



Herbert, Rowland & Grubic, Inc.
Engineering & Related Services

AN EMPLOYEE-OWNED COMPANY

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MARCH 2018

**CHAPTER 94
WASTELOAD MANAGEMENT REPORT
FOR
CALENDAR YEAR 2017
SHINGLEHOUSE BOROUGH WWTP**

**SHINGLEHOUSE
POTTER COUNTY, PENNSYLVANIA**

HRG Project No. 004004.0430

TABLE OF CONTENTS

SECTION 1	Chapter 94 Wasteload Management Report
SECTION 2	Attachments to Chapter 94 Wasteload Management Report
	Attachment A – Hydraulic And Organic Loading Data and Line Graphs
	Attachment B – Flow Meter and Chart Recorder Calibration Certificate
	Attachment C – Video Inspection Reports
	Attachment D – Pump Stations
	Attachment E – Sanitary Sewer Overview Map



CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2017

- Permittee is owner and/or operator of a POTW or other sewage treatment facility
 Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION

Permittee Name:	Shinglehouse Borough	Permit No.:	PA0036773
Mailing Address:	103 North Pleasant Street P.O. Box 156	Effective Date:	April 1, 2016
City, State, Zip:	Shinglehouse, PA 16478	Expiration Date:	March 31, 2021
Contact Person:	Mark R. Meacham	Renewal Due Date:	
Title:	Public Works Director / Wastewater Operator	Municipality:	Shinglehouse Borough
Phone:	814-697-6912	County:	Potter
Email:	shinglebsewer@yahoo.com	Consultant Name:	Herbert, Rowland & Grubic, Inc.

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

Check the appropriate boxes:

- Line graph for flows attached (**Attachment A**)
 DEP Chapter 94 Spreadsheet used (**Attachment A**)
 Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

Check the appropriate boxes:

- Line graph for organic loads attached (**Attachment A**)
 DEP Chapter 94 Spreadsheet used (**Attachment A**)
 Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

Based on the projected hydraulic and organic loadings for the next five years, no overloads are expected at the Shinglehouse Borough WWTP. Therefore, there is no need to expand the plant at this time.

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

- Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached
- List summarizing each extension or project attached
- Schedules describing how each project will be completed over time and effects attached

Comments:

No new connections were reported in 2017. The Shinglehouse Borough Sanitary Sewer System map can be found in Appendix E.

There are currently no projected developments or sewer extensions that are in the preliminary planning stage for 2018.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

The Borough treatment facility personnel include one full time treatment plant operator and one full time employee to operate and maintain the wastewater treatment plant. The facility is staffed each day. No changes have been made to the wastewater system personnel in 2017.

Routine maintenance was performed throughout 2017. Manhole inspections were conducted in order to identify possible areas of inflow and infiltration problems or concerns. Cleaning and televising of the sewer lines were also conducted. 2,121.5' of 8" Vitrified Clay Pipe were inspected in 2017. No inflow and infiltration was found in these areas but repairs were found to be needed. Repairs needed will be completed in 2018. There were no repairs made in 2017. Smoke testing was not performed in 2017 and there was no inflow covers installed, although the Borough is scheduled to perform these tasks in 2018. The video inspection reports can be found in Attachment C. The Borough continues to investigate sources of inflow and infiltration and takes corrective action to reduce these sources of extraneous flow within their collection system.

The list of equipment at the WWTP is as follows:

1. Wacker G50 65 KW Generator
2. Hach Pocket Colorimeter 11 Chlorine meter
3. Hach Sension 1 pH meter
4. Prominent dosing pump chlorine
5. Model 3000 Muffin Grinder
6. Two (2) Flygt submersible recirculation pumps
7. Three (3) Sutorbilt 4 hp blowers for digesters
8. One (1) 4x11 model EV Wemco Torque Flow Influent Pump
9. One (1) Chicago Influent Pump
10. Two (2) Chicago VTX Vortex Sludge Pumps
11. Two (2) Flygt Submersible Pumps in Effluent Pumping Station

Influent sampling and monitoring are taken at the Headworks while effluent samples and are taken at the outfall in the chlorine contact tank. The sample times are 06:30, 08:30, 10:30, 12:30, 02:30, 04:30. All sampling and monitoring are done in accordance to permit requirements as follows:

PARAMETER	FREQUENCY	TYPE
Flow	Continuous	Measured
pH	Daily	Grab
Total Residual Chlorine	Daily	Grab
Fecal Coliform	Weekly	Grab
BOD5	Weekly	Composite
Suspended Solids	Weekly	Composite

The Borough's wastewater treatment plant operator and contracted laboratory conducts the testing in accordance with EPA testing procedures. The testing lab that is used for sample analysis is Fairway Labs located in Altoona, PA.

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

- System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.
- System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

The sanitary sewer system is monitored on a regular basis through preventative maintenance activities to optimize the operation of the system and to minimize the occurrence of system failures. There were no reported repairs to the collection system in 2017. As mentioned above, the Borough inspected manholes and completed CCTV inspections throughout 2017. No overflows or backups were reported or found.

The Borough plans on continuing in 2018 to investigate and identify any areas of inflow and infiltration. The activities are as follows:

- 1. Internal video inspection and cleaning**
- 2. Smoke Testing**
- 3. Install inflow covers for manholes**
- 4. Repair issues found from 2017 inspections**

Per direction by the PA DEP, the Borough is currently preparing an Act 537 Sewage Facilities Plan to address aged WWTP equipment. The Act 537 Plan will be submitted in 2018. Upon approval of the Act 537 Plan, the Borough will submit Water Quality Management (WQM) Part II Permit Applications for phased improvements to the WWTP. Phase I will include new screening and grit removal as well as improved chemical feed equipment.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

- The collection system does not contain pump stations
- The collection system does contain pump stations (**Attachment D**)
- Discussion of condition of each pump station attached

The Borough has two pump stations; the Mill Street and Low Street Pump Stations. These two systems performed well and received general maintenance throughout the year. No change was reported for the 2017 operating year.

The Mill Street Pump Station utilizes two (2) Flygt pumps; each rated at 150 gpm (2.5 hp, and 1700 rpm). The Low Street Pump Station utilizes two Hydromatic pumps; each rated at 2.0 hp with 60 gpm capacity. The pumps normally operate in alternate fashion.

The calculated flows for these pump stations during 2017 can be found in Attachment D. Based on a peaking factor of 4.0, these pumps are adequate for the flow received.

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

- a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.
- b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.
- c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

- Industrial waste report as described in 8 a., b. and c. attached
- Industrial pretreatment report as required in an NPDES permit attached

The facility receives no industrial wastewater.

9. Existing or Projected Overload.

Check the appropriate boxes:

- This report demonstrates an existing hydraulic overload condition.
- This report demonstrates a projected hydraulic overload condition.
- This report demonstrates an existing organic overload condition.
- This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

- Corrective Action Plan attached

There were no reported overloads (hydraulic or organic) in 2017.

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

- Sewage Sludge Management Inventory attached

No bypasses were experienced or recorded in 2017. The Wastewater Treatment Plant bypass line at the head of the WWTP was permanently plugged in February 2010.

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

Annual CSO Report attached

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

Flow calibration report attached (**Attachment B**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Mark Meacham

Name of Responsible Official

Signature

(814) 697-6912

Telephone No.

Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Jeffrey J. Harman Jr., E.I.T.

Name of Preparer

Signature

(717) 564-1121

Telephone No.

Date



ATTACHMENT A

**HYDRAULIC AND ORGANIC LOADING
DATA AND LINE GRAPHS**

Facility Name:

Permit No.:

Persons/EDU:

Existing Hydraulic Design Capacity: MGD
 Upgrade Planned in Next 5 Years? Year:
 Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: lbs BOD5/day
 Upgrade Planned in Next 5 Years? Year:
 Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2013	2014	2015	2016	2017
January	0.079	0.085	0.047	0.067	0.128
February	0.088	0.074	0.056	0.085	0.089
March	0.082	0.089	0.089	0.068	0.065
April	0.072	0.097	0.132	0.073	0.115
May	0.066	0.122	0.048	0.066	0.085
June	0.06	0.072	0.094	0.045	0.055
July	0.06	0.061	0.051	0.04	0.052
August	0.054	0.068	0.047	0.046	0.044
September	0.072	0.05	0.063	0.04	0.044
October	0.06	0.046	0.079	0.079	0.057
November	0.076	0.056	0.067	0.049	0.067
December	0.096	0.063	0.107	0.074	0.053

Month	2013	2014	2015	2016	2017
January	59	63	65	62	45
February	45	56	46	77	134
March	89	89	49	112	70
April	62	97	62	106	76
May	81	134	80	85	74
June	56	47	71	104	68
July	32	42	38	106	73
August	47	37	48	89	48
September	56	34	88	65	66
October	31	36	39	46	63
November	47	106	71	43	64
December	55	66	88	38	68

Annual Avg	0.072	0.074	0.073	0.061	0.071
Max 3-Mo Avg	0.083	0.103	0.092	0.086	0.097
Max : Avg Ratio	1.15	1.39	1.26	1.41	1.37
Existing EDUs	609.0	609.0	609.0	607.0	587.0*
Flow/EDU (GPD)	118.2	121.5	119.9	100.5	121.0
Flow/Capita (GPD)	47.3	48.6	47.9	40.2	48.4
Exist. Overload?	NO	NO	NO	NO	NO

Annual Avg	55	67	62	78	71
Max Mo Avg	89	134	88	112	134
Max : Avg Ratio	1.62	1.99	1.42	1.44	1.89
Existing EDUs	609	609	609	607	587
Load/EDU	0.090	0.110	0.102	0.128	0.120
Load/Capita	0.036	0.044	0.041	0.051	0.048
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

Projected BOD5 Loads for Next Five Years (lbs/day)

	2018	2019	2020	2021	2022
New EDUs	2.0	2.0	2.0	2.0	2.0
New EDU Flow	0.0002	0.0002	0.0002	0.0002	0.0002
Proj. Annual Avg	0.07	0.0702	0.0704	0.0706	0.0708
Proj. Max 3-Mo Avg	0.092	0.092	0.093	0.093	0.093
Proj. Overload?	NO	NO	NO	NO	NO

	2018	2019	2020	2021	2022
New EDUs	2	2	2	2	2
New EDU Load	0.220	0.220	0.220	0.220	0.220
Proj. Annual Avg	67	67	67	67	68
Proj. Max Avg	112	112	112	113	113
Proj. Overload?	NO	NO	NO	NO	NO

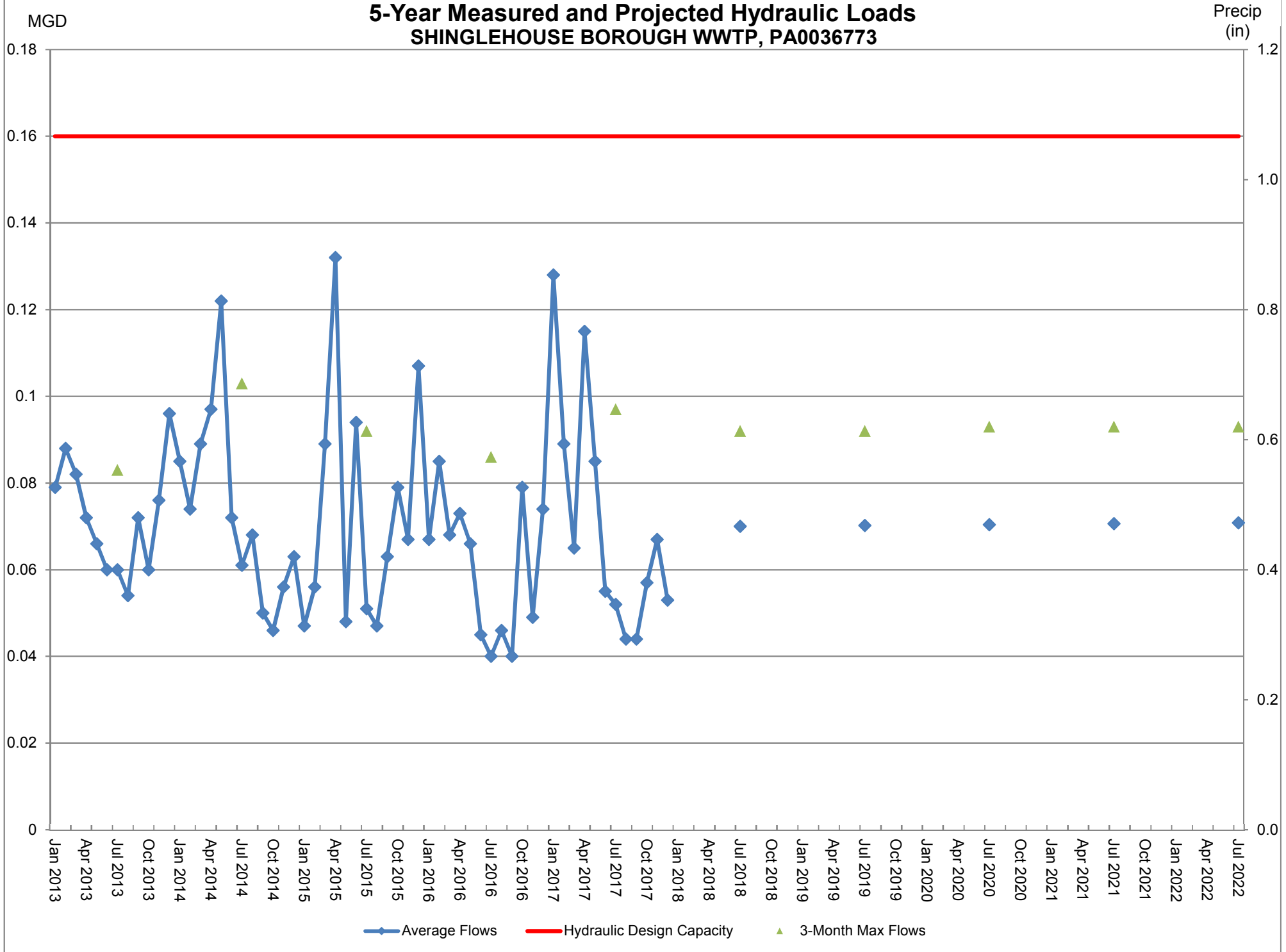
Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

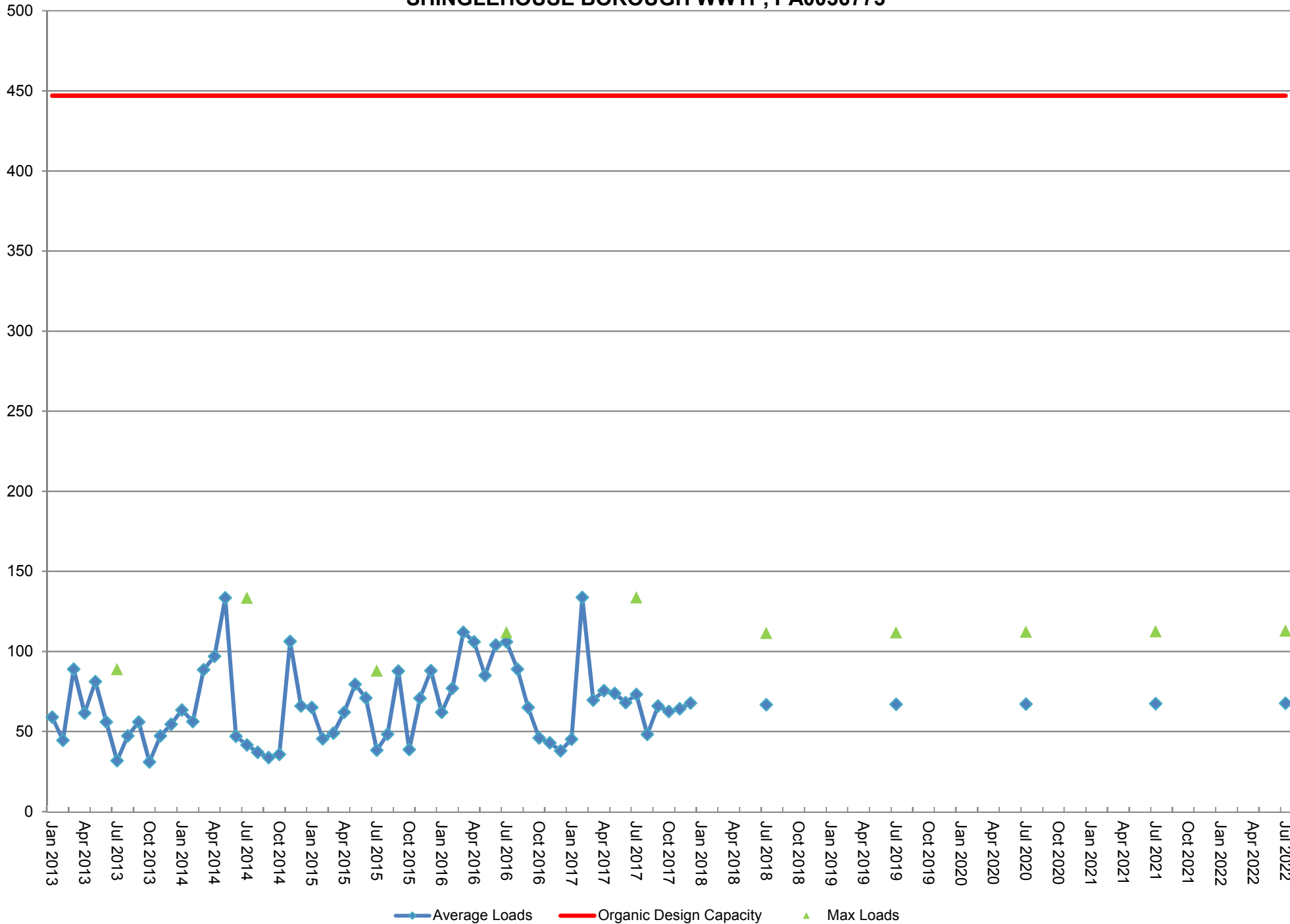
Month	2013	2014	2015	2016	2017
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

***Existing EDUs listed from previous years were based on an estimated total. Actual accounts indicate a total of 587 EDUs were connected at the end of the 2017 calendar year.**

5-Year Measured and Projected Hydraulic Loads SHINGLEHOUSE BOROUGH WWTP, PA0036773



5-Year Measured and Projected Organic Loads SHINGLEHOUSE BOROUGH WWTP, PA0036773





ATTACHMENT B

**FLOW METER AND CHART RECORDER
CALIBRATION CERTIFICATE**



KWM CONTROLS INC.

P.O. Box 430 Carnegie, PA 15106 412-276-4227 Fax: 412-276-7488

Certificate of Calibration

Customer Shinglehouse WWTP
P.O. Box 156
Shinglehouse, PA 16478

Date 12-6-17

814-697-6912

Type: Badger
Serial#: 2855
Model#: 2100
Recorder: Partlow 5000
S# 1905771

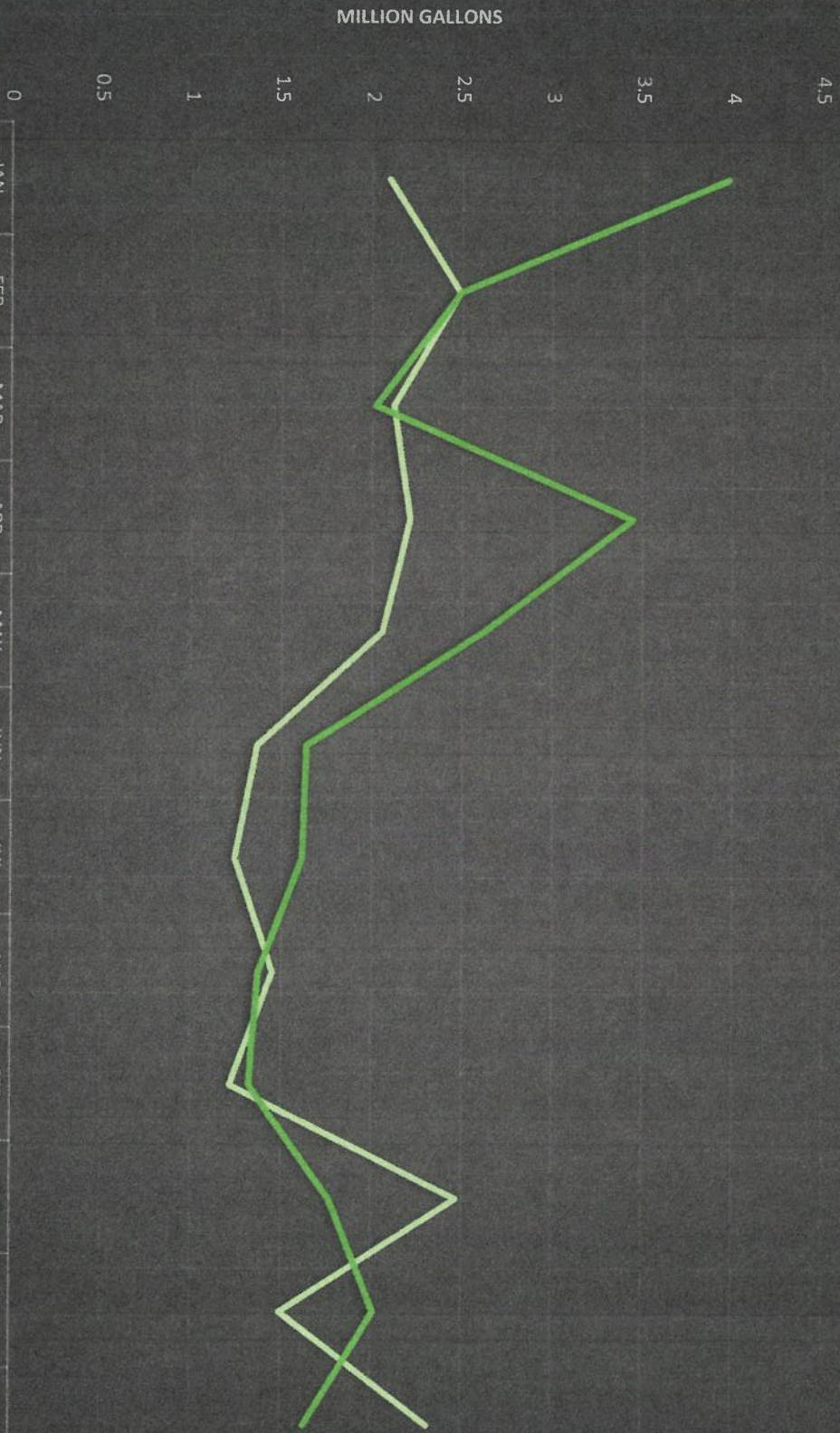
Flow Range: 0-1.2 MGD
Primary Element: 8" manhole flume
Signal: 4-20maDC

