Glenn Springs Holdings, Inc.
A subsidiary of Occidental Petroleum

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

7601 Old Channel Trail
Montague, MI 49437

April 30, 2021

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 2021
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, 2021 through March 31, 2021. A total of 5.94 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. Three drums (approximately 375 pounds) of personal protective equipment (PPE) 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
- 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

The continuously recorded water levels for the flow zone 9 piezometer PWM-1M-09 for the first quarter 2021 are presented on Figure 10. These water levels were less than 526 feet above mean sea level (AMSL) throughout the quarter, indicating that the FZ-09 outcrop along the New York Power Authority (NYPA) access road was unsaturated throughout the quarter.

The pumping wells were operational and functioning as designed during the first quarter 2021 except for PW-2M. This well was redeveloped in December 2020 and the pumping system is currently being redesigned. It is anticipated that the new pumping system will be installed in the second quarter of 2021. 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 and resolved during the first quarter of 2021:

- The water level in PW-3M exceeded setpoint range on January 17, January 20, and January 21 for unknown reasons. The water level returned to within setpoint range on January 18 and January 22, respectively.
- The water level in PW-7U exceeded setpoint range on February 16 and February 17 due to a pump communication fault. The pump was repaired and reset, and the water level returned to within setpoint range on February 18.
- The water level in PW-4U exceeded setpoint range on February 21 and February 22 and on February 26 and February 27 due to electrical faults. The pump was reset in each case and the water level returned to within setpoint range on February 23 and February 28, respectively. The water level in this well also exceeded setpoint range from March 14 through the end of the quarter (March 31), as the pump was offline awaiting replacement. The pump and motor were replaced on April 13.
- The water levels in the following wells exceeded setpoint range due to heavy rain and snowmelt:

  - PW-1L, PW-3L, PW-4U, PW-5UR, and PW-10U exceeded setpoint range on February 24 and returned to within setpoint range on February 25.

  - PW-1U, PW-2UR, PW-2L, PW-6UR, PW-7U, and PW-9U exceeded setpoint range on February 24 and February 25 and returned to within setpoint range on February 26.

  - APW-1 exceeded setpoint range on February 24 and February 28 and returned to within setpoint range on February 25 and March 1, respectively.

  - APW-2 exceeded setpoint range on March 1 and returned to within setpoint range on March 2.
- The water level in PW-9U exceeded setpoint range from March 10 through March 30 due to recurring pump faults. The pump was reset in each case, and troubleshooting was performed on March 15 and March 25. The pump fault was resolved and the pump reset again on March 30, and the well began pumping down to the setpoint. The water level returned to within setpoint range on March 31.

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
Project Manager
231-670-6809 Cell

JB/eew/9
Encl.

cc: G. May, NYSDEC
A. Zwack, NYSDOH
J. Robinson, NYSDOH
J. Pentilchuk, GHD
D. Hoyt, GHD
M. Popek, GHD

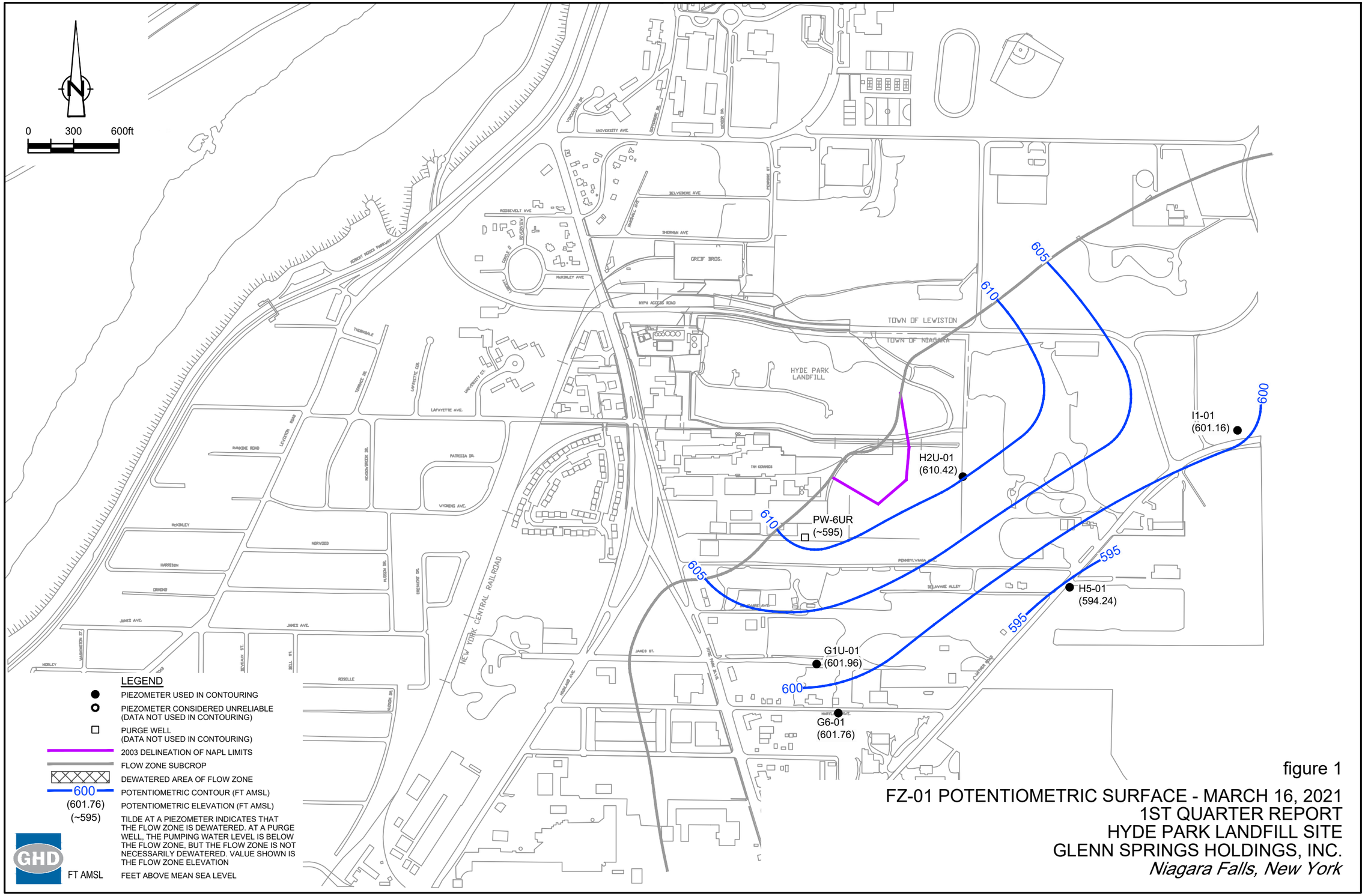

figure 1

FZ-01 POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA009)\01069-30-403(KOSA009)GN\01069-GHD-0000-LTR-EN-0101_WA-KOSA009.DWG Plot Date: APR 28, 2021

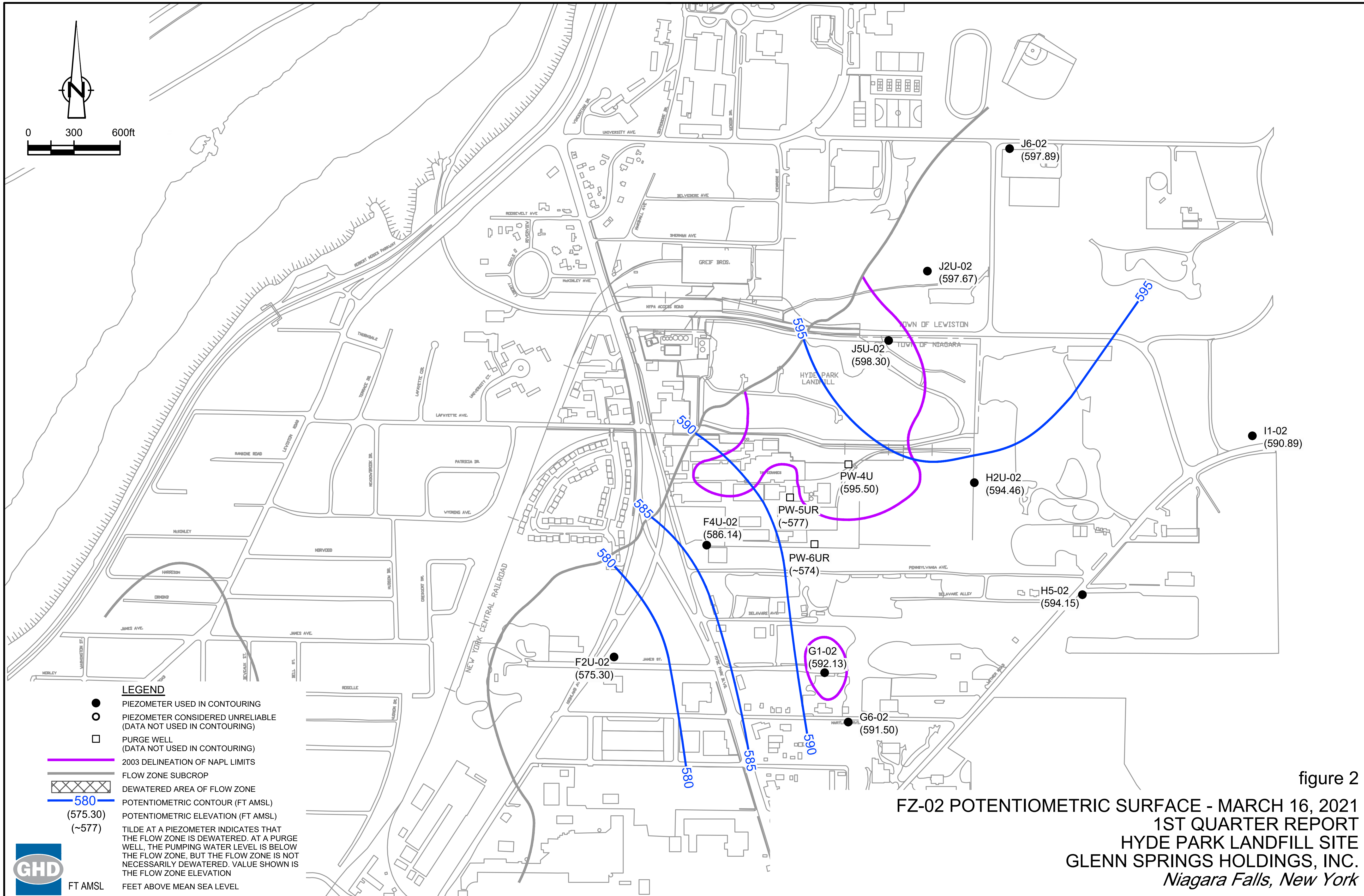
0
300
600ft
J6-02
(597.89)
J2U-02
(597.67)
J5U-02
(598.30)
TOWN OF LEWISTON
TOWN OF NIAGARA
HYDE PARK LANDFILL
I1-02
(590.89)
H2U-02
(594.46)
PW-4U
(595.50)
PW-5UR
(~577)
F4U-02
(586.14)
PW-6UR
(~574)
H5-02
(594.15)
G1-02
(592.13)
G6-02
(591.50)
F2U-02
(575.30)
595
590
585
580
NEW YORK CENTRAL RAILROAD
GREIF BROS.
LEGEND
PIEZOMETER USED IN CONTOURING
PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
PURGE WELL (DATA NOT USED IN CONTOURING)
2003 DELINEATION OF NAPL LIMITS
FLOW ZONE SUBCROP
DEWATERED AREA OF FLOW ZONE
580 POTENTIOMETRIC CONTOUR (FT AMSL)
(575.30) POTENTIOMETRIC ELEVATION (FT AMSL)
(~577) 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
FT AMSL FEET ABOVE MEAN SEA LEVEL
GHD

figure 2

FZ-02 POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

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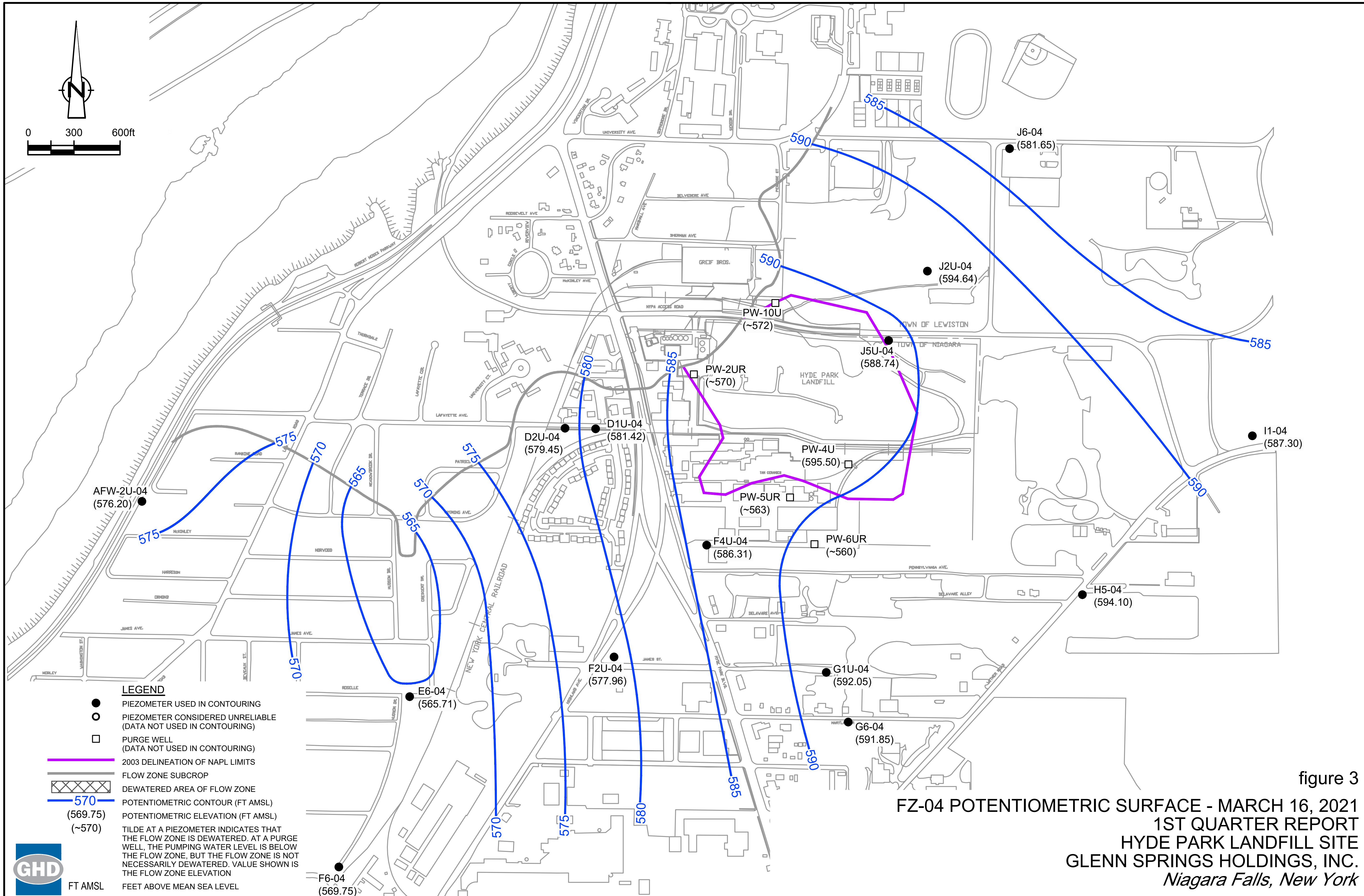
0
300
600ft
N
585
590
J6-04
(581.65)
J2U-04
(594.64)
PW-10U
(~572)
J5U-04
(588.74)
PW-2UR
(~570)
HYDE PARK
LANDFILL
TOWN OF LEWISTON
TOWN OF NIAGARA
GREIF BROS.
580
585
575
570
565
D2U-04
(579.45)
D1U-04
(581.42)
I1-04
(587.30)
PW-4U
(595.50)
AFW-2U-04
(576.20)
PW-5UR
(~563)
F4U-04
(586.31)
PW-6UR
(~560)
H5-04
(594.10)
NEW YORK CENTRAL RAILROAD
F2U-04
(577.96)
G1U-04
(592.05)
E6-04
(565.71)
G6-04
(591.85)
F6-04
(569.75)
LEGEND
PIEZOMETER USED IN CONTOURING
PIEZOMETER CONSIDERED UNRELIABLE
(DATA NOT USED IN CONTOURING)
PURGE WELL
(DATA NOT USED IN CONTOURING)
2003 DELINEATION OF NAPL LIMITS
FLOW ZONE SUBCROP
DEWATERED AREA OF FLOW ZONE
570 POTENTIOMETRIC CONTOUR (FT AMSL)
(569.75) POTENTIOMETRIC ELEVATION (FT AMSL)
(~570) 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
FT AMSL FEET ABOVE MEAN SEA LEVEL
GHD

figure 3

FZ-04 POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

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0 300 600ft

AGW-1U-05 (587.38)
J6-05 (581.32)
J2U-05 (581.37)
PW-1U (~564)
PW-10U (564.60)
PMW-1U-05 (579.46)
J5U-05 (581.57)
PW-2UR (~562)
D2U-05 (580.36)
D1U-05 (580.67)
PW-3M (~556)
I1-05 (552.75)
PW-5UR (555.80)
PW-4U (595.50)
AFW-2U-05 (576.20)
H2M-05 (591.95)
F4U-05 (584.64)
PW-6UR (558.30)
H5-05 (592.79)
F2U-05 (578.19)
E6-05 (565.85)
G6-05 (591.61)
F6-05 (569.65)

HYDE PARK LANDFILL

TOWN OF LEWISTON

NEW YORK CENTRAL RAILROAD

585 580 575 570 565 560 555 590

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 570 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (569.65) (~562) — POTENTIOMETRIC ELEVATION (FT AMSL)
- 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
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

figure 4

FZ-05 POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

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0 300 600ft

AFW-1U-06 (557.80)
AFW-2U-06 (~548)
ABP-7-06 (~554)
C3-06 (~551)
AGW-1U-06 (553.55)
B2U-06 (553.98)
PW-8U (550.40)
PW-9U (555.00)
PW-10U (564.60)
PW-8M (~547)
PW-7U (~548)
PW-1U (549.30)
PMW-1U-06 (547.59)
D2U-06 (549.20)
D1U-06 (548.44)
PW-2M (~543)
PW-3M (~539)
PW-4M (~537)
PW-6UMR (~534)
F4M-06 (551.56)
F2M-06 (551.84)
E6-06 (573.79)
F6-06 (560.87)
J6-06 (554.67)
J2M-06 (553.72)
J5M-06 (548.29)
I1-06 (546.21)
H2M-06 (581.91)
H5-06 (588.11)
G1M-06 (573.97)
G6-06 (575.82)

555 550 555 550 555 560 565 570 575 580 560 565 570 575 565 565

HYDE PARK LANDFILL
TOWN OF LEWISTON
TOWN OF NIAGARA
NEW YORK CENTRAL RAILROAD
UNIVERSITY AVE.
ROOSEVELT AVE
SHERMAN AVE
McKINLEY AVE
LAFAYETTE AVE.
RANKINE ROAD
PATRICIA DR.
WYOMING AVE.
McKINLEY
HARRISON
DEWEY
JAMES AVE.
ROSELLE
PENNSYLVANIA AVE.
DELAWARE AVE.
DELAWARE ALLEY
MARTIN AVE.

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 570 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (560.87) (~551) — POTENTIOMETRIC ELEVATION (FT AMSL)
- 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
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

GHD

figure 5

FZ-06 POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

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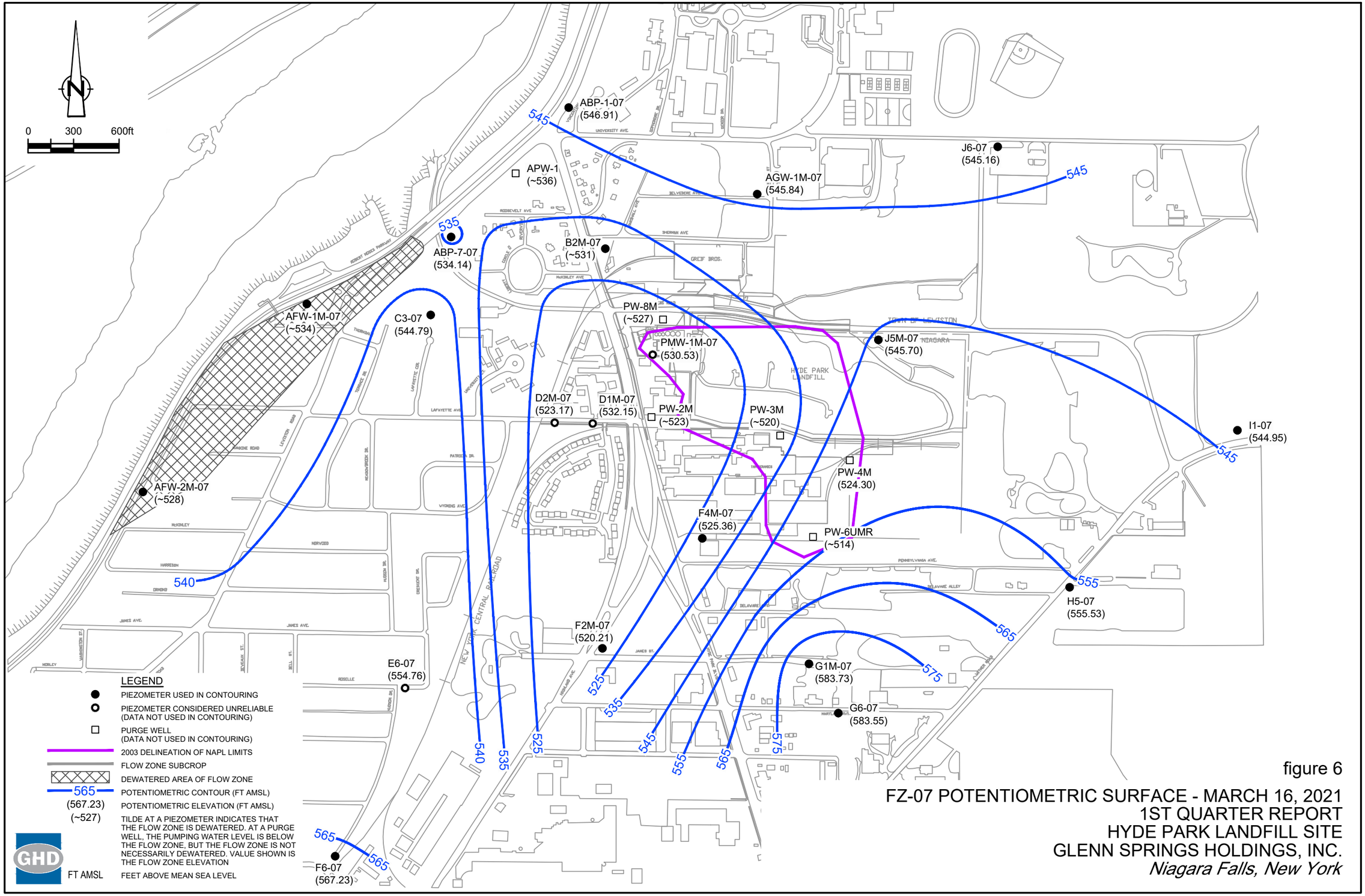

figure 6

FZ-07 POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

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0 300 600ft

ABP-1-09 (534.68)
APW-1 (~527)
APW-2 (~526)
ABP-7-09 (534.18)
AGW-1M-09 (546.47)
J6-09 (565.08)
B2M-09 (530.72)
J2M-09 (546.54)
AFW-1M-09 (525.43)
C3-09 (542.89)
PW-8M (518.90)
PW-1L (~519)
PMW-1M-09 (519.82)
J5M-09 (545.71)
D2M-09 (519.84)
D1M-09 (519.91)
PW-2M (514.30)
PW-3M (518.00)
PW-4M (524.30)
I1-09 (563.47)
AFW-2M-09 (521.04)
H2M-09 (550.83)
F4M-09 (519.54)
PW-6UMR (~506)
H5-09 (545.31)
F2M-09 (519.61)
G1M-09 (579.97)
E6-09 (552.87)
G6-09 (584.14)
F6-09 (572.34)

530 540 520 550 560 570 580

GREIF BROS.
TOWN OF LEWISTON
HYDE PARK LANDFILL
NEW YORK CENTRAL RAILROAD

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 550 (572.34) (~519) POTENTIOMETRIC CONTOUR (FT AMSL); POTENTIOMETRIC ELEVATION (FT AMSL); 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
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

figure 7

FZ-09 POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

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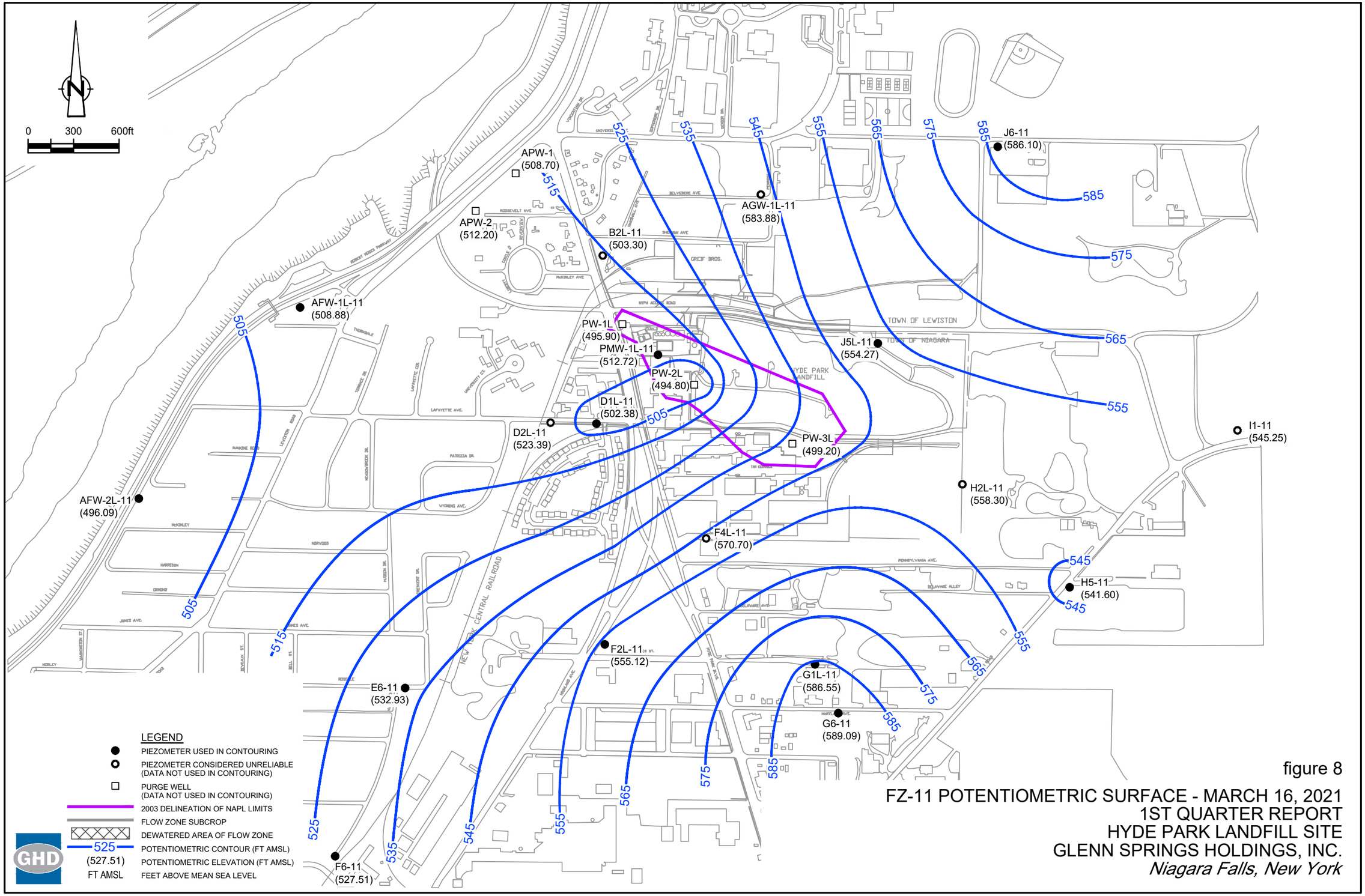

figure 8

FZ-11 POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

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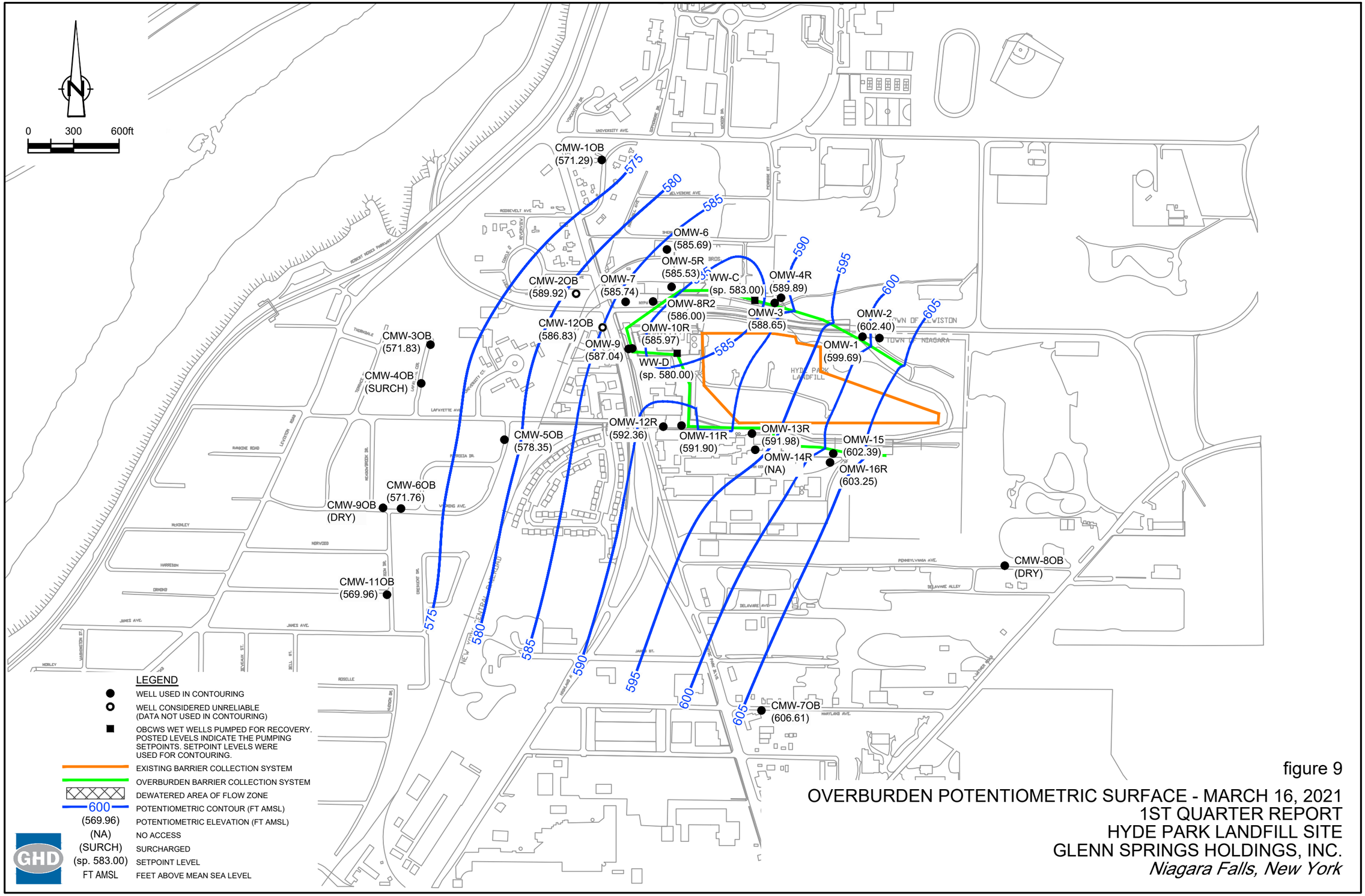


figure 9

OVERBURDEN POTENTIOMETRIC SURFACE - MARCH 16, 2021
1ST QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA009)\01069-30-403(KOSA009)GN\01069-GHD-0000-LTR-EN-0109_WA-KOSA009.DWG Plot Date: APR 28, 2021

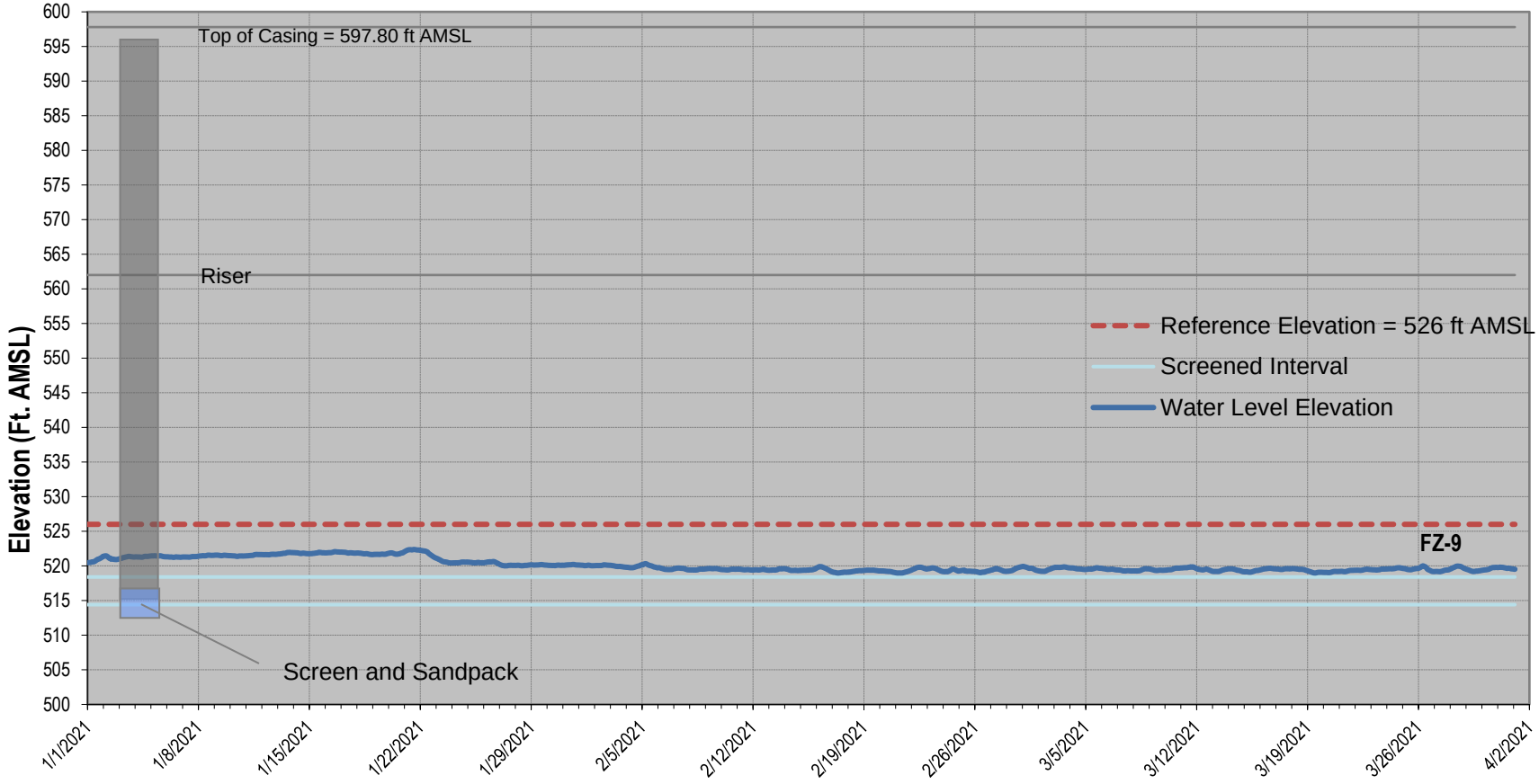


figure 10

PMW-1M-09 1st Quarter 2021 - Hourly Water Level Elevation
1st 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
First Quarter - 2021
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Overburden			
CMW-2OB	590.79	0.87	589.92
CMW-3OB	582.13	10.30	571.83
CMW-4OB	574.28	Surcharged	-
CMW-5OB	583.43	5.08	578.35
CMW-6OB	571.89	0.13	571.76
CMW-7OB	611.00	4.39	606.61
CMW-8OB	616.11	Dry	-
CMW-9OB	571.76	Dry	-
CMW-1OB	576.80	5.51	571.29
CMW-11OB	572.85	2.89	569.96
CMW-12OB	594.74	7.91	586.83
MH20	605.87	4.69	601.18
MH21	599.77	6.13	593.64
MH22	593.37	Dry	-
MH23	587.05	12.18	574.87
MH24	582.57	8.98	573.59
MH25	583.82	Dry	-
MH26	584.48	Dry	-
MH27	586.12	10.83	575.29
MH28	585.23	16.89	568.34
MH29	604.58	Dry	-
MH30	599.49	10.04	589.45
MH31	590.10	9.67	580.43
MH32	592.01	9.65	582.36
MH33	592.51	8.71	583.80
MH34	598.34	7.15	591.19
MH35	605.69	6.57	599.12
MH35A	605.69	7.17	598.52
OMW-1	605.28	5.59	599.69
OMW-2	605.99	3.59	602.40
OMW-3	598.63	9.98	588.65
OMW-4R	601.17	11.28	589.89
OMW-5R	591.31	5.78	585.53
OMW-6	587.62	1.93	585.69
OMW-7	592.74	7.00	585.74
OMW-8R2	594.67	8.67	586.00
OMW-9	595.27	8.23	587.04
OMW-10R	595.13	9.16	585.97
OMW-11R	597.52	5.62	591.90
OMW-12R	596.71	4.35	592.36
OMW-13R	601.50	9.52	591.98
OMW-14R	599.64	No Access	-
OMW-15	607.48	5.09	602.39
OMW-16R	607.62	4.37	603.25
SC-2	625.61	22.99	602.62
SC-3	638.72	40.69	598.03
SC-4	639.35	39.27	600.08
SC-5	634.07	31.82	602.25
SC-6	631.15	19.86	611.29

Table 1

Water Level Elevation Summary
First Quarter - 2021
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Shallow Bedrock			
CMW-1SH	576.11	12.13	563.98
CMW-2SH	590.51	17.72	572.79
CMW-3SH	581.91	27.61	554.30
CMW-4SH	574.16	7.20	566.96
CMW-5SH	583.36	7.39	575.97
CMW-6SH	572.05	9.60	562.45
CMW-7SH	610.58	12.36	598.22
CMW-8SH	615.95	7.35	608.60
CMW-9SH	571.96	12.09	559.87
CMW-11SH	573.21	7.85	565.36
CMW-12SH	597.02	24.62	572.40
Flow Zone 1			
G1U-01	617.08	15.12	601.96
G6-01	609.24	7.48	601.76
H2U-01	620.92	10.50	610.42
H5-01	617.61	23.37	594.24
I1-01	625.58	24.42	601.16
Flow Zone 2			
F2U-02	599.89	24.59	575.30
F4U-02	602.32	16.18	586.14
G1-02	616.86	24.73	592.13
G6-02	608.65	17.15	591.50
H2U-02	620.88	26.42	594.46
H5-02	617.47	23.32	594.15
I1-02	625.47	34.58	590.89
J2U-02	609.66	11.99	597.67
J5U-02	606.21	7.91	598.30
J6-02	609.23	11.34	597.89
Flow Zone 4			
AFW-2U-04	593.48	17.28	576.20
D1U-04	593.77	12.35	581.42
D2U-04	590.65	11.20	579.45
E6-04	578.23	12.52	565.71
F2U-04	599.76	21.80	577.96
F4U-04	602.19	15.88	586.31
F6-04	588.06	18.31	569.75
G1U-04	616.96	24.91	592.05
G6-04	609.15	17.30	591.85
H5-04	617.40	23.30	594.10
I1-04	625.30	38.00	587.30
J2U-04	609.42	14.78	594.64
J5U-04	606.05	17.31	588.74
J6-04	609.12	27.47	581.65

Table 1

Water Level Elevation Summary
First Quarter - 2021
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	17.13	576.20
AGW-1U-05	591.80	4.42	587.38
D1U-05	593.51	12.84	580.67
D2U-05	590.56	10.20	580.36
E6-05	578.04	12.19	565.85
F2U-05	599.64	21.45	578.19
F4U-05	602.06	17.42	584.64
F6-05	587.85	18.20	569.65
G6-05	609.13	17.52	591.61
H2M-05	621.59	29.64	591.95
H5-05	617.31	24.52	592.79
I1-05	625.25	72.50	552.75
J2U-05	609.30	27.93	581.37
J5U-05	605.87	24.30	581.57
J6-05	609.02	27.70	581.32
PMW-1U-05	598.00	18.54	579.46
Flow Zone 6			
ABP-7-06	575.78	Dry	-
AFW-1U-06	571.83	14.03	557.80
AFW-2U-06	593.22	47.96	545.26
AGW-1U-06	591.66	38.11	553.55
B2U-06	589.29	35.31	553.98
C3-06	585.78	37.46	548.32
D1U-06	593.25	44.81	548.44
D2U-06	590.38	41.18	549.20
E6-06	577.99	4.20	573.79
F2M-06	599.06	47.22	551.84
F4M-06	602.05	50.49	551.56
F6-06	587.84	26.97	560.87
G1M-06	616.75	42.78	573.97
G6-06	609.09	33.27	575.82
H2M-06	621.42	39.51	581.91
H5-06	617.17	29.06	588.11
I1-06	625.15	78.94	546.21
J2M-06	608.94	55.22	553.72
J5M-06	606.22	57.93	548.29
J6-06	608.93	54.26	554.67
PMW-1U-06	597.92	50.33	547.59

Table 1

Water Level Elevation Summary
First Quarter - 2021
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	28.29	546.91
ABP-7-07	575.73	41.59	534.14
AFW-1M-07	571.41	Dry	-
AFW-2M-07	593.44	66.81	526.63
AGW-1M-07	592.91	47.07	545.84
B2M-07	589.52	58.31	531.21
C3-07	585.62	40.83	544.79
D1M-07	594.15	62.00	532.15
D2M-07	590.77	67.60	523.17
E6-07	577.91	23.15	554.76
F2M-07	598.91	78.70	520.21
F4M-07	601.91	76.55	525.36
F6-07	587.68	20.45	567.23
G1M-07	616.68	32.95	583.73
G6-07	609.06	25.51	583.55
H5-07	617.05	61.52	555.53
I1-07	625.14	80.19	544.95
J5M-07	606.07	60.37	545.70
J6-07	608.85	63.69	545.16
PMW-1M-07	598.50	67.97	530.53
Flow Zone 9			
ABP-1-09	575.19	40.51	534.68
ABP-7-09	575.67	41.49	534.18
AFW-1M-09	571.12	45.69	525.43
AFW-2M-09	593.32	72.28	521.04
AGW-1M-09	592.75	46.28	546.47
B2M-09	589.34	58.62	530.72
C3-09	585.00	42.11	542.89
D1M-09	594.02	74.11	519.91
D2M-09	590.66	70.82	519.84
E6-09	577.82	24.95	552.87
F2M-09	598.71	79.10	519.61
F4M-09	601.79	82.25	519.54
F6-09	587.53	15.19	572.34
G1M-09	616.58	36.61	579.97
G6-09	608.98	24.84	584.14
H2M-09	621.32	70.49	550.83
H5-09	616.93	71.62	545.31
I1-09	624.91	61.44	563.47
J2M-09	608.77	62.23	546.54
J5M-09	605.82	60.11	545.71
J6-09	608.76	43.68	565.08
PMW-1M-09	598.34	78.52	519.82

Table 1

Water Level Elevation Summary
First Quarter - 2021
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	63.22	508.88
AFW-2L-11	593.43	97.34	496.09
AGW-1L-11	592.71	8.83	583.88
B2L-11	589.65	86.35	503.30
D1L-11	593.80	91.42	502.38
D2L-11	590.21	66.82	523.39
E6-11	577.72	44.79	532.93
F2L-11	598.94	43.82	555.12
F4L-11	602.22	31.52	570.70
F6-11	587.40	59.89	527.51
G1L-11	616.84	30.29	586.55
G6-11	608.89	19.80	589.09
H2L-11	620.73	62.43	558.30
H5-11	616.81	75.21	541.60
I1-11	624.75	79.50	545.25
J5L-11	607.20	52.93	554.27
J6-11	608.68	22.58	586.10
PMW-1L-11	598.84	86.12	512.72
Purge Wells			
APW-1	564.98	56.28	508.70
APW-2	569.89	57.69	512.20
PW-1L	593.16	97.26	495.90
PW-1U	593.50	44.20	549.30
PW-2L	597.29	102.49	494.80
PW-2M	596.61	82.31	514.30
PW-2UR	594.75	35.25	559.50
PW-3L	599.05	99.85	499.20
PW-3M	597.79	79.79	518.00
PW-4M	606.93	82.63	524.30
PW-4U	604.85	9.35	595.50
PW-5UR	601.31	45.51	555.80
PW-6UMR	609.31	104.41	504.90
PW-6UR	608.47	50.17	558.30
PW-7U	592.47	52.47	540.00
PW-8M	592.67	73.77	518.90
PW-8U	589.27	38.87	550.40
PW-9U	587.47	32.47	555.00
PW-10U	593.54	28.94	564.60

Notes:

-	- Not applicable
ft AMSL	- Feet above mean sea level
Dry	- No water present at the time of measurement
Surcharged	- Well surcharged
No Access	- Well covered by metal hoppers

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
First Quarter - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
01/01/21		
01/02/21		
01/03/21	7.0	150,000
01/04/21	7.1	202,000
01/05/21	7.0	235,000
01/06/21	7.3	222,000
01/07/21	7.1	40,000
01/08/21		
01/09/21		
01/10/21		
01/11/21	7.0	244,000
01/12/21	7.0	156,000
01/13/21		
01/14/21	7.1	20,000
01/15/21		
01/16/21		
01/17/21		
01/18/21	7.8	211,000
01/19/21	7.4	45,000
01/20/21		
01/21/21	7.2	191,000
01/22/21		
01/23/21		
01/24/21		
01/25/21		
01/26/21	7.1	179,000
01/27/21	7.2	32,000
01/28/21	7.1	125,000
01/29/21		
01/30/21		
01/31/21		
02/01/21		
02/02/21	7.0	146,000
02/03/21	7.1	110,000
02/04/21		
02/05/21		
02/06/21		

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
First Quarter - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
02/07/21		
02/08/21	7.3	139,000
02/09/21	7.6	119,000
02/10/21		
02/11/21	7.0	73,000
02/12/21		
02/13/21		
02/14/21		
02/15/21		
02/16/21		
02/17/21	7.0	137,000
02/18/21	7.1	26,000
02/19/21		
02/20/21		
02/21/21		
02/22/21		
02/23/21	7.1	114,000
02/24/21	7.0	116,000
02/25/21	7.4	212,000
02/26/21	7.1	65,000
02/27/21		
02/28/21		
03/01/21	7.2	185,000
03/02/21	7.5	201,000
03/03/21	7.5	221,000
03/04/21	7.3	226,000
03/05/21	7.4	186,000
03/06/21		
03/07/21		
03/08/21	7.2	196,000
03/09/21	7.1	94,000
03/10/21	7.2	135,000
03/11/21	7.1	40,000
03/12/21		
03/13/21		
03/14/21		
03/15/21	7.0	165,000

