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
<input checked="" type="checkbox"/> Unconsolidated Formation		<input type="checkbox"/> Bedrock		If yes, was hole retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Total Well Depth From Groundsurface (ft.) 22		Casing Diameter (in.) NA		If bentonite chips were used, were they hydrated with water from a known safe source? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Lower Drillhole Diameter (in.) 6		Casing Depth (ft.) NA		Required Method of Placing Sealing Material		
Was well annular space grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown				<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped		
If yes, to what depth (feet)? 6.5		Depth to Water (feet) 6.5		<input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain):		
				Sealing Materials		
				<input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Clay-Sand Slurry (11 lb/gal W)		
				<input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite-Sand Slurry "		
				<input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Bentonite Chips		
				For Monitoring Wells and Monitoring Well Boreholes Only:		
				<input checked="" type="checkbox"/> Bentonite Chips <input type="checkbox"/> Bentonite - Cement Grout		
				<input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry		
4. Material Used to Fill Well / Drillhole				5. Material Used to Fill Well / Drillhole		
1/2 In. Chipped Bentonite				Form (L)	Depth (ft)	Weight (lb)
				Surface	8	1.2 ft ³
						ft ³
						ft ³
6. Comments						
7. Supervision of Work				DNR Use Only		
Name of Person or Firm Doing Filling & Sealing Midwest Engineering Services, Inc.		License #	Date of Filling & Sealing (mm/dd/yyyy) 09/16/2010	DNR File #		
Street or Route 921 Corporate Court, Suite 102		Telephone Number (262) 521-2125		DNR File #		
City Waukesha	State WI	Zip Code 53189	Signature of Person Doing Work <i>[Signature]</i>	Date Signed 11-8-10		

Well / Drillhole / Borehole Filling & Sealing

Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to:

Drinking Water
 Waste Management

Watershed/Wastewater
 Other:

Remediation/Redevelopment

1. Well Location Information **2. Facility/Owner Information**

County Walworth	WI Unique Well # of Removed Well 8-107	HiCap #	Facility Name Birds Eye Foods
Latitude / Longitude (Degrees and Minutes) 42° 35' N 88° 44' W	Method Code (see instructions) G P S 0 0 8	Facility ID (FID or PWS) NA	License/Permit/Monitoring # NA
Well Street Address W8880 County Road X	Section 32	Township N 15	Range 15
Well City, Village or Town Darlen	Well Zip Code 53114	Original Well Owner Birds Eye Foods	Present Well Owner Same
Subdivision Name	Lot #	Mailing Address of Present Owner W8880 County Road X	City of Present Owner Darlen
Reason For Removal From Service Boring complete	WI Unique Well No. of Replacement Well	State WI	Zip Code 53114

3. Well/Drillhole/Borehole Information **4. Pump/Liner/Screen/Casing & Sealing Material**

<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input checked="" type="checkbox"/> Borehole / Drillhole	Original Construction Date (mm/dd/yyyy) 09/16/2010	Pump and piping removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify):	If a Well Construction Report is available, please attach.	Liner(s) removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock	Required Method of Placing Sealing Material: <input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain):	Screen removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Total Well Depth From Groundsurface (ft.) 29.5	Casing Diameter (in.) NA	Casing left in place? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Lower Drillhole Diameter (in.) 8	Casing Depth (ft.) NA	Was casing cut off below surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Was well annular space grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Depth to Water (feet) 8.5	Did sealing material rise to surface? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
If yes, to what depth (feet)?		Did material settle after 24 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
		If yes, was hole relapped? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
		If bentonite chips were used, were they hydrated with water from a known safe source? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

Material Used to Fill Well/Drillhole	Depth (ft.)	Volume (cu ft)	Mix Ratio of Mud
1/2 In. Chipped Bentonite	Surface	8	1.6 lb

6. Comments

7. Supervision of Work **DNR Use Only**

Name of Person or Firm Doing Filling & Sealing Midwest Engineering Services, Inc.	License #	Date of Filling & Sealing (mm/dd/yyyy) 09/16/2010	City	State	Zip Code	Signature of Person Doing Work <i>[Signature]</i>	Date Signed 11-8-10
Street or Route 821 Corporate Court, Suite 102	Telephone Number (262) 521-2125	City Waukesha	State WI	Zip Code 53189			

Well / Drillhole / Borehole Filling & Sealing
Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to:

Drinking Water Watershed/Wastewater Remediation/Redevelopment
 Waste Management Other: _____

2. Well / Drillhole / Borehole Information

County Walworth	WI Unique Well # of Removed Well B 1 0 8	HiCap #	Facility Name Birds Eye Foods
Latitude / Longitude (Degrees and Minutes) 4 2 3 5 5 8 7 'N 8 8 4 4 3 0 7 'W	Method Code (see instructions) G P S 0 0 8	Original Well Owner Birds Eye Foods	Facility ID (FID or PWS) NA
1/4 1/4 NE 1/4 NE Section Township Range <input checked="" type="checkbox"/> E 32 2 N 15 <input type="checkbox"/> W	Well Street Address W8880 County Road X	Present Well Owner Same	License/Permit/Monitoring # NA
Well City, Village or Town Darien	Well Zip Code 53114	Mailing Address of Present Owner W8880 County Road X	City of Present Owner State Zip Code Darien WI 53114
Subdivision Name	Lot #		

Reason For Removal From Service: **Boring complete**

WI Unique Well No. of Replacement Well: _____

3. Well / Drillhole / Borehole Information

Monitoring Well Original Construction Date (mm/dd/yyyy): **09/15/2010**

Water Well

Borehole / Drillhole If a Well Construction Report is available, please attach.

Construction Type:

Drilled Driven (Sandpoint) Dug

Other (specify): _____

Formation Type:

Unconsolidated Formation Bedrock

Total Well Depth From Groundsurface (ft.): **32** Casing Diameter (in.): **NA**

Lower Drillhole Diameter (in.): **8** Casing Depth (ft.): **NA**

Was well annular space grouted? Yes No Unknown

If yes, to what depth (feet)? Depth to Water (feet): **19**

Material Used to Fill Well / Drillhole	Depth (ft.)	Volume (cu ft.)	Notes
1/4 in. Chipped Bentonite	Surface	4	0.8 ft ³
			ft ³
			ft ³

6. Comments

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing Midwest Engineering Services, Inc.	License #	Date of Filling & Sealing (mm/dd/yyyy) 09/15/2010	DNR Use Only
Street or Route 821 Corporate Court, Suite 102	Telephone Number (262) 521-2125		
City Waukesha	State WI	Zip Code 53189	Signature of Person Doing Work <i>[Signature]</i>
			Date Signed 11-8-10

Well / Drillhole / Borehole Filling & Sealing
Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to:

Drinking Water Watershed/Wastewater Remediation/Redevelopment
 Waste Management Other: _____

2. Well/Drillhole Information			3. Facility/Owner Information		
County Waukesha	WI Unique Well # of Removed Well B-109	Hicap #	Facility Name Birds Eye Foods		
Latitude / Longitude (Degrees and Minutes) 42° 35' 42" N 88° 44' 34" W		Method Code (see instructions) GPS008	Facility ID (FID or PWS) NA		
1/4 or Gov't Lot #		Section 32	License/Permit/Monitoring # NA		
Well Street Address W8880 County Road X		Township N 15	Original Well Owner Birds Eye Foods		
Well City, Village or Town Darlen		Range 15	Present Well Owner Same		
Subdivision Name		Well Zip Code 53114	Mailing Address of Present Owner W8880 County Road X		
Reason For Removal From Service Boring complete		WI Unique Well No. of Replacement Well	City of Present Owner Darlen		
			State WI		
			Zip Code 53114		

4. Well/Drillhole/Borehole Information		5. Pump/Filter/Screen/Casing & Sealing Material	
<input type="checkbox"/> Monitoring Well	Original Construction Date (mm/dd/yyyy) 09/15/2010	Pump and piping removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Water Well	If a Well Construction Report is available, please attach.	Liner(s) removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> Borehole / Drillhole		Screen removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Construction Type:		Casing left in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> Drilled	<input type="checkbox"/> Driven (Sandpoint)	Was casing cut off below surface?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input type="checkbox"/> Other (specify):	<input type="checkbox"/> Dug	Did sealing material rise to surface?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Formation Type:		Did material settle after 24 hours?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> Unconsolidated Formation	<input type="checkbox"/> Bedrock	If yes, was hole retopped?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Total Well Depth From Groundsurface (ft.) 39.5	Casing Diameter (in.) NA	If bentonite chips were used, were they hydrated with water from a known safe source?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Lower Drillhole Diameter (in.) 8	Casing Depth (ft.) NA	Required Method of Placing Sealing Material	
Was well annular space grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown		<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped	
If yes, to what depth (feet)?	Depth to Water (feet) 17.6	<input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain):	
		Sealing Materials	
		<input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Clay-Sand Slurry (11 lb/gal wt)	
		<input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite-Sand Slurry **	
		<input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Bentonite Chips	
		For Monitoring Wells and Monitoring Well Boreholes Only:	
		<input checked="" type="checkbox"/> Bentonite Chips <input type="checkbox"/> Bentonite - Cement Grout	
		<input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry	

Material	Depth (ft.)	Volume (cu ft)	Weight (lbs)
1/2 In. Chipped Bentonite	Surface to 7	1.4	

6. Comments

7. Supervision of Work			8. DNR Only	
Name of Person or Firm Doing Filling & Sealing Midwest Engineering Services, Inc.	License #	Date of Filling & Sealing (mm/dd/yyyy) 09/15/2010	Date Received	Notified
Street or Route 821 Corporate Court, Suite 102	Telephone Number (262) 521-2125	City Waukesha	State WI	Zip Code 53189
Signature of Person Doing Work <i>Ed J. Ora</i>			Date Signed 11-8-10	

Well / Drillhole / Borehole Filling & Sealing
Form 3300-005 (R 4/08)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending upon the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

Verification Only of Fill and Seal

Route to:

Drinking Water
 Waste Management

Watershed/Wastewater
 Other:

Remediation/Redevelopment

4. Well Location Information		5. Well/Drillhole/Borehole Information	
County Walworth	WI Unique Well # of Removed Well B 1 1 1	Hicap #	Facility Name Birds Eye Foods
Latitude / Longitude (Degrees and Minutes) 4 2 ° 3 5 5 0 8 ' N 8 8 ° 4 4 3 4 6 ' W		Method Code (see instructions) G P S 0 0 8	Facility ID (FID or PWS) NA
1/4 or Govt Lot #	Section 32	Township 2 N	License/Permit/Monitoring # NA
Well Street Address W8880 County Road X	Range 15	Original Well Owner Birds Eye Foods	Present Well Owner Same
Well City, Village or Town Darlen	Well Zip Code 53114	Mailing Address of Present Owner W8880 County Road X	
Subdivision Name	Lot #	City of Present Owner Darlen	State WI
Reason For Removal From Service Boring complete		Zip Code 53114	

6. Well/Drillhole/Borehole Information		7. Pump and Piping/Screening/Sealing Material	
<input type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input checked="" type="checkbox"/> Borehole / Drillhole	Original Construction Date (mm/dd/yyyy) 09/15/2010	Pump and piping removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (specify):	If a Well Construction Report is available, please attach.	Liner(s) removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		Screen removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Total Well Depth From Groundsurface (ft.) 39.5	Casing Diameter (in.) NA	Casing left in place?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Lower Drillhole Diameter (in.) 6	Casing Depth (ft.) NA	Was casing cut off below surface?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Was well annular space grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown		Did sealing material rise to surface?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
If yes, to what depth (feet)?	Depth to Water (feet) 17.8	Did material settle after 24 hours?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
		If yes, was hole retopped?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
		If bentonite chips were used, were they hydrated with water from a known safe source?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
		Required Method of Placing Sealing Material	<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input checked="" type="checkbox"/> Screened & Poured (Bentonite Chios) <input type="checkbox"/> Other (Explain):
		Sealing Materials	<input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Clay-Sand Slurry (11 lb/gal wt) <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite-Sand Slurry ** <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Bentonite Chips
		For Monitoring Wells and Monitoring Well Boreholes Only:	<input checked="" type="checkbox"/> Bentonite Chips <input type="checkbox"/> Bentonite - Cement Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry

Material	Depth (ft)	Volume (cubic ft)	Volume (cubic yd)
1/2 In. Chipped Bentonite	Surface	13	2.5

6. Comments

7. Signatory Information		DNR Use Only	
Name of Person or Firm Doing Filling & Sealing Midwest Engineering Services, Inc.	License #	Date of Filling & Sealing (mm/dd/yyyy) 09/15/2010	Checked by
Street or Route 821 Corporate Court, Suite 102	Telephone Number (262) 521-2125	Signature of Person Doing Work <i>[Signature]</i>	Date Signed 11-8-10
City Waukesha	State WI	Zip Code 53189	

Attachment 3



A&L Analytical Laboratories, Inc.

2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

Client : Foth Infrastructure & Environment, LLC Ron Meister 2737 South Ridge Rd Suite 600 P.O. Box 12326 Green Bay WI 54307	Grower :	Report No: 10-263-0922 Cust No: 07778 Date Printed: 09/27/2010 Date Received : 09/20/2010 PO: Page : 2 of 4
--	----------	--

Lab Number : 33438

Field Id : '0'-1'

Sample Id : TP-6

Test	Method	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
			Very Low	Low	Medium	Optimum	Very High	
Soil pH	1:1	7.4						12.7 meq/100g
Buffer pH	BPH							
Phosphorus (P)	M3	181 ppm						Calculated Cation Saturation
Potassium (K)	M3	235 ppm						
Calcium (Ca)	M3	1880 ppm						%K 4.6
Magnesium (Mg)	M3	610 ppm						%Ca 58.5
Sulfur (S)								%Mg 36.8
Boron (B)								%H 0.0
Copper (Cu)								Hmeq 0.0
Iron (Fe)								
Manganese (Mn)								
Zinc (Zn)								
Sodium (Na)								
Soluble Salts								
Organic Matter	WB	2.3 % ENR 90						
Nitrate Nitrogen	NO3N	57 ppm						
								K : Mg Ratio 0.12

SOIL FERTILITY GUIDELINES

Crop : COOL SEASON GRASS PASTURE

Yield Goal : 3 TONS

Rec Units: LB/ACRE

(lbs)	LIME (tons)	N	P ₂ O ₅	K ₂ O	Mg	S	B	Cu	Mn	Zn	Fe
0	0	6	0	30	0						
Crop :											Rec Units:

Comments :

COOL SEASON GRASS PASTURE

- On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.
- For cool season grass topdress with nitrogen:

Feb 15 - March 15 60 to 100 lbs N/Acre.

May 1-15 0 to 50 lbs N/Acre.

Aug 1 - Sept 15 60 to 80 lbs N/Acre.



A&L Analytical Laboratories, Inc.

