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

January 31, 2020

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 - Fourth 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 October 1, 2019 through December 31, 2019. From October 1st through October 6th, all wells were offline due to upgrades to the process controls at the facility, which commenced in the third quarter. Wells were brought back online individually between October 7th and 20th. A total of 7.71 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 (SIU) Wastewater Discharge Permit #49. No hazardous waste was shipped for disposal this quarter. The Gorge Seep Survey was conducted on October 11, 2019. The New York State Department of Environmental Conservation (NYSDEC) was in attendance. The results of the survey will be included in the 2019 Periodic Review Report for the Site. The potentiometric contours are consistent with previous interpretations. Flow Zones 6 and 7 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
- Figure 10: Showing continuously recorded water levels at flow zone 9 piezometer PMW-1M-09
- 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

As indicated above, all wells were tested and brought back online between October 7 and October 20 with the exception of PW-4M, PW-5UR, and PW-6UR, which remained offline for repairs. PW-5UR and PW-6UR returned online on October 30 and November 6, respectively. The pump in PW-4M was temporarily taken out of service on October 31. Based on review of water level data during and after well shut downs associated with the treatment system piping replacement in the first and second quarters of 2019 and with the control upgrade in the third and fourth quarters of 2019, the water level in PW-4M is controlled by pumping PW-4U. The water

level in PW-4M was drawn down to within set point range by pumping PW-4U alone. As such, pumping form PW-4M is not required. Further evaluation will be included in the 2019 Periodic Review Report.

During the duration of the testing phase of the upgraded system (October 7 through October 20), water levels in the remainder of the wells exceeded setpoint range at various times due to this testing and phase-in.

Following the conclusion of the process control upgrade and subsequent testing, the pumping wells were operational and functioning as designed during the fourth quarter 2019. 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 fourth quarter of 2019, for the time period in which the pumping wells were operational:

- The water level in PW-10U exceeded setpoint range on October 28, November 17, and November 30 and December 1 due to electrical motor faults. The motor was re-set in each instance and the water levels returned to within setpoint range on October 29, November 18, and December 2, respectively.
- The water level in PW-8U exceeded setpoint range from October 29 through November 17 due to a scaling issue with the level probe and on December 17 due to snow melt. The water level returned to within setpoint range on November 18 and December 18, respectively.
- The water level in PW-4U exceeded setpoint range from November 8 through November 20 due to a pump fault. The pump and motor were replaced on November 20 and the water level returned to within setpoint range on November 21.
- The water levels in PW-2UR, PW-2L, PW-3L, PW-5UR, and PW-8U exceeded setpoint range on November 20 due to decanter piping repairs. The water levels in these wells returned to within setpoint range on November 21.
- The water level in PW-6MR exceeded setpoint range on November 27, before the pump started for the day. The water level returned to within setpoint range on November 28.
- The water level in APW-1 exceeded setpoint range from November 29 through December 1 due to a motor fault. The motor was reset and the water level returned to within setpoint range on December 2.
- The water levels in the following wells exceeded setpoint range due to a leak detection interlock shutdown:
  - Water levels in PW-2M and PW-3M exceeded setpoint range on December 15. The water levels in these wells returned to within setpoint range on December 16.
  - The water level in PW-6MR exceeded setpoint range on December 14 and December 15. The water level in this well returned to within setpoint range on December 16.
  - Water levels in PW-2UR, PW-2L, PW-3L, PW-4U, and PW-5UR exceeded setpoint range from December 14 through December 16. The water levels in these wells returned to within setpoint range on December 17.
- The water levels in all wells except PW-2M, PW-3M, PW-4M, and PW-8M exceeded setpoint range on December 9 due to a shutdown of unknown cause. The water levels in PW-2L, PW-3L, PW-5UR, and PW-7U also exceeded setpoint range on December 10 due to this shutdown. The water levels returned to within setpoint range on December 10 and December 11.

- The water levels in PW-3M and APW-1 exceeded setpoint range on December 30 due to snow melt. The water levels returned within setpoint range on December 31.
- The water level in PW-2UR exceeded setpoint range from December 27 through the end of the quarter (December 31) due to a motor fault. The motor is awaiting repair.
- The water level in PW-6UR exceeded setpoint range due to a scaling issue with the level probe. The well exceeded setpoint range from November 6 through the end of the quarter (December 31). The scaling issue was addressed on January 15, 2020.

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,

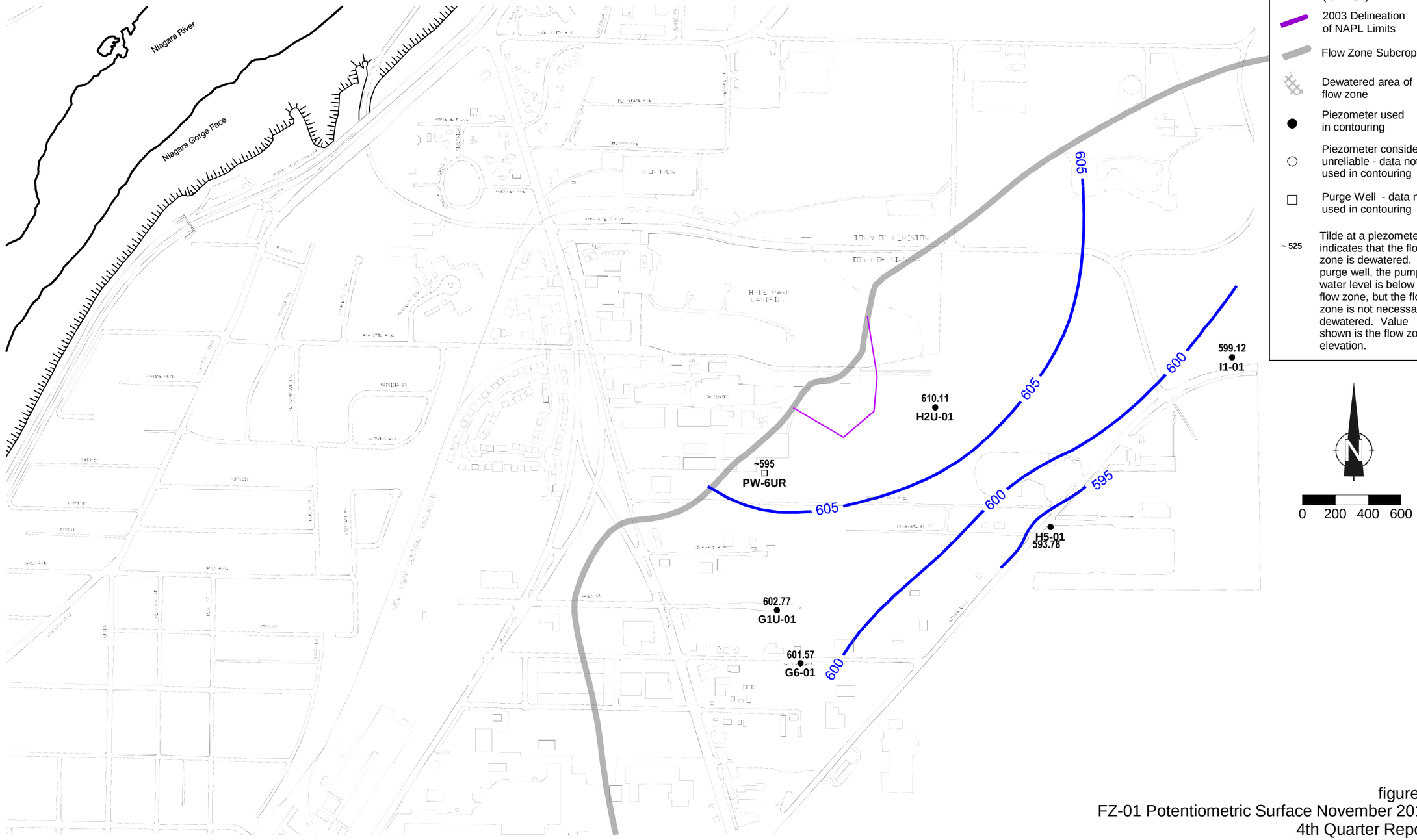
GLENN SPRINGS HOLDINGS, INC.

JBranch

Joe Branch
Site Manager
231-670-6809 Cell

JB/eew/4
Encl.

cc: G. May, NYSDEC
C. Bethoney, NYSDOH
J. Pentilchuk, GHD
D. Hoyt, GHD
M. Popek, GHD



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 1
FZ-01 Potentiometric Surface November 2019
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

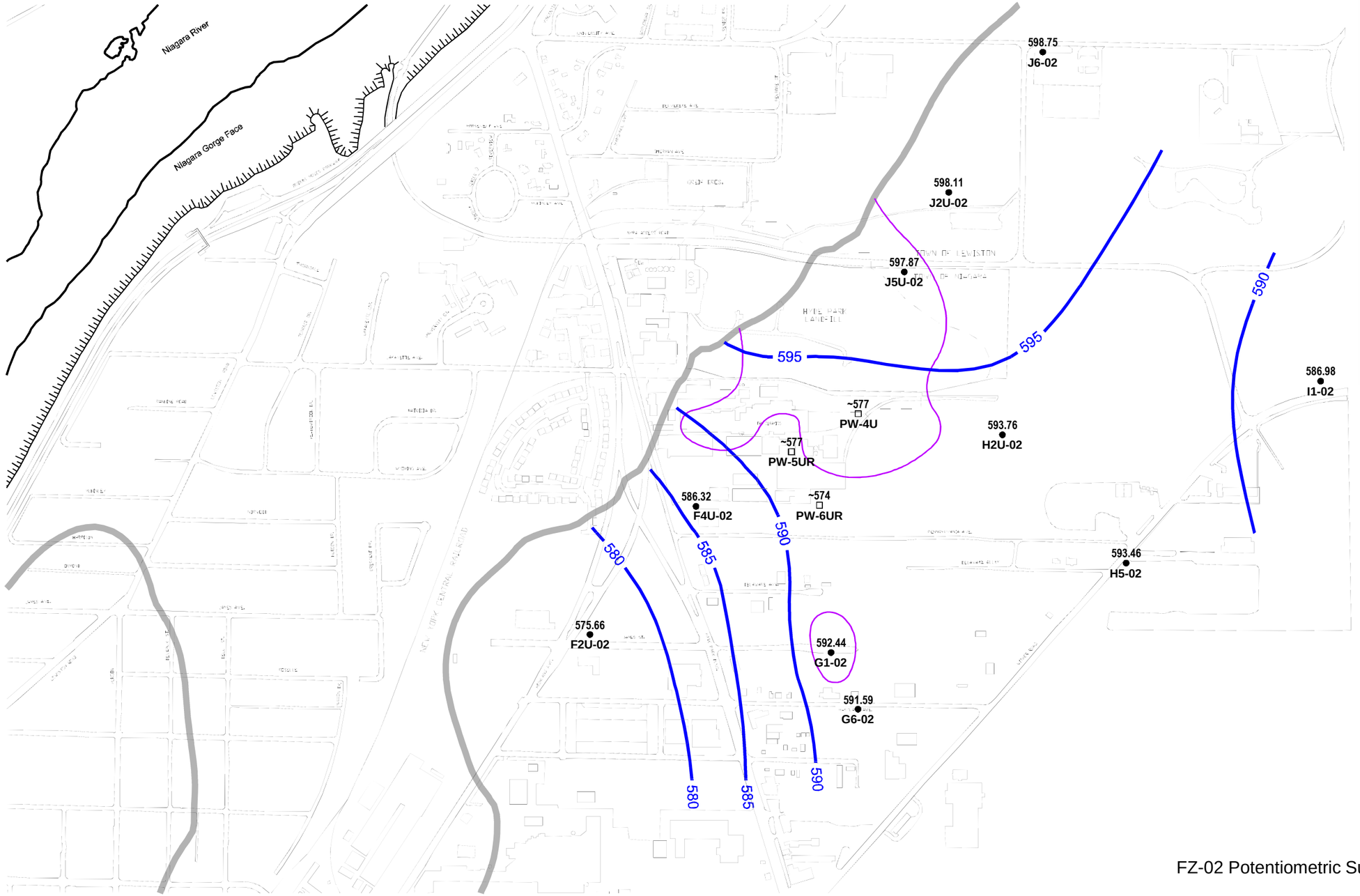


figure 2
FZ-02 Potentiometric Surface November 2019
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

Glenn Springs Holdings, Inc.

