



October 21, 2011

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Subject: Quarterly Groundwater Monitoring Results – Third Quarter 2011
Powerton Generating Station – Bypass Cleaning Basin
Water Pollution Control Permit No. 2010-EB-0664

Reference: Patrick Project No. 21153.018

To Whom It May Concern:

Patrick Engineering Inc. (Patrick) has prepared this letter report, on behalf of Midwest Generation, LLC, to provide groundwater monitoring results associated with the Powerton Generating Facility located at 13082 East Manito Road in Pekin, Illinois. Groundwater is monitored quarterly in the vicinity of the bypass cleaning basin at this facility in three monitoring wells in accordance with requirements of Illinois Environmental Protection Agency (Illinois EPA) Water Pollution Control Permit No. 2010-EB-0664.

MONITORING WELL INSTALLATION

In accordance with the permit referenced above, three monitoring wells (MW-9, MW-11, and MW-12) have been installed in the vicinity of the bypass cleaning basin. The locations of these wells were selected so that at least one of the monitoring wells (MW-09) was installed downgradient of the basin, based upon available data regarding the expected groundwater flow direction. Figure 1 shows the location of the three monitoring wells. Drilling logs and well completion reports have been included as Attachment A.

GROUNDWATER SAMPLING

Prior to collecting groundwater samples from the three wells noted above, a number of field measurements were collected from each well location, including groundwater elevation, temperature, conductivity, and pH. Groundwater elevation data is summarized in Table 1. Other field parameter data is provided in Table 2.

On September 19, 2011, groundwater samples were collected from each of the three on-site monitoring wells, either using disposable polyethylene bailers (MW-11), or by the direct use of a peristaltic pump (for MW-9 and MW-12). Each well was purged until at least three well volumes had been extracted, or until the groundwater was observed to be clear. Groundwater was pumped or bailed into a decontaminated, stainless steel container and thereafter transferred to sample containers via peristaltic pump. All groundwater samples were filtered in the field using

Quarterly Groundwater Monitoring Results – Third Quarter 2011
Powerton Generating Station – Bypass Cleaning Basin

a disposable, 0.45µm, in-line filter to allow for the analytical testing of dissolved compounds. The samples were immediately placed on ice in a cooler and kept at a temperature no higher than 4° F. The samples were transported to PDC Laboratories, an Illinois-EPA accredited analytical laboratory, in accordance with chain-of-custody procedures to maintain sample integrity.

ANALYTICAL RESULTS

The groundwater samples were analyzed for all of the inorganic compounds listed in 35 Illinois Administrative Code (IAC) 620.410(a) and 620.410(d), including radium 226/228. Analytical results (both current and historical) are summarized in Table 3. Laboratory analytical reports provided by PDC Laboratories are provided as Attachment B.

In accordance with Water Pollution Control Permit No. 2010-EB-0664, these three wells will continue to be sampled and reported on a quarterly basis for at least one year to establish a statistically valid representation of existing background conditions.

If you have any questions, please contact me at 630-795-7464.

Sincerely,

PATRICK ENGINEERING INC.



Richard M. Frendt, P.E.
Senior Project Manager

RMF/DCM

Enclosures: Figure 1: Monitoring Well Location Map
Table 1: Groundwater Elevation Data
Table 2: Field Parameter Data
Table 3: Groundwater Analytical Results
Attachment A: Boring Logs/Well Completion Reports
Attachment B: Laboratory Analytical Results

FIGURE 1

MONITORING WELL LOCATION MAP



LEGEND


 MW-01 Existing Monitoring Well Location



1" = 600'

AERIAL IMAGE SOURCE:
2005 ORTHOPHOTO TAKEN FROM THE ILLINOIS NATURAL RESOURCES CLEARINGHOUSE


Date: SEPT. 2011	EXISTING MONITORING WELL LOCATION MAP Bypass Basin Map	 4970 Varsity Drive TEL. (630) 795-7200 Lisle, Illinois 60532-4101 FAX (630) 724-1681 PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000409
Proj No.: 21153.018		
App. By: RMF	POWERTON STATION PEKIN, ILLINOIS	

TABLE 1
GROUNDWATER ELEVATION DATA

Table 1
BYPASS BASIN
GROUNDWATER ELEVATION DATA
 Powerton Station, Pekin, Illinois
 Midwest Generation
 21153.018

Groundwater Elevation Data								
Monitoring Well	Date	Water Elevation (Feet)	Depth to Water Pre-Sampling (Feet bmp)	Depth to Water Post Sampling (Feet bmp)	Water Elevation Post Sampling (bmp)	Depth to Bottom of Well (Feet)	Ground Elevation (Feet)	Top of Riser Elevation (Feet)
MW-09	2/15/2011	443.416	25.77	25.80	443.386	35.13	466.214	469.186
	6/16/2011	449.306	19.88	19.89	449.296	35.13	466.214	469.186
	9/19/2011	443.636	25.55	25.55	443.636	35.13	466.214	469.186
MW-11	2/15/2011	440.779	30.81	30.82	440.769	43.65	468.074	471.589
	6/16/2011	448.199	23.39	23.40	448.189	43.65	468.074	471.589
	9/19/2011	440.489	31.10	31.10	440.489	43.65	468.074	471.589
MW-12	2/15/2011	450.390	22.99	23.01	450.370	32.57	469.999	473.380
	6/16/2011	451.180	22.20	22.20	451.180	32.57	469.999	473.380
	9/19/2011	449.880	23.50	23.50	449.880	32.57	469.999	473.380


Notes: - Elevations are leveled from site control points per Drawing "Control Network, IL State Plane (West Zone) Powerton Station" revised 10/22/2010

-Elevations are shown in feet

bmp -below monitoring point

TABLE 2
FIELD PARAMETER DATA

Table 2
BYPASS BASIN
FIELD PARAMETER DATA
 Powerton Station, Pekin, Illinois
 Midwest Generation
 21153.018