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
First Quarter - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
03/16/21	7.2	52,000
03/17/21	7.1	172,000
03/18/21	7.1	58,000
03/19/21		
03/20/21		
03/21/21		
03/22/21	7.2	138,000
03/23/21	7.5	47,000
03/24/21	7.1	48,000
03/25/21	7.2	22,000
03/26/21		
03/27/21		
03/28/21		
03/29/21	7.5	189,000
03/30/21	7.5	46,000
03/31/21	7.4	208,000
	Total	5,938,000

Notes:

su - Standard Unit
gal - Gallons

Table 3

Analytical Results Summary
Weekly Sampling - Leachate Treatment System
First Quarter - 2021
Hyde Park RRT Program

Effluent

Parameter	Units	01/06/2021	01/13/2021	01/20/2021	01/27/2021	02/03/2021	02/10/2021
Volatiles							
1,1,1-Trichloroethane	µg/L	0.23 J	0.30 J	1.0 U	0.26 J	0.23 J	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	4.8	5.3	4.5	4.3	3.6	3.1
1,1,2-Trichloroethane	µg/L	1.1	1.1	0.98 J	1.0	0.93 J	0.85 J
1,1-Dichloroethane	µg/L	2.3	3.4	2.7	3.1	2.7	2.6
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	6.7	7.5	7.0	7.7	6.3	6.1
1,2-Dichloropropane	µg/L	0.82 J	0.81 J	0.80 J	0.84 J	0.86 J	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	19	16	14	16	12	11
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	3.7	6.3	1.0 U	4.7	8.3	1.0 U
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	11	13	9.4	9.9	8.0	6.4
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	2.1	2.3	2.0	2.5	2.1	1.9
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	0.39 J	0.25 J	0.25 J	0.24 J	1.0 U	0.37 J
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	86	130	61	110	92	64
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	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0053

Notes:

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

Table 3

Analytical Results Summary
Weekly Sampling - Leachate Treatment System
First Quarter - 2021
Hyde Park RRT Program

Effluent

Parameter	Units	02/17/2021	02/24/2021	03/03/2021	03/10/2021	03/17/2021	03/24/2021
Volatiles							
1,1,1-Trichloroethane	µg/L	0.29 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	3.2	2.5	2.6	2.8	2.3	2.5
1,1,2-Trichloroethane	µg/L	0.88 J	0.75 J	0.61 J	0.61 J	0.54 J	0.60 J
1,1-Dichloroethane	µg/L	3.3	2.7	1.8	1.9	2.3	2.5
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	6.7	5.3	5.2	6.4	5.3	6.2
1,2-Dichloropropane	µg/L	1.0 U	1.0 U	0.60 J	0.61 J	0.55 J	0.63 J
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	8.8	8.4	14	18	10	12
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	6.4	6.8	2.4	1.4	1.0 U	4.1
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	7.0	5.4	4.1	4.6	3.7	3.9
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	1.8	1.6	1.7	2.2	1.5	1.7
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	0.21 J	1.0 U	0.27 J
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	94	77	59	86	72	89
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	0.0113	0.0103	0.0047 J	0.0050 U	0.0040 J	0.0050 U

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 - 2021
Hyde Park RRT Program

Sample Location:		**EFFLUENT**	**EFFLUENT**
Sample ID:		**HP 32321 EFF**	**HP 32321 EFF**
Sample Date:		**3/23/2021**	**3/23/2021**
Parameters	**Units**		
Volatile Organic Compounds			
Vinyl chloride	µg/L	104	-
General Chemistry			
Phosphorus	mg/L	-	0.240

Notes:

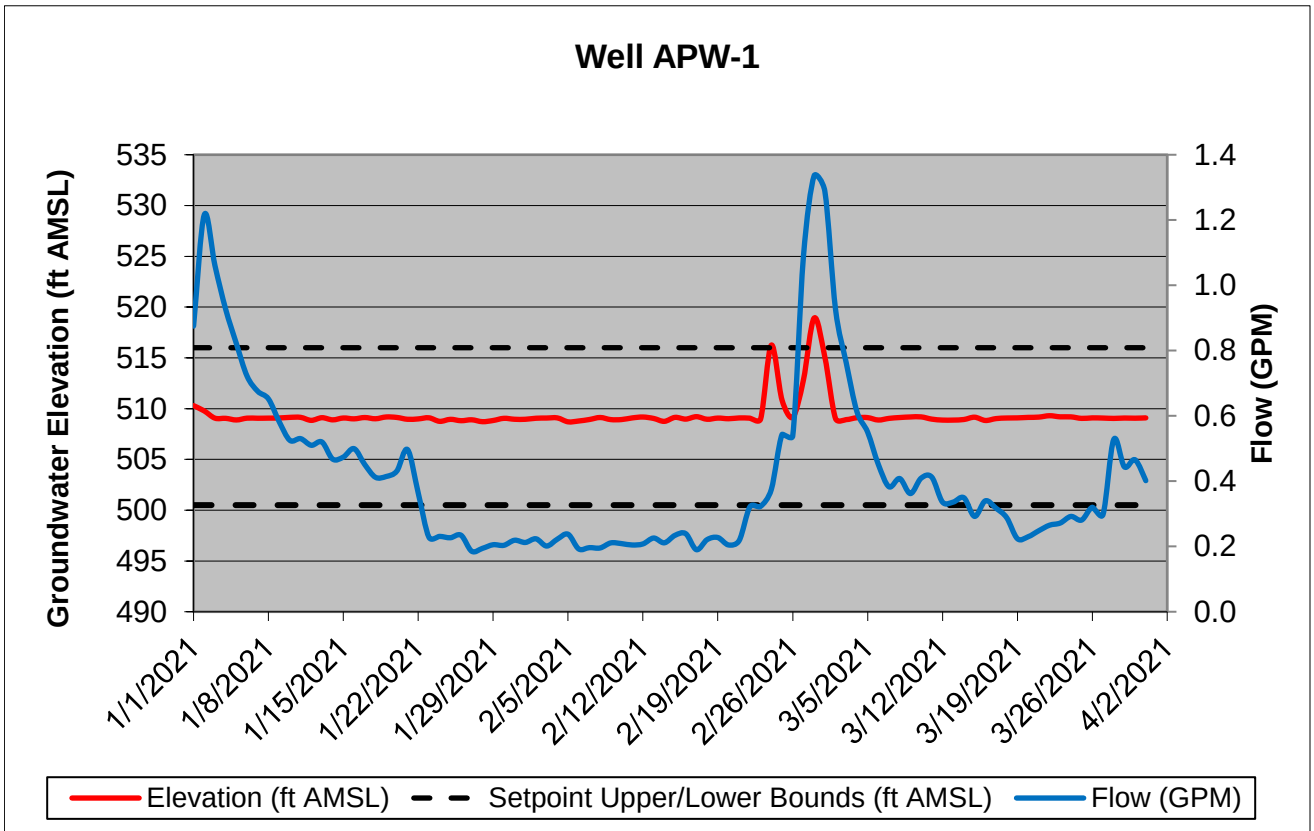
"-" - Not applicable

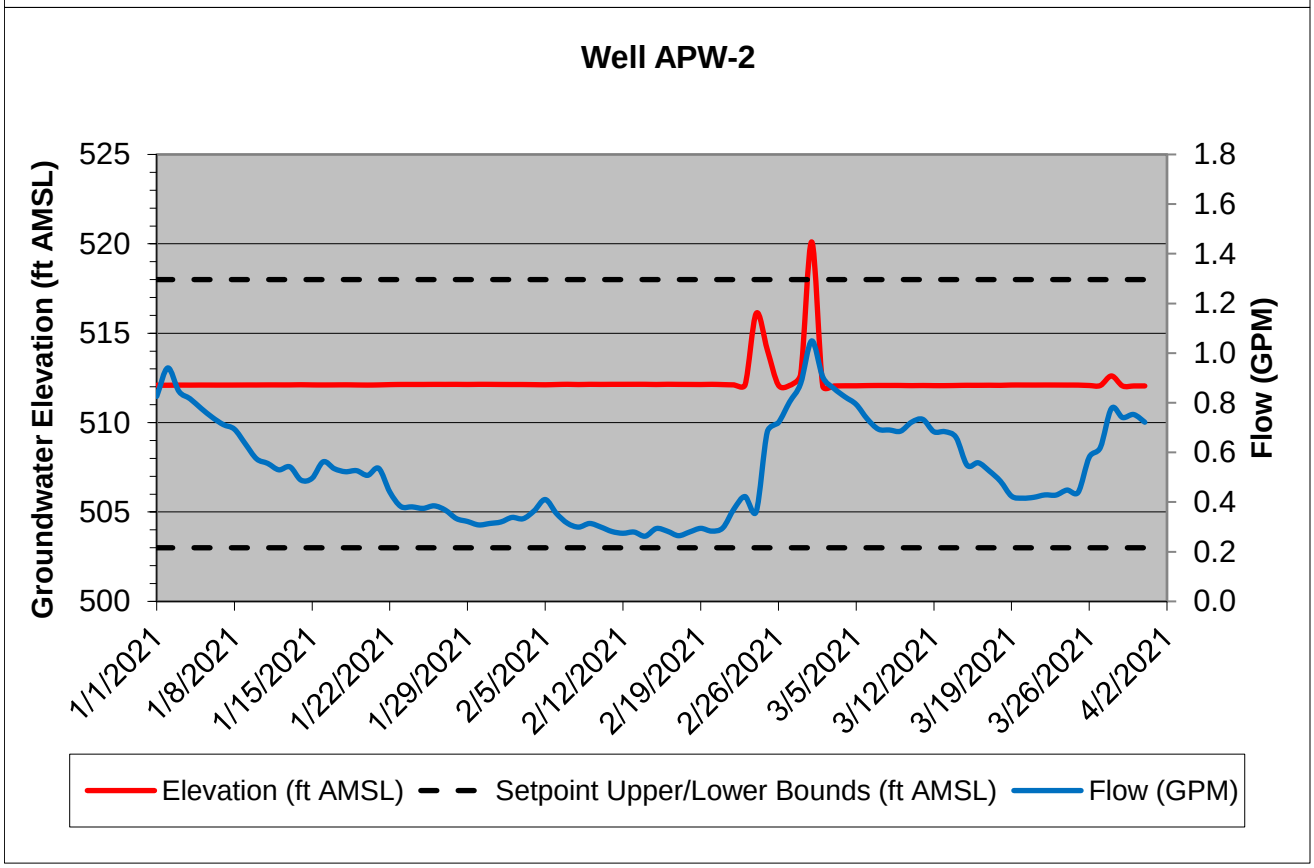
mg/L - Milligrams per liter

µg/L - Micrograms per liter

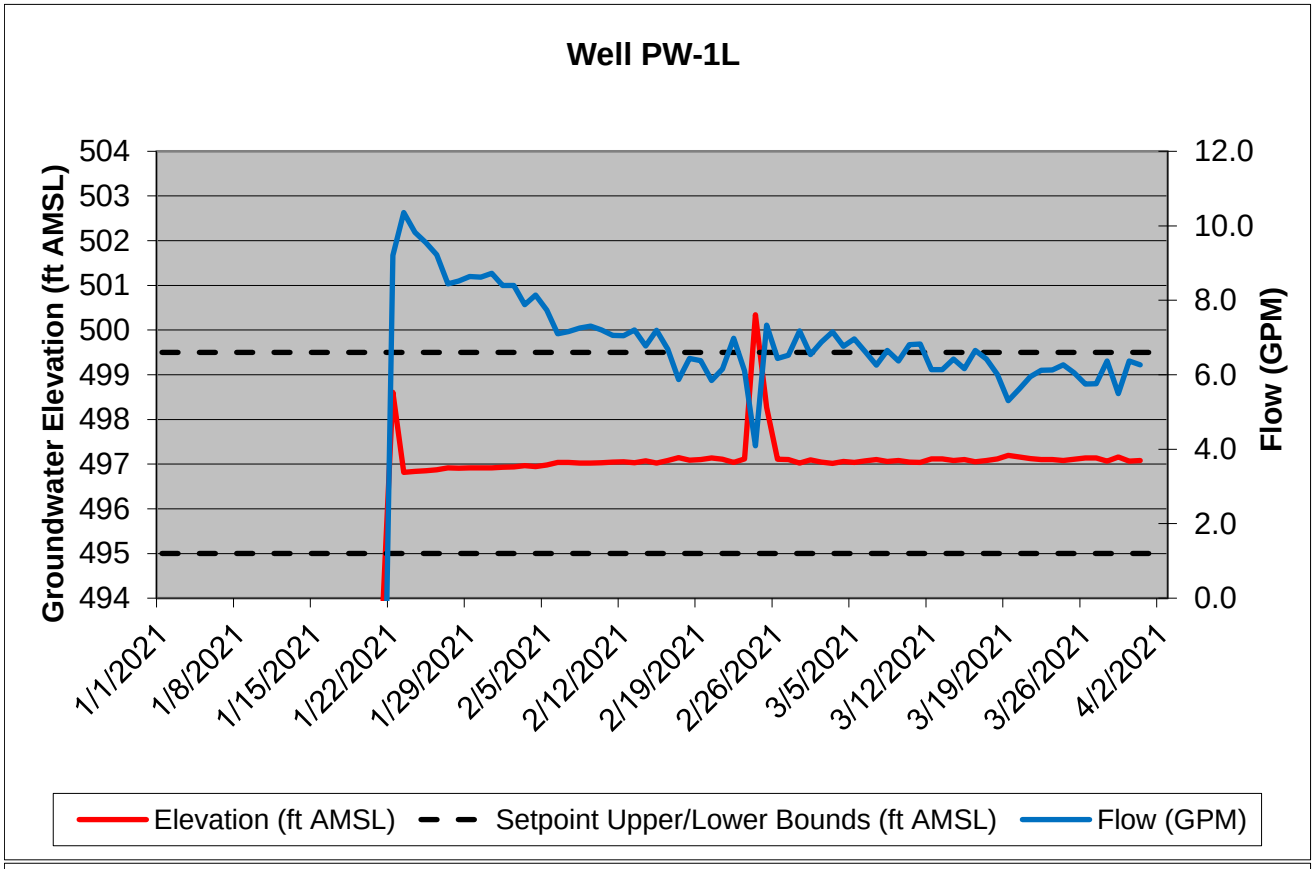
Attachment A
First Quarter 2021
Pumping Well Performance Graphs

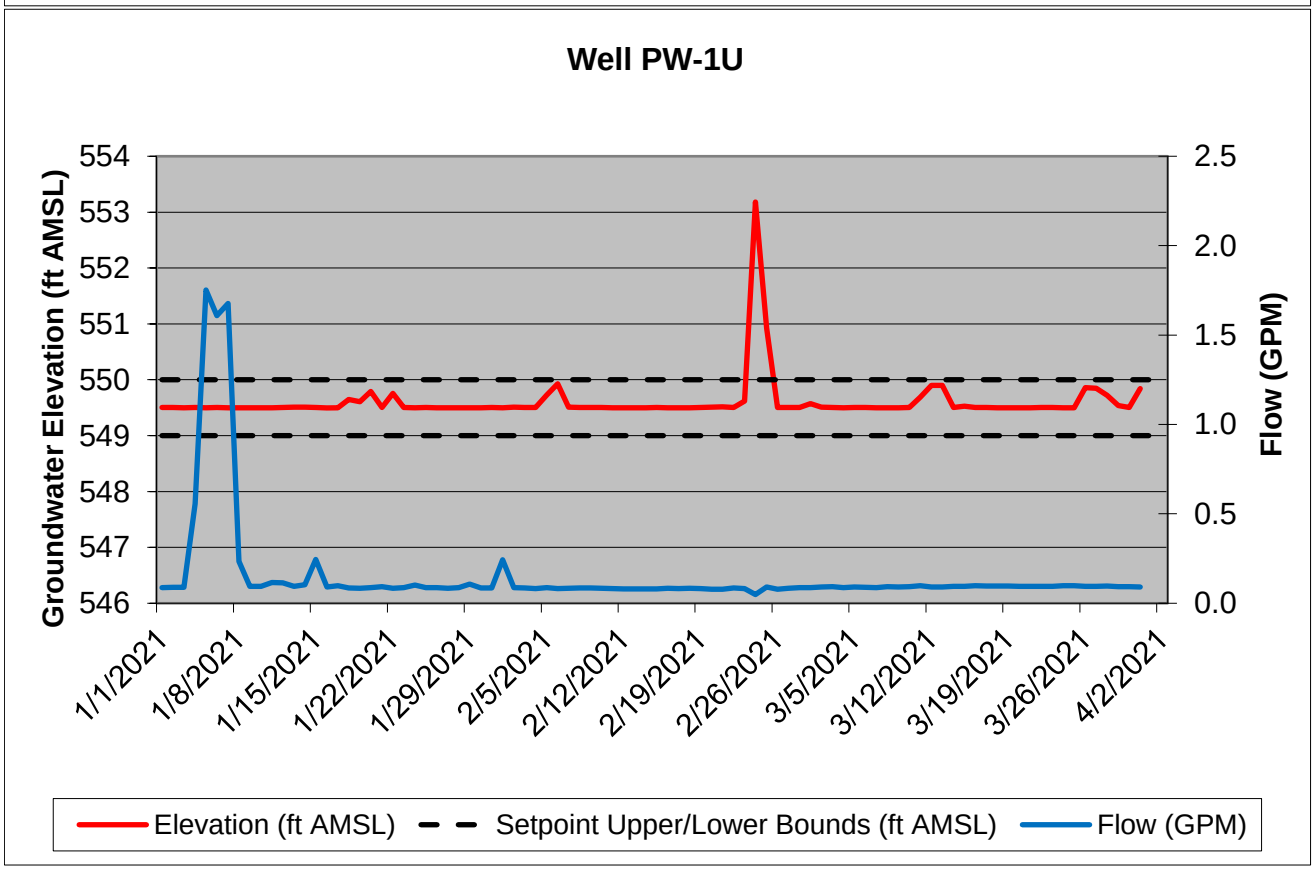
FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



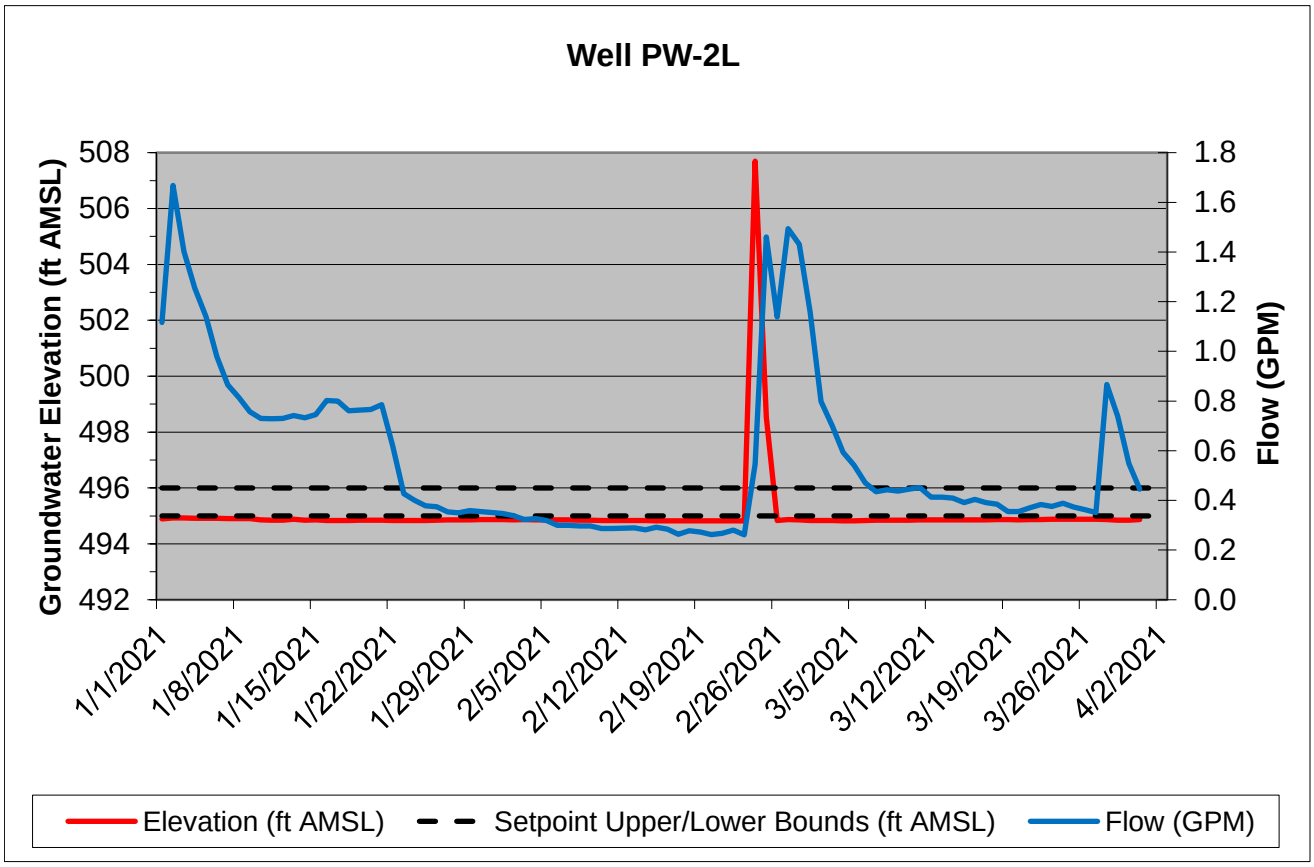


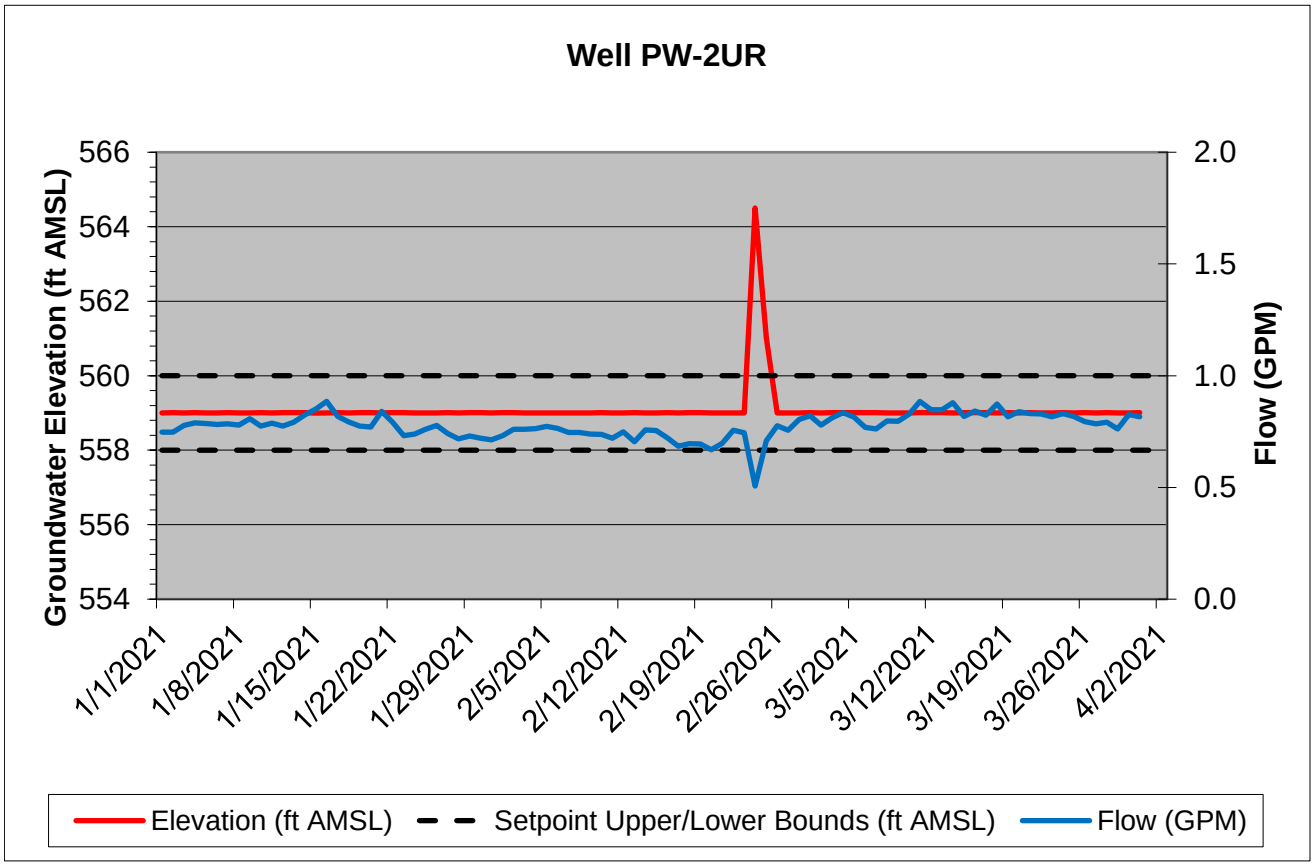
FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



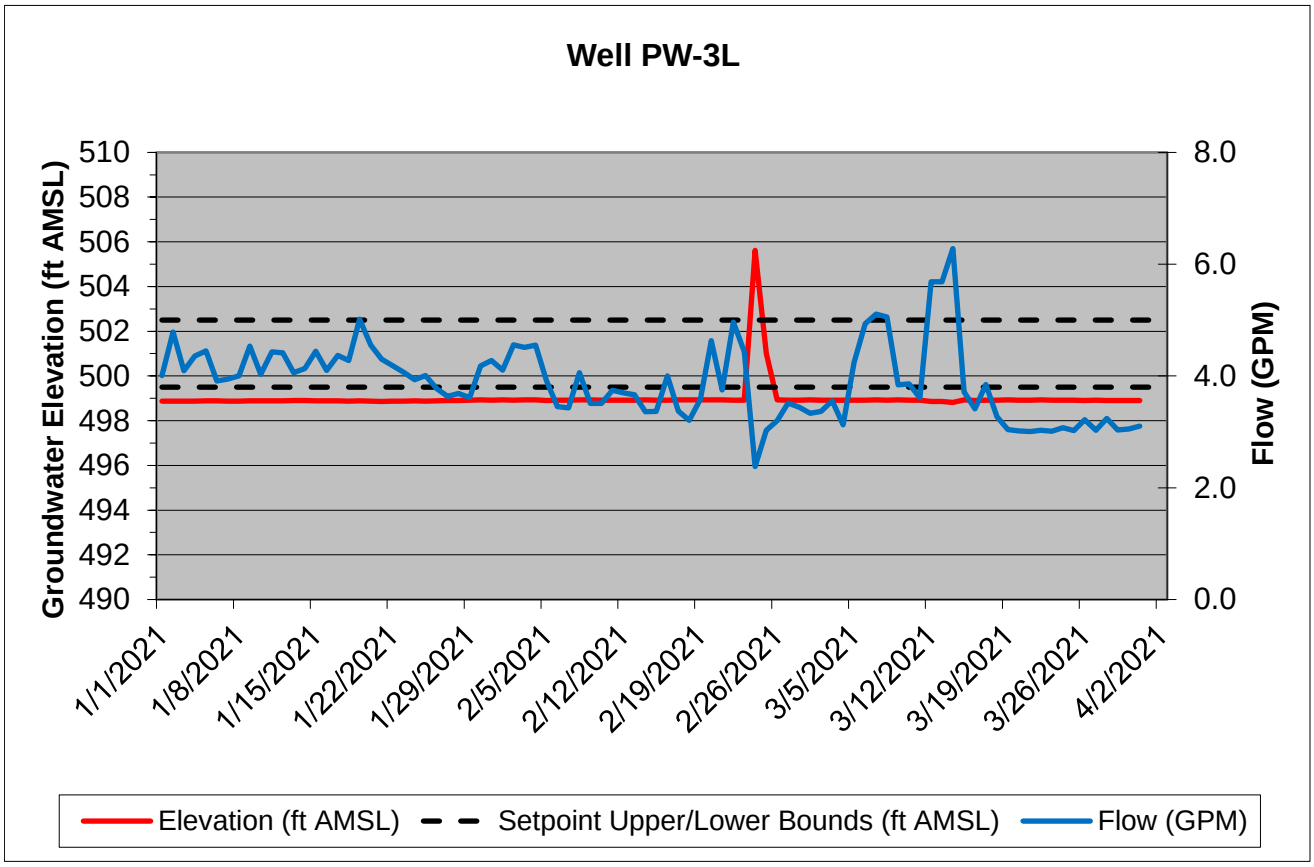


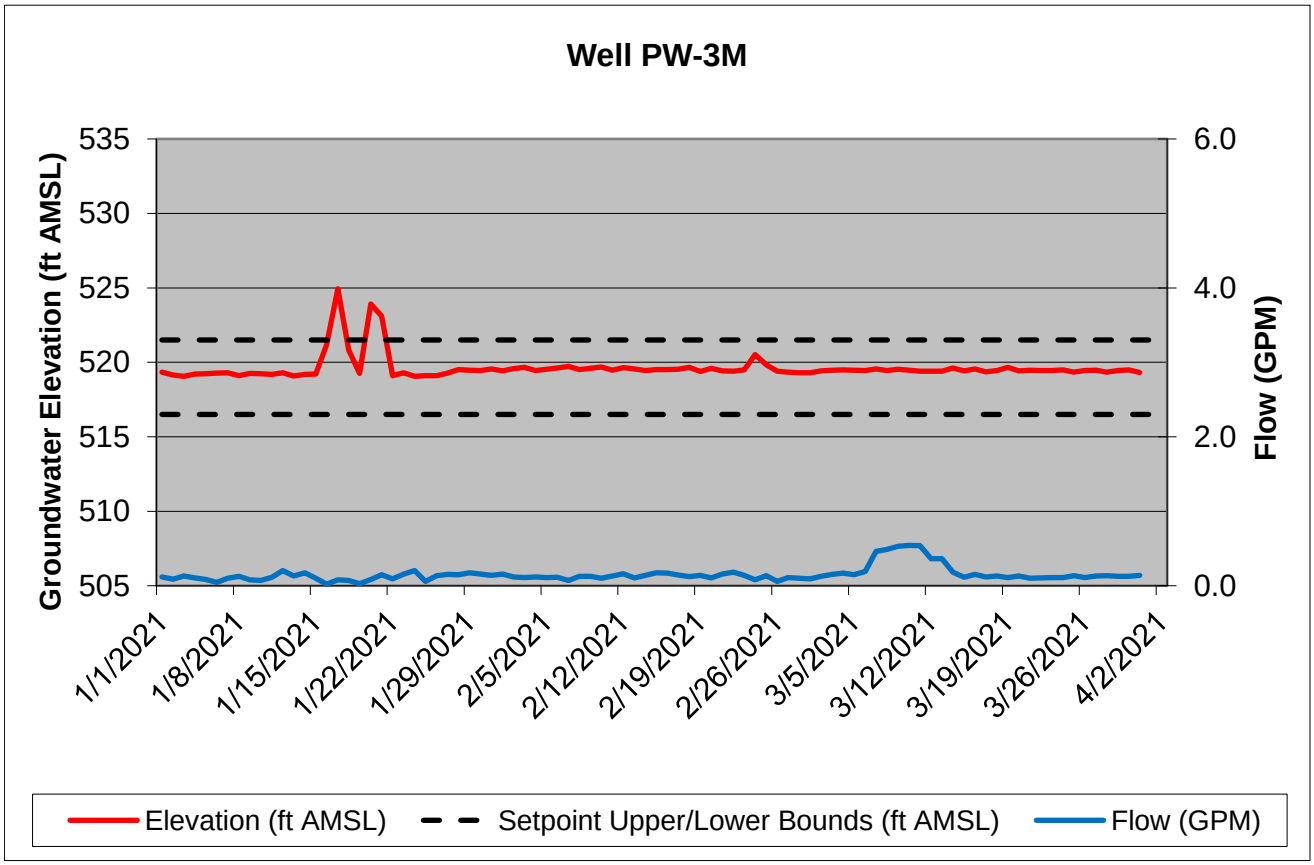
FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



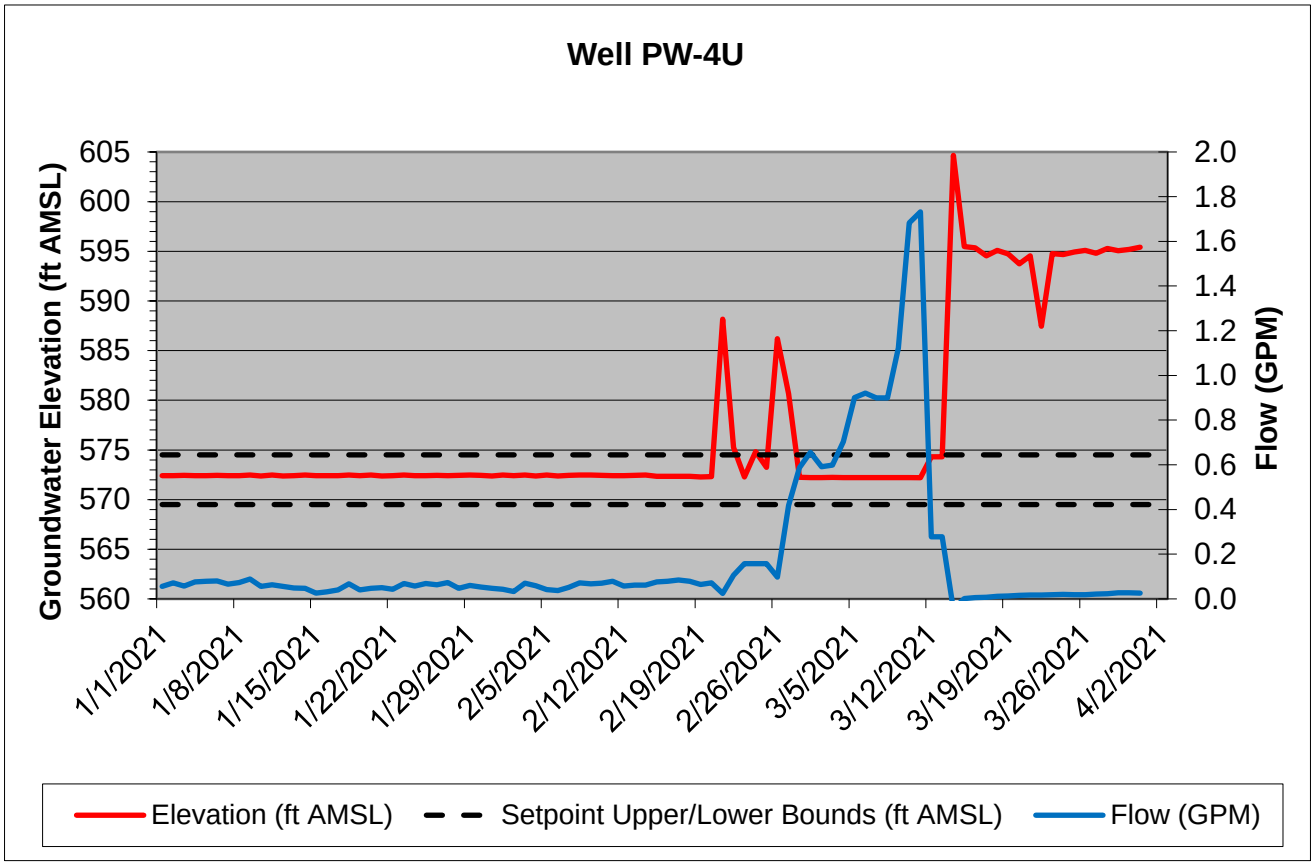


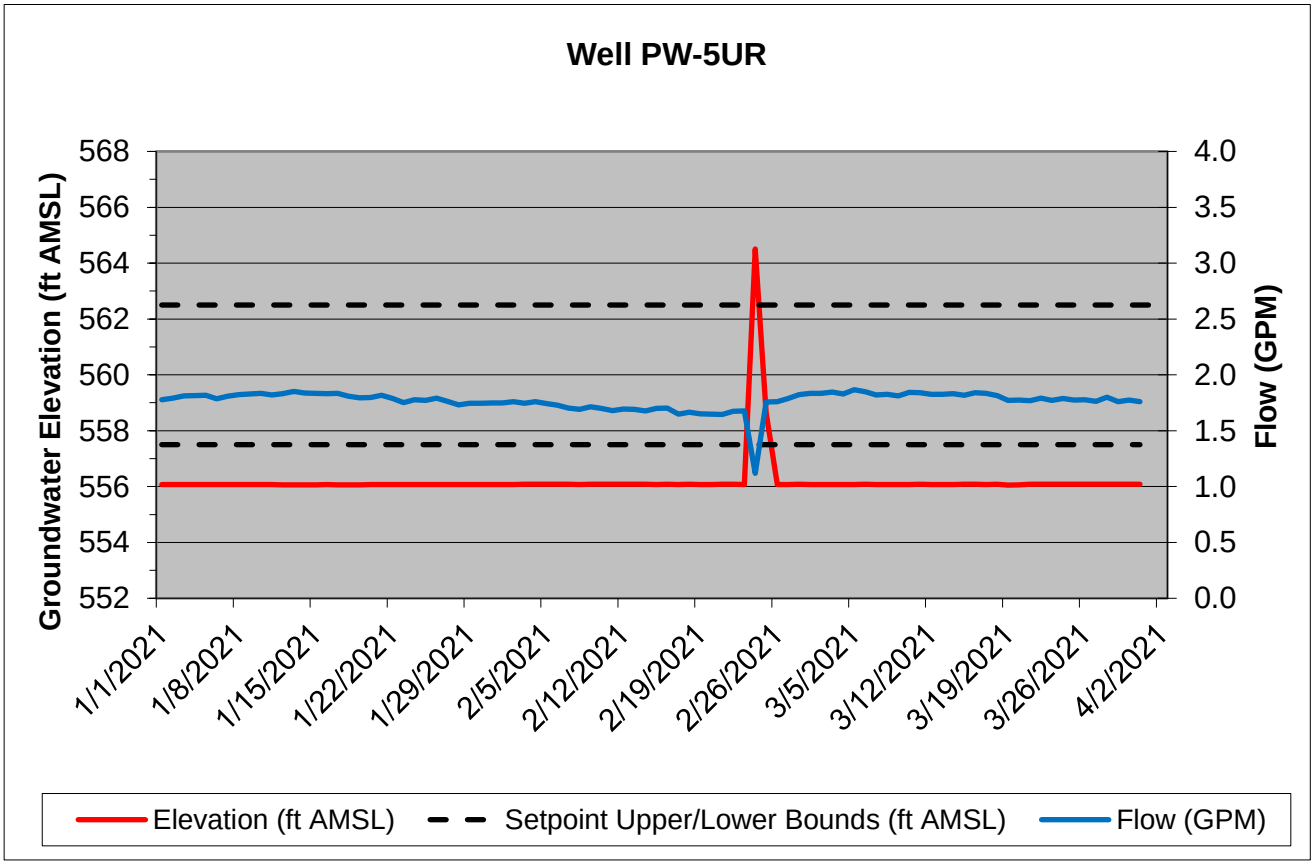
FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



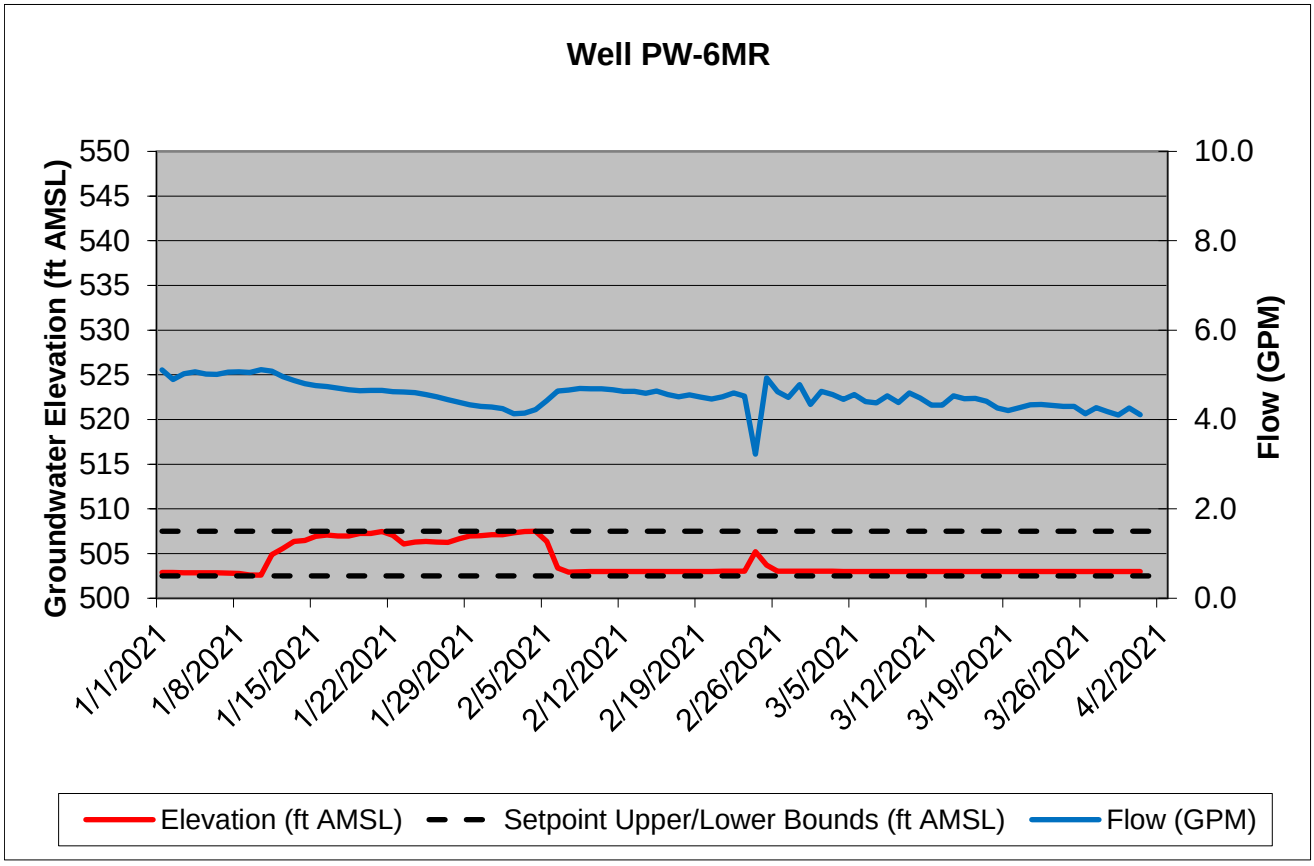


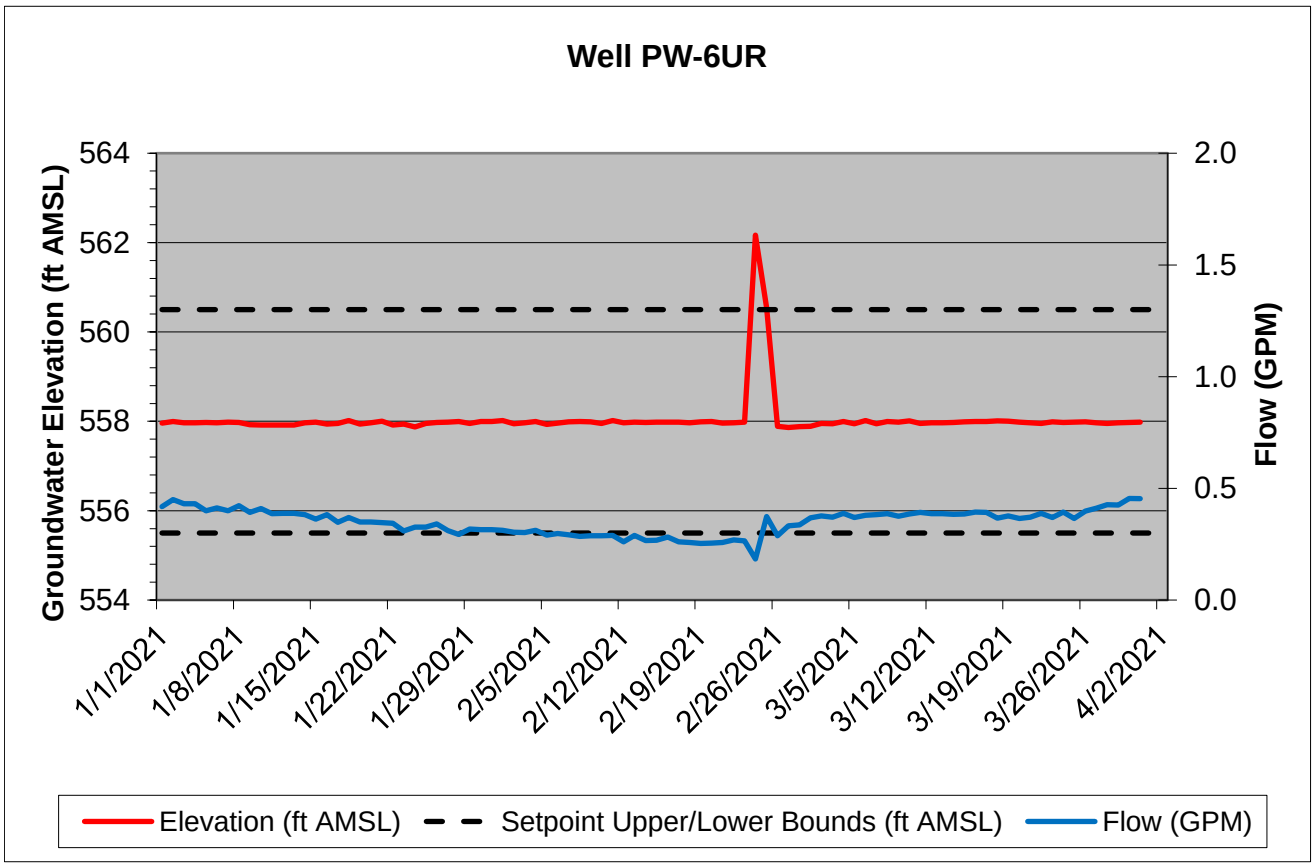
FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