	Pre Calibration	Post Calibration	Flow Reading
Reading thru primary element	.074 MGD	.074 MGD	
Signal Reading maDC			
0%	3.85 maDC	4.00 maDC	0 MGD
25%	7.87 maDC	8.00 maDC	.3 MGD
50%	11.88 maDC	12.00 maDC	.6 MGD
75%	15.89 maDC	16.00 maDC	.9 MGD
100%	19.91 maDC	20.00 maDC	1.2 MGD

Additional comments :

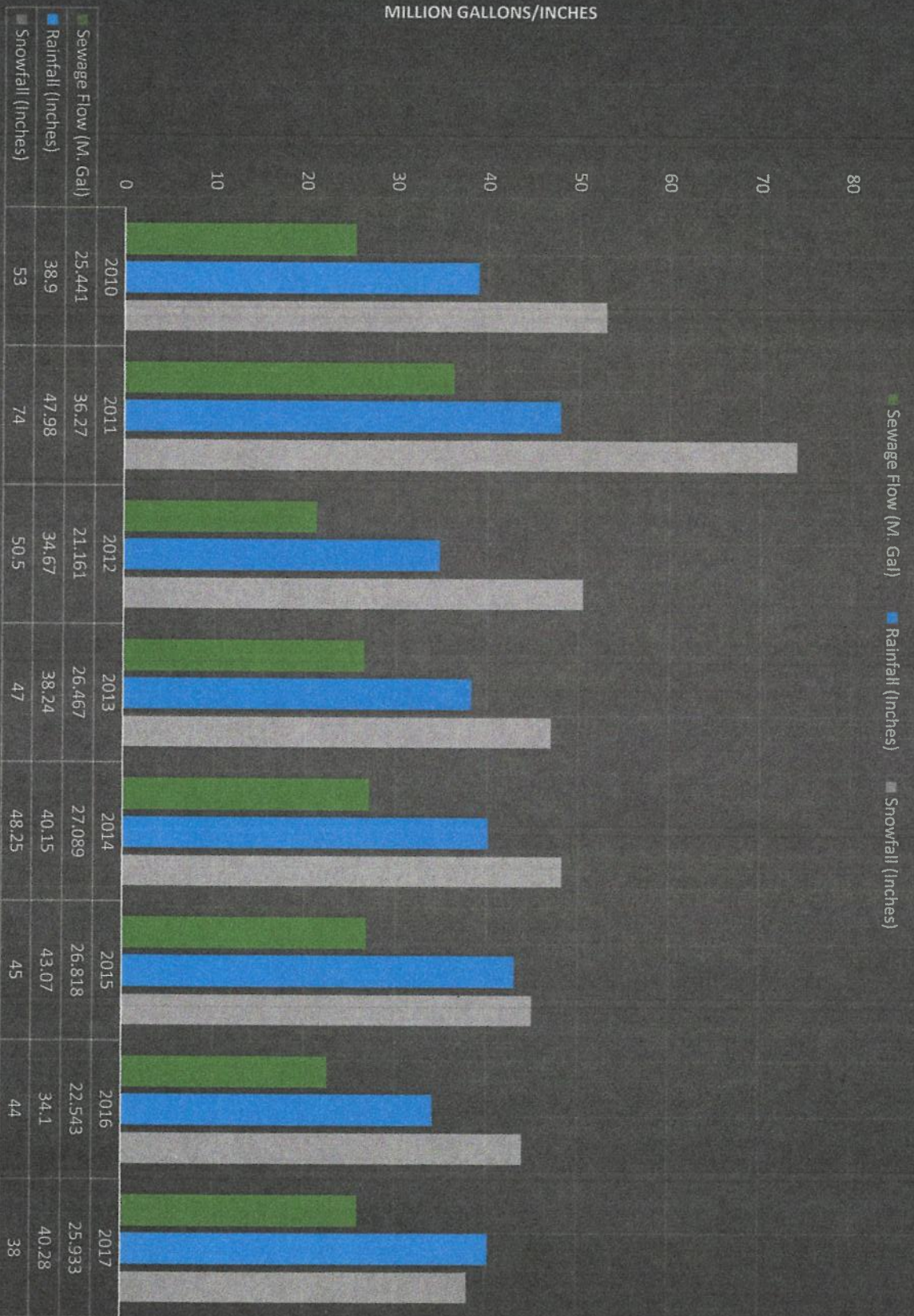
2016 - 2017 Sewage Flow

2016 2017



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2016	2.097	2.49	2.122	2.213	2.058	1.366	1.244	1.455	1.217	2.469	1.499	2.313
2017	3.979	2.494	2.022	3.449	2.622	1.639	1.618	1.374	1.324	1.767	2.014	1.631

Sewage Flow vs. Rainfall/Snowfall 2010 - 2017

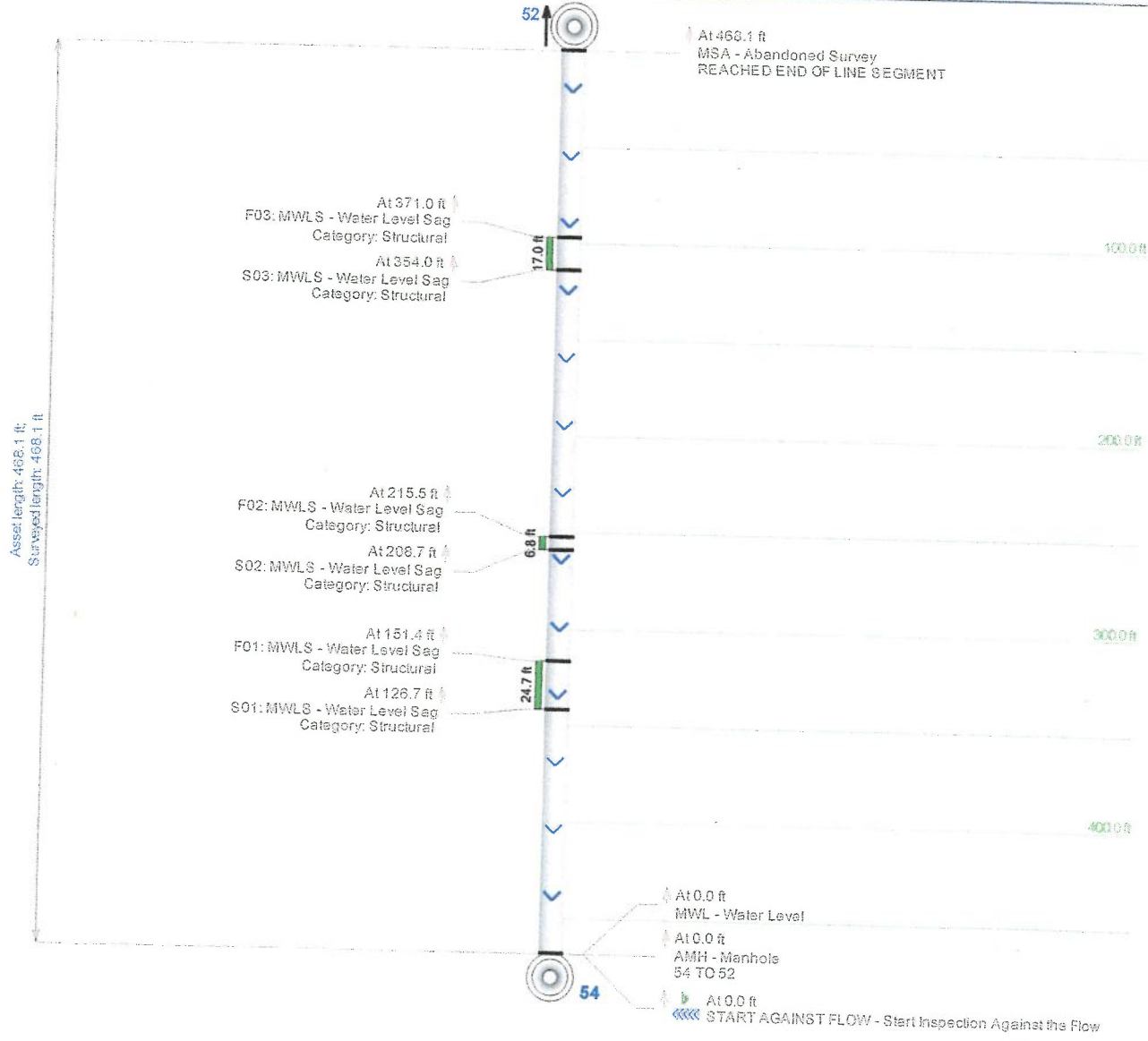




ATTACHMENT C
VIDEO INSPECTION REPORTS

Main Inspection with Pipe-Run Graph

Project Name: SHINGLEHOUSE		Pipeline segment ref: 52/54		City: SHINGLE HOUSE		Street: WWTP	
Start date/time: 9/28/2017		Width:	Height: 8	Material: FRP	Location code: D	Weather: 1	
Direction: UPSTREAM		Length surveyed: 468.1		Surveyed by: CODY FAUCHER		Additional info:	





GraniteXP Observation Report with Still Images and Scores

Pipeline segment ref: 52/54	Project Name: SHINGLEHOUSE	Start date/time: 9/28/2017 12:34:04 PM	Weather: 1	Surveyed by: CODY FAUCHER
Upstream manhole No: 52	Downstream manhole No: 54	Total length: 468.1		

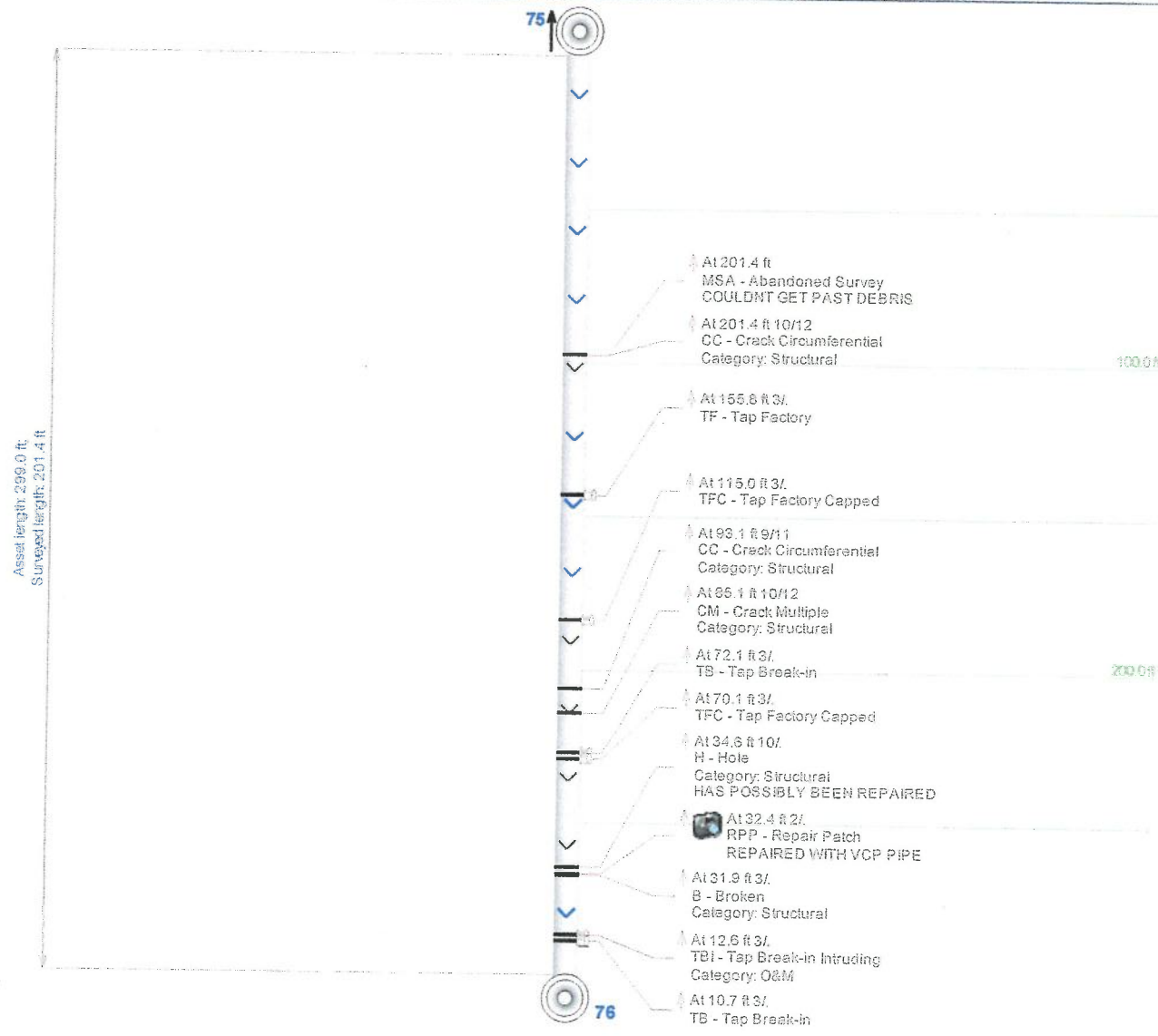
Additional info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
0.0		START AGAINST FLOW	Yes	/				
0.0		AMH	Yes	/				54 TO 52
0.0		MWL	Yes	/				
126.7		MWLS	Yes	/		Structural		
151.4		MWLS	Yes	/		Structural		
208.7		MWLS	Yes	/		Structural		
215.5		MWLS	Yes	/		Structural		
354.0		MWLS	Yes	/		Structural		
371.0		MWLS	Yes	/		Structural		
468.1		MSA	Yes	/				REACHED END OF LINE SEGMENT

Main Inspection with Pipe-Run Graph

Project Name: SHINGLEHOUSE		Pipeline segment ref: 75/76		City: SHINGLEHOUSE		Street: RT.44 <i>OSWAYO ST</i>	
Start date/time: 9/28/2017		Width:	Height: 8	Material: VCP	Location code: C	Weather: 1	
Direction: UPSTREAM		Length surveyed: 201.4		Surveyed by: CODY FAUCHER		Additional info:	

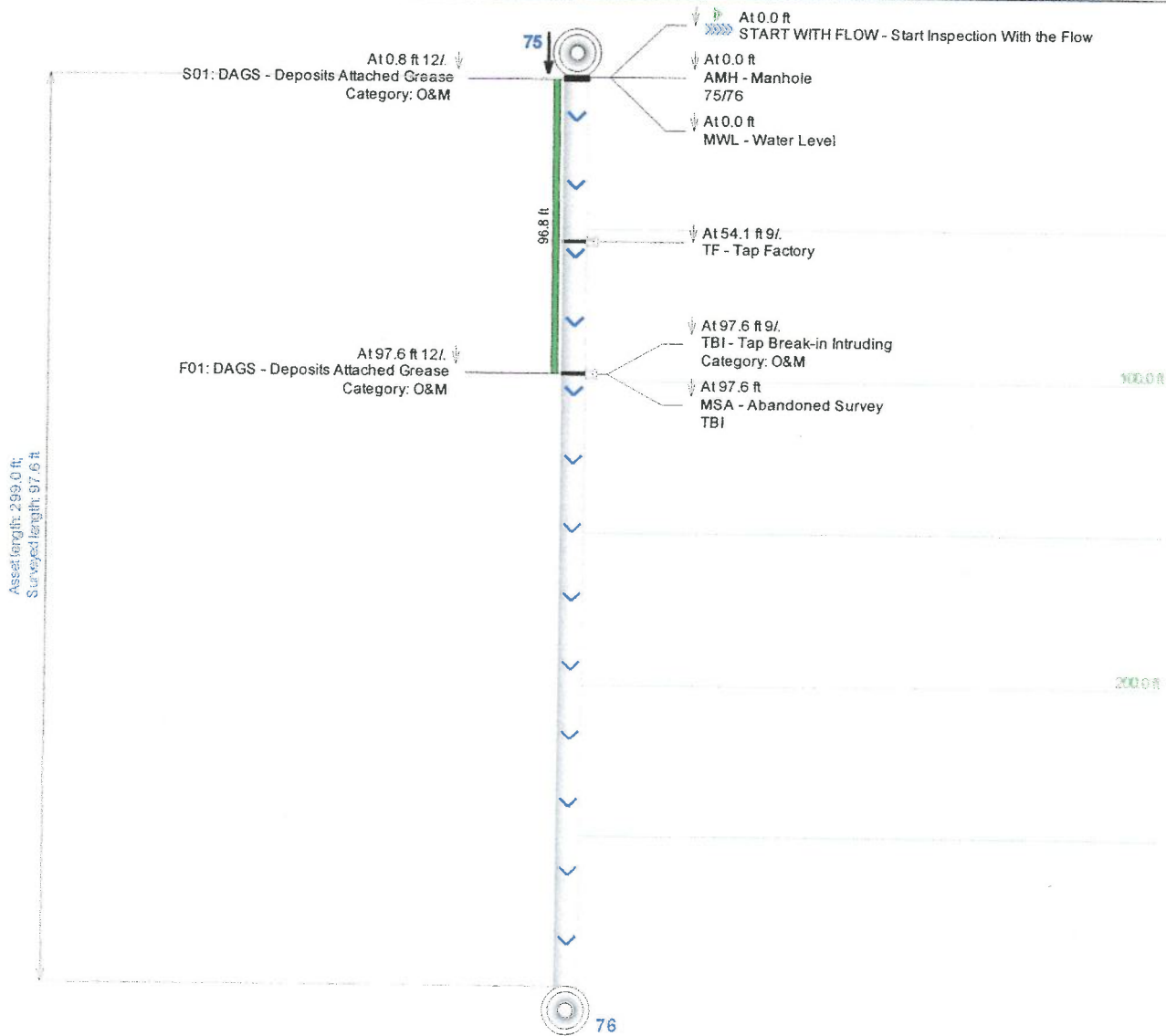


Project Name: SHINGLEHOUSE	Pipeline segment ref: 75/76	City: SHINGLEHOUSE	Street: RT.44
Start date/time: 9/28/2017	Width:	Height: 8	Material: VCP
Direction: UPSTREAM	Length surveyed: 201.4	Surveyed by: CODY FAUCHER	Location code: C
			Weather: 1
			Additional info:



Main Inspection with Pipe-Run Graph

Project Name: SHINGLEHOUSE		Pipeline segment ref: 75/76		City: SHINGLEHOUSE		Street: RT.44	
Start date/time: 9/28/2017		Width:	Height: 8	Material: VCP	Location code: C		Weather: 1
Direction: Downstream		Length surveyed: 97.6		Surveyed by: CODY FAUCHER		Additional info:	



PIPE-EYE SEWER SERVICES
 75 HOLLEY AVENUE
 BRADFORD , PENNSYLVANIA 16701



GraniteXP Observation Report with Still Images and Scores

Pipeline segment ref: 75/76	Project Name: SHINGLEHOUSE	Start date/time: 9/28/2017 9:13:29 AM	Weather: 1	Surveyed by: CODY FAUCHER
Upstream manhole No: 75	Downstream manhole No: 76	Total length: 299.0		

Additional info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
0.0		START WITH FLOW	No	/				
0.0		AMH	No	/				75/76
0.0		MWL	No	/				
0.8		DAGS	No	12 /		O&M		
54.1		TF	No	9 /				
97.6		TBI	No	9 /		O&M		
97.6		DAGS	No	12 /		O&M		
97.6		MSA	No	/				TBI



GraniteXP Observation Report with Still Images and Scores

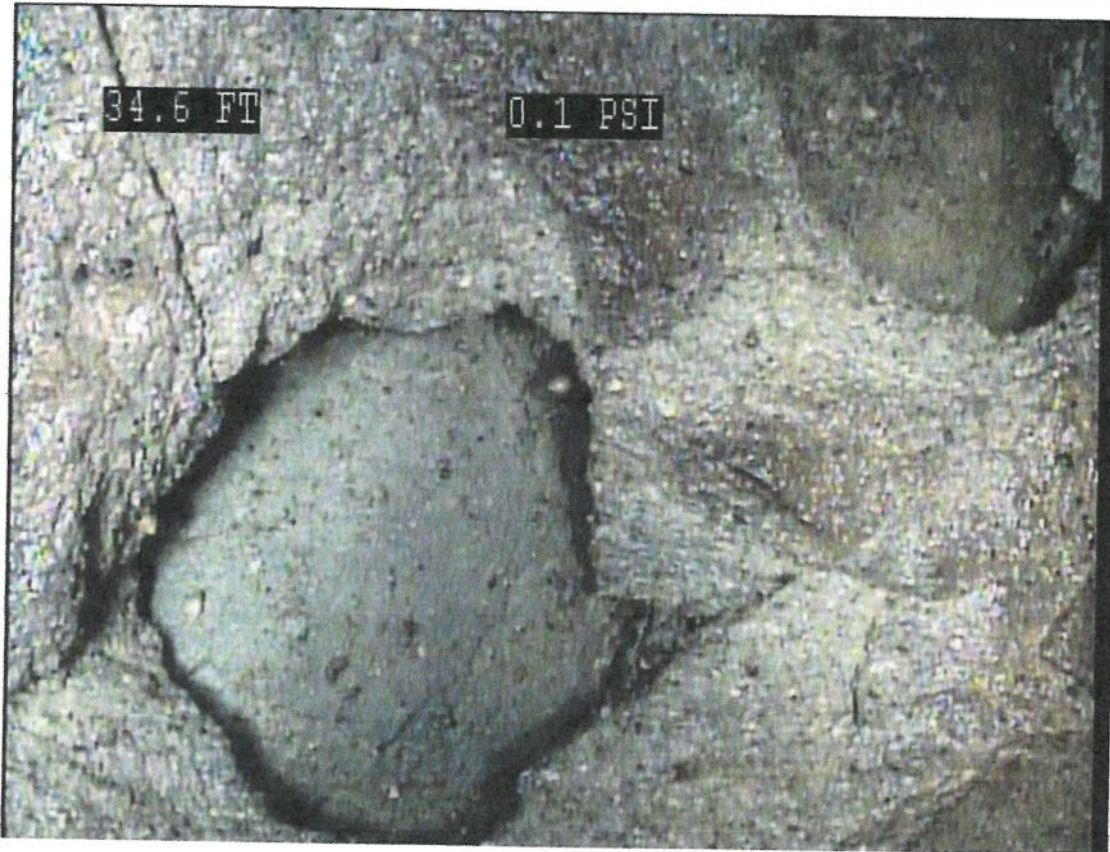
Pipeline segment ref: 75/76	Project Name: SHINGLEHOUSE	Start date/time: 9/28/2017 8:35:47 AM	Weather: 1	Surveyed by: CODY FAUCHER
Upstream manhole No: 75	Downstream manhole No: 76	Total length: 299.0		