2790 Whitten Rd. Memphis, TN 38133 (901) 213-2400 Fax (901) 213-2440

SOIL ANALYSIS

Client: Foth Infrastructure & Environment, LLC Ron Meister 2737 South Ridge Rd Suite 600 P.O. Box 12326 Green Bay WI 54307	Grower:	Report No: 10-263-0922 Cust No: 07778 Date Printed: 09/27/2010 Date Received: 09/20/2010 PO: Page: 4 of 4
---	---------	--

Lab Number : 33441

Field Id : '0'-1'

Sample Id : TP-18

Test	Method	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
			Very Low	Low	Medium	Optimum	Very High	
Soil pH	1:1	6.9						8.2 meq/100g
Buffer pH	BPH							
Phosphorus (P)	M3	49 ppm	[Bar]					Calculated Cation Saturation
Potassium (K)	M3	169 ppm	[Bar]					
Calcium (Ca)	M3	1168 ppm	[Bar]					%K 5.0
Magnesium (Mg)	M3	399 ppm	[Bar]					%Ca 56.3
Sulfur (S)								%Mg 37.3
Boron (B)								%H 1.5
Copper (Cu)								Hmeq 0.1
Iron (Fe)								
Manganese (Mn)								
Zinc (Zn)								
Sodium (Na)								
Soluble Salts								
Organic Matter	WB	2.3 % ENR 90						
Nitrate Nitrogen	NO3N	23 ppm						
								K : Mg Ratio 0.13 [Bar]

SOIL FERTILITY GUIDELINES

Crop : COOL SEASON GRASS PASTURE

Yield Goal : 3 TONS

Rec Units: LB/ACRE

(lbs)	LIME	(tons)	N	P ₂ O ₅	K ₂ O	Mg	S	B	Cu	Mn	Zn	Fe
0		0	74	33	37	0						
Crop :												Rec Units:

Comments :

COOL SEASON GRASS PASTURE

- On light soils with high grass hay yields, soil test annually to maintain soil pH and nutrient level.
- For grass hay or pasture needing high rates split the P and K application. Apply 1/2 in the spring and 1/2 in late summer.
- For cool season grass topdress with nitrogen:

Feb 15 - March 15 60 to 100 lbs N/Acre.

May 1-15 0 to 50 lbs N/Acre.

Aug 1 - Sept 15 60 to 80 lbs N/Acre.

CQM, INC.
TRANSMITTAL

TO: Ron Messier FROM: Robert Rouse
Foth I+E CQM, INC.
2679 Continental Drive
Green Bay, WI 54311
 PHONE: (920) 465-3911
 DATE: October 10, 2010
 RE: Lab Test Result Reports PROJECT: Birds Eye Foods

WE ARE SENDING YOU:

- ATTACHED UNDER SEPARATE COVER VIA
 DRAWINGS SPECIFICATIONS
 DOCUMENTS COPY OF LETTER

QUANTITY	DESCRIPTION
1	Lab Test Result Reports for Project
1	Copy of Transmittals (2)

IF MATERIAL RECEIVED IS NOT AS LISTED, PLEASE NOTIFY US AT ONCE.

REMARKS Hilbon, I had to run hydrometers to get the USDA Classification
Don't know if that test is in your budget or not. If it is not I will just
bill for Sievers + Atterbergs. Let me know. [Sievers + Atterbergs = \$1050]

COPY TO _____

Sievers, Atterbergs + Hydrometers =
\$1450

Letter of Transmittal



Foth Infrastructure & Environment, LLC
2737 South Ridge Road, Suite 600
P.O. Box 12326
Green Bay, WI 54307-2326
(920) 497-2500 • Fax: (920) 497-8516

To: Bob Rouse
CQM Inc.

Date: 09/17/10	Project: 09B004
File Classification: 9000	Phase/Task: 6/61
RE: Soil Lab Testing- Birds Eye Foods LLC, Darien, WI	

We are sending you:

- Attached
 Under separate cover via _____ the following items:
 Shop drawings Prints Plans Samples
 Specifications Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
1 bag			TP-18, 1'-2' TP18-2
1 bag			TP-10, 5'-6' TP10-1
1 bag			TP-18, 7'-8' TP18-3
1 bag			TP-5, 2'-3' TP5-1
1 bag			TP-4, 1.4' - 2' TP4-2
1 bag			TP-6, 3'-4' TP6-2

These are transmitted as checked below:

- For your information No exceptions taken Resubmit copies
 For your use Make corrections noted Submit copies for distribution
 As requested Rejected (see remarks) Return corrected copies
 For bids due _____ 20 For review and comment
 Prints returned after loan to us Other Complete soil lab testing _____


Remarks:

Bob,

Please complete PL-LL and sieve analysis with P 200 on the six samples listed above. Provide USCS and USDA classification for all samples.

Call or e-mail me with any questions at 496-6829 or rmeister@foth.com

Copy to: REM files
Office Location: Green Bay, WI _____

Signed: 
Print name: Ron Meister

If enclosures are not as noted, kindly notify us at once.

Letter of Transmittal

To: Bob Rouse
CQM Inc.



Foth Infrastructure & Environment, LLC
2737 South Ridge Road, Suite 600
P.O. Box 12326
Green Bay, WI 54307-2326
(920) 497-2500 • Fax: (920) 497-8516

Date: 09/20/10	Project: 09B004
File Classification: 9000	Phase/Task: 6/61
RE: Soil Lab Testing- Birds Eye Foods LLC, Darien, WI	

We are sending you:

- Attached
 Under separate cover via _____ the following items:
 Shop drawings Prints Plans Samples
 Specifications Copy of letter Change order _____

COPIES	DATE	NO.	DESCRIPTION
1 bag		TP-4, 0'-1'	BE-TP-4 TP4-1
1 bag		TP-6, 0'-1'	BE-TP-6 TP6-1
1 bag		TP-9, 0'-1'	BE-TP-9 TP9
1 bag		TP-18, 0'-1'	BE-TP-18 TP18-1

These are transmitted as checked below:

- For your information No exceptions taken
 For your use Make corrections noted
 As requested Rejected (see remarks)
 For bids due _____ 20
 Prints returned after loan to us
 Resubmit _____ copies
 Submit _____ copies for distribution
 Return _____ corrected copies
 For review and comment
 Other Complete soil lab testing _____

Remarks:

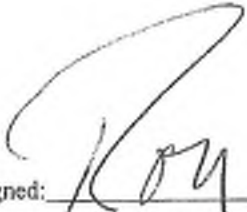
Bob,

Please complete PL-LL on the four samples listed above. Provide USCS and USDA classification for all samples. Call or e-mail me with any questions at 496-6829 or rmeister@foth.com

Birds Eye
~~9/20/10 samples~~
WL-39-10

Sieve
ATT

Copy to: REM files _____
Office Location: Green Bay, WI _____

Signed:  _____
Print name: Ron Meister _____

If enclosures are not as noted, kindly notify us at once.

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

GENERAL DATA:

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #4
Sample No:	BE-TP4-1
Depth of Sample:	0.0' - 1.0'
Date Received:	9/21/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	10YR 3/3
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 22-28, 2010
Test Performed By:	JLN
24 Hrs. Turn Around:	NO
Washed Gradation:	YES
Dry Weight of Soil (gms):	394.6

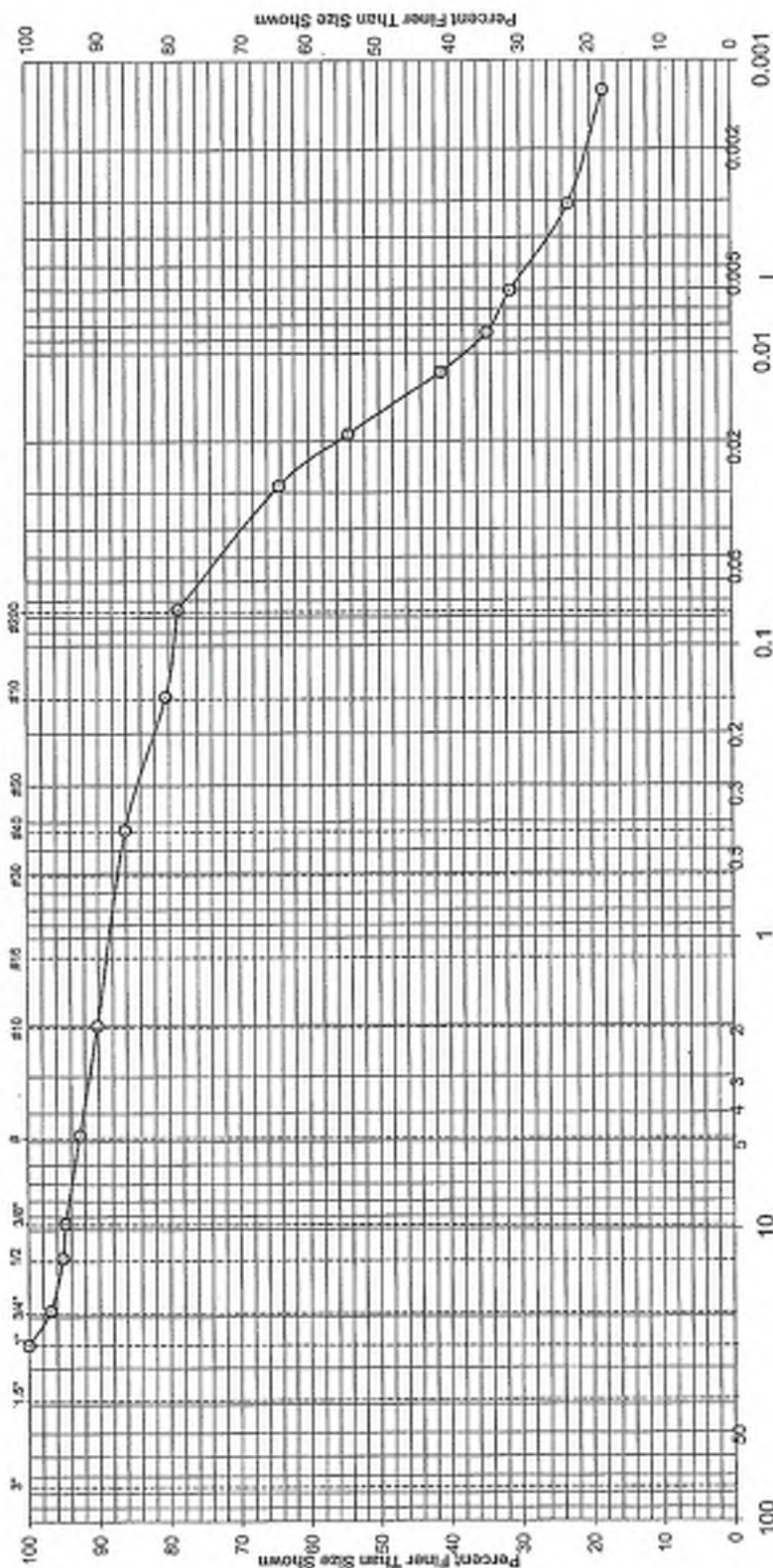
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"	0.0	0.0	100.0		
3/4"	12.3	3.1	96.9		
1/2"	6.8	1.7	98.2		
3/8"	1.8	0.5	94.7		
#4	8.0	2.0	92.7		
#10	10.2	2.6	90.1		
#40	15.8	4.0	86.1		
#100	22.4	5.7	80.4		
#200	7.0	1.8	78.6		

REVIEWED BY: *Robert R. House*
DATE REVIEWED: 10/10/10

Remarks:

GRAIN SIZE DISTRIBUTION CURVE

U.S. Standard Sieve Sizes



Soil Classification: LEAN CLAY W/ SAND, a little gravel, dark brown (CL) USDA Classification: SILT LOAM

Location Sampled: Test Pit #4

Elevation or Depth: 0.0' - 1.0'

Date Sampled: 8/31/10

Sample Number: BE-TP4-1

Sampled Moisture Content (%): 13.6

Report No.: TP4-1

Sample Source: Birds Eye - Darsen, Wisconsin

COM, INC.

Ashberg Limits: LL = 33.9

PL = 20.6

P_u = 13.3

Client: Foth Infrastructure & Environment, LLC

Munsell Color Code: 10YR 3/3

Project: Birds Eye Foods, LLC

Page: 2

Date Received: 9/21/10

Prepared by: Michael R. Andraschko

Date: 10/8/10

Coefficients: C_w =

Checked by: *Robert A. Louas*

Date: 10/10/10

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

GENERAL DATA:

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #4
Sample No:	BE-TP4-2
Depth of Sample:	1.4' - 2.0'
Date Received:	9/17/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	10YR 4/3
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 20-23, 2010
Test Performed By:	JLN

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 645.5

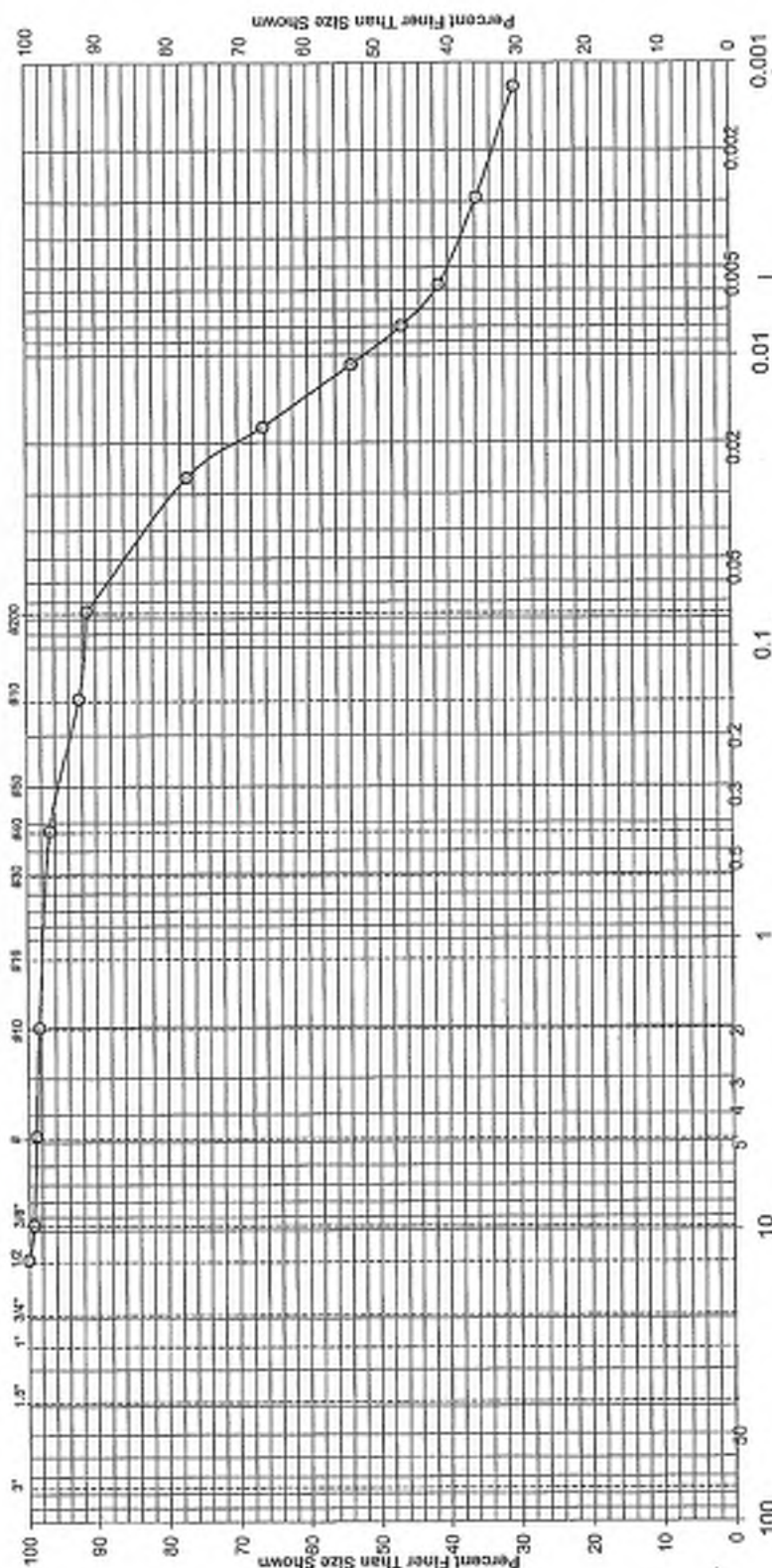
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	5.3	0.8	99.2		
#4	2.6	0.4	99.8		
#10	3.1	0.5	99.3		
#40	10.5	1.6	98.7		
#100	27.7	4.3	92.4		
#200	7.8	1.2	91.2		

REVIEWED BY:	<i>Robert A. Rouse</i>
DATE REVIEWED:	10/10/10

Remarks:

GRAIN SIZE DISTRIBUTION CURVE

U.S. Standard Sieve Sizes



Gavel		Sand	
Coarse	Fine	Medium	Clay
1.2%	0.5%	1.6%	51.2%
5.5%	5.5%	51.2%	40.0%

Soil Classification: LEAN CLAY, brown (CL) USDA Classification: SILT CLAY LOAM

Location Sampled: Test Pit #4	Elevation or Depth: 1.4' - 2.0'	Date Sampled: 9/8/10	
Sample Number: BE-TP4-2	Sampled Moisture Content (%): 18.2	Report No.: TP4-2	
Sample Source: Birds Eye - Dierin, Wisconsin			
Alterberg Limits: LL = 45.3	PL = 21.0	PI = 24.3	
Munsell Color Code: 10YR 4/3	Client: Foth Infrastructure & Environment, LLC		
Date Received: 9/17/10	Project: Birds Eye Foods, LLC		
Coefficient: Co =	Prepared by: Michael R. Andruschko		
	Checked by: Robert A. Porecki		
	Date: 10/10/10		
	Page: 2		
	Date: 10/8/10		

CQM, INC.