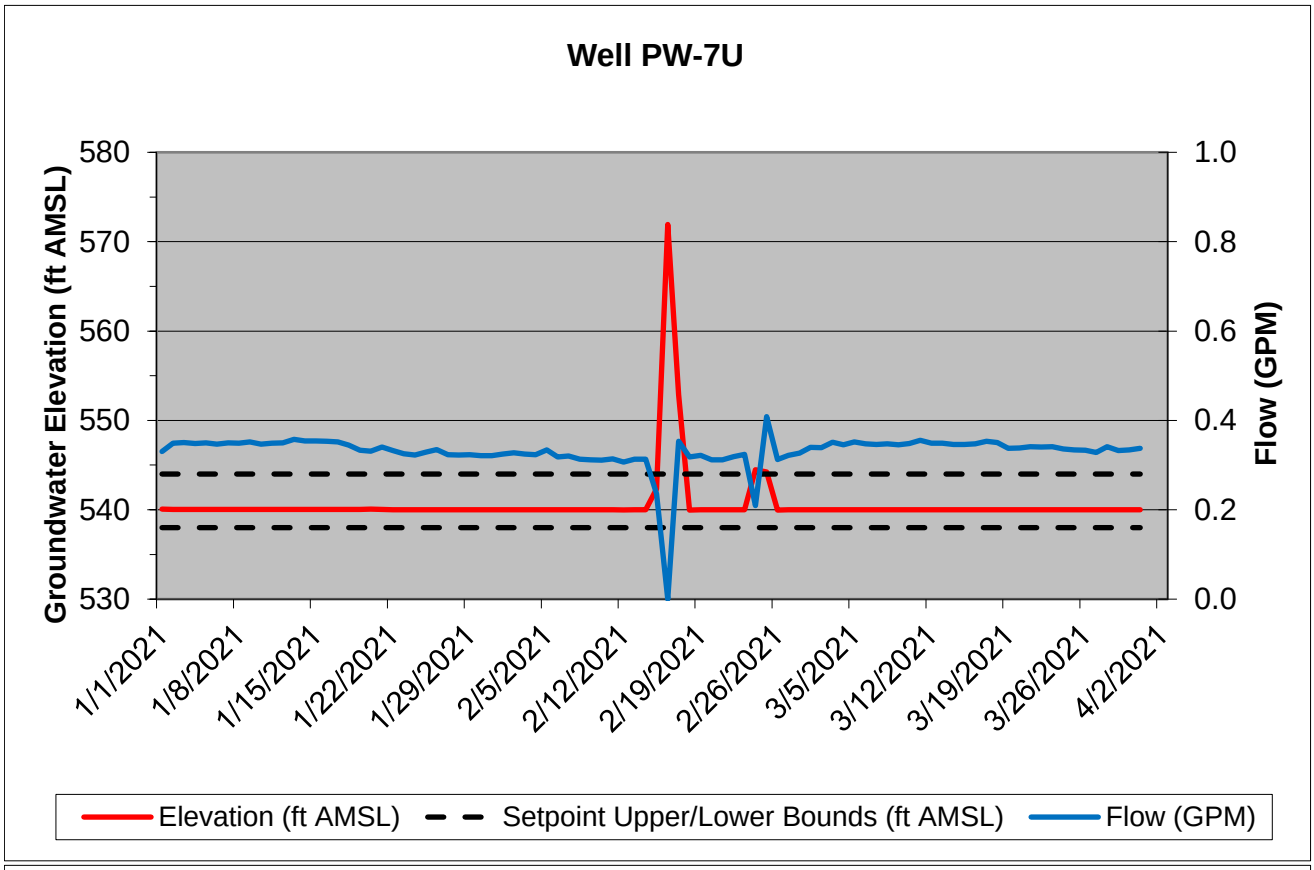


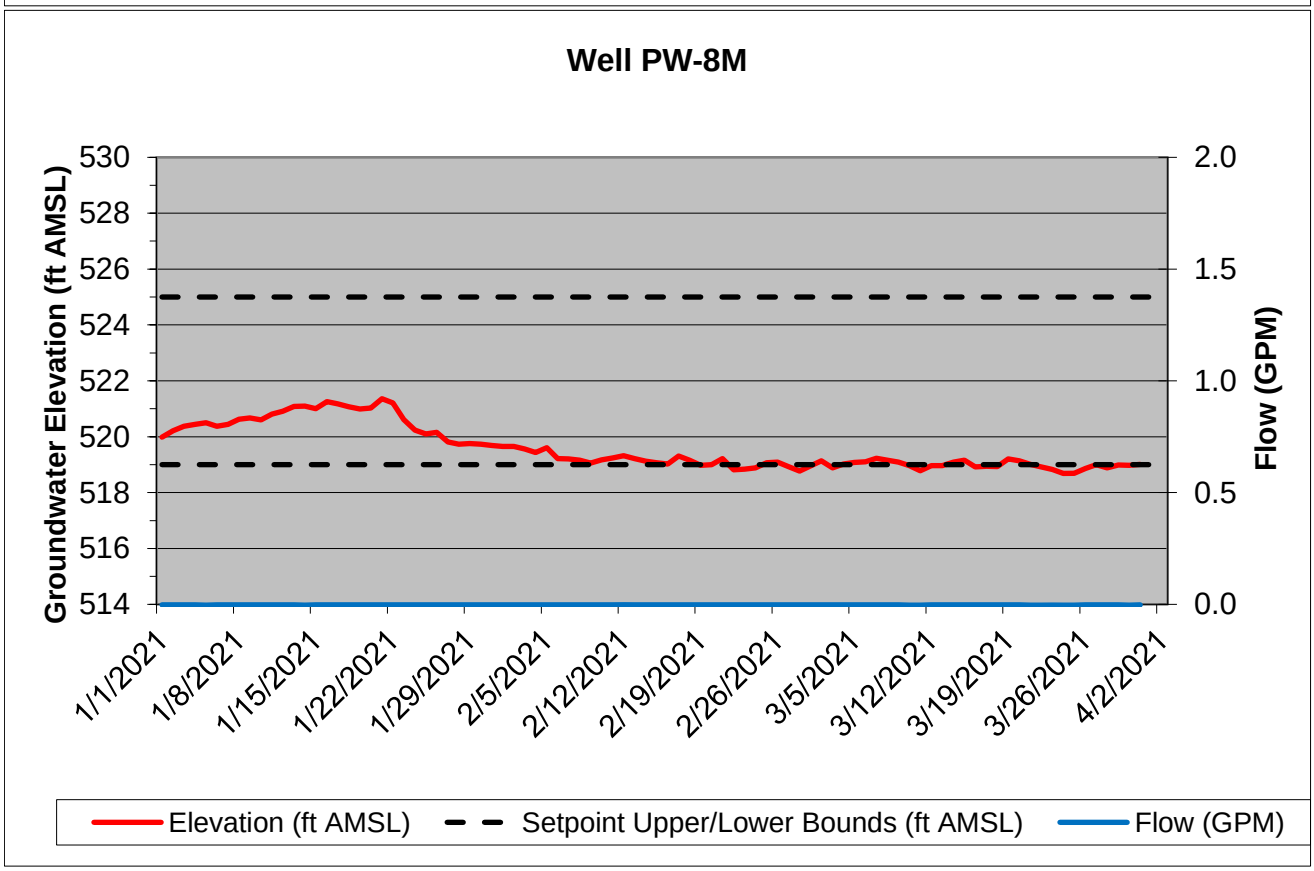
FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



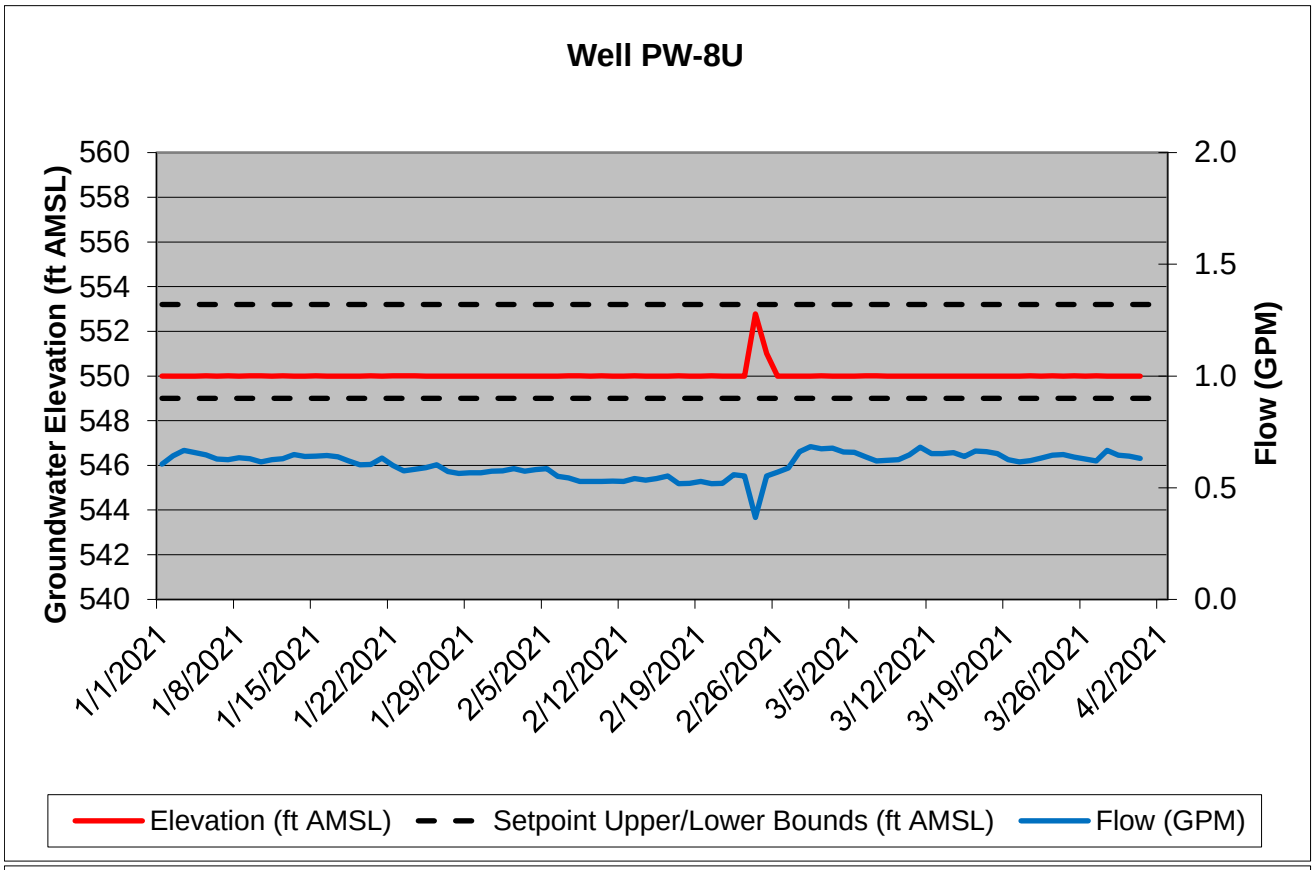


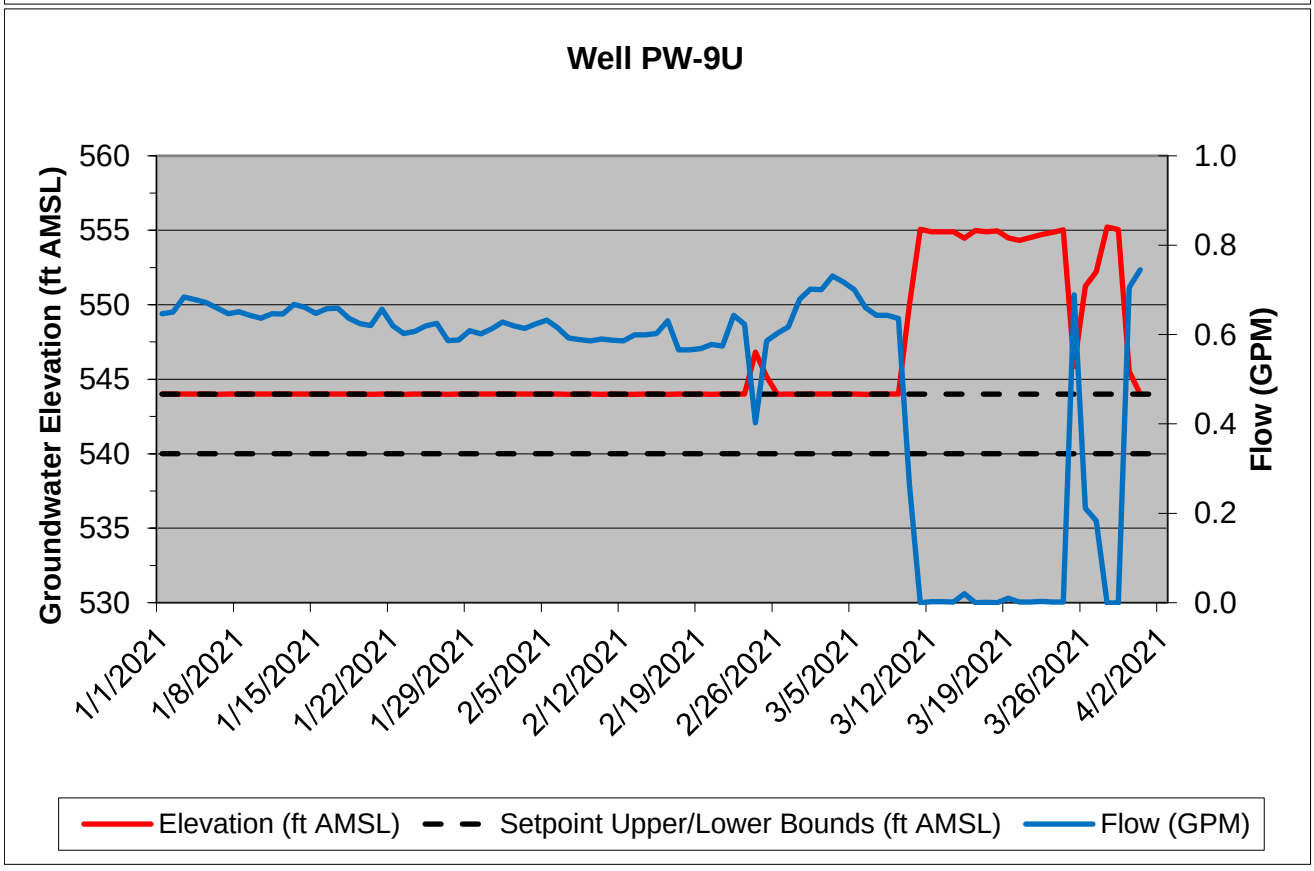
FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



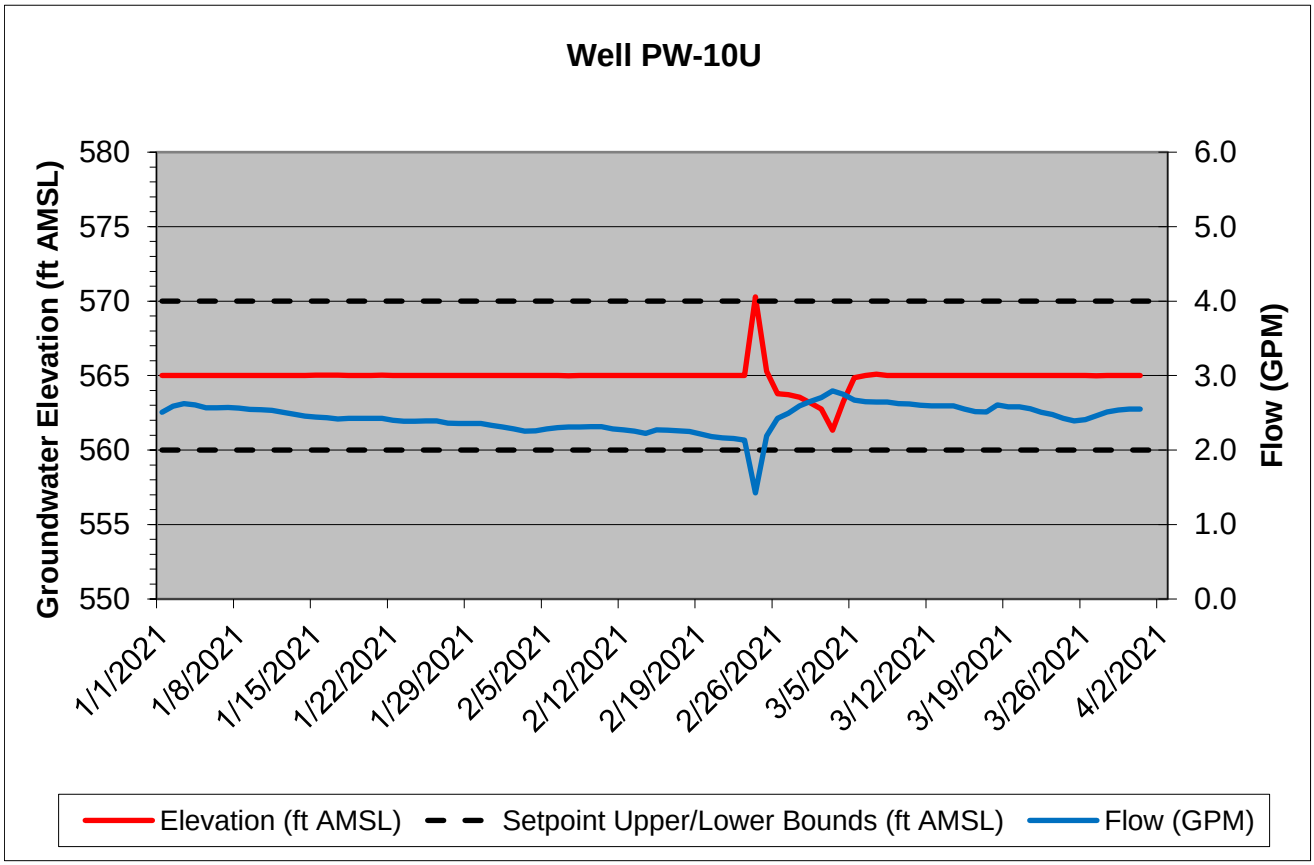


FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





FIRST QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



Glenn Springs Holdings, Inc.
A subsidiary of Occidental Petroleum

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

7601 Old Channel Trail
Montague, MI 49437

July 30, 2021

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 - Second Quarter 2021
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 April 1, 2021 through June 30, 2021. A total of 1.58 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. Six drums (approximately 300 pounds) of personal protective equipment (PPE) and one drum (approximately 500 pounds) of non-aqueous phase liquid (NAPL) were shipped for disposal this quarter. 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 and 3: Daily and weekly treatment system effluent monitoring data
- Attachment A: Purge well performance graphs indicating daily level and flow information

All wells were offline from April 26 through the end of the quarter (June 30) for an ongoing piping replacement project and APL Storage Tank cleaning. As the water levels in all wells were out of setpoint range resulting from the shutdown by June 1, water level elevations were not recorded in any of the pumping wells from June 1 through the end of the quarter.

The continuously recorded water levels for the flow zone 9 piezometer PMW-1M-09 for the second quarter 2021 are presented on Figure 10. These water levels were less than 526 feet above mean sea level (AMSL) from April 1 through May 11, indicating that the FZ-09 outcrop along the New York Power Authority (NYPA) access road was unsaturated during this period. The water level in this piezometer began rising following shutdown of

the pumping system on April 26 and exceeded 526 AMSL from May 12 through the end of the quarter. However, a groundwater sample collected from well ABP-7-09 near the gorge face on May 27, 2021 did not have any organic acids detected at concentrations above the laboratory's reporting limits.

Wells PW-2M and PW-4U were offline during the entire second quarter awaiting repairs. As such, the water levels in PW-2M and PW-4U exceeded setpoint range for the quarter. It is anticipated that these wells will be repaired and brought online in the third quarter of 2021 once the piping replacement project is complete. With the exception of these two wells, the pumping wells were operational and functioning as designed during the second quarter 2021 prior to the April 26 shutdown. 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. Due to the April 26 shutdown, the water levels in all wells eventually exceeded the setpoint ranges after April 26. Prior to the April 26 shutdown, the following minor operational and setpoint issues were investigated and resolved during the second quarter of 2021:

- The water level in APW-1 exceeded setpoint range from April 22 through April 24 for an unknown reason. The water level returned to within setpoint range on April 25.
- The water level in APW-2 exceeded setpoint range from April 23 through April 25 for an unknown reason. As a result of the April 26 shutdown, the water level did not return to within setpoint range during the quarter.

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
Project Manager
231-670-6809 Cell

JB/eew/10
Encl.

cc: G. May, NYSDEC
A. Zwack, NYSDOH
J. Robinson, NYSDOH
J. Pentilchuk, GHD
M. Popek, GHD

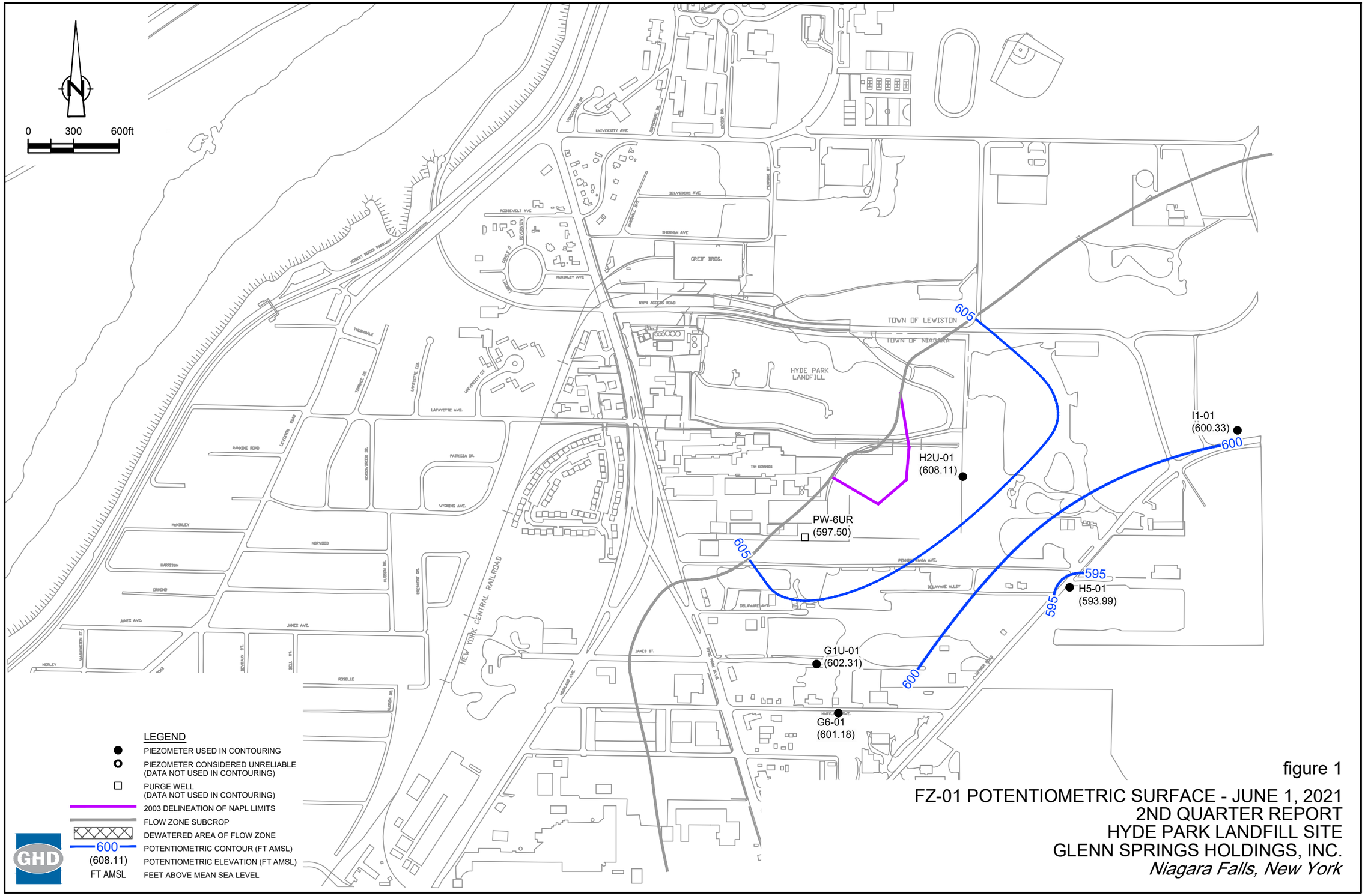


figure 1

FZ-01 POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA010)\01069-30-403-GHD-0000-LTR-EN-0101_WA-KOSA010.DWG Plot Date: JUL 21, 2021

0 300 600ft

J6-02 (594.95)

J2U-02 (594.53)

J5U-02 (594.94)

I1-02 (588.01)

PW-4U (595.00)

H2U-02 (600.96)

PW-5UR (594.10)

F4U-02 (586.61)

PW-6UR (597.50)

H5-02 (593.79)

G1-02 (592.1)

F2U-02 (575.29)

G6-02 (591.07)

595 595 590 590 600 585 580 580 585 590

TOWN OF LEWISTON

TOWN OF NIAGARA

HYDE PARK LANDFILL

NEW YORK CENTRAL RAILROAD

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 580 POTENTIOMETRIC CONTOUR (FT AMSL)
- (594.94) POTENTIOMETRIC ELEVATION (FT AMSL)
- FT AMSL FEET ABOVE MEAN SEA LEVEL

figure 2

FZ-02 POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA010)\01069-30-403-GHD-0000-LTR-EN-0102_WA-KOSA010.DWG Plot Date: JUL 21, 2021

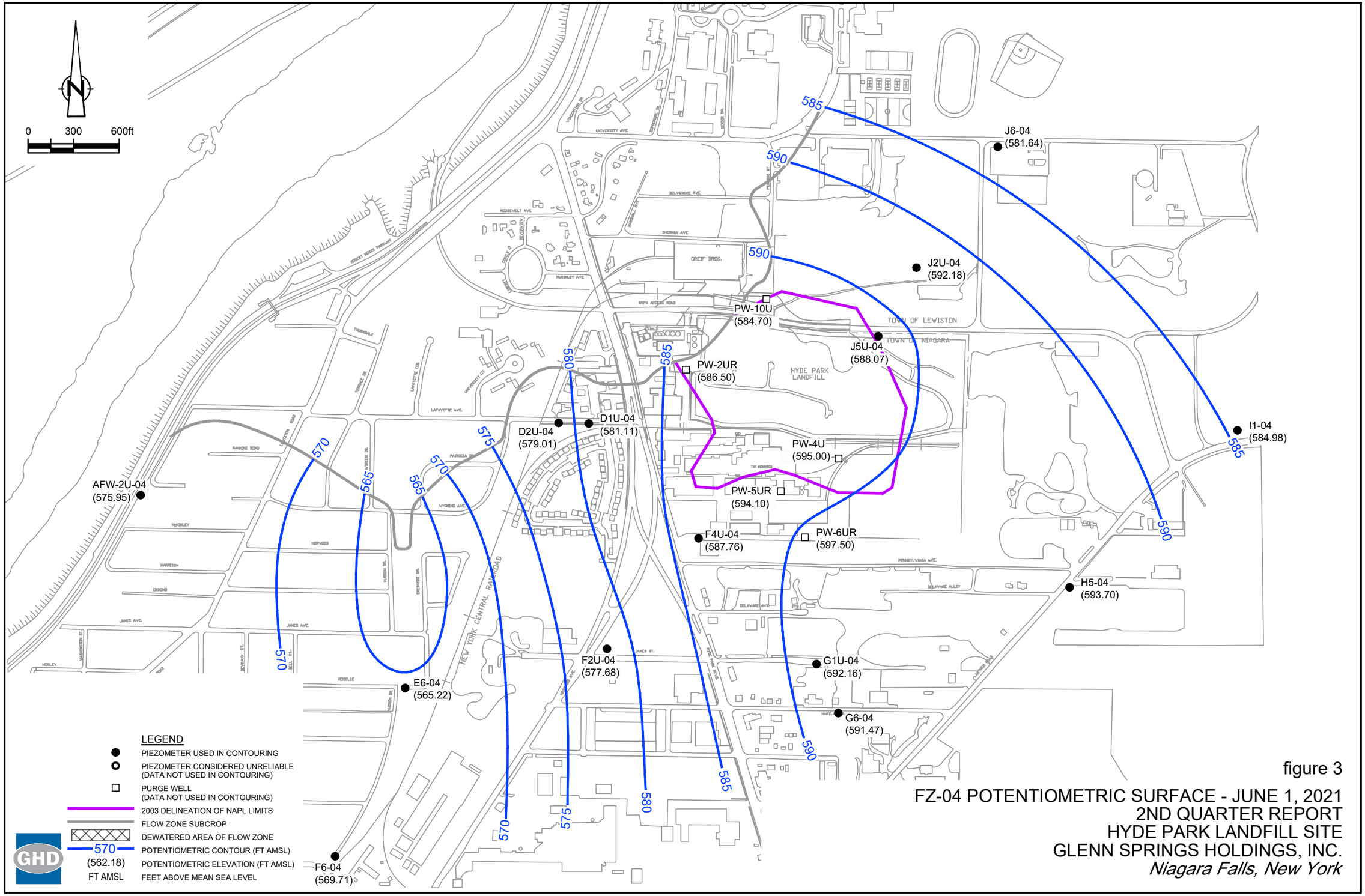


figure 3

FZ-04 POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA010)\01069-30-403-GHD-0000-LTR-EN-0103_WA-KOSA010.DWG Plot Date: JUL 21, 2021

0 300 600ft

AGW-1U-05 (585.14)
J6-05 (579.88)
J2U-05 (580.54)
PW-1U (572.40)
PW-10U (584.70)
J5U-05 (580.98)
PMW-1U-05 (581.72)
PW-2UR (586.50)
D2U-05 (580.56)
D1U-05 (580.79)
PW-3M (~556)
PW-4U (595.00)
PW-5UR (594.10)
I1-05 (553.09)
AFW-2U-05 (576.04)
H2M-05 (592.06)
F4U-05 (586.28)
PW-6UR (597.5)
H5-05 (592.23)
F2U-05 (578.02)
E6-05 (565.33)
G6-05 (591.18)
F6-05 (569.61)

HYDE PARK LANDFILL
TOWN OF LEWISTON
NEW YORK CENTRAL RAILROAD

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 570 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (562.06) (~556) — POTENTIOMETRIC ELEVATION (FT AMSL)
- 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
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

figure 4

FZ-05 POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA010)\01069-30-403-GHD-0000-LTR-EN-0104_WA-KOSA010.DWG Plot Date: JUL 21, 2021

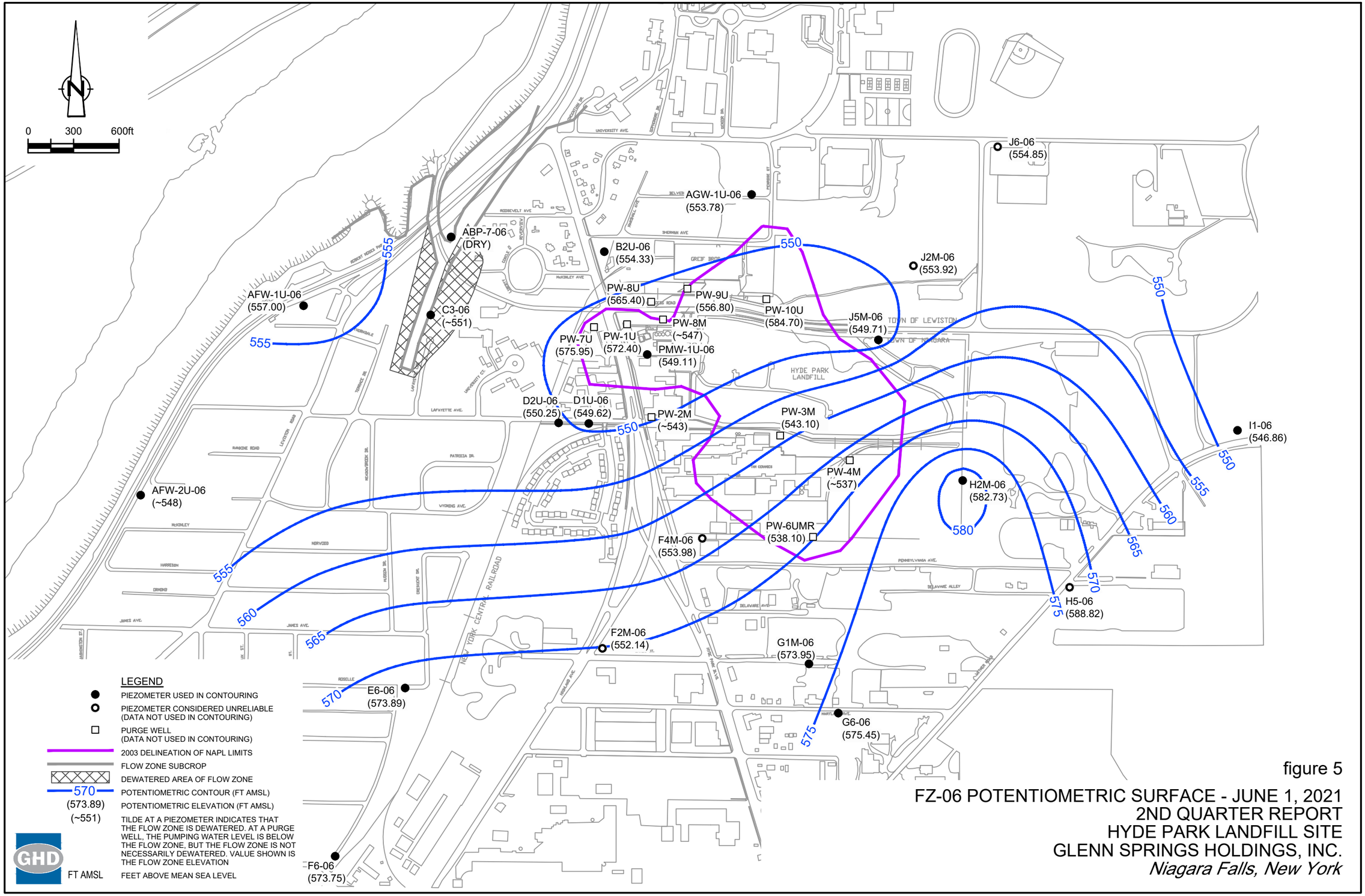


figure 5

FZ-06 POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA010)\01069-30-403-GHD-0000-LTR-EN-0105_WA-KOSA010.DWG Plot Date: JUL 22, 2021

0 300 600ft

ABP-1-07 (546.64)
APW-1 (541.50)
AGW-1M-07 (549.08)
J6-07 (547.62)
ABP-7-07 (533.94)
B2M-07 (537.20)
AFW-1M-07 (DRY)
C3-07 (546.30)
PW-8M (536.90)
PMW-1M-07 (532.01)
J5M-07 (549.20)
D2M-07 (537.21)
D1M-07 (537.75)
PW-2M (~523)
PW-3M (543.10)
I1-07 (547.10)
PW-4M (524.30)
AFW-2M-07 (~528)
F4M-07 (540.28)
PW-6UMR (538.10)
H5-07 (555.94)
F2M-07 (536.58)
E6-07 (555.87)
G1M-07 (584.51)
G6-07 (584.27)
F6-07 (567.31)

540 550 560 570 580

TOWN OF LEWISTON
HYDE PARK LANDFILL
NEW YORK CENTRAL RAILROAD

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 565 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (555.87) — POTENTIOMETRIC ELEVATION (FT AMSL)
- (~528) — 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
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

figure 6

FZ-07 POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA010)\01069-30-403-GHD-0000-LTR-EN-0106_WA-KOSA010.DWG Plot Date: JUL 22, 2021

0 300 600ft

ABP-1-09 (534.51)
APW-1 (541.50)
APW-2 (~526)
ABP-7-09 (533.84)
AGW-1M-09 (549.17)
J6-09 (564.82)
B2M-09 (537.23)
J2M-09 (547.75)
PW-8M (536.90)
AFW-1M-09 (524.91)
C3-09 (545.48)
PW-1L (544.00)
PMW-1M-09 (537.81)
J5M-09 (549.03)
D2M-09 (537.84)
D1M-09 (537.77)
PW-2M (514.30)
PW-3M (543.10)
PW-4M (524.30)
I1-09 (563.36)
AFW-2M-09 (521.03)
H2M-09 (553.66)
F4M-09 (537.40)
PW-6UMR (538.10)
H5-09 (546.64)
F2M-09 (537.42)
G1M-09 (581.37)
E6-09 (552.83)
G6-09 (585.07)
F6-09 (572.63)

530 540 550 560 570 580

GREIF BROS.
TOWN OF LEWISTON
HYDE PARK LANDFILL
NEW YORK CENTRAL RAILROAD

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 550 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (552.83) (~526) — POTENTIOMETRIC ELEVATION (FT AMSL)
- 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
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

figure 7

FZ-09 POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

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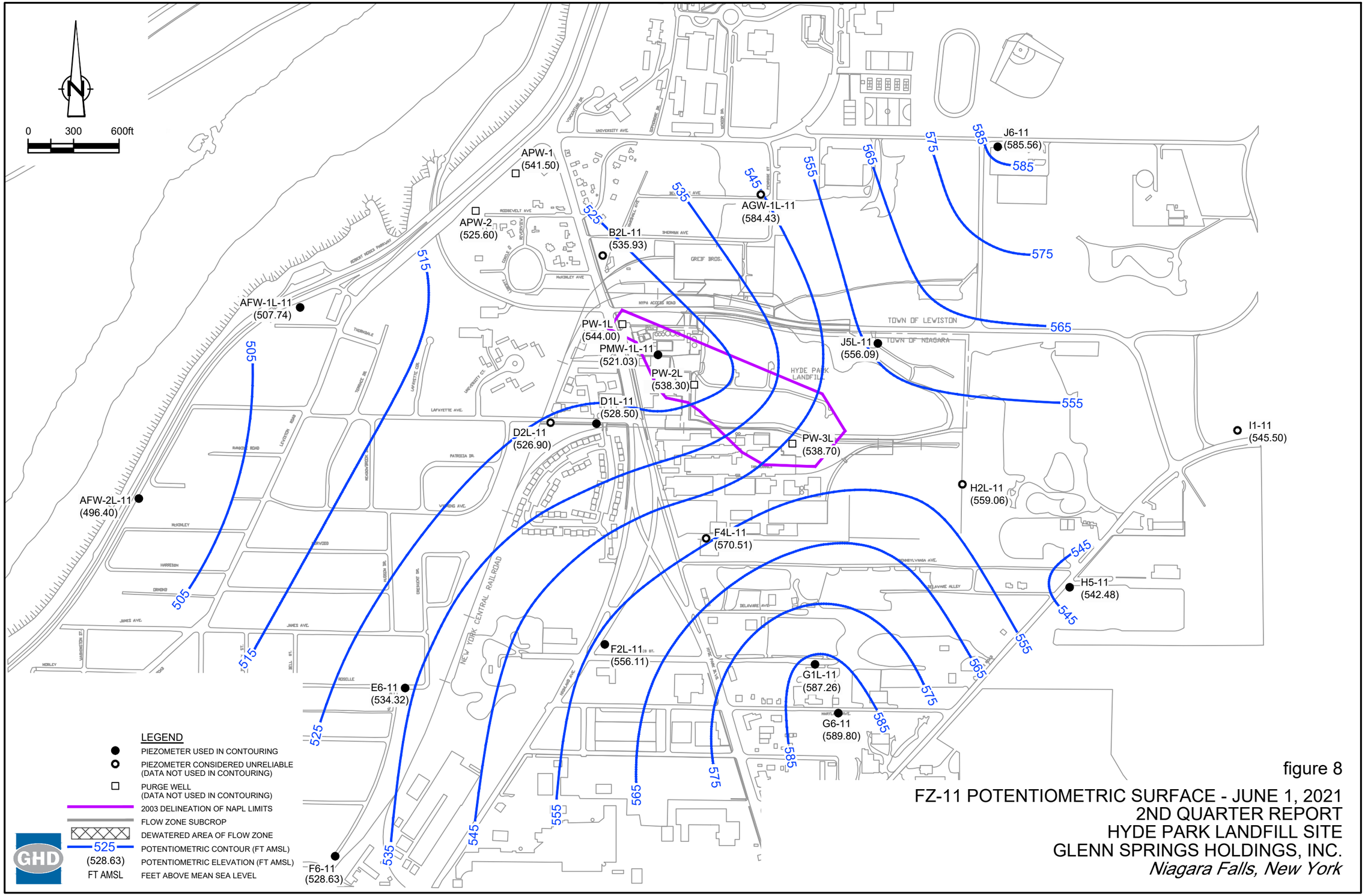


figure 8

FZ-11 POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA010)\01069-30-403-GHD-0000-LTR-EN-0108_WA-KOSA010.DWG Plot Date: JUL 21, 2021

0 300 600ft

CMW-1OB (571.32)
CMW-2OB (586.61)
CMW-3OB (573.53)
CMW-4OB (574.03)
CMW-5OB (579.05)
CMW-6OB (571.70)
CMW-9OB (DRY)
CMW-11OB (568.93)
CMW-7OB (DRY)
CMW-8OB (DRY)
OMW-6 (585.63)
OMW-5R (586.68)
OMW-7 (585.85)
OMW-8R2 (586.86)
OMW-10R (587.34)
OMW-9 (587.61)
OMW-12R (592.23)
OMW-11R (591.72)
OMW-13R (592.06)
OMW-14R (593.59)
OMW-15 (601.77)
OMW-16R (602.12)
OMW-4R (589.86)
OMW-3 (588.86)
OMW-1 (598.55)
OMW-2 (601.11)
WW-C (sp. 583.00)
WW-D (sp. 580.00)
WW-C (sp. 583.00)

575 580 585 590 595 600 570

TOWN OF LEWISTON
HYDE PARK LANDFILL
NEW YORK CENTRAL RAILROAD

LEGEND

- 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.
- EXISTING BARRIER COLLECTION SYSTEM
- OVERBURDEN BARRIER COLLECTION SYSTEM
- DEWATERED AREA OF FLOW ZONE
- 600 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (569.96) POTENTIOMETRIC ELEVATION (FT AMSL)
- (sp. 583.00) SETPOINT LEVEL
- FT AMSL FEET ABOVE MEAN SEA LEVEL

figure 9

OVERBURDEN POTENTIOMETRIC SURFACE - JUNE 1, 2021
2ND QUARTER REPORT
HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
Niagara Falls, New York

N:\CA\Waterloo\Legacy\CAD\drawings\01000s\01069\01069-corr\01069-30-403(KOSA010)\01069-30-403-GHD-0000-LTR-EN-0109_WA-KOSA010.DWG Plot Date: JUL 21, 2021

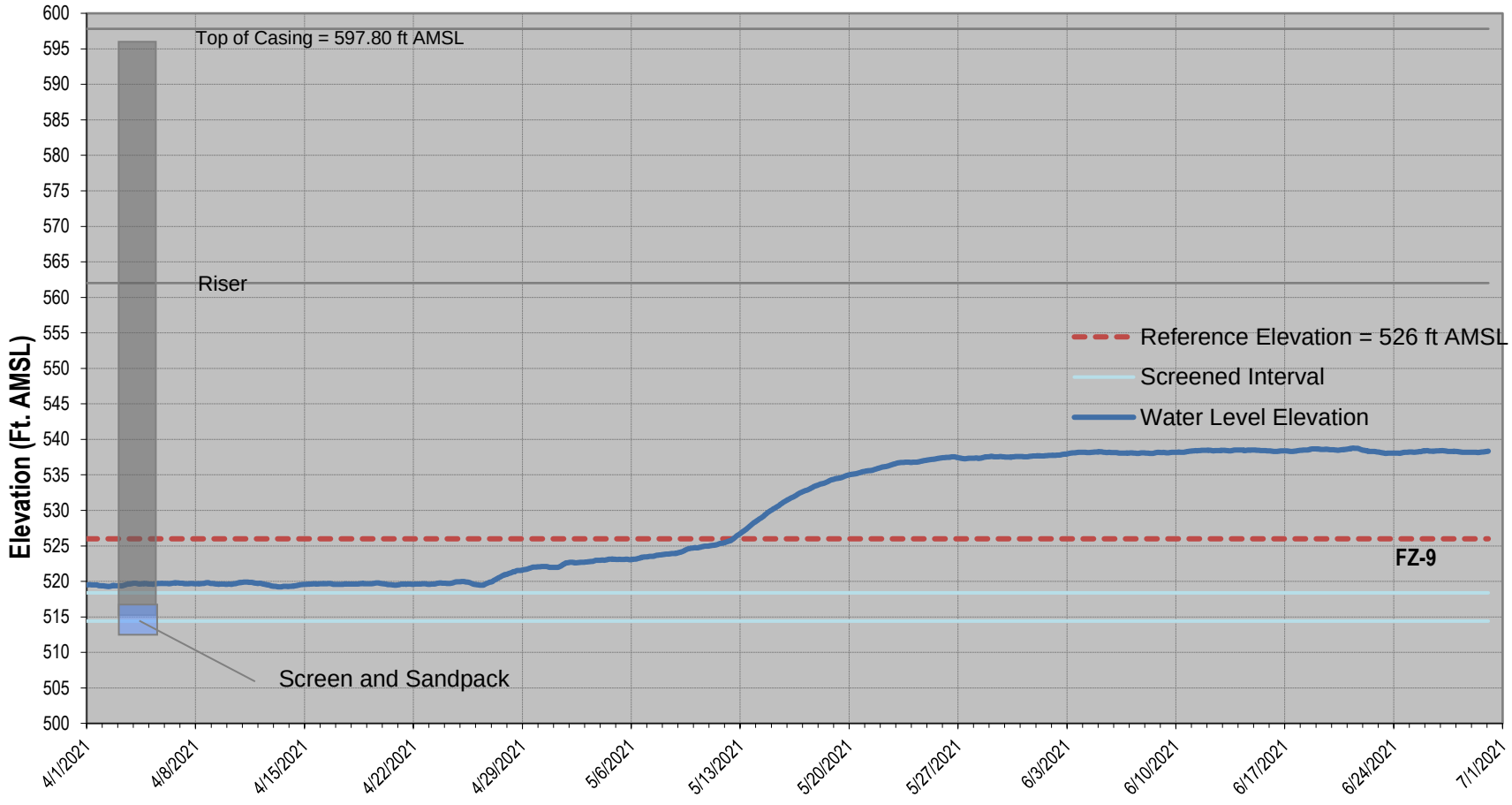


figure 10

PMW-1M-09 2nd Quarter 2021 - Hourly Water Level Elevation
2nd 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
Second Quarter - 2021
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Overburden			
CMW-2OB	590.79	4.18	586.61
CMW-3OB	582.13	8.60	573.53
CMW-4OB	574.28	0.25	574.03
CMW-5OB	583.43	4.38	579.05
CMW-6OB	571.89	0.19	571.70
CMW-7OB	611.00	Dry	-
CMW-8OB	616.11	Dry	-
CMW-9OB	571.76	Dry	-
CMW-1OB	576.80	5.48	571.32
CMW-11OB	572.85	3.92	568.93
CMW-12OB	594.74	10.47	584.27
MH20	605.87	4.64	601.23
MH21	599.77	6.11	593.66
MH22	593.37	Dry	-
MH23	587.05	10.97	576.08
MH24	582.57	4.29	578.28
MH25	583.82	3.93	579.89
MH26	584.48	5.48	579.00
MH27	586.12	8.76	577.36
MH28	585.23	8.68	576.55
MH29	604.58	10.75	593.83
MH30	599.49	10.08	589.41
MH31	590.10	9.65	580.45
MH32	592.01	9.65	582.36
MH33	592.51	8.70	583.81
MH34	598.34	7.12	591.22
MH35	605.69	6.55	599.14
MH35A	605.69	7.19	598.50
OMW-1	605.28	6.73	598.55
OMW-2	605.99	4.88	601.11
OMW-3	598.63	9.77	588.86
OMW-4R	601.17	11.31	589.86
OMW-5R	591.31	4.63	586.68
OMW-6	587.62	1.99	585.63
OMW-7	592.74	6.89	585.85
OMW-8R2	594.67	7.81	586.86
OMW-9	595.27	7.66	587.61
OMW-10R	595.13	7.79	587.34
OMW-11R	597.52	5.80	591.72
OMW-12R	596.71	4.48	592.23
OMW-13R	601.50	9.44	592.06
OMW-14R	599.64	6.05	593.59
OMW-15	607.48	5.71	601.77
OMW-16R	607.62	5.50	602.12
SC-2	625.61	23.02	602.59
SC-3	638.72	40.64	598.08
SC-4	639.35	39.28	600.07
SC-5	634.07	31.63	602.44
SC-6	631.15	23.33	607.82