 PATRICK ENGINEERING	Groundwater Field Parameter Data - Powerton Station				
Monitoring Well	Date	Time	Conductance (S/cm)*	Temperature °C	pH
MW-09	2/15/2011	11:20	0.782	12.71	7.62
	2/15/2011	11:22	0.777	12.82	7.42
	2/15/2011	11:24	0.774	13.04	7.43
	2/15/2011	11:26	0.771	13.21	7.36
	2/15/2011	11:28	0.774	13.29	7.29
MW-09	2/15/2011	11:30	0.776	13.47	7.24
	6/16/2011	13:30	0.85	16.28	7.63
	6/16/2011	13:32	0.85	14.96	7.34
	6/16/2011	13:34	0.84	14.78	7.24
	6/16/2011	13:36	0.84	14.73	7.16
MW-09	6/16/2011	13:38	0.84	14.61	7.11
	6/16/2011	13:40	0.84	14.51	7.10
	9/19/2011	13:30	0.66	14.46	7.41
	9/19/2011	13:32	0.66	14.38	7.35
	9/19/2011	13:34	0.66	14.23	7.34
MW-09	9/19/2011	13:36	0.66	14.12	7.33
	9/19/2011	13:38	0.66	14.11	7.32
	9/19/2011	13:40	0.66	14.08	7.32
MW-11	2/15/2011	9:42	1.14	13.66	7.13
MW-11	6/16/2011	14:32	1.46	17.97	7.32
	6/16/2011	14:34	1.45	17.75	7.14
	6/16/2011	14:36	1.45	17.67	7.08
	6/16/2011	14:38	1.44	17.66	7.04
	6/16/2011	14:40	1.44	17.48	7.03
	6/16/2011	14:42	1.44	17.58	7.02
MW-11	9/19/2011	16:14	0.85	14.67	7.31
MW-12	2/15/2011	10:24	1.66	13.88	7.49
	2/15/2011	10:26	1.66	16.33	7.51
	2/15/2011	10:28	1.66	16.44	7.51
	2/15/2011	10:30	1.67	16.70	7.51
	2/15/2011	10:23	1.66	16.73	7.51
	2/15/2011	10:34	1.66	16.77	7.51
MW-12	6/16/2011	15:14	1.65	19.33	7.41
	6/16/2011	15:16	1.65	18.94	7.28
	6/16/2011	15:18	1.63	18.70	7.04
	6/16/2011	15:20	1.62	18.79	6.94
	6/16/2011	15:22	1.63	18.66	6.95
	6/16/2011	15:24	1.63	18.77	6.98
MW-12	9/19/2011	16:48	1.35	18.02	7.71
	9/19/2011	16:50	1.34	17.87	7.67
	9/19/2011	16:52	1.34	17.71	7.65
	9/19/2011	16:54	1.34	17.73	7.65
	9/19/2011	16:56	1.34	17.75	7.66
	9/19/2011	16:58	1.34	17.75	7.66

Notes:

* (S/cm) - specific conductivity measured in Siemens/Centimeters

°C - degrees Celcius

TABLE 3
GROUNDWATER ANALYTICAL RESULTS

Table 3
BYPASS BASIN
GROUNDWATER ANALYTICAL RESULTS
 Powerton Station, Illinois
 Midwest Generation
 21153.018

Chemical Name	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-9		MW-11		MW-11		MW-11	
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Antimony	Metals 6020	0.006	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	ND	ND	0.0021	0.0025	0.0016	0.0019	0.0019	0.0019
Barium	Metals 6020	2.0	0.038	0.042	0.03	0.038	0.11	0.18	0.18	0.18
Beryllium	Metals 6020	0.004	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	Metals 6020	1.0	ND	ND	ND	0.0028	0.0041	ND	ND	0.0024
Copper	Metals 6020	0.65	ND	ND	ND	0.0032	0.0032	ND	ND	0.0043
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND	ND	ND	ND	ND
Iron	Metals 6020	5.0	ND	0.19	ND	0.44	0.01	0.018	0.029	0.029
Lead	Metals 6020	0.0075	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	Metals 6020	0.15	0.19	0.43	0.14	0.48	3.2	3.6	2.2	2.9
Mercury	Mercury 7470A	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	Metals 6020	0.1	0.001	0.011	0.0065	0.0063	0.019	0.016	0.011	0.013
Selenium	Metals 6020	0.05	0.005	ND	0.0043	0.0017	0.0026	0.0015	0.004	0.0018
Silver	Metals 6020	0.05	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	Metals 6020	5.0	0.0082	ND	ND	0.012	ND	ND	ND	ND
Boron	Metals 6020	2	2.2	1.9	2.5	1.9	1.6	1.8	1.5	1.6
Sulfate	Dissolved 9038	400	1.10	99	130	110	170	160	140	210
Chloride	Dissolved 9251	200	25	33	30	28	70	66	53	120
Nitrate as N	Nitrogen By calc	10	2.7	3.7	3.7	5.6	0.41	0.17	0.78	0.04
Total Dissolved Solids	Dissolved 2540C	1,200	510	470	500	540	740	710	620	930
Fluoride	Dissolved 4500 FC	4	ND	0.32	0.25	0.34	0.53	0.56	0.58	0.67
Radium 226 (pCi/L)	EPA 903.1	20	0.673	0.728	0.117	0.955	0.445	0.174	0.332	0.929
Radium 228 (pCi/L)	EPA 904.0	20	0.941	0.983	0.553	0.974	0.915	0.967	0.355	0.914

Notes:
 *Class I Groundwater Standards from 35 IAC Part 620
 Bold values show exceedences of 35 IAC Part 620
 ND=non detect
 mg/L- milligrams per Liter

Table 3
BYPASS BASIN
GROUNDWATER ANALYTICAL RESULTS
 Powerton Station, Illinois
 Midwest Generation
 21153.018

Chemical Name	Sample Analysis Method	Groundwater Quality Standard (mg/L)	MW-12 (mg/L)			
			12/15/10	2/15/11	6/16/11	9/19/11
Antimony	Metals 6020	0.006	ND	ND	ND	ND
Arsenic	Metals 6020	0.05	0.088	0.013	0.0064	0.0087
Barium	Metals 6020	2.0	0.089	0.11	0.091	0.085
Beryllium	Metals 6020	0.004	ND	ND	ND	ND
Cadmium	Metals 6020	0.005	ND	ND	ND	ND
Chromium	Metals 6020	0.1	ND	0.0056	0.0044	0.0071
Cobalt	Metals 6020	1.0	ND	ND	ND	ND
Copper	Metals 6020	0.65	ND	ND	0.0032	0.0036
Cyanide	Dissolved 9014	0.2	ND	ND	ND	ND
Iron	Metals 6020	5.0	5.5	6.3	5.6	4
Lead	Metals 6020	0.0075	ND	ND	ND	ND
Manganese	Metals 6020	0.15	0.32	0.58	0.26	0.37
Mercury	Mercury 7470A	0.002	0.0096	ND	ND	ND
Nickel	Metals 6020	0.1	0.0026	0.01	0.0072	0.0075
Selenium	Metals 6020	0.05	ND	0.0027	ND	0.0023
Silver	Metals 6020	0.05	ND	ND	ND	ND
Thallium	Metals 6020	0.002	ND	ND	ND	ND
Zinc	Metals 6020	5.0	ND	ND	ND	ND
Boron	Metals 6020	2	1.6	1.4	1.3	1.2
Sulfate	Dissolved 9038	400	290	270	350	360
Chloride	Dissolved 9251	200	170	180	180	190
Nitrate as N	Nitrogen By calc	10	ND	ND	0.14	ND
Total Dissolved Solids	Dissolved 2540C	1,200	980	1,000	1,100	970
Fluoride	Dissolved 4500 FC	4	0.71	0.61	0.64	0.74
Radium 226 (pCi/L)	EPA 903.1	20	0.617	0.207	0.893	0.373
Radium 228 (pCi/L)	EPA 904.0	20	0.97	0.973	0.956	0.859

Notes:
 *Class I Groundwater Standards from 35 IAC Part 620
 Bold values show exceedences of 35 IAC Part 620
 ND-non detect
 mg/L- milligrams per Liter

ATTACHMENT A

BORING LOGS / WELL COMPLETION REPORTS

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-9-Po** SHEET **1 OF 2**
 CLIENT **Midwest Generation**
 PROJECT & NO. **21053.070**
 LOCATION **Powerton**