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

GENERAL DATA:

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #5
Sample No.:	BE-TP-5
Depth of Sample:	2.0' - 3.0'
Date Received:	9/17/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	10YR 4/4
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 20-23, 2010
Test Performed By:	JLN

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms):	415.8
---------------------------	-------

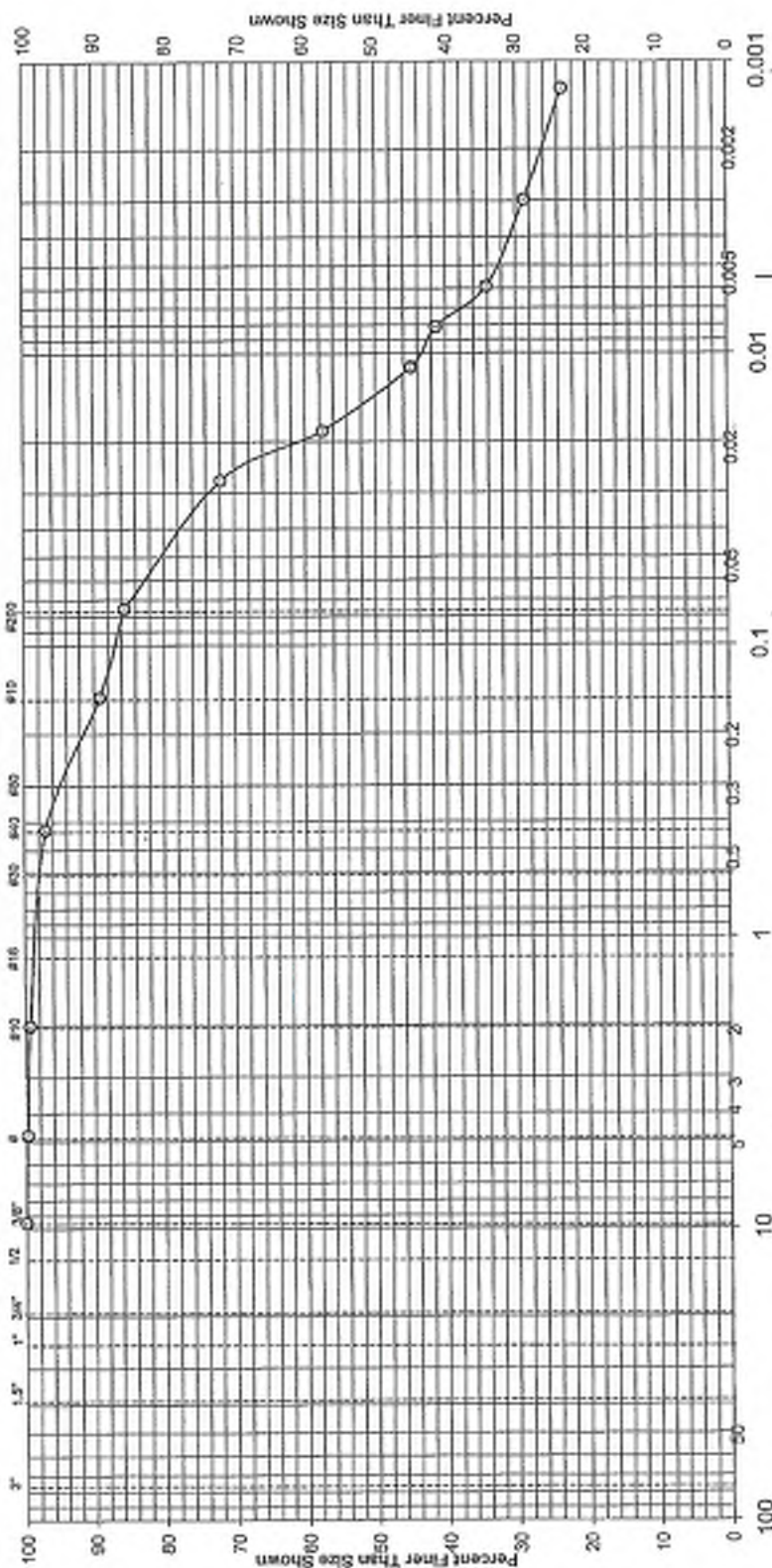
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"	0.0	0.0	100.0		
#4	1.0	0.2	99.8		
#10	2.2	0.5	99.3		
#40	9.4	2.3	97.0		
#100	33.0	7.9	89.1		
#200	14.4	3.5	85.6		

REVIEWED BY:	<i>Robert A. Ponce</i>
DATE REVIEWED:	10/10/10

Remarks:

GRAIN SIZE DISTRIBUTION CURVE

U.S. Standard Sieve Sizes



Gravel		Sand		Silt		Clay	
Coarse	Fine	Coarse	Medium	Fine	Coarse	Fine	Coarse
0.2%	0.2%	0.6%	2.3%	11.4%	53.1%	32.5%	32.5%

Soil Classification: LEAN CLAY, brown (CL) USDA Classification: SILT LOAM / SILT CLAY LOAM

Location Sampled: Test Pit #5	Elevation or Depth: 2.0' - 3.0'	Date Sampled: 8/8/10	Report No.: TP-5
Sample Number: BE-TP-5	Sampled Moisture Content (%): 25.1	COM, INC.	
Sample Source: Birds Eye - Darden, Wisconsin	Client: Foth Infrastructure & Environment, LLC	Project: Birds Eye Foods, LLC	Page: 2
LL= 35.4 PL= 18.1 P ₁₀ = 17.3	Prepared by: Michael R. Andreschko	Date: 10/10/10	
Munsell Color Code: 10YR 4/4	Checked by: Robert P. Rowse		
Date Received: 8/17/10			
Coefficients: C _u = C _w =			

CQM, INC.**SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)****GENERAL DATA:**

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #6
Sample No:	BE-TP6-1
Depth of Sample:	0.0' - 1.0'
Date Received:	9/21/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	10YR 3/1
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 22-28, 2010
Test Performed By:	JLN
24 Hrs. Turn Around:	NO
Washed Gradation:	YES
Dry Weight of Soil (gms):	324.2

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	1.0	0.3	99.7		
#4	4.0	1.2	98.5		
#10	4.1	1.3	97.2		
#40	18.0	5.6	91.6		
#100	57.6	17.8	73.8		
#200	21.9	6.8	67.0		

REVIEWED BY:	<i>Robert A. Poirer</i>
DATE REVIEWED:	10/10/10

Remarks:

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

GENERAL DATA:

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #6
Sample No:	BE-TP6-2
Depth of Sample:	3.0' - 4.0'
Date Received:	9/17/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	10YR 5/6
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 20-22, 2010
Test Performed By:	KRV

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms): 665.8

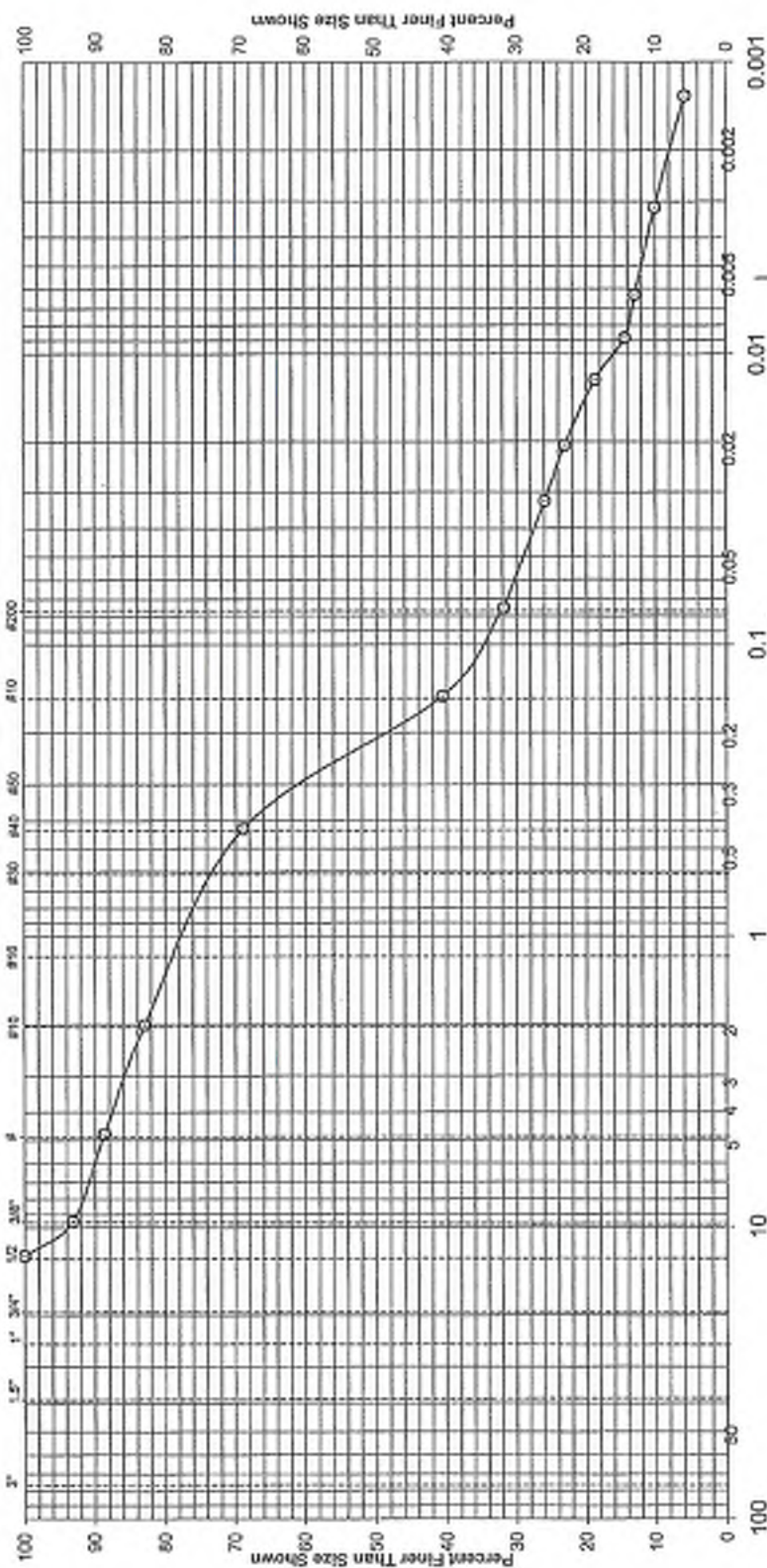
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	45.0	6.9	93.1		
#4	29.8	4.5	88.6		
#10	38.0	5.7	82.9		
#40	93.7	14.1	68.8		
#100	188.4	28.3	40.5		
#200	58.1	8.7	31.8		

REVIEWED BY:	<i>Robert A. Brown</i>
DATE REVIEWED:	10/10/10

Remarks:

GRAIN SIZE DISTRIBUTION CURVE

U.S. Standard Sieve Sizes



Gravel	Sand	Silt	Clay
Coarse	Medium	Fine	Clay
Fine	Medium	Fine	Clay
11.4%	14.1%	37.0%	12.0%
5.7%	14.1%	19.8%	12.0%

Soil Classification: SLTY SAND, fine to medium grained, a little gravel, yellowish brown (SM) USDA Classification: SANDY LOAM

Location Sampled: Test Pit #8 Elevation or Depth: 3.0' - 4.0' Date Sampled: 9/8/10

Sample Number: BE-TP8-2 Sampled Moisture Content (%): 6.5 Report No.: TP8-2

CQM, INC.

Client: Foth Infrastructure & Environment, LLC

Munsell Color Code: 10YR 5/8

Date Received: 9/17/10

Coefficients: Cc= Cu=

Page: 2
Date: 10/8/10
Date: 10/10/10

Prepared by: Michael R. Andraschko
Checked by: Robert A. Brown

CQM, INC.**SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)****GENERAL DATA:**

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #9
Sample No:	BE-TP-9
Depth of Sample:	0.0' - 1.0'
Date Received:	9/21/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	10YR 4/2
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 22-28, 2010
Test Performed By:	JLN

24 Hrs. Turn Around:	NO
Washed Gradation:	YES

Dry Weight of Soil (gms):	321.6
---------------------------	-------

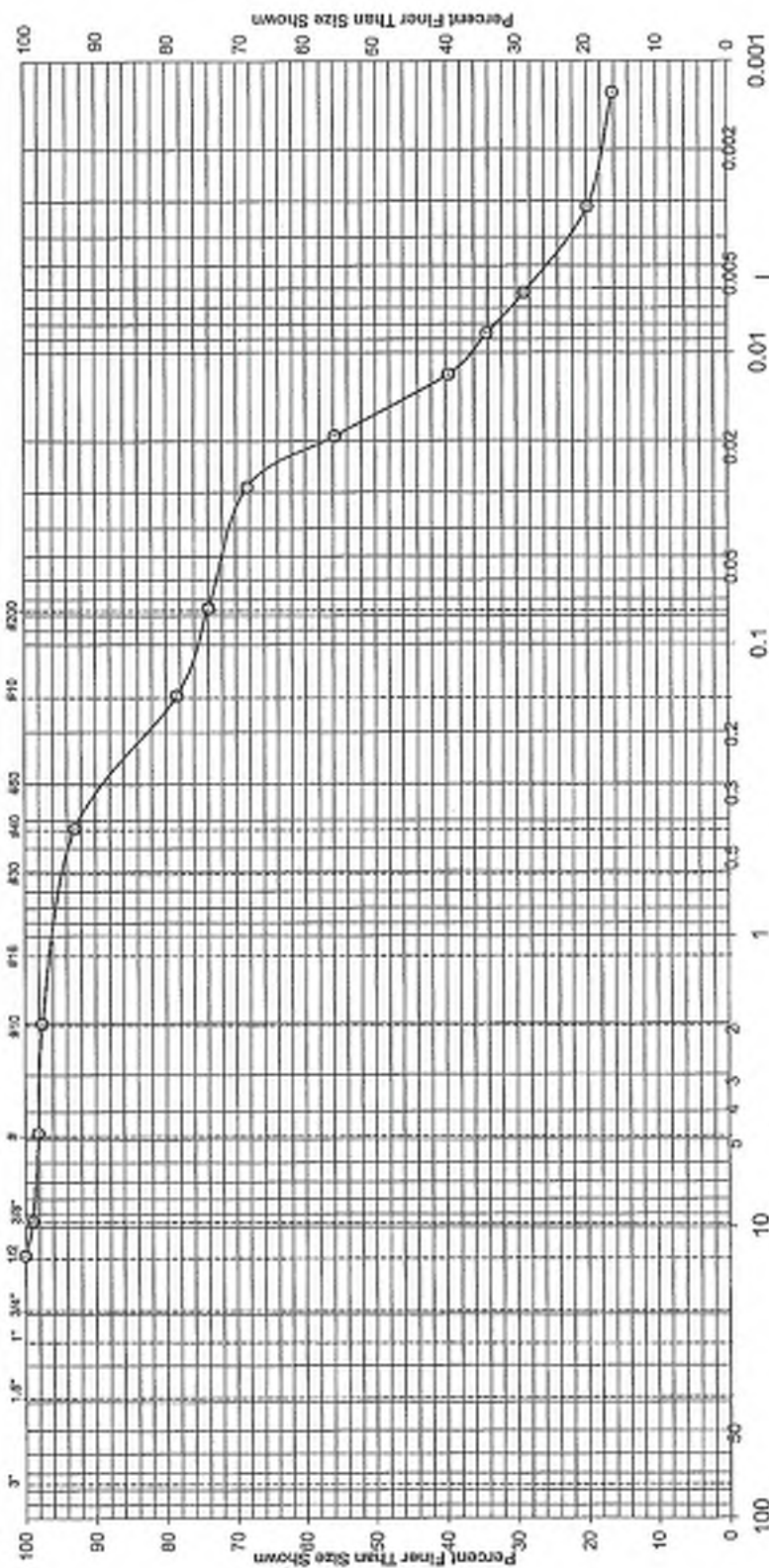
Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	3.6	1.1	98.9		
#4	2.7	0.8	98.1		
#10	2.0	0.6	97.5		
#40	15.2	4.7	92.8		
#100	46.3	14.4	78.4		
#200	14.4	4.5	73.9		