Table 1

Water Level Elevation Summary
Second Quarter - 2021
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Shallow Bedrock			
CMW-1SH	576.11	12.18	563.93
CMW-2SH	590.51	16.54	573.97
CMW-3SH	581.91	27.89	554.02
CMW-4SH	574.16	7.18	566.98
CMW-5SH	583.36	7.86	575.50
CMW-6SH	572.05	9.95	562.10
CMW-7SH	610.58	12.57	598.01
CMW-8SH	615.95	8.91	607.04
CMW-9SH	571.96	12.14	559.82
CMW-11SH	573.21	8.18	565.03
CMW-12SH	597.02	21.86	575.16
Flow Zone 1			
G1U-01	617.08	14.77	602.31
G6-01	609.24	8.06	601.18
H2U-01	620.92	12.81	608.11
H5-01	617.61	23.62	593.99
I1-01	625.58	25.25	600.33
Flow Zone 2			
F2U-02	599.89	24.60	575.29
F4U-02	602.32	15.71	586.61
G1-02	616.86	24.76	592.10
G6-02	608.65	17.58	591.07
H2U-02	620.88	19.92	600.96
H5-02	617.47	23.68	593.79
I1-02	625.47	37.46	588.01
J2U-02	609.66	15.13	594.53
J5U-02	606.21	11.27	594.94
J6-02	609.23	14.28	594.95
Flow Zone 4			
AFW-2U-04	593.48	17.53	575.95
D1U-04	593.77	12.66	581.11
D2U-04	590.65	11.64	579.01
E6-04	578.23	13.01	565.22
F2U-04	599.76	22.08	577.68
F4U-04	602.19	15.71	586.61
F6-04	588.06	18.35	569.71
G1U-04	616.96	24.80	592.16
G6-04	609.15	17.68	591.47
H5-04	617.40	23.70	593.70
I1-04	625.30	40.32	584.98
J2U-04	609.42	17.24	592.18
J5U-04	606.05	17.98	588.07
J6-04	609.12	27.48	581.64

Table 1

Water Level Elevation Summary
Second Quarter - 2021
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	17.29	576.04
AGW-1U-05	591.80	6.66	585.14
D1U-05	593.51	12.72	580.79
D2U-05	590.56	10.00	580.56
E6-05	578.04	12.71	565.33
F2U-05	599.64	21.62	578.02
F4U-05	602.06	15.78	586.28
F6-05	587.85	18.24	569.61
G6-05	609.13	17.95	591.18
H2M-05	621.59	29.53	592.06
H5-05	617.31	25.08	592.23
I1-05	625.25	72.16	553.09
J2U-05	609.30	28.76	580.54
J5U-05	605.87	24.89	580.98
J6-05	609.02	29.14	579.88
PMW-1U-05	598.00	16.28	581.72
Flow Zone 6			
ABP-7-06	575.78	Dry	-
AFW-1U-06	571.83	14.83	557.00
AFW-2U-06	593.22	48.09	545.13
AGW-1U-06	591.66	37.88	553.78
B2U-06	589.29	34.96	554.33
C3-06	585.78	37.42	548.36
D1U-06	593.25	43.63	549.62
D2U-06	590.38	40.13	550.25
E6-06	577.99	4.10	573.89
F2M-06	599.06	46.92	552.14
F4M-06	602.05	48.07	553.98
F6-06	587.84	14.09	573.75
G1M-06	616.75	42.80	573.95
G6-06	609.09	33.64	575.45
H2M-06	621.42	38.69	582.73
H5-06	617.17	28.35	588.82
I1-06	625.15	78.29	546.86
J2M-06	608.94	55.02	553.92
J5M-06	606.22	56.51	549.71
J6-06	608.93	54.08	554.85
PMW-1U-06	597.92	48.81	549.11

Table 1

Water Level Elevation Summary
Second Quarter - 2021
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	28.56	546.64
ABP-7-07	575.73	41.79	533.94
AFW-1M-07	571.41	Dry	-
AFW-2M-07	593.44	66.79	526.65
AGW-1M-07	592.91	43.83	549.08
B2M-07	589.52	52.32	537.20
C3-07	585.62	39.32	546.30
D1M-07	594.15	56.40	537.75
D2M-07	590.77	53.56	537.21
E6-07	577.91	22.04	555.87
F2M-07	598.91	62.33	536.58
F4M-07	601.91	61.63	540.28
F6-07	587.68	20.37	567.31
G1M-07	616.68	32.17	584.51
G6-07	609.06	24.79	584.27
H5-07	617.05	61.11	555.94
I1-07	625.14	78.04	547.10
J5M-07	606.07	56.87	549.20
J6-07	608.85	61.23	547.62
PMW-1M-07	598.50	66.49	532.01
Flow Zone 9			
ABP-1-09	575.19	40.68	534.51
ABP-7-09	575.67	41.83	533.84
AFW-1M-09	571.12	46.21	524.91
AFW-2M-09	593.32	72.29	521.03
AGW-1M-09	592.75	43.58	549.17
B2M-09	589.34	52.11	537.23
C3-09	585.00	39.52	545.48
D1M-09	594.02	56.25	537.77
D2M-09	590.66	52.82	537.84
E6-09	577.82	24.99	552.83
F2M-09	598.71	61.29	537.42
F4M-09	601.79	64.39	537.40
F6-09	587.53	14.90	572.63
G1M-09	616.58	35.21	581.37
G6-09	608.98	23.91	585.07
H2M-09	621.32	67.66	553.66
H5-09	616.93	70.29	546.64
I1-09	624.91	61.55	563.36
J2M-09	608.77	61.02	547.75
J5M-09	605.82	56.79	549.03
J6-09	608.76	43.94	564.82
PMW-1M-09	598.34	60.53	537.81

Table 1

Water Level Elevation Summary
Second Quarter - 2021
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	64.36	507.74
AFW-2L-11	593.43	97.03	496.40
AGW-1L-11	592.71	8.28	584.43
B2L-11	589.65	53.72	535.93
D1L-11	593.80	65.30	528.50
D2L-11	590.21	63.31	526.90
E6-11	577.72	43.40	534.32
F2L-11	598.94	42.83	556.11
F4L-11	602.22	31.71	570.51
F6-11	587.40	58.77	528.63
G1L-11	616.84	29.58	587.26
G6-11	608.89	19.09	589.80
H2L-11	620.73	61.67	559.06
H5-11	616.81	74.33	542.48
I1-11	624.75	79.25	545.50
J5L-11	607.20	51.11	556.09
J6-11	608.68	23.12	585.56
PMW-1L-11	598.84	77.81	521.03
Purge Wells			
APW-1	564.98	23.48	541.50
APW-2	569.89	44.29	525.60
PW-1L	593.16	49.16	544.00
PW-1U	593.50	21.10	572.40
PW-2L	597.29	58.99	538.30
PW-2M	596.61	82.31	514.30
PW-2UR	594.75	8.25	586.50
PW-3L	599.05	60.35	538.70
PW-3M	597.79	54.69	543.10
PW-4M	606.93	82.63	524.30
PW-4U	604.85	9.85	595.00
PW-5UR	601.31	7.21	594.10
PW-6UMR	609.31	71.21	538.10
PW-6UR	608.47	10.97	597.50
PW-7U	592.47	16.52	575.95
PW-8M	592.67	55.77	536.90
PW-8U	589.27	23.87	565.40
PW-9U	587.47	30.67	556.80
PW-10U	593.54	8.84	584.70

Notes:

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

Leachate Treatment System Daily Effluent Monitoring Data
Second Quarter - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
04/01/21	7.6	178,000
04/02/21		
04/03/21		
04/04/21		
04/05/21		
04/06/21	7.4	166,000
04/07/21	7.2	195,000
04/08/21		
04/09/21		
04/10/21		
04/11/21		
04/12/21		
04/13/21	7.3	188,000
04/14/21	7.6	173,000
04/15/21		
04/16/21		
04/17/21		
04/18/21		
04/19/21	7.1	185,000
04/20/21	7.2	202,000
04/21/21	7.4	49,000
04/22/21		
04/23/21		
04/24/21		
04/25/21		
04/26/21	7.4	70,000
04/27/21		
04/28/21		
04/29/21		
04/30/21		
05/01/21		
05/02/21		
05/03/21		
05/04/21		
05/05/21		
05/06/21		
05/07/21		

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
Second Quarter - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
05/08/21		
05/09/21		
05/10/21		
05/11/21		
05/12/21		
05/13/21		
05/14/21		
05/15/21		
05/16/21		
05/17/21	7.8	76,000
05/18/21	7.7	88,000
05/19/21	7.1	5,000
05/20/21		
05/21/21		
05/22/21		
05/23/21		
05/24/21		
05/25/21		
05/26/21		
05/27/21		
05/28/21		
05/29/21		
05/30/21		
05/31/21		
06/01/21		
06/02/21		
06/03/21		
06/04/21		
06/05/21		
06/06/21		
06/07/21		
06/08/21		
06/09/21		
06/10/21		
06/11/21		
06/12/21		
06/13/21		

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
Second Quarter - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
06/14/21		
06/15/21		
06/16/21		
06/17/21		
06/18/21		
06/19/21		
06/20/21		
06/21/21		
06/22/21		
06/23/21		
06/24/21		
06/25/21		
06/26/21		
06/27/21		
06/28/21		
06/29/21		
06/30/21		
	Total	1,575,000

Notes:

su - Standard Unit
gal - Gallons

Analytical Results Summary
Weekly Sampling - Leachate Treatment System
Second Quarter - 2021
Hyde Park RRT Program

Effluent

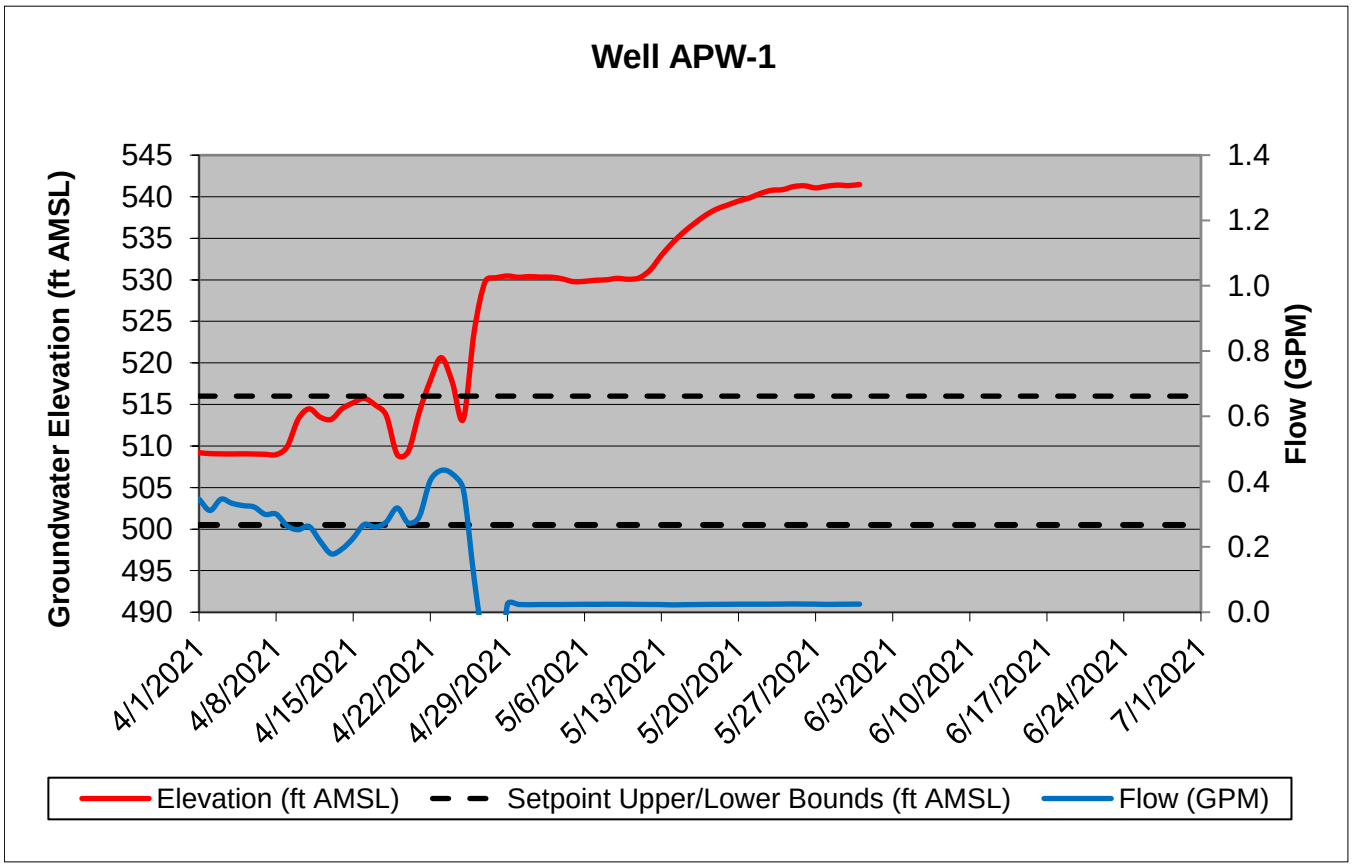
Parameter	Units	04/07/2021	04/14/2021	04/21/2021	04/28/2021
Volatiles					
1,1,1-Trichloroethane	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	2.2	2.8	2.1	2.1
1,1,2-Trichloroethane	µg/L	0.53 J	0.55 J	0.46 J	0.44 J
1,1-Dichloroethane	µg/L	2.1	2.8	1.8	2.1
1,1-Dichloroethene	µg/L	1.0 U	1.0 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	5.9	8.5	5.8	5.6
1,2-Dichloropropane	µg/L	0.59 J	0.74 J	0.62 J	0.60 J
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	1.0 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	1.0 U	1.0 U
Benzene	µg/L	13	17	14	8.5
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	2.9	8.4	5.5	0.53 J
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	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	2.9	4.3	2.6	3.1
Chloromethane (Methyl chloride)	µg/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.7	2.6	2.0	1.5
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	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
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	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
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	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	1.0 U	1.0 U	0.21 J	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	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
Vinyl chloride	µg/L	77	110	71	57
Xylenes (total)	µg/L	3.0 U	3.0 U	3.0 U	3.0 U
General Chemistry					
Phenolics (total)	mg/L	0.0044 J	0.0050 U	0.0033 J	0.0050 J

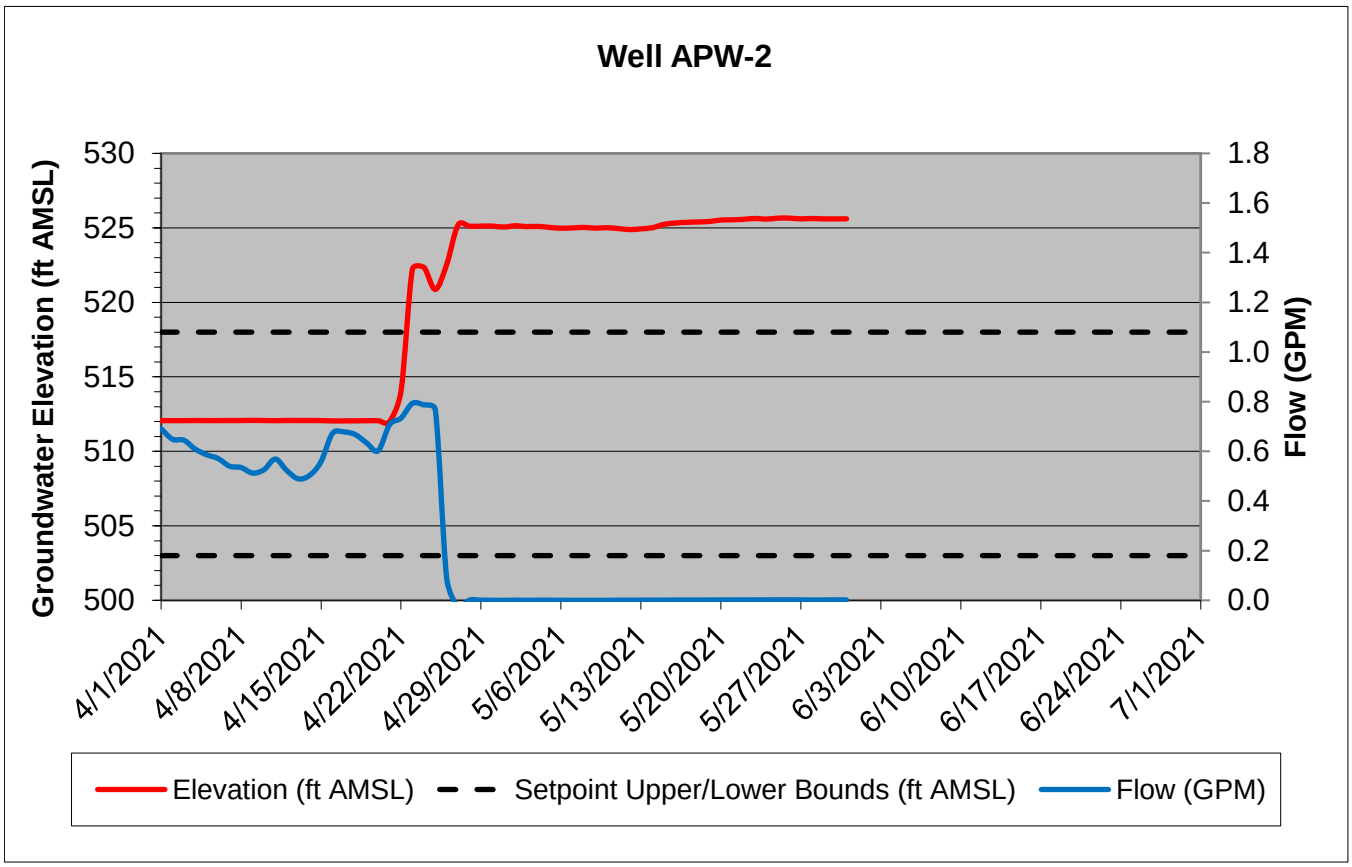
Notes:

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

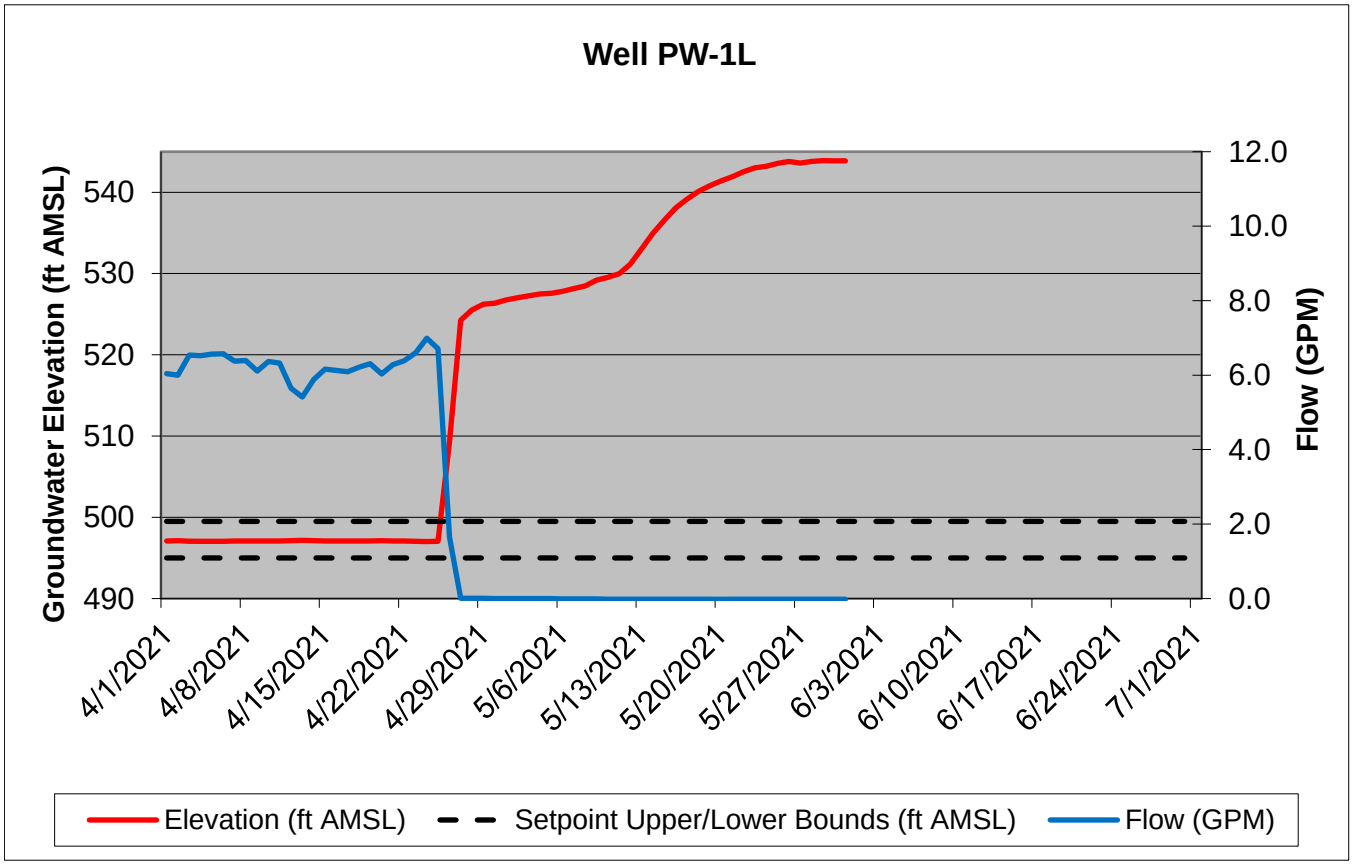
Attachment A
Second Quarter 2021
Pumping Well Performance Graphs

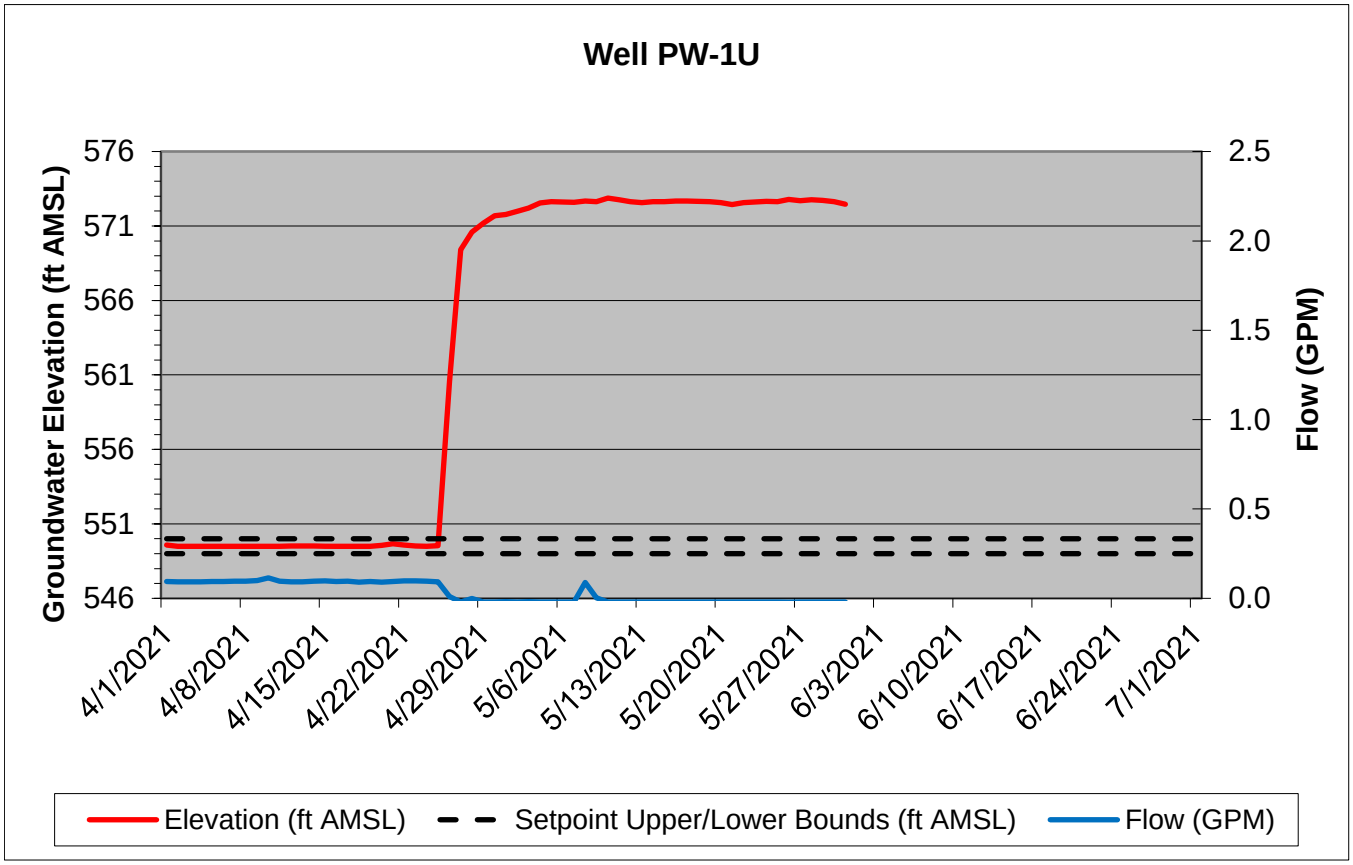
SECOND QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



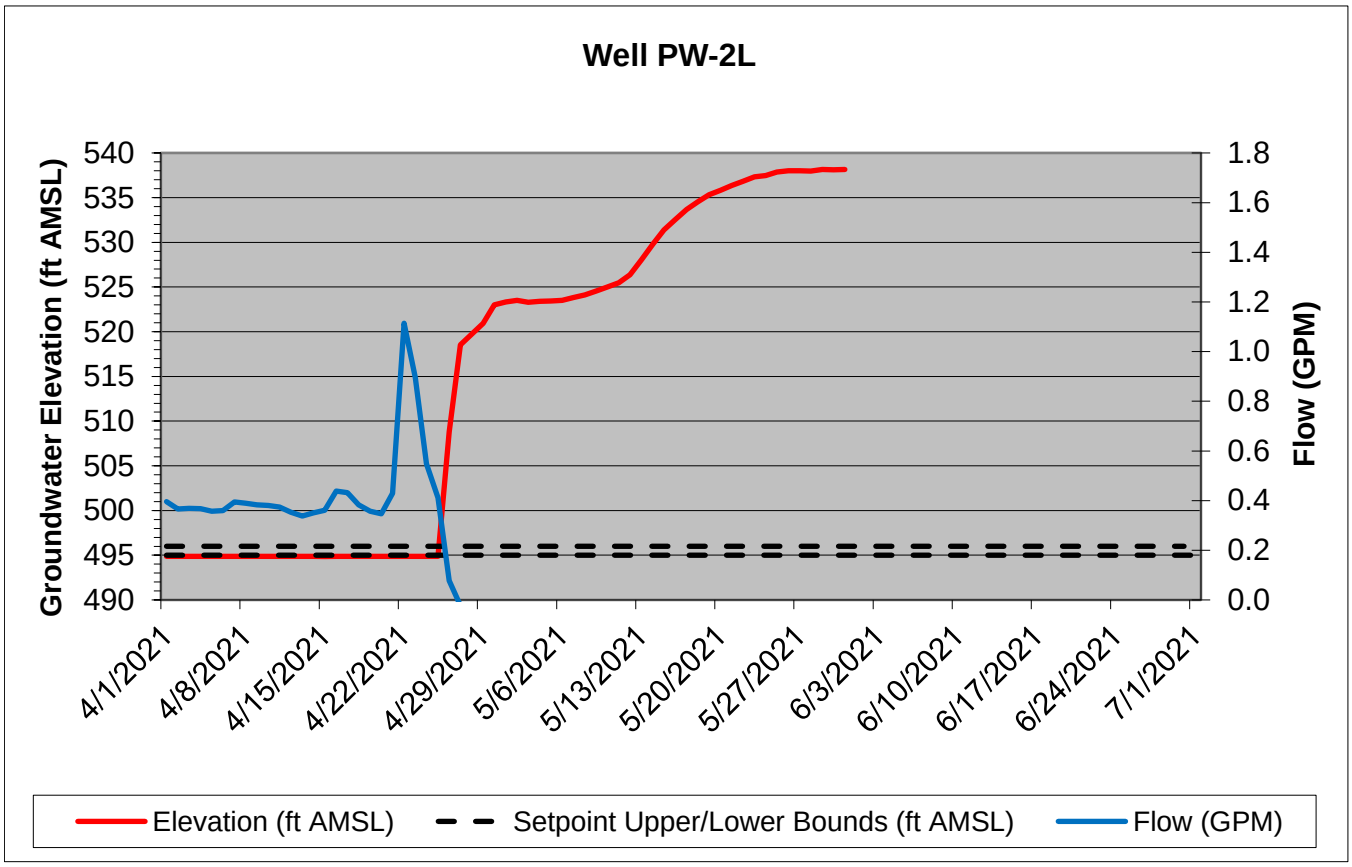


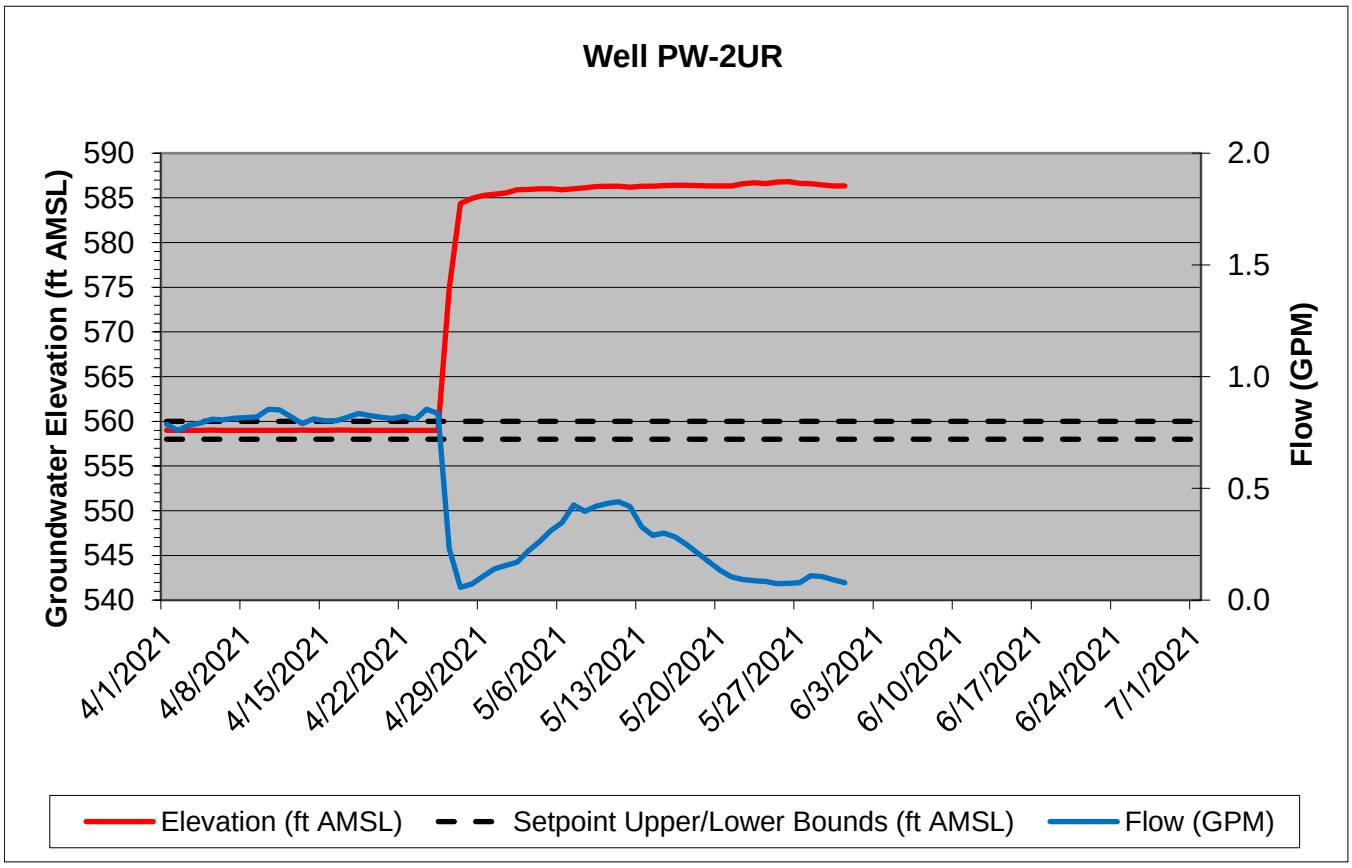
SECOND QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



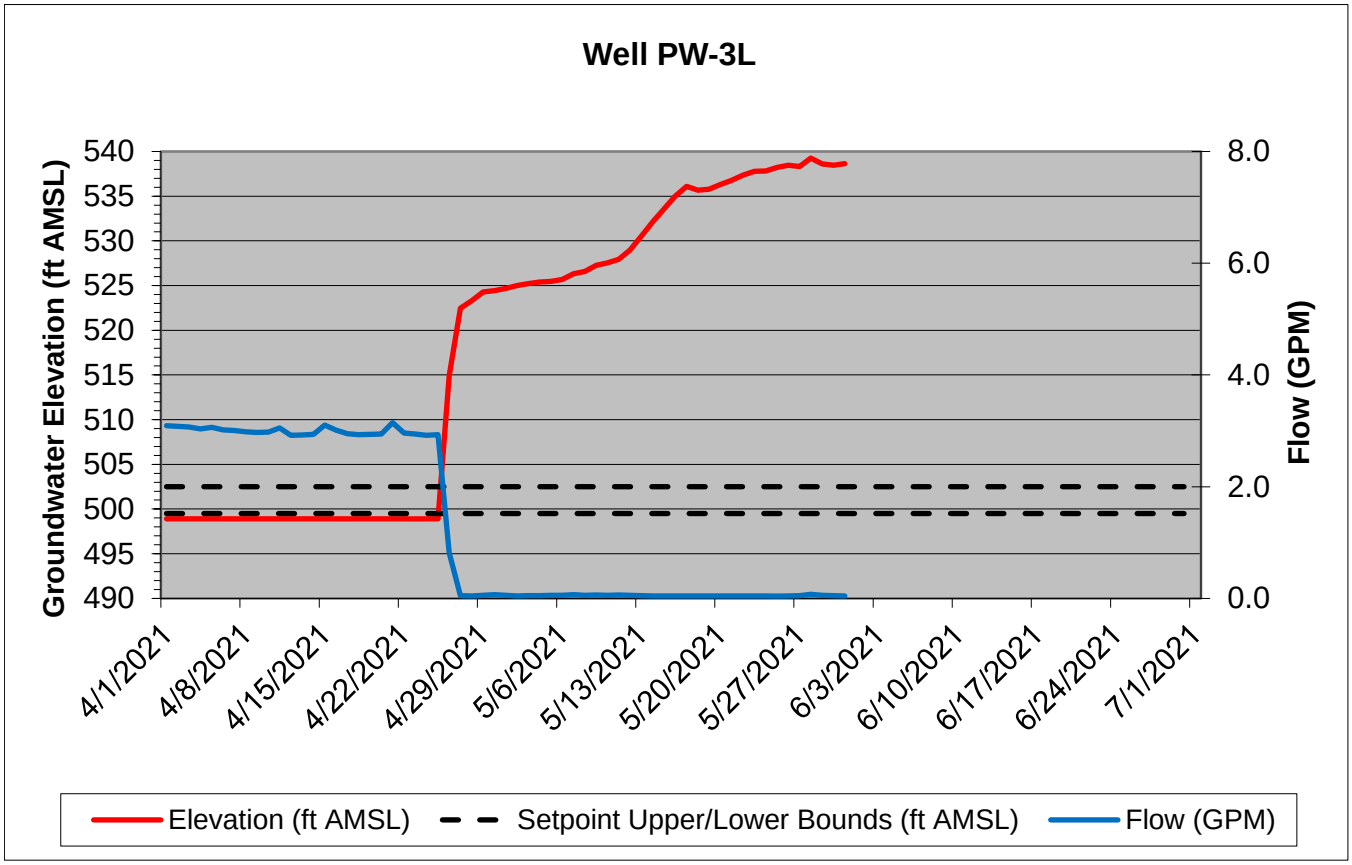


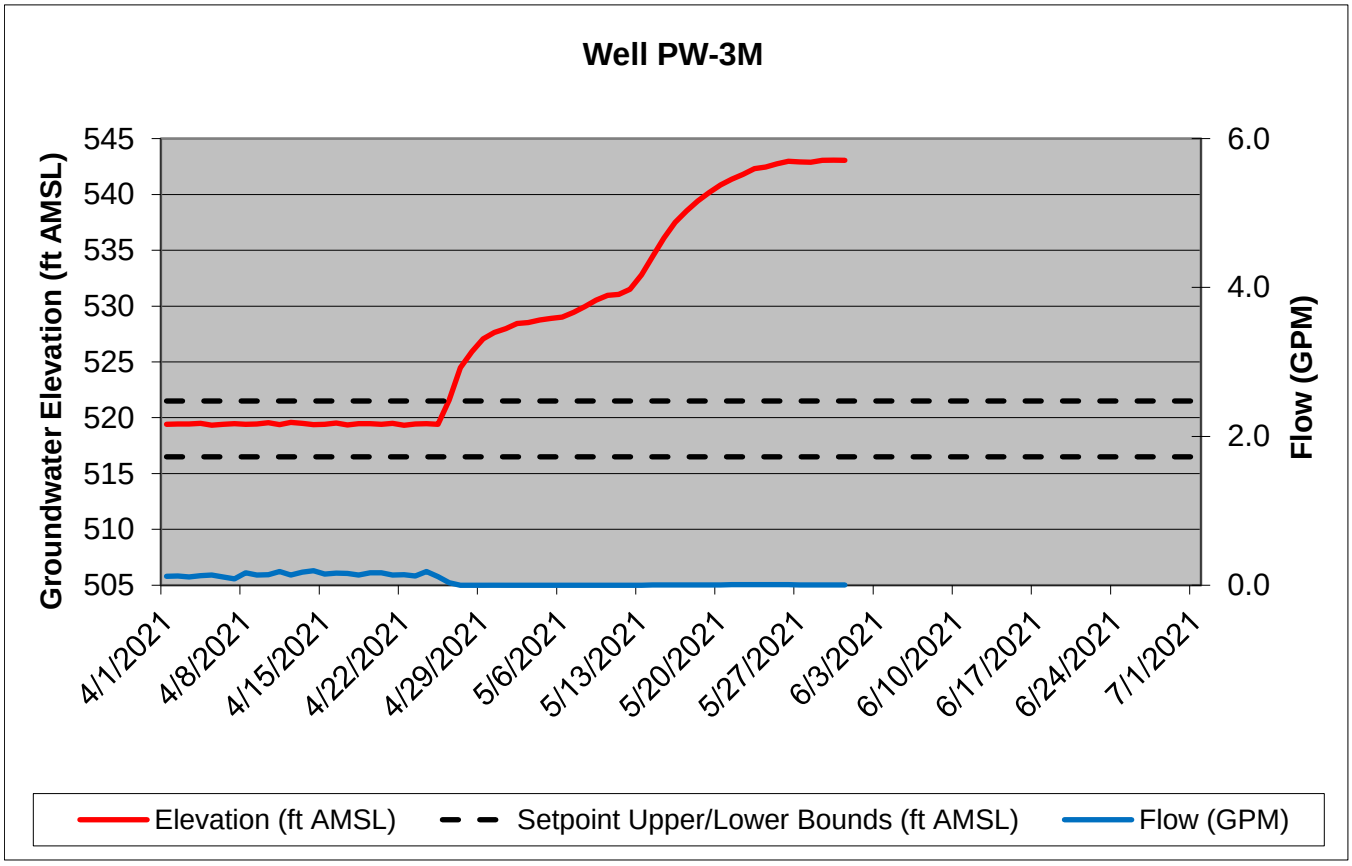
SECOND QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



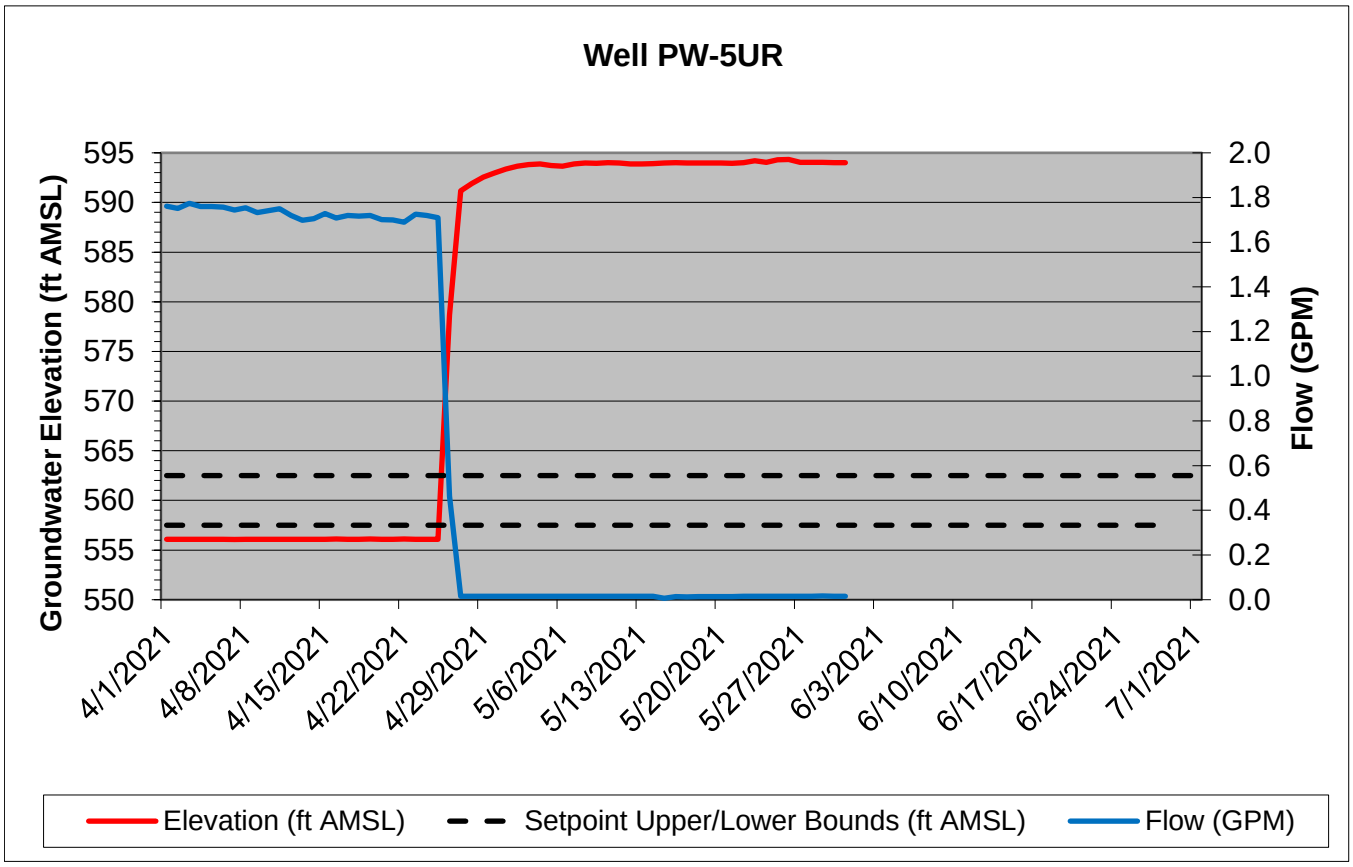


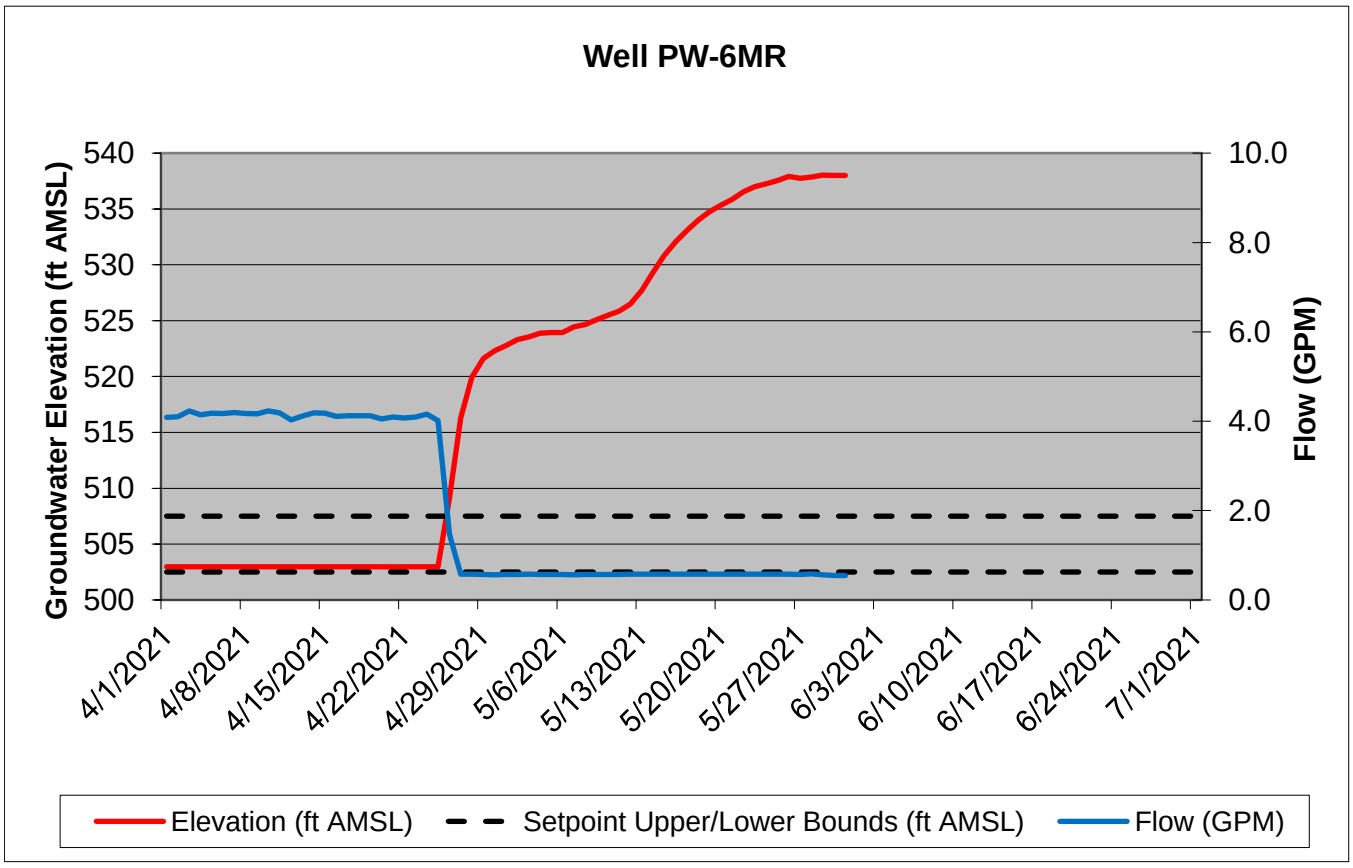
SECOND QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