Additional info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
0.0		START AGAINST FLOW	Yes	/				
0.0		AMH	Yes	/			76/75	
0.0		MWL	Yes	/				
1.0		CM	Yes	8 / 10		Structural		
10.7		TB	Yes	3 /				
12.6		TBI	Yes	3 /		O&M		
31.9		B	Yes	3 /		Structural		

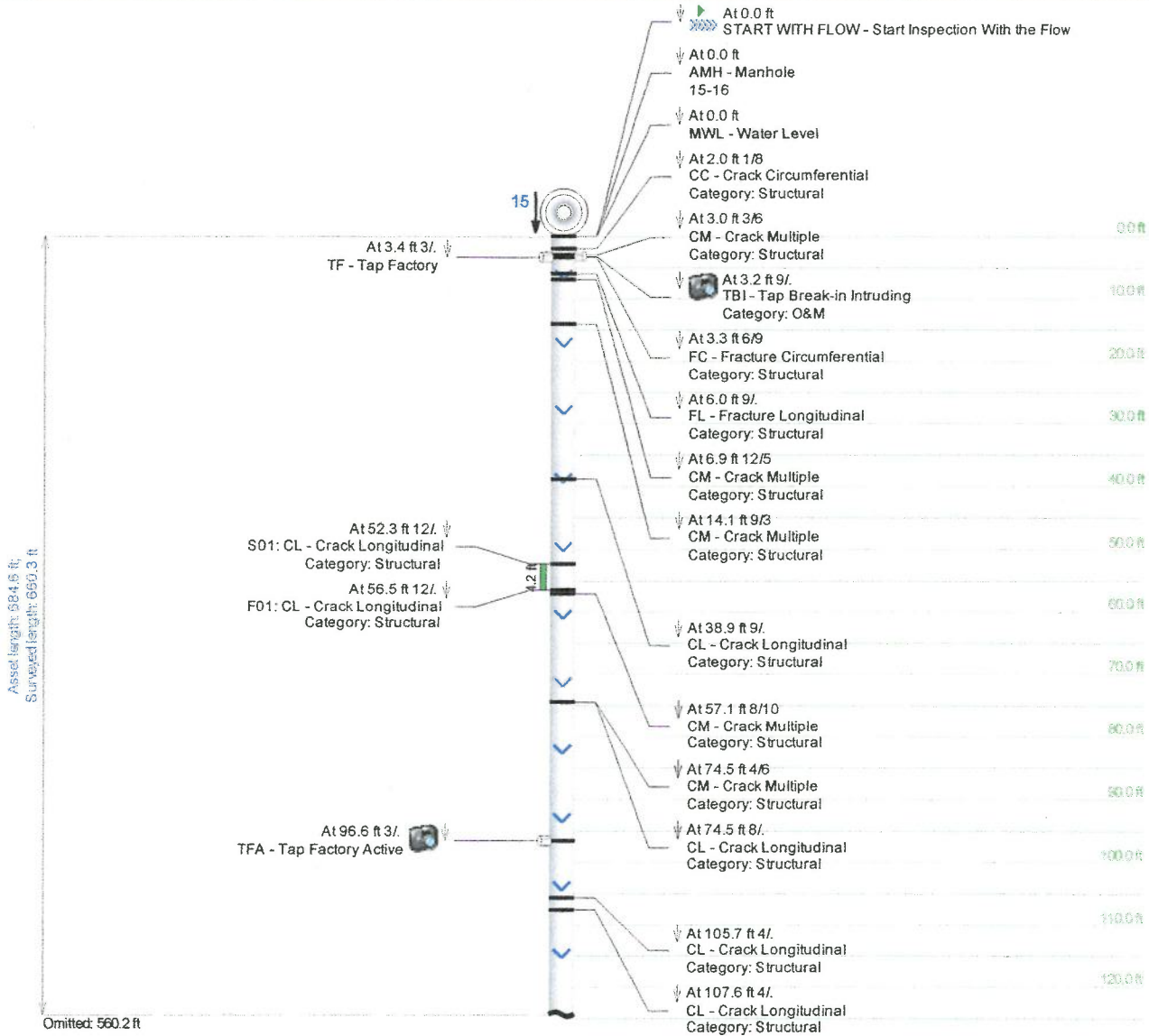
Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
32.4		RPP	Yes	2 /				REPAIRED WITH VCP PIPE



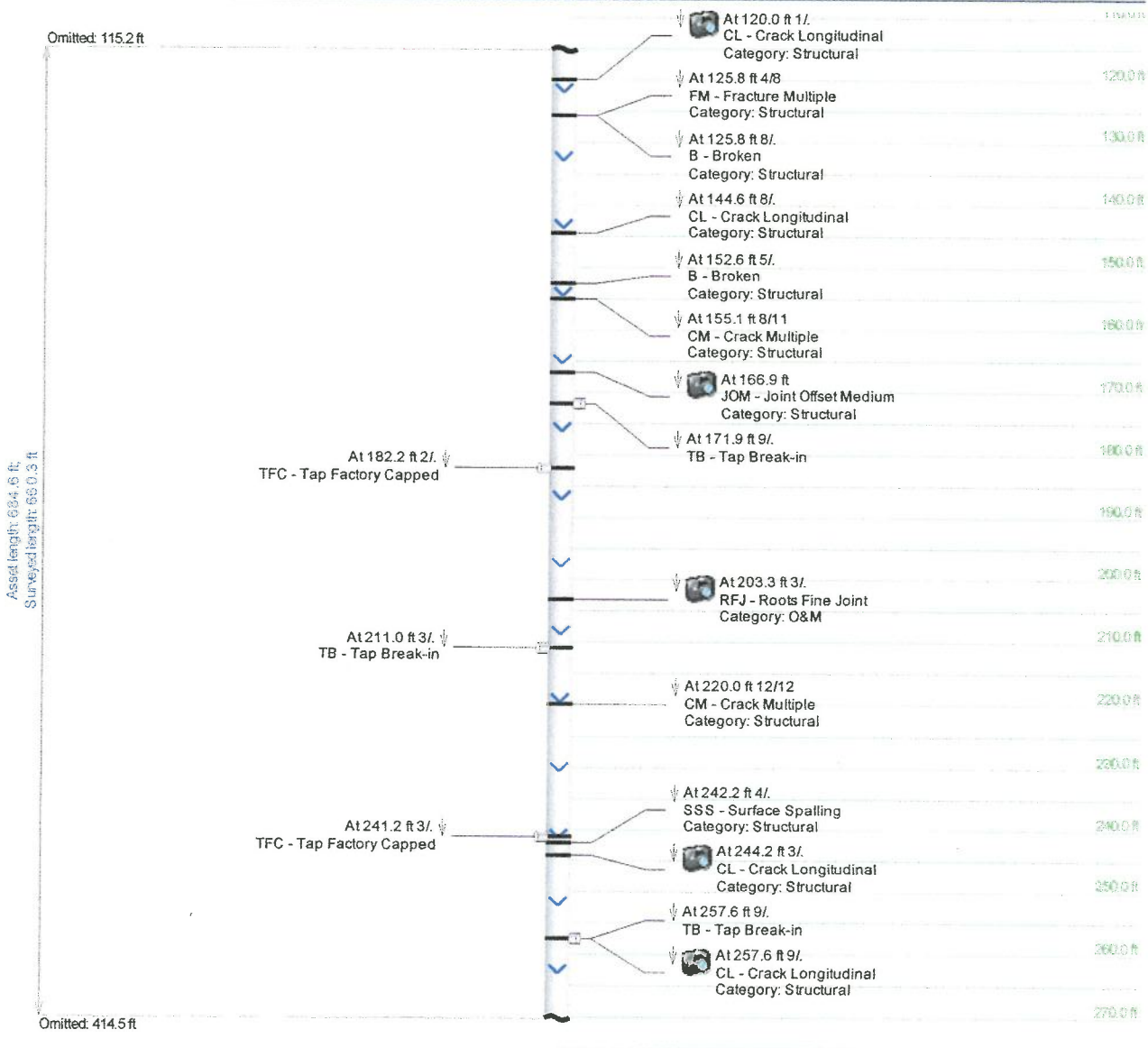
34.6	H	Yes	10 /		Structural			HAS POSSIBLY BEEN REPAIRED
70.1	TFC	Yes	3 /					
72.1	TB	Yes	3 /					
85.1	CM	Yes	10 / 12		Structural			
93.1	CC	Yes	9 / 11		Structural			
115.0	TFC	Yes	3 /					
155.8	TF	Yes	3 /					
201.4	CC	Yes	10 / 12		Structural			
201.4	MSA	Yes	/					COULDNT GET PAST DEBRIS

Main Inspection with Pipe-Run Graph

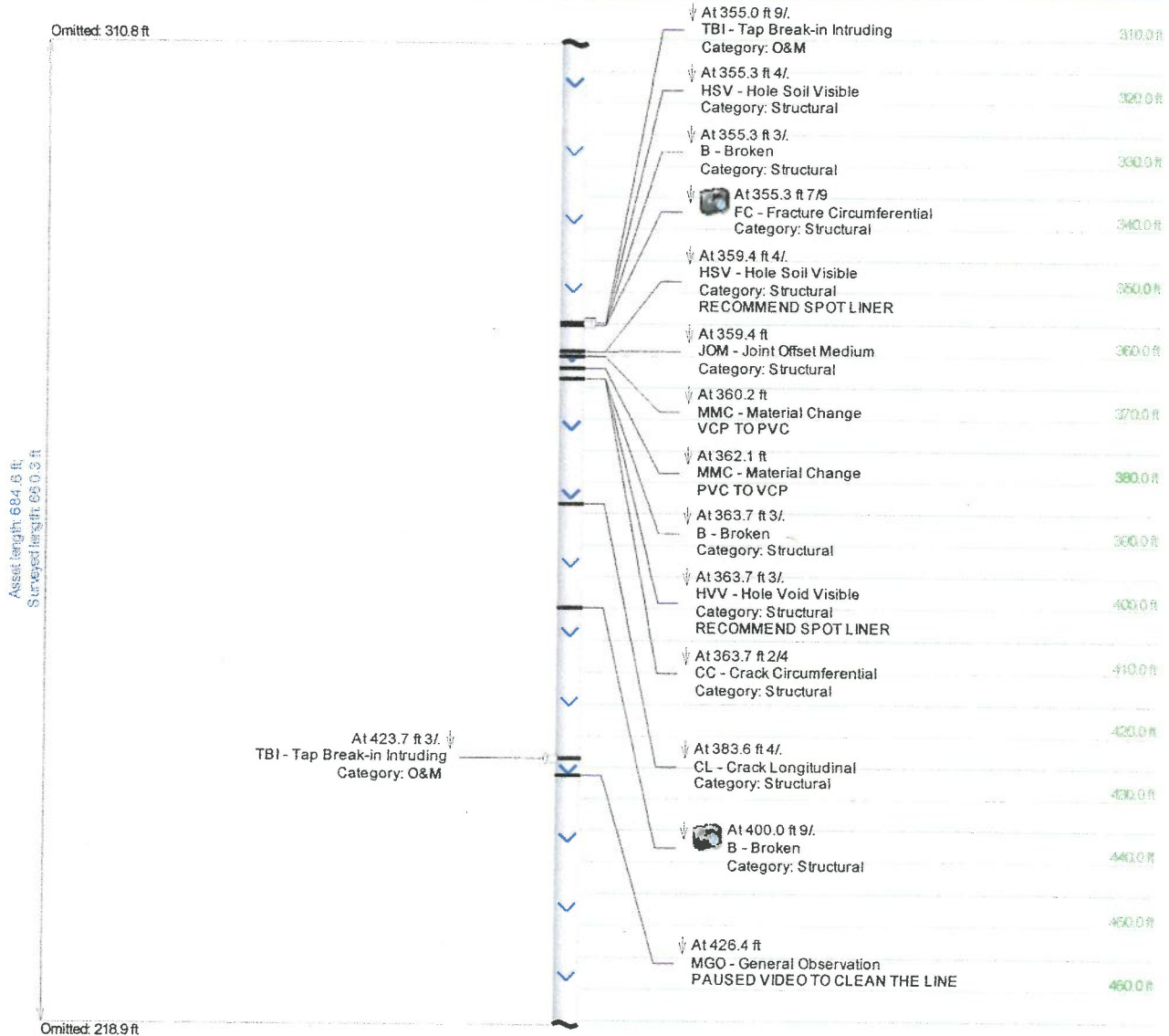
Project Name: SHINGLEHOUSE		Pipeline segment ref: 15/16		City: SHINGLEHOUSE		Street: S. MILL ST	
Start date/time: 9/27/2017		Width: 8	Height: 8	Material: VCP	Location code: C	Weather: 1	
Direction: Downstream		Length surveyed: 660.3	Surveyed by: CODY FAUCHER			Additional info:	



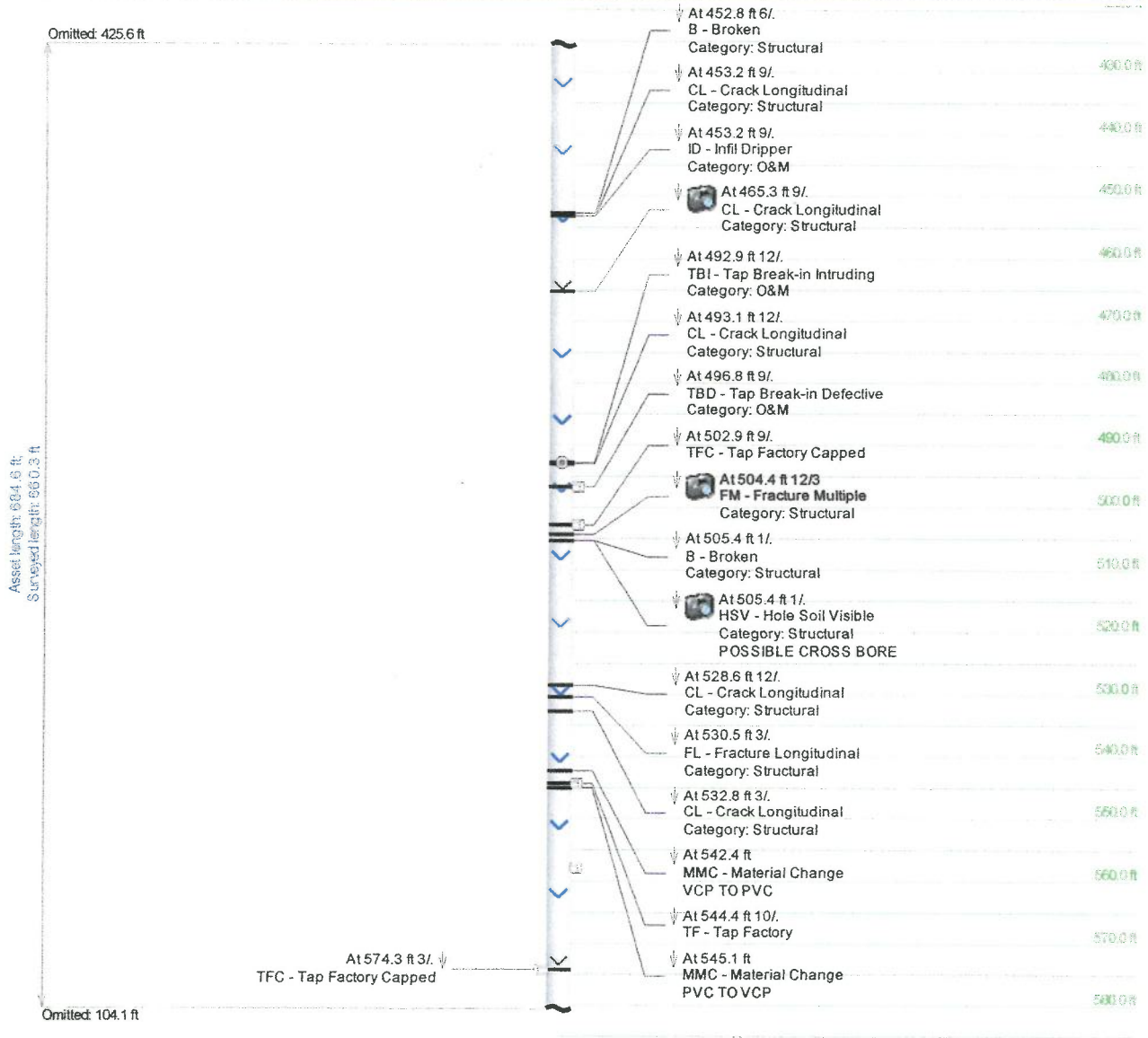
Project Name: SHINGLEHOUSE	Pipeline segment ref: 15/16	City: SHINGLEHOUSE	Street: S. MILL ST
Start date/time: 9/27/2017	Width: 8	Material: VCP	Location code: C
Direction: Downstream	Length surveyed: 660.3	Surveyed by: CODY FAUCHER	Weather: 1
Additional info:			



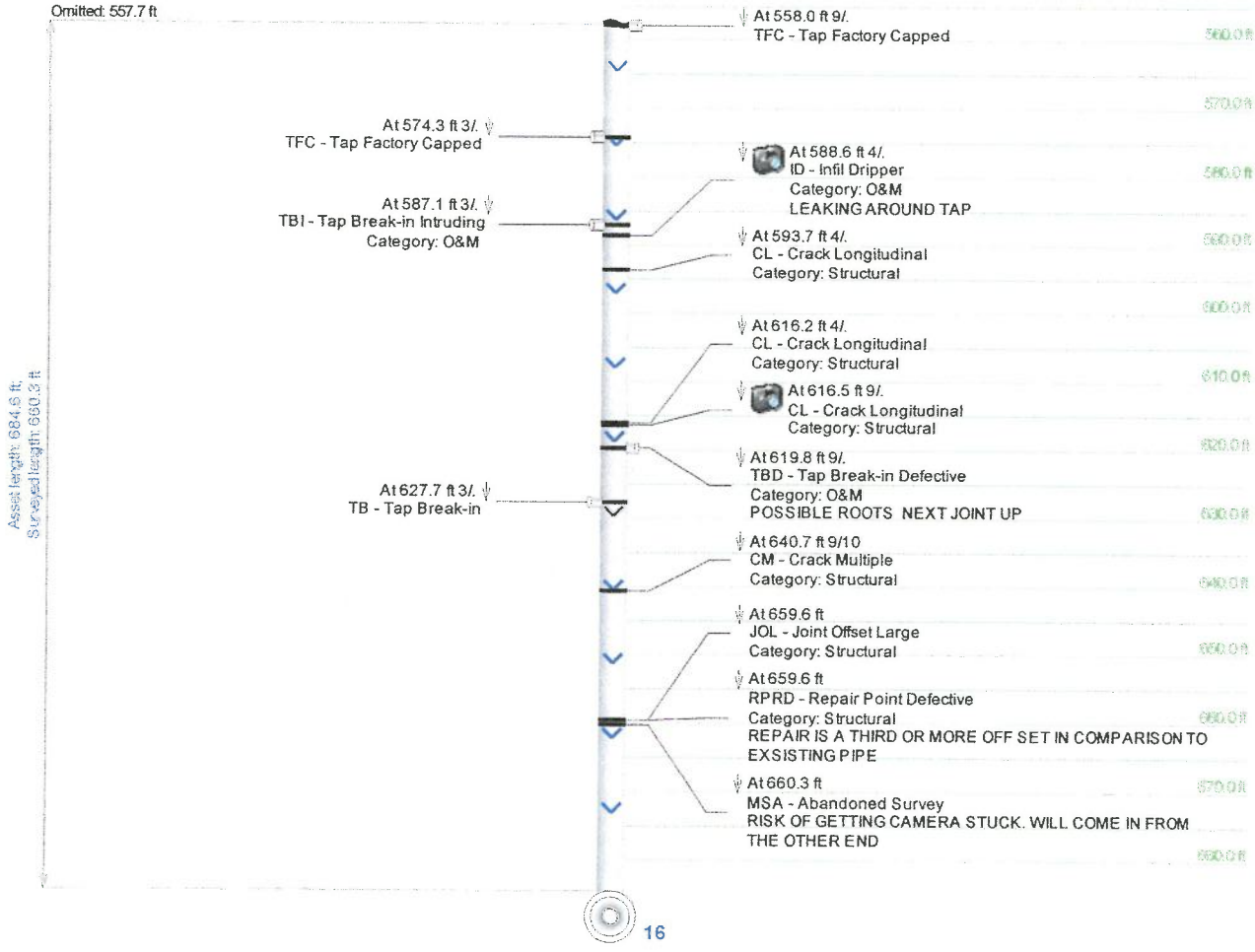
Project Name: SHINGLEHOUSE	Pipeline segment ref: 15/16	City: SHINGLEHOUSE	Street: S. MILL ST
Start date/time: 9/27/2017	Width: 8	Height: 8	Material: VCP
Direction: Downstream	Length surveyed: 660.3	Surveyed by: CODY FAUCHER	Location code: C
			Weather: 1
			Additional info:



Project Name: SHINGLEHOUSE	Pipeline segment ref: 15/16	City: SHINGLEHOUSE	Street: S. MILL ST
Start date/time: 9/27/2017	Width: 8	Material: VCP	Location code: C
Direction: Downstream	Length surveyed: 660.3	Surveyed by: CODY FAUCHER	Weather: 1
Additional info:			

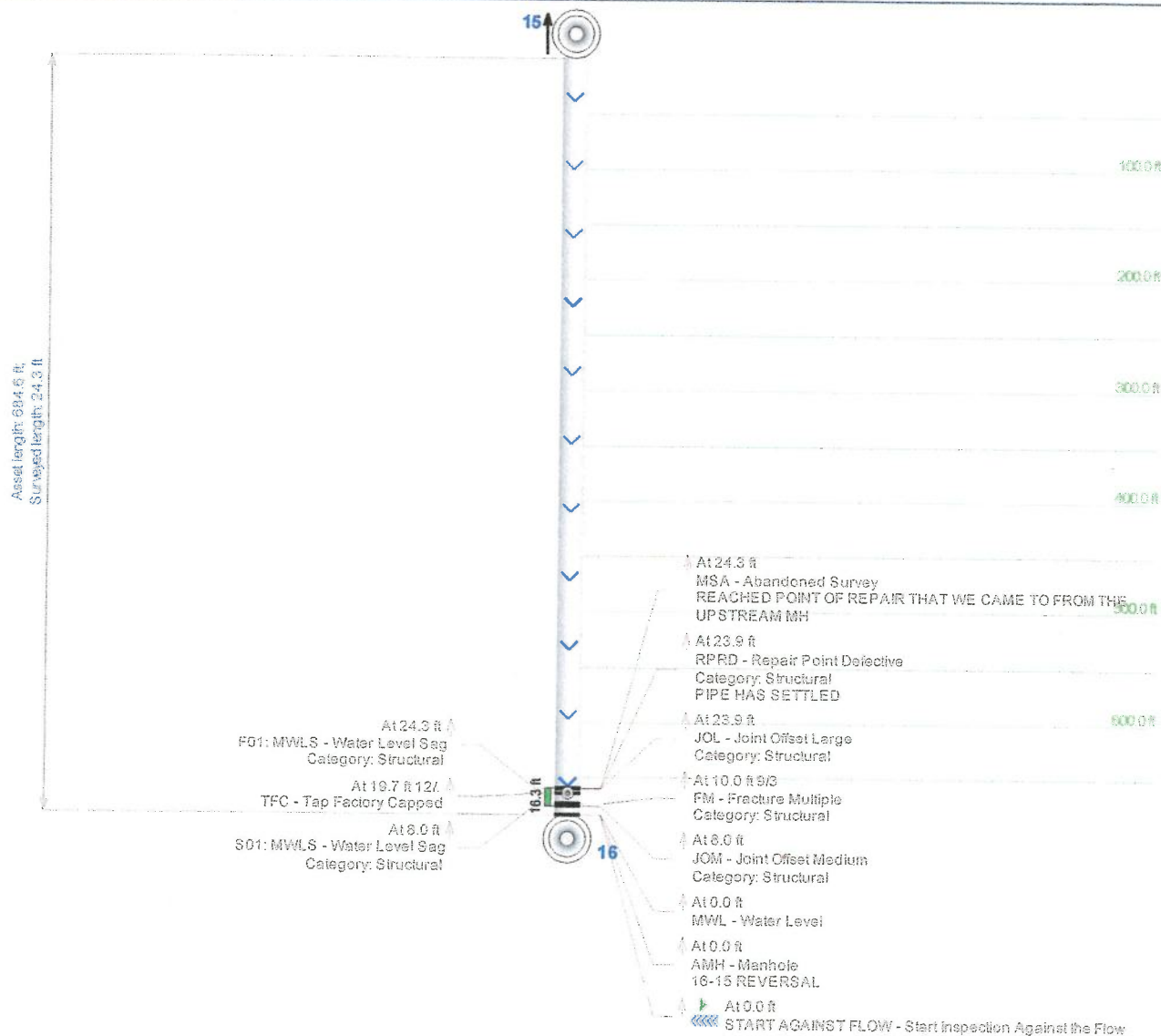


Project Name: SHINGLEHOUSE	Pipeline segment ref: 15/16	City: SHINGLEHOUSE	Street: S. MILL ST
Start date/time: 9/27/2017	Width: 8	Material: VCP	Location code: C
Direction: Downstream	Length surveyed: 660.3	Surveyed by: CODY FAUCHER	Weather: 1
Additional info:			



Main Inspection with Pipe-Run Graph

Project Name: SHINGLEHOUSE		Pipeline segment ref: 15/16		City: SHINGLEHOUSE		Street: S. MILL ST	
Start date/time: 9/27/2017		Width:	Height: 8	Material: VCP	Location code: C		Weather: 1
Direction: UPSTREAM		Length surveyed: 24.3		Surveyed by: CODY FAUCHER		Additional info:	





GraniteXP Observation Report with Still Images and Scores

Pipeline segment ref: 15/16	Project Name: SHINGLEHOUSE	Start date/time: 9/27/2017 8:58:01 AM	Weather: 1	Surveyed by: CODY FAUCHER
Upstream manhole No: 15	Downstream manhole No: 16	Total length: 684.6		

Additional info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
0.0		START WITH FLOW	No	/				
0.0		AMH	No	/				15-16
0.0		MWL	No	/				
2.0		CC	No	1 / 8		Structural		
3.0		CM	No	3 / 6		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
3.2		TBI	No	9 /		O&M		



3.3	FC	No	6 / 9	Structural
3.4	TF	No	3 /	
6.0	FL	No	9 /	Structural
6.9	CM	No	12 / 5	Structural
14.1	CM	No	9 / 3	Structural
38.9	CL	No	9 /	Structural
52.3	CL	No	12 /	Structural
56.5	CL	No	12 /	Structural
57.1	CM	No	8 / 10	Structural
74.5	CM	No	4 / 6	Structural
74.5	CL	No	8 /	Structural

Extra	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
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96.6		TFA	No	3 /				
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105.7		CL	No	4 /		Structural		
107.6		CL	No	4 /		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
120.0		CL	No	1 /		Structural		



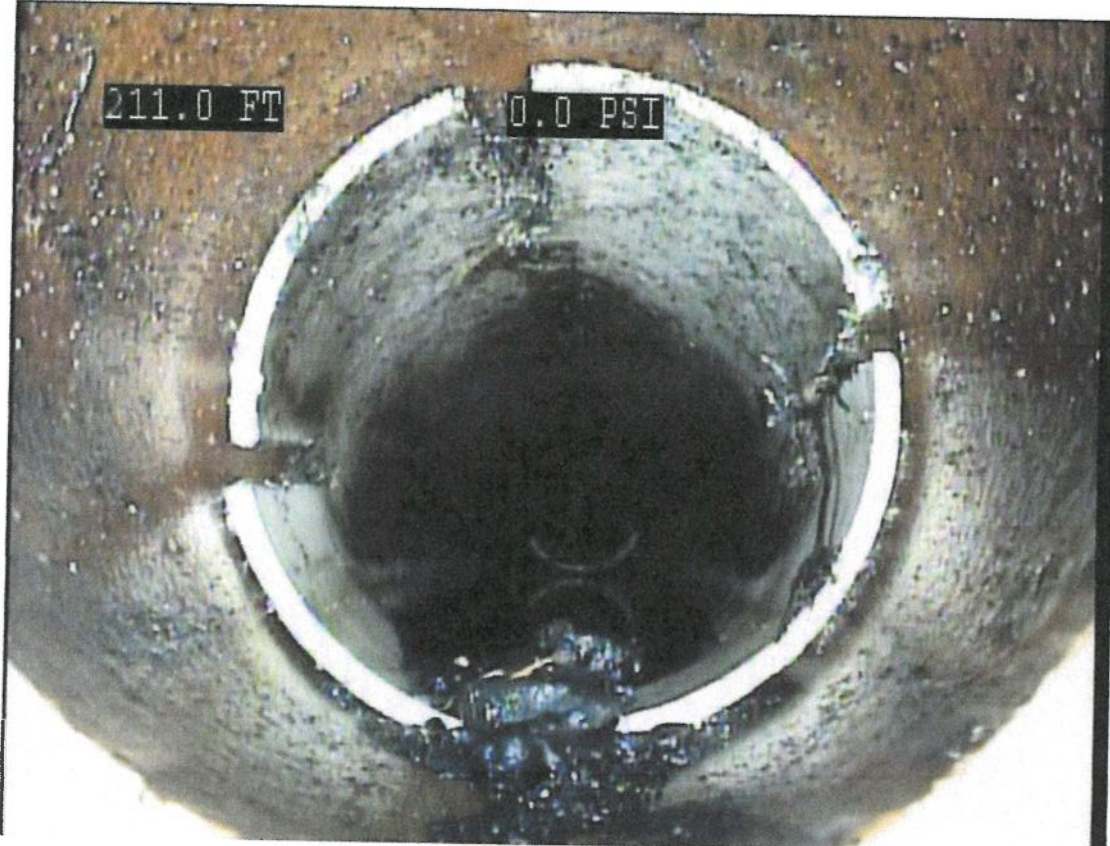
125.8		FM	No	4 / 8		Structural		
125.8		B	No	8 /		Structural		
144.6		CL	No	8 /		Structural		
152.6		B	No	5 /		Structural		
155.1		CM	No	8 / 11		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
166.9		JOM	No	/		Structural		



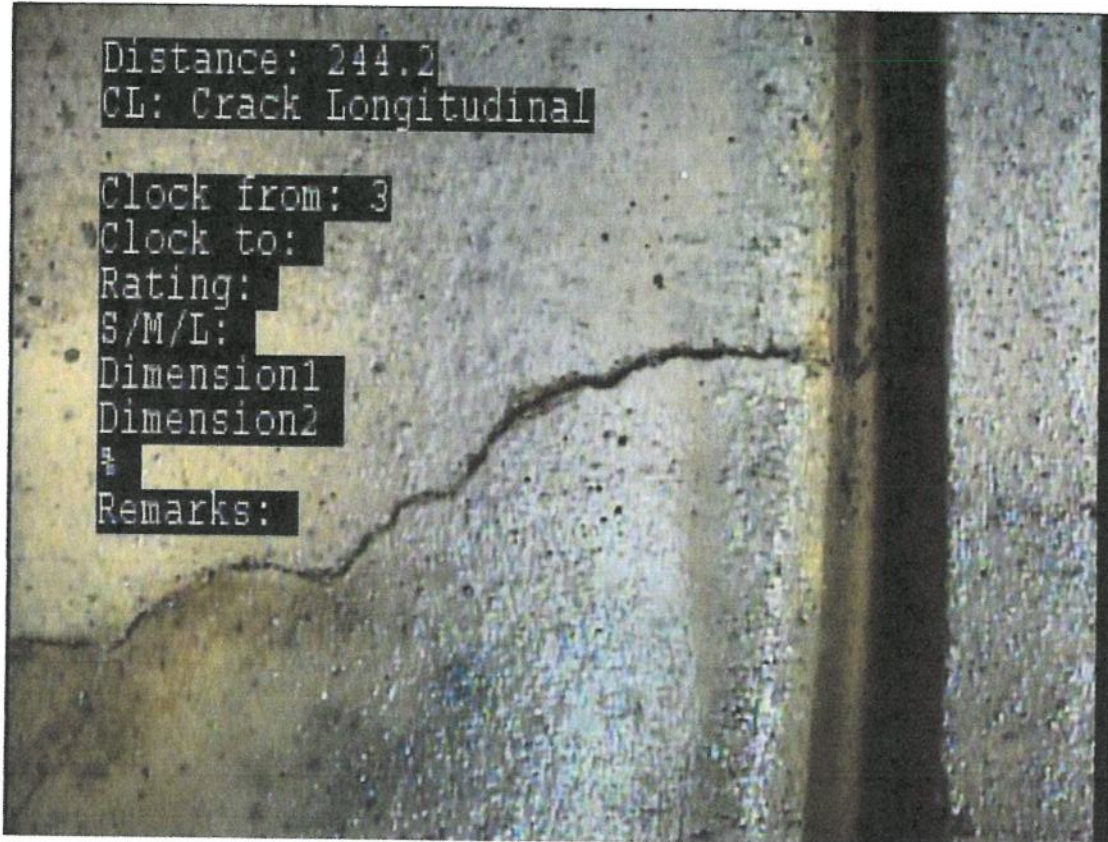
171.9	TB	No	9 /
182.2	TFC	No	2 /

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
203.3		RFJ	No	3 /		O&M		

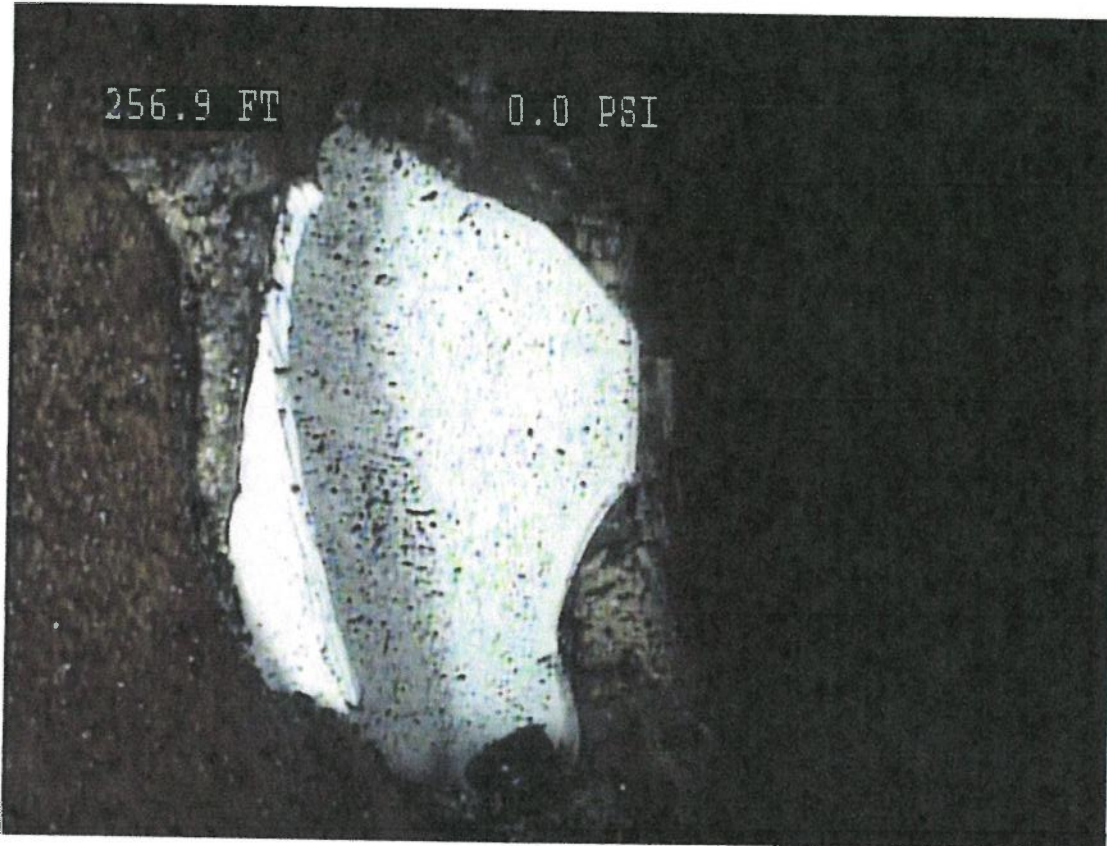


211.0	TB	No	3 /		
220.0	CM	No	12 / 12		Structural
241.2	TFC	No	3 /		
242.2	SSS	No	4 /		Structural

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
244.2		CL	No	3 /		Structural		

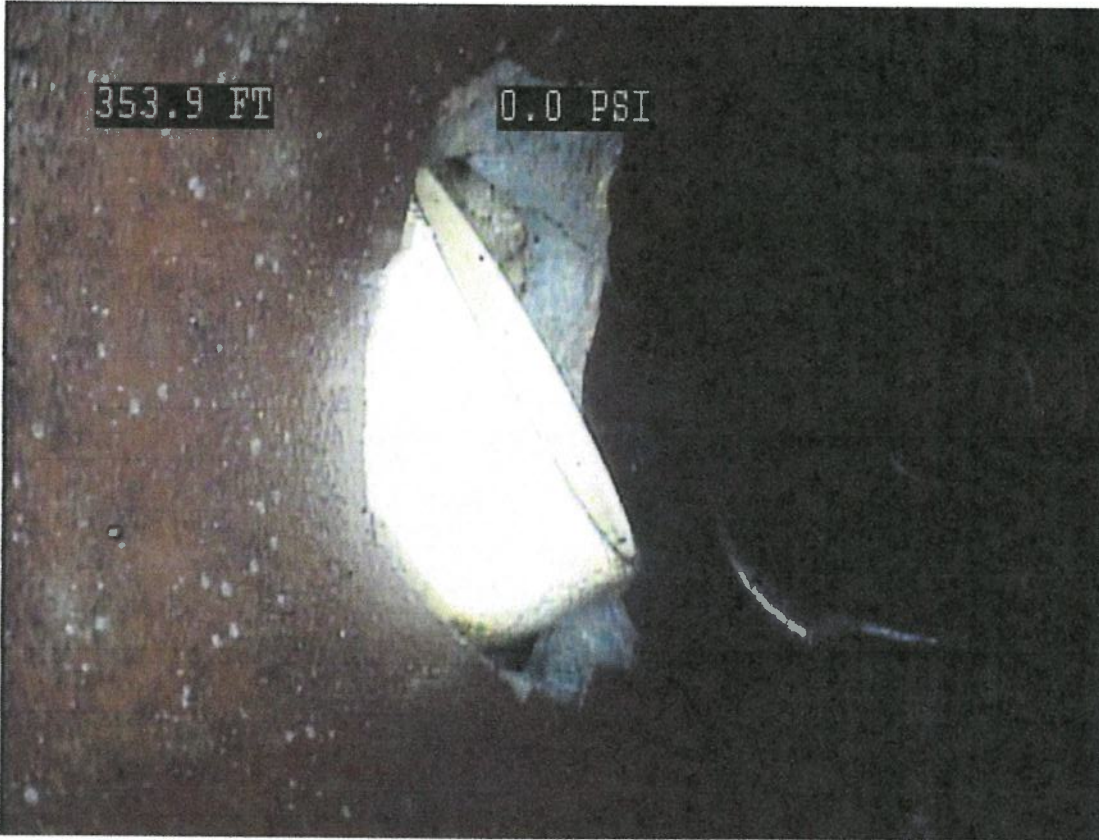


Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
244.2		CL	No	3 /		Structural		



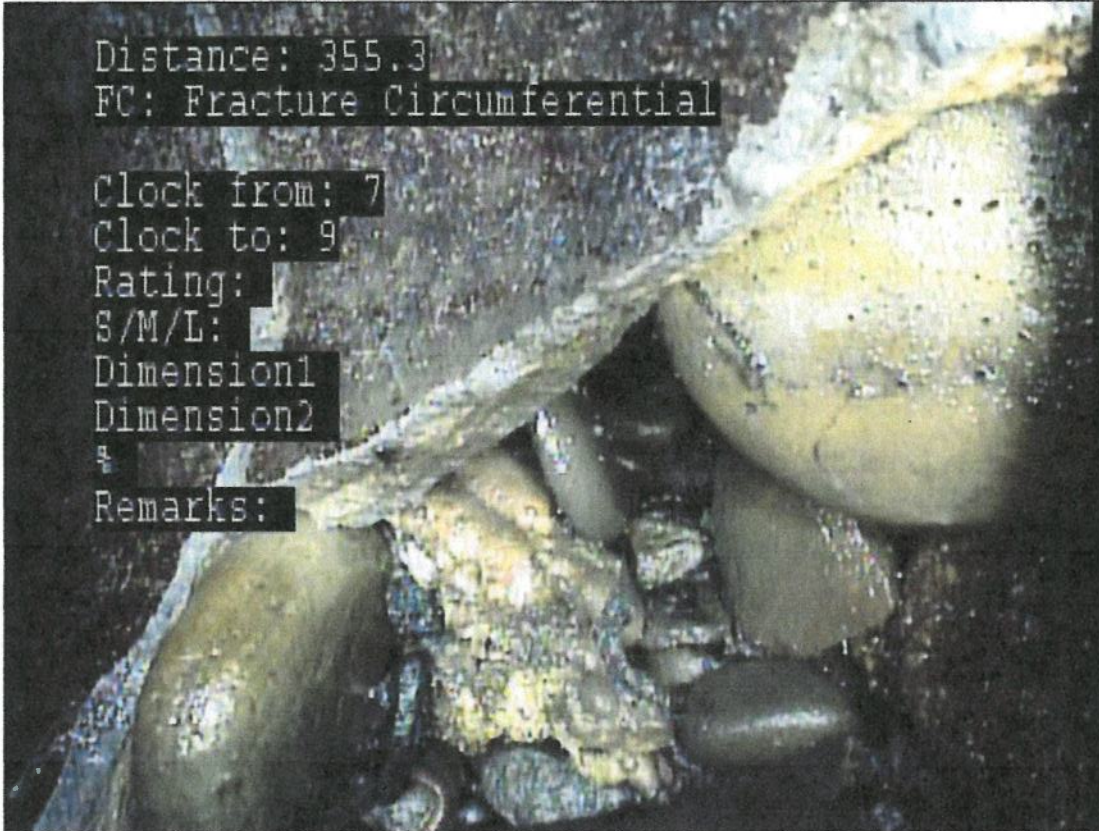
257.6		TB	No	9 /				
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Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
257.6		CL	No	9 /		Structural		

