JLA Geosciences, Inc.
HYDROGEOLOGIC CONSULTANTS

1907 Commerce Lane, Suite 104
Jupiter, Florida 33458
(561) 746-0228
fax (561) 746-0119

April 24, 2017 **via Electronic Mail**

Mr. William Flippin
Florida Power & Light (FPL) Company
700 Universe Blvd
Juno Beach, Florida 33408

RE: FPL Okeechobee Clean Energy Center, Monitor Well MW-1 (SJRWMD Well ID 465057), Well Completion Report

Dear Mr. Flippin:

JLA Geosciences, Inc., is pleased to provide this letter report summarizing the construction and testing activities for Floridan Aquifer Monitor Well (MW-1) at the above referenced project site. Well MW-1 is designated by St. Johns River Water Management District (SJRWMD) with a well identification number of 465057. The overall project includes construction and operation of a new combined cycle natural gas fired generating unit, providing approximately 1,600 megawatts nominal of electric generation. The electric generating unit is located on a 2,341-acre site in Okeechobee County, Florida. JLA Geosciences, Inc. was tasked to provide construction management, oversight and reporting services for a component of the project that includes the construction, testing and operation of production wells completed in the Upper Floridan Aquifer (UFA) and completed in the Avon Park Producing Zone (APPZ). The wells will be used to provide makeup water for the cooling towers. JLA Geosciences, Inc. also was tasked to oversee the construction of an onsite monitor well completed in the UFA. The monitor will be used to monitor the impact of the UFA from the use of the production wells over time. A site location map is included as **Figure 1**.

Construction and Data Collection Summary

Drilling activities began at Well MW-1 in December 2016. Subsurface construction and testing activities were completed at Well MW-1 on January 19, 2016 with the completion of the downhole video survey and collection of a water sample for laboratory analysis. Analytical results of the water sample were received on February 15, 2017. Installation of the permanent wellhead, pump and appurtenances had not yet commenced as of the date of this report. A summary of construction and testing activities are provided in **Table 1.**

Well MW-1 was completed with a nominal 6-inch diameter PVC casing set and cemented to 367 feet below drilling pad level (bpl) and a nominal 5-inch diameter open-hole production interval between 367 feet and 804 feet bpl. Construction details of Well MW-1 are included in **Table 2** and **Figure 2**. During well construction, data were collected and interpreted to determine the geologic and hydrogeologic characteristics of the strata intercepted by the borehole. These data were used to determine the

optimal subsurface design of Well MW-1. Data also were collected to ensure the well was being constructed in accordance with the technical specifications.

Borehole Drilling: Lithology

Boreholes were drilled when constructing Well MW-1, and the data collected during the drilling and testing of the boreholes provided information that assisted with the final design of the well. During drilling, drill cuttings were collected at 5-foot depth intervals, described by an onsite (JLA Geosciences, Inc.) geologist and summarized in a lithologic log. The lithologic log for MW-1 is included in **Attachment 1**.

Reverse-Air Drilling: Water Quality Sampling

During reverse-air drilling in the Floridan Aquifer, water quality samples of the formation water were collected at 10-foot intervals and field analyzed for temperature, pH, total dissolved solids (TDS), specific conductance and chloride concentrations. The field results were used to evaluate variability in water quality in the intended monitor zone with depth. Tabulated and graphical summaries of field water quality results are included in **Attachment 2**. Plots of field specific conductance results also are incorporated with geophysical log plots which are described in further detail below.

Reverse-Air Drilling: Flow Testing

Flow tests were performed to evaluate the artesian flow rate and specific capacity of the borehole with depth. The tests were performed at drill rod connections at approximately 40-foot intervals. At the connection, circulation continued for approximately 15 minutes to remove cuttings from the borehole. The reverse-air circulation was then terminated and the annulus valve at the wellhead was opened to allow the well to flow under artesian conditions. Flow rates were measured by an in-line flow meter.

Under flowing conditions, water levels were monitored using a manometer tube connected to an annulus port outside the drill-pipe stem. Additional water quality samples were collected for field analyses of temperature, specific conductance, chloride, pH, TDS, turbidity, hydrogen sulfide, and iron. The flow from the annulus continued for a sufficient period of time to allow flow rates and water levels to generally stabilize (approximately 30 minutes).

Upon completion of flow testing, the annulus valve was closed and the well was shut-in. Water levels continued to be monitored to obtain a water level under static conditions. The flow rate and water-level drawdowns (between static and flowing conditions) were used to calculate specific capacities.

Geophysical Logging and Video Survey

Geophysical logging was performed in Well MW-1 to correlate drill cuttings and water quality sample results collected during drilling, correlate vertical offsets between Well MW-1 and other onsite wells, identify formation boundaries, and obtain specific geologic and hydrogeologic data pertaining to the subsurface formations. These data were used to assist in the selection of the optimum casing setting

depths and identify transmissive intervals within the monitor zone. Caliper logs were performed prior to casing installation to confirm borehole conditions are acceptable for installation of casing and provide data for use in calculating appropriate cement volumes. A summary of the geophysical logs performed in Well MW-1 is included in **Attachment 3**. Merged plots of the geophysical logs also are provided in **Attachment 3**. Electronic (PDF and LAS) copies of the logs are enclosed. A video survey was performed in the completed well on January 19, 2017. DVD copies of the video are being mailed separately.

Development

After completing the nominal 5-inch diameter open-hole monitor interval below the nominal 6-inch diameter final casing (set at 367 feet bpl) to a depth of 804 feet bpl, development activities commenced within the open-hole interval. The purpose of development is to remove loose formation material in the open hole and to maximize the performance of the well. The first phase of development consisted of high-velocity jetting for approximately 24 hours. The borehole jetting phase of development was designed to deliver a high velocity of water directly into the borehole with the use of a rotating jetting tool. The jetting tool was slowly passed up and down the open borehole from the base of the 6-inch diameter casing to the total depth (804 feet). Following jetting, a 5.25-inch diameter drill bit was installed to the bottom of the open borehole and airlift development was performed to remove any remaining sediment that accumulated at the bottom of the open hole from jetting activities.

Pump Development and Final Water Quality Sample

Following airlifting, the final video survey was performed. After completing the video survey under flowing conditions, the well was shut in and water levels were allowed to recover to near static conditions. The well was then pumped at three increasing rates of 123 gpm, 182 gpm and 250 gpm. During pumping, pump rates, water levels, and field water quality were regularly monitored and recorded. A summary table of data collected during testing is provided in **Attachment 4**. A water quality sample was collected for laboratory analysis at the highest rate (250 pgm) just prior to terminating pump development. A summary of the laboratory results are included in **Attachment 4,** and the complete laboratory report is enclosed.

Please feel free to contact us if you have any questions or wish to discuss further.

Sincerely,

JLA Geosciences, Inc.

James L. Andersen, P.G.
Principal Hydrogeologist

JLA Geosciences, Inc.