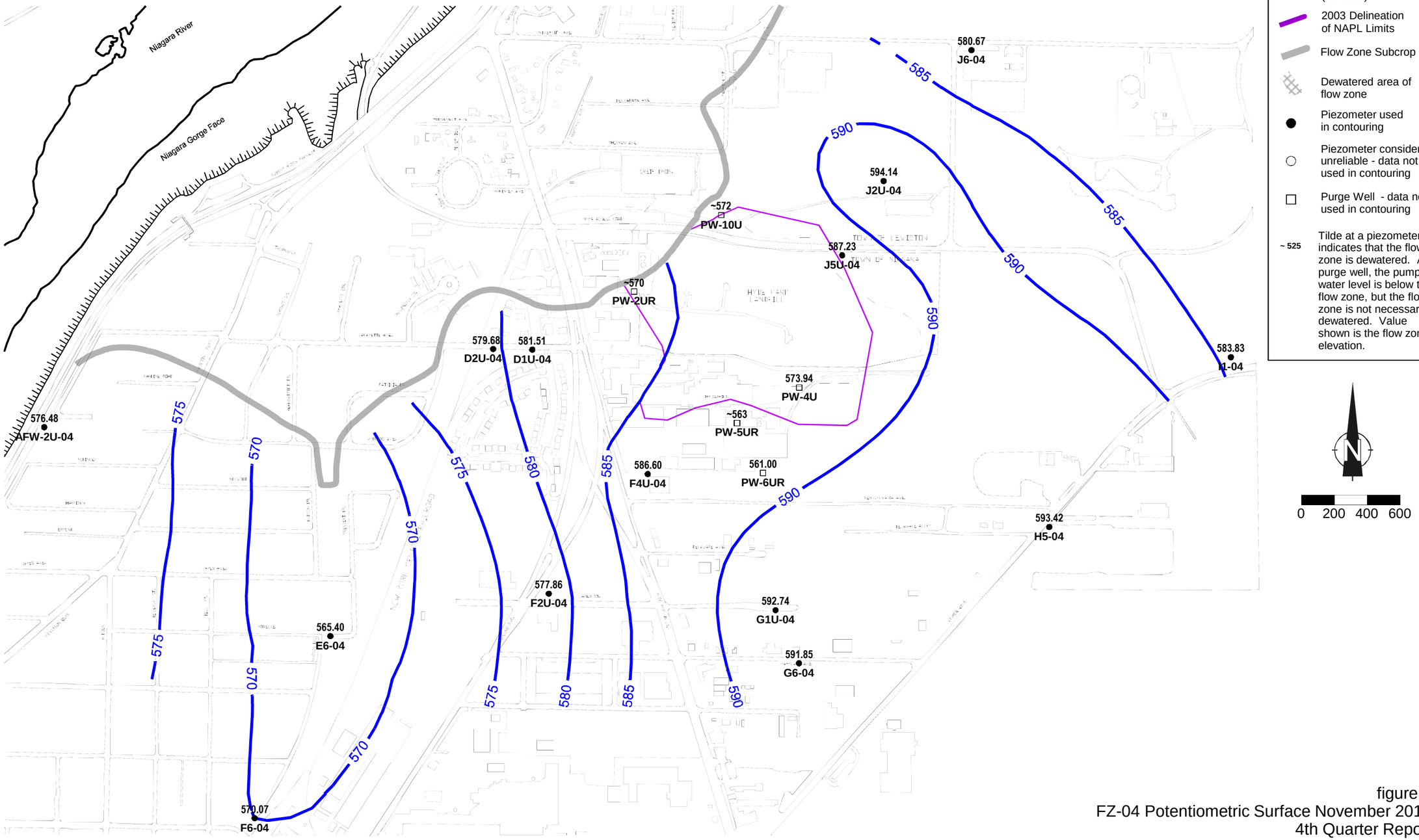
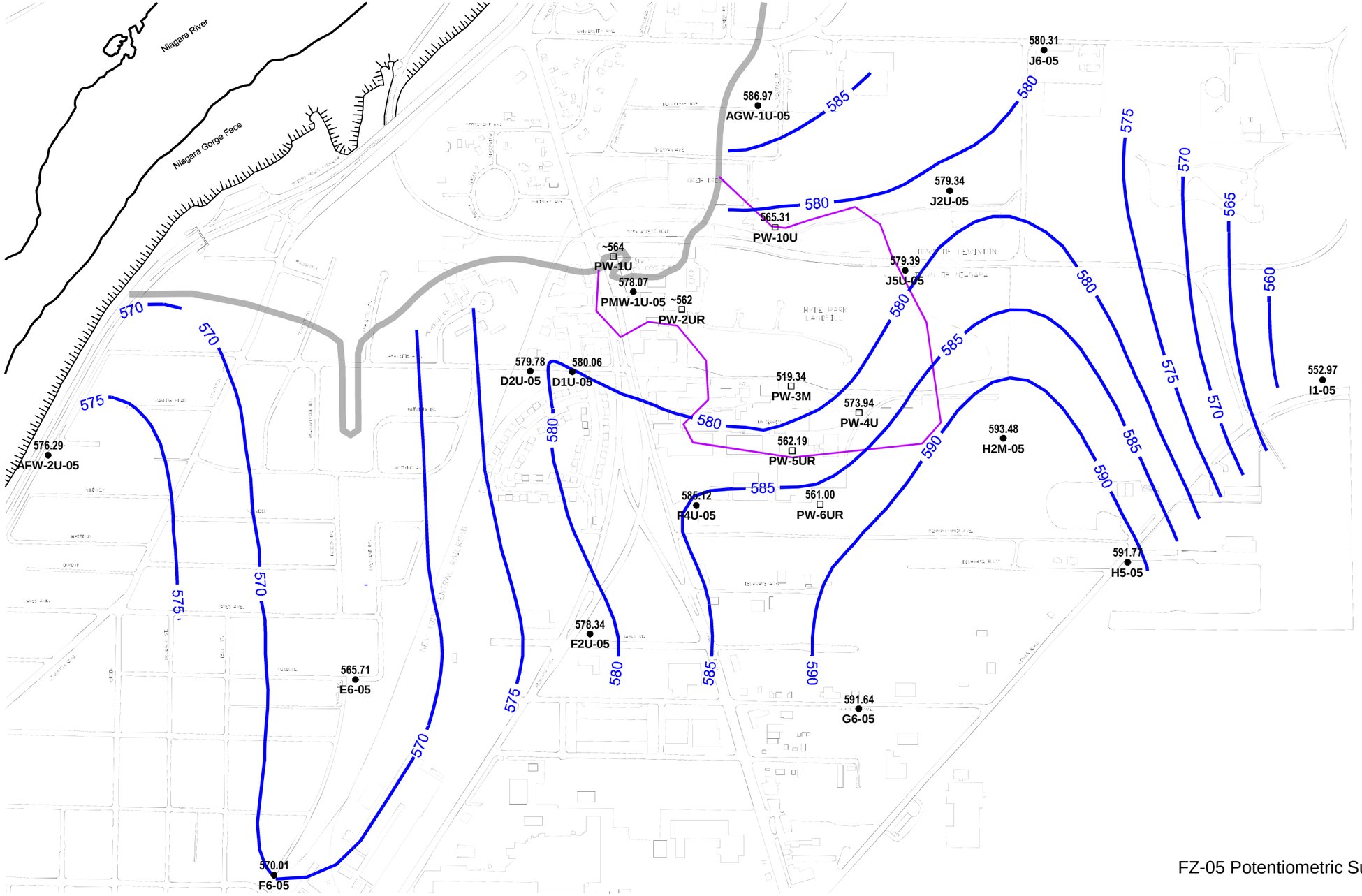


figure 3
FZ-04 Potentiometric Surface November 2019
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

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 4
FZ-05 Potentiometric Surface November 2019
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

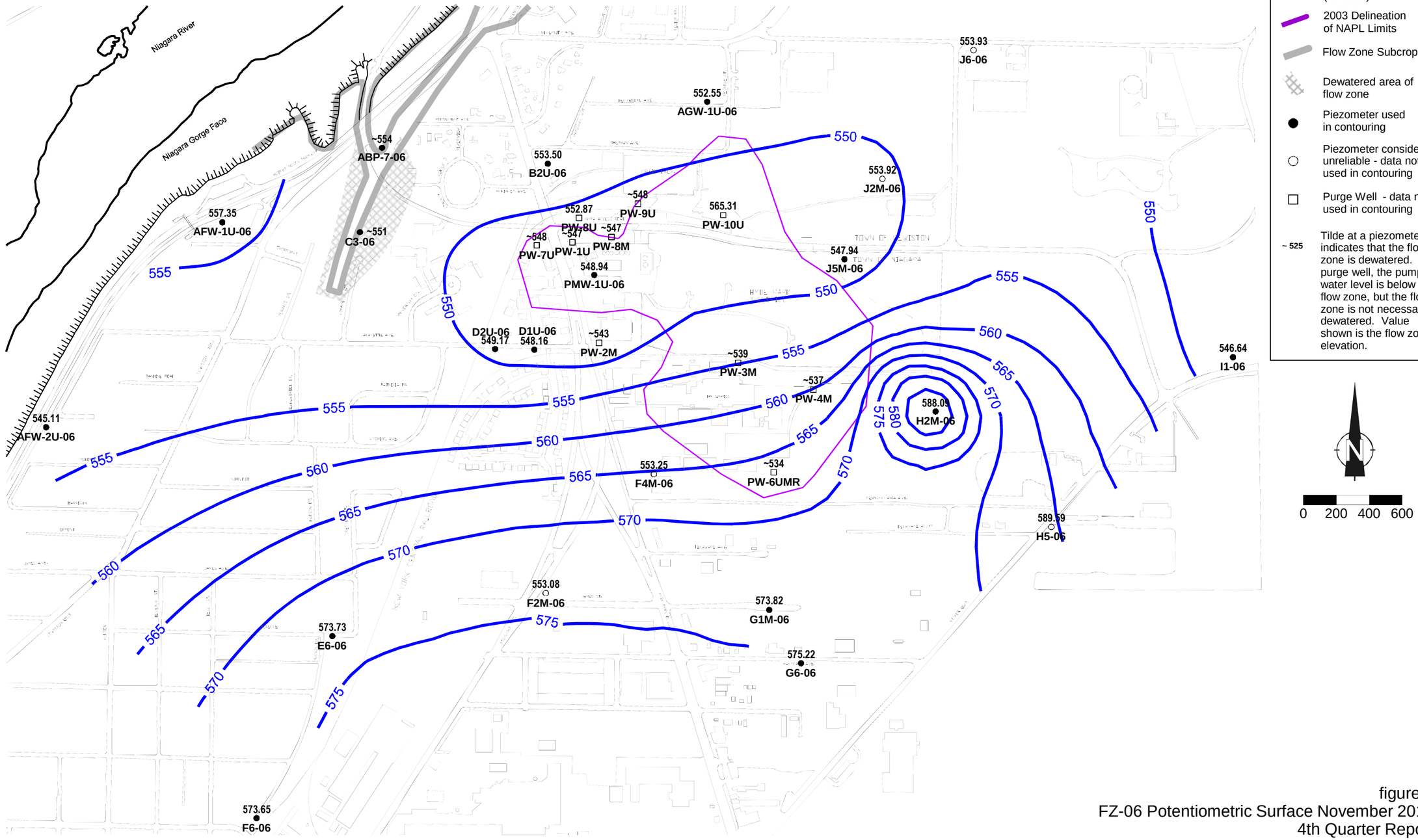
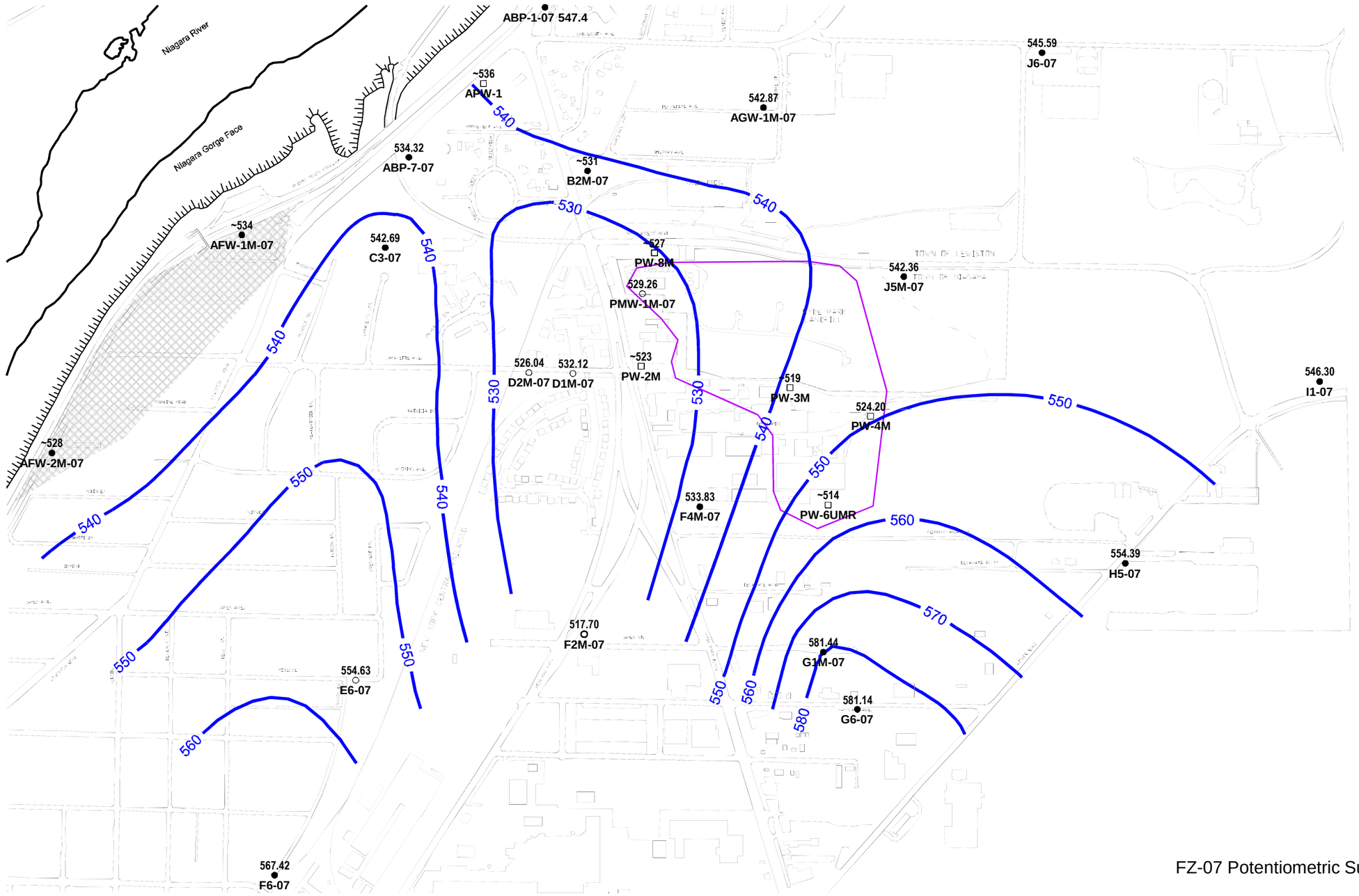


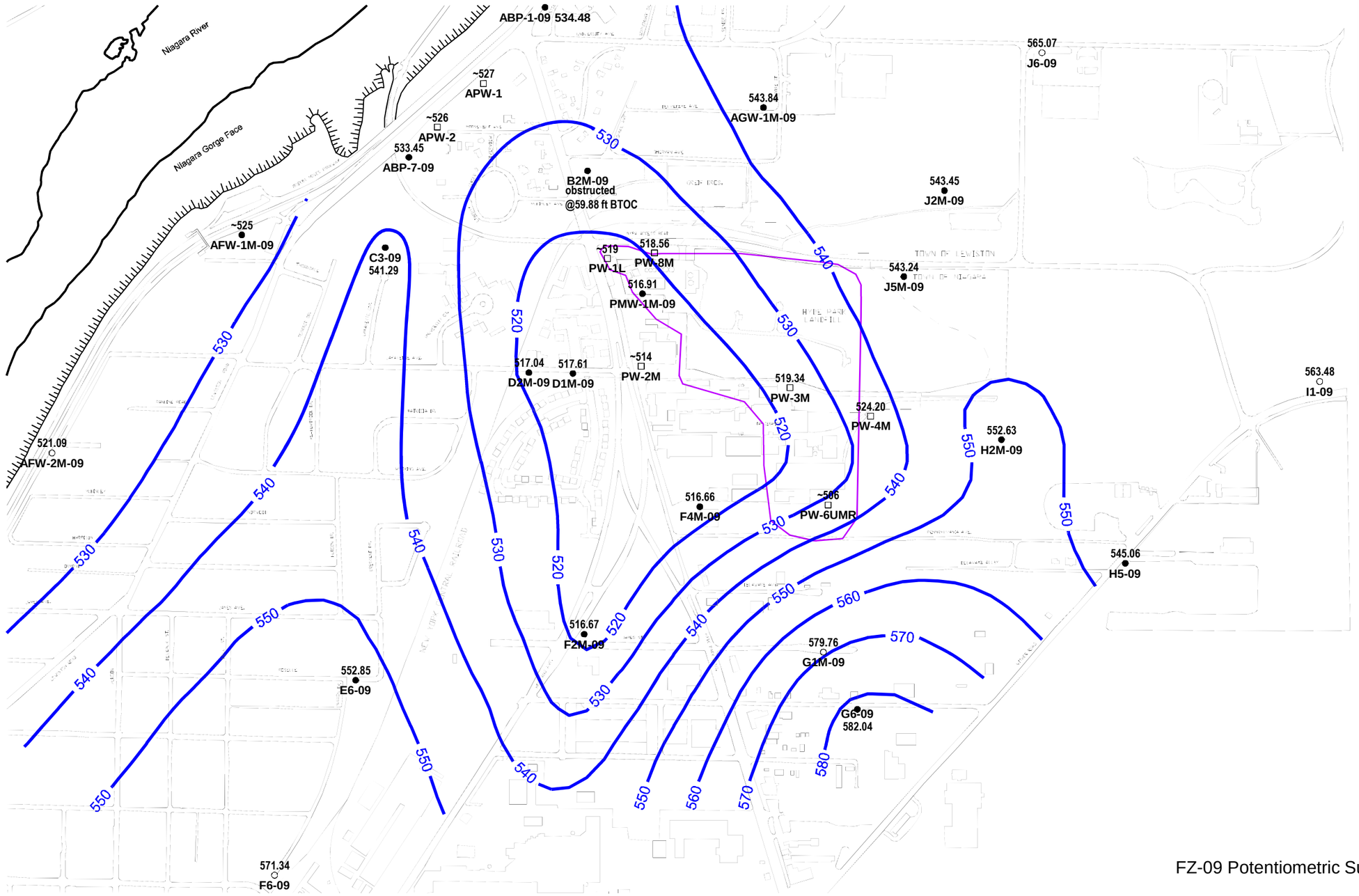
figure 5
FZ-06 Potentiometric Surface November 2019
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



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.