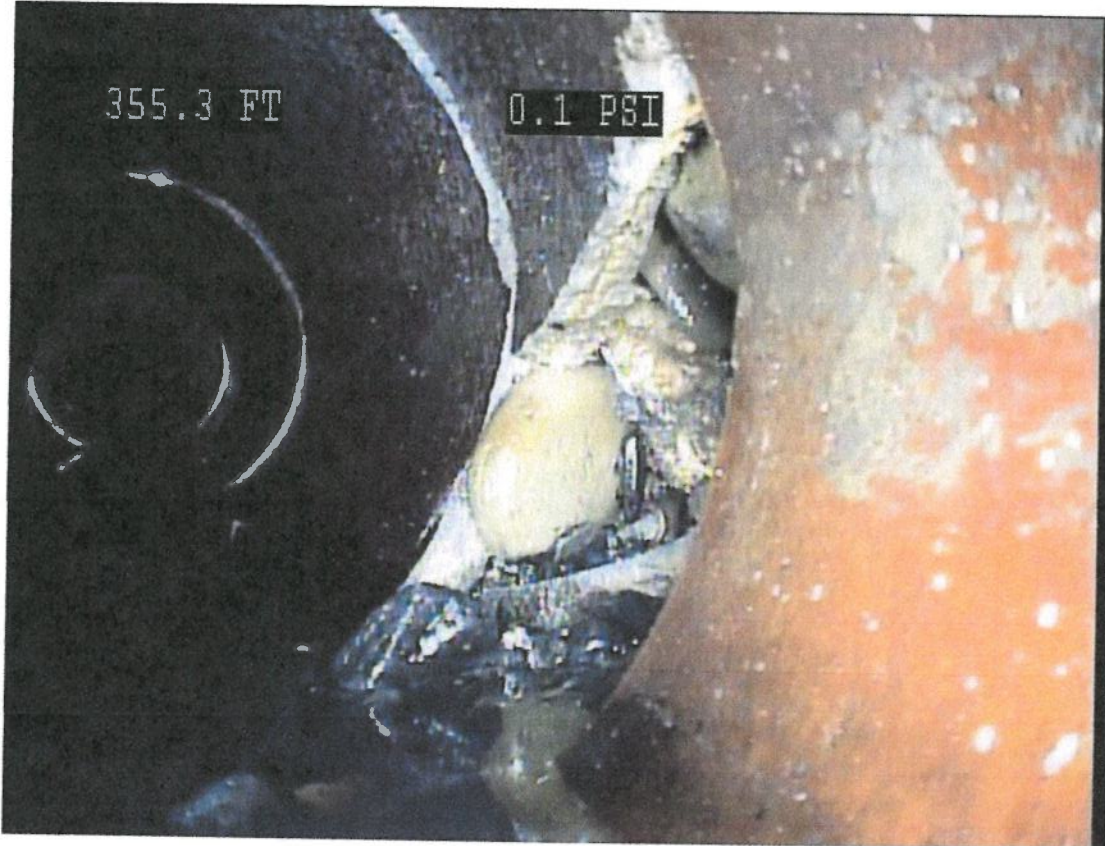


355.0		TBI	No	9 /		O&M		
355.3		HSV	No	4 /		Structural		
355.3		B	No	3 /		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
355.3		FC	No	7 / 9		Structural		

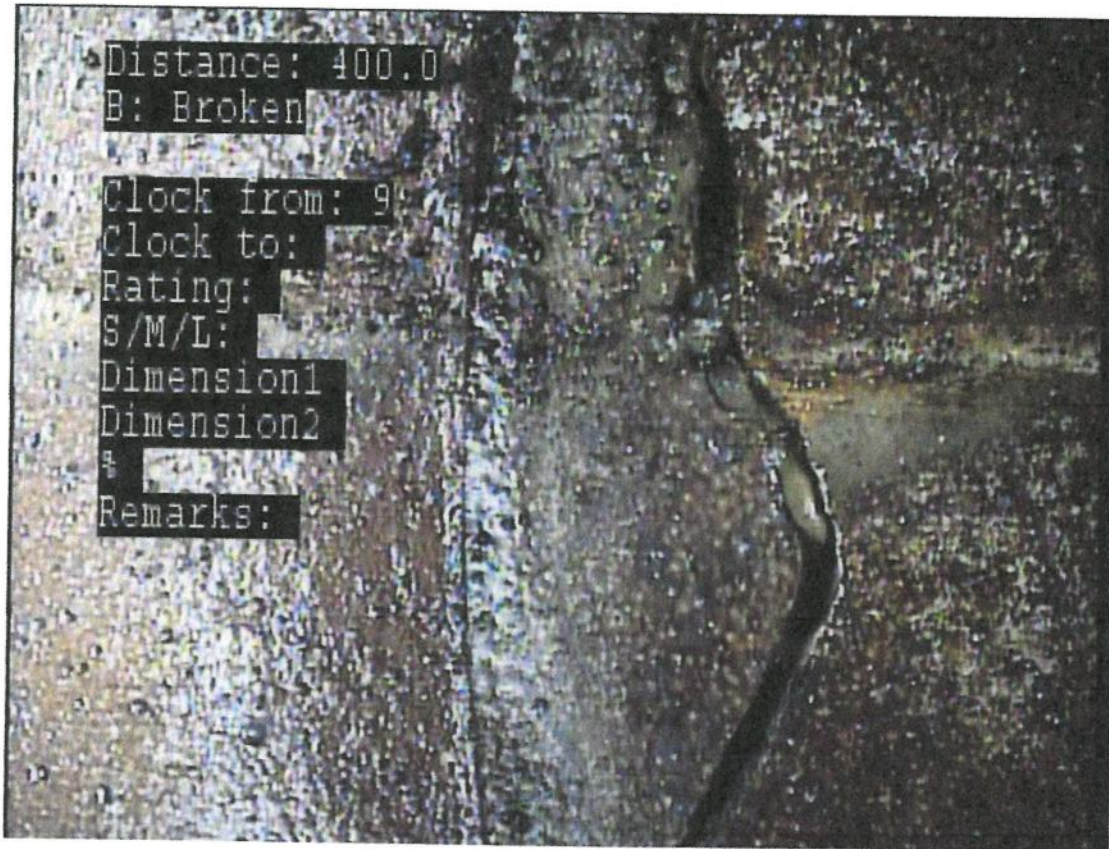


Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
355.3		FC	No	7 / 9		Structural		



359.4	HSV	No	4 /		Structural	RECOMMEND SPOT LINER
359.4	JOM	No	/		Structural	
360.2	MMC	No	/			VCP TO PVC
362.1	MMC	No	/			PVC TO VCP
363.7	B	No	3 /		Structural	
363.7	HVV	No	3 /		Structural	RECOMMEND SPOT LINER
363.7	CC	No	2 / 4		Structural	
383.6	CL	No	4 /		Structural	

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
400.0		B	No	9 /		Structural		

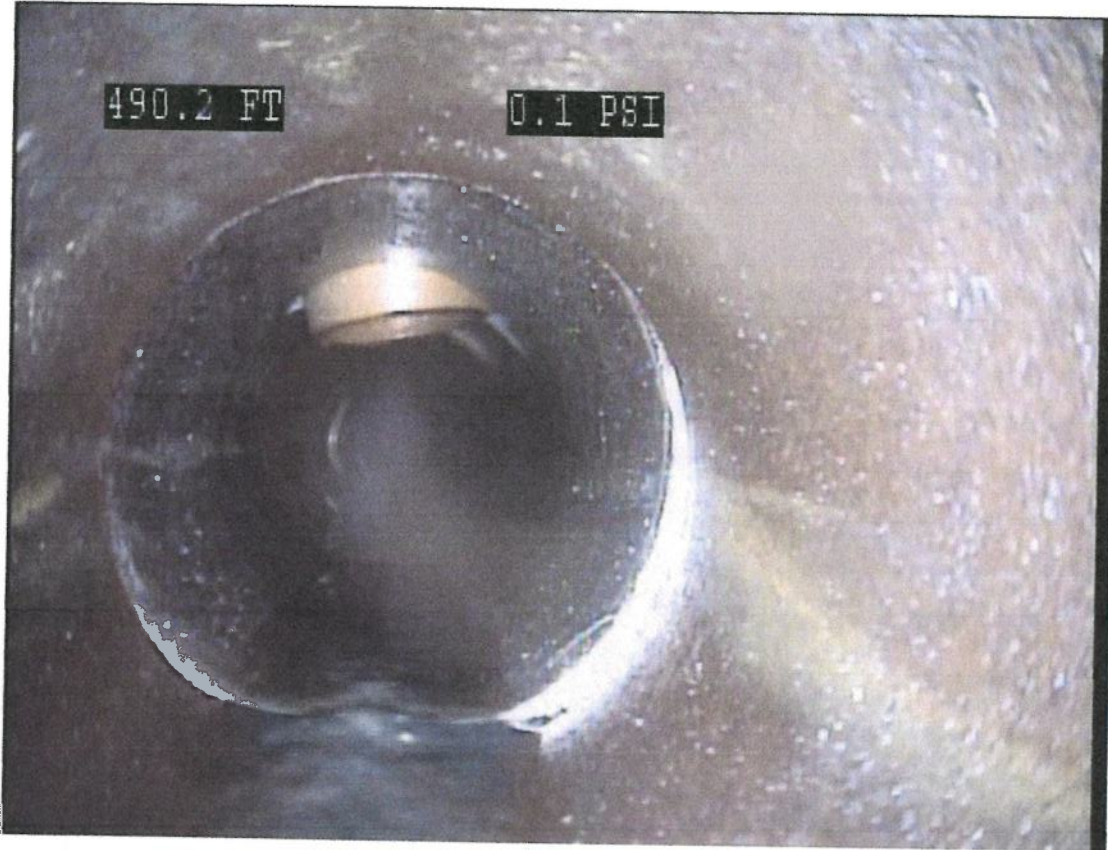


Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
400.0		B	No	9 /		Structural		



423.7	TBI	No	3 /		O&M			
426.4	MGO	No	/					PAUSED VIDEO TO CLEAN THE LINE
452.8	B	No	6 /		Structural			
453.2	CL	No	9 /		Structural			
453.2	ID	No	9 /		O&M			

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
465.3		CL	No	9 /		Structural		



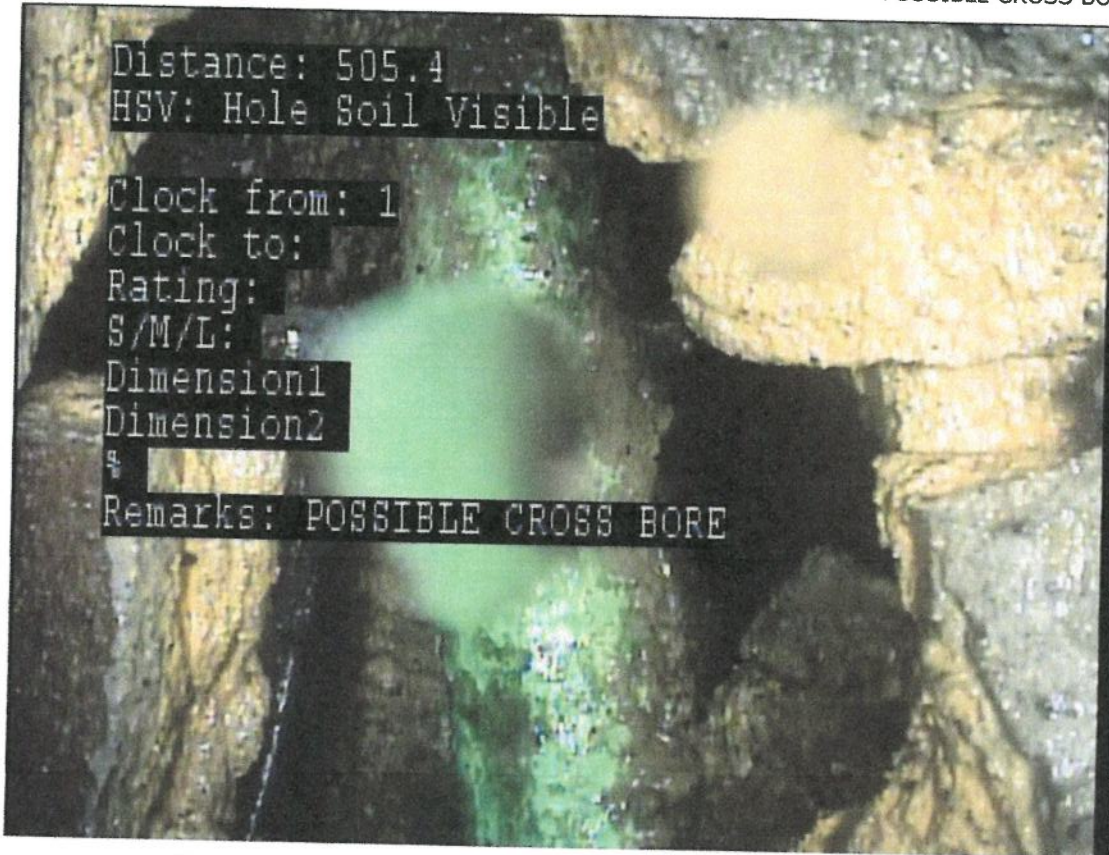
492.9	TBI	No	12 /		O&M
493.1	CL	No	12 /		Structural
496.8	TBD	No	9 /		O&M
502.9	TFC	No	9 /		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
504.4		FM	No	12 / 3		Structural		



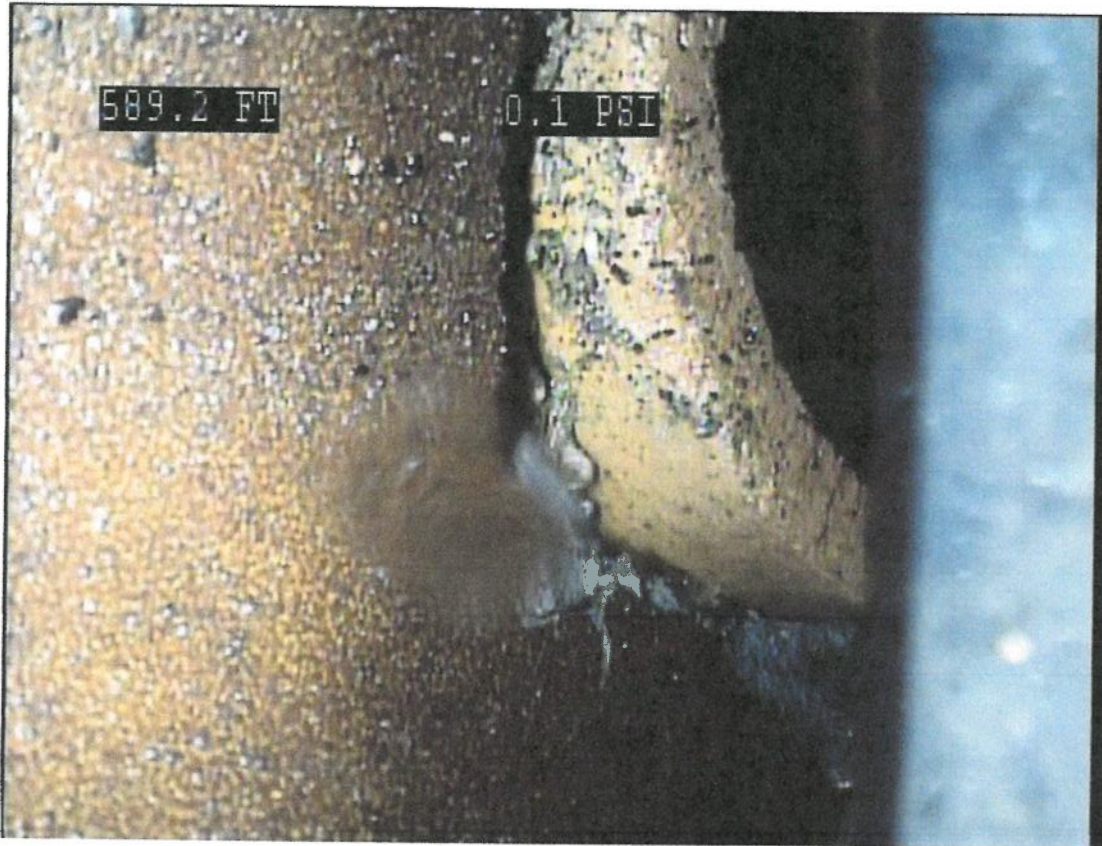
505.4	B	No	1 /			Structural		
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Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
505.4		HSV	No	1 /		Structural		POSSIBLE CROSS BORE



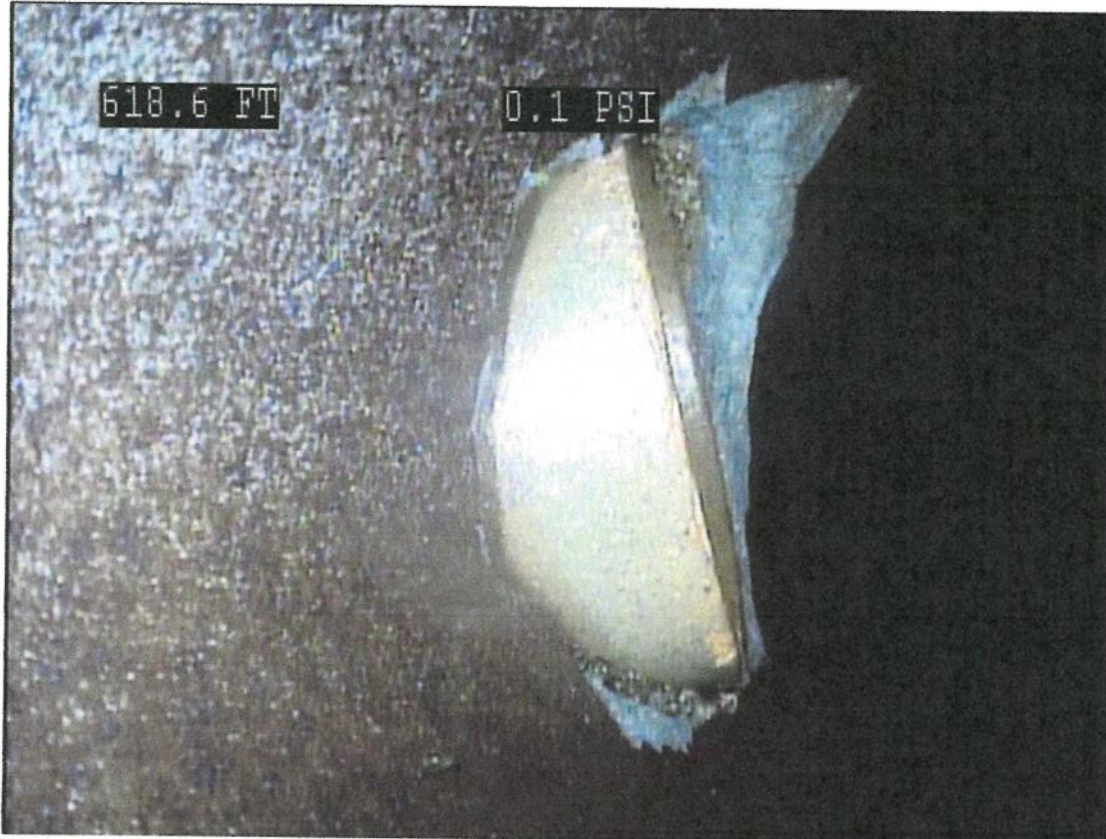
528.6		CL	No	12 /		Structural		
530.5		FL	No	3 /		Structural		
532.8		CL	No	3 /		Structural		
542.4		MMC	No	/				VCP TO PVC
544.4		TF	No	10 /				
545.1		MMC	No	/				PVC TO VCP
558.0		TFC	No	9 /				
574.3		TFC	No	3 /				
587.1		TBI	No	3 /		O&M		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
588.6		ID	No	4 /		O&M		LEAKING AROUND TAP



593.7		CL	No	4 /		Structural		
616.2		CL	No	4 /		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
616.5		CL	No	9 /		Structural		



619.8		TBD	No	9 /		O&M		POSSIBLE ROOTS NEXT JOINT UP
627.7		TB	No	3 /				
640.7		CM	No	9 / 10		Structural		
659.6		JOL	No	/		Structural		
659.6		RPRD	No	/		Structural		REPAIR IS A THIRD OR MORE OFF SET IN COMPARISON TO EXSISTING PIPE
660.3		MSA	No	/				RISK OF GETTING CAMERA STUCK. WILL COME IN FROM THE OTHER END



GraniteXP Observation Report with Still Images and Scores

Pipeline segment ref: 15/16	Project Name: SHINGLEHOUSE	Start date/time: 9/27/2017 11:27:37 AM	Weather: 1	Surveyed by: CODY FAUCHER
Upstream manhole No: 15	Downstream manhole No: 16	Total length: 684.6		

