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March 28, 2016

Via Federal Express

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-1-1-08677

Director, Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Mail Code (6EN)
Dallas, Texas 75202

Deputy Regional Counsel, Enforcement
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Dallas, Texas 75202

Arkansas Attorney General's Office
323 Center Street, Suite 200
Little Rock, Arkansas 72201

Director
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Re: 2015 Annual Report
United States of America and State of Arkansas v. City of Fort Smith, Arkansas,
United States District Court, Western District of Arkansas – Case No. 2:14-cv-2266-PKH

Greetings:

The City of Fort Smith hereby submits the 2015 Annual Report pursuant to the Consent Decree entered in the captioned action. As a deliverable under paragraph 89 of the Consent Decree, the 2015 Annual Report is submitted in electronic and searchable text format and is certified in accordance with Section XVII of the Consent Decree.

Thank you for your attention to this matter.

Very truly yours,

Jerry L. Canfield
cmm

Enclosures
cc: Lisa Cherup <Lisa.Cherup@usdoj.gov>
Jeff Dingman <jdingman@fortsmithar.gov>
Steve Parke <sparke@fortsmithar.gov>

2015 ANNUAL REPORT

March 2016

CITY OF FORT SMITH, ARKANSAS
Consent Decree Compliance Program and Infrastructure Improvements, 2015 Annual Report

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 gather and evaluate 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 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 knowing violations.

Steve Parke, Director of Utilities
City of Fort Smith, AR

March 25, 2016
Date

425 W. Capitol Avenue
Suite 233
Little Rock, AR 72201
tel: 501-374-2459
fax: 501-374-2996

March 23, 2016

City of Fort Smith, AR
Utility Department
3900 Kelley Highway
Fort Smith, AR 72904

Attention: Steve Parke, Director of Utilities

Subject: Program Management Services for Consent Decree Compliance Program and Infrastructure Improvements
Fort Smith Project Number 15-13-ED1

Regarding: Certification for the Consent Decree Annual Report

Dear Mr. Parke:

As stipulated in the Consent Decree, Section XI, Paragraph 100, I, Clayton Joseph Dollerschell certify, approve, and seal the following documents and all attachments thereto, in accordance with, and under penalty of, Arkansas State law and federal law as a licensed engineer in the State of Arkansas, that to the best of my knowledge the technical information provided by others and contained within the first year 2015 Annual Report, are in compliance with the terms and conditions of the Consent Decree.

Sincerely,

C. Joseph Dollerschell, P.E., BCEE
Vice President
CDM Smith Inc.

Seal and Signature

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 13513
CLAYTON JOSEPH DOLLERSCHELL

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List of Acronyms

ADEQ	Arkansas Department of Environmental Quality
CCA	Continuing Capacity Assurance
CCTV	Closed Circuit Television
CMOM	Capacity, Management, Operations, & Maintenance
CSSA	Continuing Sewer System Assessment
CTP	Comprehensive Training Plan
CWA	Clean Water Act
DOL	Date of Lodging
DMR	Discharge Monitoring Report
EPA	U.S. Environmental Protection Agency
FOG	Fats, Oil and Grease
GIS	Geographic Information System
I&I	Infiltration and Inflow
IMS	Information Management System
MACP	NASSCO's Manhole Assessment and Certification Program
MGD or mgd	Million Gallons per Day
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
OERP	Overflow Emergency Response Plan
PACP	NASSCO's Pipe Assessment and Certification Program
SOP	Standard Operation Procedure
SSA	Sewer System Assessment
SSO	Sanitary Sewer Overflow
U.S.	United States
WCTS	Wastewater Collection and Transmission System
WWTP	Wastewater Treatment Plant

Definitions

Unless otherwise defined herein, or expressly stated in the City of Fort Smith Sewer Use Ordinance, terms used in in the plans comprising the CMOM Program and Implementation Plan shall have the meanings given to those terms in the CWA and the EPA Consent Decree lodged for City of Fort Smith, Arkansas. The terms and acronyms are defined as follows:

ADEQ shall mean the Arkansas Department of Environmental Quality, and any successor departments or agencies of the State of Arkansas.

Annual Report shall mean the report to be submitted annually pursuant to Section X of the Consent Decree.

Article shall mean a portion of Section V ("Comprehensive Remedial Requirements" Section) of the Consent Decree.

Basin shall mean a section of a Sewershed that is a distinct wastewater collection area, and designated by Fort Smith as such.

Building/Private Property Backup shall mean a wastewater backup into a building and/or a wastewater overflow onto private property that is caused by blockages, flow conditions or other malfunctions in the WCTS. "Building/Private Property Backup'' does not include a wastewater backup into a building and/or a wastewater overflow onto private property that is caused solely by a blockage or other malfunction of a Private Service Lateral or other piping or conveyance system that Fort Smith does not own or operate.

Calendar Year shall mean the twelve (12) month period starting on January 1 and ending on December 31 of a given year.

Capacity Constraint shall mean those discrete components, or groups of components of the WCTS that are determined by the City, consistent with Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree to have capacity deficiency issues that have caused or significantly contributed to previous capacity-related SSOs; that are likely to cause or significantly contribute to future capacity-related SSOs; and/or that are identified as overflow locations for any storm event presented in Section V, Article Four, Paragraph 30.

City or **Fort Smith** shall mean the City of Fort Smith, Arkansas.

Clean Water Act or **CWA** shall mean the Federal Clean Water Act found at 33 U.S.C. §§ 1251-1387.

CMOM or **Capacity, Management, Operations, and Maintenance** shall mean a program of accepted industry practices to properly manage, operate and maintain sanitary sewer collection, transmission and treatment systems, investigate capacity constrained areas of these systems, and respond to SSO events, including as identified by the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs (EPA, Jan. 2005).

Consent Decree or **Decree** shall mean the Decree (and all Appendices) lodged by the U.S. EPA against the City of Fort Smith.

Consultant shall mean a professional engineer licensed in the State of Arkansas or other recognized professional within a field of practice, with appropriate qualifications, experience and adequate staff and resources necessary to undertake any program plan, study, analysis, design or report required by the terms of the Consent Decree.

Contractor shall mean a person or entity who in pursuit of its business undertakes to perform a job or piece of work, retaining in himself control of means, method and manner of accomplishing the desired result.

Critical Response Time shall mean the time interval between activation of the high wet well level alarm at a Pump Station and the first SSO from the WCTS tributary to that Pump Station under peak dry-weather flow conditions or under peak wet-weather flow conditions (generated by the analysis rainfalls presented in Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree), whichever weather conditions prevail at the time of the SSO.

Cross-Connection shall mean any constructed connection, whether by pipe or any other means, between any part of the WCTS and any part of a storm water drainage system that is capable of conveying flow between the two systems.

Date of Lodging shall mean the date the United States filed a copy of the Consent Decree signed by all Parties with the District Court, along with the Complaint, prior to submitting the Consent Decree for publication in the Federal Register to provide an opportunity for public review and comment thereon. The Date of Lodging for the City's Consent Decree is January 02, 2015 (1/2/2015).

Day or **Days** shall mean a calendar day or calendar days unless expressly stated to be a business day or business days. In computing any period of time under the Consent Decree, where the last Day would fall on a Saturday, Sunday, or a Federal or State holiday, the period shall run until the close of the next business day.

Deliverable shall mean any written document required to be prepared and/or submitted by or on behalf of Fort Smith pursuant to the Consent Decree.

Direct Discharge shall mean a sewer pipe installed to convey wastewater from a sanitary sewer for release into the environment.

Environmental Protection Agency or **EPA** shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

Equalization Facilities or **EQ Facilities** shall mean those components of the WCTS designated, designed or intended for the temporary storage of wet-weather wastewater flows.

Fats, Oil and Grease or **FOG** shall mean fats, oil and grease, whether petroleum-based, mineral-oil-based, animal-based or vegetable-based.

FOG Control Device shall mean any grease interceptor, grease trap, or other mechanism, device, or process that attaches to or is applied to wastewater plumbing fixtures and/or Private Service Lines to collect, contain, or remove FOG from the wastewater stream of a FOG Generator prior to discharge into the WCTS.

FOG Control Program Plan or **Fats, Oil and Grease Control Program Plan** shall mean Fort Smith's program to control discharge of FOG into the WCTS as developed and approved under **Section V, Article Seven, Paragraph 37** of the Consent Decree.

FOG Generator shall mean any food service establishment or food-processing establishment that discharges FOG into the WCTS, provided, however, that those establishments covered by the City's industrial user program shall not be considered a FOG Generator for the purposes of the Consent Decree.

Force Main shall mean any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump. A Force Main is intended to convey wastewater under pressure.

Gravity Sewer Line shall mean a pipe that receives, contains and conveys wastewater not normally under pressure, but intended to flow unassisted under the influence of gravity.

Small-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are less than twenty-four (24) inches in diameter.

Large-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are twenty-four (24) inches or greater in diameter.

Infiltration as defined by 40 C.F.R. § 35.2005(b)(20) shall mean water other than wastewater that enters a WCTS (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes.

Inflow as defined by 40 C.F.R. § 35.2005(b) (21) shall mean water other than wastewater that enters a WCTS (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage.

Infiltration and Inflow or **I&I** shall mean the total quantity of water from Infiltration and Inflow without distinguishing the source.

Interest shall mean interest accruing on a sum calculated in the manner provided by 28 U.S.C. § 1961.

Manhole Assessment and Certification Program or **MACP** shall mean the **National Association of Sewer Service Companies (NASSCO)** Manhole Assessment and Certification Program.

Massard Permit shall mean NPDES Permit Number AR0021750 issued to City pursuant to Section 402 of the Clean Water Act, 33 U,S. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the Massard POTW and any future extended, modified or reissued permit.

Massard WWTP shall mean the publicly owned treatment works that is owned and operated by the City and that is located in Fort Smith with an address of **1609 North 9th Terrace, Barling, Arkansas**.

Month shall mean one calendar month running from a numbered day to the same numbered day of the following calendar month, regardless of whether the particular month has 28, 29, 30, or 31 days. If a triggering event would occur on a day of the month that does not exist (for example, February 30), then the event shall be due on the first day of the following month (for example March 1).

NASSCO shall mean the National Association of Sewer Service Companies.

P Street Permit shall mean NPDES Permit Number AR0033278 issued to City pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the P Street POTW and any future, extended, modified or reissued permit.

P Street WWTP shall mean the publicly owned treatment works that is owned and operated by City and that is located at **13 North P Street in Fort Smith, Arkansas**.

Pipe Assessment and Certification Program or **PACP** shall mean the NASSCO Pipe Assessment and Certification Program.

Pipe Segment shall mean the portion of a Gravity Sewer Line extending from manhole to manhole.

Private Service Line shall mean a sewer line which is not owned or operated by City, but which conveys wastewater from a building to a main line of the WCTS.

Private Service Line Release shall mean any spill, release, or diversion of sewage from a Private Service Line to any location other than the WCTS caused solely by a blockage or other malfunction in that Service Line, even if the release does not reach Waters of the State or waters of the United States.

Pump Station or **Pumping Station** shall mean facilities owned or operated by Fort Smith that contain pumps that lift wastewater from a lower to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary to the operation of that Pump Station within the WCTS.

Recurring Private Service Line Release shall mean a Private Service Line Release that has occurred within three (3) years of a prior Private Service Line Release at the same location.

Recurring SSO, Recurring Dry-Weather SSO, and **Recurring Wet-Weather SSO.** A "Recurring SSO" shall mean any SSO that has occurred within three (3) years of a prior SSO that occurred at the same location under any weather conditions (wet or dry). A "Recurring Dry-Weather SSO" shall mean an SSO that has occurred during dry weather within three (3) Years of a prior SSO at the same location that also occurred during dry weather. A "Recurring Wet-Weather SSO" shall mean an SSO that has occurred during wet weather within three (3) Years of a prior SSO at the same location that also occurred during wet weather.

Remedial Measures shall mean spot repairs, trenchless sewer rehabilitation, sewer replacement, repair or reconstruction, and any other appropriate WCTS improvement technique for resolving condition deficiencies and/or capacity deficiencies in a particular system asset or group of assets within the WCTS, in accordance with **Appendix D** of the Consent Decree ("Remedial Determination Process"), that have caused or significantly contributed to previous SSOs, and/or, that are likely to cause or significantly contribute to future occurrence of SSOs.

Sanitary Sewer Overflow or **SSO** shall mean any spill, release, or diversion of sewage from the WCTS, including: (1) an overflow that results in a discharge to Waters of the State or waters of the United States, and (2) an overflow of wastewater, including a wastewater backup into a building or wastewater overflow onto private property, such as a Building/Private Property Backup (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building lateral (i.e. a "Private Service Line")), even if that overflow does not reach Waters of the State or waters of the United States.

Sewershed shall mean a section of City's WCTS that is a distinct drainage or wastewater collection area and designated as such by City for the P Street WWTP and the Massard WWTP.

State of Arkansas or **State** shall mean the State of Arkansas acting on behalf of ADEQ.

Sub-basin shall mean a section of a Basin that is a distinct wastewater collection area and designated by Fort Smith as such.

Tabulation shall mean a document in a format containing text searchable cells or fields that is also sortable by data category.

United States or U.S. shall mean the United States of America, acting on behalf of EPA.

Wastewater Treatment Plant or WWTP shall mean the Massard or P Street wastewater treatment plants and components thereof.

Wastewater Collection and Transmission System or WCTS shall mean the sanitary sewer collection, retention and transmission systems for both the Massard WWTP Sewershed and the P Street WWTP Sewershed, including all pipes, Force Mains, Gravity Sewer Lines, Pump Stations, EQ Basins, manholes and appurtenances thereto, that are owned or operated by City at any time from the Date of Lodging of the Consent Decree until its termination under Section XXIV.

Waters of the State shall mean all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies of accumulations of water, surface and underground, natural and artificial, public or private, which are contained within, flow through, or border upon the State of Arkansas, or any portion of the State of Arkansas, as defined in Ark. Code Ann. §84-102(10).

Year shall mean a twelve month period regardless of the beginning date. In the event a triggered event shall be due on a year ending date that does not exist (for example, February 29 in some years), then the event shall be due on the first day of the following month (for example, March 1).

Section 1
Summary Report

In accordance with Section II of the Consent Decree (CD), entered into between the United States Environmental Protection Agency (EPA), the Arkansas Department of Environmental Quality (ADEQ) and, the City of Fort Smith, Arkansas (City) with Date of Lodging (DOL) of January 2, 2015, the City is implementing a CD compliance program (Program) consisting of the review of its wastewater treatment plants, together with improvements and/or modifications to its wastewater collection and transmission systems (WCTS), including improved/modified operations and maintenance and the goal of abatement of sanitary sewer overflows (SSO). The Program includes sewer system assessments, conditions rating and capacity remedial measures plans, design and construction projects. At the same time, Fort Smith must continue to deliver its asset management projects every year regardless of the demands of the Program.

In order to balance these needs, the City has engaged a Program Management Consultant (PMC), CDM Smith Inc., to assist the City staff in executing the Program.

Pursuant to requirements of Section X, Reporting, the City has prepared the following Annual Report for the period from the Date of Lodging to December 31, 2015. This Annual Report contains all applicable information required, it includes all activities, planned deliverables, accomplishments and completed improvements performed before or during 2015. Based upon CDM Smith's review in the preparation of this Summary and Annual Reporting, we find that the City has successfully met each of the stipulated requirements for the Year 2015. The following is a list of CD Sections, with their associated document reference, for which detailed information, data tabulations, exhibits, plans and/or reports have been compiled in order to achieve compliance for the 2015 Annual Report:

- Sewer System Assessments (SSAs), Section V, Article One; Section X, Paragraph 91;
- Condition Remedial Measures, Section V, Article Two; Section X, Paragraph 92;
- Capacity Remedial Measures, Section V, Article Five and Section X, Paragraph 93, Appendixes E1 and E2;
- Capacity Assessment and Hydraulic Modeling, Section V, Article Four;
- Capacity, Management, Operations, and Maintenance (CMOM) Activities, Section V, Article Seven; Section X, Paragraph 94;
    - Fats, Oil and Grease (FOG) Control Program Section V, Article Seven, Paragraph 37; Section X, Paragraph 94, a;
    - Root Control Program Section V, Article Seven, Paragraph 39; Section X, Paragraph 94, b;

- Gravity Sewer Line Cleaning Program Section V, Article Seven, Paragraph 41; Section X, Paragraph 94, c;
- Continuing Sewer System Assessment (CSSA) Program Section V, Article Seven, Paragraph 43; Section X, Paragraph 94, d;
- Continuing Pump Station and Force Main Evaluation and Preventive Maintenance Program Section V, Article Seven, Paragraph 45; Section X, Paragraph 94, e;
- Continuing Capacity Assurance Program Section V, Article Seven, Paragraph 46; Section X, Paragraph 94, f;
- SSO Reporting Section V, Article Seven, Paragraph 47; Section X, Paragraph 94, g;
- Information Management System (IMS) Update Section V, Article Seven, Paragraph 50; Section X, Paragraph 94, h;
- SSO Emergency Response Program (OERP) Section V, Article Seven, Paragraph 48; Section X, Paragraph 94, i;
- Standard Operating Procedures (SOP component) Section V, Article Seven, Paragraph 53; Section X, Paragraph 94, j;
- Private Line Defect Remedial Program Section V, Article Seven, Paragraph 54; Section X, Paragraph 94, k;
- Employee Training Program Section V, Article Seven, Paragraph 55; Section X, Paragraph 94, l;
- Inventory Management System Section V, Article Seven, Paragraph 56; Section X, Paragraph 94, m;

- Supplemental Environmental Project (SEP) Status, Appendix F, Subsection D; Section X, Paragraph 95;
- Mitigation Program Requirement, Section VI, Paragraph 70.a.

This Annual Report provides pertinent data and information as required in Section IX, Deliverables and Review Process, Paragraphs 80 and 81. It should be noted that specific plans for system modeling and CMOM efforts are ongoing with scheduled completion for their respective reports that will be included with the 2016 Annual Report Year or later. Statements regarding progress and general status for development of those ongoing components will be provided in each of their respective sections and sub-sections. These reports will be included in the appropriate Annual Report Year as required by the CD.

As stipulated by Section XI, Paragraph 99, for SSO reporting activities as noted in Section X, Paragraph 94, specifically for: naming receiving streams; reporting reoccurring SSOs including Private Service Line Releases (PSLR), and; response for clean-up efforts, some reporting elements are not in compliance. It should be noted that specific CMOM Plans for SSO Reporting and SSO OERP, required in Section V, Article Seven, are included in this Report for implementing corrective actions to address these omissions going forward.

Table 1-1 below provides a list of completed milestone activities required for the 2015 CD Annual Reporting period.

Table 1-1. CD Milestones

CD Reference	CD Activity	CD Date	Status	Date Submitted
	Date of Lodging	02 Jan '15	Complete	02 Jan '15
Section V, Article One	Complete SSAs on 40 miles of Gravity Sewer Lines	31 Dec '15	Completed 56.9 miles	Mar '16
Section V, Article One	2015 Condition Assessment Report Submitted	31 Mar '16	Complete	Mar '16
Section V, Article Two	Remedial Measure Plan for Basin 12 Submitted for Approval	31 Mar '16	Complete	Mar '16
Section V, Article Seven	Root Control Program Plan Submitted for Approval	31 Dec '15	Complete	Dec '15
Section V, Article Seven	Gravity Sewer Line Cleaning Program Plan Submitted for Approval	31 Dec '15	Complete	Dec '15
Section V, Article Seven	SSO Documentation and Reporting Program Plan Submitted for Approval	31 Dec '15	Complete	Dec '15
Section V, Article Seven	SSO Emergency Response Program Plan Submitted for Approval	31 Dec '15	Complete	Dec '15
Section VI	Mitigation Program Quality Assurance Project Plan Submitted	31 Dec '15	Complete	Dec ‘15
Section VIII	Supplemental Environmental Project Escrow Agreement	30 June ‘15	Complete	June ‘15
Section VIII	Executed Escrow Agreement Submitted	31 Dec '15	Complete	Dec '15

Section 2

Consent Decree Activities

2.1 Sewer System Condition Assessments Activities

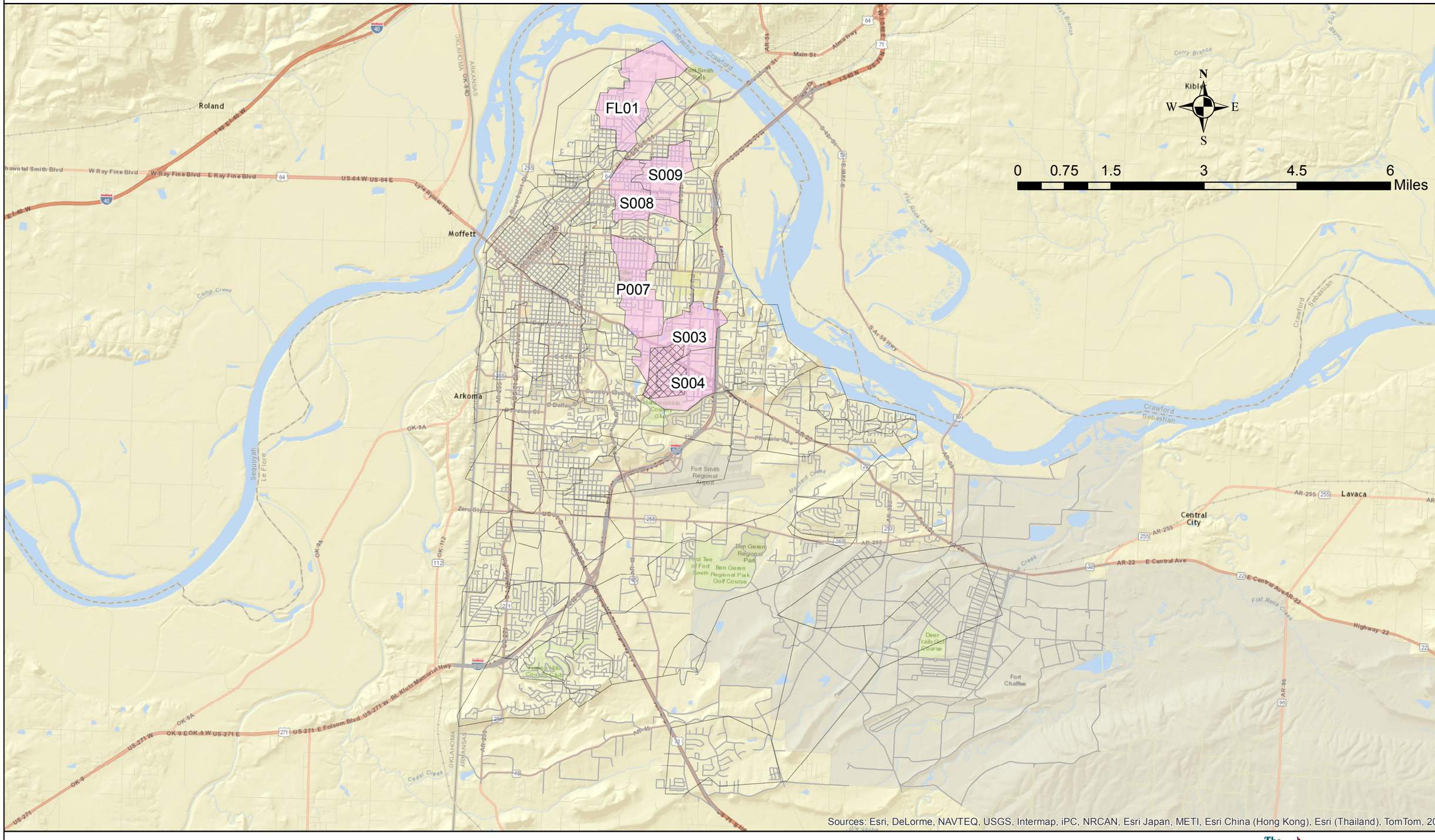
Pursuant to the requirements of Section V, Article One: Sewer System Condition Assessments and Section X, Paragraph 91 and Section V, Article Two: Condition Remedial Measures and Section X, Paragraph 92 this section documents the City's progress towards completing the Sewer System Condition Assessment Activities.

2.1.1 Sewer System Assessments (SSAs)

Pursuant to the requirements of Section V, Article One: Sewer System Condition Assessments and Section X, Paragraph 91 this section documents the City's progress toward completing SSA activities. The City contracted RJN Group, Inc. (RJN) to conduct SSA activities for sub-basins FL001, S003, S008, S009 and portions of S004 and P007 (see Figure 2-1) which included CCTV, smoke testing, and dye testing. The Condition Assessment Report: 2015 Sanitary Sewer Assessment Sub-Basins: S004, P007, FL01, S003, S008, and S009 (2015 SSA) is included in Attachment 1. The following SSA Activities were conducted during the 2015 Annual Report year:

- The City has exceeded the minimum 40 miles annual SSA requirement as shown in 2015 SSA. A total of 56.9 miles of Gravity Sewer Lines were assessed (see Figure 2-1, Table 2-1) which included:
  - 1,170 Manholes (see Table 2-2, a detailed tabulation is provided in Attachment 1: 2015 SSA: Appendix A);
  - 250,019 linear feet (47.35 miles) of CCTV which included 4,811 linear feet (0.91 Miles) of Large-Diameter Gravity Sewer Lines and 245,208 linear feet (46.44 Miles) of Small-Diameter Gravity Sewer Lines, (see Figure 2-2: a detailed is tabulation provided in Attachment 1: 2015 SSA: Appendix F);
  - 301,124 linear feet (56.9 miles) of Smoke testing (see Table 2-3 and Table 2-4, a detailed tabulation is provided in Attachment 1: 2015 SSA: Appendix D); and
  - 8,868 linear feet (1.68 miles) of Dye testing (a detailed tabulation is provided in Attachment 1: 2015 SSA: Appendix I).
- No Flow Monitoring was conducted during this report period.
- No additional gravity sewer line investigations were conducted.
- A total of 12,052 linear feet (2.28 miles) of additional gravity sewer lines were added to the WCTS during this report period. The locations of the additional gravity sewer lines are provided in Figure 2-3.

City of Fort Smith, AR



rjn group
The Choice for Collection System Solutions

Basin Boundaries
Previously Studied
Study Area

The City of Fort Smith ARKANSAS

Figure 2-1
2015 SSA
Sub-Basin
Locations

- A total of 12 Pipe Segments receiving storm water discharges from Private Property, including 1 downspout and 11 area storm drains, were discovered during the 2015 SSA (See Table 2-4, a detailed tabulation is provided in Attachment 1: 2015 SSA: Appendix D).
- A total of 867 Private Service Line Defects including 377 Private Service Lines and 490 Private Cleanouts were discovered during the 2015 SSA (See Table 2-4, a detailed tabulation is provided in Attachment 1: 2015 SSA: Appendix D). The Private Service Line Defects identified in the 2015 SSA will be evaluated and addressed as described in the to be approved Private Line Defect Remedial Program Plan (see Section 2.6.11).
- There were no Direct Discharges from the WCTS discovered during the 2015 SSA.

Table 2-1. SSA Summary

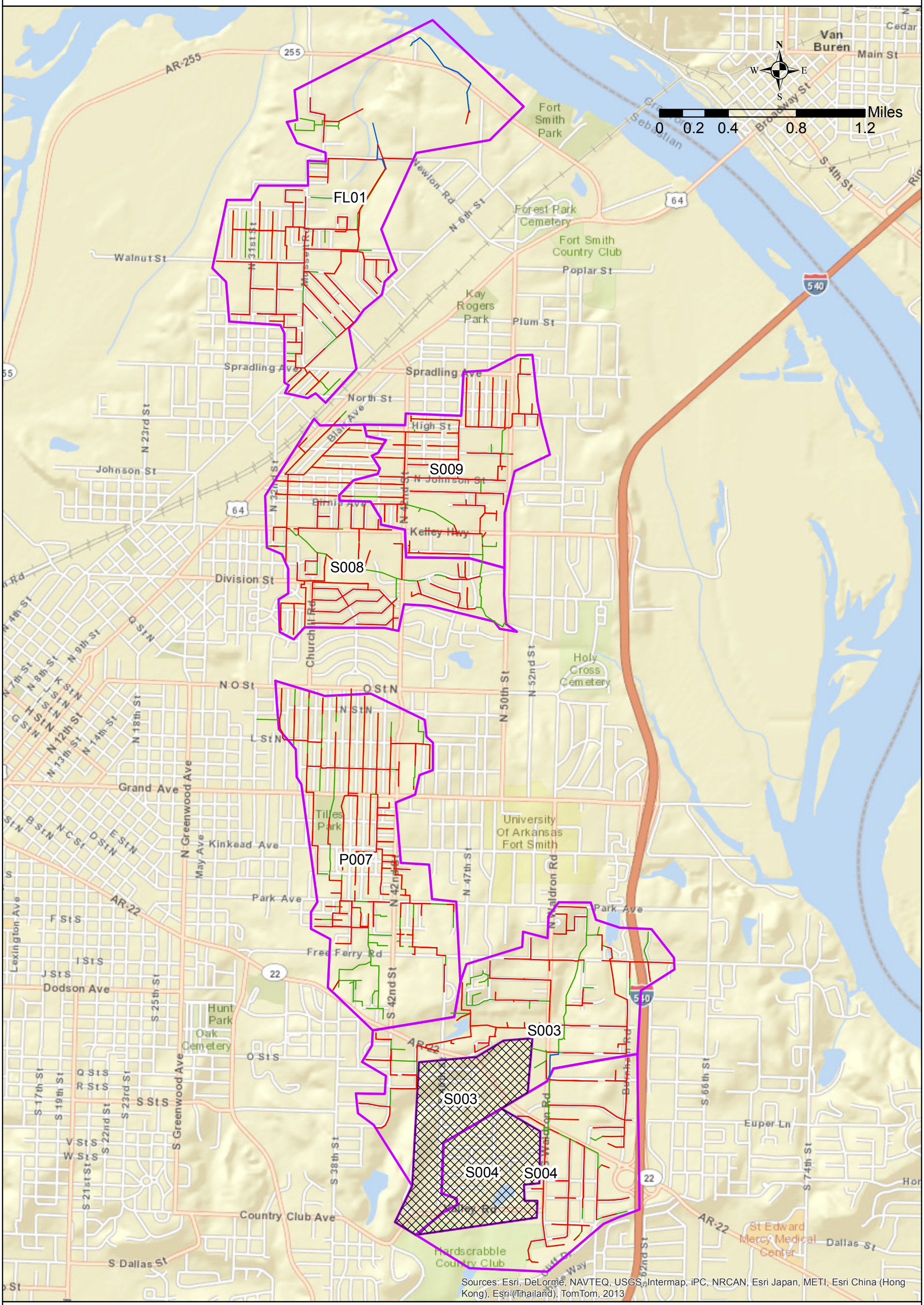
Sub-Basin	Number of Manholes	Length of Sewer Pipe	
		Linear Feet	Miles
FL01	257	64,002	12.1
S009	188	40,472	7.7
S008	219	48,280	9.1
P007	338	71,234	13.5
S003	232	47,620	9
S004	129	29,516	5.6
Total	**1,363**	**301,124**	**56.9**

Table 2-2. Manhole Inspection Status

Sub Sub-Basin - Basin	Manholes Inspected	Manholes Not Inspected[1]	Total Manholes
FL01	236	21	257
S009	146	42	188
S008	176	43	219
P007	300	38	338
S003	198	34	232
S004	114	15	129
Total	**1,170**	**193**	**1,363**

[1]A detailed tabulation with reasons that manholes could not be inspected is provided in Attachment 1: 2015 SSA: Appendix A.

City of Fort Smith, AR



rjngroup
The Choice for Collection System Solutions

Cleaned & Televised - Small Diameter
Cleaned & Televised - Large Diameter
Plastic Lines - Post 1995
Basin Boundaries
Previously Studied

Fort Smith ARKANSAS

Figure 2-2
2015 Sewer Lines Cleaned and Televised

The City of Fort Smith ARKANSAS

Gravity Sewer Line Aquisitions (2015)

Sewer Lines

MC04 Sewer Subbasins

N

1 inch = 1 miles

0 0.25 0.5 1 Miles

2015 Additional Sewer Line Locations

City of Fort Smith
Annual Report (2015)
Figure 2-3

BB: Mar 4, 2016
R:\Projects\Active\109129_FortSmith_CMOM\Production_Maps\2015_AnnualReport

Table 2-3. Linear Feet Smoke Tested

Sub-Basin	Linear Feet
FL01	64,002
S009	40,472
S008	48,280
P007	71,234
S003	47,620
S004	29,516
Total	**301,124**

Table 2-4. Private Smoke Testing Defects

Sub-Basin	Cleanouts Private	Service Lines Private	Area Drains	Down Spout
FL01	118	88	0	0
S009	79	43	2	0
S008	99	84	4	1
P007	109	127	1	0
S003	65	18	3	0
S004	20	17	1	0
Total	**490**	**377**	**11**	**1**

Defect Definitions:

- Cleanout, Private = A defect associated with the threaded cap, ferrule or the riser portion of a cleanout located outside of the City right-of-way (ROW).
- Service Lines, Private = Observation or defect associated with the portion of sewer line servicing a structure that is located outside of the City ROW.
- Area Drains = A receptacle designed to collect surface runoff or rainwater from an elevation contour defined watershed area.
- Downspout = A potential defect associated with a pipe installed to drain water from the roof gutters or roof catchment to the storm drain or other means of disposal. The downspout appears connected to the sanitary sewer.

2.1.2 Condition Assessment Results

Pursuant to the requirements of Section V, Article Two: Condition Remedial Measures and Section X, Paragraph 92 this section documents the City's progress toward completing the Condition Remedial Measures activities. The City contracted RJN to conduct SSA activities for sub-basins FL001, S003, S008, S009 and portions of S004 and P007 which included NASSCO ratings for all line segments and manholes with condition assessments. RJN's 2015 SSA is included in Attachment 1. The following is a summary of the NASSCO ratings for manholes (Table 2-5) and line segments (Table 2-6). A detailed tabulation of these results are provided in Attachment 1: 2015 SSA: Appendix B and E.

Table 2-5. NASSCO MACP Score Summary

Sub-Basin	NASSCO Score						
	Not Inspected	1	2	3	4	5	Total
FL01	21	100	25	28	38	45	257
S009	42	68	24	18	14	22	188
S008	43	82	15	18	23	38	219
P007	38	122	126	39	11	2	338
S003	34	111	32	20	13	22	232
S004	15	81	29	1	2	1	129
Total	**193**	**564**	**251**	**124**	**101**	**130**	**1,363**

Table 2-6. NASSCO PACP Score Summary

Sub-Basin	NASSCO Score (linear feet)						
	0[1]	1	2	3	4	5	Total
FL01	1,617	1,378	5,058	18,917	11,763	12,060	50,794
S009	897	1,102	5,079	8,269	7,087	16,886	39,321
S008	636	3,967	11,330	13,562	8,186	9,783	47,464
P007	6,264	2,857	3,384	8,455	11,196	21,020	53,175
S003	2,354	929	5,138	6,319	10,836	9,017	34,593
S004	2,329	146	3,752	9,590	4,283	4,571	24,672
Total	**14,098**	**10,380**	**33,742**	**65,111**	**53,351**	**73,337**	**250,019**

[1] No defects recorded during inspection

2.2 Condition Remedial Measures

Pursuant to the requirements of Section V, Article Two: Condition Remedial Measures and Section X, Paragraph 92 this section documents the City's progress toward completing the Condition Remedial Measures activities. The City contracted RJN to conduct SSA activities for sub-basins FL001, S003, S008, S009 and portions of S004 and P007 which included NASSCO ratings for all line segments and manholes with condition assessments as well as the Remedial Measures Plan for Basin 12. RJN's 2015 SSA is included in Attachment 1. The following Condition Remedial Measures Activities were conducted during the 2015 Annual Report year:

- The Remedial Measures Plan for Basin 12 is provided in Attachment 2.
- The Remedial Measures Plan for the 2015 SSA will be provided within 12 months of the condition assessment report.

2.3 Capacity Remedial Measures

Pursuant to the requirements of Section V, Article Five: Capacity Remedial Measures Plan and Section X, Paragraph 93 this section documents the City's progress toward completing the Capacity Remedial Measures activities. Table 2-7 and Table 2-8 and Figure 2-4 provide the status

of Capacity Related Remedial Measure Projects. The Capacity Remedial Measures Plan is due by March 31, 2019 and CDM Smith has been contracted by the City to develop the Capacity Remedial Measures Plan for submittal by March 31, 2019.

Table 2-7. Capacity Related Remedial Measure Projects Complete

Project	Status
Pump Station 19 Force Main Replacement	Construction Completed Prior to DOL
Zero Street Equalization Basin and Pump Station	Construction Completed in 2015
Mill Creek Capacity Improvements - Phase 2	Construction Completed in 2015

Table 2-8. Capacity Related Remedial Measure Projects in Progress

Project	Status
Mill Creek Equalization Basin and Pump Station	Construction in Progress Scheduled Completion Date 8/31/2016
Mill Creek Capacity Improvements - Phase 1	Construction In Progress Scheduled Completion Date 10/31/2016
Replacement of Pump Stations 15, 16, 17 and 23	Construction in Progress Scheduled Completion Date 12/31/2016

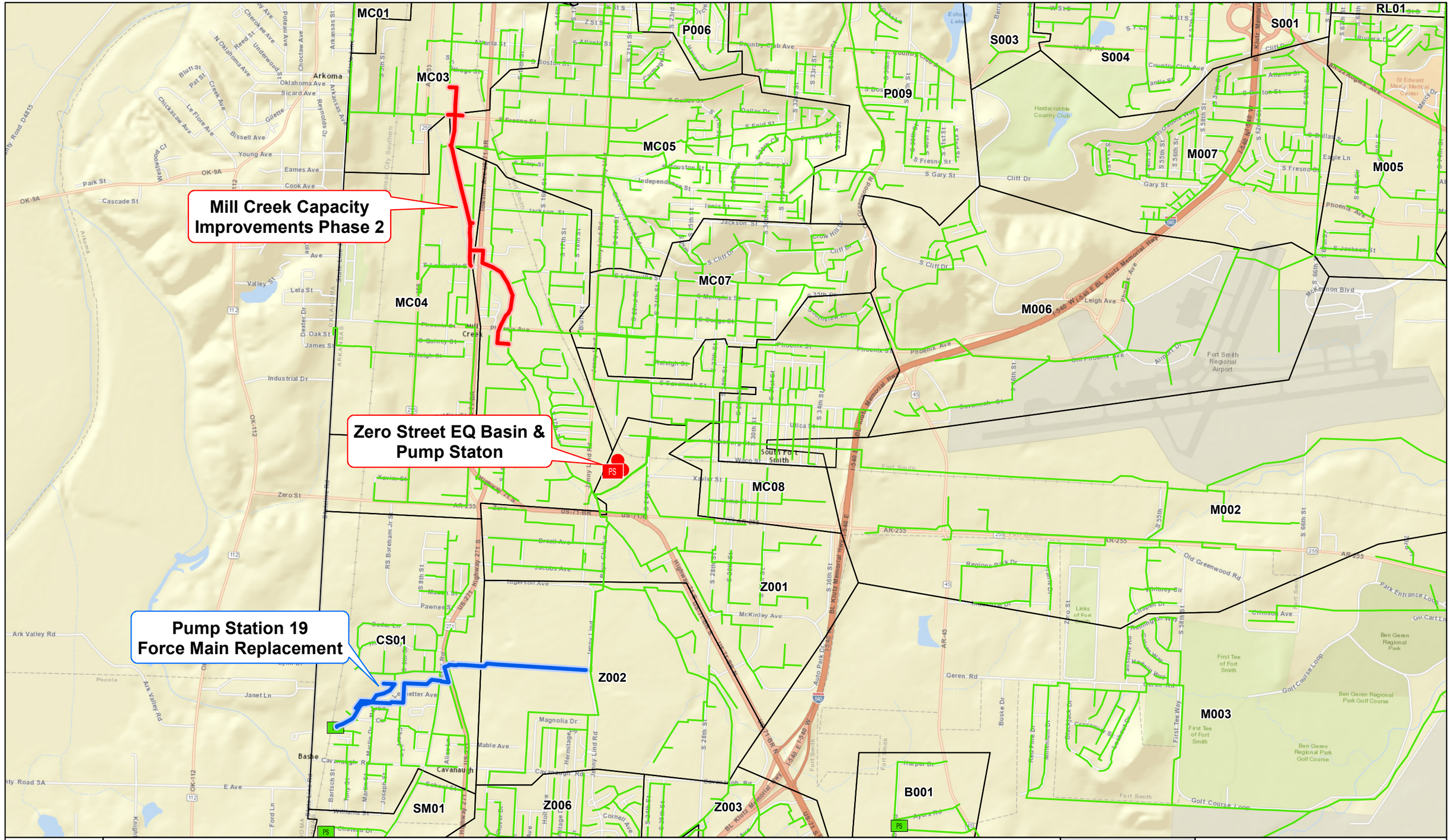
2.4 Additional Remedial Measure Activities

In addition to the Condition and Capacity Projects outlined in the CD, the Sewer Rehabilitation and Capacity Projects for Basin 17 Collection System Improvements is under construction with a scheduled completion date of July 31, 2016. This project provides WCTS Condition Improvements for 9,891 linear feet of sewer lines and 127 manholes and WCTS Capacity Improvements for 3,522 linear feet of sewer lines in Basin 17.

2.5 Capacity Assessment and Hydraulic Model

Pursuant to the requirements of Section V, Article Four: Capacity Assessment and Hydraulic Modeling and Section X, Paragraph 94, f, this section documents the City's progress toward completing the Capacity Assessment and Hydraulic Modeling.

CDM Smith has been contracted by the City for the Capacity Assessment and Hydraulic Modeling activities. During the reporting period, the City has continued to update the hydraulic model to meet the requirements of the Consent Decree. The infrastructure in the model has been expanded to include locations of recurring wet-weather SSOs and capacity-related improvements that were in service at the time of the temporary flow monitoring. Flow monitoring data collected in 2013 and 2014 is being utilized to calibrate and verify the hydraulic model, and model expansion to incorporate all gravity sewer lines 10-inches and larger in diameter is underway. The City anticipates submitting the Hydraulic Model Update Report and the Capacity Assessment Report in accordance with the timeframes required in the Consent Decree.


MC01
MC03
P006
P009
S003
S004
S001
RL01
MC05
M007
M005
Mill Creek Capacity Improvements Phase 2
MC04
MC07
M006
Zero Street EQ Basin & Pump Staton
PS
MC08
M002
Z001
Pump Station 19 Force Main Replacement
CS01
Z002
M003
SM01
Z006
Z003
B001
Arkoma
Fort Smith Regional Airport
Hardscrabble Country Club
Ben Geren Regional Park
Ben Geren Regional Park Golf Course
First Tee of Fort Smith
Links of Fort Smith
St Edward Mercy Medical Center
Park Entrance Loop
Golf Course Loop
Old Greenwood Rd
Geren Rd
Cliff Dr
Phoenix Ave
Zero St
Cavanaugh Rd
Mable Ave
Magnolia Dr
Ark Valley Rd
Janet Ln
Pocola
Industrial Dr
Valley St
Lela St
Oak St
James St
Park St
Cascade St
Young Ave
Eames Ave
Cook Ave
Bissell Ave
Gillette
Oklahoma Ave
Sicard Ave
Atlanta St
Boston St
Dallas Dr
Fresno St
Enid St
Houston St
Independence St
Ionia St
Jackson St
Crow Hill Dr
Memphis St
Leigh Ave
Raleigh St
Savannah St
Utica St
Wiley St
Xavier St
Kinsey St
Brazil Ave
Jacobs Ave
Ingerson Ave
McKinley Ave
Pawnee St
Cedar Ln
Harper Dr
Ayers Rd
Regions Park Dr
Crimson Ave
Eagle Ln
Phillips Dr
Gary St
Cliff Dr
Valley Rd
Country Club Ave
Echo Lake
Berry Rd
Rogers Ave
Kelley Ave
Riviera Dr
Mercy Dr
Jackson St
McKennon Blvd
Old Phoenix Ave
Airport Dr
Savannah St
Golf Course Loop
Fort Smith
Arkansas
Oklahoma
Arkansas River
Creek
Bluff St
Pat St
Creek Ave
Chickasaw Ave
Le Flore Ave
Reynolds Dr
Westwood Ct
Dexter Dr
Bartsch St
Tony St
Marion St
Joseph St
Allen Ln
Ford Ln
Jenny Lind Rd
Blue St
Cavanaugh
Basham Rd
Mable Ave
Ark Valley Rd
Pocola
Janet Ln
Ty Road 5A
E Ave
Ford Ln
Bartsch St
Tony St
Marion St
Joseph St
Allen Ln
Cavanaugh Rd
Mable Ave
Magnolia Dr
Hermitage Dr
Village Dr
Cornell Ave
Holly Ave
Jenny Lind Rd
Blue St
Cavanaugh
Basham Rd
Harper Dr
Ayers Rd
Fort Smith
Arkansas
Oklahoma
Arkansas River
Creek
Bluff St
Pat St
Creek Ave
Chickasaw Ave
Le Flore Ave
Reynolds Dr
Westwood Ct
Dexter Dr
Bartsch St
Tony St
Marion St
Joseph St
Allen Ln
Ford Ln
Jenny Lind Rd
Blue St
Cavanaugh
Basham Rd
Mable Ave
Ark Valley Rd
Janet Ln
Pocola
Industrial Dr
Valley St
Lela St
Oak St
James St
Park St
Cascade St
Young Ave
Eames Ave
Cook Ave
Bissell Ave
Gillette
Oklahoma Ave
Sicard Ave
Atlanta St
Boston St
Dallas Dr
Fresno St
Enid St
Houston St
Independence St
Ionia St
Jackson St
Crow Hill Dr
Memphis St
Leigh Ave
Raleigh St
Savannah St
Utica St
Wiley St
Xavier St
Kinsey St
Brazil Ave
Jacobs Ave
Ingerson Ave
McKinley Ave
Pawnee St
Cedar Ln
Harper Dr
Ayers Rd
Regions Park Dr
Crimson Ave
Eagle Ln
Phillips Dr
Gary St
Cliff Dr
Valley Rd
Country Club Ave
Echo Lake
Berry Rd
Rogers Ave
Kelley Ave
Riviera Dr
Mercy Dr
Jackson St
McKennon Blvd
Old Phoenix Ave
Airport Dr
Savannah St
Golf Course Loop

2.6 CMOM Activities

2.6.1 FOG Control Program

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; FOG Control Program Component and Section X, Paragraph 94, a, this section documents the City's progress toward completing the FOG Control Program activities. The FOG Control Program Plan is due within 24 months of DOL and CDM Smith has been contracted by the City to develop the FOG Control Program Plan for submittal by December 2016.

2.6.2 Root Control Program

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; Root Control Program Component and Section X, Paragraph 94, b, this section documents the City's progress toward completing the Root Control Program activities. The Root Control Program Plan was due within 12 months of the DOL. The Root Control Program Plan was submitted under separate cover in December 2015 and is provided in Attachment 3 of this report.

2.6.3 Gravity Sewer Line Cleaning Program

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; Gravity Sewer Line Cleaning Component and Section X, Paragraph 94, c, this section documents the City's progress toward completing the Gravity Sewer Line Cleaning Program activities. The Gravity Sewer Line Cleaning Program Plan was due within 12 months of the DOL. The Gravity Sewer Line Cleaning Program Plan was submitted under separate cover in December 2015 and is provided in Attachment 4 of this report.

Pursuant to Section V, Article Seven: Development of a CMOM Program; WCTS Maintenance Activities until Full CMOM Implementation, the City has continued to use the current City workforce and maintenance fleet to conduct targeted Gravity Sewer Line cleaning activities as needed.

In addition, RJN conducted Gravity Sewer Line Cleaning activities as part of the 2015 SSA activities described in Section 2.1. The 2015 SSA is included in Attachment 1. A total of 250,019 linear feet (47.35 miles) of Gravity Sewer Lines which included 4,811 linear feet (0.91 Miles) of Large-Diameter Gravity Sewer Lines and 245,208 linear feet (46.44 Miles) of Small-Diameter Gravity Sewer Lines were cleaned during the SSA activities. See Figure 2-2 for a map of the Gravity Sewer Lines cleaned and a detailed tabulation is provided in Attachment 1: 2015 SSA: Appendix F.

2.6.4 CSSA Program

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; CSSA Program Component and Section X, Paragraph 94, d, this section documents the City's progress toward completing the CSSA Program activities. The CSSA Program Plan is due within 24 months of DOL and CDM Smith has been contracted by the City to develop the CSSA Program Plan for submittal by December 2016.

2.6.5 Continuing Pump Station and Force Main Evaluation and Preventive Maintenance Program

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; Continuing Pump Station and Force Main Evaluation and Preventive Maintenance Program and Section X, Paragraph 94, e, this section documents the City's progress toward completing the Continuing Pump Station and Force Main Evaluation and Preventive Maintenance Program activities. The Continuing Pump Station and Force Main Evaluation and Preventive Maintenance Program Plan is due within 24 months of DOL and CDM Smith has been contracted by the City to develop the Continuing Pump Station and Force Main Evaluation and Preventive Maintenance Program Plan for submittal by December 2016.

Pursuant to the requirements of Section V, Article Three: Pump Station/Force Main Evaluation Report, this section also documents the progress of the Pump Station evaluations. The Pump Station/Force Main Evaluation Report is due by March 31, 2018, and the City has contracted Hawkins-Weir Engineers to complete the Pump Station/Force Main Evaluation Report for submittal by March 2018.

2.6.6 Continuing Capacity Assurance Program

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; Continuing Capacity Assurance Program and Section X, Paragraph 94, f, this section documents the City's progress toward completing the Continuing Capacity Assurance Program. The Continuing Capacity Assurance Program Plan is due within 24 months of DOL and CDM Smith has been contracted by the City to develop the Continuing Capacity Assurance Program Plan for submittal by December 2016.

2.6.7 SSO Reporting

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; SSO Reporting Component and Section X, Paragraph 94, g, this section documents the City's progress toward completing the SSO Reporting Program activities. The SSO Documenting and Reporting Plan was due within 12 months of the DOL. The SSO Documenting and Reporting Plan was submitted under separate cover in December 2015 and is provided in A 5 of this report. A detailed tabulation of the SSO events in the 2015 Annual Report period is provided in Attachment 6.

2.6.8 OERP

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; OERP Component and Section X, Paragraph 94, I, this section documents the City's progress toward completing the OERP activities. The OERP Plan was due within 12 months of the DOL. The OERP Plan was submitted under separate cover in December 2015 and is provided in Attachment 7 of this report.

2.6.9 IMS Update

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; IMS Update, and Section X, Paragraph 94, h, this section documents the City's progress toward completing the IMS Update activities. The IMS Update Plan is due within 24 months of DOL and

CDM Smith has been contracted by the City to develop the IMS Update for submittal by December 2016.

2.6.10 SOP Component

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; SOP Component and Section X, Paragraph 94, j, this section documents the City's progress toward completing the SOP component activities. The SOP Plan is due within 18 months of DOL and CDM Smith has been contracted by the City to develop the SOP Plan for submittal by June 2016.

2.6.11 Private Line Defect Remedial Program

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; Private Line Defect Remedial Program Component and Section X, Paragraph 94, k, this section documents the City's progress toward completing the Private Line Defect Remedial Program activities. The Private Line Defect Remedial Program Plan is due within 24 months of DOL and CDM Smith has been contracted by the City to assist in the development of the Private Line Defect Remedial Program Plan for submittal by December 2016.

2.6.12 Comprehensive Training Program

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; Comprehensive Training Program Component and Section X, Paragraph 94, l, this section documents the City's progress toward completing the Comprehensive Training Program activities. The Comprehensive Training Program Plan is due within 18 months of DOL and CDM Smith has been contracted by the City to develop the Comprehensive Training Program Plan for submittal by June 2016.

2.6.13 Inventory Management System Update

Pursuant to the requirements of Section V, Article Seven: Development of a CMOM Program; Inventory Management System and Section X, Paragraph 94, m, this section documents the City's progress toward completing the Inventory Management System activities. The Inventory Management System is due within 24 months of DOL and CDM Smith has been contracted by the City to develop the Inventory Management System for submittal by December 2016.

2.7 SEP

Pursuant to the requirements of Section V, Appendix F: SEP and Section X, Paragraph 95 this section documents the City's progress toward completing the SEP activities. The information regarding the SEP Implementation as outlined in Section D, Subparagraph 3 of Appendix F of the CD is provided in Attachment 8 of this report.

2.8 Mitigation Program Requirement

Pursuant to the requirements of Section VI, Mitigation Program Requirement, Paragraph 70.a this section documents the City's progress toward completing the Mitigation Program Activities. The Mitigation Program Quality Assurance Project Plan was due within 12 months of the DOL. The Mitigation Program Quality Assurance Project Plan was submitted under separate cover in December 2015 and is provided in Attachment 9 of this report.

Attachment 1

2015 Sanitary Sewer Condition Assessment

March 2016

Condition Assessment Report

2015 Sanitary Sewer Assessment Sub-Basins: S004, P007, FL01, S003, S008, and S009

prepared for the

City of Fort Smith, Arkansas

prepared by

RJN Group, Inc.

1808 S. C Street

Fort Smith, Arkansas 72901

(479) 709-9439

rjngroup

40 years of collection system solutions

rjngroup
The Choice for Collection System Solutions

www.rjn.com

March 2, 2016

Mr. Steve Parke
City of Fort Smith
Utility Department
3900 Kelley Hwy.
Fort Smith, AR 72904

Subject: City of Fort Smith, Arkansas
Sanitary Sewer Assessment Year 1 – Final Condition Assessment Report

Dear Mr. Parke:

In accordance with the February 3, 2015 Engineering Agreement, RJN Group, Inc. is pleased to submit this Final Condition Assessment Report for the above referenced project.

This report includes the analysis and results from the six(6) sub-basins investigated during the 2015 sanitary sewer assessment.

We appreciate the opportunity to work with the City of Fort Smith and the excellent cooperation from the staff throughout the project. We look forward to working with the City in the future. Should you have any questions, please call.

Respectfully Submitted,

RJN GROUP, INC.

Daniel Jackson, P.E.
Project Manager

Tristan Nickel, P.E.
Project Engineer

DHJ/tn/2832
Enclosure

Condition Assessment Report

2015 Sanitary Sewer Assessment

Sub-Basins: S004, P007, FL01, S003, S008, and S009

City of Fort Smith

March 2016

I hereby certify that this report was prepared under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Arkansas.

Dan Jackson

Date: 3/2/16 Registration No.: 13978

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APPENDIX B	NASSCO MACP Scores
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APPENDIX D	Smoke Testing Defects
APPENDIX E	Sewer Lines Cleaned and Televised
APPENDIX F	NASSCO PACP Scores

2015 CONDITION ASSESSMENT

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40 years of collection system solutions

SANITARY SEWER ASSESSMENT – 2015 CONDITION ASSESSMENT REPORT

The City of Fort Smith, Arkansas contracted RJN Group, Inc. to conduct a Sanitary Sewer Assessment (SSA) in six (6) sub-basins. The six (6) sub-basins were FL01, P007, S008, S009, and portions of S003 and S004 consisting of 1,363 manholes and 301,124 linear feet or 56.9 miles of sanitary sewer pipe.

RJN Group, Inc. services included the following tasks:

- Flow Monitoring
- Manhole Condition Assessment (NASSCO Level 2 Inspections)
- Smoke Testing
- Cleaning and Televising of Sanitary Sewers
- Dyed Water Flooding
- Defect Analysis/Grading

This Condition Assessment Report addresses the results from field inspection. NASSCO scores for manholes and sewer lines will also be provided.

SYSTEM OVERVIEW

The 2015 SSA consisted of six (6) sub-basins; FL01, P007, S008, S009, and portions of S003 and S004. Evaluations of S003 and S004 were performed in 2014 and FL01, P007, S008, and S009 were performed in 2015. Table 1 summarizes the quantity of manholes and sewer line inspected per sub-basin. Figure 1 on page 3 shows the sub-basins studied.

Table 1

SUB-BASIN STATISTICS

Sub-Basins	Number of Manholes	Length of Sewer Pipe	
		Linear Feet	Miles
FL01	257	64,002	12.1
S009	188	40,472	7.7
S008	219	48,280	9.1
P007	338	71,234	13.5
S003[1/]	232	47,620	9.0
S004[1/]	129	29,516	5.6
Total	**1,363**	**301,124**	**56.9**

1/ Portion of basin previously studied.

PROJECT APPROACH

FLOW MONITORING

Flow monitoring of the six sub-basins was conducted in 2013 and 2014. The flow monitoring was done to establish current flow rates. A total of twelve (12) flow meters were used to monitor the six (6) sub-basins discussed in this remedial measures plan. Table 2 gives a breakdown of the meters used to monitor the sub-basins. Figure 2 on page 4 depicts the flow meter locations used in 2014.

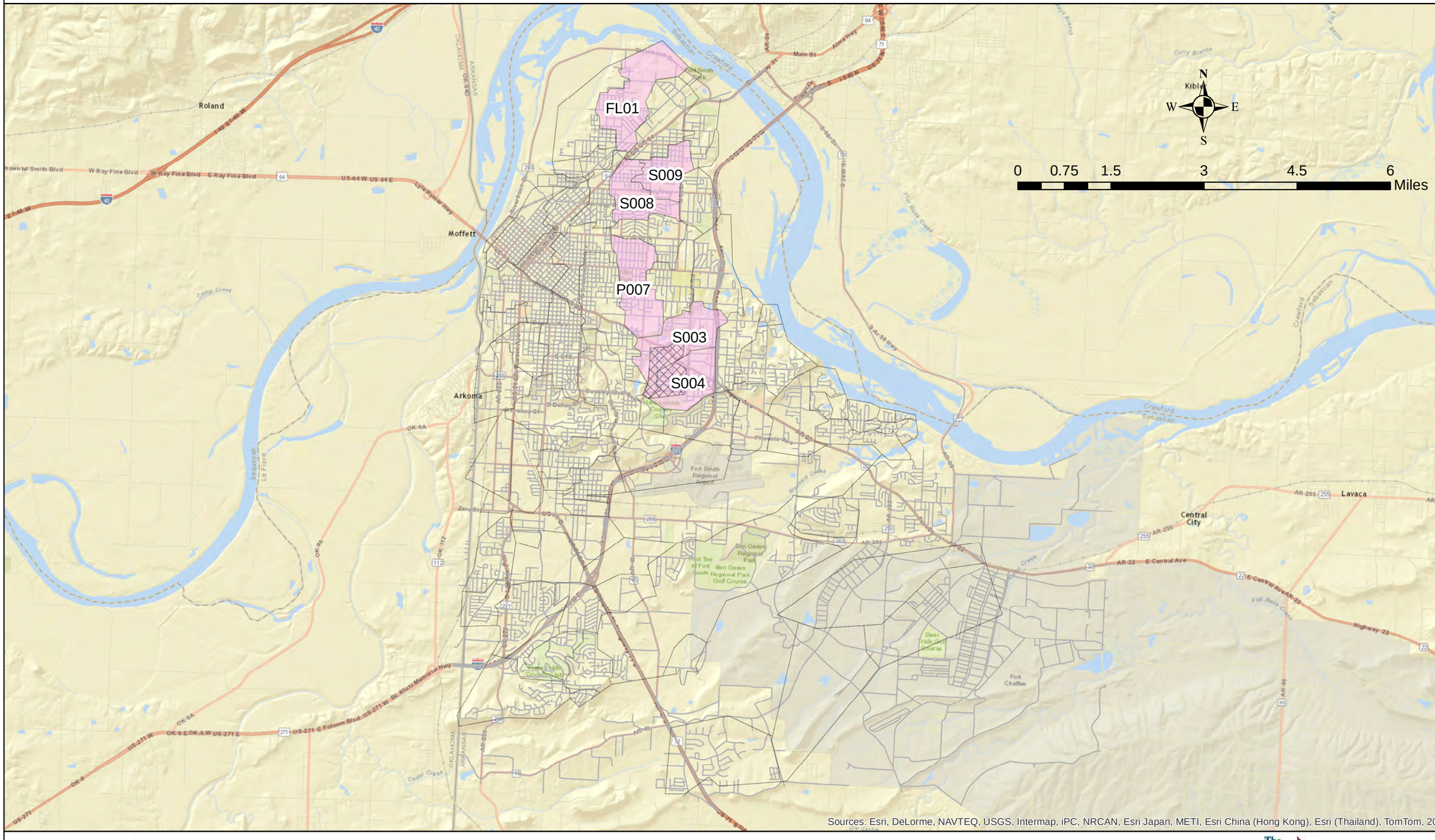
Table 2

SUB-BASIN ASSIGNMENTS

Sub-Basin	Meter Basin	Sub-Basin Size (linear feet)
FL01[1/]	FS-01, FS-02, FS-03, FS-05, FS-06, FS-10	69,689
S009	FS-09	40,472
S008	FS-08	48,280
P007	FS-04, FS-05	71,234
S003	FS-34	62,142
S004	FS-02	42,418

1/ Also includes Sub-Basin CL01.

City of Fort Smith, AR



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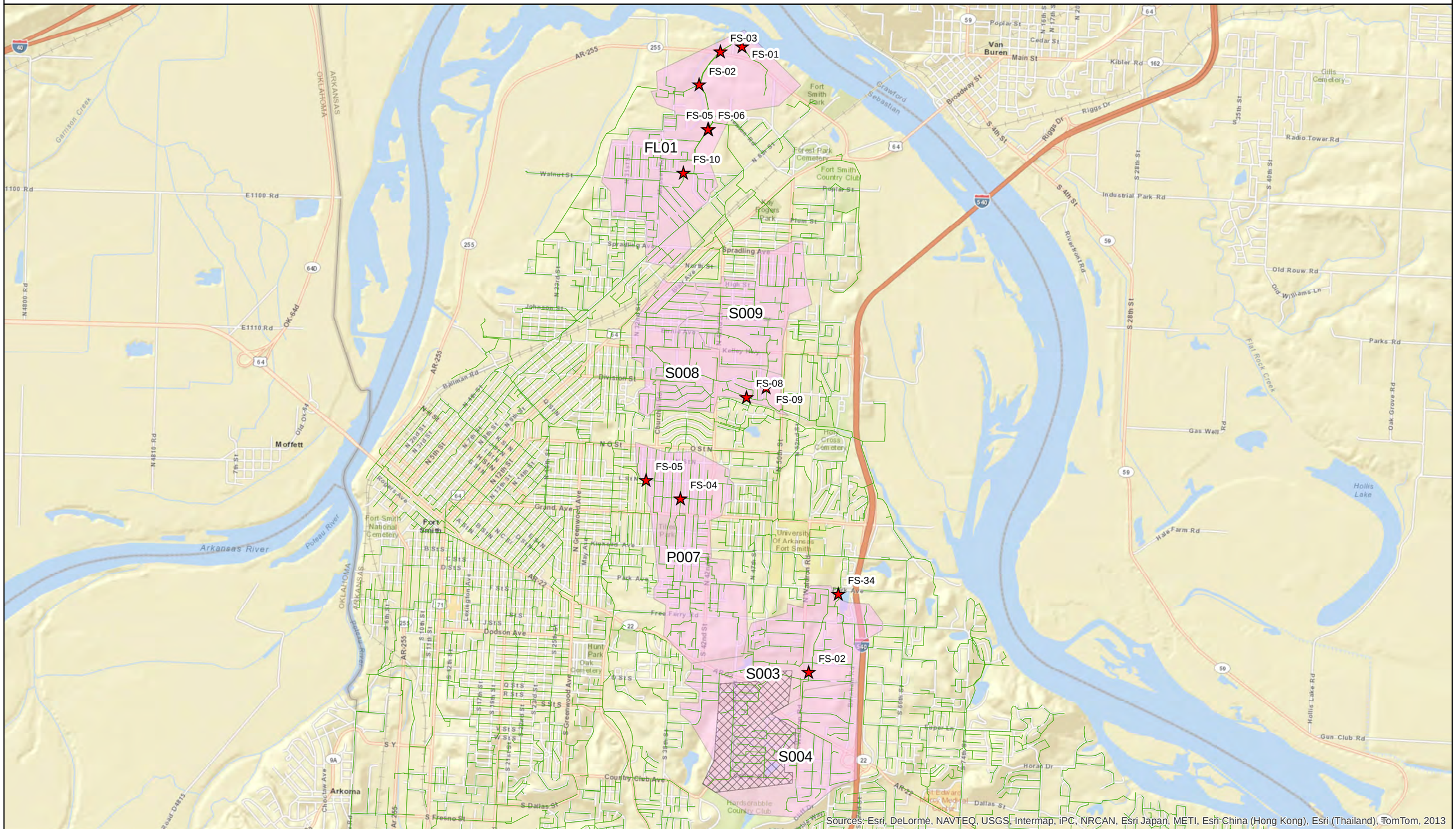
Basin Boundaries
Previously Studied
Study Area

The City of Fort Smith Arkansas

Figure 1
Sub-Basin
Location

City of Fort Smith, AR



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The Choice for Collection System Solutions

★ Flow Meter Location
Gravity Main
Study Area
Previously Studied

The City of Fort Smith ARKANSAS

Figure 2
Flow Meter &
Rain Gauge Locations

MANHOLE CONDITION ASSESSMENT

Manhole inspections were conducted utilizing NASSCO MACP inspection standards. Inspections were MACP Level 2 inspections. A level 2 inspection grades manhole defects on a scale of 1 to 5, with 5 having the most severe defects. All inspection data was entered into the Innovyze software, InfoMaster. This software generated NASSCO grades for all defects notated during inspection, and an overall score was developed for each manhole.

SMOKE TESTING

Smoke testing was conducted using the dual-blower method. Individual pipe lines were isolated where applicable. Defects were noted where smoke was observed. Defects include: defective service cleanouts, defective service lines, potential gravity sewer line leaks, potential cross-connections with the storm water system, downspouts, or area drains. A picture of the defect, GPS location, address, and defect type are recorded.

CLEANING AND TELEVISING OF SANITARY SEWERS

Cleaning and closed circuit television inspection (CCTV) investigations were performed on all non-plastic sewer lines and plastic sewer lines installed prior to 1995. Investigations utilized NASSCO PACP inspection standards. All investigation data was entered into Innovyze's software, InfoMaster. This software generated NASSCO grades for all defects notated during inspection and an overall score was developed for each gravity sewer line.. A score of 0 indicates no defects were found within the line segment.

DYED WATER FLOODING

Dyed water flooding was performed on selected defects identified during smoke testing. These defects consisted of potential gravity sewer line leaks and potential cross-connections with the storm water system. Potential gravity sewer line leaks on line segments that had a NASSCO score of 4 or 5 from the CCTV condition assessment were not tested.

INSPECTION QUANTITIES AND RESULTS

FLOW MONITORING

Flow monitoring activities were conducted in 2013 and 2014. Table 3 summarizes the dry and wet-weather flow rates. Additionally, inflow and infiltration rates are expressed below in million gallons per day (mgd) per 1,000 linear feet. This allows for an "apples to apples" comparison of each sub-basin and will provide the baseline to evaluate post-construction results. Inflow rates are calculated to a 1-year/60-minute storm with a rainfall intensity of 1.55 inches/hour.

Table 3

SUB-BASIN FLOWS

Sub-Basin	Sub-Basin Size (linear feet)	Average Dry-Weather Flow (mgd)	Peak Hour Dry- Weather Flow (mgd)	Peak Hour Wet-Weather Flow (mgd)	Inflow Rate (gpd/ 1,000 linear feet)	Peak Infiltration Rate (gpd/ 1,000 linear feet)
FL01/CL01	69,689	0.192	0.578	3.709	60,975	5,317
S009	42,549	0.252	0.451	1.229	58,005	1,170
S008	54,719	0.284	0.366	1.973	56,103	1,974
P007	71,837	0.180	0.471	2.180	55,948	2,720
S003	62,142	0.525	0.670	7.110	140,550	2,486
S004	42,418	0.167	0.312	3.234	50,147	4,500

MANHOLE CONDITION ASSESSMENT

Based on the City's GIS, there were 1,363 manholes. Of this, 1,170 (86%) were fully inspected. The remainder has been provided to the City for further research into their status. Table 4 summarizes the inspection status by basin. A detailed list of manholes inspected provided in Appendix A. Manholes not inspected during the 2015 SSA will be addressed during the 2016 SSA. NASSCO MACP defect grades were used to generate scores for all manholes. The peak defect grade was utilized to provide an overall score for each manhole. These scores are on a scale of 1 to 5 with 5 being in the worst condition. Manholes with a score of 1, 2, or 3 were entered into the City's CMOM program while rehabilitation recommendations were generated for manholes with a score of 4 or 5. A total of 231 manholes received a score of 4 or 5. The breakdown of manholes in each sub-basin, by score, can be seen in Table 5. A list of each NASSCO MACP score is provided in Appendix B. Figures 3 through 8 outline the distribution of scores for each manhole.

Table 4

MANHOLE INSPECTION STATUS

Sub-Basin	Manholes Inspected	Manholes Not Inspected	Total Manholes
FL01	236	21	257
S009	146	42	188
S008	176	43	219
P007	300	38	338
S003	198	34	232
S004	114	15	129
Total	**1,170**	**193**	**1,363**

Table 5

NASSCO MACP SCORE SUMMARY

Sub-Basin	Not Inspected	NASSCO Score 1	2	3	4	5	Total
FL01	21	100	25	28	38	45	257
S009	42	68	24	18	14	22	188
S008	43	82	15	18	23	38	219
P007	38	122	126	39	11	2	338
S003	34	111	32	20	13	22	232
S004	15	81	29	1	2	1	129
Total	**193**	**564**	**251**	**124**	**101**	**130**	**1,363**

SMOKE TESTING

A total of 301,124 linear feet of sanitary sewer lines were smoke tested in the six sub-basins, 2,626 linear feet and 298,498 linear feet were large diameter and small diameter respectively Table 6 outlines the linear footage per sub-basin. A list of sewer lines smoke tested is provided in Appendix C. During smoke testing 1,664 defects were identified and recorded. Table 7 provides a detailed breakdown of the types and quantity of defects identified per sub-basin. Appendix D contains a list of all smoke testing defects and their location. Figures 9 through 14 show the locations of the smoke testing defects.

Table 6

LINEAR FEET SMOKE TESTED

Sub-Basin	Linear Feet
FL01	64,002
S009	40,472
S008	48,280
P007	71,234
S003	47,620
S004	29,516
Total	**301,124**

Table 7

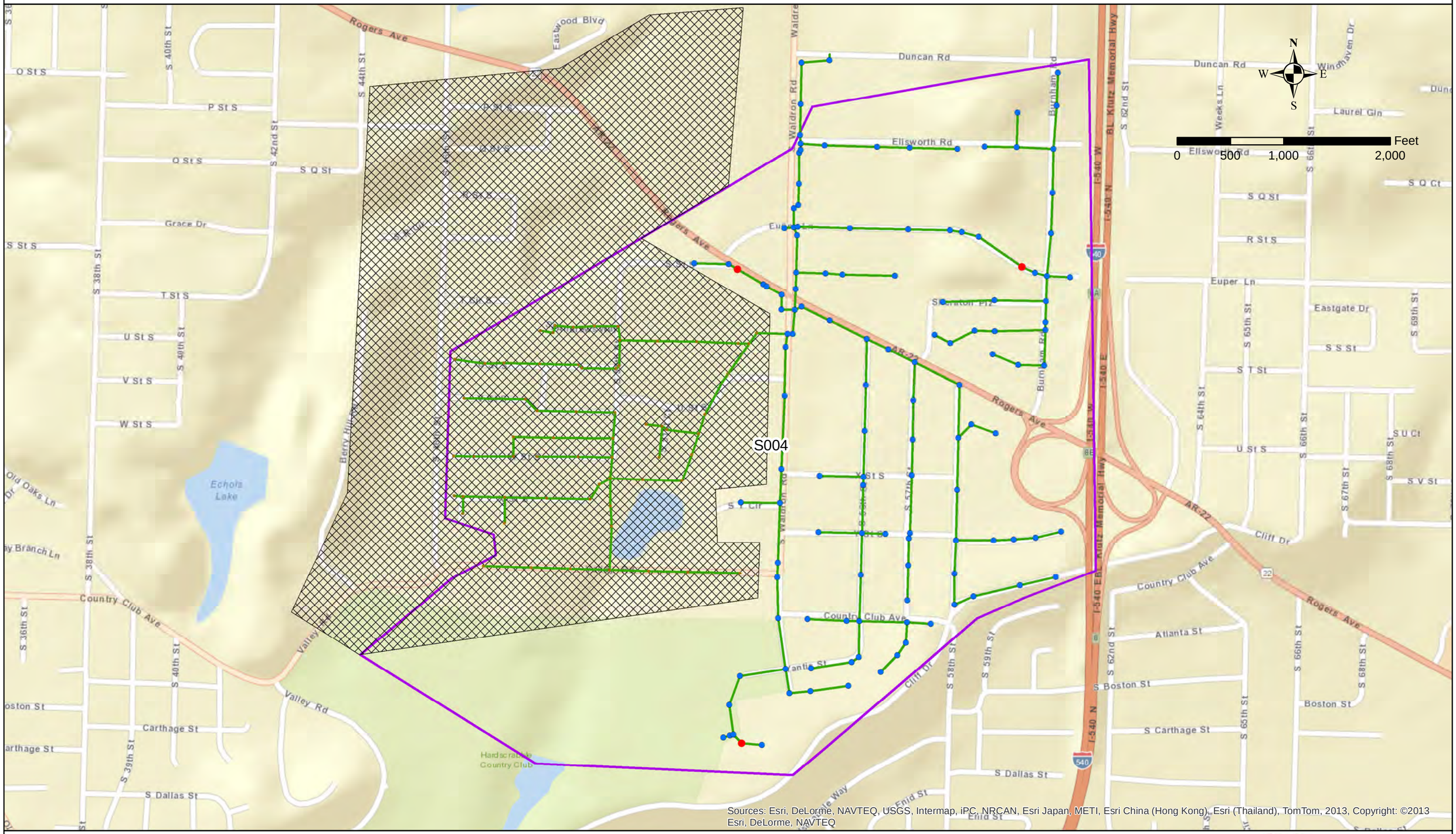
SMOKE TESTING DEFECTS[1/]

Sub-Basin	Cleanouts Public	Cleanouts Private	Service Lines Public	Service Lines Private	Area Storm Drains	Manhole	Downspout	Gravity Sewer Lines	Catch Basins	Storm Ditch	Total
FL01	6	118	6	88	0	44	0	118	8	15	406
S009	7	79	9	43	2	24	0	39	3	31	252
S008	6	99	11	84	4	35	1	33	16	14	309
P007	46	109	10	127	1	40	0	59	13	25	440
S003	7	65	2	18	3	40	0	4	0	8	149
S004	6	20	7	17	1	16	0	29	4	8	108
Total	**78**	**490**	**45**	**377**	**11**	**199**	**1**	**282**	**44**	**101**	**1,664**

1/ Defect Definitions:

- Cleanout, Public = A defect associated with the threaded cap, ferrule or the riser portion of a cleanout located within the City right-of-way (ROW).
- Cleanout, Private = A defect associated with the threaded cap, ferrule or the riser portion of a cleanout located outside of the City right-of-way (ROW).
- Service Lines, Public = Observation or defect associated with the portion of sewer line servicing a structure that is located within the City right-of-way (ROW).
- Service Lines, Private = Observation or defect associated with the portion of sewer line servicing a structure that is located outside of the City right-of-way (ROW).Area Drains = A receptacle designed to collect surface runoff or rainwater from an elevation contour defined watershed area.
- Manhole = Defect associated with a manhole wall, cone and chimney.
- Downspout = A potential defect associated with a pipe installed to drain water from the roof gutters or roof catchment to the storm drain or other means of disposal. The downspout appears connected to the sanitary sewer.
- Gravity Sewer Line = A defect or observation associated with the main sewer line.
- Catch Basin = A structure designed to drain excess rain and ground water from paved streets, parking lots, sidewalks, and roofs. Commonly constructed on a curb of a street.
- Storm Ditch = An open constructed channel designed to carry storm water run-off.