Rodney J. Miller, P.G.
Senior Hydrogeologist

Figures:

1) Site Location Map

2) Well MW-1 Construction Details

Tables:

1) Summary of Construction and Testing Activities

2) Summary of Well MW-1 Construction Details

Attachments:

1) Lithologic Log

2) Reverse Air Drilling Water Quality and Flow Testing Data

3) Geophysical Log Plots

4) Pump Development Data

Enclosures:

1) Geophysical Logs (PDF & LAS)

2) Final Water Quality Sample Laboratory Reports

Figures:

1) Site Location Map

2) Well MW-1 Construction Details

WELL ID	NORTHING	EASTING	LATTITUDE	LONGITUDE
MW-1	1202821.11	723518.10	27.6425806°	-080.7919639°
FA-1	1200373.51	722487.70	27.6358526°	-080.7951591°
FA-2	1200491.91	724356.17	27.6361697°	-080.7893875°
FA-3	1198803.22	722487.90	27.6315332°	-080.7951666°
FA-4	1198848.83	724345.61	27.6316501°	-080.7894288°

FIGURE TITLE:

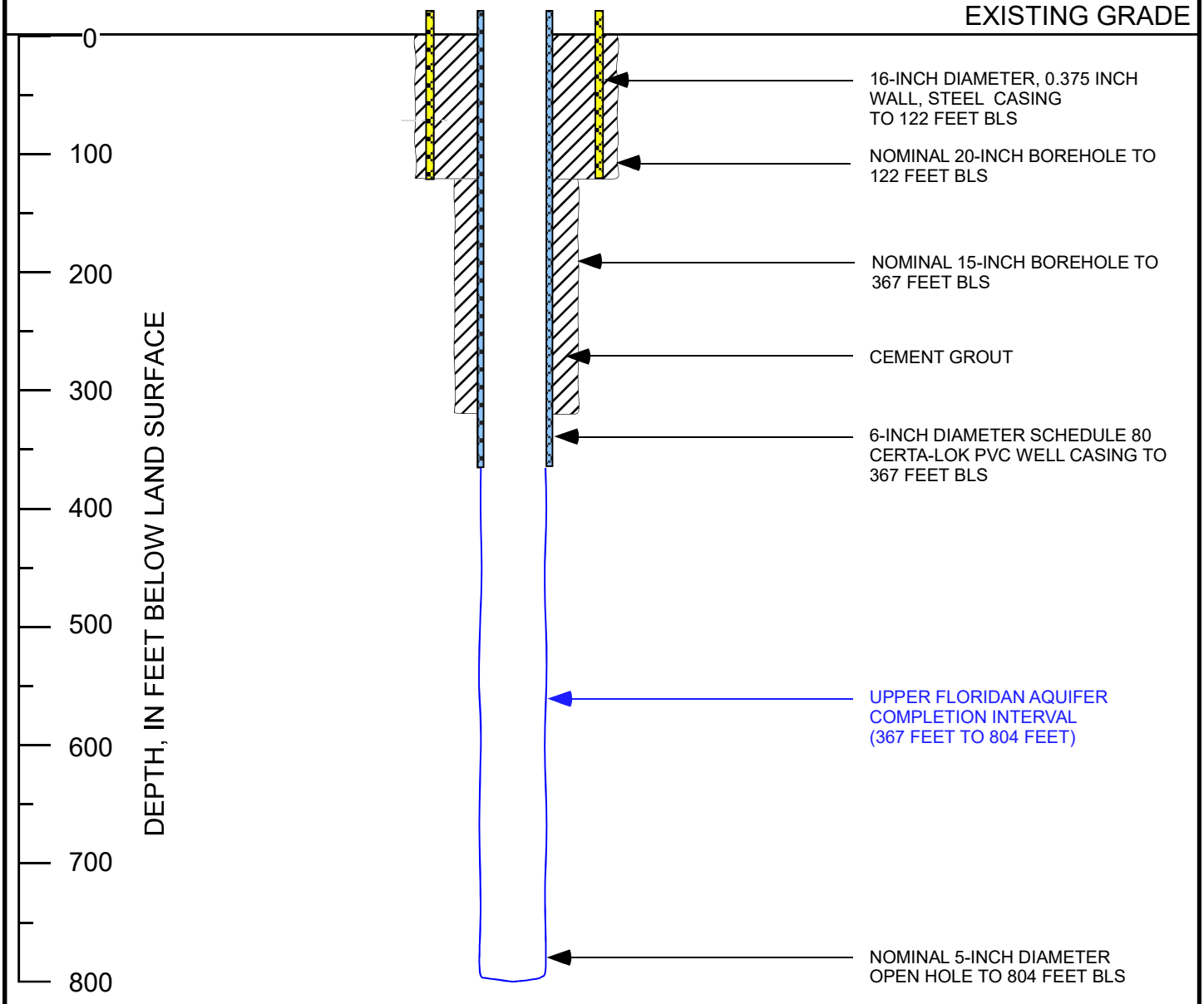
FLORIDA POWER AND LIGHT
OKEECHOBEE CLEAN ENERGY CENTER
WELL CONSTRUCTION AND TESTING OF FA-1, FA-2 (APPZ), FA-3, FA-4, & MW-1

SITE LOCATION MAP

JLA Geosciences, Inc.

DATE:	02/08/2016
DRAWN BY:	RKS
PROJECT NO:	16-031

FIGURE NO: 1



JLA Geosciences, Inc.

LEGEND: CEMENT GROUT; PVC WELL CASING; STEEL WELL CASING; OPEN HOLE	SCALE: AS SHOWN	DATE: 02/05/2017	
	DRAWN BY: CFS	DWG #:	
PROJECT SITE: FLORIDA POWER AND LIGHT OKEECHOBEE CLEAN ENERGY CENTER WELL CONSTRUCTION AND TESTING OF FA-1, FA-2 (APPZ), FA-3, FA-4, & MW-1		PROJECT NO: 16-031	
FIGURE TITLE: MW-1 WELL CONSTRUCTION DIAGRAM		FIGURE NO: 2	

Tables:

1) Summary of Construction and Testing Activities

2) Summary of Well MW-1 Construction Details

Table 1: Summary of Construction and Testing Activities, FPL OCEC Monitor Well MW-1