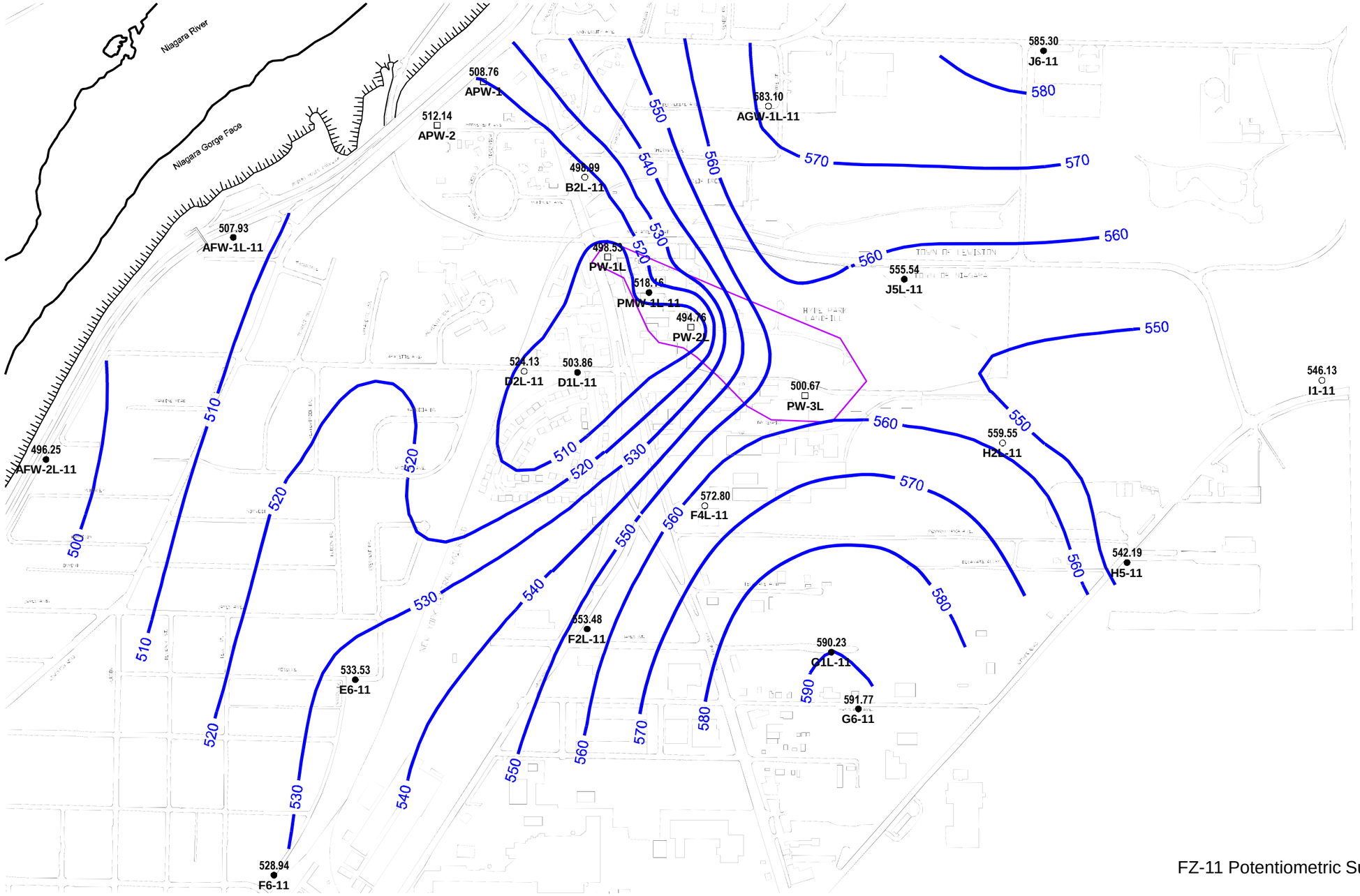
figure 6
FZ-07 Potentiometric Surface November 2019
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York



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 November 2019
4th 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 8
FZ-11 Potentiometric Surface November 2019
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

Niagara River

Niagara Gorge Face

571.51
CMW-1OB

585.71
OMW-6

589.45
CMW-2OB

586.17
OMW-5R

586.24
OMW-7

586.31
OMW-8R2

sp.583
WW-C

588.66
OMW-3

589.26
OMW-4R

576.81
CMW-12OB

587.71
OMW-9

586.32
OMW-10R

sp.580
WW-D

601.22
OMW-1

603.05
OMW-2

572.68
CMW-3OB

572.10
CMW-4OB

592.79
OMW-12R

OMW-11R
592.79

591.81
OMW-13R

594.25
OMW-14R

602.26
OMW-15

OMW-16R
603.53

590.28
CMW-5OB

Dry
CMW-9OB

571.71
CMW-6OB

570.22
CMW-11OB

Dry
CMW-8OB

607.37
CMW-7OB

570 575 580 585 590 595 600

0ft. 200ft. 400ft. 600ft.

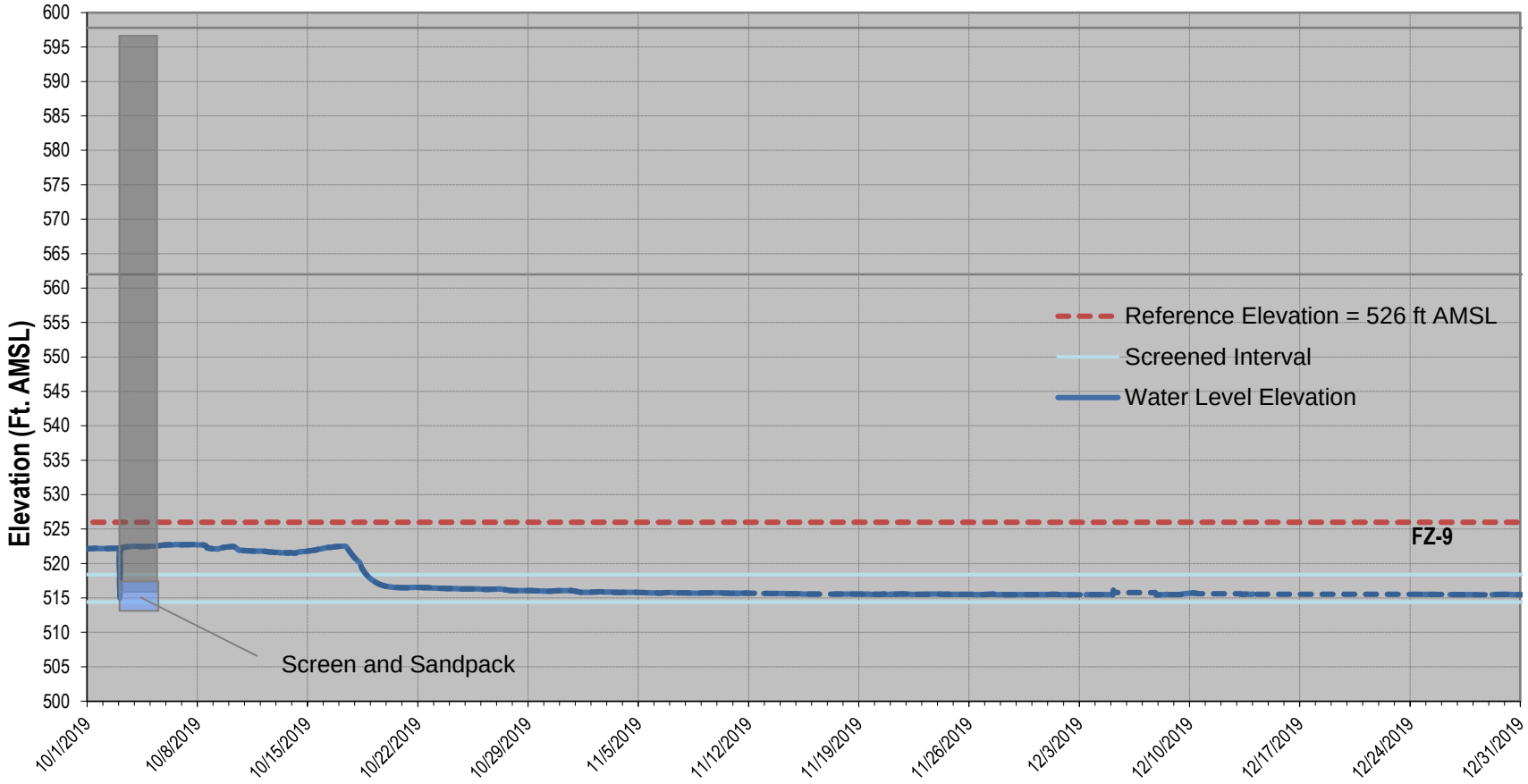
Legend

- 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 November 2019
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.
Niagara Falls, New York

Glenn Springs Holdings, Inc.



note: dashed line for estimated water level elevatons

figure 10

PMW-1M-09 4th Quarter 2019 - Hourly Water Level Elevation
4th Quarter Report
Hyde Park Landfill Site
Glenn Springs Holdings, Inc.

Glenn Springs Holdings, Inc.
A subsidiary of Occidental Petroleum

Table 1

Water Level Elevation Summary
Fourth 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	9.45	572.68
CMW-4OB	574.28	2.18	572.10
CMW-5OB	583.43	3.15	580.28
CMW-6OB	571.89	0.18	571.71
CMW-7OB	611.00	3.63	607.37
CMW-8OB	616.11	Dry	-
CMW-9OB	571.76	Dry	-
CMW-1OB	576.80	5.29	571.51
CMW-11OB	572.85	2.63	570.22
CMW-12OB	594.74	17.93	576.81
MH20	605.87	4.68	601.19
MH21	599.77	6.09	593.68
MH22	593.37	6.76	586.61
MH23	587.05	12.11	574.94
MH24	582.57	7.51	575.06
MH25	583.82	7.12	576.70
MH26	584.48	8.52	575.96
MH27	586.12	10.72	575.40
MH28	585.23	16.51	568.72
MH29	604.58	15.08	589.50
MH30	599.49	10.02	589.47
MH31	590.10	9.56	580.54
MH32	592.01	9.69	582.32
MH33	592.51	8.75	583.76
MH34	598.34	7.21	591.13
MH35	605.69	6.61	599.08
MH35A	605.69	7.23	598.46
OMW-1	605.28	4.06	601.22
OMW-2	605.99	2.94	603.05
OMW-3	598.63	9.97	588.66
OMW-4R	601.17	11.91	589.26
OMW-5R	591.31	5.14	586.17
OMW-6	587.62	1.91	585.71
OMW-7	592.74	6.50	586.24
OMW-8R2	594.67	8.36	586.31
OMW-9	595.27	7.56	587.71
OMW-10R	595.13	8.81	586.32
OMW-11R	597.52	4.73	592.79
OMW-12R	596.71	3.92	592.79
OMW-13R	601.50	9.69	591.81
OMW-14R	599.64	5.39	594.25
OMW-15	607.48	5.22	602.26
OMW-16R	607.62	4.09	603.53
SC-2	625.61	23.09	602.52
SC-3	638.72	40.77	597.95
SC-4	639.35	39.31	600.04
SC-5	634.07	31.60	602.47
SC-6	631.15	18.52	612.63

Table 1

Water Level Elevation Summary
Fourth 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	12.11	564.00
CMW-2SH	590.51	18.81	571.70
CMW-3SH	581.91	28.43	553.48
CMW-4SH	574.16	7.02	567.14
CMW-5SH	583.36	7.43	575.93
CMW-6SH	572.05	10.42	561.63
CMW-7SH	610.58	12.42	598.16
CMW-8SH	615.95	8.68	607.27
CMW-9SH	571.96	11.76	560.20
CMW-11SH	573.21	7.94	565.27
CMW-12SH	597.02	25.88	571.14
Flow Zone 1			
G1U-01	617.08	14.31	602.77
G6-01	609.24	7.67	601.57
H2U-01	620.92	10.81	610.11
H5-01	617.61	23.83	593.78
I1-01	625.58	26.46	599.12
Flow Zone 2			
F2U-02	599.89	24.23	575.66
F4U-02	602.32	16.00	586.32
G1-02	616.86	24.42	592.44
G6-02	608.65	17.06	591.59
H2U-02	620.88	27.12	593.76
H5-02	617.47	24.01	593.46
I1-02	625.47	38.49	586.98
J2U-02	609.66	11.55	598.11
J5U-02	606.21	8.34	597.87
J6-02	609.23	10.48	598.75
Flow Zone 4			
AFW-2U-04	593.48	17.00	576.48
D1U-04	593.77	12.26	581.51
D2U-04	590.65	10.97	579.68
E6-04	578.23	12.83	565.40
F2U-04	599.76	21.90	577.86
F4U-04	602.19	15.59	586.60
F6-04	588.06	17.99	570.07
G1U-04	616.96	24.22	592.74
G6-04	609.15	17.30	591.85
H5-04	617.40	23.98	593.42
I1-04	625.30	41.47	583.83
J2U-04	609.42	15.28	594.14
J5U-04	606.05	18.82	587.23
J6-04	609.12	28.45	580.67