City of Fort Smith, AR



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The Choice for Collection System Solutions

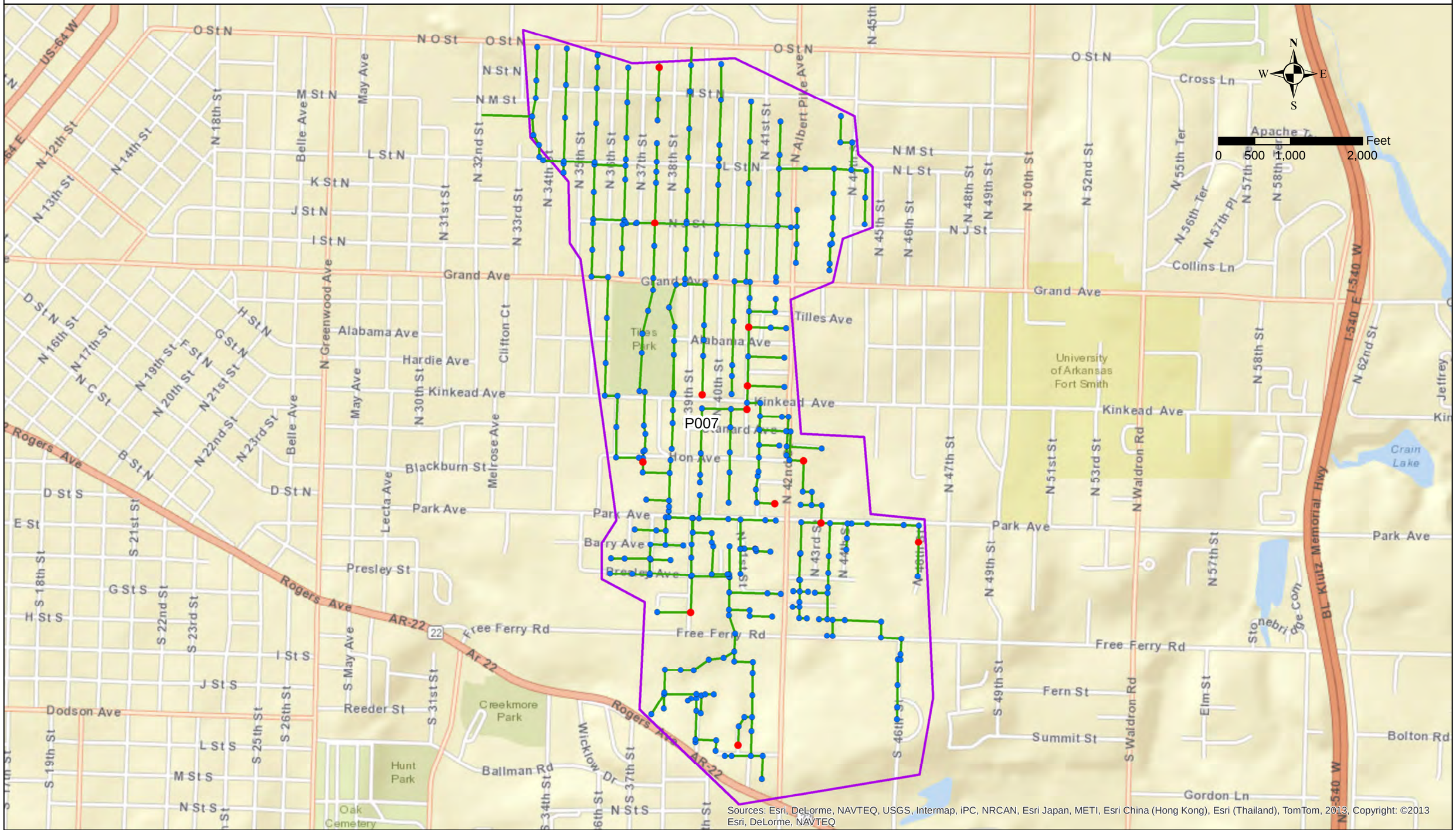
NASSCO Score
- 1, 2, 3
- 4, 5

Manholes
Gravity Main
Basin
Previously Studied

The City of Fort Smith ARKANSAS

Figure 3
MACP Score
Sub-Basin S004

City of Fort Smith, AR



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013, Copyright: ©2013 Esri, DeLorme, NAVTEQ

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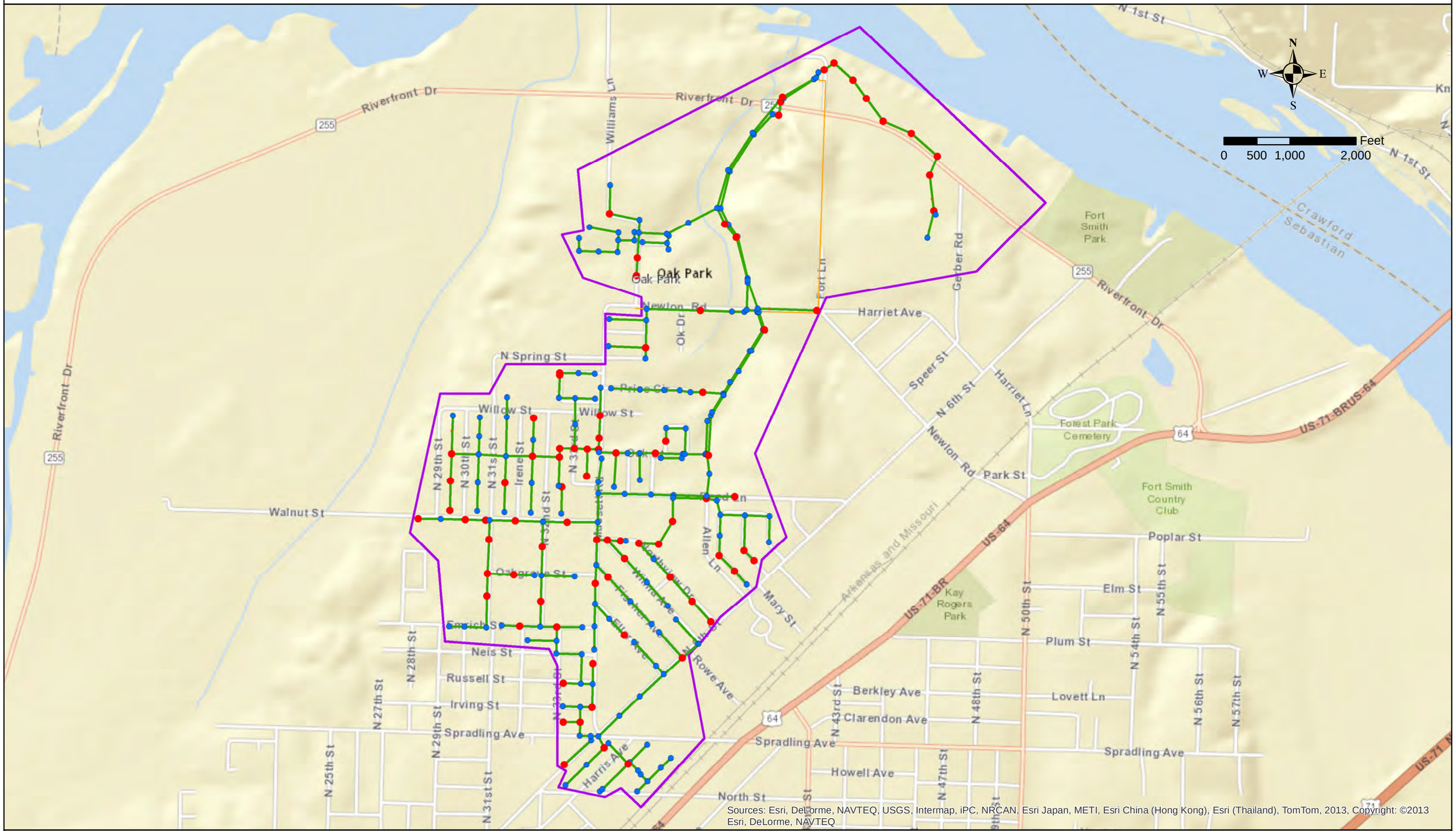
NASSCO Score
- 1, 2, 3
- 4, 5

Manholes
Gravity Main
Basin

The City of Fort Smith ARKANSAS

Figure 4
MACP Score
Sub-Basin P007

City of Fort Smith, AR



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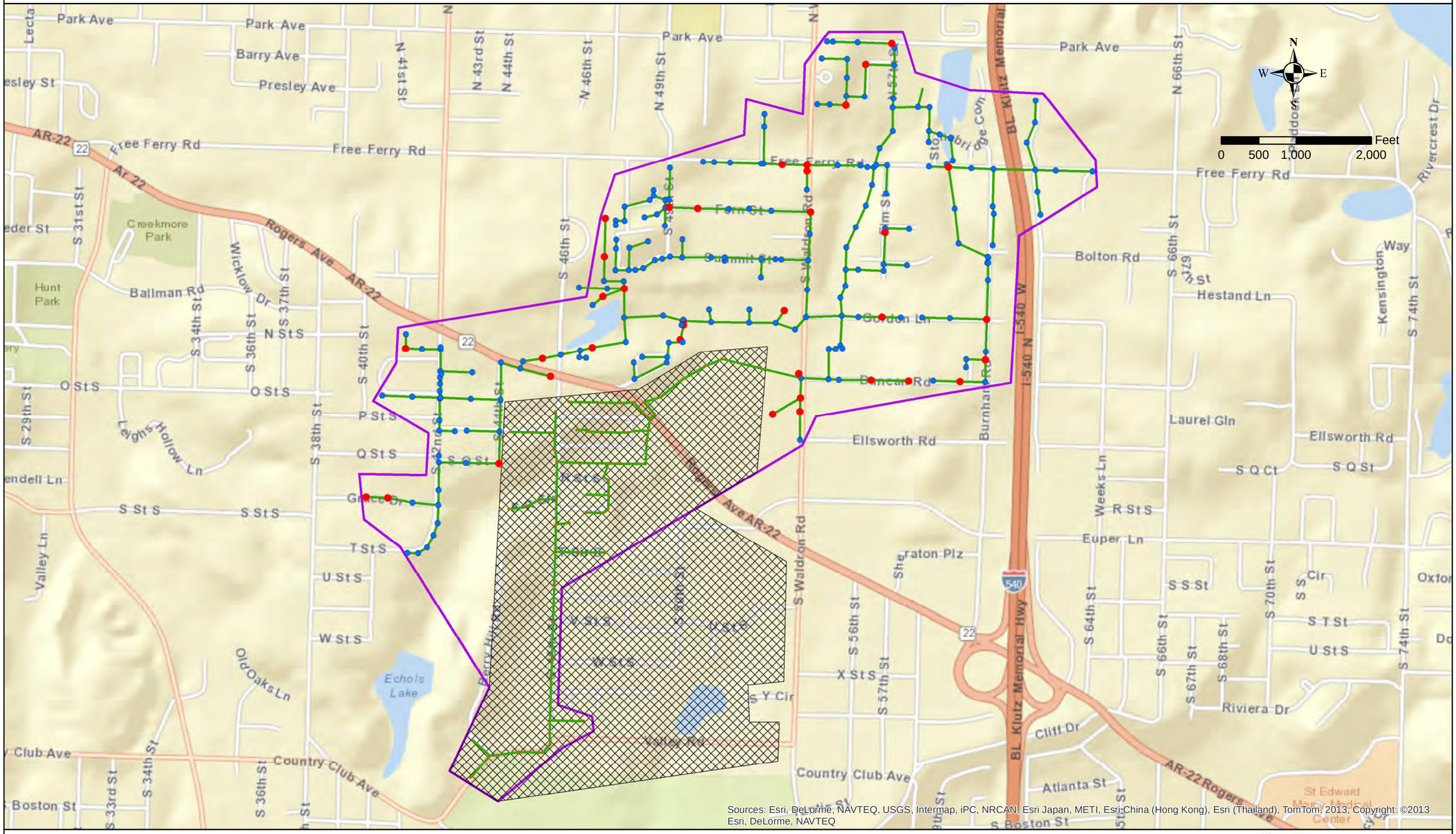
NASSCO Score
- 1, 2, 3
- 4, 5

Manholes
Gravity Main
Force Main
Basin

The City of Fort Smith Arkansas

Figure 5
MACP Score
Sub-Basin FL01

City of Fort Smith, AR



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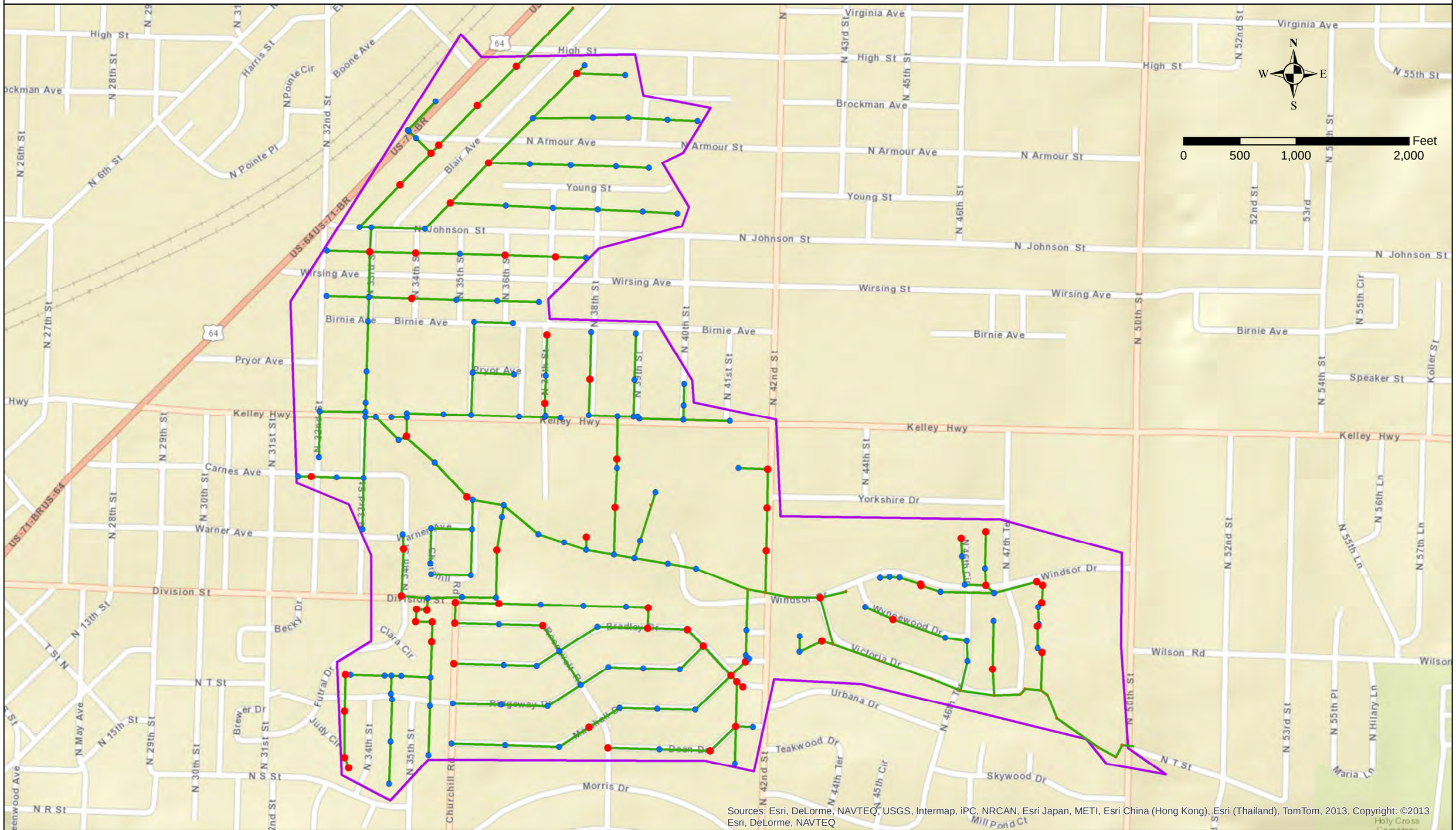
NASSCO Score
- 1, 2, 3
- 4, 5

Manholes
Gravity Main
Basin
Previously Studied

The City of Fort Smith Arkansas

Figure 6
MACP Score
Sub-Basin S003

City of Fort Smith, AR



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013, Copyright: ©2013 Esri, DeLorme, NAVTEQ

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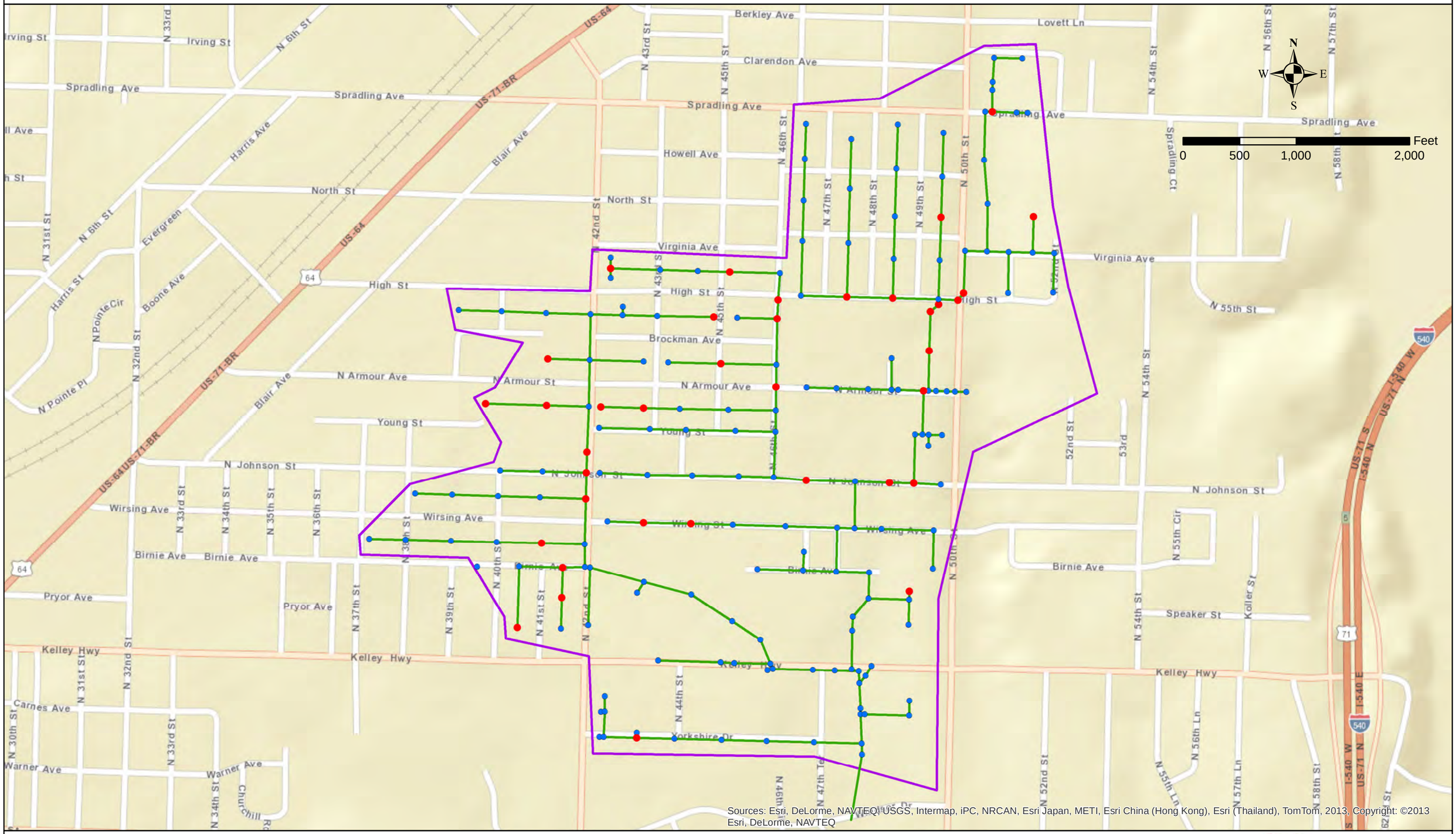
NASSCO Score
- 1, 2, 3
- 4, 5

Manholes
Gravity Main
Basin

The City of Fort Smith Arkansas

Figure 7
MACP Score
Sub-Basin S008

City of Fort Smith, AR



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013, Copyright: ©2013 Esri, DeLorme, NAVTEQ

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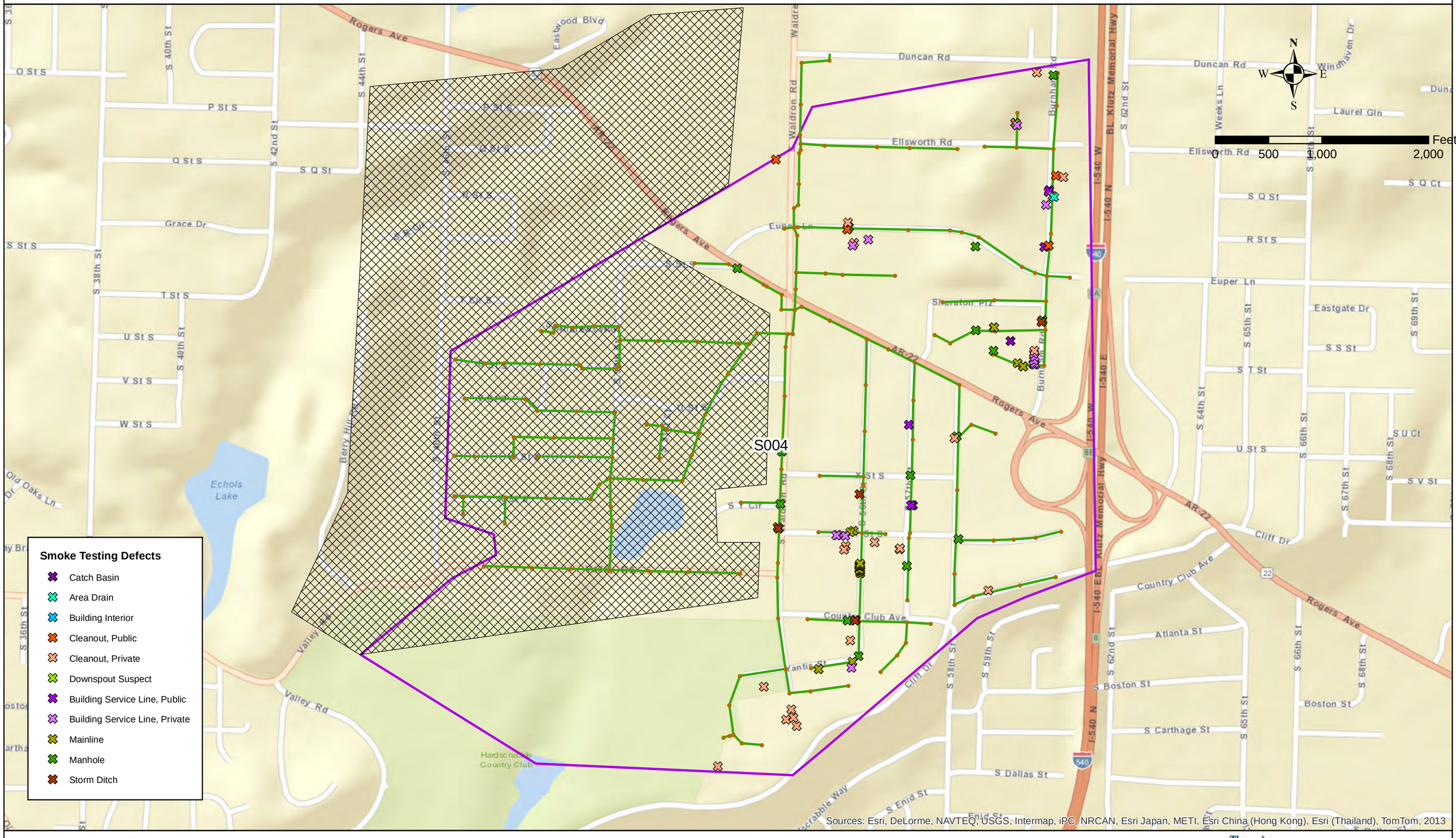
NASSCO Score
- 1, 2, 3
- 4, 5

Manholes
Gravity Main
Basin

The City of Fort Smith Arkansas

Figure 8
MACP Score
Sub-Basin S009

City of Fort Smith, AR



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

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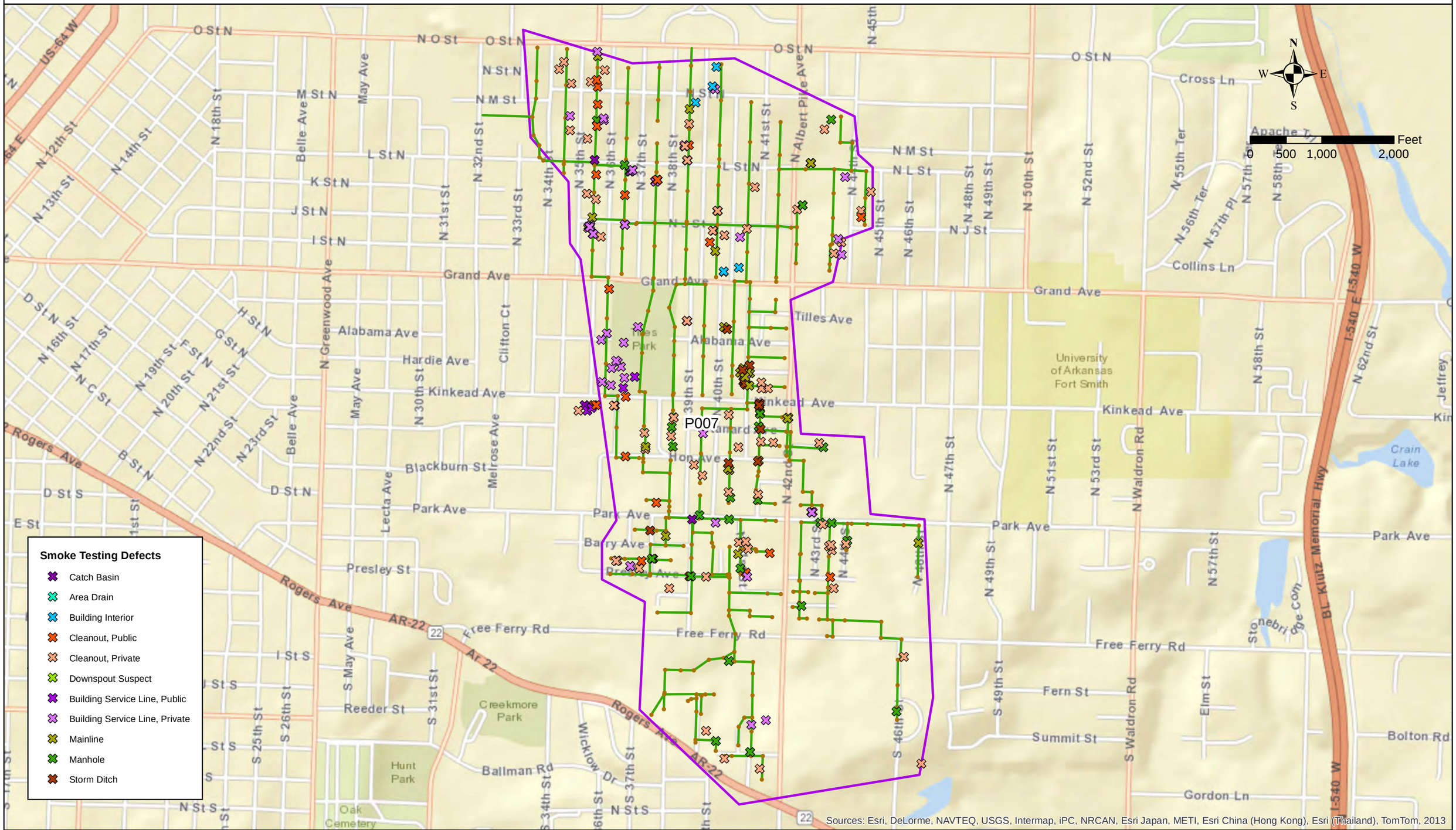
Manholes | Gravity Main | Previously Studied | Basin Boundary

The City of Fort Smith Arkansas

Figure 9
Smoke Testing Defects
Sub-Basin S004

City of Fort Smith, AR



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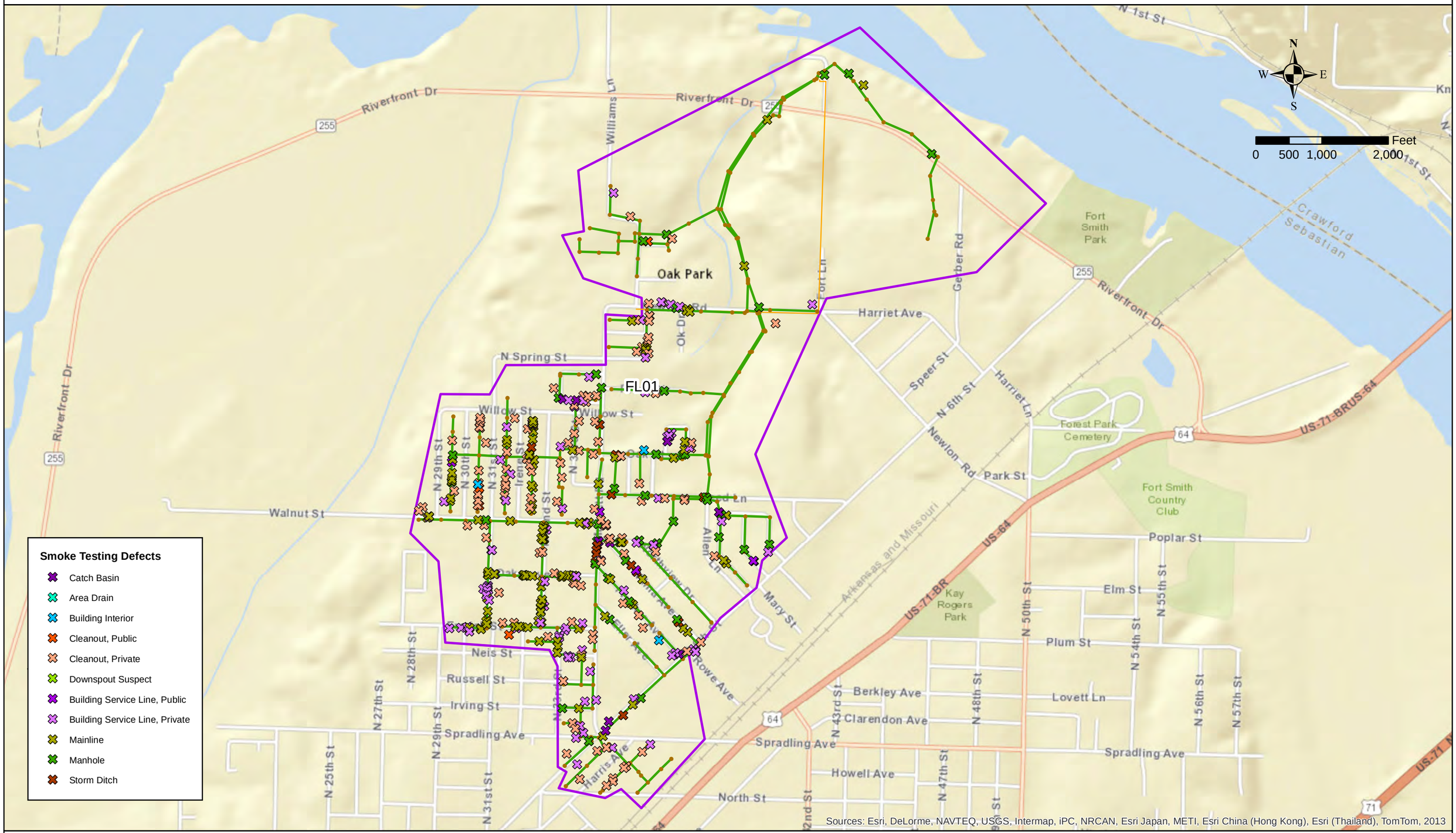
Manholes | Gravity Main | Basin Boundary

The City of Fort Smith ARKANSAS

Figure 10
Smoke Testing Defects
Sub-Basin P007

City of Fort Smith, AR



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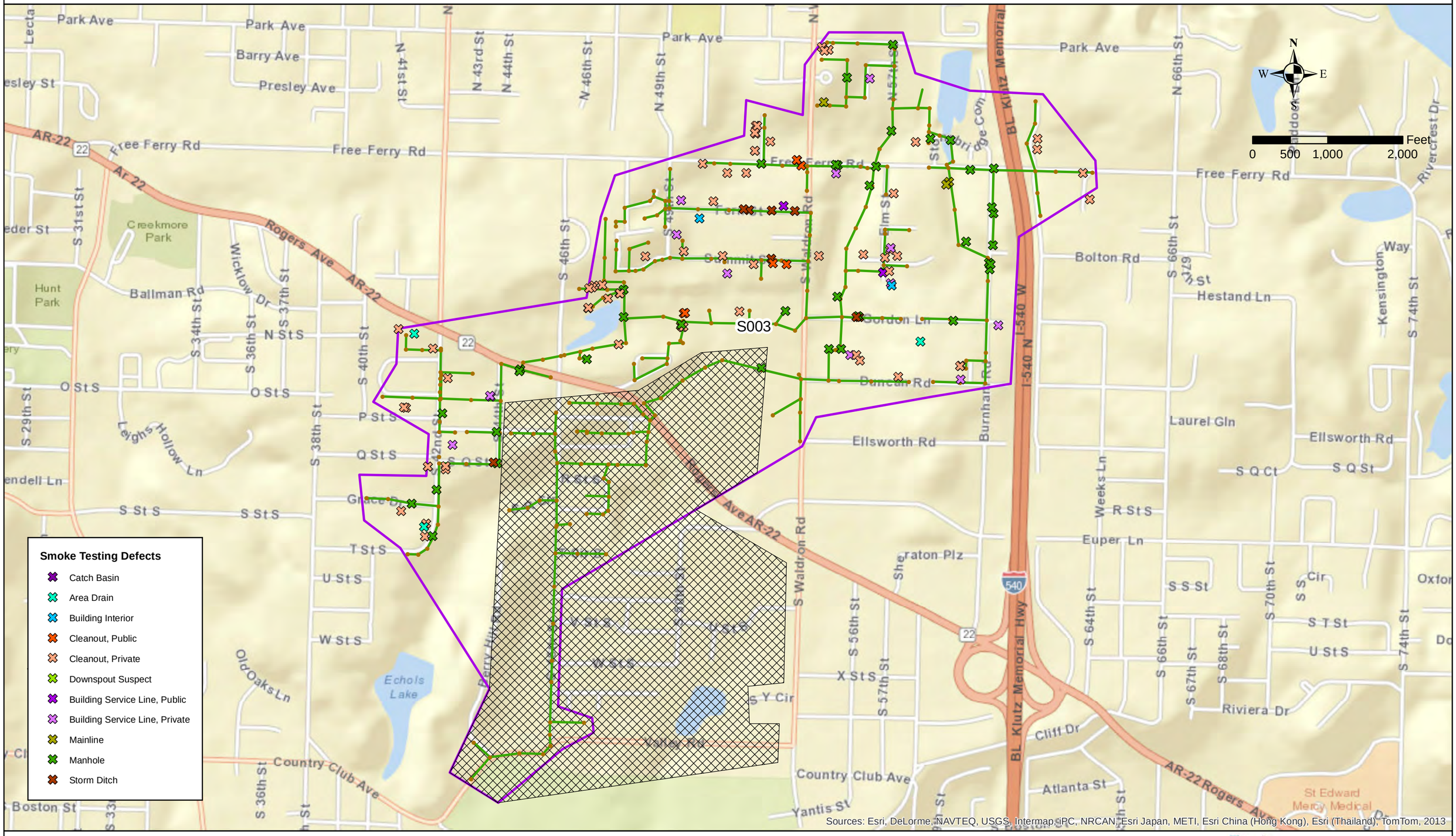
Manholes | Gravity Main | Force Main | Basin Boundary

The City of Fort Smith Arkansas

Figure 11
Smoke Testing Defects
Sub-Basin FL01

City of Fort Smith, AR



Smoke Testing Defects

- Catch Basin
- Area Drain
- Building Interior
- Cleanout, Public
- Cleanout, Private
- Downspout Suspect
- Building Service Line, Public
- Building Service Line, Private
- Mainline
- Manhole
- Storm Ditch

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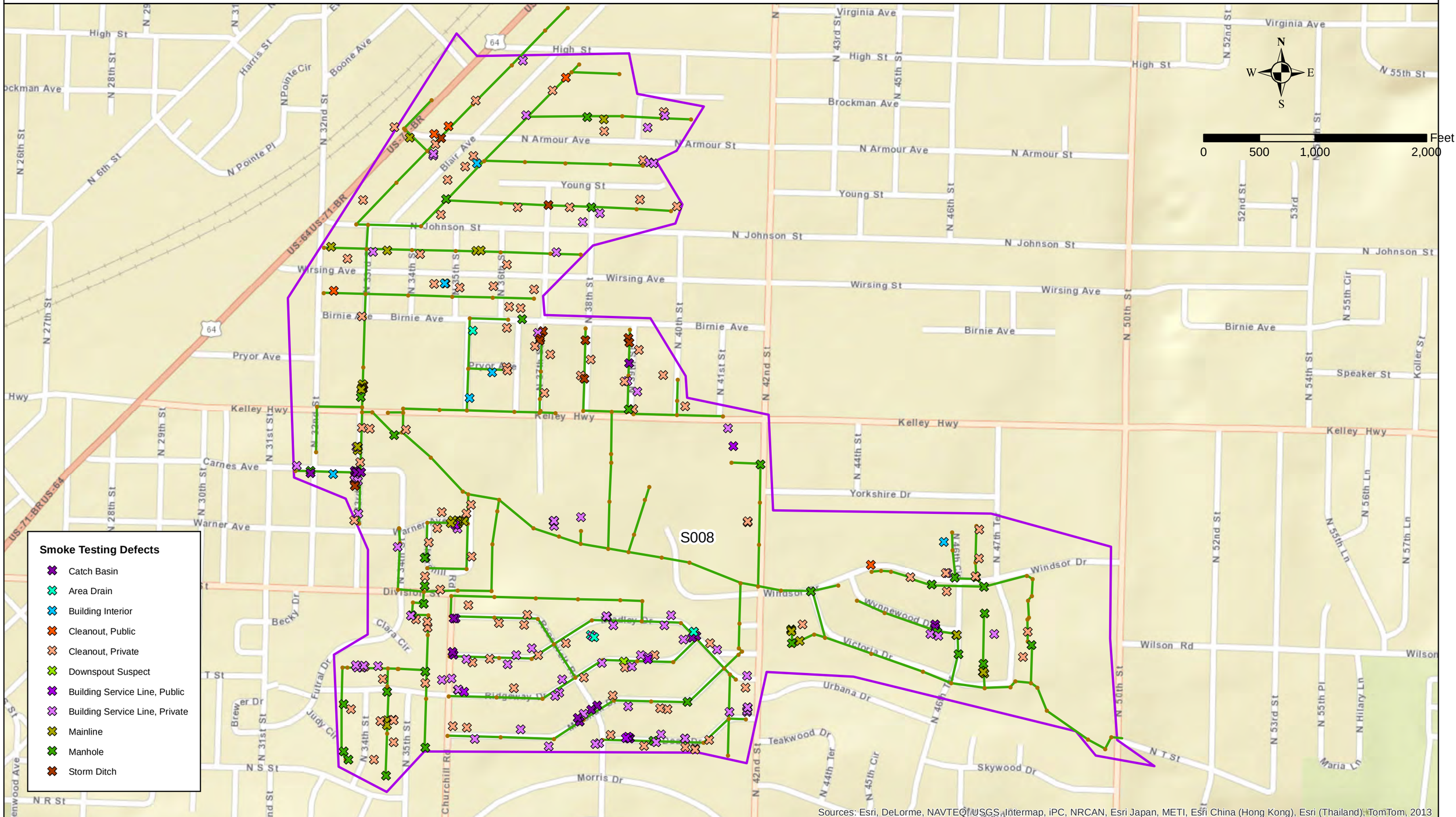
Manholes | Gravity Main | Previously Studied | Basin Boundary

The City of Fort Smith Arkansas

Figure 12
Smoke Testing Defects
Sub-Basin S003

City of Fort Smith, AR



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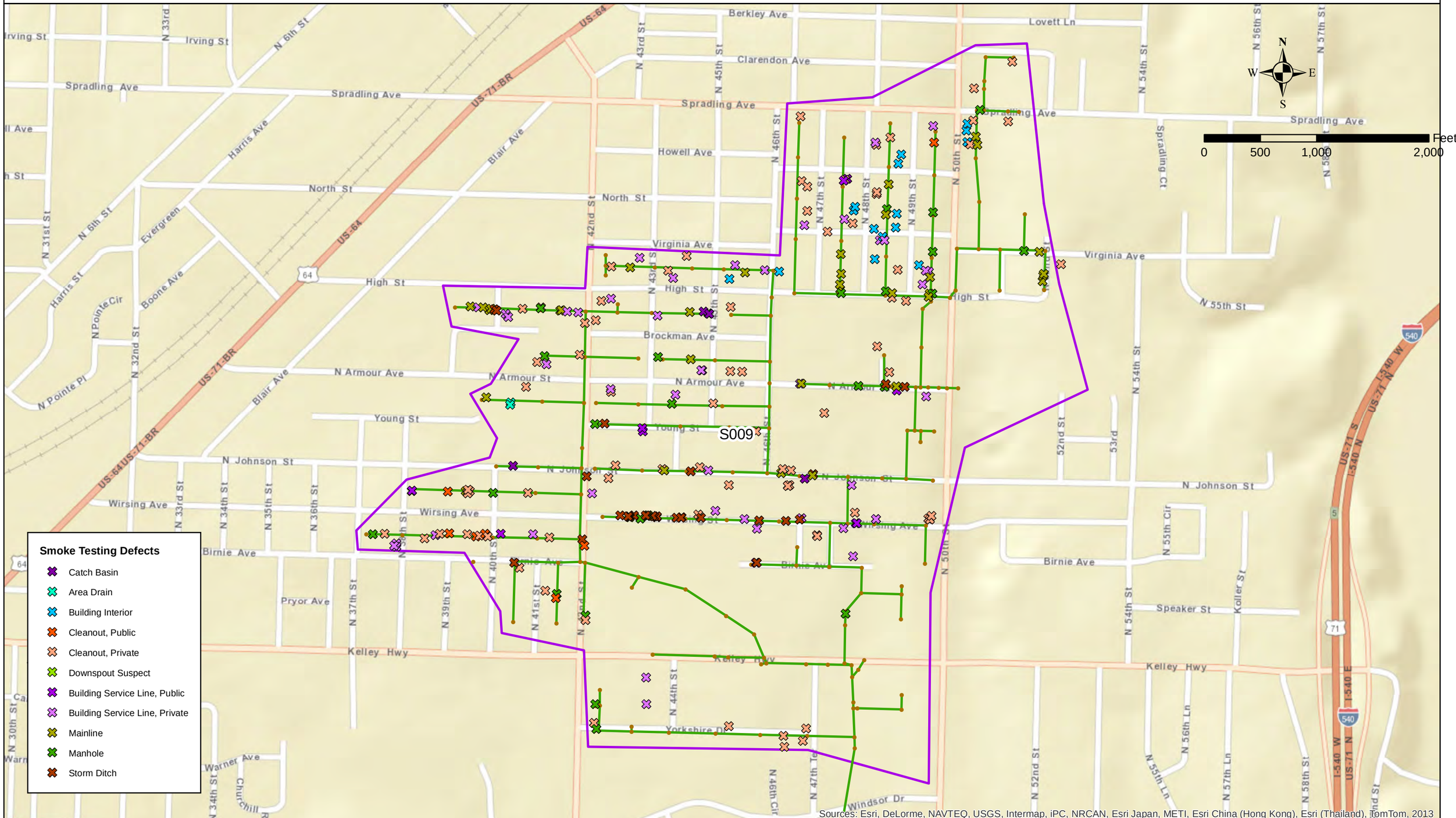
Manholes | Gravity Main | Basin Boundary

The City of Fort Smith ARKANSAS

Figure 13
Smoke Testing Defects
Sub-Basin S008

City of Fort Smith, AR



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Manholes | Gravity Main | Basin Boundary

The City of Fort Smith Arkansas

Figure 14
Smoke Testing Defects
Sub-Basin S009

CLEANING AND TELEVISING OF SANITARY SEWERS

All non-plastic sanitary lines, along with plastic lines installed prior to 1995, were cleaned and televised. This translated to 250,019 linear feet (47.35 miles), 4,811 linear feet and 245,208 linear feet were large and small diameter respectively. Figure 15 depicts all lines which were cleaned and televised and a detailed list is provided in Appendix E. NASSCO PACP defect grades were used to generate scores for all sewer lines. The peak defect grade was utilized to provide an overall score for each sewer line. Scores were on a scale of 1 to 5 with a score of 5 assigned to the sewer lines in the worst condition. A total of 126,688 linear feet from the 2015 SSA received a score of 4 or 5. The total linear footage of each can be seen in Table 8. A list of the NASSCO PACP score for every sewer line is provided in Appendix F. Figures 16 to 21 show the distribution of scores for every sewer line.

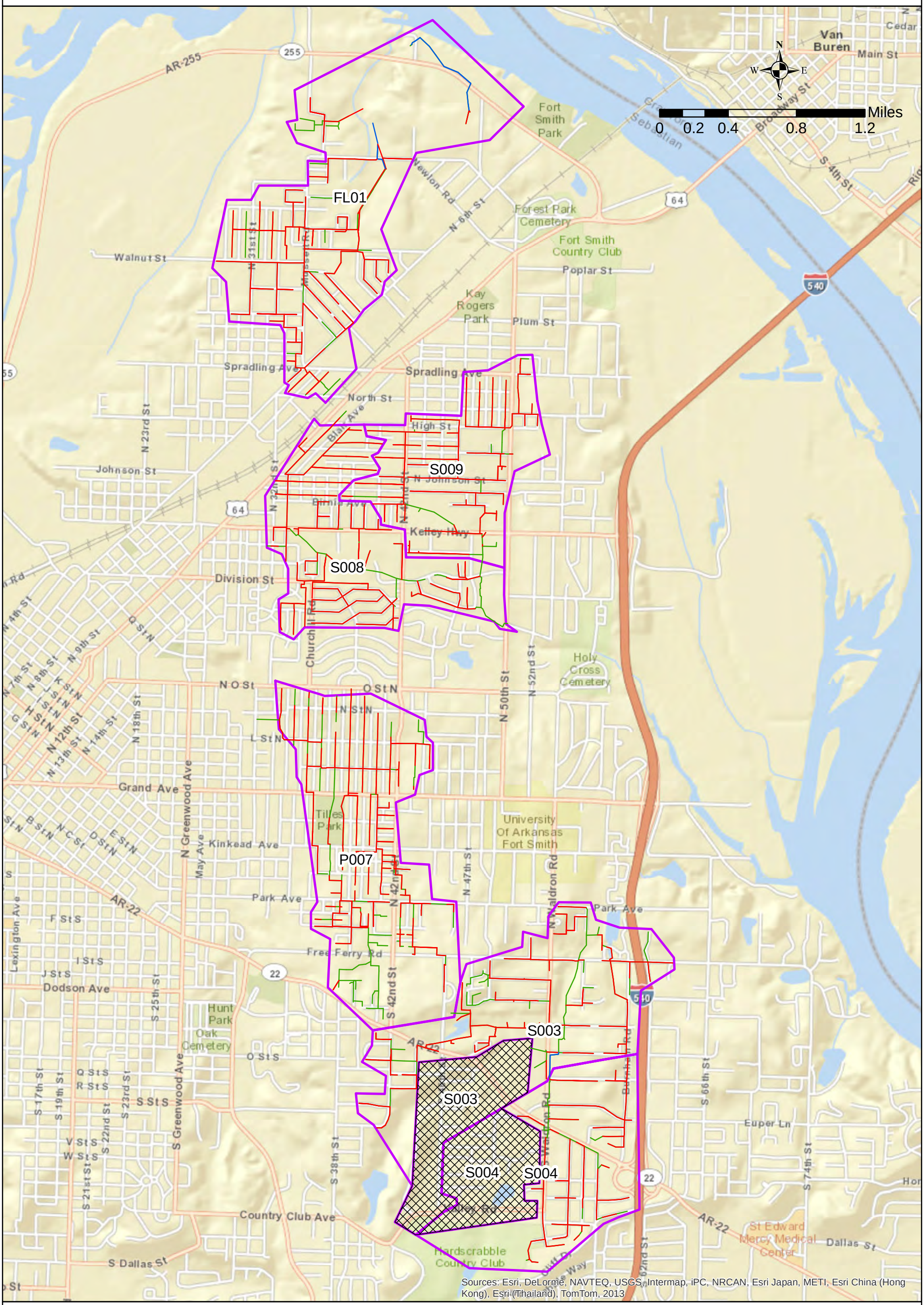
Table 8

NASSCO PACP SCORE SUMMARY

Sub-Basin	NASSCO Score (linear feet) 0[1/]	1	2	3	4	5	Total
FL01	1,617	1,378	5,058	18,917	11,763	12,060	50,794
S009	897	1,102	5,079	8,269	7,087	16,886	39,321
S008	636	3,967	11,330	13,562	8,186	9,783	47,464
P007	6,264	2,857	3,384	8,455	11,196	21,020	53,175
S003	2,354	929	5,138	6,319	10,836	9,017	34,593
S004	2,329	146	3,752	9,590	4,283	4,571	24,672
Total	**14,098**	**10,380**	**33,742**	**65,111**	**53,351**	**73,337**	**250,019**

1/ No defects recorded during inspection.

City of Fort Smith, AR



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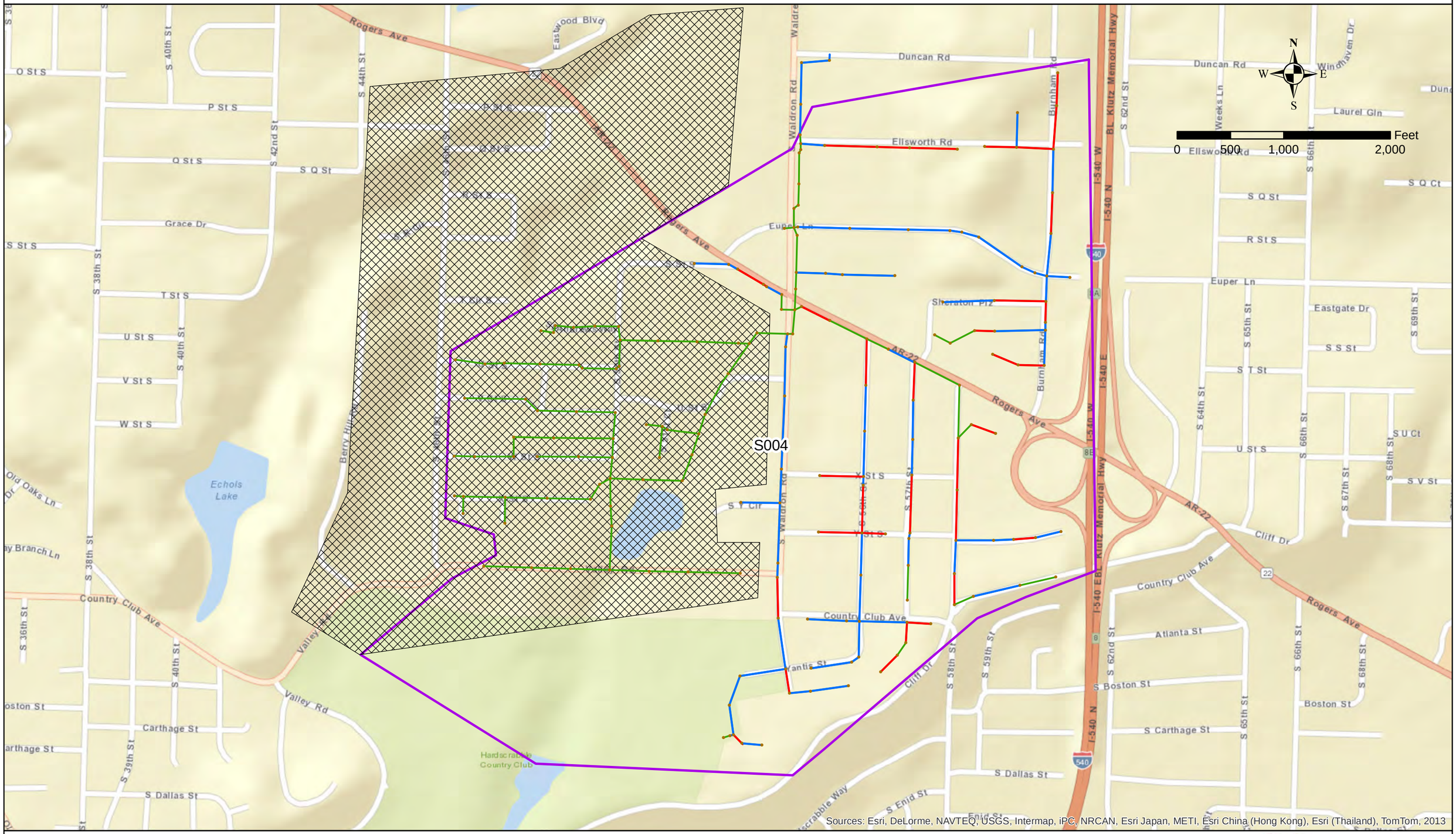
Cleaned & Televised - Small Diameter
Cleaned & Televisied - Large Diameter
Plastic Lines - Post 1995
Basin Boundaries
Previously Studied

Fort Smith ARKANSAS

Figure 15
Sewer Lines Cleaned and Televised Study Area

City of Fort Smith, AR



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The Choice for Collection System Solutions

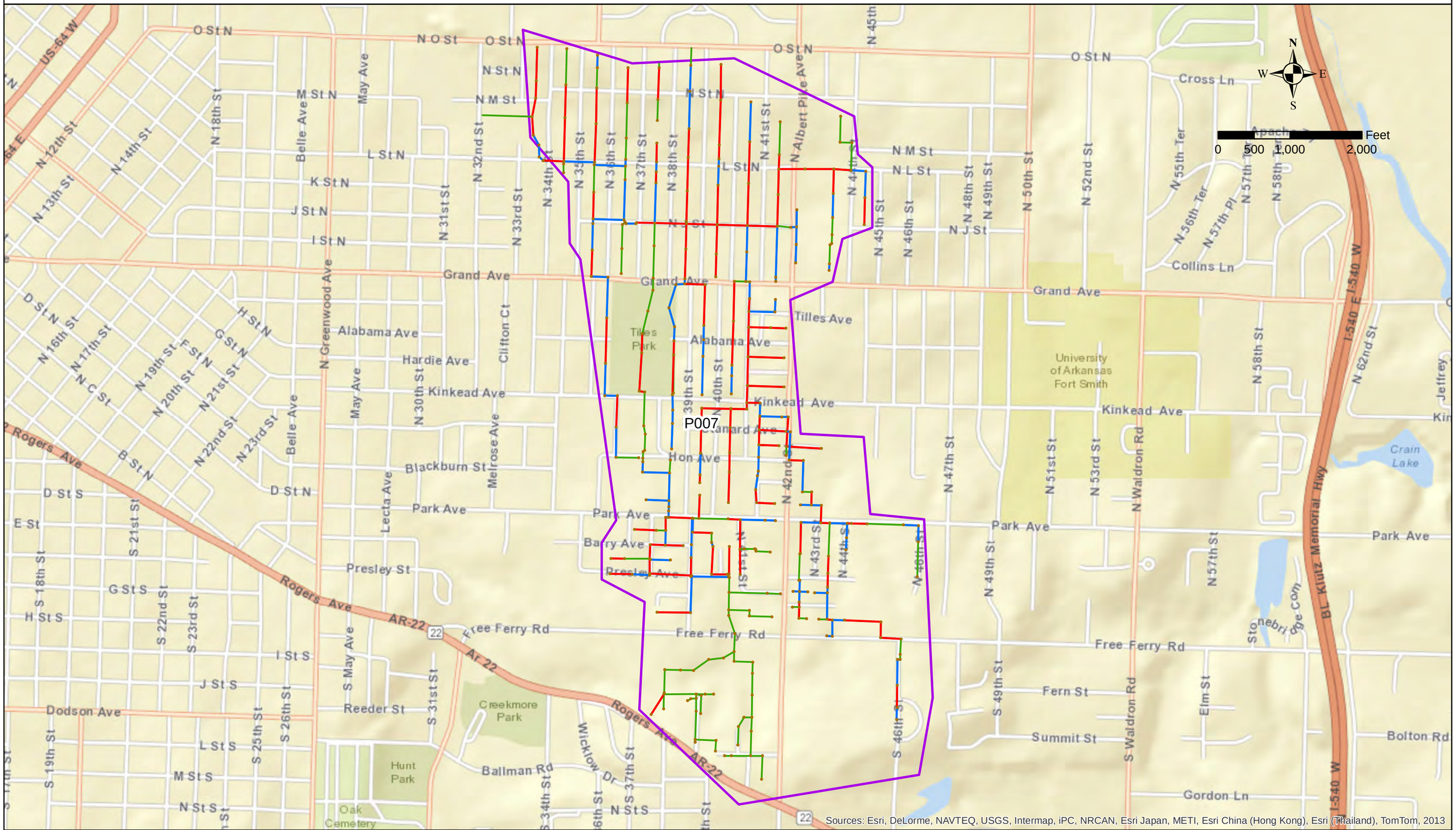
NASSCO Score
- 1, 2, 3
- 4, 5

Manholes
Plastic - Post 1995
Previously Studied
Basin Boundary

The City of Fort Smith Arkansas

Figure 16
PACP Score
Sub-Basin S004

City of Fort Smith, AR



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

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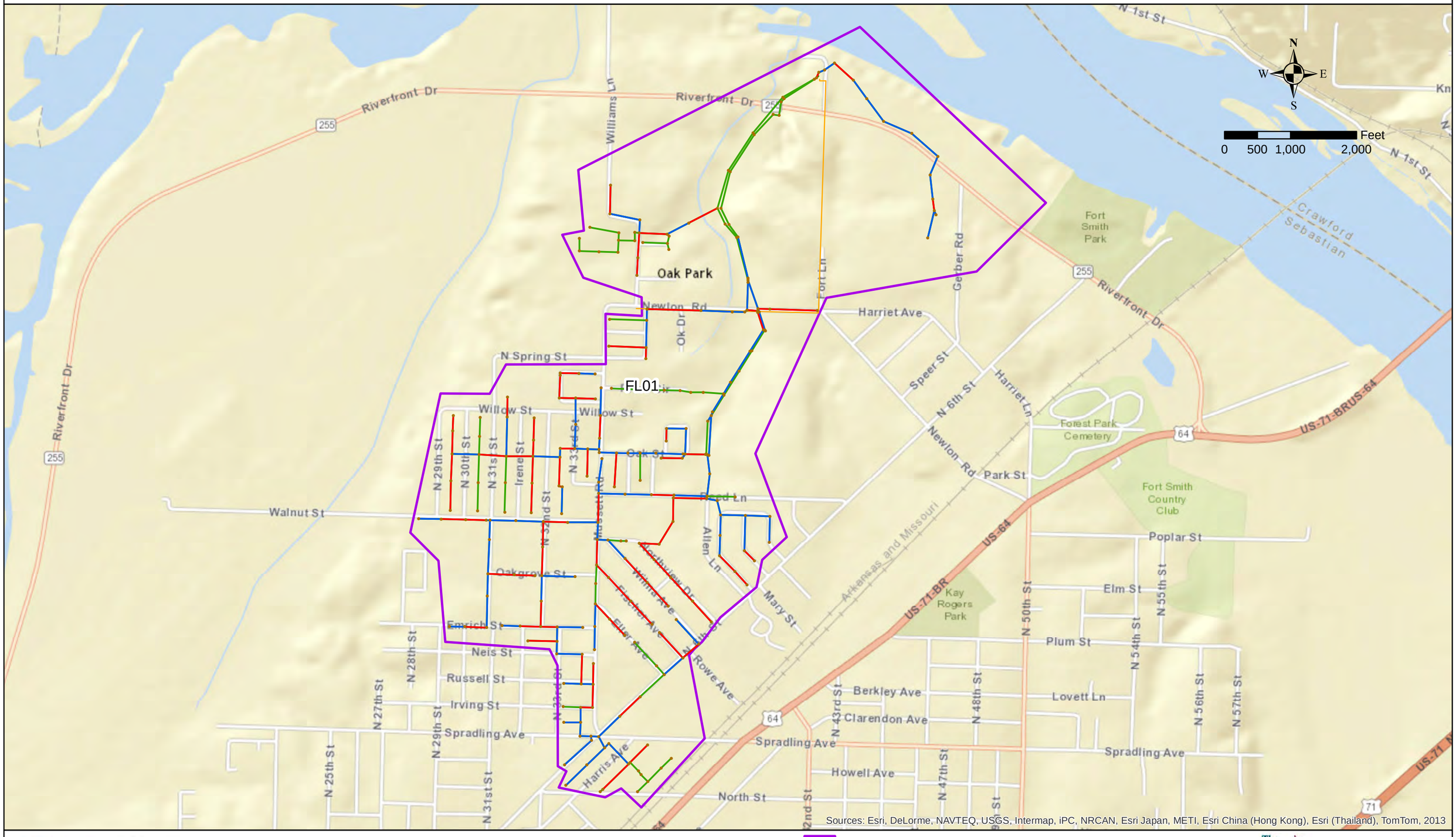
NASSCO Score

- 1, 2, 3
- 4, 5
- Manholes
- Plastic - Post 1995
- Basin Boundary

The City of Fort Smith ARKANSAS

Figure 17
PACP Score
Sub-Basin P007

City of Fort Smith, AR



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

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The Choice for Collection System Solutions

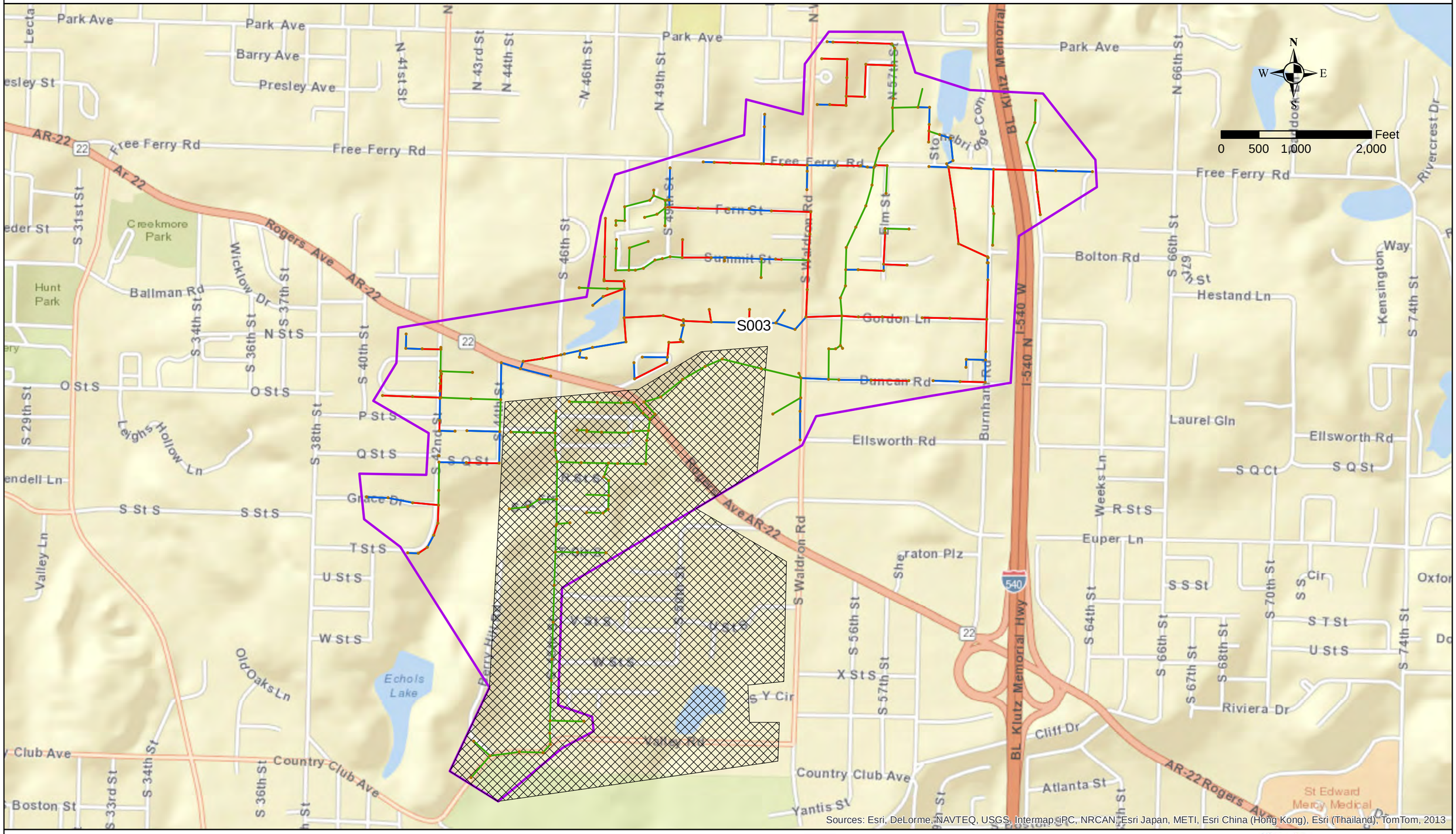
NASSCO Score
- 1, 2, 3
- 4, 5

- Manholes
- Plastic - Post 1995
- Force Main
- Basin Boundary

The City of Fort Smith Arkansas

Figure 18
PACP Score
Sub-Basin FL01

City of Fort Smith, AR



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

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The Choice for Collection System Solutions

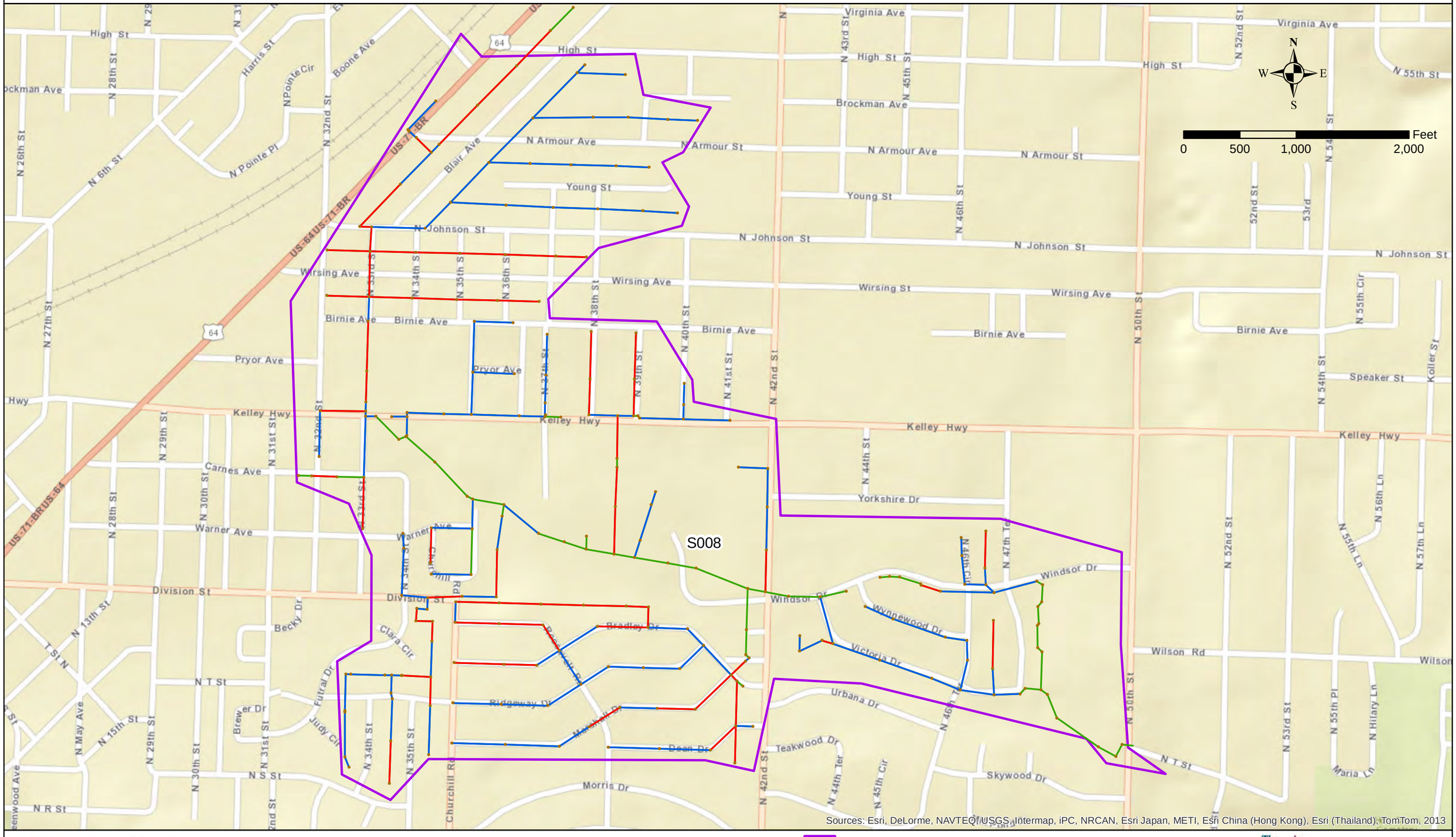
NASSCO Score
- 1, 2, 3
- 4, 5

- Manholes
- Plastic - Post 1995
- Previously Studied
- Basin Boundary

The City of Fort Smith Arkansas

Figure 19
PACP Score
Sub-Basin S003

City of Fort Smith, AR



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The Choice for Collection System Solutions

NASSCO Score

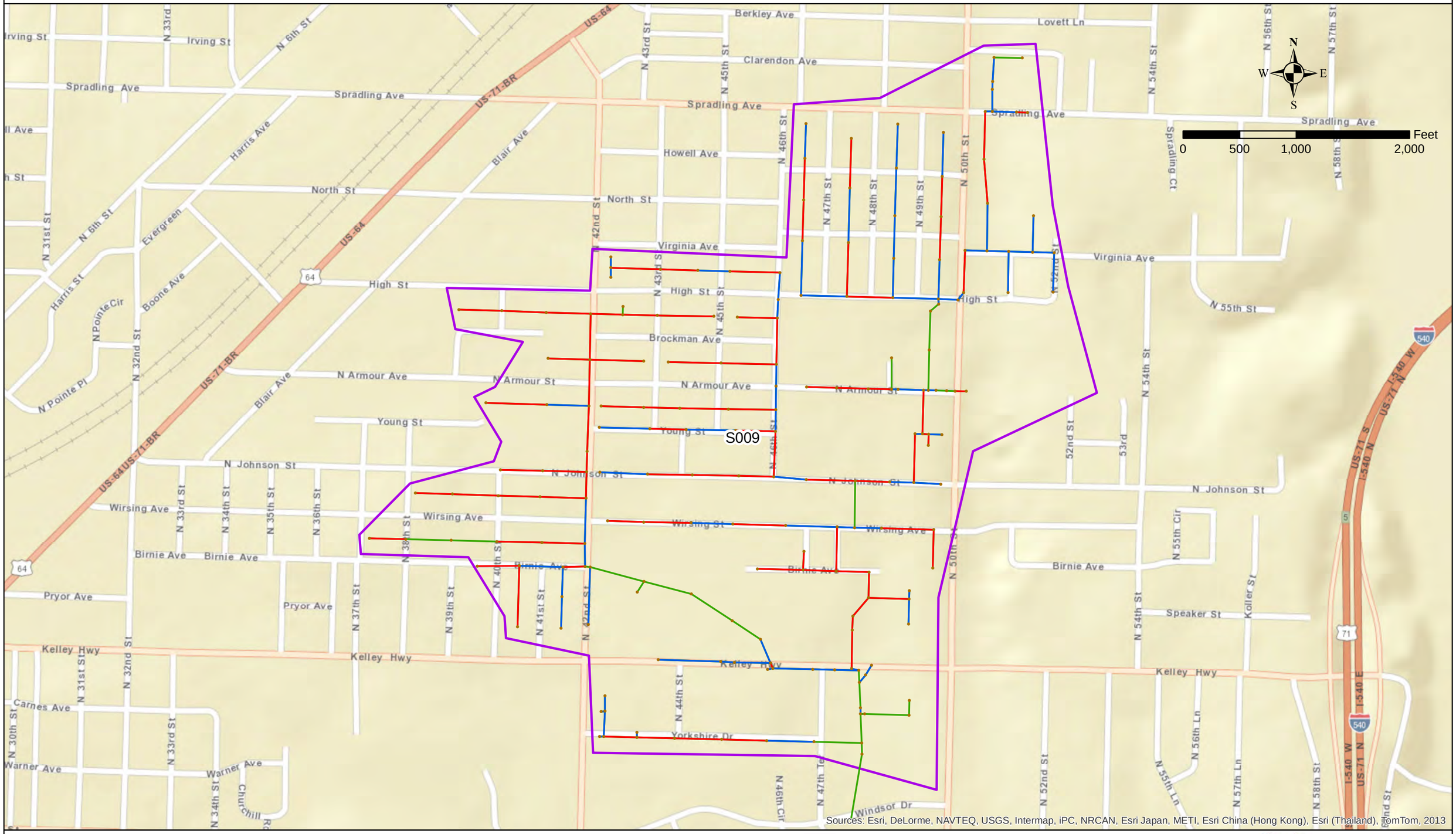
- 1, 2, 3
- 4, 5

- Manholes
- Plastic - Post 1995
- Basin Boundary

The City of Fort Smith ARKANSAS

Figure 20
PACP Score
Sub-Basin S008

City of Fort Smith, AR



rjngroup
The Choice for Collection System Solutions

NASSCO Score
- 1, 2, 3
- 4, 5

Manholes
Plastic - Post 1995
Basin Boundary

The City of Fort Smith ARKANSAS

Figure 21
PACP Score
Sub-Basin S009

DYED WATER FLOODING

A total of 71 dye tests were performed within 16,956 linear feet of small diameter pipe in the six sub-basins during 2014 and 2015. Smoke testing did not identify any large diameter pipe to be dye tested Defects dye tested consisted of potential gravity sewer lines and potential cross-connections with the storm water system. Potential gravity sewer line leaks on line segments that had a NASSCO score of 4 or 5 from the CCTV condition assessment were not tested. A breakdown of positive and negative tests per sub-basin can be found in Table 9. Several lines had multiple tests conducted at various locations. Table 9 contains the number of tests, not the number of line segments tested. Four dye tests could not be performed, two due to defective fire hydrants and one due to an odd shaped storm pipe that could not be plugged. An additional test was not performed on line segment S008-0720:S008-2090 due to the fact that the City repaired the defect prior to dye testing activities. Results from dye testing are shown in Table 10.

Table 9

DYE TEST RESULTS SUMMARY

Sub-Basin	Positive[1/]	Negative[1/]	Could Not Test
FL01	12	0	0
S009	4	2	0
S008	10	4	4
P007	21	4	0
S003	1	1	0
S004	6	6	0
Total	**54**	**17**	**4**

1/ 'Positive' = Dye observed at Downstream manhole, 'Negative' = No dye observed at Downstream manhole.

Table 10

DYE TEST RESULTS SUMMARY

Type of Test	Positive[1/]	Negative[1/]	Could Not Test
Catch Basin	13	4	3
Gravity Sewer Line	20	8	1
Storm Ditch	19	5	0
Storm Inlet	2	0	0
Total	**54**	**17**	**4**

1/ 'Positive' = Dye observed at Downstream manhole, 'Negative' = No dye observed at Downstream manhole.

Table 11 (cont.)

DYE TEST RESULTS

Sub-Basin	Upstream Manhole Number	Downstream Manhole Number	Type of Test	Test Result
2014				
P007	P007-0150	P007-0080	Catch Basin	Positive
P007	P007-0160	P007-0150	Catch Basin Gravity	Positive
P007	P007-0200	P007-0155	Sewer Line	Positive
P007	P007-0260	P007-0250	Storm Ditch	Positive
P007	P007-0280	P007-0270	Storm Inlet	Positive
P007	P007-0280	P007-0270	Storm Inlet Gravity	Positive
P007	P007-0470	P007-0465	Sewer Line	Positive
P007	P007-0470	P007-0465	Catch Basin	Negative
P007	P007-0585	P007-0580	Storm Ditch	Positive
P007	P007-0700	P007-0660	Storm Ditch Gravity	Negative
P007	P007-1320	P007-1310	Sewer Line Gravity	Positive
P007	P007-1380	P007-1370	Sewer Line	Positive
P007	P007-1730	P007-1710	Storm Ditch	Positive
P007	P007-1730	P007-1710	Storm Ditch Gravity	Negative
P007	P007-1790	P007-1780	Sewer Line	Positive
P007	P007-1880	P007-1870	Storm Ditch	Positive
P007	P007-1890	P007-1880	Storm Ditch	Positive
P007	P007-1910	P007-1900	Storm Ditch Gravity	Positive
P007	P007-2307	P007-2304	Sewer Line Gravity	Negative
P007	P007-2325	P007-2320	Sewer Line	Positive
P007	P007-2325	P007-2320	Storm Ditch	Positive
P007	P007-2325	P007-2320	Storm Ditch Gravity	Positive
P007	P007-2350	P007-2325	Sewer Line	Positive
P007	P007-2500	P007-0730	Catch Basin	Positive
P007	P007-3340	P007-0630	Storm Ditch Gravity	Positive
S004	S004-0050	S004-0045	Sewer Line	Negative
S004	S004-0050	S004-0045	Catch Basin	Negative
S004	S004-0310	S004-0260	Storm Ditch Gravity	Positive
S004	S004-0330	S004-0320	Sewer Line	Positive

Table 11 (cont.)

DYE TEST RESULTS

Sub-Basin	Upstream Manhole Number	Downstream Manhole Number	Type of Test	Test Result
S004	S004-0330	S004-0320	Storm Ditch	Positive
S004	S004-0350	S004-0312	Catch Basin	Positive
S004	S004-0350	S004-0312	Catch Basin	Positive
S004	S004-0500	S004-0480	Storm Ditch	Negative
S004	S004-1210	S004-1190	Gravity Sewer Line	Positive
S004	S004-1220	S004-1190	Storm Ditch	Negative
S004	S004-1240	S004-1230	Storm Ditch	Negative
S004	S004-1280	S004-1270	Gravity Sewer Line	Negative
2015				
FL01	FL01-0320	FL01-0310	Storm Ditch	Positive
FL01	FL01-0350	FL01-0340	Gravity Sewer Line	Positive
FL01	FL01-0570	FL01-0570A	Storm Ditch	Positive
FL01	FL01-0640	FL01-0630	Catch Basin	Positive
FL01	FL01-0650	FL01-0630	Catch Basin	Positive
FL01	FL01-0770	FL01-0770A	Gravity Sewer Line	Positive
FL01	FL01-0770A	FL01-0760	Storm Ditch	Positive
FL01	FL01-0950	FL01-0940	Catch Basin	Positive
FL01	FL01-1180	FL01-1170	Gravity Sewer Line	Positive
FL01	FL01-1360	FL01-1190	Gravity Sewer Line	Positive
FL01	FL01-1390	FL01-1380	Storm Ditch	Positive
FL01	FL01-2480	FL01-0540	Storm Ditch	Positive
S009	S009-0240	S009-0230	Storm Ditch	Positive
S009	S009-0880	S009-0870	Gravity Sewer Line	Positive
S009	S009-1480	S009-1470	Catch Basin	Negative
S009	S009-1520	S009-1510	Gravity Sewer Line	Positive
S009	S009-1585	S009-1580	Gravity Sewer Line	Negative
S009	S009-1585	S009-1580	Storm Ditch	Positive
S008	S008-0510	S008-0500	Gravity Sewer Line	Negative

Table 11 (cont.)

DYE TEST RESULTS

Sub-Basin	Upstream Manhole Number	Downstream Manhole Number	Type of Test	Test Result
S008	S008-0530	S008-0520	Catch Basin	Could not Test - Defective fire hydrant
S008	S008-0590	S008-0580	Gravity Sewer Line	Positive
S008	S008-0600	S008-0590	Gravity Sewer Line	Positive
S008	S008-0720	S008-0710	Catch Basin	Could not Test - Unable to plug storm line
S008	S008-0730	S008-0720	Catch Basin	Could not Test - Defective fire hydrant
S008	S008-0840	S008-0760	Catch Basin	Positive
S008	S008-0970	S008-0960	Catch Basin	Negative
S008	S008-0990	S008-0930	Catch Basin	Positive
S008	S008-1140	S008-1135	Catch Basin	Positive
S008	S008-1610	S008-1600	Gravity Sewer Line	Negative
S008	S008-1610	S008-1600	Gravity Sewer Line	Negative
S008	S008-2110	S008-2090	Gravity Sewer Line	Could not Test - Repaired by City
S008	S008-2130	S008-2120	Gravity Sewer Line	Positive
S008	S008-2430	S008-2420	Gravity Sewer Line	Positive
S008	S008-2510	S008-2500	Storm Ditch	Positive
S008	S008-2530	S008-2520	Catch Basin	Positive
S008	S008-EOL	S008-0960	Catch Basin	Positive
S003	S003-0820	S003-0810	Gravity Sewer Line	Positive
S003	S003-3650	S003-3640	Gravity Sewer Line	Negative

RESULTS SUMMARY

The sanitary sewer assessment conducted during the 2015 SSA included the study of 1,363 manholes, smoke testing 301,124 linear feet of sanitary sewer line, cleaning and televising 250,019 linear feet of sanitary sewer line, and performing 71 dye tests in the study area. Table 11 summarizes the number of manholes and linear feet of sewer line that had a NASSCO grade 4 or 5 broken down by sub-basin.

