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Fred Hurley,
Director

TOWN OF NEWTOWN
WATER AND SEWER AUTHORITY

Marianne Brown,
Chairman
Richard Zang
Louis Carbone
George Hill
Alan Shepard
Eugene Vetrano
Carl Zencey

THESE MINUTES ARE SUBJECT TO APPROVAL BY THE WATER AND SEWER AUTHORITY

The Water and Sewer Authority held a regular meeting, Thursday, February 7, 2019 at the Waste Water Treatment Plant, 24 Commerce Road, Newtown, CT. Marianne Brown called the meeting to order at 7:05pm.

Present: Gene Vetrano, Carl Zencey, Marianne Brown

Absent: Lou Carbone, Dick Zang, Alan Shepard, George Hill

Also Present: Director of Public Work Fred Hurley, Julio Segarra and Mike Burke of Suez Water Environmental Services, Kurt Mailman of Fuss & O'Neill and Peter Alagna

Public Participation – None

Minutes – Tabled due to lack of quorum

Report by Suez Water Environmental Services – The plant is running well. They just submitted their reports to the state and there are no violations. A pump was changed at the Sandy Hook pump station. It was clogged with rags and burnt the motor out. All the other stations are running fine.

Report by Public Works Director – Fred Hurley suggested that he and Julio Segarra be authorized to write a letter to the BOE Director of Facilities, suggesting a filter system for the High School. A year or so ago they had a huge blockage that when it released it almost overflowed the Sandy Hook Pump Station.

Fred Hurley also reported that in discussing with Attorney Grogins, they cannot find anything that says they cannot levy benefit assessments for the water improvements. This opens the avenue legally to recapture those funds and repay the sewer fund for the loan.

UNFINISHED BUSINESS

Water Pollution Control Plan – Tabled due to lack of quorum

Sandy Hook Pump Station – Kurt Mailman presented the proposed upgrades to the Sandy Hook pump station (Attachment A). Julio Segarra asked about the backup floats. The current system has back up floats and it doesn't matter what size pump, they are autonomous. He doesn't believe that we will need this item. He asked for an open assist on the hatch as well as the fall protection.

The bypass pump, Fuss & O'Neill would give the contractor the high and low flows and it would be up to them to provide a pump that could handle the flow. Because Fred and Julio will be GCing the project

they have flexibility. They can put a line in and have it monitored by SCADA to save the cost of having it manually monitored.

Financials – not discussed

NEW BUSINESS

I&I – There are concerns about the uptick in flow at the Hawleyville Pump Station. Julio provided a graph (Attachment B) which shows an uptick swing in June. They are not sure if this is from seeing the grinder pumps coming on line or state doing work. The next step is indoor inspections and dye testing.

Having no further business, the meeting was adjourned at 8:09pm

Respectfully submitted
Arlene Miles, Clerk



Sandy Hook Pump Station Upgrade

Newtown Water and Sewer Authority

February 7, 2019

Discussion Outline

- Existing Infrastructure
- Proposed Flows
- Flow Calculations
- Pump Solicitation Phase
- Recommended Pumps
- Generator Evaluation
- Other Recommended Improvements
- Opinion of Construction Cost
- Questions



Existing Infrastructure

- Pump Station
 - Submersible Pump Station constructed in 1998
 - Two (2) 25 HP Fairbanks Morse Pumps
 - Precast Concrete Building – House Generator and Controls
 - 80KW Generator (120/208V 3 phase)



Existing Infrastructure

- Force Main
 - 6-inch ductile iron force main
 - Force main length: 3,120 feet
 - Static Lift: ~145 feet
 - Parallel 8-inch force main under Pootatuck River and I-84 Interchange, exit 10 bridge only



Force Main Fly Over



Proposed Flows

	Average Daily Flow		Peak Hourly Flow
	gpd	gpm	gpm
2017 Existing Pump Station Flow	60,763	42	165
Proposed 7th Church Rd Road	22,000	15	68
Proposed River Walk	11,948	8	37
Proposed Fabric Fire Hose Commercial Building	5,000	3	18
TOTAL	121,756	85	307

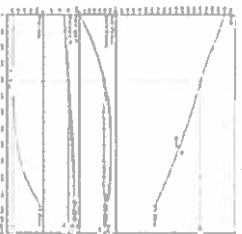
1. Approximate peak flow rate is based on the average daily flow rate.