Table 1

Water Level Elevation Summary
Fourth 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	17.04	576.29
AGW-1U-05	591.80	4.83	586.97
D1U-05	593.51	13.45	580.06
D2U-05	590.56	10.78	579.78
E6-05	578.04	12.33	565.71
F2U-05	599.64	21.30	578.34
F4U-05	602.06	16.94	585.12
F6-05	587.85	17.84	570.01
G6-05	609.13	17.49	591.64
H2M-05	621.59	28.11	593.48
H5-05	617.31	25.54	591.77
I1-05	625.25	72.28	552.97
J2U-05	609.30	29.96	579.34
J5U-05	605.87	26.48	579.39
J6-05	609.02	28.71	580.31
PMW-1U-05	598.00	19.93	578.07
Flow Zone 6			
ABP-7-06	575.78	Dry	-
AFW-1U-06	571.83	14.48	557.35
AFW-2U-06	593.22	48.11	545.11
AGW-1U-06	591.66	39.11	552.55
B2U-06	589.29	35.79	553.50
C3-06	585.78	Dry	-
D1U-06	593.25	45.09	548.16
D2U-06	590.38	41.21	549.17
E6-06	577.99	4.26	573.73
F2M-06	599.06	45.98	553.08
F4M-06	602.05	48.80	553.25
F6-06	587.84	14.19	573.65
G1M-06	616.75	42.93	573.82
G6-06	609.09	33.87	575.22
H2M-06	621.42	33.33	588.09
H5-06	617.17	27.58	589.59
I1-06	625.15	78.51	546.64
J2M-06	608.94	55.02	553.92
J5M-06	606.22	58.28	547.94
J6-06	608.93	55.00	553.93
PMW-1U-06	597.92	48.98	548.94

Table 1

Water Level Elevation Summary
Fourth 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	575.20	27.80	547.40
ABP-7-07	575.73	41.41	534.32
AFW-1M-07	571.41	Dry	-
AFW-2M-07	593.44	66.78	526.66
AGW-1M-07	592.91	50.04	542.87
B2M-07	589.52	Dry	-
C3-07	585.62	42.93	542.69
D1M-07	594.15	62.03	532.12
D2M-07	590.77	64.73	526.04
E6-07	577.91	23.28	554.63
F2M-07	598.91	81.21	517.70
F4M-07	601.91	68.08	533.83
F6-07	587.68	20.26	567.42
G1M-07	616.68	35.24	581.44
G6-07	609.06	27.92	581.14
H5-07	617.05	62.66	554.39
I1-07	625.14	78.84	546.30
J5M-07	606.07	63.71	542.36
J6-07	608.85	63.26	545.59
PMW-1M-07	598.50	69.24	529.26
Flow Zone 9			
ABP-1-09	575.19	40.71	534.48
ABP-7-09	575.67	42.22	533.45
AFW-1M-09	571.12	46.29	524.83
AFW-2M-09	593.32	72.23	521.09
AGW-1M-09	592.75	48.91	543.84
B2M-09	589.34	-	-
C3-09	585.00	43.71	541.29
D1M-09	594.02	76.41	517.61
D2M-09	590.66	73.62	517.04
E6-09	577.82	24.97	552.85
F2M-09	598.71	82.04	516.67
F4M-09	601.79	85.13	516.66
F6-09	587.53	16.19	571.34
G1M-09	616.58	36.82	579.76
G6-09	608.98	26.94	582.04
H2M-09	621.32	68.69	552.63
H5-09	616.93	71.87	545.06
I1-09	624.91	61.43	563.48
J2M-09	608.77	65.32	543.45
J5M-09	605.82	62.58	543.24
J6-09	608.76	43.69	565.07
PMW-1M-09	598.34	81.43	516.91

Table 1

Water Level Elevation Summary
Fourth 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	64.17	507.93
AFW-2L-11	593.43	97.18	496.25
AGW-1L-11	592.71	9.61	583.10
B2L-11	589.65	90.66	498.99
D1L-11	593.80	89.94	503.86
D2L-11	590.21	66.08	524.13
E6-11	577.72	44.19	533.53
F2L-11	598.94	45.46	553.48
F4L-11	602.22	29.42	572.80
F6-11	587.40	58.46	528.94
G1L-11	616.84	26.61	590.23
G6-11	608.89	17.12	591.77
H2L-11	620.73	61.18	559.55
H5-11	616.81	74.62	542.19
I1-11	624.75	78.62	546.13
J5L-11	607.20	51.66	555.54
J6-11	608.68	23.38	585.30
PMW-1L-11	598.84	80.68	518.16
Purge Wells			
APW-1	564.98	56.22	508.76
APW-2	569.89	57.75	512.14
PW-1L	593.16	94.63	498.53
PW-1U	593.50	47.86	545.64
PW-2L	597.29	102.53	494.76
PW-2M	596.61	85.38	511.23
PW-2UR	594.75	35.53	559.22
PW-3L	599.05	98.38	500.67
PW-3M	597.79	78.45	519.34
PW-4M	606.93	82.73	524.20
PW-4U	604.85	30.91	573.94
PW-5UR	601.31	39.12	562.19
PW-6UMR	609.31	105.17	504.14
PW-6UR	608.47	47.47	561.00
PW-7U	592.47	50.83	541.64
PW-8M	592.67	74.11	518.56
PW-8U	589.27	36.40	552.87
PW-9U	587.47	46.65	540.82
PW-10U	593.54	28.23	565.31

Notes:

"-" - Not applicable
ft AMSL - Feet above mean sea level
Dry - No water present at the time of measurement

Table 2

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

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
10/01/19		
10/02/19		
10/03/19		
10/04/19		
10/05/19		
10/06/19		
10/07/19		
10/08/19		
10/09/19		
10/10/19		
10/11/19		
10/12/19		
10/13/19		
10/14/19		
10/15/19		
10/16/19		
10/17/19	7.0	231,000
10/18/19	7.0	45,000
10/19/19		
10/20/19		
10/21/19	7.1	89,000
10/22/19		
10/23/19	7.1	110,000
10/24/19	7.1	256,000
10/25/19	7.0	201,000
10/26/19		
10/27/19		
10/28/19		
10/29/19	7.0	225,000
10/30/19	7.0	49,000
10/31/19	7.1	240,000
11/01/19	7.1	229,000
11/02/19		
11/03/19		
11/04/19	7.0	133,000
11/05/19	7.0	200,000
11/06/19	7.0	254,000
11/07/19		

Table 2

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

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
11/08/19		
11/09/19		
11/10/19		
11/11/19	7.0	169,000
11/12/19	7.9	172,000
11/13/19	6.9	35,000
11/14/19	7.0	153,000
11/15/19		
11/16/19		
11/17/19		
11/18/19	7.1	96,000
11/19/19	6.9	105,000
11/20/19	7.0	113,000
11/21/19	7.0	110,000
11/22/19	7.0	114,000
11/23/19		
11/24/19		
11/25/19	7.0	200,000
11/26/19	7.0	205,000
11/27/19	7.1	153,000
11/28/19		
11/29/19		
11/30/19		
12/01/19		
12/02/19	7.0	153,000
12/03/19	7.0	210,000
12/04/19	7.0	210,000
12/05/19	7.0	66,000
12/06/19		
12/07/19		
12/08/19		
12/09/19	7.0	165,000
12/10/19	7.0	331,000
12/11/19	7.0	190,000
12/12/19	7.0	153,000
12/13/19		
12/14/19		
12/15/19		

Table 2

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

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
12/16/19	7.0	170,000
12/17/19	7.1	239,000
12/18/19	7.1	248,000
12/19/19	7.1	220,000
12/20/19	7.1	51,000
12/21/19		
12/22/19	7.0	168,000
12/23/19	7.0	237,000
12/24/19	7.0	37,000
12/25/19		
12/26/19	7.0	225,000
12/27/19	7.0	257,000
12/28/19		
12/29/19		
12/30/19	7.8	236,000
12/31/19	7.0	259000
	Total	7,712,000

Notes:

su - Standard Unit
gal - Gallons

Table 3

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

Effluent

Parameter	Units	10/24/2019	10/31/2019	11/07/2019	11/14/2019	11/20/2019	11/26/2019
Volatiles							
1,1,1-Trichloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	0.96 J	1.4	1.9	1.5	1.7	1.9
1,1-Dichloroethene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	2.0 U	0.67 J	1.0	0.86 J	0.92 J	0.96 J
1,2-Dichloropropane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
3-Chlorotoluene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	µg/L	2.0 U	1.0 U	0.21 J	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	2.0 U	24	1.0 U	14	14	22
Carbon tetrachloride	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.0 U	0.49 J	2.1	1.3	1.6	2.0
Chloromethane (Methyl chloride)	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
m-Monochlorobenzotrifluoride	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.59 J
o-Monochlorobenzotrifluoride	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	µg/L	4.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Vinyl chloride	µg/L	170	170	180	180	190	190
Xylenes (total)	µg/L	6.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
General Chemistry							
Phenolics (total)	mg/L	0.0081	0.0119	0.0072	0.0057	0.0060	0.0055 U

Notes:

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

Effluent

Parameter	Units	12/05/2019	12/12/2019	12/18/2019	12/23/2019
Volatiles					
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	0.27 J	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	1.0 U	0.26 J	0.35 J	0.42 J
1,1,2-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	1.9	2.2	2.1	2.4
1,1-Dichloroethene	µg/L	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
1,2-Dichlorobenzene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	1.1	1.4	1.3	1.3
1,2-Dichloropropane	µg/L	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
1,4-Dichlorobenzene	µg/L	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	2.0 U
3-Chlorotoluene	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	µg/L	1.0 U	1.0 U	0.0050 U	3.0 U
Benzene	µg/L	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
Bromoform	µg/L	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
Carbon disulfide	µg/L	15	9.5	14	42
Carbon tetrachloride	µg/L	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
Chloroethane	µg/L	1.0 U	1.0 U	2.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.3	1.8	1.8	1.5
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	3.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.0 U	0.0050 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
Dichlorodifluoromethane (CFC-12)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	2.0 U	1.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
m-Monochlorobenzotrifluoride	µg/L	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
o-Monochlorobenzotrifluoride	µg/L	1.0 U	2.0 U	1.0 U	1.0 U
o-Xylene	µg/L	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
Styrene	µg/L	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
Toluene	µg/L	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
trans-1,3-Dichloropropene	µg/L	2.0 U	1.0 U	1.0 U	2.0 U
Trichloroethene	µg/L	1.0 U	1.2	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	3.0 U	1.0 U	1.0 U	1.0 U
Vinyl acetate	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	140	120	140	170
Xylenes (total)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
General Chemistry					
Phenolics (total)	mg/L	0.0046 J	0.0071	0.0078	0.0089

Notes:

J - Estimated concentration

U - Not detected at the associated reporting limit

mg/L - Milligrams per liter

µg/L - Micrograms per liter

Weekly effluent samples were not collected on October 3, October 10, or October 17 due to process control upgrades.

Table 4

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

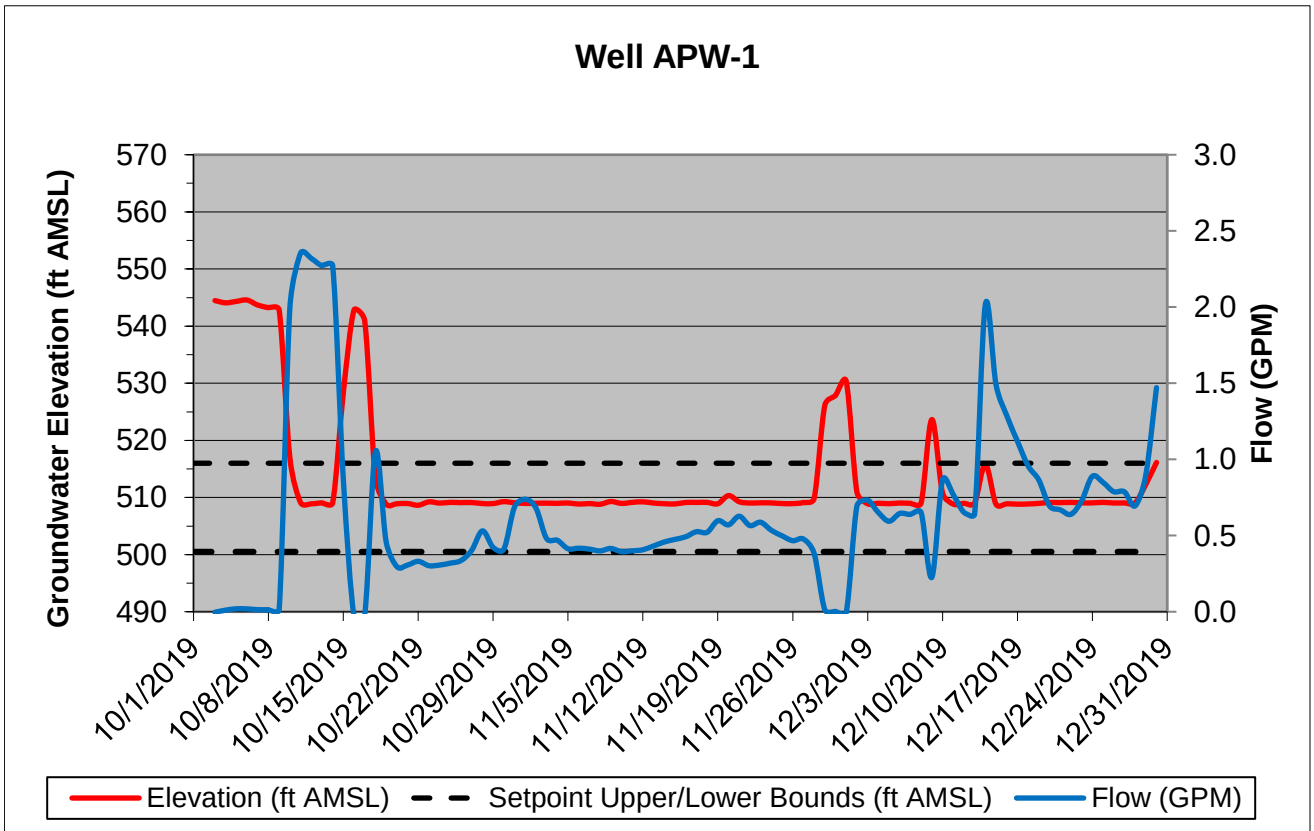
Sample Location:		**EFFLUENT**	**EFFLUENT**
Sample ID:		**HP 111919 EFF**	**HP 111919 EFF**
Sample Date:		**11/19/2019**	**11/19/2019**
Parameters	**Units**		
Volatile Organic Compounds			
Vinyl chloride	µg/L	158	--
General Chemistry			
Phosphorus	mg/L	--	0.148