Table 12

NASSCO SCORE 4 & 5 SUMMARY

Sub-Basin	Manholes	Sewer Lines (linear feet)
FL01	83	23,823
S009	36	23,973
S008	61	17,969
P007	13	32,216
S003	35	19,853
S004	3	8,854
Total	**231**	**126,688**

APPENDICES

APPENDIX A

MANHOLE INSPECTION STATUS

rjngroup
The Choice for Collection System Solutions

Manhole Inspection Status

The City of Fort Smith Arkansas

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S004-0010	Level 2	Descent Inspection	
S004-0012	Level 2	Descent Inspection	
S004-0014	Level 2	Descent Inspection	
S004-0016	Level 2	Descent Inspection	
S004-0018	Level 2	Descent Inspection	
S004-0020	Level 2	Descent Inspection	
S004-0022	Level 2	Descent Inspection	
S004-0024	Level 2	Descent Inspection	
S004-0026	Level 2	Descent Inspection	
S004-0028	Level 2	Descent Inspection	
S004-0030	Level 2	Descent Inspection	
S004-0032	Level 2	No Access	MH located at intersection of Waldron Rd and Euper Ln, high traffic area
S004-0034	Level 2	Descent Inspection	
S004-0036	Level 2	Descent Inspection	
S004-0038	Level 2	Descent Inspection	
S004-0040	Level 2	Descent Inspection	
S004-0045	Level 2	Descent Inspection	
S004-0050	Level 2	Descent Inspection	
S004-0060	Level 2	Descent Inspection	
S004-0065	Level 2	Descent Inspection	
S004-0080	Level 2	Descent Inspection	
S004-0090	Level 2	Descent Inspection	
S004-0100	Level 2	Descent Inspection	
S004-0110	Level 2	Descent Inspection	
S004-0120	Level 2	Descent Inspection	
S004-0130	Level 2	Descent Inspection	
S004-0140	Level 2	Descent Inspection	
S004-0150	Level 2	Descent Inspection	
S004-0160	Level 2	Descent Inspection	
S004-0170	Level 2	Descent Inspection	
S004-0180	Level 2	Descent Inspection	
S004-0190	Level 2	Descent Inspection	
S004-0200	Level 2	Descent Inspection	
S004-0210	Level 2	Descent Inspection	
S004-0220	Level 2	Descent Inspection	
S004-0230	Level 2	Descent Inspection	
S004-0240	Level 2	Descent Inspection	
S004-0245	Level 2	Descent Inspection	
S004-0250	Level 2	Descent Inspection	
S004-0260	Level 2	Descent Inspection	
S004-0270	Level 2	Descent Inspection	
S004-0280	Level 2	Descent Inspection	
S004-0310	Level 2	Descent Inspection	
S004-0312	Level 2	Descent Inspection	
S004-0320	Level 2	Descent Inspection	
S004-0330	Level 2	Descent Inspection	
S004-0340	Level 2	Descent Inspection	
S004-0350	Level 2	Descent Inspection	
S004-0370	Level 2	Descent Inspection	
S004-0375	Level 2	Traffic	MH located in Rogers Ave. which is also a state highway, will need to contact city for highway permit
S004-0380	Level 2	Traffic	MH located in Rogers Ave. which is also a state highway, will need to contact city for highway permit
S004-0390	Level 2	Traffic	MH located in Rogers Ave. which is also a state highway, will need to contact city for highway permit
S004-0400	Level 2	Descent Inspection	
S004-0410	Level 2	Descent Inspection	
S004-0420	Level 2	Descent Inspection	
S004-0430	Level 2	Descent Inspection	
S004-0440	Level 2	Descent Inspection	
S004-0450	Level 2	Not Found	Unable to locate MH, 2200 S Waldron Rd.
S004-0460	Level 2	Descent Inspection	
S004-0470	Level 2	Descent Inspection	
S004-0480	Level 2	Descent Inspection	
S004-0490	Level 2	Descent Inspection	
S004-0500	Level 2	Descent Inspection	
S004-0510	Level 2	Descent Inspection	
S004-0520	Level 2	Descent Inspection	
S004-0530	Level 2	Descent Inspection	
S004-0540	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S004-0550	Level 2	Descent Inspection	
S004-0560	Level 2	Buried or Marked	MH is buried, more than 6 inches below surface
S004-0570	Level 2	Descent Inspection	
S004-0580	Level 2	Descent Inspection	
S004-0590	Level 2	Descent Inspection	
S004-0600	Level 2	Descent Inspection	
S004-0605	Level 2	Not Found	MH possibly located in golf course, used metal detector, UTL
S004-0610	Level 2	Descent Inspection	
S004-0620	Level 2	Descent Inspection	
S004-1120	Level 2	No Access	MH located in Rogers Ave, high traffic, unable to set up
S004-1130	Level 2	No Access	MH located in Rogers Ave, high traffic location, unable to set up
S004-1140	Level 2	No Access	MH located in Rogers Ave, high traffic, unable to set up
S004-1150	Level 2	Descent Inspection	
S004-1160	Level 2	Descent Inspection	
S004-1170	Level 2	Descent Inspection	
S004-1173	Level 2	Descent Inspection	
S004-1180	Level 2	Descent Inspection	
S004-1190	Level 2	Descent Inspection	
S004-1200	Level 2	Descent Inspection	
S004-1210	Level 2	Descent Inspection	
S004-1220	Level 2	Descent Inspection	
S004-1230	Level 2	Descent Inspection	
S004-1240	Level 2	Descent Inspection	
S004-1250	Level 2	Descent Inspection	
S004-1260	Level 2	Descent Inspection	
S004-1270	Level 2	Descent Inspection	
S004-1280	Level 2	Descent Inspection	
S004-1290	Level 2	Descent Inspection	
S004-1300	Level 2	Descent Inspection	
S004-1310	Level 2	No Access	MH partiall under asphalt, Inaccessible
S004-1320	Level 2	Descent Inspection	
S004-1330	Level 2	Not Found	MH not found
S004-1340	Level 2	No Access	MH located in Rogers Ave, high traffic, unable to set up
S004-1350	Level 2	No Access	MH in Rogers Ave, high traffic, unable to set up
S004-1360	Level 2	Descent Inspection	
S004-1370	Level 2	Descent Inspection	
S004-1380	Level 2	Descent Inspection	
S004-1390	Level 2	Descent Inspection	
S004-1400	Level 2	Descent Inspection	
S004-1410	Level 2	Descent Inspection	
S004-1415	Level 2	Descent Inspection	
S004-1420	Level 2	No Access	MH located in Rogers Ave, high traffic, unable to set up
S004-1430	Level 2	Descent Inspection	
S004-1440	Level 2	Descent Inspection	
S004-1450	Level 2	Descent Inspection	
S004-1470	Level 2	Descent Inspection	
S004-1480	Level 2	Descent Inspection	
S004-1490	Level 2	Descent Inspection	
S004-1500	Level 2	Descent Inspection	
S004-1510	Level 2	Descent Inspection	
S004-1520	Level 2	Descent Inspection	
S004-1530	Level 2	Descent Inspection	
S004-1540	Level 2	Descent Inspection	
S004-1550	Level 2	Descent Inspection	
S004-1560	Level 2	Descent Inspection	
S004-1570	Level 2	Descent Inspection	
S004-1580	Level 2	Descent Inspection	
S004-1585	Level 2	Descent Inspection	
S004-1590	Level 2	Descent Inspection	
S004-1650	Level 2	Descent Inspection	
S004-1660	Level 2	Descent Inspection	
S004-1670	Level 2	Descent Inspection	
P007-0010	Level 2	Descent Inspection	
P007-0020	Level 2	Not Found	Could not find during smoke testing, used metal detector and probing rod, unable to locate
P007-0030	Level 2	Descent Inspection	
P007-0040	Level 2	Descent Inspection	
P007-0050	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
P007-0060	Level 2	Descent Inspection	
P007-0065	Level 2	Descent Inspection	
P007-0070	Level 2	Descent Inspection	
P007-0080	Level 2	Descent Inspection	
P007-0084	Level 2	Descent Inspection	
P007-0090	Level 2	Not Found	Could not find during smoke testing, resident not home, could not gain access to back yard
P007-0120	Level 2	Descent Inspection	
P007-0130	Level 2	Descent Inspection	
P007-0140	Level 2	Not Found	Could not find during smoke test. Used metal detector, unable to locate. 3422 O St.
P007-0150	Level 2	Descent Inspection	
P007-0152	Level 2	Descent Inspection	
P007-0154	Level 2	Descent Inspection	
P007-0155	Level 2	Descent Inspection	
P007-0157	Level 2	Descent Inspection	
P007-0160	Level 2	Descent Inspection	
P007-0170	Level 2	Descent Inspection	
P007-0180	Level 2	Descent Inspection	
P007-0190	Level 2	Surface Inspection	
P007-0200	Level 2	Descent Inspection	
P007-0202	Level 2	Descent Inspection	
P007-0205	Level 2	Descent Inspection	
P007-0210	Level 2	Descent Inspection	
P007-0220	Level 2	Descent Inspection	
P007-0230	Level 2	Descent Inspection	
P007-0240	Level 2	Descent Inspection	
P007-0250	Level 2	Descent Inspection	
P007-0260	Level 2	Descent Inspection	
P007-0270	Level 2	Descent Inspection	
P007-0280	Level 2	Descent Inspection	
P007-0290	Level 2	Descent Inspection	
P007-0300	Level 2	Descent Inspection	
P007-0310	Level 2	Descent Inspection	
P007-0312	Level 2	Descent Inspection	
P007-0314	Level 2	Descent Inspection	
P007-0316	Level 2	Descent Inspection	
P007-0320	Level 2	Descent Inspection	
P007-0330	Level 2	Descent Inspection	
P007-0340	Level 2	Descent Inspection	
P007-0350	Level 2	Descent Inspection	
P007-0370	Level 2	Descent Inspection	
P007-0380	Level 2	Descent Inspection	
P007-0383	Level 2	Descent Inspection	
P007-0386	Level 2	Descent Inspection	
P007-0390	Level 2	Descent Inspection	
P007-0395	Level 2	Descent Inspection	
P007-0400	Level 2	Descent Inspection	
P007-0410	Level 2	Descent Inspection	
P007-0430	Level 2	Descent Inspection	
P007-0440	Level 2	Descent Inspection	
P007-0450	Level 2	Descent Inspection	
P007-0460	Level 2	Descent Inspection	
P007-0465	Level 2	Descent Inspection	
P007-0470	Level 2	Descent Inspection	
P007-0480	Level 2	Descent Inspection	
P007-0482	Level 2	Descent Inspection	
P007-0484	Level 2	Descent Inspection	
P007-0486	Level 2	Descent Inspection	
P007-0490	Level 2	Descent Inspection	
P007-0495	Level 2	Descent Inspection	
P007-0500	Level 2	Descent Inspection	
P007-0500A	Level 2	Descent Inspection	
P007-0510	Level 2	Descent Inspection	
P007-0520	Level 2	Descent Inspection	
P007-0520A	Level 2	Descent Inspection	
P007-0530	Level 2	Descent Inspection	
P007-0530A	Level 2	Descent Inspection	
P007-0530B	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
P007-0540	Level 2	Descent Inspection	
P007-0550	Level 2	Descent Inspection	
P007-0557	Level 2	Descent Inspection	
P007-0560	Level 2	Descent Inspection	
P007-0570	Level 2	Descent Inspection	
P007-0580	Level 2	Descent Inspection	
P007-0585	Level 2	Descent Inspection	
P007-0600	Level 2	Descent Inspection	
P007-0610	Level 2	Descent Inspection	
P007-0620	Level 2	Descent Inspection	
P007-0630	Level 2	Descent Inspection	
P007-0640	Level 2	Descent Inspection	
P007-0650	Level 2	Descent Inspection	
P007-0660	Level 2	Descent Inspection	
P007-0670	Level 2	Descent Inspection	
P007-0680	Level 2	Descent Inspection	
P007-0690	Level 2	Descent Inspection	
P007-0700	Level 2	Descent Inspection	
P007-0710	Level 2	Descent Inspection	
P007-0720	Level 2	Not Found	MH not found during smoke test, used metal detector, unable to locate.
P007-0730	Level 2	Descent Inspection	
P007-0740	Level 2	Descent Inspection	
P007-0750	Level 2	Descent Inspection	
P007-0760	Level 2	Descent Inspection	
P007-0770	Level 2	Descent Inspection	
P007-0780	Level 2	Descent Inspection	
P007-0782	Level 2	Descent Inspection	
P007-0784	Level 2	Descent Inspection	
P007-0785	Level 2	Descent Inspection	
P007-0786	Level 2	Descent Inspection	
P007-0788	Level 2	Descent Inspection	
P007-0790	Level 2	Descent Inspection	
P007-0810	Level 2	Descent Inspection	
P007-0820	Level 2	No Access	Sanitary Cleanout, metal cap routed and seized.
P007-0840	Level 2	Descent Inspection	
P007-0850	Level 2	Descent Inspection	
P007-0860	Level 2	Descent Inspection	
P007-0870	Level 2	Descent Inspection	
P007-0920	Level 2	Descent Inspection	
P007-0930	Level 2	No Access	Address is 3915 Free Ferry Rd, third attempt to gain access to the backyard to inspect the manhole…resident continually not home, No Access to yard
P007-0940	Level 2	Descent Inspection	
P007-0950	Level 2	Not Found	City comments on hit list state that structure is a lamp hole, 148 feet from DSMH, wheeled footage and used metal detector, still UTL
P007-0955	Level 2	Not Found	MH possibly located in thick brush, tried to clear area, UTL
P007-0958	Level 2	Not Found	Could not find during smoke test, used metal detector, thick brush. UTL
P007-0960	Level 2	Not Found	MH possibly located in thick brush, tried to cut away, UTL
P007-0970	Level 2	Not Found	Could not find during smoke test, used metal detector, thick brush. UTL
P007-0980	Level 2	Not Found	Could not find during smoke test, used metal detector, unable to locate
P007-0990	Level 2	Descent Inspection	
P007-1000	Level 2	Descent Inspection	
P007-1010	Level 2	Descent Inspection	
P007-1020	Level 2	Descent Inspection	
P007-1030	Level 2	Descent Inspection	
P007-1040	Level 2	Descent Inspection	
P007-1050	Level 2	Descent Inspection	
P007-1060	Level 2	Not Found	Could not find during smoke test, metal detector would not pick up with other metal in ground. 1209 41st St.
P007-1070	Level 2	Descent Inspection	
P007-1080	Level 2	Descent Inspection	
P007-1090	Level 2	Descent Inspection	
P007-1100	Level 2	Descent Inspection	
P007-1110	Level 2	Descent Inspection	
P007-1140	Level 2	Descent Inspection	
P007-1150	Level 2	No Access	MH located under chain link fence, inaccessible
P007-1160	Level 2	Descent Inspection	
P007-1170	Level 2	Not Found	City stated they located manhole in backyard of 3820 Free Ferry Rd, walked entire backyard twice while using metal detector, still UTL
P007-1180	Level 2	Descent Inspection	
P007-1190	Level 2	Not Found	MH possibly located in thick bamboo, tried to clear area, UTL

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
P007-1200	Level 2	Descent Inspection	
P007-1210	Level 2	Not Found	3811 Rogers Ave
P007-1220	Level 2	Descent Inspection	
P007-1222	Level 2	Not Found	
P007-1224	Level 2	Not Found	Could not find during smoke test, extremely thick brush, used metal detector, not found.
P007-1230	Level 2	Descent Inspection	
P007-1240	Level 2	Descent Inspection	
P007-1250	Level 2	Descent Inspection	
P007-1250A	Level 2	Descent Inspection	
P007-1250B	Level 2	Descent Inspection	
P007-1255	Level 2	Descent Inspection	
P007-1260	Level 2	Descent Inspection	
P007-1264	Level 2	No Access	Improper cover, has been hammered down and forced into frame.
P007-1267	Level 2	Descent Inspection	
P007-1270	Level 2	Descent Inspection	
P007-1280	Level 2	Descent Inspection	
P007-1282	Level 2	Descent Inspection	
P007-1290	Level 2	Descent Inspection	
P007-1300	Level 2	Descent Inspection	
P007-1310	Level 2	Descent Inspection	
P007-1320	Level 2	Descent Inspection	
P007-1330	Level 2	Descent Inspection	
P007-1350	Level 2	Descent Inspection	
P007-1360	Level 2	Descent Inspection	
P007-1363	Level 2	Descent Inspection	
P007-1370	Level 2	Descent Inspection	
P007-1380	Level 2	Descent Inspection	
P007-1385	Level 2	Descent Inspection	
P007-1390	Level 2	Descent Inspection	
P007-1400	Level 2	Descent Inspection	
P007-1410	Level 2	Descent Inspection	
P007-1415	Level 2	Descent Inspection	
P007-1420	Level 2	Descent Inspection	
P007-1425	Level 2	Descent Inspection	
P007-1430	Level 2	Descent Inspection	
P007-1440	Level 2	Descent Inspection	
P007-1450	Level 2	Descent Inspection	
P007-1460	Level 2	Descent Inspection	
P007-1470	Level 2	Descent Inspection	
P007-1480	Level 2	Descent Inspection	
P007-1490	Level 2	Descent Inspection	
P007-1500	Level 2	Descent Inspection	
P007-1504	Level 2	Descent Inspection	
P007-1507	Level 2	Descent Inspection	
P007-1510	Level 2	Descent Inspection	
P007-1520	Level 2	Descent Inspection	
P007-1525	Level 2	Descent Inspection	
P007-1530	Level 2	Descent Inspection	
P007-1540	Level 2	Surface Inspection	
P007-1550	Level 2	Descent Inspection	
P007-1560	Level 2	Descent Inspection	
P007-1570	Level 2	Descent Inspection	
P007-1580	Level 2	Descent Inspection	
P007-1590	Level 2	Descent Inspection	
P007-1600	Level 2	Descent Inspection	
P007-1610	Level 2	Descent Inspection	
P007-1620	Level 2	Descent Inspection	
P007-1630	Level 2	Not Found	Used metal detector, could not find during smoke test. 706 40th.
P007-1635	Level 2	Descent Inspection	
P007-1640	Level 2	Descent Inspection	
P007-1650	Level 2	Descent Inspection	
P007-1660	Level 2	Descent Inspection	
P007-1665	Level 2	Descent Inspection	
P007-1670	Level 2	Descent Inspection	
P007-1675	Level 2	Descent Inspection	
P007-1680	Level 2	Descent Inspection	
P007-1690	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
P007-1700	Level 2	Descent Inspection	
P007-1710	Level 2	Descent Inspection	
P007-1720	Level 2	Descent Inspection	
P007-1730	Level 2	Descent Inspection	
P007-1740	Level 2	Descent Inspection	
P007-1750	Level 2	Descent Inspection	
P007-1760	Level 2	Descent Inspection	
P007-1770	Level 2	Descent Inspection	
P007-1780	Level 2	Descent Inspection	
P007-1790	Level 2	Descent Inspection	
P007-1800	Level 2	Descent Inspection	
P007-1810	Level 2	Not Found	Used metal detector, could not find during smoke test. 422 39th St.
P007-1820	Level 2	Not Found	Used metal detector, could not find during smoke test. 416 39th St.
P007-1830	Level 2	Descent Inspection	
P007-1840	Level 2	Descent Inspection	
P007-1850	Level 2	Descent Inspection	
P007-1860	Level 2	Descent Inspection	
P007-1870	Level 2	Descent Inspection	
P007-1880	Level 2	Descent Inspection	
P007-1890	Level 2	Descent Inspection	
P007-1895	Level 2	Descent Inspection	
P007-1897	Level 2	Descent Inspection	
P007-1900	Level 2	Descent Inspection	
P007-1910	Level 2	Descent Inspection	
P007-1920	Level 2	Descent Inspection	
P007-1930	Level 2	Descent Inspection	
P007-1940	Level 2	Descent Inspection	
P007-1945	Level 2	Not Found	MH does not exist. 501 Albert Pike.
P007-1950	Level 2	Descent Inspection	
P007-1960	Level 2	Descent Inspection	
P007-1960A	Level 2	Descent Inspection	
P007-1970	Level 2	Descent Inspection	
P007-1980	Level 2	Descent Inspection	
P007-1990	Level 2	Descent Inspection	
P007-2000	Level 2	Descent Inspection	
P007-2010	Level 2	Descent Inspection	
P007-2020	Level 2	Descent Inspection	
P007-2030	Level 2	Surface Inspection	
P007-2040	Level 2	Descent Inspection	
P007-2050	Level 2	Descent Inspection	
P007-2060	Level 2	Not Found	Could not find during smoke test. 4215 Park.
P007-2070	Level 2	Descent Inspection	
P007-2080	Level 2	Descent Inspection	
P007-2090	Level 2	Descent Inspection	
P007-2100	Level 2	Descent Inspection	
P007-2102	Level 2	Descent Inspection	
P007-2108	Level 2	Descent Inspection	
P007-2110	Level 2	Descent Inspection	
P007-2120	Level 2	Descent Inspection	
P007-2130	Level 2	Descent Inspection	
P007-2140	Level 2	Not Found	Used metal detector, could not find during smoke test, chain link fence picked up by metal detector. 4206 Presley.
P007-2150	Level 2	Descent Inspection	
P007-2155	Level 2	Descent Inspection	
P007-2155A	Level 2	Descent Inspection	
P007-2160	Level 2	Not Found	Could not find during smoke test, home owner states city was also unable to locate
P007-2170	Level 2	Not Found	Could not find during smoke test, home owner states city was also unable to locate
P007-2180	Level 2	Descent Inspection	
P007-2190	Level 2	Descent Inspection	
P007-2200	Level 2	Descent Inspection	
P007-2210	Level 2	Not Found	4308 Presley
P007-2210A	Level 2	Descent Inspection	
P007-2220	Level 2	Descent Inspection	
P007-2230	Level 2	Descent Inspection	
P007-2240	Level 2	Descent Inspection	
P007-2245	Level 2	Descent Inspection	
P007-2248	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
P007-2250	Level 2	Descent Inspection	
P007-2260	Level 2	Descent Inspection	
P007-2270	Level 2	Descent Inspection	
P007-2272	Level 2	Descent Inspection	
P007-2280	Level 2	Descent Inspection	
P007-2285	Level 2	Descent Inspection	
P007-2290	Level 2	Descent Inspection	
P007-2300	Level 2	Descent Inspection	
P007-2304	Level 2	Descent Inspection	
P007-2307	Level 2	Descent Inspection	
P007-2310	Level 2	Descent Inspection	
P007-2320	Level 2	Descent Inspection	
P007-2325	Level 2	Descent Inspection	
P007-2330	Level 2	Not Found	MH point near chain link fence in resident yard, gates locked and resident not home. UTL
P007-2340	Level 2	Not Found	MH point near chain link fence in resident yard, gates locked and resident not home. UTL
P007-2350	Level 2	Descent Inspection	
P007-2354	Level 2	Not Found	Could not find during some test, unable to locate.
P007-2357	Level 2	Descent Inspection	
P007-2360	Level 2	Descent Inspection	
P007-2370	Level 2	Descent Inspection	
P007-2372	Level 2	Descent Inspection	
P007-2380	Level 2	Not Found	MH not found, coordinates did not change. 4305 Grand Ave.
P007-2383	Level 2	Descent Inspection	
P007-2385	Level 2	Descent Inspection	
P007-2390	Level 2	Descent Inspection	
P007-2395	Level 2	Descent Inspection	
P007-2400	Level 2	Descent Inspection	
P007-2500	Level 2	Descent Inspection	
P007-2510	Level 2	Descent Inspection	
P007-2520	Level 2	Not Found	Could not find during smoke test, used metal detector, UTL
P007-2530	Level 2	No Access	Resident not home, manhole located in backyard, gate locked. Inaccessible
P007-2540	Level 2	Descent Inspection	
P007-2550	Level 2	Descent Inspection	
P007-2560	Level 2	Descent Inspection	
P007-2570	Level 2	Not Found	307 N 41st St, unable to locate manhole
P007-2700	Level 2	Descent Inspection	
P007-2710	Level 2	Descent Inspection	
P007-2720	Level 2	Descent Inspection	
P007-2730	Level 2	Descent Inspection	
P007-2740	Level 2	No Access	MH located on edge of ditch, cannot set up tripod. 4500 Park.
P007-2740A	Level 2	Descent Inspection	
P007-2750	Level 2	Descent Inspection	
P007-2760	Level 2	Descent Inspection	
P007-2770	Level 2	Descent Inspection	
P007-2900	Level 2	Descent Inspection	
P007-2910	Level 2	Descent Inspection	
P007-2920	Level 2	Descent Inspection	
P007-2930	Level 2	Descent Inspection	
P007-2940	Level 2	Descent Inspection	
P007-2940A	Level 2	Descent Inspection	
P007-2950	Level 2	Descent Inspection	
P007-2960	Level 2	Descent Inspection	
P007-2970	Level 2	Descent Inspection	
P007-2980	Level 2	Descent Inspection	
P007-3100	Level 2	Not Found	Could not find during smoke test. Thick brush, unable to wheel or use metal detector. 1203 41st St.
P007-3110	Level 2	Descent Inspection	
P007-3120	Level 2	Descent Inspection	
P007-3130	Level 2	Descent Inspection	
P007-3140	Level 2	Descent Inspection	
P007-3150	Level 2	Descent Inspection	
P007-3300	Level 2	Descent Inspection	
P007-3310	Level 2	Descent Inspection	
P007-3320	Level 2	Descent Inspection	
P007-3330	Level 2	Descent Inspection	
P007-3340	Level 2	Descent Inspection	
P007-3350	Level 2	Descent Inspection	
S007-3350	Level 2	Surface Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
FL01-0020	Level 2	Descent Inspection	
FL01-0020A	Level 2	No Access	Found during smoke testing Located inside pump station
FL01-0030	Level 2	Surface Inspection	
FL01-0040	Level 2	Descent Inspection	
FL01-0050	Level 2	Not Found	
FL01-0060	Level 2	Surcharged/Debris	
FL01-0070	Level 2	Descent Inspection	
FL01-0080	Level 2	Descent Inspection	
FL01-0090	Level 2	Descent Inspection	
FL01-0100	Level 2	Descent Inspection	
FL01-0110	Level 2	Descent Inspection	
FL01-0120	Level 2	Descent Inspection	
FL01-0130	Level 2	Descent Inspection	
FL01-0140	Level 2	Descent Inspection	
FL01-0150	Level 2	Descent Inspection	
FL01-0160	Level 2	Descent Inspection	
FL01-0170	Level 2	Descent Inspection	
FL01-0180	Level 2	Descent Inspection	
FL01-0190	Level 2	Descent Inspection	
FL01-0200	Level 2	Descent Inspection	
FL01-0210	Level 2	Surface Inspection	
FL01-0220	Level 2	Surface Inspection	
FL01-0230	Level 2	Surface Inspection	
FL01-0240	Level 2	Surface Inspection	
FL01-0250	Level 2	Surface Inspection	
FL01-0260	Level 2	Not Found	
FL01-0270	Level 2	Descent Inspection	
FL01-0280	Level 2	Descent Inspection	
FL01-0290	Level 2	Descent Inspection	
FL01-0300	Level 2	Descent Inspection	
FL01-0305	Level 2	Descent Inspection	
FL01-0310	Level 2	Descent Inspection	
FL01-0320	Level 2	Descent Inspection	
FL01-0330	Level 2	Descent Inspection	
FL01-0340	Level 2	Descent Inspection	
FL01-0350	Level 2	Not Found	
FL01-0360	Level 2	Descent Inspection	
FL01-0365	Level 2	Descent Inspection	
FL01-0370	Level 2	Surface Inspection	
FL01-0380	Level 2	Descent Inspection	
FL01-0390	Level 2	Surface Inspection	
FL01-0400	Level 2	Surface Inspection	
FL01-0405	Level 2	Surface Inspection	
FL01-0410	Level 2	Surface Inspection	
FL01-0420	Level 2	Surface Inspection	
FL01-0430	Level 2	Surface Inspection	
FL01-0439	Level 2	Surface Inspection	
FL01-0440	Level 2	Surface Inspection	
FL01-0445	Level 2	Surface Inspection	
FL01-0450	Level 2	Descent Inspection	
FL01-0460	Level 2	Descent Inspection	
FL01-0470	Level 2	Descent Inspection	
FL01-0480	Level 2	Descent Inspection	
FL01-0490	Level 2	Descent Inspection	
FL01-0500	Level 2	Descent Inspection	
FL01-0510	Level 2	Descent Inspection	
FL01-0515	Level 2	Descent Inspection	
FL01-0520	Level 2	Descent Inspection	
FL01-0525	Level 2	Surcharged/Debris	Manhole is surcharged, called and reported to the city, surcharge depth is 11.6
FL01-0530	Level 2	No Access	Pics-0471-0472
FL01-0540	Level 2	Descent Inspection	
FL01-0550	Level 2	Descent Inspection	
FL01-0560	Level 2	Descent Inspection	
FL01-0570	Level 2	Descent Inspection	
FL01-0570A	Level 2	Descent Inspection	
FL01-0580	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
FL01-0590	Level 2	Descent Inspection	
FL01-0600	Level 2	Descent Inspection	
FL01-0610	Level 2	Descent Inspection	
FL01-0620	Level 2	Descent Inspection	
FL01-0630	Level 2	Descent Inspection	
FL01-0640	Level 2	Descent Inspection	
FL01-0650	Level 2	Surcharged/Debris	
FL01-0660	Level 2	Descent Inspection	
FL01-0680	Level 2	Descent Inspection	
FL01-0690	Level 2	Descent Inspection	
FL01-0700	Level 2	Descent Inspection	
FL01-0710	Level 2	Descent Inspection	
FL01-0720	Level 2	Surface Inspection	
FL01-0730	Level 2	Not Found	
FL01-0740	Level 2	Descent Inspection	
FL01-0750	Level 2	Buried or Marked	Green dot on sidewalk Pic # 0832
FL01-0760	Level 2	Descent Inspection	
FL01-0770	Level 2	Descent Inspection	
FL01-0770A	Level 2	Descent Inspection	
FL01-0780	Level 2	Descent Inspection	
FL01-0790	Level 2	Descent Inspection	
FL01-0800	Level 2	Descent Inspection	
FL01-0810	Level 2	Descent Inspection	
FL01-0820	Level 2	Descent Inspection	
FL01-0830	Level 2	Descent Inspection	
FL01-0840	Level 2	Descent Inspection	
FL01-0845	Level 2	Descent Inspection	
FL01-0850	Level 2	Descent Inspection	
FL01-0860	Level 2	Descent Inspection	
FL01-0870	Level 2	Descent Inspection	
FL01-0880	Level 2	Descent Inspection	
FL01-0890	Level 2	Not Found	
FL01-0900	Level 2	Descent Inspection	
FL01-0910	Level 2	Descent Inspection	
FL01-0920	Level 2	Not Found	
FL01-0930	Level 2	Descent Inspection	
FL01-0930A	Level 2	Descent Inspection	
FL01-0932	Level 2	Descent Inspection	
FL01-0940	Level 2	Descent Inspection	
FL01-0950	Level 2	Descent Inspection	
FL01-0960	Level 2	Descent Inspection	
FL01-0970	Level 2	Descent Inspection	
FL01-0980	Level 2	Descent Inspection	
FL01-0990	Level 2	Descent Inspection	
FL01-1000	Level 2	Descent Inspection	
FL01-1010	Level 2	Descent Inspection	
FL01-1020	Level 2	Descent Inspection	
FL01-1030	Level 2	Descent Inspection	
FL01-1040	Level 2	Descent Inspection	
FL01-1060	Level 2	Descent Inspection	
FL01-1070	Level 2	Descent Inspection	
FL01-1080	Level 2	Descent Inspection	
FL01-1090	Level 2	Descent Inspection	
FL01-1100	Level 2	Descent Inspection	
FL01-1110	Level 2	Descent Inspection	
FL01-1120	Level 2	Descent Inspection	
FL01-1130	Level 2	Descent Inspection	
FL01-1140	Level 2	Descent Inspection	
FL01-1150	Level 2	Descent Inspection	
FL01-1160	Level 2	Descent Inspection	
FL01-1170	Level 2	Descent Inspection	
FL01-1180	Level 2	Descent Inspection	
FL01-1185	Level 2	Descent Inspection	
FL01-1190	Level 2	Descent Inspection	
FL01-1200	Level 2	Descent Inspection	
FL01-1210	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
FL01-1220	Level 2	Surcharged/Debris	
FL01-1220A	Level 2	Surcharged/Debris	
FL01-1230	Level 2	Descent Inspection	
FL01-1240	Level 2	Descent Inspection	
FL01-1250	Level 2	Descent Inspection	
FL01-1260	Level 2	Descent Inspection	
FL01-1270	Level 2	Descent Inspection	
FL01-1280	Level 2	Descent Inspection	
FL01-1290	Level 2	Descent Inspection	
FL01-1300	Level 2	Descent Inspection	
FL01-1310	Level 2	Descent Inspection	
FL01-1320	Level 2	Descent Inspection	
FL01-1330	Level 2	Descent Inspection	
FL01-1340	Level 2	Descent Inspection	
FL01-1350	Level 2	Descent Inspection	
FL01-1360	Level 2	Descent Inspection	
FL01-1370	Level 2	Descent Inspection	
FL01-1380	Level 2	Descent Inspection	
FL01-1390	Level 2	Descent Inspection	
FL01-1395	Level 2	Descent Inspection	
FL01-1400	Level 2	Descent Inspection	
FL01-1410	Level 2	Descent Inspection	
FL01-1420	Level 2	Descent Inspection	
FL01-1430	Level 2	Descent Inspection	
FL01-1440	Level 2	Descent Inspection	
FL01-1450	Level 2	Descent Inspection	
FL01-1460	Level 2	Descent Inspection	
FL01-1470	Level 2	Descent Inspection	
FL01-1480	Level 2	Descent Inspection	
FL01-1490	Level 2	Descent Inspection	
FL01-1500	Level 2	Descent Inspection	
FL01-1510	Level 2	Descent Inspection	
FL01-1520	Level 2	Descent Inspection	
FL01-1530	Level 2	Descent Inspection	
FL01-1540	Level 2	Descent Inspection	
FL01-1550	Level 2	Descent Inspection	
FL01-1560	Level 2	Descent Inspection	
FL01-1570	Level 2	Surcharged/Debris	
FL01-1580	Level 2	Descent Inspection	
FL01-1590	Level 2	Descent Inspection	
FL01-1600	Level 2	Descent Inspection	
FL01-1610	Level 2	Descent Inspection	
FL01-1620	Level 2	Descent Inspection	
FL01-1630	Level 2	Descent Inspection	
FL01-1640	Level 2	Descent Inspection	
FL01-1650	Level 2	Descent Inspection	
FL01-1660	Level 2	Descent Inspection	
FL01-1670	Level 2	Descent Inspection	
FL01-1680	Level 2	Descent Inspection	
FL01-1690	Level 2	Descent Inspection	
FL01-1700	Level 2	Descent Inspection	
FL01-1710	Level 2	Descent Inspection	
FL01-1720	Level 2	Descent Inspection	
FL01-1730	Level 2	Descent Inspection	
FL01-1740	Level 2	Descent Inspection	
FL01-1750	Level 2	Descent Inspection	
FL01-1760	Level 2	Descent Inspection	
FL01-1770	Level 2	No Access	Manhole located in intersection of N 6th St and Mussett Rd Heavy traffic
FL01-1780	Level 2	Descent Inspection	
FL01-1790	Level 2	Descent Inspection	
FL01-1800	Level 2	Descent Inspection	
FL01-1810	Level 2	Descent Inspection	
FL01-1820	Level 2	Descent Inspection	
FL01-1830	Level 2	Descent Inspection	
FL01-1840	Level 2	Descent Inspection	
FL01-1850	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
FL01-1860	Level 2	Descent Inspection	
FL01-1870	Level 2	Not Found	
FL01-1880	Level 2	Descent Inspection	
FL01-1890	Level 2	Descent Inspection	
FL01-1892	Level 2	Descent Inspection	
FL01-1900	Level 2	Descent Inspection	
FL01-1905	Level 2	Descent Inspection	
FL01-1910	Level 2	Not Found	Thick brush
FL01-1915	Level 2	Descent Inspection	
FL01-1920	Level 2	Descent Inspection	
FL01-1930	Level 2	Descent Inspection	
FL01-1940	Level 2	Descent Inspection	
FL01-1950	Level 2	Descent Inspection	
FL01-1960	Level 2	Descent Inspection	
FL01-1970	Level 2	Descent Inspection	
FL01-1980	Level 2	Descent Inspection	
FL01-1990	Level 2	Descent Inspection	
FL01-1990A	Level 2	Descent Inspection	
FL01-2000	Level 2	Descent Inspection	
FL01-2010	Level 2	Descent Inspection	
FL01-2020	Level 2	Descent Inspection	
FL01-2030	Level 2	Descent Inspection	
FL01-2040	Level 2	Descent Inspection	
FL01-2050	Level 2	Not Found	
FL01-2060	Level 2	Descent Inspection	
FL01-2070	Level 2	Not Found	
FL01-2080	Level 2	Descent Inspection	
FL01-2090	Level 2	Descent Inspection	
FL01-2100	Level 2	Descent Inspection	
FL01-2110	Level 2	Descent Inspection	
FL01-2200	Level 2	Descent Inspection	
FL01-2210	Level 2	Descent Inspection	
FL01-2220	Level 2	Descent Inspection	
FL01-2230	Level 2	Descent Inspection	
FL01-2240	Level 2	Descent Inspection	
FL01-2250	Level 2	Descent Inspection	
FL01-2260	Level 2	Descent Inspection	
FL01-2270	Level 2	Descent Inspection	
FL01-2280	Level 2	Descent Inspection	
FL01-2290	Level 2	Descent Inspection	
FL01-2300	Level 2	Descent Inspection	
FL01-2310	Level 2	Descent Inspection	
FL01-2320	Level 2	Descent Inspection	
FL01-2330	Level 2	Descent Inspection	
FL01-2340	Level 2	Descent Inspection	
FL01-2350	Level 2	Descent Inspection	
FL01-2360	Level 2	Descent Inspection	
FL01-2370	Level 2	Descent Inspection	
FL01-2380	Level 2	Descent Inspection	
FL01-2390	Level 2	Descent Inspection	
FL01-2400	Level 2	Descent Inspection	
FL01-2410	Level 2	Descent Inspection	
FL01-2420	Level 2	Descent Inspection	
FL01-2430	Level 2	Descent Inspection	
FL01-2440	Level 2	Descent Inspection	
FL01-2450	Level 2	Descent Inspection	
FL01-2460	Level 2	Descent Inspection	
FL01-2470	Level 2	Descent Inspection	
FL01-2480	Level 2	No Access	Pic-0473
S003-0020	Level 2	Descent Inspection	
S003-0030	Level 2	Descent Inspection	
S003-0040	Level 2	Not Found	
S003-0060	Level 2	Descent Inspection	
S003-0070	Level 2	Descent Inspection	
S003-0080	Level 2	Descent Inspection	
S003-0090	Level 2	Not Found	
S003-0100	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S003-0105	Level 2	Descent Inspection	
S003-0110	Level 2	Descent Inspection	
S003-0120	Level 2	Descent Inspection	
S003-0130	Level 2	Descent Inspection	
S003-0160	Level 2	Descent Inspection	
S003-0165	Level 2	Descent Inspection	
S003-0170	Level 2	Descent Inspection	
S003-0180	Level 2	Descent Inspection	
S003-0190	Level 2	Descent Inspection	
S003-0200	Level 2	Not Found	910 Burnham Rd Photo # 1466
S003-0210	Level 2	Descent Inspection	
S003-0214	Level 2	Descent Inspection	
S003-0216	Level 2	Descent Inspection	
S003-0217	Level 2	Descent Inspection	
S003-0220	Level 2	Descent Inspection	
S003-0230	Level 2	Descent Inspection	
S003-0240	Level 2	Descent Inspection	
S003-0250	Level 2	Descent Inspection	
S003-0260	Level 2	Descent Inspection	
S003-0270	Level 2	Descent Inspection	
S003-0274	Level 2	Descent Inspection	
S003-0280	Level 2	Descent Inspection	
S003-0290	Level 2	Descent Inspection	
S003-0300	Level 2	Descent Inspection	
S003-0330	Level 2	Descent Inspection	
S003-0340	Level 2	Descent Inspection	
S003-0350	Level 2	Descent Inspection	
S003-0356	Level 2	Descent Inspection	
S003-0360	Level 2	Buried or Marked	Photo # 1470 Place stick in probing hole and tied green landscape ribbon to it
S003-0370	Level 2	Descent Inspection	
S003-0380	Level 2	Descent Inspection	
S003-0390	Level 2	Descent Inspection	
S003-0390A	Level 2	Descent Inspection	
S003-0400	Level 2	Descent Inspection	
S003-0410	Level 2	Descent Inspection	
S003-0420	Level 2	Descent Inspection	
S003-0430	Level 2	Descent Inspection	
S003-0440	Level 2	Descent Inspection	
S003-0450	Level 2	Descent Inspection	
S003-0460	Level 2	Descent Inspection	
S003-0465	Level 2	Descent Inspection	
S003-0520	Level 2	Descent Inspection	
S003-0530	Level 2	Descent Inspection	
S003-0540	Level 2	Descent Inspection	
S003-0550	Level 2	Not Found	
S003-0560	Level 2	Descent Inspection	
S003-0590	Level 2	Descent Inspection	
S003-0600	Level 2	Descent Inspection	
S003-0610	Level 2	Descent Inspection	
S003-0620	Level 2	No Access	Manhole located in intersection of Gordon Ln and Waldron Rd Heavy traffic
S003-0630	Level 2	Descent Inspection	
S003-0640	Level 2	Descent Inspection	
S003-0650	Level 2	Descent Inspection	
S003-0650A	Level 2	Descent Inspection	
S003-0660	Level 2	Descent Inspection	
S003-0660A	Level 2	Descent Inspection	
S003-0670	Level 2	Descent Inspection	
S003-0670A	Level 2	Descent Inspection	
S003-0672	Level 2	Descent Inspection	
S003-0680	Level 2	Descent Inspection	
S003-0690	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S003-0700	Level 2	Not Opened	Inaccessible MH has large amount of asphalt on cover, used sledge hammer Stopped hitting for fear of cover breaking, MH located in busy road Photo # 1698 Address is 1103 Waldron Rd
S003-0710	Level 2	Descent Inspection	
S003-0720	Level 2	Descent Inspection	
S003-0726	Level 2	Descent Inspection	
S003-0730	Level 2	Descent Inspection	
S003-0740	Level 2	Descent Inspection	
S003-0750	Level 2	Descent Inspection	
S003-0752	Level 2	Descent Inspection	
S003-0760	Level 2	Descent Inspection	
S003-0770	Level 2	Not Found	
S003-0780	Level 2	Descent Inspection	
S003-0785	Level 2	Descent Inspection	
S003-0790	Level 2	Descent Inspection	
S003-0795	Level 2	Descent Inspection	
S003-0800	Level 2	Not Opened	Pic 2646
S003-0805	Level 2	Descent Inspection	
S003-0810	Level 2	Descent Inspection	
S003-0810A	Level 2	Surcharged/Debris	No visual on pipes
S003-0820	Level 2	Descent Inspection	
S003-0830	Level 2	Descent Inspection	
S003-0840	Level 2	Descent Inspection	
S003-0850	Level 2	Descent Inspection	
S003-0860	Level 2	Not Found	Extreme remote, very thick brush, pic 2601
S003-0870	Level 2	Descent Inspection	
S003-0880	Level 2	Descent Inspection	
S003-0890	Level 2	Descent Inspection	
S003-0900	Level 2	Descent Inspection	
S003-0910	Level 2	Descent Inspection	
S003-0920	Level 2	Not Found	MH possibly under asphalt
S003-0930	Level 2	Descent Inspection	
S003-0940	Level 2	Descent Inspection	
S003-0940A	Level 2	Descent Inspection	
S003-0940B	Level 2	Descent Inspection	
S003-0950	Level 2	Not Found	Appears some dirt work has been done, went to neighborhood on Chestnut to gain access to backyard, resident not home
S003-0960	Level 2	Descent Inspection	
S003-0965	Level 2	Surface Inspection	
S003-0970	Level 2	Descent Inspection	
S003-0980	Level 2	Descent Inspection	
S003-0990	Level 2	Not Found	
S003-1000	Level 2	Descent Inspection	
S003-1010	Level 2	Descent Inspection	
S003-1020	Level 2	Descent Inspection	
S003-1024	Level 2	Descent Inspection	
S003-1030	Level 2	Descent Inspection	
S003-1040	Level 2	Descent Inspection	
S003-1050	Level 2	Descent Inspection	
S003-1060	Level 2	Descent Inspection	
S003-1070	Level 2	Descent Inspection	
S003-1080	Level 2	Descent Inspection	
S003-1090	Level 2	Descent Inspection	
S003-1100	Level 2	Descent Inspection	
S003-1110	Level 2	Descent Inspection	
S003-1120	Level 2	Descent Inspection	
S003-1130	Level 2	Descent Inspection	
S003-1140	Level 2	Descent Inspection	
S003-1150	Level 2	Descent Inspection	
S003-1160	Level 2	Descent Inspection	
S003-1170	Level 2	Descent Inspection	
S003-1180	Level 2	Descent Inspection	
S003-1190	Level 2	Descent Inspection	
S003-1200	Level 2	Descent Inspection	
S003-1210	Level 2	Descent Inspection	
S003-1220	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S003-1230	Level 2	Descent Inspection	
S003-1240	Level 2	Descent Inspection	
S003-1250	Level 2	No Access	Locked gate, resident not home
S003-1260	Level 2	Descent Inspection	
S003-1270	Level 2	Descent Inspection	
S003-1280	Level 2	Descent Inspection	
S003-1290	Level 2	Not Found	
S003-1300	Level 2	Descent Inspection	
S003-1310	Level 2	Descent Inspection	
S003-1320	Level 2	Descent Inspection	
S003-1330	Level 2	Descent Inspection	
S003-1340	Level 2	Descent Inspection	
S003-1350	Level 2	Not Found	
S003-1360	Level 2	Not Found	
S003-1370	Level 2	Descent Inspection	
S003-1373	Level 2	Descent Inspection	
S003-1380	Level 2	Descent Inspection	
S003-1390	Level 2	Descent Inspection	
S003-1400	Level 2	Not Opened	Photo # 2377
S003-1410	Level 2	Not Found	Manhole located within flower garden and under small tree, did not want to destroy private property Used metal detector, did not hit on anything...swung detector for approximately 100 feet possibly does not exist, recommend televising from S003-1390 south to where S003-1410 is supposedly located
S003-1420	Level 2	Not Found	
S003-1430	Level 2	Not Found	
S003-1450	Level 2	Descent Inspection	
S003-1460	Level 2	Descent Inspection	
S003-1470	Level 2	Descent Inspection	
S003-1480	Level 2	Descent Inspection	
S003-1480A	Level 2	Descent Inspection	
S003-1480B	Level 2	Descent Inspection	
S003-1480C	Level 2	Descent Inspection	
S003-2170	Level 2	Not Found	
S003-2180	Level 2	Not Found	
S003-2600	Level 2	Descent Inspection	
S003-2610	Level 2	Descent Inspection	
S003-3050	Level 2	Descent Inspection	
S003-3060	Level 2	Descent Inspection	
S003-3070	Level 2	Descent Inspection	
S003-3080	Level 2	Descent Inspection	
S003-3090	Level 2	Descent Inspection	
S003-3100	Level 2	Descent Inspection	
S003-3110	Level 2	Not Found	
S003-3120	Level 2	Descent Inspection	
S003-3130	Level 2	Descent Inspection	
S003-3140	Level 2	Descent Inspection	
S003-3150	Level 2	Buried or Marked	Pic 1349. Address 4804
S003-3160	Level 2	Descent Inspection	
S003-3170	Level 2	Descent Inspection	
S003-3180	Level 2	Descent Inspection	
S003-3190	Level 2	Descent Inspection	
S003-3200	Level 2	Not Found	
S003-3210	Level 2	Descent Inspection	
S003-3220	Level 2	Descent Inspection	
S003-3230	Level 2	Surface Inspection	
S003-3240	Level 2	Descent Inspection	
S003-3250	Level 2	Descent Inspection	
S003-3250A	Level 2	Buried or Marked	
S003-3260	Level 2	Buried or Marked	Photo # 1374
S003-3270	Level 2	Buried or Marked	Address is 4905 Aspen Court 106 Lakeview Dr.....across street next to wood line
S003-3280	Level 2	Buried or Marked	Photo # 1597 203 Lakeview Dr
S003-3290	Level 2	Buried or Marked	Photo # 1596 221 Lakeview Dr
S003-3300	Level 2	Descent Inspection	Photo # 1595
S003-3310	Level 2	Descent Inspection	
S003-3320	Level 2	Descent Inspection	

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S003-3330	Level 2	Descent Inspection	
S003-3340	Level 2	Descent Inspection	
S003-3350	Level 2	Descent Inspection	
S003-3360	Level 2	Descent Inspection	
S003-3370	Level 2	Not Opened	Bolts are seized
S003-3380	Level 2	Descent Inspection	
S003-3390	Level 2	Descent Inspection	
S003-3400	Level 2	Descent Inspection	
S003-3410	Level 2	Descent Inspection	
S003-3420	Level 2	Descent Inspection	
S003-3430	Level 2	Descent Inspection	
S003-3440	Level 2	Descent Inspection	
S003-3450	Level 2	Descent Inspection	
S003-3460	Level 2	Not Opened	Photo number 2729
S003-3470	Level 2	Descent Inspection	
S003-3470A	Level 2	Descent Inspection	
S003-3480	Level 2	Descent Inspection	
S003-3490	Level 2	Descent Inspection	
S003-3500	Level 2	Descent Inspection	
S003-3510	Level 2	Descent Inspection	
S003-3520	Level 2	Descent Inspection	
S003-3530	Level 2	Descent Inspection	
S003-3540	Level 2	Descent Inspection	
S003-3550	Level 2	Descent Inspection	
S003-3560	Level 2	Descent Inspection	
S003-3570	Level 2	Descent Inspection	
S003-3580	Level 2	Descent Inspection	
S003-3590	Level 2	Descent Inspection	
S003-3600	Level 2	Descent Inspection	
S003-3610	Level 2	Descent Inspection	
S003-3620	Level 2	Descent Inspection	
S003-3630	Level 2	Descent Inspection	
S003-3640	Level 2	Descent Inspection	
S003-3650	Level 2	Descent Inspection	
S003-3660	Level 2	Descent Inspection	
S003-3670	Level 2	Descent Inspection	
S003-3680	Level 2	Descent Inspection	
S003-3690	Level 2	Descent Inspection	
S008-0350	Level 2	Descent Inspection	
S008-0352	Level 2	Not Opened	Potted tree on top, Pic 2247
S008-0354	Level 2	Descent Inspection	
S008-0356	Level 2	Descent Inspection	
S008-0360	Level 2	Descent Inspection	
S008-0370	Level 2	Descent Inspection	
S008-0380	Level 2	Descent Inspection	
S008-0390	Level 2	Descent Inspection	
S008-0400	Level 2	Descent Inspection	
S008-0410	Level 2	Descent Inspection	
S008-0420	Level 2	Descent Inspection	
S008-0425	Level 2	Descent Inspection	
S008-0430	Level 2	Descent Inspection	
S008-0432	Level 2	Descent Inspection	
S008-0434	Level 2	Descent Inspection	
S008-0470	Level 2	Descent Inspection	
S008-0480	Level 2	Descent Inspection	
S008-0500	Level 2	Descent Inspection	
S008-0510	Level 2	Descent Inspection	
S008-0520	Level 2	Descent Inspection	
S008-0530	Level 2	Descent Inspection	
S008-0540	Level 2	Descent Inspection	
S008-0580	Level 2	Descent Inspection	
S008-0590	Level 2	Descent Inspection	
S008-0600	Level 2	Descent Inspection	
S008-0610	Level 2	Descent Inspection	
S008-0643	Level 2	Descent Inspection	
S008-0646	Level 2	Descent Inspection	
S008-0648	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S008-0650	Level 2	Descent Inspection	
S008-0660	Level 2	Descent Inspection	
S008-0670	Level 2	Descent Inspection	
S008-0670A	Level 2	Descent Inspection	
S008-0690	Level 2	Descent Inspection	
S008-0700	Level 2	Descent Inspection	
S008-0710	Level 2	Descent Inspection	
S008-0720	Level 2	Descent Inspection	
S008-0730	Level 2	Descent Inspection	
S008-0740	Level 2	Descent Inspection	
S008-0750	Level 2	Descent Inspection	
S008-0760	Level 2	Descent Inspection	
S008-0770	Level 2	Descent Inspection	
S008-0770A	Level 2	Descent Inspection	
S008-0780	Level 2	Descent Inspection	
S008-0790	Level 2	Descent Inspection	
S008-0800	Level 2	Descent Inspection	
S008-08-1	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-0810	Level 2	Descent Inspection	
S008-0820	Level 2	Descent Inspection	
S008-0840	Level 2	Descent Inspection	
S008-0850	Level 2	Descent Inspection	
S008-0860	Level 2	Descent Inspection	
S008-0870	Level 2	Not Found	Deep remote
S008-0880	Level 2	Not Opened	Under fence pic 2029 2030
S008-0890	Level 2	Not Opened	Under fence pic 2027 and 2028
S008-0900	Level 2	Descent Inspection	
S008-0910	Level 2	Not Opened	Pic 1853
S008-0920	Level 2	Descent Inspection	
S008-0930	Level 2	Descent Inspection	
S008-0940	Level 2	Descent Inspection	
S008-0950	Level 2	Descent Inspection	
S008-0960	Level 2	Descent Inspection	
S008-0970	Level 2	Not Opened	Pic 1864
S008-0980	Level 2	Descent Inspection	
S008-0990	Level 2	Descent Inspection	
S008-1000	Level 2	Descent Inspection	
S008-1005	Level 2	Not Found	
S008-1010	Level 2	Descent Inspection	
S008-1020	Level 2	Descent Inspection	
S008-1030	Level 2	Descent Inspection	
S008-1040	Level 2	Descent Inspection	
S008-1070	Level 2	Descent Inspection	
S008-1070A	Level 2	Descent Inspection	
S008-1080	Level 2	Descent Inspection	
S008-1090	Level 2	Descent Inspection	
S008-1093	Level 2	Descent Inspection	
S008-1096	Level 2	Descent Inspection	
S008-1096A	Level 2	Descent Inspection	
S008-1100	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1110	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1115	Level 2	Descent Inspection	
S008-1120	Level 2	Descent Inspection	
S008-1130	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1135	Level 2	Descent Inspection	
S008-1140	Level 2	Not Found	
S008-1150	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1160	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1170	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1173	Level 2	Descent Inspection	
S008-1175	Level 2	Descent Inspection	
S008-1180	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1190	Level 2	Descent Inspection	
S008-1190A	Level 2	Descent Inspection	
S008-1190B	Level 2	Descent Inspection	
S008-1200	Level 2	Descent Inspection	
S008-1210	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S008-1210A	Level 2	Descent Inspection	
S008-1220	Level 2	Descent Inspection	
S008-1230	Level 2	Surface Inspection	
S008-1240	Level 2	Surface Inspection	
S008-1250	Level 2	Descent Inspection	
S008-1252	Level 2	Descent Inspection	
S008-1254	Level 2	Descent Inspection	
S008-1256	Level 2	Surcharged/Debris	
S008-1260	Level 2	Descent Inspection	
S008-1270	Level 2	Descent Inspection	
S008-1280	Level 2	Descent Inspection	
S008-1290	Level 2	Descent Inspection	
S008-1300	Level 2	Descent Inspection	
S008-1320	Level 2	Descent Inspection	
S008-1330	Level 2	Descent Inspection	
S008-1340	Level 2	Descent Inspection	
S008-1350	Level 2	Descent Inspection	
S008-1370	Level 2	Descent Inspection	
S008-1380	Level 2	Descent Inspection	
S008-1390	Level 2	Descent Inspection	
S008-1400	Level 2	Not Found	
S008-1410	Level 2	Not Found	
S008-1420	Level 2	Not Found	
S008-1440	Level 2	Descent Inspection	
S008-1450	Level 2	Descent Inspection	
S008-1470	Level 2	Descent Inspection	
S008-1480	Level 2	Descent Inspection	
S008-1484	Level 2	Descent Inspection	
S008-1760	Level 2	Descent Inspection	
S008-1770	Level 2	Descent Inspection	
S008-1780	Level 2	Descent Inspection	
S008-1790	Level 2	Descent Inspection	
S008-1800	Level 2	Descent Inspection	
S008-1810	Level 2	Descent Inspection	
S008-1820	Level 2	Descent Inspection	
S008-1830	Level 2	Descent Inspection	
S008-1840	Level 2	Descent Inspection	
S008-1840A	Level 2	Descent Inspection	
S008-1850	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1850A	Level 2	No Access	
S008-1860	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1870	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1880	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1890	Level 2	Descent Inspection	
S008-1900	Level 2	Descent Inspection	
S008-1910	Level 2	Descent Inspection	
S008-1920	Level 2	Not Opened	
S008-1930	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1940	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1950	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1960	Level 2	Descent Inspection	
S008-1970	Level 2	Descent Inspection	
S008-1975	Level 2	Descent Inspection	
S008-1980	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1980A	Level 2	No Access	
S008-1980B	Level 1	Surface Inspection	
S008-1990	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-1990A	Level 2	Descent Inspection	
S008-2000	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S008-2005	Level 2	Descent Inspection	
S008-2010	Level 2	Descent Inspection	
S008-2020	Level 2	Descent Inspection	
S008-2030	Level 2	Descent Inspection	
S008-2040	Level 2	Descent Inspection	
S008-2050	Level 2	Descent Inspection	
S008-2060	Level 2	Descent Inspection	
S008-2070	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S008-2080	Level 2	Descent Inspection	
S008-2090	Level 2	Descent Inspection	
S008-2100	Level 2	Surcharged/Debris	
S008-2110	Level 2	Descent Inspection	
S008-2120	Level 2	Descent Inspection	
S008-2130	Level 2	Descent Inspection	
S008-2140	Level 2	Descent Inspection	
S008-2150	Level 2	Descent Inspection	
S008-2160	Level 2	Descent Inspection	
S008-2170	Level 2	Descent Inspection	
S008-2180	Level 2	Descent Inspection	
S008-2190	Level 2	Descent Inspection	
S008-2200	Level 2	No Access	3028 Midland BLVD Manhole has asphalt on cover, cannot open unless the asphalt is picked off Manhole is 5 inches below surface of the street, needs to have a riser ring put in place Photo #'s 1727 & 1728
S008-2209	Level 2	Descent Inspection	
S008-2210	Level 2	Descent Inspection	
S008-2220	Level 2	Descent Inspection	
S008-2240	Level 2	Descent Inspection	
S008-2250	Level 2	Descent Inspection	
S008-2260	Level 2	Descent Inspection	
S008-2290	Level 2	Descent Inspection	
S008-2300	Level 2	Descent Inspection	
S008-2310	Level 2	Not Found	
S008-2320	Level 2	Descent Inspection	
S008-2330	Level 2	Descent Inspection	
S008-2340	Level 2	Descent Inspection	
S008-2350	Level 2	Descent Inspection	
S008-2360	Level 2	Descent Inspection	
S008-2370	Level 2	Not Found	
S008-2380	Level 2	Buried or Marked	
S008-2390	Level 2	Descent Inspection	
S008-2400	Level 2	Descent Inspection	
S008-2410	Level 2	Descent Inspection	
S008-2420	Level 2	Descent Inspection	
S008-2430	Level 2	Not Found	
S008-2440	Level 2	Descent Inspection	
S008-2450	Level 2	Not Found	
S008-2460	Level 2	Descent Inspection	
S008-2470	Level 2	Descent Inspection	
S008-2480	Level 2	Not Found	
S008-2500	Level 2	Descent Inspection	
S008-2510	Level 2	Descent Inspection	
S008-2520	Level 2	Buried or Marked	
S008-2530	Level 2	Descent Inspection	
S008-2530A	Level 2	Descent Inspection	
S008-3000	Level 2	Descent Inspection	
S008-3010	Level 2	Not Found	City states manhole is located in backyard of 4631 Windsor, that manhole is S008-3000 Wheeled footage on map, 122 feet, to 2309 N 47th and looked in backyard...cannot find manhole
S008-3020	Level 2	Descent Inspection	
S008-3030	Level 2	Descent Inspection	
S008-3040	Level 2	Descent Inspection	
S008-3050	Level 2	Descent Inspection	
S008-4010	Level 2	Descent Inspection	
S008-4020	Level 2	Descent Inspection	
S008-4030	Level 2	Descent Inspection	
S008-4035	Level 2	Descent Inspection	
S008-4100	Level 2	Descent Inspection	
S008-4110	Level 2	Descent Inspection	
S009-0005	Level 2	Descent Inspection	
S009-0010	Level 2	Descent Inspection	
S009-0020	Level 2	Descent Inspection	
S009-0030	Level 2	Descent Inspection	
S009-0040	Level 2	Descent Inspection	
S009-0050	Level 2	Descent Inspection	
S009-0070	Level 2	Descent Inspection	
S009-0075	Level 2	Descent Inspection	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S009-0080	Level 2	Descent Inspection	
S009-0082	Level 2	Descent Inspection	
S009-0084	Level 2	Descent Inspection	
S009-0085	Level 2	Descent Inspection	
S009-0085A	Level 2	Descent Inspection	
S009-0086	Level 2	Descent Inspection	
S009-0088	Level 2	Descent Inspection	
S009-0090	Level 2	Not Found	
S009-0095	Level 2	Descent Inspection	
S009-0100	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic,need permit
S009-0105	Level 2	Descent Inspection	
S009-0110	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S009-0115	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S009-0120	Level 2	Descent Inspection	
S009-0130	Level 2	Descent Inspection	
S009-0140	Level 2	Descent Inspection	
S009-0150	Level 2	Descent Inspection	
S009-0160	Level 2	Surcharged/Debris	
S009-0170	Level 2	Descent Inspection	
S009-0180	Level 2	Descent Inspection	
S009-0190	Level 2	Descent Inspection	
S009-0200	Level 2	Descent Inspection	
S009-0210	Level 2	Descent Inspection	
S009-0220	Level 2	Descent Inspection	
S009-0230	Level 2	Descent Inspection	
S009-0240	Level 2	Descent Inspection	
S009-0250	Level 2	Descent Inspection	
S009-0260	Level 2	Descent Inspection	
S009-0270	Level 2	Descent Inspection	
S009-0280	Level 2	Descent Inspection	
S009-0290	Level 2	Descent Inspection	
S009-0300	Level 2	Descent Inspection	
S009-0310	Level 2	Descent Inspection	
S009-0320	Level 2	Not Found	Address is 2317 N 50th St Map shows manhole to be in backyard, looked in backyard Manhole may possibly be under shed Need city to locate
S009-0330	Level 2	Descent Inspection	
S009-0340	Level 2	Descent Inspection	
S009-0350	Level 2	Descent Inspection	
S009-0360	Level 2	Descent Inspection	
S009-0370	Level 2	Descent Inspection	
S009-0380	Level 2	Buried or Marked	
S009-0390	Level 2	Descent Inspection	
S009-0400	Level 2	Descent Inspection	
S009-0410	Level 2	Descent Inspection	
S009-0420	Level 2	No Access	
S009-0430	Level 2	Descent Inspection	
S009-0440	Level 2	Descent Inspection	
S009-0450	Level 2	Descent Inspection	
S009-0460	Level 2	Descent Inspection	
S009-0470	Level 2	Descent Inspection	
S009-0480	Level 2	Descent Inspection	
S009-0490	Level 2	Descent Inspection	
S009-0500	Level 2	Descent Inspection	
S009-0510	Level 2	Descent Inspection	
S009-0520	Level 2	Descent Inspection	
S009-0530	Level 2	Descent Inspection	
S009-0540	Level 2	Descent Inspection	
S009-0550	Level 2	Descent Inspection	
S009-0560	Level 2	Descent Inspection	
S009-0570	Level 2	Descent Inspection	
S009-0580	Level 2	Descent Inspection	
S009-0590	Level 2	Descent Inspection	
S009-0600	Level 2	Descent Inspection	
S009-0610	Level 2	Descent Inspection	
S009-0620	Level 2	Not Found	
S009-0630	Level 2	Not Found	

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S009-0640	Level 2	Descent Inspection	
S009-0650	Level 2	Descent Inspection	
S009-0655	Level 2	Descent Inspection	
S009-0660	Level 2	Not Found	Could not find during manhole inspection and smoke testing Manhole possibly located on private property, could not access due to fence with posted private property sign Need city to locate
S009-0670	Level 2	Not Found	Could not find during manhole inspection or smoke testing Manhole possibly located on private property, could not access due to fence with posted private property sign Need city to locate
S009-0680	Level 2	Not Found	Could not find during manhole inspection or smoke testing Manhole possibly located on private property, could not access due to fence with posted private property sign Need city to locate
S009-0690	Level 2	Not Found	Could not find during manhole inspection or smoke testing Manhole possibly located on private property, could not access due to fence with posted private property sign Need city to locate
S009-0700	Level 2	Not Found	Could not find during , manhole inspection or smoke testing Could not access due to fence with posted private property sign Need city to locate
S009-0710	Level 2	Descent Inspection	
S009-0712	Level 2	Descent Inspection	
S009-0720	Level 2	Descent Inspection	
S009-0730	Level 2	Descent Inspection	
S009-0740	Level 2	Descent Inspection	
S009-0750	Level 2	No Access	
S009-0760	Level 2	Buried or Marked	
S009-0770	Level 2	Not Found	Could not find during manhole inspection or smoke test Manhole possibly located on private property, could not access due to fence with private property sign posted Need city to locate
S009-0780	Level 2	Descent Inspection	
S009-0784	Level 2	Descent Inspection	
S009-0785	Level 2	Not Found	
S009-0786	Level 2	Descent Inspection	
S009-0788	Level 2	Descent Inspection	
S009-0800	Level 2	Descent Inspection	
S009-0810	Level 2	Descent Inspection	
S009-0820	Level 2	Descent Inspection	
S009-0830	Level 2	Descent Inspection	
S009-0840	Level 2	Descent Inspection	
S009-0850	Level 2	Descent Inspection	
S009-0860	Level 2	Descent Inspection	
S009-0870	Level 2	Descent Inspection	
S009-0880	Level 2	Descent Inspection	
S009-0890	Level 2	Descent Inspection	
S009-0900	Level 2	Descent Inspection	
S009-0910	Level 2	Descent Inspection	
S009-0920	Level 2	Descent Inspection	
S009-0930	Level 2	Descent Inspection	
S009-0940	Level 2	Descent Inspection	
S009-0950	Level 2	Descent Inspection	
S009-0960	Level 2	Descent Inspection	
S009-0970	Level 2	Descent Inspection	
S009-0980	Level 2	Descent Inspection	
S009-0990	Level 2	Descent Inspection	
S009-1000	Level 2	Descent Inspection	
S009-1010	Level 2	Descent Inspection	
S009-1020	Level 2	Descent Inspection	
S009-1030	Level 2	Descent Inspection	
S009-1040	Level 2	Descent Inspection	
S009-1050	Level 2	Descent Inspection	
S009-1060	Level 2	Descent Inspection	
S009-1070	Level 2	Descent Inspection	
S009-1080	Level 2	Descent Inspection	
S009-1090	Level 2	Descent Inspection	
S009-1100	Level 2	Not Found	
S009-1110	Level 2	Descent Inspection	
S009-1120	Level 2	Descent Inspection	
S009-1130	Level 2	Not Found	
S009-1140	Level 2	Not Found	
S009-1150	Level 2	No Access	
S009-1160	Level 2	Descent Inspection	
S009-1170	Level 2	Descent Inspection	
S009-1175	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit

Manhole Inspection Status

Manhole Number	NASSCO Inspection Level	Inspection Status	Additional Information
S009-1180	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S009-1190	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S009-1192	Level 2	Descent Inspection	
S009-1200	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S009-1210	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S009-1220	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S009-1230	Level 2	No Access	Manhole located in Kelley Highway, heavy traffic, need permit
S009-1240	Level 2	No Access	Manhole located in horse pasture, private property sign is posted Unable to locate owner to get permission to access property Need city to locate
S009-1250	Level 2	No Access	Manhole is located in horse pasture, private property sign is posted Could not locate owner to gain access to property Need city to locate
S009-1260	Level 2	No Access	Manhole located in horse pasture, private property sign is posted Could not find owner to gain access to property Need city to locate
S009-1270	Level 2	No Access	Manhole is located in horse pasture, private property sign is posted Could not find owner to gain access Need city to locate
S009-1275	Level 2	No Access	Manhole is located in horse pasture, private property sign is posted Could not find owner to gain access Need city to locate
S009-1280	Level 2	Descent Inspection	
S009-1285	Level 2	Descent Inspection	
S009-1290	Level 2	Descent Inspection	
S009-1300	Level 2	Descent Inspection	
S009-1310	Level 2	Descent Inspection	
S009-1320	Level 2	Not Found	
S009-1330	Level 2	Descent Inspection	
S009-1331	Level 2	Descent Inspection	
S009-1340	Level 2	Descent Inspection	
S009-1350	Level 2	Descent Inspection	
S009-1360	Level 2	Descent Inspection	
S009-1370	Level 2	Descent Inspection	
S009-1380	Level 2	Descent Inspection	
S009-1390	Level 2	Descent Inspection	
S009-1400	Level 2	Descent Inspection	
S009-1410	Level 2	Descent Inspection	
S009-1420	Level 2	Not Found	
S009-1430	Level 2	Descent Inspection	
S009-1440	Level 2	Surcharged/Debris	
S009-1450	Level 2	Descent Inspection	
S009-1460	Level 2	Descent Inspection	
S009-1470	Level 2	Descent Inspection	
S009-1480	Level 2	Not Found	
S009-1490	Level 2	Descent Inspection	
S009-1500	Level 2	Descent Inspection	
S009-1510	Level 2	Descent Inspection	
S009-1520	Level 2	Descent Inspection	
S009-1530	Level 2	Descent Inspection	
S009-1540	Level 2	Descent Inspection	
S009-1550	Level 2	Descent Inspection	
S009-1560	Level 2	Descent Inspection	
S009-1570	Level 2	Buried or Marked	
S009-1575	Level 2	Not Found	
S009-1580	Level 2	Descent Inspection	
S009-1585	Level 2	Descent Inspection	
S009-1590	Level 2	Descent Inspection	
S009-1600	Level 2	Descent Inspection	
S009-1610	Level 2	Not Found	
S009-1620	Level 2	Descent Inspection	
S009-1630	Level 2	Descent Inspection	
S009-1640	Level 2	Descent Inspection	
S009-1650	Level 2	Descent Inspection	
S009-1660	Level 2	Descent Inspection	

APPENDIX B

NASSCO MACP SCORES

NASSCO MACP Scores

Manhole Number	MACP Score
S004-0010	No Defect
S004-0012	1
S004-0014	1
S004-0016	No Defect
S004-0018	1
S004-0020	No Defect
S004-0022	No Defect
S004-0024	No Defect
S004-0026	No Defect
S004-0028	No Defect
S004-0030	1
S004-0032	Not Inspected
S004-0034	No Defect
S004-0036	No Defect
S004-0038	No Defect
S004-0040	1
S004-0045	1
S004-0050	2
S004-0060	1
S004-0065	2
S004-0080	No Defect
S004-0090	No Defect
S004-0100	1
S004-0110	No Defect
S004-0120	No Defect
S004-0130	No Defect
S004-0140	3
S004-0150	4
S004-0160	1
S004-0170	2
S004-0180	1
S004-0190	No Defect
S004-0200	2
S004-0210	1
S004-0220	2
S004-0230	1
S004-0240	No Defect
S004-0245	No Defect
S004-0250	2
S004-0260	No Defect
S004-0270	No Defect
S004-0280	2
S004-0310	No Defect
S004-0312	1
S004-0320	No Defect
S004-0330	No Defect
S004-0340	No Defect
S004-0350	No Defect
S004-0370	1
S004-0375	Not Inspected
S004-0380	Not Inspected
S004-0390	Not Inspected
S004-0400	4
S004-0410	No Defect
S004-0420	1
S004-0430	No Defect
S004-0440	No Defect
S004-0450	Not Inspected
S004-0460	No Defect
S004-0470	2
S004-0480	1
S004-0490	No Defect
S004-0500	No Defect
S004-0510	No Defect
S004-0520	No Defect
S004-0530	No Defect
S004-0540	No Defect
S004-0550	2

NASSCO MACP Scores

Manhole Number	MACP Score
S004-0560	Not Inspected
S004-0570	2
S004-0580	No Defect
S004-0590	No Defect
S004-0600	2
S004-0605	Not Inspected
S004-0610	5
S004-0620	2
S004-1120	Not Inspected
S004-1130	Not Inspected
S004-1140	Not Inspected
S004-1150	No Defect
S004-1160	No Defect
S004-1170	1
S004-1173	No Defect
S004-1180	2
S004-1190	No Defect
S004-1200	No Defect
S004-1210	2
S004-1220	2
S004-1230	2
S004-1240	2
S004-1250	2
S004-1260	1
S004-1270	2
S004-1280	1
S004-1290	No Defect
S004-1300	2
S004-1310	Not Inspected
S004-1320	1
S004-1330	Not Inspected
S004-1340	Not Inspected
S004-1350	Not Inspected
S004-1360	No Defect
S004-1370	No Defect
S004-1380	No Defect
S004-1390	No Defect
S004-1400	No Defect
S004-1410	2
S004-1415	1
S004-1420	Not Inspected
S004-1430	No Defect
S004-1440	2
S004-1450	2
S004-1470	No Defect
S004-1480	No Defect
S004-1490	1
S004-1500	1
S004-1510	2
S004-1520	1
S004-1530	No Defect
S004-1540	No Defect
S004-1550	No Defect
S004-1560	2
S004-1570	1
S004-1580	No Defect
S004-1585	2
S004-1590	2
S004-1650	2
S004-1660	1
S004-1670	2
P007-0010	No Defect
P007-0020	Not Inspected
P007-0030	No Defect
P007-0040	2
P007-0050	2
P007-0060	No Defect
P007-0065	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
P007-0070	2
P007-0080	3
P007-0084	No Defect
P007-0090	Not Inspected
P007-0120	2
P007-0130	2
P007-0140	Not Inspected
P007-0150	3
P007-0152	2
P007-0154	3
P007-0155	3
P007-0157	2
P007-0160	2
P007-0170	No Defect
P007-0180	No Defect
P007-0190	No Defect
P007-0200	2
P007-0202	2
P007-0205	2
P007-0210	No Defect
P007-0220	2
P007-0230	3
P007-0240	3
P007-0250	No Defect
P007-0260	No Defect
P007-0270	1
P007-0280	No Defect
P007-0290	1
P007-0300	1
P007-0310	No Defect
P007-0312	2
P007-0314	No Defect
P007-0316	1
P007-0320	2
P007-0330	2
P007-0340	No Defect
P007-0350	No Defect
P007-0370	4
P007-0380	2
P007-0383	3
P007-0386	No Defect
P007-0390	1
P007-0395	1
P007-0400	1
P007-0410	4
P007-0430	2
P007-0440	No Defect
P007-0450	No Defect
P007-0460	No Defect
P007-0465	1
P007-0470	3
P007-0480	2
P007-0482	2
P007-0484	1
P007-0486	No Defect
P007-0490	1
P007-0495	1
P007-0500	No Defect
P007-0500A	4
P007-0510	No Defect
P007-0520	No Defect
P007-0520A	No Defect
P007-0530	No Defect
P007-0530A	No Defect
P007-0530B	No Defect
P007-0540	2
P007-0550	2
P007-0557	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
P007-0560	No Defect
P007-0570	2
P007-0580	1
P007-0585	3
P007-0600	2
P007-0610	2
P007-0620	2
P007-0630	No Defect
P007-0640	No Defect
P007-0650	2
P007-0660	No Defect
P007-0670	No Defect
P007-0680	1
P007-0690	3
P007-0700	No Defect
P007-0710	4
P007-0720	Not Inspected
P007-0730	2
P007-0740	2
P007-0750	2
P007-0760	2
P007-0770	2
P007-0780	1
P007-0782	2
P007-0784	1
P007-0785	1
P007-0786	2
P007-0788	1
P007-0790	2
P007-0810	2
P007-0820	Not Inspected
P007-0840	2
P007-0850	No Defect
P007-0860	2
P007-0870	No Defect
P007-0920	1
P007-0930	Not Inspected
P007-0940	2
P007-0950	Not Inspected
P007-0955	Not Inspected
P007-0958	Not Inspected
P007-0960	Not Inspected
P007-0970	Not Inspected
P007-0980	Not Inspected
P007-0990	3
P007-1000	2
P007-1010	2
P007-1020	2
P007-1030	No Defect
P007-1040	1
P007-1050	2
P007-1060	Not Inspected
P007-1070	No Defect
P007-1080	2
P007-1090	3
P007-1100	2
P007-1110	2
P007-1140	2
P007-1150	2
P007-1160	No Defect
P007-1170	Not Inspected
P007-1180	2
P007-1190	Not Inspected
P007-1200	2
P007-1210	Not Inspected
P007-1220	2
P007-1222	Not Inspected
P007-1224	Not Inspected

