Glenn Springs Holdings, Inc.
A subsidiary of Occidental Petroleum

Joe Branch
Site Manager
Direct Dial (231) 670-6809

7601 Old Channel Trail
Montague, MI 49437

April 29, 2019

Reference No. 001069

Ms. Jaclyn Kondrk
USEPA
Region II, Site Investigation & Compliance Branch
290 Broadway, 20th Floor
New York, NY 10007-1866

Mr. Brian P. Sadowski
NYSDEC
270 Michigan Avenue
Buffalo, NY 14203-2999

Dear Ms. Kondrk and Mr. Sadowski:

Re: Quarterly Operations Report – First Quarter 2019
Hyde Park Remedial Program
Bedrock and Overburden Monitoring Programs
NYSDEC Site No. 932021

In accordance with the July 2006 "Performance Monitoring Plan" (PMP), the following is the Quarterly Operations Report for the Hyde Park Remedial Program for the period January 1, 2019 through March 31, 2019. A total of 8.44 million gallons of aqueous phase liquid (APL) were collected, treated, and discharged in compliance with the Site's City of Niagara Falls Publicly Owned Treatment Works (POTW) Significant Industrial Users Wastewater Discharge Permit #49. Forty-one drums (approximately 11,213 pounds) of non-aqueous phase liquid (NAPL) and ten drums (approximately 2,081 pounds) of personal protective equipment (PPE) and debris were shipped for disposal this quarter. The potentiometric contours are consistent with previous interpretations. Flow Zones 6, 7, and 9 have dewatered areas between the landfill and the gorge face. The current data continue to support the interpretation of effective hydraulic containment and inward gradients.

The performance monitoring data are presented as follows:

- Figures 1-9: Showing the potentiometric surface for the bedrock flow zones and overburden
- Table 1: Water level elevation summary
- Tables 2, 3, and 4: Daily, weekly, and quarterly treatment system effluent monitoring data
- Attachment A: Purge well performance graphs indicating daily level and flow information

Due to a pressure transducer malfunction, the continuously recorded water levels in flow zone 9 piezometer PMW-1M-09 for this quarterly reporting period could not be retrieved. As such, these water levels are not presented in this report. GSH is working with the manufacturer of the pressure transducer in an attempt to extract the water level data for this period. If successful, the PMW-1M-09 water levels for first quarter 2019 will be presented in the Quarterly Operations Report. The quarterly groundwater elevation in this piezometer

measured manually on March 8, 2019 was 517.85 feet above mean sea level (AMSL), indicating that the FZ-09 outcrop along the New York Power Authority (NYPA) access road was unsaturated.

As the pump in PW-1U was not operational during the quarter, this well's performance is not included in Attachment A. This well has a compromised overburden casing at the overburden/bedrock interface. Options to repair have been developed and an evaluation was conducted to determine if pumping this well is still required for containment. Based on the results of the evaluation, PW-1U will be repaired via insertion of a well riser pipe and screen in the second quarter of 2019.

A small leak was observed in aboveground steel piping associated with the NAPL decanters and APL storage tanks on March 20. The leak was contained within the concrete containment dike associated with these tanks. As a result of the small leak, all purge wells were immediately shut down. Removal of insulation and inspection of the piping to determine the location of the leak was performed between March 21 and 23. The results of the inspection indicated that several sections of aboveground piping (approximately 200 feet in total) were found in deteriorated condition. Due to the extent of deterioration, GSH opted to replace the piping. GSH commenced the process of replacing the piping on March 25 and anticipates demolition, fabrication, and installation to be complete by the end of April. Due to the age of the aboveground piping (approximately 30 years old), GSH plans to inspect the remaining aboveground steel piping associated with the decanters and APL storage tanks in the second quarter of 2019 and implement a program to replace any other deteriorated sections of piping identified.

With the exception of PW-1U, the pumping wells are operational and functioning as designed. The pumps are operated to maintain a water level between a typical range of 2.5 feet above (pump on) and 2.5 feet below (pump off) a specific setpoint in accordance with the setpoint range defined in the Operation & Maintenance Manual. The following minor operational and setpoint issues were investigated or resolved during the first quarter of 2019:

- The water level in APW-1 exceeded setpoint range on the following dates:
    - January 24 due to heavy rain and snowmelt. Water levels returned to within setpoint range on January 25.
    - February 5 through February 7 due to heavy rain and snow melt (did not return to setpoint range following this event due to power outage, see second bullet on page 3).
    - March 10 due to heavy rain and leak detection. Returned to within setpoint range on March 11.
- The water level in APW-2 exceeded setpoint range on the following dates:
    - January 1, as the well was turning on. Returned to within setpoint range on January 2.
    - January 9, March 10 and 11, and March 15 and 16 due to heavy rain. Returned to within setpoint range on January 10, March 12, and March 17, respectively.
    - January 24 due to heavy rain and snowmelt. Water levels returned to within setpoint range on January 25.
- The water level in PW-2M exceeded setpoint range from February 16 through February 18 due to a communication issue. Returned to within setpoint range on February 19.
- The water level in PW-7U exceeded setpoint range on the following dates:
    - February 16 through February 18 and February 24 and 25 due to a communication issue. Returned to within setpoint range on February 19 and February 26, respectively.

  - February 28 through March 19 due to a communication issue (did not return to setpoint range following this event due to well shut-down for aboveground steel piping repairs described previously).

- The water level in PW-9U exceeded setpoint range on March 17 due to high levels in the decanter. Returned to within setpoint range on March 18.
- Water levels in PW-2L, PW-2UR, PW-3L, PW-5UR, and PW-9U exceeded setpoint on January 11 and 31 due to a frozen decanter transmitter. Water levels returned to within setpoint range on January 12 and February 1, respectively.
- Water levels in APW-1, PW-1L, PW-2L, PW-2UR, PW-3L, PW-5UR, PW-6UR, PW-9U, and PW-10U exceeded setpoint from February 3 through February 4 due to an unidentified error in the pumping well control system on February 3. In addition, water levels in APW-2, PW-3M, PW-4U, and PW-7U exceeded setpoint on February 4 due to this control system error. Water levels returned to within setpoint range on February 5, with the exception of APW-1 (continued to exceed setpoint due to heavy rain and snow melt, returned to within setpoint range on February 9).
- Water levels in APW-1 and APW-2 exceeded setpoint on February 8 due to a site-wide power outage. Water levels returned to within setpoint range on February 9.
- The water level in PW-6UR exceeded setpoint range on both February 8 and February 9 due to the site-wide power outage, and returned to within setpoint range on February 10.

If you have any questions, please feel free to contact me at (231) 670-6809 or by email at joseph_branch@oxy.com.

Very truly yours,

GLENN SPRINGS HOLDINGS, INC.

Joe Branch
Site Manager
231-670-6809 Cell

JB/eew/1

Encl.
cc: G. May, NYSDEC
D. Hettrick, NYSDOH
J. Pentilchuk, GHD
D. Hoyt, GHD
M. Popek, GHD

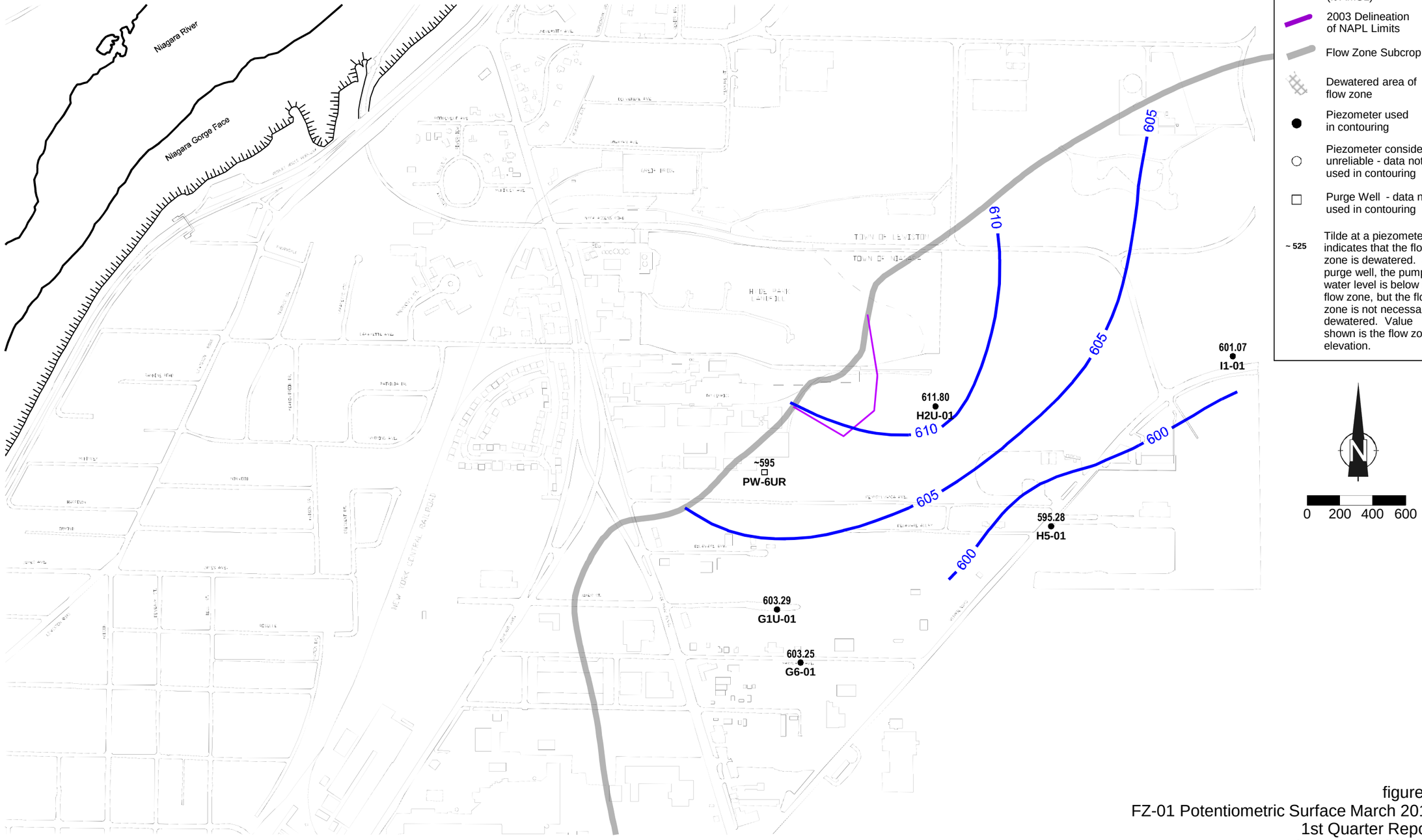


figure 1
FZ-01 Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

Glenn Springs Holdings, Inc.