- Pump station history
 - March 2017: Upstream clogged lateral resulted in nearly surcharged pump station
 - Draining of high school pool resulted in nearly surcharged pump station



Pump Solicitation Phase

- High head, low flow application
- Three (3) pump manufacturers contacted
 - Xylem - Flygt
 - HOMA
 - Fairbank Nijhuis (formerly Fairbank Morse)
- Only one manufacturer could meet specified duty points
 - Xylem - Flygt



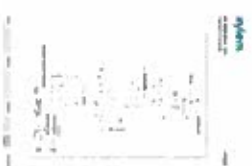
Flow Calculations

- Hazen Williams equation used to calculate head loss through pressurized force main
- Two Hazen Williams coefficients (C factor) used
 - C = 91 (calculated based on observed operating flows and pressures)
 - C = 120 (industry standard for old ductile iron)
- Need scour velocity greater than 3.0 fps
- Proposed Average Flow - 86 gpm; Peak Hour Flow - 310 gpm
- Proposed Duty Points
 - 380 gpm @ 260.9 feet (C=91)
 - 380 gpm @ 214.6 feet (C=120)
- Scour velocity at proposed duty point = 4.27 fps±
- Existing Pump Duty Point: 200 gpm @ 165 feet



Recommended Pumps

- Xylem - Flygt pumps
 - Two (2) 72 HP submersible pumps
 - Two (2) ABB variable frequency drives (VFD)
 - New level transducer and back up floats
 - Need electrical service upgrade to 460V/3 phase (existing 208V/3 phase)



Generator Evaluation

- Existing generator cannot power proposed pumps
- Replace 80kW generator with 200kW
- Due to electrical clearances, generator shall be sited outside



Other Recommended Improvements

- Enlarge existing wet well hatch to accommodate new pumps
- Replace valves and fittings in existing valve chamber
- Provide wet well and valve chamber safety net



Existing Valve Chamber



Wet Well Access Hatch

NO.	DESCRIPTION	UNITS	UNIT COST	TOTAL COST
1	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
2	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
3	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
4	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
5	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
6	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
7	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
8	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
9	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
10	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
11	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
12	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
13	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
14	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
15	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
16	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
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95	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
96	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
97	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
98	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
99	WET WELL ACCESS HATCH	1	1,000.00	1,000.00
100	WET WELL ACCESS HATCH	1	1,000.00	1,000.00

Existing Check Valve

Proposed Generator

- Kohler Power Systems 200 kW Generator
- Sized for starting pumps across the line in the event that both line power and VFDs are out of service (similar setup to other pump stations in Town)
- Sited on concrete pad and in sound/weather enclosure



Opinion of Project Cost

Note: Items 1 through Item 10 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 11 through Item 15 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 16 through Item 20 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 21 through Item 25 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 26 through Item 30 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. 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Items 606 through Item 610 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 611 through Item 615 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 616 through Item 620 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 621 through Item 625 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 626 through Item 630 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 631 through Item 635 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 636 through Item 640 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 641 through Item 645 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 646 through Item 650 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 651 through Item 655 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 656 through Item 660 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 661 through Item 665 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 666 through Item 670 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 671 through Item 675 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 676 through Item 680 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 681 through Item 685 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 686 through Item 690 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 691 through Item 695 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 696 through Item 700 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 701 through Item 705 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 706 through Item 710 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 711 through Item 715 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 716 through Item 720 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 721 through Item 725 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 726 through Item 730 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 731 through Item 735 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 736 through Item 740 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 741 through Item 745 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 746 through Item 750 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 751 through Item 755 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 756 through Item 760 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 761 through Item 765 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 766 through Item 770 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 771 through Item 775 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 776 through Item 780 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 781 through Item 785 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 786 through Item 790 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 791 through Item 795 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 796 through Item 800 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 801 through Item 805 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 806 through Item 810 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 811 through Item 815 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 816 through Item 820 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 821 through Item 825 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 826 through Item 830 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. 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Items 906 through Item 910 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 911 through Item 915 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 916 through Item 920 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 921 through Item 925 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. Items 926 through Item 930 are estimates, submitted by a local government, complete or incomplete, subject to local government's approval and completion of the project. 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1	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
2	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
3	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
4	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
5	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
6	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
7	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
8	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
9	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
10	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
11	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
12	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
13	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
14	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
15	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
16	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
17	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
18	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
19	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
20	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
21	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
22	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
23	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
24	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
25	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
26	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
27	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
28	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
29	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
30	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
31	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
32	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
33	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
34	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
35	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
36	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
37	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
38	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
39	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
40	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
41	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
42	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
43	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
44	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
45	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
46	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
47	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
48	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
49	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
50	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
51	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
52	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
53	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
54	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
55	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
56	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
57	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
58	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
59	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
60	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
61	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
62	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
63	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
64	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
65	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
66	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
67	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
68	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
69	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
70	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
71	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
72	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
73	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
74	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
75	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
76	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
77	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000.00				
78	WET WELL ACCESS HATCH	1	1,000.00	1,000.00	1,000				