NASSCO MACP Scores

Manhole Number	MACP Score
P007-1230	2
P007-1240	2
P007-1250	1
P007-1250A	No Defect
P007-1250B	2
P007-1255	2
P007-1260	3
P007-1264	Not Inspected
P007-1267	2
P007-1270	3
P007-1280	3
P007-1282	No Defect
P007-1290	3
P007-1300	2
P007-1310	No Defect
P007-1320	3
P007-1330	2
P007-1350	2
P007-1360	No Defect
P007-1363	2
P007-1370	1
P007-1380	1
P007-1385	1
P007-1390	2
P007-1400	4
P007-1410	No Defect
P007-1415	2
P007-1420	No Defect
P007-1425	1
P007-1430	2
P007-1440	2
P007-1450	2
P007-1460	2
P007-1470	2
P007-1480	2
P007-1490	3
P007-1500	2
P007-1504	1
P007-1507	2
P007-1510	2
P007-1520	1
P007-1525	2
P007-1530	No Defect
P007-1540	No Defect
P007-1550	3
P007-1560	3
P007-1570	1
P007-1580	3
P007-1590	2
P007-1600	2
P007-1610	3
P007-1620	3
P007-1630	Not Inspected
P007-1635	No Defect
P007-1640	3
P007-1650	2
P007-1660	3
P007-1665	1
P007-1670	No Defect
P007-1675	2
P007-1680	4
P007-1690	No Defect
P007-1700	No Defect
P007-1710	3
P007-1720	No Defect
P007-1730	5
P007-1740	No Defect
P007-1750	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
P007-1760	4
P007-1770	1
P007-1780	2
P007-1790	2
P007-1800	3
P007-1810	Not Inspected
P007-1820	Not Inspected
P007-1830	No Defect
P007-1840	2
P007-1850	1
P007-1860	No Defect
P007-1870	3
P007-1880	No Defect
P007-1890	2
P007-1895	2
P007-1897	No Defect
P007-1900	2
P007-1910	1
P007-1920	3
P007-1930	3
P007-1940	3
P007-1945	Not Inspected
P007-1950	2
P007-1960	2
P007-1960A	2
P007-1970	2
P007-1980	5
P007-1990	2
P007-2000	2
P007-2010	No Defect
P007-2020	4
P007-2030	No Defect
P007-2040	No Defect
P007-2050	3
P007-2060	No Defect
P007-2070	2
P007-2080	4
P007-2090	2
P007-2100	1
P007-2102	1
P007-2108	No Defect
P007-2110	No Defect
P007-2120	No Defect
P007-2130	2
P007-2140	Not Inspected
P007-2150	2
P007-2155	2
P007-2155A	2
P007-2160	Not Inspected
P007-2170	Not Inspected
P007-2180	2
P007-2190	No Defect
P007-2200	No Defect
P007-2210	Not Inspected
P007-2210A	2
P007-2220	No Defect
P007-2230	3
P007-2240	2
P007-2245	1
P007-2248	1
P007-2250	3
P007-2260	No Defect
P007-2270	2
P007-2272	2
P007-2280	2
P007-2285	No Defect
P007-2290	No Defect
P007-2300	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
P007-2304	2
P007-2307	2
P007-2310	No Defect
P007-2320	2
P007-2325	2
P007-2330	Not Inspected
P007-2340	Not Inspected
P007-2350	1
P007-2354	Not Inspected
P007-2357	2
P007-2360	2
P007-2370	2
P007-2372	2
P007-2380	Not Inspected
P007-2383	2
P007-2385	1
P007-2390	2
P007-2395	No Defect
P007-2400	2
P007-2500	3
P007-2510	2
P007-2520	Not Inspected
P007-2530	Not Inspected
P007-2540	No Defect
P007-2550	2
P007-2560	2
P007-2570	Not Inspected
P007-2700	2
P007-2710	2
P007-2720	No Defect
P007-2730	2
P007-2740	Not Inspected
P007-2740A	1
P007-2750	3
P007-2760	4
P007-2770	2
P007-2900	3
P007-2910	2
P007-2920	No Defect
P007-2930	1
P007-2940	2
P007-2940A	1
P007-2950	2
P007-2960	3
P007-2970	2
P007-2980	3
P007-3100	Not Inspected
P007-3110	No Defect
P007-3120	4
P007-3130	2
P007-3140	1
P007-3150	No Defect
P007-3300	2
P007-3310	2
P007-3320	1
P007-3330	2
P007-3340	No Defect
P007-3350	2
S007-3350	No Defect
FL01-0020	3
FL01-0020A	Not Inspected
FL01-0030	4
FL01-0040	No Defect
FL01-0050	Not Inspected
FL01-0060	No Defect
FL01-0070	3
FL01-0080	2
FL01-0090	3

NASSCO MACP Scores

Manhole Number	MACP Score
FL01-0100	3
FL01-0110	5
FL01-0120	2
FL01-0130	4
FL01-0140	4
FL01-0150	5
FL01-0160	5
FL01-0170	No Defect
FL01-0180	1
FL01-0190	5
FL01-0200	No Defect
FL01-0210	4
FL01-0220	No Defect
FL01-0230	No Defect
FL01-0240	No Defect
FL01-0250	No Defect
FL01-0260	Not Inspected
FL01-0270	No Defect
FL01-0280	No Defect
FL01-0290	No Defect
FL01-0300	No Defect
FL01-0305	No Defect
FL01-0310	1
FL01-0320	4
FL01-0330	2
FL01-0340	No Defect
FL01-0350	Not Inspected
FL01-0360	4
FL01-0365	2
FL01-0370	No Defect
FL01-0380	3
FL01-0390	2
FL01-0400	3
FL01-0405	2
FL01-0410	No Defect
FL01-0420	2
FL01-0430	5
FL01-0439	2
FL01-0440	No Defect
FL01-0445	3
FL01-0450	3
FL01-0460	3
FL01-0470	No Defect
FL01-0480	5
FL01-0490	2
FL01-0500	No Defect
FL01-0510	3
FL01-0515	5
FL01-0520	3
FL01-0525	No Defect
FL01-0530	Not Inspected
FL01-0540	5
FL01-0550	3
FL01-0560	4
FL01-0570	5
FL01-0570A	4
FL01-0580	2
FL01-0590	4
FL01-0600	5
FL01-0610	4
FL01-0620	3
FL01-0630	No Defect
FL01-0640	No Defect
FL01-0650	No Defect
FL01-0660	4
FL01-0680	4
FL01-0690	No Defect
FL01-0700	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
FL01-0710	5
FL01-0720	5
FL01-0730	Not Inspected
FL01-0740	4
FL01-0750	Not Inspected
FL01-0760	5
FL01-0770	4
FL01-0770A	1
FL01-0780	No Defect
FL01-0790	No Defect
FL01-0800	3
FL01-0810	2
FL01-0820	5
FL01-0830	No Defect
FL01-0840	No Defect
FL01-0845	No Defect
FL01-0850	No Defect
FL01-0860	No Defect
FL01-0870	No Defect
FL01-0880	4
FL01-0890	Not Inspected
FL01-0900	5
FL01-0910	5
FL01-0920	Not Inspected
FL01-0930	2
FL01-0930A	5
FL01-0932	4
FL01-0940	No Defect
FL01-0950	No Defect
FL01-0960	3
FL01-0970	5
FL01-0980	5
FL01-0990	No Defect
FL01-1000	No Defect
FL01-1010	5
FL01-1020	5
FL01-1030	3
FL01-1040	3
FL01-1060	2
FL01-1070	5
FL01-1080	5
FL01-1090	4
FL01-1100	No Defect
FL01-1110	5
FL01-1120	5
FL01-1130	4
FL01-1140	3
FL01-1150	No Defect
FL01-1160	2
FL01-1170	No Defect
FL01-1180	3
FL01-1185	2
FL01-1190	No Defect
FL01-1200	4
FL01-1210	4
FL01-1220	4
FL01-1220A	No Defect
FL01-1230	4
FL01-1240	No Defect
FL01-1250	3
FL01-1260	No Defect
FL01-1270	4
FL01-1280	No Defect
FL01-1290	No Defect
FL01-1300	5
FL01-1310	3
FL01-1320	No Defect
FL01-1330	4

NASSCO MACP Scores

Manhole Number	MACP Score
FL01-1340	No Defect
FL01-1350	3
FL01-1360	5
FL01-1370	2
FL01-1380	4
FL01-1390	No Defect
FL01-1395	5
FL01-1400	5
FL01-1410	No Defect
FL01-1420	5
FL01-1430	4
FL01-1440	4
FL01-1450	5
FL01-1460	No Defect
FL01-1470	5
FL01-1480	No Defect
FL01-1490	No Defect
FL01-1500	No Defect
FL01-1510	4
FL01-1520	No Defect
FL01-1530	2
FL01-1540	5
FL01-1550	No Defect
FL01-1560	5
FL01-1570	No Defect
FL01-1580	4
FL01-1590	No Defect
FL01-1600	3
FL01-1610	2
FL01-1620	No Defect
FL01-1630	2
FL01-1640	2
FL01-1650	5
FL01-1660	No Defect
FL01-1670	5
FL01-1680	5
FL01-1690	No Defect
FL01-1700	No Defect
FL01-1710	5
FL01-1720	5
FL01-1730	No Defect
FL01-1740	3
FL01-1750	No Defect
FL01-1760	4
FL01-1770	Not Inspected
FL01-1780	2
FL01-1790	No Defect
FL01-1800	No Defect
FL01-1810	4
FL01-1820	2
FL01-1830	No Defect
FL01-1840	No Defect
FL01-1850	4
FL01-1860	No Defect
FL01-1870	Not Inspected
FL01-1880	2
FL01-1890	4
FL01-1892	No Defect
FL01-1900	No Defect
FL01-1905	No Defect
FL01-1910	Not Inspected
FL01-1915	5
FL01-1920	5
FL01-1930	4
FL01-1940	4
FL01-1950	4
FL01-1960	4
FL01-1970	5

NASSCO MACP Scores

Manhole Number	MACP Score
FL01-1980	5
FL01-1990	5
FL01-1990A	2
FL01-2000	3
FL01-2010	No Defect
FL01-2020	3
FL01-2030	5
FL01-2040	4
FL01-2050	Not Inspected
FL01-2060	2
FL01-2070	Not Inspected
FL01-2080	No Defect
FL01-2090	No Defect
FL01-2100	No Defect
FL01-2110	No Defect
FL01-2200	No Defect
FL01-2210	No Defect
FL01-2220	No Defect
FL01-2230	No Defect
FL01-2240	3
FL01-2250	1
FL01-2260	No Defect
FL01-2270	No Defect
FL01-2280	No Defect
FL01-2290	No Defect
FL01-2300	No Defect
FL01-2310	No Defect
FL01-2320	No Defect
FL01-2330	No Defect
FL01-2340	No Defect
FL01-2350	No Defect
FL01-2360	No Defect
FL01-2370	No Defect
FL01-2380	No Defect
FL01-2390	No Defect
FL01-2400	No Defect
FL01-2410	3
FL01-2420	No Defect
FL01-2430	No Defect
FL01-2440	No Defect
FL01-2450	No Defect
FL01-2460	No Defect
FL01-2470	No Defect
FL01-2480	Not Inspected
S003-0020	3
S003-0030	No Defect
S003-0040	Not Inspected
S003-0060	No Defect
S003-0070	No Defect
S003-0080	3
S003-0090	Not Inspected
S003-0100	5
S003-0105	1
S003-0110	1
S003-0120	2
S003-0130	No Defect
S003-0160	1
S003-0165	2
S003-0170	1
S003-0180	1
S003-0190	3
S003-0200	Not Inspected
S003-0210	3
S003-0214	No Defect
S003-0216	No Defect
S003-0217	No Defect
S003-0220	2
S003-0230	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
S003-0240	5
S003-0250	3
S003-0260	No Defect
S003-0270	No Defect
S003-0274	4
S003-0280	No Defect
S003-0290	4
S003-0300	3
S003-0330	No Defect
S003-0340	2
S003-0350	No Defect
S003-0356	No Defect
S003-0360	Not Inspected
S003-0370	No Defect
S003-0380	5
S003-0390	No Defect
S003-0390A	5
S003-0400	5
S003-0410	No Defect
S003-0420	3
S003-0430	No Defect
S003-0440	No Defect
S003-0450	1
S003-0460	3
S003-0465	No Defect
S003-0520	2
S003-0530	2
S003-0540	3
S003-0550	Not Inspected
S003-0560	5
S003-0590	3
S003-0600	5
S003-0610	No Defect
S003-0620	Not Inspected
S003-0630	No Defect
S003-0640	No Defect
S003-0650	No Defect
S003-0650A	1
S003-0660	2
S003-0660A	2
S003-0670	No Defect
S003-0670A	No Defect
S003-0672	No Defect
S003-0680	No Defect
S003-0690	3
S003-0700	Not Inspected
S003-0710	3
S003-0720	No Defect
S003-0726	No Defect
S003-0730	2
S003-0740	4
S003-0750	4
S003-0752	No Defect
S003-0760	No Defect
S003-0770	Not Inspected
S003-0780	2
S003-0785	5
S003-0790	2
S003-0795	No Defect
S003-0800	Not Inspected
S003-0805	3
S003-0810	4
S003-0810A	Not Inspected
S003-0820	2

NASSCO MACP Scores

Manhole Number	MACP Score
S003-0830	4
S003-0840	4
S003-0850	No Defect
S003-0860	Not Inspected
S003-0870	2
S003-0880	1
S003-0890	No Defect
S003-0900	No Defect
S003-0910	No Defect
S003-0920	Not Inspected
S003-0930	1
S003-0940	4
S003-0940A	No Defect
S003-0940B	No Defect
S003-0950	Not Inspected
S003-0960	No Defect
S003-0965	4
S003-0970	4
S003-0980	3
S003-0990	Not Inspected
S003-1000	5
S003-1010	No Defect
S003-1020	No Defect
S003-1024	No Defect
S003-1030	2
S003-1040	5
S003-1050	1
S003-1060	2
S003-1070	5
S003-1080	2
S003-1090	2
S003-1100	2
S003-1110	No Defect
S003-1120	4
S003-1130	2
S003-1140	No Defect
S003-1150	No Defect
S003-1160	2
S003-1170	No Defect
S003-1180	3
S003-1190	1
S003-1200	1
S003-1210	3
S003-1220	2
S003-1230	4
S003-1240	5
S003-1250	Not Inspected
S003-1260	2
S003-1270	2
S003-1280	2
S003-1290	Not Inspected
S003-1300	2
S003-1310	No Defect
S003-1320	3
S003-1330	4
S003-1340	2
S003-1350	Not Inspected
S003-1360	Not Inspected
S003-1370	No Defect
S003-1373	2
S003-1380	No Defect
S003-1390	No Defect
S003-1400	Not Inspected
S003-1410	Not Inspected
S003-1420	Not Inspected
S003-1430	Not Inspected
S003-1450	No Defect
S003-1460	5

NASSCO MACP Scores

Manhole Number	MACP Score
S003-1470	5
S003-1480	No Defect
S003-1480A	5
S003-1480B	5
S003-1480C	5
S003-2170	Not Inspected
S003-2180	Not Inspected
S003-2600	No Defect
S003-2610	3
S003-3050	No Defect
S003-3060	No Defect
S003-3070	No Defect
S003-3080	No Defect
S003-3090	No Defect
S003-3100	No Defect
S003-3110	Not Inspected
S003-3120	No Defect
S003-3130	No Defect
S003-3140	No Defect
S003-3150	Not Inspected
S003-3160	No Defect
S003-3170	No Defect
S003-3180	No Defect
S003-3190	No Defect
S003-3200	Not Inspected
S003-3210	No Defect
S003-3220	No Defect
S003-3230	No Defect
S003-3240	No Defect
S003-3250	No Defect
S003-3250A	Not Inspected
S003-3260	Not Inspected
S003-3270	Not Inspected
S003-3280	Not Inspected
S003-3290	Not Inspected
S003-3300	No Defect
S003-3310	No Defect
S003-3320	No Defect
S003-3330	No Defect
S003-3340	2
S003-3350	No Defect
S003-3360	No Defect
S003-3370	Not Inspected
S003-3380	3
S003-3390	No Defect
S003-3400	1
S003-3410	No Defect
S003-3420	1
S003-3430	1
S003-3440	2
S003-3450	No Defect
S003-3460	Not Inspected
S003-3470	No Defect
S003-3470A	No Defect
S003-3480	No Defect
S003-3490	No Defect
S003-3500	No Defect
S003-3510	5
S003-3520	No Defect
S003-3530	No Defect
S003-3540	No Defect
S003-3550	2
S003-3560	5
S003-3570	No Defect
S003-3580	3
S003-3590	No Defect
S003-3600	5
S003-3610	2

NASSCO MACP Scores

Manhole Number	MACP Score
S003-3620	No Defect
S003-3630	5
S003-3640	No Defect
S003-3650	No Defect
S003-3660	No Defect
S003-3670	2
S003-3680	No Defect
S003-3690	5
S008-0350	5
S008-0352	Not Inspected
S008-0354	5
S008-0356	2
S008-0360	No Defect
S008-0370	4
S008-0380	5
S008-0390	5
S008-0400	3
S008-0410	No Defect
S008-0420	3
S008-0425	3
S008-0430	No Defect
S008-0432	No Defect
S008-0434	No Defect
S008-0470	5
S008-0480	No Defect
S008-0500	No Defect
S008-0510	No Defect
S008-0520	No Defect
S008-0530	5
S008-0540	No Defect
S008-0580	5
S008-0590	2
S008-0600	1
S008-0610	4
S008-0643	No Defect
S008-0646	No Defect
S008-0648	No Defect
S008-0650	5
S008-0660	4
S008-0670	5
S008-0670A	5
S008-0690	2
S008-0700	3
S008-0710	No Defect
S008-0720	5
S008-0730	No Defect
S008-0740	No Defect
S008-0750	No Defect
S008-0760	5
S008-0770	2
S008-0770A	3
S008-0780	3
S008-0790	3
S008-0800	No Defect
S008-08-1	Not Inspected
S008-0810	3
S008-0820	No Defect
S008-0840	5
S008-0850	5
S008-0860	5
S008-0870	Not Inspected
S008-0880	Not Inspected
S008-0890	Not Inspected
S008-0900	No Defect
S008-0910	Not Inspected
S008-0920	No Defect
S008-0930	2
S008-0940	5

NASSCO MACP Scores

Manhole Number	MACP Score
S008-0950	4
S008-0960	3
S008-0970	Not Inspected
S008-0980	3
S008-0990	5
S008-1000	4
S008-1005	Not Inspected
S008-1010	3
S008-1020	5
S008-1030	No Defect
S008-1040	4
S008-1070	No Defect
S008-1070A	No Defect
S008-1080	No Defect
S008-1090	No Defect
S008-1093	5
S008-1096	No Defect
S008-1096A	4
S008-1100	Not Inspected
S008-1110	Not Inspected
S008-1115	5
S008-1120	1
S008-1130	Not Inspected
S008-1135	No Defect
S008-1140	Not Inspected
S008-1150	Not Inspected
S008-1160	Not Inspected
S008-1170	Not Inspected
S008-1173	No Defect
S008-1175	No Defect
S008-1180	Not Inspected
S008-1190	No Defect
S008-1190A	3
S008-1190B	No Defect
S008-1200	No Defect
S008-1210	No Defect
S008-1210A	No Defect
S008-1220	5
S008-1230	No Defect
S008-1240	No Defect
S008-1250	2
S008-1252	5
S008-1254	4
S008-1256	No Defect
S008-1260	5
S008-1270	4
S008-1280	5
S008-1290	5
S008-1300	5
S008-1320	2
S008-1330	No Defect
S008-1340	2
S008-1350	No Defect
S008-1370	No Defect
S008-1380	No Defect
S008-1390	No Defect
S008-1400	Not Inspected
S008-1410	Not Inspected
S008-1420	Not Inspected
S008-1440	No Defect
S008-1450	5
S008-1470	5
S008-1480	4
S008-1484	5
S008-1760	No Defect
S008-1770	No Defect
S008-1780	No Defect
S008-1790	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
S008-1800	2
S008-1810	No Defect
S008-1820	3
S008-1830	No Defect
S008-1840	No Defect
S008-1840A	3
S008-1850	Not Inspected
S008-1850A	Not Inspected
S008-1860	Not Inspected
S008-1870	Not Inspected
S008-1880	Not Inspected
S008-1890	3
S008-1900	2
S008-1910	1
S008-1920	Not Inspected
S008-1930	Not Inspected
S008-1940	Not Inspected
S008-1950	Not Inspected
S008-1960	5
S008-1970	2
S008-1975	4
S008-1980	Not Inspected
S008-1980A	Not Inspected
S008-1980B	No Defect
S008-1990	Not Inspected
S008-1990A	No Defect
S008-2000	Not Inspected
S008-2005	No Defect
S008-2010	3
S008-2020	No Defect
S008-2030	No Defect
S008-2040	2
S008-2050	4
S008-2060	2
S008-2070	2
S008-2080	2
S008-2090	4
S008-2100	No Defect
S008-2110	5
S008-2120	3
S008-2130	4
S008-2140	4
S008-2150	No Defect
S008-2160	No Defect
S008-2170	No Defect
S008-2180	5
S008-2190	5
S008-2200	Not Inspected
S008-2209	No Defect
S008-2210	No Defect
S008-2220	No Defect
S008-2240	5
S008-2250	4
S008-2260	5
S008-2290	No Defect
S008-2300	4
S008-2310	Not Inspected
S008-2320	No Defect
S008-2330	No Defect
S008-2340	No Defect
S008-2350	No Defect
S008-2360	4
S008-2370	Not Inspected
S008-2380	Not Inspected
S008-2390	No Defect
S008-2400	No Defect
S008-2410	No Defect
S008-2420	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
S008-2430	Not Inspected
S008-2440	No Defect
S008-2450	Not Inspected
S008-2460	5
S008-2470	No Defect
S008-2480	Not Inspected
S008-2500	No Defect
S008-2510	No Defect
S008-2520	Not Inspected
S008-2530	5
S008-2530A	3
S008-3000	4
S008-3010	Not Inspected
S008-3020	4
S008-3030	No Defect
S008-3040	1
S008-3050	4
S008-4010	5
S008-4020	4
S008-4030	4
S008-4035	No Defect
S008-4100	No Defect
S008-4110	No Defect
S009-0005	No Defect
S009-0010	No Defect
S009-0020	No Defect
S009-0030	No Defect
S009-0040	3
S009-0050	3
S009-0070	5
S009-0075	2
S009-0080	No Defect
S009-0082	No Defect
S009-0084	No Defect
S009-0085	No Defect
S009-0085A	No Defect
S009-0086	No Defect
S009-0088	3
S009-0090	Not Inspected
S009-0095	No Defect
S009-0100	Not Inspected
S009-0105	2
S009-0110	Not Inspected
S009-0115	Not Inspected
S009-0120	No Defect
S009-0130	No Defect
S009-0140	No Defect
S009-0150	1
S009-0160	No Defect
S009-0170	5
S009-0180	3
S009-0190	1
S009-0200	1
S009-0210	No Defect
S009-0220	2
S009-0230	2
S009-0240	No Defect
S009-0250	3
S009-0260	4
S009-0270	5
S009-0280	2
S009-0290	No Defect
S009-0300	No Defect
S009-0310	No Defect
S009-0320	Not Inspected
S009-0330	2
S009-0340	4
S009-0350	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
S009-0360	No Defect
S009-0370	2
S009-0380	Not Inspected
S009-0390	No Defect
S009-0400	No Defect
S009-0410	3
S009-0420	Not Inspected
S009-0430	No Defect
S009-0440	3
S009-0450	No Defect
S009-0460	No Defect
S009-0470	2
S009-0480	5
S009-0490	5
S009-0500	5
S009-0510	2
S009-0520	4
S009-0530	3
S009-0540	4
S009-0550	No Defect
S009-0560	5
S009-0570	2
S009-0580	4
S009-0590	1
S009-0600	No Defect
S009-0610	4
S009-0620	Not Inspected
S009-0630	Not Inspected
S009-0640	5
S009-0650	5
S009-0655	No Defect
S009-0660	Not Inspected
S009-0670	Not Inspected
S009-0680	Not Inspected
S009-0690	Not Inspected
S009-0700	Not Inspected
S009-0710	4
S009-0712	No Defect
S009-0720	2
S009-0730	No Defect
S009-0740	No Defect
S009-0750	Not Inspected
S009-0760	Not Inspected
S009-0770	Not Inspected
S009-0780	3
S009-0784	5
S009-0785	Not Inspected
S009-0786	3
S009-0788	4
S009-0800	3
S009-0810	No Defect
S009-0820	4
S009-0830	No Defect
S009-0840	1
S009-0850	4
S009-0860	No Defect
S009-0870	No Defect
S009-0880	No Defect
S009-0890	No Defect
S009-0900	5
S009-0910	No Defect
S009-0920	2
S009-0930	No Defect
S009-0940	No Defect
S009-0950	No Defect
S009-0960	No Defect
S009-0970	2
S009-0980	No Defect

NASSCO MACP Scores

Manhole Number	MACP Score
S009-0990	4
S009-1000	5
S009-1010	2
S009-1020	3
S009-1030	2
S009-1040	2
S009-1050	2
S009-1060	4
S009-1070	2
S009-1080	2
S009-1090	No Defect
S009-1100	Not Inspected
S009-1110	2
S009-1120	5
S009-1130	Not Inspected
S009-1140	Not Inspected
S009-1150	Not Inspected
S009-1160	3
S009-1170	1
S009-1175	Not Inspected
S009-1180	Not Inspected
S009-1190	Not Inspected
S009-1192	No Defect
S009-1200	Not Inspected
S009-1210	Not Inspected
S009-1220	Not Inspected
S009-1230	Not Inspected
S009-1240	Not Inspected
S009-1250	Not Inspected
S009-1260	Not Inspected
S009-1270	Not Inspected
S009-1275	Not Inspected
S009-1280	No Defect
S009-1285	No Defect
S009-1290	2
S009-1300	5
S009-1310	5
S009-1320	Not Inspected
S009-1330	No Defect
S009-1331	No Defect
S009-1340	5
S009-1350	3
S009-1360	4
S009-1370	No Defect
S009-1380	No Defect
S009-1390	No Defect
S009-1400	No Defect
S009-1410	5
S009-1420	Not Inspected
S009-1430	3
S009-1440	No Defect
S009-1450	No Defect
S009-1460	5
S009-1470	No Defect
S009-1480	Not Inspected
S009-1490	5
S009-1500	3
S009-1510	5
S009-1520	5
S009-1530	3
S009-1540	4
S009-1550	2
S009-1560	No Defect
S009-1570	Not Inspected
S009-1575	Not Inspected
S009-1580	3
S009-1585	5
S009-1590	2

NASSCO MACP Scores

Manhole Number	MACP Score
S009-1600	2
S009-1610	Not Inspected
S009-1620	No Defect
S009-1630	No Defect
S009-1640	No Defect
S009-1650	No Defect
S009-1660	No Defect

APPENDIX C

SEWER LINES SMOKE TESTED

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S004	S004-0038	S004-0036	160
S004	S004-0038	S004-1120	54
S004	S004-0040	S004-0038	188
S004	S004-0370	S004-0038	104
S004	S004-0430	S004-0040	42
S004	S004-0440	S004-0430	102
S004	S004-0450	S004-0440	400
S004	S004-0460	S004-0450	400
S004	S004-0470	S004-0460	159
S004	S004-0480	S004-0470	247
S004	S004-0490	S004-0480	332
S004	S004-0500	S004-0480	456
S004	S004-0510	S004-0510	110
S004	S004-0520	S004-0510	315
S004	S004-0530	S004-0520	384
S004	S004-0540	S004-0530	194
S004	S004-0550	S004-0540	167
S004	S004-0560	S004-0550	292
S004	S004-0570	S004-0530	350
S004	S004-0580	S004-0570	242
S004	S004-0590	S004-0580	228
S004	S004-0600	S004-0590	29
S004	S004-0605	S004-0600	53
S004	S004-0610	S004-0590	100
S004	S004-0620	S004-0610	156
S004	S004-0630	S004-0430	237
S004	S004-1120	S004-1130	238
S004	S004-1130	S004-1140	319
S004	S004-1150	S004-1140	353
S004	S004-1160	S004-1150	350
S004	S004-1170	S004-1160	348
S004	S004-1173	S004-1170	65
S004	S004-1180	S004-1170	334
S004	S004-1190	S004-1173	365
S004	S004-1220	S004-1230	355
S004	S004-1240	S004-1230	98
S004	S004-1250	S004-1240	278
S004	S004-1260	S004-1230	274
S004	S004-1270	S004-1260	69
S004	S004-1280	S004-1270	315
S004	S004-1290	S004-1230	363
S004	S004-1300	S004-1290	179
S004	S004-1310	S004-1290	156
S004	S004-1320	S004-1310	115
S004	S004-1330	S004-1320	179
S004	S004-1340	S004-1140	182
S004	S004-1350	S004-1340	228
S004	S004-1420	S004-1350	385
S004	S004-1430	S004-1420	419
S004	S004-0012	S004-0010	210
S004	S004-0014	S004-0012	316
S004	S004-0016	S004-0014	234
S004	S004-0018	S004-0016	64
S004	S004-0020	S004-0018	51
S004	S004-0022	S004-0020	21
S004	S004-0024	S004-0022	240
S004	S004-0026	S004-0024	160
S004	S004-0028	S004-0026	41
S004	S004-0030	S004-0028	144
S004	S004-0032	S004-0030	60
S004	S004-0034	S004-0032	290
S004	S004-0036	S004-0034	122
S004	S004-0045	S004-0018	156
S004	S004-0050	S004-0045	400
S004	S004-0060	S004-0050	246
S004	S004-0065	S004-0060	371
S004	S004-0080	S004-0030	75

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S004	S004-0090	S004-0030	29
S004	S004-0090	S004-0100	400
S004	S004-0100	S004-0110	447
S004	S004-0110	S004-0120	323
S004	S004-0120	S004-0130	89
S004	S004-0130	S004-0140	123
S004	S004-0140	S004-0150	410
S004	S004-0150	S004-0160	109
S004	S004-0160	S004-0170	95
S004	S004-0180	S004-0170	177
S004	S004-0190	S004-0170	328
S004	S004-0200	S004-0190	305
S004	S004-0210	S004-0200	339
S004	S004-0220	S004-0210	314
S004	S004-0230	S004-0220	239
S004	S004-0240	S004-0210	281
S004	S004-0245	S004-0240	288
S004	S004-0250	S004-0240	246
S004	S004-0260	S004-0170	190
S004	S004-0270	S004-0260	393
S004	S004-0280	S004-0270	395
S004	S004-0310	S004-0260	150
S004	S004-0312	S004-0310	62
S004	S004-0320	S004-0312	270
S004	S004-0330	S004-0320	192
S004	S004-0340	S004-0330	213
S004	S004-0350	S004-0312	392
S004	S004-0375	S004-0370	113
S004	S004-0380	S004-0375	120
S004	S004-0390	S004-0380	30
S004	S004-0400	S004-0390	234
S004	S004-0410	S004-0400	117
S004	S004-0420	S004-0410	420
S004	S004-0490	S004-0485	402
S004	S004-1200	S004-1190	182
S004	S004-1210	S004-1190	332
S004	S004-1220	S004-1190	321
S004	S004-1360	S004-1350	300
S004	S004-1370	S004-1360	298
S004	S004-1380	S004-1370	269
S004	S004-1390	S004-1380	430
S004	S004-1400	S004-1390	39
S004	S004-1410	S004-1400	208
S004	S004-1415	S004-1410	265
S004	S004-1440	S004-1430	140
S004	S004-1450	S004-1440	199
S004	S004-1470	S004-1430	400
S004	S004-1480	S004-1470	385
S004	S004-1490	S004-1480	273
S004	S004-1500	S004-1490	154
S004	S004-1510	S004-1500	158
S004	S004-1520	S004-1510	195
S004	S004-1530	S004-1480	254
S004	S004-1540	S004-1530	234
S004	S004-1550	S004-1540	142
S004	S004-1560	S004-1550	363
S004	S004-1570	S004-1560	278
S004	S004-1580	S004-0034	223
S004	S004-1585	S004-1580	131
S004	S004-1650	S004-0350	144
S004	S004-1660	S004-1650	210
S004	S004-1670	S004-1660	138
S004	UNKNOWN	S004-3350	1
P007	EOL	P007-0180	67
P007	EOL	P007-0410	73
P007	EOL	P007-0570	53
P007	EOL	P007-0790	135

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
P007	EOL	P007-1360	232
P007	EOL	P007-1400	75
P007	EOL	P007-2910	175
P007	P007-0020	P007-0010	212
P007	P007-0030	P007-0020	200
P007	P007-0040	P007-0030	375
P007	P007-0050	P007-0010	210
P007	P007-0060	P007-0050	126
P007	P007-0065	P007-0060	132
P007	P007-0070	P007-0065	61
P007	P007-0080	P007-0070	233
P007	P007-0084	P007-0080	30
P007	P007-0090	P007-0084	101
P007	P007-0120	P007-0080	502
P007	P007-0130	P007-0120	396
P007	P007-0140	P007-0130	410
P007	P007-0150	P007-0080	357
P007	P007-0152	P007-0150	28
P007	P007-0154	P007-0152	350
P007	P007-0155	P007-0152	320
P007	P007-0157	P007-0154	70
P007	P007-0160	P007-0150	448
P007	P007-0170	P007-0160	390
P007	P007-0180	P007-0170	236
P007	P007-0190	P007-0180	111
P007	P007-0200	P007-0155	290
P007	P007-0202	P007-0200	41
P007	P007-0205	P007-0202	248
P007	P007-0210	P007-0205	356
P007	P007-0220	P007-0210	188
P007	P007-0230	P007-0220	462
P007	P007-0240	P007-0230	451
P007	P007-0250	P007-0240	424
P007	P007-0260	P007-0250	152
P007	P007-0270	P007-0260	288
P007	P007-0280	P007-0270	420
P007	P007-0290	P007-0280	260
P007	P007-0300	P007-0200	349
P007	P007-0310	P007-0300	24
P007	P007-0312	P007-0310	18
P007	P007-0314	P007-0312	107
P007	P007-0316	P007-0314	16
P007	P007-0320	P007-0154	161
P007	P007-0320	P007-0300	450
P007	P007-0330	P007-0157	237
P007	P007-0340	P007-0330	397
P007	P007-0350	P007-0340	395
P007	P007-0370	P007-0316	206
P007	P007-0380	P007-0370	452
P007	P007-0383	P007-0380	126
P007	P007-0386	P007-0383	125
P007	P007-0390	P007-0386	196
P007	P007-0395	P007-0390	255
P007	P007-0400	P007-0395	240
P007	P007-0410	P007-0400	345
P007	P007-0430	P007-0370	267
P007	P007-0440	P007-0430	366
P007	P007-0450	P007-0440	142
P007	P007-0460	P007-0450	245
P007	P007-0465	P007-0460	272
P007	P007-0470	P007-0465	221
P007	P007-0480	P007-0470	444
P007	P007-0482	P007-0480	62
P007	P007-0484	P007-0482	383
P007	P007-0486	P007-0484	110
P007	P007-0490	P007-0486	185
P007	P007-0495	P007-0490	24

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
P007	P007-0500	P007-0495	63
P007	P007-0510	P007-0500	157
P007	P007-0510A	P007-0510	116
P007	P007-0520	P007-0520A	155
P007	P007-0520A	P007-0510A	300
P007	P007-0530	P007-0520A	157
P007	P007-0530A	P007-0530	71
P007	P007-0540	P007-0530	196
P007	P007-0557	P007-0550	262
P007	P007-0560	P007-0550	25
P007	P007-0570	P007-0550	154
P007	P007-0580	P007-0570	109
P007	P007-0585	P007-0580	239
P007	P007-0600	P007-0570	167
P007	P007-0610	P007-0600	206
P007	P007-0620	P007-0600	170
P007	P007-0630	P007-0620	158
P007	P007-0640	P007-0630	292
P007	P007-0650	P007-0640	154
P007	P007-0660	P007-0630	170
P007	P007-0670	P007-0660	8
P007	P007-0700	P007-0660	473
P007	P007-0710	P007-0700	425
P007	P007-0720	P007-0710	380
P007	P007-0730	P007-0557	12
P007	P007-0740	P007-0730	70
P007	P007-0750	P007-0740	263
P007	P007-0760	P007-0740	340
P007	P007-0770	P007-0760	143
P007	P007-0780	P007-0770	328
P007	P007-0782	P007-0780	44
P007	P007-0784	P007-0782	120
P007	P007-0786	P007-0784	29
P007	P007-0788	P007-0786	158
P007	P007-0790	P007-0780	193
P007	P007-0810	P007-0770	198
P007	P007-0820	P007-0810	180
P007	P007-0840	P007-0557	302
P007	P007-0850	P007-0840	149
P007	P007-0860	P007-0850	206
P007	P007-0870	P007-0860	438
P007	P007-0920	P007-0870	10
P007	P007-0930	P007-0920	165
P007	P007-0940	P007-0930	435
P007	P007-0950	P007-0940	150
P007	P007-0955	P007-0930	197
P007	P007-0958	P007-0955	237
P007	P007-0960	P007-0955	65
P007	P007-0970	P007-0958	85
P007	P007-0980	P007-0970	255
P007	P007-0990	P007-0960	218
P007	P007-1000	P007-0990	205
P007	P007-1010	P007-1000	111
P007	P007-1020	P007-1010	213
P007	P007-1030	P007-1020	130
P007	P007-1040	P007-1030	269
P007	P007-1050	P007-1040	253
P007	P007-1060	P007-1050	167
P007	P007-1070	P007-1060	278
P007	P007-1080	P007-1070	135
P007	P007-1090	P007-1080	267
P007	P007-1100	P007-1070	222
P007	P007-1110	P007-1100	74
P007	P007-1140	P007-1000	114
P007	P007-1150	P007-1140	177
P007	P007-1160	P007-1150	210
P007	P007-1170	P007-1160	150

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
P007	P007-1180	P007-1170	177
P007	P007-1190	P007-1180	258
P007	P007-1200	P007-1190	20
P007	P007-1210	P007-1200	166
P007	P007-1220	P007-1200	368
P007	P007-1222	P007-1220	111
P007	P007-1224	P007-1222	101
P007	P007-1240	P007-1430	208
P007	P007-1250	P007-1220	49
P007	P007-1250B	P007-1220	60
P007	P007-1255	P007-1250	146
P007	P007-1260	P007-1255	322
P007	P007-1264	P007-1260	236
P007	P007-1267	P007-1264	180
P007	P007-1270	P007-1260	31
P007	P007-1280	P007-0370	361
P007	P007-1282	P007-1280	25
P007	P007-1290	P007-1282	350
P007	P007-1300	P007-1290	377
P007	P007-1310	P007-1300	376
P007	P007-1320	P007-1310	374
P007	P007-1330	P007-1320	252
P007	P007-1350	P007-1280	308
P007	P007-1360	P007-1350	335
P007	P007-1360	P007-1363	57
P007	P007-1363	P007-1360	57
P007	P007-1370	P007-1363	232
P007	P007-1380	P007-1370	455
P007	P007-1385	P007-1380	165
P007	P007-1390	P007-1385	157
P007	P007-1400	P007-1390	410
P007	P007-1410	P007-1363	100
P007	P007-1415	P007-1410	275
P007	P007-1420	P007-1415	375
P007	P007-1425	P007-1420	155
P007	P007-1430	P007-1425	140
P007	P007-1440	P007-1430	437
P007	P007-1450	P007-1430	448
P007	P007-1450	P007-1440	12
P007	P007-1460	P007-1450	188
P007	P007-1470	P007-1460	155
P007	P007-1480	P007-1470	275
P007	P007-1490	P007-1280	352
P007	P007-1500	P007-1490	451
P007	P007-1504	P007-1500	215
P007	P007-1507	P007-1504	102
P007	P007-1510	P007-1507	140
P007	P007-1520	P007-1510	500
P007	P007-1525	P007-1520	407
P007	P007-1530	P007-1490	351
P007	P007-1540	P007-1530	234
P007	P007-1550	P007-1490	345
P007	P007-1560	P007-1550	477
P007	P007-1570	P007-1560	
P007	P007-1580	P007-1570	455
P007	P007-1590	P007-1550	321
P007	P007-1610	P007-1600	132
P007	P007-1620	P007-1610	462
P007	P007-1630	P007-1620	500
P007	P007-1635	P007-1630	121
P007	P007-1640	P007-1635	190
P007	P007-1650	P007-1590	313
P007	P007-1650	P007-1600	45
P007	P007-1660	P007-1650	190
P007	P007-1665	P007-1660	146
P007	P007-1670	P007-1665	289
P007	P007-1675	P007-1670	146

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
P007	P007-1680	P007-1665	185
P007	P007-1690	P007-1680	235
P007	P007-1700	P007-1690	173
P007	P007-1710	P007-1680	332
P007	P007-1720	P007-1710	415
P007	P007-1730	P007-1710	328
P007	P007-1740	P007-1730	413
P007	P007-1750	P007-1730	186
P007	P007-1760	P007-1750	118
P007	P007-1770	P007-1760	183
P007	P007-1780	P007-1770	320
P007	P007-1780A	P007-1780	113
P007	P007-1790	P007-1780	177
P007	P007-1800	P007-1790	313
P007	P007-1810	P007-1800	240
P007	P007-1820	P007-1810	90
P007	P007-1830	P007-1770	180
P007	P007-1840	P007-1830	276
P007	P007-1850	P007-1840	222
P007	P007-1860	P007-1850	343
P007	P007-1870	P007-1750	146
P007	P007-1880	P007-1870	150
P007	P007-1890	P007-1880	165
P007	P007-1895	P007-1890	147
P007	P007-1897	P007-1895	231
P007	P007-1900	P007-1895	144
P007	P007-1910	P007-1900	159
P007	P007-1920	P007-1880	250
P007	P007-1930	P007-1920	77
P007	P007-1940	P007-1930	340
P007	P007-1945	P007-1940	
P007	P007-1950	P007-1940	403
P007	P007-1960	P0071960A	87
P007	P007-1960A	P007-1910	50
P007	P007-1970	P007-1960	201
P007	P007-1980	P007-1970	175
P007	P007-1990	P007-1890	303
P007	P007-2000	P007-1990	50
P007	P007-2010	P007-2000	337
P007	P007-2020	P007-2010	156
P007	P007-2030	P007-2020	353
P007	P007-2040	P007-2030	106
P007	P007-2050	P007-2040	150
P007	P007-2060	P007-2050	125
P007	P007-2070	P007-2050	120
P007	P007-2080	P007-2070	110
P007	P007-2090	P007-2080	220
P007	P007-2100	P007-2090	353
P007	P007-2102	P007-2100	10
P007	P007-2108	P007-2102	298
P007	P007-2110	P007-2108	10
P007	P007-2120	P007-2110	126
P007	P007-2130	P007-2120	55
P007	P007-2140	P007-2120	75
P007	P007-2150	P007-2120	117
P007	P007-2155	P007-2150	57
P007	P007-2155A	P007-2155	80
P007	P007-2160	P007-2155	128
P007	P007-2170	P007-2160	88
P007	P007-2180	P007-2080	175
P007	P007-2190	P007-2180	380
P007	P007-2200	P007-2190	205
P007	P007-2210	P007-2200	225
P007	P007-2230	P007-2210	300
P007	P007-2240	P007-2230	96
P007	P007-2245	P007-2230	58
P007	P007-2248	P007-2245	185

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
P007	P007-2250	P007-2248	63
P007	P007-2260	P007-1550	344
P007	P007-2270	P007-2260	486
P007	P007-2272	P007-2270	101
P007	P007-2280	P007-2260	6
P007	P007-2285	P007-2280	393
P007	P007-2290	P007-2280	150
P007	P007-2300	P007-2290	70
P007	P007-2304	P007-2300	220
P007	P007-2307	P007-2304	201
P007	P007-2310	P007-2300	190
P007	P007-2320	P007-2285	288
P007	P007-2325	P007-2320	330
P007	P007-2330	P007-2320	375
P007	P007-2340	P007-2330	375
P007	P007-2350	P007-2325	326
P007	P007-2354	P007-2350	275
P007	P007-2357	P007-2354	275
P007	P007-2360	P007-2357	195
P007	P007-2370	P007-2360	100
P007	P007-2372	P007-2370	27
P007	P007-2380	P007-2372	275
P007	P007-2383	P007-2380	75
P007	P007-2385	P007-2350	180
P007	P007-2390	P007-2385	173
P007	P007-2395	P007-2390	243
P007	P007-2400	P007-2395	338
P007	P007-2500	P007-0730	154
P007	P007-2510	P007-2500	216
P007	P007-2520	P007-2510	105
P007	P007-2530	P007-2520	52
P007	P007-2540	P007-2530	313
P007	P007-2550	P007-2540	182
P007	P007-2560	P007-2550	21
P007	P007-2570	P007-2560	316
P007	P007-2700	P007-2180	162
P007	P007-2710	P007-2700	135
P007	P007-2720	P007-2710	186
P007	P007-2730	P007-2700	47
P007	P007-2730	P007-2740	303
P007	P007-2740A	P007-2740	236
P007	P007-2750	P007-2740A	172
P007	P007-2760	P007-2750	191
P007	P007-2770	P007-2760	389
P007	P007-2900	P007-2245	135
P007	P007-2910	P007-2900	413
P007	P007-2920	P007-2910	183
P007	P007-2930	P007-2920	185
P007	P007-2940	P007-2930	232
P007	P007-2940	P007-2940A	29
P007	P007-2950	P007-2940	183
P007	P007-2960	P007-2950	291
P007	P007-2970	P007-2960	255
P007	P007-2980	P007-2970	134
P007	P007-3100	P007-1050	100
P007	P007-3110	P007-3100	122
P007	P007-3120	P007-3110	210
P007	P007-3130	P007-0310	32
P007	P007-3140	P007-3130	268
P007	P007-3150	P007-3140	287
P007	P007-3300	P007-2385	296
P007	P007-3310	P007-3300	136
P007	P007-3320	P007-3310	295
P007	P007-3330	P007-1200	274
P007	P007-3340	P007-0630	13
P007	P007-3350	P007-3340	224
FL01	EOL	FL01-0930A	45

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
FL01	FL01-0008	FL01-0220	379
FL01	FL01-0010	FL01-0008	162
FL01	FL01-0020	FL01-0020A	68
FL01	FL01-0020A	LIFT STATION	30
FL01	FL01-0030	FL01-0020A	508
FL01	FL01-0040	FL01-0030	575
FL01	FL01-0050	FL01-0040	550
FL01	FL01-0060	FL01-0050	480
FL01	FL01-0070	FL01-0060	400
FL01	FL01-0080	FL01-0070	300
FL01	FL01-0090	FL01-0080	327
FL01	FL01-0100	FL01-0090	140
FL01	FL01-0110	FL01-0100	340
FL01	FL01-0120	FL01-0110	310
FL01	FL01-0130	FL01-0090	327
FL01	FL01-0140	FL01-0130	239
FL01	FL01-0150	FL01-0060	218
FL01	FL01-0160	FL01-0150	219
FL01	FL01-0170	FL01-0160	578
FL01	FL01-0170	FL01-2110	22
FL01	FL01-0180	FL01-0170	336
FL01	FL01-0190	FL01-0180	744
FL01	FL01-0200	FL01-0180	45
FL01	FL01-0210	FL01-0200	228
FL01	FL01-0220	FL01-0210	14
FL01	FL01-0230	FL01-0210	305
FL01	FL01-0240	FL01-0230	294
FL01	FL01-0250	FL01-0240	348
FL01	FL01-0260	FL01-0420	84
FL01	FL01-0270	FL01-0170	28
FL01	FL01-0310	FL01-0305	152
FL01	FL01-0320	FL01-0310	379
FL01	FL01-0330	FL01-0320	365
FL01	FL01-0340	FL01-0330	146
FL01	FL01-0350	FL01-0340	440
FL01	FL01-0360	FL01-0340	319
FL01	FL01-0365	FL01-0360	130
FL01	FL01-0370	FL01-0360	441
FL01	FL01-0420	FL01-0410	45
FL01	FL01-0420	FL01-0250	294
FL01	FL01-0430	FL01-0420	489
FL01	FL01-0439	FL01-0260	399
FL01	FL01-0440	FL01-0430	20
FL01	FL01-0440	FL01-0439	15
FL01	FL01-0445	FL01-0439	15
FL01	FL01-0450	FL01-0445	250
FL01	FL01-0460	FL01-0450	313
FL01	FL01-0470	FL01-0460	237
FL01	FL01-0480	FL01-0470	153
FL01	FL01-0490	FL01-0450	53
FL01	FL01-0500	FL01-0490	278
FL01	FL01-0510	FL01-0450	26
FL01	FL01-0515	FL01-0510	331
FL01	FL01-0520	FL01-0515	198
FL01	FL01-0525	FL01-0520	150
FL01	FL01-0530	FL01-0520	331
FL01	FL01-0540	FL01-0525	144
FL01	FL01-0550	FL01-0540	210
FL01	FL01-0560	FL01-0550	39
FL01	FL01-0570	FL01-0570A	289
FL01	FL01-0570A	FL01-0560	139
FL01	FL01-0580	FL01-0570	325
FL01	FL01-0590	FL01-0560	146
FL01	FL01-0600	FL01-0590	312
FL01	FL01-0610	FL01-0590	147
FL01	FL01-0620	FL01-0610	300
FL01	FL01-0630	FL01-0620	332

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
FL01	FL01-0640	FL01-0630	248
FL01	FL01-0650	FL01-0630	202
FL01	FL01-0660	FL01-0650	280
FL01	FL01-0680	FL01-0660	26
FL01	FL01-0690	FL01-0680	227
FL01	FL01-0700	FL01-0690	215
FL01	FL01-0710	FL01-0610	175
FL01	FL01-0720	FL01-0710	97
FL01	FL01-0730	FL01-0720	295
FL01	FL01-0740	FL01-0730	51
FL01	FL01-0750	FL01-0740	252
FL01	FL01-0760	FL01-0720	325
FL01	FL01-0770	FL01-077A	254
FL01	FL01-0770A	FL01-0760	200
FL01	FL01-0780	FL01-0760	338
FL01	FL01-0790	FL01-0780	340
FL01	FL01-0800	FL01-0760	343
FL01	FL01-0810	FL01-0800	198
FL01	FL01-0820	FL01-0800	325
FL01	FL01-0830	FL01-0820	357
FL01	FL01-0840	FL01-0800	337
FL01	FL01-0845	FL01-0840	226
FL01	FL01-0850	FL01-0845	227
FL01	FL01-0860	FL01-0840	345
FL01	FL01-0870	FL01-0860	348
FL01	FL01-0880	FL01-0840	332
FL01	FL01-0890	FL01-0880	469
FL01	FL01-0900	FL01-0880	333
FL01	FL01-0910	FL01-0900	347
FL01	FL01-0920	FL01-0440	240
FL01	FL01-0930	FL01-0920	274
FL01	FL01-0930A	FL01-0930	47
FL01	FL01-0932	FL01-0930	25
FL01	FL01-0940	FL01-0932	132
FL01	FL01-0950	FL01-0940	187
FL01	FL01-0960	FL01-0950	271
FL01	FL01-0970	FL01-0960	220
FL01	FL01-0980	FL01-0970	280
FL01	FL01-0990	FL01-0980	219
FL01	FL01-1000	FL01-0950	309
FL01	FL01-1010	FL01-1000	420
FL01	FL01-1020	FL01-1010	183
FL01	FL01-1030	FL01-1000	305
FL01	FL01-1040	FL01-1030	355
FL01	FL01-1060	FL01-0932	395
FL01	FL01-1070	FL01-1060	281
FL01	FL01-1080	FL01-1070	351
FL01	FL01-1090	FL01-1080	227
FL01	FL01-1100	FL01-1090	269
FL01	FL01-1110	FL01-1100	296
FL01	FL01-1120	FL01-1110	396
FL01	FL01-1130	FL01-1120	340
FL01	FL01-1140	FL01-0930	380
FL01	FL01-1150	FL01-1140	376
FL01	FL01-1160	FL01-1150	249
FL01	FL01-1170	FL01-1160	328
FL01	FL01-1180	FL01-1170	122
FL01	FL01-1185	FL01-1180	290
FL01	FL01-1190	FL01-1170	353
FL01	FL01-1200	FL01-1190	219
FL01	FL01-1210	FL01-1200	128
FL01	FL01-1220	FL01-1210	155
FL01	FL01-1220A	FL01-1220	64
FL01	FL01-1230	FL01-1210	350
FL01	FL01-1240	FL01-1230	405
FL01	FL01-1250	FL01-1240	387
FL01	FL01-1260	FL01-1200	302

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
FL01	FL01-1270	FL01-1260	199
FL01	FL01-1280	FL01-1270	412
FL01	FL01-1290	FL01-1280	378
FL01	FL01-1300	FL01-1260	230
FL01	FL01-1310	FL01-1300	244
FL01	FL01-1320	FL01-1310	271
FL01	FL01-1330	FL01-1320	272
FL01	FL01-1340	FL01-1310	292
FL01	FL01-1350	FL01-1340	293
FL01	FL01-1360	FL01-1190	337
FL01	FL01-1370	FL01-1360	329
FL01	FL01-1380	FL01-1370	322
FL01	FL01-1390	FL01-1380	344
FL01	FL01-1395	FL01-1390	47
FL01	FL01-1400	FL01-1395	250
FL01	FL01-1410	FL01-1400	299
FL01	FL01-1420	FL01-1410	275
FL01	FL01-1430	FL01-1390	239
FL01	FL01-1440	FL01-1430	422
FL01	FL01-1450	FL01-1440	321
FL01	FL01-1460	FL01-1450	257
FL01	FL01-1470	FL01-1440	277
FL01	FL01-1480	FL01-1470	391
FL01	FL01-1490	FL01-1480	276
FL01	FL01-1500	FL01-1490	194
FL01	FL01-1510	FL01-1370	320
FL01	FL01-1520	FL01-1510	346
FL01	FL01-1530	FL01-1520	412
FL01	FL01-1540	FL01-1520	322
FL01	FL01-1550	FL01-1540	319
FL01	FL01-1560	FL01-1550	247
FL01	FL01-1570	FL01-1560	235
FL01	FL01-1580	FL01-1550	206
FL01	FL01-1590	FL01-1580	295
FL01	FL01-1600	FL01-1580	178
FL01	FL01-1610	FL01-1600	368
FL01	FL01-1620	FL01-1600	151
FL01	FL01-1630	FL01-1620	292
FL01	FL01-1640	FL01-1630	352
FL01	FL01-1650	FL01-1640	193
FL01	FL01-1660	FL01-1640	163
FL01	FL01-1670	FL01-1660	249
FL01	FL01-1680	FL01-1660	308
FL01	FL01-1690	FL01-1680	169
FL01	FL01-1700	FL01-1690	209
FL01	FL01-1710	FL01-1690	181
FL01	FL01-1720	FL01-1710	309
FL01	FL01-1730	FL01-1710	163
FL01	FL01-1740	FL01-1730	118
FL01	FL01-1750	FL01-1740	53
FL01	FL01-1760	FL01-1750	419
FL01	FL01-1770	FL01-1740	92
FL01	FL01-1780	FL01-1770	401
FL01	FL01-1790	FL01-1780	356
FL01	FL01-1800	FL01-1790	404
FL01	FL01-1810	FL01-1800	303
FL01	FL01-1820	FL01-1810	420
FL01	FL01-1830	FL01-1810	277
FL01	FL01-1840	FL01-1830	397
FL01	FL01-1850	FL01-1770	170
FL01	FL01-1860	FL01-1850	309
FL01	FL01-1870	FL01-1860	360
FL01	FL01-1880	FL01-1850	68
FL01	FL01-1890	FL01-1880	349
FL01	FL01-1892	FL01-1890	27
FL01	FL01-1900	FL01-1890	438
FL01	FL01-1905	FL01-1900	45

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
FL01	FL01-1910	FL01-1892	322
FL01	FL01-1915	FL01-0020	77
FL01	FL01-1920	FL01-1915	153
FL01	FL01-1930	FL01-1920	330
FL01	FL01-1940	FL01-1930	275
FL01	FL01-1950	FL01-1940	416
FL01	FL01-1960	FL01-1950	430
FL01	FL01-1970	FL01-1960	338
FL01	FL01-2010	FL01-0020A	33
FL01	FL01-2020	FL01-2010	441
FL01	FL01-2030	FL01-2020	78
FL01	FL01-2040	FL01-2030	165
FL01	FL01-2050	FL01-2040	75
FL01	FL01-2060	FL01-2050	541
FL01	FL01-2070	FL01-2060	542
FL01	FL01-2080	FL01-2070	543
FL01	FL01-2090	FL01-2080	224
FL01	FL01-2100	FL01-2090	184
FL01	FL01-2110	FL01-2100	543
FL01	FL01-2200	FL01-0080	45
FL01	FL01-2210	FL01-2200	91
FL01	FL01-2220	FL01-2210	305
FL01	FL01-2230	FL01-2210	78
FL01	FL01-2240	FL01-0405	251
FL01	FL01-2250	FL01-2240	152
FL01	FL01-2260	FL01-2250	133
FL01	FL01-2270	FL01-2260	191
FL01	FL01-2280	FL01-2270	295
FL01	FL01-2290	FL01-2280	357
FL01	FL01-2300	FL01-1800	150
FL01	FL01-2310	FL01-2300	392
FL01	FL01-2320	FL01-1892	143
FL01	FL01-2330	FL01-2320	61
FL01	FL01-2340	FL01-2330	113
FL01	FL01-2350	FL01-2340	234
FL01	FL01-2360	FL01-2350	170
FL01	FL01-2370	FL01-2340	178
FL01	FL01-2380	FL01-0810	521
FL01	FL01-2390	FL01-0090	47
FL01	FL01-2400	FL01-2390	102
FL01	FL01-2410	FL01-2400	200
FL01	FL01-2420	FL01-2410	93
FL01	FL01-2430	FL01-2420	364
FL01	FL01-2440	FL01-2410	147
FL01	FL01-2450	FL01-2440	241
FL01	FL01-2460	FL01-2450	239
FL01	FL01-2470	FL01-2460	163
FL01	FL01-2480	FL01-0540	421
S003	EOL	S003-1390	272
S003	S003-0020	S003-3340	124
S003	S003-0030	S003-0020	256
S003	S003-0040	S003-0030	120
S003	S003-0060	S003-0030	122
S003	S003-0070	S003-0060	125
S003	S003-0080	S003-0070	262
S003	S003-0090	S003-0080	78
S003	S003-0100	S003-0090	37
S003	S003-0105	S003-0100	209
S003	S003-0110	S003-0100	250
S003	S003-0120	S003-0110	247
S003	S003-0130	S003-0120	395
S003	S003-0160	S003-0120	451
S003	S003-0165	S003-0160	229
S003	S003-0170	S003-0165	252
S003	S003-0180	S003-0160	224
S003	S003-0190	S003-0180	398
S003	S003-0200	S003-0100	456

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S003	S003-0210	S003-0200	380
S003	S003-0214	S003-0210	345
S003	S003-0216	S003-0214	75
S003	S003-0217	S003-0216	12
S003	S003-0220	S003-0214	15
S003	S003-0230	S003-0217	127
S003	S003-0240	S003-0230	427
S003	S003-0250	S003-0240	390
S003	S003-0260	S003-0250	310
S003	S003-0270	S003-0240	346
S003	S003-0274	S003-0270	72
S003	S003-0280	S003-0274	254
S003	S003-0290	S003-0280	272
S003	S003-0300	S003-0290	287
S003	S003-0330	S003-3380	35
S003	S003-0340	S003-0330	117
S003	S003-0350	S003-0340	305
S003	S003-0356	S003-3380	69
S003	S003-0360	S003-0356	76
S003	S003-0370	S003-0360	250
S003	S003-0380	S003-0370	326
S003	S003-0390	S003-0390A	197
S003	S003-0390A	S003-0380	65
S003	S003-0400	S003-0380	307
S003	S003-0410	S003-0400	164
S003	S003-0420	S003-0410	398
S003	S003-0430	S003-0420	138
S003	S003-0440	S003-0410	21
S003	S003-0450	S003-0440	340
S003	S003-0460	S003-0450	173
S003	S003-0465	S003-0460	116
S003	S003-0520	S003-3430	135
S003	S003-0530	S003-0520	276
S003	S003-0540	S003-0530	71
S003	S003-0550	S003-0540	256
S003	S003-0560	S003-0540	344
S003	S003-0590	S003-3460	177
S003	S003-0600	S003-0590	248
S003	S003-0610	S003-0600	201
S003	S003-0620	S003-3460	390
S003	S003-0630	S003-0620	298
S003	S003-0640	S003-0630	320
S003	S003-0650	S003-0650A	65
S003	S003-0650A	S003-0640	282
S003	S003-0660	S003-0650	149
S003	S003-0660A	S003-0660	198
S003	S003-0670	S003-0660	403
S003	S003-0670A	S003-0670	150
S003	S003-0672	S003-0670	35
S003	S003-0680	S003-0670A	310
S003	S003-0690	S003-0680	183
S003	S003-0700	S003-0640	278
S003	S003-0710	S003-0700	251
S003	S003-0720	S003-0710	403
S003	S003-0726	MIDLINE	11
S003	S003-0730	S003-0720	462
S003	S003-0740	S003-0730	349
S003	S003-0750	S003-0740	317
S003	S003-0752	S003-0750	81
S003	S003-0760	S003-0752	351
S003	S003-0770	S003-0620	181
S003	S003-0780	S003-0770	221
S003	S003-0785	S003-0780	170

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S003	S003-0790	S003-0780	292
S003	S003-0795	S003-0790	131
S003	S003-0800	S003-0790	415
S003	S003-0805	S003-0800	135
S003	S003-0810	S003-0800	302
S003	S003-0810A	S003-0810	5
S003	S003-0820	S003-0830	10
S003	S003-0830	S003-0810	42
S003	S003-0840	S003-0830	165
S003	S003-0850	S003-0840	21
S003	S003-0860	S003-0850	151
S003	S003-0870	S003-0860	162
S003	S003-0880	S003-0870	274
S003	S003-0890	S003-0870	58
S003	S003-0900	S003-0890	393
S003	S003-0910	S003-0900	172
S003	S003-0920	S003-0930	426
S003	S003-0920	S003-0810	220
S003	S003-0930	S003-0990	285
S003	S003-0940	S003-0930	311
S003	S003-0940A	S003-0940	187
S003	S003-0940B	S003-0940A	305
S003	S003-0950	S003-0940	73
S003	S003-0960	S003-0950	215
S003	S003-0965	S003-0960	262
S003	S003-0970	S003-0940	247
S003	S003-0980	S003-0970	150
S003	S003-1000	S003-0990	366
S003	S003-1010	S003-1000	137
S003	S003-1020	S003-1010	99
S003	S003-1024	S003-1020	73
S003	S003-1030	S003-1010	226
S003	S003-1040	S003-1030	198
S003	S003-1050	S003-1040	228
S003	S003-1060	S003-1050	79
S003	S003-1070	S003-1060	337
S003	S003-1080	S003-1060	215
S003	S003-1090	S003-1080	397
S003	S003-1100	S003-1090	350
S003	S003-1110	S003-1100	361
S003	S003-1120	S003-1100	340
S003	S003-1130	S003-1120	356
S003	S003-1140	S003-1130	295
S003	S003-1150	S003-1140	305
S003	S003-1160	S003-1150	148
S003	S003-1170	S003-1160	202
S003	S003-1180	S003-1170	145
S003	S003-1190	S003-1180	167
S003	S003-1200	S003-1190	88
S003	S003-1210	S003-1200	112
S003	S003-1220	S003-1160	280
S003	S003-1230	S003-1220	273
S003	S003-1240	S003-1230	232
S003	S003-1250	S003-1090	322
S003	S003-1260	S003-1250	329
S003	S003-1270	S003-1260	257
S003	S003-1280	S003-1270	7
S003	S003-1290	S003-1280	350
S003	S003-1300	S003-1280	236
S003	S003-1310	S003-1300	37
S003	S003-1320	S003-1300	196
S003	S003-1330	S003-1320	176
S003	S003-1340	S003-1330	153
S003	S003-1350	S003-1280	65
S003	S003-1360	S003-1350	70
S003	S003-1370	S003-1360	79
S003	S003-1373	S003-1370	82

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S003	S003-1380	S003-1373	164
S003	S003-1390	S003-1380	197
S003	S003-1400	S003-1390	172
S003	S003-1420	S003-1260	300
S003	S003-1430	S003-1420	323
S003	S003-1450	S003-3500	113
S003	S003-1460	S003-1450	347
S003	S003-1470	S003-1460	405
S003	S003-1480	S003-3500	300
S003	S003-1480A	S003-1480	56
S003	S003-1480B	S003-1480	215
S003	S003-1480C	S003-1480B	351
S003	S003-1490	S003-1480	353
S003	S003-2170	S003-2160	243
S003	S003-2180	S003-2170	130
S003	S003-2600	S003-0274	210
S003	S003-2610	S003-2600	86
S003	S003-3050	S003-0680	138
S003	S003-3060	S003-3050	84
S003	S003-3070	S003-3060	84
S003	S003-3080	S003-3070	155
S003	S003-3090	S003-3080	83
S003	S003-3100	S003-3090	76
S003	S003-3110	S003-3100	145
S003	S003-3120	S003-3110	231
S003	S003-3130	S003-3120	99
S003	S003-3140	S003-3100	244
S003	S003-3150	S003-3140	214
S003	S003-3160	S003-0752	43
S003	S003-3170	S003-3160	84
S003	S003-3180	S003-3170	113
S003	S003-3190	S003-3180	135
S003	S003-3200	S003-3170	195
S003	S003-3210	S003-3160	133
S003	S003-3220	S003-3210	64
S003	S003-3230	S003-3220	287
S003	S003-3240	S003-3230	101
S003	S003-3250	S003-3240	97
S003	S003-3250A	S003-3250	50
S003	S003-3260	S003-3210	57
S003	S003-3270	S003-0160	312
S003	S003-3280	S003-3270	237
S003	S003-3290	S003-3280	236
S003	S003-3300	S003-0130	79
S003	S003-3310	S003-3300	342
S003	S003-3320	S003-0560	42
S003	S003-3330	S003-3320	258
S003	S003-3340	S002-2180	206
S003	S003-3350	S003-3340	279
S003	S003-3360	S003-3350	254
S003	S003-3370	S003-3360	238
S003	S003-3380	S003-3370	217
S003	S003-3390	S003-3380	192
S003	S003-3400	S003-3390	233
S003	S003-3410	S003-3400	256
S003	S003-3420	S003-3410	241
S003	S003-3430	S003-3420	234
S003	S003-3440	S003-3430	173
S003	S003-3450	S003-3440	138
S003	S003-3460	S003-3450	200
S003	S003-3470	S003-3460	319
S003	S003-3470A	S003-3470	33
S003	S003-3480	S003-3470	65
S003	S003-3490	S003-3480	72
S003	S003-3500	S003-3490	329
S003	S003-3510	S003-1480B	148
S003	S003-3520	S003-3510	315

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S003	S003-3530	S003-3350	103
S003	S003-3540	S003-3530	358
S003	S003-3550	S003-3540	186
S003	S003-3560	S003-3550	55
S003	S003-3570	S003-3560	366
S003	S003-3580	S003-3570	203
S003	S003-3590	S003-3580	65
S003	S003-3600	S003-3540	303
S003	S003-3610	S003-3600	333
S003	S003-3620	S003-3610	200
S003	S003-3630	S003-3620	100
S003	S003-3640	S003-3630	175
S003	S003-3650	S003-3640	136
S003	S003-3660	S003-3620	100
S003	S003-3670	S003-3660	100
S003	S003-3680	S003-3670	280
S003	S003-3690	S003-0965	418
S003	S004-0010	S003-3500	44
S003	S004-0012	S004-0010	213
S003	S004-0014	S004-0012	314
S003	S004-0016	S004-0014	232
S003	S008-0860	S008-0850	149
S003	S008-0870	S008-0860	161
S003	S008-0880	S008-0870	309
S003	S008-1030	S008-1020	367
S008	EOL	S008-0990	247
S008	EOL	S008-0960	247
S008	EOL	S008-0670A	91
S008	S008-0350	S008-0060	273
S008	S008-0352	S008-0350	42
S008	S008-0354	S008-0352	160
S008	S008-0356	S008-0354	16
S008	S008-0360	S008-0356	124
S008	S008-0370	S008-0360	43
S008	S008-0380	S008-0370	123
S008	S008-0390	S008-0380	50
S008	S008-0400	S008-0390	319
S008	S008-0410	S008-0400	387
S008	S008-0420	S008-0410	145
S008	S008-0425	S008-0420	9
S008	S008-0430	S008-0425	158
S008	S008-0432	S008-0430	73
S008	S008-0434	S008-0432	68
S008	S008-0470	S008-0460	189
S008	S008-0480	S008-0470	347
S008	S008-0500	S008-0490	223
S008	S008-0510	S008-0500	141
S008	S008-0520	S008-0510	159
S008	S008-0530	S008-0520	399
S008	S008-0540	S008-0530	219
S008	S008-0580	S008-0570	83
S008	S008-0590	S008-0580	175
S008	S008-0600	S008-0590	112
S008	S008-0610	S008-0570	350
S008	S008-0620	S008-0610	194
S008	S008-0630	S008-0610	152
S008	S008-0643	S008-0640	297
S008	S008-0646	S008-0643	183
S008	S008-0648	S008-0646	31
S008	S008-0650	S008-0648	31
S008	S008-0660	S008-0650	146
S008	S008-0670	S008-0660	61
S008	S008-0670A	S008-0670	49
S008	S008-0690	S008-0660	359
S008	S008-0700	S008-0690	277
S008	S008-0710	S008-0700	274
S008	S008-0720	S008-0710	262

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S008	S008-0730	S008-0720	261
S008	S008-0740	S008-0730	392
S008	S008-0750	S008-0740	388
S008	S008-0760	S008-0660	293
S008	S008-0770	S008-0760	239
S008	S008-0770A	S008-0770	265
S008	S008-0780	S008-0770A	255
S008	S008-0790	S008-0780	240
S008	S008-0800	S008-0790	287
S008	S008-0810	S008-0800	340
S008	S008-0820	S008-0810	349
S008	S008-0840	S008-0760	166
S008	S008-0850	S008-0840	288
S008	S008-0860	S008-0850	149
S008	S008-0870	S008-0860	161
S008	S008-0890	S008-0880	309
S008	S008-0900	S008-0850	365
S008	S008-0910	S008-0900	326
S008	S008-0910	S008-0790	290
S008	S008-0920	S008-0910	195
S008	S008-0930	S008-0920	241
S008	S008-0940	S008-0890	304
S008	S008-0950	S008-0940	314
S008	S008-0960	S008-0950	150
S008	S008-0970	S008-0960	321
S008	S008-0980	S008-0910	220
S008	S008-0980	S008-0970	320
S008	S008-0990	S008-0930	358
S008	S008-1000	S008-0670	324
S008	S008-1005	S008-1000	269
S008	S008-1010	S008-1000	122
S008	S008-1020	S008-1000	254
S008	S008-1040	S008-1030	372
S008	S008-1070	S008-0640	373
S008	S008-1070A	S008-1070	390
S008	S008-1080	S008-1070A	236
S008	S008-1090	S008-1080	154
S008	S008-1093	S008-1090	342
S008	S008-1096	S008-1093	292
S008	S008-1096A	S008-1096	64
S008	S008-1115	S008-1110	259
S008	S008-1120	S008-1115	309
S008	S008-1135	S008-1130	271
S008	S008-1140	S008-1135	333
S008	S008-1173	S008-1170	96
S008	S008-1175	S008-1173	160
S008	S008-1190	S008-1090	202
S008	S008-1190A	S008-1190	9
S008	S008-1190B	S008-1190	254
S008	S008-1200	S008-1190B	253
S008	S008-1210	S008-1200	219
S008	S008-1210	S008-1210A	95
S008	S008-1220	S008-1210A	256
S008	S008-1230	S008-1220	340
S008	S008-1240	S008-1230	254
S008	S008-1250	S008-1240	246
S008	S008-1252	S008-1250	187
S008	S008-1254	S008-1252	337
S008	S008-1256	S008-1254	106
S008	S008-1260	S008-1250	98
S008	S008-1270	S008-1260	75
S008	S008-1280	S008-1270	90
S008	S008-1290	S008-1280	120
S008	S008-1300	S008-1290	145
S008	S008-1320	S008-1300	255
S008	S008-1330	S008-1320	205
S008	S008-1340	S008-1330	359

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S008	S008-1350	S008-1320	238
S008	S008-1370	S008-1350	78
S008	S008-1380	S008-1370	127
S008	S008-1390	S008-1380	55
S008	S008-1400	S008-1390	306
S008	S008-1410	S008-1400	302
S008	S008-1420	S008-1370	55
S008	S008-1440	S008-1420	248
S008	S008-1450	S008-1440	59
S008	S008-1470	S008-1450	275
S008	S008-1480	S008-1470	339
S008	S008-1484	S008-1480	64
S008	S008-1760	S008-1210	225
S008	S008-1770	S008-1760	200
S008	S008-1780	S008-1770	335
S008	S008-1790	S008-1780	286
S008	S008-1800	S008-1770	301
S008	S008-1810	S008-1800	253
S008	S008-1820	S008-1760	59
S008	S008-1830	S008-1820	342
S008	S008-1840	S008-1830	283
S008	S008-1840A	S008-1840	11
S008	S008-1890	S008-1880	314
S008	S008-1900	S008-1890	297
S008	S008-1910	S008-1890	352
S008	S008-1920	S008-1910	308
S008	S008-1960	S008-1940	96
S008	S008-1970	S008-1960	198
S008	S008-1975	S008-1970	387
S008	S008-1980A	S008-1980B	235
S008	S008-1980B	S008-1840	50
S008	S008-1990A	S008-1990	84
S008	S008-2010	S008-1990A	223
S008	S008-2020	S008-2010	378
S008	S008-2030	S008-2020	165
S008	S008-2040	S008-2030	304
S008	S008-2050	S008-2030	320
S008	S008-2060	S008-2050	323
S008	S008-2070	S008-2060	302
S008	S008-2080	S008-2070	310
S008	S008-2090	S008-2030	329
S008	S008-2100	S008-2090	289
S008	S008-2110	S008-2090	327
S008	S008-2120	S008-2110	327
S008	S008-2130	S008-2120	326
S008	S008-2140	S008-2130	364
S008	S008-2150	S008-2140	221
S008	S008-2160	S008-2090	174
S008	S008-2170	S008-2160	88
S008	S008-2180	S008-2170	429
S008	S008-2190	S008-2180	311
S008	S008-2200	S008-2190	160
S008	S008-2209	S008-2200	84
S008	S008-2210	S008-2209	10
S008	S008-2220	S008-2210	284
S008	S008-2240	S008-2190	82
S008	S008-2250	S008-2240	403
S008	S008-2260	S008-2250	396
S008	S008-2270	S008-2260	101
S008	S008-2290	S008-2160	388
S008	S008-2300	S008-2290	263
S008	S008-2310	S008-2300	400
S008	S008-2320	S008-2310	342
S008	S008-2330	S008-2320	325
S008	S008-2340	S008-2330	327
S008	S008-2350	S008-2340	250
S008	S008-2360	S008-2300	395

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S008	S008-2370	S008-2360	299
S008	S008-2380	S008-2370	327
S008	S008-2390	S008-2380	329
S008	S008-2400	S008-2390	239
S008	S008-2410	S008-2360	447
S008	S008-2420	S008-2410	438
S008	S008-2430	S008-2420	255
S008	S008-2440	S008-2430	287
S008	S008-2450	S008-2440	217
S008	S008-2460	S008-2410	467
S008	S008-2470	S008-2460	83
S008	S008-2480	S008-2460	351
S008	S008-2500	S008-1980	438
S008	S008-2510	S008-2500	376
S008	S008-2520	S008-2500	194
S008	S008-2530	S008-2520	183
S008	S008-2530A	S008-2530	97
S008	S008-3000	S008-0400	81
S008	S008-3010	S008-3000	122
S008	S008-3020	S008-3010	268
S008	S008-3030	S008-3000	152
S008	S008-3040	S008-3030	132
S008	S008-3050	S008-3040	206
S008	S008-4010	S008-0635	300
S008	S008-4020	S008-4010	303
S008	S008-4030	S008-4020	287
S008	S008-4035	S008-4030	215
S008	S008-4100	S008-1080	140
S008	S008-4110	S008-4100	365
S008	S009-0005	S008-0390	288
S008	S009-1590	S009-1560	318
S009	S009-0010	S009-0005	260
S009	S009-0020	S009-0010	320
S009	S009-0030	S009-0020	339
S009	S009-0040	S009-0030	324
S009	S009-0050	S009-0040	339
S009	S009-0070	S009-0050	272
S009	S009-0075	S009-0070	35
S009	S009-0080	S009-0070	239
S009	S009-0082	S009-0080	182
S009	S009-0084	S009-0082	112
S009	S009-0085	S009-0010	210
S009	S009-0085A	S009-0085	42
S009	S009-0086	S009-0080	28
S009	S009-0088	S009-0082	22
S009	S009-0090	S009-0085	42
S009	S009-0095	S009-0090	183
S009	S009-0100	S009-0095	86
S009	S009-0105	S009-0095	69
S009	S009-0110	S009-0105	74
S009	S009-0115	S009-0100	54
S009	S009-0120	S009-0115	278
S009	S009-0130	S009-0120	103
S009	S009-0140	S009-0130	193
S009	S009-0150	S009-0140	292
S009	S009-0160	S009-0150	180
S009	S009-0170	S009-0150	53
S009	S009-0180	S009-0140	188
S009	S009-0190	S009-0180	230
S009	S009-0200	S009-0190	244
S009	S009-0210	S009-0200	133
S009	S009-0220	S009-0200	325
S009	S009-0230	S009-0190	309
S009	S009-0240	S009-0230	375
S009	S009-0250	S009-0240	399
S009	S009-0260	S009-0250	298
S009	S009-0270	S008-0260	302