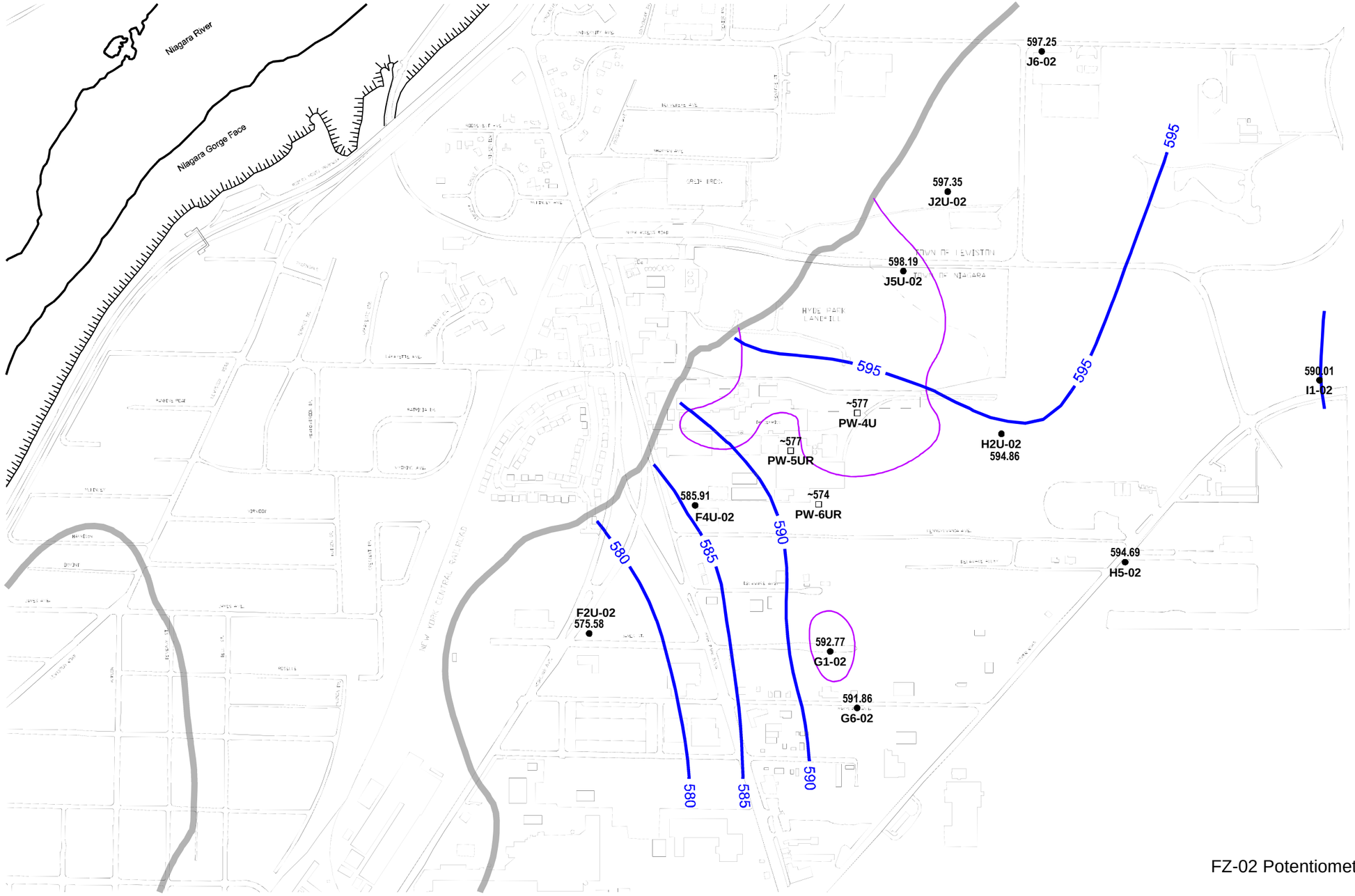


figure 2
FZ-02 Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

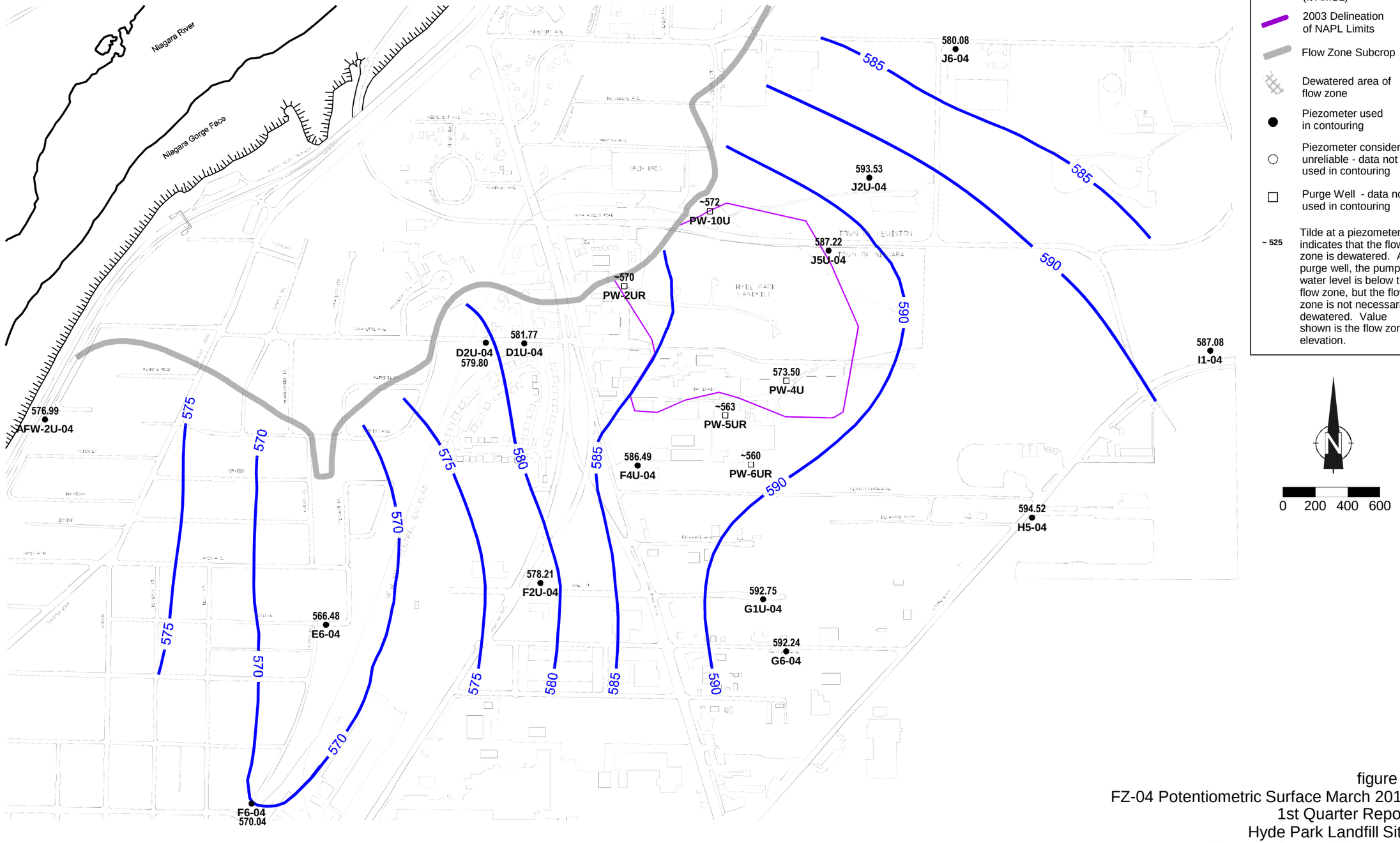
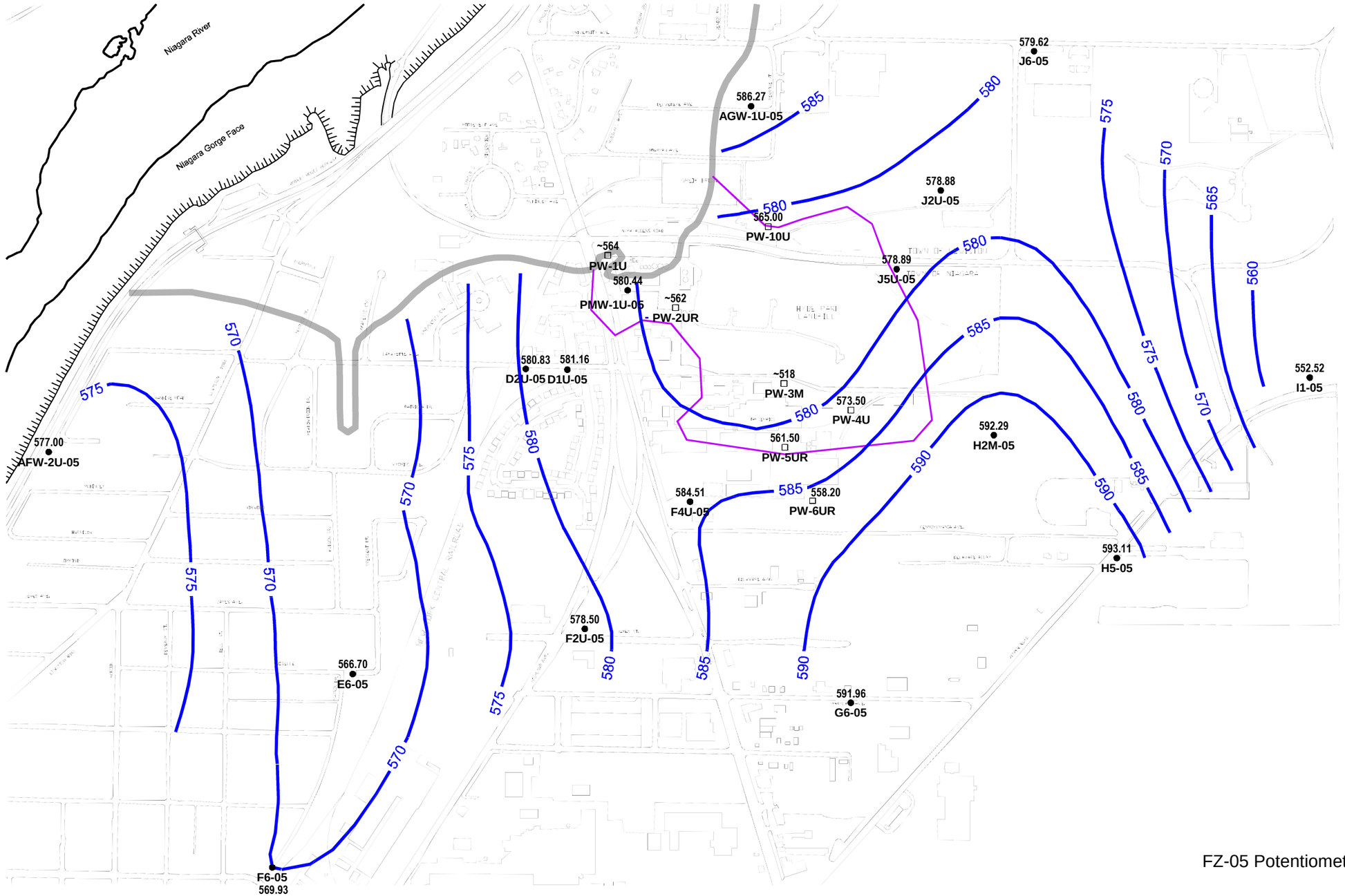


figure 3
FZ-04 Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

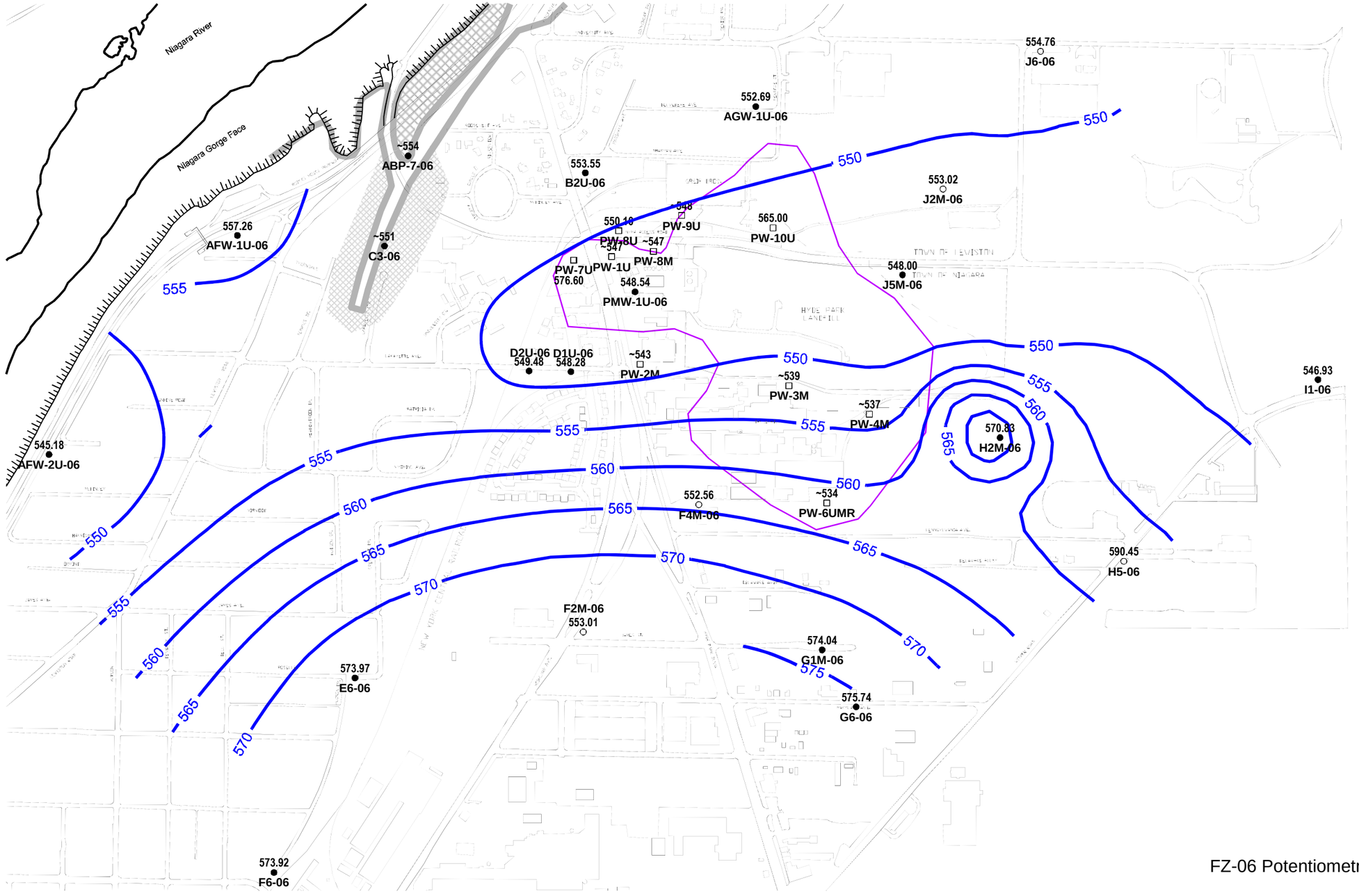


Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

figure 4
FZ-05 Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

Glenn Springs Holdings, Inc.