Date	Description
12/20/16	Mobilize and setup drill rig at MW1 site
12/21/16	Begin drilling from pad level with 20-inch diameter bit
12/22/16	Extend nominal 20-inch borehole to a total depth of 125 feet bpl
12/23/16	Perform XY caliper and gamma-ray logging
	Install 16-inch O.D. casing to 122 feet bpl
	Complete cement stage #1 (pressure grout-41 bbls); pump 46 bbls of neat cement; cement returns observed at surface
12/31/16	Continue drilling with 14.75-inch bit
1/2/17	Resume drilling with 14.75-inch bit; extend borehole to total depth of 375 feet bpl
1/3/17	Perform XY caliper, gamma-ray, dual-induction and Spontaneous Potential logging
	Install nominal 6-inch diameter Certalok PVC casing to 367 feet bpl
	Complete cement stage #1 (pressure grout); pump 52 bbls of 6% bentonite cement followed by 18 bbls of neat cement
1/4/17	Tag top of cement in annulus at 20 feet bgl; complete cement stage #2, pump 4.5 bbls of neat cement
1/5/17	Switch to reverse-air drilling
1/11/17	Begin drilling pilot hole with 5.25-inch bit from base of nominal 6-inch casing
1/12/17	Continue drilling pilot hole with 5.25-inch bit
1/13/17	Extend pilot hole to total depth of 800 feet bpl
	Perform suite of geophysical logs under static and dynamic conditions (238 gpm)
1/16/17	Begin jetting procedures
1/17/17	Complete jetting procedures
	Install bit to base of open hole and remove approximately 20 feet of sediment from base of borehole by airlifting
1/19/17	Perform final video at a rate of 238 gpm to a total depth of 804 feet bpl
	Perform brief step drawdown test and collect final water quality sample for laboratory analysis

Table 2: Well Completion Summary, FPL OCEC Monitor Well MW-1

Casing String	Outside Diameter (inches)	Inside Diameter (inches)	Casing Depth (feet bpl)	Date	Cement Stage	Type of Cement	Cement Quantity (cubic feet)	Remarks
Surface Casing	16.00	0.375	122	12/13/2016	1	Neat	258	Pressure grout. Cement returns observed at pad level.
Final Casing	6.63	5.59	367	1/3/2017	1	Neat	101	Pressure grout. Pumped 6% bentonite cement followed by neat cement. Tagged cement top at 20 feet bpl
						6% Bentonite	292	
				1/4/2017	2	Neat	25	Tremied in place. Cement returns observed at pad level.
Monitor Interval	The monitor interval was completed as a nominal 5-inch diameter open hole between 367 feet and 804 feet bpl							

-Surface casing sections are comprised of steel in conformence with American Society for Testing and Materials (ASTM) A139, Grade B or American Petroleum Institute (API) 5L Grade B standards

- Final casing sections are comprised of schedule 80 Certa-Lok PVC Drop Pipe in conformance with ASTM D1784, D1785, D3139, F477.

-"feet bpl" denotes feet below pad level.

-Neat cement refers to Portland Type I/II cement with no additives

-6% bentonite refers to Portland Type I/II cement with a 6% (by weight) bentonite additive

Attachment 1:

Lithologic Log

FLORIDA POWER AND LIGHT OCEC CMA: WELL MW-1 Lithologic Log	
Depth (Feet BLS)	Lithologic Description
0 – 10	ORGANICS (90%), brownish black (5YR 2/1), organic material; CLAY (10%), brownish gray (5YR 4/1), unconsolidated, moderately cohesive.
10 – 15	ORGANICS (70%), brownish black (5YR 2/1), organic material; CLAY (30%), brownish gray (5YR 4/1), unconsolidated, moderately cohesive.
15 – 25	LIMESTONE (75%), very light gray (N8) to medium gray (N5), hard, fossiliferous, very well cemented; SHELL (20%), white (N9) to very light gray (N8) to dark gray (N3) to pale yellowish brown (10 YR 6/2), mollusk shells (bivalves and cephalopods); CLAY (<5%), medium gray (N5) poorly cohesive.
25 – 45	SHELL AND SHELL FRAGMENTS (85%), white (N9) to very light gray (N8), mollusk shells (bivalves and cephalopods); LIMESTONE (10%), moderate amounts of shell/fossil casts and molds, poorly cemented, moderate intergranular and moldic porosity; CLAY (<5%), dark gray (N3) to very light gray (N8), trace very fine grain, quartz and carbonate grains, poorly cohesive clay.
45 – 70	FOSSILIFEROUS LIMESTONE (80%), yellowish gray (5Y 8/1), moderately hard, abundant fossil/shell casts and molds, moderately cemented, intergranular porosity; SAND and SHELL (20%), medium dark gray (N4) to light gray (N7), moderately hard, unconsolidated, mollusk shells (bivalves and cephalopods), sub rounded.
70 – 85	FOSSILIFEROUS LIMESTONE (85%), white (N9) to yellowish gray (5Y 8/1), moderately soft, abundant fossil/undifferentiated shell casts and molds, moldic porosity. LIMEMUD (70%), yellowish gray (5Y 8/1), unconsolidated, moderately cohesive.
85 – 100	CLAY (90%), olive gray (5Y 4/1) to medium dark gray (N4), unconsolidated, minor very fine to medium sand sized shell fragments, trace very fine phosphate grains, very cohesive; LIMESTONE (10%), medium gray (N4), poorly cemented.
100 – 120	CLAY (100%), same as above.
120 – 160	CLAY (70%), same as above; LIMESTONE (30%), yellowish gray (5Y 8/1) to medium gray (N5), moderately soft, trace phosphate grains; CLAYEY SAND (100%), white (N9) to light olive gray (5Y 6/1) to black (N2), unconsolidated, very fine to medium grain, quartz and carbonate grains, very fine to fine phosphate grains, minor fossils/undifferentiated shell fragments, moderately cohesive.
160 – 185	SANDY CLAY (75%), medium gray (N5) to dark green gray (5GY 4/1), very fine grain, quartz and carbonate grains, very fine phosphate grains, moderately cohesive; CLAY (25%), olive gray (5Y 4/1) to dark green gray (5GY 4/1), very fine phosphate grains, moderately cohesive.
185 – 215	CLAY (100%), medium dark gray (N4), minor small shell fragments, trace very

FLORIDA POWER AND LIGHT OCEC CMA: WELL MW-1 Lithologic Log	
Depth (Feet BLS)	Lithologic Description
	fine phosphate grains, very cohesive.
215 – 240	CLAY (80%), white (N9) to very light gray (N8), very fine to fine grain, phosphate grains, moderately cohesive; FOSSILIFEROUS LIMESTONE (20%), yellowish gray (5Y 8/1), trace phosphate grains, trace fossil/undifferentiated shell casts and molds, moldic porosity.
240 – 250	FOSSILIFEROUS LIMESTONE (75%), light gray (N7), moderately soft, abundant fossil/undifferentiated shell casts and molds, moldic porosity; SANDY CLAY (25%), light gray (N7) to medium gray (N5), partially consolidated, silt to very fine grain, quartz and carbonate grains, very fine phosphate grains, moderately cohesive.
250 – 280	CLAYEY SAND (100%), white (N9) to light gray (N7), unconsolidated, very fine to medium grain, quartz and carbonate grains, very fine phosphate grains, minor fossils/undifferentiated shell fragments, moderately cohesive.
280 – 300	SANDY CLAY (100%), medium gray (N5) to olive gray (5Y 4/1), unconsolidated to semi consolidated, silt to very fine grain, quartz and carbonate grains, very fine phosphate grains, trace shell fragments, moderately cohesive.
300 – 330	CLAY (100%), olive gray (5Y 4/1) to medium dark gray (N4), minor small shell fragments, trace very fine phosphate grains, very cohesive.
330 – 340	SANDY CLAY (75%), medium gray (N5) to olive gray (5Y 4/1), unconsolidated to semi consolidated, very fine grain, very fine phosphate grains, moderately cohesive; FOSSILIFEROUS LIMESTONE (25%), light olive gray (5Y 6/1), moderately soft, abundant fossil/undifferentiated shell casts and molds, moldic porosity. A transition zone from clay with shell fragments to fossiliferous limestone.
340 – 380	FOSSILIFEROUS LIMESTONE (95%), yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), moderately hard, very fine to medium grain, carbonate grains, sub angular, fossil/undifferentiated shell casts and molds, intergranular porosity, lepidocyclina and echinoderms present; LIMEMUD (≤5%), yellowish gray (5Y 8/1), moderately cohesive.
380 – 405	LIMESTONE (100%), yellowish gray (5Y 8/1) to pale yellowish brown (10 YR 6/2), moderately soft, rounded grains, minor very fine phosphate grains.
405 – 420	DOLOMITIC LIMESTONE (100%), dark yellowish brown (10 YR 4/2) medium gray (N5), moderately hard, medium grain, sub angular, moderately hard, variably crystalline.
420 – 425	FOSSILIFEROUSE LIMESTONE (100%), same as interval between 340-380 feet bls.
425 – 460	FOSSILIFEROUS LIMESTONE (95%), yellowish gray (5Y 8/1), moderately hard, very fine to medium grain, carbonate grains, sub angular, undifferentiated shell