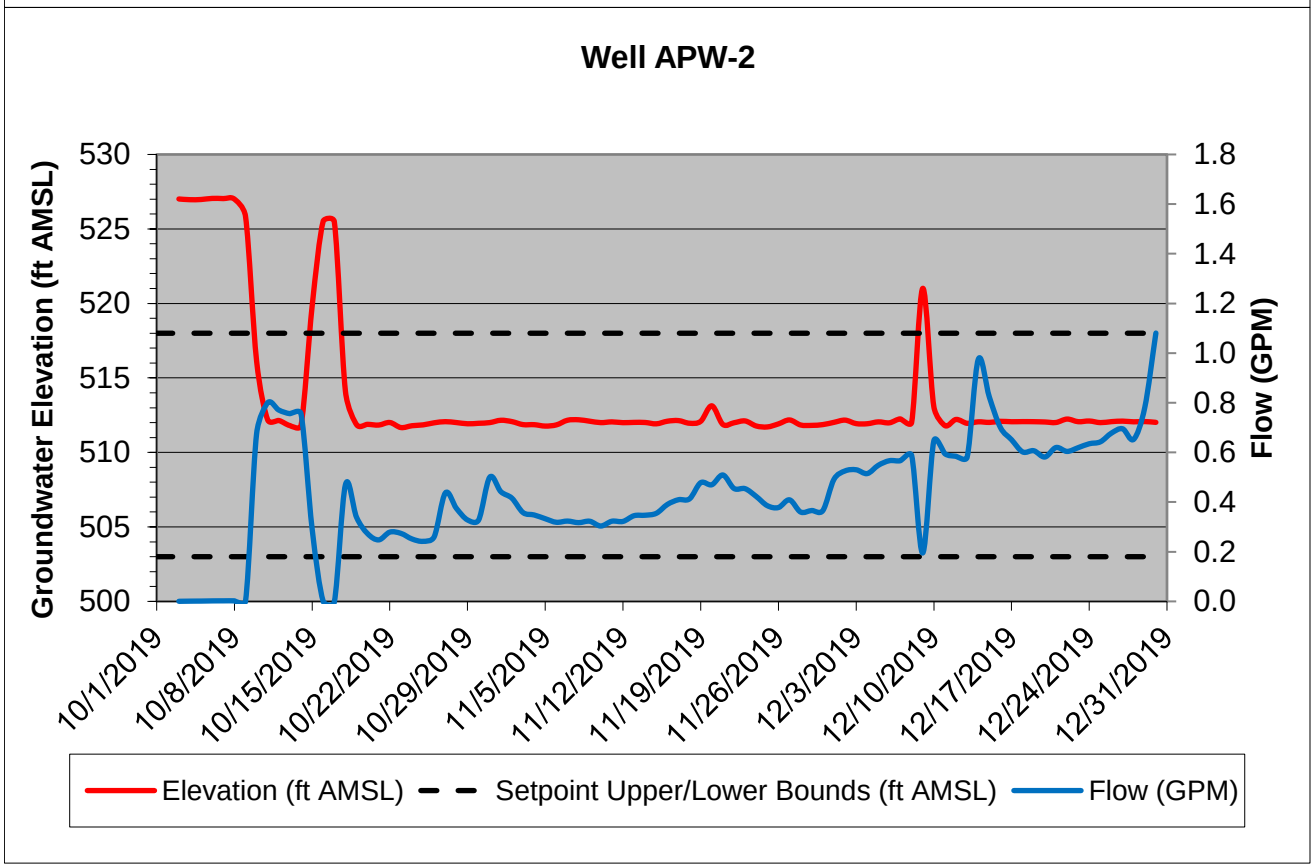
Notes:

"--" - Not applicable
mg/L - Milligrams per liter
µg/L - Micrograms per liter

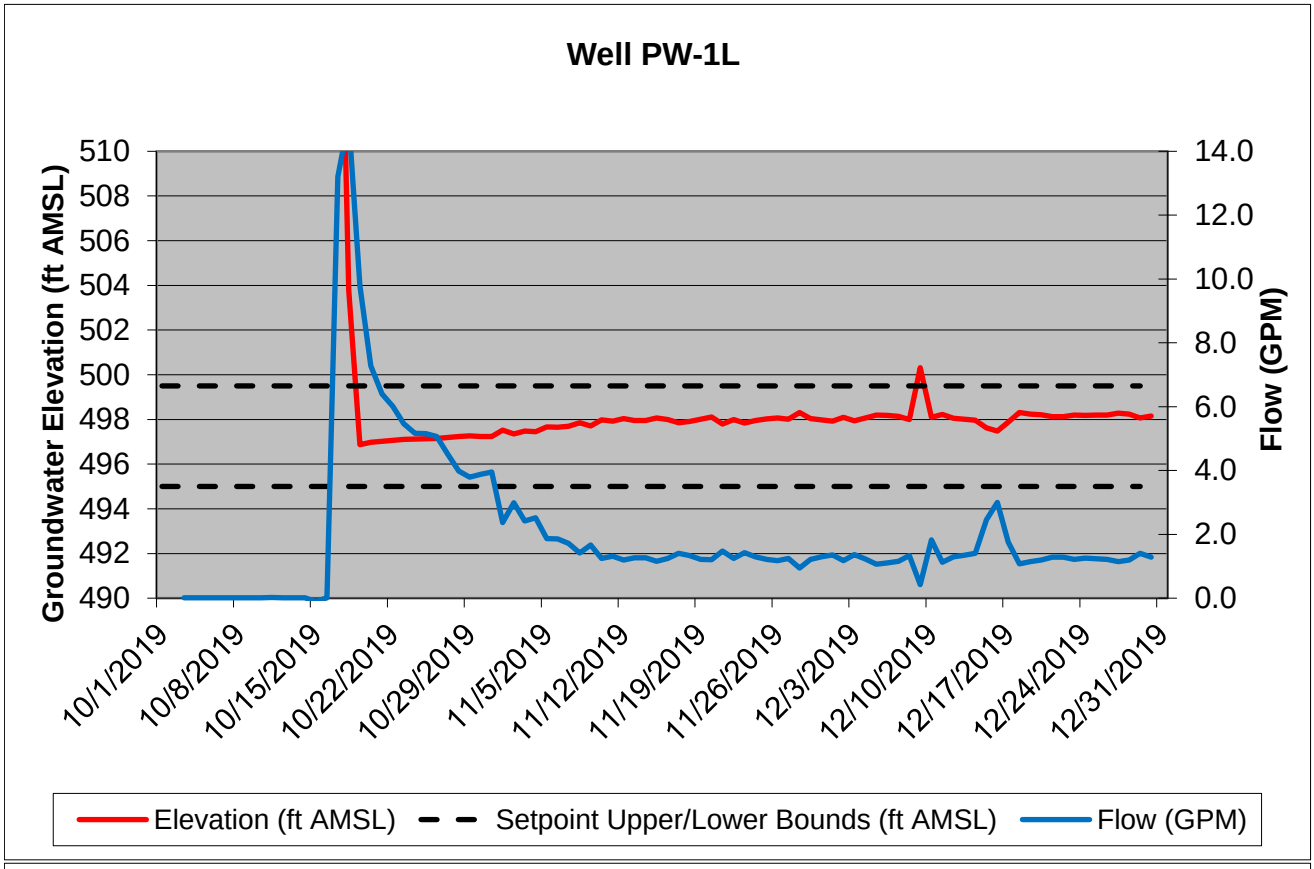
Attachment A
Fourth Quarter 2019
Pumping Well Performance Graphs

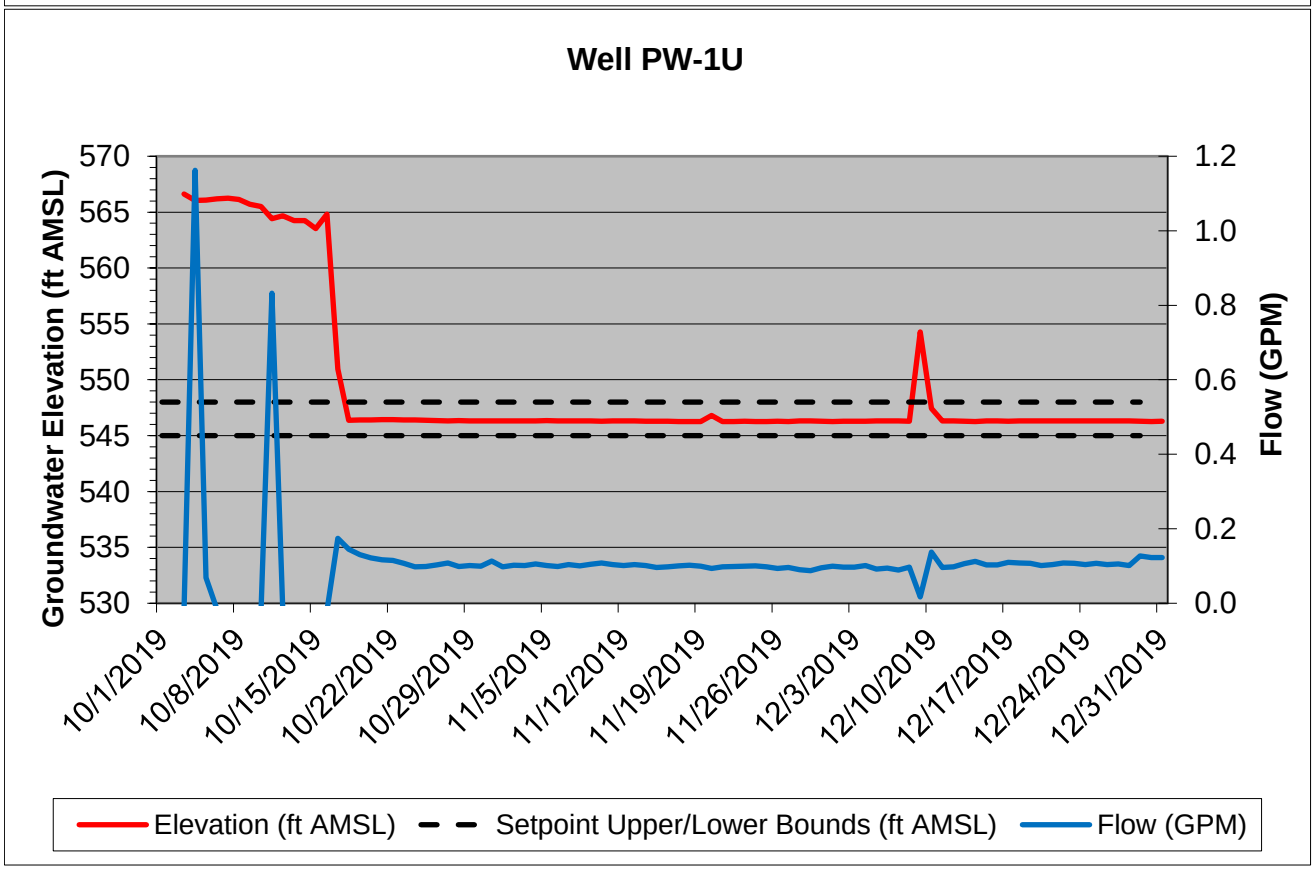
FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



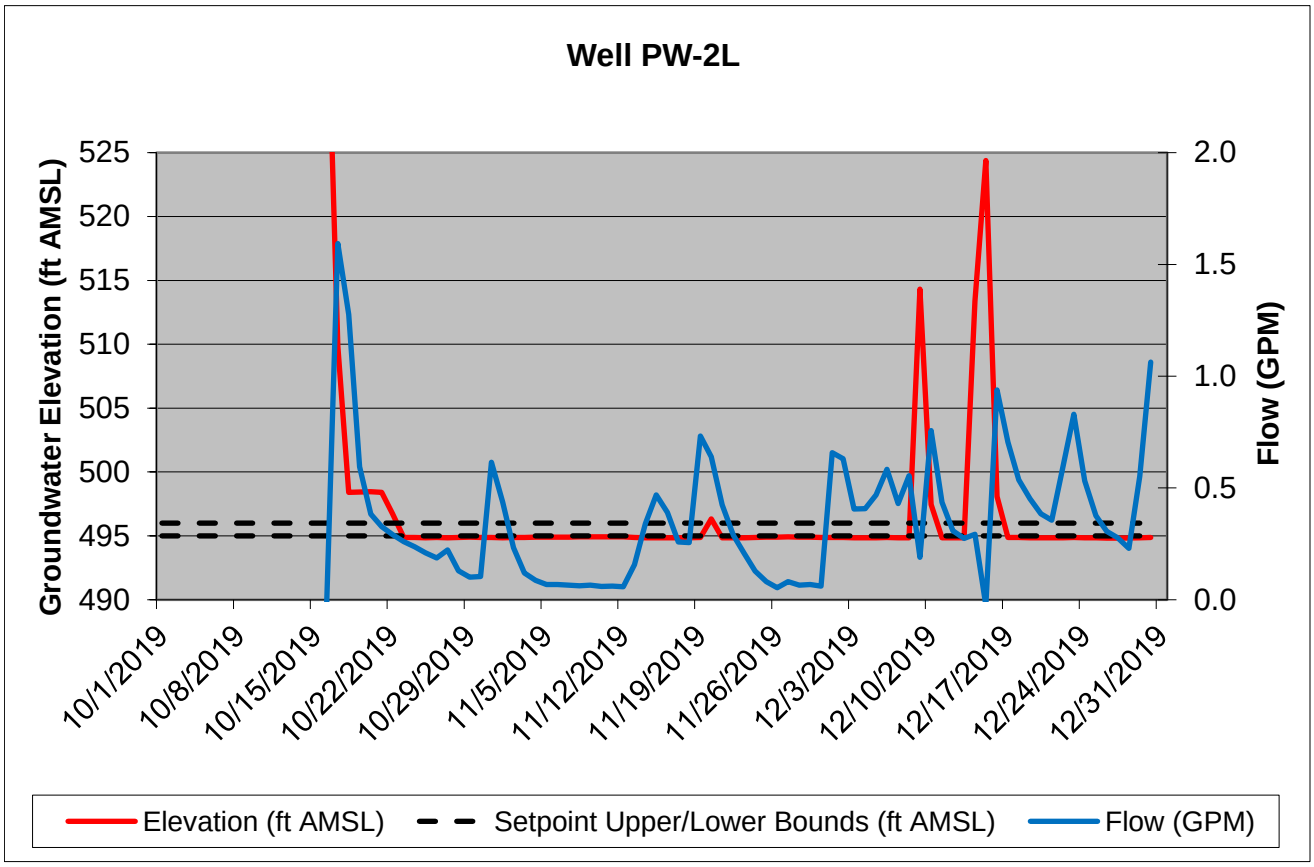


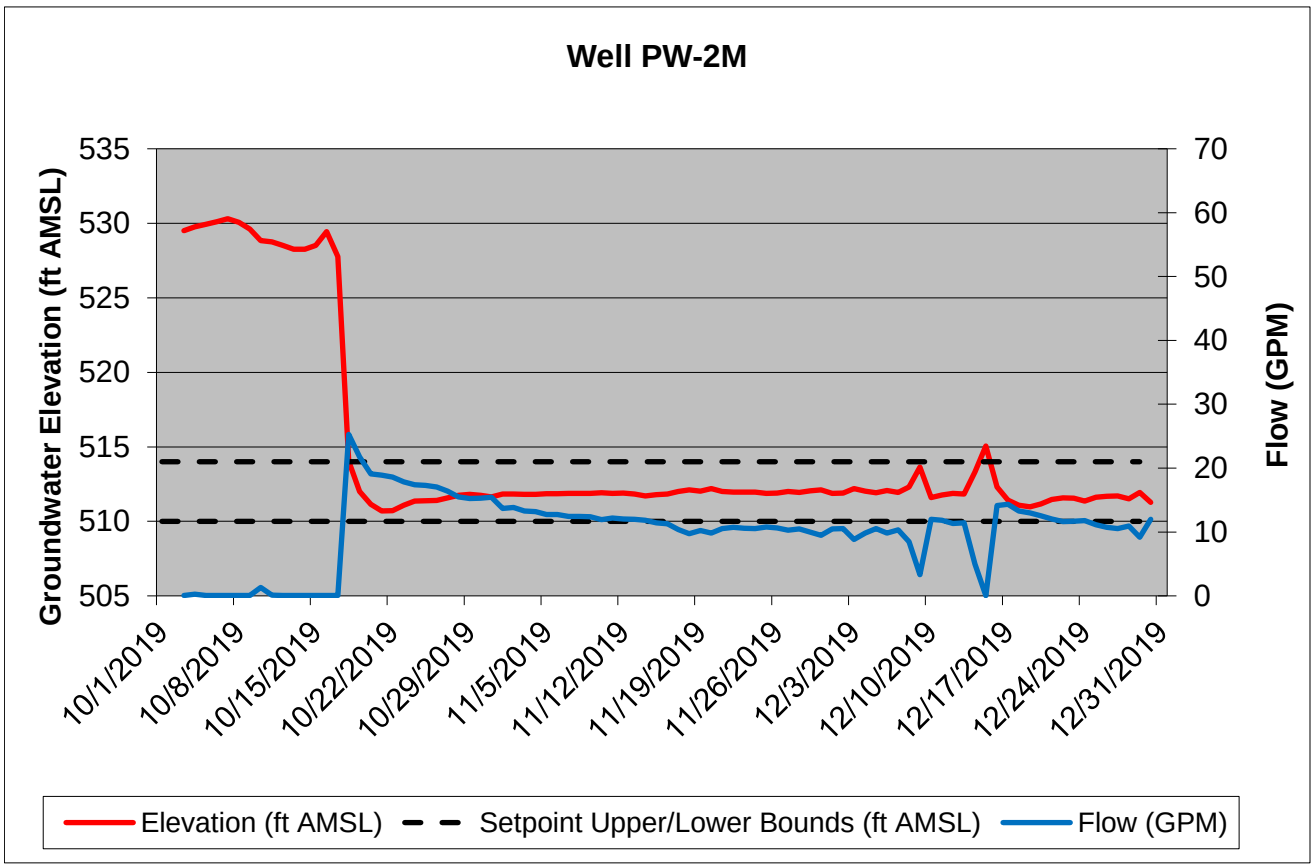
FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