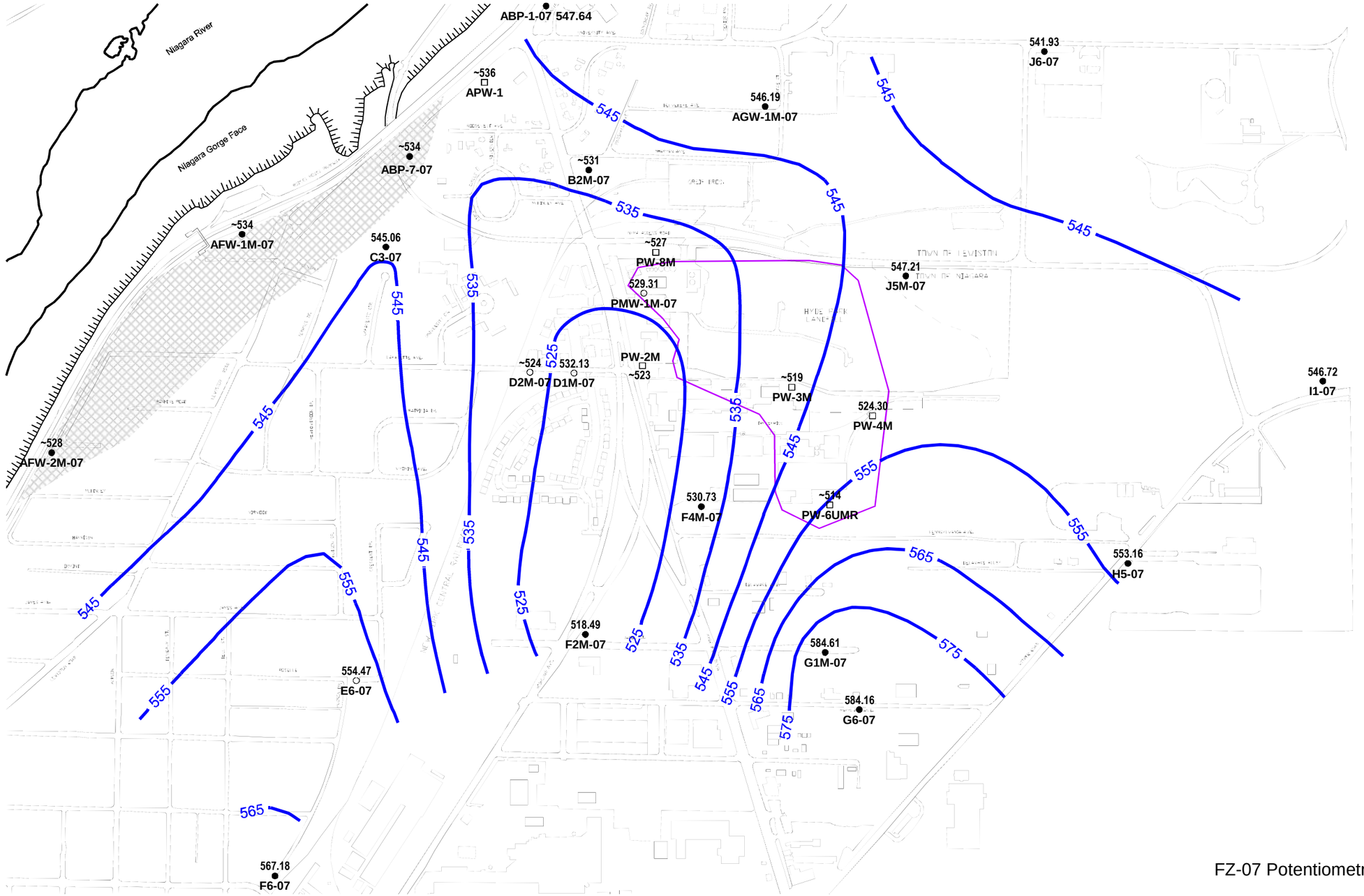


Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

figure 5
FZ-06 Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

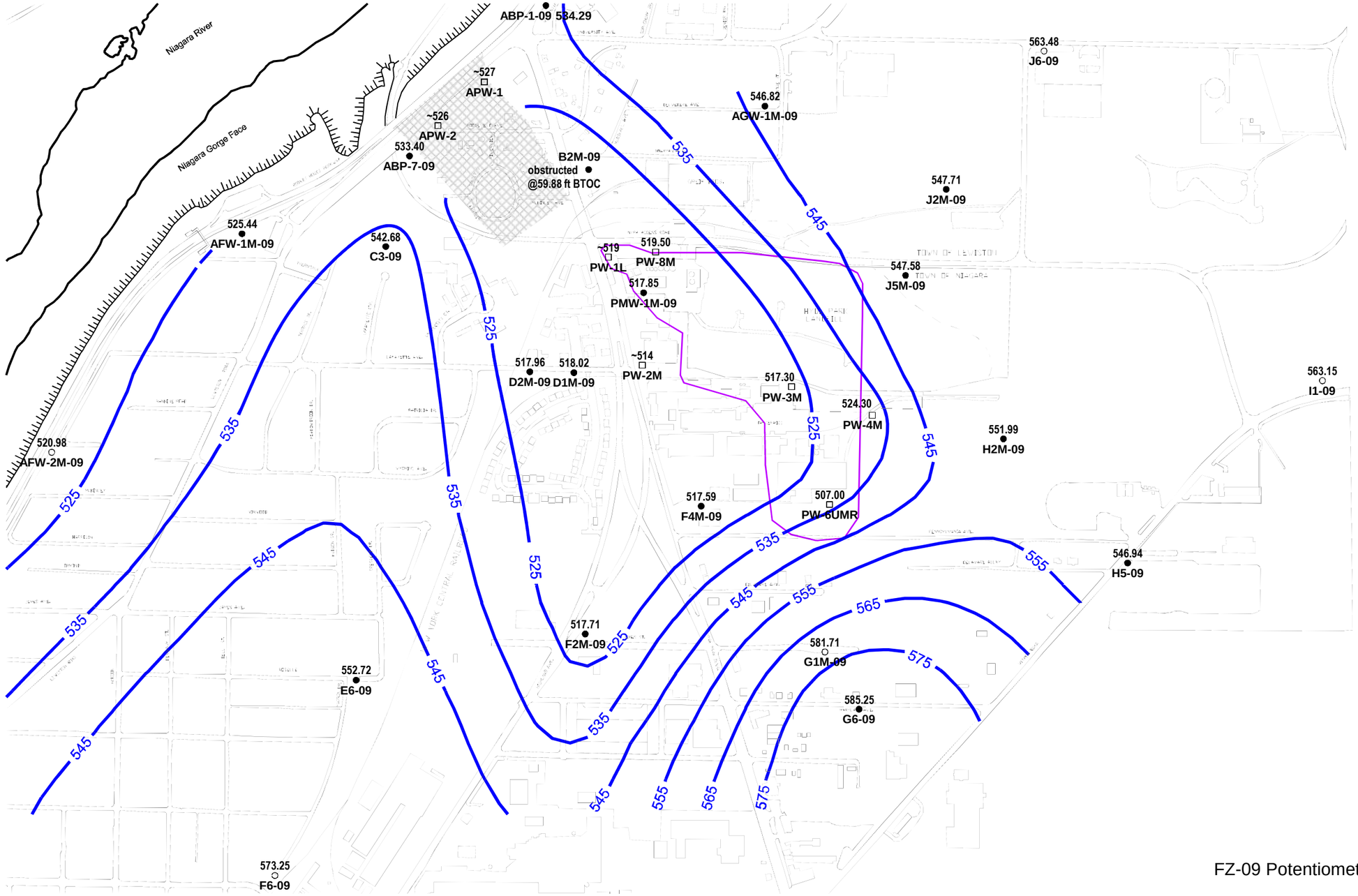
Glenn Springs Holdings, Inc.



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

figure 6
FZ-07 Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- 2003 Delineation of NAPL Limits
- Flow Zone Subcrop
- Dewatered area of flow zone
- ● Piezometer used in contouring
- ○ Piezometer considered unreliable - data not used in contouring
- □ Purge Well - data not used in contouring
- ~ 525 Tilde at a piezometer indicates that the flow zone is dewatered. At a purge well, the pumping water level is below the flow zone, but the flow zone is not necessarily dewatered. Value shown is the flow zone elevation.

figure 7
FZ-09 Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

Glenn Springs Holdings, Inc.

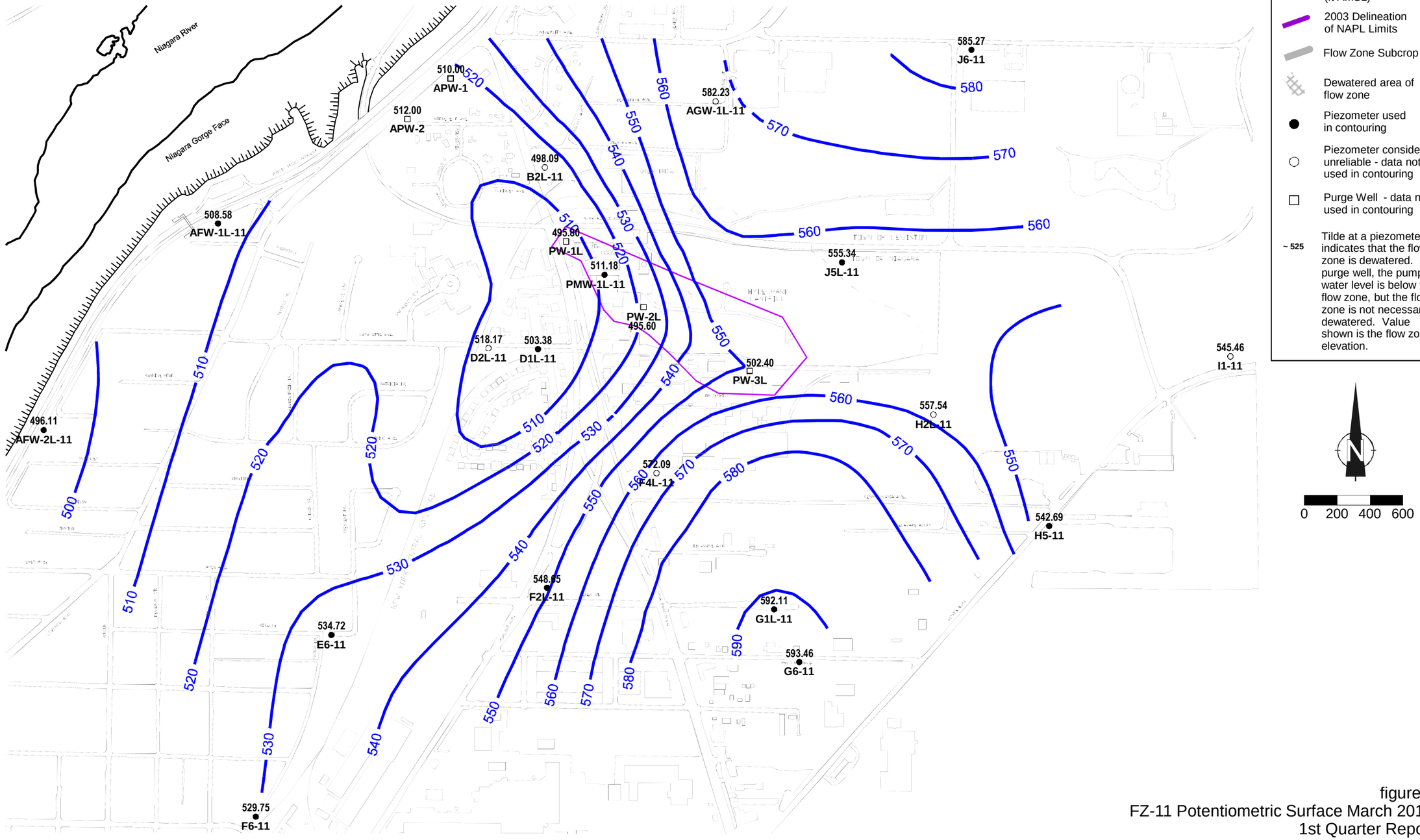
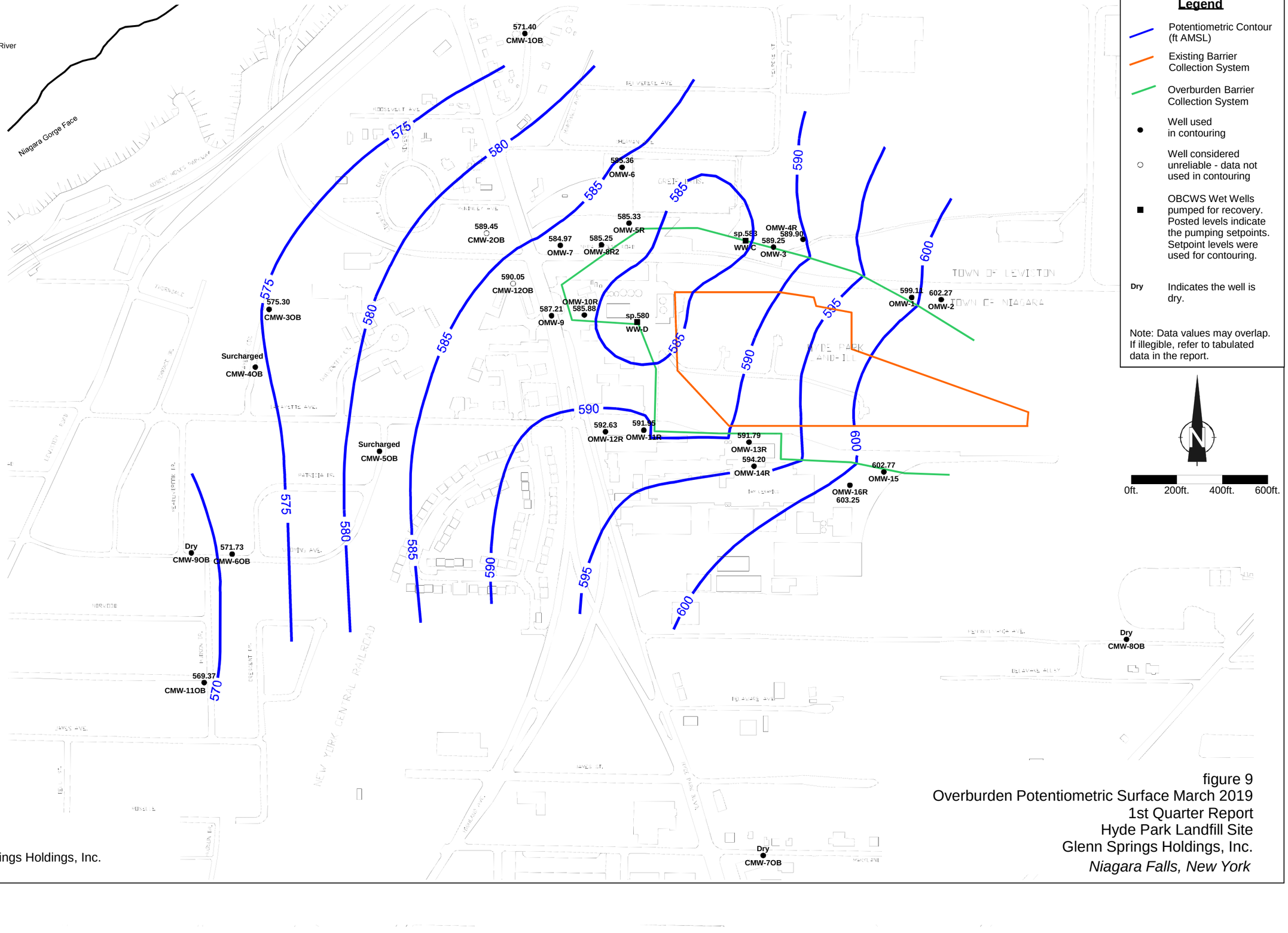


figure 8
FZ-11 Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



Legend

- Potentiometric Contour (ft AMSL)
- Existing Barrier Collection System
- Overburden Barrier Collection System
- ● Well used in contouring
- ○ Well considered unreliable - data not used in contouring
- ■ OBCWS Wet Wells pumped for recovery. Posted levels indicate the pumping setpoints. Setpoint levels were used for contouring.
- **Dry** Indicates the well is dry.

Note: Data values may overlap. If illegible, refer to tabulated data in the report.

figure 9
Overburden Potentiometric Surface March 2019
1st Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

Glenn Springs Holdings, Inc.