LOGGED BY **MPG**
 GROUND ELEVATION **466.2**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content					NOTES & TEST RESULTS	
						PL	Unconfined Compressive Strength (TSF) *			LL		
						10	20	30	40	50		
466.2	0.0	[Cross-hatched pattern]	Black cinders, fine gravel, crushed rock, dry FILL	SS-1 1.0-2.5							Bentonite seal 3.0'-20.0'. Stickup protective cover installed.	
				SS-2 3.5-5.0								
				SS-3 6.0-7.5								
				SS-4 8.5-10.0								
456.2	10.0	[Cross-hatched pattern]	Black cinders, coarse to fine sand, brick, fine gravel, dry FILL	SS-5 11.0-12.5 14"R	6 12 15						qu=NT	
				SS-6 13.5-15.0 18"R	5 6 7							qu=NT
				SS-7 16.0-17.5 18"R	6 9 10							qu=NT
449.2	17.0	[Diagonal hatched pattern]	Moist Brown clayey silt, trace fine sand, moist CL	SS-8 18.5-20.0 18"R	3 6 11						qu=NT	
447.2	19.0		[Dotted pattern]	Light brown fine to medium sand, loose, well graded								

DRILLING CONTRACTOR **Groff Testing**
 DRILLING METHOD **4.25" I.D. HSA**
 DRILLING EQUIPMENT **CME 550 ATV**
 DRILLING STARTED **9/28/10** ENDED **9/28/10**


REMARKS
 Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
 ▽ 23.5
 ▽ 21.6
 ▽

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-9-Po** SHEET **2 OF 2**
 CLIENT **Midwest Generation**
 PROJECT & NO. **21053.070**
 LOCATION **Powerton**

LOGGED BY **MPG**
 GROUND ELEVATION **466.2**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content					NOTES & TEST RESULTS	
						PL	Unconfined Compressive Strength (TSF)			LL		
						1	2	3	4	5		
446.2	20.0		SW								Sand pack 20.0'-32.0' Set screen (slot 0.010") 22.0'-32.0'	
444.6	21.6		▽	SS-9 21.0-22.5 18"R	3 3 4							
442.7	23.5		▽	Saturated	SS-10 23.5-25.0 18"R	1 3 8						
					SS-11 26.0-27.5 18"R	0 2 2						
				Medium dense	SS-12 28.5-30.0 18"R	2 6 13						
				Trace fine gravel	SS-13 31.0-32.5 18"R	2 5 10						
433.7	32.5			End of Boring at 32.5'								

DRILLING CONTRACTOR **Groff Testing**
 DRILLING METHOD **4.25" I.D. HSA**
 DRILLING EQUIPMENT **CME 550 ATV**
 DRILLING STARTED **9/28/10** ENDED **9/28/10**





REMARKS
Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
 ▽ 23.5
 ▽ 21.6
 ▽

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-11-Po** SHEET **1** OF **2**
 CLIENT **Midwest Generation**
 PROJECT & NO. **21053.070**
 LOCATION **Powerton**

LOGGED BY **MPG**
 GROUND ELEVATION **468.1**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content					NOTES & TEST RESULTS	
						PL	Unconfined Compressive Strength (TSF) *			LL		
						1	2	3	4	5		
468.1	0.0		Cinders, gravel, sand, silt FILL	SS-1 1.0-2.5							Bentonite seal 3.0'-28.0'. Stickup protective cover installed.	
				SS-2 3.5-5.0								
					SS-3 6.0-7.5							
					SS-4 8.5-10.0							
458.1	10.0		Black and brown clay, fine gravel, cinders, bricks, silt, coarse sand, dry FILL	SS-5 11.0-12.5 16"R	8 10 10						qu=NT	
					SS-6 13.5-15.0 17"R	2 2 3						qu=2.5**tsf
					SS-7 16.0-17.5 18"R	1 3 4						qu=1.5**tsf
452.1	16.0		Brown and gray silty clay, trace fine gravel, trace fine sand, stiff, dry CL	SS-8 18.5-20.0 18"R	WOH 2 2						qu=0.5**tsf	
449.6	18.5			Gray clayey silt, organics, very soft, moist ML								

DRILLING CONTRACTOR **Groff Testing**
 DRILLING METHOD **4.25" I.D. HSA**
 DRILLING EQUIPMENT **CME 550 ATV**
 DRILLING STARTED **9/28/10** ENDED **9/29/10**

REMARKS
 Installed 2" diameter PVC
 monitoring well.

WATER LEVEL (ft.)
 ∇ 32.5 while drilling
 ∇ 26.5 after 12 hours
 ∇ 26.5 after 48 hours

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-11-Po** SHEET **2 OF 2**
 CLIENT **Midwest Generation**
 PROJECT & NO. **21053.070**
 LOCATION **Powerton**

LOGGED BY **MPG**
 GROUND ELEVATION **468.1**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content					NOTES & TEST RESULTS
						PL	Unconfined Compressive Strength (TSF) *			LL	
						1	2	3	4	5	
448.1	20.0			SS-9 21.0-22.5 0"R	1 2 3						qu=NT
				SS-10 23.5-25.0 18"R	WOH WOH 1						qu=0.5**tsf
442.1	26.0		Dark gray silty clay, some organics, medium stiff, dry CL	SS-11 26.0-27.5 18"R	1 3 4						qu=1.5**tsf
441.6	26.5				SS-12 28.5-30.0 18"R	3 4 6					
				SS-13 31.0-32.5 18"R	3 4 6						Set screen (slot 0.010") 30.0'-40.0' qu=2.5**tsf
435.6	32.5		Brown and gray coarse to fine gravel, coarse to fine sand, loose, saturated GP	SS-14 33.5-35.0 18"R	1 2 1						qu=NT
					SS-15 36.0-37.5 18"R	1 0 0					
431.6	36.5		Light brown fine sand, well graded, very loose, saturated SW	SS-16 38.5-40.0 18"R	2 3 4						qu=NT
428.1	40.0			End of Boring at 40.0'							

DRILLING CONTRACTOR **Groff Testing**
 DRILLING METHOD **4.25" I.D. HSA**
 DRILLING EQUIPMENT **CME 550 ATV**
 DRILLING STARTED **9/28/10** ENDED **9/29/10**




REMARKS
 Installed 2" diameter PVC
 monitoring well.

WATER LEVEL (ft.)
 ∇ 32.5 while drilling
 ∇ 26.5 after 12 hours
 ∇ 26.5 after 48 hours

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-12-Po** SHEET 1 OF 2
 CLIENT **Midwest Generation**
 PROJECT & NO. **21053.070**
 LOCATION **Powerton**

LOGGED BY **MPG**
 GROUND ELEVATION **470.0**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content					NOTES & TEST RESULTS	
						PL	Unconfined Compressive Strength (TSF) *			LL		
						10	20	30	40	50		
470.0	0.0		Black cinders, fine gravel, silty clay, dry FILL	SS-1 1.0-2.5							Bentonite seal 3.0'-18.0'. Stickup protective cover installed.	
			SS-2 3.5-5.0									
			SS-3 6.0-7.5									
			SS-4 8.5-10.0									
460.0	10.0		Black cinders FILL	SS-5 11.0-12.5 18"R	17 18 11						qu=NT	
			SS-6 13.5-15.0 18"R		12 20 17							qu=NT
			Seam of light brown coarse sand	SS-7 16.0-17.5 18"R	6 7 6							qu=NT
451.5	18.5		Gray silt, little to some coarse to fine sand, trace clay, very soft, saturated	SS-8 18.5-20.0 18"R	1 5 2						Sand pack 18.0'-35.0' qu=NT Set screen (slot 0.010") 19.0'-29.0'	

DRILLING CONTRACTOR **Groff Testing**
 DRILLING METHOD **4.25" I.D. HSA**
 DRILLING EQUIPMENT **CME 550 ATV**
 DRILLING STARTED **9/29/10** ENDED **9/29/10**

REMARKS
 Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
 ▽ 20.5
 ▽ 19.5
 ▽

PATRICK ENGINEERING INC.