REVIEWED BY:	<i>Robert R. Rouse</i>
DATE REVIEWED:	10/10/10

Remarks:

GRAIN SIZE DISTRIBUTION CURVE

U.S. Standard Sieve Sizes



Gravel		Sand		Silt		Clay	
Coarse	Fine	Coarse	Fine				
	2.0%	0.6%	18.9%	48.3%		25.8%	

Soil Classification: LEAN CLAY W/SAND, dark grayish brown (CL)

USDA Classification: SILT LOAM

Location Sampled: Test Pit #9	Elevation or Depth: 0.0' - 1.0'	Date Sampled: 9/30/10
Sample Number: BE-TP-6	Sampled Moisture Content (%): 14.8	Report No.: TP-9
Sample Source: Birds Eye - Darion, Wisconsin	COM, INC.	
LL= 32.6	PI= 22.0	PI= 10.6
Munsell Color Code: 10YR 4/2	Client: Foth Infrastructure & Environment, LLC	Page: 2
Date Received: 8/21/10	Project: Birds Eye Foods, LLC	Date: 10/18/10
Coefficients: C _u	Prepared by: Michael R. Andraschko	Date: 10/18/10
	Checked by: Robert R. Kovar	

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

GENERAL DATA:

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #10
Sample No:	BE-TP-10
Depth of Sample:	5.0' - 6.0'
Date Received:	9/17/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	2.5Y 4/4
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 20-23, 2010
Test Performed By:	JLN
24 Hrs. Turn Around:	NO
Washed Gradation:	YES
Dry Weight of Soil (gms):	273.5

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"					
3/8"					
#4	0.0	0.0	100.0		
#10	1.0	0.4	99.6		
#40	5.6	2.0	97.6		
#100	4.2	1.5	98.1		
#200	1.3	0.5	99.5		

REVIEWED BY:	<i>Robert A. Rowe</i>
DATE REVIEWED:	10/10/10

Remarks:

CQM, INC.

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

GENERAL DATA:

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #18
Sample No:	BE-TP18-1
Depth of Sample:	0.0' - 1.0'
Date Received:	9/21/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	10YR 4/2
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 22-28, 2010
Test Performed By:	JLN
24 Hrs. Turn Around:	<input type="checkbox"/> NO
Washed Gradation:	<input type="checkbox"/> YES
Dry Weight of Soil (gms):	318.5

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"	0.0	0.0	100.0		
1/2"	7.4	2.3	97.7		
3/8"	1.3	0.4	97.3		
#4	3.2	1.0	96.3		
#10	5.4	1.7	94.6		
#40	22.6	7.1	87.5		
#100	70.8	22.2	65.3		
#200	17.1	5.4	59.9		

REVIEWED BY:	<i>Robert R. Poulos</i>
DATE REVIEWED:	10/10/10

Remarks:

CQM, INC.**SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)****GENERAL DATA:**

Client:	Foth Infrastructure & Environment, LLC
Project:	Birds Eye Foods, LLC
Location Sampled:	Test Pit #18
Sample No:	BE-TP18-2
Depth of Sample:	1.0' - 2.0'
Date Received:	9/17/10
Sample Designated For:	Soil Classification
Source of Sample:	Birds Eye - Darien, Wisconsin
Munsell Color Code:	10YR 3/2
Date Sampled:	9/9/10

LABORATORY DATA:

Date Tested:	September 20-23, 2010
Test Performed By:	JLN
24 Hrs. Turn Around:	NO
Washed Gradation:	YES
Dry Weight of Soil (gms):	326.6

Sieve Size	Weight Retained	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"					
3/4"					
1/2"	0.0	0.0	100.0		
3/8"	1.7	0.5	99.5		
#4	0.2	0.1	99.4		
#10	0.7	0.2	99.2		
#40	6.8	2.1	97.1		
#100	23.2	7.1	90.0		
#200	8.7	2.7	87.3		

REVIEWED BY:	<i>Robert A. Davis</i>
DATE REVIEWED:	10/10/10

Remarks:

Sieve	Size	Weight Retained	% Retained	% Passing	Project Specification	Source of Specification
3"						
1 1/2"						
1"						
3/4"						
1/2"						
3/8"						
#4	0.0	0.0	0.0	100.0		
#10	1.2	0.3	99.7			
#40	7.5	1.9	97.8			
#100	29.8	7.5	90.3			
#200	10.5	2.7	87.8			

REVIEWED BY: *Robert A. Larson* DATE REVIEWED: 10/10/10

Remarks:

Client: Foith Infrastructure & Environment, LLC
 Project: Birds Eye Foods, LLC
 Location Sampled: Test Pit #18
 Sample No: BE-TP18-3
 Depth of Sample: 7.0' - 8.0'
 Date Received: 9/17/10
 Sample Designated For: Soil Classification
 Source of Sample: Birds Eye - Darden, Wisconsin
 Munsell Color Code: 10YR 4/3
 Date Sampled: 9/9/10

GENERAL DATA:

LABORATORY DATA:

Date Tested: September 20-23, 2010
 Test Performed By: JLN

24 Hrs. Turn Around: NO
 Washed Gradation: YES

Dry Weight of Soil (gms): 385.0

SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES (ASTM D422)

COM, INC.

Foth & Van Dyke

Client: The Larsen Company Scope I.D.: 93L016
Project: Environmental Impact Evaluation Page: 1
Prepared by: Perry Kepler Date: 12/21/93
Checked by: James L Bernardi Date: 12/29/93

**REPORT OF:
SIEVE ANALYSIS OF COARSE TO FINE AGGREGATES**

Contractor:

Report Number: 43

Test Performed in General Accordance with: ASTM: C136 and C117

General Data:

Sample Location: _____ Date Sampled: 10/26/93
Sample Number: WD-3P Date Received: 12/21/93
Depth of Sample: 24' - 26' Source of Sample: Soil Borings - Darien Site
Sampled by: Rebecca Koepke of FVD Munsell Color Code: 2.5 Y . 5/3
Sample Designated for: Classification

Laboratory Data:

Date Tested: December 21-22, 1993 24 hrs. turn-around Yes No
Test Performed by: POK Washed Gradation Yes No
Weight of Test Sample 579.8 Grams

Sieve Size	Weight Retained (gms)	% Retained	% Passing	Project Specification % Passing by Weight	Source of Specification
3"					
1 1/2"					
1"	0	0	100		
3/4"	50.4	8.7	91.3		
1/2"	58.6	10.1	81.3		
3/8"	26.5	4.6	76.6		
#4	50.4	8.7	67.9		
10	54.0	9.3	58.6		
40	195.9	33.8	24.8		
100	99.2	17.1	7.7		
200	14.9	2.6	5.1		
Pan	29.1	5.1			

Remarks:

Attachment 4



42

PtA

Or

WhG2

EgA

WhB

WhBGP

PtB

EQG 4

Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>).

Engineering Properties—Walworth County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>			<i>Pct</i>	<i>Pct</i>					<i>Pct</i>		
Dt—Drummer silt loam, gravelly substratum														
Drummer	100	B/D	0-9	Silt loam	ML	A-7-5	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	90-95-100	38-45-51	11-15-18
			9-28	Silty clay loam	CL	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	100-100-100	80-90-100	38-43-49	19-22-25
			28-40	Clay loam, silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	95-98-100	85-93-100	50-65-80	32-38-44	15-19-23
			40-60	Gravelly coarse sand, sand	SP-SM	A-1-b	—	0- 3- 5	40-68-95	30-60-90	30-40-50	5-10- 15	0-17 -21	NP-2 -4
EgA—Elburn silt loam, gravelly substratum, 1 to 3 percent slopes														
Elburn	100	B/D	0-12	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	100-100-100	80-90-100	35-40-45	14-16-18
			12-36	Silty clay loam, silt loam	CL	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	100-100-100	80-90-100	35-41-47	17-21-25
			36-40	Sandy loam	SC-SM	A-2-4	0- 0- 0	0- 0- 0	90-95-100	80-88-95	60-70-80	25-35-45	16-22-27	2-6 -10
			40-60	Gravelly coarse sand, sand and gravel	SP-SM	A-1-b	0- 0- 0	0- 3- 5	40-68-95	30-58-85	30-40-50	5-10- 15	0-17 -21	NP-2 -4

Engineering Properties--Walworth County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>Pct</i>	<i>Pct</i>					<i>Pct</i>	
GP--Gravel pit														
Pits, gravel	99		0-10	Stratified extremely gravelly coarse sand to very gravelly sand	—	—	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	0-0-0	—	—
PtA--Plano silt loam, gravelly substratum, 0 to 2 percent slopes														
Plano, gravelly substratum	85	B	0-16	Silt loam	ML	A-6, A-7-6	0-0-0	0-0-0	100-100-100	100-100-100	96-99-100	90-95-100	35-41-48	12-15-18
			16-46	Silty clay loam, silt loam	CL	A-7, A-7-6	0-0-0	0-0-0	100-100-100	100-100-100	95-99-100	88-95-100	31-43-49	13-22-25
			46-57	Loam, sandy clay loam, gravelly clay loam	GC, SC, CL	A-7, A-6	0-0-0	0-3-4	59-82-100	58-81-100	47-76-100	33-57-84	28-37-46	12-18-25
			57-79	Very gravelly sand, sand, stratified gravelly sand	GP-GM, GP, SP, SP-SM	A-1, A-3	0-0-0	0-4-7	34-69-100	31-68-100	22-53-84	3-9-17	0-0-14	NP
WhB--Warsaw silt loam, 2 to 6 percent slopes														
Warsaw	85	B	0-13	Silt loam	CL-ML, CL, ML	A-4, A-6	0-0-0	0-0-0	100-100-100	100-100-100	89-94-100	73-78-84	30-38-46	9-13-17
			13-30	Sandy clay loam, loam	CL, SC	A-6	0-0-0	0-0-0	92-97-100	92-97-100	74-84-93	38-47-56	28-36-44	11-16-21
			30-79	Stratified sand to gravel	GP, SP, SP-SM, GP-GM	A-1, A-1-a	0-0-0	7-18-22	30-49-85	27-47-84	14-27-54	3-6-17	0-0-21	NP-0-4

Engineering Properties--Walworth County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>Pct</i>	<i>Pct</i>					<i>Pct</i>	
WhC2--Warsaw silt loam, 6 to 12 percent slopes, eroded														
Warsaw, eroded	85	B	0-10	Silt loam	ML, CL-ML	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	89-94-100	73-78-84	30-38-46	9-13-17
			10-36	Sandy clay loam, loam	SC, CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	81-87-93	41-49-56	28-36-44	11-16-21
			36-79	Stratified sand to gravel	GP-GM	A-1-a	0- 0- 0	7-18- 22	30-49-85	27-47-84	14-27-54	3- 6- 17	0-0 -21	NP-0 -4

Data Source Information

Soil Survey Area: Walworth County, Wisconsin
 Survey Area Data: Version 12, Sep 25, 2015

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (K_{sat}), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Physical Soil Properties—Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
Dt—Drummer silt loam, gravelly substratum														
Drummer	0-9	- 7-	-70-	18-23- 27	1.10-1.20 -1.30	4.00-9.00-14.00	0.22-0.23-0.24	0.0- 1.5- 2.9	5.0- 6.0- 7.0	.32	.32	5	6	48
	9-28	- 7-	-62-	27-31- 35	1.20-1.33 -1.45	4.00-9.00-14.00	0.18-0.19-0.20	3.0- 4.5- 5.9	0.5- 1.3- 2.0	.37	.37			
	28-40	-27-	-45-	22-28- 33	1.30-1.43 -1.55	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.43	.43			
	40-60	—	—	1- 5- 8	1.80-1.95 -2.10	141.00-141.00-141.00	0.02-0.03-0.04	0.0- 1.5- 2.9	0.0- 0.3- 0.5					
EgA—Elburn silt loam, gravelly substratum, 1 to 3 percent slopes														
Elburn	0-12	- 7-	-69-	22-25- 27	1.10-1.20 -1.30	4.00-9.00-14.00	0.22-0.23-0.24	0.0- 1.5- 2.9	2.0- 3.0- 4.0	.32	.32	5	6	48
	12-36	- 7-	-63-	25-30- 35	1.20-1.30 -1.40	4.00-9.00-14.00	0.18-0.20-0.22	3.0- 4.5- 5.9	0.0- 0.5- 1.0	.43	.43			
	36-40	-67-	-23-	5-10- 15	1.60-1.68 -1.75	14.00-28.00-42.00	0.11-0.12-0.13	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.28	.28			
	40-60	—	—	2- 5- 8	1.80-1.95 -2.10	141.00-141.00-141.00	0.02-0.03-0.04	0.0- 1.5- 2.9	0.0- 0.1- 0.2					

Physical Soil Properties--Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
GP—Gravel pit														
Pits, gravel	0-10	-94-	- 4-	0- 2- 5	-1.65-	-92.00-	—	- 0.8-	- 0.1-	.02	.05		2	134
PtA—Plano silt loam, gravelly substratum, 0 to 2 percent slopes														
Plano, gravelly substratum	0-16	1- 7- 10	63-70- 80	18-23- 27	1.27-1.34 -1.41	4.23-9.17-14.11	0.22-0.23-0.24	2.0- 3.0- 3.8	3.0- 4.0- 5.0	.37	.37	4	6	48
	16-46	1- 7- 10	55-62- 74	20-31- 35	1.33-1.39 -1.45	4.23-9.17-14.11	0.18-0.20-0.22	2.4- 4.4- 5.3	0.5- 1.3- 2.0	.37	.37			
	46-57	30-32- 70	12-42- 52	18-27- 35	1.52-1.61 -1.70	4.23-9.17-14.11	0.14-0.16-0.19	1.1- 2.9- 5.1	0.0- 0.3- 0.5	.32	.32			
	57-79	85-90- 95	2- 7- 14	0- 3- 3	1.61-1.64 -1.67	20.00-80.57-141.14	0.02-0.05-0.07	0.0- 0.2- 0.2	0.0- 0.3- 0.5	.02	.02			
WhB—Warsaw silt loam, 2 to 6 percent slopes														
Warsaw	0-13	25-26- 30	50-54- 60	15-20- 24	1.24-1.28 -1.32	4.23-9.17-14.11	0.20-0.22-0.24	1.6- 2.5- 3.4	2.0- 3.5- 5.0	.37	.37	3	6	48
	13-30	52-59- 65	5-18- 31	17-24- 30	1.45-1.52 -1.60	4.23-9.17-14.11	0.16-0.18-0.19	1.7- 3.0- 4.3	0.5- 1.3- 2.0	.24	.24			
	30-79	85-90- 95	0- 7- 13	2- 3- 8	1.56-1.63 -1.70	141.14-423.42-705.00	0.02-0.03-0.04	0.0- 0.1- 0.6	0.0- 0.5- 1.0	.02	.02			