FLORIDA POWER AND LIGHT OCEC CMA: WELL MW-1 Lithologic Log	
Depth (Feet BLS)	Lithologic Description
	casts and molds, intergranular porosity, traces of lepidocyclina and echinoderms present.
460 – 500	LIMESTONE (100%), white (N9) to yellowish gray (5Y 8/1), moderately soft, fine to medium grain, slighty vuggy.
500 – 505	DOLOMITIC LIMESTONE (100%), very pale orange (10 YR 8/2), hard, medium grain, sub angular, moderately hard, variably crystalline.
505 – 540	LIMESTONE (100%), white (N9), moderately hard, fine to medium grain, slighty vuggy.
540 – 545	LIMESTONE (90%), same as above; LIMEMUD (10%), white (N9), unconsolidated, moderately cohesive.
545 – 600	FOSSILIFEROUS LIMESTONE (95%), yellowish gray (5Y 8/1) to very pale orange (10YR 8/2), moderately hard, very fine to medium grain, carbonate grains, sub angular, fossil/undifferentiated shell casts and molds, intergranular porosity, lepidocyclina and echinoderms present; MARL (≤5%), yellowish gray (5Y 8/1), unconsolidated, moderately cohesive.
600 – 610	LIMESTONE (100%), white (N4) to very pale orange (10YR 8/2), medium grain, sub angular to sub rounded, moderately hard, fossiliferous.
610 – 615	DOLOMITE (98%), white (N9), medium grain, sub angular, very hard, microcrystalline; LIMESTONE (2%), same as above.
615 – 620	LIMESTONE (100%), same as above.
620 – 650	DOLOMITIC LIMESTONE (100%), white (N9) and medium gray (N5) to black (N2), fine to medium grain, sub angular, moderately hard, partially crystalline.
650 – 655	LIMESTONE (100%), white (N9) to very light gray (N8), hard, medium grain, sub angular.
655 – 660	FOSSILIFEROUS LIMESTONE (100%), very pale orange (10YR 8/2) to yellowish gray (5Y 8/1), hard, abundant fossil/undifferentiated shell casts and molds.
660 – 670	DOLOMITE (100%), dark yellowish brown (10 YR 4/2) to brownish black (5YR 2/1), medium grain, sub angular, very hard, microcrystalline.
670 – 695	LIMESTONE (100%), white (N9) to very pale orange (10YR 8/2) fine to medium grain, sub angular, moderately soft, chalky, vuggy and fossiliferous.
695 – 725	DOLOMITIC LIMESTONE (100%), dark yellowish brown (10 YR 4/2), to white (N9) and medium gray (N5), fine to medium grain, sub angular, moderately hard, variably crystalline.
725 – 770	LIMESTONE (100%), white (N9) to very pale orange (10YR 8/2), fine to medium grain, sub angular, moderately hard, vuggy and fossiliferous.
770 – 775	FOSSILIFEROUS LIMESTONE (100%), predominately very pale orange (10YR 8/2), moderately hard, very fine to medium grain, carbonate grains, sub angular, intergranular porosity, high permeability.

FLORIDA POWER AND LIGHT OCEC CMA: WELL MW-1 Lithologic Log	
Depth (Feet BLS)	Lithologic Description
775 – 800	LIMESTONE (100%), white (N9) to very pale orange (10YR 8/2), fine to medium grain, sub angular, moderately hard, vuggy and fossiliferous.

Attachment 2:

Reverse Air Drilling Water Quality and Flow Testing Data

Summary of Pilot Hole Water Quality and Flow Testing Data, FPL OCEC Monitor Well MW-1