BORING NUMBER **B-MW-12-Po** SHEET **2 OF 2**
 CLIENT **Midwest Generation**
 PROJECT & NO. **21053.070**
 LOCATION **Powerton**

LOGGED BY **MPG**
 GROUND ELEVATION **470.0**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content					NOTES & TEST RESULTS
						PL	Unconfined Compressive Strength (TSF) *			LL	
						1	2	3	4	5	
450.0 449.5	20.0 20.5		ML								
				SS-9 21.0-22.5 18"R	1 2 1						qu=0.25**tsf
			Trace peat	SS-10 23.5-25.0 18"R	WOH 2 1						qu=0.5**tsf
444.0	26.0		Gray mottled black clayey silt, with some organics, trace peat, very soft, medium stiff, moist	SS-11 26.0-27.5 18"R	WOH WOH 2						qu=0.5**tsf
				SS-12 28.5-30.0 18"R	1 3 4						qu=1.75**tsf
				SS-13 31.0-32.5 18"R	2 3 3						qu=2.0**tsf
437.5	32.5		Dark brown and gray silty clay, trace coarse sand, trace organics, stiff to very stiff, dry	SS-14 33.5-35.0 18"R	4 6 6						qu=2.5**tsf
435.0	35.0		End of Boring at 35.0'								

DRILLING CONTRACTOR **Groff Testing**
 DRILLING METHOD **4.25" I.D. HSA**
 DRILLING EQUIPMENT **CME 550 ATV**
 DRILLING STARTED **9/29/10** ENDED **9/29/10**

REMARKS
 Installed 2" diameter PVC monitoring well.

WATER LEVEL (ft.)
 ∇ 20.5
 ∇ 19.5
 ∇

1. Type of Well

- a. Driven Well: Casing Diameter (in.) _____ Depth (ft.) _____
 - b. Bored Well: Casing Diameter (in.) _____ Buried Slab? _____
 - c. Drilled Well: PVC Casing Formation Packer Set at Depth of (ft.) 32
 - d. Drilled Well: Steel Casing Mechanically Driven _____
 - e. Hole Diameter (in.) 8.5 to (ft.) 32 ; (in.) _____ to (ft.) _____
 - f. Type of Grout # of bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)
- | | | | | | |
|-----------|---|---|----|----|----|
| Bentonite | 9 | 3 | 20 | 20 | 20 |
|-----------|---|---|----|----|----|

g. Well Finished within Unconsolidated Materials

- h. Kind of Gravel/Sand Pack Grain Size/Supplier # From (ft.) To (ft.)
- | | | | |
|--------------------|----|----|----|
| Washed quartz sand | #5 | 20 | 32 |
|--------------------|----|----|----|

2. Well Use: Monitoring Well Deinfected? No

- 3. Date Well Completed: Sep 28, 2010 Driller's Estimated Well Yield (gpm): _____
- 4. Date Permanent Pump Installed: _____ Set at Depth (ft.): _____
- 5. Pump Capacity (gpm): _____ Attachment to Casing: _____
- 6. Pileas Adapter Model and Manufacturer: _____
- 7. Well Cap Type & Manufacturer: _____
- 8. Pressure Tank Working Cycles (gals.): _____ Captive Air? _____ 9. Pump System Deinfected: _____
- 10. Name of Pump Company _____ License # _____
- 11. Pump Installer: _____ License # _____
- 12. Licensed Pump Installation Contractor Signature _____ Date _____

Illinois Department of Public Health
Division of Environmental Health
525 West Jefferson Street
Springfield, IL 62761

IMPORTANT NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 09-63. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center.

13. Property Owner: Midwest Generation LLC Well # PEI-MV-09

14. Driller: _____ License # _____

15. Name of Drilling Company: Groff Testing Corporation 16. Permit Number: _____

Date Issued: _____ 17. Date Drilling Started Sep 28, 2010

18. Well Site Address: 13082 E. Manito Road, Pekin, IL 61554

19. Township Name: Cincinnati Land I.D. # _____

20. Subdivision Name: _____ Lot # _____

21. Location: a. County Tazewell b. Site Elevation 470 ft. (above msl)

c. Township: 24N Range: 5W Section: 9

d. NE Quarter of the SE Quarter of the SW Quarter

e. GPS: Lat: Degrees 40 Minutes 32 Seconds 32.3 N

Lon: Degrees 89 Minutes 40 Seconds 34.4 W

22. Casing and Liner Information

Diameter (in.)	Material, Joint Type	From (ft.)	To (ft.)
2	PVC, threaded	0	22

23. Is the well screened? Yes No If yes Diameter (in.) Length (ft.) Slot Size (in.) From (ft.) To (ft.)

2	10	0.01	22	32
---	----	------	----	----

24. Water from sand _____ at a depth of (ft.) 19 To (ft.) 32

a. Static water level (ft.) below top of casing 21.6 which is (in.) above ground 3

b. pumping level is (ft.) _____ pumping (gpm) _____ for (hours) _____

25. Earth Materials Passed Through _____ From (ft.) To (ft.)

Earth Materials Passed Through	From (ft.)	To (ft.)
gravel, crushed rock, cinders	0	10
cinders, sand, brick	10	17
clayey silt	17	19
sand	19	32

(Attach 2nd page, if necessary) (if DRY HOLE, fill out log & indicate how hole was sealed)

Licensed Water Well Contractor Signature _____ License # _____

1. Type of Well

a. Driven Well: Casing Diameter (in.) _____ Depth (ft.) _____
 b. Bored Well: Casing Diameter (in.) _____ Buried Slab? _____
 c. Drilled Well: PVC Casing Formation Packer Set at Depth of (ft.) 40
 d. Drilled Well: Steel Casing Mechanically Driven _____

e. Hole Diameter (in.) 8.5 to (ft.) 40 ; (in.) _____ ; (ft.) _____
 f. Type of Grout # of bags Grout Weight From (ft.) To (ft.) Tremie Depth (ft.)

Bentonite	12		3	28	

g. Well Finished within Unconsolidated Materials _____

h. Kind of Gravel/Sand Pack Grain Size/Supplier # From (ft.) To (ft.)
 Washed quartz sand #5 28 40

2. Well Use: Monitoring _____ Well Disinfected? No

3. Date Well Completed: Sep 28, 2010 Driller's Estimated Well Yield (gpm): _____

4. Date Permanent Pump Installed: _____ Set at Depth (ft.): _____

5. Pump Capacity (gpm): _____
 6. Pitless Adapter Model and Manufacturer: _____ Attachment to Casing: _____

7. Well Cap Type & Manufacturer: _____

8. Pressure Tank Working Cycle (gals.): _____ Captive Air? _____ 9. Pump System Disinfected: _____

10. Name of Pump Company _____ License # _____

11. Pump Installer: _____ License # _____

12. Licensed Pump Installation Contractor Signature _____ Date _____

Illinois Department of Public Health
 Division of Environmental Health
 525 West Jefferson Street
 Springfield, IL 62761
 IL 482-0126
 Revised 6/09

IMPORTANCE NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 08-063. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center.