Table 1

Water Level Elevation Summary
First Quarter - 2019
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Overburden			
CMW-2OB	590.79	1.34	589.45
CMW-3OB	582.13	6.83	575.30
CMW-4OB	574.28	Surcharge	574.28
CMW-5OB	583.43	Surcharge	583.43
CMW-6OB	571.89	0.16	571.73
CMW-7OB	611.00	Dry	-
CMW-8OB	616.11	Dry	-
CMW-9OB	571.76	Dry	-
CMW-1OB	576.80	5.40	571.40
CMW-11OB	572.85	3.48	569.37
CMW-12OB	594.74	4.69	590.05
MH20	605.87	4.69	601.18
MH21	599.77	6.12	593.65
MH22	593.37	6.99	586.38
MH23	587.05	12.06	574.99
MH24	582.57	6.70	575.87
MH25	583.82	6.29	577.53
MH26	584.48	7.71	576.77
MH27	586.12	10.93	575.19
MH28	585.23	16.63	568.60
MH29	604.58	Dry	-
MH30	599.49	10.10	589.39
MH31	590.10	9.63	580.47
MH32	592.01	9.71	582.30
MH33	592.51	8.62	583.89
MH34	598.34	7.24	591.10
MH35	605.69	6.58	599.11
MH35A	605.69	7.16	598.53
OMW-1	605.28	6.17	599.11
OMW-2	605.99	3.72	602.27
OMW-3	598.63	9.38	589.25
OMW-4R	601.17	11.27	589.90
OMW-5R	591.31	5.98	585.33
OMW-6	587.62	2.26	585.36
OMW-7	592.74	7.77	584.97
OMW-8R2	594.67	9.42	585.25
OMW-9	595.27	8.06	587.21
OMW-10R	595.13	9.25	585.88
OMW-11R	597.52	5.57	591.95
OMW-12R	597.20	4.57	592.63
OMW-13R	601.50	9.71	591.79
OMW-14R	599.64	5.44	594.20
OMW-15	607.48	4.71	602.77
OMW-16R	607.62	4.37	603.25
SC-2	625.61	22.96	602.65
SC-3	638.72	40.83	597.89
SC-4	639.35	39.22	600.13
SC-5	634.07	31.62	602.45
SC-6	631.15	20.04	611.11

Table 1

Water Level Elevation Summary
First Quarter - 2019
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Shallow Bedrock			
CMW-1SH	576.11	11.92	564.19
CMW-2SH	590.51	15.94	574.57
CMW-3SH	581.91	32.67	549.24
CMW-4SH	574.16	7.17	566.99
CMW-5SH	583.36	7.19	576.17
CMW-6SH	572.05	10.00	562.05
CMW-7SH	610.58	11.10	599.48
CMW-8SH	615.95	6.18	609.77
CMW-9SH	571.96	11.94	560.02
CMW-11SH	573.21	8.37	564.84
CMW-12SH	597.02	22.91	574.11
Flow Zone 1			
G1U-01	617.08	13.79	603.29
G6-01	609.24	5.99	603.25
H2U-01	620.92	9.12	611.80
H5-01	617.61	22.33	595.28
I1-01	625.58	24.51	601.07
Flow Zone 2			
F2U-02	599.89	24.31	575.58
F4U-02	602.32	16.41	585.91
G1-02	616.86	24.09	592.77
G6-02	608.65	16.79	591.86
H2U-02	620.88	26.02	594.86
H5-02	617.47	22.78	594.69
I1-02	625.47	35.46	590.01
J2U-02	609.66	12.31	597.35
J5U-02	606.21	8.02	598.19
J6-02	609.23	11.98	597.25
Flow Zone 4			
AFW-2U-04	593.48	16.49	576.99
D1U-04	593.77	12.00	581.77
D2U-04	590.65	10.85	579.80
E6-04	578.23	11.75	566.48
F2U-04	599.76	21.55	578.21
F4U-04	602.19	15.70	586.49
F6-04	588.06	18.02	570.04
G1U-04	616.96	24.21	592.75
G6-04	609.15	16.91	592.24
H5-04	617.40	22.88	594.52
I1-04	625.30	38.22	587.08
J2U-04	609.42	15.89	593.53
J5U-04	606.05	18.83	587.22
J6-04	609.12	29.04	580.08

Table 1

Water Level Elevation Summary
First Quarter - 2019
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Flow Zone 5			
AFW-2U-05	593.33	16.33	577.00
AGW-1U-05	591.80	5.53	586.27
D1U-05	593.51	12.35	581.16
D2U-05	590.56	9.73	580.83
E6-05	578.04	11.34	566.70
F2U-05	599.64	21.14	578.50
F4U-05	602.06	17.55	584.51
F6-05	587.85	17.92	569.93
G6-05	609.13	17.17	591.96
H2M-05	621.59	29.30	592.29
H5-05	617.31	24.20	593.11
I1-05	625.25	72.73	552.52
J2U-05	609.30	30.42	578.88
J5U-05	605.87	26.98	578.89
J6-05	609.02	29.40	579.62
PMW-1U-05	598.00	17.56	580.44
Flow Zone 6			
ABP-7-06	575.78	Dry	-
AFW-1U-06	571.83	14.57	557.26
AFW-2U-06	593.22	48.04	545.18
AGW-1U-06	591.66	38.97	552.69
B2U-06	589.29	35.74	553.55
C3-06	585.78	Dry	-
D1U-06	593.25	44.97	548.28
D2U-06	590.38	40.90	549.48
E6-06	577.99	4.02	573.97
F2M-06	599.06	46.05	553.01
F4M-06	602.05	49.49	552.56
F6-06	587.84	13.92	573.92
G1M-06	616.75	42.71	574.04
G6-06	609.09	33.35	575.74
H2M-06	621.42	50.59	570.83
H5-06	617.17	26.72	590.45
I1-06	625.15	78.22	546.93
J2M-06	608.94	55.92	553.02
J5M-06	606.22	58.22	548.00
J6-06	608.93	54.17	554.76
PMW-1U-06	597.92	49.38	548.54

Table 1

Water Level Elevation Summary
First Quarter - 2019
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Flow Zone 7			
ABP-1-07	576.44	28.80	547.64
ABP-7-07	575.73	41.85	533.88
AFW-1M-07	571.41	Dry	-
AFW-2M-07	593.44	66.86	526.58
AGW-1M-07	592.91	46.72	546.19
B2M-07	589.52	Dry	-
C3-07	585.62	40.56	545.06
D1M-07	594.15	62.02	532.13
D2M-07	590.77	68.24	522.53
E6-07	577.91	23.44	554.47
F2M-07	598.91	80.42	518.49
F4M-07	601.91	71.18	530.73
F6-07	587.68	20.50	567.18
G1M-07	616.68	32.07	584.61
G6-07	609.06	24.90	584.16
H5-07	617.05	63.89	553.16
I1-07	625.14	78.42	546.72
J5M-07	606.07	58.86	547.21
J6-07	608.85	66.92	541.93
PMW-1M-07	598.50	69.19	529.31
Flow Zone 9			
ABP-1-09	575.49	41.20	534.29
ABP-7-09	575.67	42.27	533.40
AFW-1M-09	571.12	45.68	525.44
AFW-2M-09	593.32	72.34	520.98
AGW-1M-09	592.75	45.93	546.82
B2M-09	589.34	O[(1)]	-
C3-09	585.00	42.32	542.68
D1M-09	594.02	76.00	518.02
D2M-09	590.66	72.70	517.96
E6-09	577.82	25.10	552.72
F2M-09	598.71	81.00	517.71
F4M-09	601.79	84.20	517.59
F6-09	587.53	14.28	573.25
G1M-09	616.58	34.87	581.71
G6-09	608.98	23.73	585.25
H2M-09	621.32	69.33	551.99
H5-09	616.93	69.99	546.94
I1-09	624.91	61.76	563.15
J2M-09	608.77	61.06	547.71
J5M-09	605.82	58.24	547.58
J6-09	608.76	45.28	563.48
PMW-1M-09	598.34	80.49	517.85

Table 1

Water Level Elevation Summary
First Quarter - 2019
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Flow Zone 11			
AFW-1L-11	572.10	63.52	508.58
AFW-2L-11	593.43	97.32	496.11
AGW-1L-11	592.71	10.48	582.23
B2L-11	589.65	91.56	498.09
D1L-11	593.80	90.42	503.38
D2L-11	590.21	72.04	518.17
E6-11	577.72	43.00	534.72
F2L-11	598.94	50.29	548.65
F4L-11	602.22	30.13	572.09
F6-11	587.40	57.65	529.75
G1L-11	616.84	24.73	592.11
G6-11	608.89	15.43	593.46
H2L-11	620.73	63.19	557.54
H5-11	616.81	74.12	542.69
I1-11	624.75	79.29	545.46
J5L-11	607.20	51.86	555.34
J6-11	608.68	23.41	585.27
PMW-1L-11	598.84	87.66	511.18
Purge Wells			
APW-1	564.98	54.98	510.00
APW-2	569.89	57.89	512.00
PW-1L	593.16	97.36	495.80
PW-1U	593.16	67.66	525.50
PW-2L	597.29	101.69	495.60
PW-2M	596.61	87.11	509.50
PW-2UR	594.75	35.55	559.20
PW-3L	599.05	96.65	502.40
PW-3M	597.79	80.49	517.30
PW-4M	606.93	82.63	524.30
PW-4U	604.85	31.35	573.50
PW-5UR	601.31	39.81	561.50
PW-6UMR	609.31	102.31	507.00
PW-6UR	608.47	50.27	558.20
PW-7U	592.47	15.87	576.60
PW-8M	592.67	73.17	519.50
PW-8U	589.27	39.17	550.10
PW-9U	587.47	45.57	541.90
PW-10U	593.54	28.54	565.00

Notes:

"-"	- Not applicable
ft AMSL	- Feet above mean sea level
O[(1)]	- Well is obstructed
Dry	- No water present at the time of measurement
Surcharge	- Well surcharged

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
First Quarter - 2019
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
01/01/19		
01/02/19	7.0	111,000
01/03/19	7.3	315,000
01/04/19	7.5	68,000
01/05/19		
01/06/19		
01/07/19	7.5	295,000
01/08/19	7.4	83,000
01/09/19	7.4	108,000
01/10/19	7.4	294,000
01/11/19		
01/12/19		
01/13/19		
01/14/19	7.2	244,000
01/15/19	7.4	128,000
01/16/19	7.6	76,000
01/17/19	7.5	69,000
01/18/19		
01/19/19		
01/20/19		
01/21/19	7.4	309,000
01/22/19		
01/23/19	7.2	39,000
01/24/19	7.0	104,000
01/25/19	7.0	293,000
01/26/19		
01/27/19		
01/28/19	7.0	323,000
01/29/19	7.0	84,000
01/30/19	7.0	62,000
01/31/19	7.0	45,000
02/01/19	7.0	90,000
02/02/19		
02/03/19		
02/04/19	7.0	289,000
02/05/19	7.0	102,000
02/06/19	7.0	107,000
02/07/19	7.0	172,000

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
First Quarter - 2019
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
02/08/19		
02/09/19		
02/10/19	7.0	347,000
02/11/19	7.0	117,000
02/12/19	7.0	98,000
02/13/19	7.1	94,000
02/14/19	7.0	323,000
02/15/19	7.1	42,000
02/16/19		
02/17/19		
02/18/19	7.2	351,000
02/19/19	7.1	85,000
02/20/19	7.1	91,000
02/21/19		
02/22/19	7.0	260,000
02/23/19		
02/24/19		
02/25/19	7.0	290,000
02/26/19	7.1	90,000
02/27/19	7.1	96,000
02/28/19	7.0	251,000
03/01/19		
03/02/19		
03/03/19		
03/04/19		
03/05/19	7.0	246,000
03/06/19	7.0	89,000
03/07/19		
03/08/19		
03/09/19		
03/10/19	7.0	284,000
03/11/19	7.0	85,000
03/12/19		
03/13/19	7.0	297,000
03/14/19	7.1	72,000
03/15/19	7.1	84,000
03/16/19		
03/17/19		

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
First Quarter - 2019
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
03/18/19	7.0	312,000
03/19/19	7.0	307,000
03/20/19	7.0	23,000
03/21/19		
03/22/19		
03/23/19		
03/24/19		
03/25/19		
03/26/19	7.1	83,000
03/27/19	7.1	72,000
03/28/19	7.1	64,000
03/29/19	7.1	76,000
03/30/19		
03/31/19		
	Total	8,439,000

Notes:

su - Standard Unit
gal - Gallons

Analytical Results Summary
Weekly Sampling - Leachate Treatment System
First Quarter - 2019
Hyde Park RRT Program

Effluent

Parameter	Units	01/02/2019	01/09/2019	01/16/2019	01/23/2019	01/30/2019	02/06/2019	02/13/2019
Volatiles								
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	0.23 J	0.27 J	0.29 J	0.33 J	0.40 J	0.39 J	0.51 J
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
3-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	19	15	8.5	9.1	13	7.4	7.4
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	µg/L	110	120	120	140	120	120	150
Xylenes (total)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
General Chemistry								
Phenolics (total)	mg/L	0.0026 J	0.0023 J	0.0050 U	0.0039 J	0.0025 J	0.0028 J	0.0050 U

Analytical Results Summary
Weekly Sampling - Leachate Treatment System
First Quarter - 2019
Hyde Park RRT Program

Effluent

Parameter	Units	02/20/2019	02/27/2019	03/06/2019	03/13/2019	03/20/2019	03/27/2019
Volatiles							
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	0.55 J	0.66 J	0.94 J	0.52 J	1.1	0.58 J
1,1-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.0 U	1.0 U	0.24 J	1.0 U	0.29 J	1.0 U
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
3-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	3.6	4.8	15	4.8	7.4	8.6
Carbon tetrachloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	1.0 U	1.0 U	0.32 J	1.0 U	0.33 J	1.0 U
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	µg/L	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	µg/L	130	140	180	120	180	110
Xylenes (total)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
General Chemistry							
Phenolics (total)	mg/L	0.0023 J	0.0019 J	0.0027 J	0.0023 J	0.0033 J	0.0012 J

Notes:

J - Estimated concentration
U - Not detected at the associated reporting limit
mg/L - Milligrams per liter
µg/L - Micrograms per liter

Table 4

Analytical Results Summary
Quarterly Sampling - Leachate Treatment System
First Quarter - 2019
Hyde Park RRT Program

