

Feet	Time	Strokes	Gallons	A/BTemp	Lift Interval	RPM	AVG PSI	Notes IP-1
6/21/22	Test Shot	16	1					Cored 6 inch bore hole, encountered 4 inch void beneath slab. Drilled to 40 feet. Intent was to begin injection at 35 but soil was not competent to hold casing.
38	2:35	60	3.75	95-105	1 Foot	500	1250	temporary stop at 36 strokes, grout in the line. Camera operator error
37	2:45	212	9.5	95-105	1 Foot	500	1200	
36	2:55	300	5.5	95-105	1 Foot	500	1200	
35	3:05	400	6.25	95-105	1 Foot	550	1200	
34	3:11	512	7	95-105	1 Foot	600	1200	
33	3:18	692	11.25	95-105	1 Foot	600	1200	
32	3:30	880	11.75	95-105	1 Foot	600	1200	
31	3:39	1050	10.63	95-105	1 Foot	600	1200	
30	3:48	1220	10.63	95-105	1 Foot	600	1200	
29	3:58	1400	11.25	95-105	1 Foot	600	1200	
28	4:05	1550	9.37	95-105	1 Foot	600	1200	
27	4:12	1700	9.37	95-105	1 Foot	600	1200	
26	4:22	1832	8.25	95-105	1 Foot	600	1200	
25	4:30	1888	3.5	95-105	1 Foot	600	1200	
Total Gallons	4:30		119					End of IP-1 6/21/22
6/22/22								Lost and recovered 10 foot section of pipe when drilling back down to 25 feet. Set up Injection point 1-A and re-drilled down to 25 feet. Test shot uncovered unbalanced quantity. Changed mixer head,

Feet	Time	Strokes	Gallons	A/BTemp	Lift Interval	RPM	AVG PSI	Notes IP-1A
20	11:00	640	40	95-100	4 inches 3 times per foot	600	1250	Changed stroke count to 160 every 3 inches times four intervals as we approach last 2 feet of the void
19	11:33	1280	40	95-105	3 inches 4 times per foot	700	1300	
18	12:13	1920	40	95-105	3 inches 4 times per foot	700	1250	
17	12:42	2560	40	95-105	3 inches 4 times per foot	700	1300	
16	1:04	3200	40	95-105	3 inches 4 times per foot	700	1300	Grout to surface (GTS) recorded at 12:50pm at a depth of 16 3/4 feet with 2880 strokes 180 gallons. 12 feet lateral by 16.75feet depth =28.75 feet migration.
15	1:30	3840	40	95-105	3 inches 4 times per foot	600	1100	Dismissed CCTV crew for remainder of the day at 1:15pm. Will require service once IP-2 begins.
14	1:58	4480	40	95-105	3 inches 4 times per foot	600	1100	Witnessed ground water emerging from IP 1A at 13.50 feet
13	2:13	4784	19	95-105	6 inches	600	1100	Temporary end of injection at 2:13pm, 12.50 feet due to sewer water back flow through the manifold pumps.Waiting for Hillsborough Ctny. Supervisory assessment.Removed casing from IP-1A until advised by Project Manager advises next steps.

Feet	Time	Strokes	Gallons	A/BTemp	Lift Interval	RPM	AVG PSI	Notes IP-1A
			299					Manifolds were disconnected and removed as not to damage the main sewer line.
6/24/22	8:30							Hard drill starting at 11.5 feet. Removed starter and retrieved hardened polymer/soil sample from bit. Raised pipe to 11 feet, begin injection. Polymer backed up through casing. Stopped injection.
12	No material injected	0	0	00000	0	0	0	Pulled up casing to 10 feet, material began to flow. Recalculated spec to 16.5 gallons per foot till surface.
11	No material injected	0	0	00000	0	0	0	
10.5	10:30	263	16.5	92-96	1 foot	600	1300	Grout to surface (GTS) recorded. 10.5 feet by 12 feet lateral grout=22.5 lateral migration
9.5	10:45	526	16.5	95-105	1 foot	600	1300	Grout to surface (GTS) recorded
8.5	11:00	600	4.63	95-105	6 inches	600	1300	Grout to surface (GTS) recorded
8	11:10	646	3	95-105	6 inches	600	1300	Grout to surface (GTS) recorded
7.5/7/6.5	11:12	689	2.7	95-105	1.5 feet	600	1300	Grout to surface (GTS) recorded
7/6.5/6	11:15	716	1.7	95-105	1.5 feet	600	1300	Grout to surface (GTS) recorded
5.5/5/4.5	11:25	743	1.7	95-105	1.5 feet	600	1300	Grout to surface (GTS) recorded
4/2.5	11:27	790	2.94	95-105	1.5 feet	600	1300	Grout to surface (GTS) recorded
2	11:29	817	1.7	95-105	6 inches	600	1300	Water displacement through superficial cracks in concrete slab