Physical Soil Properties--Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
WhC2— Warsaw silt loam, 6 to 12 percent slopes, eroded														
Warsaw, eroded	0-10	25-26- 30	50-54- 60	15-20- 24	1.35-1.40 -1.44	4.23-9.17-14.11	0.20-0.22-0.24	1.6- 2.5- 3.4	2.0- 3.5- 5.0	.32	.32	3	6	48
	10-36	52-59- 65	5-18- 31	17-24- 30	1.45-1.52 -1.60	4.23-9.17-14.11	0.16-0.18-0.19	1.7- 3.0- 4.3	0.5- 1.3- 2.0	.24	.24			
	36-79	85-90- 95	0- 7- 13	2- 3- 8	1.56-1.63 -1.70	141.14-423.42-705.00	0.02-0.03-0.04	0.0- 0.1- 0.6	0.0- 0.5- 1.0	.02	.02			

Data Source Information

Soil Survey Area: Walworth County, Wisconsin
 Survey Area Data: Version 12, Sep 25, 2015

Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

Report—Chemical Soil Properties

Chemical Soil Properties—Walworth County, Wisconsin								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
Dt—Drummer silt loam, gravelly substratum								
Drummer	0-9	18-25	—	5.6-7.3	0	—	—	—
	9-28	19-27	—	5.6-7.3	0	—	—	—
	28-40	15-22	—	5.6-7.3	0	—	—	—
	40-60	0.8-5.8	—	6.6-8.4	0-25	—	—	—
EgA—Elburn silt loam, gravelly substratum, 1 to 3 percent slopes								
Elburn	0-12	19-24	—	5.6-7.8	0-20	—	—	—
	12-36	17-23	—	5.6-7.8	0-20	—	—	—
	36-40	3.8-11	—	6.1-8.4	0-20	—	—	—
	40-60	1.6-5.8	—	6.1-8.4	0-20	—	—	—
GP—Gravel pit								
Pits, gravel	0-10	—	—	—	0	0	0	0
PtA—Plano silt loam, gravelly substratum, 0 to 2 percent slopes								
Plano, gravelly substratum	0-16	16-23	—	6.1-7.3	0	0	0.0-2.0	0
	16-46	16-28	—	5.6-7.3	0	0	0.0-2.0	0
	46-57	13-27	—	5.6-7.3	0	0	0.0-2.0	0
	57-79	0.1-2.9	—	7.4-8.4	0-10	0	0.0-2.0	0

Chemical Soil Properties--Walworth County, Wisconsin								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
WhB--Warsaw silt loam, 2 to 6 percent slopes								
Warsaw	0-13	13-22	—	5.6-7.3	0	0	0.0-2.0	0
	13-30	14-25	—	5.1-6.5	0	0	0.0-2.0	0
	30-79	1.8-7.3	—	7.9-8.4	15-25	0	0.0-2.0	0
WhC2--Warsaw silt loam, 6 to 12 percent slopes, eroded								
Warsaw, eroded	0-10	13-22	—	5.6-7.3	0	0	0.0-2.0	0
	10-36	14-25	—	5.1-6.5	0	0	0.0-2.0	0
	36-79	1.8-7.3	—	7.9-8.4	15-25	0	0.0-2.0	0

Data Source Information

Soil Survey Area: Walworth County, Wisconsin

Survey Area Data: Version 12, Sep 25, 2015



Engineering Properties

This table gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Hydrologic soil group is a group of soils having similar runoff potential under similar storm and cover conditions. The criteria for determining Hydrologic soil group is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Listing HSGs by soil map unit component and not by soil series is a new concept for the engineers. Past engineering references contained lists of HSGs by soil series. Soil series are continually being defined and redefined, and the list of soil series names changes so frequently as to make the task of maintaining a single national list virtually impossible. Therefore, the criteria is now used to calculate the HSG using the component soil properties and no such national series lists will be maintained. All such references are obsolete and their use should be discontinued. Soil properties that influence runoff potential are those that influence the minimum rate of infiltration for a bare soil after prolonged wetting and when not frozen. These properties are depth to a seasonal high water table, saturated hydraulic conductivity after prolonged wetting, and depth to a layer with a very slow water transmission rate. Changes in soil properties caused by land management or climate changes also cause the hydrologic soil group to change. The influence of ground cover is treated independently. There are four hydrologic soil groups, A, B, C, and D, and three dual groups, A/D, B/D, and C/D. In the dual groups, the first letter is for drained areas and the second letter is for undrained areas.

The four hydrologic soil groups are described in the following paragraphs:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

References:

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Report—Engineering Properties

Absence of an entry indicates that the data were not estimated. The asterisk "*" denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007 (<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>).

Engineering Properties—Walworth County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>			<i>Pct</i>	<i>Pct</i>					<i>Pct</i>		
Dt—Drummer silt loam, gravelly substratum														
Drummer	100	B/D	0-9	Silt loam	ML	A-7-5	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	90-95-100	38-45-51	11-15-18
			9-28	Silty clay loam	CL	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	100-100-100	80-90-100	38-43-49	19-22-25
			28-40	Clay loam, silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	95-98-100	85-93-100	50-65-80	32-38-44	15-19-23
			40-60	Gravelly coarse sand, sand	SP-SM	A-1-b	—	0- 3- 5	40-68-95	30-60-90	30-40-50	5-10- 15	0-17 -21	NP-2 -4
FgB—Flagg silt loam, 2 to 6 percent slopes														
Flagg	100	B	0-16	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-98-100	90-95-100	33-38-43	14-16-18
			16-46	Silty clay loam	CL	A-7-6	0- 0- 0	0- 0- 0	100-100-100	95-98-100	95-98-100	90-95-100	37-41-46	19-22-25
			46-60	Clay loam, sandy clay loam, silty clay loam	CL	A-6	0- 0- 0	0- 0- 0	95-98-100	90-95-100	85-93-100	60-78-95	30-35-39	15-18-21

Engineering Properties--Walworth County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>Pct</i>	<i>Pct</i>					<i>Pct</i>	
FsB--Fox silt loam, 2 to 6 percent slopes														
Fox	85	B	0-7	Silt loam	ML, CL-ML, CL	A-6, A-4	0- 0- 0	0- 0- 0	95-96-100	94-96-100	83-89-98	66-72-81	23-28-34	6-8 -11
			7-21	Silty clay loam, silt loam	CL	A-7, A-6	0- 0- 0	0- 0- 0	90-95-100	90-95-100	84-94-100	72-84-98	28-37-46	12-19-25
			21-31	Sandy clay loam, gravelly loam	GC, CL, SC	A-2, A-7, A-6	0- 0- 0	0- 3- 4	71-85-100	70-84-100	54-73-95	28-43-61	28-37-46	12-18-25
			31-79	Stratified sand to gravel, gravelly sand, very gravelly coarse sand	SP, GP, GP-GM, SM, SP-SM	A-1, A-2, A-3, A-1-b	0- 0- 0	0- 4- 7	51-71-100	49-70-100	30-47-71	4-10- 18	0-0 -16	NP-0 -1
MmA--Matherton silt loam, 1 to 3 percent slopes														
Matherton	100	B/D	0-11	Silt loam	CL	A-4	0- 0- 0	0- 3- 5	90-95-100	75-88-100	70-85-100	50-70-90	26-33-39	7-10-13
			11-36	Sandy clay loam, clay loam, loam	CL	A-6	0- 0- 0	0- 3- 5	85-90-95	60-85-90	50-70-90	30-53-75	31-38-46	13-19-25
			36-60	Error, sand	SP-SM	A-1-b	0- 0- 0	0- 5- 10	40-70-100	25-50-75	20-38-55	0- 8- 15	0-17 -23	NP-2 -6
MwC2--Miami loam, 6 to 12 percent slopes, eroded														
Miami	100	B	0-10	Loam	CL	A-6	0- 0- 0	0- 1- 2	95-98-100	90-95-100	76-86-95	55-65-75	32-37-42	13-16-19
			10-30	Clay loam	CL	A-7-6	0- 1- 1	0- 3- 5	90-95-100	90-93-95	80-88-95	60-70-80	37-41-46	19-22-25
			30-60	Loam	CL	A-6	0- 1- 1	0- 3- 5	90-95-100	90-93-95	75-83-90	55-65-75	24-30-36	9-14-18

Engineering Properties--Walworth County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>Pct</i>	<i>Pct</i>					<i>Pct</i>	
MwD2--Miami loam, 12 to 20 percent slopes, eroded														
Miami	100	B	0-10	Loam	CL	A-6	0- 0- 0	0- 1- 2	95-98-100	90-95-100	76-86-95	55-65-75	32-37-42	13-16-19
			10-30	Clay loam	CL	A-7-6	0- 1- 1	0- 3- 5	90-95-100	90-93-95	80-88-95	60-70-80	37-41-46	19-22-25
			30-60	Loam	CL	A-6	0- 1- 1	0- 3- 5	90-95-100	90-93-95	75-83-90	55-65-75	24-30-36	9-14-18
MyC2--Miami silt loam, 6 to 12 percent slopes, eroded														
Miami	100	B	0-10	Silt loam	CL	A-6	0- 0- 0	0- 1- 2	95-98-100	90-95-100	76-86-95	55-65-75	32-37-42	13-16-19
			10-30	Clay loam	CL	A-7-6	0- 1- 1	0- 3- 5	90-95-100	90-93-95	80-88-95	60-70-80	37-41-46	19-22-25
			30-60	Loam	CL	A-6	0- 1- 1	0- 3- 5	90-95-100	90-93-95	75-83-90	55-65-75	24-30-36	9-14-18
PeB--Pecatonica silt loam, 2 to 6 percent slopes														
Pecatonica	100	B	0-11	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	85-90-95	29-35-41	12-14-17
			11-24	Silt loam, silty clay loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	85-90-95	30-35-41	13-17-21
			24-42	Sandy clay loam, clay loam, loam	CL	A-7-6	0- 1- 1	0- 3- 5	90-95-100	90-95-100	80-85-90	60-75-90	35-41-46	17-21-25
			42-60	Sandy loam, loam	CL	A-6	0- 1- 1	0- 3- 5	90-95-100	90-95-100	60-75-90	30-50-70	25-30-34	9-12-16

Engineering Properties--Walworth County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>Pct</i>	<i>Pct</i>					<i>Pct</i>	
SeA--St. Charles silt loam, gravelly substratum, 0 to 2 percent slopes														
St. Charles, gravelly substratum	90	B	0-15	Silt loam	ML	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-96-100	35-41-48	12-15-18
			15-49	Silty clay loam, silt loam	CL	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	94-99-100	89-96-100	31-42-47	13-22-25
			49-57	Gravelly clay loam, gravelly sandy clay loam	CL	A-6	0- 0- 0	0- 0- 1	59-71-78	58-70-77	57-70-77	43-53-68	36-37-50	19-19-29
			57-79	Stratified sand to gravel, gravelly sand	SM	A-2-4	0- 0- 0	0- 0- 0	58-80-92	57-79-92	32-54-76	7-15-22	0-16-22	NP-1-6
SeB--St. Charles silt loam, gravelly substratum, 2 to 6 percent slopes														
St. Charles, gravelly substratum	85	B	0-12	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	95-99-100	90-96-100	30-36-43	12-15-19
			12-49	Silty clay loam, silt loam	CL	A-7-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	94-99-100	89-96-100	31-42-47	13-22-25
			49-57	Gravelly clay loam, gravelly sandy clay loam	CL	A-6	0- 0- 0	0- 0- 1	59-71-78	58-70-77	57-70-77	43-53-68	36-37-50	19-19-29
			57-79	Gravelly sand, stratified sand to gravel	SM	A-2-4	0- 0- 0	0- 0- 0	58-80-92	57-79-92	32-54-76	7-15-22	0-16-22	NP-1-6

Engineering Properties--Walworth County, Wisconsin														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>Pct</i>	<i>Pct</i>					<i>Pct</i>	
WvC2--Westville silt loam, 6 to 12 percent slopes, eroded														
Westville	100	B	0-11	Silt loam	CL	A-6	0- 0- 0	0- 0- 0	100-100-100	100-100-100	90-95-100	70-80-90	29-36-43	12-15-18
			11-50	Clay loam, sandy clay loam	CL	A-7-6	0- 0- 0	0- 3- 5	90-95-100	90-95-100	80-85-90	60-75-90	35-41-47	17-21-25
			50-60	Sandy loam, loam	CL	A-6	0- 1- 1	0- 3- 5	90-95-100	90-95-100	60-75-90	30-50-70	25-29-33	9-12-15
Ww--Wet alluvial land														
Wet alluvial land	100		0-15	Loam	CL, OL, ML	A-4, A-6, A-7	0- 0- 0	0- 0- 0	90-95-100	90-95-100	80-90-100	70-83-95	37-43-49	13-16-18
			15-35	Loam, silty clay loam, clay loam	CL	A-6, A-7	0- 0- 0	0- 0- 0	95-98-100	90-95-100	80-90-100	70-83-95	31-41-51	12-18-25
			35-60	Stratified sandy loam to silty clay loam	CL, CL-ML	A-4, A-6, A-7	0- 0- 0	0- 0- 0	80-90-100	80-90-100	80-90-100	60-78-95	29-35-49	12-15-25

Data Source Information

Soil Survey Area: Walworth County, Wisconsin
 Survey Area Data: Version 12, Sep 25, 2015

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (K_{sat}), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Physical Soil Properties—Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
Dt—Drummer silt loam, gravelly substratum														
Drummer	0-9	- 7-	-70-	18-23- 27	1.10-1.20 -1.30	4.00-9.00-14.00	0.22-0.23-0.24	0.0- 1.5- 2.9	5.0- 6.0- 7.0	.32	.32	5	6	48
	9-28	- 7-	-62-	27-31- 35	1.20-1.33 -1.45	4.00-9.00-14.00	0.18-0.19-0.20	3.0- 4.5- 5.9	0.5- 1.3- 2.0	.37	.37			
	28-40	-27-	-45-	22-28- 33	1.30-1.43 -1.55	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.43	.43			
	40-60	—	—	1- 5- 8	1.80-1.95 -2.10	141.00-141.00-141.00	0.02-0.03-0.04	0.0- 1.5- 2.9	0.0- 0.3- 0.5					
FgB—Flagg silt loam, 2 to 6 percent slopes														
Flagg	0-16	- 7-	-69-	22-25- 27	1.20-1.30 -1.40	4.00-9.00-14.00	0.22-0.23-0.24	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	6	48
	16-46	- 7-	-62-	27-31- 35	1.30-1.40 -1.50	4.00-9.00-14.00	0.14-0.17-0.20	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.43	.43			
	46-60	-54-	-20-	22-26- 30	1.45-1.53 -1.60	4.00-9.00-14.00	0.07-0.09-0.10	0.0- 1.5- 2.9	0.0- 0.1- 0.2	.43	.43			