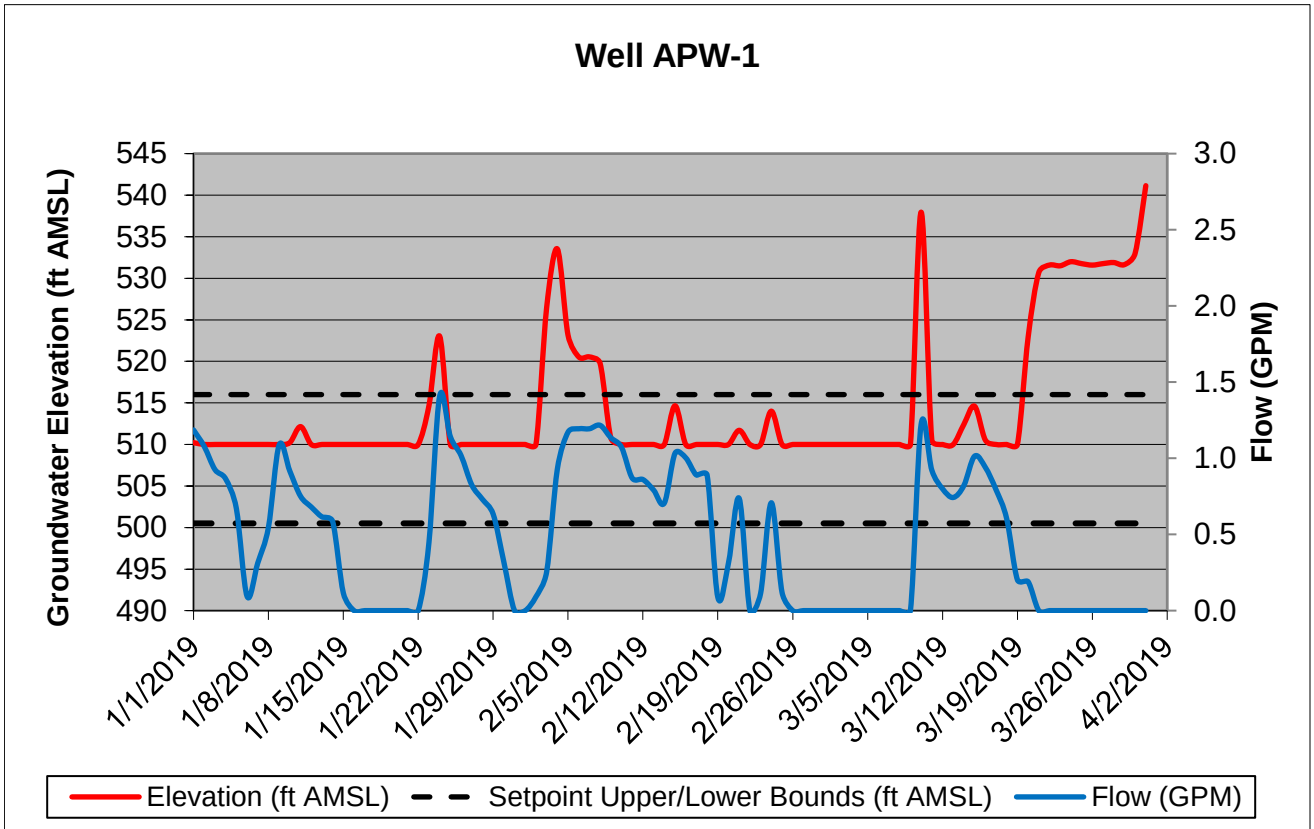
Sample Location:		**EFFLUENT**	**EFFLUENT**
Sample ID:		**HP 32719 EFF**	**HP 32719 EFF**
Sample Date:		**3/27/2019**	**3/27/2019**
Parameters	**Units**		
Volatile Organic Compounds			
Vinyl chloride	µg/L	141	--
General Chemistry			
Phosphorus	mg/L	--	0.200

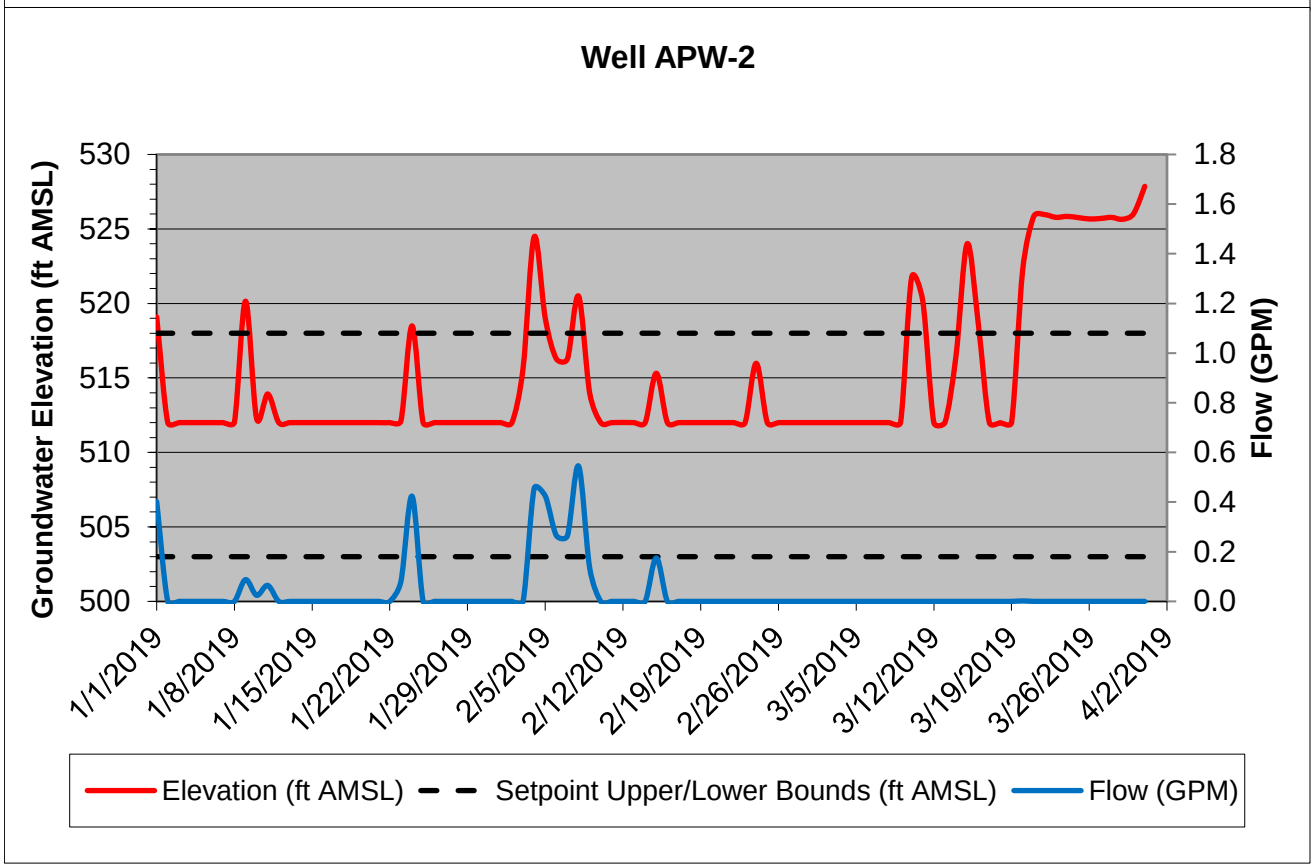
Notes:

"--" - Not applicable

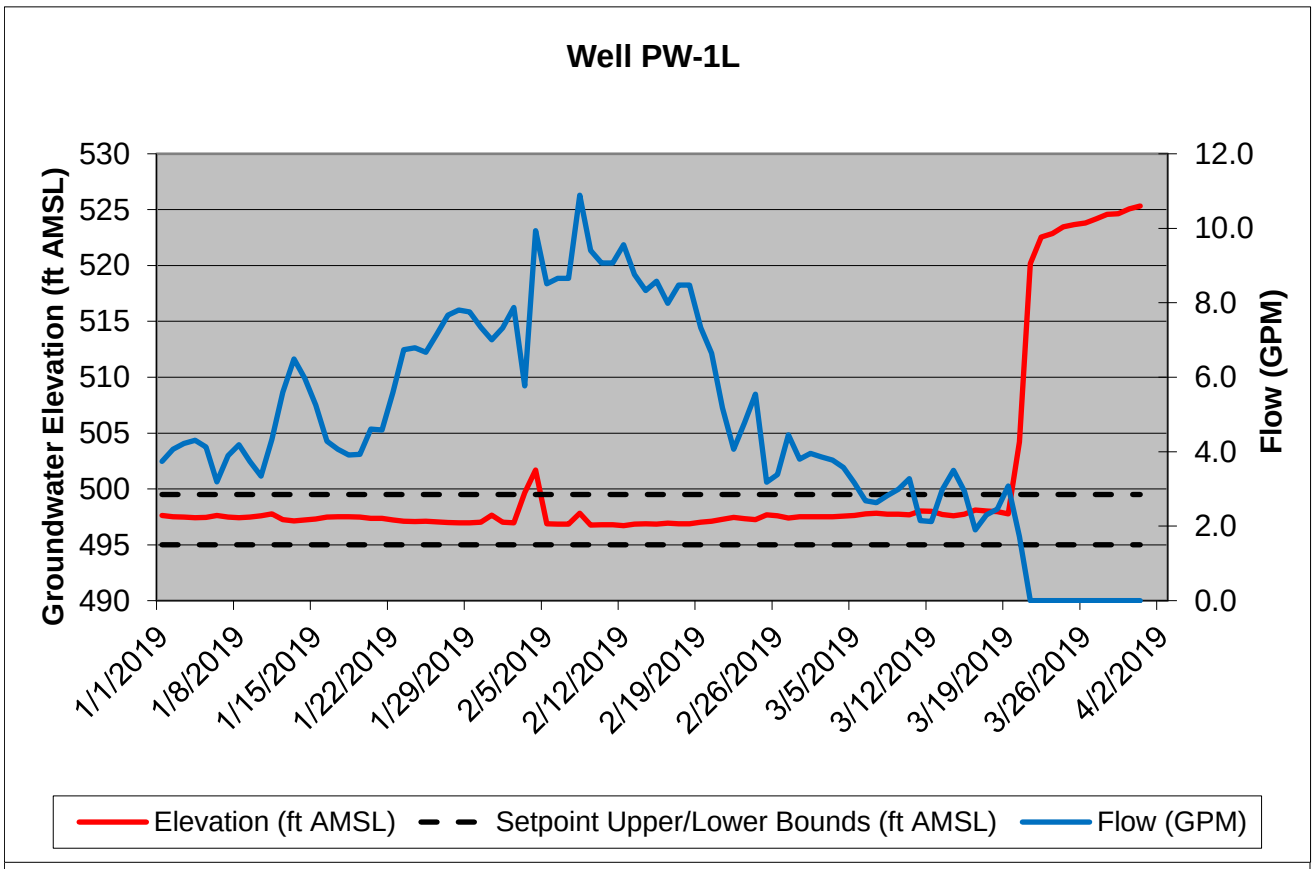
Attachment A
First Quarter 2019
Pumping Well Performance Graphs

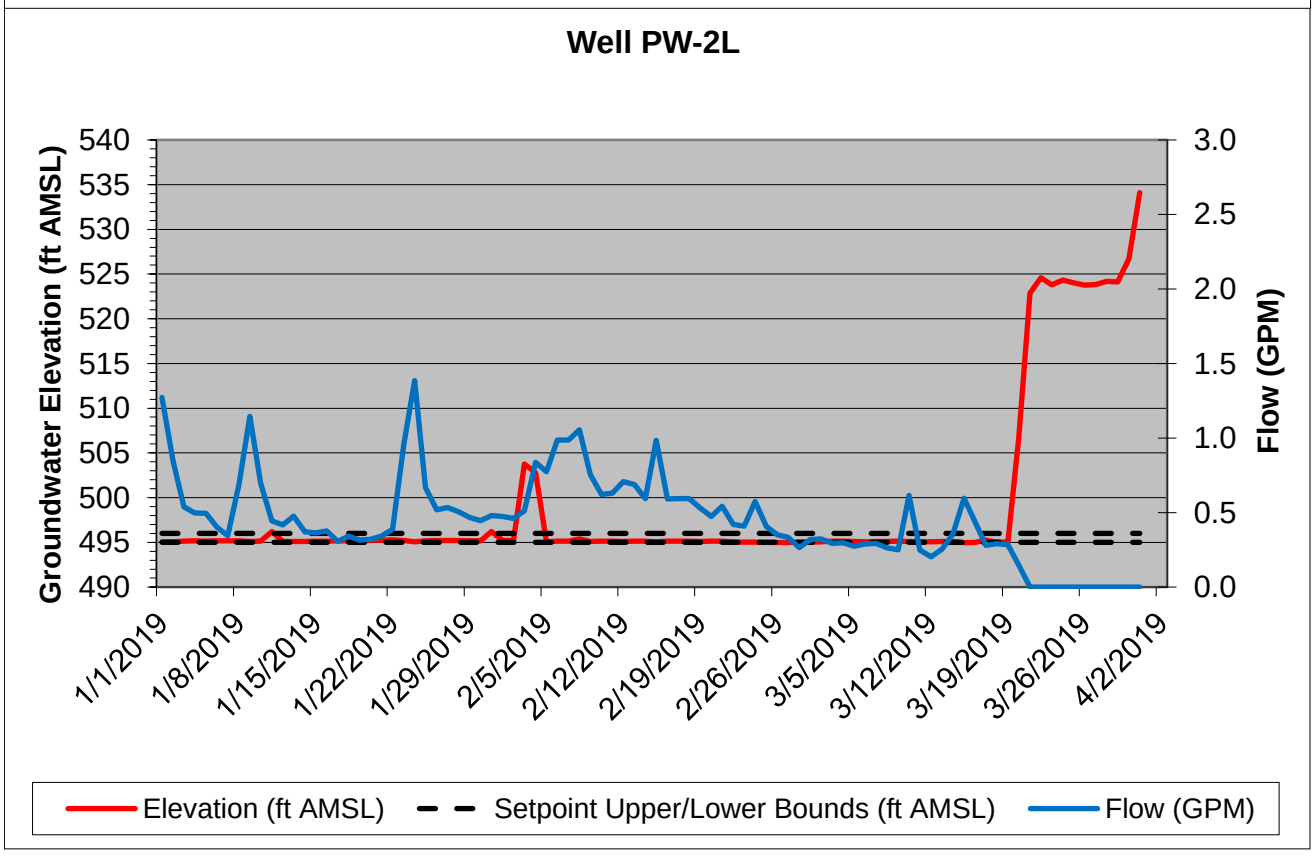
FIRST QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