Contact Information

Kurt Mailman, P.E.

Vice President

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Douglas Brisee P.E.

Senior Project Engineer

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FUSS & O'Neill, Inc.

146 Hartford Road

Manchester, CT 06040

(800) 286-2469 x5273

www.fando.com

Opinion of Project Cost - Electrical

ITEM DESCRIPTION	UNIT MEAS	NO UNITS	PER UNIT	TOTAL COST
Electrical				
Electrical Demolition	LS	1	\$ 7,500.00	\$ 7,500.00
Provide 200KV Sound Attenuation Generator & Transfer Switch	LS	1	\$ 75,000.00	\$ 75,000.00
Concrete Pad for Generator	LS	1	\$ 7,500.00	\$ 7,500.00
11kv Branch Circuit Wiring	LS	1	\$ 10,000.00	\$ 10,000.00
Electrical Connections	LS	1	\$ 10,000.00	\$ 10,000.00
Electrical Installation	LS	1	\$ 13,000.00	\$ 13,000.00
Total Electrical Cost:				\$ 121,000.00

Opinion of Project Cost - Mechanical

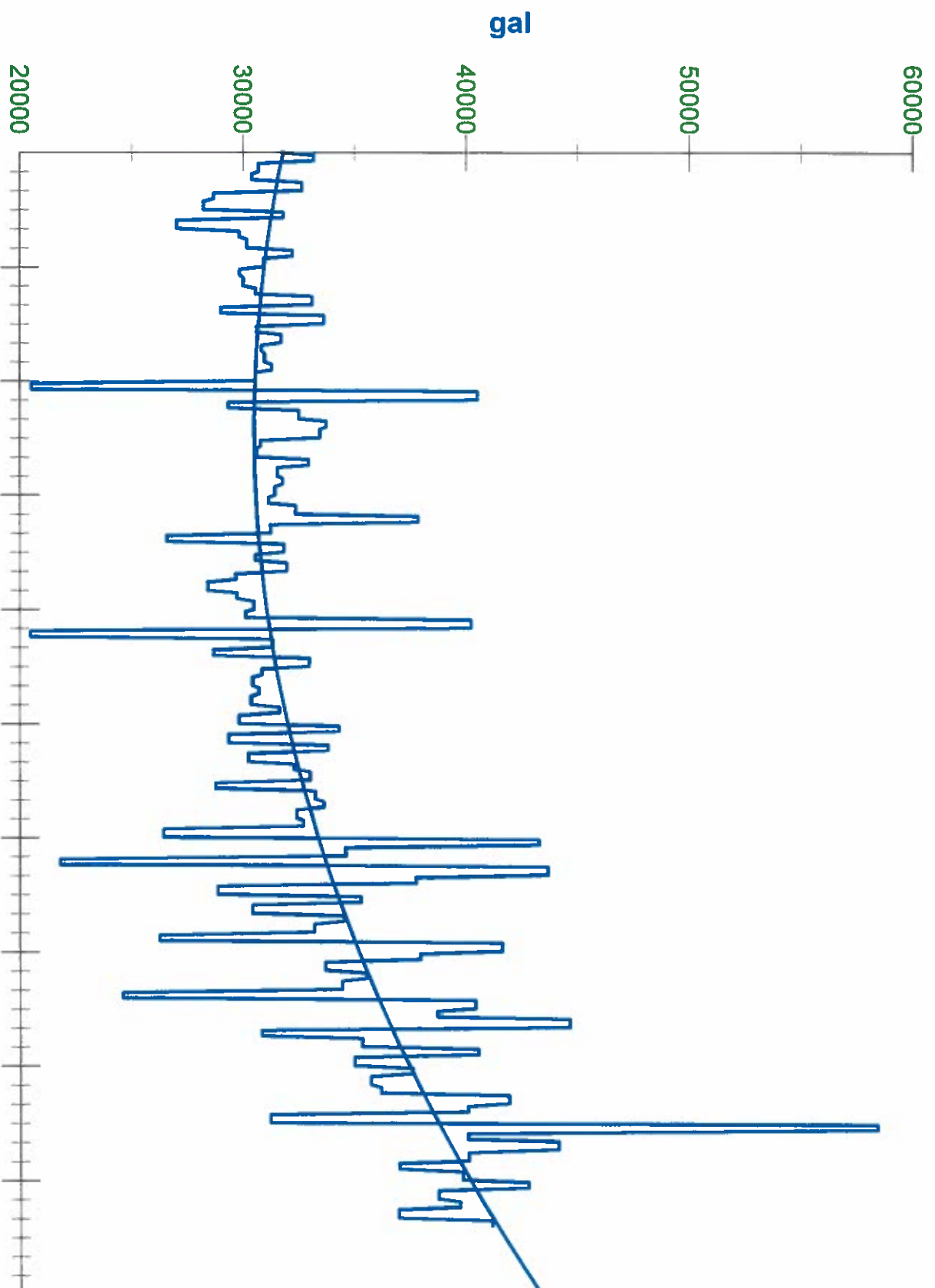
ITEM DESCRIPTION	UNIT MEAS	NO UNITS	PER UNIT	TOTAL COST
Mechanical				
Mechanical Demolition	LS	1	\$ 6,000.00	\$ 6,000.00
Two (2) 72HP Submersible Pumps with base elbows, installation accessories, VFDs, Controls and Control Panel	LS	1	\$ 156,000.00	\$ 156,000.00
New Riser for Wastewater Submersible Pumps	LS	1	\$ 5,000.00	\$ 5,000.00