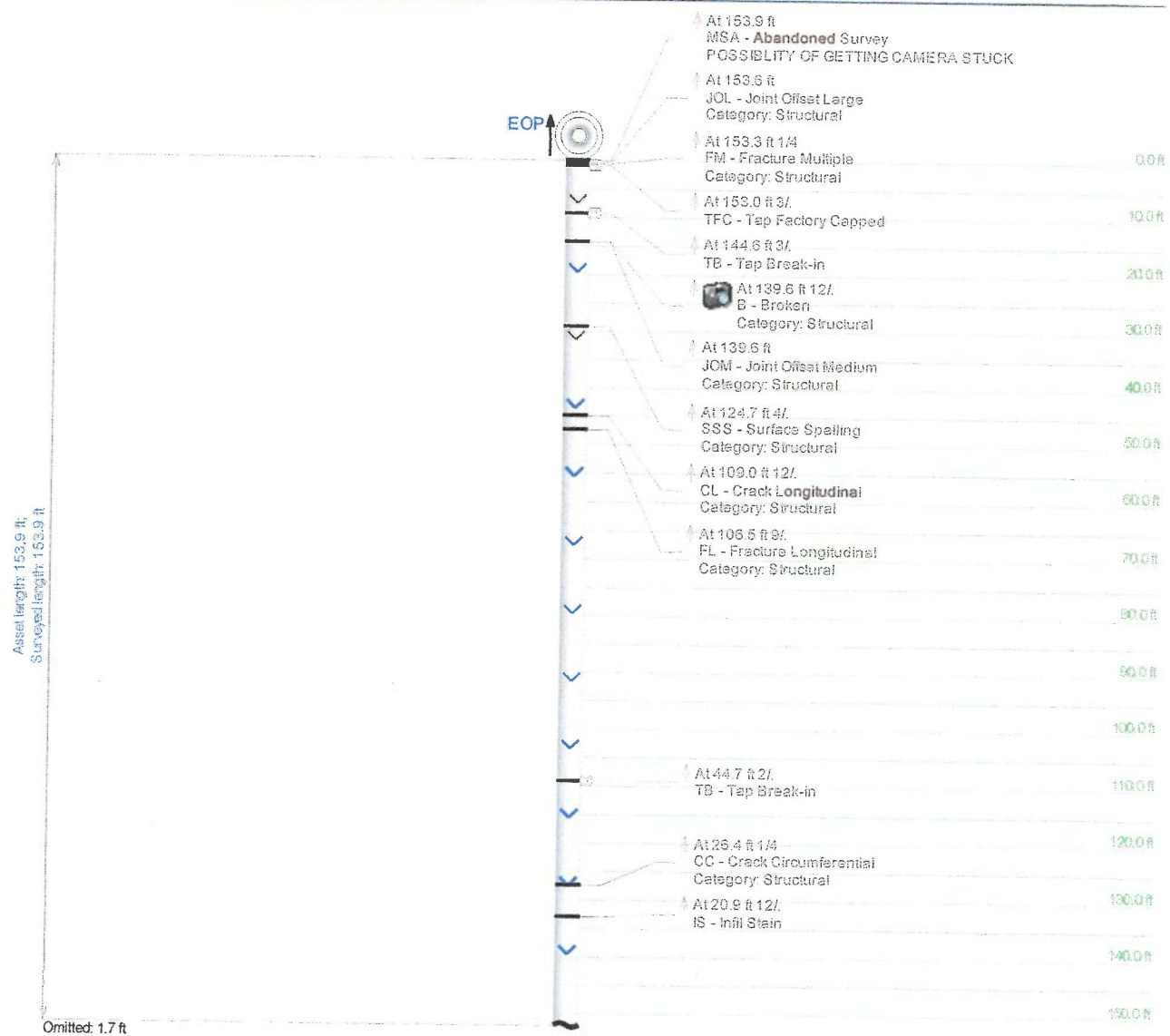
Additional info:

Observations

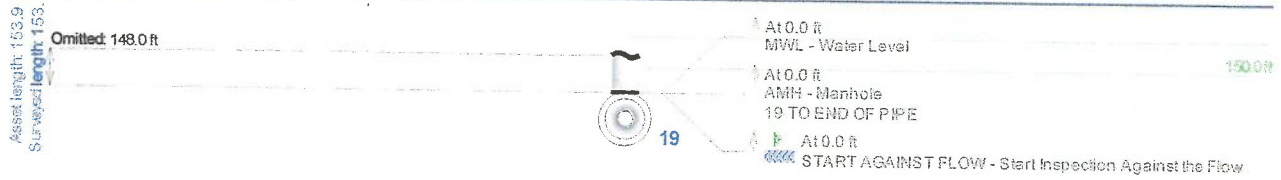
Distance	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
0.0		START AGAINST FLOW	Yes	/				
0.0		AMH	Yes	/				16-15 REVERSAL
0.0		MWL	Yes	/				
8.0		MWLS	Yes	/		Structural		
8.0		JOM	Yes	/		Structural		
10.0		FM	Yes	9 / 3		Structural		
19.7		TFC	Yes	12 /				
23.9		JOL	Yes	/		Structural		
23.9		RPRD	Yes	/		Structural		PIPE HAS SETTLED
24.3		MWLS	Yes	/		Structural		
24.3		MSA	Yes	/				REACHED POINT OF REPAIR THAT WE CAME TO FROM THE UPSTREAM MH

Main Inspection with Pipe-Run Graph

Project Name: SHINGLEHOUSE		Pipeline segment ref: EOP/19		City: SHINGLEHOUSE		Street: E. ACADEMY ST	
Start date/time: 9/27/2017	Width:	Height: 8	Material: VCP	Location code: C	Weather: 1		
Direction: UPSTREAM		Length surveyed: 153.9	Surveyed by: CODY FAUCHER			Additional info:	

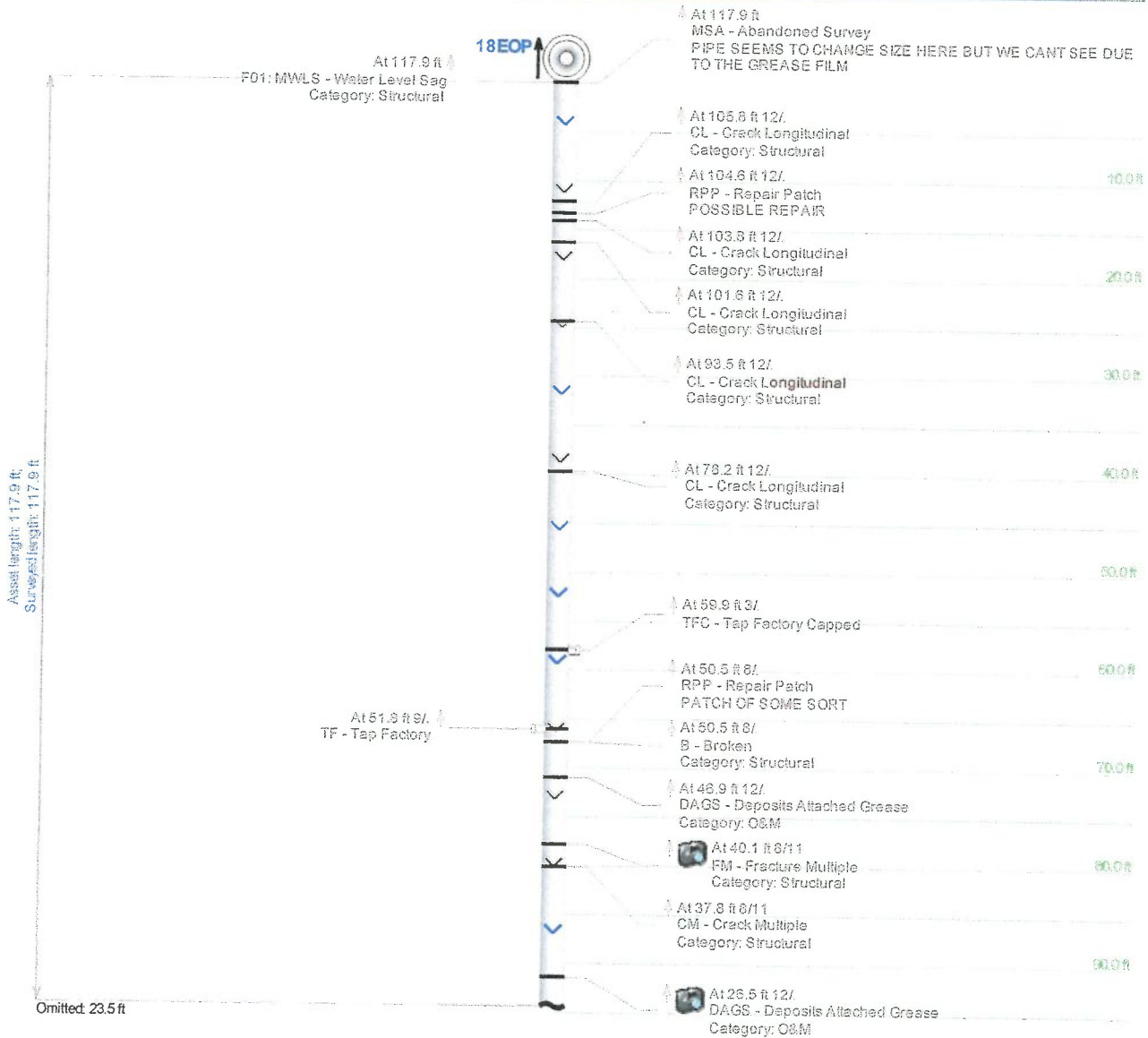


Project Name: SHINGLEHOUSE	Pipeline segment ref: EOP/19	City: SHINGLEHOUSE	Street: E. ACADEMY ST
Start date/time: 9/27/2017	Width:	Height: 8	Material: VCP
Direction: UPSTREAM	Length surveyed: 153.9	Surveyed by: CODY FAUCHER	Location code: C
			Weather: 1
Additional info:			

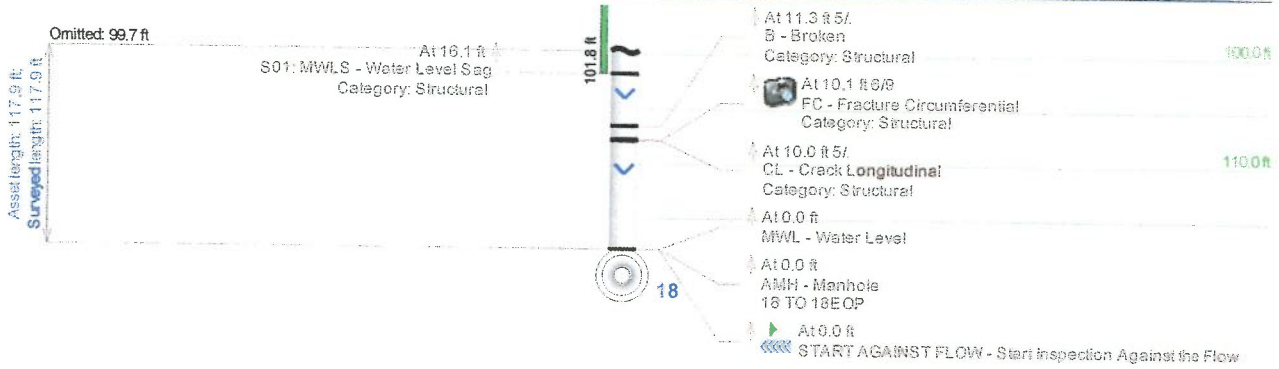


Main Inspection with Pipe-Run Graph

Project Name: SHINGLEHOUSE		Pipeline segment ref: 18EOP/18		City: SHINGLEHOUSE		Street: E. ACADEMY ST	
Start date/time: 9/27/2017	Width:	Height: 6	Material: VCP	Location code: C	Weather: 1		
Direction: UPSTREAM	Length surveyed: 117.9	Surveyed by: CODY FAUCHER		Additional info:			



Project Name: SHINGLEHOUSE	Pipeline segment ref: 18EOP/18	City: SHINGLEHOUSE	Street: E. ACADEMY ST
Start date/time: 9/27/2017	Width:	Height: 6	Material: VCP
Direction: UPSTREAM	Length surveyed: 117.9	Surveyed by: CODY FAUCHER	Location code: C
			Weather: 1
Additional info:			



PIPE-EYE SEWER SERVICES
 75 HOLLEY AVENUE
 BRADFORD , PENNSYLVANIA 16701



GraniteXP Observation Report with Still Images and Scores

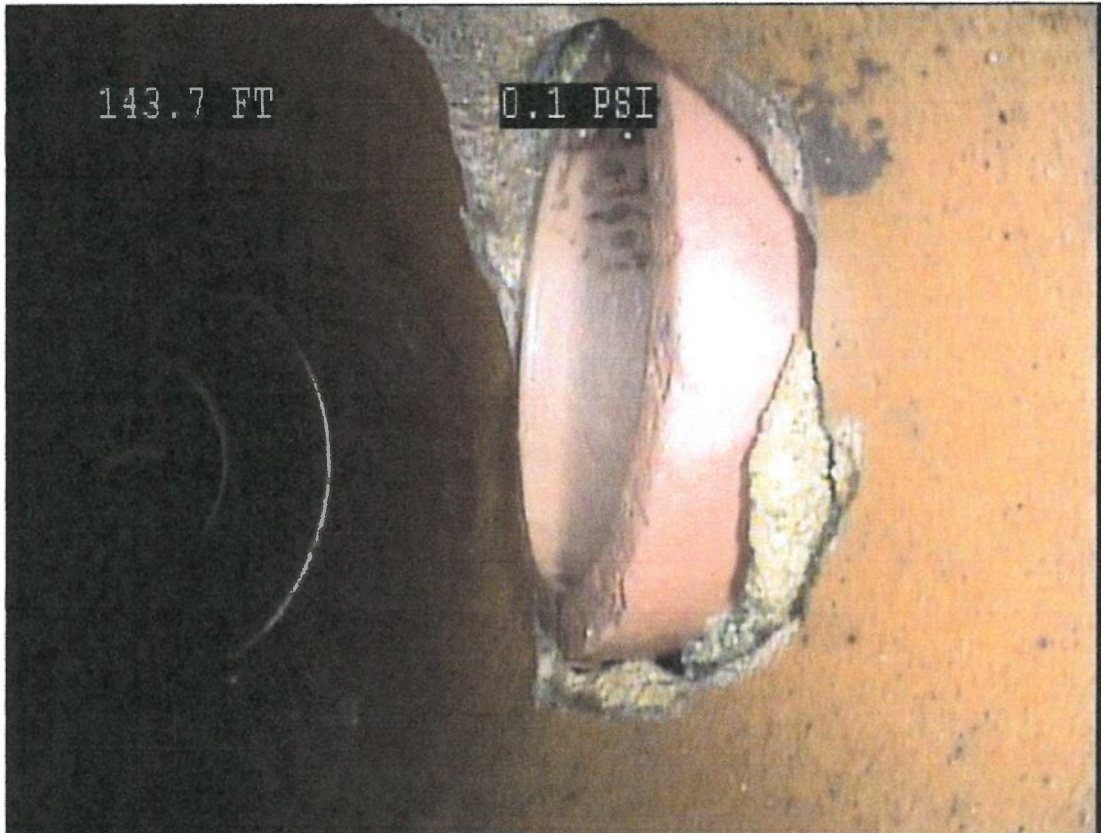
Pipeline segment ref: EOP/19	Project Name: SHINGLEHOUSE	Start date/time: 9/27/2017 12:26:48 PM	Weather: 1	Surveyed by: CODY FAUCHER
Upstream manhole No: EOP	Downstream manhole No: 19	Total length: 153.9		

Additional info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
0.0		START AGAINST FLOW	Yes	/				
0.0		AMH	Yes	/				19 TO END OF PIPE
0.0		MWL	Yes	/				
20.9		IS	Yes	12 /				
26.4		CC	Yes	1 / 4		Structural		
44.7		TB	Yes	2 /				
106.5		FL	Yes	9 /		Structural		
109.0		CL	Yes	12 /		Structural		
124.7		SSS	Yes	4 /		Structural		
139.6		JOM	Yes	/		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
139.6		B	Yes	12 /		Structural		



144.6		TB	Yes	3 /				
153.0		TFC	Yes	3 /				
153.3		FM	Yes	1 / 4		Structural		
153.6		JOL	Yes	/		Structural		
153.9		MSA	Yes	/				POSSIBILITY OF GETTING CAMERA STUCK

PIPE-EYE SEWER SERVICES
 75 HOLLEY AVENUE
 BRADFORD , PENNSYLVANIA 16701



GraniteXP Observation Report with Still Images and Scores

Pipeline segment ref: 18EOP/18 Project Name: SHINGLEHOUSE Start date/time: 9/27/2017 1:19:33 PM Weather: 1 Surveyed by: CODY FAUCHER

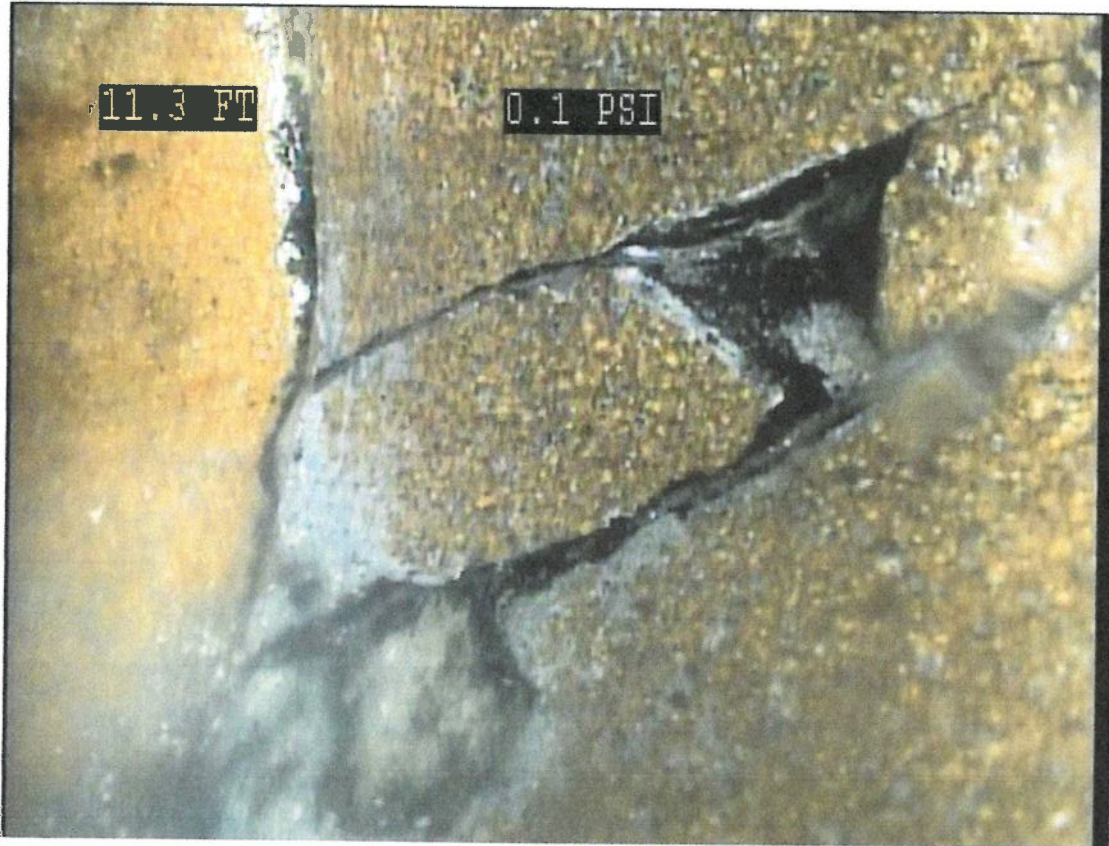
Upstream manhole No: 18EOP Downstream manhole No: 18 Total length: 117.9

Additional info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
0.0		START AGAINST FLOW	Yes	/				
0.0		AMH	Yes	/				18 TO 18EOP
0.0		MWL	Yes	/				
10.0		CL	Yes	5 /		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
10.1		FC	Yes	6 / 9		Structural		



11.3		B	Yes	5 /		Structural		
16.1		MWLS	Yes	/		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
26.5		DAGS	Yes	12 /		O&M		



37.8	CM	Yes	8 / 11	Structural
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Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
40.1		FM	Yes	8 / 11		Structural		



46.9	DAGS	Yes	12 /		O&M		
50.5	B	Yes	8 /		Structural		
50.5	RPP	Yes	8 /				PATCH OF SOME SORT
51.8	TF	Yes	9 /				
59.9	TFC	Yes	3 /				
78.2	CL	Yes	12 /		Structural		
93.5	CL	Yes	12 /		Structural		
101.6	CL	Yes	12 /		Structural		
103.8	CL	Yes	12 /		Structural		
104.6	RPP	Yes	12 /				POSSIBLE REPAIR
105.8	CL	Yes	12 /		Structural		
117.9	MWLS	Yes	/		Structural		