Physical Soil Properties--Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
FsB—Fox silt loam, 2 to 6 percent slopes														
Fox	0-7	25-31- 40	50-56- 65	10-14- 17	1.35-1.37 -1.39	4.23-9.17-14.11	0.17-0.21-0.24	0.9- 1.4- 1.8	1.0- 2.0- 3.0	.32	.32	3	5	56
	7-21	1-18- 19	46-55- 72	18-27- 35	1.41-1.46 -1.52	4.23-9.17-14.11	0.10-0.16-0.22	1.6- 3.4- 5.1	0.0- 0.3- 0.5	.43	.43			
	21-31	46-56- 72	0-18- 36	18-27- 35	1.60-1.62 -1.63	4.02-9.17-14.11	0.10-0.15-0.19	1.3- 3.0- 5.1	0.0- 0.3- 0.5	.20	.20			
	31-79	85-93- 95	1- 4- 11	0- 3- 4	1.55-1.59 -1.63	42.34-91.74-141.14	0.02-0.05-0.07	0.0- 0.2- 0.3	0.0- 0.3- 0.5	.02	.02			
M-W—Miscellaneous water														
Water, miscellaneous	—	—	—	—	—	—	—	—	—					
MmA—Matherton silt loam, 1 to 3 percent slopes														
Matherton	0-11	-30-	-54-	12-16- 20	1.30-1.48 -1.65	14.00-28.00-42.00	0.15-0.20-0.24	0.0- 1.5- 2.9	2.0- 3.0- 4.0	.32	.32	3	5	56
	11-36	-55-	-17-	20-28- 35	1.40-1.55 -1.70	4.00-9.00-14.00	0.12-0.15-0.18	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.20	.20			
	36-60	-94-	- 1-	0- 5- 10	1.50-1.58 -1.65	42.00-92.00-141.00	0.02-0.03-0.04	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.02	.05			

Physical Soil Properties--Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
MwC2—Miami loam, 6 to 12 percent slopes, eroded														
Miami	0-10	-39-	-37-	20-24- 27	1.30-1.38 -1.45	4.00-9.00-14.00	0.19-0.20-0.21	3.0- 4.5- 5.9	0.5- 1.3- 2.0	.32	.32	5	6	48
	10-30	-35-	-34-	27-31- 35	1.45-1.53 -1.60	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.28	.28			
	30-60	-42-	-38-	15-21- 26	1.45-1.53 -1.60	4.00-9.00-14.00	0.17-0.18-0.19	0.0- 1.5- 2.9	0.0- 0.1- 0.2	.37	.37			
MwD2—Miami loam, 12 to 20 percent slopes, eroded														
Miami	0-10	-39-	-37-	20-24- 27	1.30-1.38 -1.45	4.00-9.00-14.00	0.19-0.20-0.21	3.0- 4.5- 5.9	0.5- 1.3- 2.0	.32	.32	5	6	48
	10-30	-35-	-34-	27-31- 35	1.45-1.53 -1.60	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.28	.28			
	30-60	-42-	-38-	15-21- 26	1.45-1.53 -1.60	4.00-9.00-14.00	0.17-0.18-0.19	0.0- 1.5- 2.9	0.0- 0.1- 0.2	.37	.37			

Physical Soil Properties--Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
MyC2—Miami silt loam, 6 to 12 percent slopes, eroded														
Miami	0-10	-22-	-55-	20-24- 27	1.30-1.38 -1.45	4.00-9.00-14.00	0.19-0.20-0.21	3.0- 4.5- 5.9	0.5- 1.3- 2.0	.43	.43	5	6	48
	10-30	-35-	-34-	27-31- 35	1.45-1.53 -1.60	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.28	.28			
	30-60	-42-	-38-	15-21- 26	1.45-1.53 -1.60	4.00-9.00-14.00	0.17-0.18-0.19	0.0- 1.5- 2.9	0.0- 0.1- 0.2	.37	.37			
PeB—Pecatonica silt loam, 2 to 6 percent slopes														
Pecatonica	0-11	-26-	-52-	18-22- 25	1.20-1.30 -1.40	4.00-9.00-14.00	0.22-0.23-0.24	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.37	.37	5	6	48
	11-24	-21-	-55-	20-25- 30	1.30-1.40 -1.50	4.00-9.00-14.00	0.18-0.20-0.22	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.43	.43			
	24-42	-56-	-15-	25-30- 35	1.45-1.55 -1.65	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.2- 0.3- 0.5	.20	.20			
	42-60	-66-	-15-	15-19- 23	1.45-1.55 -1.65	4.00-9.00-14.00	0.07-0.11-0.15	0.0- 1.5- 2.9	0.2- 0.3- 0.5	.20	.20			

Physical Soil Properties--Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
SeA—St. Charles silt loam, gravelly substratum, 0 to 2 percent slopes														
St. charles, gravelly substratum	0-15	0- 6- 10	63-72- 82	18-22- 27	1.27-1.35 -1.43	4.23-9.17-14.11	0.22-0.23-0.24	2.0- 2.9- 3.8	3.0- 4.0- 5.0	.37	.37	4	6	48
	15-49	0- 6- 10	55-63- 76	20-31- 35	1.37-1.43 -1.49	4.23-9.17-14.11	0.18-0.19-0.20	2.3- 4.3- 5.2	0.2- 0.6- 1.0	.43	.43			
	49-57	20-39- 60	8-34- 53	27-27- 40	1.48-1.57 -1.66	4.23-23.29-42.34	0.09-0.13-0.16	2.3- 2.8- 5.1	0.1- 0.3- 0.5	.24	.37			
	57-79	85-89- 97	1- 7- 10	1- 4- 10	1.60-1.62 -1.65	20.00-80.57-141.14	0.02-0.05-0.07	0.0- 0.3- 0.9	0.1- 0.3- 0.5	.05	.05			
SeB—St. Charles silt loam, gravelly substratum, 2 to 6 percent slopes														
St. charles, gravelly substratum	0-12	0- 6- 10	63-72- 82	18-22- 27	1.33-1.38 -1.44	4.23-9.17-14.11	0.22-0.23-0.24	1.9- 2.8- 3.8	1.0- 2.0- 3.0	.43	.43	4	6	48
	12-49	0- 6- 10	55-63- 76	20-31- 35	1.37-1.43 -1.49	4.23-9.17-14.11	0.18-0.19-0.20	2.3- 4.3- 5.2	0.2- 0.6- 1.0	.43	.43			
	49-57	20-39- 60	8-34- 53	27-27- 40	1.48-1.57 -1.66	4.23-23.29-42.34	0.09-0.13-0.16	2.3- 2.8- 5.1	0.1- 0.3- 0.5	.24	.37			
	57-79	85-89- 97	1- 7- 10	1- 4- 10	1.60-1.62 -1.65	20.00-80.57-141.14	0.02-0.05-0.07	0.0- 0.3- 0.9	0.1- 0.3- 0.5	.05	.05			

Physical Soil Properties--Walworth County, Wisconsin														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
WvC2— Westville silt loam, 6 to 12 percent slopes, eroded														
Westville	0-11	-22-	-55-	18-23- 27	1.20-1.30 -1.40	4.00-9.00-14.00	0.20-0.22-0.24	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.43	.43	5	6	48
	11-50	-34-	-37-	25-30- 35	1.35-1.45 -1.55	4.00-9.00-14.00	0.15-0.17-0.19	3.0- 4.5- 5.9	0.2- 0.6- 1.0	.32	.32			
	50-60	-67-	-15-	15-19- 22	1.40-1.55 -1.70	4.00-9.00-14.00	0.07-0.11-0.15	0.0- 1.5- 2.9	0.2- 0.3- 0.5	.20	.20			
Ww—Wet alluvial land														
Wet alluvial land	0-15	-39-	-37-	20-24- 27	1.40-1.50 -1.60	4.00-9.00-14.00	0.20-0.22-0.24	0.0- 1.5- 2.9	4.0- 5.0- 6.0	.20	.20		4L	86
	15-35	-38-	-36-	18-27- 35	1.40-1.50 -1.60	4.00-9.00-14.00	0.17-0.19-0.20	3.0- 4.5- 5.9	1.0- 2.0- 3.0	.28	.28			
	35-60	-45-	-33-	18-22- 35	1.50-1.60 -1.70	4.00-9.00-14.00	0.14-0.17-0.20	3.0- 4.5- 5.9	0.1- 1.0- 2.0	.32	.32			

Data Source Information

Soil Survey Area: Walworth County, Wisconsin
 Survey Area Data: Version 12, Sep 25, 2015

Chemical Soil Properties

This table shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced saturated hydraulic conductivity and aeration, and a general degradation of soil structure.

Report—Chemical Soil Properties

Chemical Soil Properties—Walworth County, Wisconsin								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
Dt—Drummer silt loam, gravelly substratum								
Drummer	0-9	18-25	—	5.6-7.3	0	—	—	—
	9-28	19-27	—	5.6-7.3	0	—	—	—
	28-40	15-22	—	5.6-7.3	0	—	—	—
	40-60	0.8-5.8	—	6.6-8.4	0-25	—	—	—
FgB—Flagg silt loam, 2 to 6 percent slopes								
Flagg	0-16	14-19	—	4.5-7.3	0	—	—	—
	16-46	—	—	4.5-6.0	0	—	—	—
	46-60	12-16	—	5.1-7.3	0	—	—	—
FsB—Fox silt loam, 2 to 6 percent slopes								
Fox	0-7	8.9-15	—	5.1-7.3	0	0	0.0-2.0	0
	7-21	13-27	—	5.1-7.3	0	0	0.0-2.0	0
	21-31	13-27	—	5.1-8.4	0-45	0	0.0-2.0	0
	31-79	0.1-3.8	—	7.4-8.4	5-45	0	0.0-2.0	0
M-W—Miscellaneous water								
Water, miscellaneous	—	—	—	—	—	—	—	—

Chemical Soil Properties--Walworth County, Wisconsin								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
MmA--Matherton silt loam, 1 to 3 percent slopes								
Matherton	0-11	9.4-16	—	5.1-7.3	0	—	—	—
	11-36	11-19	—	5.1-7.3	0	—	—	—
	36-60	0.0-6.0	—	7.4-8.4	10-25	—	—	—
MwC2--Miami loam, 6 to 12 percent slopes, eroded								
Miami	0-10	11-18	—	5.6-7.3	0	—	—	—
	10-30	15-19	—	5.1-6.0	0	—	—	—
	30-60	8.7-14	—	7.4-8.4	5-35	—	—	—
MwD2--Miami loam, 12 to 20 percent slopes, eroded								
Miami	0-10	11-18	—	5.6-7.3	0	—	—	—
	10-30	15-19	—	5.1-6.0	0	—	—	—
	30-60	8.7-14	—	7.4-8.4	5-35	—	—	—
MyC2--Miami silt loam, 6 to 12 percent slopes, eroded								
Miami	0-10	11-18	—	5.6-7.3	0	—	—	—
	10-30	15-19	—	5.1-6.0	0	—	—	—
	30-60	8.7-14	—	7.4-8.4	5-35	—	—	—
PeB--Pecatonica silt loam, 2 to 6 percent slopes								
Pecatonica	0-11	12-18	—	5.1-6.5	0	—	—	—
	11-24	11-18	—	4.5-6.5	0	—	—	—
	24-42	14-19	—	4.5-6.5	0	—	—	—
	42-60	8.7-13	—	5.6-8.4	0-30	—	—	—

Chemical Soil Properties--Walworth County, Wisconsin								
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>	
SeA—St. Charles silt loam, gravelly substratum, 0 to 2 percent slopes								
St. charles, gravelly substratum	0-15	16-23	—	6.1-7.3	0	0	0.0-2.0	0
	15-49	16-28	—	5.1-7.3	0	0	0.0-2.0	0
	49-57	20-30	—	5.6-7.8	0	0	0.0-2.0	0
	57-79	1.0-8.6	—	5.6-8.4	0-20	0	0.0-2.0	0
SeB—St. Charles silt loam, gravelly substratum, 2 to 6 percent slopes								
St. charles, gravelly substratum	0-12	15-23	—	6.1-7.3	0	0	0.0-2.0	0
	12-49	16-28	—	5.1-7.3	0	0	0.0-2.0	0
	49-57	20-30	—	5.6-7.8	0	0	0.0-2.0	0
	57-79	1.0-8.6	—	5.6-8.4	0-20	0	0.0-2.0	0
WvC2—Westville silt loam, 6 to 12 percent slopes, eroded								
Westville	0-11	12-19	—	5.1-6.5	0	—	—	—
	11-50	12-20	—	5.1-7.3	0	—	—	—
	50-60	8.7-12	—	6.6-8.4	0-30	—	—	—
Ww—Wet alluvial land								
Wet alluvial land	0-15	19-25	—	7.4-8.4	5-20	—	—	—
	15-35	15-28	—	7.4-8.4	5-30	—	—	—
	35-60	11-27	—	7.4-8.4	10-30	—	—	—

Data Source Information

Soil Survey Area: Walworth County, Wisconsin
Survey Area Data: Version 12, Sep 25, 2015



BIRDS EYE FOODS

W8880 COUNTY ROAD X
DARIEN, WI 53114

June 4, 2019

Emily James
Wisconsin Department of Natural Resources
2300 N. Dr. Martin Luther King Jr. Dr.
Milwaukee, WI 53212

Re: West Lagoon Proposed Action Plan, Birds Eye Foods, Darien WI

Dear Ms. James,

Birds Eye Foods (BEF) Darien is providing this proposed action plan to address the leak in the west lagoon liner as discussed during the WDNR site visit on May 7, 2019, for your consideration and approval. This letter only addresses planned action steps as the background information was provided during the site visit and weekly updates related to the calculated leak rate have been provided to your office.

The following steps are proposed and include items that have been handled separately as there was an expedient need.

1. As discussed, BEF is utilizing the groundwater gradient system to capture the leaked liquid and pumping back into the lagoon. Weekly updates on pumped volumes have been provided to the WDNR during times when continuous pumpout does not occur.
2. BEF has stopped adding wastewater into the west lagoon, until the leak repair work is complete. The WDNR has approved utilization of the west lagoon if the north lagoon is out of capacity and in danger of overflowing, this is anticipated to only be utilized to avert impacting the environment in the north lagoon area.
3. BEF completed leak detection using electrical resistivity testing and found 4 leaks in the liner. Gannett Fleming was mobilized to the site the week of May 13, 2019 to perform the work. The following week, divers were used to plug the leaks using Flex Seal tape, HDPE liner pieces and sand bags. The areas were checked using the electrical resistivity to determine if the plugs stopped the leak. Indications from the electrical resistivity testing showed the leaks were stopped.
4. BEF will increase monitoring of the groundwater monitoring wells downgradient of the lagoon to monthly.
5. BEF is utilizing the land application system to remove water from the lagoon and is investigating additional options to aid in the dewatering of the system.
6. It is anticipated to have the lagoon dewatered and repairs initiated prior to the end of the permitted spray season.
7. A plan for the repair work will be provided to the WDNR prior to initiation of the work.
8. Repair work contractors have yet to be determined. All repairs will have testing completed to confirm HDPE welds are completely sealed, the methods used is anticipated to vacuum testing of the welds, similar to new installation of liners.
9. Following repair work, a final report of the findings, repairs, and testing will be prepared and submitted to the WDNR.

If you need additional information or clarification of the information, please contact Todd Boehne (402) 240-8501 or todd.boehne@conagra.com or Meredith Anderson (262) 724-3266 ext 8229 or meredith.anderson@conagra.com.

Sincerely,

Kip Guyon
Plant Manager

Cc: Rohit Reddy, Vice President Manufacturing
Tom Culross, Vice President EHS
Tracy Kayhanfar, Senior Director Environmental
Meredith Anderson, Environmental Supervisor
Todd Boehne, Director Environmental

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



January 29, 2020

Sent Electronically Only

Kip Guyon, Site Leader
Birds Eye Foods, Inc. – Darien
W8880 Cty Rd X
Darien, WI 53114

Subject: Industrial Wastewater Facility Letter of No Objection

Dear Mr. Guyon:

The Department of Natural Resources (hereafter Department) does not object to the repairs made to the West Lagoon at the Birds Eye Foods facility in Darien, WI. Department staff made a site visit on January 10, 2020 to observe the extent of repairs made. During the site visit, it was determined that some of the repairs may have warranted approval under s. 281.41, Wis. Stats. Pursuant to s. NR 108.04(5), Wis. Adm. Code, the Department may not approve plans and specifications for any project which construction has commenced.