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S009	S009-0280	S009-0270	269
S009	S009-0290	S009-0230	125
S009	S009-0300	S009-0290	203
S009	S009-0310	S009-0300	380
S009	S009-0320	S009-0310	276
S009	S009-0330	S009-0290	334
S009	S009-0340	S009-0330	346
S009	S009-0350	S009-0340	241
S009	S009-0360	S009-0350	249
S009	S009-0370	S009-0360	350
S009	S009-0380	S009-0370	299
S009	S009-0390	S009-0380	343
S009	S009-0400	S009-0350	328
S009	S009-0410	S009-0400	305
S009	S009-0420	S009-0410	351
S009	S009-0430	S009-0420	249
S009	S009-0440	S009-0430	354
S009	S009-0450	S009-0400	158
S009	S009-0460	S009-0450	351
S009	S009-0470	S009-0460	355
S009	S009-0480	S009-0470	263
S009	S009-0490	S009-0480	307
S009	S009-0500	S009-0450	173
S009	S009-0510	S009-0500	160
S009	S009-0520	S009-0510	398
S009	S009-0530	S009-0520	398
S009	S009-0540	S009-0510	320
S009	S009-0550	S009-0540	322
S009	S009-0560	S009-0540	145
S009	S009-0570	S009-0560	176
S009	S009-0580	S009-0570	350
S009	S009-0590	S009-0580	232
S009	S009-0600	S009-0590	265
S009	S009-0610	S009-0600	370
S009	S009-0620	S009-0610	76
S009	S009-0630	S009-0610	69
S009	S009-0640	S009-0330	233
S009	S009-0650	S009-0640	179
S009	S009-0655	S009-0650	192
S009	S009-0660	S009-0650	349
S009	S009-0670	S009-0660	70
S009	S009-0680	S009-0670	45
S009	S009-0690	S009-0680	80
S009	S009-0700	S009-0680	95
S009	S009-0710	S009-0670	315
S009	S009-0712	S009-0710	34
S009	S009-0720	S009-0710	200
S009	S009-0730	S009-1620	181
S009	S009-0740	S009-0730	237
S009	S009-0750	S009-0740	212
S009	S009-0760	S009-0712	57
S009	S009-0770	S009-0760	77
S009	S009-0780	S009-0770	60
S009	S009-0784	S009-0712	282
S009	S009-0785	S009-0780	80
S009	S009-0786	S009-0784	274
S009	S009-0788	S009-0786	82
S009	S009-0800	S009-0788	42
S009	S009-0810	S009-0800	307
S009	S009-0820	S009-0810	302
S009	S009-0830	S009-0820	293
S009	S009-0840	S009-0830	320
S009	S009-0850	S009-0800	333
S009	S009-0860	S009-0850	303
S009	S009-0870	S009-0860	300
S009	S009-0880	S009-0870	347
S009	S009-0890	S009-0880	306

Sewer Lines Smoke Tested

Sub-Basin	Upstream Manhole	Downstream Manhole	Segment Length
S009	S009-0900	S009-0850	331
S009	S009-0910	S009-0900	400
S009	S009-0920	S009-0910	404
S009	S009-0930	S009-0920	361
S009	S009-0940	S009-0900	332
S009	S009-0950	S009-0940	400
S009	S009-0960	S009-0950	300
S009	S009-0970	S009-0960	300
S009	S009-0980	S009-0970	254
S009	S009-0990	S009-0800	134
S009	S009-1060	S009-1050	273
S009	S009-1070	S009-1050	151
S009	S009-1080	S009-1070	289
S009	S009-1100	S009-1090	316
S009	S009-1110	S009-1100	344
S009	S009-1120	S009-1110	33
S009	S009-1130	S009-1120	175
S009	S009-1140	S009-1130	80
S009	S009-1150	S009-1120	158
S009	S009-1160	S009-1150	57
S009	S009-1170	S009-1160	173
S009	S009-1285	S009-1280	390
S009	S009-1290	S009-1280	39
S009	S009-1300	S009-1290	155
S009	S009-1310	S009-1300	236
S009	S009-1320	S009-1310	223
S009	S009-1330	S009-1300	327
S009	S009-1331	S009-1330	325
S009	S009-1340	S009-1330	338
S009	S009-1350	S009-1290	160
S009	S009-1360	S009-1350	347
S009	S009-1370	S009-1360	291
S009	S009-1380	S009-1370	333
S009	S009-1390	S009-1380	325
S009	S009-1400	S009-1390	207
S009	S009-1410	S009-1350	325
S009	S009-1420	S009-1410	358
S009	S009-1430	S009-1420	288
S009	S009-1440	S009-1430	314
S009	S009-1450	S009-1440	292
S009	S009-1460	S009-1410	325
S009	S009-1470	S009-1460	337
S009	S009-1480	S009-1470	307
S009	S009-1490	S009-1460	147
S009	S009-1500	S009-1490	331
S009	S009-1510	S009-1500	302
S009	S009-1520	S009-1510	440
S009	S009-1530	S009-1500	320
S009	S009-1540	S009-1530	300
S009	S009-1550	S009-1530	394
S009	S009-1560	S009-1530	330
S009	S009-1570	S009-1560	230
S009	S009-1575	S009-1570	60
S009	S009-1580	S009-1570	250
S009	S009-1585	S009-1580	458
S009	S009-1600	S009-1590	322
S009	S009-1610	S009-1600	379
S009	S009-1620	S009-0720	31
S009	S009-1630	S009-1620	226
S009	S009-1640	S009-0085A	320
S009	S009-1650	S009-1640	104
S009	S009-1660	S009-1170	204

APPENDIX D

SMOKE TESTING DEFECTS

rjngroup
The Choice for Collection System Solutions

Smoke Testing Defects

The City of Fort Smith Arkansas

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S004	S004-0470	S004-0460	2220-2398	S Waldron Rd	Manhole	Medium	In front of Bonneville Elementary School in sidewalk
S004	S004-0480	S004-0470	2400-2504	S Waldron Rd	Manhole	Medium	
S004	S004-0500	S004-0480	5324	Y	Mainline	Light	Next to drive way facing Waldron
S004	S004-0500	S004-0480	5324	Y	Storm Ditch	Heavy	In ditch next to drive way facing Waldron
S004	S004-0500	S004-0480	5324	Y	Mainline	Light	Next to drive way facing Waldron
S004	S004-0550	S004-0540	5375	Cliff Dr	Cleanout, Private	Heavy	
S004	S004-0550	S004-0540	5375	Cliff Dr	Cleanout, Private	Heavy	
S004	S004-0550	S004-0540	5375	Cliff Dr	Cleanout, Private	Heavy	
S004	S004-0550	S004-0540	5375	Cliff Dr	Cleanout, Private	Heavy	
S004	S004-0570	S004-0530	5310	Yantis St	Cleanout, Private	Heavy	Two clean outs 1 foot apart, both missing caps
S004	S004-0605	S004-0600	5219	Cliff Dr	Cleanout, Private	Light	Defective riser
S004	S004-1190	S004-1173	2500	S 56th St	Storm Ditch	Light	
S004	S004-1240	S004-1230	5520	Country Club Ave	Manhole	Light	
S004	S004-1240	S004-1230	5520	Country Club Ave	Storm Ditch	Light	
S004	S004-1240	S004-1230	5520	Country Club Ave	Storm Ditch	Heavy	
S004	S004-1240	S004-1230	5520	Country Club Ave	Storm Ditch	Medium	
S004	S004-1260	S004-1230	5505	Yantis St	Cleanout, Private	Heavy	
S004	S004-1270	S004-1260	5508	Yantis St	Building Lateral, Private	Light	
S004	S004-1270	S004-1260	5424	Yantis St	Manhole	Light	
S004	S004-1270	S004-1260	5508	Yantis St	Mainline	Heavy	
S004	S004-1280	S004-1270	5500	Yantis St	Mainline	Heavy	
S004	S004-1280	S004-1270	5500	Yantis St	Mainline	Heavy	
S004	S004-0050	S004-0045	5423	Elsworth	Catch Basin	Medium	
S004	S004-0050	S004-0045	5423	Elsworth	Mainline	Heavy	In ditch
S004	S004-0050	S004-0045	5423	Elsworth	Mainline	Heavy	In ditch
S004	S004-0050	S004-0045	5423	Elsworth	Catch Basin	Medium	
S004	S004-0100	S004-0110	5500	Euper	Building Lateral, Private	Heavy	
S004	S004-0100	S004-0110	1801	Waldron	Cleanout, Public	Light	Defective riser
S004	S004-0100	S004-0110	1801	Waldron	Building Lateral, Public	Light	
S004	S004-0100	S004-0110	5426	Euper	Building Lateral, Private	Medium	
S004	S004-0100	S004-0110	5426	Euper	Cleanout, Private	Medium	Defective riser
S004	S004-0100	S004-0110	5426	Euper	Manhole	Light	
S004	S004-0100	S004-0110	1801	Waldron	Cleanout, Private	Medium	
S004	S004-0140	S004-0150	5808	Euper	Manhole	Light	
S004	S004-0190	S004-0170	602	Euper	Cleanout, Public	Medium	Defective riser
S004	S004-0190	S004-0170	602	Euper	Building Lateral, Public	Heavy	In ditch
S004	S004-0190	S004-0170	602	Euper	Building Lateral, Public	Heavy	In ditch
S004	S004-0200	S004-0190	1801	Burnham	Cleanout, Private	Light	Defective riser
S004	S004-0200	S004-0190	1800	Burnham	Building Lateral, Private	Heavy	
S004	S004-0200	S004-0190	1803	Burnham	Area Drain	Heavy	
S004	S004-0210	S004-0200	1722	Burnham	Building Lateral, Public	Medium	In ditch
S004	S004-0210	S004-0200	1722	Burnham	Building Lateral, Public	Light	In ditch
S004	S004-0210	S004-0200	1719	Burnham	Cleanout, Private	Heavy	Defective riser
S004	S004-0210	S004-0200	1719	Burnham	Cleanout, Public	Medium	2 clean outs 3 inches apart
S004	S004-0230	S004-0220	1601	Burnham	Manhole	Light	
S004	S004-0230	S004-0220	5920	Duncan	Cleanout, Private	Heavy	
S004	S004-0245	S004-0240	5911	Elsworth	Building Lateral, Private	Light	
S004	S004-0310	S004-0260	2123	Burnham	Manhole	Light	
S004	S004-0310	S004-0260	2123	Burnham	Storm Ditch	Medium	
S004	S004-0330	S004-0320	5821	Rogers Ave	Mainline	Light	
S004	S004-0330	S004-0320	5801	Rogers Ave	Cleanout, Private	Heavy	
S004	S004-0330	S004-0320	5821	Rogers Ave	Storm Ditch	Heavy	
S004	S004-0330	S004-0320	5801	Rogers Ave	Building Lateral, Private	Heavy	
S004	S004-0330	S004-0320	5821	Rogers Ave	Mainline	Heavy	
S004	S004-0330	S004-0320	6001	Rogers Ave	Building Lateral, Private	Light	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S004	S004-0330	S004-0320	5801	Rogers Ave	Building Lateral, Private	Light	
S004	S004-0330	S004-0320	5801	Rogers Ave	Building Lateral, Private	Light	
S004	S004-0330	S004-0320	5821	Rogers Ave	Mainline	Light	
S004	S004-0330	S004-0320	5821	Rogers Ave	Mainline	Light	
S004	S004-0330	S004-0320	5821	Rogers Ave	Mainline	Light	
S004	S004-0330	S004-0320	5801	Rogers Ave	Building Lateral, Private	Light	
S004	S004-0330	S004-0320	5821	Rogers Ave	Mainline	Light	
S004	S004-0340	S004-0330	5819	Rogers Ave	Manhole	Heavy	
S004	S004-0350	S004-0312	5801	Rogers Ave	Catch Basin	Heavy	
S004	S004-0350	S004-0312	5801	Rogers Ave	Mainline	Light	
S004	S004-0350	S004-0312	5801	Rogers Ave	Catch Basin	Medium	
S004	S004-0350	S004-0312	5801	Rogers Ave	Storm Ditch	Medium	
S004	S004-0350	S004-0312	5801	Rogers Ave	Manhole	Medium	
S004	S004-0410	S004-0400	5024-5298	South S Street	Manhole	Light	
S004	S004-0490	S004-0485	5607	Roger Ave	Cleanout, Public	Heavy	
S004	S004-0490	S004-0485	5607	Rogers Ave	Cleanout, Public	Heavy	
S004	S004-0490	S004-0485	5609A	Rogers Ave	Cleanout, Public	Heavy	
S004	S004-1200	S004-1190	2601	S 56th St	Cleanout, Private	Heavy	
S004	S004-1210	S004-1190	5400-5598	Y St S	Building Lateral, Private	Heavy	Ditch
S004	S004-1210	S004-1190	5409	Y St S	Mainline	Medium	Ditch
S004	S004-1210	S004-1190	5414	S Y St	Cleanout, Private	Heavy	
S004	S004-1210	S004-1190	5409	Y St S	Mainline	Heavy	Ditch
S004	S004-1210	S004-1190	5414	Y St S	Building Lateral, Private	Heavy	Ditch
S004	S004-1210	S004-1190	5414	S Y St	Cleanout, Private	Heavy	
S004	S004-1210	S004-1190	5414	Y St S	Building Lateral, Private	Heavy	
S004	S004-1220	S004-1190	2720	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Building Lateral, Private	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Building Lateral, Private	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1220	S004-1190	2700	S 56th St	Mainline	Medium	
S004	S004-1370	S004-1360	2300	S 57th St	Building Lateral, Public	Light	
S004	S004-1390	S004-1380	2511	S 57th St	Building Lateral, Private	Light	
S004	S004-1390	S004-1380	2322-2420	S 57th St	Manhole	Light	
S004	S004-1390	S004-1380	2511	S 57th St	Building Lateral, Public	Light	
S004	S004-1390	S004-1380	2511	S 57th St	Building Lateral, Private	Light	
S004	S004-1410	S004-1400	5610	S Y St	Cleanout, Private	Heavy	
S004	S004-1410	S004-1400	2614	S 57th St	Manhole	Light	
S004	S004-1410	S004-1400	5610	S Y St	Cleanout, Private	Heavy	
S004	S004-1470	S004-1430	2414	S 58th St	Manhole	Light	
S004	S004-1470	S004-1430	2414	S 58th St	Cleanout, Private	Heavy	
S004	S004-1490	S004-1480	2601-2603	S 58th St	Manhole	Light	
S004	S004-1560	S004-1550	5821	Cliff Dr	Cleanout, Private	Heavy	
S004	S004-1650	S004-0350	5801	Rogers Ave	Manhole	Light	
P007	EOL	P007-0410	1522	37th	Building Lateral, Private	Heavy	
P007	EOL	P007-0410	1532	37th	Cleanout, Public	Heavy	
P007	EOL	P007-0790	205	41st	Manhole	Light	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
P007	EOL	P007-0790	200	41st	Building Lateral, Private	Heavy	
P007	EOL	P007-0790	200	41st	Cleanout, Public	Light	Defective riser
P007	P007-0020	P007-0010	1312	M	Manhole	Medium	USMH UTL, used metal detector...wheeled distance, used footage from map
P007	P007-0030	P007-0020	1515	34th	Cleanout, Private	Heavy	
P007	P007-0030	P007-0020	1505	34th	Cleanout, Private	Heavy	
P007	P007-0030	P007-0020	1515	33th	Mainline	Light	
P007	P007-0030	P007-0020	1515	33th	Building Lateral, Private	Medium	
P007	P007-0030	P007-0020	1503	34th	Cleanout, Public	Medium	In alley
P007	P007-0065	P007-0060	1425	34th	Manhole	Light	
P007	P007-0120	P007-0080	1427	35th	Cleanout, Private	Heavy	
P007	P007-0130	P007-0120	1437	35th	Building Lateral, Private	Heavy	
P007	P007-0130	P007-0120	1505	35th	Cleanout, Private	Heavy	2 clean outs side by side 3 inches apart
P007	P007-0140	P007-0130	1522	34th	Cleanout, Private	Heavy	Point taken at fence in alley, gate is locked, defect located next to back side of house
P007	P007-0140	P007-0130	1514	34th	Cleanout, Private	Heavy	
P007	P007-0150	P007-0080	1403	36th	Manhole	Light	
P007	P007-0150	P007-0080	1401	35th	Catch Basin	Medium	
P007	P007-0150	P007-0080	1406	35th	Catch Basin	Light	
P007	P007-0154	P007-0152	1322	36th	Manhole	Heavy	
P007	P007-0155	P007-0152	1309	36th	Cleanout, Public	Heavy	
P007	P007-0160	P007-0150	1457	36th	Catch Basin	Light	
P007	P007-0160	P007-0150	1420	35th	Cleanout, Private	Heavy	
P007	P007-0160	P007-0150	1431	36th	Cleanout, Public	Heavy	
P007	P007-0160	P007-0150	1434	35th	Manhole	Light	
P007	P007-0170	P007-0160	1437	36th	Building Lateral, Private	Medium	
P007	P007-0170	P007-0160	1449	36th	Cleanout, Public	Light	Defective riser
P007	P007-0170	P007-0160	1433	36th	Building Lateral, Private	Medium	Point taken from north side of back yard out side of fence, defect is approximately 8 feet from house
P007	P007-0180	P007-0170	1504	35th	Cleanout, Private	Heavy	
P007	P007-0180	P007-0170	1501	36th	Cleanout, Public	Light	
P007	P007-0180	P007-0170	1517	36th	Cleanout, Private	Heavy	
P007	P007-0180	P007-0170	1504	35th	Cleanout, Public	Heavy	Missing cap and defective riser
P007	P007-0190	P007-0180	1528	O St	Mainline	Light	Disregard defect, point taken shows where lamp hole is, has metal plate used for marking water meter on it
P007	P007-0190	P007-0180	3414	O St	Building Lateral, Private	Medium	
P007	P007-0200	P007-0155	1220	35th	Cleanout, Private	Heavy	
P007	P007-0200	P007-0155	1223	36th	Cleanout, Private	Heavy	Point taken in alley, defect is approximately 12 feet from back of house
P007	P007-0200	P007-0155	1200	35th	Mainline	Light	
P007	P007-0200	P007-0155	1220	35th	Cleanout, Private	Heavy	Defective riser Additional photos shows 4 inch service opening to drainage canal
P007	P007-0205	P007-0202	1115	36th	Building Lateral, Private	Medium	
P007	P007-0205	P007-0202	1120	35th	Building Lateral, Private	Medium	
P007	P007-0205	P007-0202	1109	36th	Cleanout, Private	Heavy	
P007	P007-0205	P007-0202	1120	35th	Building Lateral, Private	Light	
P007	P007-0205	P007-0202	1120	35th	Building Lateral, Private	Medium	
P007	P007-0205	P007-0202	1120	35th	Building Lateral, Private	Medium	
P007	P007-0205	P007-0202	1120	35th	Building Lateral, Private	Medium	
P007	P007-0205	P007-0202	1120	35th	Building Lateral, Private	Heavy	
P007	P007-0205	P007-0202	1115	36th	Cleanout, Private	Light	Defective riser
P007	P007-0205	P007-0202	1120	35th	Building Lateral, Private	Heavy	
P007	P007-0205	P007-0202	1120	35th	Cleanout, Private	Medium	
P007	P007-0205	P007-0202	1120	35th	Building Lateral, Private	Medium	
P007	P007-0230	P007-0220	816	36th	Cleanout, Public	Heavy	
P007	P007-0240	P007-0230	704	36th	Building Lateral, Private	Light	Point taken outside of fence next to Alabama
P007	P007-0240	P007-0230	710	36th	Building Lateral, Private	Light	
P007	P007-0240	P007-0230	710	36th	Building Lateral, Public	Light	
P007	P007-0240	P007-0230	720	36th	Building Lateral, Private	Light	
P007	P007-0240	P007-0230	710	36th	Building Lateral, Private	Medium	
P007	P007-0240	P007-0230	710	36th	Building Lateral, Private	Medium	
P007	P007-0240	P007-0230	720	36th	Building Lateral, Private	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
P007	P007-0240	P007-0230	704	36th	Building Lateral, Private	Light	Point taken outside of fence next to Alabama
P007	P007-0240	P007-0230	704	36th	Building Lateral, Private	Light	Point taken outside of fence next to Alabama
P007	P007-0240	P007-0230	720	36th	Building Lateral, Private	Medium	
P007	P007-0240	P007-0230	720	36th	Building Lateral, Private	Medium	
P007	P007-0240	P007-0230	710	36th	Building Lateral, Public	Light	
P007	P007-0250	P007-0240	3603	Kinkead	Cleanout, Public	Light	
P007	P007-0250	P007-0240	700	36th	Cleanout, Public	Heavy	Defective riser
P007	P007-0250	P007-0240	614	36th	Building Lateral, Private	Heavy	
P007	P007-0250	P007-0240	3601	Kinkead	Cleanout, Private	Heavy	
P007	P007-0250	P007-0240	3616	Kinkead	Cleanout, Private	Heavy	
P007	P007-0250	P007-0240	3603	Kinkead	Building Lateral, Public	Light	
P007	P007-0250	P007-0240	3603	Kinkead	Building Lateral, Public	Light	
P007	P007-0260	P007-0250	3616	Kinkead	Catch Basin	Medium	
P007	P007-0260	P007-0250	3603	Kinkead	Storm Ditch	Light	
P007	P007-0260	P007-0250	3616	Kinkead	Catch Basin	Medium	
P007	P007-0270	P007-0260	3620	Kinkead	Catch Basin	Heavy	
P007	P007-0270	P007-0260	3620	Kinkead	Mainline	Heavy	Next to utility pole
P007	P007-0270	P007-0260	526	36th	Manhole	Medium	
P007	P007-0270	P007-0260	3620	Kinkead	Mainline	Light	Next to curb
P007	P007-0270	P007-0260	3620	Kinkead	Mainline	Light	
P007	P007-0280	P007-0270	526	36th	Catch Basin	Light	
P007	P007-0280	P007-0270	520	36th	Catch Basin	Light	
P007	P007-0280	P007-0270	519	36th	Building Lateral, Private	Medium	
P007	P007-0280	P007-0270	520	36th	Cleanout, Private	Heavy	
P007	P007-0290	P007-0280	3616	Hon	Cleanout, Public	Medium	
P007	P007-0320	P007-0154	1317	37th	Building Lateral, Private	Heavy	
P007	P007-0320	P007-0154	1317	37th	Building Lateral, Private	Light	
P007	P007-0320	P007-0154	1317	37th	Building Lateral, Private	Light	
P007	P007-0320	P007-0154	1317	37th	Building Lateral, Private	Light	
P007	P007-0320	P007-0154	1317	37th	Building Lateral, Private	Light	
P007	P007-0320	P007-0154	1317	37th	Building Lateral, Private	Medium	
P007	P007-0320	P007-0300	1220	36th	Cleanout, Public	Heavy	Defective riser
P007	P007-0330	P007-0157	1400	37th	Cleanout, Public	Heavy	
P007	P007-0330	P007-0157	1401	36th	Cleanout, Public	Light	
P007	P007-0330	P007-0157	1418	36th	Cleanout, Private	Heavy	Defective riser
P007	P007-0330	P007-0157	1417	37th	Cleanout, Private	Heavy	
P007	P007-0330	P007-0157	1405	36th	Cleanout, Public	Light	Defective riser
P007	P007-0340	P007-0330	1445	37th	Cleanout, Public	Light	Defective riser
P007	P007-0340	P007-0330	1424	36th	Building Lateral, Private	Medium	
P007	P007-0340	P007-0330	1444	36th	Building Lateral, Private	Medium	
P007	P007-0340	P007-0330	1445	37th	Building Lateral, Private	Heavy	Point taken at fence on right side of residence
P007	P007-0340	P007-0330	1425	37th	Cleanout, Public	Heavy	
P007	P007-0340	P007-0330	1422	36th	Cleanout, Private	Heavy	
P007	P007-0340	P007-0330	1449	37th	Cleanout, Public	Heavy	
P007	P007-0340	P007-0330	1441	37th	Cleanout, Public	Medium	
P007	P007-0340	P007-0330	1422	36th	Cleanout, Public	Heavy	
P007	P007-0340	P007-0330	1424	36th	Building Lateral, Private	Light	
P007	P007-0340	P007-0330	1424	36th	Building Lateral, Private	Light	
P007	P007-0340	P007-0330	1444	36th	Building Lateral, Private	Medium	
P007	P007-0340	P007-0330	1424	36th	Building Lateral, Private	Light	Point taken from next door, gates locked
P007	P007-0350	P007-0340	1520	36th	Cleanout, Public	Light	Defective riser
P007	P007-0350	P007-0340	1519	37th	Cleanout, Private	Heavy	
P007	P007-0350	P007-0340	1501	37th	Cleanout, Private	Heavy	Back side of apartments in alley
P007	P007-0380	P007-0370	1301	38th	Building Lateral, Private	Heavy	
P007	P007-0380	P007-0370	1304	37th	Cleanout, Public	Light	Defective riser
P007	P007-0380	P007-0370	1208	37th	Building Lateral, Private	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
P007	P007-0380	P007-0370	1212	37th	Cleanout, Private	Light	
P007	P007-0380	P007-0370	1301	38th	Building Lateral, Private	Heavy	
P007	P007-0383	P007-0380	1316	37th	Building Lateral, Private	Light	Inside shed
P007	P007-0383	P007-0380	1316	37th	Cleanout, Private	Heavy	
P007	P007-0383	P007-0380	1319	38th	Cleanout, Private	Heavy	
P007	P007-0383	P007-0380	1316	37th	Building Lateral, Private	Light	
P007	P007-0386	P007-0383	1320	37th	Building Lateral, Private	Light	
P007	P007-0386	P007-0383	1400	37th	Manhole	Medium	
P007	P007-0390	P007-0386	1411	38th	Building Lateral, Private	Light	
P007	P007-0390	P007-0386	1411	38th	Building Interior	Medium	
P007	P007-0390	P007-0386	1411	38th	Building Lateral, Public	Light	
P007	P007-0395	P007-0390	1437	38th	Cleanout, Public	Heavy	
P007	P007-0395	P007-0390	1431	38th	Cleanout, Public	Heavy	
P007	P007-0395	P007-0390	1424	38th	Cleanout, Public	Heavy	
P007	P007-0395	P007-0390	1430	37th	Cleanout, Public	Light	
P007	P007-0400	P007-0395	1449	38th	Cleanout, Private	Heavy	Point taken at front of house, resident not home, dog in back yard, defect located next to back steps
P007	P007-0410	P007-0400	1506	37th	Cleanout, Private	Heavy	
P007	P007-0430	P007-0370	1115	38th	Building Lateral, Private	Medium	Point taken at back of fence in alley, fence is locked, leak located near fence
P007	P007-0430	P007-0370	1112	37th	Cleanout, Private	Heavy	Point taken at fence in alley, fence is locked, defect is located in middle of yard approximately 50 feet from fence
P007	P007-0440	P007-0430	1009	38th	Building Lateral, Public	Heavy	
P007	P007-0440	P007-0430	1104	37th	Manhole	Light	
P007	P007-0440	P007-0430	1009	38th	Building Lateral, Private	Light	2 defects in back yard, has electric fence and dog, point taken at gate behind house
P007	P007-0440	P007-0430	1009	38th	Building Lateral, Private	Light	
P007	P007-0440	P007-0430	1018	37th	Building Lateral, Private	Light	Leak located in back yard next to bird bath, dog in back yard, point taken at gate in alley way
P007	P007-0465	P007-0460	Unknown	Grand Ave	Cleanout, Public	Medium	Defective riser
P007	P007-0470	P007-0465	Uknown	Kinkead	Mainline	Medium	Tilles Park next to kiddie pool
P007	P007-0470	P007-0465	Unkown	Kinkead	Catch Basin	Medium	Tilles Park northeast of kiddie pool
P007	P007-0470	P007-0465	Unknown	Kinkead	Manhole	Light	Tilles Park
P007	P007-0470	P007-0465	Unkown	Kinkead	Catch Basin	Light	Tillis Park
P007	P007-0470	P007-0465	Unknown	Kinkead	Catch Basin	Light	Tilles Park
P007	P007-0486	P007-0484	519	38th	Cleanout, Private	Heavy	
P007	P007-0490	P007-0486	508	38th	Mainline	Heavy	
P007	P007-0495	P007-0490	3705	Hon	Cleanout, Private	Medium	
P007	P007-0540	P007-0530	3729	Park	Cleanout, Public	Light	
P007	P007-0585	P007-0580	310	38th	Storm Ditch	Light	
P007	P007-0600	P007-0570	3815	Barry	Mainline	Medium	
P007	P007-0640	P007-0630	3649	Presley	Cleanout, Public	Light	
P007	P007-0640	P007-0630	3637	Presley	Building Lateral, Private	Medium	
P007	P007-0640	P007-0630	3645	Presley	Cleanout, Private	Heavy	
P007	P007-0640	P007-0630	3637	Presley	Building Lateral, Private	Medium	
P007	P007-0640	P007-0630	3637	Presley	Building Lateral, Private	Medium	
P007	P007-0650	P007-0640	3629	Presley	Cleanout, Private	Heavy	
P007	P007-0650	P007-0640	3625	Presley	Cleanout, Private	Heavy	
P007	P007-0650	P007-0640	3629	Presley	Building Lateral, Private	Medium	
P007	P007-0700	P007-0660	120	Presley	Storm Ditch	Heavy	
P007	P007-0720	P007-0710	3819	Free Ferry	Cleanout, Private	Heavy	
P007	P007-0740	P007-0730	3900	Park	Manhole	Light	
P007	P007-0760	P007-0740	3920	Park	Building Lateral, Private	Heavy	
P007	P007-0770	P007-0760	4000	Park	Manhole	Light	
P007	P007-0780	P007-0770	311	41st	Cleanout, Private	Heavy	Defective riser
P007	P007-0780	P007-0770	330	41st	Cleanout, Private	Heavy	
P007	P007-0784	P007-0782	316	41st	Cleanout, Private	Light	
P007	P007-0788	P007-0786	Unk	Free Ferry Ln	Cleanout, Public	Heavy	No physical address
P007	P007-0790	P007-0780	301	41st	Mainline	Light	
P007	P007-0870	P007-0860	120	Presley	Cleanout, Private	Heavy	
P007	P007-0870	P007-0860	120	Presley	Manhole	Light	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
P007	P007-1020	P007-1010	4000	Free Ferry	Manhole	Light	
P007	P007-1060	P007-1050	1207	41st	Building Lateral, Private	Medium	
P007	P007-1060	P007-1050	1120	Albert Pike	Building Lateral, Private	Heavy	
P007	P007-1080	P007-1070	4101	Miller	Mainline	Heavy	
P007	P007-1080	P007-1070	4101	Miller	Manhole	Heavy	
P007	P007-1090	P007-1080	1309	41st	Cleanout, Private	Heavy	
P007	P007-1110	P007-1100	4005	Miller	Cleanout, Private	Heavy	
P007	P007-1260	P007-1255	1207	Tancred	Cleanout, Private	Medium	
P007	P007-1267	P007-1264	3917	Rogers Ave	Manhole	Medium	Seized, blow through
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Medium	
P007	P007-1290	P007-1282	1209	38th	Cleanout, Private	Heavy	
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Light	
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Medium	
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Medium	
P007	P007-1290	P007-1282	1216	38th	Building Lateral, Private	Light	
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Medium	
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Medium	
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Medium	
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Medium	
P007	P007-1290	P007-1282	1221	39th	Building Lateral, Private	Medium	
P007	P007-1300	P007-1290	1322	38th	Cleanout, Public	Light	Defective riser
P007	P007-1300	P007-1290	1312	38th	Cleanout, Private	Medium	
P007	P007-1300	P007-1290	1323	39th	Cleanout, Public	Light	Defective riser
P007	P007-1300	P007-1290	1304	38th	Cleanout, Private	Heavy	
P007	P007-1300	P007-1290	1305	39th	Cleanout, Private	Medium	
P007	P007-1310	P007-1300	1424	38th	Cleanout, Private	Heavy	
P007	P007-1310	P007-1300	1414	38th	Cleanout, Private	Light	
P007	P007-1310	P007-1300	1414	38th	Cleanout, Public	Light	Defective riser
P007	P007-1310	P007-1300	1414	38th	Building Lateral, Private	Light	
P007	P007-1310	P007-1300	1414	38th	Building Lateral, Private	Light	
P007	P007-1320	P007-1310	1455	39th	Building Interior	Medium	
P007	P007-1320	P007-1310	1439	39th	Mainline	Heavy	
P007	P007-1320	P007-1310	1431	39th	Cleanout, Private	Heavy	Point taken from outside of fence, gate is locked
P007	P007-1350	P007-1280	1111	39th	Cleanout, Private	Heavy	
P007	P007-1350	P007-1280	1016	38th	Cleanout, Private	Heavy	
P007	P007-1350	P007-1280	1128	38th	Cleanout, Private	Heavy	
P007	P007-1350	P007-1280	1128	39th	Building Interior	Light	
P007	P007-1350	P007-1280	1128	39th	Cleanout, Public	Light	
P007	P007-1350	P007-1280	1016	38th	Cleanout, Public	Light	
P007	P007-1380	P007-1370	821	40th	Cleanout, Private	Heavy	
P007	P007-1380	P007-1370	3900	Grand Ave	Manhole	Light	
P007	P007-1380	P007-1370	3900	Grand Ave	Mainline	Medium	Concrete storm ditch 10 inches wide, 2 ft deep and 20 feet long
P007	P007-1390	P007-1385	714	39th	Cleanout, Private	Heavy	
P007	P007-1400	P007-1390	618	39th	Cleanout, Public	Heavy	
P007	P007-1400	P007-1390	709	39th	Building Lateral, Private	Heavy	Point taken outside of fence under car port in alley, large dog in yard, defect located west of house approximately 10 feet
P007	P007-1410	P007-1363	3900	Grand Ave	Manhole	Medium	
P007	P007-1410	P007-1363	3900	Grand Ave	Building Lateral, Private	Medium	
P007	P007-1420	P007-1415	801	39th	Cleanout, Private	Heavy	
P007	P007-1440	P007-1430	705	39th	Building Interior	Heavy	
P007	P007-1440	P007-1430	619	39th	Building Lateral, Private	Medium	
P007	P007-1470	P007-1460	531	39th	Building Lateral, Private	Medium	Point taken at fence in alley, approximately 125 ft from back of house
P007	P007-1470	P007-1460	535	39th	Cleanout, Private	Heavy	Point taken at fence in alley, approximately 140 ft from back of house
P007	P007-1480	P007-1470	512	38th	Cleanout, Private	Heavy	Point taken at fence in alley, approximately 75 ft from back of house
P007	P007-1480	P007-1470	500	38th	Manhole	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
P007	P007-1480	P007-1470	524	38th	Manhole	Light	
P007	P007-1500	P007-1490	1200	39th	Cleanout, Private	Heavy	
P007	P007-1500	P007-1490	1306	39th	Cleanout, Private	Medium	
P007	P007-1500	P007-1490	1311	40th	Cleanout, Private	Heavy	Drain hose from pool placed inside clean out
P007	P007-1500	P007-1490	1220	39th	Mainline	Medium	
P007	P007-1504	P007-1500	1318	39th	Cleanout, Private	Medium	
P007	P007-1504	P007-1500	1318	39th	Building Lateral, Private	Medium	
P007	P007-1504	P007-1500	1311	40th	Building Lateral, Private	Medium	
P007	P007-1504	P007-1500	1323	40th	Cleanout, Public	Medium	
P007	P007-1504	P007-1500	1318	39th	Building Lateral, Private	Medium	
P007	P007-1504	P007-1500	1318	39th	Building Lateral, Public	Medium	
P007	P007-1504	P007-1500	1318	39th	Building Lateral, Private	Medium	
P007	P007-1504	P007-1500	1318	39th	Building Lateral, Private	Medium	
P007	P007-1504	P007-1500	1318	39th	Building Lateral, Private	Medium	
P007	P007-1507	P007-1504	1400	39th	Building Interior	Medium	
P007	P007-1507	P007-1504	1400	39th	Cleanout, Private	Heavy	
P007	P007-1510	P007-1507	1411	40th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1406	39th	Building Lateral, Public	Light	
P007	P007-1510	P007-1507	1411	40th	Building Lateral, Public	Light	
P007	P007-1510	P007-1507	1405	40th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1406	39th	Manhole	Light	
P007	P007-1510	P007-1507	1406	39th	Building Lateral, Private	Medium	
P007	P007-1510	P007-1507	1411	40th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1405	40th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1406	39th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1406	39th	Mainline	Light	
P007	P007-1510	P007-1507	1406	39th	Mainline	Light	
P007	P007-1510	P007-1507	1411	40th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1406	39th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1411	40th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1411	40th	Building Lateral, Private	Light	
P007	P007-1510	P007-1507	1406	39th	Building Lateral, Private	Medium	
P007	P007-1520	P007-1510	1436	39th	Building Interior	Light	Point taken at fence, locked gate
P007	P007-1520	P007-1510	1427	40th	Cleanout, Private	Medium	Point taken at fence, aggressive dog in yard Picture also shows building interior
P007	P007-1525	P007-1520	1500	39th	Building Lateral, Private	Medium	
P007	P007-1525	P007-1520	1524	39th	Building Interior	Heavy	
P007	P007-1525	P007-1520	1500	39th	Building Interior	Light	
P007	P007-1530	P007-1490	1110	39th	Cleanout, Public	Medium	
P007	P007-1530	P007-1490	1122	39th	Cleanout, Private	Heavy	
P007	P007-1530	P007-1490	1119	40th	Cleanout, Private	Medium	
P007	P007-1530	P007-1490	1119	40th	Cleanout, Private	Medium	
P007	P007-1530	P007-1490	1122	39th	Cleanout, Private	Heavy	
P007	P007-1540	P007-1530	1005	40th	Building Lateral, Private	Light	
P007	P007-1540	P007-1530	1009	40th	Building Interior	Light	
P007	P007-1560	P007-1550	1210	40th	Cleanout, Private	Heavy	
P007	P007-1560	P007-1550	1309	41st	Cleanout, Private	Heavy	
P007	P007-1580	P007-1570	1426	40th	Building Lateral, Private	Light	
P007	P007-1580	P007-1570	1438	40th	Cleanout, Public	Heavy	
P007	P007-1580	P007-1570	1426	40th	Building Lateral, Private	Light	
P007	P007-1580	P007-1570	1456	40th	Cleanout, Private	Light	
P007	P007-1580	P007-1570	1438	40th	Cleanout, Private	Heavy	GPS point at back of privacy fence in alley, gate is locked
P007	P007-1580	P007-1570	1430	40th	Building Lateral, Private	Heavy	
P007	P007-1580	P007-1570	1426	40th	Building Lateral, Private	Light	
P007	P007-1580	P007-1570	1426	40th	Building Lateral, Public	Light	
P007	P007-1580	P007-1570	1426	40th	Building Lateral, Private	Light	
P007	P007-1590	P007-1550	1112	40th	Building Lateral, Private	Light	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
P007	P007-1590	P007-1550	1124	J	Cleanout, Private	Light	
P007	P007-1620	P007-1610	814	41st	Cleanout, Private	Heavy	
P007	P007-1620	P007-1610	4010	41st	Cleanout, Private	Heavy	
P007	P007-1620	P007-1610	814	41st	Building Lateral, Private	Light	
P007	P007-1620	P007-1610	814	41st	Building Lateral, Private	Medium	
P007	P007-1630	P007-1620	718	40th	Cleanout, Private	Medium	
P007	P007-1630	P007-1620	722	40th	Cleanout, Private	Heavy	
P007	P007-1635	P007-1630	619	41st	Building Lateral, Private	Medium	
P007	P007-1650	P007-1590	1010	40th	Building Interior	Light	
P007	P007-1660	P007-1650	4100	Grand Ave	Cleanout, Private	Medium	
P007	P007-1675	P007-1670	901	Albert Pike	Cleanout, Private	Heavy	
P007	P007-1675	P007-1670	901	Albert Pike	Building Lateral, Private	Heavy	
P007	P007-1675	P007-1670	901	Albert Pike	Cleanout, Private	Medium	
P007	P007-1675	P007-1670	901	Albert Pike	Cleanout, Private	Medium	
P007	P007-1700	P007-1690	4117	Alabama Ave	Cleanout, Public	Heavy	
P007	P007-1710	P007-1680	800	41st	Building Lateral, Private	Medium	
P007	P007-1710	P007-1680	505	41st	Manhole	Light	
P007	P007-1710	P007-1680	800	41st	Building Lateral, Private	Light	
P007	P007-1710	P007-1680	800	41st	Building Lateral, Private	Light	
P007	P007-1710	P007-1680	800	41st	Building Lateral, Private	Light	
P007	P007-1710	P007-1680	800	41st	Cleanout, Private	Light	
P007	P007-1730	P007-1710	710	41st	Storm Ditch	Heavy	Storm pipe
P007	P007-1730	P007-1710	617	41st	Storm Ditch	Heavy	
P007	P007-1730	P007-1710	617	41st	Storm Ditch	Medium	
P007	P007-1730	P007-1710	710	41st	Mainline	Light	
P007	P007-1730	P007-1710	704	41st	Storm Ditch	Medium	
P007	P007-1730	P007-1710	716	41st	Storm Ditch	Heavy	
P007	P007-1730	P007-1710	617	41st	Building Lateral, Private	Light	
P007	P007-1730	P007-1710	710	41st	Mainline	Medium	Water meter
P007	P007-1730	P007-1710	704	41st	Mainline	Heavy	
P007	P007-1730	P007-1710	617	41st	Mainline	Medium	
P007	P007-1730	P007-1710	617	41st	Storm Ditch	Medium	
P007	P007-1730	P007-1710	617	41st	Storm Ditch	Heavy	
P007	P007-1730	P007-1710	617	41st	Mainline	Medium	
P007	P007-1730	P007-1710	710	41st	Mainline	Light	Gas meter
P007	P007-1730	P007-1710	617	41st	Storm Ditch	Medium	
P007	P007-1730	P007-1710	617	41st	Mainline	Medium	
P007	P007-1730	P007-1710	704	41st	Mainline	Medium	
P007	P007-1740	P007-1730	4111	Kinkead	Cleanout, Private	Heavy	
P007	P007-1740	P007-1730	4112	Hardie	Cleanout, Private	Heavy	
P007	P007-1740	P007-1730	4108	Hardie	Cleanout, Private	Heavy	Point taken at fence in alley, leak located under deck in back yard
P007	P007-1790	P007-1780	524	39th	Mainline	Light	
P007	P007-1790	P007-1780	529	39th	Mainline	Light	
P007	P007-1790	P007-1780	524	39th	Mainline	Light	
P007	P007-1790	P007-1780	524	39th	Mainline	Light	
P007	P007-1790	P007-1780	524	39th	Mainline	Light	
P007	P007-1800	P007-1790	516	39th	Building Lateral, Private	Heavy	
P007	P007-1810	P007-1800	434	39th	Cleanout, Private	Heavy	
P007	P007-1810	P007-1800	442	39th	Cleanout, Private	Medium	
P007	P007-1830	P007-1770	534	40th	Cleanout, Private	Heavy	
P007	P007-1840	P007-1830	509	41st	Cleanout, Private	Heavy	
P007	P007-1850	P007-1840	440	40th	Mainline	Heavy	
P007	P007-1850	P007-1840	444	40th	Storm Ditch	Light	
P007	P007-1850	P007-1840	440	40th	Cleanout, Public	Heavy	
P007	P007-1850	P007-1840	440	40th	Mainline	Light	
P007	P007-1850	P007-1840	440	40th	Mainline	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
P007	P007-1860	P007-1850	4065	Park	Manhole	Light	
P007	P007-1860	P007-1850	4020	40th	Cleanout, Private	Heavy	Point taken at fence next to school access rd, approximately 80 ft from back of house
P007	P007-1880	P007-1870	1110	Kinkead	Manhole	Heavy	Elevated MH
P007	P007-1880	P007-1870	1110	Kinkead	Storm Ditch	Light	
P007	P007-1880	P007-1870	1110	Kinkead	Storm Ditch	Medium	
P007	P007-1880	P007-1870	1110	Kinkead	Storm Ditch	Medium	
P007	P007-1880	P007-1870	1110	Kinkead	Storm Ditch	Medium	
P007	P007-1880	P007-1870	1110	Kinkead	Storm Ditch	Medium	
P007	P007-1880	P007-1870	1110	Kinkead	Storm Ditch	Medium	
P007	P007-1880	P007-1870	1110	Kinkead	Storm Ditch	Light	
P007	P007-1890	P007-1880	4115	Stanard	Manhole	Medium	
P007	P007-1890	P007-1880	4115	Stanard	Storm Ditch	Heavy	
P007	P007-1897	P007-1895	4112	Stanard	Cleanout, Private	Medium	Point taken at fence in easement, approximately 55 ft from back of house Leak located in middle of yard 20 north of fence
P007	P007-1897	P007-1895	4126	Stanard	Cleanout, Private	Medium	Point taken from fence in easement, approximately 80 feet from back of house
P007	P007-1910	P007-1900	4119	Park	Mainline	Light	At fence south of Hon
P007	P007-1910	P007-1900	4115	Hon	Storm Ditch	Light	South of Hon next to Pike Elementary school yard
P007	P007-1940	P007-1930	Unkown	Albert Pike	Manhole	Medium	No physical address
P007	P007-1940	P007-1930	Unknown	Albert Pike	Mainline	Medium	Next to curb south of Kinkead Across from May Fair apartments
P007	P007-1950	P007-1940	4228	Stanard Circle	Manhole	Light	
P007	P007-1950	P007-1940	4223	Stanard Circle	Cleanout, Private	Heavy	
P007	P007-1970	P007-1960	4119	Park	Manhole	Light	
P007	P007-1970	P007-1960	413	Albert Pike	Cleanout, Private	Heavy	
P007	P007-2060	P007-2050	4215	Park	Mainline	Heavy	
P007	P007-2090	P007-2080	Unk	Park	Building Lateral, Private	Medium	No physical address
P007	P007-2090	P007-2080	Unl	Park	Building Lateral, Private	Medium	No physical address
P007	P007-2090	P007-2080	Unk	Park	Building Lateral, Private	Light	No physical address
P007	P007-2090	P007-2080	Unk	Park	Building Lateral, Private	Medium	No physical address
P007	P007-2090	P007-2080	Unk	Park	Building Lateral, Private	Medium	No physical address
P007	P007-2090	P007-2080	Unk	Park	Building Lateral, Private	Light	No physical address
P007	P007-2155A	P007-2155	4210	Free Ferry CT	Manhole	Heavy	
P007	P007-2180	P007-2080	4300	Park	Manhole	Light	
P007	P007-2180	P007-2080	4300	Park	Cleanout, Private	Heavy	
P007	P007-2190	P007-2180	221	44th	Cleanout, Private	Heavy	
P007	P007-2190	P007-2180	Unk	42nd	Cleanout, Private	Heavy	Leak located in back yard next to privacy fence, point taken behind privacy fence
P007	P007-2190	P007-2180	315	44th	Cleanout, Private	Medium	Defective riser
P007	P007-2210	P007-2200	4315	Presley	Cleanout, Public	Heavy	
P007	P007-2210	P007-2200	4312	Presley	Cleanout, Private	Heavy	
P007	P007-2270	P007-2260	1107	Albert Pike	Cleanout, Public	Light	
P007	P007-2272	P007-2270	4121	Grand Ave	Cleanout, Private	Light	2 defects
P007	P007-2285	P007-2280	1216	41st ST	Area Drain	Heavy	
P007	P007-2285	P007-2280	1220	41st ST	Building Lateral, Private	Medium	
P007	P007-2304	P007-2300	1207	Albert Pike	Manhole	Heavy	
P007	P007-2307	P007-2304	4205	Grand Ave	Cleanout, Public	Heavy	
P007	P007-2307	P007-2304	1023	Albert Pike	Mainline	Medium	
P007	P007-2307	P007-2304	4207	Grand Ave	Building Lateral, Private	Light	
P007	P007-2307	P007-2304	1023	Albert Pike	Manhole	Medium	
P007	P007-2307	P007-2304	1023	Albert Pike	Mainline	Medium	
P007	P007-2310	P007-2300	1222	Albert Pike	Cleanout, Private	Heavy	
P007	P007-2310	P007-2300	1222	Albert Pike	Cleanout, Private	Medium	2 clean outs beside each other
P007	P007-2320	P007-2285	1309	Albert Pike	Cleanout, Private	Heavy	Next to pool
P007	P007-2320	P007-2285	1309	Albert Pike	Building Lateral, Private	Light	
P007	P007-2325	P007-2320	1323	Albert Pike	Mainline	Medium	
P007	P007-2325	P007-2320	1324	Albert Pike	Mainline	Medium	
P007	P007-2325	P007-2320	1323	Albert Pike	Mainline	Medium	
P007	P007-2325	P007-2320	1324	Albert Pike	Mainline	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
P007	P007-2325	P007-2320	1323	Albert Pike	Storm Ditch	Heavy	
P007	P007-2325	P007-2320	1323	Albert Pike	Storm Ditch	Heavy	
P007	P007-2325	P007-2320	1323	Albert Pike	Mainline	Medium	
P007	P007-2325	P007-2320	1323	Albert Pike	Mainline	Medium	
P007	P007-2325	P007-2320	1323	Albert Pike	Mainline	Medium	
P007	P007-2325	P007-2320	1323	Albert Pike	Catch Basin	Medium	
P007	P007-2325	P007-2320	1324	Albert Pike	Mainline	Medium	
P007	P007-2325	P007-2320	1323	Albert Pike	Storm Ditch	Medium	
P007	P007-2325	P007-2320	1324	Albert Pike	Mainline	Medium	
P007	P007-2350	P007-2325	1340	Albert Pike	Mainline	Medium	
P007	P007-2350	P007-2325	1322	Albert Pike	Mainline	Heavy	
P007	P007-2350	P007-2325	1314	Albert Pike	Mainline	Heavy	
P007	P007-2350	P007-2325	1320	Albert Pike	Mainline	Heavy	
P007	P007-2350	P007-2325	1322	Albert Pike	Mainline	Heavy	
P007	P007-2350	P007-2325	1340	Albert Pike	Mainline	Light	
P007	P007-2350	P007-2325	1320	Albert Pike	Mainline	Heavy	
P007	P007-2350	P007-2325	1320	Albert Pike	Mainline	Heavy	
P007	P007-2350	P007-2325	1320	Albert Pike	Mainline	Light	
P007	P007-2350	P007-2325	1320	Albert Pike	Mainline	Heavy	
P007	P007-2350	P007-2325	1320	Albert Pike	Mainline	Light	
P007	P007-2354	P007-2350	1317	44th	Building Lateral, Private	Light	
P007	P007-2370	P007-2360	1111	44th	Cleanout, Private	Light	
P007	P007-2370	P007-2360	1115	44th	Building Lateral, Private	Medium	GPS point is 45 feet south of defect, large dogs in back yard
P007	P007-2372	P007-2370	Uknown	44th	Manhole	Light	
P007	P007-2380	P007-2372	1105	44th	Cleanout, Private	Medium	
P007	P007-2380	P007-2372	1105	44th	Building Lateral, Private	Light	
P007	P007-2380	P007-2372	4301	Grand Ave	Manhole	Medium	
P007	P007-2385	P007-2350	1323	41st	Manhole	Light	
P007	P007-2395	P007-2390	1311	L	Cleanout, Private	Heavy	
P007	P007-2400	P007-2395	1200	44TH	Cleanout, Public	Medium	
P007	P007-2500	P007-0730	3900	Park	Catch Basin	Light	
P007	P007-2700	P007-2180	4300	Park	Manhole	Light	
P007	P007-2710	P007-2700	344	44th	Manhole	Light	
P007	P007-2720	P007-2710	310	44th	Cleanout, Private	Heavy	
P007	P007-2770	P007-2760	315	46th	Mainline	Heavy	
P007	P007-2940	P007-2940A	1005	46th	Cleanout, Private	Heavy	
P007	P007-2980	P007-2970	11	Free Ferry	Manhole	Medium	
P007	P007-3140	P007-3130	1120	36th	Mainline	Medium	Point taken in drainage canal
P007	P007-3140	P007-3130	1123	37th	Building Lateral, Private	Heavy	
P007	P007-3140	P007-3130	1024	36th	Building Lateral, Private	Heavy	Defect at back of house near right side window, point taken in drainage canal, dog in back yard
P007	P007-3150	P007-3140	1001	37th	Cleanout, Private	Heavy	
P007	P007-3150	P007-3140	1015	37th	Building Lateral, Private	Heavy	
P007	P007-3150	P007-3140	1007	37th	Building Lateral, Private	Light	
P007	P007-3320	P007-3310	1443	44TH	Manhole	Light	Above grade
P007	P007-3320	P007-3310	1435	44TH	Cleanout, Private	Heavy	
P007	P007-3340	P007-0630	214	38th	Storm Ditch	Medium	
P007	P007-3340	P007-0630	219	38th	Manhole	Light	
FL01	FL01-0008	FL01-0220	4018	Newlon Rd	Cleanout, Private	Heavy	
FL01	FL01-0020	FL01-0020A	4121	Riverfront	Manhole	Medium	
FL01	FL01-0080	FL01-0070	3538	Clayton Ct	Manhole	Medium	
FL01	FL01-0110	FL01-0100	5900	Williams Ln	Cleanout, Private	Heavy	
FL01	FL01-0120	FL01-0110	6004	Williams Ln	Building Lateral, Private	Light	
FL01	FL01-0180	FL01-0170	3915	Newlon Rd	Manhole	Medium	
FL01	FL01-0190	FL01-0180	4121	Newlon Rd	Building Lateral, Private	Medium	
FL01	FL01-0320	FL01-0310	3709	Newlon Rd	Building Lateral, Private	Heavy	
FL01	FL01-0320	FL01-0310	3709	Newlon Rd	Manhole	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
FL01	FL01-0320	FL01-0310	3716	Newlon Rd	Mainline	Light	
FL01	FL01-0320	FL01-0310	3716	Newlon Rd	Mainline	Light	
FL01	FL01-0320	FL01-0310	3716	Newlon Rd	Mainline	Heavy	
FL01	FL01-0330	FL01-0320	3519	Newlon Rd	Cleanout, Private	Heavy	
FL01	FL01-0330	FL01-0320	3603	Newlon Rd	Cleanout, Private	Heavy	
FL01	FL01-0330	FL01-0320	3603	Newlon Rd	Building Lateral, Private	Medium	
FL01	FL01-0330	FL01-0320	3705	Newlon Rd	Building Lateral, Private	Light	
FL01	FL01-0340	FL01-0330	3600	Newlon Rd	Cleanout, Public	Heavy	
FL01	FL01-0340	FL01-0330	5112	Staples St	Cleanout, Private	Heavy	
FL01	FL01-0340	FL01-0330	3600	Newlon Rd	Cleanout, Private	Heavy	
FL01	FL01-0350	FL01-0340	3500	Newlon Rd	Cleanout, Private	Medium	
FL01	FL01-0350	FL01-0340	3429	Staples St	Building Lateral, Private	Medium	Unable to access, defect is 35 ft south of gps point
FL01	FL01-0350	FL01-0340	3500	Newlon Rd	Mainline	Heavy	
FL01	FL01-0360	FL01-0340	5024	Staples St	Cleanout, Private	Light	
FL01	FL01-0360	FL01-0340	5020	Staples St	Cleanout, Private	Heavy	
FL01	FL01-0365	FL01-0360	5008	Staples St	Cleanout, Private	Heavy	
FL01	FL01-0365	FL01-0360	5004	Staples St	Building Lateral, Private	Medium	
FL01	FL01-0365	FL01-0360	5008	Staples St	Mainline	Light	
FL01	FL01-0365	FL01-0360	5008	Staples St	Mainline	Medium	
FL01	FL01-0365	FL01-0360	5008	Staples St	Mainline	Light	
FL01	FL01-0365	FL01-0360	5008	Staples St	Mainline	Medium	
FL01	FL01-0370	FL01-0360	3429	Carrizo St	Cleanout, Private	Medium	
FL01	FL01-0370	FL01-0360	3433	Carrizo St	Cleanout, Private	Heavy	
FL01	FL01-0460	FL01-0450	4700	N 37th St	Cleanout, Private	Heavy	
FL01	FL01-0460	FL01-0450	4710	N 37th St	Cleanout, Private	Medium	
FL01	FL01-0460	FL01-0450	4700	N 37th St	Building Lateral, Private	Light	
FL01	FL01-0460	FL01-0450	4715	N 37th St	Mainline	Light	
FL01	FL01-0460	FL01-0450	4701	N 37th St	Mainline	Light	
FL01	FL01-0480	FL01-0470	4716	N 36th St	Building Lateral, Private	Light	
FL01	FL01-0480	FL01-0470	3600	Willow St	Building Lateral, Private	Light	
FL01	FL01-0480	FL01-0470	4716	N 36th St	Building Lateral, Private	Light	
FL01	FL01-0480	FL01-0470	4716	N 36th St	Building Lateral, Private	Medium	
FL01	FL01-0480	FL01-0470	4710	N 36th St	Catch Basin	Medium	Smoke coming out of water meter
FL01	FL01-0500	FL01-0490	3622	Oak St	Mainline	Light	
FL01	FL01-0510	FL01-0450	4701	N 37th St	Manhole	Light	
FL01	FL01-0515	FL01-0510	4701	Oak St	Manhole	Light	
FL01	FL01-0520	FL01-0515	3521	Oak St	Building Interior	Light	
FL01	FL01-0520	FL01-0515	4701	Oak St	Manhole	Light	
FL01	FL01-0530	FL01-0520	3421	N 35th St	Cleanout, Private	Medium	
FL01	FL01-0570	FL01-0570A	3402	Willow St	Cleanout, Private	Heavy	
FL01	FL01-0570	FL01-0570A	4717	Mussett Rd	Storm Ditch	Medium	
FL01	FL01-0570A	FL01-0560	4701	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-0580	FL01-0570	1	Mussett Rd	Manhole	Light	
FL01	FL01-0590	FL01-0560	4627	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-0610	FL01-0590	4614	N 33rd St	Cleanout, Private	Heavy	
FL01	FL01-0620	FL01-0610	4710	N 33rd St	Cleanout, Private	Heavy	
FL01	FL01-0630	FL01-0620	3400	Willow St	Cleanout, Private	Heavy	Inaccessible, defect is 10 north of gps point
FL01	FL01-0630	FL01-0620	10	Northwood Dr	Cleanout, Private	Heavy	
FL01	FL01-0630	FL01-0620	12	Northwood Dr	Building Lateral, Private	Light	
FL01	FL01-0640	FL01-0630	1	Northwood Dr	Cleanout, Private	Heavy	
FL01	FL01-0640	FL01-0630	7	Northwood Dr	Cleanout, Private	Heavy	
FL01	FL01-0640	FL01-0630	6	Northwood Dr	Cleanout, Private	Heavy	
FL01	FL01-0640	FL01-0630	5	Northwood Dr	Cleanout, Private	Heavy	
FL01	FL01-0640	FL01-0630	8	Northwood Dr	Building Lateral, Private	Medium	
FL01	FL01-0640	FL01-0630	10	Northwood Dr	Catch Basin	Heavy	
FL01	FL01-0650	FL01-0630	14	Northwood Dr	Building Lateral, Private	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
FL01	FL01-0650	FL01-0630	18	Northwood Dr	Manhole	Light	
FL01	FL01-0650	FL01-0630	15	Northwood Dr	Catch Basin	Medium	
FL01	FL01-0660	FL01-0650	23	Northwood Dr	Cleanout, Private	Heavy	
FL01	FL01-0700	FL01-0690	42	Northwood Dr	Building Lateral, Private	Light	
FL01	FL01-0700	FL01-0690	46	Northwood Dr	Manhole	Light	
FL01	FL01-0710	FL01-0610	4703	N 33rd St	Cleanout, Private	Heavy	
FL01	FL01-0710	FL01-0610	4619	N 33rd St	Building Lateral, Private	Light	
FL01	FL01-0710	FL01-0610	4619	N 33rd St	Mainline	Light	
FL01	FL01-0730	FL01-0720	4603	N 33rd St	Cleanout, Private	Heavy	Unable to access defect is 23 ft north of gps point
FL01	FL01-0730	FL01-0720	4610	N 32nd St	Cleanout, Private	Heavy	Unable to access, defect is 67 ft to the west of gps point
FL01	FL01-0750	FL01-0740		N 32nd St	Cleanout, Private	Heavy	Unable to access, defect is 55 ft west of gps point
FL01	FL01-0750	FL01-0740	3201	Walnut St	Building Lateral, Private	Medium	
FL01	FL01-0770	FL01-077A	4714	Irene St	Cleanout, Private	Medium	
FL01	FL01-0770	FL01-077A	4722	Irene St	Building Lateral, Public	Light	
FL01	FL01-0770	FL01-077A	4722	Irene St	Building Lateral, Private	Medium	43 feet east of gps.
FL01	FL01-0770	FL01-077A	4722	Irene St	Building Lateral, Private	Medium	Smoke is 56 feet east from gps
FL01	FL01-0770	FL01-077A	4726	Irene St	Manhole	Light	
FL01	FL01-0770	FL01-077A	4714	Irene St	Mainline	Light	
FL01	FL01-0770	FL01-077A	4722	Irene St	Mainline	Medium	
FL01	FL01-0770	FL01-077A	4722	Irene St	Mainline	Light	
FL01	FL01-0770	FL01-077A	4708	Irene St	Mainline	Heavy	
FL01	FL01-0770	FL01-077A	4714	Irene St	Mainline	Heavy	
FL01	FL01-0770	FL01-077A	4722	Irene St	Mainline	Light	
FL01	FL01-0770A	FL01-0760	4625	Irene St	Storm Ditch	Heavy	
FL01	FL01-0780	FL01-0760	4610	Irene St	Cleanout, Private	Heavy	
FL01	FL01-0780	FL01-0760	4608	Irene St	Cleanout, Private	Medium	Unable to access, defect is 65 ft west of gps point
FL01	FL01-0780	FL01-0760	4610	Irene St	Cleanout, Private	Heavy	
FL01	FL01-0780	FL01-0760	4610	Irene St	Mainline	Medium	
FL01	FL01-0780	FL01-0760	4610	Irene St	Mainline	Light	
FL01	FL01-0780	FL01-0760	4600	Irene St	Mainline	Medium	
FL01	FL01-0790	FL01-0780	4511	32nd street	Cleanout, Private	Medium	
FL01	FL01-0790	FL01-0780	4506	Irene St	Cleanout, Private	Medium	Unable to access, defect is 75 ft to the west of s point
FL01	FL01-0790	FL01-0780	4500	Irene St	Mainline	Medium	
FL01	FL01-0790	FL01-0780	4510	Irene St	Mainline	Medium	
FL01	FL01-0790	FL01-0780	4600	N 32nd St	Mainline	Light	
FL01	FL01-0800	FL01-0760	4616	Irene St	Mainline	Medium	
FL01	FL01-0800	FL01-0760	4616	Irene St	Mainline	Medium	
FL01	FL01-0810	FL01-0800	4620	N 31st St	Cleanout, Private	Heavy	
FL01	FL01-0810	FL01-0800	4700	N 31st St	Mainline	Medium	
FL01	FL01-0820	FL01-0800	4601	Irene St	Cleanout, Private	Medium	
FL01	FL01-0820	FL01-0800	5607	Irene St	Cleanout, Private	Heavy	
FL01	FL01-0820	FL01-0800	4605	Irene St	Building Lateral, Private	Medium	
FL01	FL01-0820	FL01-0800	4618	N 31st St	Building Lateral, Private	Medium	
FL01	FL01-0830	FL01-0820	4520	Irene St	Cleanout, Private	Heavy	
FL01	FL01-0830	FL01-0820	4512	N 31st St	Cleanout, Private	Medium	
FL01	FL01-0830	FL01-0820	4531	Irene St	Cleanout, Private	Heavy	
FL01	FL01-0830	FL01-0820	4513	Irene St	Building Lateral, Private	Medium	Unable to access defect is 46 ft from gps point
FL01	FL01-0845	FL01-0840	4701	N 31st St	Cleanout, Private	Heavy	
FL01	FL01-0850	FL01-0845	4724	N 30st St	Cleanout, Private	Heavy	
FL01	FL01-0850	FL01-0845	4728	N 30th St	Cleanout, Private	Heavy	
FL01	FL01-0850	FL01-0845	4708	N 30th St	Cleanout, Private	Heavy	
FL01	FL01-0850	FL01-0845	4709	N 31st St	Cleanout, Private	Heavy	
FL01	FL01-0850	FL01-0845	4717	N 31st St	Cleanout, Private	Heavy	
FL01	FL01-0860	FL01-0840	4605	N 31st St	Cleanout, Private	Heavy	Smoke is 70 feet east of GPS behind house
FL01	FL01-0870	FL01-0860	4506	N 31st St	Cleanout, Public	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
FL01	FL01-0870	FL01-0860	4531	N 31st St	Cleanout, Public	Heavy	
FL01	FL01-0870	FL01-0860	4509	N 30th St	Cleanout, Public	Heavy	
FL01	FL01-0870	FL01-0860	4509	N 31st St	Cleanout, Private	Medium	Smoke is 67 feet east of GPS behind house
FL01	FL01-0870	FL01-0860	4506	N 31st St	Cleanout, Private	Heavy	Smoke is 70 feet east from GPS behind house.
FL01	FL01-0870	FL01-0860	4509	N 30th St	Cleanout, Private	Medium	Smoke is 65 feet east of GPS behind house
FL01	FL01-0870	FL01-0860	4601	N 30th St	Cleanout, Private	Heavy	Smoke is 106 feet north east from GPS behind house
FL01	FL01-0870	FL01-0860	4530	N 30th St	Building Interior	Medium	
FL01	FL01-0890	FL01-0880	4701	N 29th St	Cleanout, Private	Heavy	
FL01	FL01-0900	FL01-0880	4608	N 30th St	Building Lateral, Public	Light	
FL01	FL01-0900	FL01-0880	4631	N 30th St	Manhole	Light	
FL01	FL01-0900	FL01-0880	4531	N 30th St	Mainline	Medium	
FL01	FL01-0900	FL01-0880	4605	N 29th St	Mainline	Light	
FL01	FL01-0900	FL01-0880	4531	N 30th St	Mainline	Light	
FL01	FL01-0900	FL01-0880	4617	N 30th St	Mainline	Medium	
FL01	FL01-0910	FL01-0900	4527	N 30th St	Cleanout, Private	Light	
FL01	FL01-0910	FL01-0900	4508	N 29th St	Building Lateral, Private	Medium	
FL01	FL01-0910	FL01-0900	4531	N 30th St	Manhole	Heavy	
FL01	FL01-0910	FL01-0900	4508	N 29th St	Mainline	Medium	
FL01	FL01-0910	FL01-0900	4512	N 29th St	Mainline	Light	
FL01	FL01-0932	FL01-0930	3720	Allen Ln	Manhole	Light	
FL01	FL01-0932	FL01-0930	3720	Reed Ln	Manhole	Light	
FL01	FL01-0950	FL01-0940	32	Homestead Terrace	Manhole	Light	
FL01	FL01-0950	FL01-0940	39	Homestead Terrace	Catch Basin	Medium	Smoke is not coming out of storm inlet but from around it.
FL01	FL01-0960	FL01-0950	32	Sylvan Hills	Building Lateral, Private	Light	
FL01	FL01-0960	FL01-0950	22	Sylvan Hills	Manhole	Light	
FL01	FL01-0970	FL01-0960	15	Sylvan Hills	Cleanout, Private	Heavy	
FL01	FL01-0980	FL01-0970	12	Sylvan Hills	Mainline	Light	
FL01	FL01-0980	FL01-0970	14	Sylvan Hills	Mainline	Light	
FL01	FL01-1000	FL01-0950	32	Homestead Terrace	Mainline	Light	
FL01	FL01-1020	FL01-1010	5	Woodland Pl	Building Lateral, Public	Light	
FL01	FL01-1020	FL01-1010	5	Woodland Pl	Manhole	Light	
FL01	FL01-1020	FL01-1010	12	Woodland Pl	Manhole	Light	
FL01	FL01-1040	FL01-1030	4307	6th St.	Building Lateral, Private	Light	
FL01	FL01-1040	FL01-1030	6	Homestead Terrace	Manhole	Light	
FL01	FL01-1060	FL01-0932	3710	Reed Ln	Cleanout, Private	Medium	
FL01	FL01-1070	FL01-1060	3604	Reed Ln	Manhole	Medium	
FL01	FL01-1080	FL01-1070	3605	Northview Dr	Manhole	Medium	
FL01	FL01-1090	FL01-1080	3415	Northview Dr	Cleanout, Private	Heavy	
FL01	FL01-1090	FL01-1080	3400	Short Wilma St	Building Lateral, Private	Medium	
FL01	FL01-1090	FL01-1080	3415	Northview Dr	Building Lateral, Private	Light	
FL01	FL01-1090	FL01-1080	3400	Short Wilma St	Manhole	Medium	
FL01	FL01-1100	FL01-1090	3419	Northview Dr	Cleanout, Private	Heavy	
FL01	FL01-1140	FL01-0930	3710	Reed Ln	Cleanout, Private	Medium	
FL01	FL01-1140	FL01-0930	3723	Reed Ln	Storm Ditch	Light	
FL01	FL01-1150	FL01-1140	3604	Reed Ln	Cleanout, Private	Heavy	
FL01	FL01-1150	FL01-1140	3602	Reed Ln	Building Lateral, Private	Heavy	
FL01	FL01-1150	FL01-1140	3521	Reed Ln	Manhole	Light	
FL01	FL01-1160	FL01-1150	3520	Reed Ln	Cleanout, Private	Medium	
FL01	FL01-1170	FL01-1160	4600	Reed Ln	Storm Ditch	Light	
FL01	FL01-1180	FL01-1170	4601	Mussett Rd	Mainline	Heavy	Smoke is coming out from both sides of storm ditch running under asphalt
FL01	FL01-1190	FL01-1170	4504	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-1190	FL01-1170	4505	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-1190	FL01-1170	4504	Mussett Rd	Building Lateral, Public	Heavy	
FL01	FL01-1190	FL01-1170	4319	Mussett Rd	Manhole	Light	
FL01	FL01-1200	FL01-1190	4500	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-1200	FL01-1190	4500	Mussett Rd	Cleanout, Private	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
FL01	FL01-1200	FL01-1190	4500	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-1200	FL01-1190	4500	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-1200	FL01-1190	4309	Mussett Rd	Manhole	Light	
FL01	FL01-1210	FL01-1200	4310	Mussett Rd	Catch Basin	Light	
FL01	FL01-1220	FL01-1210	3409	Short Wilma St	Cleanout, Private	Heavy	
FL01	FL01-1220	FL01-1210	3409	Short Wilma St	Cleanout, Private	Heavy	
FL01	FL01-1220	FL01-1210	3409	Short Wilma St	Cleanout, Private	Heavy	
FL01	FL01-1220	FL01-1210	3415	Wilma Ave	Catch Basin	Light	
FL01	FL01-1220	FL01-1210	3415	Short Wilma St	Manhole	Light	
FL01	FL01-1220A	FL01-1220	3415	Short Wilma St	Cleanout, Private	Heavy	
FL01	FL01-1220A	FL01-1220	3415	Short Wilma St	Building Lateral, Public	Light	
FL01	FL01-1220A	FL01-1220	3415	Short Wilma St	Mainline	Light	
FL01	FL01-1220A	FL01-1220	3415	Short Wilma St	Mainline	Light	
FL01	FL01-1230	FL01-1210	3421	Wilma Ave	Cleanout, Private	Heavy	
FL01	FL01-1230	FL01-1210	3423	Wilma Ave	Manhole	Light	
FL01	FL01-1240	FL01-1230	3433	Wilma Ave	Building Lateral, Public	Light	
FL01	FL01-1240	FL01-1230	3431	Wilma Ave	Storm Ditch	Light	
FL01	FL01-1240	FL01-1230	3501	Wilma Ave	Storm Ditch	Light	
FL01	FL01-1240	FL01-1230	3515	Wilma Ave	Mainline	Light	
FL01	FL01-1260	FL01-1200	4300	Mussett Rd	Cleanout, Private	Medium	Smoke coming out 20 feet east of GPS other side of fence next to house.
FL01	FL01-1260	FL01-1200	4300	Mussett Rd	Building Lateral, Private	Light	
FL01	FL01-1260	FL01-1200	4309	Mussett Rd	Storm Ditch	Light	
FL01	FL01-1260	FL01-1200	4303	Mussett Rd	Storm Ditch	Light	
FL01	FL01-1260	FL01-1200	4309	Mussett Rd	Storm Ditch	Light	
FL01	FL01-1260	FL01-1200	4309	Mussett Rd	Storm Ditch	Light	
FL01	FL01-1260	FL01-1200	4303	Mussett Rd	Manhole	Medium	Smoke is coming up out of storm ditch next to manhole.
FL01	FL01-1270	FL01-1260	3405	Fischer Ave	Manhole	Light	Denis all around manhole and in drain ditch. Would back up water all around manhole.
FL01	FL01-1280	FL01-1270	3508	Fischer Ave	Cleanout, Private	Heavy	
FL01	FL01-1280	FL01-1270	3431	Fischer Ave	Building Lateral, Private	Heavy	
FL01	FL01-1280	FL01-1270	3409	Fischer Ave	Mainline	Heavy	There are 8 mainline brakes and only 7 pictures. 2 are so close their in the same picture. Picked the best smoke to GPS that was in the grass.
FL01	FL01-1290	FL01-1280	3528	Fischer Ave	Cleanout, Private	Heavy	
FL01	FL01-1290	FL01-1280	3516	Fischer Ave	Cleanout, Private	Heavy	
FL01	FL01-1290	FL01-1280	3435	Fischer Ave	Manhole	Light	
FL01	FL01-1290	FL01-1280	3435	Fischer Ave	Mainline	Light	
FL01	FL01-1290	FL01-1280	3435	Fischer Ave	Mainline	Light	
FL01	FL01-1320	FL01-1310	3520	Eller Ave	Manhole	Medium	
FL01	FL01-1320	FL01-1310	4120	Mussett Rd	Mainline	Heavy	Located in ditch on south side of Eller Ave
FL01	FL01-1350	FL01-1340	4023	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-1350	FL01-1340	4023	Mussett Rd	Cleanout, Private	Heavy	
FL01	FL01-1360	FL01-1190	3320	Walnut St	Building Lateral, Private	Light	
FL01	FL01-1360	FL01-1190	3320	Walnut St	Mainline	Light	
FL01	FL01-1360	FL01-1190	3320	Walnut St	Mainline	Light	
FL01	FL01-1360	FL01-1190	3312	Walnut St	Mainline	Light	
FL01	FL01-1360	FL01-1190	3320	Walnut St	Mainline	Medium	
FL01	FL01-1390	FL01-1380	3108	Walnut St	Mainline	Medium	
FL01	FL01-1395	FL01-1390	4421	31st St	Manhole	Light	
FL01	FL01-1400	FL01-1395	2920	Walnut St	Cleanout, Private	Heavy	
FL01	FL01-1400	FL01-1395	3004	Walnut St	Mainline	Light	
FL01	FL01-1420	FL01-1410	2805	Walnut St	Cleanout, Private	Heavy	
FL01	FL01-1420	FL01-1410	2805	Walnut St	Cleanout, Private	Heavy	
FL01	FL01-1420	FL01-1410	2800	Walnut St	Building Lateral, Private	Medium	
FL01	FL01-1420	FL01-1410	2805	Walnut St	Building Lateral, Private	Light	
FL01	FL01-1420	FL01-1410	2800	Walnut St	Mainline	Light	
FL01	FL01-1420	FL01-1410	2800	Walnut St	Mainline	Light	
FL01	FL01-1430	FL01-1390	4421	N 31st St	Cleanout, Private	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
FL01	FL01-1430	FL01-1390	4411	N 31st St	Cleanout, Private	Heavy	
FL01	FL01-1440	FL01-1430	4320	N 31st St	Building Lateral, Private	Light	
FL01	FL01-1440	FL01-1430	4320	N 31st St	Building Lateral, Private	Heavy	
FL01	FL01-1440	FL01-1430	4303	N 31st St	Mainline	Medium	
FL01	FL01-1450	FL01-1440	3106	Oak Grove St	Building Lateral, Private	Light	
FL01	FL01-1450	FL01-1440	3106	Oak Grove St	Mainline	Light	
FL01	FL01-1460	FL01-1450	3200	Oak Grove St	Mainline	Light	
FL01	FL01-1460	FL01-1450	3224	Oak Grove St	Mainline	Light	
FL01	FL01-1460	FL01-1450	3200	Oak Grove St	Mainline	Light	
FL01	FL01-1460	FL01-1450	3200	Oak Grove St	Mainline	Light	
FL01	FL01-1460	FL01-1450	3200	Oak Grove St	Mainline	Light	
FL01	FL01-1470	FL01-1440	4206	N 31st St	Cleanout, Private	Heavy	
FL01	FL01-1470	FL01-1440	4209	N 31st St	Building Lateral, Private	Medium	
FL01	FL01-1470	FL01-1440	4209	N 31st St	Building Lateral, Private	Light	
FL01	FL01-1470	FL01-1440	4301	N 31st St	Building Lateral, Private	Light	
FL01	FL01-1470	FL01-1440	4209	N 31st St	Building Lateral, Private	Heavy	
FL01	FL01-1470	FL01-1440	4213	N 31st St	Building Lateral, Private	Light	
FL01	FL01-1470	FL01-1440	4205	N 31st St	Building Lateral, Private	Heavy	
FL01	FL01-1470	FL01-1440	4213	N 31st St	Building Lateral, Private	Heavy	
FL01	FL01-1470	FL01-1440	4209	N 31st St	Building Lateral, Private	Heavy	
FL01	FL01-1470	FL01-1440	4301	N 31st St	Mainline	Light	
FL01	FL01-1470	FL01-1440	4301	N 31st St	Mainline	Medium	
FL01	FL01-1470	FL01-1440	4301	N 31st St	Mainline	Light	
FL01	FL01-1480	FL01-1470	4205	N 31st St	Building Lateral, Private	Medium	
FL01	FL01-1480	FL01-1470	4206	N 31st St	Building Lateral, Private	Medium	
FL01	FL01-1480	FL01-1470	4105	N 31st St	Mainline	Light	
FL01	FL01-1480	FL01-1470	3023	Emrich st	Mainline	Light	
FL01	FL01-1480	FL01-1470	3023	Emrich	Mainline	Light	
FL01	FL01-1480	FL01-1470	4205	N 31st St	Mainline	Medium	
FL01	FL01-1480	FL01-1470	3023	Emrich	Mainline	Medium	
FL01	FL01-1490	FL01-1480	3006	Emrich St	Building Lateral, Private	Light	
FL01	FL01-1490	FL01-1480	2919	Emrich St	Building Lateral, Private	Light	
FL01	FL01-1490	FL01-1480	3006	Emrich St	Building Lateral, Private	Heavy	
FL01	FL01-1490	FL01-1480	2919	Emrich St	Building Lateral, Private	Light	
FL01	FL01-1490	FL01-1480	3006	Emrich St	Mainline	Light	
FL01	FL01-1490	FL01-1480	3018	Emrich St	Mainline	Light	
FL01	FL01-1490	FL01-1480	3018	Emrich St	Mainline	Light	
FL01	FL01-1490	FL01-1480	3006	Emrich St	Mainline	Medium	
FL01	FL01-1500	FL01-1490	2900	Emrich St	Building Lateral, Private	Medium	
FL01	FL01-1500	FL01-1490	2918	Emrich St	Building Lateral, Private	Light	
FL01	FL01-1510	FL01-1370	4422	N 32nd St	Building Lateral, Private	Light	
FL01	FL01-1510	FL01-1370	4311	N 32nd St	Mainline	Light	
FL01	FL01-1510	FL01-1370	4311	N 32nd St	Mainline	Light	
FL01	FL01-1510	FL01-1370	3130	Walnut st	Mainline	Light	
FL01	FL01-1510	FL01-1370	4311	N 32nd St	Mainline	Light	
FL01	FL01-1510	FL01-1370	3130	Walnut st	Mainline	Light	
FL01	FL01-1510	FL01-1370	3130	Walnut	Mainline	Medium	
FL01	FL01-1510	FL01-1370	3130	Walnut st	Mainline	Light	
FL01	FL01-1510	FL01-1370	4311	N 32nd St	Mainline	Light	
FL01	FL01-1510	FL01-1370	3130	Walnut st	Mainline	Light	
FL01	FL01-1520	FL01-1510	4311	N 32nd St	Cleanout, Private	Heavy	
FL01	FL01-1520	FL01-1510	4311	N 32nd St	Cleanout, Private	Heavy	
FL01	FL01-1530	FL01-1520	3318	Oak grove st	Cleanout, Private	Heavy	
FL01	FL01-1530	FL01-1520	3316	Oak Grove St	Cleanout, Private	Medium	
FL01	FL01-1530	FL01-1520	3316	Oak Grove St	Cleanout, Private	Light	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
FL01	FL01-1530	FL01-1520	3307	Oak Grove St	Cleanout, Private	Heavy	
FL01	FL01-1530	FL01-1520	3318	Oak Grove St	Building Lateral, Private	Light	
FL01	FL01-1530	FL01-1520	3316	Oak Grove St	Manhole	Light	
FL01	FL01-1530	FL01-1520	3314	Oak Grove St	Mainline	Light	
FL01	FL01-1530	FL01-1520	3310	Oak Grove St	Mainline	Light	
FL01	FL01-1530	FL01-1520	3310	Oak Grove St	Mainline	Medium	
FL01	FL01-1530	FL01-1520	3316	Oak Grove St	Mainline	Medium	
FL01	FL01-1530	FL01-1520	3316	Oak Grove St	Mainline	Light	
FL01	FL01-1530	FL01-1520	3314	Oak Grove St	Mainline	Light	
FL01	FL01-1530	FL01-1520	3316	Oak Grove St	Mainline	Medium	
FL01	FL01-1530	FL01-1520	3314	Oak Grove St	Mainline	Light	
FL01	FL01-1540	FL01-1520	3300	N 32nd St	Building Lateral, Private	Light	
FL01	FL01-1540	FL01-1520	4201	N 32nd St	Mainline	Light	
FL01	FL01-1540	FL01-1520	3300	Oak grove st	Mainline	Light	
FL01	FL01-1540	FL01-1520	3224	N 32nd St	Mainline	Light	
FL01	FL01-1550	FL01-1540	4124	N 32nd St	Building Lateral, Private	Medium	
FL01	FL01-1550	FL01-1540	4125	N 32nd St	Building Lateral, Private	Light	
FL01	FL01-1550	FL01-1540	3211	N 32nd St	Building Lateral, Private	Medium	
FL01	FL01-1550	FL01-1540	4125	N 32nd St	Building Lateral, Private	Light	
FL01	FL01-1550	FL01-1540	4125	N 32nd St	Manhole	Light	
FL01	FL01-1550	FL01-1540	4125	N 32nd St	Mainline	Light	
FL01	FL01-1550	FL01-1540	3211	Emrich St	Mainline	Light	
FL01	FL01-1550	FL01-1540	4117	N 32nd St	Mainline	Light	
FL01	FL01-1550	FL01-1540	3211	Emrich st	Mainline	Light	
FL01	FL01-1550	FL01-1540	4125	N 32nd St	Mainline	Medium	
FL01	FL01-1550	FL01-1540	4117	N 32nd St	Mainline	Light	
FL01	FL01-1560	FL01-1550	3207	Emrich St	Mainline	Light	
FL01	FL01-1560	FL01-1550	3121	Emrich St	Mainline	Light	
FL01	FL01-1570	FL01-1560	3116	Emrich St	Cleanout, Public	Heavy	
FL01	FL01-1570	FL01-1560	3105	Emrich St	Cleanout, Private	Heavy	
FL01	FL01-1570	FL01-1560	3119	Emrich St	Cleanout, Private	Heavy	Unable to access defect. Defect is 25 ft north of gps point.
FL01	FL01-1570	FL01-1560	3118	Emrich St	Building Lateral, Private	Medium	
FL01	FL01-1570	FL01-1560	3121	Emrich St	Mainline	Light	
FL01	FL01-1570	FL01-1560	3119	Emrich St	Mainline	Light	
FL01	FL01-1590	FL01-1580	3311	Emrich St	Cleanout, Private	Heavy	
FL01	FL01-1590	FL01-1580	3323	Emrich St	Building Lateral, Private	Light	
FL01	FL01-1590	FL01-1580	3304	Emrich St	Building Lateral, Private	Light	
FL01	FL01-1590	FL01-1580	3304	Emrich St	Building Lateral, Private	Light	
FL01	FL01-1590	FL01-1580	3319	Emrich St	Mainline	Light	
FL01	FL01-1600	FL01-1580	3300	N 33rd st	Building Lateral, Private	Light	
FL01	FL01-1600	FL01-1580	3300	Emrich st	Building Lateral, Private	Light	
FL01	FL01-1600	FL01-1580	3224	Pape Ave	Mainline	Light	
FL01	FL01-1610	FL01-1600	3220	Emrich St	Cleanout, Private	Heavy	
FL01	FL01-1610	FL01-1600	3212	Emrich St	Mainline	Medium	
FL01	FL01-1620	FL01-1600	3231	Neis st	Mainline	Medium	
FL01	FL01-1620	FL01-1600	3231	Neis st	Mainline	Light	
FL01	FL01-1630	FL01-1620	3313	Neis St	Cleanout, Private	Heavy	
FL01	FL01-1630	FL01-1620	3308	Neis St	Building Lateral, Private	Medium	
FL01	FL01-1630	FL01-1620	3308	Neis St	Building Lateral, Private	Light	
FL01	FL01-1630	FL01-1620	3313	Neis St	Building Lateral, Private	Medium	
FL01	FL01-1630	FL01-1620	3308	Neis St	Building Lateral, Private	Light	
FL01	FL01-1640	FL01-1630	3318	Neis St	Mainline	Medium	
FL01	FL01-1650	FL01-1640	3301	Russell St	Cleanout, Private	Heavy	Unable to access, defect is 95 ft from defect to the north
FL01	FL01-1650	FL01-1640	3301	Russell St	Cleanout, Private	Heavy	Unable to access, defect is 96 feet to the north
FL01	FL01-1670	FL01-1660	3909	Mussett Rd	Building Lateral, Private	Light	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
FL01	FL01-1680	FL01-1660	3804	Mussett Rd	Building Lateral, Private	Heavy	
FL01	FL01-1690	FL01-1680	3801	Mussett Rd	Building Lateral, Private	Light	
FL01	FL01-1690	FL01-1680	3317	Irving St	Mainline	Heavy	
FL01	FL01-1700	FL01-1690	3301	Irving St	Manhole	Light	
FL01	FL01-1720	FL01-1710	3310	Irving St	Cleanout, Private	Heavy	
FL01	FL01-1720	FL01-1710	3309	Spradling Ave	Cleanout, Private	Heavy	
FL01	FL01-1730	FL01-1710	3715	Mussett Rd	Building Lateral, Private	Light	
FL01	FL01-1740	FL01-1730	3715	Mussett Rd	Building Lateral, Private	Light	
FL01	FL01-1740	FL01-1730	3619	N 6th st	Building Lateral, Private	Light	
FL01	FL01-1750	FL01-1740	3381	N 6th St	Manhole	Light	
FL01	FL01-1760	FL01-1750	3607	N 6th St	Cleanout, Private	Light	
FL01	FL01-1780	FL01-1770	3701	N 6th St	Mainline	Light	
FL01	FL01-1780	FL01-1770	3701	N 6th St	Catch Basin	Light	
FL01	FL01-1780	FL01-1770	3701	N 6th St	Catch Basin	Medium	
FL01	FL01-1790	FL01-1780	3807	N 6th St	Building Lateral, Private	Heavy	
FL01	FL01-1790	FL01-1780	3807	N 6th St	Building Lateral, Private	Light	
FL01	FL01-1790	FL01-1780	3807	N 6th St	Storm Ditch	Heavy	Both ends of storm pipe crossing N 6th St smoking Pipe diameter is 24 inch
FL01	FL01-1790	FL01-1780	3811	N 6th St	Manhole	Light	
FL01	FL01-1790	FL01-1780	3807	N 6th St	Mainline	Light	85% of mainline is smoking.
FL01	FL01-1820	FL01-1810	3632	Fischer Ave	Building Lateral, Private	Light	
FL01	FL01-1820	FL01-1810	3632	Fischer Ave	Building Lateral, Private	Light	
FL01	FL01-1820	FL01-1810	3608	Fischer Ave	Building Interior	Medium	
FL01	FL01-1820	FL01-1810	3633	Fischer Ave	Catch Basin	Light	
FL01	FL01-1830	FL01-1810	3915	N 6th St	Cleanout, Private	Medium	Smoke is 20 feet north of GPS beside house
FL01	FL01-1830	FL01-1810	4000	N 6th St	Building Lateral, Private	Heavy	
FL01	FL01-1830	FL01-1810	4000	N 6th St	Building Lateral, Private	Heavy	
FL01	FL01-1830	FL01-1810	4000	N 6th St	Building Lateral, Private	Heavy	
FL01	FL01-1840	FL01-1830	4010	N 6th St	Cleanout, Private	Medium	
FL01	FL01-1840	FL01-1830	3618	Wilma Ave	Storm Ditch	Light	
FL01	FL01-1840	FL01-1830	3618	Wilma Ave	Manhole	Light	
FL01	FL01-1840	FL01-1830	3624	Wilma Ave	Mainline	Light	
FL01	FL01-1840	FL01-1830	3636	Wilma Ave	Mainline	Heavy	
FL01	FL01-1860	FL01-1850	3620	N 6th St	Cleanout, Private	Medium	
FL01	FL01-1870	FL01-1860	3505	Harris Ave	Cleanout, Private	Medium	
FL01	FL01-1870	FL01-1860	3617	N 6th St	Building Lateral, Private	Heavy	
FL01	FL01-1880	FL01-1850	3620	N 6th St	Cleanout, Private	Heavy	
FL01	FL01-1890	FL01-1880	3424	Spradling Ave	Building Lateral, Private	Heavy	
FL01	FL01-1900	FL01-1890	3558	Harris Ave	Cleanout, Private	Heavy	
FL01	FL01-1900	FL01-1890	3505	Boone Ave	Cleanout, Private	Heavy	
FL01	FL01-1900	FL01-1890	3540	Harris Ave	Cleanout, Private	Heavy	
FL01	FL01-1900	FL01-1890	3562	Harris Ave	Cleanout, Private	Heavy	
FL01	FL01-1900	FL01-1890	3522	Harris Ave	Cleanout, Private	Medium	
FL01	FL01-1910	FL01-1892	3617	Boone Ave	Cleanout, Private	Heavy	
FL01	FL01-1910	FL01-1892	3637	Boone Ave	Building Lateral, Private	Heavy	
FL01	FL01-1930	FL01-1920	4133	Riverfront Dr	Manhole	Light	
FL01	FL01-1940	FL01-1930	4133	Riverfront Dr	Mainline	Medium	
FL01	FL01-1970	FL01-1960	4609	Riverfront Dr	Manhole	Light	
FL01	FL01-2060	FL01-2050	4121	Riverfront	Mainline	Heavy	
FL01	FL01-2110	FL01-2100	3915	Newlon Rd	Mainline	Heavy	Mainline spanned 421 ft from up stream manhole.
FL01	FL01-2210	FL01-2200	3535	Clayton Ct	Cleanout, Private	Medium	
FL01	FL01-2220	FL01-2210	3507	Clayton Ct	Cleanout, Public	Heavy	
FL01	FL01-2220	FL01-2210	3501	Clayton Ct	Manhole	Light	
FL01	FL01-2280	FL01-2270	3511	Price Cir	Cleanout, Private	Medium	
FL01	FL01-2280	FL01-2270	3600	Price Cir	Cleanout, Private	Medium	
FL01	FL01-2280	FL01-2270	3512	Price Cir	Building Lateral, Private	Light	Coming out from around clean out in the ground