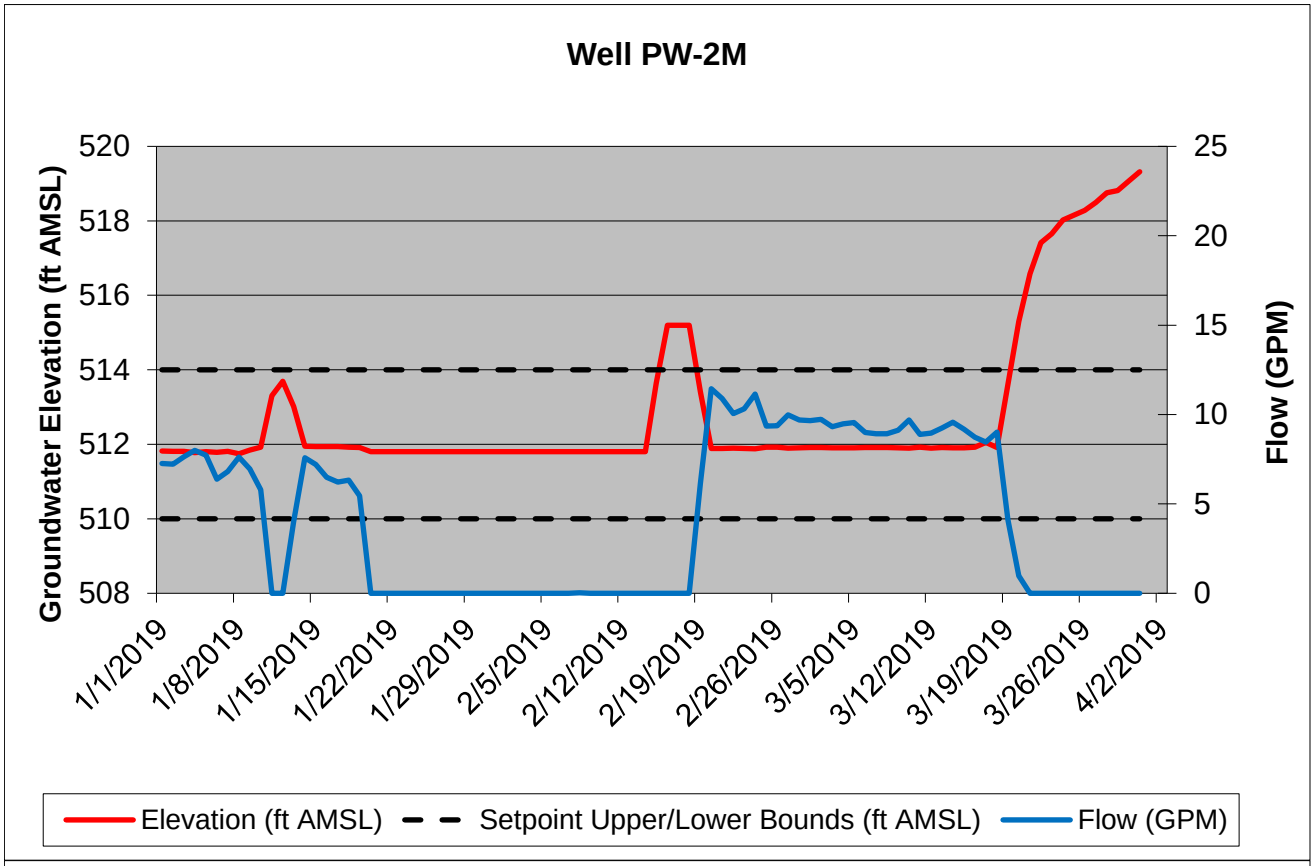


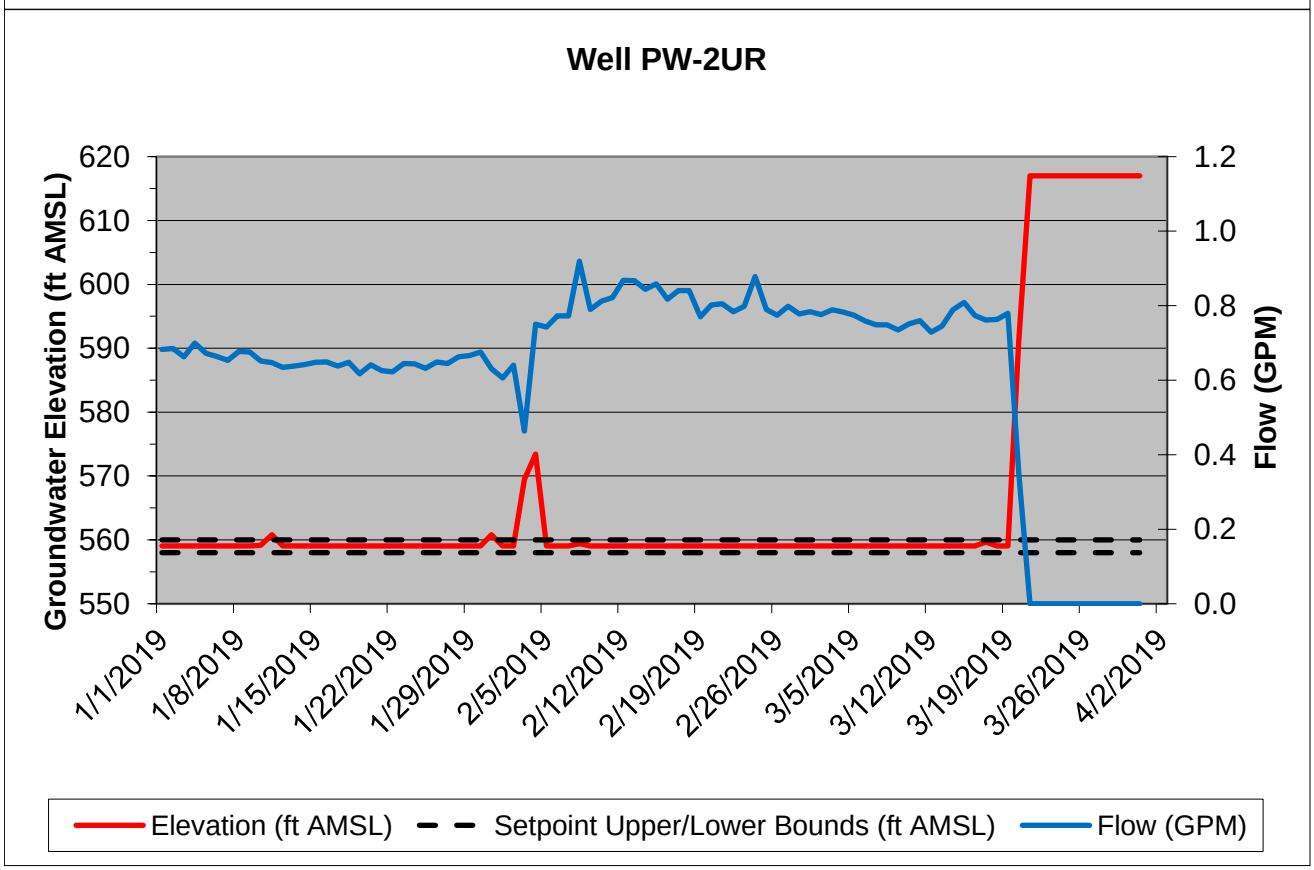
FIRST QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



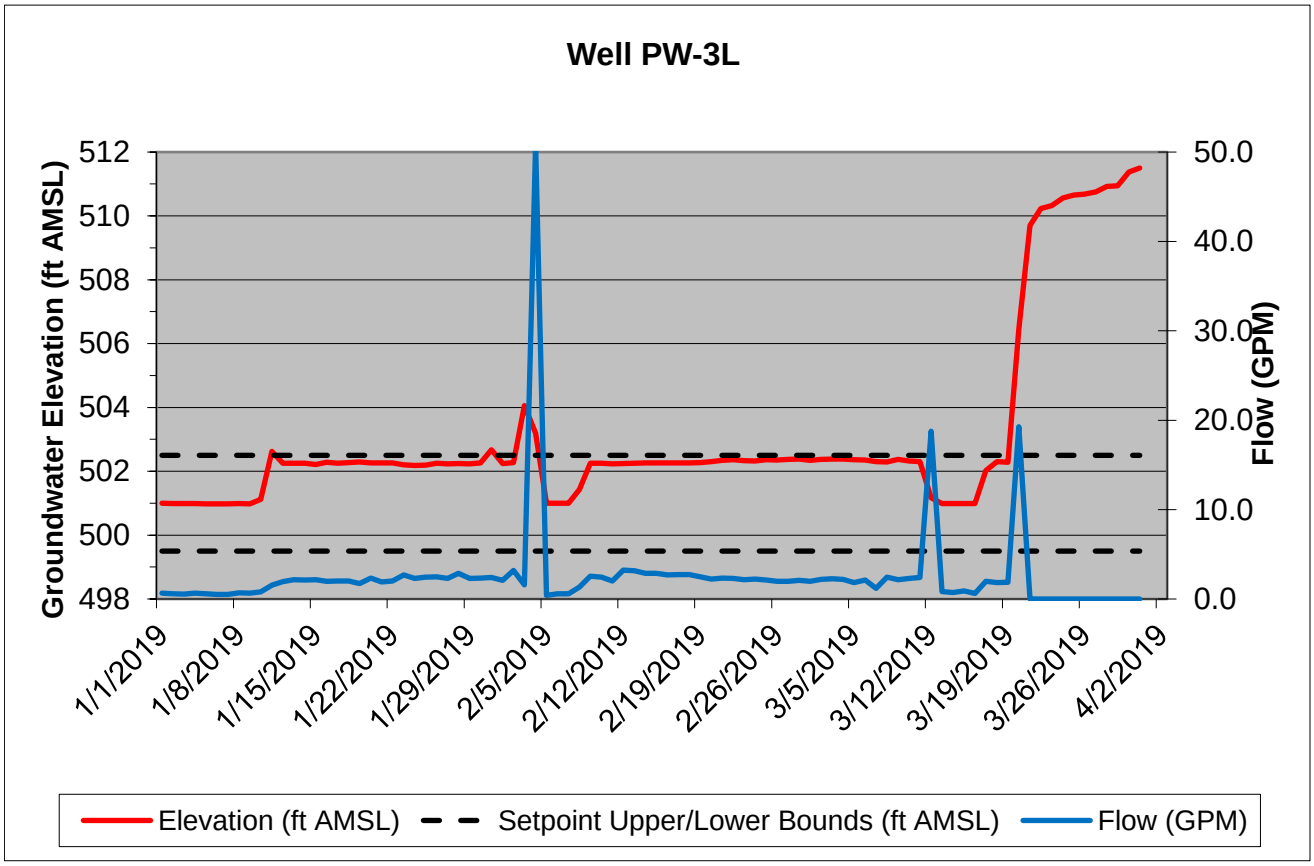


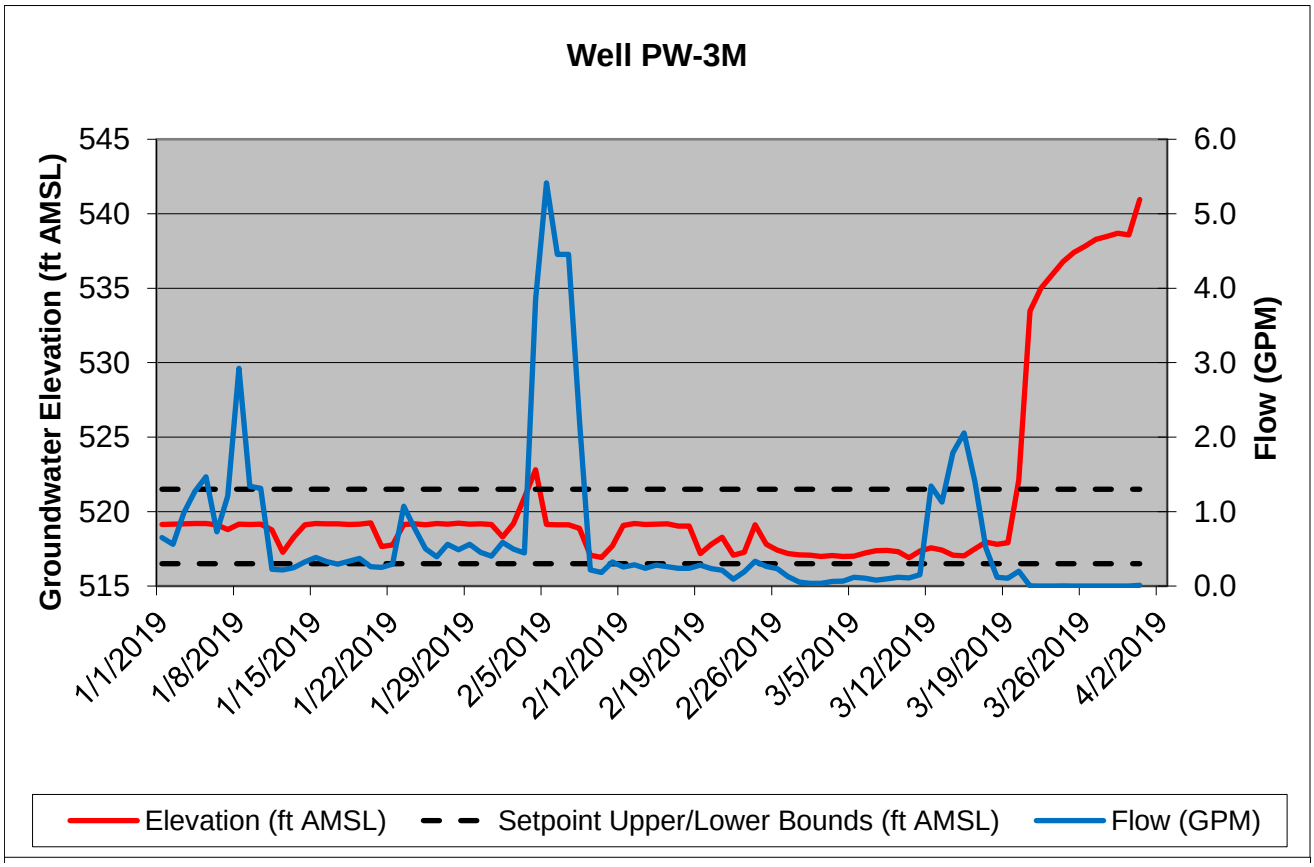
FIRST QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