13. Property Owner: Midwest Generation LLC Well # FEL-004-11

14. Driller: _____ License # _____

15. Name of Drilling Company: Groff Teeling Corporation 16. Permit Number: _____

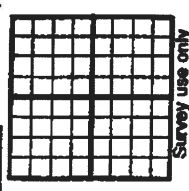
Date issued: _____ 17. Date Drilling Started Sep 28, 2010

18. Well Site Address: 13082 E. Manito Road, Pekin, IL 61554

19. Township Name: Cincinnati Land I.D. # _____

20. Subdivision Name: _____ Lot # _____

21. Location: a. County Tazewell b. Site Elevation 470 ft. (above msl)



c. Township: 24N Range: SW Section: 9

d. SW Quarter of the NE Quarter of the SW Quarter

e. GPS: Lat: Degrees 40 Minutes 32 Seconds 35.2 N

Lon: Degrees 89 Minutes 40 Seconds 33.2 W

22. Casing and Liner Information

Diameter (in.)	Material, Joint Type	From (ft.)	To (ft.)
2	PVC, threaded	0	30

23. Is the well screened? Yes No If yes Diameter (in.) Length (ft.) Slot Size (in.) From (ft.) To (ft.)

	2	10	0.01	30	40
--	---	----	------	----	----

24. Water from sand and gravel at a depth of (ft.) 32.5 To (ft.) 40

a. Static water level (ft.) below top of casing 26.5 which is (in.) above ground 3

b. pumping level is (ft.) _____ pumping (gpm) _____ for (hours) _____

25. Earth Materials Passed Through

Earth Materials Passed Through	From (ft.)	To (ft.)
gravel, sand, cinders	0	10
clay and gravel	10	16
silt and clay	16	20
organic silt	20	26
silty clay	26	32.5
sand and gravel	32.5	40

(Attach 2nd page, if necessary) (If DRY HOLE, fill out log & indicate how hole was sealed)

Licensed Water Well Contractor Signature _____ License # _____

1. Type of Well

a. Driven Well: Casing Diameter (in.) _____ Depth (ft.) _____
 b. Bored Well: Casing Diameter (in.) _____ Buried Slab? _____
 c. Drilled Well: PVC Casing Formation Packer Set at Depth of (ft.) 29
 d. Drilled Well: Steel Casing Mechanically Driven
 e. Hole Diameter (in.) 8.5 to (ft.) 29 ; (in.) _____ to (ft.) _____ ; (in.) _____ to (ft.) _____
 f. Type of Grout # of bags GROUT Weight From (ft.) To (ft.) Tremie Depth (ft.)

Bentonite	6		3	18	

g. Well Finished within Unconsolidated Materials

h. Kind of Gravel/Sand Pack Grain Size/Supplier # From (ft.) To (ft.)

Washed quartz sand	#5	18	29

2. Well Use: Monitoring Well Disinfected? No

3. Date Well Completed: Sep 28, 2010 Driller's Estimated Well Yield (gpm): _____

4. Date Permanent Pump Installed: _____ Set at Depth (ft.): _____

5. Pump Capacity (gpm): _____ Attachment to Casing: _____
 6. Pitless Adapter Model and Manufacturer: _____

7. Well Cap Type & Manufacturer: _____
 8. Pressure Tank Working Cycle (gals.): _____ Captive Air? _____ 9. Pump System Disinfected: _____

10. Name of Pump Company _____ License # _____

11. Pump Installer: _____ License # _____

12. Licensed Pump Installation Contractor Signature _____ Date _____

Illinois Department of Public Health
 Division of Environmental Health
 525 West Jefferson Street
 Springfield, IL 62761
 IL 482-0126
 Revised 6/09

IMPORTANCE NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 0863. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center.

13. Property Owner: Midwest Generation LLC Well # PEI-MW-12

14. Driller: _____ License # _____

15. Name of Drilling Company: Groff Testing Corporation 16. Permit Number: _____

Date Issued: _____ 17. Date Drilling Started Sep 29, 2010

18. Well Site Address: 13082 E. Manito Road, Pekin, IL 61554

19. Township Name: Cincinnati Land L.D. # _____

20. Subdivision Name: _____ Lot # _____

21. Location: a. County Tazewell b. Site Elevation 470 ft. (above msl)

c. Township: 24N Range: 5W Section: 9

d. SE Quarter of the NE Quarter of the SW Quarter

e. GPS: Lat: Degrees 40 Minutes 32 Seconds 34.2 N

Lon: Degrees 89 Minutes 40 Seconds 35.7 W

22. Casing and Liner Information

Diameter (in.)	Material, Joint Type	From (ft.)	To (ft.)
2	PVC, threaded	0	19

23. Is the well screened? Yes No If yes Diameter (in.) Length (ft.) Slot Size (in.) From (ft.) To (ft.)

	2	10	0.01	19	29
--	---	----	------	----	----

24. Water from silt and sand _____ at a depth of (ft.) 20 To (ft.) 26

a. Static water level (ft.) below top of casing 19.5 which is (in.) above ground 3

b. pumping level is (ft.) _____ pumping (gpm) _____ for (hours) _____

25. Earth Materials Passed Through From (ft.) To (ft.)

Earth Materials Passed Through	From (ft.)	To (ft.)
clinders, gravel, clay	0	10
clinders	10	18.5
silt and sand	18.5	26
clayey silt	26	29

(Attach 2nd page, if necessary) (If DRY HOLE, fill out log & indicate how hole was sealed)

Licensed Water Well Contractor Signature _____ License # _____

ATTACHMENT B
LABORATORY ANALYTICAL RESULTS



PDC Laboratories, Inc.
 P.O. Box 9071 • Peoria, IL 61612-9071
 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



Midwest Generation - Powerton Facility
 13082 E Manito Rd
 Pekin, IL 61554
 Attn: Mark Kelly

Date Received: 09/20/11 7:00
 Report Date: 10/17/11
 Customer #: 233203
 PO#: 4500073039

Sample No: 1091955-08
 Sample Description: WELL #8

Collect Date: 09/19/11 17:55
 Matrix: Ground Water

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Soluble Metals - PIA</u>					
Mercury	< 0.20 ug/L		09/20/11 15:19	JMW	SW 6020
Nickel	7.0 ug/L		09/20/11 15:19	JMW	SW 6020
Selenium	3.1 ug/L		09/21/11 08:10	JMW	SW 6020
Silver	< 5.0 ug/L		09/20/11 15:19	JMW	SW 6020
Thallium	< 1.0 ug/L		09/20/11 15:19	JMW	SW 6020
Zinc	< 6.0 ug/L		09/20/11 15:19	JMW	SW 6020