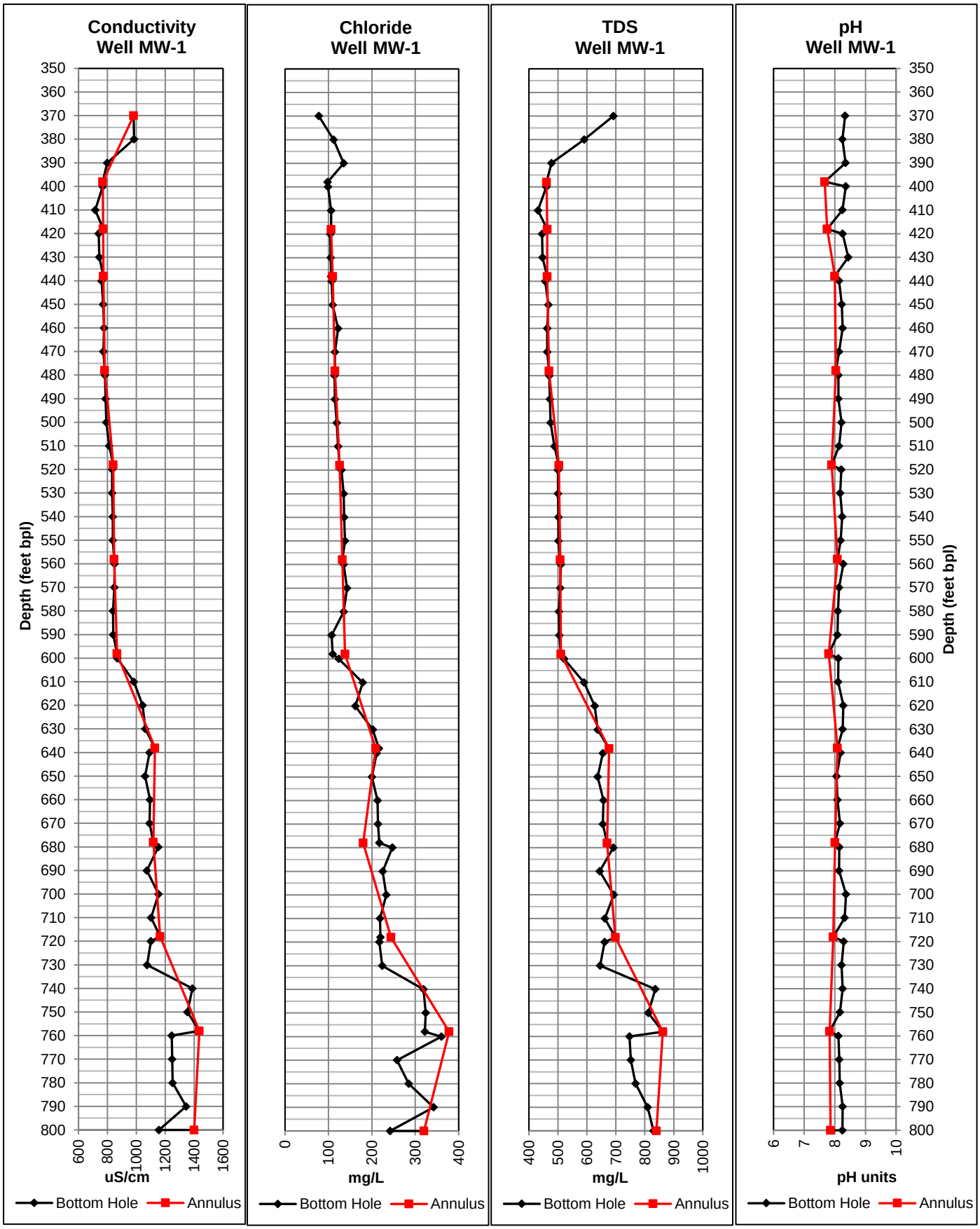
Depth	Bottom Hole (Drill Stem) WQ				Annulus WQ						Annulus Flow		
	Cond	Chloride	TDS	pH	Cond	Chloride	TDS	H2S	pH	Total Iron	Flow Rate	Drawdown	Specific Capacity
(feet bls)	(uS/cm)	(mg/L)	(mg/L)		(uS/cm)	(mg/L)	(mg/L)	(mg/L)		(mg/L)	(gpm)	(feet)	(gpm/ft)
370	982	78	691	8.34	982								
380	985	112	591	8.25									
390	798	135	478	8.35									
398	768	98	461	7.67	768		461		7.67		0	0	0
400	767	99	460	8.36									
410	716	106	431	8.25									
418	771	106	463	7.75	771	106	463	0.40	7.75	0.1	77	5.00	15.40
420	740	104	445	8.26									
430	744	105	447	8.44									
438	772	106	463	8.00	772	110	463	0.60	8.00	0.3	71.3	5.00	14.26
440	760	107	456	8.14									
450	771	110	467	8.23									
460	777	122	463	8.26									
470	772	115	463	8.14									
478	781	115	469	8.04	781	115	469	0.6	8.04	0.3	64	4.50	14.22
480	783	114	470	8.12									
490	787	115	472	8.12									
500	792	119	475	8.22									
510	813	122	488	8.14									
518	841	126	503	7.90	841	126	503	0.60	7.90	0.5	66	3.35	19.70
520	833	130	500	8.21									
530	832	135	500	8.18									
540	837	136	502	8.24									
550	838	138	502	8.19									
558	847	132	508	8.09	847	132	508	1.00	8.09	0.4	76	3.16	24.05
560	849	135	510	8.28									
570	848	143	508	8.14									
580	839	135	503	8.10									
590	841	107	505	8.09									
598	866	110	510	7.80	866	138	510	1.00	7.80	0.4	65	2.70	24.07
600	869	124	521	8.12									
610	983	179	590	8.11									
620	1044	162	627	8.28									
630	1062	202	637	8.26									
638	1129	216	677	8.09	1129	209	677	1.0	8.09	0.6	59	2.30	25.65
640	1092	211	655	8.19									
650	1061	200	637	8.06									
660	1095	213	657	8.09									
670	1092	214	655	8.17									
678	1118	217	670	8.01	1118	180	670	1.2	8.01	0.8	92	3.00	30.67
680	1152	247	691	8.15									
690	1073	225	644	8.14									
700	1154	233	693	8.37									
710	1102	218.5	662	8.32									
718	1164	220	698	7.95	1164	244	698	1.2	7.95	0.8	90	2.65	33.96
720	1101	217	661	8.29									
730	1074	224	646	8.22									
740	1388	319	836	8.26									
750	1354	324	812	8.17									

Summary of Pilot Hole Water Quality and Flow Testing Data, FPL OCEC Monitor Well MW-1

Depth	Bottom Hole (Drill Stem) WQ				Annulus WQ						Annulus Flow		
	Cond	Chloride	TDS	pH	Cond	Chloride	TDS	H2S	pH	Total Iron	Flow Rate	Drawdown	Specific Capacity
(feet bls)	(uS/cm)	(mg/L)	(mg/L)		(uS/cm)	(mg/L)	(mg/L)	(mg/L)		(mg/L)	(gpm)	(feet)	(gpm/ft)
758	1436	322	862	7.83	1436	378	862	1	7.83	0.8	99	1.33	74.44
760	1245	360	747	8.12									
770	1248	258	752	8.15									
780	1252	285	768	8.16									
790	1345	342	810	8.26									
800	1157	242	830	8.25									
800	1400	320	840	7.86	1400	320	840	1	7.86	0.8	99	0.68	145.59

- Cond (uS/cm) denotes field conductivity measured in microSiemans per centimeter
- mg/L denotes milligrams per liter
- H2S denotes field hydrogen sulfide
- Depth refers to the total depth of the pilot hole at the time both the drill stem and the annulus sample was collected
-gpm/ft denotes specific capacity in gallons per minute per foot of drawdown
- Reverse-air, open circulation drilling method was used during drilling.