SECOND QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





SECOND QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
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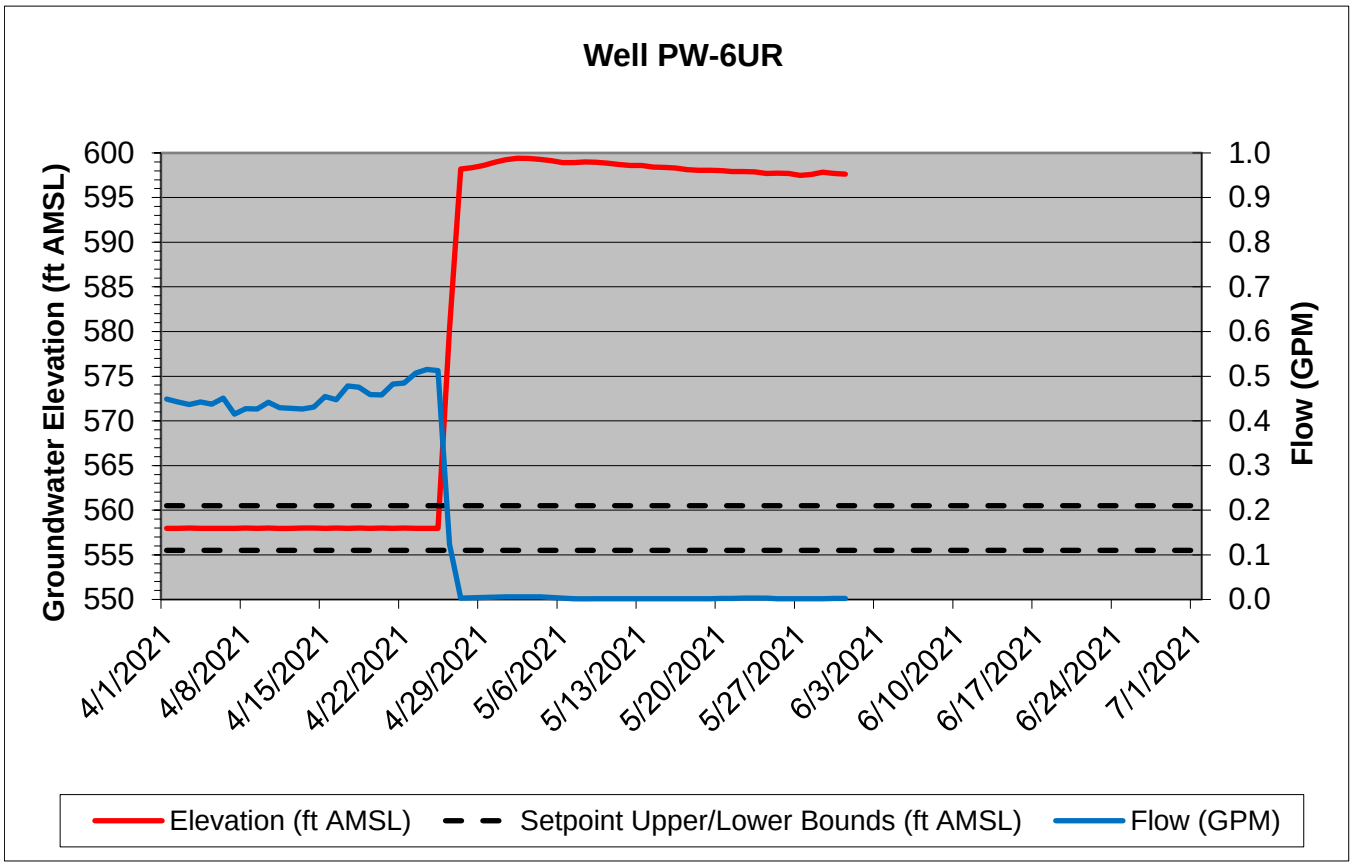
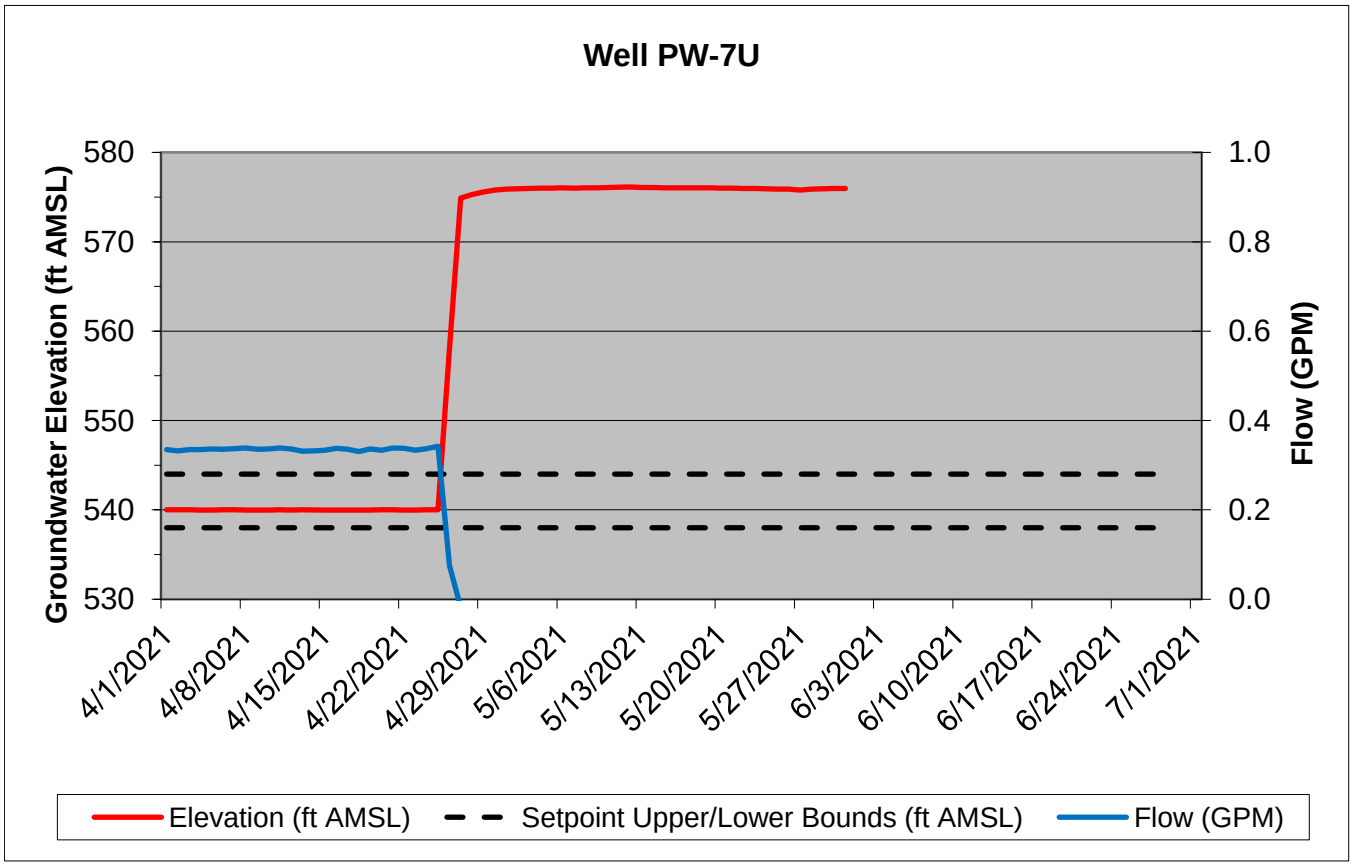
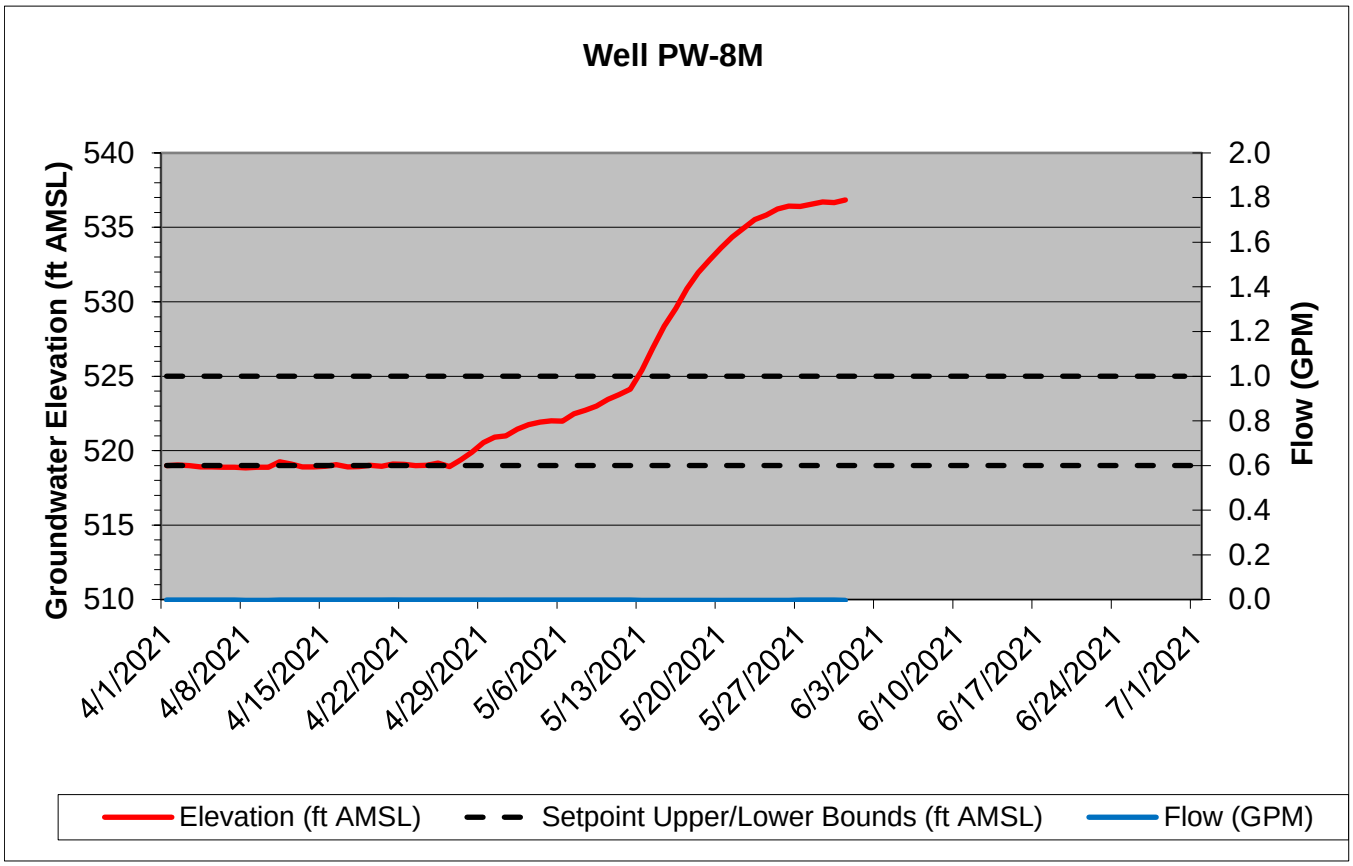
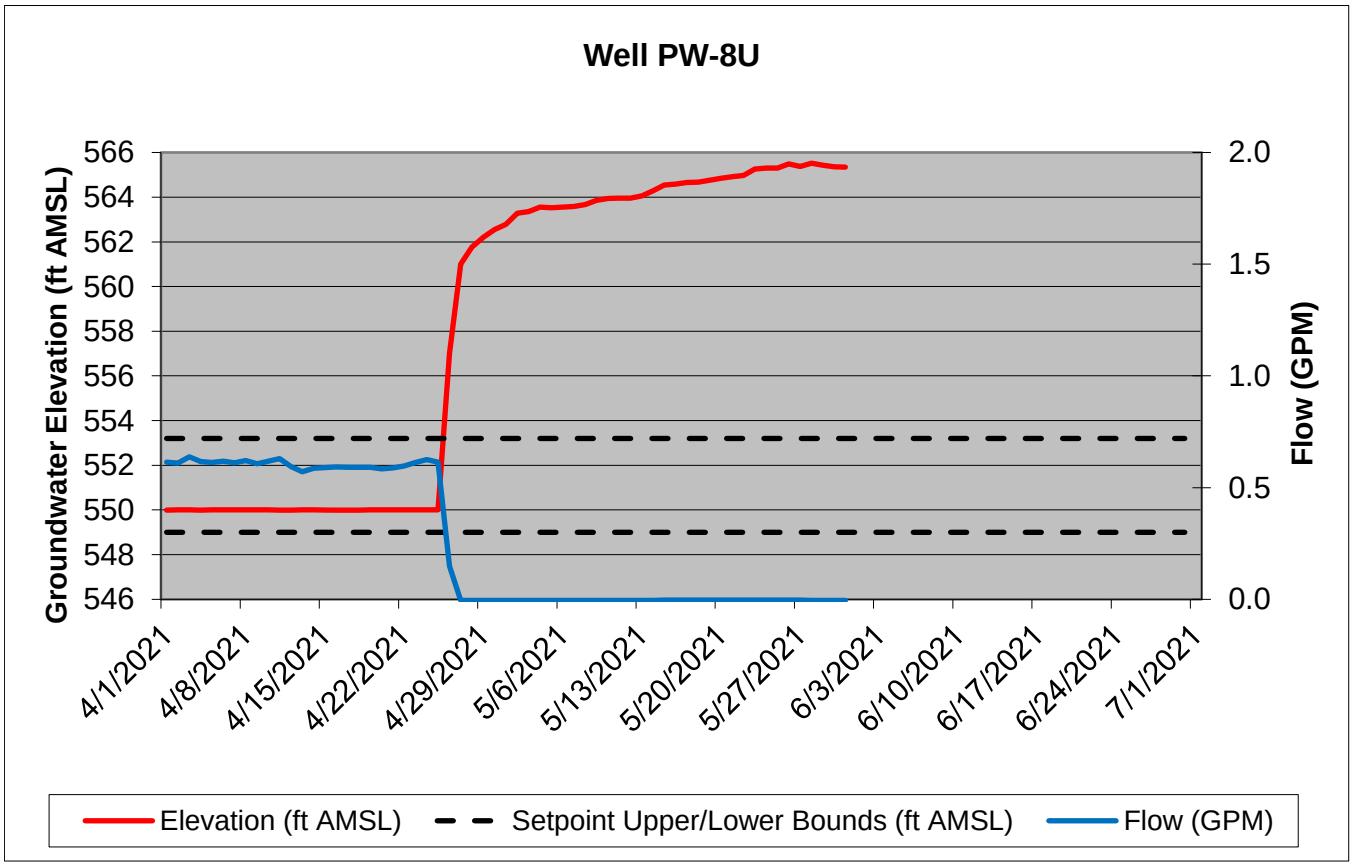


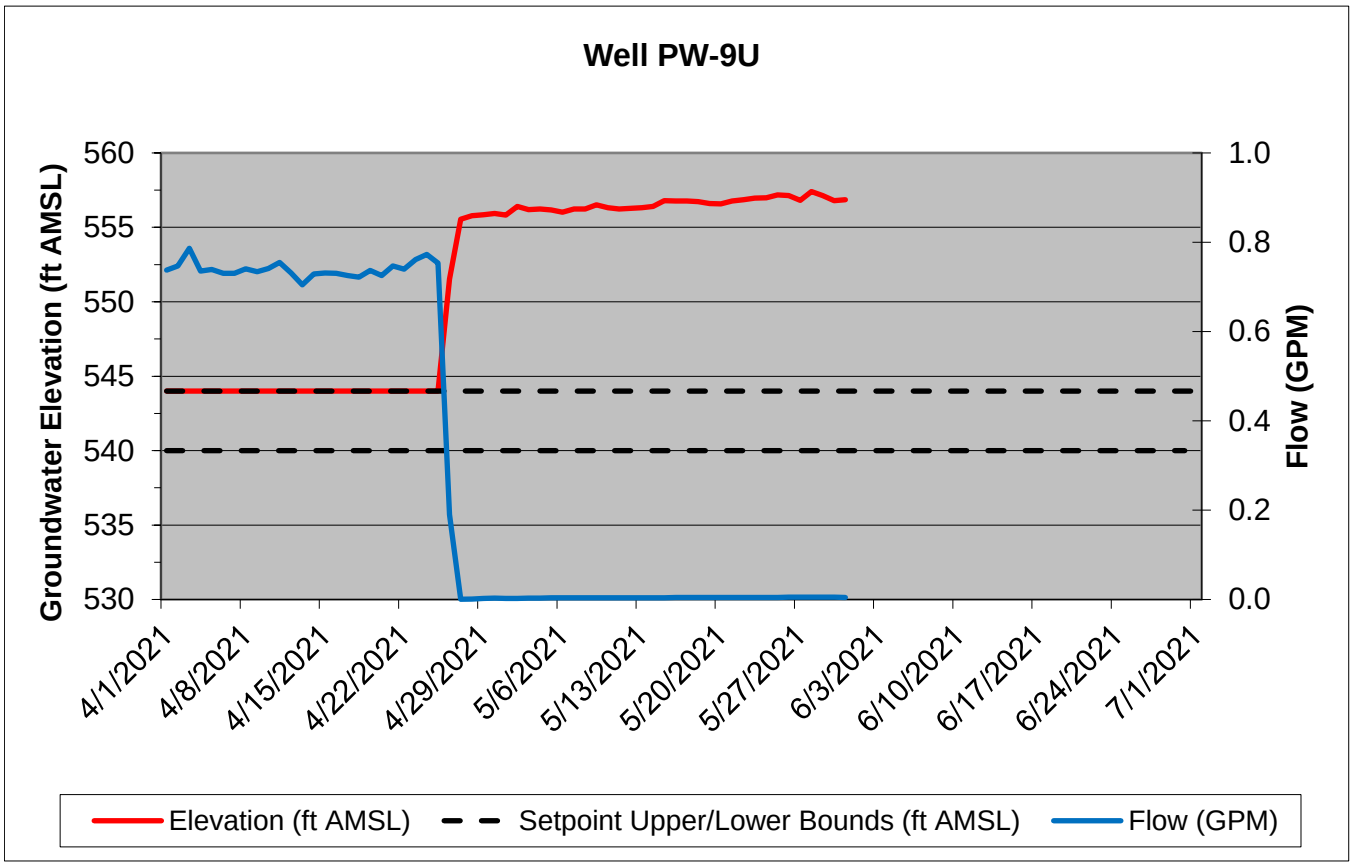


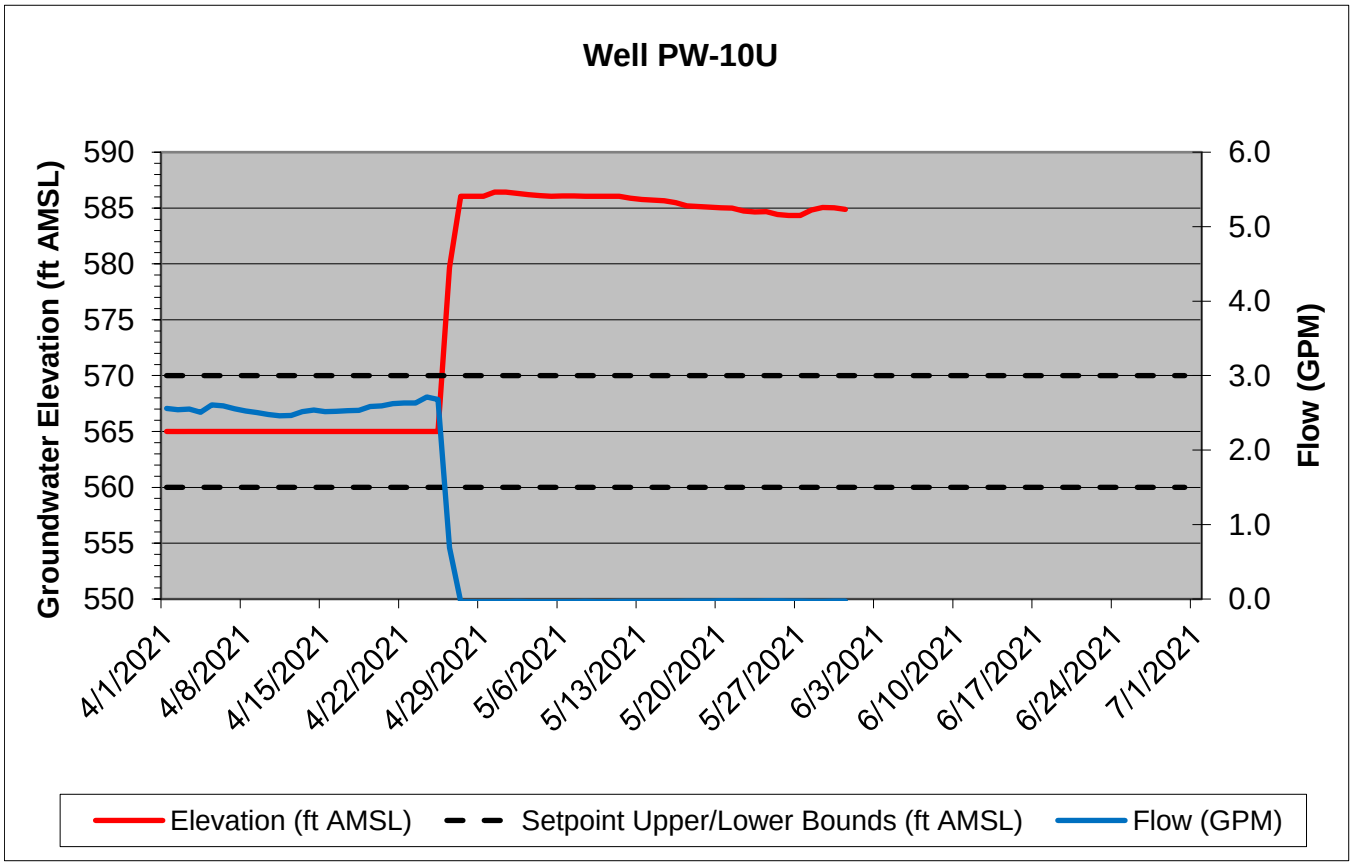
SECOND QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





SECOND QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





Glenn Springs Holdings, Inc.
A subsidiary of Occidental Petroleum

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

7601 Old Channel Trail
Montague, MI 49437

October 29, 2021

Reference No. 11230216

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

Mr. Andrew Zwack
NYSDEC
270 Michigan Avenue
Buffalo, NY 14203-2999

Dear Ms. Kondrk and Mr. Zwack:

Re: Quarterly Operations Report - Third Quarter 2021
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 July 1, 2021 through September 30, 2021. The treatment system at the Site has been down since April 26, 2021 for a piping replacement project and aqueous phase liquid (APL) storage tank cleaning. As such, no APL was collected, treated, or discharged during the quarterly monitoring period. No waste was shipped for disposal this quarter. 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

All wells were offline from April 26 through the end of the quarter (September 30) for an ongoing piping replacement project and APL Storage Tank cleaning. As such, the water levels in all wells were out of setpoint range for the entire quarterly monitoring period. Cleaning the APL storage tanks involves removal of some non-aqueous phase liquids (NAPL) that have accumulated over time in the two upfront APL storage tanks. Delay in completing the project has been caused by the lack of capacity at incinerators to approve and accept bulk NAPL shipments from these tanks. This has now been addressed and it is anticipated that the project will be completed in November 2021.

The continuously recorded water levels for the flow zone 9 piezometer PMW-1M-09 for the third quarter 2021 are presented in Figure 10. The water level in this piezometer exceeded 526 feet above mean sea level (AMSL) throughout the quarter as a result of the pumping system not being in operation.

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

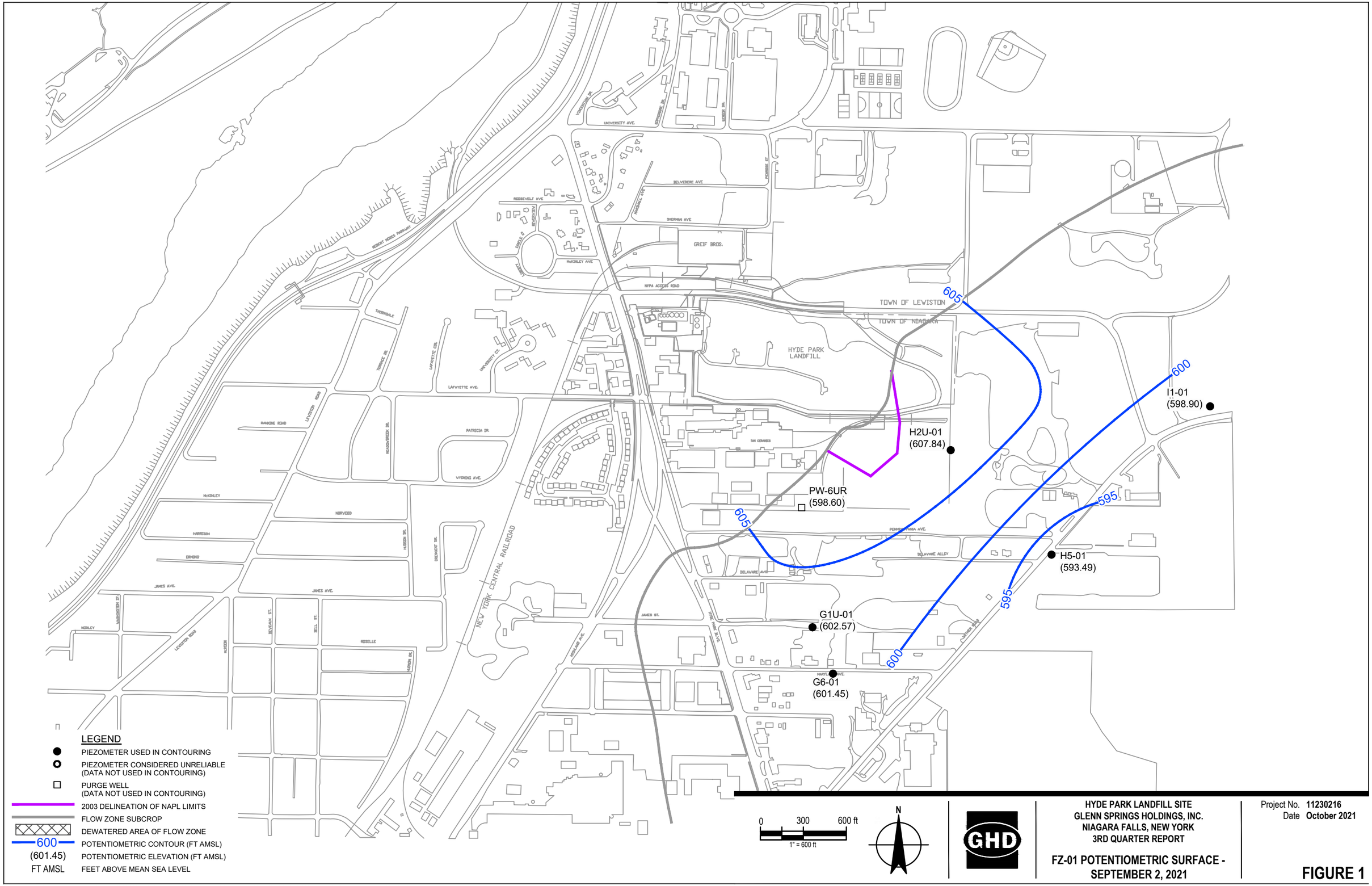
Very truly yours,

GLENN SPRINGS HOLDINGS, INC.

Joe Branch
Project Manager
231-670-6809 Cell

JB/eew/1
Encl.

cc: G. May, NYSDEC
J. Robinson, NYSDOH
J. Pentilchuk, GHD
M. Popek, GHD



HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

FZ-01 POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

Project No. **11230216**
Date **October 2021**

FIGURE 1

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0101_WA-Kondrk-Zwack001.DWG
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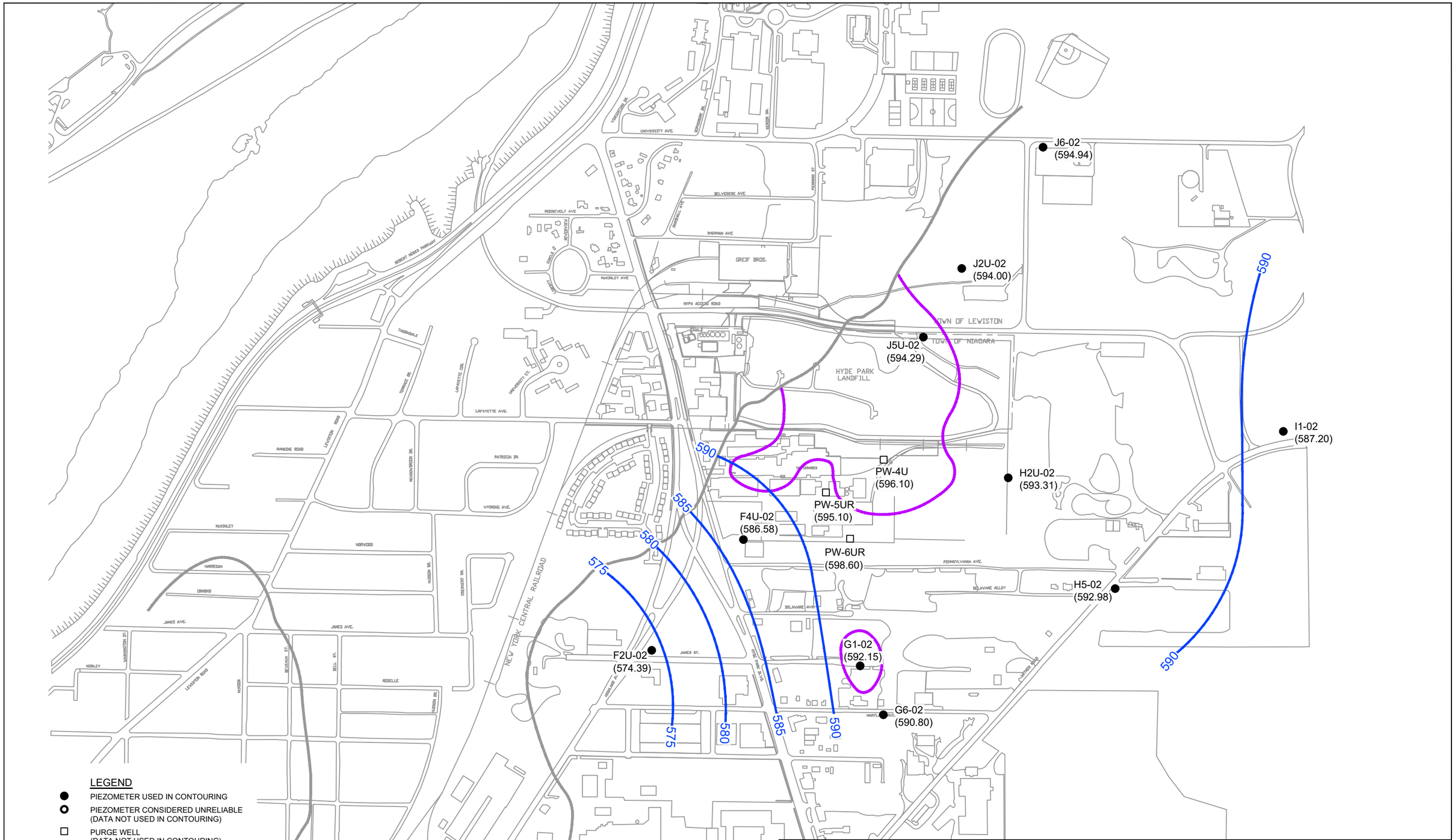

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

FZ-02 POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

Project No. **11230216**
Date **October 2021**

FIGURE 2

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0102_WA-Kondrk-Zwack001.DWG
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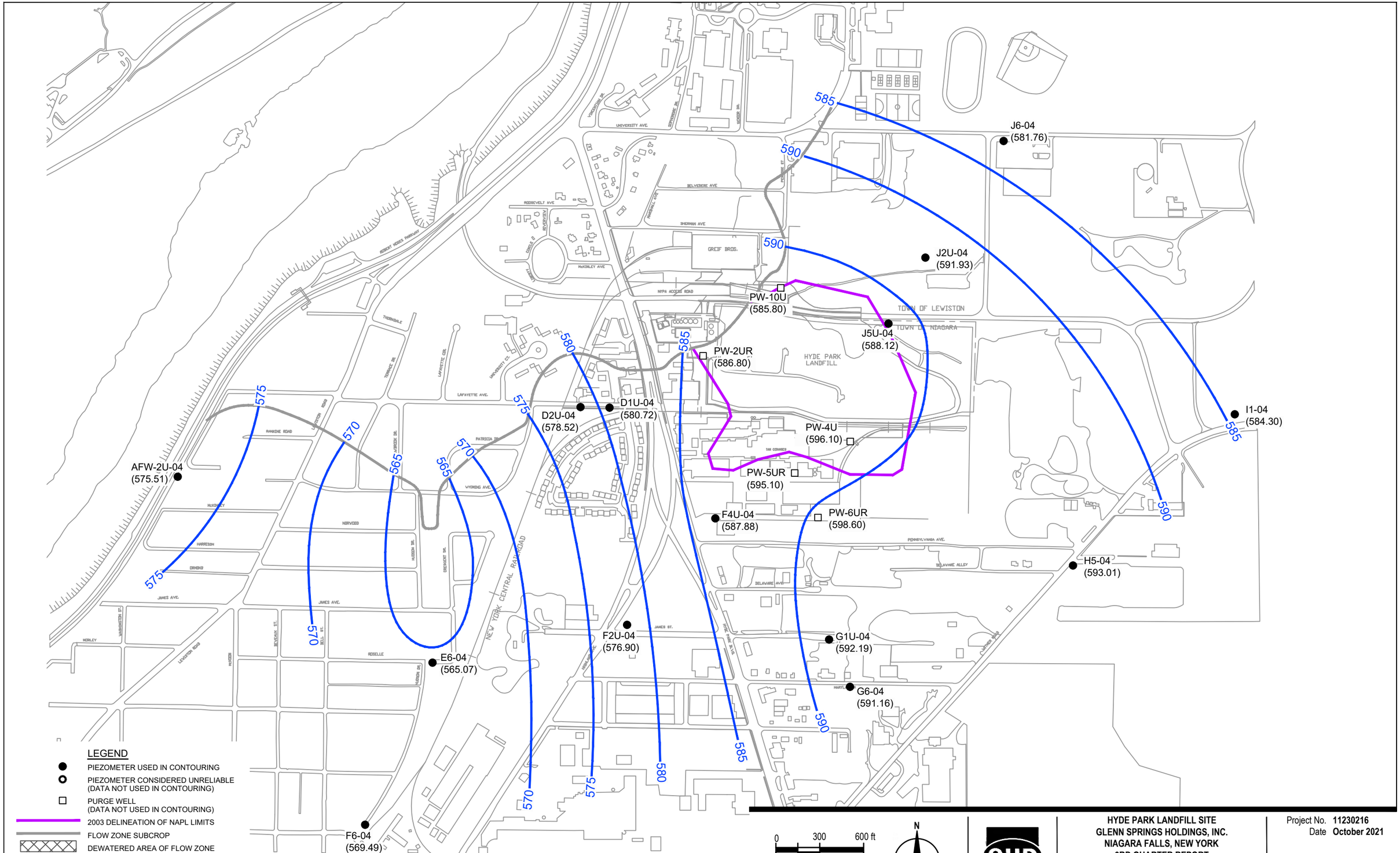

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

FZ-04 POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

Project No. **11230216**
Date **October 2021**

FIGURE 3

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0103_WA-Kondrk-Zwack001.DWG
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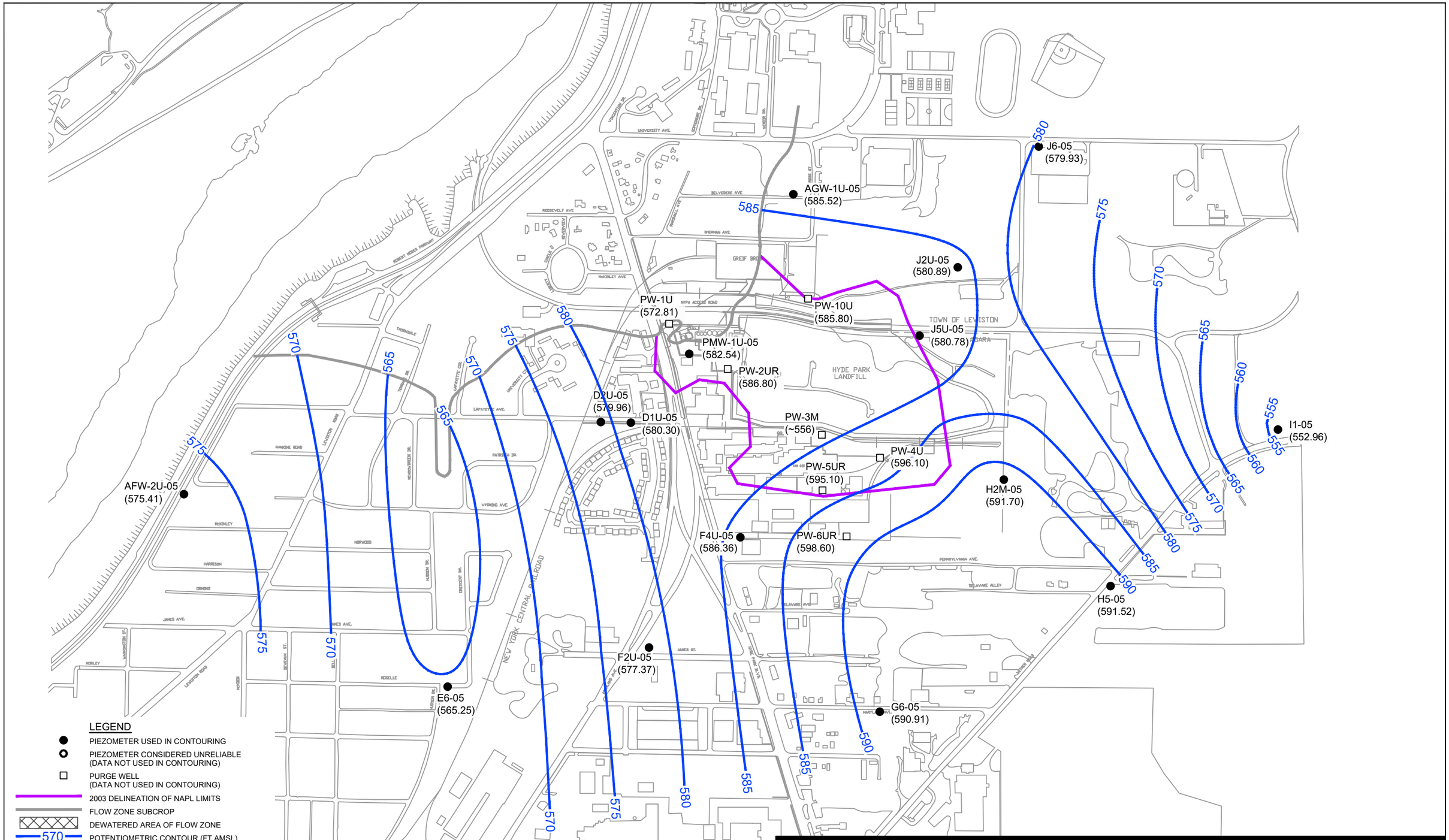

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HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

FZ-05 POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

Project No. **11230216**
Date **October 2021**

FIGURE 4

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0104_WA-Kondrk-Zwack001.DWG
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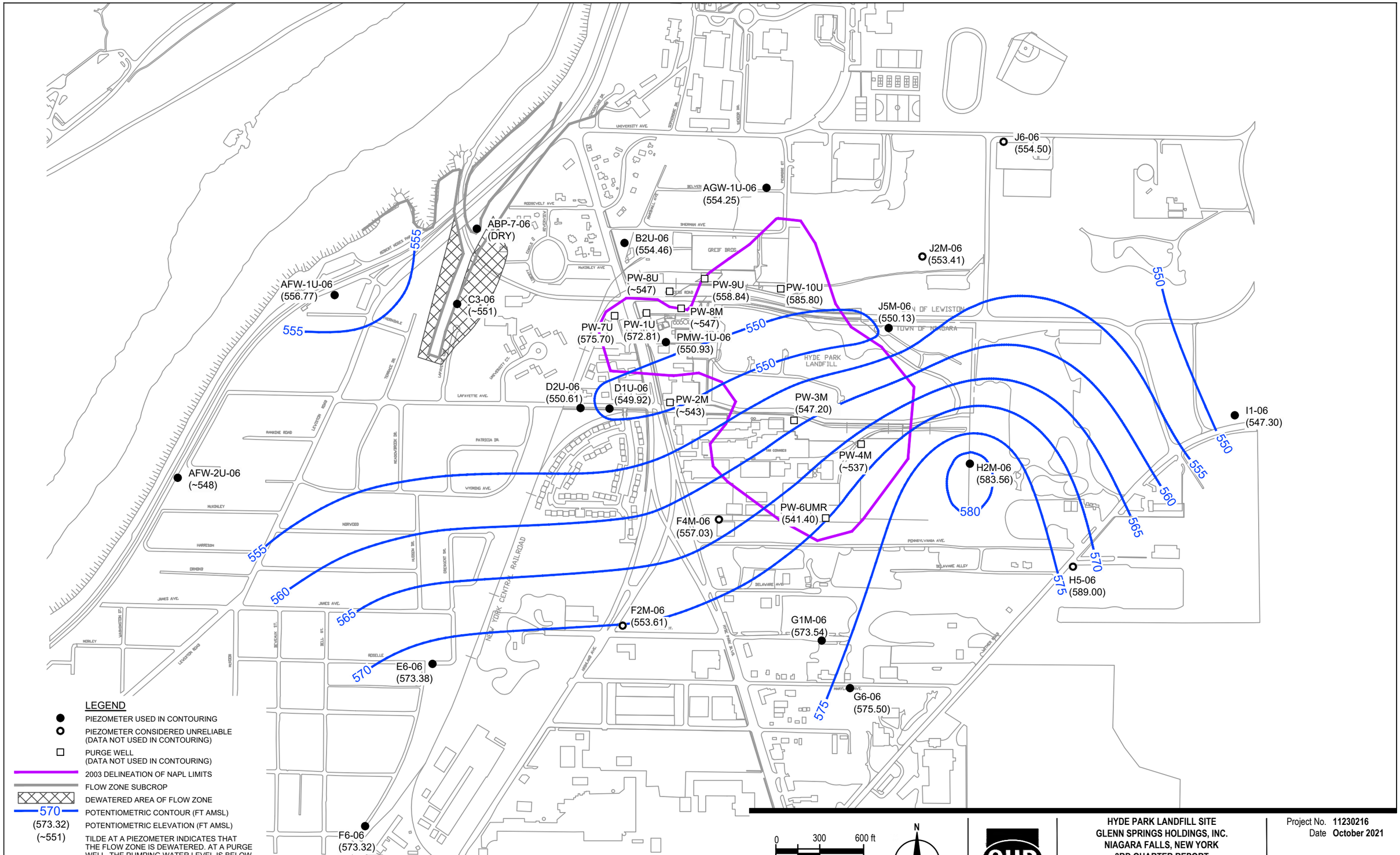

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 570 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (573.32) (~551) — POTENTIOMETRIC ELEVATION (FT AMSL)
  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
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

0 300 600 ft
1" = 600 ft

N

GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

FZ-06 POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

Project No. **11230216**
Date **October 2021**

FIGURE 5

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0105_WA-Kondrk-Zwack001.DWG
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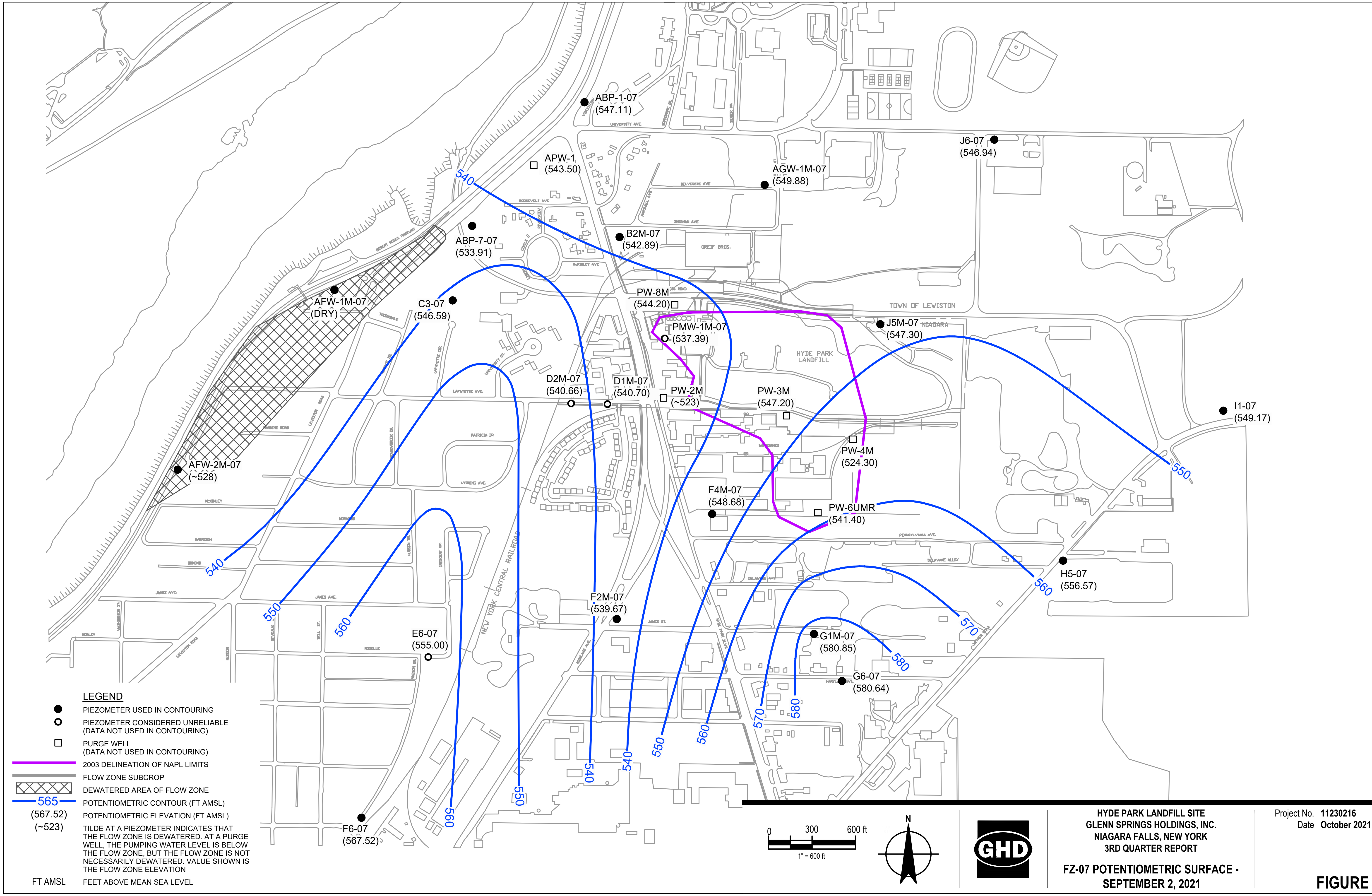
ABP-1-07
(547.11)
APW-1
(543.50)
J6-07
(546.94)
AGW-1M-07
(549.88)
ABP-7-07
(533.91)
B2M-07
(542.89)
AFW-1M-07
(DRY)
C3-07
(546.59)
PW-8M
(544.20)
PMW-1M-07
(537.39)
J5M-07
(547.30)
HYDE PARK LANDFILL
TOWN OF LEWISTON
D2M-07
(540.66)
D1M-07
(540.70)
PW-2M
(~523)
PW-3M
(547.20)
I1-07
(549.17)
PW-4M
(524.30)
AFW-2M-07
(~528)
F4M-07
(548.68)
PW-6UMR
(541.40)
H5-07
(556.57)
F2M-07
(539.67)
E6-07
(555.00)
G1M-07
(580.85)
G6-07
(580.64)
F6-07
(567.52)
NEW YORK CENTRAL RAILROAD
540
550
560
570
580
LEGEND
PIEZOMETER USED IN CONTOURING
PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
PURGE WELL (DATA NOT USED IN CONTOURING)
2003 DELINEATION OF NAPL LIMITS
FLOW ZONE SUBCROP
DEWATERED AREA OF FLOW ZONE
565 POTENTIOMETRIC CONTOUR (FT AMSL)
(567.52) POTENTIOMETRIC ELEVATION (FT AMSL)
(~523) 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
FT AMSL FEET ABOVE MEAN SEA LEVEL
0 300 600 ft
1" = 600 ft
N
GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

FZ-07 POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

Project No. 11230216
Date October 2021

FIGURE 6

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0106_WA-Kondrk-Zwack001.DWG
Plot Date: 20 October 2021 11:54 AM

ABP-1-09 (535.48)
APW-1 (543.50)
APW-2 (~526)
ABP-7-09 (533.55)
AFW-1M-09 (525.23)
C3-09 (546.26)
AFW-2M-09 (521.04)
B2M-09 (542.02)
AGW-1M-09 (549.84)
J6-09 (565.34)
J2M-09 (548.05)
PW-8M (544.20)
PW-1L (547.90)
PMW-1M-09 (540.67)
J5M-09 (547.10)
PW-3M (547.20)
PW-2M (514.30)
PW-4M (524.30)
D2M-09 (540.73)
D1M-09 (540.72)
I1-09 (563.54)
H2M-09 (554.28)
F4M-09 (540.31)
PW-6UMR (541.40)
H5-09 (547.87)
F2M-09 (540.13)
G1M-09 (580.58)
E6-09 (552.93)
G6-09 (581.39)
F6-09 (571.64)

530 540 550 560 570 580

TOWN OF LEWISTON
HYDE PARK LANDFILL
NEW YORK CENTRAL RAILROAD
GREIF BROS.