Feet	Time	Strokes	Gallons	A/BTemp	Lift Interval	RPM	AVG PSI	Notes IP-1A
1.5	11:30	829	.75	95-105	6 inches	600	1300	End of injection at 2 feet at 11:30 with GTS at various points around the fallen slab (see photos/videos)
1	6/24/22		52					
	6/23/2022		299					
	6/22/22		240					
	6/21/2022		119					
	Total for IP-1 and 1A=710		710					

Feet	Time	Strokes	Gallons	A/B Temp	RPM	Lift	Avg PSI	Notes IP-2
19	12:20	1760	40	88/106	800	1 foot	1900	Change Injection rate to 40 gallons per foot until 15 feet is reached. 160 strokes per 3 inches See geotechnical report
18	12:50	2400	40	89/106	800	1 foot	1600	
17	1:12	3040	40	90/106	800	1 foot	1600	
16	1:35	3680	40	92/105	800	1 foot	1600	
15	1:48	4000	20	95/105	800	1 foot	1600	Changed bump method to 160 strokes (10 gallons) per 6 inches. See geotechnical report
14	2:00	4320	20	97/105	800	1 foot	1600	Grout to surface. Water displacing through the crevices of the sunken lid.
13	2:12	4640	20	97/105	800	1 foot	1650	
12	2:25	4960	20	94/106	800	1 foot	1650	
11	2:35	5280	20	95/105	800	1 foot	1650	
10	2:45	5600	20	95/105	800	1 foot	1650	Grout to surface. Grout intrusion to the wet well side wall from the seal beneath the lid.

Feet	Time	Strokes	Gallons	A/B Temp	RPM	Lift	Avg PSI	Notes IP-2
9	3:00	5920	20	95/105	800	1 foot	1350	More GTS in wet well. Slab lifting, water displacing.
8	3:04	6000	5	97/103	800	1 foot	1450	Proceeding with 80 strokes (5 Gallons) per foot to surface.
7	3:09	6160	10	97/105	800	1 foot	1450	
6	RAISED CASING 2 FEET DUE TO EXCESS GROUT TO SURFACE							
5								
4	3:20	6205	2.8	97/105	800	1 foot	1450	
3	RAISED CASING 2 ADDITIONAL FEET DUE TO EXCESS GTS IN WET WELL AND SURFACE							
2								
1	3:25	6238	2	97/105	800	surface	1450	End injection at 3:30
Total for 6/28/22			388					
Total for 6/27/22			321					
Total Gallons IP-2			709					

6/29/2022							
Feet	Time	Strokes	Gallons	A/BTemp	RPM	AVG PSI	Notes IP-3
31	11:00						IP-3 West side of Lift Lid. Drilled down to 32 feet, then raised to 30 feet. Very soft soils down to 32 feet. Grout removed from starter at 9-10 feet and 23-25 feet.
31cont.	12:30						Waiting for sewer camera. Sewer camera arrived, could not be used due to surcharge pump running out of fuel. Refueled, back-up cleared, proceeded without CCTV.
30	1:40	1280	95/105	95/105	600	1200	
29	3:00	2560	95/105	95/105	600	1200	
28	3:20	2880	95/105	95/105	600	1200	Grout intrusion into the wet well
27	3:30	3200	95/105	95/105	800	1600	
26	3:50	3520	95/105	95/105	800	1600	
25	4:00	3840	95/105	95/105	800	1600	
24	4:12	4160	95/105	95/105	800	1600	
23	4:26	4480	95/105	95/105	800	1600	
22	4:38	4820	95/105	95/105	800	1600	
21	4:52	5140	95/105	95/105	800	1600	
20	5:05	5460	95/105	95/105	800	1600	
19	5:25	5780	105/105	105/105	800	1600	
17	5:40	6100	105/105	105/105	800	1600	
16	5:55	6420	106/105	106/105	800	1800	Encountering high pressure 1750/1800. Raised casing 2 feet to offset pressure.
15	5:55	6740	111/105	111/105	800	1800	
14	5:55	6740	111/105	111/105	800	1800	
13	6:25	6740	111/105	111/105	800	1800	Raised another foot, pressure still high
12	6:25	6740	98/105	98/105	800	1800	Stopped injection and Removed entire 5 foot casing as pressure was not elevating