Summary of Reverse-Air Drilling Water Quality Data, FPL OCEC Production Well MW-1



Attachment 3:

Geophysical Log Plots

Summary of Geophysical Logs Performed, FPL OCEC Monitor Well MW-1

Date Performed	Geophysical Survey Performed	Casing Depth (feet bpl)	Open Hole Depth (feet bpl)	Casing/Drilled Hole Diameter (inches)
12/23/2016	X-Y Caliper, Gamma Ray	0	125	22
1/3/2017	X-Y Caliper, Gamma Ray	122	375	16/14.75
1/3/2017	Dual Induction LL3 with SP	122	375	16/14.75
1/13/2017	X-Y Caliper, Gamma Ray	367	804	6/5.25
1/13/2017	Dual Induction LL3 with SP	367	804	6/5.25
1/13/2017	Fluid Conductivity and Temperature; static & dynamic (238 gpm)	367	804	6/5.25
1/13/2017	Flowmeter; static & dynamic (238 gpm)	367	804	6/5.25
1/19/2017	Video Survey; dynamic (230 gpm)	367	804	6/5.25

-"feet bpl" denotes feet below pad level

- Casing Depth refers to the depth of the innermost (deepest) casing installed at the time the geophysical log was performed

- Open Hole Depth refers to the depth of the open hole at the time the geophysical log was performed

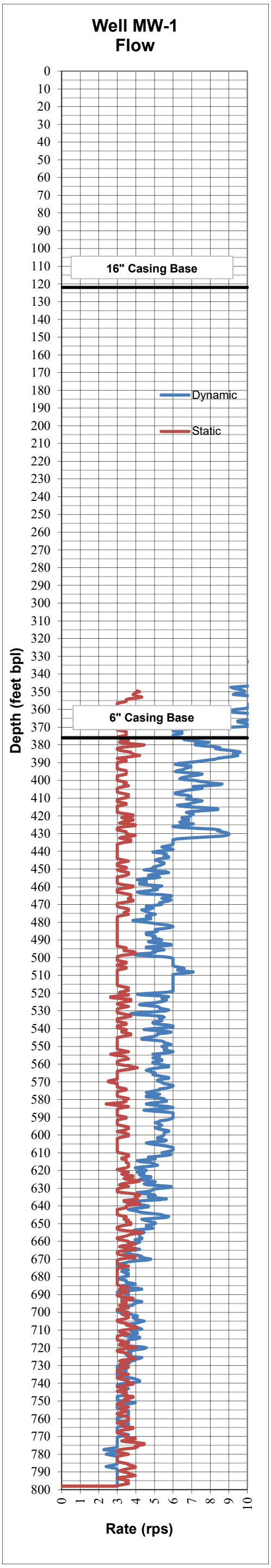
- Casing/Drilled Hole Diameter refers to outside diameter of the innermost (deepest) casing installed at the time the log was performed

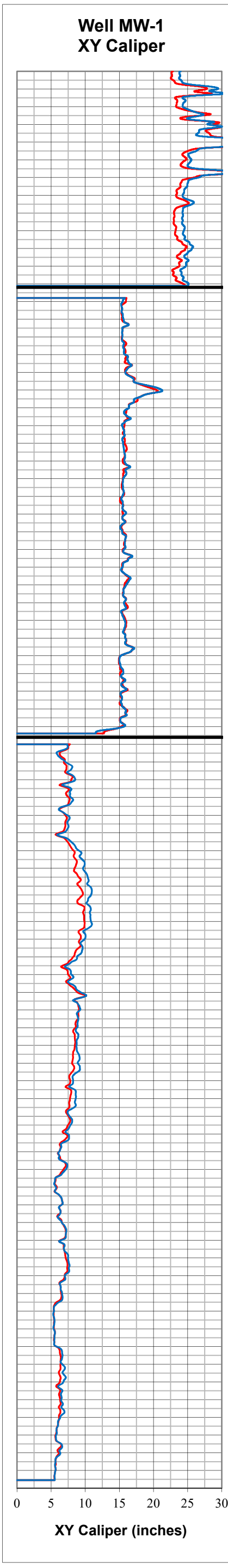
- The subsequent number refers to the nominal open-hole diameter at the time the log was performed

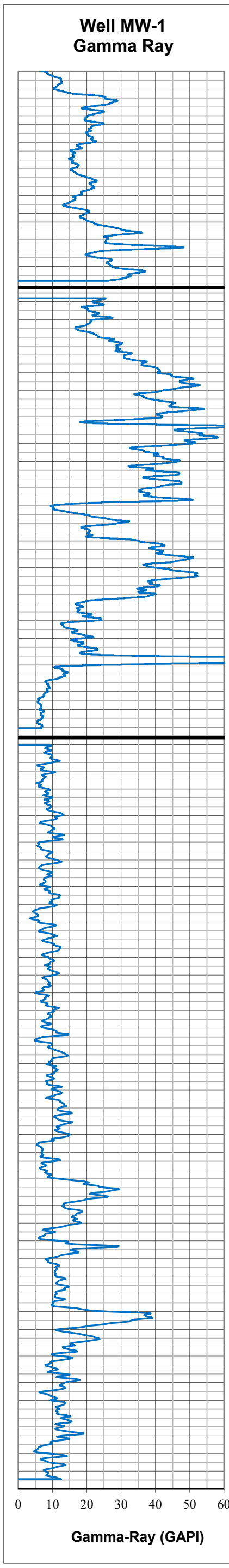
- Flow rates in parentheses (ex: 238 gpm) refer to the rate the well was flowing or pumping during dynmaic logging in gallons per minute (gpm)

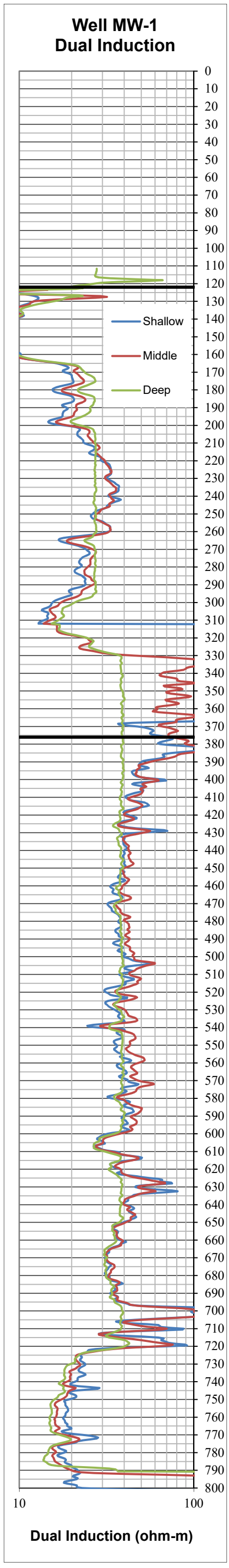
- Reverse-air, open circulation drilling method was used during pilot hole drilling