Wastewater Bypass from Temporary Wet Well to Force Main	LS	1	\$ 30,000.00	\$ 30,000.00
4 inch Check Valve	FA	2	\$ 2,000.00	\$ 4,000.00
4 inch Plug Valve	EA	2	\$ 2,000.00	\$ 4,000.00
4 inch Surge Relief Valve	EA	1	\$ 8,500.00	\$ 8,500.00
Piping Improvements (Spool pieces, flanges, etc.)	LS	1	\$ 5,000.00	\$ 5,000.00
Mechanical Installation	LS	1	\$ 73,000.00	\$ 73,000.00
Total Mechanical Cost:				\$ 244,500.00

Opinion of Project Cost - Structural, Site Work, Other

ITEM DESCRIPTION	UNIT MEAS	NO UNITS	PER UNIT	TOTAL COST
Structural				
Provide Wet Well and Valve Chamber Safety Hill	LS	2	\$ 250.00	\$ 500.00
Locate Existing Wet Well Opening and New Hatch	LS	1	\$ 10,000.00	\$ 10,000.00
Site Work				
Reinforced Concrete Saw improvements (does not include resurfacing or Town Property barrier/curb widening)	LS	1	\$ 3,000.00	\$ 3,000.00
Other				
Modularization & Demolition	LS	1	\$ 3,000.00	\$ 3,000.00
Survey/As-Built Mapping	LS	1	\$ 2,000.00	\$ 2,000.00
Construction Overhead and Profit	%	15%	\$ 54,000.00	\$ 54,000.00
Total Structural, Site Work & Other Cost:				\$ 76,500.00

Attachment B

HAWLEYVILLE PUMP STATION FLOWS



Date (1/1/2018 to 1/31/2019)

/ Hawleyville PS Flow