The repairs generally consisted of:

- Increasing the number of groundwater gradient control trenches
- Installation of a new gas ventilation system
- Installation of geotextile on top of lagoon gas ventilation system and lagoon subgrade
- Installation of 60 mil HDPE geomembrane liner and associated quality control procedures
- Installation of liner protection pads underneath aeration equipment to prevent future damage
- Replacement of mooring posts for aeration equipment

Some lagoon sludge was removed and hauled by a contract hauler to access the original three targeted areas for liner repair. During sludge removal, additional areas of the existing liner were damaged which required expanding the areas to be repaired. There is no discharge from the groundwater trench drains as they are routed a wet well and pumped back into the lagoon. Overall, the Department considers the repairs to be compliant with ch. NR 213, Wis. Adm. Code and therefore the Department does not object to the repairs. The Department reserves the right to order changes or additions should conditions arise making this necessary.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
FOR THE SECRETARY

Ian Hansen, P.E.
Wastewater Engineer
Water Quality Bureau

Jason Knutson, P.E.
Wastewater Section Chief
Water Quality Bureau

cc (via email): Steve Warrner, DNR Facility Regulator

Construction Observation Report

West Lagoon Liner Repair

Darien, WI Facility

Project I.D.: 19C050

**Conagra Brands, Inc.
Darien, Wisconsin**

May 2020



Green Bay Location

2121 Innovation Court, Suite 300
P.O. Box 5126 • De Pere, WI 54115-5126
(920) 497-2500 • Fax: (920) 497-8516
www.foth.com

June 11, 2020

Mr. Art Hattersley
Conagra Brands, Inc.
W8880 County Road X
Darien, WI 53114-1342

Dear Art Hattersley:

RE: Construction Observation Report
West Lagoon Liner Repair at Conagra Brands, Inc., Darien, Wisconsin

Foth Productions Solutions, LLC (Foth) has performed liner repair on the West Lagoon at the Darien, Wisconsin facility. The attached report one shows the method used to repair and to conduct quality control during construction by GSI. Attached report two shows the leak verification process used by CQM.

Summary of reports: Eight patches were welded and a vacuum box test was performed. Following these repairs and qaqc by GSI, the leak detection company performed arc testing on the repairs. Each repair was tested and in one case additional repairs were required and performed. When the work was completed all leaks were repaired with no issues.

One electronic copy of this report is being submitted via email to the following addresses:

Jayme.Laser@conagra.com
Tom.Stachura@conagra.com
Todd.Boehne@conagra.com
Kenneth.Kline@conagra.com

If you have any questions, please call the undersigned at (920) 496-6890.

Sincerely,

J. Scott Wandeloski
Foth Infrastructure & Environment, LLC

Attachment 1 –



TRIAL WELD FORM

PROJECT NAME:	BIRDSEYE FOOD PLANT POND REPAIR	Test Criteria	Fusion	Extrusion
PROJECT NO.:	720019	Time	As Noted	As Noted
MATERIAL TYPE:	60 MIL HDPE TEXTURED	Number		1
MATERIAL LAYER:	PRIMARY	Peel - ppi	96	
QC NAME:	ENZO AYONA	Shear - ppi	120	

Trial No.	Date	Sample Time	Air Temp	Mater Type	Tech Initials	Machn No.	Wedge Barrel	Speed Preheat	Peel (ppi)					Shear (ppi)					Pass Fail	
									1	2	3	4	5	1	2	3	4	5		
1	05/22/20	10:21	65	TEXT	EA	93	550	550	112	115	121				189	190	200			PASS



REPAIR FORM

PROJECT NAME:	BIRDSEYE FOOD PLANT POND REPAIR
PROJECT NO.:	720019
MATERIAL TYPE:	60 MIL HDPE TEXT
MATERIAL LAYER:	PRIMARY
QC NAME:	ENZO AYONA

Repair No.	Seam / Panel No.	Location of Repairs	Repair Date	Repair Tech	Repair Type*	Repair Time	Repair Size	Vacuum Test Date	Test Tech	Test P/F
R-1	N/A	LEAK LOCATION 1	05/22/20	EA	P	AM	2x2	05/22/20	EA	PASS
R-2	N/A	LEAK LOCATION 2	05/22/20	EA	P	AM	2x2	05/22/20	EA	PASS
R-3	N/A	LEAK LOCATION 3	05/22/20	EA	P	AM	2x2	05/22/20	EA	PASS
R-4	N/A	LEAK LOCATION 4	05/22/20	EA	P	AM	3x3	05/22/20	EA	PASS
R-5	N/A	LEAK LOCATION 5	05/22/20	EA	P	AM	2x2	05/22/20	EA	PASS
R-6	N/A	LEAK LOCATION 6	05/22/20	EA	P	AM	2x2	05/22/20	EA	PASS
R-7	N/A	LEAK LOCATION 7	05/22/20	EA	P	AM	2x2	05/22/20	EA	PASS
R-8	N/A	LEAK LOCATION 8	05/22/20	EA	P	AM	2x2	05/22/20	EA	PASS

* Repair Type: P=Patch, C=Cap, B=Boot, DT=Destruct (with number), W= Weld, (explain any additional repairs)

CQM, INC.
Engineering – Surveying – Material Testing
2679 Continental Drive Green Bay, Wisconsin 54311-6627
Phone: (920) 465-3911 Fax: (920) 465-3913

May 27, 2020

Mr. Dan Michiels, P.E.
Foth Infrastructure & Environment, LLC
2121 Innovation Court, Suite 300
P.O. Box 5126
De Pere, WI 54115

Re: Completion Report for Electrical Leak Location Testing for
 the West Lagoon in Darien, Wisconsin

Dear Mr. Michiels,

CQM, INC. has prepared this report to document the completion of an electrical leak location test recently completed for the West Lagoon in Darien, Wisconsin. The electrical leak location test described in this report consists of a nondestructive test method utilized to locate leaks in a geomembrane liner. The test was performed by CQM, Inc. on May 22, 2020 by Mr. Frank (Nick) Sturzl, P.E. This report documents the results of the testing.

1. SITE DESCRIPTION

The project site consisted of a wastewater lagoon located at W8880 County Road X, Darien, Wisconsin. The lagoon has an area of approximately 395,000 square feet and is lined from the bottom up with compacted base soil (silty clay with sand) 12 oz. fabric, and 60 mil white HDPE. A previous leak location test was completed in March 2020 with the lagoon filled with wastewater. This March 2020 leak location test identified eight (8) leaks. At the time of the leak location testing completed on May 22, 2020, the wastewater had been pumped out of the lagoon leaving a small amount of wastewater sludge across the lagoon bottom. The 8 leak locations were isolated from the remaining wastewater sludge in the lagoon and the liner area around each leak was cleaned by the general contractor as needed to complete the geomembrane repairs.

2. TEST METHODOLOGY

Test procedure ASTM D7953 “Standard Practice for Electrical Leak Location on Exposed Geomembranes Using the Arc Testing Method” was used to test the 8 repairs. This test procedure consists of using a detection test probe to introduce a high voltage between the test probe and the subgrade geotextile/soils below the geomembrane. Each test area is swept with the test probe. Leaks (holes) in the geomembrane will be identified by an audible visual signal as the test probe passes over the leak (hole).

3. TEST PROCEDURE AND RESULTS

The leak location testing consisted of testing the 8 repair patches. Each leak location was repaired and documented by others prior to performing the leak location testing. The approximate location of the repairs is illustrated on the attached page 3 of 4, prepared by Leak Location Services, Inc. (LLSI). All repairs consisted of small geomembrane patches extrusion welded to the base liner. CQM, Inc. performed the leak location test on the completed repairs/patches. The entire area of the patches and welds were tested. No leaks were detected at the 8 repairs. When possible, the base liner within the immediate area surrounding each repair was also tested. During this testing one (1) leak was located near repair No. 6. The leak consisted of several small punctures. The punctures can be seen on the attached photograph. This leak was promptly repaired and documented by others. Following the repair of this additional leak, the repair was retested by CQM, Inc. The retesting of the additional repair was performed with no leak detected.

CQM, Inc. appreciates this opportunity to provide these services to you. We look forward to working with you again in the future.

If you have any questions or need additional information, please contact me by phone at (920) 362-3870 or by email at sturzl@cqmine.com

Sincerely,

CQM, Inc.

ELECTRICAL LEAK LOCATION SERVICES



Frank R. (Nick) Sturzl, P.E.
Senior Project Manager

Attachments: Location of Repairs (Page 3 of 4)
 Photograph (Page 4 of 4)

submerged in the impoundment. Leak location scans were made to determine the maximum distance that the simulated leak can be reliably detected. The simulated leak could be detected from three to four feet away.

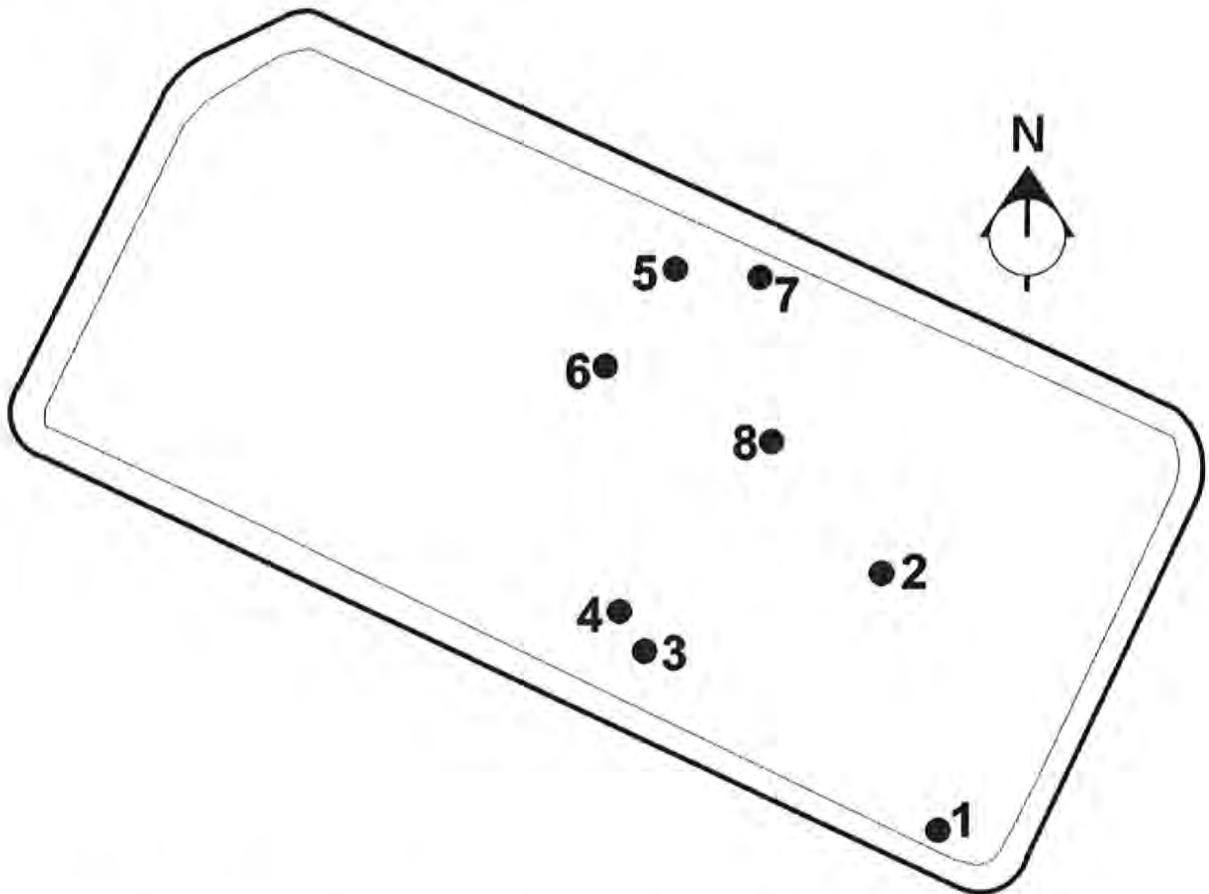


FIGURE 1. APPROXIMATE LOCATIONS OF LEAKS IN THE WEST LAGOON

Table 1. Locations of Leaks in the West Lagoon

LEAK	LOCATION
1	20 feet from a mark at line 30 on the north slope, in line with a reference mark at line 30 on the south slope
2	28 feet from a mark at line 80 on the south slope, in line with a reference mark at line 80 on the east slope





Green Bay Location

2121 Innovation Court, Suite 200
P.O. Box 5125 • De Pere, WI 54115-5125
(920) 497-2500 • Fax: (920) 497-8516
www.foth.com

June 08, 2020

Ms. Jayme Laser
Conagra Brands, Inc.
222 West Merchandise Mart Plaza
Chicago, Illinois 60654

Dear Ms. Jayme Laser:

RE: Engineering Change Notice
Project Number: 19C060.01
Change Notice No. 20200608
PO: 3243221

Foth Production Solutions, LLC (Foth) is pleased to provide this Scope Change for the Darien EQ Tank addition Project capturing the engineering and design costs for these changes.

A formal P.O. adjustment is required at this time.

Thank you for the opportunity to submit this Scope Change for your project. Please review and approve or contact me immediately should you have any questions regarding this Scope Change. We look forward to working with you and continuing to expand our business relationship.

Sincerely,

Foth Production Solutions, LLC

Brandon J. Ebent
Foth/Conagra Team Leader

Rick Panzer
Project Management

BJE:xxx:yyy

Attachment

cc: Ms. Sarah Volkman, Foth

Scope Change Document

Conagra Project Leader	Ken Kline	Date: 06/08/20	
Foth Project Manager:	Rick Panzer	Project #: 19C060.01	
Project Name:	Darien EQ Tank	Original Purchase Order #:	3243221
Submitted by:	Rick Panzer	Scope Change #:	20200608
Description of Change:	<p>Project has worked through multiple iterations of scope to meet project objectives which exhausted budgeted hours and requires additional hours to analyze and vet out. Note project moved forward with scoping efforts to date using hours budgeted for other activities in best interest of the project and schedule and this CR will align the budget to hours used and hours for efforts needed to complete. Reference attached change log for itemized details</p>		
Reason for Change:	<ol style="list-style-type: none"> 1. Project needed to prove out available power. During this process a potential alternate source was identified which would carry a potential project savings. This requires more time. See ID#8 in change log 2. PM time, Project required additional time to manage changes identified in this change request. See ID#9 in change log 3. It was determined and requested by Conagra that the re-purposed existing tank requires mixing due to the content of service. See ID#10 in change log 4. Foth was asked to spec and quote a new sludge tank w/cone bottom. See ID#12 in change log 5. The chosen available space within the GEM building does not meet the physical requirements of this project and limits future expansion to the facility. Project needs more time to work through the space restraints. See ID#13 in change log 		
Source of Change:	See attached change log for details		
Schedule Impact: (if any)	Schedule dates will be pushed out which the extent are unknown at this time. Once the scope is realigned Foth will layout and review the schedule dates with the Conagra Team.		
Major Assumption(s):	<ol style="list-style-type: none"> 1. In light of recent global events, labor shortages or supply chain disruptions resultant from epidemic or pandemic events (e.g. the Covid-19 outbreak) are specifically to be considered grounds constituting a force majeure condition. Labor shortages and inefficiencies, delays, escalation, or cost impacts resulting from labor shortages or supply chain disruptions associated with such an event shall be considered grounds for a changed condition event and shall afford Foth the opportunity for schedule and cost relief associated with such an event by the Owner notwithstanding any express language in the Agreement to the contrary. 2. 		

Contract Type:	
	<input type="checkbox"/> Lump Sum <input checked="" type="checkbox"/> T&M <input type="checkbox"/> Split Lump Sum and T&M

Estimated Change Amount (+/-): \$105,180	<input type="checkbox"/> Firm Quote	<input checked="" type="checkbox"/> T&M	<input type="checkbox"/> Budgetary Estimate
---	-------------------------------------	---	---

*If new contract amount exceeds original approver's authorization limit, please obtain proper authorization, the same applies for the requisition process.
 (Attach List of all other SC#s submitted on this project to-date)

Overall Project Priority: <input checked="" type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low
--

Comments:

Foth Acceptance Name: _____	Date: ___/___/___
Foth Acceptance Signature: _____	

Conagra Approved By: _____	Project Manager: _____	Date: ___/___/___
-----------------------------------	-------------------------------	--------------------------

Conagra Approved By: _____	Date: ___/___/___
Secondary Approval if required.	