Geophysical Log Plots and Field Water Quality Data, FPL OCEC Monitor Well MW-1

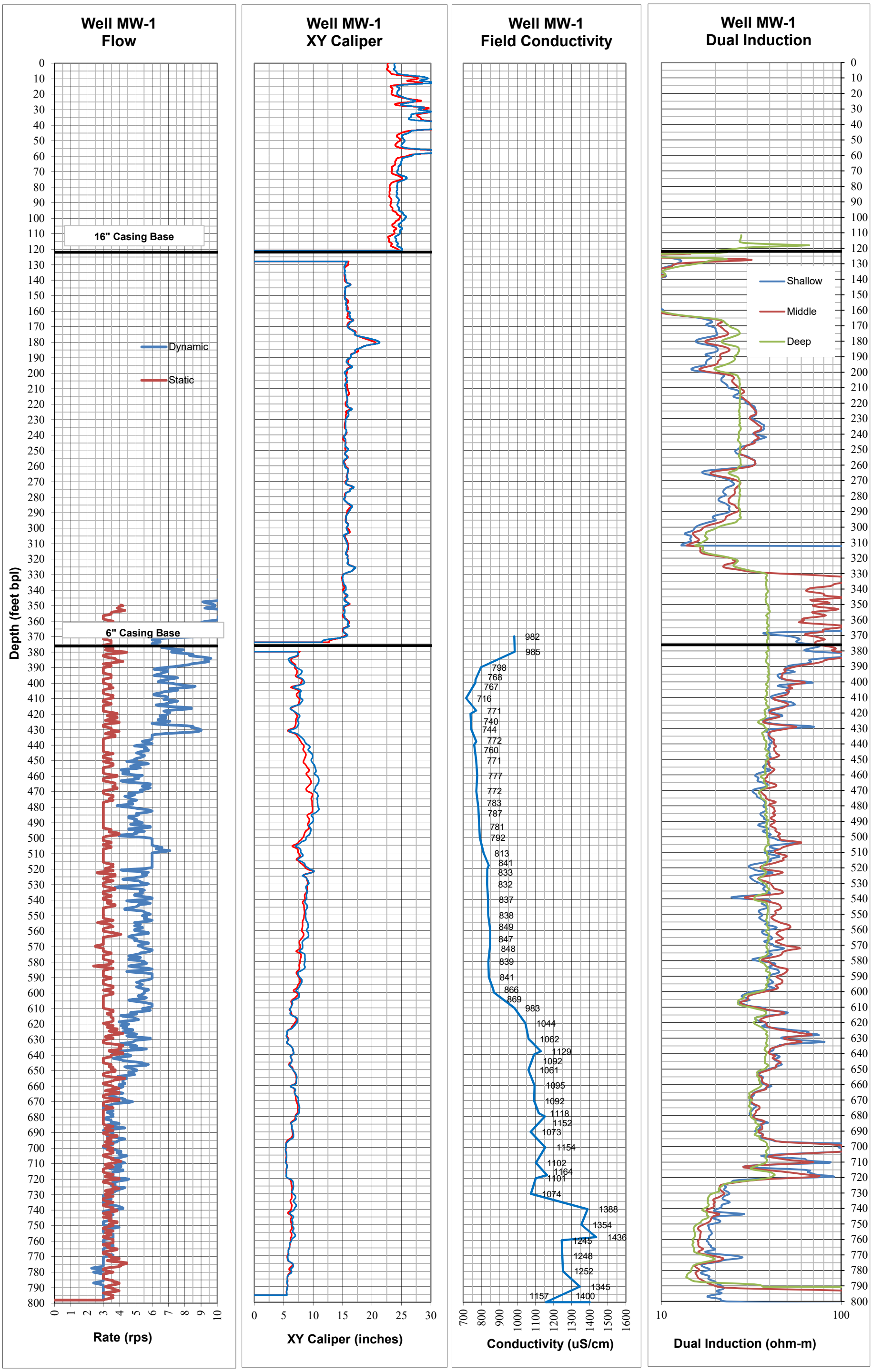




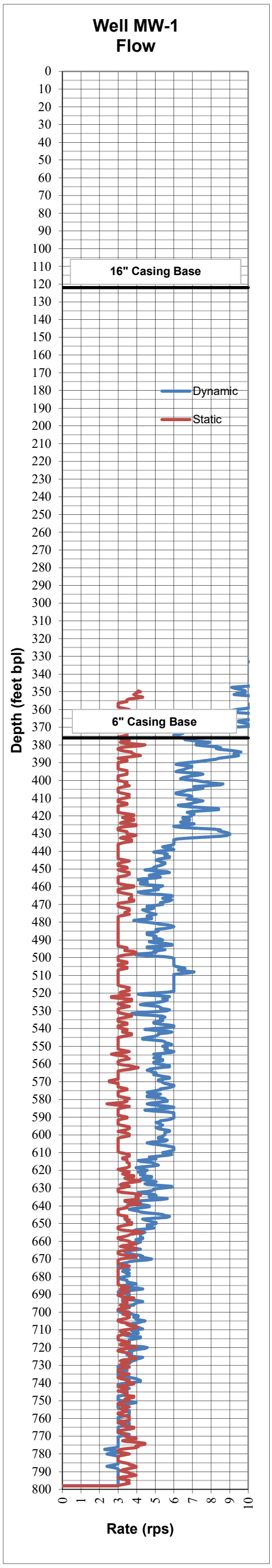


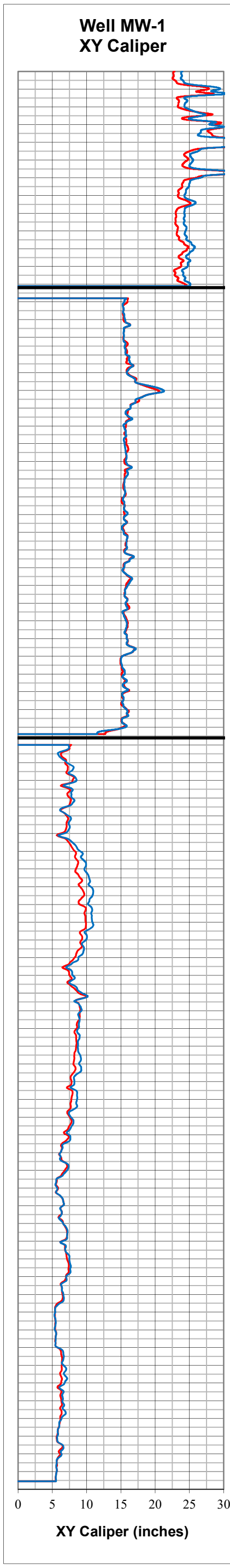


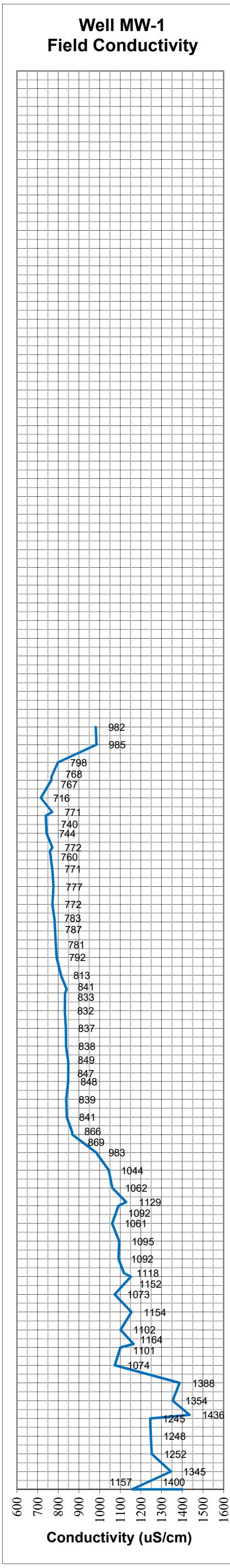
Geophysical Log Plots and Field Water Quality Data, FPL OCEC Monitor Well MW-1