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
FL01	FL01-2280	FL01-2270	3608	Price Cir	Manhole	Light	
FL01	FL01-2380	FL01-0810	4729	Irene St	Cleanout, Private	Heavy	
FL01	FL01-2380	FL01-0810	4708	N 31st St	Building Lateral, Private	Medium	
FL01	FL01-2380	FL01-0810	4700	Irene St	Mainline	Medium	
FL01	FL01-2480	FL01-0540	4623	Oak St	Cleanout, Private	Heavy	Smoke is 13 feet south of GPS behind house
FL01	FL01-2480	FL01-0540	3412	Oak St	Storm Ditch	Medium	
FL01	FL01-2480	FL01-0540	3412	Oak St	Storm Ditch	Light	
FL01	FL01-2480	FL01-0540	3415	Reed Ln	Manhole	Heavy	Manhole was sealed.
FL01	FL01-2480	FL01-0540	4623	Oak St	Mainline	Heavy	
S003	EOL	S003-1390	1721	S P St	Building Lateral, Private	Light	
S003	S003-0040	S003-0030	5621	Free Ferry Rd	Cleanout, Private	Heavy	
S003	S003-0040	S003-0030	5621	Free Ferry Rd	Manhole	Heavy	
S003	S003-0080	S003-0070	5701	Free Ferry Rd	Manhole	Light	Blew from 0080.
S003	S003-0120	S003-0110	5720	Free Ferry Rd	Manhole	Light	
S003	S003-0130	S003-0120	1005	Burnham Rd	Manhole	Light	
S003	S003-0160	S003-0120	5701	Free Ferry Rd	Manhole	Light	
S003	S003-0190	S003-0180	6218	Free Ferry Rd	Cleanout, Private	Heavy	
S003	S003-0190	S003-0180	6212	Free Ferry Rd	Cleanout, Private	Heavy	
S003	S003-0200	S003-0100	5704	Free Ferry Rd	Mainline	Heavy	
S003	S003-0200	S003-0100	5704	Free Ferry Rd	Mainline	Heavy	A lateral line elbows into mainline setting in a creek.
S003	S003-0210	S003-0200	5705	Gordon Ln	Manhole	Medium	At the time of smoke test could not find manhole so blew smoke at Free Ferry and Burnham Rd. 0200 is UTL. Located 0210 during test. 0210 is located near creek. Used measurement on map.
S003	S003-0216	S003-0214	1105	Burnham Rd	Manhole	Medium	
S003	S003-0220	S003-0214	1105	Burnham Rd	Manhole	Medium	
S003	S003-0220	S003-0214	1105	Burnham Rd	Manhole	Medium	
S003	S003-0250	S003-0240	5823	Gordon Ln	Manhole	Medium	
S003	S003-0260	S003-0250	5740	Gordon Ln	Area Drain	Heavy	Has gutters on house with a drain coming off to the yard.
S003	S003-0270	S003-0240	1301	Burnham Rd	Building Lateral, Private	Medium	
S003	S003-0300	S003-0290	1412	Burnham Ct	Building Lateral, Private	Medium	
S003	S003-0330	S003-3380	5520	Free Ferry Rd	Manhole	Light	
S003	S003-0350	S003-0340	925	Elm St	Cleanout, Private	Heavy	
S003	S003-0370	S003-0360	5414	Free Ferry Rd	Manhole	Light	In storm ditch.
S003	S003-0380	S003-0370	5414	Free Ferry Rd	Building Lateral, Private	Medium	
S003	S003-0380	S003-0370	5414	Free Ferry Rd	Manhole	Light	
S003	S003-0400	S003-0380	900	Free Ferry Rd	Cleanout, Public	Heavy	
S003	S003-0400	S003-0380	5305	Free Ferry Rd	Cleanout, Public	Heavy	
S003	S003-0400	S003-0380	5305	Free Ferry Rd	Building Lateral, Private	Light	
S003	S003-0420	S003-0410	113	N 53rd St	Cleanout, Private	Heavy	
S003	S003-0420	S003-0410	113	N 53rd St	Cleanout, Private	Heavy	
S003	S003-0420	S003-0410	105	N 53rd St	Cleanout, Private	Heavy	
S003	S003-0420	S003-0410	105	N 53rd St	Cleanout, Private	Heavy	
S003	S003-0420	S003-0410	108	N 53rd St	Cleanout, Private	Heavy	
S003	S003-0430	S003-0420	117	N 53rd St	Cleanout, Private	Heavy	
S003	S003-0430	S003-0420	117	N 53rd St	Cleanout, Private	Heavy	
S003	S003-0440	S003-0410	5320	Free Ferry Rd	Manhole	Light	
S003	S003-0450	S003-0440	5216	Free Ferry Rd	Cleanout, Private	Heavy	Defect is 7 feet from gps point in back yard.
S003	S003-0460	S003-0450	5204	Free Ferry Rd	Cleanout, Private	Heavy	
S003	S003-0465	S003-0460	4916	Free Ferry Rd	Cleanout, Private	Heavy	
S003	S003-0520	S003-3430	5507	Summit Ct	Cleanout, Private	Heavy	
S003	S003-0540	S003-0530	5602	Elm St	Cleanout, Private	Heavy	
S003	S003-0540	S003-0530	5602	Elm St	Building Lateral, Public	Light	Located in storm ditch.
S003	S003-0540	S003-0530	5602	Summit St	Building Lateral, Private	Light	
S003	S003-0540	S003-0530	5602	Summit St	Building Interior	Light	
S003	S003-0540	S003-0530	5602	Elm St	Manhole	Medium	Located in storm ditch.
S003	S003-0550	S003-0540	5607	Summit St	Cleanout, Private	Heavy	
S003	S003-0560	S003-0540	1121	Elm St	Cleanout, Private	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S003	S003-0560	S003-0540	1117	Elm St	Cleanout, Private	Heavy	
S003	S003-0560	S003-0540	1117	Elm St	Building Lateral, Private	Heavy	
S003	S003-0590	S003-3460	5505	Gordon Ln	Storm Ditch	Light	
S003	S003-0590	S003-3460	5505	Gordon Ln	Manhole	Medium	
S003	S003-0600	S003-0590	5505	Gordon Ln	Storm Ditch	Light	0600 was backed up. Blew from down stream.
S003	S003-0650A	S003-0640	5330	Summit St	Cleanout, Public	Heavy	
S003	S003-0660	S003-0650	5318	Summit St	Cleanout, Public	Heavy	
S003	S003-0660	S003-0650	5319	Summit St	Storm Ditch	Light	
S003	S003-0670	S003-0660	5310	Summit St	Cleanout, Private	Heavy	
S003	S003-0670A	S003-0670	5305	Summit St	Cleanout, Private	Heavy	
S003	S003-0672	S003-0670	5304	Summit St	Building Lateral, Private	Medium	
S003	S003-0690	S003-0680	4927	Summit St	Cleanout, Private	Heavy	Defect is 15 feet from gps point.
S003	S003-0690	S003-0680	1115	Oakland St	Building Lateral, Private	Light	
S003	S003-0700	S003-0640	1107	S Waldron Rd	Cleanout, Private	Light	
S003	S003-0720	S003-0710	5321	Fern St	Building Lateral, Public	Light	
S003	S003-0720	S003-0710	5310	Fern St	Storm Ditch	Medium	
S003	S003-0720	S003-0710	5205	Fern St	Storm Ditch	Light	
S003	S003-0730	S003-0720	5129	Fern St	Storm Ditch	Light	Wind was blowing at time of picture taken.
S003	S003-0730	S003-0720	5125	Fern St	Storm Ditch	Light	
S003	S003-0740	S003-0730	5003	Fern St	Cleanout, Private	Heavy	
S003	S003-0740	S003-0730	5004	Fern St	Building Interior	Light	
S003	S003-0750	S003-0740	4903	Fern St	Building Lateral, Private	Heavy	
S003	S003-0785	S003-0780	1200	S Waldron Rd	Manhole	Heavy	A drain system covering the parking lot had smoke coming from manhole.
S003	S003-0800	S003-0790	1200	S Waldron Rd	Cleanout, Private	Medium	
S003	S003-0810A	S003-0810	1200	Eastwood Dr	Cleanout, Public	Heavy	
S003	S003-0810A	S003-0810	1200	Summit St	Cleanout, Public	Heavy	
S003	S003-0820	S003-0830	1200	Eastwood Dr	Cleanout, Private	Heavy	
S003	S003-0820	S003-0830	1200	Eastwood Dr	Cleanout, Private	Heavy	
S003	S003-0820	S003-0830	1200	Eastwood Dr	Cleanout, Private	Heavy	
S003	S003-0820	S003-0830	1200	Eastwood Dr	Manhole	Heavy	
S003	S003-0830	S003-0810	1200	Eastwood Dr	Mainline	Medium	
S003	S003-0920	S003-0930	1340	Eastwood Dr	Manhole	Heavy	
S003	S003-0940	S003-0930	1331	Chestnut Way	Manhole	Medium	
S003	S003-0940B	S003-0940A	126	S 46th St	Cleanout, Private	Light	
S003	S003-0940B	S003-0940A	1331	Chestnut Way	Cleanout, Private	Heavy	
S003	S003-0940B	S003-0940A	1331	S 46th St	Cleanout, Private	Medium	
S003	S003-0940B	S003-0940A	1331	S 46th St	Cleanout, Private	Medium	
S003	S003-0940B	S003-0940A	126	S 46th St	Cleanout, Private	Medium	
S003	S003-0970	S003-0940	1331	Chestnut Way	Cleanout, Private	Medium	
S003	S003-0970	S003-0940	1331	S 46th St	Cleanout, Private	Light	
S003	S003-0970	S003-0940	1331	Chestnut Way	Cleanout, Private	Medium	
S003	S003-0980	S003-0970	1331	S 46th St	Cleanout, Private	Heavy	
S003	S003-0980	S003-0970	1331	S 46th St	Cleanout, Private	Heavy	
S003	S003-1000	S003-0990	4623	Eastwood Dr	Cleanout, Private	Light	
S003	S003-1024	S003-1020	4611	Rogers Ave	Manhole	Light	
S003	S003-1050	S003-1040	4418	Rogers Ave	Manhole	Light	Defect is 91 feet from GPS point.
S003	S003-1060	S003-1050	4418	Rogers Ave	Manhole	Light	
S003	S003-1100	S003-1090	1704	S P St	Manhole	Light	
S003	S003-1130	S003-1120	1725	S 44th St	Storm Ditch	Light	
S003	S003-1130	S003-1120	1725	S 44th St	Manhole	Medium	
S003	S003-1140	S003-1130	4200	S Q St	Cleanout, Private	Heavy	
S003	S003-1140	S003-1130	4200	S Q St	Cleanout, Private	Heavy	
S003	S003-1150	S003-1140	1800	S Albert Pike Ave	Cleanout, Private	Heavy	
S003	S003-1150	S003-1140	1800	S Albert Pike Ave	Cleanout, Private	Heavy	
S003	S003-1150	S003-1140	1920	S Albert Pike Ave	Manhole	Light	
S003	S003-1180	S003-1170	2000	S Albert Pike Ave	Cleanout, Private	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S003	S003-1180	S003-1170	2000	S Albert Pike Ave	Area Drain	Heavy	
S003	S003-1180	S003-1170	2014	S Albert Pike Ave	Manhole	Medium	
S003	S003-1190	S003-1180	2014	S Albert Pike Ave	Cleanout, Private	Heavy	
S003	S003-1220	S003-1160	4101	S S St	Manhole	Light	
S003	S003-1230	S003-1220	4016	S S St	Cleanout, Private	Light	
S003	S003-1250	S003-1090	1522	S 44th St	Building Lateral, Private	Medium	Smoke is coming out from under tree in the left of the picture. It's where a house use to be.
S003	S003-1250	S003-1090	1522	S 44th St	Building Lateral, Private	Medium	
S003	S003-1270	S003-1260	4300	S Albert Pike Ave	Cleanout, Private	Medium	Almost out of smoke during picture.
S003	S003-1320	S003-1300	4120	Rogers Ave	Cleanout, Private	Medium	
S003	S003-1340	S003-1330	4118	Rogers Ave	Cleanout, Private	Medium	
S003	S003-1340	S003-1330	4102	Rogers Ave	Area Drain	Light	
S003	S003-1380	S003-1373	1621	S Albert Pike Ave	Manhole	Light	
S003	S003-1430	S003-1420	4115	S P St	Cleanout, Private	Heavy	
S003	S003-1430	S003-1420	4115	S P St	Cleanout, Private	Heavy	
S003	S003-1470	S003-1460	5611	Duncan Rd	Cleanout, Private	Medium	
S003	S003-1490	S003-1480	5111	S Waldron Rd	Manhole	Medium	
S003	S003-2610	S003-2600	1408	Burnham Ct	Cleanout, Private	Heavy	
S003	S003-2610	S003-2600	1404	Burnham Ct	Cleanout, Private	Heavy	
S003	S003-3080	S003-3070	4809	Chesnut Way	Cleanout, Private	Heavy	
S003	S003-3270	S003-0160	106	Lakeview Ct	Cleanout, Private	Medium	
S003	S003-3280	S003-3270	110	Lakeview Ct	Cleanout, Private	Heavy	
S003	S003-3300	S003-0130	1011	Burnham Rd	Manhole	Medium	
S003	S003-3310	S003-3300	1031	Burnham Rd	Manhole	Light	
S003	S003-3360	S003-3350	5421	Free Ferry Rd	Manhole	Medium	Man hole is remote setting next to a creek channel. Can see where water has ran around it.
S003	S003-3400	S003-3390	5520	Free Ferry Rd	Manhole	Light	
S003	S003-3450	S003-3440	5505	S Waldron Rd	Manhole	Medium	
S003	S003-3470A	S003-3470	5419	Duncan Rd	Cleanout, Private	Heavy	Sprinklers in yard.
S003	S003-3470A	S003-3470	5419	Duncan Rd	Cleanout, Private	Heavy	
S003	S003-3470A	S003-3470	5419	Duncan Rd	Building Lateral, Private	Medium	
S003	S003-3470A	S003-3470	5419	Duncan Rd	Manhole	Medium	Manhole has storm ditch with crack and smoke coming out
S003	S003-3490	S003-3480	1401	Duncan Rd	Manhole	Light	
S003	S003-3520	S003-3510	5111	S Waldron Rd	Cleanout, Public	Heavy	
S003	S003-3570	S003-3560	5614	Park Ave	Manhole	Light	
S003	S003-3590	S003-3580	5408	Park Ave	Cleanout, Private	Heavy	
S003	S003-3590	S003-3580	5408	Park Ave	Cleanout, Private	Heavy	
S003	S003-3590	S003-3580	5412	Park Ave	Cleanout, Private	Heavy	
S003	S003-3610	S003-3600	302	N 56th St	Building Lateral, Private	Heavy	
S003	S003-3650	S003-3640	5434	Highland Dr	Mainline	Light	
S003	S003-3670	S003-3660	5426	Highland Dr	Manhole	Light	
S003	S008-1030	S008-1020	4012	Dean Dr	Cleanout, Private	Light	
S003	S008-1030	S008-1020	4016	Dean Dr	Cleanout, Private	Heavy	
S003	S008-1030	S008-1020	4016	Dean Dr	Cleanout, Private	Heavy	
S003	S008-1030	S008-1020	4001	Dean Dr	Building Lateral, Private	Light	
S003	S008-1030	S008-1020	4015	Dean Dr	Building Lateral, Private	Light	
S003	S008-1030	S008-1020	4015	Dean Dr	Building Lateral, Private	Light	
S003	S008-1030	S008-1020	4000	Dean Dr	Building Lateral, Private	Light	
S003	S008-1030	S008-1020	3924	Dean Dr	Manhole	Light	
S008	EOL	S008-0670A	4120	Bradley Dr	Cleanout, Private	Heavy	
S008	EOL	S008-0990	2104	Churchill Rd	Building Lateral, Private	Light	
S008	EOL	S008-0990	2111	Churchill Rd	Building Lateral, Private	Light	
S008	EOL	S008-0670A	4125	Bradley Dr	Building Lateral, Private	Light	
S008	EOL	S008-0960	2122	Bradley Dr	Catch Basin	Medium	
S008	S008-0350	S008-0060	2112	N 47th Terrace	Cleanout, Private	Heavy	
S008	S008-0352	S008-0350	2118	N 47th Terrace	Manhole	Light	Manhole next to drainage ditch. Very small leak on ditch side.
S008	S008-0354	S008-0352	2200	N 47th Terrace	Cleanout, Private	Heavy	
S008	S008-0410	S008-0400	4518	Windsor Dr	Cleanout, Private	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S008	S008-0410	S008-0400	4610	Windsor Dr	Manhole	Light	
S008	S008-0420	S008-0410	4500	Windsor Dr	Manhole	Light	
S008	S008-0430	S008-0425	4418	Windsor Dr	Cleanout, Private	Heavy	
S008	S008-0434	S008-0432	4408	Windsor Dr	Cleanout, Public	Heavy	
S008	S008-0470	S008-0460	4615	Victoria Dr	Manhole	Heavy	
S008	S008-0470	S008-0460	4615	Victoria Dr	Mainline	Light	
S008	S008-0470	S008-0460	4615	Victoria Dr	Mainline	Medium	
S008	S008-0470	S008-0460	4615	Victoria Dr	Mainline	Light	
S008	S008-0480	S008-0470	2201	N 47th Terrace	Building Lateral, Private	Heavy	
S008	S008-0480	S008-0470	2214	N 47th Terrace	Manhole	Medium	
S008	S008-0500	S008-0490	4520	N 46th Terrace	Manhole	Heavy	
S008	S008-0510	S008-0500	4520	Wynnewood Dr	Manhole	Heavy	
S008	S008-0510	S008-0500	4520	Wynnewood Dr	Mainline	Light	
S008	S008-0520	S008-0510	4514	Wynnewood Dr	Building Lateral, Private	Medium	
S008	S008-0520	S008-0510	4514	Wynnewood Dr	Manhole	Medium	
S008	S008-0530	S008-0520	4508	Wynnewood Dr	Building Lateral, Private	Light	
S008	S008-0530	S008-0520	4509	Wynnewood Dr	Catch Basin	Heavy	
S008	S008-0530	S008-0520	4508	Wynnewood Dr	Catch Basin	Heavy	
S008	S008-0590	S008-0580	4228	Victoria Dr	Mainline	Heavy	Has a sink hole 3ft deep 3 wide.
S008	S008-0600	S008-0590	4224	Victoria Dr	Cleanout, Private	Heavy	
S008	S008-0600	S008-0590	4228	Victoria Dr	Manhole	Light	
S008	S008-0600	S008-0590	4828	Victoria Dr	Manhole	Light	
S008	S008-0600	S008-0590	4228	Victoria Dr	Mainline	Medium	
S008	S008-0600	S008-0590	4228	Victoria Dr	Mainline	Heavy	
S008	S008-0610	S008-0570	4219	Windsor Dr	Manhole	Light	
S008	S008-0690	S008-0660	4014	Marshall Dr	Manhole	Light	
S008	S008-0700	S008-0690	4000	Marshall Dr	Cleanout, Private	Medium	
S008	S008-0700	S008-0690	4004	Marshall Dr	Cleanout, Private	Heavy	
S008	S008-0710	S008-0700	3908	Marshall Dr	Building Lateral, Private	Medium	
S008	S008-0720	S008-0710	3905	Marshall Dr	Cleanout, Private	Heavy	
S008	S008-0720	S008-0710	3809	Marshall Dr	Building Lateral, Private	Medium	Two large holes
S008	S008-0720	S008-0710	3900	Roosevelt Rd	Catch Basin	Light	
S008	S008-0720	S008-0710	3815	Marshall	Catch Basin	Light	
S008	S008-0730	S008-0720	3809	Marshall Dr	Catch Basin	Light	
S008	S008-0730	S008-0720	3809	Marshall Dr	Catch Basin	Light	
S008	S008-0740	S008-0730	3712	Marshall Dr	Building Lateral, Private	Medium	
S008	S008-0740	S008-0730	3701	Marshall Dr	Building Lateral, Private	Light	
S008	S008-0750	S008-0740	3601	Marshall Dr	Cleanout, Private	Medium	
S008	S008-0750	S008-0740	2014	Churchill Rd	Cleanout, Private	Heavy	
S008	S008-0750	S008-0740	3600	Marshall Dr	Building Lateral, Private	Light	
S008	S008-0760	S008-0660	4103	Bradley Dr	Cleanout, Private	Heavy	
S008	S008-0760	S008-0660	4107	Bradley Dr	Building Lateral, Private	Medium	
S008	S008-0770	S008-0760	4021	Ridgeway Dr	Building Lateral, Private	Medium	Coming out from underneath a cement porch around eve of house.
S008	S008-0770A	S008-0770	3935	Ridgeway Dr	Cleanout, Private	Light	
S008	S008-0770A	S008-0770	3939	Ridgeway Dr	Cleanout, Private	Heavy	
S008	S008-0770A	S008-0770	3935	Ridgeway Dr	Building Lateral, Public	Light	In a crack between the blacktop and cement gutter .
S008	S008-0770A	S008-0770	3935	Ridgeway Dr	Building Lateral, Private	Light	
S008	S008-0770A	S008-0770	3931	Ridgeway Dr	Building Lateral, Private	Medium	
S008	S008-0780	S008-0770A	3922	Ridgeway Dr	Cleanout, Private	Heavy	
S008	S008-0780	S008-0770A	3926	Ridgeway Dr	Building Lateral, Private	Light	
S008	S008-0780	S008-0770A	3922	Ridgeway Dr	Downspout	Heavy	In gutter but not even with pavement
S008	S008-0790	S008-0780	3900	Ridgeway Dr	Cleanout, Private	Heavy	
S008	S008-0790	S008-0780	3910	Ridgeway Dr	Building Lateral, Private	Medium	
S008	S008-0800	S008-0790	3802	Ridgeway Dr	Building Lateral, Private	Medium	
S008	S008-0800	S008-0790	3809	Ridgeway Dr	Building Lateral, Private	Medium	
S008	S008-0800	S008-0790	3806	Ridgeway Dr	Building Lateral, Private	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S008	S008-0810	S008-0800	3623	Ridgeway Dr	Cleanout, Private	Heavy	
S008	S008-0820	S008-0810	3601	Ridgeway Dr	Building Lateral, Public	Light	
S008	S008-0820	S008-0810	2104	Churchill Rd	Building Lateral, Private	Light	
S008	S008-0820	S008-0810	2104	Churchill Rd	Building Lateral, Private	Light	
S008	S008-0840	S008-0760	4023	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0840	S008-0760	4023	Bradley Dr	Area Drain	Medium	
S008	S008-0840	S008-0760	4023	Bradley Dr	Catch Basin	Heavy	
S008	S008-0840	S008-0760	4021	Bradley Dr	Catch Basin	Heavy	
S008	S008-0850	S008-0840	4000	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0850	S008-0840	4005	Bradley Dr	Building Lateral, Private	Heavy	Under the eve with no gutters in a flower bed.
S008	S008-0850	S008-0840	4000	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0900	S008-0850	3923	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0900	S008-0850	3923	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0900	S008-0850	3926	Bradley Dr.	Building Lateral, Private	Heavy	
S008	S008-0900	S008-0850	3923	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0910	S008-0900	3900	Bradley Dr	Cleanout, Private	Medium	
S008	S008-0910	S008-0900	3918	Bradley Dr	Building Lateral, Private	Medium	
S008	S008-0910	S008-0900	3918	Bradley Dr	Area Drain	Heavy	Vented cap
S008	S008-0910	S008-0900	3918	Bradley Dr	Area Drain	Medium	
S008	S008-0920	S008-0910	3710	Bradley Dr	Cleanout, Private	Medium	
S008	S008-0920	S008-0910	3709	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0930	S008-0920	3618	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0930	S008-0920	3623	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0950	S008-0940	3523	Roosevelt Rd	Cleanout, Private	Heavy	
S008	S008-0970	S008-0960	2134	Church Hill rd	Building Lateral, Public	Light	
S008	S008-0970	S008-0960	2134	Church Hill	Catch Basin	Heavy	
S008	S008-0980	S008-0970	3701	Roosevelt Rd	Cleanout, Private	Heavy	
S008	S008-0980	S008-0970	3700	Roosevelt Rd	Cleanout, Private	Heavy	
S008	S008-0980	S008-0970	3614	Roosevelt Rd	Cleanout, Private	Light	Broken cap and defective riser
S008	S008-0990	S008-0930	3600	Bradley Dr	Cleanout, Private	Heavy	
S008	S008-0990	S008-0930	3610	Bradley Dr	Cleanout, Private	Heavy	
S008	S008-0990	S008-0930	3600	Bradley Dr	Building Lateral, Private	Light	
S008	S008-0990	S008-0930	2122	Churchill Rd	Catch Basin	Medium	
S008	S008-1010	S008-1000	4125	Dean Dr	Building Lateral, Private	Light	
S008	S008-1010	S008-1000	4125	Dean Dr	Building Lateral, Private	Light	
S008	S008-1010	S008-1000	4125	Dean Dr	Building Lateral, Private	Light	
S008	S008-1010	S008-1000	4125	Dean Dr	Building Lateral, Private	Medium	
S008	S008-1010	S008-1000	4125	Dean Dr	Building Lateral, Private	Light	
S008	S008-1010	S008-1000	4115	Dean Dr	Building Lateral, Private	Medium	
S008	S008-1020	S008-1000	4102	Dean Dr	Cleanout, Private	Light	
S008	S008-1040	S008-1030	3915	Dean Dr	Cleanout, Private	Light	Cap is removed and replaced with a screen.
S008	S008-1040	S008-1030	3901	Dean Dr	Cleanout, Private	Heavy	
S008	S008-1040	S008-1030	3909	Dean Dr	Building Lateral, Public	Light	
S008	S008-1040	S008-1030	3909	Dean Dr	Building Lateral, Public	Light	
S008	S008-1040	S008-1030	3909	Dean Dr	Building Lateral, Public	Light	
S008	S008-1040	S008-1030	3909	Dean Dr	Building Lateral, Public	Light	
S008	S008-1040	S008-1030	3909	Dean Dr	Building Lateral, Public	Light	Crack in drainage ditch.
S008	S008-1040	S008-1030	2007	Roosevelt Rd	Building Lateral, Private	Medium	
S008	S008-1040	S008-1030	2007	Roosevelt Rd	Building Lateral, Private	Light	
S008	S008-1115	S008-1110	2517	N 38th St	Cleanout, Private	Medium	It's under the eve of the house in a flower bed.
S008	S008-1115	S008-1110	2517	N 38th St	Storm Ditch	Heavy	It's coming out of a cement drainage near a water line break.
S008	S008-1120	S008-1115	2600	N 38th St	Cleanout, Private	Heavy	
S008	S008-1120	S008-1115	2619	N 38th St	Storm Ditch	Heavy	It's in a cement drainage pipe.
S008	S008-1135	S008-1130	2500	N 39th St	Cleanout, Private	Heavy	
S008	S008-1135	S008-1130	2515	N 39th St	Cleanout, Private	Light	
S008	S008-1135	S008-1130	2515	N 39th St	Building Lateral, Private	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S008	S008-1135	S008-1130	2508	N 39th St	Building Lateral, Private	Light	
S008	S008-1135	S008-1130	2501	N 39th St	Manhole	Light	
S008	S008-1140	S008-1135	2606	N 39th St	Cleanout, Private	Heavy	
S008	S008-1140	S008-1135	2601	N 39th St	Catch Basin	Light	
S008	S008-1140	S008-1135	2617	N 39th St	Storm Ditch	Medium	
S008	S008-1140	S008-1135	2613	N 39th St	Storm Ditch	Medium	
S008	S008-1173	S008-1170	4003	Kelley Hwy	Cleanout, Private	Heavy	
S008	S008-1175	S008-1173	2523	N 40th St	Cleanout, Private	Heavy	
S008	S008-1190A	S008-1190	3700	Kelley Hwy	Building Lateral, Private	Light	
S008	S008-1190B	S008-1190	3700	Kelley Hwy	Building Lateral, Private	Heavy	
S008	S008-1190B	S008-1190	3700	Kelley Hwy	Building Lateral, Private	Medium	
S008	S008-1190B	S008-1190	3700	Kelley Hwy	Building Lateral, Private	Medium	
S008	S008-1190B	S008-1190	3700	Kelley Hwy	Building Lateral, Private	Light	
S008	S008-1190B	S008-1190	3700	Kelley Hwy	Building Lateral, Private	Light	
S008	S008-1250	S008-1240		Division St	Cleanout, Private	Light	
S008	S008-1252	S008-1250	2100	Division St	Manhole	Medium	
S008	S008-1254	S008-1252	2223	N 34th St	Building Lateral, Private	Light	
S008	S008-1260	S008-1250	280	Division St	Manhole	Light	
S008	S008-1290	S008-1280	271	Futral Dr	Cleanout, Private	Light	
S008	S008-1290	S008-1280	273	Futral Dr	Building Lateral, Private	Light	
S008	S008-1290	S008-1280	273	Futral Dr	Manhole	Light	
S008	S008-1300	S008-1290	270	Division	Cleanout, Private	Light	
S008	S008-1300	S008-1290	269	Division	Cleanout, Private	Light	
S008	S008-1330	S008-1320	3509	Ridgeway Dr	Cleanout, Private	Light	
S008	S008-1340	S008-1330	1922	N 35th St	Manhole	Light	
S008	S008-1350	S008-1320	253	Futral	Manhole	Light	
S008	S008-1380	S008-1370	3409	Ridgeway Dr	Cleanout, Private	Light	
S008	S008-1400	S008-1390	2010	N 34th St	Cleanout, Private	Heavy	
S008	S008-1400	S008-1390	2009	N 35th St	Cleanout, Private	Light	
S008	S008-1400	S008-1390	2009	N 35th St	Cleanout, Private	Heavy	
S008	S008-1400	S008-1390	2010	N 34th St	Building Lateral, Private	Light	
S008	S008-1400	S008-1390	3409	Ridgeway Dr	Manhole	Medium	
S008	S008-1400	S008-1390	2004	N 35th St	Mainline	Light	
S008	S008-1400	S008-1390	2010	N 35th St	Mainline	Light	
S008	S008-1410	S008-1400	1925	N 35th St	Cleanout, Private	Heavy	
S008	S008-1410	S008-1400	1914	N 34th St	Cleanout, Private	Heavy	Leak is 21 feet away from actual gps point. Could not get into back yard.
S008	S008-1410	S008-1400	1905	N 35th St	Manhole	Heavy	1410 was UTI. Found it in some bushes. Leaking bad around frame and cement riser.
S008	S008-1420	S008-1370	239	Futral	Building Lateral, Private	Light	
S008	S008-1440	S008-1420	234	Futral	Cleanout, Private	Light	
S008	S008-1440	S008-1420	233	Futral	Building Lateral, Private	Light	
S008	S008-1440	S008-1420	233	Futral	Building Lateral, Private	Light	
S008	S008-1440	S008-1420	234	Futral	Building Lateral, Private	Light	
S008	S008-1440	S008-1420	234	Futral	Building Lateral, Private	Light	
S008	S008-1440	S008-1420	233	Futral	Building Lateral, Private	Light	
S008	S008-1440	S008-1420	234	Futral	Building Lateral, Private	Light	
S008	S008-1470	S008-1450	2021	N 34th St	Manhole	Light	
S008	S008-1480	S008-1470	2017	N 34th St	Cleanout, Private	Heavy	
S008	S008-1480	S008-1470	1913	N 34th St	Manhole	Light	Behind 204 Judy Ln
S008	S008-1484	S008-1480	1909	N 34th St	Manhole	Medium	
S008	S008-1770	S008-1760	2312	N 35th St	Cleanout, Private	Heavy	
S008	S008-1770	S008-1760	3429	Warner St	Cleanout, Private	Light	
S008	S008-1780	S008-1770	2216	N 35th St	Cleanout, Private	Heavy	
S008	S008-1790	S008-1780	2207	Churchill Rd	Cleanout, Private	Heavy	
S008	S008-1800	S008-1770	3419	Warner St	Cleanout, Private	Medium	
S008	S008-1800	S008-1770	2226	Churchill Rd	Cleanout, Private	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S008	S008-1800	S008-1770	2227	N 35th St	Building Lateral, Public	Medium	
S008	S008-1800	S008-1770	2227	N 35th St	Building Lateral, Private	Heavy	
S008	S008-1800	S008-1770	3423	Warner St	Mainline	Light	
S008	S008-1800	S008-1770	3429	Warner St	Mainline	Light	
S008	S008-1800	S008-1770	3429	Warner St	Mainline	Light	
S008	S008-1800	S008-1770	2227	N 35th St	Mainline	Light	
S008	S008-1800	S008-1770	3423	Warner St	Mainline	Light	
S008	S008-1800	S008-1770	3429	Warner St	Mainline	Light	
S008	S008-1800	S008-1770	3429	Warner St	Mainline	Light	
S008	S008-1800	S008-1770	3429	Warner St	Mainline	Light	
S008	S008-1810	S008-1800	2222	Churchill Rd	Cleanout, Private	Heavy	
S008	S008-1810	S008-1800	2214	Churchill Rd	Manhole	Medium	
S008	S008-1810	S008-1800	2214	Churchill Rd	Manhole	Light	
S008	S008-1840	S008-1830	3404	Kelley Hwy	Cleanout, Private	Light	
S008	S008-1890	S008-1880	3501	Kelley Hwy	Building Interior	Heavy	
S008	S008-1900	S008-1890	3520	Pryor Ave	Cleanout, Private	Light	Smoke was coming out from around the clean out through the ground.
S008	S008-1900	S008-1890	3521	Pryor Ave	Cleanout, Private	Light	
S008	S008-1900	S008-1890	3512	Pryor Ave	Building Interior	Heavy	
S008	S008-1910	S008-1890	3500	Birnie Ave	Area Drain	Light	Leak located under carport
S008	S008-1920	S008-1910	3516	Birnie Ave	Cleanout, Private	Heavy	
S008	S008-1920	S008-1910	3611	Birnie Ave	Manhole	Light	Defective exterior cone
S008	S008-1970	S008-1960	2512	N 37th St	Cleanout, Private	Medium	
S008	S008-1975	S008-1970	2606	N 37th St	Cleanout, Private	Medium	
S008	S008-1975	S008-1970	2609	N 37th St	Cleanout, Private	Medium	
S008	S008-1975	S008-1970	2617	N 37th St	Building Lateral, Private	Medium	Located in ditch
S008	S008-1975	S008-1970	2614	N 37th St	Storm Ditch	Light	
S008	S008-1975	S008-1970	2614	N 37th St	Storm Ditch	Light	
S008	S008-1975	S008-1970	2612	N 37th St	Storm Ditch	Light	On side of ditch next to street
S008	S008-1980B	S008-1840	3404	Kelley Hwy	Manhole	Heavy	
S008	S008-2010	S008-1990A	2600	N 32nd St	Storm Ditch	Heavy	
S008	S008-2010	S008-1990A	2600	N 32nd St	Storm Ditch	Heavy	
S008	S008-2010	S008-1990A	2600	N 32nd St	Manhole	Medium	Unmapped manhole
S008	S008-2010	S008-1990A	2600	N 32nd St	Mainline	Medium	
S008	S008-2010	S008-1990A	2600	N 32nd St	Mainline	Medium	
S008	S008-2010	S008-1990A	2600	N 32nd St	Mainline	Light	
S008	S008-2010	S008-1990A	2600	N 32nd St	Mainline	Medium	
S008	S008-2020	S008-2010	2600	Birnie Ave	Cleanout, Private	Heavy	
S008	S008-2040	S008-2030	3204	Wirsing Ave	Cleanout, Public	Heavy	
S008	S008-2060	S008-2050	3424	Wirsing Ave	Cleanout, Private	Heavy	
S008	S008-2060	S008-2050	3408	Wirsing Ave	Cleanout, Private	Heavy	
S008	S008-2060	S008-2050	3424	Wirsing Ave	Building Interior	Heavy	
S008	S008-2070	S008-2060	3520	Wirsing Ave	Cleanout, Private	Medium	Defective riser
S008	S008-2070	S008-2060	3500	Wirsing Ave	Cleanout, Private	Light	
S008	S008-2080	S008-2070	3601	Birnie Ave	Cleanout, Private	Heavy	
S008	S008-2080	S008-2070	3620	Wirsing Ave	Cleanout, Private	Heavy	
S008	S008-2080	S008-2070	3611	Birnie Ave	Cleanout, Private	Heavy	
S008	S008-2100	S008-2090	3215	Wirsing Ave	Cleanout, Private	Heavy	
S008	S008-2100	S008-2090	3205	Midland Blvd	Mainline	Light	No smoke full of sewer water sink hole
S008	S008-2110	S008-2090	3305	N 33rd St	Building Lateral, Private	Heavy	
S008	S008-2110	S008-2090	3309	Wirsing Ave	Mainline	Heavy	
S008	S008-2120	S008-2110	3406	Wirsing Ave	Cleanout, Private	Heavy	
S008	S008-2130	S008-2120	3510	Johnson St	Mainline	Heavy	
S008	S008-2130	S008-2120	3510	Johnson St	Mainline	Light	
S008	S008-2140	S008-2130	3603	Wirsing Ave	Cleanout, Private	Light	Two clean outs foot and a half apart, one on west side is above grade 1 inch the other on the east side is at grade and will catch all drainage area
S008	S008-2150	S008-2140	3700	Johnson St	Building Lateral, Private	Light	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S008	S008-2180	S008-2170	2914	Midland Blvd	Cleanout, Private	Medium	
S008	S008-2200	S008-2190	3028	Midland BLVD	Mainline	Light	
S008	S008-2220	S008-2210	3023	Midland Blvd	Cleanout, Private	Heavy	
S008	S008-2240	S008-2190	3015	Blair Ave	Building Lateral, Private	Light	
S008	S008-2240	S008-2190	3015	Blair Ave	Building Lateral, Private	Light	
S008	S008-2250	S008-2240	3118	Midland Blvd	Cleanout, Public	Light	
S008	S008-2250	S008-2240	3112	Midland BLVD	Cleanout, Public	Light	
S008	S008-2250	S008-2240	3428	Armour St	Cleanout, Private	Heavy	
S008	S008-2250	S008-2240	3428	Armour St	Storm Ditch	Light	
S008	S008-2260	S008-2250	3115	Blair Ave	Cleanout, Private	Heavy	
S008	S008-2260	S008-2250	3610	High St	Building Lateral, Private	Heavy	
S008	S008-2300	S008-2290	3419	Johnson St	Cleanout, Private	Heavy	
S008	S008-2310	S008-2300	3603	Johnson St	Cleanout, Private	Light	Defect is 44 feet south of gps point
S008	S008-2320	S008-2310	3714	Young St	Cleanout, Private	Heavy	Defect is 72 feet north of gps point
S008	S008-2320	S008-2310	3721	Johnson St	Building Lateral, Private	Light	
S008	S008-2320	S008-2310	3607	Young St	Storm Ditch	Light	
S008	S008-2340	S008-2330	3801	Johnson St	Building Lateral, Private	Heavy	
S008	S008-2340	S008-2330	3800	N 38th St	Manhole	Medium	
S008	S008-2350	S008-2340	3906	Young St	Cleanout, Private	Heavy	
S008	S008-2350	S008-2340	3923 1/2	Johnson St	Cleanout, Private	Heavy	
S008	S008-2360	S008-2300	3000	Blair Ave	Cleanout, Private	Heavy	
S008	S008-2360	S008-2300	3020	Blair Ave	Cleanout, Private	Heavy	
S008	S008-2360	S008-2300	2920	Blair Ave	Manhole	Heavy	
S008	S008-2400	S008-2390	3900	Armour St	Cleanout, Private	Heavy	
S008	S008-2400	S008-2390	3900	Armour St	Building Lateral, Private	Heavy	
S008	S008-2400	S008-2390	3910	Armour St	Building Lateral, Private	Heavy	
S008	S008-2410	S008-2360	3024	Blair Ave	Cleanout, Private	Heavy	
S008	S008-2410	S008-2360	3024	Blair Ave	Building Interior	Heavy	
S008	S008-2430	S008-2420	3803	Armour St	Cleanout, Private	Medium	
S008	S008-2430	S008-2420	3719	Armour St	Manhole	Light	Defective frame seal
S008	S008-2430	S008-2420	3803	Armour St	Mainline	Heavy	
S008	S008-2440	S008-2430	3905	Armour St	Building Lateral, Private	Heavy	
S008	S008-2450	S008-2440	3916	Brockman Ave	Cleanout, Private	Heavy	
S008	S008-2450	S008-2440	3916	Brockman Ave	Building Lateral, Private	Heavy	
S008	S008-2460	S008-2410	3226	Blair Ave	Cleanout, Public	Light	
S008	S008-2460	S008-2410	3216	Blair Ave	Cleanout, Private	Heavy	
S008	S008-2460	S008-2410	3128	Blair Ave	Building Lateral, Private	Heavy	
S008	S008-2500	S008-1980	2400	N 33rd St	Cleanout, Private	Medium	Defective riser
S008	S008-2500	S008-1980	2420	N 33rd St	Cleanout, Private	Heavy	
S008	S008-2500	S008-1980	2420	N 33rd St	Cleanout, Private	Heavy	
S008	S008-2500	S008-1980	2409	N 33rd St	Building Lateral, Private	Light	
S008	S008-2500	S008-1980	2409	N 33rd St	Mainline	Light	
S008	S008-2500	S008-1980	2409	N 33rd St	Mainline	Light	
S008	S008-2500	S008-1980	2409	N 33rd St	Mainline	Light	
S008	S008-2510	S008-2500	2329	N 33rd St	Cleanout, Public	Medium	
S008	S008-2510	S008-2500	2301	N 33rd St	Cleanout, Private	Medium	
S008	S008-2510	S008-2500	2329	N 33rd St	Building Lateral, Public	Light	
S008	S008-2510	S008-2500	2304	N 33rd St	Building Lateral, Private	Medium	
S008	S008-2510	S008-2500	2329	N 33rd St	Building Lateral, Private	Light	
S008	S008-2510	S008-2500	2326	N 33rd St	Building Lateral, Private	Medium	
S008	S008-2510	S008-2500	2325	N 33rd St	Storm Ditch	Light	
S008	S008-2510	S008-2500	2325	N 33rd St	Storm Ditch	Light	
S008	S008-2510	S008-2500	2329	N 33rd St	Catch Basin	Light	
S008	S008-2510	S008-2500	2329	Carnes Ave	Mainline	Light	
S008	S008-2510	S008-2500	2329	Carnes Ave	Catch Basin	Heavy	
S008	S008-2510	S008-2500	2326	Carnes Ave	Catch Basin	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S008	S008-2510	S008-2500	2329	N 33rd St	Catch Basin	Heavy	
S008	S008-2520	S008-2500	3228	Carnes Ave	Building Interior	Medium	
S008	S008-2530	S008-2520	2331	N 32nd St	Catch Basin	Medium	
S008	S008-2530	S008-2520	2331	Carnes Ave	Manhole	Light	
S008	S008-2530A	S008-2530	2401	Carnes Ave	Building Lateral, Private	Heavy	
S008	S008-3000	S008-0400	4631	Windsor Dr	Manhole	Medium	
S008	S008-3010	S008-3000	4631	N 46th Cir	Cleanout, Private	Heavy	
S008	S008-3020	S008-3010	2325	N 47th Terrace	Cleanout, Private	Heavy	
S008	S008-3020	S008-3010	2309	N 47th Terrace	Cleanout, Private	Heavy	Directly under eve of house.
S008	S008-3030	S008-3000	4515	N 46th Cir	Manhole	Medium	
S008	S008-3040	S008-3030	4515	Windsor Dr	Cleanout, Private	Heavy	
S008	S008-3040	S008-3030	4515	Windsor Dr	Building Lateral, Private	Heavy	
S008	S008-3050	S008-3040	2317	N 46th Cir	Building Interior	Light	
S008	S008-4020	S008-4010	2415	N Albert Pike Ave	Cleanout, Private	Heavy	
S008	S008-4020	S008-4010	2415	N Albert Pike Ave	Cleanout, Private	Heavy	
S008	S008-4030	S008-4020	2416	N Albert Pike Ave	Manhole	Light	
S008	S008-4035	S008-4030	2417	N Albert Pike Ave	Building Lateral, Public	Heavy	
S008	S008-4035	S008-4030	4100	Kelley Hwy	Building Lateral, Private	Heavy	
S008	S009-1590	S009-1560	3225	N Albert Pike Ave	Building Lateral, Private	Light	
S008	S009-1590	S009-1560	3225	N Albert Pike Ave	Building Lateral, Private	Light	
S008	S009-1590	S009-1560	3225	N Albert Pike	Mainline	Light	
S008	S009-1590	S009-1560	3225	N Albert Pike	Mainline	Light	
S009	S009-0030	S009-0020	4612	Yorkshire Dr	Cleanout, Private	Heavy	
S009	S009-0030	S009-0020	2333	N 47th Terrace	Cleanout, Private	Medium	
S009	S009-0030	S009-0020	4627	Yorkshire Dr	Cleanout, Private	Heavy	
S009	S009-0030	S009-0020	4612	Yorkshire Dr	Cleanout, Private	Medium	
S009	S009-0040	S009-0030	4501	Yorkshire Dr	Cleanout, Private	Heavy	
S009	S009-0075	S009-0070	4301	Yorkshire Dr	Building Lateral, Private	Medium	
S009	S009-0075	S009-0070	4301	Yorkshire Dr	Building Lateral, Private	Medium	
S009	S009-0080	S009-0070	2400	Yorkshire Dr	Manhole	Medium	
S009	S009-0082	S009-0080	2400	Yorkshire Dr	Cleanout, Private	Heavy	
S009	S009-0082	S009-0080	2400	Yorkshire Dr	Cleanout, Private	Heavy	
S009	S009-0088	S009-0082	2400	N Albert Pike Ave	Manhole	Heavy	
S009	S009-0140	S009-0130	4711	Kelley Hwy	Manhole	Medium	
S009	S009-0190	S009-0180	4809	Birnie Ave	Building Lateral, Private	Medium	
S009	S009-0220	S009-0200	4519	Birnie Ave	Building Lateral, Public	Light	
S009	S009-0220	S009-0200	4519	Birnie Ave	Storm Ditch	Light	
S009	S009-0240	S009-0230	4712	Wirsing Ave	Cleanout, Private	Heavy	
S009	S009-0240	S009-0230	4712	Wirsing Ave	Cleanout, Private	Heavy	
S009	S009-0240	S009-0230	4701	Wirsing Ave	Building Lateral, Private	Medium	
S009	S009-0240	S009-0230	4601	Wirsing Ave	Storm Ditch	Light	
S009	S009-0240	S009-0230	4701	Wirsing Ave	Storm Ditch	Heavy	
S009	S009-0250	S009-0240	4523	Wirsing Ave	Building Lateral, Private	Light	
S009	S009-0250	S009-0240	4516	Wirsing Ave	Building Lateral, Private	Medium	
S009	S009-0250	S009-0240	4525	Wirsing Ave	Storm Ditch	Light	
S009	S009-0260	S009-0250	4417	Wirsing Ave	Cleanout, Private	Heavy	
S009	S009-0260	S009-0250	4421	Wirsing Ave	Building Lateral, Private	Medium	
S009	S009-0260	S009-0250	4419	Wirsing Ave	Storm Ditch	Light	
S009	S009-0260	S009-0250	4305	Wirsing Ave	Storm Ditch	Light	
S009	S009-0260	S009-0250	4305	Wirsing Ave	Storm Ditch	Light	
S009	S009-0270	S008-0260	4241	Wirsing Ave	Storm Ditch	Medium	
S009	S009-0270	S008-0260	4241	Wirsing Ave	Storm Ditch	Light	
S009	S009-0270	S008-0260	4241	Wirsing Ave	Storm Ditch	Light	
S009	S009-0270	S008-0260	4237	Wirsing Ave	Storm Ditch	Medium	
S009	S009-0270	S008-0260	4239	Wirsing Ave	Storm Ditch	Light	
S009	S009-0270	S008-0260	4239	Wirsing Ave	Storm Ditch	Medium	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S009	S009-0270	S008-0260	4301	Wirsing Ave	Storm Ditch	Light	
S009	S009-0270	S008-0260	4237	Wirsing Ave	Mainline	Medium	
S009	S009-0270	S008-0260	4237	Wirsing Ave	Mainline	Light	
S009	S009-0270	S008-0260	4237	Wirsing Ave	Mainline	Light	
S009	S009-0270	S008-0260	4237	Wirsing Ave	Mainline	Light	
S009	S009-0280	S009-0270	4225	Wirsing Ave	Storm Ditch	Light	
S009	S009-0280	S009-0270	4225	Wirsing Ave	Storm Ditch	Light	
S009	S009-0280	S009-0270	4225	Wirsing Ave	Storm Ditch	Light	
S009	S009-0280	S009-0270	4215	Wirsing Ave	Storm Ditch	Light	
S009	S009-0280	S009-0270	4225	Wirsing Ave	Storm Ditch	Light	
S009	S009-0280	S009-0270	4237	Wirsing Ave	Manhole	Light	
S009	S009-0280	S009-0270	4225	Wirsing Ave	Mainline	Light	
S009	S009-0280	S009-0270	4225	Wirsing Ave	Mainline	Light	
S009	S009-0290	S009-0230	4802	Wirsing Ave	Building Lateral, Private	Light	
S009	S009-0300	S009-0290	4723	Wirsing Ave	Cleanout, Private	Heavy	
S009	S009-0300	S009-0290	4723	Wirsing Ave	Building Lateral, Public	Light	Lateral runs up to clean out and is broken at storm ditch.
S009	S009-0300	S009-0290	4723	Wirsing Ave	Building Lateral, Public	Light	
S009	S009-0300	S009-0290	4801	Wirsing Ave	Building Lateral, Private	Light	
S009	S009-0300	S009-0290	4801	Wirsing Ave	Building Lateral, Private	Light	
S009	S009-0310	S009-0300	2811	N 50th St	Cleanout, Private	Medium	
S009	S009-0310	S009-0300	2811	Wirsing Ave	Cleanout, Private	Medium	
S009	S009-0310	S009-0300	2811	N 50th St	Cleanout, Private	Heavy	
S009	S009-0310	S009-0300	2811	N 50th St	Cleanout, Private	Medium	
S009	S009-0340	S009-0330	4612	Johnson St	Catch Basin	Light	
S009	S009-0340	S009-0330	4625	Johnson St	Storm Ditch	Light	Has a small sink hole 3 inches in diameter and 12 inches deep
S009	S009-0340	S009-0330	4625	Johnson St	Mainline	Light	Smoke coming out at the edge of the black top.
S009	S009-0350	S009-0340	4608	Johnson St	Cleanout, Private	Medium	Defective riser
S009	S009-0350	S009-0340	4608	Johnson St	Cleanout, Private	Heavy	
S009	S009-0350	S009-0340	4605	Johnson St	Cleanout, Private	Heavy	Broken cap and defective riser
S009	S009-0350	S009-0340	4615	Johnson St	Cleanout, Private	Medium	
S009	S009-0350	S009-0340	4604	Johnson St	Cleanout, Private	Heavy	
S009	S009-0350	S009-0340	4605	Johnson St	Mainline	Light	Water meter
S009	S009-0360	S009-0350	4504	Johnson St	Cleanout, Private	Heavy	
S009	S009-0370	S009-0360	4415	Johnson St	Cleanout, Private	Heavy	
S009	S009-0370	S009-0360	4415	Johnson St	Building Lateral, Private	Heavy	
S009	S009-0370	S009-0360	4415	Johnson St	Storm Ditch	Light	
S009	S009-0380	S009-0370	4319	Johnson St	Cleanout, Private	Heavy	
S009	S009-0380	S009-0370	4319	Johnson St	Mainline	Medium	Cement and brick male box has smoke coming out from under it.
S009	S009-0390	S009-0380	4220	Johnson St	Cleanout, Private	Heavy	
S009	S009-0390	S009-0380	4215	Johnson St	Cleanout, Private	Heavy	
S009	S009-0410	S009-0400	4526	Young St	Cleanout, Private	Heavy	
S009	S009-0430	S009-0420	4242	Young St	Building Lateral, Public	Light	
S009	S009-0430	S009-0420	4242	Young St	Building Lateral, Public	Light	
S009	S009-0440	S009-0430	3000	Young St	Storm Ditch	Light	
S009	S009-0440	S009-0430	4200	Young St	Manhole	Medium	Manhole has a ditch against it.
S009	S009-0470	S009-0460	4503	N 45th St	Cleanout, Private	Heavy	
S009	S009-0470	S009-0460	4312	Armour St	Building Lateral, Private	Heavy	
S009	S009-0470	S009-0460	4306	Armour St	Manhole	Medium	
S009	S009-0490	S009-0480	4212	Armour St	Cleanout, Private	Heavy	
S009	S009-0490	S009-0480	4212	Armour St	Building Lateral, Private	Medium	
S009	S009-0520	S009-0510	4515	Armour St	Cleanout, Private	Heavy	
S009	S009-0520	S009-0510	4513	Armour St	Cleanout, Private	Heavy	
S009	S009-0530	S009-0520	4415	Armour St	Building Lateral, Private	Medium	
S009	S009-0530	S009-0520	4415	Armour St	Building Lateral, Private	Heavy	
S009	S009-0530	S009-0520	4305	N 43rd St	Manhole	Heavy	

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S009	S009-0530	S009-0520	4404	Brockman Ave	Mainline	Heavy	
S009	S009-0550	S009-0540	4508	High St	Cleanout, Private	Heavy	
S009	S009-0570	S009-0560	3306	N 46th St	Building Interior	Medium	
S009	S009-0580	S009-0570	4524	N 46th St	Building Lateral, Private	Medium	
S009	S009-0580	S009-0570	4510	Virginia Ave	Building Lateral, Private	Heavy	
S009	S009-0580	S009-0570	4505	High St	Building Interior	Light	
S009	S009-0580	S009-0570	4511	High St	Mainline	Heavy	It has a 12inch sink hole 2feet across. It's behind some apartments.
S009	S009-0600	S009-0590	4305	High St	Cleanout, Private	Heavy	
S009	S009-0600	S009-0590	4310	Virginia Ave	Cleanout, Private	Heavy	
S009	S009-0600	S009-0590	4309	High St	Building Lateral, Private	Heavy	
S009	S009-0610	S009-0600	4209	High St	Cleanout, Private	Medium	Defect is 66 feet south of gps point, next to back of house
S009	S009-0610	S009-0600	4224	Virginia Ave	Building Lateral, Private	Heavy	
S009	S009-0610	S009-0600	4223	High St	Mainline	Heavy	
S009	S009-0640	S009-0330	4718	Johnson St	Building Lateral, Private	Heavy	
S009	S009-0720	S009-0710	4822	Armour St	Building Lateral, Public	Heavy	
S009	S009-0720	S009-0710	4831	Armour St	Storm Ditch	Medium	
S009	S009-0720	S009-0710	4831	Armour St	Mainline	Medium	
S009	S009-0730	S009-1620	4722	Armour St	Manhole	Light	
S009	S009-0740	S009-0730	4624	Armour St	Cleanout, Private	Heavy	
S009	S009-0750	S009-0740	4617	Armour St	Building Lateral, Private	Light	
S009	S009-0750	S009-0740	4617	Armour St	Mainline	Light	
S009	S009-0760	S009-0712	4910	Armour St	Building Lateral, Private	Light	
S009	S009-0800	S009-0788	3304	High St	Mainline	Heavy	
S009	S009-0810	S009-0800	3308	N 49th St	Building Lateral, Private	Light	
S009	S009-0810	S009-0800	3314	N 49th St	Building Lateral, Private	Light	
S009	S009-0810	S009-0800	3314	N 49th St	Building Lateral, Private	Light	
S009	S009-0810	S009-0800	3316	N 49th St	Building Interior	Heavy	
S009	S009-0810	S009-0800	3320	N 49th St	Manhole	Medium	
S009	S009-0810	S009-0800	3304	High St	Manhole	Medium	
S009	S009-0810	S009-0800	3310	N 49th St	Mainline	Light	
S009	S009-0830	S009-0820	3515	N 50th St	Manhole	Light	
S009	S009-0840	S009-0830	3615	N 50th St	Cleanout, Public	Medium	Defective riser
S009	S009-0840	S009-0830	4900	Spradling Ave	Building Lateral, Private	Light	
S009	S009-0850	S009-0800	4822	High St	Cleanout, Private	Heavy	
S009	S009-0850	S009-0800	4820	High St	Cleanout, Private	Heavy	
S009	S009-0850	S009-0800	3304	High St	Mainline	Medium	
S009	S009-0850	S009-0800	3301	High St	Mainline	Medium	
S009	S009-0860	S009-0850	3318	N 49th St	Cleanout, Private	Medium	
S009	S009-0860	S009-0850	3315	N 48th St	Building Interior	Light	
S009	S009-0870	S009-0860	3330	N 48th St	Building Lateral, Private	Light	
S009	S009-0870	S009-0860	3330	Virginia Ave	Building Lateral, Private	Medium	
S009	S009-0870	S009-0860	3409	N 49th St	Building Interior	Medium	
S009	S009-0870	S009-0860	3400	N 48th St	Building Interior	Heavy	
S009	S009-0870	S009-0860	3401	N 49th St	Building Interior	Light	
S009	S009-0870	S009-0860	3330	Virginia Ave	Building Interior	Light	
S009	S009-0870	S009-0860	3407	N 48th St	Mainline	Light	
S009	S009-0880	S009-0870	3500	N 48th St	Cleanout, Private	Heavy	
S009	S009-0880	S009-0870	3506	N 48th St	Cleanout, Private	Heavy	
S009	S009-0880	S009-0870	3601	N 49th St	Building Interior	Light	
S009	S009-0880	S009-0870	3409	N 49th St	Manhole	Light	
S009	S009-0880	S009-0870	3515	N 49th St	Mainline	Heavy	
S009	S009-0890	S009-0880	4820	Spradling Ave	Cleanout, Private	Heavy	
S009	S009-0890	S009-0880	3618	N 48th St	Cleanout, Private	Heavy	
S009	S009-0890	S009-0880	3618	N 48th St	Building Lateral, Private	Heavy	
S009	S009-0890	S009-0880	3607	N 49th St	Building Interior	Medium	
S009	S009-0900	S009-0850	3307	N 48th St	Manhole	Light	Manhole located on High St

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S009	S009-0900	S009-0850	4816	High St	Manhole	Light	Leak located in ditch
S009	S009-0910	S009-0900	3307	N 48 th St	Mainline	Light	
S009	S009-0910	S009-0900	3320	N 47th St	Mainline	Light	
S009	S009-0910	S009-0900	3307	N 48th St	Mainline	Light	
S009	S009-0910	S009-0900	3308	N 47th St	Mainline	Light	
S009	S009-0920	S009-0910	3400	N 47th St	Cleanout, Private	Medium	Point place south of defect approximately 40 feet...gate is locked and resident is not home
S009	S009-0920	S009-0910	3405	N 48th St	Cleanout, Private	Medium	
S009	S009-0920	S009-0910	3405	N 48th St	Building Lateral, Private	Heavy	
S009	S009-0920	S009-0910	3415	N 48th St	Building Interior	Light	
S009	S009-0920	S009-0910	3409	N 48th St	Building Interior	Light	
S009	S009-0930	S009-0920	3715	N 47th St	Cleanout, Private	Heavy	
S009	S009-0930	S009-0920	3715	N 47th St	Building Lateral, Public	Light	
S009	S009-0930	S009-0920	3517	N 48th St	Catch Basin	Heavy	Illegal tap, kitchen sink connected to lateral Garden hose attached to sink
S009	S009-0960	S009-0950	3411	N 47th St	Cleanout, Private	Heavy	
S009	S009-0960	S009-0950	3401	N 47th St	Building Lateral, Private	Light	
S009	S009-0970	S009-0960	3511	N 47th St	Cleanout, Private	Heavy	
S009	S009-0970	S009-0960	3513	N 47th St	Cleanout, Private	Heavy	
S009	S009-0980	S009-0970	4606	Spradling Ave	Cleanout, Private	Heavy	
S009	S009-1070	S009-1050	5117	Virginia Ave	Manhole	Light	
S009	S009-1070	S009-1050	5117	Virginia Ave	Mainline	Light	
S009	S009-1080	S009-1070	3322	N 52nd St	Cleanout, Private	Heavy	
S009	S009-1080	S009-1070	3309	N 52nd St	Mainline	Medium	
S009	S009-1080	S009-1070	3313	N 52nd St	Mainline	Medium	
S009	S009-1080	S009-1070	3313	N 52nd St	Mainline	Medium	
S009	S009-1100	S009-1090	3614	N 50th St	Cleanout, Private	Heavy	
S009	S009-1100	S009-1090	3614	N 50th St	Building Interior	Medium	
S009	S009-1100	S009-1090	3614	N 50th St	Mainline	Heavy	
S009	S009-1110	S009-1100	3630	N 50th St	Cleanout, Private	Heavy	
S009	S009-1110	S009-1100	3630	N 50th St	Building Interior	Medium	
S009	S009-1110	S009-1100	3620	N 50th St	Building Interior	Light	
S009	S009-1110	S009-1100	3620	N 50th St	Mainline	Heavy	
S009	S009-1130	S009-1120	5100	Spradling Ave	Cleanout, Private	Heavy	
S009	S009-1150	S009-1120	5704	N 50th St	Cleanout, Private	Medium	
S009	S009-1150	S009-1120	5015	Spradling Ave	Manhole	Medium	
S009	S009-1285	S009-1280	4217	N Albert Pike Ave	Cleanout, Private	Light	
S009	S009-1285	S009-1280	2512	N Albert Pike Ave	Manhole	Light	
S009	S009-1310	S009-1300	2610	N 41st St	Cleanout, Private	Light	
S009	S009-1320	S009-1310	2606	N 41st St	Cleanout, Public	Heavy	Defective riser
S009	S009-1320	S009-1310	2610	N 41st St	Manhole	Light	
S009	S009-1340	S009-1330	2623	N 41st St	Cleanout, Private	Heavy	
S009	S009-1340	S009-1330	4013	Birnie Ave	Storm Ditch	Light	
S009	S009-1350	S009-1290	2714	N Albert Pike Ave	Cleanout, Public	Medium	
S009	S009-1360	S009-1350	4106	Wirsing Ave	Cleanout, Private	Medium	Defect is 75 feet northwest of gps point, defect is above grade clean out missing cap
S009	S009-1360	S009-1350	4022	Wirsing Ave	Building Lateral, Private	Light	Defect is 70 north of gps point next to house
S009	S009-1360	S009-1350	2711	N Albert Pike Ave	Storm Ditch	Light	
S009	S009-1370	S009-1360	4000	Wirsing Ave	Building Lateral, Public	Light	
S009	S009-1380	S009-1370	3902	Wirsing Ave	Cleanout, Public	Light	Defective riser
S009	S009-1380	S009-1370	3915	Wirsing Ave	Cleanout, Public	Light	
S009	S009-1380	S009-1370	3920	Wirsing Ave	Cleanout, Public	Light	
S009	S009-1380	S009-1370	3911	Birnie	Cleanout, Private	Heavy	Defect is 76 feet south of gps point next to house
S009	S009-1380	S009-1370	3921	Birnie	Cleanout, Private	Heavy	
S009	S009-1380	S009-1370	3919	Wirsing Ave	Cleanout, Private	Heavy	Defect is 80 feet south of gps point next to house
S009	S009-1390	S009-1380	3813	Birnie Ave	Cleanout, Private	Medium	
S009	S009-1390	S009-1380	3822	Wirsing Ave	Cleanout, Private	Heavy	78 feet north of gps point
S009	S009-1390	S009-1380	3815	Birnie	Building Lateral, Private	Medium	75 feet south of gps point

Smoke Testing Defects

Sub-Basin	Upstream Manhole	Downstream Manhole	Address	Street Name	Defect	Smoke Intensity	Remarks
S009	S009-1400	S009-1390	3712	Wirsing Ave	Cleanout, Private	Heavy	37 feet northwest of gps point
S009	S009-1400	S009-1390	3711	Birnie	Building Lateral, Private	Medium	
S009	S009-1400	S009-1390	3711	Birnie Ave	Building Lateral, Private	Medium	
S009	S009-1400	S009-1390	3711	Birnie	Building Lateral, Private	Light	
S009	S009-1400	S009-1390	3711	Birnie	Manhole	Heavy	
S009	S009-1430	S009-1420	4019	Wirsing Ave	Cleanout, Private	Heavy	
S009	S009-1440	S009-1430	3909	Wirsing Ave	Cleanout, Private	Heavy	
S009	S009-1440	S009-1430	3913	Wirsing Ave	Cleanout, Private	Medium	Possible clean out, could not access backyard to verify Defect is 61 ft north of gps point
S009	S009-1440	S009-1430	3909	Wirsing Ave	Cleanout, Private	Heavy	Possible clean out, could not access backyard to verify Defect is 40 ft south of gps point
S009	S009-1440	S009-1430	3920	Johnson Ave	Manhole	Light	
S009	S009-1440	S009-1430	3909	Wirsing Ave	Mainline	Light	
S009	S009-1440	S009-1430	3909	Wirsing Ave	Mainline	Light	
S009	S009-1450	S009-1440	3901	Wirsing Ave	Cleanout, Public	Heavy	
S009	S009-1450	S009-1440	3801	Wirsing Ave	Building Lateral, Public	Light	
S009	S009-1450	S009-1440	3800	Johnson	Mainline	Light	
S009	S009-1460	S009-1410	2810	N Albert Pike Ave	Building Lateral, Private	Heavy	
S009	S009-1460	S009-1410	2815	N Albert Pike Ave	Storm Ditch	Medium	
S009	S009-1480	S009-1470	4005	Johnson St	Catch Basin	Light	
S009	S009-1520	S009-1510	4020	Armour St	Cleanout, Private	Medium	
S009	S009-1520	S009-1510	4016	Armour St	Area Drain	Heavy	Wash out pad
S009	S009-1520	S009-1510	4016	Armour St	Area Drain	Heavy	Wash out pad
S009	S009-1520	S009-1510	3920	Armour St	Mainline	Medium	
S009	S009-1540	S009-1530	3115	N Albert Pike Ave	Cleanout, Private	Light	Defective riser
S009	S009-1540	S009-1530	4019	Armour St	Cleanout, Private	Heavy	Roof drains directly onto defect
S009	S009-1540	S009-1530	4021	Armour St	Building Lateral, Private	Medium	
S009	S009-1540	S009-1530	4021	Armour St	Manhole	Light	
S009	S009-1560	S009-1530	3201	N 42nd St	Cleanout, Private	Heavy	Car parked on top of defect
S009	S009-1570	S009-1560	4206	High St	Cleanout, Private	Heavy	
S009	S009-1570	S009-1560	4201	Brockman Ave	Cleanout, Private	Heavy	
S009	S009-1570	S009-1560	4208	High St	Building Lateral, Private	Medium	
S009	S009-1585	S009-1580	3206	N 43rd St	Building Lateral, Private	Medium	Point placed 5 feet east of defect, defect located in back yard with locked gate
S009	S009-1585	S009-1580	4420	N 45th St	Manhole	Light	
S009	S009-1585	S009-1580	4406	High St	Mainline	Heavy	Large hole in ground 500140 is the worst leak
S009	S009-1585	S009-1580	4420	High St	Catch Basin	Heavy	Cannot see defect
S009	S009-1585	S009-1580	4420	N 45th St	Catch Basin	Heavy	
S009	S009-1600	S009-1590	4022	High St	Cleanout, Private	Heavy	
S009	S009-1600	S009-1590	4015	High St	Cleanout, Private	Heavy	
S009	S009-1600	S009-1590	4005	Brockman Ave	Building Lateral, Private	Heavy	
S009	S009-1600	S009-1590	4005	Brockman Ave	Building Lateral, Private	Light	
S009	S009-1600	S009-1590	4005	Brockman	Storm Ditch	Heavy	
S009	S009-1600	S009-1590	4022	High St	Manhole	Light	
S009	S009-1610	S009-1600	3921	Brockman	Building Lateral, Private	Heavy	
S009	S009-1610	S009-1600	3921	Brockman	Storm Ditch	Medium	
S009	S009-1610	S009-1600	3921	N 40th St	Mainline	Light	
S009	S009-1610	S009-1600	4208	High St	Mainline	Light	
S009	S009-1610	S009-1600	3921	Brockman	Mainline	Light	
S009	S009-1610	S009-1600	3921	Brockman	Mainline	Light	
S009	S009-1620	S009-0720	3100	Armour St	Manhole	Heavy	
S009	S009-1630	S009-1620	3120	Armour Ct	Cleanout, Private	Heavy	
S009	S009-1630	S009-1620	3104	Armour Ct	Cleanout, Private	Medium	
S009	S009-1630	S009-1620	3100	Armour St	Storm Ditch	Medium	
S009	S009-1660	S009-1170	5108	Clarendon Ave	Cleanout, Private	Heavy	