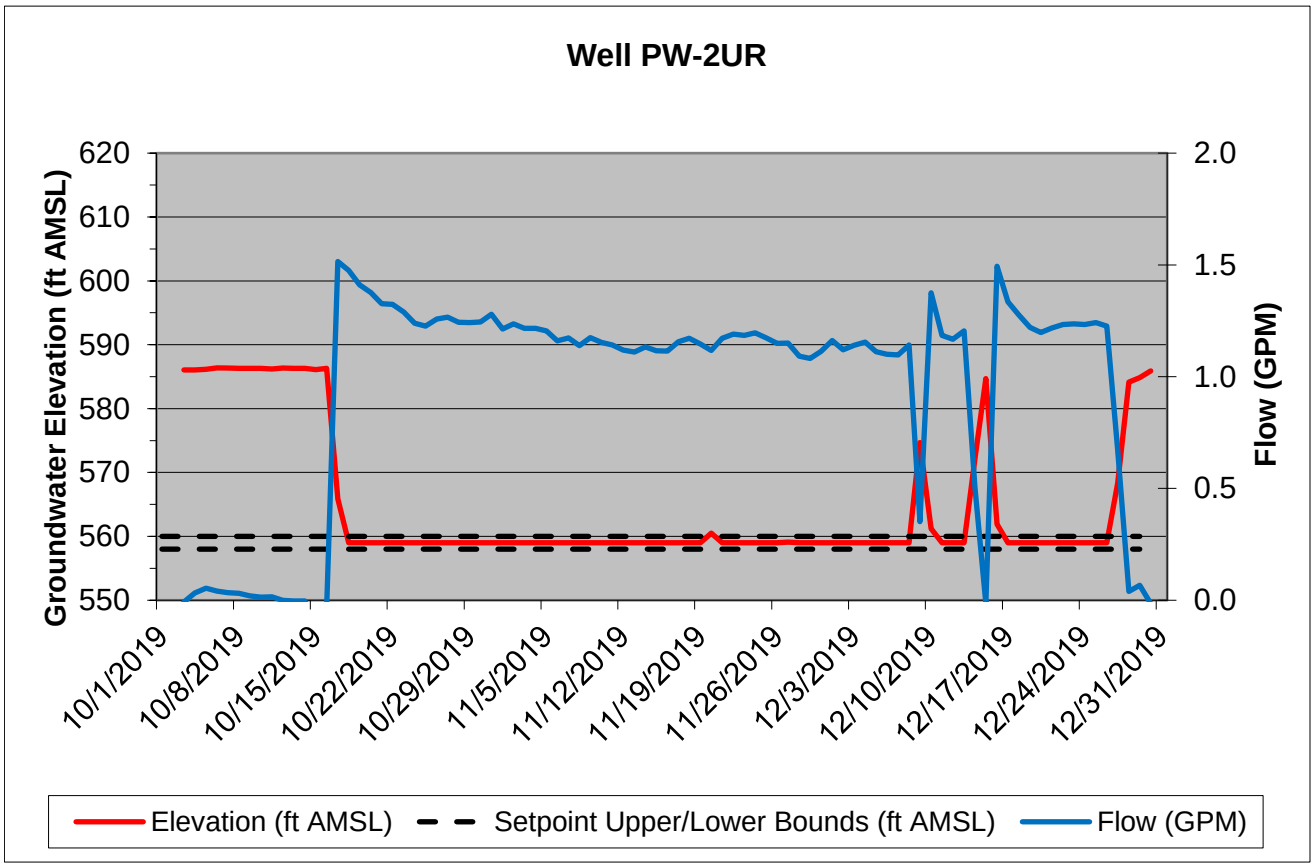


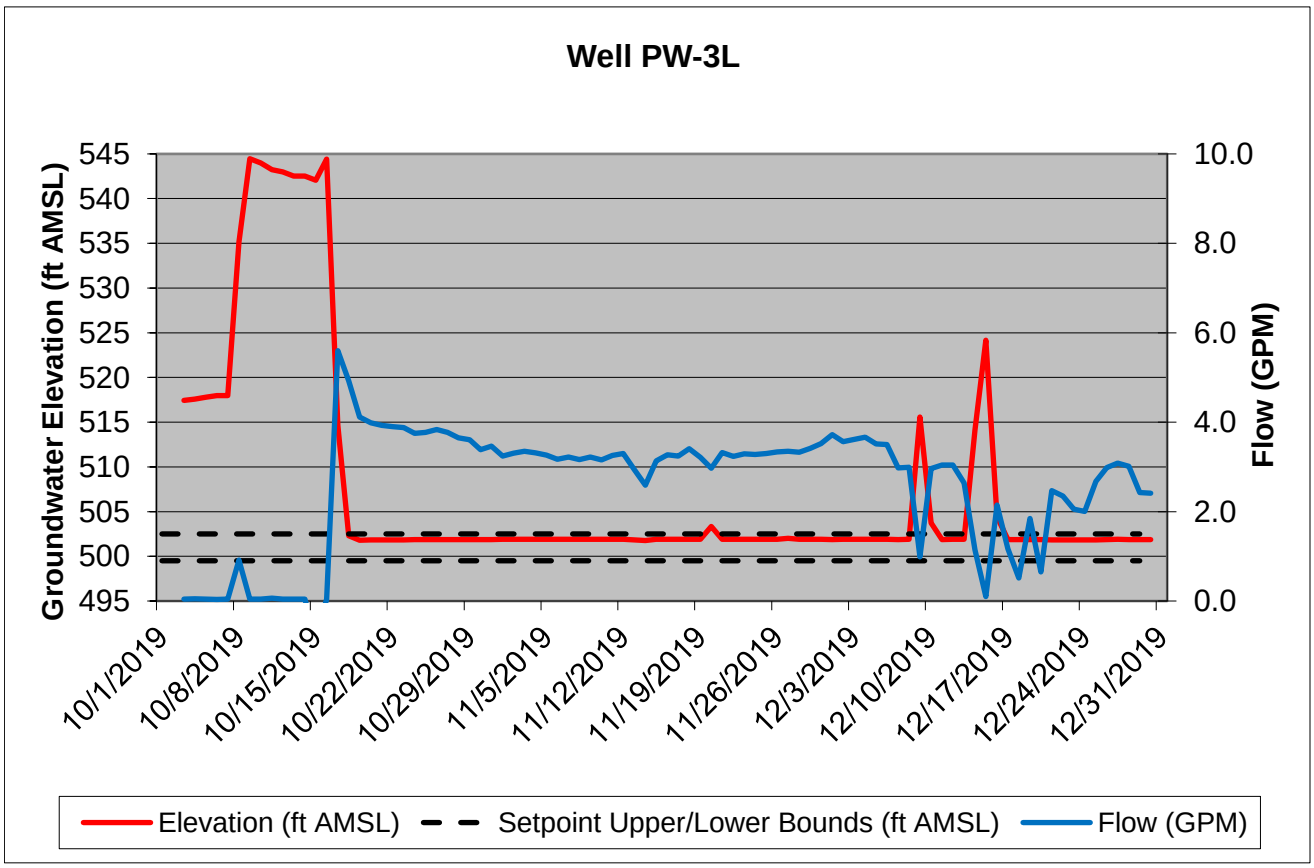
FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



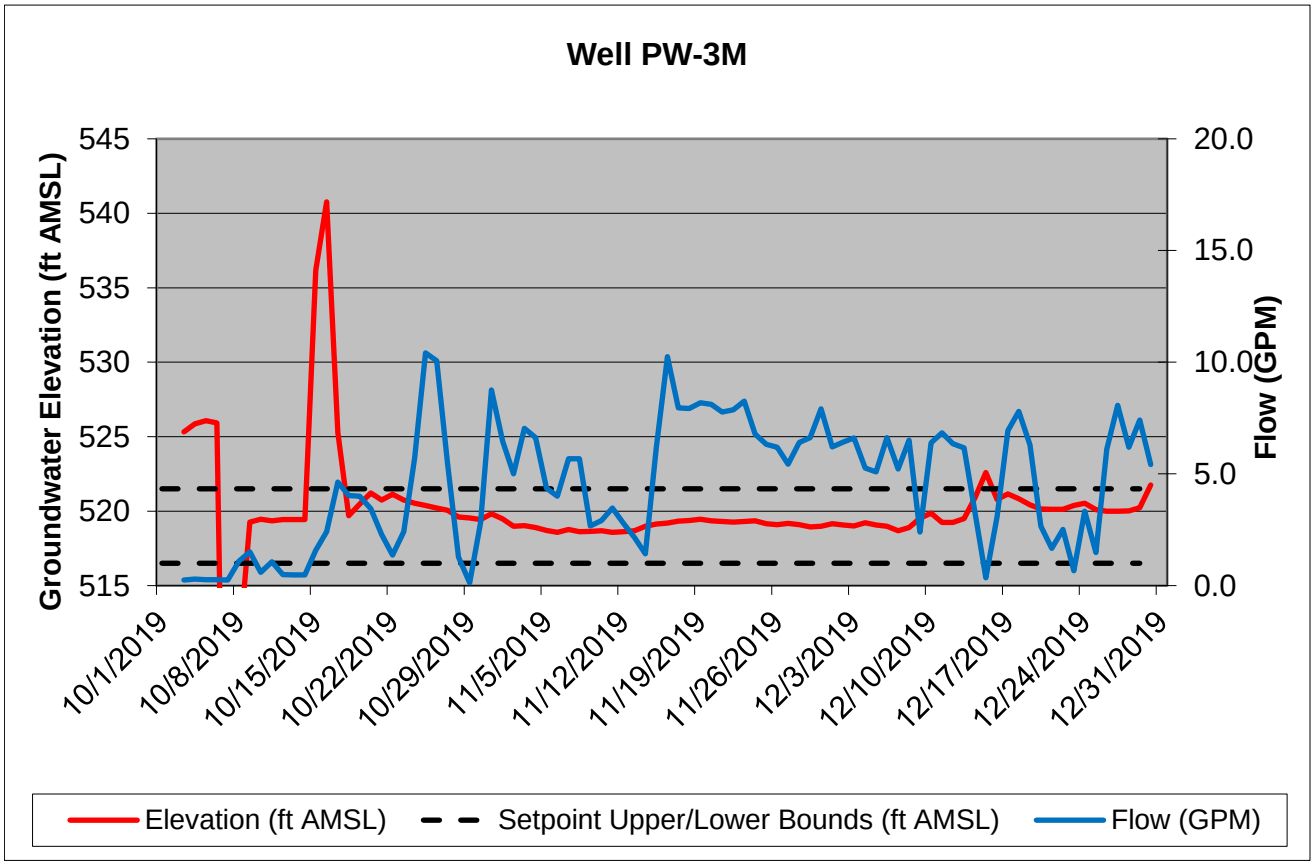


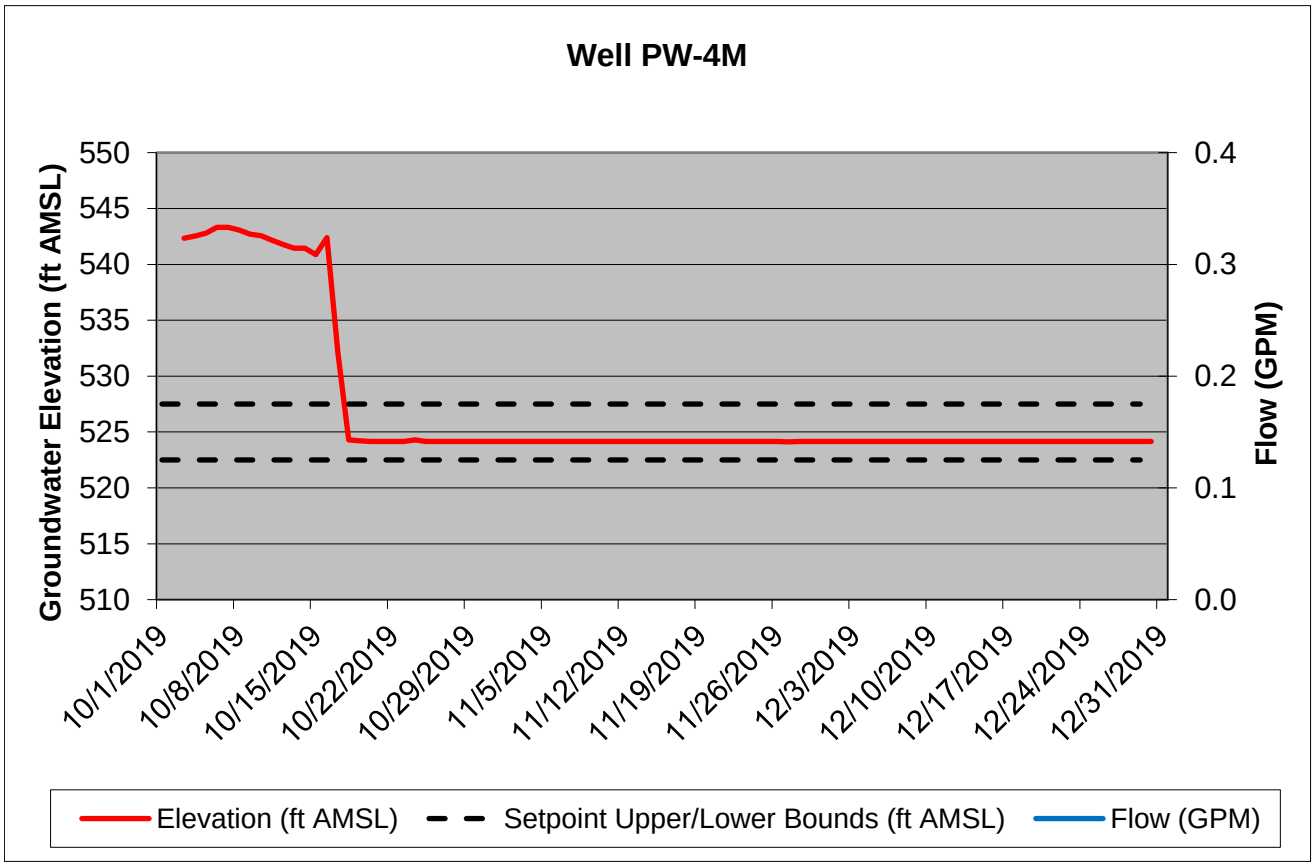
FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