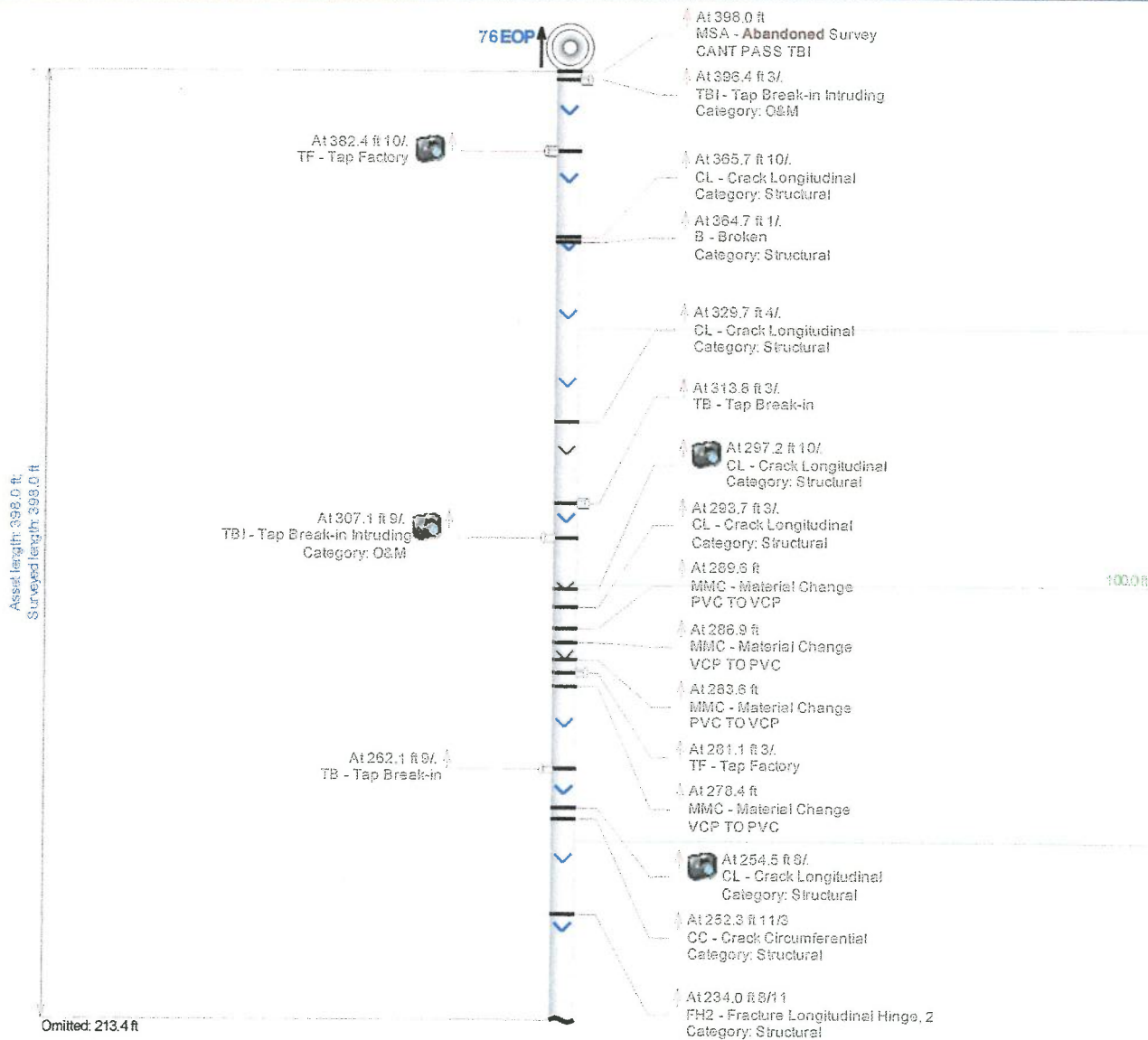
PIPE-EYE SEWER SERVICES
75 HOLLEY AVENUE
BRADFORD, PENNSYLVANIA 16701



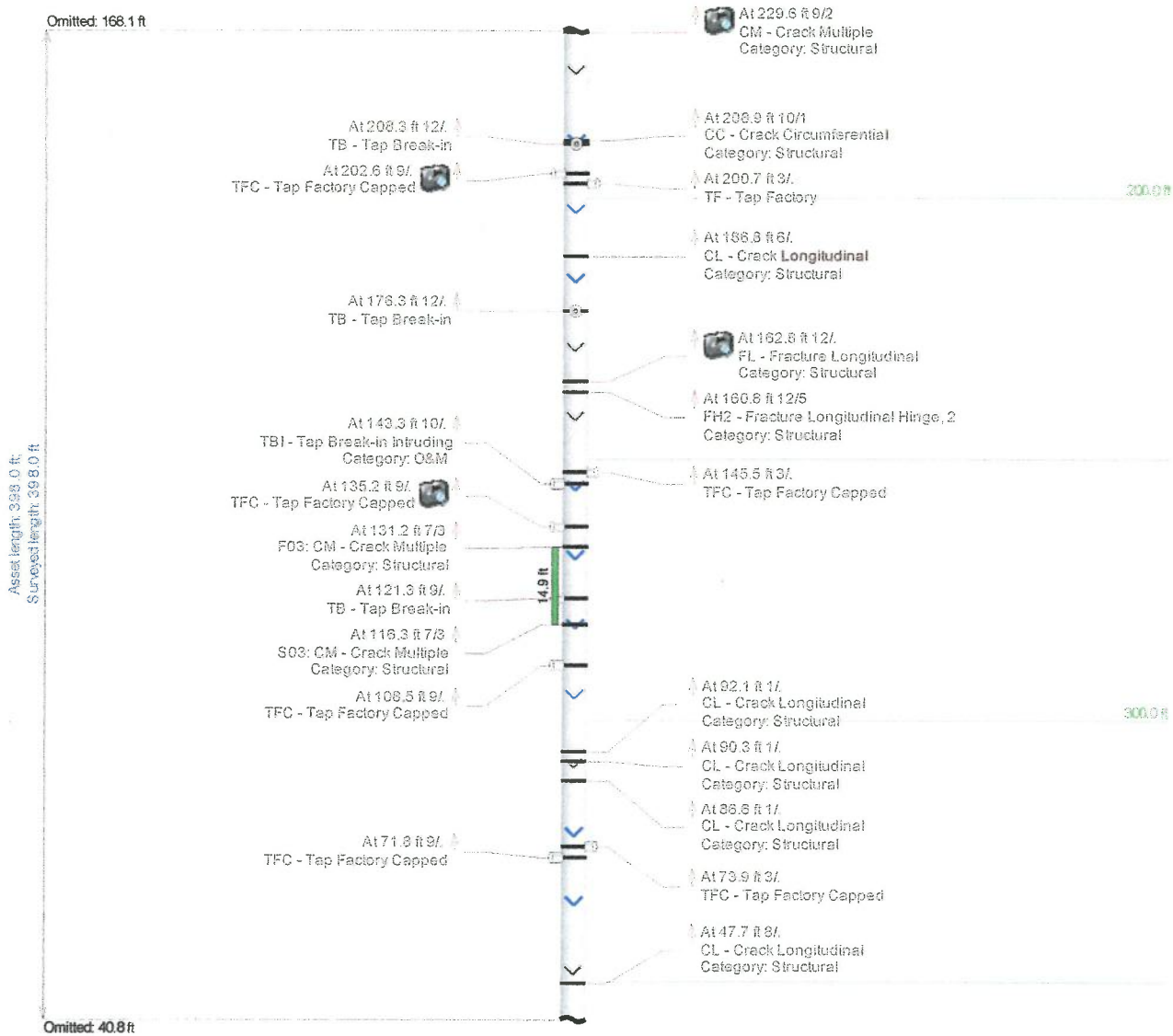
Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
117.9		MSA	Yes	/				PIPE SEEMS TO CHANGE SIZE HERE BUT WE CANT SEE DUE TO THE GREASE FILM

Main Inspection with Pipe-Run Graph

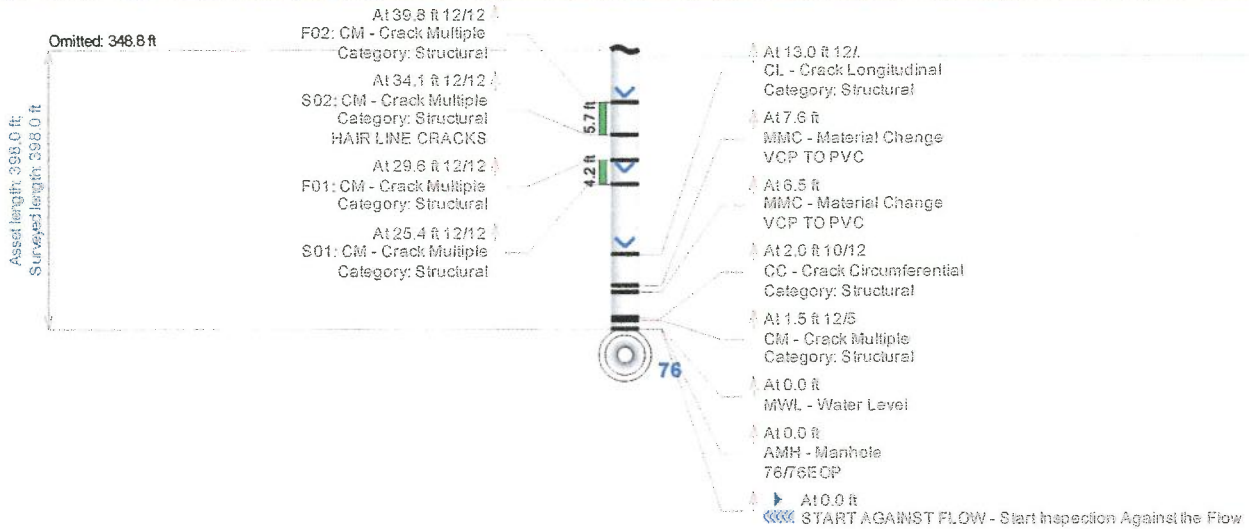
Project Name: SHINGLEHOUSE		Pipeline segment ref: 76EOP/76		City: SHINGLEHOUSE		Street: CHURCH ST.	
Start date/time: 9/28/2017	Width:	Height: 8	Material: VCP	Location code: C	Weather: 1		
Direction: UPSTREAM	Length surveyed: 398.0	Surveyed by: CODY FAUCHER		Additional info:			



Project Name: SHINGLEHOUSE		Pipeline segment ref: 76EOP/76		City: SHINGLEHOUSE		Street: CHURCH ST.	
Start date/time: 9/28/2017		Width:	Height: 8	Material: VCP	Location code: C	Weather: 1	
Direction: UPSTREAM		Length surveyed: 398.0	Surveyed by: CODY FAUCHER			Additional info:	



Project Name: SHINGLEHOUSE	Pipeline segment ref: 76EOP/76	City: SHINGLEHOUSE	Street: CHURCH ST.
Start date/time: 9/28/2017	Width: 8	Material: VCP	Location code: C
Direction: UPSTREAM	Length surveyed: 398.0	Surveyed by: CODY FAUCHER	Weather: 1
Additional info:			





GraniteXP Observation Report with Still Images and Scores

Pipeline segment ref: 76EOP/76	Project Name: SHINGLEHOUSE	Start date/time: 9/28/2017 10:48:59 AM	Weather: 1	Surveyed by: CODY FAUCHER
Upstream manhole No: 76EOP	Downstream manhole No: 76	Total length: 398.0		

Additional info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
0.0		START AGAINST FLOW	Yes	/				
0.0		AMH	Yes	/				76/76EOP
0.0		MWL	Yes	/				
1.5		CM	Yes	12 / 5		Structural		
2.0		CC	Yes	10 / 12		Structural		
6.5		MMC	Yes	/				VCP TO PVC
7.6		MMC	Yes	/				VCP TO PVC
13.0		CL	Yes	12 /		Structural		
25.4		CM	Yes	12 / 12		Structural		
29.6		CM	Yes	12 / 12		Structural		
34.1		CM	Yes	12 / 12		Structural		HAIR LINE CRACKS
39.8		CM	Yes	12 / 12		Structural		
47.7		CL	Yes	8 /		Structural		
71.8		TFC	Yes	9 /				
73.9		TFC	Yes	3 /				
86.6		CL	Yes	1 /		Structural		
90.3		CL	Yes	1 /		Structural		
92.1		CL	Yes	1 /		Structural		
108.5		TFC	Yes	9 /				

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
116.3		CM	Yes	7 / 3		Structural		
121.3		TB	Yes	9 /				
131.2		CM	Yes	7 / 3		Structural		
135.2		TFC	Yes	9 /				



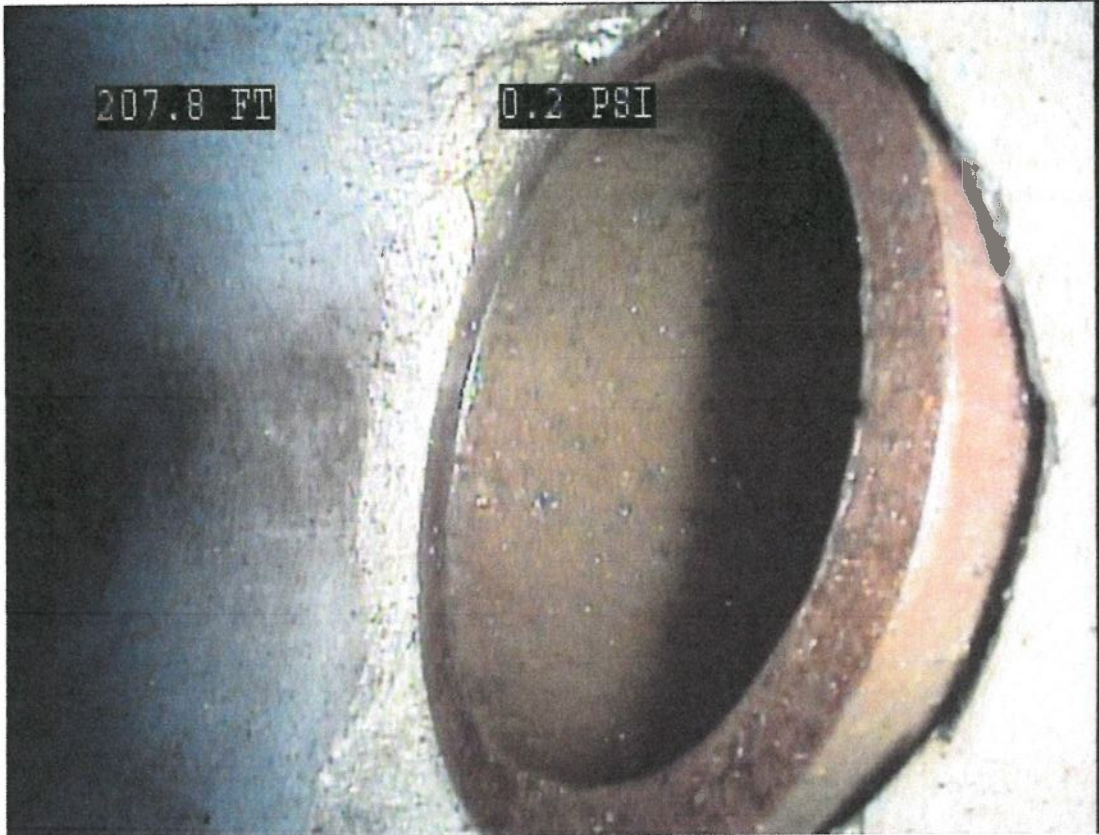
143.3		TBI	Yes	10 /		O&M		
145.5		TFC	Yes	3 /				
160.8		FH2	Yes	12 / 5		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
162.8		FL	Yes	12 /		Structural		



176.3		TB	Yes	12 /				
186.8		CL	Yes	6 /		Structural		
200.7		TF	Yes	3 /				

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
202.6		TFC	Yes	9 /				



208.3		TB	Yes	12 /				
208.9		CC	Yes	10 / 1		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
229.6		CM	Yes	9 / 2		Structural		



234.0		FH2	Yes	8 / 11		Structural		
252.3		CC	Yes	11 / 3		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
254.5		CL	Yes	8 /		Structural		



262.1		TB	Yes	9 /				
278.4		MMC	Yes	/				VCP TO PVC
281.1		TF	Yes	3 /				
283.6		MMC	Yes	/				PVC TO VCP
286.9		MMC	Yes	/				VCP TO PVC
289.6		MMC	Yes	/				PVC TO VCP
293.7		CL	Yes	3 /		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
297.2		CL	Yes	10 /		Structural		



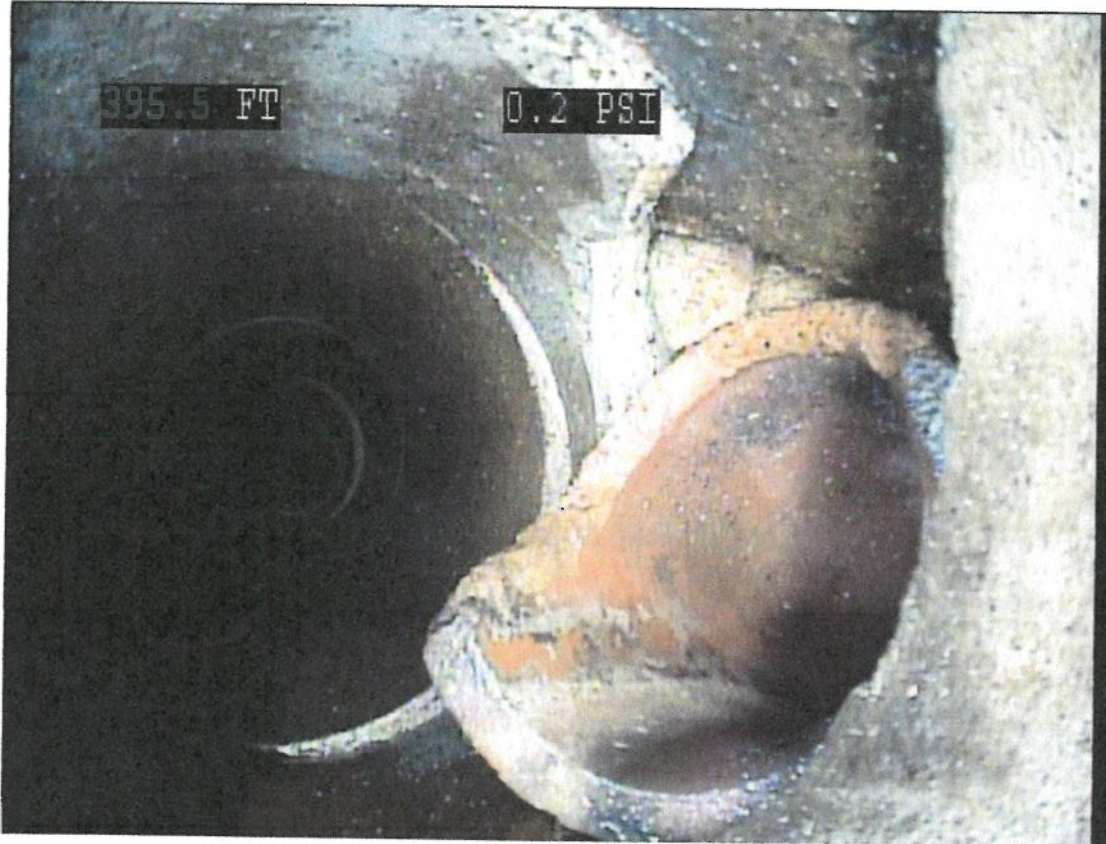
Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
307.1		TBI	Yes	9 /		O&M		



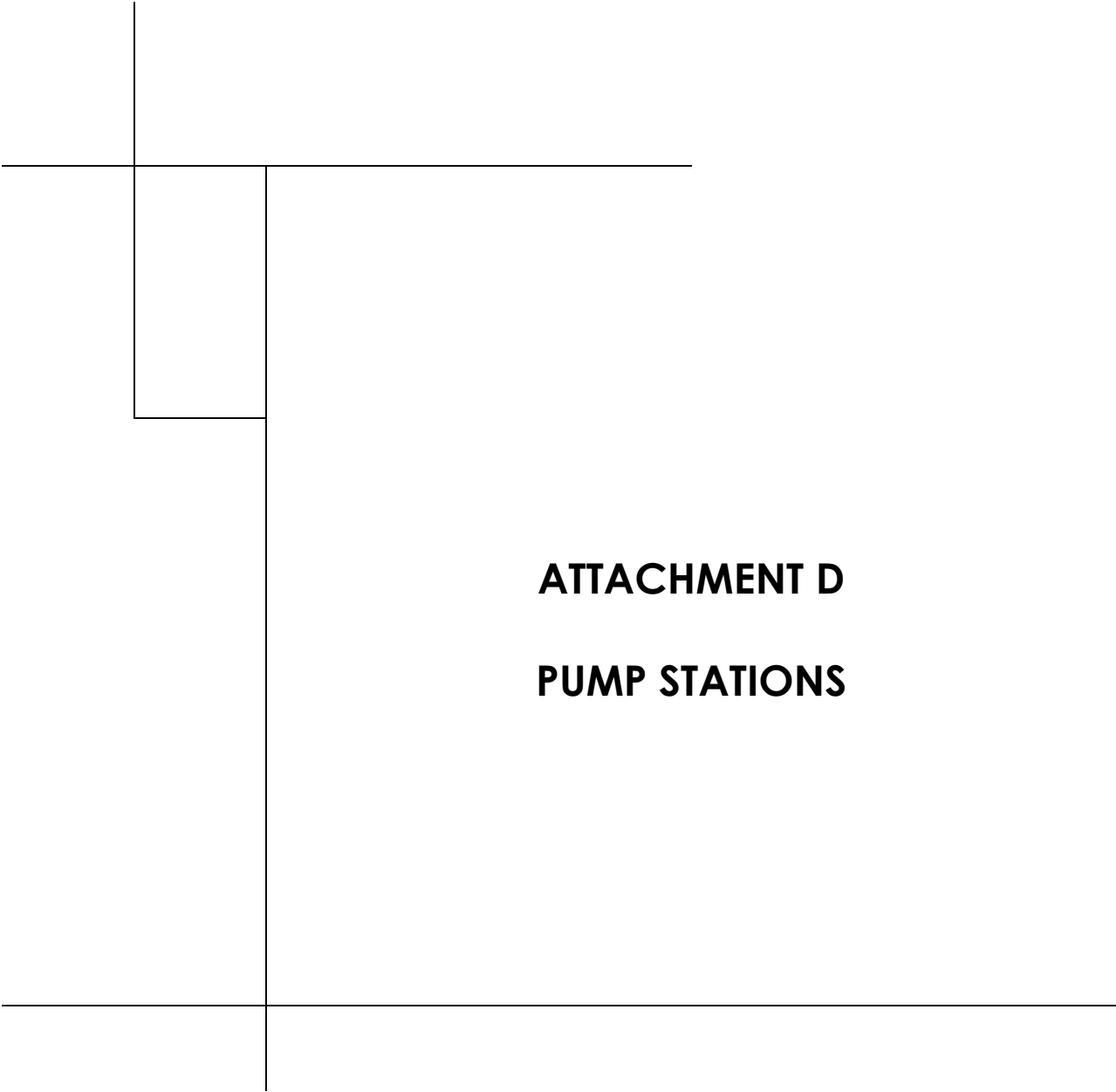
313.8		TB	Yes	3 /				
329.7		CL	Yes	4 /		Structural		
364.7		B	Yes	1 /		Structural		
365.7		CL	Yes	10 /		Structural		

Extra:	Length	Code	Reversed	Clock Pos.	Severity	Category	Rating	Comment
--------	--------	------	----------	------------	----------	----------	--------	---------

382.4		TF	Yes	10 /				
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396.4		TBI	Yes	3 /		O&M		
398.0		MSA	Yes	/				CANT PASS TBI



ATTACHMENT D

PUMP STATIONS

ATTACHMENT D

2017 PUMP STATIONS FLOWS				
MONTH	Mill Street Lifting Station		Low Street Lifting Station	
	Average Daily Flow (gpd)	Maximum Peak Flow (gpm)	Average Daily Flow (gpd)	Maximum Peak Flow (gpm)
January*	18,523	18.8	28,603	27.5
February*	13,886	36.3	19,286	56.8
March	9,029	11.9	50,272	41.7
April	15,180	20.6	62,268	60.5
May	12,135	23.1	18,105	42.8
June	6,720	9.4	6,048	8.0
July	2,874	6.2	2,950	5.5
August	3,542	4.4	2,346	5.2
September	5,160	9.4	3,552	5.0
October	4,819	8.1	3,832	7.8
November	11,760	49.4	13,932	22.7
December	7,781	13.1	8,175	11.3
Max	18,523	49.4	62,268	60.5

Pumping Station	Location	Rated Capacity (gpd)	2017 Conditions	
			Average Daily Flow (gpd)⁽¹⁾	Remaining Facility Capacity (gpd)
1	Mill Street Pump Station	54,000	165	53,835
2	Low Street Pump Station	21,600	253	21,347

Notes:

- (1) Average Daily Flows are calculated based on the monthly pump run-times and the rated capacity of the pumps as supplied by the pump manufacturers. Peaking Factor of 4.0 was assumed.