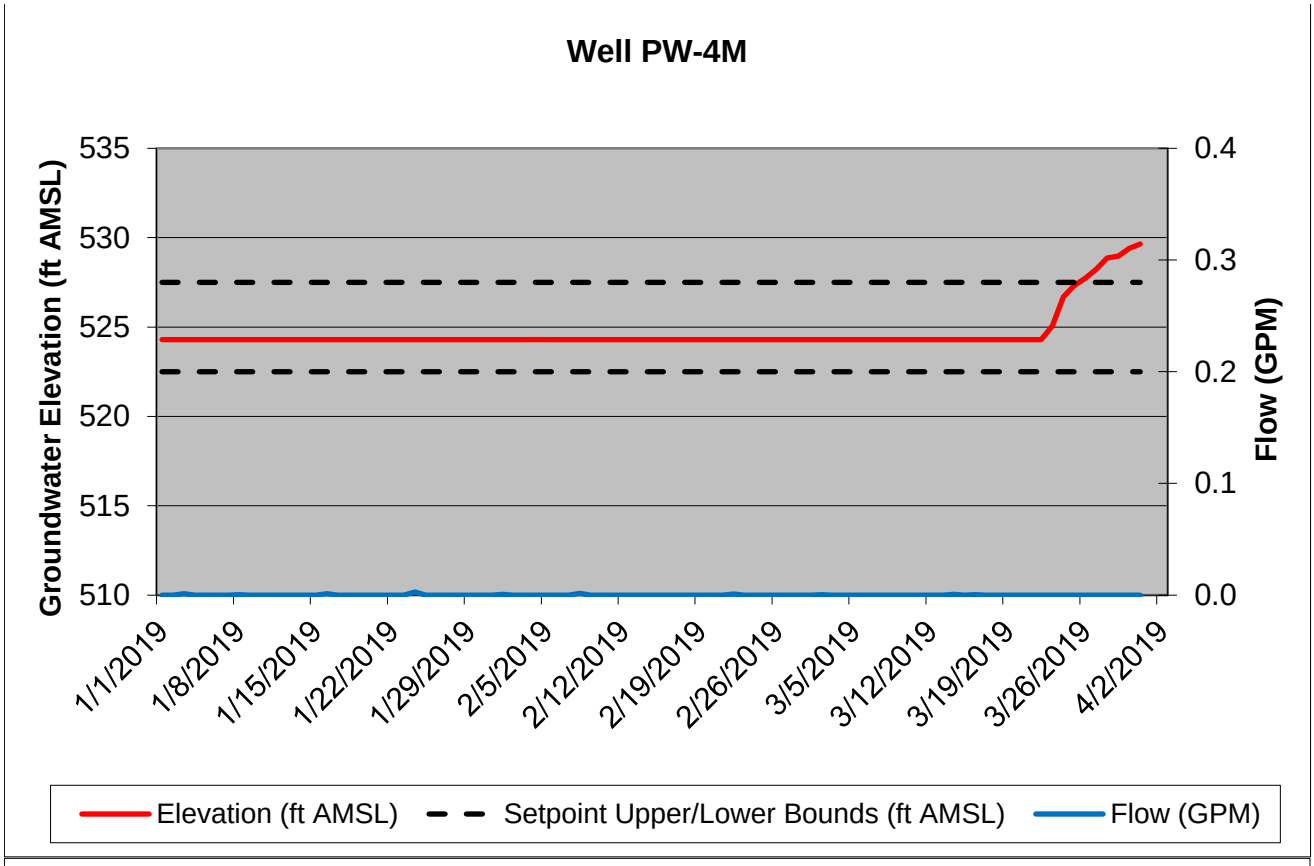


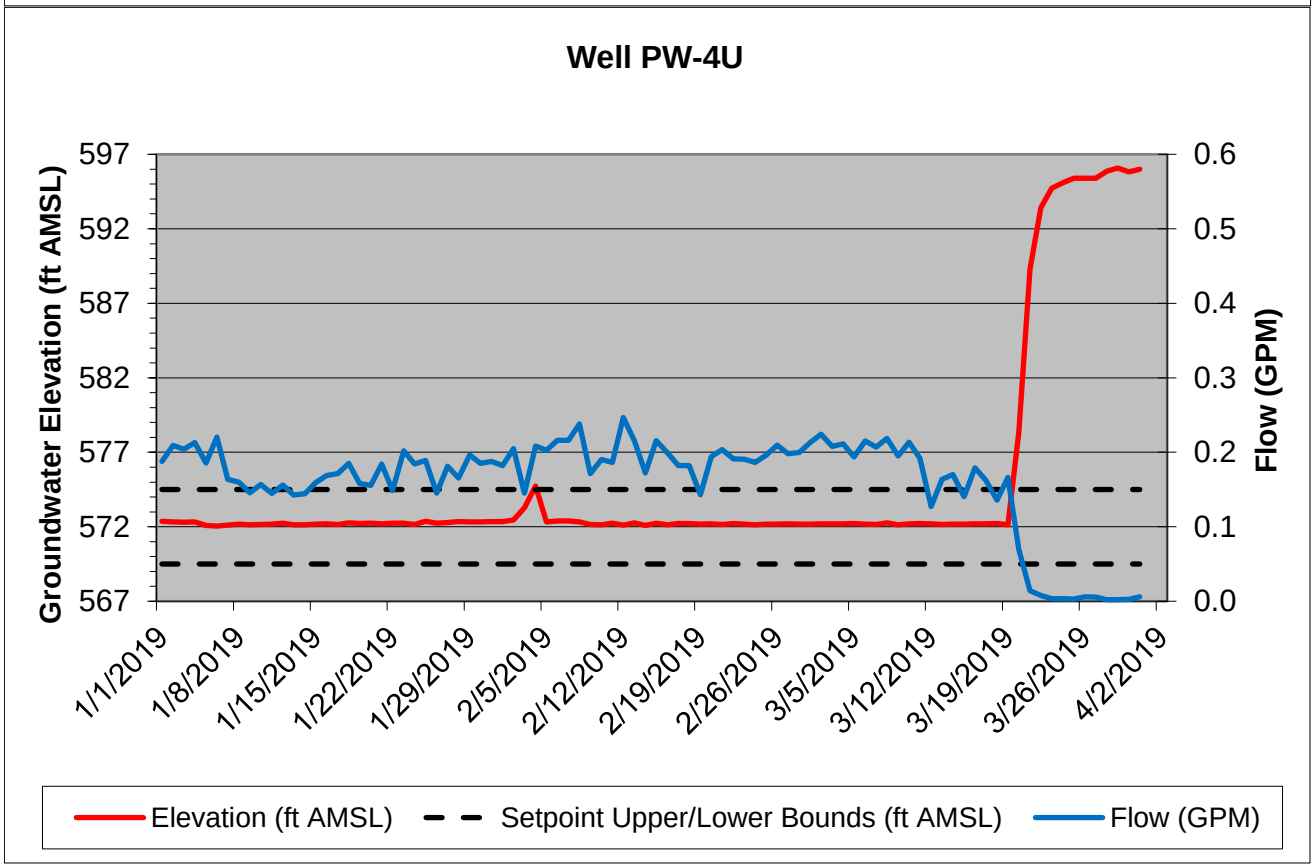
FIRST QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



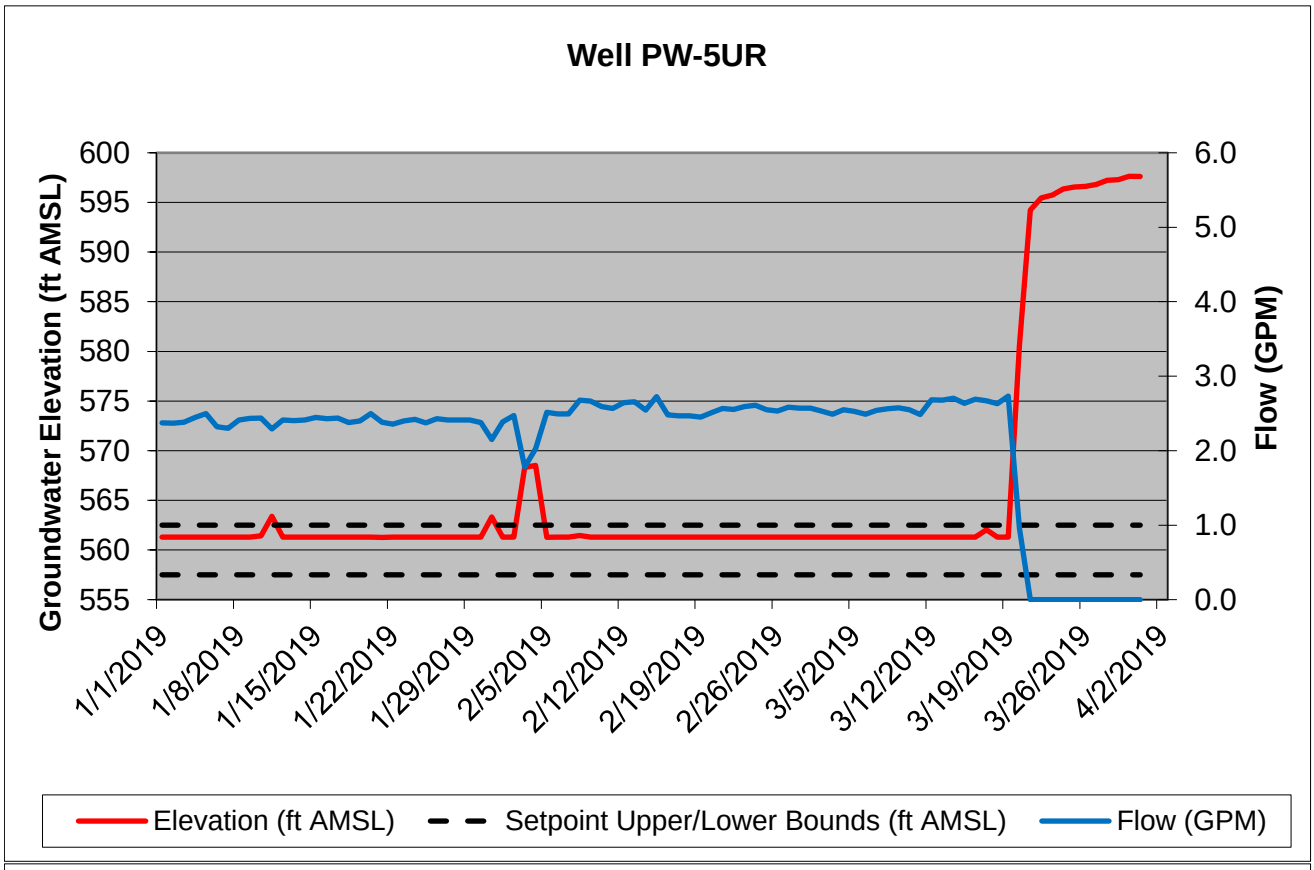


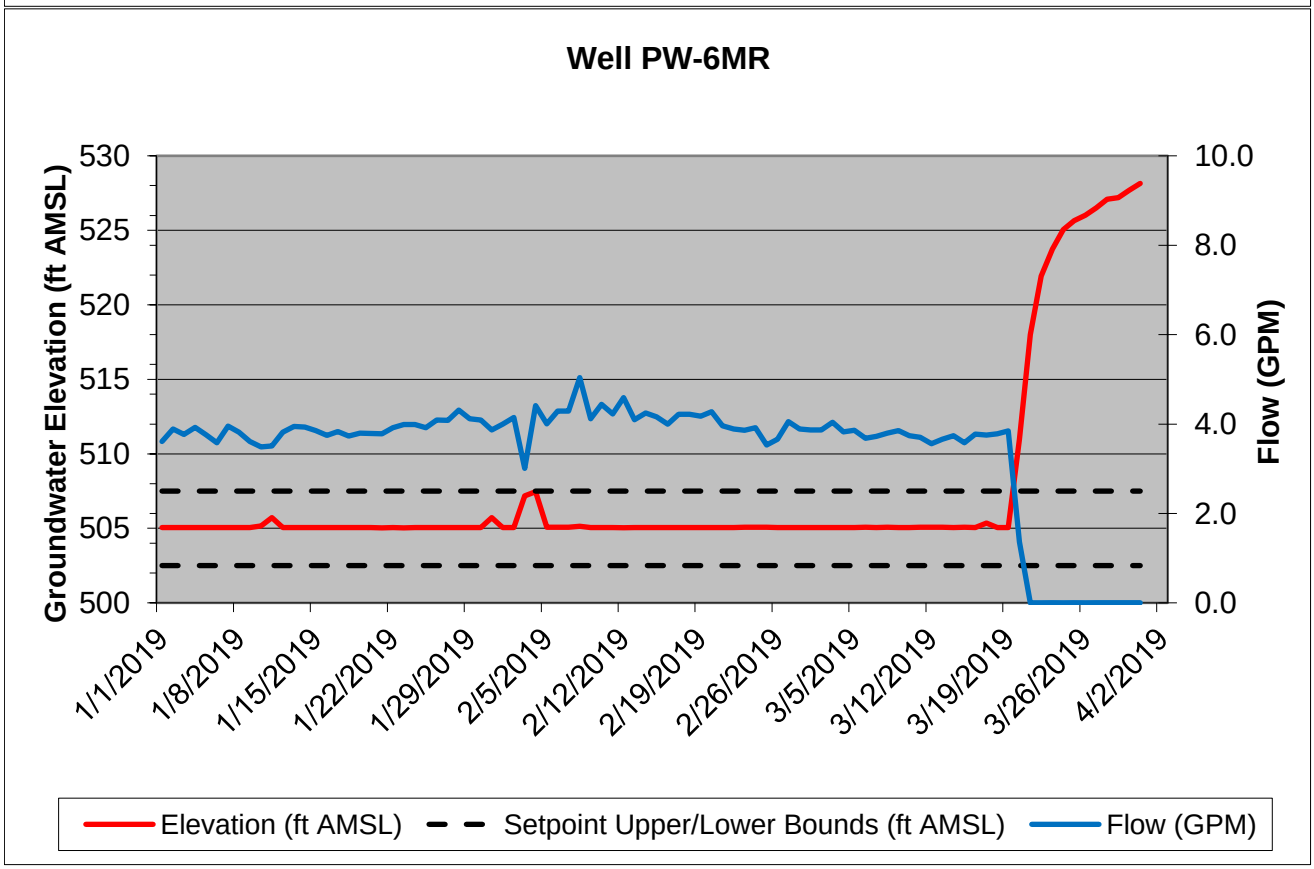
FIRST QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