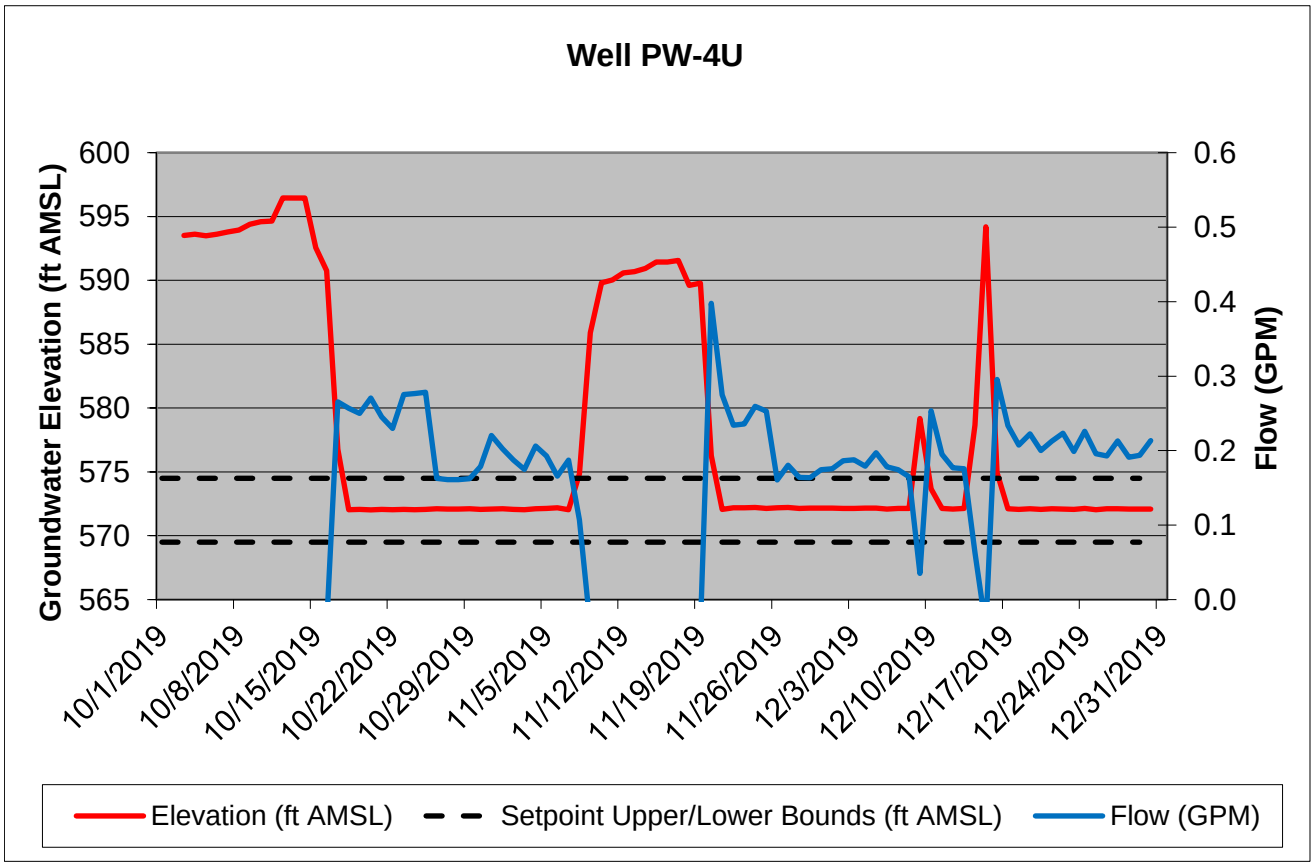


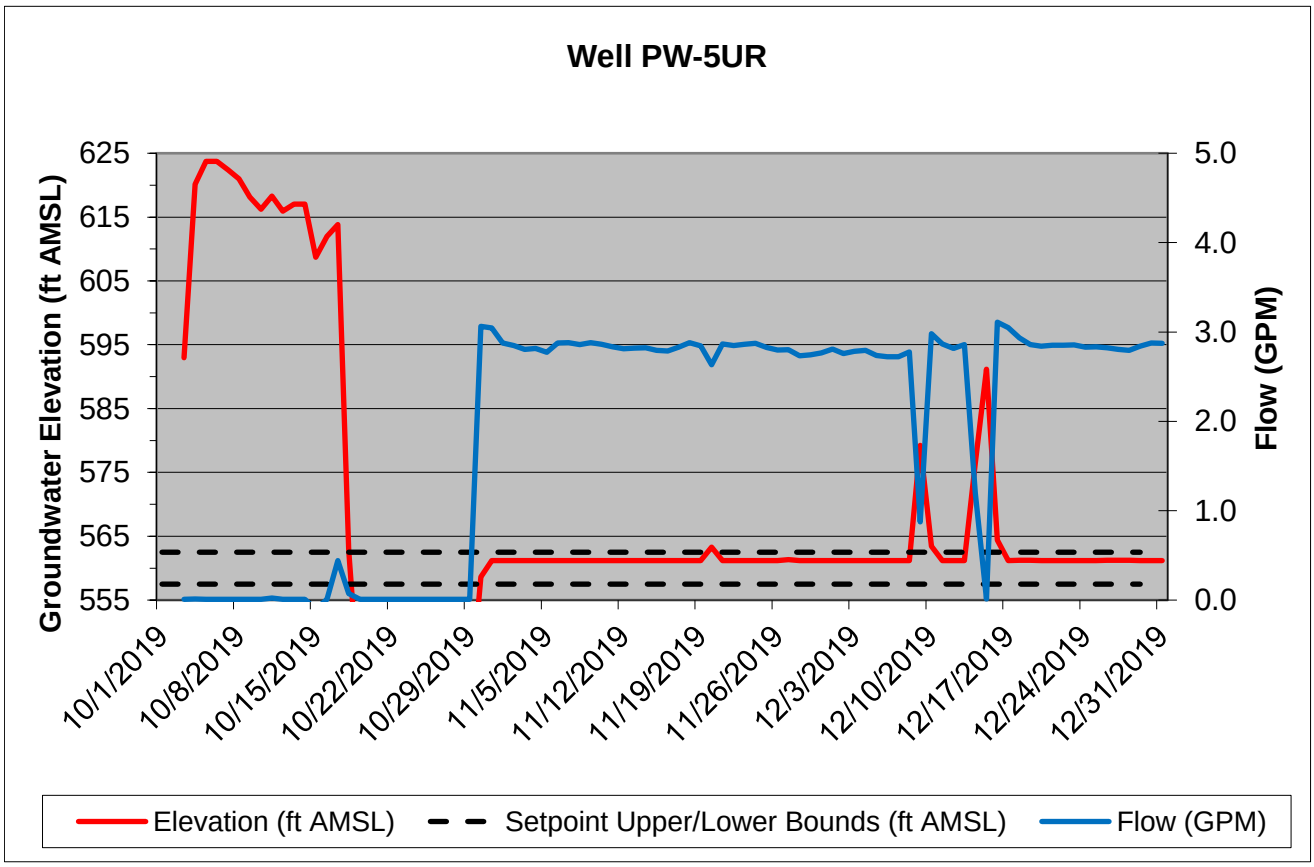
FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



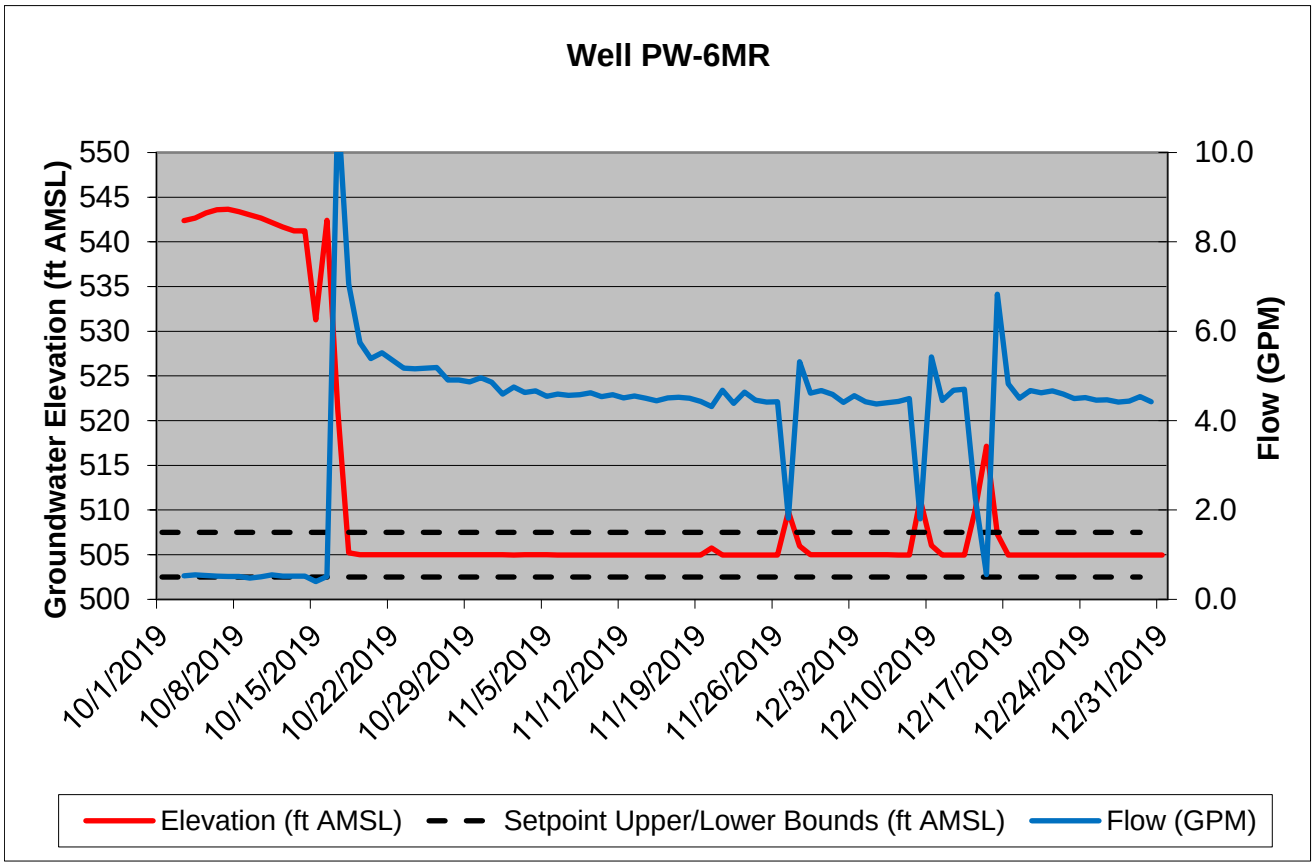


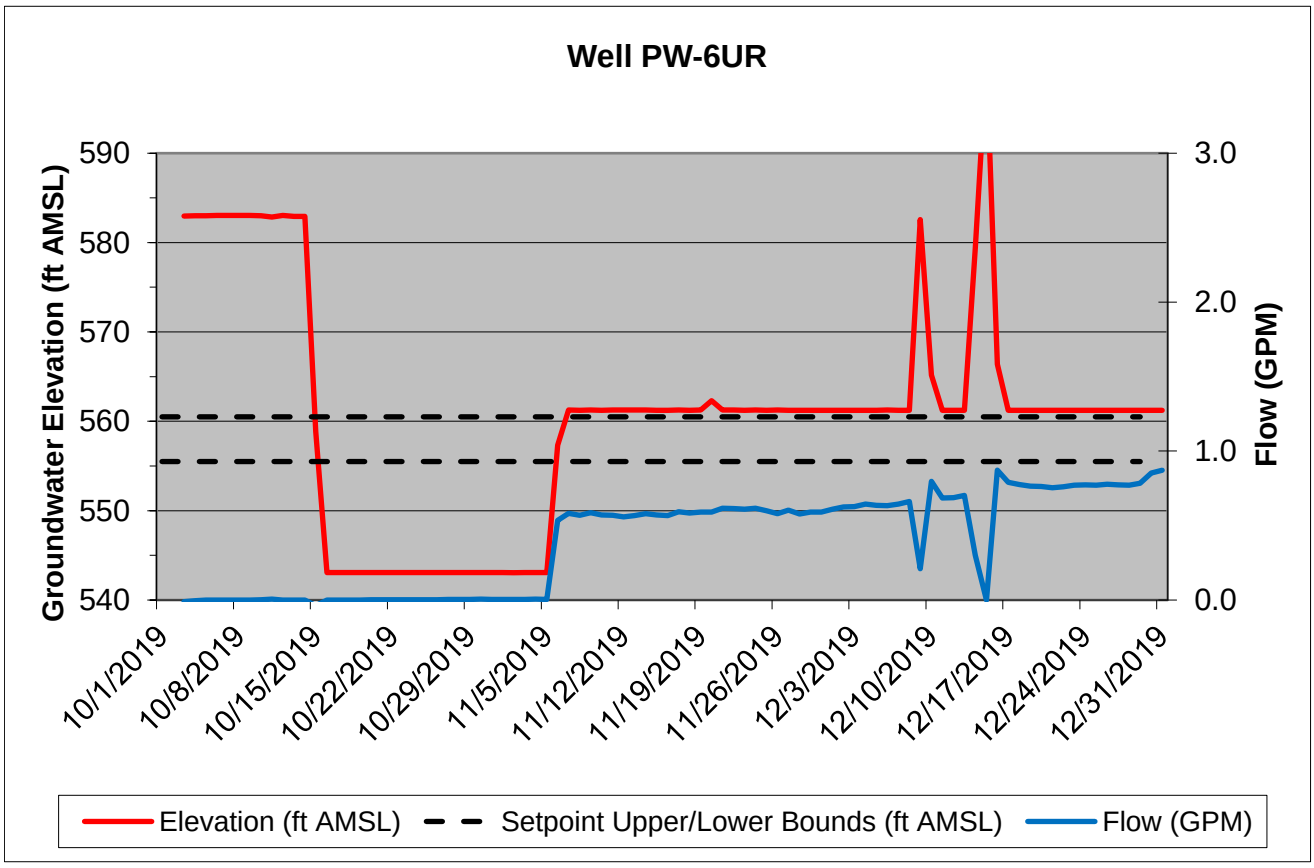
FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