Sample No: 1091955-09
 Sample Description: WELL #9

Collect Date: 09/19/11 13:40
 Matrix: Ground Water

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Cyanide	< 0.0050 mg/L		09/26/11 10:12	lgth	335.4
Solids - total dissolved solids (TDS)	500 mg/L		09/26/11 10:28	BNS	SM 2540C 18Ed
<u>Soluble Anions - PIA</u>					
Chloride	30 mg/L		09/21/11 17:33	SJW	EPA 300.0 R2.1
Fluoride	0.25 mg/L		09/21/11 16:44	SJW	EPA 300.0 R2.1
Nitrate-N	3.7 mg/L		09/21/11 17:33	SJW	EPA 300.0 R2.1
Sulfate	130 mg/L		09/21/11 17:49	SJW	EPA 300.0 R2.1
<u>Soluble Metals - PIA</u>					
Antimony	< 3.0 ug/L		09/20/11 15:41	JMW	SW 6020
Arsenic	< 1.0 ug/L		09/20/11 15:41	JMW	SW 6020
Barium	30 ug/L		09/20/11 15:41	JMW	SW 6020
Beryllium	< 1.0 ug/L		09/20/11 15:41	JMW	SW 6020
Boron	2500 ug/L		09/20/11 15:41	JMW	SW 6020
Cadmium	< 1.0 ug/L		09/20/11 15:41	JMW	SW 6020
Chromium	< 4.0 ug/L		09/20/11 15:41	JMW	SW 6020
Cobalt	< 2.0 ug/L		09/20/11 15:41	JMW	SW 6020
Copper	< 3.0 ug/L		09/20/11 15:41	JMW	SW 6020
Iron	< 0.010 mg/L		09/20/11 14:52	eck	SW 6010B
Lead	< 1.0 ug/L		09/20/11 15:41	JMW	SW 6020
Manganese	140 ug/L		09/20/11 15:41	JMW	SW 6020
Mercury	< 0.20 ug/L		09/20/11 15:41	JMW	SW 6020
Nickel	6.5 ug/L		09/20/11 15:41	JMW	SW 6020
Selenium	4.3 ug/L		09/21/11 08:32	JMW	SW 6020

1091955



PDC Laboratories, Inc.

P.O. Box 9071 • Peoria, IL 61612-9071
(309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



Midwest Generation - Powerton Facility
13082 E Manito Rd
Pekin, IL 61554
Attn: Mark Kelly

Date Received: 09/20/11 7:00
Report Date: 10/17/11
Customer #: 233203
PO#: 4500073039

Sample No: **1091955-09**
Sample Description: **WELL #9**

Collect Date: **09/19/11 13:40**
Matrix: **Ground Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Soluble Metals - PIA</u>					
Silver	< 5.0 ug/L		09/20/11 15:41	JMW	SW 6020
Thallium	< 1.0 ug/L		09/20/11 15:41	JMW	SW 6020
Zinc	< 6.0 ug/L		09/20/11 15:41	JMW	SW 6020

Sample No: **1091955-10**
Sample Description: **WELL #10**

Collect Date: **09/19/11 15:00**
Matrix: **Ground Water**

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>General Chemistry - PIA</u>					
Cyanide	< 0.0050 mg/L		09/26/11 10:12	lgth	335.4
Solids - total dissolved solids (TDS)	470 mg/L		09/26/11 10:28	BNS	SM 2540C 18Ed
<u>Soluble Anions - PIA</u>					
Chloride	49 mg/L		09/21/11 18:21	SJW	EPA 300.0 R2.1
Fluoride	< 0.25 mg/L		09/21/11 18:05	SJW	EPA 300.0 R2.1
Nitrate-N	4.5 mg/L		09/21/11 18:21	SJW	EPA 300.0 R2.1
Sulfate	64 mg/L		09/21/11 18:21	SJW	EPA 300.0 R2.1
<u>Soluble Metals - PIA</u>					
Antimony	< 3.0 ug/L		09/20/11 15:46	JMW	SW 6020
Arsenic	< 1.0 ug/L		09/20/11 15:46	JMW	SW 6020
Barium	250 ug/L		09/20/11 15:46	JMW	SW 6020
Beryllium	< 1.0 ug/L		09/20/11 15:46	JMW	SW 6020
Boron	420 ug/L		09/20/11 15:46	JMW	SW 6020
Cadmium	< 1.0 ug/L		09/20/11 15:46	JMW	SW 6020
Chromium	< 4.0 ug/L		09/20/11 15:46	JMW	SW 6020
Cobalt	2.5 ug/L		09/20/11 15:46	JMW	SW 6020
Copper	< 3.0 ug/L		09/20/11 15:46	JMW	SW 6020
Iron	< 0.010 mg/L		09/21/11 09:18	eck	SW 6010B
Lead	< 1.0 ug/L		09/20/11 15:46	JMW	SW 6020
Manganese	2300 ug/L		09/20/11 15:46	JMW	SW 6020
Mercury	< 0.20 ug/L		09/20/11 15:46	JMW	SW 6020
Nickel	10 ug/L		09/20/11 15:46	JMW	SW 6020
Selenium	5.7 ug/L		09/21/11 08:36	JMW	SW 6020
Silver	< 5.0 ug/L		09/20/11 15:46	JMW	SW 6020
Thallium	< 1.0 ug/L		09/20/11 15:46	JMW	SW 6020
Zinc	< 6.0 ug/L		09/20/11 15:46	JMW	SW 6020

1091955



PDC Laboratories, Inc.
 P.O. Box 9071 • Peoria, IL 61612-9071
 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



Midwest Generation - Powerton Facility
 13082 E Manito Rd
 Pekin, IL 61554
 Attn: Mark Kelly

Date Received: 09/20/11 7:00
 Report Date: 10/17/11
 Customer #: 233203
 PO#: 4500073039

Sample No: 1091955-11
 Sample Description: MW -11

Collect Date: 09/19/11 16:15
 Matrix: Ground Water

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Cyanide	< 0.0050 mg/L		09/26/11 10:13	Igth	335.4
Solids - total dissolved solids (TDS)	620 mg/L		09/26/11 10:28	BNS	SM 2540C 18Ed
Soluble Anions - PIA					
Chloride	53 mg/L		09/21/11 19:25	SJW	EPA 300.0 R2.1
Fluoride	0.58 mg/L		09/21/11 18:37	SJW	EPA 300.0 R2.1
Nitrate-N	0.74 mg/L		09/21/11 18:37	SJW	EPA 300.0 R2.1
Sulfate	140 mg/L		09/21/11 19:25	SJW	EPA 300.0 R2.1
Soluble Metals - PIA					
Antimony	< 3.0 ug/L		09/20/11 15:52	JMW	SW 6020
Arsenic	1.6 ug/L		09/20/11 15:52	JMW	SW 6020
Barium	110 ug/L		09/20/11 15:52	JMW	SW 6020
Beryllium	< 1.0 ug/L		09/20/11 15:52	JMW	SW 6020
Boron	1500 ug/L		09/20/11 15:52	JMW	SW 6020
Cadmium	< 1.0 ug/L		09/20/11 15:52	JMW	SW 6020
Chromium	< 4.0 ug/L		09/20/11 15:52	JMW	SW 6020
Cobalt	< 2.0 ug/L		09/20/11 15:52	JMW	SW 6020
Copper	< 3.0 ug/L		09/20/11 15:52	JMW	SW 6020
Iron	0.018 mg/L		09/21/11 09:25	eck	SW 6010B
Lead	< 1.0 ug/L		09/20/11 15:52	JMW	SW 6020
Manganese	2200 ug/L		09/20/11 15:52	JMW	SW 6020
Mercury	< 0.20 ug/L		09/20/11 15:52	JMW	SW 6020
Nickel	11 ug/L		09/20/11 15:52	JMW	SW 6020
Selenium	4.0 ug/L		09/21/11 08:40	JMW	SW 6020
Silver	< 5.0 ug/L		09/20/11 15:52	JMW	SW 6020
Thallium	< 1.0 ug/L		09/20/11 15:52	JMW	SW 6020
Zinc	< 6.0 ug/L		09/20/11 15:52	JMW	SW 6020