--

Unbilled Detail

Thursday, June 11, 2020

8:01:17 AM

Foth Production Solutions, LLC

As of 6/11/2020

Billing Status	Date	Labor Code /Account	Description	Hours/ Units	Billing Rate	Cost Amount	Billing Amount
Project Number: 0020C010.00 DAR North Lagoon Repair FEL 3							
Phase Number: 0000090 Non-Billable							
Tasks Number: 0000900 DAR North Lagoon - Non-Billable							
Labor:							
B	3/31/2020	WI00000000	Brillhart, Rob	3.00	171.50		514.50
B	4/1/2020	WI00000000	Brillhart, Rob	2.00	171.50		343.00
B	4/3/2020	WI00000000	Brillhart, Rob	1.00	171.50		171.50
B	4/10/2020	WI00000000	Brillhart, Rob	1.00	171.50		171.50
B	4/14/2020	WI00000000	Brillhart, Rob	1.00	171.50		171.50
B	4/15/2020	WI00000000	Brillhart, Rob	3.50	171.50		600.25
B	4/17/2020	WI00000000	Brillhart, Rob	2.00	171.50		343.00
B	4/21/2020	WI00000000	Brillhart, Rob	1.00	171.50		171.50
B	4/22/2020	WI00000000	Brillhart, Rob	2.00	171.50		343.00
B	4/29/2020	WI00000000	Brillhart, Rob	1.00	171.50		171.50
B	5/1/2020	WI00000000	Brillhart, Rob	1.00	171.50		171.50
B	5/4/2020	WI00000000	Brillhart, Rob	1.00	171.50		171.50
B	5/5/2020	WI00000000	Brillhart, Rob	2.50	171.50		428.75
B	4/13/2020	WI00000000	Buchberger, Jim	1.50	126.50		189.75
B	5/8/2020	WI00000000	Davis, Shawn	6.50	143.75		934.38
B	5/15/2020	WI00000000	Forrest, Janet	1.50	68.00		102.00
B	6/2/2020	WI00000000	Kurowski, Lori	.30	96.75		29.03
B	3/31/2020	WI00000000	Michiels, Dan	1.50	133.50		200.25
B	4/1/2020	WI00000000	Michiels, Dan	1.50	133.50		200.25
B	4/3/2020	WI00000000	Michiels, Dan	.50	133.50		66.75
B	4/8/2020	WI00000000	Michiels, Dan	.50	133.50		66.75
B	4/9/2020	WI00000000	Michiels, Dan	.50	133.50		66.75
B	4/22/2020	WI00000000	Michiels, Dan	.50	133.50		66.75
B	4/29/2020	WI00000000	Michiels, Dan	.50	133.50		66.75
B	5/1/2020	WI00000000	Michiels, Dan	1.50	133.50		200.25
B	5/4/2020	WI00000000	Michiels, Dan	2.00	133.50		267.00
B	5/13/2020	WI00000000	Michiels, Dan	1.00	133.50		133.50
B	5/20/2020	WI00000000	Michiels, Dan	.50	133.50		66.75
B	5/27/2020	WI00000000	Michiels, Dan	.30	133.50		40.05
B	6/3/2020	WI00000000	Michiels, Dan	.50	133.50		66.75
B	3/31/2020	MN00000000	Rehwaldt, Bruce	3.00	171.50		514.50
B	4/1/2020	MN00000000	Rehwaldt, Bruce	6.00	171.50		1,029.00
B	4/2/2020	MN00000000	Rehwaldt, Bruce	3.50	171.50		600.25
B	4/3/2020	MN00000000	Rehwaldt, Bruce	3.50	171.50		600.25
B	4/7/2020	MN00000000	Rehwaldt, Bruce	.50	171.50		85.75
B	4/8/2020	MN00000000	Rehwaldt, Bruce	2.70	171.50		463.05
B	4/9/2020	MN00000000	Rehwaldt, Bruce	.50	171.50		85.75
B	4/10/2020	MN00000000	Rehwaldt, Bruce	1.50	171.50		257.25
B	4/27/2020	MN00000000	Rehwaldt, Bruce	2.50	171.50		428.75
B	4/28/2020	MN00000000	Rehwaldt, Bruce	1.00	171.50		171.50
B	4/29/2020	MN00000000	Rehwaldt, Bruce	.50	171.50		85.75
B	4/30/2020	MN00000000	Rehwaldt, Bruce	.50	171.50		85.75
B	5/1/2020	MN00000000	Rehwaldt, Bruce	.50	171.50		85.75
B	5/4/2020	MN00000000	Rehwaldt, Bruce	1.00	171.50		171.50
B	5/5/2020	MN00000000	Rehwaldt, Bruce	1.00	171.50		171.50
B	5/6/2020	MN00000000	Rehwaldt, Bruce	3.00	171.50		514.50
B	5/8/2020	MN00000000	Rehwaldt, Bruce	1.00	171.50		171.50
B	5/10/2020	MN00000000	Rehwaldt, Bruce	1.00	171.50		171.50
B	5/13/2020	MN00000000	Rehwaldt, Bruce	6.00	171.50		1,029.00
B	5/14/2020	MN00000000	Rehwaldt, Bruce	1.00	171.50		171.50

Billing Status	Date	Labor Code /Account	Description	Hours/ Units	Billing Rate	Cost Amount	Billing Amount
B	5/15/2020	MN00000000	Rehwaldt, Bruce	1.00	171.50		171.50
B	5/19/2020	MN00000000	Rehwaldt, Bruce	2.50	171.50		428.75
B	5/20/2020	MN00000000	Rehwaldt, Bruce	2.20	171.50		377.30
B	5/21/2020	MN00000000	Rehwaldt, Bruce	.50	171.50		85.75
B	5/27/2020	MN00000000	Rehwaldt, Bruce	.50	171.50		85.75
B	5/29/2020	MN00000000	Rehwaldt, Bruce	2.50	171.50		428.75
B	6/3/2020	MN00000000	Rehwaldt, Bruce	3.00	171.50		514.50
B	6/4/2020	MN00000000	Rehwaldt, Bruce	1.00	171.50		171.50
B	4/1/2020	WI00000000	Sturzl, Martin	.50	155.25		77.63
B	4/8/2020	WI00000000	Sturzl, Martin	.50	155.25		77.63
B	4/16/2020	WI00000000	Sturzl, Martin	1.00	155.25		155.25
B	4/21/2020	WI00000000	Sturzl, Martin	6.00	155.25		931.50
B	4/22/2020	WI00000000	Sturzl, Martin	2.00	155.25		310.50
B	4/23/2020	WI00000000	Sturzl, Martin	2.00	155.25		310.50
B	4/29/2020	WI00000000	Sturzl, Martin	4.00	155.25		621.00
B	4/30/2020	WI00000000	Sturzl, Martin	6.00	155.25		931.50
B	5/4/2020	WI00000000	Sturzl, Martin	4.00	155.25		621.00
B	5/5/2020	WI00000000	Sturzl, Martin	2.00	155.25		310.50
B	5/6/2020	WI00000000	Sturzl, Martin	2.00	155.25		310.50
B	5/7/2020	WI00000000	Sturzl, Martin	10.00	155.25		1,552.50
B	5/8/2020	WI00000000	Sturzl, Martin	8.00	155.25		1,242.00
B	5/12/2020	WI00000000	Sturzl, Martin	1.00	155.25		155.25
B	5/13/2020	WI00000000	Sturzl, Martin	1.00	155.25		155.25
B	5/14/2020	WI00000000	Sturzl, Martin	1.00	155.25		155.25
B	5/20/2020	WI00000000	Sturzl, Martin	.50	155.25		77.63
B	5/29/2020	WI00000000	Sturzl, Martin	.50	155.25		77.63
B	5/31/2020	WI00000000	Sturzl, Martin	8.00	155.25		1,242.00
B	6/1/2020	WI00000000	Sturzl, Martin	3.00	155.25		465.75
B	6/2/2020	WI00000000	Sturzl, Martin	2.00	155.25		310.50
B	6/3/2020	WI00000000	Sturzl, Martin	.50	155.25		77.63
B	4/10/2020	WI00000000	Van Hoof, Tara	.70	143.75		100.63
B	4/13/2020	WI00000000	Van Hoof, Tara	.40	143.75		57.50
B	4/9/2020	WI00000000	Volkman, Sarah	.50	96.75		48.38
B	5/11/2020	WI00000000	Volkman, Sarah	.50	96.75		48.38
B	5/18/2020	WI00000000	Volkman, Sarah	.50	96.75		48.38
B	3/30/2020	IL00000000	Wandeloski, Scott	2.00	171.50		343.00
B	3/31/2020	IL00000000	Wandeloski, Scott	4.00	171.50		686.00
B	4/1/2020	IL00000000	Wandeloski, Scott	3.00	171.50		514.50
B	4/2/2020	IL00000000	Wandeloski, Scott	3.00	171.50		514.50
B	4/3/2020	IL00000000	Wandeloski, Scott	4.00	171.50		686.00
B	4/4/2020	WI00000000	Wandeloski, Scott	9.00	171.50		1,543.50
B	4/5/2020	WI00000000	Wandeloski, Scott	9.00	171.50		1,543.50
B	4/6/2020	WI00000000	Wandeloski, Scott	4.00	171.50		686.00
B	4/7/2020	WI00000000	Wandeloski, Scott	4.00	171.50		686.00
B	4/8/2020	WI00000000	Wandeloski, Scott	4.00	171.50		686.00
B	4/9/2020	WI00000000	Wandeloski, Scott	4.00	171.50		686.00
B	4/10/2020	WI00000000	Wandeloski, Scott	4.00	171.50		686.00
B	4/16/2020	WI00000000	Wandeloski, Scott	2.00	171.50		343.00
B	4/17/2020	WI00000000	Wandeloski, Scott	3.00	171.50		514.50
B	4/22/2020	WI00000000	Wandeloski, Scott	2.00	171.50		343.00
B	4/23/2020	WI00000000	Wandeloski, Scott	4.00	171.50		686.00
B	4/24/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	4/27/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	4/28/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/1/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/4/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/5/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/6/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00

Billing Status	Date	Labor Code /Account	Description	Hours/ Units	Billing Rate	Cost Amount	Billing Amount
B	5/11/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/12/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/15/2020	WI00000000	Wandeloski, Scott	4.00	171.50		686.00
B	5/18/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/19/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/20/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/26/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/27/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	5/28/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	6/1/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	6/2/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	6/3/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
B	6/5/2020	WI00000000	Wandeloski, Scott	8.00	171.50		1,372.00
Total Billable Labor				385.60			64,068.48
Total Labor				385.60			64,068.48
Expenses:							
B	3/30/2020	533.00	Listo Distributors Inc. HALLETT,HEATHER 02/19/2020-02/24/2020 FOTH GREEN BAY			366.91	366.91
Total Billable Expenses						366.91	366.91
Total Expenses						366.91	366.91
Units:							
B	3/9/2020	CADDSRV	C:4.0 Hours @ 0 4.0 B: Hours @ 15.00	4.00	15.00		60.00
B	3/10/2020	CADDSRV	C:4.0 Hours @ 0 4.0 B: Hours @ 15.00	4.00	15.00		60.00
B	3/13/2020	CADDSRV	C:1.0 Hour @ 0 1.0 B:Hour @ 15.00	1.00	15.00		15.00
B	4/13/2020	CADDSRV	C:1.0 Hour @ 0 1.0 B:Hour @ 15.00	1.00	15.00		15.00
B	3/20/2020	CADDSRV	C:1.0 Hour @ 0 1.0 B:Hour @ 15.00	1.00	15.00		15.00
Total Billable Units				11.00			165.00
Total Units				11.00			165.00
Total for 0000900				396.60		366.91	64,600.39
Total for 0000090				396.60		366.91	64,600.39
Total for 0020C010.00				396.60		366.91	64,600.39



SCOPE CHANGE NOTICE # 27
 Procter & Gamble - Mehoopany, PA
 16P235.01 - Vindicator 3 - Air Threading Ph. 2
 PO#: 8000320327
 March 8, 2019

P&G Contact: Cliff Baumbach
 513-634-2224
 baumbach.cl@pg.com

Foth Project Manager: Scott Wandeloski
 (570) 871-6311
 Scott.Wandeloski@foth.com

Change in Engineering Support Services

Description of Change: Change (s) to original scope of work to include the following additional services:
 A. See attachment 1 for change breakdown

Cost of Services: Foth proposes to provide the defined work on a time and materials basis as defined below. Cost Estimate for the change is as follows:

Phase 100 – MH Programming Support	\$6,087.60
Management Fee - MH Programming Support	\$715.99
Subtotal - MH Programming Support	\$6,803.59
Phase 110 – MH PSI Support	\$11,664.40
Management Fee - MH PSI Support	\$460.77
Subtotal - MH PSI Support	\$12,125.17
Total This SCN	\$18,928.76
Original PO Amount	\$185,105.42
Previous Scope Changes	\$522,405.53
New PO Total	\$726,439.71

It is requested that the Purchase Order be increased for SCN #27 to the amount of \$726,439.71

Reason for Change:

<input type="checkbox"/> Foth – Project Costs Exceeded Estimate	<input type="checkbox"/> Foth – Changed Resources
<input type="checkbox"/> P&G – Schedule Change	<input type="checkbox"/> P&G – Scope Change
<input checked="" type="checkbox"/> Undefined Project Scope	

Additional Details: See attached document for breakdowns.

Source of Change: Change is at the request of the Client on 1Sep18

Schedule Impact: No impact on schedule

Other Impacts: No additional impacts

Major Assumptions: Safety Validation for the Wismee project will be billed on an allowance due to limited scope definition. As scope becomes more clearly defined the estimate may either increase or decrease.

Terms & Conditions: Terms and conditions of the original PO apply.

Timothy Griffin
 Procter & Gamble Team Leader

Scott Wandeloski
 Project Management Leadership

CC: WPC Jamie Gavek
 RCM Matt Kostick
 AREA LEAD Jeff Goldovich

Project Name: Air Threading

Client P&G

Project Number: 16P235.01

Discipline/Task Description	Sub Totals	Engineering and Design								
		Project	Engineering and Design						Detailer/	Tech
		Leadership/PM	Technical Leadership	Engineer II	Engineer III	Designer III	Designer II	Drafter	Designer I	
	\$145.00	\$107.52	\$88.61	\$98.35	\$85.72	\$69.96	\$44.95	\$124.00		
A. Phase 100 – MH Programming Support										
1 MEH 3M Programming Support	\$6,087.60	4.0		56.0						
Subtotal - Phase 100 MH Programming Support	\$6,087.60									
B. Phase 110 – MH PSI Support										
1 MEH 3M Outage Coverage	\$11,664.40	56.0	40.0							
Subtotal - Phase 110 MH PSI Support	\$11,664.40									
Subtotal Effort Hours	156.0	60.0	0.0	40.0	56.0	0.0	0.0	0.0	0.0	
Total Administrative/PM/QA-QC Labor	\$0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Effort Hours	156.0	60.0	0.0	40.0	56.0	0.0	0.0	0.0	0.0	
Total Dollars - Labor	\$17,752.00	\$8,700.00	\$0.00	\$3,544.40	\$5,507.60	\$0.00	\$0.00	\$0.00	\$0.00	
Management Fee	\$1,176.76									
Total Dollars - Expenses	\$0.00									
Total Project Dollars	\$18,928.76	\$8,700.00	\$0.00	\$3,544.40	\$5,507.60	\$0.00	\$0.00	\$0.00	\$0.00	