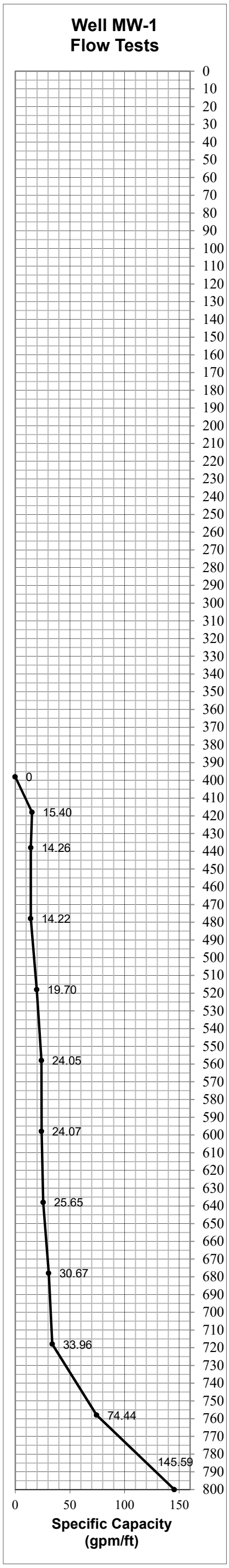


Geophysical Log Plots and Field Water Quality Data, FPL OCEC Monitor Well MW-1









Attachment 4:

Pump Development Test Data

Summary of Water Quality Analytical Results

Summary of Pump Development Test Performance and Water Quality Data, FPL OCEC Monitor Well MW-1

PERFORMANCE DATA					
Step	**Pump Rate** (gpm)	**Duration** (minutes)	**Stabilized Water Level** (feet apl)	**Drawdown** (feet)	**Specific Capacity** (gpm/ft)
1	123	50	4.9	3.2	38.4
2	182	43	2.9	5.2	35.0
3	250	47	0.33	7.77	32.2

Static water level prior to commencement of test was measured at **8.1 feet above pad level**. Drawdown and specific capacity calculatons are based on this water level.

FIELD WATER QUALITY							
Step	**Specific Conductance** (µS/cm)	**pH** (pH units)	**TDS** (mg/L)	**Turbidity** (NTU)	**Hydrogen Sulfide** (mg/L)	**Total Iron** (mg/L)	**Soluable Iron** (mg/L)
1	1,236	7.74	742	0.37	1.0	0.2	0.1
2	1,233	7.89	740	0.69	1.5	0.2	0.1
3	1,232	7.98	739	0.3	1.0	0.1	0.1

-gpm denotes gallons per minute

-ft apl denotes feet above pad level

-gpm/ft denotes specific capacity in gallons per minute per foot of drawdown

-"mg/L" denotes concentration in units of milligrams per liter

-"µS/cm" denotes specific conductance in units of microSiemens per centimeter

"NTU" denotes Nephelometric Turbidity Units

-Test performed on January 19, 2017

Final Water Quality Sample Analytical Results, FPL OCEC Monitor Well MW-1

Parameter	Units	Result		Parameter	Units	Result	
Silica, Dissolved	mg/L	9.29		1,1,2-Trichloroethane	µg/L	0.500	U
Langelier_Index	LX	0.940		1,1-Dichloroethene	µg/L	0.500	U
Saturation_Index	pHs	8.597		1,2,4-trichlorobenzene	µg/L	0.500	U
Stability_Index	pHs	7.44		1,2-dichloroethane	µg/L	0.500	U
Residual Chlorine	mg/L	0.230	I	1,2-dichloropropane	µg/L	0.500	U
Turbidity	NTU	1.22		Benzene	µg/L	0.500	U
Bicarbonate Alkalinity	mg/L	127		Carbon Tetrachloride	µg/L	0.500	U
Carbonate CaCO3	mg/L	3.240	U	Chlorobenzene	µg/L	0.500	U
Total Alkalinity CaCO3	mg/L	130		Ethylbenzene	µg/L	0.500	U
Specific Conductance	µmhos/cm	1350		Methylene chloride	µg/L	0.500	U
Color	CU	5.00	U	Para-dichlorobenzene	µg/L	0.500	U
Total Solids	% Wt	0.0914		Styrene	µg/L	0.500	U
Chloride	mg/L			Tetrachloroethene	µg/L	0.500	U
Nitrate (as N)	mg/L	0.0100	U	Toluene	µg/L	0.500	U
Nitirite (as N)	mg/L	0.0200	U	Trichloroethene	µg/L	0.500	U
Sulfate	mg/L	177		Vinyl chloride	µg/L	0.500	U
Aluminum	mg/L	0.0177	I	Xylenes	µg/L	0.500	U
Aluminum, Dissolved	mg/L		U	cis-1,2-dichloroethene	µg/L	0.200	U
Arsenic	mg/L	0.00600	U	o-dichlorobenzene	µg/L	0.500	U
Barium	mg/L	0.0279		trans-1,2-dichloroethene	µg/L	0.500	U
Boron	mg/L	0.118		TDS	mg/L	778	
Chromium	mg/L	0.00100	U	BOD5day	mg/L	2.97	U
Copper	mg/L	0.00100	U	TOC	mg/L	11.50	
Lead	mg/L	0.00100	U	Orthophosphate (as P)	mg/L	0.00200	U
Selenium	mg/L	0.00200	U	TKN (as N)	mg/L		I
Silica (SiO2)	mg/L	22.2		Total Phosphorus (as P)	mg/L	0.0400	U
Silver	mg/L	0.000500	U	Lab pH	pHs	8.38	Q
Strontium	mg/L	20.5		Ammonia (as N)	mg/L	0.0912	
Zinc	mg/L	0.0100	U	Iron	mg/L	0.144	
Magnesium	mg/L	45.3	U	Magnesium Hardness CaCO3	mg/L	187	
Calcium	mg/L	68.7		Manganese	mg/L	0.0100	U
Calcium Hardness (CaCO3)	mg/L	171		Potassium	mg/L	3.62	
Iron, Dissolved	mg/L	0.0100	U	Sodium	mg/L	107	
Manganese, Dissolved	mg/L	0.01000	U	Fluoride	mg/L	0.622	
Hydrogen Sulfide	mg/L	1.24					
TSS	mg/L	1.00	U				
1,1,1-Trichloroethane	µg/L	0.500	U				

-"TKN" denotes Total Kjeldahl Nitrogen

-"TDS" denotes Total Dissolved Solids

-"mg/L" denotes concentration in units of milligrams per liter

-"µmhos/cm" denotes specific conductance in units of micromhos per centimeter

"NTU" denotes Nephelometric Turbidity Units

-"µg/L" denotes concentration units of micrograms per liter

-"pCi/L" denotes concentration units of picoCuries per liter

-"U" indicates compound was analyzed for but not detected

-"I" indicates reported value between the laboratory method detection limit and the laboratory pratical quantitation limit

-"Q" indicates sample held beyond the accepted holding time