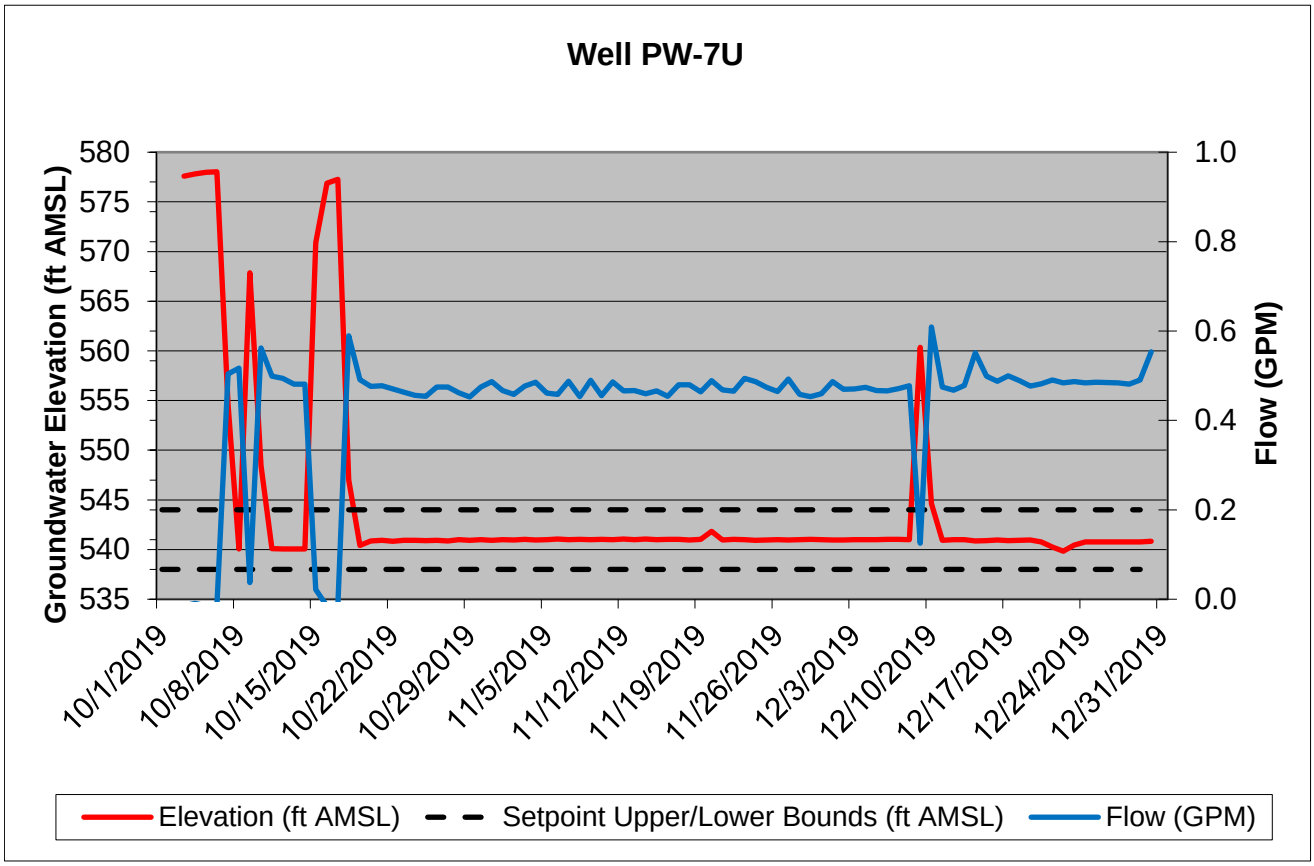


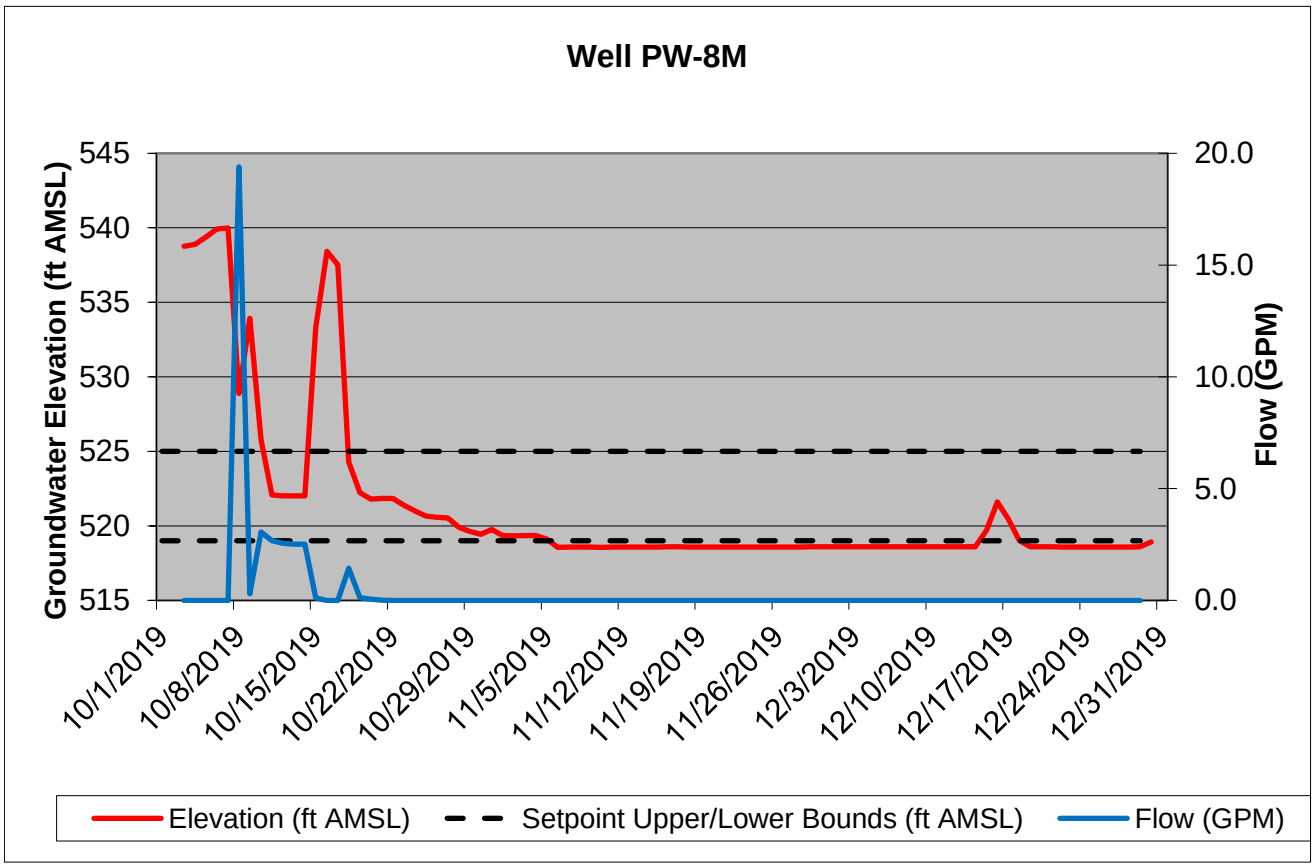
FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



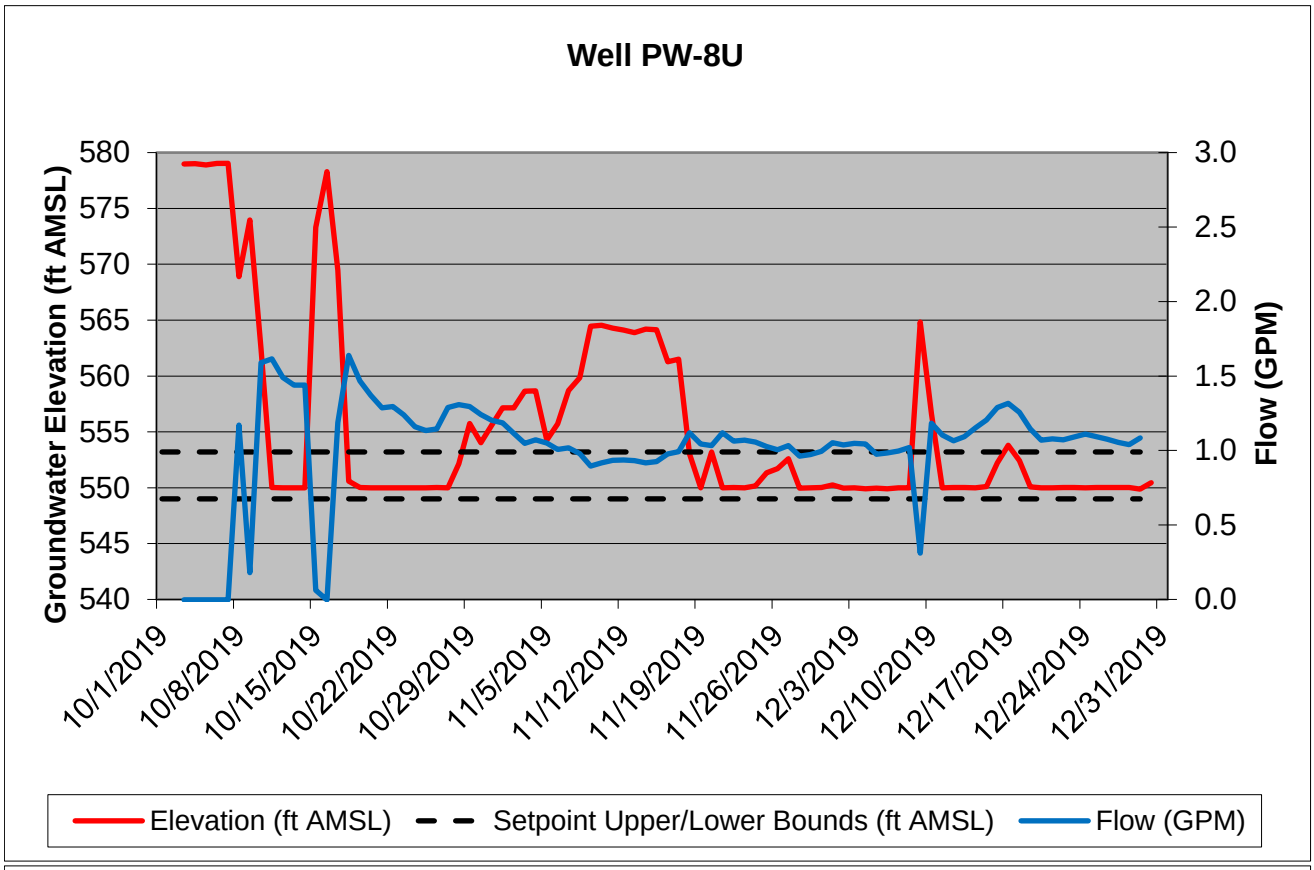


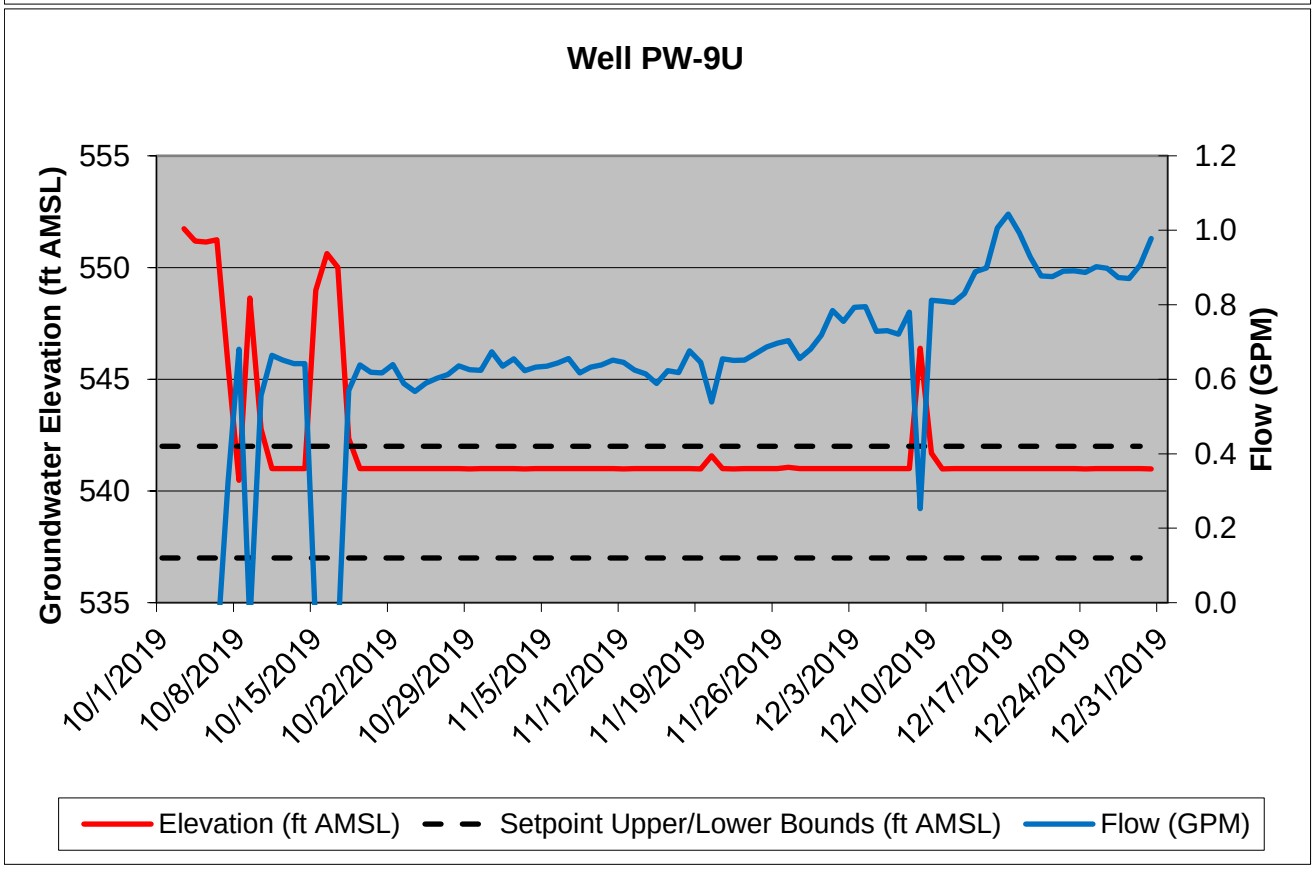
FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





FOURTH QUARTER 2019 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





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