APPENDIX E

SEWER LINES CLEANED AND TELEVISED WITH NASSCO SCORES

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S004	S004-0010	S003-3500	45	0
S004	S004-0012	S004-0010	210	0
S004	S004-0014	S004-0012	314	0
S004	S004-0016	S004-0014	234	0
S004	S004-0045	S004-0018	99	2
S004	S004-0050	S004-0045	400	5
S004	S004-0060	S004-0050	124	5
S004	S004-0065	S004-0060	97	5
S004	S004-0100	S004-0090	398	2
S004	S004-0110	S004-0100	445	3
S004	S004-0120	S004-0110	322	3
S004	S004-0130	S004-0120	88	3
S004	S004-0140	S004-0130	124	3
S004	S004-0150	S004-0140	406	3
S004	S004-0160	S004-0150	108	2
S004	S004-0170	S004-0160	95	0
S004	S004-0180	S004-0170	177	2
S004	S004-0190	S004-0170	327	3
S004	S004-0200	S004-0190	310	4
S004	S004-0210	S004-0200	339	3
S004	S004-0220	S004-0210	7	5
S004	S004-0230	S004-0220	71	5
S004	S004-0240	S004-0210	3	5
S004	S004-0245	S004-0240	266	3
S004	S004-0250	S004-0240	246	5
S004	S004-0260	S004-0170	6	0
S004	S004-0270	S004-0260	395	5
S004	S004-0280	S004-0270	281	3
S004	S004-0310	S004-0260	151	5
S004	S004-0312	S004-0310	64	2
S004	S004-0320	S004-0312	272	2
S004	S004-0330	S004-0320	196	4
S004	S004-0340	S004-0330	210	5
S004	S004-0350	S004-0312	389	2
S004	S004-0380	S004-0375	120	2
S004	S004-0390	S004-0380	31	4
S004	S004-0400	S004-0390	235	4
S004	S004-0410	S004-0400	118	1
S004	S004-0420	S004-0410	421	2
S004	S004-0440	S004-0430	101	0
S004	S004-0450	S004-0440	397	3
S004	S004-0460	S004-0450	397	3
S004	S004-0470	S004-0460	156	3
S004	S004-0480	S004-0470	246	3
S004	S004-0490	S004-0480	330	3
S004	S004-0500	S004-0480	454	3
S004	S004-0510	S004-0500	109	0
S004	S004-0520	S004-0510	314	4
S004	S004-0530	S004-0520	383	2
S004	S004-0540	S004-0530	194	4
S004	S004-0550	S004-0540	168	3
S004	S004-0560	S004-0550	255	3
S004	S004-0570	S004-0530	346	3
S004	S004-0580	S004-0570	241	2
S004	S004-0590	S004-0580	227	0
S004	S004-0600	S004-0590	26	0
S004	S004-0610	S004-0590	101	5
S004	S004-0620	S004-0610	150	0
S004	S004-1130	S004-1120	239	4
S004	S004-1150	S004-1140	293	5
S004	S004-1160	S004-1150	351	2
S004	S004-1170	S004-1160	348	2
S004	S004-1173	S004-1170	66	2
S004	S004-1180	S004-1170	188	5
S004	S004-1190	S004-1173	362	4
S004	S004-1200	S004-1190	183	4

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S004	S004-1210	S004-1190	334	4
S004	S004-1220	S004-1190	320	3
S004	S004-1230	S004-1220	355	3
S004	S004-1240	S004-1230	99	2
S004	S004-1250	S004-1240	276	3
S004	S004-1260	S004-1230	273	3
S004	S004-1270	S004-1260	69	1
S004	S004-1280	S004-1270	313	3
S004	S004-1290	S004-1230	365	3
S004	S004-1300	S004-1290	178	4
S004	S004-1310	S004-1290	166	5
S004	S004-1330	S004-1320	128	4
S004	S004-1350	S004-1340	226	3
S004	S004-1360	S004-1350	293	5
S004	S004-1370	S004-1360	300	3
S004	S004-1380	S004-1370	230	3
S004	S004-1390	S004-1380	260	4
S004	S004-1400	S004-1390	41	0
S004	S004-1410	S004-1400	211	3
S004	S004-1450	S004-1440	206	5
S004	S004-1470	S004-1430	398	4
S004	S004-1480	S004-1470	386	4
S004	S004-1490	S004-1480	272	2
S004	S004-1500	S004-1490	154	3
S004	S004-1510	S004-1500	158	4
S004	S004-1520	S004-1510	196	0
S004	S004-1530	S004-1480	257	3
S004	S004-1540	S004-1530	236	5
S004	S004-1560	S004-1550	364	0
S004	S004-1580	S004-0034	221	3
S004	S004-1585	S004-1580	133	3
S004	S004-1590	S004-1585	403	3
S004	S004-1650	S004-0350	146	4
P007	EOL	P007-0570	53	2
P007	EOL	P007-1360	213	4
P007	P007-0020	P007-0010	25	4
P007	P007-0030	P007-0020	16	5
P007	P007-0040	P007-0030	373	5
P007	P007-0050	P007-0010	10	5
P007	P007-0060	P007-0050	127	0
P007	P007-0065	P007-0060	134	0
P007	P007-0070	P007-0065	23	0
P007	P007-0080	P007-0070	231	4
P007	P007-0120	P007-0080	499	4
P007	P007-0130	P007-0120	6	5
P007	P007-0150	P007-0080	356	3
P007	P007-0152	P007-0150	27	3
P007	P007-0154	P007-0152	349	0
P007	P007-0157	P007-0154	71	0
P007	P007-0160	P007-0150	447	5
P007	P007-0170	P007-0160	367	5
P007	P007-0190	P007-0180	104	2
P007	P007-0200	P007-0155	288	4
P007	P007-0202	P007-0200	41	3
P007	P007-0205	P007-0202	249	2
P007	P007-0210	P007-0205	137	5
P007	P007-0220	P007-0210	188	3
P007	P007-0230	P007-0220	450	3
P007	P007-0240	P007-0230	448	4
P007	P007-0250	P007-0240	140	3
P007	P007-0260	P007-0250	145	2
P007	P007-0270	P007-0260	288	4
P007	P007-0280	P007-0270	420	3
P007	P007-0300	P007-0200	349	1
P007	P007-0310	P007-0300	24	0
P007	P007-0312	P007-0310	19	0

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
P007	P007-0314	P007-0312	108	0
P007	P007-0316	P007-0314	18	0
P007	P007-0320	P007-0300	453	0
P007	P007-0350	P007-0340	206	5
P007	P007-0370	P007-0316	203	4
P007	P007-0380	P007-0370	370	3
P007	P007-0383	P007-0380	125	4
P007	P007-0386	P007-0383	126	0
P007	P007-0390	P007-0386	195	4
P007	P007-0410	P007-0400	345	5
P007	P007-0470	P007-0465	142	4
P007	P007-0480	P007-0470	427	4
P007	P007-0482	P007-0480	62	4
P007	P007-0510	P007-0510A	158	3
P007	P007-0520	P007-0510	302	0
P007	P007-0530	P007-0520	157	1
P007	P007-0530A	P007-0530	119	1
P007	P007-0530B	P007-0530A	11	0
P007	P007-0540	P007-0530	0	2
P007	P007-0550	P007-0530B	62	1
P007	P007-0557	P007-0550	78	5
P007	P007-0560	P007-0550	24	2
P007	P007-0570	P007-0560	149	5
P007	P007-0585	P007-0580	243	4
P007	P007-0600	P007-0570	161	3
P007	P007-0610	P007-0600	205	5
P007	P007-0620	P007-0600	170	5
P007	P007-0630	P007-0620	156	5
P007	P007-0650	P007-0640	146	4
P007	P007-0660	P007-0630	170	5
P007	P007-0670	P007-0660	10	3
P007	P007-0680	P007-0670	202	0
P007	P007-0690	P007-0680	250	4
P007	P007-0700	P007-0660	16	5
P007	P007-0710	P007-0700	423	1
P007	P007-0720	P007-0710	335	4
P007	P007-0730	P007-0557	71	0
P007	P007-0750	P007-0740	265	4
P007	P007-0770	P007-0760	330	4
P007	P007-0780	P007-0770	46	5
P007	P007-0790	P007-0780	184	5
P007	P007-0810	P007-0770	142	3
P007	P007-0820	P007-0810	199	3
P007	P007-0840	P007-0557	301	2
P007	P007-0850	P007-0840	149	3
P007	P007-0860	P007-0850	205	4
P007	P007-0870	P007-0860	436	3
P007	P007-1280	P007-0370	357	4
P007	P007-1282	P007-1280	24	3
P007	P007-1290	P007-1282	347	5
P007	P007-1300	P007-1290	373	5
P007	P007-1310	P007-1300	373	5
P007	P007-1320	P007-1310	370	3
P007	P007-1330	P007-1320	0	0
P007	P007-1350	P007-1280	305	5
P007	P007-1360	P007-1350	324	5
P007	P007-1363	P007-1360	59	0
P007	P007-1370	P007-1363	206	5
P007	P007-1380	P007-1370	161	5
P007	P007-1385	P007-1380	165	0
P007	P007-1390	P007-1385	159	1
P007	P007-1400	P007-1390	417	3
P007	P007-1410	P007-1363	99	0
P007	P007-1415	P007-1410	275	0
P007	P007-1420	P007-1415	227	3
P007	P007-1425	P007-1420	155	0

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
P007	P007-1430	P007-1425	139	4
P007	P007-1450	P007-1430	433	5
P007	P007-1450	P007-1440	12	0
P007	P007-1460	P007-1450	189	3
P007	P007-1470	P007-1460	155	3
P007	P007-1480	P007-1470	148	2
P007	P007-1490	P007-1280	348	5
P007	P007-1500	P007-1490	445	5
P007	P007-1504	P007-1500	211	3
P007	P007-1507	P007-1504	101	1
P007	P007-1510	P007-1507	137	5
P007	P007-1520	P007-1510	497	5
P007	P007-1525	P007-1520	403	5
P007	P007-1530	P007-1490	345	5
P007	P007-1540	P007-1530	232	4
P007	P007-1550	P007-1490	343	4
P007	P007-1560	P007-1550	473	5
P007	P007-1570	P007-1560	472	5
P007	P007-1580	P007-1570	451	2
P007	P007-1590	P007-1550	319	2
P007	P007-1600	P007-1590	0	0
P007	P007-1620	P007-1610	138	5
P007	P007-1630	P007-1620	473	5
P007	P007-1635	P007-1630	138	0
P007	P007-1640	P007-1635	189	3
P007	P007-1660	P007-1650	190	3
P007	P007-1665	P007-1660	146	5
P007	P007-1665	P007-1670	288	0
P007	P007-1675	P007-1670	146	0
P007	P007-1680	P007-1665	45	5
P007	P007-1690	P007-1680	122	5
P007	P007-1700	P007-1690	174	4
P007	P007-1710	P007-1680	292	5
P007	P007-1720	P007-1710	230	4
P007	P007-1730	P007-1710	325	5
P007	P007-1740	P007-1730	62	5
P007	P007-1750	P007-1730	184	4
P007	P007-1760	P007-1750	120	4
P007	P007-1770	P007-1760	183	5
P007	P007-1780	P007-1770	326	5
P007	P007-1790	P007-1780	177	4
P007	P007-1800	P007-1790	315	5
P007	P007-1810	P007-1800	0	0
P007	P007-1820	P007-1810	41	5
P007	P007-1830	P007-1770	180	4
P007	P007-1840	P007-1830	283	5
P007	P007-1850	P007-1840	221	5
P007	P007-1860	P007-1850	341	5
P007	P007-1870	P007-1750	147	4
P007	P007-1880	P007-1870	147	3
P007	P007-1890	P007-1880	166	5
P007	P007-1890	P007-1990	301	4
P007	P007-1895	P007-1890	166	4
P007	P007-1897	P007-1895	217	5
P007	P007-1900	P007-1895	150	3
P007	P007-1910	P007-1900	160	3
P007	P007-1920	P007-1880	237	2
P007	P007-1930	P007-1920	38	3
P007	P007-1940	P007-1930	342	4
P007	P007-1950	P007-1940	401	4
P007	P007-1960	P007-1960A	88	0
P007	P007-1960A	P007-1910	51	3
P007	P007-1970	P007-1960	203	4
P007	P007-1980	P007-1970	176	4
P007	P007-2000	P007-1990	54	0
P007	P007-2010	P007-2000	336	3

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
P007	P007-2020	P007-2010	137	5
P007	P007-2030	P007-2020	55	0
P007	P007-2050	P007-2040	0	5
P007	P007-2060	P007-2050	0	0
P007	P007-2070	P007-2050	55	1
P007	P007-2080	P007-2070	175	4
P007	P007-2090	P007-2080	219	3
P007	P007-2100	P007-2090	352	5
P007	P007-2120	P007-2110	126	3
P007	P007-2130	P007-2120	0	0
P007	P007-2140	P007-2120	83	3
P007	P007-2150	P007-2120	119	3
P007	P007-2155	P007-2150	58	4
P007	P007-2160	P007-2155	127	4
P007	P007-2180	P007-2080	107	4
P007	P007-2200	P007-2190	205	5
P007	P007-2210	P007-2210A	33	2
P007	P007-2210A	P007-2200	209	5
P007	P007-2220	P007-2210	0	0
P007	P007-2230	P007-2210	265	3
P007	P007-2245	P007-2230	61	4
P007	P007-2248	P007-2245	184	0
P007	P007-2250	P007-2248	64	0
P007	P007-2260	P007-1550	339	5
P007	P007-2270	P007-2260	484	1
P007	P007-2272	P007-2270	14	2
P007	P007-2285	P007-2280	389	5
P007	P007-2300	P007-2290	72	0
P007	P007-2304	P007-2300	217	0
P007	P007-2307	P007-2304	200	1
P007	P007-2310	P007-2300	189	0
P007	P007-2320	P007-2285	286	5
P007	P007-2325	P007-2320	0	5
P007	P007-2330	P007-2320	111	5
P007	P007-2350	P007-2325	187	5
P007	P007-2354	P007-2350	185	4
P007	P007-2357	P007-2354	0	0
P007	P007-2383	P007-2380	0	0
P007	P007-2385	P007-2350	184	4
P007	P007-2390	P007-2385	170	3
P007	P007-2395	P007-2390	255	3
P007	P007-2400	P007-2395	127	4
P007	P007-2500	P007-0730	155	2
P007	P007-2510	P007-2500	216	5
P007	P007-2530	P007-2520	13	3
P007	P007-2540	P007-2530	305	5
P007	P007-2550	P007-2540	54	5
P007	P007-2560	P007-2550	24	3
P007	P007-2570	P007-2560	207	4
P007	P007-2700	P007-2180	64	2
P007	P007-2710	P007-2700	133	1
P007	P007-2720	P007-2710	185	3
P007	P007-2730	P007-2700	133	4
P007	P007-2740	P007-2730	300	4
P007	P007-2750	P007-2740A	64	3
P007	P007-2760	P007-2750	65	3
P007	P007-2900	P007-2245	139	3
P007	P007-2910	P007-2900	91	5
P007	P007-2920	P007-2910	86	5
P007	P007-2930	P007-2920	227	5
P007	P007-2950	P007-2940	1	2
P007	P007-2960	P007-2950	290	1
P007	P007-2970	P007-2960	258	5
P007	P007-2980	P007-2970	135	2
P007	P007-3330	P007-1200	52	5
P007	P007-3340	P007-0630	14	1

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
P007	P007-3350	P007-3340	226	2
P007	S007-3350	P007-1330	142	5
FL01	FL01-0020	FL01-0020A	62	5
FL01	FL01-0070	FL01-0060	102	5
FL01	FL01-0080	FL01-0070	296	1
FL01	FL01-0090	FL01-0080	343	5
FL01	FL01-0100	FL01-0090	6	2
FL01	FL01-0120	FL01-0110	48	4
FL01	FL01-0130	FL01-0090	300	5
FL01	FL01-0140	FL01-0130	240	4
FL01	FL01-0180	FL01-0170	357	3
FL01	FL01-0190	FL01-0190A	123	5
FL01	FL01-0190A	FL01-0180	181	4
FL01	FL01-0200	FL01-0180	50	2
FL01	FL01-0210	FL01-0200	227	2
FL01	FL01-0220	FL01-0210	6	0
FL01	FL01-0260	FL01-0420	82	0
FL01	FL01-0270	FL01-0170	30	2
FL01	FL01-0280	FL01-0270	9	3
FL01	FL01-0290	FL01-0280	20	5
FL01	FL01-0300	FL01-0290	7	2
FL01	FL01-0305	FL01-0280	36	0
FL01	FL01-0310	FL01-0305	152	2
FL01	FL01-0320	FL01-0310	316	1
FL01	FL01-0330	FL01-0320	378	4
FL01	FL01-0340	FL01-0330	144	3
FL01	FL01-0360	FL01-0340	317	3
FL01	FL01-0365	FL01-0360	129	5
FL01	FL01-0370	FL01-0360	437	4
FL01	FL01-0380	FL01-0300	226	4
FL01	FL01-0390	FL01-0380	307	2
FL01	FL01-0400	FL01-0390	455	2
FL01	FL01-0405	FL01-0400	165	1
FL01	FL01-0410	FL01-0405	265	0
FL01	FL01-0420	FL01-0410	43	1
FL01	FL01-0430	FL01-0420	4	3
FL01	FL01-0445	FL01-0439	14	2
FL01	FL01-0450	FL01-0445	249	5
FL01	FL01-0460	FL01-0450	141	3
FL01	FL01-0470	FL01-0460	228	3
FL01	FL01-0480	FL01-0470	155	4
FL01	FL01-0490	FL01-0450	55	0
FL01	FL01-0500	FL01-0490	280	5
FL01	FL01-0510	FL01-0450	26	4
FL01	FL01-0515	FL01-0510	329	3
FL01	FL01-0520	FL01-0515	199	3
FL01	FL01-0525	FL01-0520	177	3
FL01	FL01-0540	FL01-0525	117	2
FL01	FL01-0550	FL01-0540	209	2
FL01	FL01-0560	FL01-0550	42	0
FL01	FL01-0570	FL01-0570A	291	5
FL01	FL01-0570A	FL01-0560	141	2
FL01	FL01-0580	FL01-0570	326	3
FL01	FL01-0590	FL01-0560	146	3
FL01	FL01-0600	FL01-0590	72	5
FL01	FL01-0610	FL01-0590	149	3
FL01	FL01-0620	FL01-0610	303	3
FL01	FL01-0630	FL01-0620	334	2
FL01	FL01-0640	FL01-0630	247	5
FL01	FL01-0650	FL01-0630	2	5
FL01	FL01-0660	FL01-0650	283	5
FL01	FL01-0680	FL01-0660	25	2
FL01	FL01-0690	FL01-0680	229	4
FL01	FL01-0700	FL01-0690	216	2
FL01	FL01-0710	FL01-0610	6	4
FL01	FL01-0720	FL01-0710	96	3

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
FL01	FL01-0730	FL01-0720	303	4
FL01	FL01-0740	FL01-0730	55	4
FL01	FL01-0750	FL01-0740	61	3
FL01	FL01-0760	FL01-0720	331	2
FL01	FL01-0770	FL01-0770A	254	5
FL01	FL01-0770A	FL01-0760	205	5
FL01	FL01-0780	FL01-0760	339	5
FL01	FL01-0790	FL01-0780	345	5
FL01	FL01-0800	FL01-0760	274	5
FL01	FL01-0810	FL01-0800	202	3
FL01	FL01-0840	FL01-0800	337	4
FL01	FL01-0880	FL01-0840	0	1
FL01	FL01-0890	FL01-0890A	27	4
FL01	FL01-0890A	FL01-0880	288	5
FL01	FL01-0900	FL01-0880	337	5
FL01	FL01-0910	FL01-0900	353	5
FL01	FL01-0920	FL01-0440	253	2
FL01	FL01-0930	FL01-0920	258	3
FL01	FL01-0940	FL01-0932	132	2
FL01	FL01-0950	FL01-0940	36	3
FL01	FL01-0960	FL01-0950	271	3
FL01	FL01-0970	FL01-0960	223	3
FL01	FL01-0980	FL01-0970	278	5
FL01	FL01-0990	FL01-0980	222	4
FL01	FL01-1000	FL01-0950	308	3
FL01	FL01-1010	FL01-1000	418	3
FL01	FL01-1020	FL01-1010	185	4
FL01	FL01-1030	FL01-1000	306	3
FL01	FL01-1040	FL01-1030	352	3
FL01	FL01-1060	FL01-0932	398	4
FL01	FL01-1070	FL01-1060	283	4
FL01	FL01-1080	FL01-1070	2	5
FL01	FL01-1090	FL01-1080	224	5
FL01	FL01-1100	FL01-1090	265	4
FL01	FL01-1110	FL01-1100	299	4
FL01	FL01-1120	FL01-1110	368	4
FL01	FL01-1130	FL01-1120	341	4
FL01	FL01-1140	FL01-0930	379	3
FL01	FL01-1150	FL01-1140	375	4
FL01	FL01-1160	FL01-1150	248	3
FL01	FL01-1170	FL01-1160	327	3
FL01	FL01-1180	FL01-1170	121	3
FL01	FL01-1185	FL01-1180	0	0
FL01	FL01-1190	FL01-1170	350	4
FL01	FL01-1200	FL01-1190	217	3
FL01	FL01-1210	FL01-1200	131	3
FL01	FL01-1230	FL01-1210	351	3
FL01	FL01-1240	FL01-1230	405	5
FL01	FL01-1250	FL01-1240	0	4
FL01	FL01-1260	FL01-1200	117	4
FL01	FL01-1270	FL01-1260	201	4
FL01	FL01-1280	FL01-1270	170	4
FL01	FL01-1290	FL01-1280	379	4
FL01	FL01-1320	FL01-1310	266	5
FL01	FL01-1330	FL01-1320	270	4
FL01	FL01-1340	FL01-1310	289	3
FL01	FL01-1350	FL01-1340	292	3
FL01	FL01-1360	FL01-1190	334	3
FL01	FL01-1370	FL01-1360	328	4
FL01	FL01-1380	FL01-1370	322	3
FL01	FL01-1390	FL01-1380	340	3
FL01	FL01-1395	FL01-1390	47	3
FL01	FL01-1400	FL01-1395	250	4
FL01	FL01-1410	FL01-1400	296	4
FL01	FL01-1420	FL01-1410	277	3
FL01	FL01-1430	FL01-1390	239	2

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
FL01	FL01-1440	FL01-1430	423	3
FL01	FL01-1450	FL01-1440	74	5
FL01	FL01-1460	FL01-1450	256	4
FL01	FL01-1470	FL01-1440	278	3
FL01	FL01-1480	FL01-1470	389	3
FL01	FL01-1490	FL01-1480	274	5
FL01	FL01-1500	FL01-1490	194	3
FL01	FL01-1510	FL01-1370	319	4
FL01	FL01-1520	FL01-1510	344	4
FL01	FL01-1530	FL01-1520	0	3
FL01	FL01-1540	FL01-1520	319	3
FL01	FL01-1550	FL01-1540	317	4
FL01	FL01-1560	FL01-1550	10	5
FL01	FL01-1570	FL01-1560	0	3
FL01	FL01-1580	FL01-1550	206	4
FL01	FL01-1590	FL01-1580	0	3
FL01	FL01-1600	FL01-1580	177	3
FL01	FL01-1610	FL01-1600	227	5
FL01	FL01-1620	FL01-1600	152	3
FL01	FL01-1630	FL01-1620	290	3
FL01	FL01-1640	FL01-1630	103	5
FL01	FL01-1650	FL01-1640	192	3
FL01	FL01-1660	FL01-1640	163	3
FL01	FL01-1670	FL01-1660	249	5
FL01	FL01-1680	FL01-1660	306	5
FL01	FL01-1690	FL01-1680	168	5
FL01	FL01-1710	FL01-1690	179	3
FL01	FL01-1720	FL01-1710	0	3
FL01	FL01-1730	FL01-1710	166	3
FL01	FL01-1740	FL01-1730	127	3
FL01	FL01-1750	FL01-1740	54	1
FL01	FL01-1760	FL01-1750	417	2
FL01	FL01-1770	FL01-1740	88	3
FL01	FL01-1780	FL01-1770	377	3
FL01	FL01-1790	FL01-1780	353	5
FL01	FL01-1810	FL01-1800	298	3
FL01	FL01-1820	FL01-1810	386	5
FL01	FL01-1830	FL01-1810	278	4
FL01	FL01-1850	FL01-1770	166	3
FL01	FL01-1860	FL01-1850	244	3
FL01	FL01-1870	FL01-1860	361	3
FL01	FL01-1880	FL01-1850	67	2
FL01	FL01-1890	FL01-1880	352	3
FL01	FL01-1892	FL01-1890	28	2
FL01	FL01-1900	FL01-1890	365	5
FL01	FL01-1910	FL01-1892	324	4
FL01	FL01-1915	FL01-0020	76	1
FL01	FL01-1920	FL01-1915	149	3
FL01	FL01-1930	FL01-1920	315	4
FL01	FL01-1940	FL01-1930	275	3
FL01	FL01-1950	FL01-1940	355	2
FL01	FL01-1960	FL01-1950	417	3
FL01	FL01-1970	FL01-1960	343	2
FL01	FL01-1980	FL01-1970	251	0
FL01	FL01-1980A	FL01-1980	271	3
FL01	FL01-1990	FL01-1980A	136	5
FL01	FL01-1990A	FL01-1990	18	0
FL01	FL01-2000	FL01-1990	2	2
FL01	FL01-2110	FL01-2100	25	0
FL01	FL01-2380	FL01-0810	272	5
FL01	FL01-2480	FL01-0540	117	5
S003	EOL	S003-1390	13	0
S003	S003-0020	S003-3340	135	0
S003	S003-0030	S003-0030A	0	5
S003	S003-0030A	S003-0020	262	0
S003	S003-0040	S003-0030	0	4

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S003	S003-0070	S003-0060	125	0
S003	S003-0080	S003-0070	253	3
S003	S003-0090	S003-0080	55	0
S003	S003-0100	S003-0090	35	2
S003	S003-0105	S003-0100	207	1
S003	S003-0110	S003-0100	249	4
S003	S003-0120	S003-0110	246	3
S003	S003-0130	S003-0120	397	4
S003	S003-0160	S003-0120	453	4
S003	S003-0165	S003-0160	232	5
S003	S003-0170	S003-0165	251	4
S003	S003-0180	S003-0160	223	3
S003	S003-0190	S003-0180	400	3
S003	S003-0200	S003-0100	453	5
S003	S003-0210	S003-0200	380	5
S003	S003-0214	S003-0210	335	5
S003	S003-0216	S003-0214	77	2
S003	S003-0217	S003-0216	15	0
S003	S003-0220	S003-0214	16	0
S003	S003-0230	S003-0217	117	2
S003	S003-0240	S003-0230	427	5
S003	S003-0250	S003-0240	387	5
S003	S003-0260	S003-0250	306	5
S003	S003-0270	S003-0240	154	5
S003	S003-0274	S003-0270	74	0
S003	S003-0280	S003-0274	253	2
S003	S003-0290	S003-0280	274	5
S003	S003-0300	S003-0290	282	3
S003	S003-0330	S003-3380	32	0
S003	S003-0340	S003-0330	117	5
S003	S003-0356	S003-3380	67	0
S003	S003-0360	S003-0356	83	1
S003	S003-0370	S003-0360	252	4
S003	S003-0380	S003-0370	325	2
S003	S003-0390	S003-0390A	188	3
S003	S003-0390A	S003-0380	63	0
S003	S003-0400	S003-0380	305	5
S003	S003-0410	S003-0400	165	4
S003	S003-0420	S003-0410	398	3
S003	S003-0430	S003-0420	136	2
S003	S003-0440	S003-0410	22	0
S003	S003-0450	S003-0440	341	4
S003	S003-0460	S003-0450	172	4
S003	S003-0465	S003-0460	116	0
S003	S003-0520	S003-3430	137	1
S003	S003-0530	S003-0520	277	5
S003	S003-0540	S003-0530	70	0
S003	S003-0550	S003-0540	249	4
S003	S003-0560	S003-0540	272	4
S003	S003-0590	S003-3460	178	4
S003	S003-0600	S003-0590	256	4
S003	S003-0610	S003-0600	203	5
S003	S003-0620	S003-3460	388	5
S003	S003-0630	S003-0620	297	4
S003	S003-0640	S003-0630	321	4
S003	S003-0650	S003-0650A	279	5
S003	S003-0660	S003-0650	65	3
S003	S003-0670	S003-0660	200	2
S003	S003-0670A	S003-0670	150	0
S003	S003-0672	S003-0670	202	3
S003	S003-0680	S003-0670A	309	4
S003	S003-0690	S003-0680	184	4
S003	S003-0700	S003-0640	281	4
S003	S003-0710	S003-0700	246	4
S003	S003-0720	S003-0710	401	4
S003	S003-0726	Midline	245	3

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S003	S003-0730	S003-0720	204	3
S003	S003-0740	S003-0730	347	4
S003	S003-0750	S003-0740	311	5
S003	S003-0752	S003-0750	81	0
S003	S003-0760	S003-0752	350	2
S003	S003-0770	S003-0620	23	2
S003	S003-0780	S003-0770	312	3
S003	S003-0785	S003-0780	168	1
S003	S003-0790	S003-0780	289	2
S003	S003-0795	S003-0790	131	5
S003	S003-0800	S003-0790	413	2
S003	S003-0805	S003-0800	143	5
S003	S003-0810	S003-0800	303	4
S003	S003-0820	S003-0830	9	0
S003	S003-0830	S003-0810	39	0
S003	S003-0840	S003-0830	163	3
S003	S003-0850	S003-0840	25	1
S003	S003-0860	S003-0850	158	4
S003	S003-0870	S003-0860	161	5
S003	S003-0880	S003-0870	273	3
S003	S003-0890	S003-0870	57	2
S003	S003-0900	S003-0890	390	4
S003	S003-0910	S003-0900	171	3
S003	S003-0920	S003-0810	230	4
S003	S003-0930	S003-0920	423	5
S003	S003-0940	S003-0930	310	2
S003	S003-0950	S003-0940	71	4
S003	S003-0960	S003-0950	211	5
S003	S003-0965	S003-0965A	18	5
S003	S003-0965A	S003-0960	18	3
S003	S003-0970	S003-0940	246	4
S003	S003-0980	S003-0970	151	3
S003	S003-0990	S003-0930	152	4
S003	S003-1000	S003-0990	361	0
S003	S003-1010	S003-1000	139	0
S003	S003-1010A	S003-1010	181	0
S003	S003-1020	S003-1010	97	0
S003	S003-1024	S003-1020	72	0
S003	S003-1040	S003-1030	196	4
S003	S003-1050	S003-1040	226	5
S003	S003-1060	S003-1050	80	2
S003	S003-1070	S003-1060	90	2
S003	S003-1080	S003-1060	214	2
S003	S003-1090	S003-1080	392	3
S003	S003-1110	S003-1100	220	3
S003	S003-1120	S003-1100	335	3
S003	S003-1130	S003-1120	352	4
S003	S003-1140	S003-1130	294	3
S003	S003-1170	S003-1160	202	4
S003	S003-1180	S003-1170	146	4
S003	S003-1190	S003-1180	146	2
S003	S003-1200	S003-1190	167	4
S003	S003-1210	S003-1200	112	2
S003	S003-1220	S003-1160	278	4
S003	S003-1230	S003-1220	274	3
S003	S003-1240	S003-1230	0	2
S003	S003-1270	S003-1260	255	5
S003	S003-1280	S003-1270	5	0
S003	S003-1320	S003-1300	63	4
S003	S003-1330	S003-1320	180	0
S003	S003-1340	S003-1330	13	2
S003	S003-1370	S003-1360	40	5
S003	S003-1373	S003-1370	81	2
S003	S003-1380	S003-1373	163	3
S003	S003-1390	S003-1380	195	5
S003	S003-1400	S003-1390	171	2

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S003	S003-1420	S003-1260	298	5
S003	S003-1430	S003-1420	325	5
S003	S003-1460	S003-1450	346	2
S003	S003-1470	S003-1460	408	4
S003	S003-1480	S003-3500	299	3
S003	S003-2600	S003-0274	210	3
S003	S003-2610	S003-2600	87	3
S003	S003-3510	S003-1480B	361	3
S003	S003-3520	S003-3510	315	1
S003	S003-3570	S003-3560	366	4
S003	S003-3580	S003-3570	262	4
S003	S003-3590	S003-3580	61	2
S003	S003-3600	S003-3540	302	5
S003	S003-3610	S003-3600	320	4
S003	S003-3620	S003-3610	8	5
S003	S003-3630	S003-3620	3	5
S003	S003-3640	S003-3630	84	4
S003	S003-3650	S003-3640	133	2
S003	S003-3660	S003-3620	4	4
S003	S003-3670	S003-3660	182	5
S003	S003-3680	S003-3670	286	5
S003	S003-3690	S003-0965	20	5
S008	EOL	S008-0960	264	5
S008	EOL	S008-0990	290	2
S008	S008-0400	S008-0390	319	2
S008	S008-0410	S008-0400	133	3
S008	S008-0420	S008-0410	147	4
S008	S008-0460	S008-0080	188	2
S008	S008-0470	S008-0460	190	2
S008	S008-0480	S008-0470	189	5
S008	S008-0490	S008-0460	246	2
S008	S008-0500	S008-0490	219	3
S008	S008-0510	S008-0500	144	3
S008	S008-0520	S008-0510	158	3
S008	S008-0530	S008-0520	400	3
S008	S008-0540	S008-0530	220	3
S008	S008-0550	S008-0490	223	1
S008	S008-0560	S008-0550	398	1
S008	S008-0570	S008-0560	356	1
S008	S008-0580	S008-0570	83	4
S008	S008-0590	S008-0580	181	2
S008	S008-0600	S008-0590	112	2
S008	S008-0610	S008-0570	38	3
S008	S008-0660	S008-0650	144	4
S008	S008-0670	S008-0660	60	4
S008	S008-0690	S008-0660	355	5
S008	S008-0700	S008-0690	274	4
S008	S008-0710	S008-0700	272	2
S008	S008-0720	S008-0710	258	4
S008	S008-0730	S008-0720	257	3
S008	S008-0740	S008-0730	386	1
S008	S008-0750	S008-0740	386	3
S008	S008-0760	S008-0660	288	3
S008	S008-0770	S008-0760	238	3
S008	S008-0770A	S008-0770	260	3
S008	S008-0780	S008-0770A	253	2
S008	S008-0790	S008-0780	236	3
S008	S008-0800	S008-0790	282	3
S008	S008-0810	S008-0800	337	2
S008	S008-0820	S008-0810	350	3
S008	S008-0840	S008-0760	167	1
S008	S008-0850	S008-0840	286	2
S008	S008-0860	S008-0850	149	5
S008	S008-0870	S008-0860	0	5
S008	S008-0880	S008-0870	307	5
S008	S008-0890	S008-0880	306	5

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S008	S008-0900	S008-0850	364	4
S008	S008-0910	S008-0790	287	1
S008	S008-0910	S008-0900	322	1
S008	S008-0920	S008-0910	191	3
S008	S008-0930	S008-0920	237	4
S008	S008-0940	S008-0890	308	5
S008	S008-0950	S008-0940	313	5
S008	S008-0960	S008-0950	149	3
S008	S008-0970	S008-0960	316	5
S008	S008-0980	S008-0910	220	4
S008	S008-0980	S008-0970	317	4
S008	S008-0990	S008-0930	359	4
S008	S008-1000	S008-0670	322	4
S008	S008-1005	S008-1000	69	4
S008	S008-1010	S008-1000	124	3
S008	S008-1020	S008-1000	254	5
S008	S008-1030	S008-1020	365	3
S008	S008-1040	S008-1030	370	3
S008	S008-1093	S008-1090	10	5
S008	S008-1096	S008-1093	50	5
S008	S008-1100	S008-1096A	1	5
S008	S008-1110	S008-0100	54	3
S008	S008-1115	S008-1110	153	4
S008	S008-1120	S008-1115	309	5
S008	S008-1130	S008-1100	40	3
S008	S008-1135	S008-1130	273	5
S008	S008-1140	S008-1135	109	5
S008	S008-1170	S008-1160	351	3
S008	S008-1173	S008-1170	97	1
S008	S008-1175	S008-1173	155	1
S008	S008-1180	S008-1170	344	2
S008	S008-1210	S008-1200	221	3
S008	S008-1220	S008-1210A	253	0
S008	S008-1230	S008-1220	343	5
S008	S008-1240	S008-1230	249	2
S008	S008-1250	S008-1240	249	4
S008	S008-1252	S008-1250	189	3
S008	S008-1254	S008-1252	338	3
S008	S008-1256	S008-1254	109	2
S008	S008-1260	S008-1250	99	2
S008	S008-1270	S008-1260	74	3
S008	S008-1280	S008-1270	86	4
S008	S008-1290	S008-1280	120	4
S008	S008-1300	S008-1290	144	4
S008	S008-1320	S008-1300	257	2
S008	S008-1320A	S008-1320	235	4
S008	S008-1330	S008-1320	205	4
S008	S008-1340	S008-1330	348	2
S008	S008-1350	S008-1320A	4	1
S008	S008-1370	S008-1350	86	2
S008	S008-1380	S008-1370	132	3
S008	S008-1390	S008-1380	56	0
S008	S008-1400	S008-1390	302	3
S008	S008-1410	S008-1400	304	4
S008	S008-1420	S008-1370	56	2
S008	S008-1440	S008-1420	162	2
S008	S008-1450	S008-1440	58	2
S008	S008-1470	S008-1450	263	3
S008	S008-1470A	S008-1470	10	2
S008	S008-1480	S008-1470A	333	3
S008	S008-1484	S008-1480	68	3
S008	S008-1770	S008-1760	191	1
S008	S008-1790	S008-1780	287	1
S008	S008-1800	S008-1770	296	3
S008	S008-1810	S008-1800	253	5
S008	S008-1850A	S008-1850	112	0

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S008	S008-1860	S008-1850	29	1
S008	S008-1870	S008-1860	264	2
S008	S008-1880	S008-1870	197	3
S008	S008-1890	S008-1880	310	1
S008	S008-1900	S008-1890	300	3
S008	S008-1910	S008-1890	335	3
S008	S008-1920	S008-1910	386	2
S008	S008-1930	S008-1880	346	3
S008	S008-1940	S008-1930	186	2
S008	S008-1960	S008-1940	103	2
S008	S008-1970	S008-1960	200	3
S008	S008-1975	S008-1970	295	3
S008	S008-1980	S008-1980A	88	1
S008	S008-1990	S008-1980	15	0
S008	S008-1990A	S008-1990	84	2
S008	S008-2000	S008-1990	316	5
S008	S008-2005	S008-2000	338	3
S008	S008-2010	S008-1990A	222	5
S008	S008-2020	S008-2010	366	5
S008	S008-2030	S008-2020	165	3
S008	S008-2040	S008-2030	167	5
S008	S008-2050	S008-2030	328	5
S008	S008-2060	S008-2050	143	5
S008	S008-2070	S008-2060	326	4
S008	S008-2080	S008-2070	0	5
S008	S008-2090	S008-2030	328	5
S008	S008-2100	S008-2090	159	5
S008	S008-2110	S008-2090	185	4
S008	S008-2120	S008-2110	316	5
S008	S008-2130	S008-2120	233	5
S008	S008-2140	S008-2130	331	4
S008	S008-2150	S008-2140	119	5
S008	S008-2160	S008-2090	174	5
S008	S008-2170	S008-2160	90	4
S008	S008-2180	S008-2170	430	4
S008	S008-2190	S008-2180	307	3
S008	S008-2200	S008-2190	159	4
S008	S008-2209	S008-2200	0	0
S008	S008-2210	S008-2209	0	0
S008	S008-2220	S008-2210	282	1
S008	S008-2240	S008-2190	91	3
S008	S008-2250	S008-2240	398	4
S008	S008-2260	S008-2250	261	5
S008	S008-2270	S008-2260	387	4
S008	S008-2290	S008-2160	387	2
S008	S008-2300	S008-2290	264	2
S008	S008-2310	S008-2300	323	2
S008	S008-2320	S008-2310	340	2
S008	S008-2330	S008-2320	324	3
S008	S008-2340	S008-2330	327	2
S008	S008-2350	S008-2340	250	2
S008	S008-2360	S008-2300	401	3
S008	S008-2370	S008-2360	301	2
S008	S008-2380	S008-2370	325	2
S008	S008-2390	S008-2380	295	2
S008	S008-2400	S008-2390	240	2
S008	S008-2410	S008-2360	450	2
S008	S008-2420	S008-2410	435	2
S008	S008-2430	S008-2420	254	2
S008	S008-2440	S008-2430	287	2
S008	S008-2450	S008-2440	218	2
S008	S008-2460	S008-2410	444	3
S008	S008-2470	S008-2460	74	2
S008	S008-2480	S008-2460	348	3
S008	S008-2500	S008-1980	436	3
S008	S008-2510	S008-2500	375	4

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S008	S008-2530	S008-2520	344	4
S008	S008-3000	S008-0400	82	2
S008	S008-3010	S008-3000	124	0
S008	S008-3020	S008-3010	187	4
S008	S008-3030	S008-3000	152	2
S008	S008-3040	S008-3030	205	2
S008	S008-3050	S008-3040	133	1
S008	S008-4010	S008-0635	0	4
S008	S008-4020	S008-4010	0	3
S008	S008-4030	S008-4020	263	2
S008	S008-4035	S008-4030	216	1
S008	S008-4100	S008-1080	141	3
S008	S008-4100A	S008-4100	96	2
S008	S008-4110	S008-4100A	271	2
S009	EOL	S009-1192	228	5
S009	S009-0030	S009-0020	339	2
S009	S009-0040	S009-0030	153	4
S009	S009-0050	S009-0040	118	5
S009	S009-0070	S009-0050	234	4
S009	S009-0075	S009-0070	36	0
S009	S009-0080	S009-0070	240	5
S009	S009-0082	S009-0080	124	2
S009	S009-0084	S009-0082	116	3
S009	S009-0086	S009-0080	31	1
S009	S009-0088	S009-0082	29	0
S009	S009-0090	S009-0085	0	0
S009	S009-0105	S009-0095	69	2
S009	S009-0110	S009-0105	78	0
S009	S009-0115	S009-0100	53	3
S009	S009-0120	S009-0115	104	5
S009	S009-0130	S009-0120	98	4
S009	S009-0140	S009-0130	191	4
S009	S009-0150	S009-0140	0	4
S009	S009-0160	S009-0150	0	0
S009	S009-0170	S009-0150	0	0
S009	S009-0180	S009-0140	186	4
S009	S009-0190	S009-0180	229	5
S009	S009-0200	S009-0190	242	4
S009	S009-0210	S009-0200	132	4
S009	S009-0220	S009-0200	322	5
S009	S009-0230	S009-0190	309	4
S009	S009-0240	S009-0230	373	3
S009	S009-0250	S009-0240	303	5
S009	S009-0260	S009-0250	52	2
S009	S009-0270	S009-0260	10	5
S009	S009-0280	S009-0270	179	5
S009	S009-0290	S009-0230	126	3
S009	S009-0300	S009-0290	20	2
S009	S009-0310	S009-0300	380	5
S009	S009-0320	S009-0310	273	4
S009	S009-0340	S009-0330	18	5
S009	S009-0350	S009-0340	240	3
S009	S009-0360	S009-0350	248	5
S009	S009-0370	S009-0360	164	4
S009	S009-0380	S009-0370	263	5
S009	S009-0390	S009-0380	345	2
S009	S009-0400	S009-0350	331	4
S009	S009-0410	S009-0400	299	5
S009	S009-0420	S009-0410	350	3
S009	S009-0430	S009-0420	249	5
S009	S009-0440	S009-0430	353	3
S009	S009-0450	S009-0400	159	3
S009	S009-0460	S009-0450	285	5
S009	S009-0470	S009-0460	353	4
S009	S009-0480	S009-0470	16	5
S009	S009-0490	S009-0480	300	4

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S009	S009-0500	S009-0450	179	2
S009	S009-0510	S009-0500	146	2
S009	S009-0520	S009-0510	396	5
S009	S009-0530	S009-0520	221	5
S009	S009-0540	S009-0510	238	5
S009	S009-0550	S009-0540	295	5
S009	S009-0560	S009-0540	58	2
S009	S009-0570	S009-0560	178	3
S009	S009-0580	S009-0570	345	5
S009	S009-0590	S009-0580	155	3
S009	S009-0600	S009-0590	268	4
S009	S009-0610	S009-0600	370	5
S009	S009-0620	S009-0610	84	2
S009	S009-0630	S009-0610	75	1
S009	S009-0640	S009-0330	233	4
S009	S009-0650	S009-0640	170	3
S009	S009-0655	S009-0650	192	3
S009	S009-0660	S009-0650	339	5
S009	S009-0670	S009-0660	68	3
S009	S009-0680	S009-0670	11	5
S009	S009-0690	S009-0680	0	5
S009	S009-0700	S009-0680	127	3
S009	S009-0710	S009-0670	337	4
S009	S009-0712	S009-0710	36	1
S009	S009-0720	S009-0710	0	2
S009	S009-0730	S009-1620	187	5
S009	S009-0740	S009-0730	236	5
S009	S009-0750	S009-0740	212	4
S009	S009-0760	S009-0712	190	2
S009	S009-0785	S009-0780	86	5
S009	S009-0800	S009-0788	41	3
S009	S009-0810	S009-0800	174	2
S009	S009-0820	S009-0810	299	5
S009	S009-0830	S009-0820	298	5
S009	S009-0840	S009-0830	308	3
S009	S009-0850	S009-0800	331	3
S009	S009-0860	S009-0850	301	3
S009	S009-0870	S009-0860	300	3
S009	S009-0880	S009-0870	353	3
S009	S009-0890	S009-0880	305	3
S009	S009-0900	S009-0850	135	4
S009	S009-0910	S009-0900	404	4
S009	S009-0920	S009-0910	65	3
S009	S009-0930	S009-0920	356	5
S009	S009-0940	S009-0900	331	2
S009	S009-0950	S009-0940	403	3
S009	S009-0960	S009-0950	301	5
S009	S009-0970	S009-0960	300	4
S009	S009-0980	S009-0970	252	3
S009	S009-0990	S009-0800	132	2
S009	S009-1000	S009-0990	65	2
S009	S009-1010	S009-1000	298	5
S009	S009-1020	S009-1010	149	2
S009	S009-1030	S009-1020	158	2
S009	S009-1040	S009-1030	292	2
S009	S009-1050	S009-1030	178	2
S009	S009-1060	S009-1050	272	3
S009	S009-1070	S009-1050	151	2
S009	S009-1080	S009-1070	287	3
S009	S009-1090	S009-1020	339	2
S009	S009-1100	S009-1090	334	4
S009	S009-1110	S009-1100	332	5
S009	S009-1120	S009-1110	33	2
S009	S009-1130	S009-1120	200	2
S009	S009-1140	S009-1130	149	4
S009	S009-1150	S009-1120	161	3

Sewer Lines
Cleaned and Televised with NASSCO Score

Sub-Basin	Upstream Manhole	Downstream Manhole	Surveyed Length (ft)	NASSCO PACP Score
S009	S009-1160	S009-1150	56	3
S009	S009-1170	S009-1160	173	3
S009	S009-1175	S009-0100	173	0
S009	S009-1180	S009-1175	222	1
S009	S009-1190	S009-1180	228	1
S009	S009-1192	S009-1190	19	0
S009	S009-1200	S009-1190	47	4
S009	S009-1210	S009-1200	233	0
S009	S009-1220	S009-1210	98	2
S009	S009-1230	S009-1220	448	3
S009	S009-1240	S009-1200	180	3
S009	S009-1285	S009-1280	390	2
S009	S009-1300	S009-1290	125	5
S009	S009-1310	S009-1300	182	3
S009	S009-1320	S009-1310	7	1
S009	S009-1330	S009-1300	325	3
S009	S001-1331	S009-1330	332	4
S009	S009-1340	S009-1330	187	5
S009	S009-1350	S009-1290	159	3
S009	S009-1360	S009-1350	253	5
S009	S009-1370	S009-1360	289	5
S009	S009-1400	S009-1390	49	5
S009	S009-1410	S009-1350	328	3
S009	S009-1420	S009-1410	211	5
S009	S009-1430	S009-1420	48	5
S009	S009-1440	S009-1430	310	5
S009	S009-1450	S009-1440	107	5
S009	S009-1460	S009-1410	173	4
S009	S009-1470	S009-1460	334	4
S009	S009-1480	S009-1470	292	5
S009	S009-1490	S009-1460	163	4
S009	S009-1500	S009-1490	157	5
S009	S009-1510	S009-1500	303	1
S009	S009-1520	S009-1510	384	5
S009	S009-1530	S009-1500	321	5
S009	S009-1540	S009-1530	215	5
S009	S009-1550	S009-1530	390	5
S009	S009-1560	S009-1530	325	5
S009	S009-1570	S009-1560	75	5
S009	S009-1580	S009-1570	49	5
S009	S009-1585	S009-1580	444	5
S009	S009-1590	S009-1560	324	5
S009	S009-1600	S009-1590	335	5
S009	S009-1610	S009-1600	378	5
S009	S009-1620	S009-0720	32	2

Attachment 2

Remedial Measures Plan for Basin 12

March 2016

Remedial Measures Plan

2015 Sanitary Sewer Assessment
Basin 12

prepared for the

City of Fort Smith, Arkansas

prepared by

RJN Group, Inc.

1808 S. C Street

Fort Smith, Arkansas 72901

(479) 709-9439

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www.rjn.com

March 2, 2016

Mr. Steve Parke
City of Fort Smith
Utility Department
3900 Kelley Hwy.
Fort Smith, AR 72904

Subject: City of Fort Smith, Arkansas
Final Remedial Measures Plan Basin 12

Dear Mr. Parke:

In accordance with the February 3, 2015 Engineering Agreement, RJN Group, Inc. is pleased to submit this Final Remedial Measures Plan for Basin 12.

This report includes the analysis and results Basin 12.

We appreciate the opportunity to work with the City of Fort Smith and the excellent cooperation from the staff throughout the project. We look forward to working with the City in the future. Should you have any questions, please call.

Respectfully Submitted,

RJN GROUP, INC.

Dan Jackson

Daniel Jackson, P.E.
Project Manager

Tristan Nickel

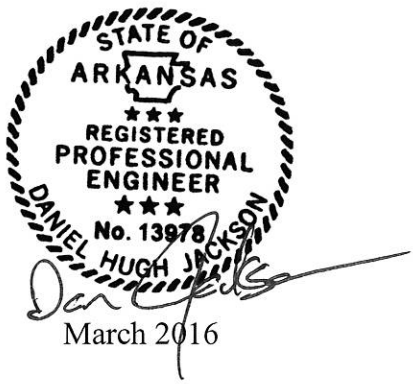
Tristan Nickel, P.E.
Project Engineer

DHJ/tn/2832
Enclosure

Remedial Measures Plan

Basin 12

City of Fort Smith



March 2016

I hereby certify that this report was prepared under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Arkansas.

Dan Jackson

Date: 3/2/16 Registration No.: 13978

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APPENDIX A Decision Tree Pullouts

APPENDIX B Sewer Lines Rehabilitation Recommendations

BASIN 12 REMEDIAL MEASURES PLAN

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SANITARY SEWER ASSESSMENT – BASIN 12 REMEDIAL MEASURES PLAN

The City of Fort Smith, Arkansas contracted RJN Group, Inc. to develop a Remedial Measures Plan for Basin 12. The Basin 12 condition assessment was conducted in 2009 and consists of approximately 100,000 linear feet of sanitary sewer pipe.

This Remedial Measures Plan discusses the rehabilitation recommendations along with the methodology used to develop the recommendations. Figure 1 shows the sub-basins studied.

SYSTEM OVERVIEW

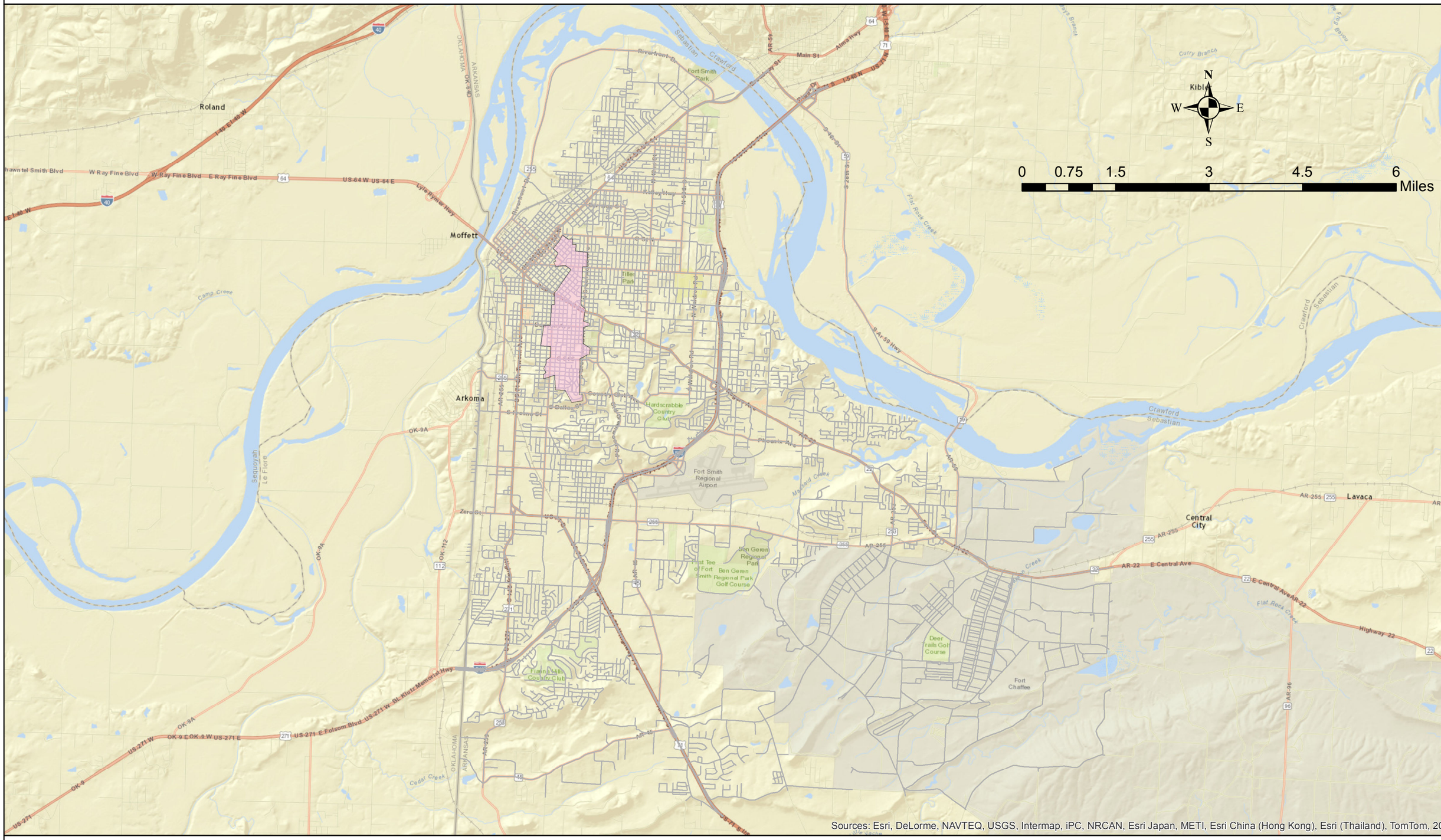
The cleaning and televising of sanitary sewer lines in Basin 12 was conducted in 2009. Table 1 summarizes the quantity of manholes and sewer line inspected Basin 12. Figure 1 shows Basin 12.

Table 1

BASIN 12 STATISTICS

Basin	Number of Manholes	Length of Sewer Pipe	
		Linear Feet	Miles
12	501	100,996	19.13
Total	**501**	**100,996**	**19.13**

City of Fort Smith, AR



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Study Area

The City of Fort Smith Arkansas

Figure 1
Basin 12
Location

CLEANING AND TELEVISING OF SANITARY SEWERS

Cleaning and closed circuit television inspection (CCTV) investigations were performed on all sewer lines. Investigations utilized NASSCO PACP inspection standards. All investigation data was entered into InfoMaster, an Innovyze asset management software. InfoMaster generated NASSCO defect grades for each line segment using a 1 to 5 scale. The peak defect grade was utilized to provide an overall score for each sewer line segment. A score of 0 indicates no defects were found within the line segment. A decision tree was developed in InfoMaster to generate recommended remedial measures for each line segment, and can be seen in Figure 3 on page 5. If the score was 1, 2, or 3 the line segment was flagged to enter the City's CMOM Program. If a score was either 4 or 5 the line segment passed through the remainder of the decision tree to determine the best rehabilitation.

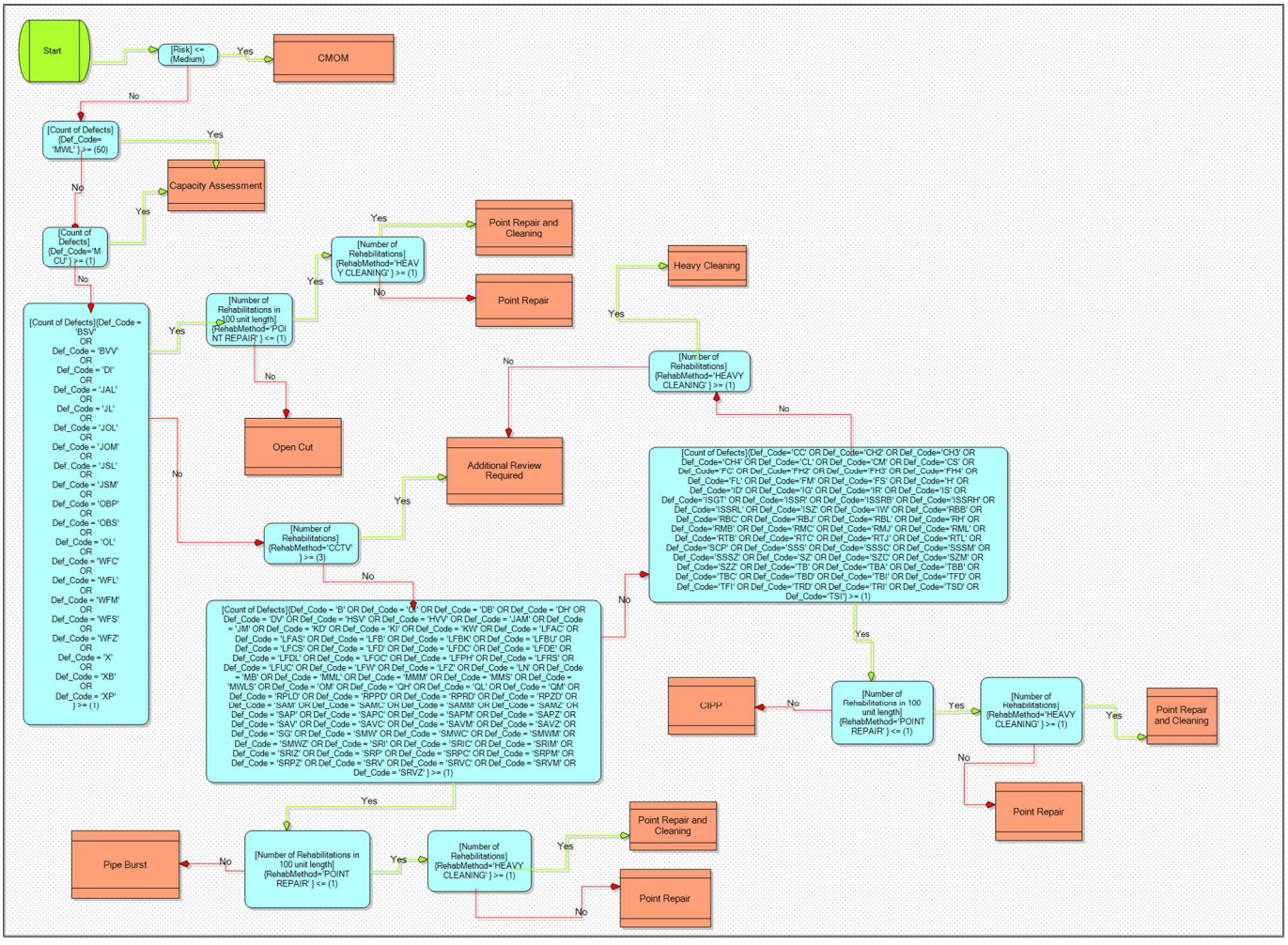


Figure 2 - Sewer Line Decision Tree (see Appendix A for full size pullout)

RECOMMENDATIONS

All sewer line segments in Basin 12 were cleaned and televised. This translated to 100,996 linear feet (19.13 miles). NASSCO PACP defect grades were used to generate a score for all sewer lines. NASSCO's peak defect grade was utilized as the overall score for the sewer line segment. Scores were on a scale of 1 to 5 with a score of 5 assigned to the sewer lines in the worst condition. Sewer lines with a score of 1, 2, or 3 were entered into the City's CMOM program while rehabilitation recommendations were generated for lines with a score of 4 or 5. A total of 60,363 linear feet from Basin 12 received a score of 4 or 5. NASSCO Scores within Basin 12 can be seen in Table 2. Figure 3 depicts the remedial measures plan. Table 3 outlines the preliminary recommended construction technique for Basin 12. All sewer line segments requiring remedial measures should be put through a rehabilitation design project to verify the preliminary recommended construction technique.

Additionally all manholes in Basin 12 were inspected and graded. There are 323 manholes that require rehabilitation. Figure 4 depicts the location of the manholes that require rehabilitation.

Table 2

NASSCO PACP SCORE SUMMARY IN LINEAR FEET

	NASSCO Score (Total Asset Length)						
Basin	**0**[1/]	**1**	**2**	**3**	**4**	**5**	**Total**
12	4,437	2,778	11,432	21,986	25,054	35,309	100,996
Total	**4,437**	**2,778**	**11,432**	**21,986**	**25,054**	**35,309**	**100,996**

1/ No defects recorded during inspection.

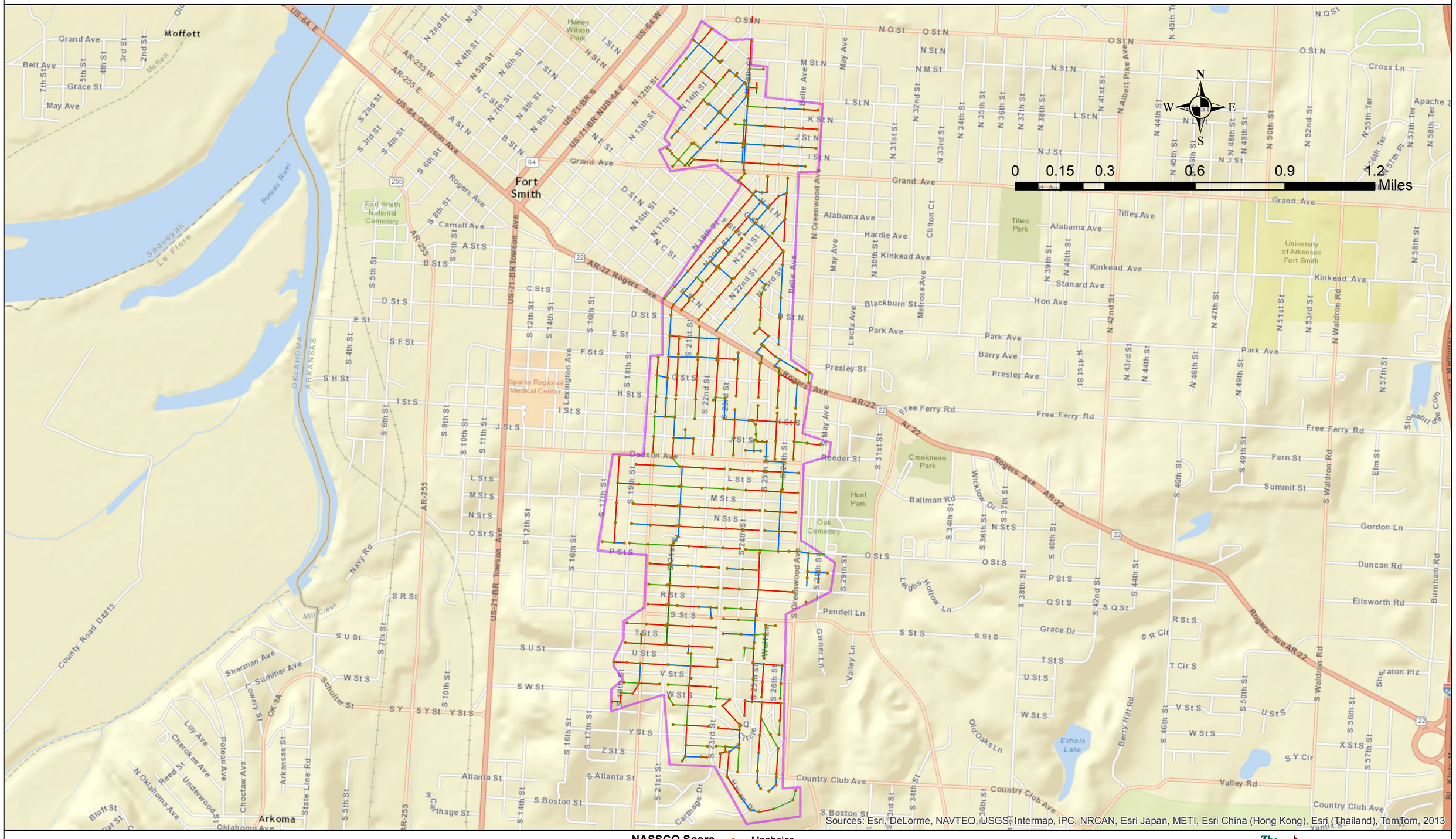
Table 3

SEWER LINE REHABILITATION SUMMARY

Basin	CMOM	CIPP	Pipe Burst	Open Cut	Grade 4/5 Obstructions (roots, grease, etc.)	Point Repair(s)[1/]	Total
12	40,633	4,760	28,915	22,969	1,985	9	99,262
Total	**40,633**	**4,760**	**28,915**	**22,969**	**1,985**	**9**	**99,262**

1/ Quantity of Point Repair Locations not a linear footage.