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 550 POTENTIOMETRIC CONTOUR (FT AMSL)
- (571.64) POTENTIOMETRIC ELEVATION (FT AMSL)
- (~526) 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
- FT AMSL FEET ABOVE MEAN SEA LEVEL

0 300 600 ft
1" = 600 ft

N

GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

FZ-09 POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

Project No. 11230216
Date October 2021

FIGURE 7

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0107_WA-Kondrk-Zwack001.DWG
Plot Date: 20 October 2021 11:55 AM

APW-1 (543.50)
APW-2 (525.80)
AGW-1L-11 (584.40)
B2L-11 (531.18)
J6-11 (585.99)
AFW-1L-11 (506.79)
PW-1L (547.90)
PMW-1L-11 (530.62)
PW-2L (541.20)
J5L-11 (555.24)
D1L-11 (526.04)
D2L-11 (584.05)
PW-3L (544.00)
I1-11 (545.93)
H2L-11 (559.94)
AFW-2L-11 (496.62)
F4L-11 (570.63)
H5-11 (541.06)
F2L-11 (556.51)
G1L-11 (613.79)
E6-11 (535.64)
G6-11 (587.39)
F6-11 (530.09)

500 505 515 525 535 545 555 565 575 585

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 525 POTENTIOMETRIC CONTOUR (FT AMSL)
- (530.09) POTENTIOMETRIC ELEVATION (FT AMSL)
- FT AMSL FEET ABOVE MEAN SEA LEVEL

0 300 600 ft
1" = 600 ft

N

GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

FZ-11 POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

Project No. 11230216
Date October 2021

FIGURE 8

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0108_WA-Kondrk-Zwack001.DWG
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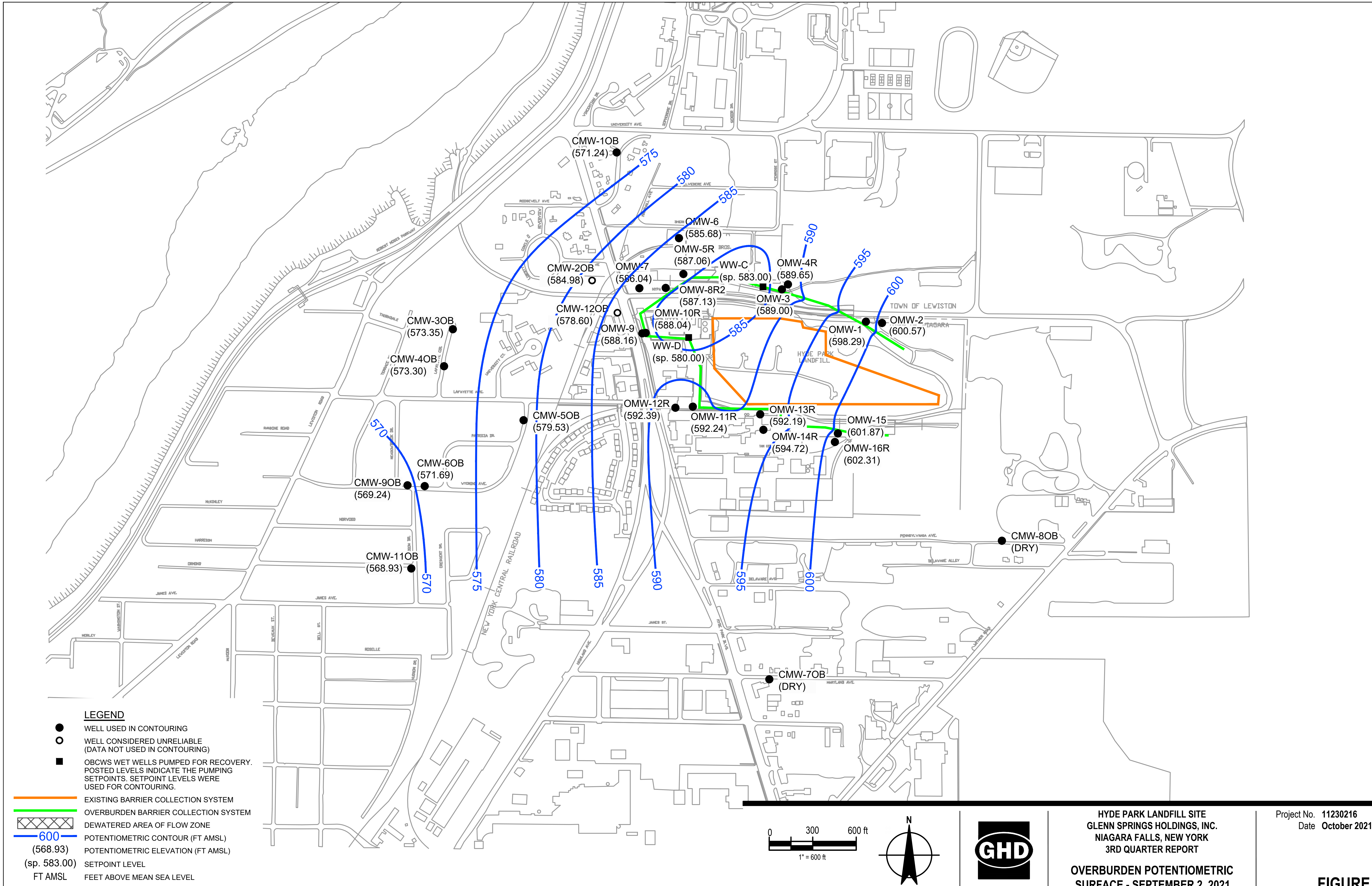

CMW-1OB (571.24)
CMW-2OB (584.98)
CMW-3OB (573.35)
CMW-4OB (573.30)
CMW-5OB (579.53)
CMW-6OB (571.69)
CMW-7OB (DRY)
CMW-8OB (DRY)
CMW-9OB (569.24)
CMW-11OB (568.93)
CMW-12OB (578.60)
OMW-1 (598.29)
OMW-2 (600.57)
OMW-3 (589.00)
OMW-4R (589.65)
OMW-5R (587.06)
OMW-6 (585.68)
OMW-7 (586.04)
OMW-8R2 (587.13)
OMW-9 (588.16)
OMW-10R (588.04)
OMW-11R (592.24)
OMW-12R (592.39)
OMW-13R (592.19)
OMW-14R (594.72)
OMW-15 (601.87)
OMW-16R (602.31)
WW-C (sp. 583.00)
WW-D (sp. 580.00)
570
575
580
585
590
595
600
HYDE PARK LANDFILL
TOWN OF LEWISTON
NEW YORK CENTRAL RAILROAD
UNIVERSITY AVE.
ROOSEVELT AVE.
LAFAYETTE AVE.
PENNSYLVANIA AVE.
DELAWARE AVE.
JAMES AVE.
JAMES ST.
PATRICIA DR.
WYOMING AVE.
MCKINLEY
NORWOOD
HARRISON
ORMOND
ROSELLE
HARTLAND AVE.
RANKINE ROAD
LEWISTON ROAD
ROBERT MOSES PARKWAY
LEGEND
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.
EXISTING BARRIER COLLECTION SYSTEM
OVERBURDEN BARRIER COLLECTION SYSTEM
DEWATERED AREA OF FLOW ZONE
600 POTENTIOMETRIC CONTOUR (FT AMSL)
(568.93) POTENTIOMETRIC ELEVATION (FT AMSL)
(sp. 583.00) SETPOINT LEVEL
FT AMSL FEET ABOVE MEAN SEA LEVEL
0 300 600 ft
1" = 600 ft
N

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
3RD QUARTER REPORT

Project No. 11230216
Date October 2021

OVERBURDEN POTENTIOMETRIC SURFACE - SEPTEMBER 2, 2021

FIGURE 9

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack001\11230216-GHD-0000-LTR-EN-0109_WA-Kondrk-Zwack001.DWG
Plot Date: 20 October 2021 11:55 AM

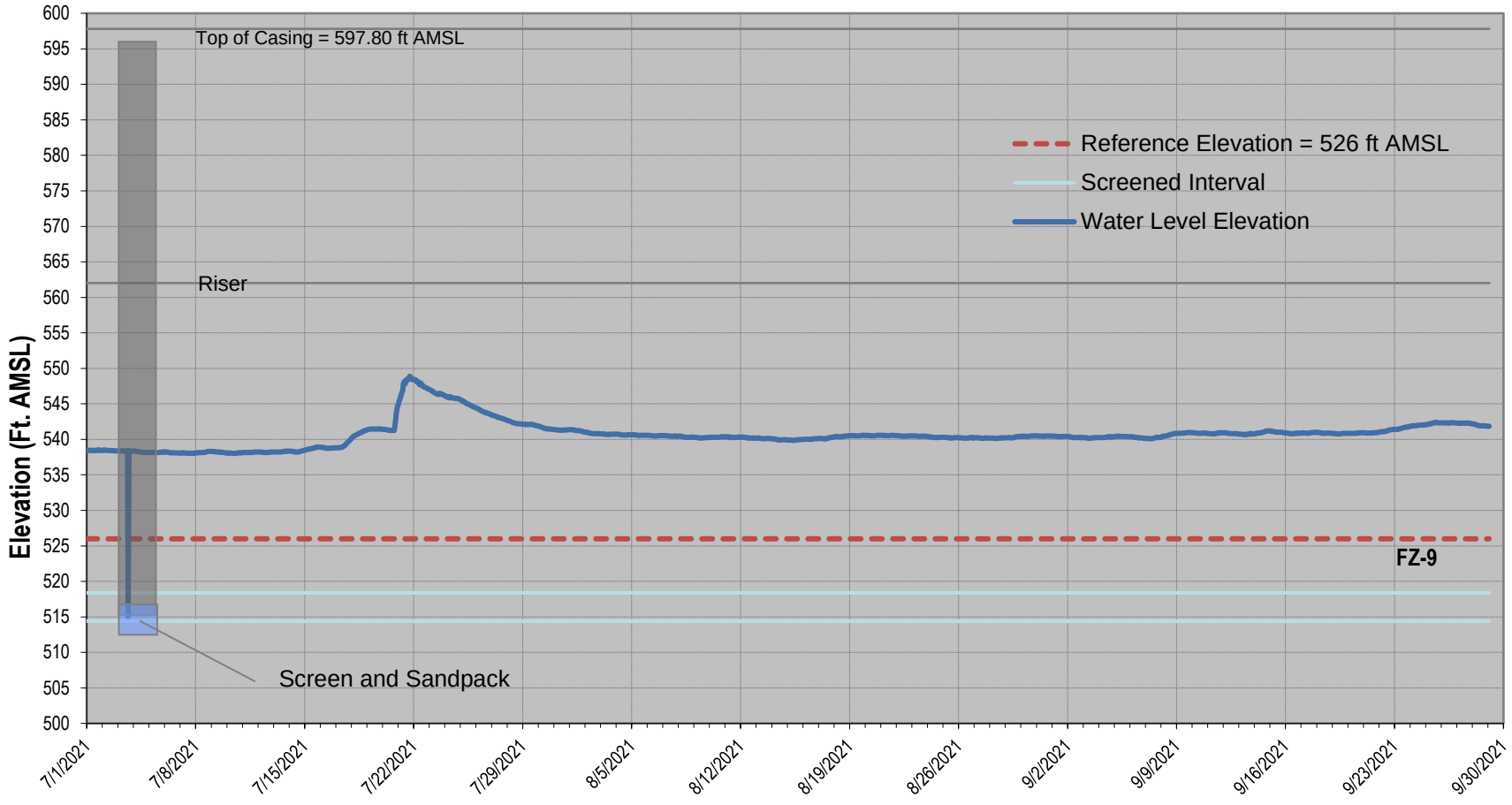


figure 10

PMW-1M-09 3rd Quarter 2021 - Hourly Water Level Elevation
3rd 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
Third Quarter - 2021
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Overburden			
CMW-2OB	590.79	5.81	584.98
CMW-3OB	582.13	8.78	573.35
CMW-4OB	574.28	0.98	573.30
CMW-5OB	583.43	3.90	579.53
CMW-6OB	571.89	0.20	571.69
CMW-7OB	611.00	DRY	-
CMW-8OB	616.11	DRY	-
CMW-9OB	571.76	2.52	569.24
CMW-1OB	576.80	5.56	571.24
CMW-11OB	572.85	3.92	568.93
CMW-12OB	594.74	16.14	578.60
MH20	605.87	4.66	601.21
MH21	599.77	6.11	593.66
MH22	593.37	DRY	-
MH23	587.05	10.41	576.64
MH24	582.57	3.73	578.84
MH25	583.82	3.36	580.46
MH26	584.48	4.91	579.57
MH27	586.12	8.14	577.98
MH28	585.23	8.07	577.16
MH29	604.58	10.12	594.46
MH30	599.49	9.99	589.50
MH31	590.10	9.63	580.47
MH32	592.01	9.63	582.38
MH33	592.51	8.74	583.77
MH34	598.34	7.15	591.19
MH35	605.69	6.56	599.13
MH35A	605.69	7.38	598.31
OMW-1	605.28	6.99	598.29
OMW-2	605.99	5.42	600.57
OMW-3	598.63	9.63	589.00
OMW-4R	601.17	11.52	589.65
OMW-5R	591.31	4.25	587.06
OMW-6	587.62	1.94	585.68
OMW-7	592.74	6.70	586.04
OMW-8R2	594.67	7.54	587.13
OMW-9	595.27	7.11	588.16
OMW-10R	595.13	7.09	588.04
OMW-11R	597.52	5.28	592.24
OMW-12R	596.71	4.32	592.39
OMW-13R	601.50	9.31	592.19
OMW-14R	599.64	4.92	594.72
OMW-15	607.48	5.61	601.87
OMW-16R	607.62	5.31	602.31
SC-2	625.61	22.92	602.69
SC-3	638.72	40.67	598.05
SC-4	639.35	39.16	600.19
SC-5	634.07	31.63	602.44
SC-6	631.15	19.31	611.84

Table 1

Water Level Elevation Summary
Third Quarter - 2021
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Shallow Bedrock			
CMW-1SH	576.11	13.09	563.02
CMW-2SH	590.51	17.58	572.93
CMW-3SH	581.91	28.01	553.90
CMW-4SH	574.16	7.57	566.59
CMW-5SH	583.36	8.34	575.02
CMW-6SH	572.05	10.50	561.55
CMW-7SH	610.58	12.62	597.96
CMW-8SH	615.95	8.72	607.23
CMW-9SH	571.96	11.95	560.01
CMW-11SH	573.21	8.46	564.75
CMW-12SH	597.02	22.89	574.13
Flow Zone 1			
G1U-01	617.08	14.51	602.57
G6-01	609.24	7.79	601.45
H2U-01	620.92	13.08	607.84
H5-01	617.61	24.12	593.49
I1-01	625.58	26.68	598.90
Flow Zone 2			
F2U-02	599.89	25.50	574.39
F4U-02	602.32	15.74	586.58
G1-02	616.86	24.71	592.15
G6-02	608.65	17.85	590.80
H2U-02	620.88	27.57	593.31
H5-02	617.47	24.49	592.98
I1-02	625.47	38.27	587.20
J2U-02	609.66	15.66	594.00
J5U-02	606.21	11.92	594.29
J6-02	609.23	14.29	594.94
Flow Zone 4			
AFW-2U-04	593.48	17.97	575.51
D1U-04	593.77	13.05	580.72
D2U-04	590.65	12.13	578.52
E6-04	578.23	13.16	565.07
F2U-04	599.76	22.86	576.90
F4U-04	602.19	14.31	587.88
F6-04	588.06	18.57	569.49
G1U-04	616.96	24.77	592.19
G6-04	609.15	17.99	591.16
H5-04	617.40	24.39	593.01
I1-04	625.30	41.00	584.30
J2U-04	609.42	17.49	591.93
J5U-04	606.05	17.93	588.12
J6-04	609.12	27.36	581.76

Table 1

Water Level Elevation Summary
Third Quarter - 2021
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	17.92	575.41
AGW-1U-05	591.80	6.28	585.52
D1U-05	593.51	13.21	580.30
D2U-05	590.56	10.60	579.96
E6-05	578.04	12.79	565.25
F2U-05	599.64	22.27	577.37
F4U-05	602.06	15.70	586.36
F6-05	587.85	18.45	569.40
G6-05	609.13	18.22	590.91
H2M-05	621.59	29.89	591.70
H5-05	617.31	25.79	591.52
I1-05	625.25	72.29	552.96
J2U-05	609.30	28.41	580.89
J5U-05	605.87	25.09	580.78
J6-05	609.02	29.09	579.93
PMW-1U-05	598.00	15.46	582.54
Flow Zone 6			
ABP-7-06	575.78	DRY	-
AFW-1U-06	571.83	15.06	556.77
AFW-2U-06	593.22	48.14	545.08
AGW-1U-06	591.66	37.41	554.25
B2U-06	589.29	34.83	554.46
C3-06	585.78	37.41	548.37
D1U-06	593.25	43.33	549.92
D2U-06	590.38	39.77	550.61
E6-06	577.99	4.61	573.38
F2M-06	599.06	45.45	553.61
F4M-06	602.05	45.02	557.03
F6-06	587.84	14.52	573.32
G1M-06	616.75	43.21	573.54
G6-06	609.09	33.59	575.50
H2M-06	621.42	37.86	583.56
H5-06	617.17	28.17	589.00
I1-06	625.15	77.85	547.30
J2M-06	608.94	55.53	553.41
J5M-06	606.22	56.09	550.13
J6-06	608.93	54.43	554.50
PMW-1U-06	597.92	46.99	550.93

Table 1

Water Level Elevation Summary
Third Quarter - 2021
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	28.09	547.11
ABP-7-07	575.73	41.82	533.91
AFW-1M-07	571.41	DRY	-
AFW-2M-07	593.44	66.43	527.01
AGW-1M-07	592.91	43.03	549.88
B2M-07	589.52	46.63	542.89
C3-07	585.62	39.03	546.59
D1M-07	594.15	53.45	540.70
D2M-07	590.77	50.11	540.66
E6-07	577.91	22.91	555.00
F2M-07	598.91	59.24	539.67
F4M-07	601.91	53.23	548.68
F6-07	587.68	20.16	567.52
G1M-07	616.68	35.83	580.85
G6-07	609.06	28.42	580.64
H5-07	617.05	60.48	556.57
I1-07	625.14	75.97	549.17
J5M-07	606.07	58.77	547.30
J6-07	608.85	61.91	546.94
PMW-1M-07	598.50	61.11	537.39
Flow Zone 9			
ABP-1-09	575.19	39.71	535.48
ABP-7-09	575.67	42.12	533.55
AFW-1M-09	571.12	45.89	525.23
AFW-2M-09	593.32	72.28	521.04
AGW-1M-09	592.75	42.91	549.84
B2M-09	589.34	47.32	542.02
C3-09	585.00	38.74	546.26
D1M-09	594.02	53.30	540.72
D2M-09	590.66	49.93	540.73
E6-09	577.82	24.89	552.93
F2M-09	598.71	58.58	540.13
F4M-09	601.79	61.48	540.31
F6-09	587.53	15.89	571.64
G1M-09	616.58	36.00	580.58
G6-09	608.98	27.59	581.39
H2M-09	621.32	67.04	554.28
H5-09	616.93	69.06	547.87
I1-09	624.91	61.37	563.54
J2M-09	608.77	60.72	548.05
J5M-09	605.82	58.72	547.10
J6-09	608.76	43.42	565.34
PMW-1M-09	598.34	57.67	540.67

Table 1

Water Level Elevation Summary
Third Quarter - 2021
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	65.31	506.79
AFW-2L-11	593.43	96.81	496.62
AGW-1L-11	592.71	8.31	584.40
B2L-11	589.65	58.47	531.18
D1L-11	593.80	67.76	526.04
D2L-11	590.21	6.16	584.05
E6-11	577.72	42.08	535.64
F2L-11	598.94	42.43	556.51
F4L-11	602.22	31.59	570.63
F6-11	587.40	57.31	530.09
G1L-11	616.84	3.05	613.79
G6-11	608.89	21.50	587.39
H2L-11	620.73	60.79	559.94
H5-11	616.81	75.75	541.06
I1-11	624.75	78.82	545.93
J5L-11	607.20	51.96	555.24
J6-11	608.68	22.69	585.99
PMW-1L-11	598.84	68.22	530.62
Purge Wells			
APW-1	564.98	21.48	543.50
APW-2	569.89	44.09	525.80
PW-1L	593.16	45.26	547.90
PW-1U	593.50	20.69	572.81
PW-2L	597.29	56.09	541.20
PW-2M	596.61	82.31	514.30
PW-2UR	594.75	7.95	586.80
PW-3L	599.05	55.05	544.00
PW-3M	597.79	50.59	547.20
PW-4M	606.93	82.63	524.30
PW-4U	604.85	8.75	596.10
PW-5UR	601.31	6.21	595.10
PW-6UMR	609.31	67.91	541.40
PW-6UR	608.47	9.87	598.60
PW-7U	592.47	16.77	575.70
PW-8M	592.67	48.47	544.20
PW-8U	589.27	51.47	537.80
PW-9U	587.47	28.63	558.84
PW-10U	593.54	7.74	585.80

Notes:

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

Glenn Springs Holdings, Inc.
A subsidiary of Occidental Petroleum

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

7601 Old Channel Trail
Montague, MI 49437

January 31, 2022

Reference No. 11230216

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

Mr. Andrew Zwack
NYSDEC
270 Michigan Avenue
Buffalo, NY 14203-2999

Dear Ms. Kondrk and Mr. Zwack:

Re: Quarterly Operations Report - Fourth Quarter 2021
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, 2021 through December 31, 2021. The treatment system at the Site was down from April 26, 2021 through December 14, 2021 for a piping replacement project and aqueous phase liquid (APL) storage tank cleaning. The treatment system became operational again on December 15, 2021. The pumping wells were brought online in phases starting on December 15. All wells are anticipated to be back online in the first quarter of 2022. A total of 1.79 million gallons of APL were collected, treated, and discharged in compliance with the Site's City of Niagara Falls Publicly Owned Treatment Works (POTW) Significant Industrial User (SIU) Wastewater Discharge Permit #49. Effluent discharged from October 4 through October 8 was for system testing purposes. One drum (approximately 800 pounds) and one tanker (approximately 3,000 gallons) of non-aqueous phase liquid (NAPL) 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
- 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

The continuously recorded water levels for the flow zone 9 piezometer PMW-1M-09 for the fourth quarter 2021 are presented on Figure 10. Based on the manual water level in this piezometer collected on December 3, 2021, indicating a groundwater elevation of 543.52 feet above mean sea level (AMSL), the groundwater elevations presented on Figure 10 are suspect. It is anticipated that the water level in this piezometer exceeded 526 feet

AMSL throughout the quarter as a result of the pumping system not being in operation until December 15. The transducer will be replaced in early 2022.

All wells were offline from April 26 through December 14 for an ongoing piping replacement project and APL Storage Tank cleaning. As such, the water levels in all wells were out of setpoint range throughout most of the quarter. The wells began to be brought back online in phases on December 15. All wells are anticipated to be back online in the first quarter of 2022. 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. At the end of the quarterly monitoring period, the water level exceeded setpoint range in the following wells:

- APW-1 and PW-10U: The water levels in APW-1 and PW-10U were out of setpoint range at the end of the quarter due to variable frequency drive (VFD) faults, which will be addressed in the first quarter of 2022. This will include replacement of the pump and motor in APW-1.
- PW-2L and PW-5UR: The water levels in PW-2L and PW-5UR were out of setpoint range at the end of the quarter due to pump faults. The pumps and motors in these wells will be replaced in the first quarter of 2022.
- PW-2M: The water level in PW-2M was out of setpoint range at the end of the quarter as the well awaits a pump/variable frequency drive upgrade.
- PW-6MR: The water level in PW-6MR was out of setpoint range at the end of the quarter, as the pump did not start up when attempted. The pump and motor will be replaced in the first quarter of 2022.
- PW-8U and PW-9U: The water levels in PW-8U and PW-9U were out of setpoint range at the end of the quarter due to pump communication issues, which will be addressed in the first quarter of 2022.

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,

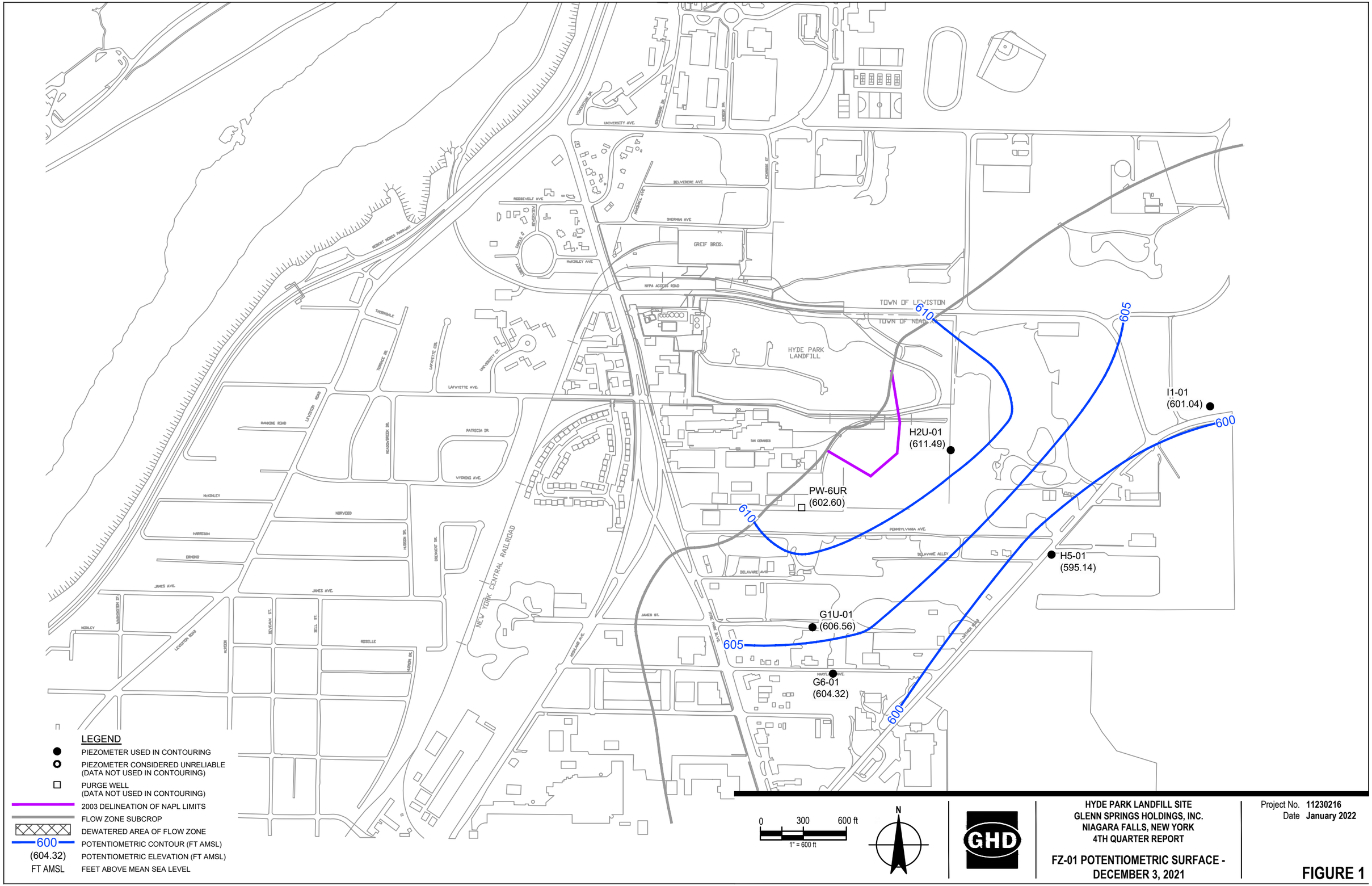
GLENN SPRINGS HOLDINGS, INC.

JBranch

Joe Branch
Project Manager
231-670-6809 Cell

JB/eew/10
Encl.

cc: G. May, NYSDEC
J. Robinson, NYSDOH
J. Pentilchuk, GHD
M. Popek, GHD



LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 600 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (604.32) FT AMSL — POTENTIOMETRIC ELEVATION (FT AMSL)

0 300 600 ft

1" = 600 ft

N

GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

FZ-01 POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. **11230216**
Date **January 2022**

FIGURE 1

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack002\11230216-GHD-0000-LTR-EN-0101_WA-Kondrk-Zwack002.DWG
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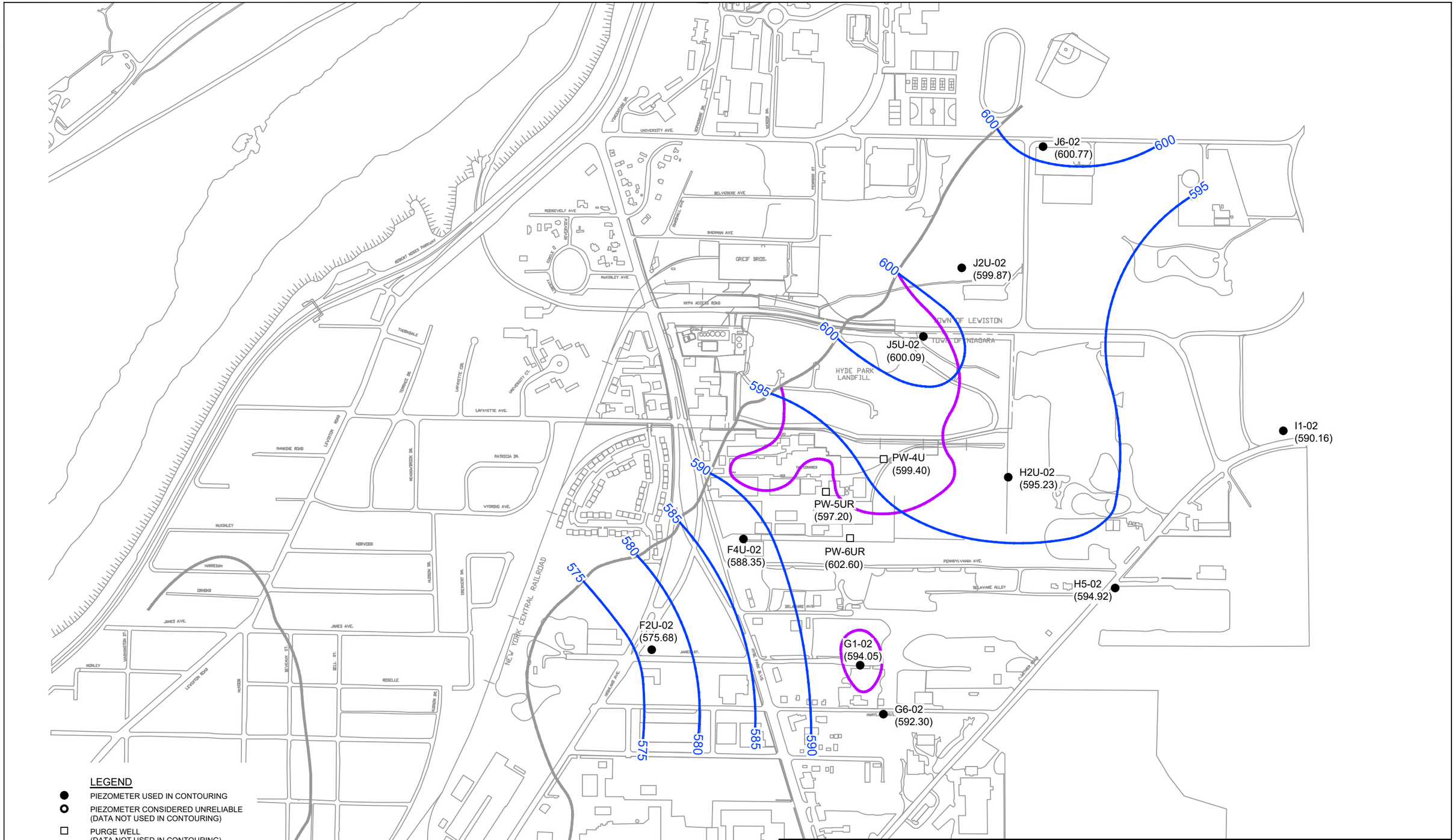

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 580 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (575.68) FT AMSL — POTENTIOMETRIC ELEVATION (FT AMSL)
- FEET ABOVE MEAN SEA LEVEL

GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

FZ-02 POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. **11230216**
Date **January 2022**

FIGURE 2

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack002\11230216-GHD-0000-LTR-EN-0102_WA-Kondrk-Zwack002.DWG
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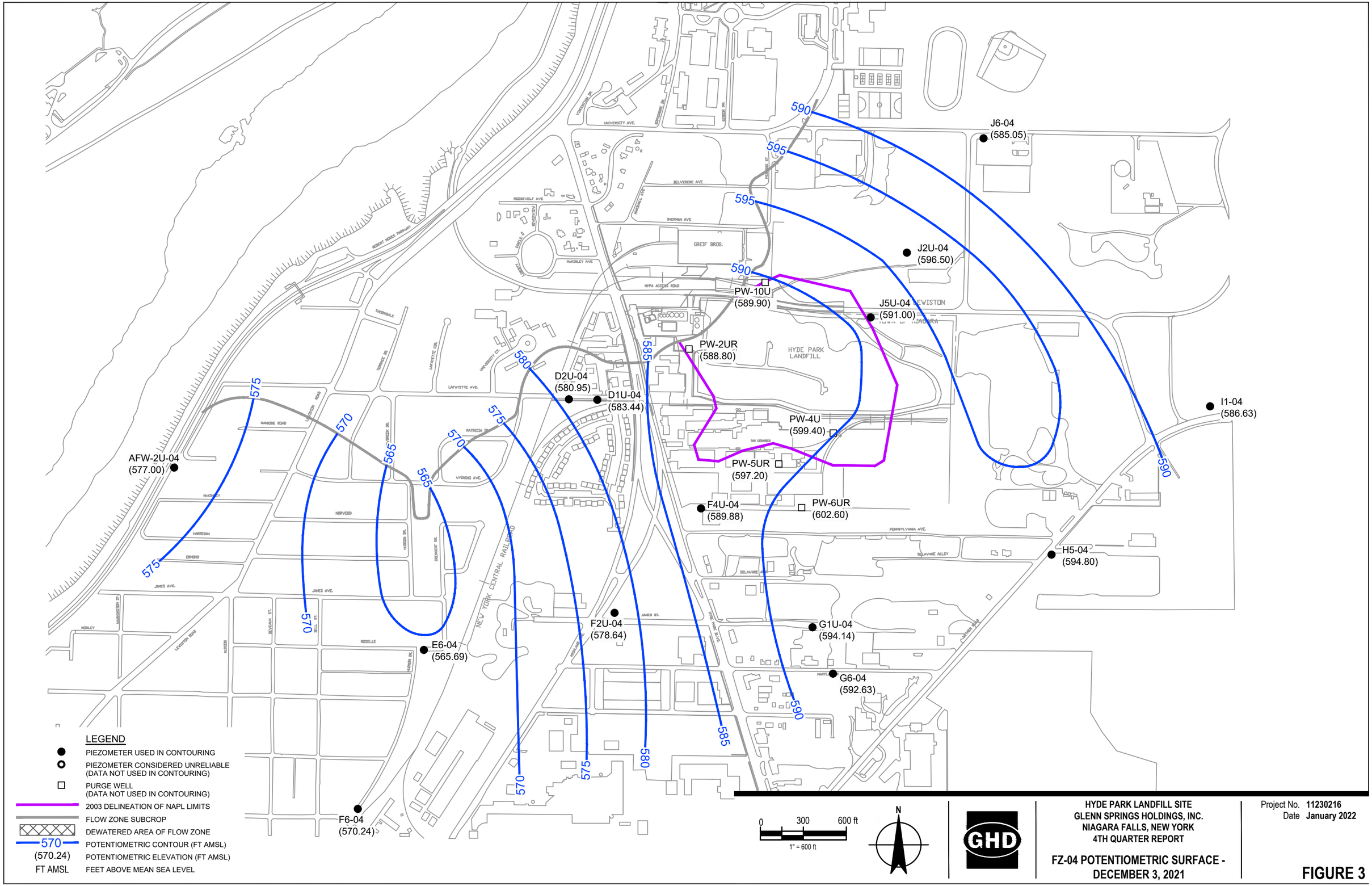

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

FZ-04 POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. **11230216**
Date **January 2022**

FIGURE 3

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack002\11230216-GHD-0000-LTR-EN-0103_WA-Kondrk-Zwack002.DWG
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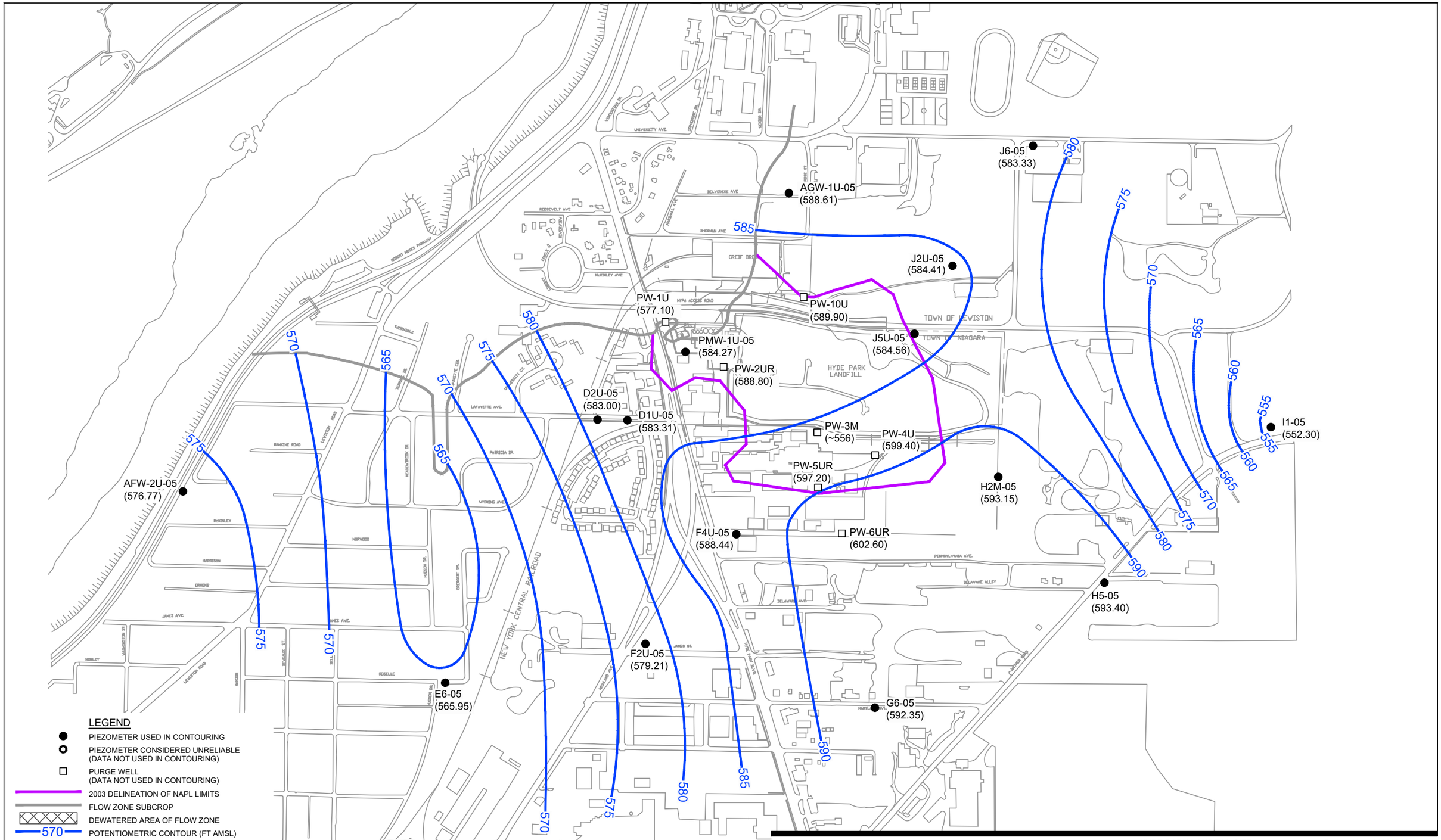

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 570 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (570.14) — POTENTIOMETRIC ELEVATION (FT AMSL)
- (~556) — 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
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

FZ-05 POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. **11230216**
Date **January 2022**

FIGURE 4

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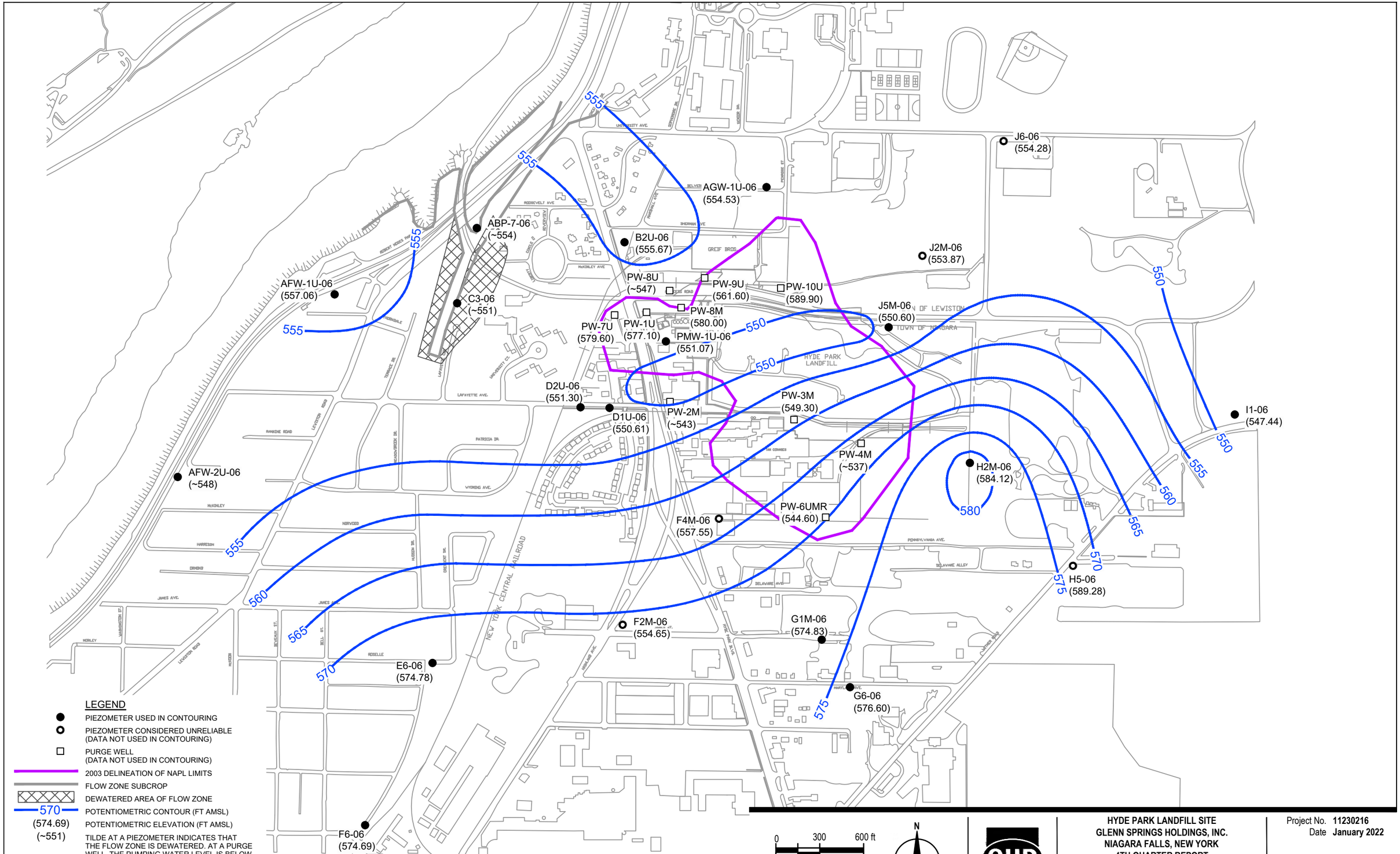

LEGEND

- PIEZOMETER USED IN CONTOURING
- PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
- PURGE WELL (DATA NOT USED IN CONTOURING)
- 2003 DELINEATION OF NAPL LIMITS
- FLOW ZONE SUBCROP
- DEWATERED AREA OF FLOW ZONE
- 570 — POTENTIOMETRIC CONTOUR (FT AMSL)
- (574.69) (~551) — POTENTIOMETRIC ELEVATION (FT AMSL)

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

FT AMSL — FEET ABOVE MEAN SEA LEVEL

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HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

FZ-06 POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. **11230216**
Date **January 2022**