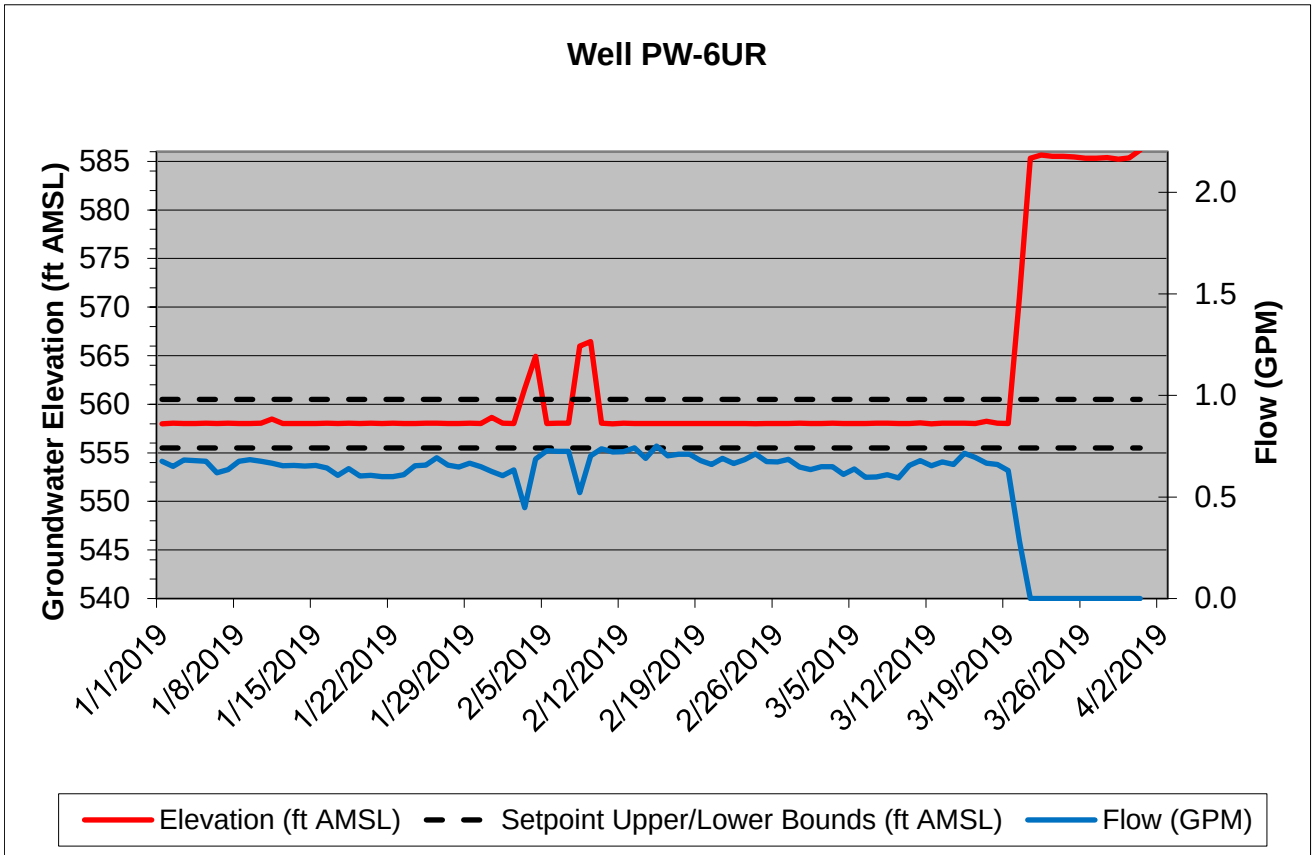


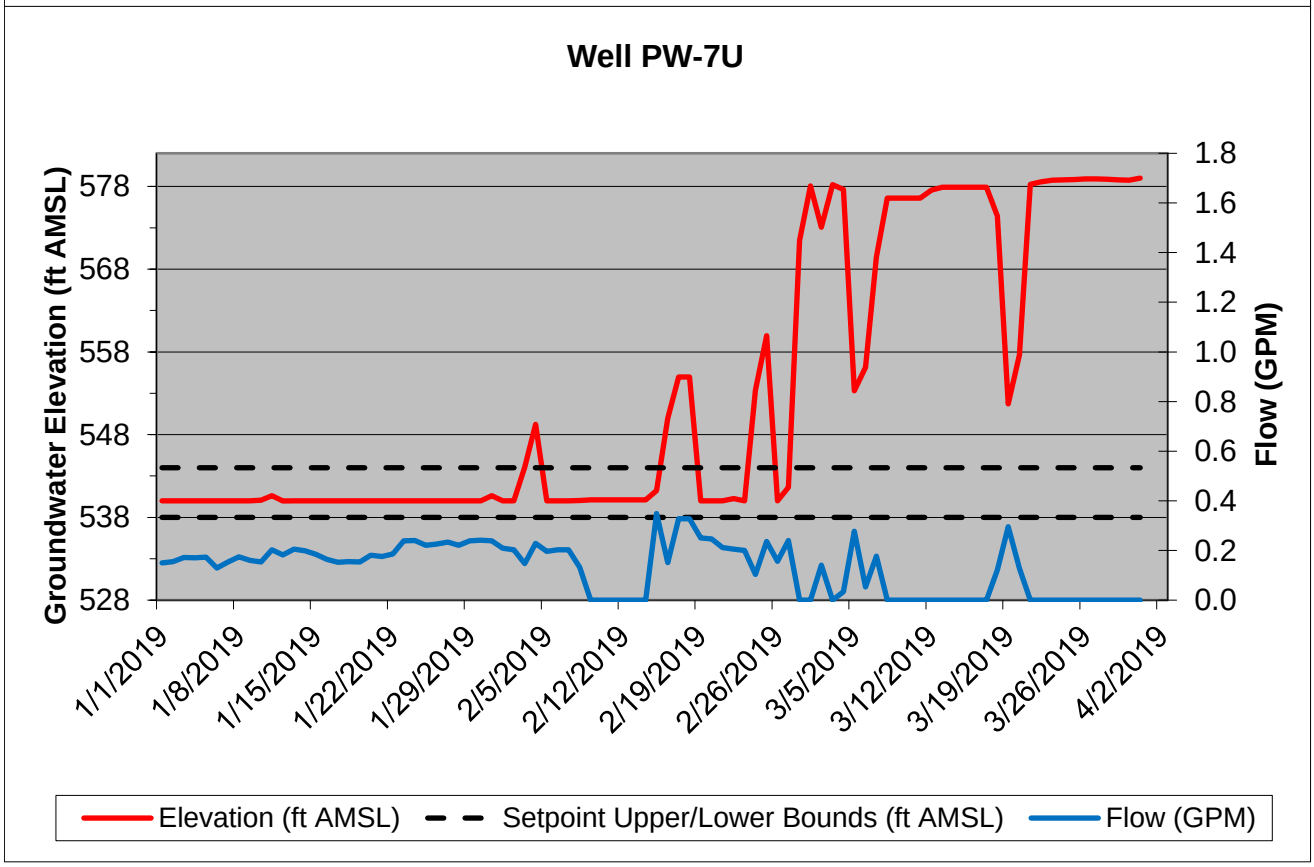
FIRST QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



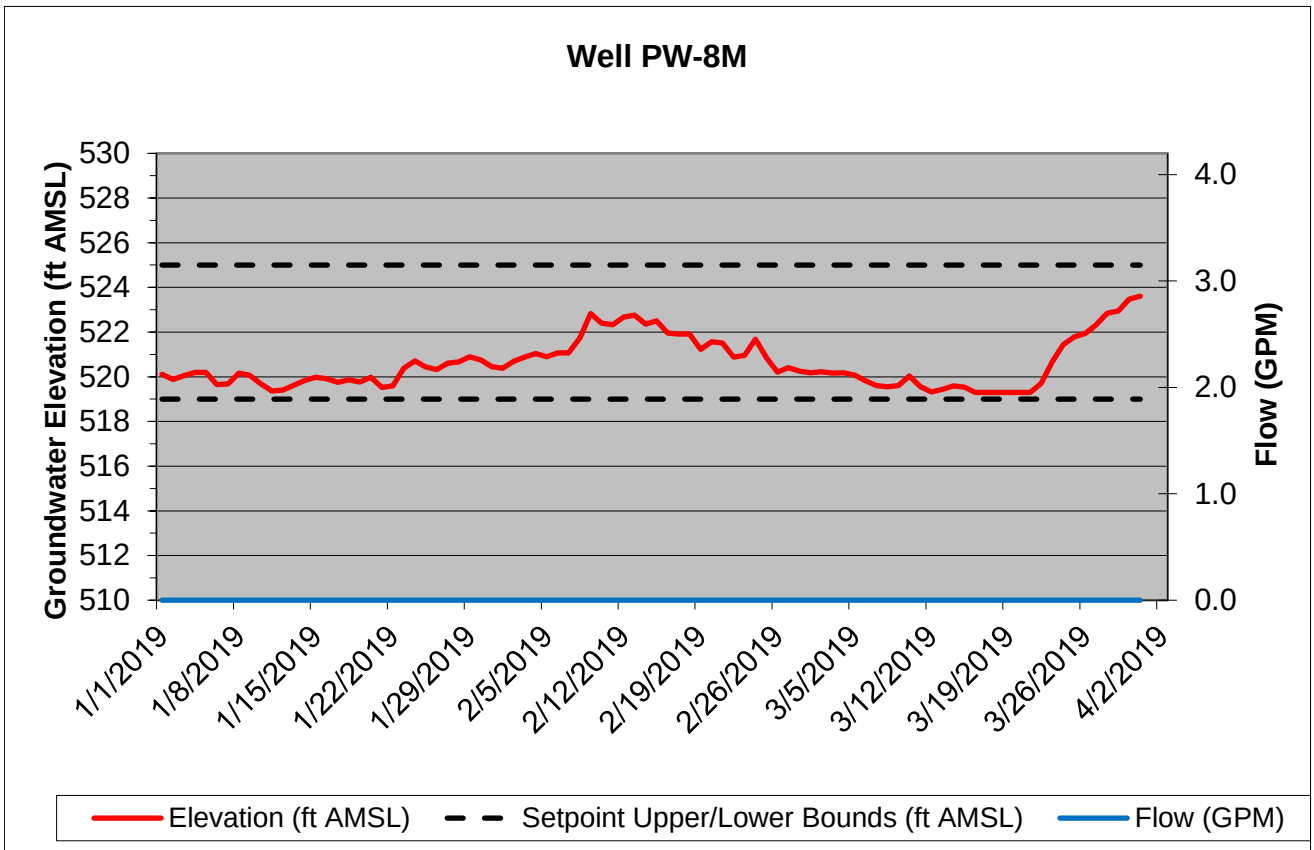


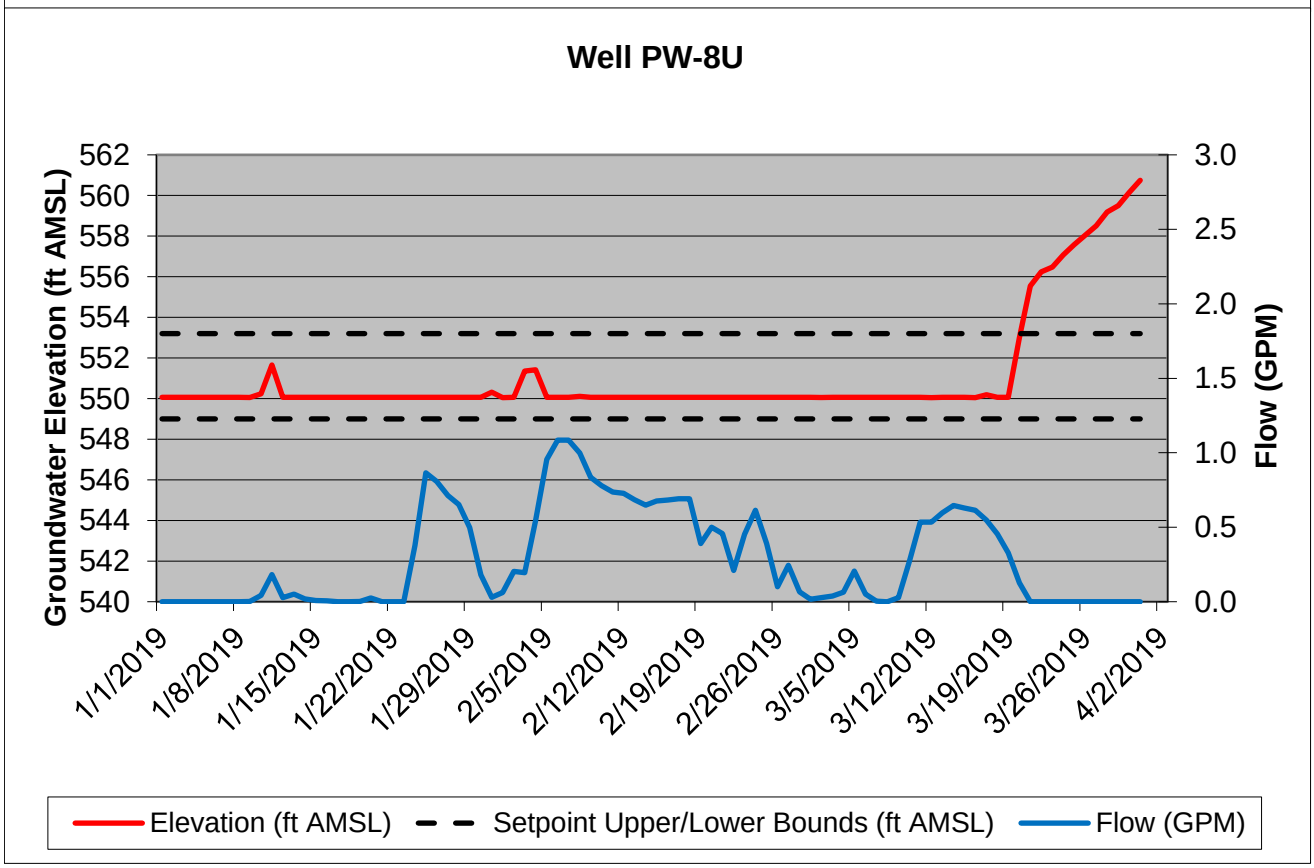
FIRST QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





FIRST QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





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