Sample No: 1091955-12
 Sample Description: MW -12

Collect Date: 09/19/11 17:00
 Matrix: Ground Water

Parameters	Result	Qual	Analysis Date	Analyst	Method
General Chemistry - PIA					
Cyanide	< 0.0050 mg/L		09/26/11 10:16	Igth	335.4
Solids - total dissolved solids (TDS)	970 mg/L		09/26/11 10:28	BNS	SM 2540C 18Ed

1091955



PDC Laboratories, Inc.
 P.O. Box 9071 • Peoria, IL 61612-9071
 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



Midwest Generation - Powerton Facility
 13082 E Manito Rd
 Pekin, IL 61554
 Attn: Mark Kelly

Date Received: 09/20/11 7:00
 Report Date: 10/17/11
 Customer #: 233203
 PO#: 4500073039

Sample No: 1091955-12
 Sample Description: MW -12

Collect Date: 09/19/11 17:00
 Matrix: Ground Water

Parameters	Result	Qual	Analysis Date	Analyst	Method
<u>Soluble Anions - PIA</u>					
Chloride	190 mg/L		09/21/11 19:58	SJW	EPA 300.0 R2.1
Fluoride	0.74 mg/L		09/21/11 19:41	SJW	EPA 300.0 R2.1
Nitrate-N	< 0.02 mg/L		09/21/11 19:41	SJW	EPA 300.0 R2.1
Sulfate	360 mg/L		09/21/11 19:58	SJW	EPA 300.0 R2.1
<u>Soluble Metals - PIA</u>					
Antimony	< 3.0 ug/L		09/20/11 15:57	JMW	SW 6020
Arsenic	8.7 ug/L		09/20/11 15:57	JMW	SW 6020
Barium	85 ug/L		09/20/11 15:57	JMW	SW 6020
Beryllium	< 1.0 ug/L		09/20/11 15:57	JMW	SW 6020
Boron	1200 ug/L		09/20/11 15:57	JMW	SW 6020
Cadmium	< 1.0 ug/L		09/20/11 15:57	JMW	SW 6020
Chromium	7.1 ug/L		09/20/11 15:57	JMW	SW 6020
Cobalt	< 2.0 ug/L		09/20/11 15:57	JMW	SW 6020
Copper	3.6 ug/L		09/20/11 15:57	JMW	SW 6020
Iron	4.0 mg/L		09/21/11 09:40	eck	SW 6010B
Lead	< 1.0 ug/L		09/20/11 15:57	JMW	SW 6020
Manganese	370 ug/L		09/20/11 15:57	JMW	SW 6020
Mercury	< 0.20 ug/L		09/20/11 15:57	JMW	SW 6020
Nickel	7.5 ug/L		09/20/11 15:57	JMW	SW 6020
Selenium	2.3 ug/L		09/21/11 08:44	JMW	SW 6020
Silver	< 5.0 ug/L		09/20/11 15:57	JMW	SW 6020
Thallium	< 1.0 ug/L		09/20/11 15:57	JMW	SW 6020
Zinc	< 6.0 ug/L		09/20/11 15:57	JMW	SW 6020



PDC Laboratories, Inc.
 P.O. Box 9071 • Peoria, IL 61612-9071
 (309) 692-9688 • (800) 752-6651 • FAX (309) 692-9689



Midwest Generation - Powerton Facility
 13082 E Manito Rd
 Pekin, IL 61554
 Attn: Mark Kelly

Date Received: 09/20/11 7:00
 Report Date: 10/17/11
 Customer #: 233203
 PO#: 4500073039

Notes

This report shall not be reproduced, except in full, without the written approval of the laboratory.

PDC Laboratories participates in the following accreditation/certification and proficiency programs at the following locations. Endorsement by Federal or State Governments or their agencies is not implied.

- PIA PDC Laboratories - Peoria, IL
 NELAC Accreditation for Drinking Water, Wastewater, Hazardous and Solid Wastes Fields of Testing through IL EPA Lab No. 100230
 Illinois Department of Public Health Bacteriological Analysis in Drinking Water Approved Laboratory Registry No. 17553
 Drinking Water Certifications: Kansas (E-10338); Missouri (870); Wisconsin (998284430); Indiana (C-IL-040); Iowa (240)
 Wastewater Certifications: Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 Hazardous/Solid Waste Certifications; Arkansas (88-0677); Wisconsin (998284430); Iowa (240); Kansas (E-10335)
 UST Certification; Iowa (240)
- SPM PDC Laboratories - Springfield, MO
 EPA DMR-QA Program
- STL PDC Laboratories - St. Louis, MO
 NELAC Accreditation for Wastewater, Hazardous and Solid Wastes Fields of Testing through KS EPA Lab No. E-10389

Subcontract Report attached for Rad 226/228

Certified by: Janet L. Clutters, Project Manager

CHAIN OF CUSTODY RECORD

PDC LABORATORIES, INC.
 2231 WEST ALTORFER DRIVE
 PEORIA, IL 61615

PHONE # 800-752-6651
 FAX # 309-692-9689

State where samples collected **IL**

ALL HIGHLIGHTED AREAS MUST BE COMPLETED BY CLIENT (PLEASE PRINT) - (SAMPLE ACCEPTANCE POLICY ON REVERSE)

CLIENT		PROJECT NUMBER	PHONE NUMBER	P.O. NUMBER	MEANS SHIPPED	ANALYSIS REQUESTED		(FOR LAB USE ONLY)					
1 PROJECTS Eng. 4983 Varsity Dr. Peoria, IL 61612 CONTACT PERSON: Lisa J. Gossie PHONE: 309-692-9689 FAX: 309-692-9689							3 Dissolved Metals Cyanide Cr, Fe, Ni, Cu, Zn, Pb, Cd Total Diss. Solids Rodium 226/228	LOGIN # 1091955-12 LOGGED BY: JAM LAB PROJ # TEMPLATE Midwest Gen - Prod PROJ. MGR: Oct. 2011	REMARKS				
SAMPLE INFORMATION		PDC LAB INFORMATION		SHIPMENT INFORMATION		LABORATORY INFORMATION							
PROJECT NUMBER	PHONE NUMBER	P.O. NUMBER	FAX NUMBER	MEANS SHIPPED	DATE SHIPPED	MATRIX TYPES	DATE RECEIVED	TIME RECEIVED	DATE ANALYZED	TIME ANALYZED			
MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 MW-10 MW-11 MW-12		1405 0930 1010 1050 1130 1320 1230 1755 1340 1500 1615 1700				GW GW GW GW GW GW GW GW GW GW GW	9/19/11 9/19/11 9/19/11 9/19/11 9/19/11 9/19/11 9/19/11 9/19/11 9/19/11 9/19/11 9/19/11 9/19/11 9/19/11	1405 0930 1010 1050 1130 1320 1230 1755 1340 1500 1615 1700	X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X
5 TURNAROUND TIME REQUESTED (PLEASE CIRCLE) (PUSH THE IS SUBJECT TO PDC LABS APPROVAL AND SURCHARGE) PUNCH RESULTS VIA (PLEASE CIRCLE) FAX PHONE E-MAIL		NORMAL RUSH DATE RESULTS NEEDED		RECEIVED BY: (SIGNATURE) RECEIVED BY: (SIGNATURE) RECEIVED BY: (SIGNATURE) RECEIVED BY: (SIGNATURE)		COMMENTS: (FOR LAB USE ONLY) SAMPLE TEMPERATURE UPON RECEIPT: 11 °C SAMPLE TEMPERATURE STARTED PRIOR TO RECEIPT: 11 °C BOTTLES RECEIVED IN GOOD CONDITION BOTTLES FILLED WITH ADEQUATE VOLUME SAMPLES RECEIVED WITHIN HOLD TIME(S) (EXCLUDES TYPICAL FIELD PARAMETERS) DATE AND TIME TAKEN FROM SAMPLE BOTTLE							

Copies: white should accompany samples to PDC Labs. Yellow copy to be retained by the client.