FIGURE 5

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack002\11230216-GHD-0000-LTR-EN-0105_WA-Kondrk-Zwack002.DWG
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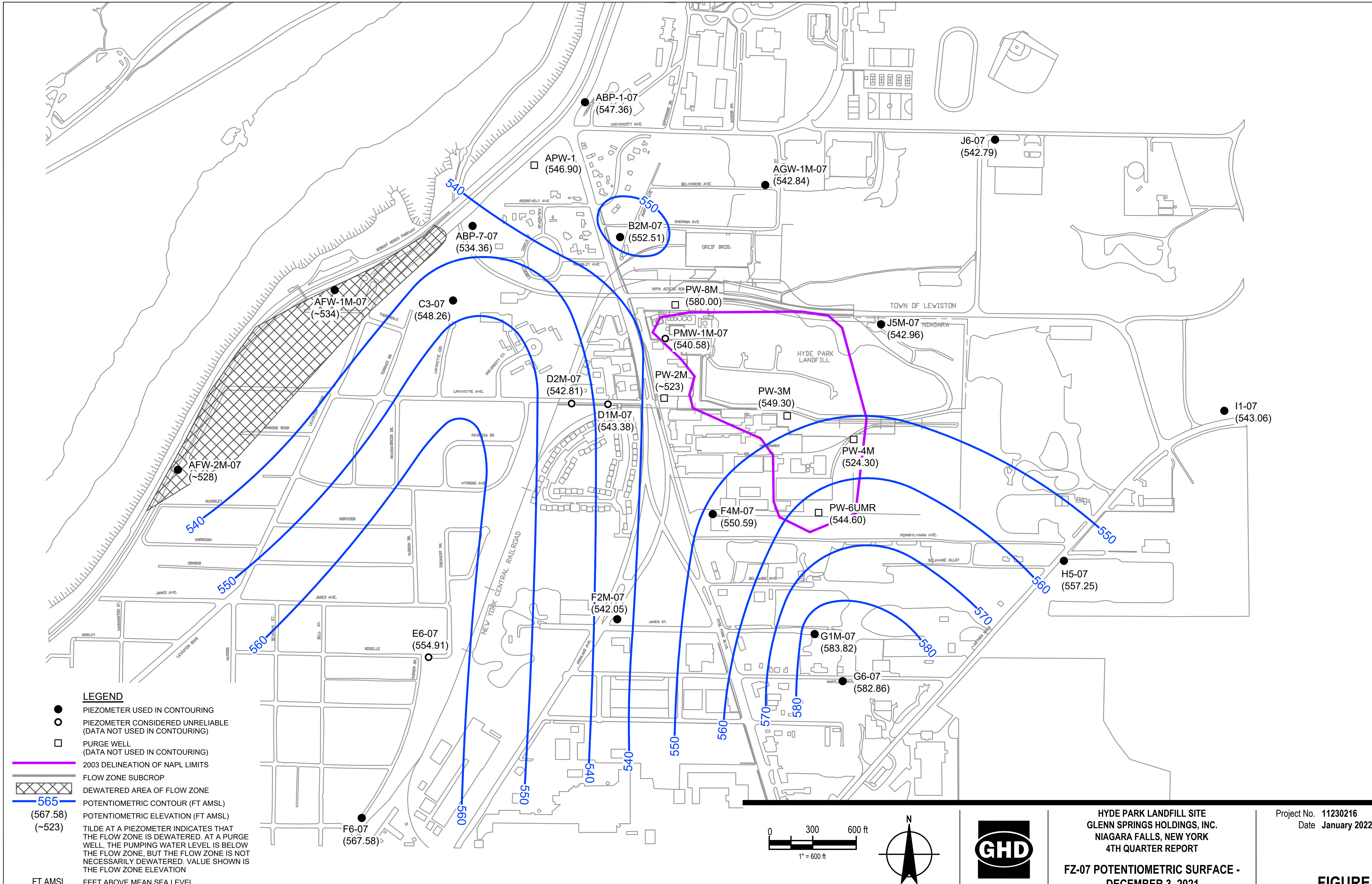
ABP-1-07
(547.36)
APW-1
(546.90)
AGW-1M-07
(542.84)
J6-07
(542.79)
B2M-07
(552.51)
ABP-7-07
(534.36)
GREIF BROS.
PW-8M
(580.00)
TOWN OF LEWISTON
J5M-07
(542.96)
PMW-1M-07
(540.58)
HYDE PARK LANDFILL
AFW-1M-07
(~534)
C3-07
(548.26)
D2M-07
(542.81)
PW-2M
(~523)
PW-3M
(549.30)
D1M-07
(543.38)
I1-07
(543.06)
PW-4M
(524.30)
AFW-2M-07
(~528)
PW-6UMR
(544.60)
F4M-07
(550.59)
H5-07
(557.25)
F2M-07
(542.05)
G1M-07
(583.82)
E6-07
(554.91)
G6-07
(582.86)
F6-07
(567.58)
NEW YORK CENTRAL RAILROAD
540
550
560
570
580
LEGEND
PIEZOMETER USED IN CONTOURING
PIEZOMETER CONSIDERED UNRELIABLE (DATA NOT USED IN CONTOURING)
PURGE WELL (DATA NOT USED IN CONTOURING)
2003 DELINEATION OF NAPL LIMITS
FLOW ZONE SUBCROP
DEWATERED AREA OF FLOW ZONE
565 POTENTIOMETRIC CONTOUR (FT AMSL)
(567.58) POTENTIOMETRIC ELEVATION (FT AMSL)
(~523) 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
FT AMSL FEET ABOVE MEAN SEA LEVEL
0 300 600 ft
1" = 600 ft
N

GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

FZ-07 POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. 11230216
Date January 2022

FIGURE 6

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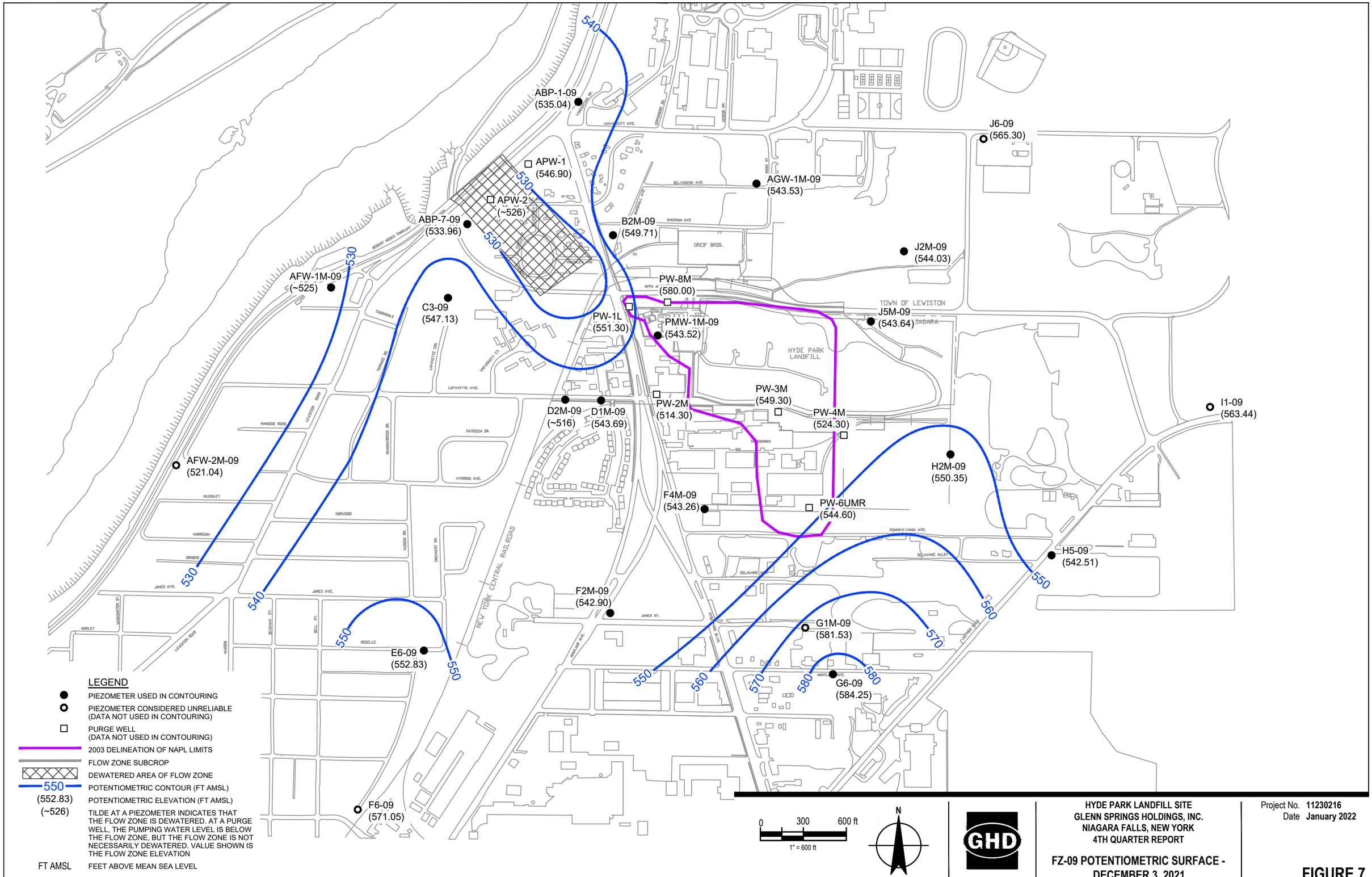

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

FZ-09 POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. **11230216**
Date **January 2022**

FIGURE 7

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack002\11230216-GHD-0000-LTR-EN-0107_WA-Kondrk-Zwack002.DWG
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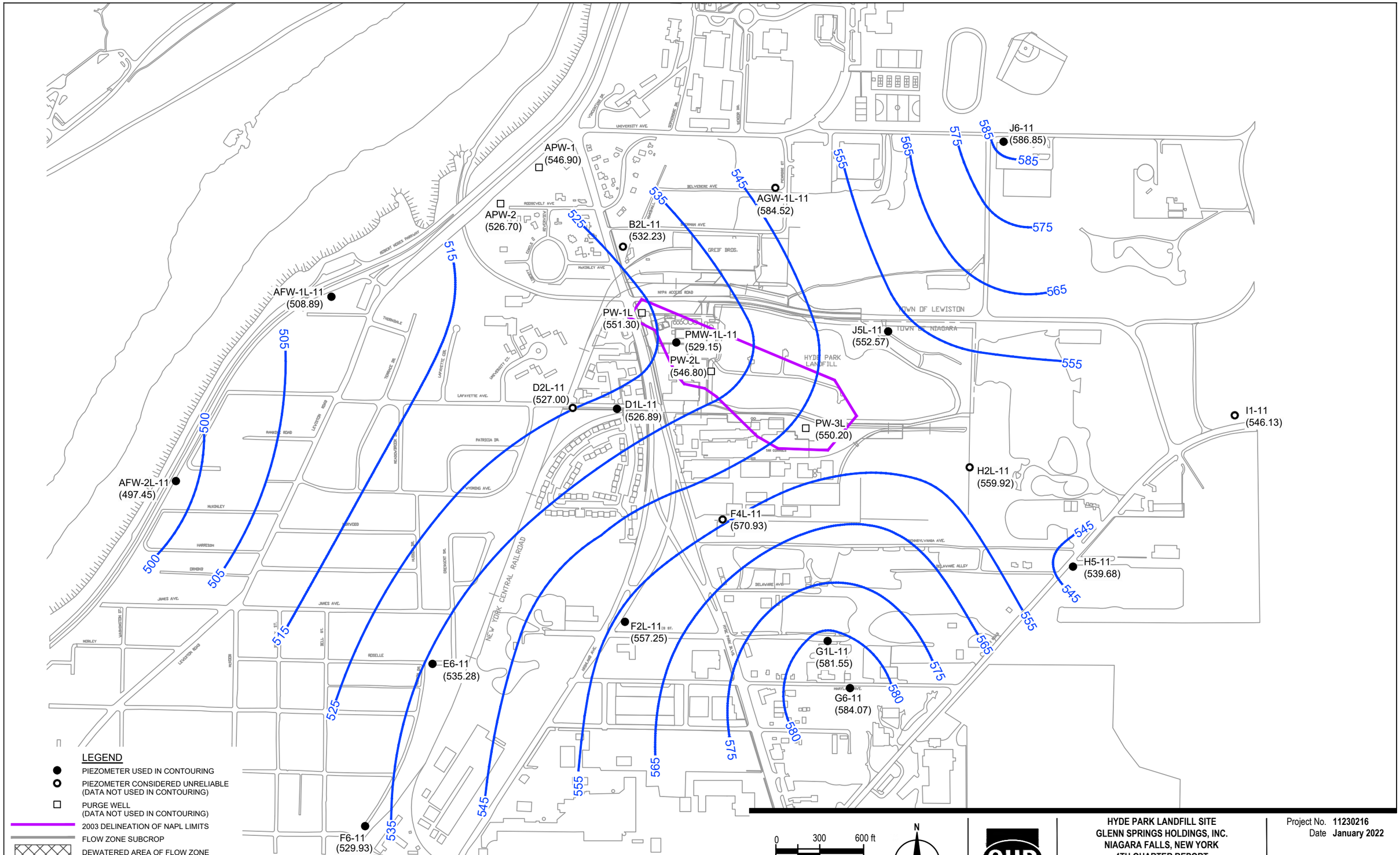

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

FZ-11 POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. **11230216**
Date **January 2022**

FIGURE 8

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack002\11230216-GHD-0000-LTR-EN-0108_WA-Kondrk-Zwack002.DWG
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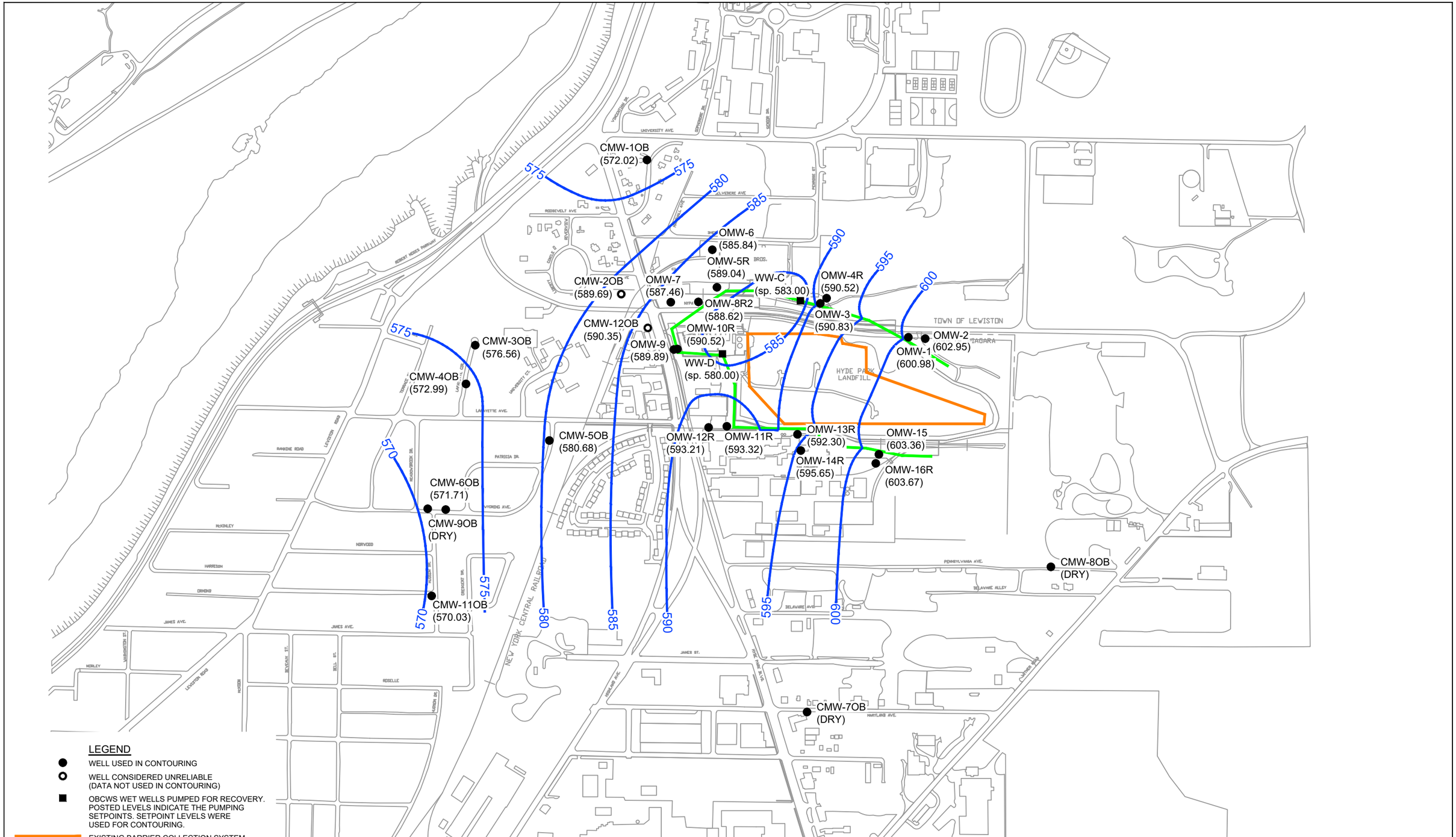

LEGEND

●	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.
🟧	EXISTING BARRIER COLLECTION SYSTEM
🟩	OVERBURDEN BARRIER COLLECTION SYSTEM
▨	DEWATERED AREA OF FLOW ZONE
600	POTENTIOMETRIC CONTOUR (FT AMSL)
(570.03)	POTENTIOMETRIC ELEVATION (FT AMSL)
(sp. 583.00)	SETPOINT LEVEL
FT AMSL	FEET ABOVE MEAN SEA LEVEL

0 300 600 ft
1" = 600 ft

N

GHD

HYDE PARK LANDFILL SITE
GLENN SPRINGS HOLDINGS, INC.
NIAGARA FALLS, NEW YORK
4TH QUARTER REPORT

OVERBURDEN POTENTIOMETRIC SURFACE - DECEMBER 3, 2021

Project No. **11230216**
Date **January 2022**

FIGURE 9

Filename: \\ghdnet\ghd\US\Niagara Falls\Projects\564\11230216\Digital_Design\ACAD\Figures\LTR-Kondrk-Zwack002\11230216-GHD-0000-LTR-EN-0109_WA-Kondrk-Zwack002.DWG
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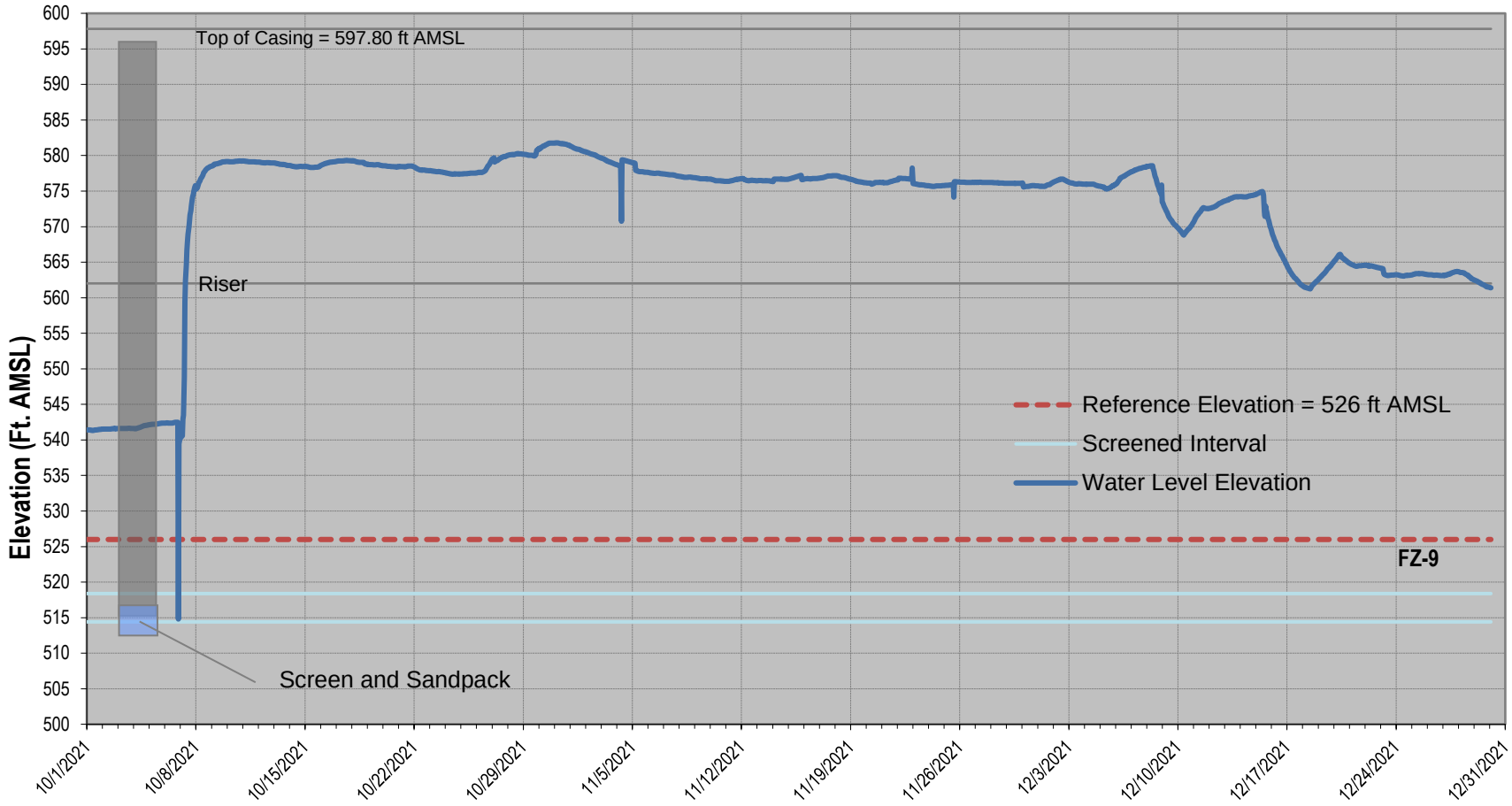

figure 10

PMW-1M-09 4th Quarter 2021 - 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 - 2021
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Overburden			
CMW-2OB	590.79	1.10	589.69
CMW-3OB	582.13	5.57	576.56
CMW-4OB	574.28	1.29	572.99
CMW-5OB	583.43	2.75	580.68
CMW-6OB	571.89	0.18	571.71
CMW-7OB	611.00	Dry	-
CMW-8OB	616.11	Dry	-
CMW-9OB	571.76	Dry	-
CMW-1OB	576.80	4.78	572.02
CMW-11OB	572.85	2.82	570.03
CMW-12OB	594.74	4.39	590.35
MH20	605.87	4.63	601.24
MH21	599.77	5.99	593.78
MH22	593.37	6.79	586.58
MH23	587.05	7.68	579.37
MH24	582.57	1.09	581.48
MH25	583.82	0.72	583.10
MH26	584.48	2.22	582.26
MH27	586.12	5.42	580.70
MH28	585.23	5.42	579.81
MH29	604.58	7.46	597.12
MH30	599.49	7.33	592.16
MH31	590.10	8.66	581.44
MH32	592.01	9.71	582.30
MH33	592.51	8.77	583.74
MH34	598.34	7.16	591.18
MH35	605.69	6.55	599.14
MH35A	605.69	7.18	598.51
OMW-1	605.28	4.30	600.98
OMW-2	605.99	3.04	602.95
OMW-3	598.63	7.80	590.83
OMW-4R	601.17	10.65	590.52
OMW-5R	591.31	2.27	589.04
OMW-6	587.62	1.78	585.84
OMW-7	592.74	5.28	587.46
OMW-8R2	594.67	6.05	588.62
OMW-9	595.27	5.38	589.89
OMW-10R	595.13	4.61	590.52
OMW-11R	597.52	4.20	593.32
OMW-12R	596.71	3.50	593.21
OMW-13R	601.50	9.20	592.30
OMW-14R	599.64	3.99	595.65
OMW-15	607.48	4.12	603.36
OMW-16R	607.62	3.95	603.67
SC-2	625.61	22.74	602.87
SC-3	638.72	40.63	598.09
SC-4	639.35	39.52	599.83
SC-5	634.07	31.70	602.37
SC-6	631.15	19.30	611.85

Table 1

Water Level Elevation Summary
Fourth Quarter - 2021
Hyde Park RRT Program

Well	Reference Elevation (ft AMSL)	Depth to Water (ft)	Water Level Elevation (ft AMSL)
Shallow Bedrock			
CMW-1SH	576.11	11.65	564.46
CMW-2SH	590.51	14.53	575.98
CMW-3SH	581.91	27.00	554.91
CMW-4SH	574.16	6.33	567.83
CMW-5SH	583.36	6.52	576.84
CMW-6SH	572.05	10.19	561.86
CMW-7SH	610.58	11.19	599.39
CMW-8SH	615.95	5.49	610.46
CMW-9SH	571.96	11.70	560.26
CMW-11SH	573.21	7.85	565.36
CMW-12SH	597.02	19.52	577.50
Flow Zone 1			
G1U-01	617.08	10.52	606.56
G6-01	609.24	4.92	604.32
H2U-01	620.92	9.43	611.49
H5-01	617.61	22.47	595.14
I1-01	625.58	24.54	601.04
Flow Zone 2			
F2U-02	599.89	24.21	575.68
F4U-02	602.32	13.97	588.35
G1-02	616.86	22.81	594.05
G6-02	608.65	16.35	592.30
H2U-02	620.88	25.65	595.23
H5-02	617.47	22.55	594.92
I1-02	625.47	35.31	590.16
J2U-02	609.66	9.79	599.87
J5U-02	606.21	6.12	600.09
J6-02	609.23	8.46	600.77
Flow Zone 4			
AFW-2U-04	593.48	16.48	577.00
D1U-04	593.77	10.33	583.44
D2U-04	590.65	9.70	580.95
E6-04	578.23	12.54	565.69
F2U-04	599.76	21.12	578.64
F4U-04	602.19	12.31	589.88
F6-04	588.06	17.82	570.24
G1U-04	616.96	22.82	594.14
G6-04	609.15	16.52	592.63
H5-04	617.40	22.60	594.80
I1-04	625.30	38.67	586.63
J2U-04	609.42	12.92	596.50
J5U-04	606.05	15.05	591.00
J6-04	609.12	24.07	585.05

Table 1

Water Level Elevation Summary
Fourth Quarter - 2021
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	16.56	576.77
AGW-1U-05	591.80	3.19	588.61
D1U-05	593.51	10.20	583.31
D2U-05	590.56	7.56	583.00
E6-05	578.04	12.09	565.95
F2U-05	599.64	20.43	579.21
F4U-05	602.06	13.62	588.44
F6-05	587.85	17.71	570.14
G6-05	609.13	16.78	592.35
H2M-05	621.59	28.44	593.15
H5-05	617.31	23.91	593.40
I1-05	625.25	72.95	552.30
J2U-05	609.30	24.89	584.41
J5U-05	605.87	21.31	584.56
J6-05	609.02	25.69	583.33
PMW-1U-05	598.00	13.73	584.27
Flow Zone 6			
ABP-7-06	575.78	Dry	-
AFW-1U-06	571.83	14.77	557.06
AFW-2U-06	593.22	48.17	545.05
AGW-1U-06	591.66	37.13	554.53
B2U-06	589.29	33.62	555.67
C3-06	585.78	36.85	548.93
D1U-06	593.25	42.64	550.61
D2U-06	590.38	39.08	551.30
E6-06	577.99	3.21	574.78
F2M-06	599.06	44.41	554.65
F4M-06	602.05	44.50	557.55
F6-06	587.84	13.15	574.69
G1M-06	616.75	41.92	574.83
G6-06	609.09	32.49	576.60
H2M-06	621.42	37.30	584.12
H5-06	617.17	27.89	589.28
I1-06	625.15	77.71	547.44
J2M-06	608.94	55.07	553.87
J5M-06	606.22	55.62	550.60
J6-06	608.93	54.65	554.28
PMW-1U-06	597.92	46.85	551.07

Table 1

Water Level Elevation Summary
Fourth Quarter - 2021
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	27.84	547.36
ABP-7-07	575.73	41.37	534.36
AFW-1M-07	571.41	Dry	-
AFW-2M-07	593.44	66.79	526.65
AGW-1M-07	592.91	50.07	542.84
B2M-07	589.52	37.01	552.51
C3-07	585.62	37.36	548.26
D1M-07	594.15	50.77	543.38
D2M-07	590.77	47.96	542.81
E6-07	577.91	23.00	554.91
F2M-07	598.91	56.86	542.05
F4M-07	601.91	51.32	550.59
F6-07	587.68	20.10	567.58
G1M-07	616.68	32.86	583.82
G6-07	609.06	26.20	582.86
H5-07	617.05	59.80	557.25
I1-07	625.14	82.08	543.06
J5M-07	606.07	63.11	542.96
J6-07	608.85	66.06	542.79
PMW-1M-07	598.50	57.92	540.58
Flow Zone 9			
ABP-1-09	575.19	40.15	535.04
ABP-7-09	575.67	41.71	533.96
AFW-1M-09	571.12	46.19	524.93
AFW-2M-09	593.32	72.28	521.04
AGW-1M-09	592.75	49.22	543.53
B2M-09	589.34	39.63	549.71
C3-09	585.00	37.87	547.13
D1M-09	594.02	50.33	543.69
D2M-09	590.66	Dry	-
E6-09	577.82	24.99	552.83
F2M-09	598.71	55.81	542.90
F4M-09	601.79	58.53	543.26
F6-09	587.53	16.48	571.05
G1M-09	616.58	35.05	581.53
G6-09	608.98	24.73	584.25
H2M-09	621.32	70.97	550.35
H5-09	616.93	74.42	542.51
I1-09	624.91	61.47	563.44
J2M-09	608.77	64.74	544.03
J5M-09	605.82	62.18	543.64
J6-09	608.76	43.46	565.30
PMW-1M-09	598.34	54.82	543.52

Table 1

Water Level Elevation Summary
Fourth Quarter - 2021
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	63.21	508.89
AFW-2L-11	593.43	95.98	497.45
AGW-1L-11	592.71	8.19	584.52
B2L-11	589.65	57.42	532.23
D1L-11	593.80	66.91	526.89
D2L-11	590.21	63.21	527.00
E6-11	577.72	42.44	535.28
F2L-11	598.94	41.69	557.25
F4L-11	602.22	31.29	570.93
F6-11	587.40	57.47	529.93
G1L-11	616.84	35.29	581.55
G6-11	608.89	24.82	584.07
H2L-11	620.73	60.81	559.92
H5-11	616.81	77.13	539.68
I1-11	624.75	78.62	546.13
J5L-11	607.20	54.63	552.57
J6-11	608.68	21.83	586.85
PMW-1L-11	598.84	69.69	529.15
Purge Wells			
APW-1	564.98	18.08	546.90
APW-2	569.89	43.19	526.70
PW-1L	593.16	41.86	551.30
PW-1U	593.50	16.40	577.10
PW-2L	597.29	50.49	546.80
PW-2M	596.61	82.31	514.30
PW-2UR	594.75	5.95	588.80
PW-3L	599.05	48.85	550.20
PW-3M	597.79	48.49	549.30
PW-4M	606.93	82.63	524.30
PW-4U	604.85	5.45	599.40
PW-5UR	601.31	4.11	597.20
PW-6UMR	609.31	64.71	544.60
PW-6UR	608.47	5.87	602.60
PW-7U	592.47	12.87	579.60
PW-8M	592.67	12.67	580.00
PW-8U	589.27	51.47	537.80
PW-9U	587.47	25.87	561.60
PW-10U	593.54	3.64	589.90

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 - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
10/01/21		
10/02/21		
10/03/21		
10/04/21	7.7	58,000
10/05/21	7.3	25,000
10/06/21	7.3	83,000
10/07/21	7.3	143,000
10/08/21	7.1	37,000
10/09/21		
10/10/21		
10/11/21		
10/12/21		
10/13/21		
10/14/21		
10/15/21		
10/16/21		
10/17/21		
10/18/21		
10/19/21		
10/20/21		
10/21/21		
10/22/21		
10/23/21		
10/24/21		
10/25/21		
10/26/21		
10/27/21		
10/28/21		
10/29/21		
10/30/21		
10/31/21		
11/01/21		
11/02/21		
11/03/21		
11/04/21		
11/05/21		
11/06/21		

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
Fourth Quarter - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
11/07/21		
11/08/21		
11/09/21		
11/10/21		
11/11/21		
11/12/21		
11/13/21		
11/14/21		
11/15/21		
11/16/21		
11/17/21		
11/18/21		
11/19/21		
11/20/21		
11/21/21		
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12/02/21		
12/03/21		
12/04/21		
12/05/21		
12/06/21		
12/07/21		
12/08/21		
12/09/21		
12/10/21		
12/11/21		
12/12/21		
12/13/21		

Table 2

Leachate Treatment System Daily Effluent Monitoring Data
Fourth Quarter - 2021
Hyde Park RRT Program

	Effluent	
Date	**pH**	**Flow**
	(su)	(gal)
12/14/21		
12/15/21	7.1	159,000
12/16/21	7.1	102,000
12/17/21	7.1	259,000
12/18/21		
12/19/21		
12/20/21	7.0	166,000
12/21/21		
12/22/21	7.1	174,000
12/23/21		
12/24/21		
12/25/21		
12/26/21		
12/27/21		
12/28/21	7.1	181,000
12/29/21	7.0	195,000
12/30/21	7.1	195,000
12/31/21	7.0	15,000
	Total	1,792,000

Notes:

su - Standard Unit
gal - Gallons

Table 3

Analytical Results Summary
Weekly Sampling - Leachate Treatment System
Fourth Quarter - 2021
Hyde Park RRT Program

Effluent

Parameter	Units	10/6/2021	12/22/2021	12/31/2021
Volatiles				
1,1,1-Trichloroethane	µg/L	2.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	2.1	0.51 J	0.59 J
1,1,2-Trichloroethane	µg/L	0.60 J	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	4.1	1.9	1.8
1,1-Dichloroethene	µg/L	2.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	2.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	µg/L	2.0 U	1.0 U	1.0 U
1,2-Dichloroethane	µg/L	7.7	3.6	4.0
1,2-Dichloropropane	µg/L	0.54 J	1.0 U	0.36 J
1,3-Dichlorobenzene	µg/L	2.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	2.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	2.0 U	1.0 U	1.0 U
3-Chlorotoluene	µg/L	2.0 U	1.0 U	1.0 U
4-Chlorotoluene	µg/L	2.0 U	1.0 U	1.0 U
Benzene	µg/L	4.7	2.6	4.6
Bromodichloromethane	µg/L	2.0 U	1.0 U	1.0 U
Bromoform	µg/L	2.0 U	1.0 U	1.0 U
Bromomethane (Methyl bromide)	µg/L	2.0 U	1.0 U	1.0 U
Carbon disulfide	µg/L	10	11	5.7
Carbon tetrachloride	µg/L	2.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	2.0 U	1.0 U	1.0 U
Chloroethane	µg/L	2.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	µg/L	3.2	1.6	1.9
Chloromethane (Methyl chloride)	µg/L	2.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	µg/L	1.9 J	1.0	1.2
cis-1,3-Dichloropropene	µg/L	2.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC-12)	µg/L	2.0 U	1.0 U	1.0 U
Ethylbenzene	µg/L	2.0 U	1.0 U	1.0 U
m&p-Xylenes	µg/L	4.0 U	2.0 U	2.0 U
m-Monochlorobenzotrifluoride	µg/L	2.0 U	1.0 U	1.0 U
Methylene chloride	µg/L	2.0 U	1.0 U	1.0 U
o-Monochlorobenzotrifluoride	µg/L	2.0 U	1.0 U	1.0 U
o-Xylene	µg/L	2.0 U	1.0 U	1.0 U
p-Monochlorobenzotrifluoride	µg/L	2.0 U	1.0 U	1.0 U
Styrene	µg/L	2.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	2.0 U	1.0 U	1.0 U
Toluene	µg/L	2.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	2.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	2.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	2.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	µg/L	2.0 U	1.0 U	1.0 U
Vinyl acetate	µg/L	4.0 U	2.0 U	2.0 U
Vinyl chloride	µg/L	140	72	64
Xylenes (total)	µg/L	6.0 U	3.0 U	3.0 U
General Chemistry				
Phenolics (total)	mg/L	0.0050 U	0.0040 J	0.0044 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
Fourth Quarter - 2021
Hyde Park RRT Program

Sample Location:		**EFFLUENT**	**EFFLUENT**
Sample ID:		**HP 123121 EFF**	**HP 123121 EFF**
Sample Date:		**12/31/2021**	**12/31/2021**
Parameters	**Units**		
Volatile Organic Compounds			
Vinyl chloride	µg/L	60.1	-
General Chemistry			
Phosphorus	mg/L	-	0.300

Notes:

"-" - Not applicable

mg/L - Milligrams per liter

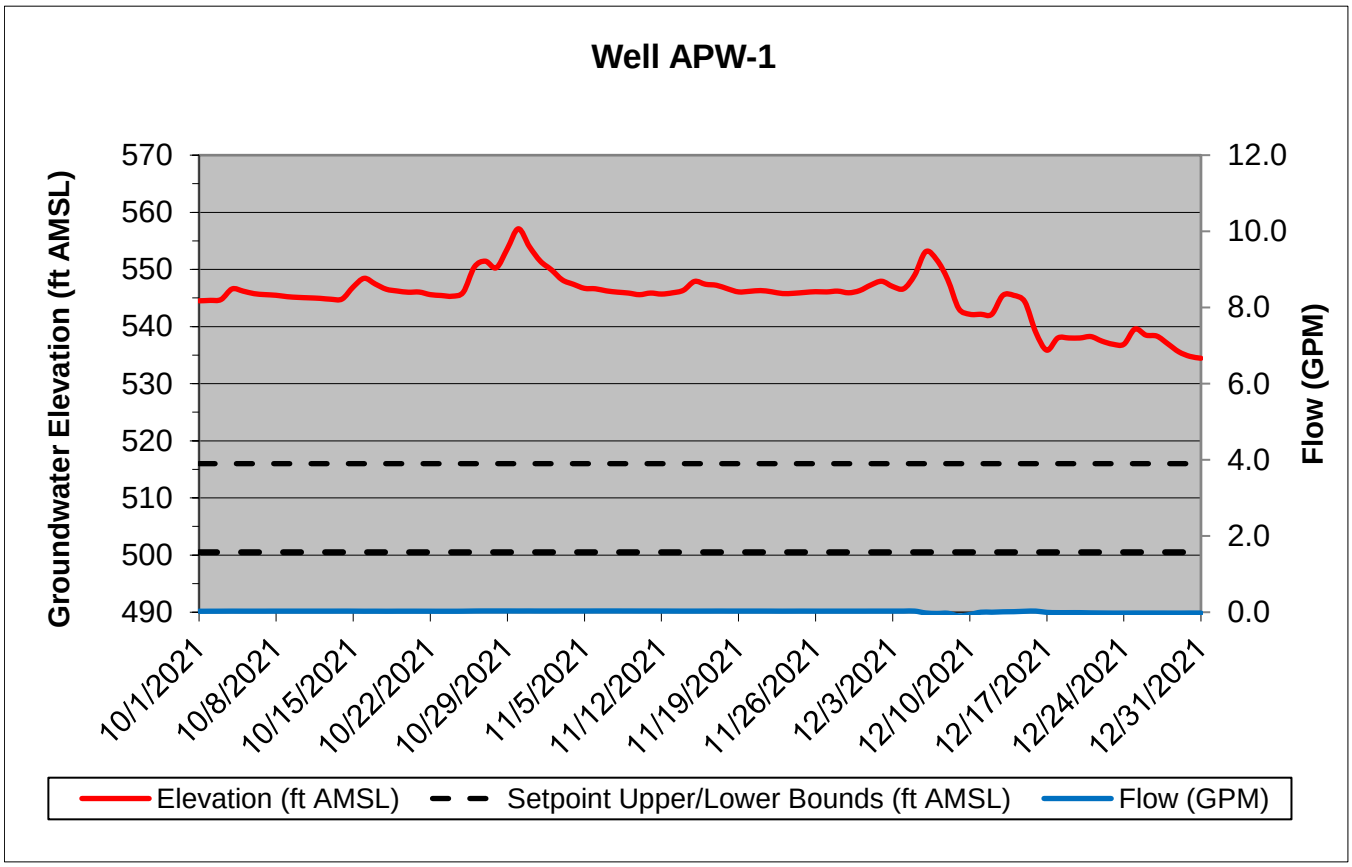
µg/L - Micrograms per liter

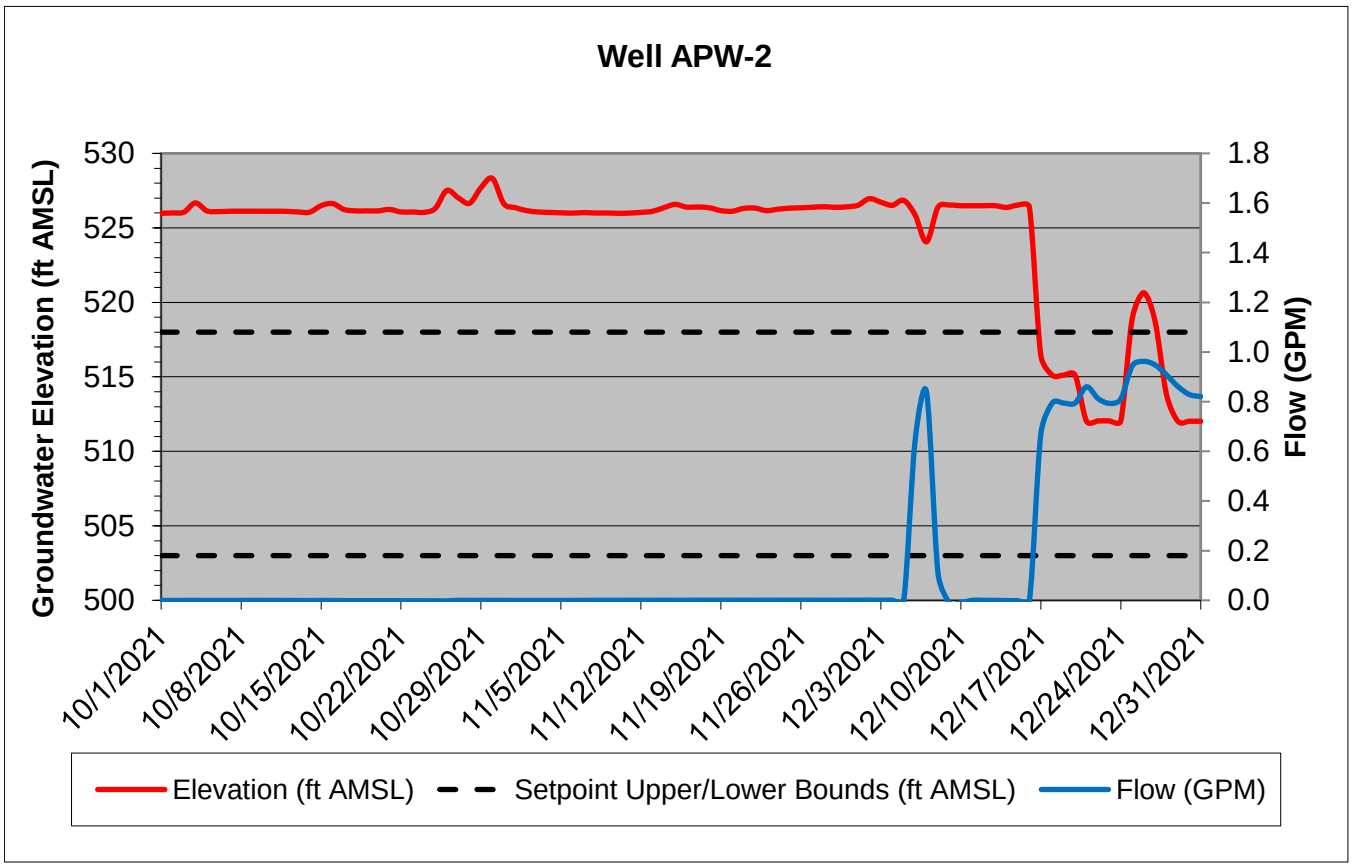
Attachment A

Fourth Quarter 2021

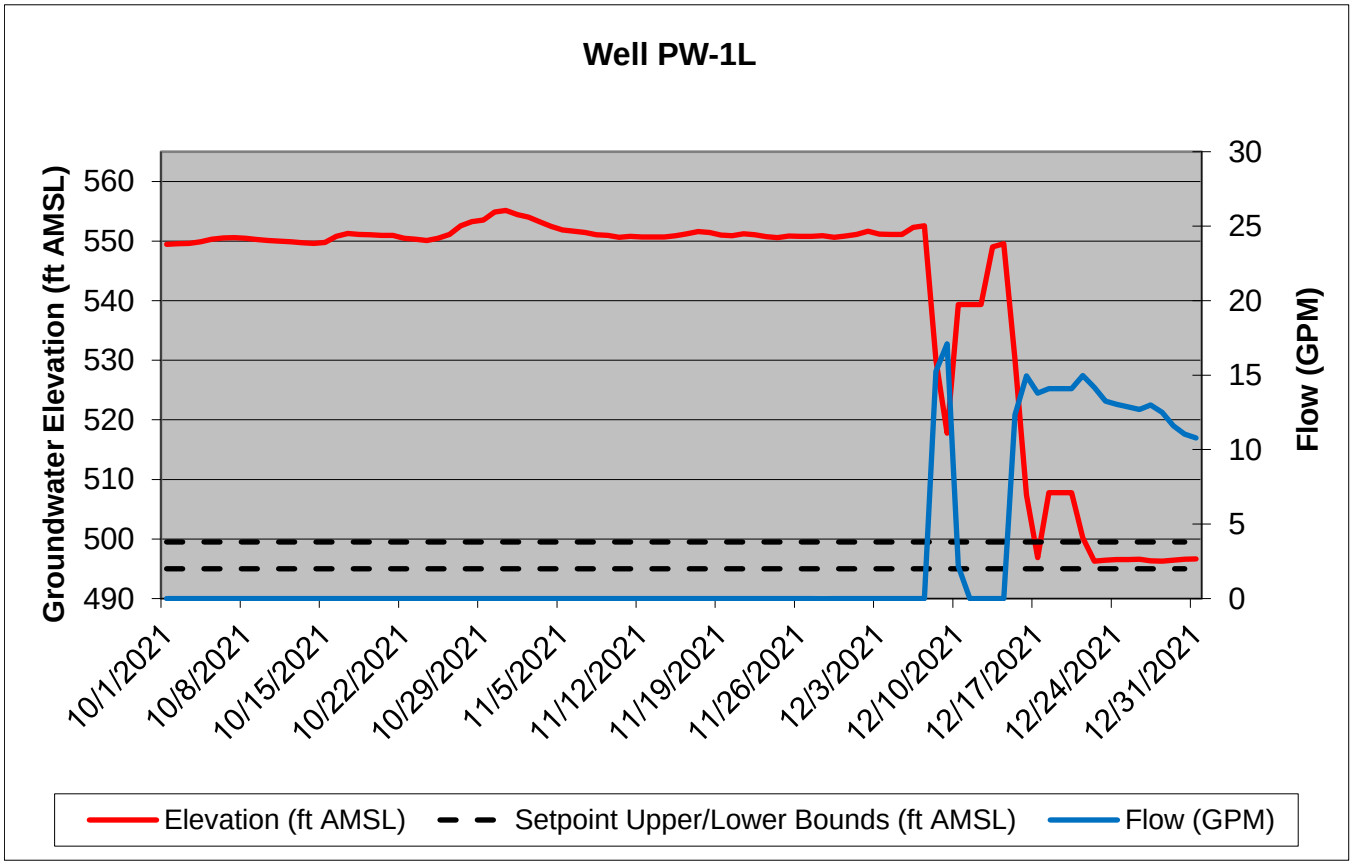
Pumping Well Performance Graphs

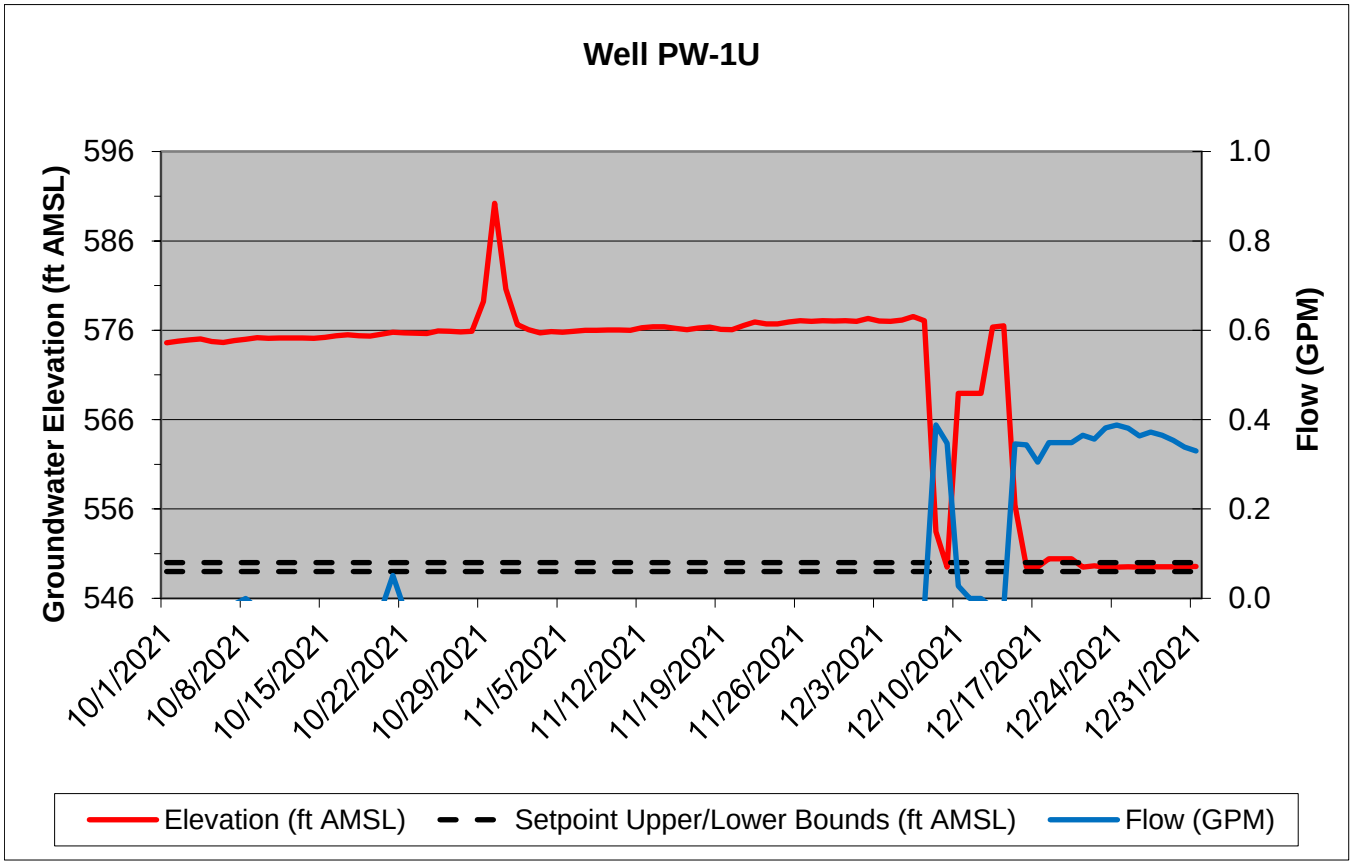
FOURTH QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