Month/Year JANUARY / 2017

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)
1	-	120.1	125.1	347.8	353.9		
2	-	121.0	126.0	350.0	357.9		
3	-	121.9	126.8	353.7	361.9		
4	0.50	122.7	127.7	356.2	365.9		
5	-	123.7	128.7	358.2	370.0		
6	-	124.6	129.6	361.9	374.2		
7	-	125.4	130.4	365.6	378.2		
8	-	126.3	131.3	369.3	382.7		
9	-	127.3	132.2	373.1	386.7		
10	-	128.2	133.1	377.0	390.7		
11	-	129.2	134.1	380.0	394.7		
12	1.15	130.3	135.0	383.7	399.2		
13	1.58	131.8	136.1	387.4	404.2		
14	-	132.8	137.2	391.1	408.7		
15	-	133.7	138.1	395.1	412.6		
16	-	134.6	139	399.1	416.6		
17	-	135.4	139.8	402.8	422.1		
18	1.48	136.4	140.7	406.8	427.6		
19	1.01	137.3	141.8	411.8	431.6		
20	-	138.2	143.0	416.8	435.6		
21	1.12	139.1	144.1	421.9	439.8		
22	-	139.9	145.6	426.9	443.8		
23	-	140.7	147.1	432.1	447.8		
24	1.18	141.5	148.6	438.1	452.8		
25	1.18	142.3	150.3	443.1	456.8		
26	1.07	143.3	152.0	448.1	460.8		
27	-	144.3	154.0	453.1	464.9		
28	-	145.2	155.1	457.1	468.7		
29	-	146.1	156.6	460.6	472.7		
30	-	147.1	158.1	463.6	476.7		
* 31	-	148.6	159.6	465.1	480.1		
Total	3.87	2815	34.6	117.3	126.2		
AVG							

Month/Year February/2012

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)
1		149	110		
2		149.4	160.3		
3		149.8	160.7		
4		150.2	161.2		
5		150.8	161.6		
6		151.0	162		
7		152.0	162.7		
8	.93	152.0	166.5		
9		156.9	167.4		
10		157.9	168.4		
11		158.4	169.3		
12	.05	159.4	170.3		
13	.45	160.1	171.2		
14		161.3	172.5		
15		162.5	173.4		
16		163.4	174.4		
17		163.9	175.0		
18		164.3	175.4		
19		164.7	175.8		
20		165.1	176.0		
21		165.4	176.6		
22		165.8	177.2		
23	.03	166.13	177.8		
24	.02	166.7	178.8		
25		167.1	180.2		
26	.52	167.5	181.5		
27		167.8	182.4		
* 28		168.0	183.4		
29					
30					
31					
Total	.21	19	23.4		
AVG					

Low Street Lifting Station		Draw Down	
Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)
466.5	481.5		
467.9	482.9		
468.2	483.4		
470.6	484.8		
472	486.4		
473	488		
474.5	489.7		
485.9	501.0		
496.6	506.4		
494.1	509.2		
499.2	513.5		
501.3	516.1		
503.4	518.8		
508.2	524.2		
512.9	529.0		
516.3	532.4		
518.9	534.8		
522.1	536.1		
523.6	538.4		
524.9	540.1		
526.4	542.7		
527.0	544.2		
529.0	546.0		
531.0	547.0		
532.5	549.1		
534.8	551.0		
537.1	553.4		
539.5	555.0		
73	74.2		

Month/Year March 2017

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)	Pump 1 (GPM)	Pump 2 (GPM)
1		168.4	183.8				
2	.20	168.6	184.2				
3		169.3	184.6				
4		169.7	185.0				
5		170.3	185.4				
6		170.7	185.8				
7	.51	171.3	186.2				
8	.43	171.9	186.7				
9		172.3	187.1				
10		172.7	187.4				
11		173.0	187.8				
12		173.4	188.1				
13		173.8	188.4				
14		174.3	188.8				
15		174.8	189.2				
16		175.2	189.6				
17		175.9	190.0				
18		176.4	190.4				
19		177.2	190.7				
20		177.7	191.1				
21		178.5	191.5				
22		179.6	191.9				
23		180.4	192.3				
24		181.9	192.7				
25	.10	182.7	193.1				
26	.01	183.4	193.6				
27	.22	184.8	194.0				
28	.02	185.8	194.4				
29	.10	186.8	194.8				
30		187.3	195.2				
31	.98	186.3	195.7				
Total	2.157"	17.9	11.9				
AVG							

Month/ Year 11/11/17 2017

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)	Pump 1 (GPM)	Pump 2 (GPM)
1	.85	187.2	196.9			835	712.0
2	1.02	188.1	194.4			849	720.1
3		189.0	200.3			854.9	728.2
4	.17	189.9	202.2			865.2	736.3
5	.18	190.7	202.9			875.2	742.2
6		191.6	203.7			886.5	749.6
7	1.73	192.8	205.3			897.6	760.4
8	1.05	193.7	206.8			907.6	770.1
9		194.4	207.0			920.1	779.2
10		195.4	207.9			930.4	788.9
11		195.8	208.9			940.1	794.2
12	1.74	196.2	209.8			950.6	800.7
13		196.7	210.2			961.6	805.9
14		197.2	210.8			970.4	810.1
15		197.8	211.0			981.2	815.3
16	1.03	198.1	211.1			990.9	819.9
17	1.32	201.7	211.7	198.7	211.4	1195.1	973.4
18	1.32	202.1	212.4	199.3	211.7	1196.1	974.1
19		201.4	212.9			1017.5	838.2
20	1.10	202.6	213.9			1028.5	850.1
21	1.95	203.1	215.9			1037.0	852.2
22		204.5	217.3			1051.2	860.2
23		204.9	218.7			1064.5	868.2
24		205.8	219.1			1077.4	876.2
25		206.5	219.9			1092.1	885.7
26	1.05	207.4	220.5			1098.6	891.2
27		208.8	221.6			1104.1	898.1
28	1.06	209.0	222.2			1124.3	901.2
29		209.6	222.8			1126.4	906.7
* 30	1.02	210.0	223.1			1135.0	912.0
31							
Total	47.87	22.8	26.2			300	200
AVG							

Month/ Year July 17

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)	Pump 1 (GPM)	Pump 2 (GPM)
1	.62	241.1	256.8			1,237.0	1,018.1
2	.35	241.4	257.0			1,238.1	1,019.2
3		241.7	257.7			1,239.1	1,020.1
4		242	258			1,240	1,021
5		242	258			1,240	1,021
6		242	258			1,241	1,022
7		242	258			1,241	1,022
8	.72	242.3	258			1,241.3	1,022.3
9	.03	242.0	258			1,241.6	1,022.6
10		241.7	258.0			1,242.0	1,022.9
11	.09	242.0				1,242.4	1,023.1
12		242.5				1,242.7	1,023.4
13	.02	242.9				1,243.0	1,023.7
14	.75	243.3				1,243.6	1,024.4
15		243.7				1,243.9	1,024.7
16		244.0				1,244.2	1,025.0
17		244.4				1,244.3	1,025.3
18		244.8				1,244.5	1,025.9
19		245.0				1,244.7	1,026.8
20		245.3				1,245.1	1,027.1
21		245.7				1,245.5	1,027.5
22		246.0				1,245.8	1,027.8
23	.06	246.5				1,246.1	1,028.1
24	.41	246.9				1,246.4	1,028.4
25	.02	247.3				1,246.7	1,028.7
26	.02	247.7				1,247.0	1,029.1
27		248.0				1,247.3	1,029.4
28		248.3				1,247.6	1,029.7
29		248.6				1,247.9	1,030.1
30		248.9				1,248.2	1,030.5
31		249.2				11.2	12.4
Total	2.69	8.1	1.2				
AVG							

1 Pump Run

Month/ Year AUGUST 2017

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)	Pump 1 (GPM)	Pump 2 (GPM)
1		249.5	247.6			1,250.0	1,030.8
2	.02	249.8				1,250.3	1,030.1
3	.11	250.1				1,250.7	1,031.4
4		250.4				1,251.0	1,031.7
5	.53	250.7				1,251.3	1,032.0
6		251.0				1,251.6	1,032.3
7		251.4				1,251.8	1,032.6
8	.08	251.8				1,252.1	1,032.9
9		252.2				1,252.4	1,033.3
10		252.6				1,252.8	1,033.7
11		253.0				1,253.0	1,034.0
12		253.4				1,253.3	1,034.3
13		253.7				1,253.6	1,034.6
14		254.0				1,253.9	1,034.9
15		254.3				1,254.2	1,035.1
16		254.7				1,254.5	1,035.3
17		255.1				1,254.8	1,035.6
18	.03	255.4				1,255.1	1,035.8
19		255.9				1,255.4	1,036.0
20	.05	256.2				1,255.7	1,036.1
21		256.7				1,256.0	1,036.5
22	.01	257.0				1,256.3	1,036.9
23	.93	257.3				1,256.6	1,037.1
24		257.6	258.1			1,256.9	1,037.5
25		257.9	258.3			1,257.1	1,037.8
26		258.2	258.5			1,257.5	1,038.1
27		258.5	258.7			1,257.8	1,038.5
28		258.8	258.9			1,258.1	1,038.8
29		259.1	259.0			1,258.5	1,039.1
30		259.4	259.3			1,258.8	1,039.5
* 31		259.8	259.6			1,259.1	1,039.8
Total	1.76	10.3	1.5			9.1	9
AVG							

Month/ Year Sept 17

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)	Pump 1 (GPM)	Pump 2 (GPM)
1	.12	260.1	259.9	1259.4	1040.1		
2		260.5	260.2	1259.7	1040.5		
3	.10	260.8	260.6	1260.0	1040.8		
4	.24	261.0	260.9	1260.2	1041.1		
5	.16	261.4	261.2	1260.5	1041.4		
6	.10	261.7	261.7	1260.8	1041.7		
7		262	262	1261	1042		
8	.17	281.0	281.0	1261	1042		
9	.15		281.5	1261.6	1042.5		
10			282.0	1262.2	1043.0		
11			282.6	1262.8	1043.6		
12			284.1	1263.4	1044.1		
13			284.6	1264.0	1044.6		
14	.03		284.9	1264.7	1045.1		
15	.15		285.4	1265.16	1045.7		
16			285.9	1265.16	1045.7		
17			286.4	1266.2	1046.13		
18	.04		286.9	1266.8	1046.8		
19	.07		287.2	1268.0	1047.3		
20			287.7	1267.3	1047.8		
21			288.1	1267.7	1048.2		
22			288.7	1268.0	1049.0		
23			289.2	1264.3	1050.5		
24			289.8	1268.9	1051.0		
25			290.3	1269.5	1051.5		
26			290.7	1270.9	1052.1		
27			291.1	1271.5	1052.7		
28			291.6	1272.0	1053.1		
29			292.1	1272.6	1053.7		
* 30			292.6	1273.2	1054.2		
31			293.1	1273.8	1054.7		
Total	2.22		3312	111.4	14.6		
AVG			20.9				

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Month/ Year OCT 17

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)	Pump 1 (GPM)	Pump 2 (GPM)
1			293.6				
2			294.0			1055.1	
3			294.4			1055.6	
4			294.8			1056.1	
5			295.2			1056.7	
6			295.6			1057.3	
7	1.03		296.0			1057.8	
8	1.62		296.5			1058.3	
9	1.41		296.9			1058.6	
10	1.03		297.3			1059.1	
11			297.7			1059.6	
12	1.66		297.9			1060.0	
13	1.03		298.3			1060.7	
14			298.6			1061.1	
15			299.4			1061.6	
16	1.15		299.8			1062.1	
17			300.2			1062.6	
18			300.6			1062.9	
19			301.0			1063.5	
20			301.4			1063.9	
21			301.8			1064.2	
22			302.3			1064.7	
23			302.7			1065.2	
24	1.01		303.1			1065.8	
25			303.4			1066.3	
26			303.8			1066.9	
27			304.1			1067.6	
28			304.4			1068.0	
29	1.07		304.8			1068.5	
30	1.53		305.2			1069.1	
31	1.10		305.9			1069.6	
Total	5.64		12.3			1071.5	
AVG						106.4	

Month/ Year Nov 17

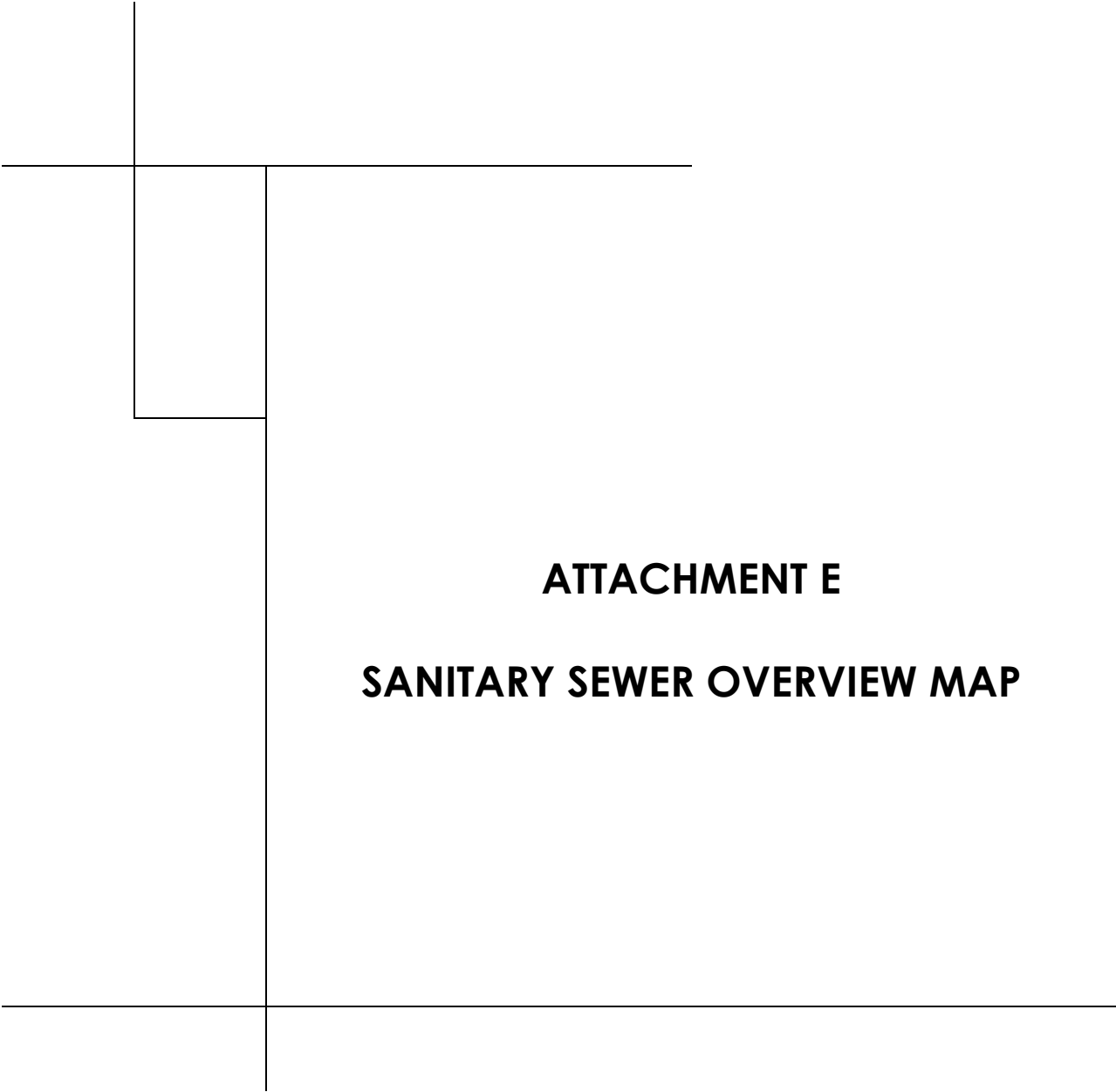
Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)	Pump 1 (GPM)	Pump 2 (GPM)
1		285.5	306.7				
2	177	286.4	307.7				
3	152	290.3	308.8				
4	13	288.1	309.9				
5		289.0	309.0				
6	164	287.9	310.1				
7	227	290.8	311.8				
8	204	291.7	312.7				
9		292.5	313.4				
10		293.9	314.7				
11		294.5	315.6				
12		295.3	316.4				
13		296.1	317.5				
14	110	297.0	318.4				
15		297.9	319.5				
16	106	298.2	320.9				
17	124	299.1	322.1				
18	107	300.0	323.0				
19	188	300.3	323.2				
20	104	300.6	323.4				
21		300.9	323.6				
22	109	300.9	323.8				
23		301.1	324.0				
24		301.5	324.3				
25		301.9	324.6				
26	110	302.3	325.1				
27		302.6	325.3				
28		302.9	325.5				
29		303.2	325.7				
30		303.5	325.9				
31							
Total	3.92	18	19.2				
AVG							

Month/Year December 2017

Lift Station Monthly Data

Day	Rain	Mill Street Lifting Station		Low Street Lifting Station		Draw Down	
		Pump 1 (Hrs.)	Pump 2 (Hrs.)	Pump 1 (GPM)	Pump 2 (GPM)	Pump 1 (GPM)	Pump 2 (GPM)
1		303.7	326.5	1,348.6	1,130.5		
2	.11	304.1	326.9	1,349.3	1,131.2		
3		304.5	327.5	1,350.0	1,131.9		
4		304.9	327.9	1,350.7	1,132.6		
5	1.08	305.4	328.4	1,351.4	1,133.4		
6	1.50	305.8	328.8	1,351.9	1,134.1		
7		306.1	329.1	1,352.4	1,134.8		
8		306.5	329.5	1,353.1	1,135.6		
9		306.9	330.0	1,353.9	1,136.1		
10		307.3	330.4	1,354.6	1,137.4		
11		307.7	330.8	1,355.5	1,138.1		
12		308.1	331.2	1,356.0	1,138.8		
13		308.5	331.6	1,356.6	1,139.4		
14		308.9	331.9	1,357.3	1,140.1		
15		309.3	332.1	1,358.0	1,140.9		
16		309.6	332.5	1,358.8	1,141.6		
17		309.0	332.9	1,359.5	1,142.3		
18		310.4	333.3	1,360.2	1,143.0		
19		311.0	333.5	1,361.1	1,143.6		
20		311.5	334.7	1,362.8	1,145.3		
21		311.8	334.7	1,363.4	1,146.2		
22		312.3	335.1	1,365.3	1,148.1		
23	1.22	312.8	335.6	1,367.6	1,150.3		
24	1.52	313.2	336.2	1,369.1	1,152.7		
25		313.6	336.7	1,371.5	1,154.3		
26		314.2	337.1	1,373.2	1,155.9		
27		314.7	337.8	1,375.4	1,157.3		
28		315.1	338.0	1,377.2	1,159.6		
29		315.7	338.5	1,379.6	1,161.2		
30		316.1	339.0	1,381.1	1,163.7		
* 31		316.6	339.6	1,383.0	1,165.0		
Total	1.43	12.9	13.1	34.4	34.5		
AVG							



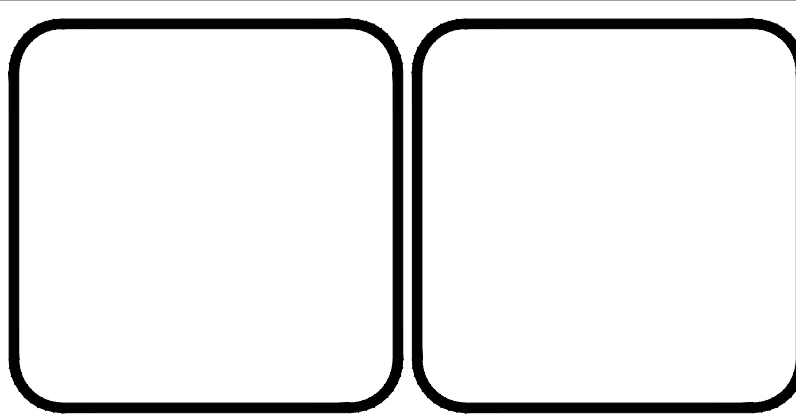
ATTACHMENT E

SANITARY SEWER OVERVIEW MAP



NOTES:
 1. BACKGROUND IMAGE WAS TAKEN FROM DRAWINGS TITLED "SHINGLEHOUSE BOROUGH SANITARY SEWER SYSTEM" AS PREPARED BY NORTHWEST ENGINEERING, INC. DATED AUG. 6 2007.

NO.	REVISION	DATE	BY



HRG
 Herbert, Rowland & Grubic, Inc.
 Engineering & Related Services
 AN EMPLOYEE-OWNED COMPANY

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SHINGLEHOUSE BOROUGH
 P.O. BOX 156
 SHINGLEHOUSE, PA 16748

SANITARY SEWER SYSTEM
 EXISTING CONDITIONS PLAN
 FOR
 SHINGLEHOUSE BOROUGH

SHINGLEHOUSE BOROUGH POTTER COUNTY PENNSYLVANIA

PROJ. MGR. - JTF
DESIGN - JSR
CADD - RSF
CHECKED -
SCALE - AS NOTED
DATE - MAR. 2017

DRAWING NO.	1
SHEET NO.	1 OF 1
PROJECT	004004.0430