Feet	Time	Strokes	Gallons	A/BTemp	RPM	AVG PSI	Notes IP-3
11	6:25	6740	98/105	98/105	800	1800	^^^
10	6:25	6740	98/105	98/105	800	1800	^^^
9	6:32	6800	98/105	98/105	800	1800	^^^
8	6:32	6800	98/105	98/105	800	1300	
7	6:39	6825	98/105	98/105	800	1300	Grout to surface through IP-3 point. Constant upflow, pumps laboring.
6	6:39	6825	98/105	98/105	800	1300	
5	6:45	6825	98/105	98/105	800	1300	
4	6:45	6835	98/105	98/105	800	1300	End injection at 4 feet due to pump laboring and excess GTS
3	6:45						
2	6:45						
1	6:45						
Total	Gallons for IP-3		425				

06/30/22							
Feet	Time	Strokes	Gallons	A/BTemp	RPM	AVG PSI	Notes IP-4
41	12:15	0	0				Drilled to 41 feet, backed up casing to 40. Loose soil to 36 feet. Flushed lines before injection
40	12:25	320	20	91/105	700	1200	2 x 6 at 160 strokes per
39	12:45	640	20	92/105	700	1200	
38	1:05	960	20	92/105	600	1200	
37	1:25	1280	20	93/105	600	1300	
36	2:25	2560	80	95/110	600	1350	3x4 at 320 strokes per
35	3:30	3840	80	97/110	650	1300	
34	3:45	4160	20	95/110	650	1300	
33	4:00	4480	20	94/110	650	1300	
32	4:15	4800	20	95/110	650	1300	
31	4:40	5120	20	95/110	650	1300	
30	5:00	5440	20	94/110	650	1350	
29	5:20	5760	20	94/110	650	1350	
28	5:40	6080	20	94/111	650	1500	
27	6:00	6400	20	94/110	650	1500	
26	6:20	6640	15	94/110	650	1500	
25	6:40	6880	15	95/111	650	1450	
24	6:55	7000	7.5	94/110	800	1600	
23	7:12	7120	7.5	95/110	800	1600	
22	7:40	7685	(35.5-Don't Count)	95/110	800	1600	End IP-4, continue 7/1/22
07/01/22	9:00	128	43.5	83/100	600	1150	Continue IP-4, added 128 strokes for a total of 7813 strokes.
21	9:06	256	8	83/110	590	1150	
20	9:16	384	8	83/110	590	1150	
19	9:27	597	13.3	84/110	590	1150	
18	9:30	640	2.7	84/110	590	1150	
17	9:32	1213	35.8	84/111	595	1200	

Feet	Time	Strokes	Gallons	A/BTemp	RPM	AVG PSI	Notes IP-4
16	9:53	1459	15.4	84/111	590	1150	
15	10:12	1706	15.4	84/111	590	1200	
14	10:21	1885	11.2	86/111	600	1200	Grout leak at lid of structure 5 feet lateral SW
13	10:36	2228	21.4	86/111	600	1100/1250	Grout leak between outside slab & concrete structure 12 feet lateral. TCGH(tight casing/ground heave)
12	10:52	2635	25.4	86/111	600	1100/1250	TCGH
11	11:05	2889	15.9	87/111	600	1100/1200	Grout leak at lid of structure 6 feet horizontal from IP-4
10	11:55	4077	74.25	87/114	600	1100/1200	TCGH 10 feet lateral grout movement GTS below concrete lid-North side
9	12:05	4329	15.75	87/114	600	1100/1200	GTS under lid
8	12:11	4401	4.5	90/115	600	1100/1250	GTS under lid
7	12:15	4490	5.6	90/115	600	1100/1300	GTS 3 feet from IP-4 North Side
6	12:20	4587	6	90/115	600	1100/1300	
5	12:27	4645	3.63	89/113	600	1100/130	
4	12:29	4660	.94	89/113	600	1100/1300	
3	12:30	4692	2	89/113	600	1100/1300	
2	12:35	4722	1.9	89/113	600	1100/1300	
1	12:40	4778	3.5	89/113	600	1100/1300	End IP-4 injection at 12:45-project complete

Injection Summary

Total Grout Injection for IP-1 & 1A 6/21-24/2022	710			
Total Grout Injection for IP-2 6/27-28/2022	709			
Total Grout Injection for IP-3 6/29/2022	425			
Total Grout Injection for IP-4 6/30/2022-7/1/2022	779			
Grand Total in Gallons used for project 2,623 Gallons x	2,623			
9.6 (Conversion from Gallons to Lbs)	25,181 Lbs. Billing Max approved for 25,000 per			