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

October 17, 2011

Ms. Janet Clutters
PDC Laboratories
2231 W. Altorfer Drive
Peoria, IL 61615

RE: Project: 1091955
Pace Project No.: 3054614

Dear Ms. Clutters:

Enclosed are the analytical results for sample(s) received by the laboratory on September 28, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Carin Ferris

carin.ferris@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 1091955
Pace Project No.: 3054614

Pennsylvania Certification IDs

1638 Roseytown Road Suites 2,3&4, Greensburg, PA
15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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Greensburg, PA 15601
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SAMPLE SUMMARY

Project: 1091955
Pace Project No.: 3054614

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3054614001	1091955-09	Water	09/19/11 13:40	09/28/11 09:00
3054614002	1091955-11	Water	09/19/11 16:15	09/28/11 09:00
3054614003	1091955-12	Water	09/19/11 17:00	09/28/11 09:00

REPORT OF LABORATORY ANALYSIS

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 1091955
Pace Project No.: 3054614

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3054614001	1091955-09	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA
3054614002	1091955-11	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA
3054614003	1091955-12	EPA 903.1	SLA	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1091955
Pace Project No.: 3054614

Method: EPA 903.1
Description: 903.1 Radium 226
Client: PDC Laboratories, Inc.
Date: October 17, 2011

General Information:

3 samples were analyzed for EPA 903.1. 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.

Method Blank:

All analytes were below the report limit in the method blank 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.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 1091955
Pace Project No.: 3054614

Method: EPA 904.0
Description: 904.0 Radium 228
Client: PDC Laboratories, Inc.
Date: October 17, 2011

General Information:

3 samples were analyzed for EPA 904.0. 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.

Method Blank:

All analytes were below the report limit in the method blank 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.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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

REPORT OF LABORATORY ANALYSIS

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 Greensburg, PA 15601
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ANALYTICAL RESULTS

Project: 1091955
 Pace Project No.: 3054614

Sample: 1091955-09		Lab ID: 3054614001	Collected: 09/19/11 13:40	Received: 09/28/11 09:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.117 ± 0.230 (0.430)	pCi/L	10/10/11 13:53	13982-63-3	
Radium-228	EPA 904.0	0.553 ± 0.478 (0.966)	pCi/L	10/12/11 12:58	15262-20-1	

Sample: 1091955-11		Lab ID: 3054614002	Collected: 09/19/11 16:15	Received: 09/28/11 09:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.332 ± 0.350 (0.489)	pCi/L	10/10/11 13:53	13982-63-3	
Radium-228	EPA 904.0	0.355 ± 0.448 (0.949)	pCi/L	10/12/11 12:52	15262-20-1	

Sample: 1091955-12		Lab ID: 3054614003	Collected: 09/19/11 17:00	Received: 09/28/11 09:00	Matrix: Water	
PWS:		Site ID:	Sample Type:			
Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.373 ± 0.490 (0.803)	pCi/L	10/10/11 13:53	13982-63-3	
Radium-228	EPA 904.0	0.859 ± 0.540 (0.996)	pCi/L	10/12/11 13:01	15262-20-1	

Date: 10/17/2011 02:08 PM

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QUALITY CONTROL DATA

Project: 1091955
Pace Project No.: 3054614

QC Batch: RADC/9642 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Associated Lab Samples: 3054614001, 3054614002, 3054614003

METHOD BLANK: 348705 Matrix: Water
Associated Lab Samples: 3054614001, 3054614002, 3054614003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	-0.0213 ± 0.410 (0.951)	pCi/L	10/12/11 12:55	



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Greensburg, PA 15601
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QUALITY CONTROL DATA

Project: 1091955
Pace Project No.: 3054614

QC Batch: RADC/9660 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Associated Lab Samples: 3054614001, 3054614002, 3054614003

METHOD BLANK: 349943 Matrix: Water
Associated Lab Samples: 3054614001, 3054614002, 3054614003

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.297 (0.667)	pCi/L	10/10/11 13:42	

Date: 10/17/2011 02:08 PM

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1091955
Pace Project No.: 3054614

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.

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.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

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

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

SUBCONTRACT ORDER

PDC Laboratories, Inc.
1091955

9/26/2011

3054614

PDC Laboratories, Inc.
2231 W. Altorfer Drive
Peoria, IL 61615
Project Manager: Janet L. Clutters
jclutters@pdciab.com Phone: 309-683-1743

PACE Analytical - Greensburg
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
Phone : (724) 850-5600

Sample Origin (State) IL

PO# L38872

Analysis	Due	Expires	Comments
Sample ID: 1091955-09	Ground Water		Sampled: 09/19/11 13:40
Rad 226 228	09/30/11 16:00	03/17/12 13:40	<i>001</i>
Sample ID: 1091955-11	Ground Water		Sampled: 09/19/11 16:15
Rad 226 228	09/30/11 16:00	03/17/12 16:15	<i>002</i>
Sample ID: 1091955-12	Ground Water		Sampled: 09/19/11 17:00
Rad 226 228	09/30/11 16:00	03/17/12 17:00	<i>003</i>

Walter R. Clutter *9-26-11 11:30* *A. Bayan* *9/28/11 0900*
Relinquished By _____ Date/Time _____ Received By _____ Date/Time _____

Relinquished By _____ Date/Time _____ Received By _____ Date/Time _____

Sample Temperature Upon Receipt _____ C
Sample(s) Received on Ice Y or N
Proper Bottles Received in Good Condition Y or N
Bottles Filled with Adequate Volume Y or N
Samples Received Within Hold Time Y or N
Date/Time Taken From Sample Bottle Y or N



Sample Condition Upon Receipt

Client Name: PDC Project # 3054614

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 231794215000217

Optional
Proj. Due Date:
Proj. Name:

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

Packing Material: Bubble Wrap Bubble Bags None Other peanuts

Thermometer Used 3 5 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature NA Biological Tissue is Frozen: Yes No
Temp should be above freezing to 6°C
Comments: _____
Date and Initials of person examining contents: SMB 9/

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>As WT</u>		
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13. <u>9/21/11 @ 1040 12mts</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed <u>SMB</u> Lot # of added preservative <u>RF11-0136 3</u>
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: _____ Field Data Required? Y / N
Person Contacted: _____ Date/Time: _____
Comments/ Resolution: _____

Project Manager Review: Carina Jones Date: 9/28/11

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)