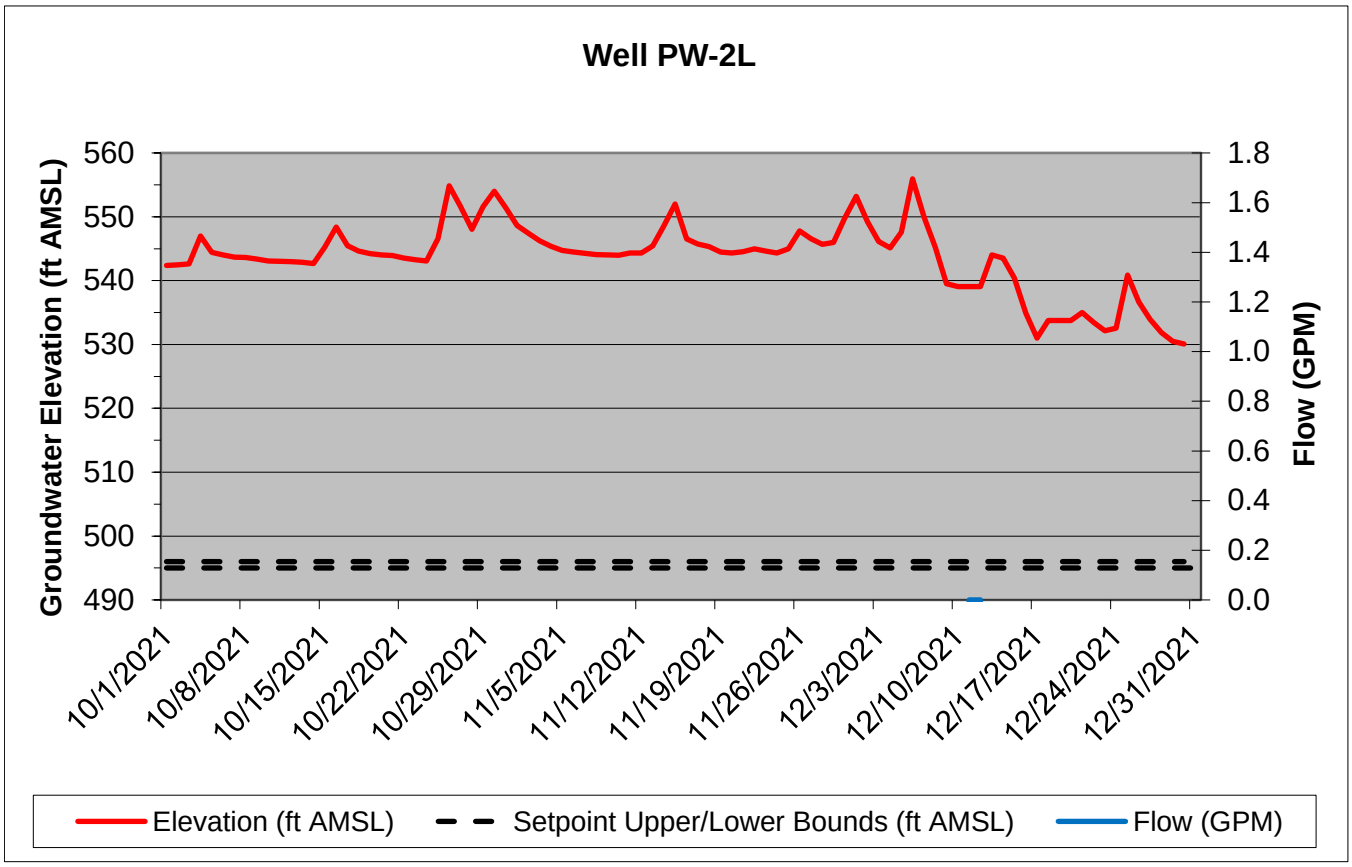


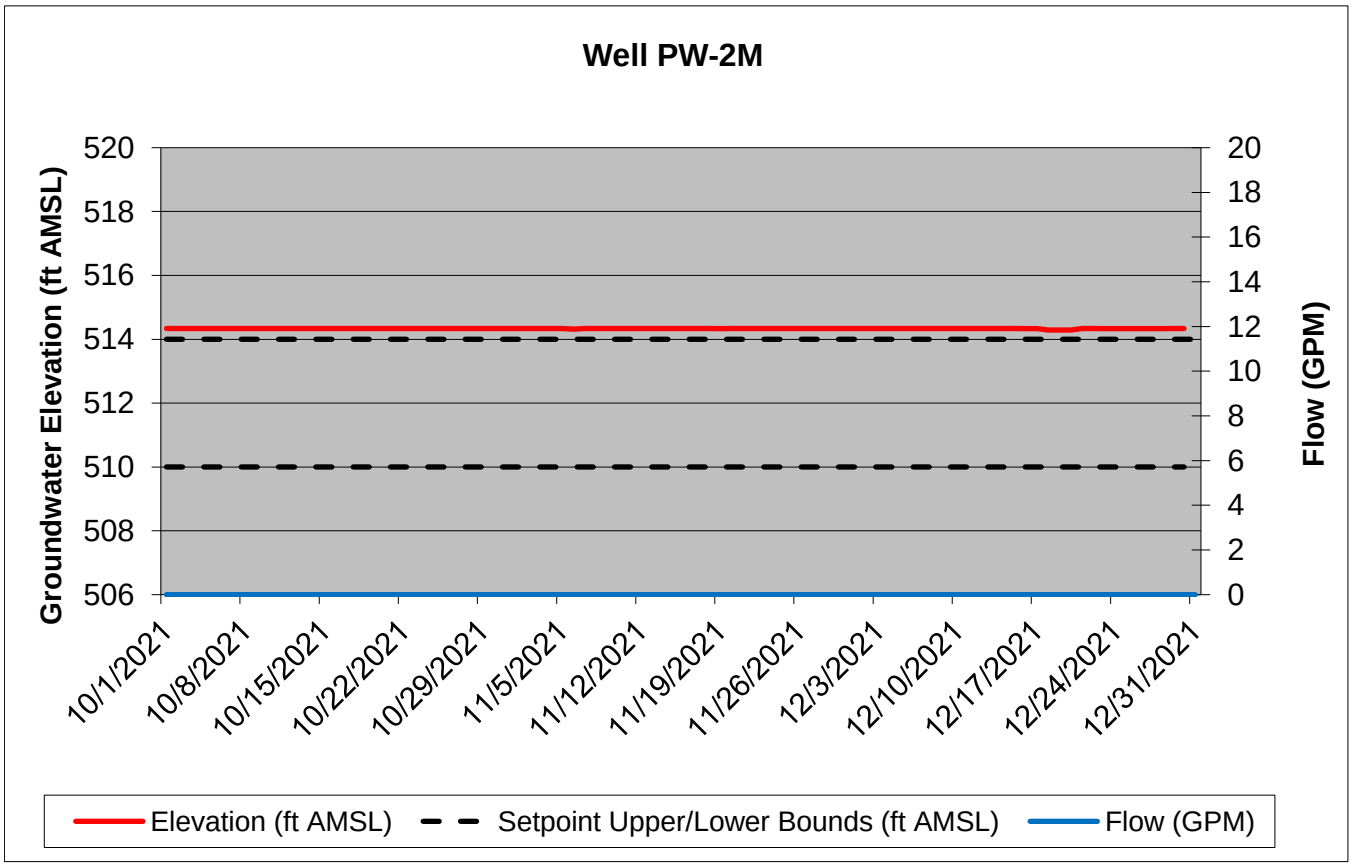
FOURTH QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



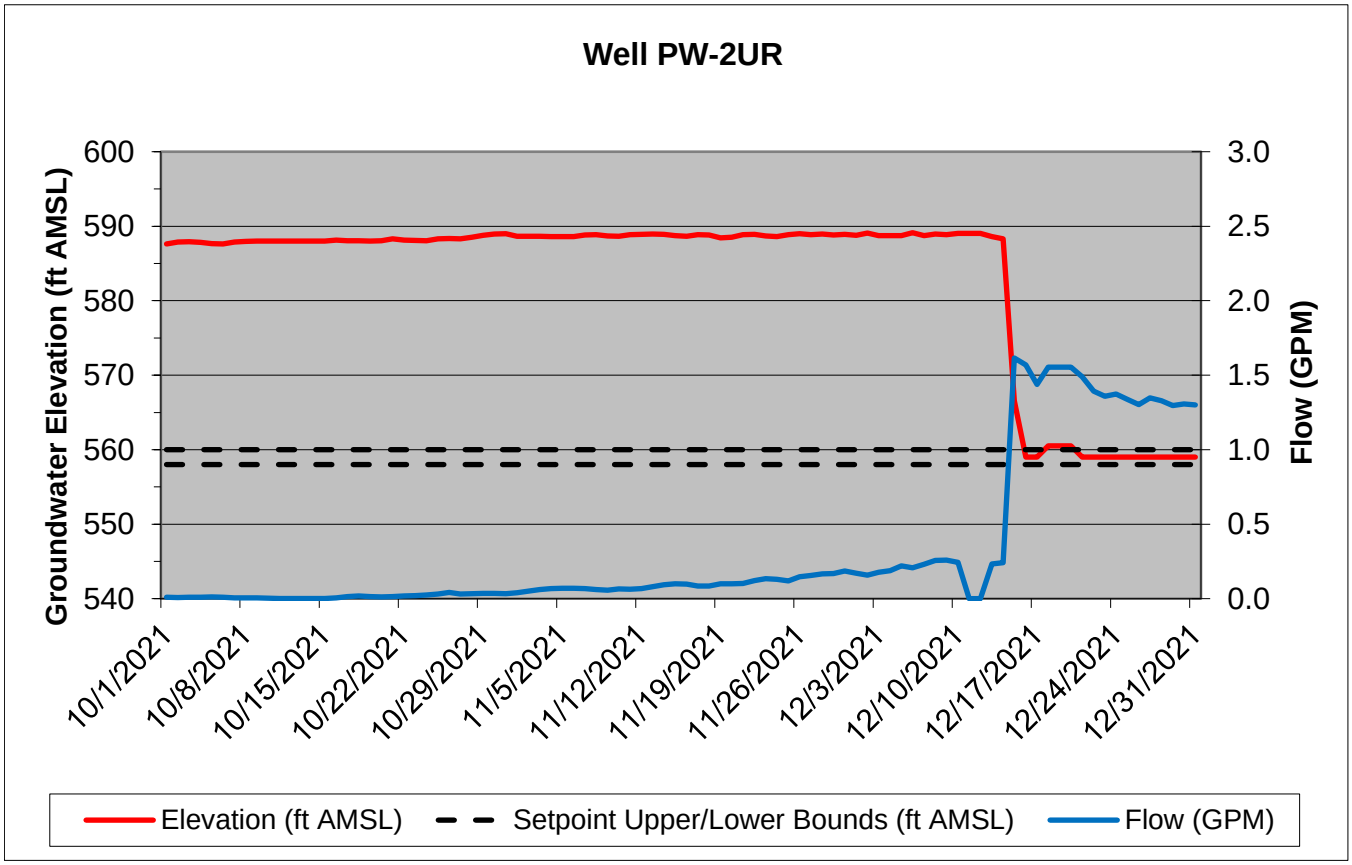


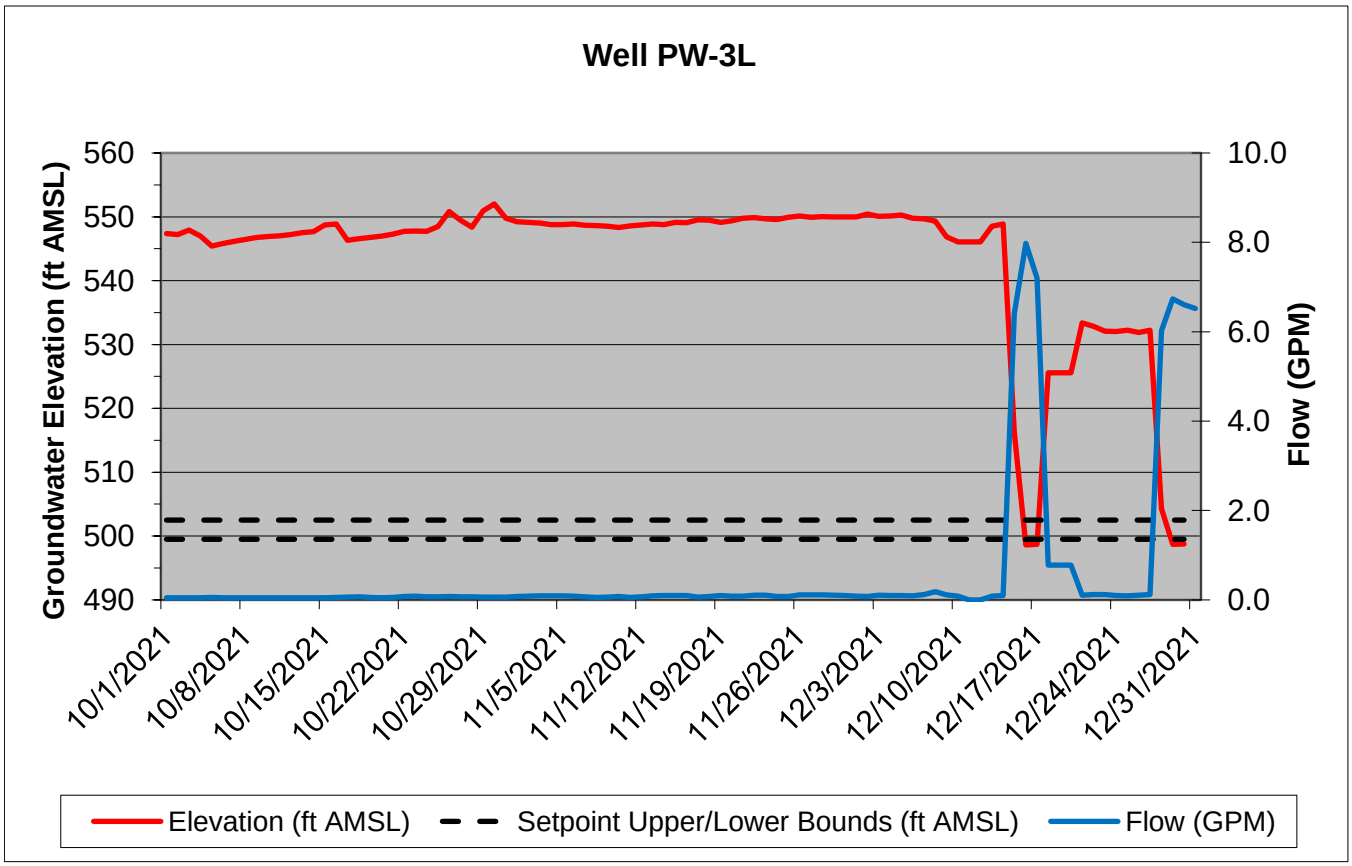
FOURTH QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



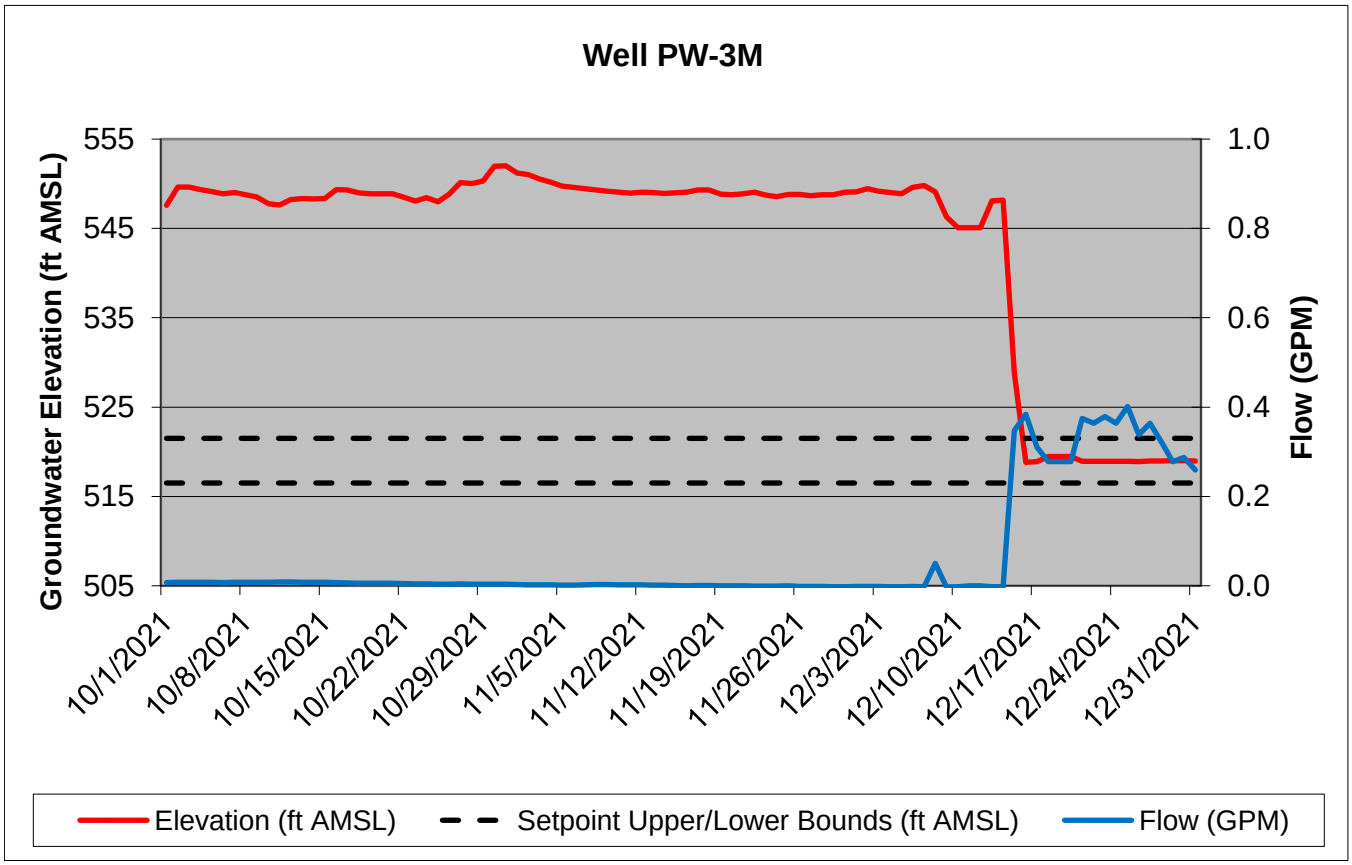


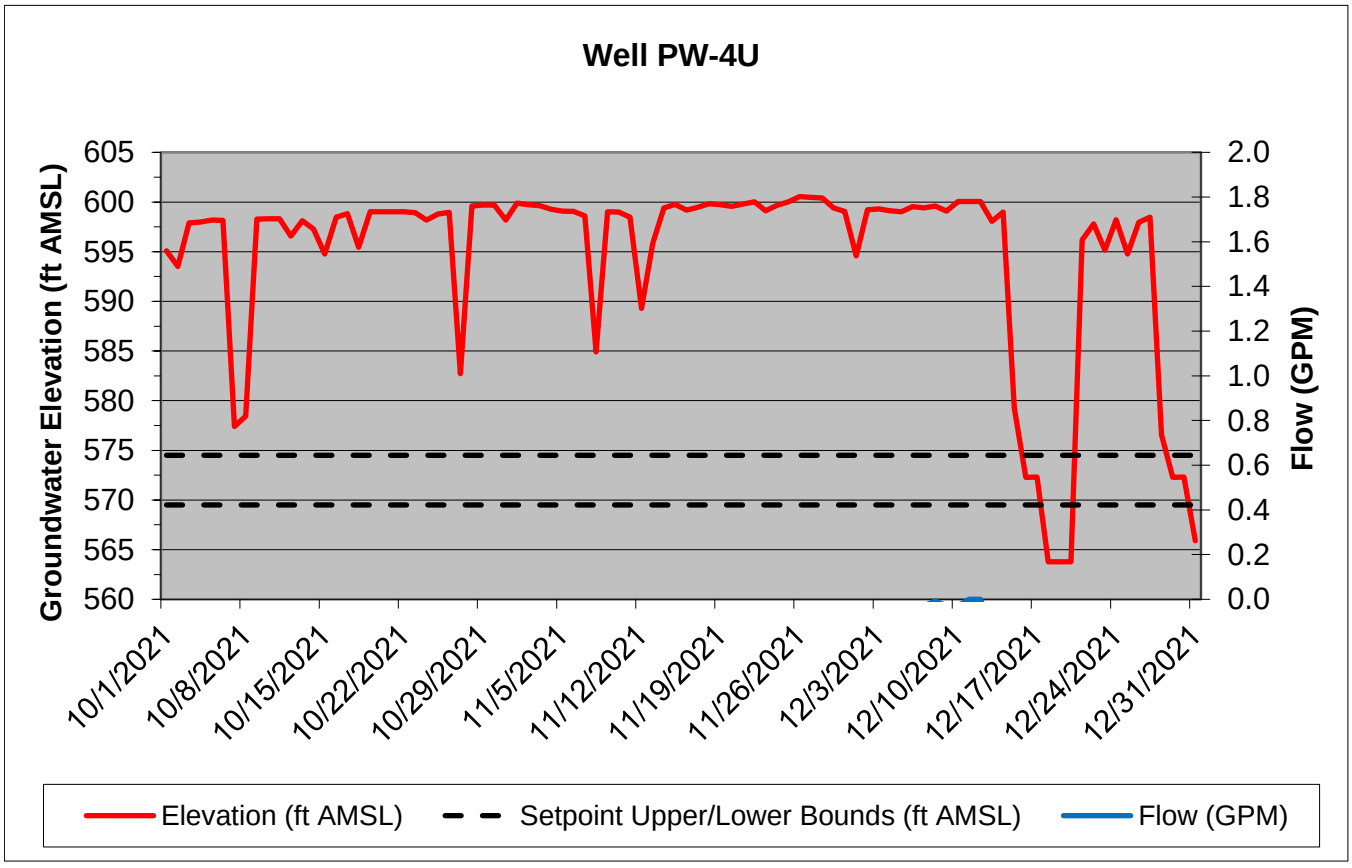
FOURTH QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



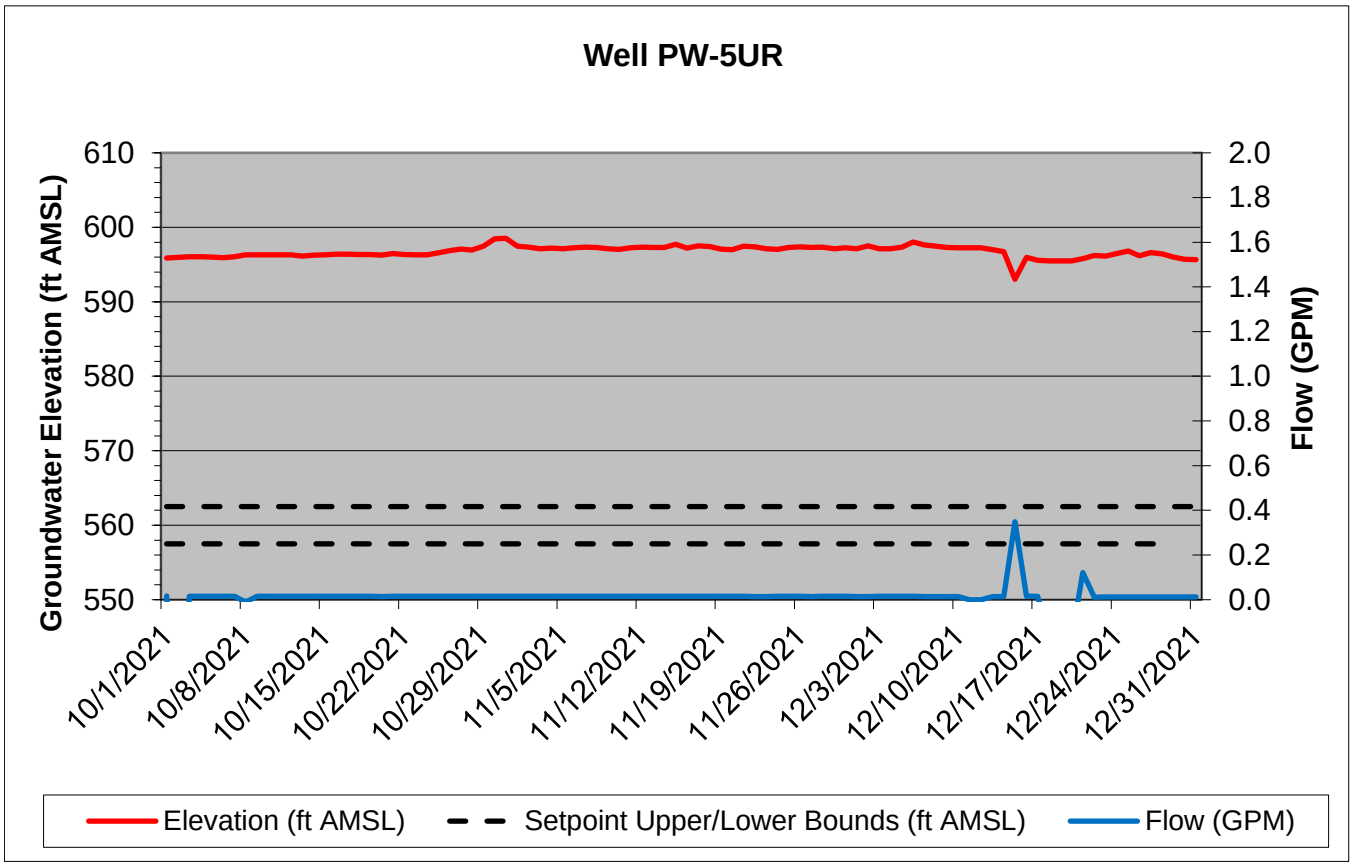


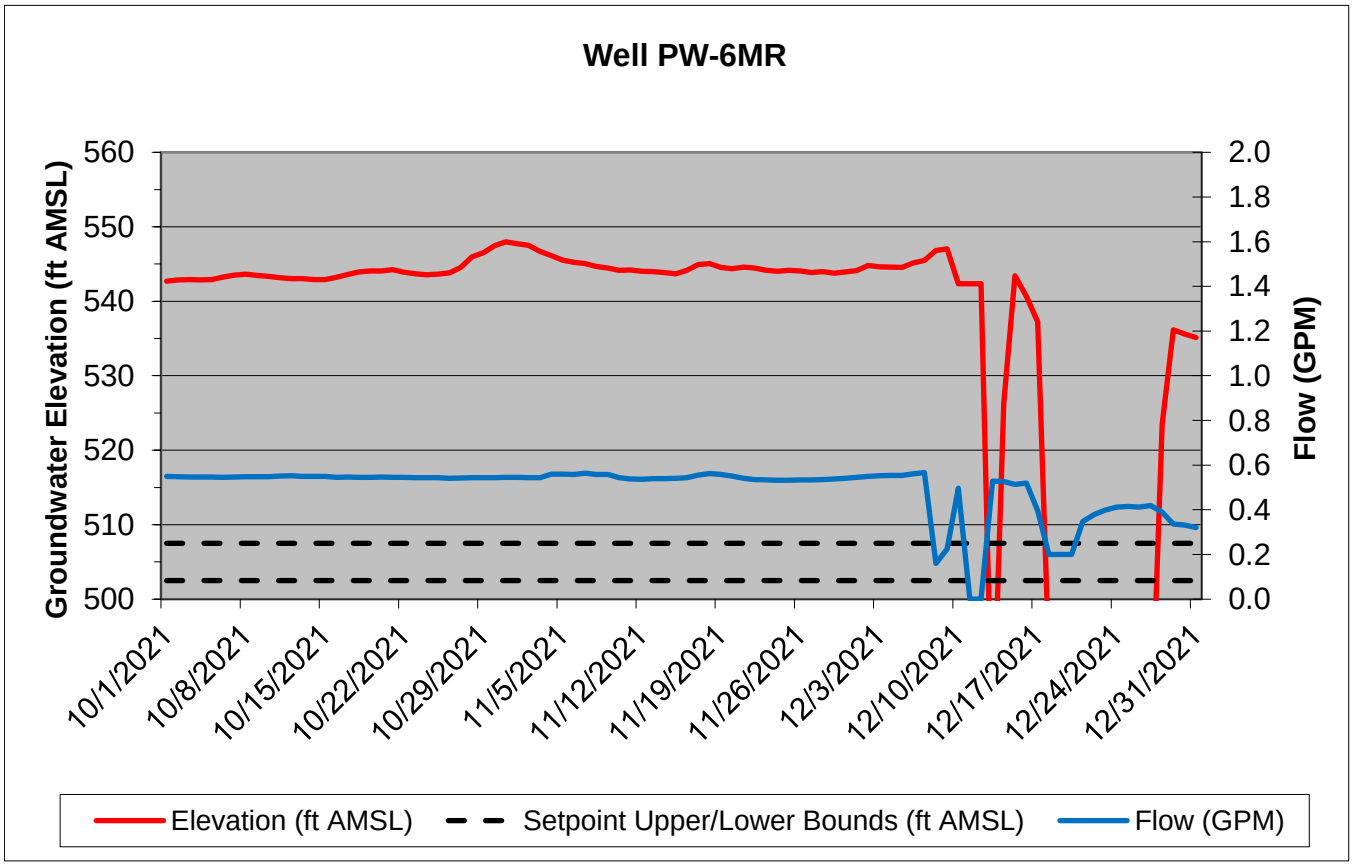
FOURTH QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK



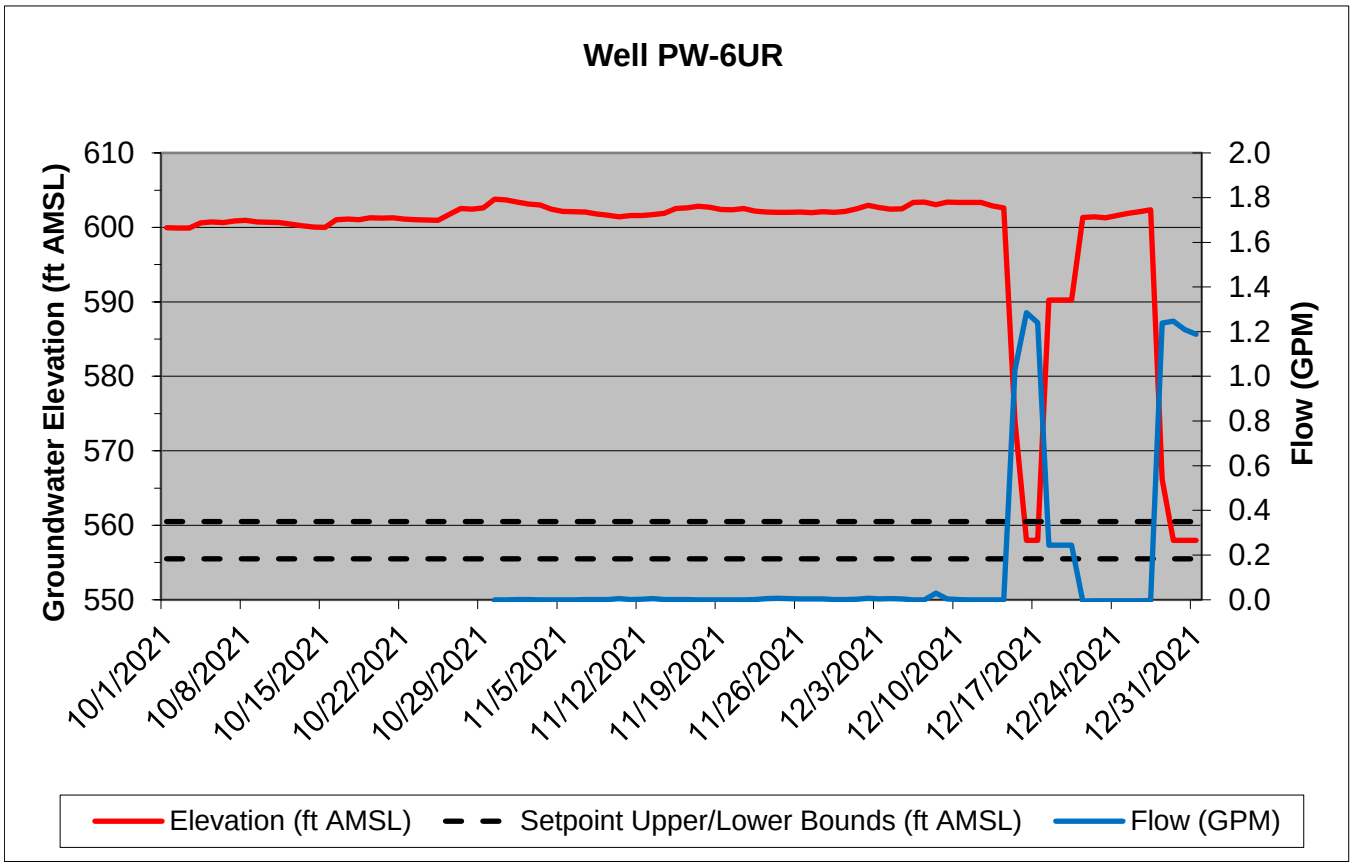


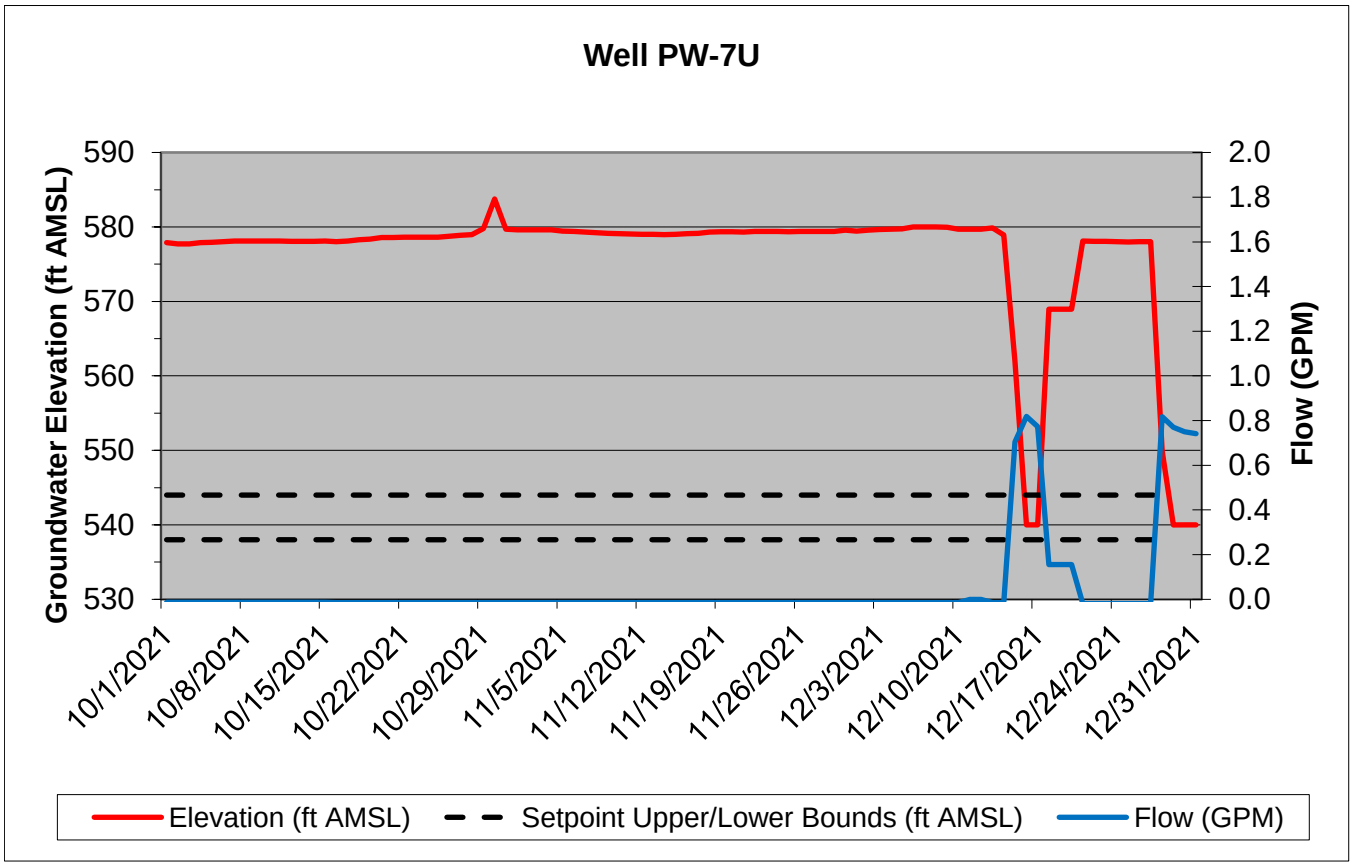
FOURTH QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





FOURTH QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK





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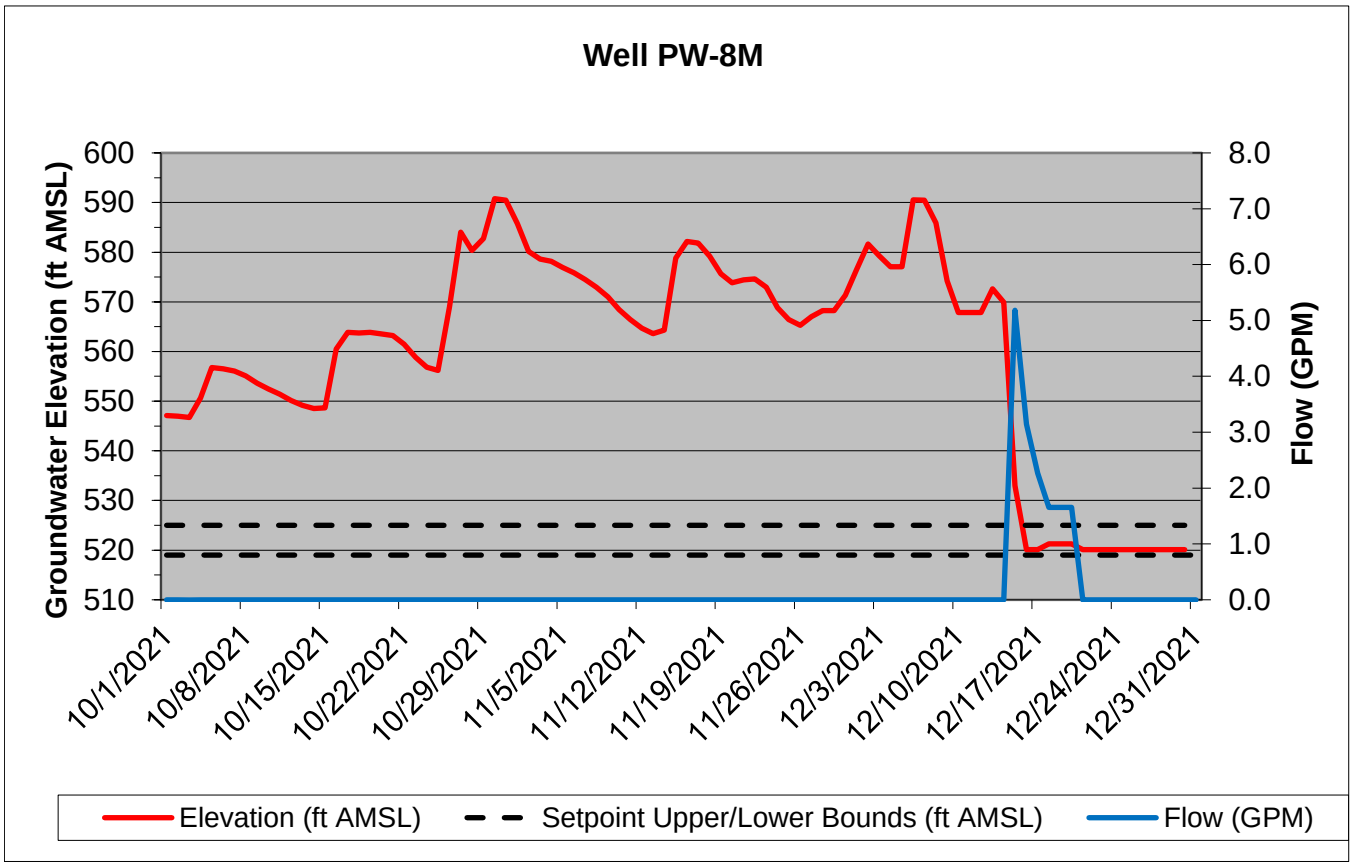
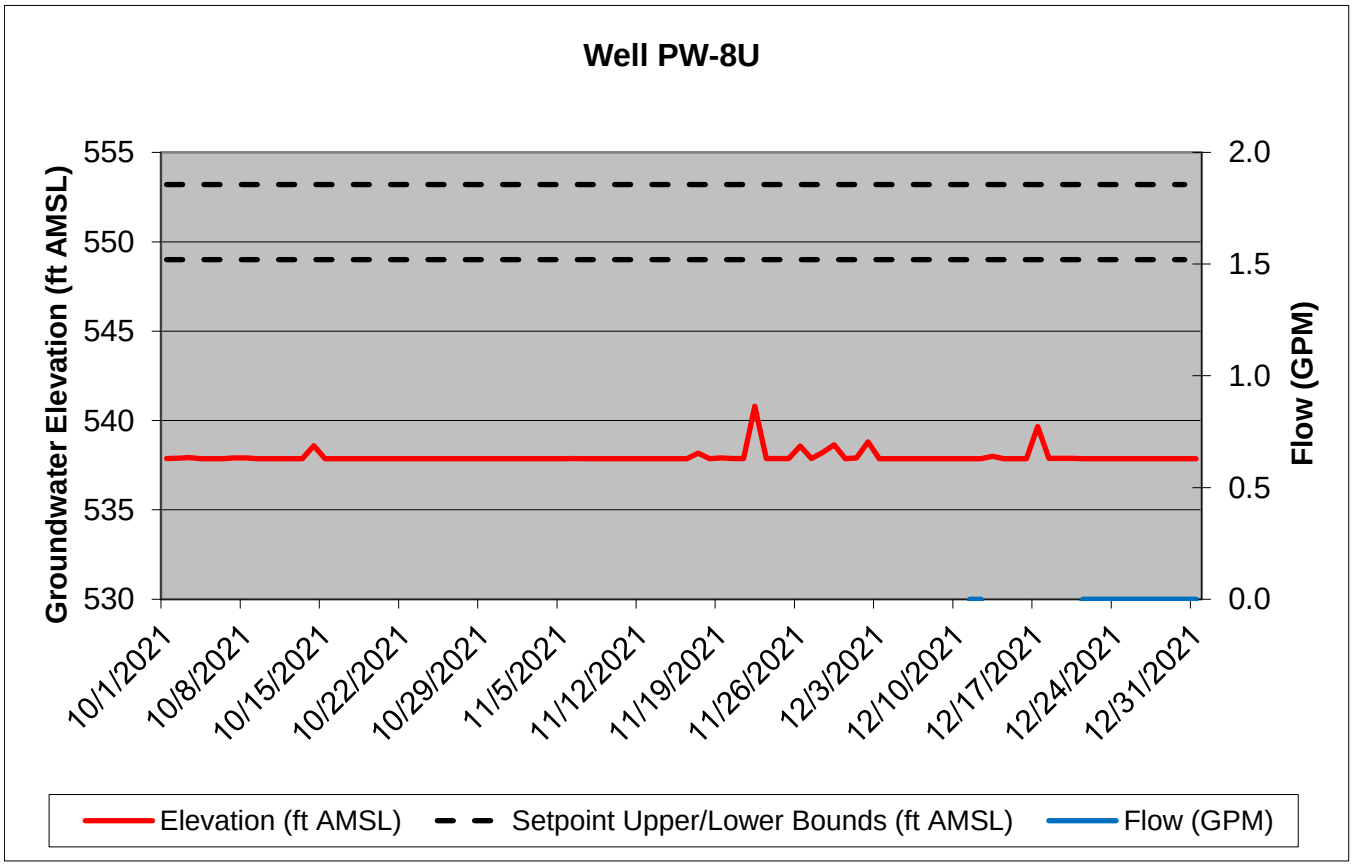
HYDE PARK





FOURTH QUARTER 2021 - PUMPING WELL PERFORMANCE GRAPHS
HYDE PARK