City of Fort Smith, AR



NASSCO Score

- No Defects
- 1, 2, 3
- 4, 5

- Manholes
- Study Area

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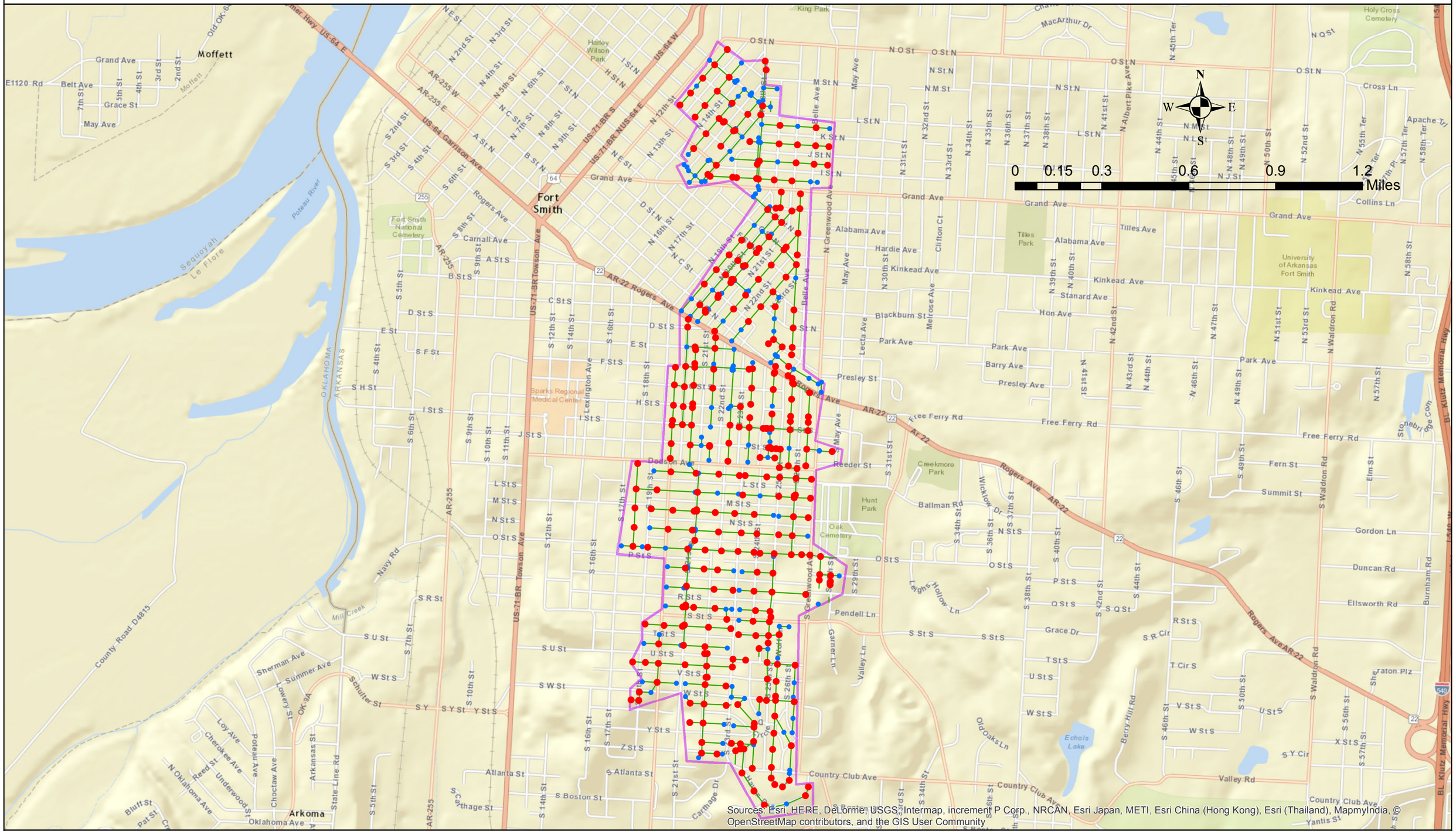
The City of Fort Smith ARKANSAS

Figure 3
PACP Score
Basin 12

City of Fort Smith, AR



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Manholes Requiring Rehabilitation (4, 5)
CMOM - No Rehabilitation Required (1, 2, 3)
Gravity Main
Study Area

Fort Smith ARKANSAS

Figure 4
MACP Score
Basin 12

APPENDICES

APPENDIX A

DECISION TREE PULLOUTS

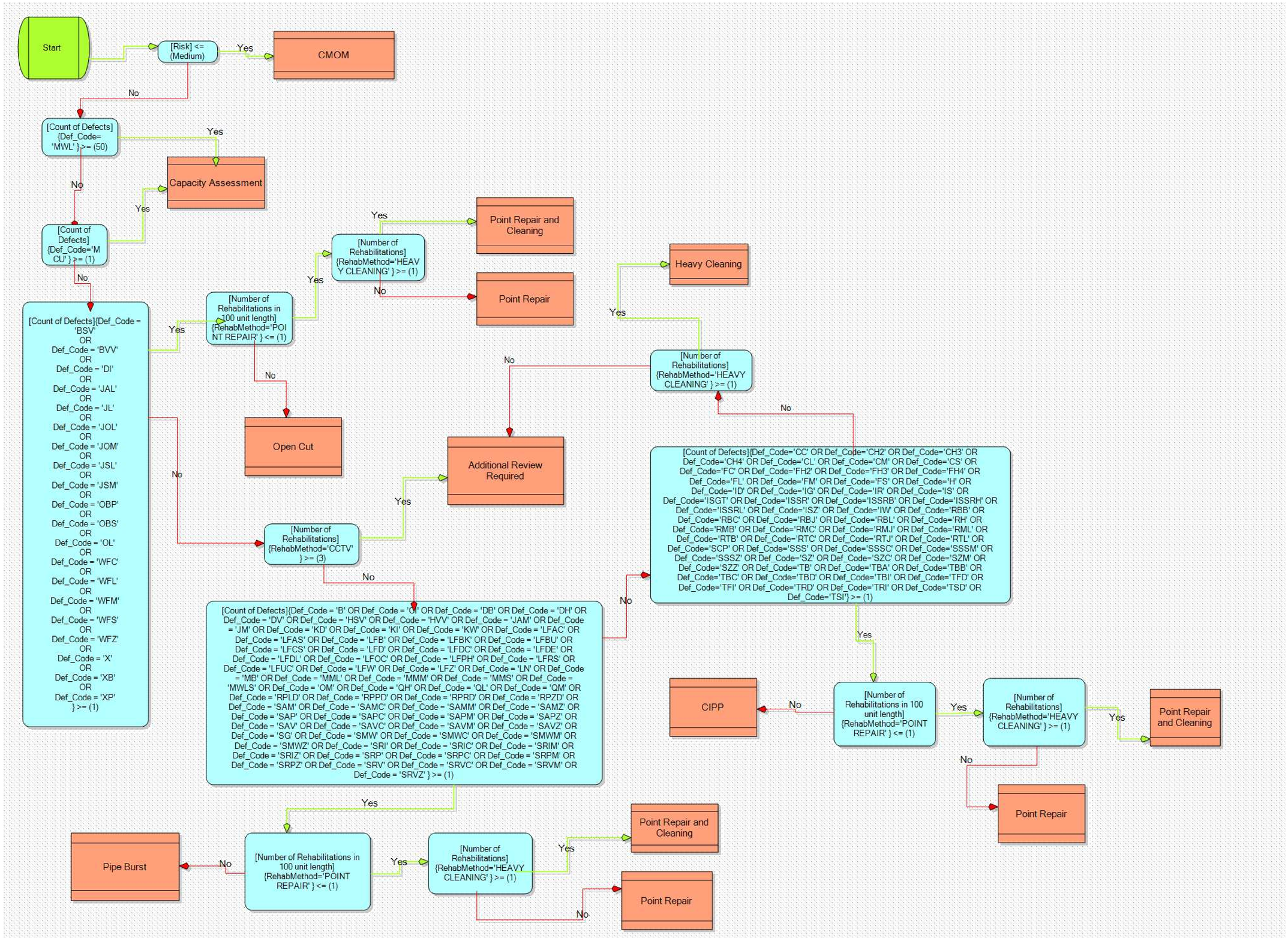

Figure 2 - Pipe Line Decision Tree

APPENDIX B

RECOMMEDNDED REHABILITATION – SEWER LINES

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	EOL_North	P005-0885	Open Cut
12	EOL_South	P005-0885	CMOM
12	P005-0850	P005-0840	Pipe Burst
12	P005-0870	P005-0850	CMOM
12	P005-0880	P005-0870	CMOM
12	P005-0885	P005-0880	Pipe Burst
12	P005-0890	P005-0880	Point Repair
12	P005-0900	P005-0890	CMOM
12	P005-0910	P005-0900	CMOM
12	P005-0920	P005-0910	CMOM
12	P005-0940	P005-0930	CMOM
12	P005-0945	P005-0940	Point Repair
12	P005-0950	P005-0900	CMOM
12	P005-0960	P005-0950	Point Repair
12	P005-0970	P005-0960	CMOM
12	P005-0990	P005-0980	CMOM
12	P005-1010	P005-0970	CMOM
12	P005-1020	P005-1010	CMOM
12	P005-1030	P005-1020	Open Cut
12	P005-1040	P005-0950	CMOM
12	P005-1050	P005-1040	CMOM
12	P005-1055	P005-1050	CMOM
12	P005-1080	P005-1090	CMOM
12	P005-1080	P005-1040	CMOM
12	P005-1090	P005-1100	CMOM
12	P005-1110	P005-1100	Pipe Burst
12	P005-1120	P005-1110	CMOM
12	P005-1130	P005-1120	CMOM
12	P005-1140	P005-1107	CIPP
12	P005-1150	P005-1145	Open Cut
12	P005-1160	P005-1150	CMOM
12	P005-1160	P005-0930	CMOM
12	P005-1170	P005-1140	Pipe Burst
12	P005-1180	P005-1170	Open Cut
12	P005-1200	P005-1180	Pipe Burst
12	P005-1230	P005-1170	CMOM
12	P005-1240	P005-1230	Pipe Burst
12	P005-1250	P005-1230	CMOM
12	P005-1260	P005-1230	CMOM
12	P005-1265	P005-1260	CMOM
12	P005-1270	P005-1260	Pipe Burst
12	P005-1290	P005-1260	CMOM
12	P005-1310	P005-1300	CMOM
12	P005-1330	P005-1310	CMOM

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P005-1340	P005-0890	CMOM
12	P005-1360	P005-1350	CMOM
12	P005-1370	P005-1360	CMOM
12	P005-1380	P005-1370	Pipe Burst
12	P005-1390	P005-1340	CMOM
12	P005-1400	P005-1390	CMOM
12	P005-1410	P005-1400	Pipe Burst
12	P005-1420	P005-1410	Pipe Burst
12	P005-1430	P005-1420	Open Cut
12	P005-1440	P005-1390	Pipe Burst
12	P005-1450	P005-1440	CMOM
12	P005-1460	P005-1450	CIPP
12	P005-1470	P005-1460	CMOM
12	P005-1480	P005-1470	Open Cut
12	P005-1490	P005-1440	CMOM
12	P005-1495	P005-1490	CMOM
12	P005-1495	P005-1530	CMOM
12	P005-1500	P005-1490	CMOM
12	P005-1510	P005-1490	CMOM
12	P005-1535	P005-1530	CMOM
12	P005-1540	P005-1440	CMOM
12	P005-1550	P005-1540	Open Cut
12	P005-1560	P005-1550	Open Cut
12	P005-1570	P005-1560	Pipe Burst
12	P005-1580	P005-1570	CMOM
12	P005-1590	P005-1540	Pipe Burst
12	P005-1600	P005-1590	CMOM
12	P005-1620	P005-1610	Pipe Burst
12	P005-1630	P005-1620	Point Repair
12	P005-1640	P005-1630	CMOM
12	P005-1650	P005-1640	CMOM
12	P005-1660	P005-1650	CMOM
12	P005-1670	P005-1660	Pipe Burst
12	P005-1680	P005-1630	Pipe Burst
12	P005-1690	P005-1680	Pipe Burst
12	P005-1700	P005-1690	Open Cut
12	P005-1710	P005-1700	Open Cut
12	P005-1720	P005-1710	Open Cut
12	P005-1730	P005-1720	CMOM
12	P005-1750	P005-1630	CMOM
12	P005-1760	P005-1750	CMOM
12	P005-1770	P005-1760	CMOM
12	P005-1780	P005-1760	Pipe Burst
12	P005-1790	P005-1780	CMOM

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P005-1800	P005-1790	CMOM
12	P005-1810	P005-1790	Pipe Burst
12	P005-1820	P005-1810	CMOM
12	P005-1830	P005-1810	Point Repair and Cleaning
12	P005-1840	P005-1750	CMOM
12	P005-1850	P005-1840	Pipe Burst
12	P005-1860	P005-1850	CMOM
12	P005-1870	P005-1860	Open Cut
12	P005-1880	P005-1870	CMOM
12	P005-1890	P005-1880	Open Cut
12	P005-1900	P005-1870	CMOM
12	P005-1910	P005-1900	Open Cut
12	P005-1920	P005-1860	CMOM
12	P005-1930	P005-1920	CMOM
12	P005-1940	P005-1930	CMOM
12	P005-1950	P005-1940	Open Cut
12	P005-1960	P005-1930	CMOM
12	P005-1970	P005-1960	CMOM
12	P005-1980	P005-1970	CMOM
12	P005-1990	P005-1980	Open Cut
12	P005-2000	P005-1990	Open Cut
12	P005-2010	P005-2000	Open Cut
12	P005-2020	P005-1920	CMOM
12	P005-2040	P005-2030	CMOM
12	P005-2050	P005-2040	Open Cut
12	P005-2060	P005-2020	CMOM
12	P005-2070	P005-2060	CMOM
12	P005-2080	P005-2070	CMOM
12	P005-2090	P005-2080	Pipe Burst
12	P005-2100	P005-2060	CMOM
12	P005-2110	P005-1840	CMOM
12	P005-2120	P005-2110	CMOM
12	P005-2130	P005-2110	CMOM
12	P005-2140	P005-2130	Open Cut
12	P005-2150	P005-2140	Open Cut
12	P005-2160	P005-2150	Pipe Burst
12	P005-2170	P005-2130	Open Cut
12	P005-2170B	P005-2170	CMOM
12	P005-2180	P005-2170B	Pipe Burst
12	P005-2190	P005-2180	CMOM
12	P005-2200	P005-2190	CMOM
12	P005-2210	P005-2200	Pipe Burst
12	P005-2220	P005-2210	CMOM
12	P005-2230	P005-2170	Pipe Burst

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P005-2250	P005-2230	Pipe Burst
12	P005-2260	P005-2250	Open Cut
12	P005-2270	P005-2260	CMOM
12	P005-2280	P005-2270	Pipe Burst
12	P005-2290	P005-2280	CMOM
12	P005-2300	P005-2250	CMOM
12	P005-2320	P005-2310	Pipe Burst
12	P005-2330	P005-2320	Point Repair
12	P005-2345	P005-2340	Pipe Burst
12	P005-2350	P005-2340	Heavy Cleaning
12	P005-2360	P005-2350	CMOM
12	P005-2370	P005-2360	CMOM
12	P005-2380	P005-2370	CMOM
12	P005-2390	P005-2380	CMOM
12	P005-2400	P005-2390	CMOM
12	P005-2420	P005-2410	Open Cut
12	P005-2430	P005-2420	Pipe Burst
12	P005-2450	P005-2370	CMOM
12	P005-2460	P005-2450	Open Cut
12	P005-2470	P005-2460	CMOM
12	P005-2470A	P005-2470	CMOM
12	P005-2480	P005-2470A	Open Cut
12	P005-2490	P005-2470	CMOM
12	P005-2500	P005-2490	CMOM
12	P005-2505	P005-2510	CMOM
12	P005-2510	P005-2500	CMOM
12	P005-2520	P005-2510	Open Cut
12	P005-2530	P005-2520	Open Cut
12	P005-2540	P005-2505	Open Cut
12	P005-2550	P005-2540	CMOM
12	P005-3200	P005-1010	CMOM
12	P005-3330	P005-1020	CMOM
12	P006-0010	P005-2100	Open Cut
12	P006-0020	P006-0010	CMOM
12	P006-0030	P006-0020	CMOM
12	P006-0040	P006-0030	Open Cut
12	P006-0050	P006-0040	CMOM
12	P006-0060	P006-0050	Pipe Burst
12	P006-0070	P006-0040	Pipe Burst
12	P006-0080	P006-0070	CMOM
12	P006-0090	P006-0070	Open Cut
12	P006-0100	P006-0070	CMOM
12	P006-0110	P006-0100	Pipe Burst
12	P006-0120	P006-0030	CMOM

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P006-0130	P006-0120	Pipe Burst
12	P006-0140	P006-0130	CMOM
12	P006-0150	P006-0140	Pipe Burst
12	P006-0170	P006-0160	Pipe Burst
12	P006-0180	P006-0130	CMOM
12	P006-0190	P006-0180	CMOM
12	P006-0200	P006-0190	CMOM
12	P006-0220	P006-0210	Pipe Burst
12	P006-0230	P006-0190	CMOM
12	P006-0250	P006-0230	CMOM
12	P006-0260	P006-0250	Pipe Burst
12	P006-0280	P006-0270	CMOM
12	P006-0290	P006-0280	Open Cut
12	P006-0310	P006-0300	Open Cut
12	P006-0320	P006-0310	Pipe Burst
12	P006-0330	P006-0300	CMOM
12	P006-0340	P006-0330	CMOM
12	P006-0360	P006-0350	Open Cut
12	P006-0370	P006-0360	Pipe Burst
12	P006-0380	P006-0360	Open Cut
12	P006-0390	P006-0380	Open Cut
12	P006-0400	P006-0390	Open Cut
12	P006-0410	P006-0400	CMOM
12	P006-0420	P006-0330	CMOM
12	P006-0450	P006-0420	CMOM
12	P006-0460	P006-0450	CMOM
12	P006-0470	P006-0460	Open Cut
12	P006-0480	P006-0470	Pipe Burst
12	P006-0490	P006-0450	CMOM
12	P006-0500	P006-0490	Open Cut
12	P006-0510	P006-0500	CIPP
12	P006-0520	P006-0510	Open Cut
12	P006-0530	P006-0520	Pipe Burst
12	P006-0540	P006-0490	CMOM
12	P006-0550	P006-0540	CMOM
12	P006-0560	P006-0550	Open Cut
12	P006-0570	P006-0560	CMOM
12	P006-0580	P006-0540	CMOM
12	P006-0590	P006-0580	Open Cut
12	P006-0600	P006-0590	Open Cut
12	P006-0610	P006-0600	Open Cut
12	P006-0615	P006-0610	Open Cut
12	P006-0620	P006-0580	CMOM
12	P006-0630	P006-0620	CMOM

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P006-0640	P006-0630	Open Cut
12	P006-0680	P006-0670	Pipe Burst
12	P006-0690	P006-0680	Pipe Burst
12	P006-0710	P006-0700	CMOM
12	P006-0720	P006-0670	Open Cut
12	P006-0740	P006-0730	Open Cut
12	P006-0750	P006-0720	CMOM
12	P006-0760	P006-0750	CMOM
12	P006-0770	P006-0760	CMOM
12	P006-0780	P006-0770	Pipe Burst
12	P006-0790	P006-0750	CMOM
12	P006-0800	P006-0790	CMOM
12	P006-0820	P006-0790	Open Cut
12	P006-0830	P006-0820	Pipe Burst
12	P006-0840	P006-0830	Pipe Burst
12	P006-0850	P006-0820	Pipe Burst
12	P006-0860	P006-0850	Pipe Burst
12	P006-0870	P006-0860	Point Repair
12	P006-0880	P006-0850	CMOM
12	P006-0900	P006-0890	Pipe Burst
12	P006-0910	P006-0900	CMOM
12	P006-0920	P006-0910	CMOM
12	P006-0930	P006-0910	CMOM
12	P006-0940	P006-0880	CMOM
12	P006-0950	P006-0940	CMOM
12	P006-0960	P006-0950	Pipe Burst
12	P006-0990	P006-0980	Pipe Burst
12	P006-1000	P006-0990	CIPP
12	P006-1010	P006-0980	CMOM
12	P006-1020	P006-1010	CMOM
12	P006-1030	P006-1020	Pipe Burst
12	P006-1040	P006-1030	CMOM
12	P006-1050	P006-1030	Open Cut
12	P006-1060	P006-1010	CMOM
12	P006-1070	P006-1060	Pipe Burst
12	P006-1080	P006-1070	Open Cut
12	P006-1090	P006-1070	CMOM
12	P006-1100	P006-1090	CMOM
12	P006-1120	P006-1110	CMOM
12	P006-1130	P006-1120	Pipe Burst
12	P006-1140	P006-1130	Open Cut
12	P006-1150	P006-1140	Open Cut
12	P006-1160	P006-1130	CMOM
12	P006-1180	P006-1160	Pipe Burst

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P006-1190	P006-1160	Open Cut
12	P006-1210	P006-1200	CIPP
12	P006-1220	P006-1210	Pipe Burst
12	P006-1230	P006-1110	Open Cut
12	P006-1240	P006-1110	Open Cut
12	P006-1260	P006-1240	CMOM
12	P006-1280	P006-1260	Open Cut
12	P006-1290	P006-1260	Open Cut
12	P006-1320	P006-1310	Pipe Burst
12	P006-1330	P006-1310	Pipe Burst
12	P006-1350	P006-1330	Pipe Burst
12	P006-1355	P006-1350	CMOM
12	P006-1357	P006-1350	CMOM
12	P006-1360	P006-1357	CIPP
12	P006-1380	P006-1370	CIPP
12	P006-1390	P006-1388	CIPP
12	P006-1400	P006-1390	Pipe Burst
12	P006-1410	P006-1405	CMOM
12	P006-1420	P006-1410	Pipe Burst
12	P006-1430	P006-1410	CIPP
12	P006-1452	P006-1450	CIPP
12	P006-1454	P006-1452	CIPP
12	P006-1454A	P006-1454	Pipe Burst
12	P006-1470	P006-1430	CMOM
12	P006-1480	P006-1470	Point Repair and Cleaning
12	P006-1490	P006-1480	Pipe Burst
12	P006-1500	P006-1490	CMOM
12	P006-1510	P006-1500	CMOM
12	P006-1520	P006-1510	CIPP
12	P006-1550	P006-0120	CMOM
12	P006-1560	P006-1550	Pipe Burst
12	P006-1570	P006-1560	Pipe Burst
12	P006-1580	P006-1550	CMOM
12	P006-1590	P006-1580	CMOM
12	P006-1600	P006-1590	Pipe Burst
12	P006-1610	P006-1600	Pipe Burst
12	P006-1625	P006-0250	CMOM
12	P006-1630	P006-1625	CMOM
12	P006-1640	P006-1630	CMOM
12	P006-1650	P006-1640	CIPP
12	P006-1660	P006-1580	CMOM
12	P006-1670	P006-1660	Pipe Burst
12	P006-1680	P006-1670	CMOM
12	P006-1690	P006-1680	CMOM

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P006-1700	P006-1680	Open Cut
12	P006-1710	P006-1700	Pipe Burst
12	P006-1720	P006-1660	CMOM
12	P006-1730	P006-1720	CMOM
12	P006-1740	P006-1730	CIPP
12	P006-1760	P006-1740	Pipe Burst
12	P006-1770	P006-1760	Open Cut
12	P006-1780	P006-1770	Pipe Burst
12	P006-1800	P006-1790	CMOM
12	P006-1810	P006-1800	CMOM
12	P006-1820	P006-1810	CMOM
12	P006-1830	P006-1810	Open Cut
12	P006-1840	P006-1830	Heavy Cleaning
12	P006-1850	P006-1810	CMOM
12	P006-1860	P006-1850	CMOM
12	P006-1880	P006-1870	CIPP
12	P006-1890	P006-1880	Open Cut
12	P006-1910	P006-1880	Pipe Burst
12	P006-1920	P006-1910	Open Cut
12	P006-1940	P006-1910	Pipe Burst
12	P006-1950	P006-1940	Open Cut
12	P006-1960	P006-1910	Pipe Burst
12	P006-1970	P006-1960	Open Cut
12	P006-1990	P006-1960	Open Cut
12	P006-1998	P006-1996	Open Cut
12	P006-2010	P006-1990	Pipe Burst
12	P006-2080	P006-2050	CMOM
12	P006-2090	P006-2080	CMOM
12	P006-2100	P006-2090	CMOM
12	P006-2110	P006-2100	CMOM
12	P006-2120	P006-2110	CMOM
12	P006-2130	P006-2120	CMOM
12	P006-2140	P006-2130	CMOM
12	P006-2150	P006-2130	Open Cut
12	P006-2160	P006-2150	Open Cut
12	P006-2170	P006-2160	Pipe Burst
12	P006-2180	P006-2130	CMOM
12	P006-2190	P006-2180	CMOM
12	P006-2210	P006-2200	Open Cut
12	P006-2220	P006-2200	Open Cut
12	P006-2230	P006-2220	Open Cut
12	P006-2250	P006-2200	CMOM
12	P006-2260	P006-2250	Open Cut
12	P006-2270	P006-2250	Open Cut

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P006-2280	P006-2250	CMOM
12	P006-2283	P006-2280	CMOM
12	P006-2286	P006-2280	Open Cut
12	P006-2290	P006-2280	CMOM
12	P006-2310	P006-2300	CMOM
12	P006-2320	P006-2310	CMOM
12	P006-2330	P006-2320	CMOM
12	P006-2340	P006-2330	Pipe Burst
12	P006-2340A	P006-2340	CMOM
12	P006-2350	P006-2330	CMOM
12	P006-2360	P006-2350	CMOM
12	P006-2370	P006-2350	CMOM
12	P006-2380	P006-2370	CMOM
12	P006-2420	P006-2400	Heavy Cleaning
12	P006-2430	P006-2420	Open Cut
12	P006-2440	P006-2430	CMOM
12	P006-2450	P006-2420	CIPP
12	P006-2470	P006-2460	Pipe Burst
12	P006-2490	P006-2450	Pipe Burst
12	P006-2500	P006-2450	Point Repair and Cleaning
12	P006-2535	P006-2500	CIPP
12	P006-2540	P006-2500	CMOM
12	P006-2550	P006-2540	CMOM
12	P006-2560	P006-2550	CMOM
12	P006-2565	P006-2560	CMOM
12	P006-2590	P006-2570	CMOM
12	P006-2600	P006-2550	CMOM
12	P006-2620	P006-2600	Pipe Burst
12	P006-2630	P006-2620	Pipe Burst
12	P006-2640	P006-2630	CMOM
12	P006-2650	P006-2640	Pipe Burst
12	P006-2660	P006-2650	Pipe Burst
12	P006-2670	P006-2640	Pipe Burst
12	P006-2680	P006-2670	CMOM
12	P006-2700	P006-2630	CIPP
12	P006-2710	P006-2700	Pipe Burst
12	P006-2720	P006-2710	CMOM
12	P006-2730	P006-2720	Pipe Burst
12	P006-2740	P006-2710	Pipe Burst
12	P006-2750	P006-2740	Open Cut
12	P006-2760	P006-2750	Pipe Burst
12	P006-2780	P006-2740	Pipe Burst
12	P006-2790	P006-2780	Pipe Burst
12	P006-2800	P006-2790	CIPP

Sewer Line Rehabilitation Recommendations

Basin	Upstream Manhole	Downstream Manhole	Rehabilitation Action
12	P006-2820	P006-2800	CMOM
12	P006-2830	P006-2820	CMOM
12	P006-2840	P006-2830	CMOM
12	P006-2870	P006-2880	CIPP
12	P006-2890	P006-2900	CMOM
12	P006-2900	P006-2910	CMOM
12	P006-3020	P006-3010	CMOM
12	P006-3030	P006-3010	CMOM
12	P006-3060	P006-1230	Open Cut
12	P006-3070	P006-3060	Pipe Burst

Attachment 3

CMOM Root Control Program Plan

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December 22, 2015

Via Federal Express

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Re: United States of America and State of Arkansas v. City of Fort Smith, Arkansas,
United States District Court, Western District of Arkansas – Case No. 2:14-cv-2266-PKH

Greetings:

Regarding the Root Control Program component of CMOM (paragraph 39 of the Consent Decree), the City of Fort Smith hereby submits its Root Control Program Plan for EPA review and approval. As a deliverable under paragraph 89 of the Consent Decree, the Plan is also

is also submitted to ADEQ. The submission is made in hard copy as well as in electronic and searchable text format.

Thank you for your attention to this matter.

Very truly yours,

Jerry L. Canfield
cmm

Enclosures
cc: Chief, Environmental Enforcement Section (Via Federal Express)
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CAPACITY, MANAGEMENT, OPERATIONS, AND MAINTENANCE (CMOM) PROGRAM AND IMPLEMENTATION PLAN

Root Control Program Plan

December 2015

CITY OF FORT SMITH, ARKANSAS

Capacity, Management, Operation, and Maintenance Program

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 gather and evaluate 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 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 knowing violations.

Steve Parke, Director of Utilities
City of Fort Smith, AR
Utility Department

12/22/2015
Date

Root Control Program Plan

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List of Acronyms

ADEQ	Arkansas Department of Environmental Quality
CCA	Continuing Capacity Assurance
CCTV	Closed Circuit Television
CMOM	Capacity, Management, Operations, & Maintenance
CSSA	Continuing Sewer System Assessment
CTP	Comprehensive Training Plan
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	U.S. Environmental Protection Agency
FOG	Fats, Oil and Grease
GIS	Geographic Information System
I&I	Infiltration and Inflow
IMS	Information Management System
MACP	NASSCO's Manhole Assessment and Certification Program
MGD or mgd	Million Gallons per Day
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
OERP	Overflow Emergency Response Plan
PACP	NASSCO's Pipe Assessment and Certification Program
SOP	Standard Operation Procedure
SSA	Sewer System Assessment
SSO	Sanitary Sewer Overflow
U.S.	United States
WCTS	Wastewater Collection and Transmission System
WWTP	Wastewater Treatment Plant

Definitions

Unless otherwise defined herein, or expressly stated in the City of Fort Smith Sewer Use Ordinance, terms used in in the plans comprising the CMOM Program and Implementation Plan shall have the meanings given to those terms in the CWA and the EPA Consent Decree lodged for City of Fort Smith, Arkansas. The terms and acronyms are defined as follows:

ADEQ shall mean the Arkansas Department of Environmental Quality, and any successor departments or agencies of the State of Arkansas.

Annual Report shall mean the report to be submitted annually pursuant to Section X of the Consent Decree.

Article shall mean a portion of Section V ("Comprehensive Remedial Requirements" Section) of the Consent Decree.

Basin shall mean a section of a Sewershed that is a distinct wastewater collection area, and designated by Fort Smith as such.

Building/Private Property Backup shall mean a wastewater backup into a building and/or a wastewater overflow onto private property that is caused by blockages, flow conditions or other malfunctions in the WCTS. "Building/Private Property Backup'' does not include a wastewater backup into a building and/or a wastewater overflow onto private property that is caused solely by a blockage or other malfunction of a Private Service Lateral or other piping or conveyance system that Fort Smith does not own or operate.

Calendar Year shall mean the twelve (12) month period starting on January 1 and ending on December 31 of a given year.

Capacity Constraint shall mean those discrete components, or groups of components of the WCTS that are determined by the City, consistent with Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree to have capacity deficiency issues that have caused or significantly contributed to previous capacity-related SSOs; that are likely to cause or significantly contribute to future capacity-related SSOs; and/or that are identified as overflow locations for any storm event presented in Section V, Article Four, Paragraph 30.

City or **Fort Smith** shall mean the City of Fort Smith, Arkansas.

Clean Water Act or **CWA** shall mean the Federal Clean Water Act found at 33 U.S.C. §§ 1251- 1387.

CMOM or **Capacity, Management, Operations, and Maintenance** shall mean a program of accepted industry practices to properly manage, operate and maintain sanitary sewer collection, transmission and treatment systems, investigate capacity constrained areas of these systems, and respond to SSO events, including as identified by the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs (EPA, Jan. 2005).

Consent Decree or **Decree** shall mean the Decree (and all Appendices) lodged by the U.S. EPA against the City of Fort Smith.

Consultant shall mean a professional engineer licensed in the State of Arkansas or other recognized professional within a field of practice, with appropriate qualifications, experience and adequate staff and resources necessary to undertake any program plan, study, analysis, design or report required by the terms of the Consent Decree.

Contractor shall mean a person or entity who in pursuit of its business undertakes to perform a job or piece of work, retaining in himself control of means, method and manner of accomplishing the desired result.

Critical Response Time shall mean the time interval between activation of the high wet well level alarm at a Pump Station and the first SSO from the WCTS tributary to that Pump Station under peak dry-weather flow conditions or under peak wet-weather flow conditions (generated by the analysis rainfalls presented in Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree), whichever weather conditions prevail at the time of the SSO.

Cross-Connection shall mean any constructed connection, whether by pipe or any other means, between any part of the WCTS and any part of a storm water drainage system that is capable of conveying flow between the two systems.

Date of Lodging shall mean the date the United States filed a copy of the Consent Decree signed by all Parties with the District Court, along with the Complaint, prior to submitting the Consent Decree for publication in the Federal Register to provide an opportunity for public review and comment thereon. The Date of Lodging for the City's Consent Decree is January 02, 2015 (1/2/2015).

Day or **Days** shall mean a calendar day or calendar days unless expressly stated to be a business day or business days. In computing any period of time under the Consent Decree, where the last Day would fall on a Saturday, Sunday, or a Federal or State holiday, the period shall run until the close of the next business day.

Deliverable shall mean any written document required to be prepared and/or submitted by or on behalf of Fort Smith pursuant to the Consent Decree.

Direct Discharge shall mean a sewer pipe installed to convey wastewater from a sanitary sewer for release into the environment.

Environmental Protection Agency or **EPA** shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

Equalization Facilities or **EQ Facilities** shall mean those components of the WCTS designated, designed or intended for the temporary storage of wet-weather wastewater flows.

Fats, Oil and Grease or **FOG** shall mean fats, oil and grease, whether petroleum-based, mineral-oil-based, animal-based or vegetable-based.

FOG Control Device shall mean any grease interceptor, grease trap, or other mechanism, device, or process that attaches to or is applied to wastewater plumbing fixtures and/or Private Service Lines to collect, contain, or remove FOG from the wastewater stream of a FOG Generator prior to discharge into the WCTS.

FOG Control Program Plan or **Fats, Oil and Grease Control Program Plan** shall mean Fort Smith's program to control discharge of FOG into the WCTS as developed and approved under **Section V, Article Seven, Paragraph 37** of the Consent Decree.

FOG Generator shall mean any food service establishment or food-processing establishment that discharges FOG into the WCTS, provided, however, that those establishments covered by the City's industrial user program shall not be considered a FOG Generator for the purposes of the Consent Decree.

Force Main shall mean any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump. A Force Main is intended to convey wastewater under pressure.

Gravity Sewer Line shall mean a pipe that receives, contains and conveys wastewater not normally under pressure, but intended to flow unassisted under the influence of gravity.

Small-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are less than twenty-four (24) inches in diameter.

Large-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are twenty-four (24) inches or greater in diameter.

Infiltration as defined by 40 C.F.R. § 35.2005(b)(20) shall mean water other than wastewater that enters a WCTS (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes.

Inflow as defined by 40 C.F.R. § 35.2005(b) (21) shall mean water other than wastewater that enters a WCTS (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage.

Infiltration and Inflow or **I&I** shall mean the total quantity of water from Infiltration and Inflow without distinguishing the source.

Interest shall mean interest accruing on a sum calculated in the manner provided by 28 U.S.C. § 1961.

Manhole Assessment and Certification Program or **MACP** shall mean the **National Association of Sewer Service Companies (NASSCO)** Manhole Assessment and Certification Program.

Massard Permit shall mean NPDES Permit Number AR0021750 issued to City pursuant to Section 402 of the Clean Water Act, 33 U,S. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the Massard POTW and any future extended, modified or reissued permit.

Massard WWTP shall mean the publicly owned treatment works that is owned and operated by the City and that is located in Fort Smith with an address of **1609 North 9th Terrace, Barling, Arkansas**.

Month shall mean one calendar month running from a numbered day to the same numbered day of the following calendar month, regardless of whether the particular month has 28, 29, 30, or 31 days. If a triggering event would occur on a day of the month that does not exist (for example, February 30), then the event shall be due on the first day of the following month (for example March 1).

NASSCO shall mean the National Association of Sewer Service Companies.

P Street Permit shall mean NPDES Permit Number AR0033278 issued to City pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the P Street POTW and any future, extended, modified or reissued permit.

P Street WWTP shall mean the publicly owned treatment works that is owned and operated by City and that is located at **13 North P Street in Fort Smith, Arkansas**.

Pipe Assessment and Certification Program or **PACP** shall mean the NASSCO Pipe Assessment and Certification Program.

Pipe Segment shall mean the portion of a Gravity Sewer Line extending from manhole to manhole.

Private Service Line shall mean a sewer line which is not owned or operated by City, but which conveys wastewater from a building to a main line of the WCTS.

Private Service Line Release shall mean any spill, release, or diversion of sewage from a Private Service Line to any location other than the WCTS caused solely by a blockage or other malfunction in that Service Line, even if the release does not reach Waters of the State or waters of the United States.

Pump Station or **Pumping Station** shall mean facilities owned or operated by Fort Smith that contain pumps that lift wastewater from a lower to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary to the operation of that Pump Station within the WCTS.

Recurring Private Service Line Release shall mean a Private Service Line Release that has occurred within three (3) years of a prior Private Service Line Release at the same location.

Recurring SSO, Recurring Dry-Weather SSO, and **Recurring Wet-Weather SSO.** A “Recurring SSO” shall mean any SSO that has occurred within three (3) years of a prior SSO that occurred at the same location under any weather conditions (wet or dry). A "Recurring Dry-Weather SSO" shall mean an SSO that has occurred during dry weather within three (3) Years of a prior SSO at the same location that also occurred during dry weather. A "Recurring Wet-Weather SSO" shall mean an SSO that has occurred during wet weather within three (3) Years of a prior SSO at the same location that also occurred during wet weather.

Remedial Measures shall mean spot repairs, trenchless sewer rehabilitation, sewer replacement, repair or reconstruction, and any other appropriate WCTS improvement technique for resolving condition deficiencies and/or capacity deficiencies in a particular system asset or group of assets within the WCTS, in accordance with **Appendix D** of the Consent Decree ("Remedial Determination Process"), that have caused or significantly contributed to previous SSOs, and/or, that are likely to cause or significantly contribute to future occurrence of SSOs.

Sanitary Sewer Overflow or **SSO** shall mean any spill, release, or diversion of sewage from the WCTS, including: (1) an overflow that results in a discharge to Waters of the State or waters of the United States, and (2) an overflow of wastewater, including a wastewater backup into a building or wastewater overflow onto private property, such as a Building/Private Property Backup (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building

lateral (i.e. a "Private Service Line")), even if that overflow does not reach Waters of the State or waters of the United States.

Sewershed shall mean a section of City's WCTS that is a distinct drainage or wastewater collection area and designated as such by City for the P Street WWTP and the Massard WWTP.

State of Arkansas or **State** shall mean the State of Arkansas acting on behalf of ADEQ.

Sub-basin shall mean a section of a Basin that is a distinct wastewater collection area and designated by Fort Smith as such.

Tabulation shall mean a document in a format containing text searchable cells or fields that is also sortable by data category.

United States or U.S. shall mean the United States of America, acting on behalf of EPA.

Wastewater Treatment Plant or WWTP shall mean the Massard or P Street wastewater treatment plants and components thereof.

Wastewater Collection and Transmission System or WCTS shall mean the sanitary sewer collection, retention and transmission systems for both the Massard WWTP Sewershed and the P Street WWTP Sewershed, including all pipes, Force Mains, Gravity Sewer Lines, Pump Stations, EQ Basins, manholes and appurtenances thereto, that are owned or operated by City at any time from the Date of Lodging of the Consent Decree until its termination under Section XXIV.

Waters of the State shall mean all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies of accumulations of water, surface and underground, natural and artificial, public or private, which are contained within, flow through, or border upon the State of Arkansas, or any portion of the State of Arkansas, as defined in Ark. Code Ann. §84-102(10).

Year shall mean a twelve month period regardless of the beginning date. In the event a triggered event shall be due on a year ending date that does not exist (for example, February 29 in some years), then the event shall be due on the first day of the following month (for example, March 1).

Capacity, Management, Operation, and Maintenance (CMOM) Program Summary and Intent

On January 2, 2015, the City of Fort Smith, Arkansas (City) entered into a Consent Decree with the United States Environmental Protection Agency (EPA) and the State of Arkansas to address deficiencies within the City's wastewater collection and transmission system (WCTS). Per Section V, Article Seven of the Consent Decree, the City will prepare an effective WCTS Capacity, Management, Operation, and Maintenance Program ("CMOM Program") consistent with EPA's 2005 Guidance entitled "Guide for Evaluating Capacity, Management Operation and Maintenance Programs at Sanitary Sewer Collection Systems." All components of the CMOM Program, as set forth in Paragraphs 37-56, shall be submitted in report form to EPA for review and approval at a date no later than two (2) years from the Date of Lodging, with shorter submission dates for certain components. The Date of Lodging for the Consent Decree has been established as January 2, 2015.

The aggregate CMOM Program is comprised of 13 separate components that were developed to address deficiencies within specific elements of the City of Fort Smith's WCTS. Upon approval by EPA, each of the respective CMOM components is intended to be used by the City of Fort Smith as guidelines for the implementation of a defined set of procedures to satisfy the long-term requirements of EPA and promote compliance with the Clean Water Act (CWA).

Section 1
Consent Decree Requirements of the Root Control Program Plan

The Root Control Program Plan described herein has been prepared to satisfy the requirements set forth in Article Seven, Paragraphs 39 and 40 of the Consent Decree and must be submitted to EPA for review no later than twelve (12) months from the Date of Lodging of the Consent Decree (i.e., by December 31, 2015). Following EPA's approval, the City will initiate the implementation of the Root Control Program. **Table 1-1** includes a list of the Consent Decree requirements for the Root Control Program and the corresponding section of this document that addresses each requirement.

Table 1-1 Summary of Consent Decree Requirements for the Root Control Program

Consent Decree Paragraph	Consent Decree Requirement	Root Control Program Plan Section
39.a.	Methods for identifying when roots are the primary or contributing cause of an Sanitary Sewer Overflow (SSO)	3.1
39.b.	Plan for the reactive removal of root intrusions when City determines that roots were the cause or a contributing cause to an SSO	3.2
39.c.	Plan for proactively preventing root intrusions from causing or contributing to SSOs, whether by use of chemicals or by physical means, particularly in those Pipe Segments where root intrusions have occurred in the past	3.2, 3.3
39.d.	Plan for repairing or replacing Pipe Segments that have been damaged by roots	3.4
39.e.	Plan for notifying private property owners whenever City obtains information that roots in Private Service Lines have apparently caused or contributed to the occurrence of a Private Service Line Release and a procedure for addressing defects in Private Service Lines in accordance with the Private Service Line Defect Remediation Program in Paragraph 54	3.5
40.	City shall report the Root Control Program activities performed in each Calendar Year in the Annual Report for that Calendar Year as described under Section X ("Reporting") of this Consent Decree	4.2

Section 2
Purpose and Goals of the Root Control Program

The Root Control Program is a component of the City's comprehensive CMOM Program and is intended to reduce, mitigate, and prevent future SSOs caused by root intrusion blockages within the system's gravity sewer pipelines. Due to the moist and nutrient-rich environment inherent within gravity sewer lines, roots from adjacent trees can migrate towards, and ultimately into, sewer pipes when defects in the pipe are present. As the root growth into the pipe continues, it can result in adverse effects to the line segment such as reduction in hydraulic capacity, and increased potential for sewer blockages. In severe cases, the root intrusions can undermine the structural integrity of the pipe, thus, increasing the potential for a pipe collapse. By addressing the growth before obstruction of the flow (or structural damage to piping) occurs, more serious consequences may be averted.

The Root Control Program is comprised of the following elements:

- Identifying Root Intrusions Contributing to SSOs;
- Mechanical Abatement for Root Intrusions;
- Chemical Abatement for Preventing Root Intrusions;
- Repairing/Replacing Damaged Pipe Segments Allowing Root Entry; and
- Addressing Root Intrusions on Private Service Lines.

The goal of the Root Control Program is to eliminate the recurrence of preventable and chronic SSOs caused by root intrusion. Doing so helps protect public health, reduces adverse impacts to the environment, improves the efficiency of the collection system, and better ensures compliance with regulatory requirements.

Once implemented, the Root Control Program is intended to be a predominantly preventative maintenance component of the City's CMOM Program. The immediate response to root blockages contributing to SSOs is by mechanical root cutting, which is conducted through the Gravity Sewer Line Cleaning Program.

Section 3
Elements of the Comprehensive Root Control Program

3.1 Identifying Root Intrusions Contributing to SSOs

Implementation of the Root Control Program begins with the identification of locations prone to root intrusion, particularly those locations where root intrusions have caused or contributed to SSOs. Per the Sanitary Sewer Overflow Emergency Response Plan (OERP), following a blockage-related SSO, the City shall perform an investigation to determine the cause of the SSO event. The causes will be tracked by the Information Management System (IMS) as either contributory cause or primary cause.

In order to identify locations prone to roots, data, including SSOs caused by roots, closed circuit television (CCTV) inspection identifying the presence of roots, and historical root problem areas, will be collected and mapped for analysis. The mapping will be used to identify locations needing potential root control, prioritizing those areas, and determining the appropriate response. Where the results of this analysis identify the need for root control, one of the methods described within this Plan will be used, or the problem will be referred to the City's Condition Remedial Measures Program.

The City has sewer mapping software that is capable of simple mapping; however, a more functional sewer mapping system is planned as part of future enhancements once the IMS plan has been approved and implemented. The sewer condition assessment data will be incorporated into the City's mapping system as part of the IMS. A sewer condition database will be created for use in identifying areas with chronic or densely grouped root intrusion within the gravity sewer system. The database will utilize tools to aid in the interpretation of the data collected in the field over time. Following the implementation of root control measures in previously-identified problematic areas; or, as new areas of excessive root intrusion are identified within the system, the information will be updated accordingly in the sewer condition database. By maintaining accurate records, the City can more effectively identify scheduling needs for routine cleaning and maintenance or other root mitigation measures.

3.2 Mechanical Abatement for Root Intrusion

As part of the CMOM Program, the City's Utility Department will maintain "in-house" capabilities to provide reactive response operations, in the form of mechanical root abatement, in the event that an SSO due to root intrusion were to occur or a root blockage was encountered during routine maintenance. The mechanical root control equipment currently owned and operated by the Utility Department includes two hydraulic jetters and one hydraulic cutter. The Utility Department may also enlist a contractor to assist with mechanical root abatement.

When reactive maintenance is required to alleviate an acute/critical root blockage, particularly in instances where a root blockage is contributing to an SSO event, hydraulic cleaning and

mechanical root removal will be used. Upon completion of mechanical root abatement, the condition of the cleared segment of sewer will be updated accordingly in the IMS.

Maintaining current and historical records will aid in identifying problematic areas of root intrusion. Once these problematic areas are identified, they can be scheduled for proactive post-mitigation inspection, and if necessary, undergo additional mechanical and/or chemical root abatement.

3.3 Chemical Abatement for Preventing Root Intrusions

Chemical root control treatment will be used as a proactive approach to mitigating sewers that are prone to significant and/or multiple root intrusions where other condition remedial measures are not warranted, where other capacity remedial measures are not planned (in the near term), and where other targeted cleaning and monitoring are not an appropriate means of preventing SSOs.

Prior to the application of the chemical, the downstream wastewater treatment plant will be notified of the chemical treatment activities, along with information on the specific type and quantity of chemical being used. A contact time of around two (2) hours is required to effectively kill the roots within the pipeline, but it typically takes between two (2) and six (6) months for the treated roots to decay and drop off. Upon completion of a chemical root control application, the treated pipelines will be monitored to measure the effectiveness of the treatment. When chemicals are applied in specific lines for roots removal, the pipes receiving chemical treatment should not be cleaned within six months after that application. For this reason, the treated lines will be identified within the IMS to notify cleaning crews of recent chemical treatment application.

3.4 Repairing/Replacing Damaged Pipe Segments Allowing Root Entry

In certain locations, the City will be required to repair or replace segments of pipe damaged by root intrusion or where root intrusion was located near and within areas needing other condition-related remedial measures. These repairs will be performed on pipe segments where the structural integrity of the pipe is of concern (e.g., structural ratings of 4 or 5 based on the National Association of Sewer Service Companies rating system). Repair or replacement of pipe segments due to root damage may be executed in coordination with the City's Condition Remedial Measures Program.

3.5 Addressing Root Intrusions on Private Service Lines

If the City observes that roots originating from a Private Service Line have caused or contributed to an SSO or are likely to cause or contribute to an SSO in the WCTS, the City will proceed with root mitigation activities in order to restore capacity of the WCTS and prevent a future SSO. The City will not remove roots from the Private Service Line. If roots are identified by the City to be in a Private Service Line, regardless of whether a Private Service Line Release has occurred, the issue is referred to the Private Service Line Defect Remediation Program.

Section 4
Record Keeping and Reporting

4.1 Record Keeping

As required by the Consent Decree, records associated with the Root Control Program will be saved in the City's document management system and maintained as required under the records retention policy.

Root control records maintained by the City include:

- Unique asset identifier
- Date, time, and location of root control activity;
- Identity of root control crew; and
- Further actions necessary and/or initiated.

Work conducted under Sewer System Assessment (SSA) activities is currently recorded in a separate database but will be integrated with the City database in the future.

The City is currently updating its strategy for managing its field and office information. The City's plan for modifying its Information Management System (IMS), as described in Article Seven, Paragraph 50 of the Consent Decree, will be submitted to EPA for approval within twenty-four (24) months of the Date of Lodging (i.e., by December 31, 2016).

4.2 Reporting

Root control performance is measured by the number of sewers undergoing reactive and proactive root control activities and the occurrence of SSOs resulting from roots. Performance measures for routine cleaning activities include the following:

- Number of pipe segments receiving reactive root control;
- Number of pipe segments receiving proactive root control; and
- Annual SSO occurrence due to roots.

Per Article Seven, Paragraph 40 of the Consent Decree the City must report the Root Control Program activities performed in each Calendar Year in the Annual Report for that Calendar Year as described in Section X of the Consent Decree.

Section 5
Training and Standard Operating Procedures

5.1 Training

Per Article Seven, Paragraph 55 of the Consent Decree, the CMOM Program must include a Comprehensive Training Program (CTP) for technical and skills training for appropriate categories of the City's employees. The City's CTP plan will be submitted to EPA for approval within eighteen (18) months of the Date of Lodging (i.e., by July 1, 2016). The CTP will be directly related to the operation and maintenance of the WCTS for the purpose of responding to and preventing SSOs.

5.2 Standard Operating Procedures (SOPs)

The plan and schedule for developing Standard Operating Procedures (SOPs) for general operation and maintenance of all components of the WCTS will be detailed in a report submitted to EPA within eighteen (18) months of the Date of Lodging (i.e., by July 1, 2016) per the Consent Decree.

Attachment 4

CMOM Gravity Sewer Line Cleaning Program Plan

CDM Smith

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December 22, 2015

Via Federal Express

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Director
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North Little Rock, Arkansas 72118-5317

Re: United States of America and State of Arkansas v. City of Fort Smith, Arkansas,
United States District Court, Western District of Arkansas – Case No. 2:14-cv-2266-PKH

Greetings:

Regarding the Gravity Sewer Line Cleaning Plan component of CMOM (paragraph 41 of the Consent Decree), the City of Fort Smith hereby submits its Gravity Sewer Line Cleaning Plan for EPA review and approval. As a deliverable under paragraph 89 of the Consent Decree, the Plan

is also submitted to ADEQ. The submission is made in hard copy as well as in electronic and searchable text format.

Thank you for your attention to this matter.

Very truly yours,

Jerry L. Canfield
cmh

Enclosures

cc: Chief, Environmental Enforcement Section (Via Federal Express)
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Attachment 5

CMOM Sanitary Sewer Overflow Documentation and Reporting Program Plan

CDM Smith

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December 22, 2015

Via Federal Express

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North Little Rock, Arkansas 72118-5317

Re: United States of America and State of Arkansas v. City of Fort Smith, Arkansas,
United States District Court, Western District of Arkansas – Case No. 2:14-cv-2266-PKH

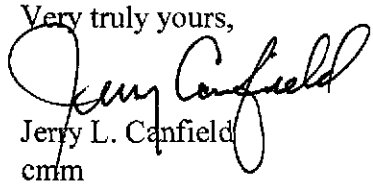
Greetings:

Regarding the Sanitary Sewer Overflow Reporting and Documentation component of CMOM (paragraph 17 of the Consent Decree), the City of Fort Smith hereby submits its Sanitary Sewer Overflow Documentation and Reporting Plan for EPA review and approval. As a deliverable

under paragraph 89 of the Consent Decree, the Plan is also submitted to ADEQ. The submission is made in hard copy as well as in electronic and searchable text format.

Thank you for your attention to this matter.

Very truly yours,



Jerry L. Canfield
cmm

Enclosures
cc: Chief, Environmental Enforcement Section (Via Federal Express)
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-1-1-08677

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CAPACITY, MANAGEMENT, OPERATIONS, AND MAINTENANCE (CMOM) PROGRAM AND IMPLEMENTATION PLAN

Sanitary Sewer Overflow Documentation and Reporting Program Plan

December 2015

CITY OF FORT SMITH, ARKANSAS

Capacity, Management, Operation, and Maintenance Program

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 gather and evaluate 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 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 knowing violations.

Steve Parke, Director of Utilities
City of Fort Smith, AR
Utility Department

12/22/2015
Date

Sanitary Sewer Overflow Documentation and Reporting Program Plan

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List of Acronyms

ADEQ	Arkansas Department of Environmental Quality
CCA	Continuing Capacity Assurance
CCTV	Closed Circuit Television
CMOM	Capacity, Management, Operations, & Maintenance
CSSA	Continuing Sewer System Assessment
CTP	Comprehensive Training Plan
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	U.S. Environmental Protection Agency
FOG	Fats, Oil and Grease
GIS	Geographic Information System
I&I	Infiltration and Inflow
IMS	Information Management System
MACP	NASSCO's Manhole Assessment and Certification Program
MGD or mgd	Million Gallons per Day
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
OERP	Overflow Emergency Response Plan
PACP	NASSCO's Pipe Assessment and Certification Program
SOP	Standard Operation Procedure
SSA	Sewer System Assessment
SSO	Sanitary Sewer Overflow
U.S.	United States
WCTS	Wastewater Collection and Transmission System
WWTP	Wastewater Treatment Plant

Definitions

Unless otherwise defined herein, or expressly stated in the City of Fort Smith Sewer Use Ordinance, terms used in in the plans comprising the CMOM Program and Implementation Plan shall have the meanings given to those terms in the CWA and the EPA Consent Decree lodged for City of Fort Smith, Arkansas. The terms and acronyms are defined as follows:

ADEQ shall mean the Arkansas Department of Environmental Quality, and any successor departments or agencies of the State of Arkansas.

Annual Report shall mean the report to be submitted annually pursuant to Section X of the Consent Decree.

Article shall mean a portion of Section V ("Comprehensive Remedial Requirements" Section) of the Consent Decree.

Basin shall mean a section of a Sewershed that is a distinct wastewater collection area, and designated by Fort Smith as such.

Building/Private Property Backup shall mean a wastewater backup into a building and/or a wastewater overflow onto private property that is caused by blockages, flow conditions or other malfunctions in the WCTS. "Building/Private Property Backup'' does not include a wastewater backup into a building and/or a wastewater overflow onto private property that is caused solely by a blockage or other malfunction of a Private Service Lateral or other piping or conveyance system that Fort Smith does not own or operate.

Calendar Year shall mean the twelve (12) month period starting on January 1 and ending on December 31 of a given year.

Capacity Constraint shall mean those discrete components, or groups of components of the WCTS that are determined by the City, consistent with Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree to have capacity deficiency issues that have caused or significantly contributed to previous capacity-related SSOs; that are likely to cause or significantly contribute to future capacity-related SSOs; and/or that are identified as overflow locations for any storm event presented in Section V, Article Four, Paragraph 30.

City or **Fort Smith** shall mean the City of Fort Smith, Arkansas.

Clean Water Act or **CWA** shall mean the Federal Clean Water Act found at 33 U.S.C. §§ 1251- 1387.

CMOM or **Capacity, Management, Operations, and Maintenance** shall mean a program of accepted industry practices to properly manage, operate and maintain sanitary sewer collection, transmission and treatment systems, investigate capacity constrained areas of these systems, and respond to SSO events, including as identified by the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs (EPA, Jan. 2005).

Consent Decree or **Decree** shall mean the Decree (and all Appendices) lodged by the U.S. EPA against the City of Fort Smith.

Consultant shall mean a professional engineer licensed in the State of Arkansas or other recognized professional within a field of practice, with appropriate qualifications, experience and adequate staff and resources necessary to undertake any program plan, study, analysis, design or report required by the terms of the Consent Decree.

Contractor shall mean a person or entity who in pursuit of its business undertakes to perform a job or piece of work, retaining in himself control of means, method and manner of accomplishing the desired result.

Critical Response Time shall mean the time interval between activation of the high wet well level alarm at a Pump Station and the first SSO from the WCTS tributary to that Pump Station under peak dry-weather flow conditions or under peak wet-weather flow conditions (generated by the analysis rainfalls presented in Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree), whichever weather conditions prevail at the time of the SSO.

Cross-Connection shall mean any constructed connection, whether by pipe or any other means, between any part of the WCTS and any part of a storm water drainage system that is capable of conveying flow between the two systems.

Date of Lodging shall mean the date the United States filed a copy of the Consent Decree signed by all Parties with the District Court, along with the Complaint, prior to submitting the Consent Decree for publication in the Federal Register to provide an opportunity for public review and comment thereon. The Date of Lodging for the City's Consent Decree is January 02, 2015 (1/2/2015).

Day or **Days** shall mean a calendar day or calendar days unless expressly stated to be a business day or business days. In computing any period of time under the Consent Decree, where the last Day would fall on a Saturday, Sunday, or a Federal or State holiday, the period shall run until the close of the next business day.

Deliverable shall mean any written document required to be prepared and/or submitted by or on behalf of Fort Smith pursuant to the Consent Decree.

Direct Discharge shall mean a sewer pipe installed to convey wastewater from a sanitary sewer for release into the environment.

Environmental Protection Agency or **EPA** shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

Equalization Facilities or **EQ Facilities** shall mean those components of the WCTS designated, designed or intended for the temporary storage of wet-weather wastewater flows.

Fats, Oil and Grease or **FOG** shall mean fats, oil and grease, whether petroleum-based, mineral-oil-based, animal-based or vegetable-based.

FOG Control Device shall mean any grease interceptor, grease trap, or other mechanism, device, or process that attaches to or is applied to wastewater plumbing fixtures and/or Private Service Lines to collect, contain, or remove FOG from the wastewater stream of a FOG Generator prior to discharge into the WCTS.

FOG Control Program Plan or **Fats, Oil and Grease Control Program Plan** shall mean Fort Smith's program to control discharge of FOG into the WCTS as developed and approved under **Section V, Article Seven, Paragraph 37** of the Consent Decree.

FOG Generator shall mean any food service establishment or food-processing establishment that discharges FOG into the WCTS, provided, however, that those establishments covered by the City's industrial user program shall not be considered a FOG Generator for the purposes of the Consent Decree.

Force Main shall mean any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump. A Force Main is intended to convey wastewater under pressure.

Gravity Sewer Line shall mean a pipe that receives, contains and conveys wastewater not normally under pressure, but intended to flow unassisted under the influence of gravity.

Small-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are less than twenty-four (24) inches in diameter.

Large-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are twenty-four (24) inches or greater in diameter.

Infiltration as defined by 40 C.F.R. § 35.2005(b)(20) shall mean water other than wastewater that enters a WCTS (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes.

Inflow as defined by 40 C.F.R. § 35.2005(b) (21) shall mean water other than wastewater that enters a WCTS (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage.

Infiltration and Inflow or **I&I** shall mean the total quantity of water from Infiltration and Inflow without distinguishing the source.

Interest shall mean interest accruing on a sum calculated in the manner provided by 28 U.S.C. § 1961.

Manhole Assessment and Certification Program or **MACP** shall mean the **National Association of Sewer Service Companies (NASSCO)** Manhole Assessment and Certification Program.

Massard Permit shall mean NPDES Permit Number AR0021750 issued to City pursuant to Section 402 of the Clean Water Act, 33 U,S. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the Massard POTW and any future extended, modified or reissued permit.

Massard WWTP shall mean the publicly owned treatment works that is owned and operated by the City and that is located in Fort Smith with an address of **1609 North 9th Terrace, Barling, Arkansas**.

Month shall mean one calendar month running from a numbered day to the same numbered day of the following calendar month, regardless of whether the particular month has 28, 29, 30, or 31 days. If a triggering event would occur on a day of the month that does not exist (for example, February 30), then the event shall be due on the first day of the following month (for example March 1).

NASSCO shall mean the National Association of Sewer Service Companies.

P Street Permit shall mean NPDES Permit Number AR0033278 issued to City pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the P Street POTW and any future, extended, modified or reissued permit.

P Street WWTP shall mean the publicly owned treatment works that is owned and operated by City and that is located at **13 North P Street in Fort Smith, Arkansas**.

Pipe Assessment and Certification Program or **PACP** shall mean the NASSCO Pipe Assessment and Certification Program.

Pipe Segment shall mean the portion of a Gravity Sewer Line extending from manhole to manhole.

Private Service Line shall mean a sewer line which is not owned or operated by City, but which conveys wastewater from a building to a main line of the WCTS.

Private Service Line Release shall mean any spill, release, or diversion of sewage from a Private Service Line to any location other than the WCTS caused solely by a blockage or other malfunction in that Service Line, even if the release does not reach Waters of the State or waters of the United States.

Pump Station or **Pumping Station** shall mean facilities owned or operated by Fort Smith that contain pumps that lift wastewater from a lower to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary to the operation of that Pump Station within the WCTS.

Recurring Private Service Line Release shall mean a Private Service Line Release that has occurred within three (3) years of a prior Private Service Line Release at the same location.

Recurring SSO, Recurring Dry-Weather SSO, and **Recurring Wet-Weather SSO.** A “Recurring SSO” shall mean any SSO that has occurred within three (3) years of a prior SSO that occurred at the same location under any weather conditions (wet or dry). A "Recurring Dry-Weather SSO" shall mean an SSO that has occurred during dry weather within three (3) Years of a prior SSO at the same location that also occurred during dry weather. A "Recurring Wet-Weather SSO" shall mean an SSO that has occurred during wet weather within three (3) Years of a prior SSO at the same location that also occurred during wet weather.

Remedial Measures shall mean spot repairs, trenchless sewer rehabilitation, sewer replacement, repair or reconstruction, and any other appropriate WCTS improvement technique for resolving condition deficiencies and/or capacity deficiencies in a particular system asset or group of assets within the WCTS, in accordance with **Appendix D** of the Consent Decree ("Remedial Determination Process"), that have caused or significantly contributed to previous SSOs, and/or, that are likely to cause or significantly contribute to future occurrence of SSOs.

Sanitary Sewer Overflow or **SSO** shall mean any spill, release, or diversion of sewage from the WCTS, including: (1) an overflow that results in a discharge to Waters of the State or waters of the United States, and (2) an overflow of wastewater, including a wastewater backup into a building or wastewater overflow onto private property, such as a Building/Private Property Backup (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building

lateral (i.e. a "Private Service Line")), even if that overflow does not reach Waters of the State or waters of the United States.

Sewershed shall mean a section of City's WCTS that is a distinct drainage or wastewater collection area and designated as such by City for the P Street WWTP and the Massard WWTP.

State of Arkansas or **State** shall mean the State of Arkansas acting on behalf of ADEQ.

Sub-basin shall mean a section of a Basin that is a distinct wastewater collection area and designated by Fort Smith as such.

Tabulation shall mean a document in a format containing text searchable cells or fields that is also sortable by data category.

United States or U.S. shall mean the United States of America, acting on behalf of EPA.

Wastewater Treatment Plant or WWTP shall mean the Massard or P Street wastewater treatment plants and components thereof.

Wastewater Collection and Transmission System or WCTS shall mean the sanitary sewer collection, retention and transmission systems for both the Massard WWTP Sewershed and the P Street WWTP Sewershed, including all pipes, Force Mains, Gravity Sewer Lines, Pump Stations, EQ Basins, manholes and appurtenances thereto, that are owned or operated by City at any time from the Date of Lodging of the Consent Decree until its termination under Section XXIV.

Waters of the State shall mean all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies of accumulations of water, surface and underground, natural and artificial, public or private, which are contained within, flow through, or border upon the State of Arkansas, or any portion of the State of Arkansas, as defined in Ark. Code Ann. §84-102(10).

Year shall mean a twelve month period regardless of the beginning date. In the event a triggered event shall be due on a year ending date that does not exist (for example, February 29 in some years), then the event shall be due on the first day of the following month (for example, March 1).

Capacity, Management, Operation, and Maintenance (CMOM) Program and Summary Intent

On January 2, 2015, the City of Fort Smith, Arkansas (City) entered into a Consent Decree with the United States Environmental Protection Agency (EPA) and the State of Arkansas to address deficiencies within the City's wastewater collection and transmission system (WCTS). Per Section V, Article Seven of the Consent Decree, the City will prepare an effective WCTS Capacity, Management, Operation, and Maintenance Program ("CMOM Program") consistent with EPA's 2005 Guidance entitled "Guide for Evaluating Capacity, Management Operation and Maintenance Programs at Sanitary Sewer Collection Systems." All components of the CMOM Program, as set forth in Paragraphs 37-56, shall be submitted in report form to EPA for review and approval at a date no later than two (2) years from the Date of Lodging, with shorter submission dates for certain components. The Date of Lodging for the Consent Decree has been established as January 2, 2015.

The aggregate CMOM Program is comprised of 13 separate components that were developed to address deficiencies within specific elements of the City of Fort Smith's WCTS. Upon approval by EPA, each of the respective CMOM components is intended to be used by the City of Fort Smith as guidelines for the implementation of a defined set of procedures to satisfy the long-term requirements of EPA and promote compliance with the Clean Water Act (CWA).

Section 1
Consent Decree Requirements for the Sanitary Sewer Overflow (SSO) Documentation and Reporting Program Plan

The SSO Documentation and Reporting Program Plan described herein has been prepared to satisfy the requirements set forth in Article Seven, Paragraph 47 of the Consent Decree and must be submitted to EPA for review within twelve (12) months from the Date of Lodging of the Consent Decree (i.e., by December 31, 2015). Following EPA's approval, the City will initiate the implementation of the SSO Documentation and Reporting Program. **Table 1-1** includes a list of the Consent Decree requirements for the SSO Documentation and Reporting Program and the corresponding section of this document that addresses each requirement.

Table 1-1 Summary of Consent Decree Requirements for the SSO Documentation and Reporting Program

Consent Decree Paragraph	Consent Decree Requirement	SSO Documentation and Reporting Program Plan Section
47.a.	Immediate SSO Reporting: All SSOs shall be reported to both the EPA and ADEQ utilizing ADEQ's Sanitary Sewer Overflow (SSO) Online Report system, available on ADEQ's website, within twenty-four (24) hours of when the City first became aware of the SSO.	3.1
	In instances where the ADEQ online reporting system is not available, the City shall meet the immediate reporting requirement by submission to ADEQ's Enforcement Branch of the Water Division by facsimile using a printed version of ADEQ's online report form, or a form which presents the ADEQ required information in essentially the same format. The completed form should be faxed to (501) 682-0880.	3.1.3
	In instances where the ADEQ online reporting and ADEQ facsimile reporting are not available, the City shall report to ADEQ's Enforcement Branch of the Water Division on or before the next business day by telephone at (501) 682-0640.	
47.b.	Monthly Reporting Requirements: With the City's Monthly Discharge Monitoring Reports ("DMR's"), the City shall continue to provide printed copies to EPA of all Immediate SSO Reports submitted to ADEQ during the reporting period, directed to 6EN-WC-Water Enforcement and to ADEQ, directed to NPDES Enforcement Section, Water Division.	3.2
47.c.	Annual Reporting Requirements: The City shall submit a Tabulation of the SSOs occurring in each Calendar Year as part of the Annual Report for that Calendar Year in accordance with Section X "Reporting" of the Consent Decree.	3.3

Section 2
Purpose and Goals of the SSO Documentation and Reporting Program

The purpose of the City of Fort Smith's SSO Documentation and Reporting Program is to facilitate the prompt and appropriate reporting of any observed SSO to satisfy the reporting requirements of both the Arkansas Department of Environmental Quality (ADEQ) and EPA. The reporting procedures described herein shall apply to all SSOs in the WCTS, regardless of where the SSO occurs, or whether the SSO occurs during dry weather or wet weather.

The SSO Documentation and Reporting Program must be coordinated with the Sanitary Sewer Overflow Emergency Response Program (OERP) which identifies the response measures to protect public health and environment from SSO events. The SSO Documentation and Reporting Program includes SSO reporting procedures for both the EPA and ADEQ; thereby ensuring both regulatory agencies are informed of all SSOs and resulting response measures in a timely manner.

Private Service Line Releases are not considered SSOs and are excluded from the SSO Documentation and Reporting Program.

Section 3
SSO Documentation and Reporting Procedures and Responsibilities

The administration and implementation of the SSO Documentation and Reporting Program requires adequate staff, equipment, software/hardware resources, and pre-planning. This section discusses the procedures and responsibilities for reporting SSOs on an immediate, monthly, and annual basis.

This plan defines internal and external communication required to report an SSO. Agencies, departments, and personnel that must be notified are identified, including associated telephone numbers or other pertinent information. The procedures described in this plan apply only to the WCTS.

3.1 Immediate Reporting

3.1.1 Chain of Responsibility

Accurate and timely reporting by the Fort Smith Utility Department is the foundation of the procedures outlined within this plan. In following the City's Organizational Chart (effective January 1, 2016), the Sewer System Program Manager will ultimately be responsible for inputting data into the ADEQ electronic reporting form. The Sewer System Program Manager's reporting responsibilities will encompass any and all SSOs, whether occurring within the City's gravity sewer system, force mains, pump stations, or at the plants, with the exception of wastewater treatment plant (WWTP) bypasses.

In instances where the Sewer System Program Manager is unavailable, the chain of responsibility for reporting the SSO will pass to the Deputy Director of Systems, and then to the Director of Utilities.

For the purposes of this plan, WWTP bypasses, if any, are excluded from being reported as SSOs on the ADEQ's SSO Online Report form. Instead, any WWTP bypass shall be reported under the NPDES permit Discharge Monitoring Report (DMR) for the WWTP.

3.1.2 ADEQ Online Reporting System

Within 24 hours of when the City first becomes aware of an SSO within the WCTS, such as being alerted by way of a citizen's call, the System Control Group will initiate the response procedures as outlined in the OERP Plan. Upon verification and response, the Sewer System Program Manager will report the event to ADEQ and EPA using the ADEQ's SSO Online Report form. Timeframes appropriate for information gathering are detailed in the OERP Plan.

The ADEQ online form is located at the following address:

http://www2.adeq.state.ar.us/water/branch_enforcement/forms/sso_report.asp

See **Figure 3-1** for a screenshot of ADEQ's SSO Online Report form. For the purposes of the SSO Documentation and Reporting Program, the following information should be entered for an SSO event:

1. SSO, Bypass or Upset:

   The SSO box will be checked, reflecting that a sanitary sewer overflow has occurred.

2. Facility Permit Number and Facility Name:

   The facility name and permit number given will be the WWTP service area in which the sanitary sewer overflow has occurred.

   - P Street WWTP – NPDES Permit No. AR0033278
   - Massard WWTP – NPDES Permit No. AR0021750

3. Date and Time Overflow Began:

   The start date and time of the SSO is the date and time the System Control Operator recorded notification of a possible SSO.

4. Date and Time Overflow Ended:

   The end date and time of the SSO is the date and time when discharge has ceased.

5. Location:

   The location of the SSO will be documented by the asset identification number and street address. If that information is not available, other appropriate location identifiers should be included, such as latitude and longitude or geographic description. For an SSO on Private Property, both the street address and the asset identification number for the nearest manhole should be used.

   The location field will also include where the overflow went, such as yard, ditch, stream, storm sewer, building, etc.

6. Type of Overflow:

   The type(s) of overflow will be identified by checking all that apply from the following options:

   - Manhole
   - Lift Station
   - Main Line
   - Service Line
   - Other

   If the "Other" box is checked, a brief description of the type of SSO will be entered.

7. Cause of Overflow:

The cause(s) of overflow will be identified by checking all that apply from the following options:

- I&I – Rainfall
- Roots
- Grease
- Debris
- Equipment Failure
- Construction
- Vandalism
- Power Failure
- Line Failure / Break
- Other

If the "Other" box is checked, a brief description of the cause of SSO will be entered.

8. Volume:

   The estimated volume of the SSO will be entered in gallons.

9. Impact of SSO Event:

   The impact of overflow will be identified by selecting the first category that applies from the following list:

   - SSO Reached Receiving Water (river, stream)
   - SSO Reached Public Land Only (ground)
   - SSO Affected Private Property (ground)
   - Basement Backup

   The "Occurred at Treatment Plant" option should be reported as a bypass and does not apply to this SSO Documentation and Reporting process.

10. Action Taken:

    The actions taken to address the SSO will be identified by checking all that apply from the following options:

    - Machine Rodded
    - Disinfected and Deodorized
    - Jet-Vac
    - Hydro Cleaned
    - Hand Rodded
    - Spread Line on Affected Area
    - Used Generator to Power Pumps/Equipment
    - Public Notification
    - Other

If the "Other" box is checked, a brief description of the actions taken to address the SSO will be entered.

11. Environmental Damage:

    The environmental damage will be identified by checking all that apply from the following options:

    - OEHC-Observed or Evidence of Human Contact
    - NEAH-No Evidence of Adverse Health/Environmental Impact
    - OEEI-Observed or Evidence of Environmental Impact
    - EFK-Evidence of Fish Kill

12. Reported By:

    The name of the person reporting the SSO, their job title, and a contact phone number will be included on the form.

13. Additional Comments (if Needed):

    This section should only be utilized if additional information is required, i.e. if the SSO is still discharging or if further investigation is necessary and the reason(s) why.

14. Email a Copy of This Report to the Email Address:

    To receive a copy of the SSO report for confirmation and records retention purposes, the following email address will be entered based upon whether the Report is complete or whether it is incomplete at the time of submittal and a follow-up, 5-day Report is required:

    - Complete reports: SSORptConfirm@FortSmithAR.gov
    - Incomplete reports: SSORptConfirm5Day@FortSmithAR.gov

    These email addresses serve as distribution lists within the City, documenting submittal of the report and notifying appropriate personnel of the occurrence and status of an SSO.

If all of the above information is not available when the 24-hour Report is submitted, e.g. the SSO has not ceased, the 24-hour Report will be submitted with as much information as possible. The Sewer System Program Manager will assign the continued monitoring of the SSO to the response personnel until complete information is available. At that time, and no later than five (5) days from the start date/time of the SSO, the Sewer System Program Manager (or Deputy Director of Systems or Director of Utilities, in this priority) will prepare and submit to ADEQ a 5-day Report, via the same procedures as the 24-hour Report. If a complete report cannot be submitted within five days, a 5-day Report will be submitted that provides an update in the additional comments portion of the report detailing this information. Once complete information is available, e.g. the SSO has ceased, an additional report will be submitted to ADEQ via the online reporting form.

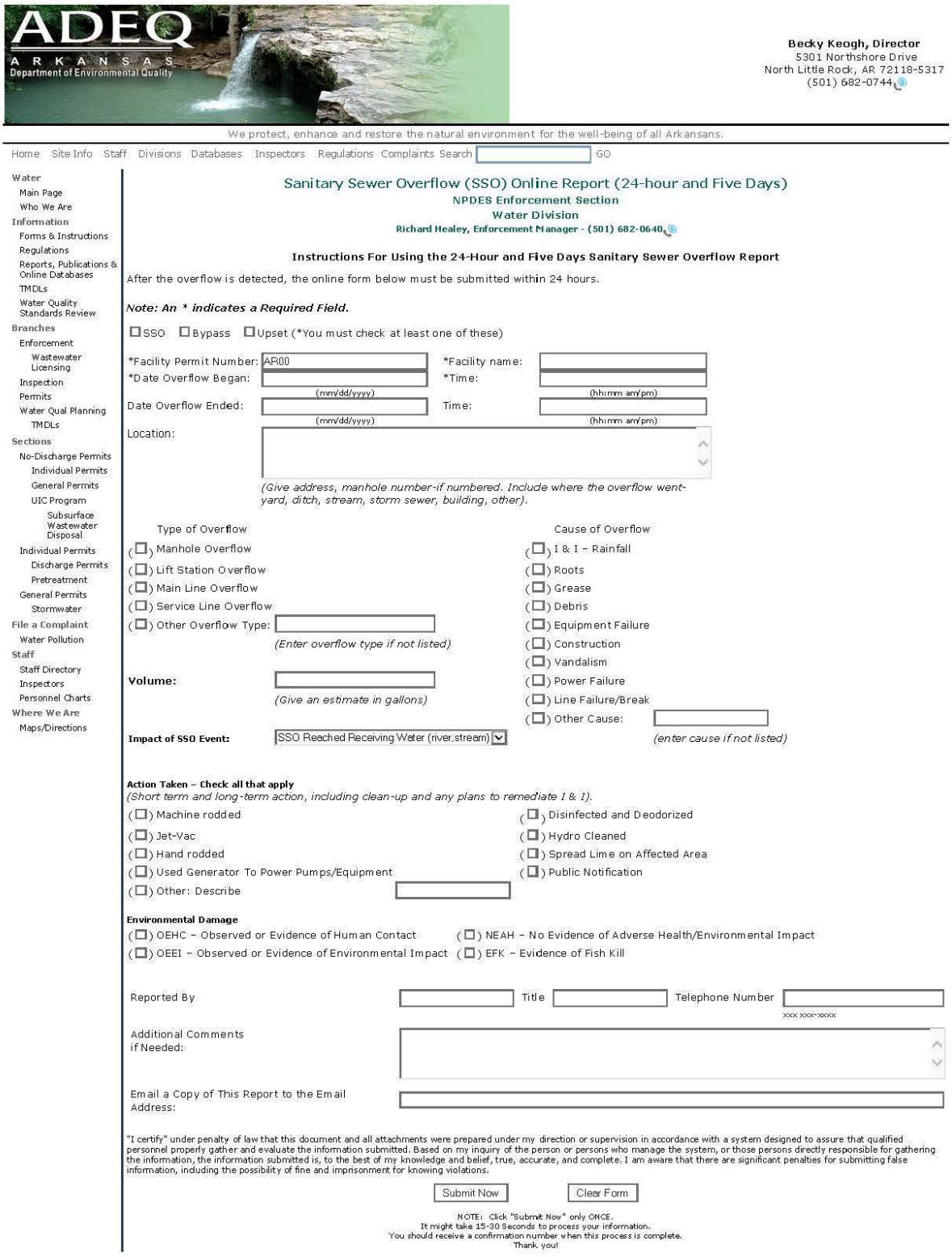

Figure 3-1
Sample SSO Online Report

3.1.3 Reporting Procedures if Online Reporting Form is Unavailable

In instances where the ADEQ online reporting system is not available, the City shall meet the immediate reporting requirement by submission to ADEQ's Enforcement Branch of the Water Division by facsimile using a printed version of ADEQ's online report form, or a form which presents the ADEQ required information in essentially the same format. The completed form should be faxed to (501) 682-0880.

In instances where the ADEQ online reporting and ADEQ facsimile reporting are not available, the City shall report to ADEQ's Enforcement Branch of the Water Division on or before the next business day by telephone at (501) 682-0640.

Enforcement Branch Manager
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317
Phone: (501) 682-0640
Fax: (501) 682-0880

3.2 Monthly Discharge Monitoring Reports (DMRs)

The Discharge Monitoring Reports (DMRs), submitted by the authorized signatory or his/her designee, are required monthly to ensure compliance with permits and regulations. With the City's Monthly DMRs, a printed copy of all SSO Reports will be submitted to ADEQ for that reporting period. This submittal will serve as a dual submittal to ADEQ, NPDES Enforcement Section, Water Division and 6EN-WC-Water Enforcement Branch of EPA, to meet the submittal requirements outlined in the Consent Decree.

3.3 Annual Reporting

The City of Fort Smith shall prepare and submit to the EPA and ADEQ, in accordance with the Consent Decree, an Annual Report documenting its compliance activities for each Calendar Year. Information to be included in the Annual Report will be compiled from the data gathered during each individual SSO report.

The Annual Report shall include a tabulation of SSOs which occurred in the Annual Report Year including, but not limited to:

a. The location of the SSO by the asset identification number, street address, and/or other appropriate location identifiers, such as latitude and longitude or geographic description. For an SSO on Private Property, both the street address and the asset identification number for the nearest manhole should be used.

a. Name of the receiving water (stream, lake, wetland, etc.), if any

b. Date and time the SSO started

c. Date and time the SSO ceased

d. Estimate of the volume (in gallons) of wastewater released

e. Identification of the WCTS component from which the SSO was released, including, but not limited to, manhole, lift station, main line, or service line.

f. An explanation of the potential impact of the SSOs, if any, on public health and/or water quality in the receiving water body;

g. Cause(s) or suspected cause(s) of the SSO;

h. Steps taken to respond to the SSO;

i. Steps taken to reduce, eliminate, and/or prevent recurrence of the SSO, including WCTS investigations;

j. Copies of all SSO notifications sent to the public or other agencies or departments, as warranted; and

k. If an SSO is a Recurring SSO, the following additional information shall be reported:

    i. The dates within the previous three (3) Calendar Years that other SSOs occurred at this location;

    ii. The previous steps taken, if any, to reduce, eliminate, and/or prevent a recurrence of SSOs at this location; and

    iii. The additional steps that City shall take to eliminate future SSOs from this location.

Section 4
Record Keeping and Reporting

4.1 SSO Records

As required by the Consent Decree, records related to SSOs will be saved in the City's document management system and maintained as required under the records retention policy.

The City is currently updating its strategy for managing its field and office information. The City's plan for modifying its Information Management System (IMS), as described in Article Seven, Paragraph 50 of the Consent Decree, will be submitted to EPA for approval within twenty-four (24) months of the Date of Lodging (i.e., by December 31, 2016).

4.2 Reporting

This SSO Documentation and Reporting Program Plan describes reporting requirements related to SSOs.

Section 5
Training and Standard Operating Procedures

5.1 Training

Per Article Seven, Paragraph 55 of the Consent Decree, the CMOM Program must include a Comprehensive Training Program (CTP) for technical and skills training for appropriate categories of the City's employees. The City's CTP plan will be submitted to EPA for approval within eighteen (18) months of the Date of Lodging (i.e., by July 1, 2016). The CTP will be directly related to the operation and maintenance of the WCTS for the purpose of responding to and preventing SSOs.

5.2 Standard Operating Procedures (SOPs)

Although the City does not anticipate developing SOPs specifically related to the SSO Documentation and Reporting Program, the plan and schedule for developing SOPs for general operation and maintenance of all components of the WCTS will be detailed in a report submitted to EPA within eighteen (18) months of the Date of Lodging (i.e., by July 1, 2016) per the Consent Decree.

Attachment 6

2015 Sanitary Sewer Overflow Events

Sanitary Sewer Overflow Summary Report
AR0021750*

SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0004	1/3/2015	7:22:00 AM	1/3/2015	4:10:00 PM	9 Riverlyn Ter	RL01-0150 to RL01-0140	RL01-0140	5280	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	Arkansas River
15-0008	1/3/2015	3:00:00 PM	1/3/2015	4:44:59 PM	3220 S 62 St	M007-1210 to M007-1190		105	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0034	1/20/2015	8:32:00 AM	1/20/2015	9:05:00 AM	815 N 46 St	S006-1120 to S006-1110		175	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0038	1/22/2015	8:45:00 AM	1/22/2015	9:59:59 AM	933 S 68 Ln	S001-0120 to S001-0110		75	Cleanout		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0041	1/24/2015	10:50:00 AM	1/24/2015	1:17:00 PM	4619 S Q St	S003-1660 to S003-1650		326	Cleanout		Debris		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0063	2/2/2015	8:54:00 AM	2/2/2015	9:55:00 AM	511 N 47 St	S006-0950 to S006-0940		275	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0072	2/5/2015	8:08:00 PM	2/5/2015	9:26:00 PM	5311 Birnie Ave	S005-1450 to S005-1440		78	Cleanout		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0099	2/22/2015	5:17:59 PM	2/22/2015	8:29:59 PM	4619 S Q St	S003-1660 to S003-1650		192	Cleanout		Line Break		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0101	2/23/2015	7:39:00 AM	2/23/2015	9:40:00 AM	3600 N 50 St	S009-1100 to S009-1090 S009-1090 to S009-1020	S009-1100	270	Manhole		Debris		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0112	3/4/2015	9:21:00 AM	3/4/2015	10:40:00 AM	12920 Brittany Dr	FC02-0870 to fc02-0860	FC02-0860		Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	Little Vache Grasse Creek
15-0114	3/4/2015	12:30:00 PM	3/5/2015	10:28:00 AM	9422 Rogers Ave	M002-0070 to M002-0020	M002-0070	197,700	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0115	3/4/2015	3:00:00 PM	3/5/2015	10:40:00 AM	3200 Vicksburg St	M002-1400 to M002-1390	M002-1400	41,300	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0119	3/4/2015	8:25:00 PM	3/4/2015	9:45:00 PM	2001 Churchill Rd	S007-0570 to S007-0550	S007-0590	1,350	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0125	3/6/2015	12:41:00 PM	3/6/2015	6:02:00 PM	3602 Morris Dr	S001-0760 to S001-0750		50	Cleanout		Roots	Grease	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0128	3/8/2015	4:16:00 PM	3/8/2015	7:48:59 PM	5424 Park Ave	S003-3670 to S003-3660		213	Building		Roots	Grease	Power Jet	Basement Backup	No	No	Yes	No	None Indicated
15-0129	3/8/2015	9:38:00 AM	3/8/2015	8:00:00 PM	7101 S R St	RL01-0850 to RL01-0843			Building		Unknown		None Indicated	Basement Backup	No	No	Yes	No	None Indicated
15-0130	3/9/2015	3:12:00 PM	3/9/2015	4:30:00 PM	2001 Churchill Rd	S007-0590 to S007-0570	S007-0590	900	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0132	3/10/2015	7:25:00 AM	3/10/2015	10:50:00 AM	4619 S Q St	S003-1665 to S003-1650		1,700	Cleanout		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0133	3/10/2015	8:04:00 AM	3/10/2015	9:28:00 AM	3409 Gary St	P009-2270 to P009-2250		88	Cleanout		Line Break		Refer to Engineer	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0134	3/10/2015	8:40:00 AM	3/10/2015	9:40:00 AM	4209 Jenny Lind Rd	MC05-0640 to MC05-0630		60	Cleanout		Roots	Grease	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0136	3/10/2015	11:23:00 AM	3/10/2015	1:10:00 PM	3428 Armour Ave	S008-2240 to S008-2190		107	Cleanout		Grease		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0139	3/10/2015	7:41:00 AM	3/10/2015	8:00:00 PM	4109 Morris Dr	S007-0500 to S007-0490		1,100	Main Line		Grease		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0145	3/13/2015	12:38:00 PM	3/14/2015	3:50:00 PM	3200 Vicksburg St	M002-1400 to M002-1390	M002-1400	16,320	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0147	3/13/2015	12:51:00 PM	3/14/2015	11:00:00 AM	5801 Boys Club Ln	Z001-0756 to Z001-0754	Z001-0756	0	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0148	3/13/2015	12:51:00 PM	3/14/2015	11:00:00 AM	5800 Boys Club Ln	Z001-0756 to Z001-0754	Z001-0754	0	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0150	3/13/2015	11:50:00 PM	3/15/2015	11:40:00 AM	12920 Brittany Dr	FL02-0860 to FL02-0850	FL02-0866	507,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0154	3/13/2015	5:00:00 PM	3/14/2015	11:45:00 AM	1801 S 74 St	RL01-0690 to RL01-0680	RL01-0690	106,500	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0155	3/13/2015	5:00:00 PM	3/14/2015	11:45:00 AM	1601 S 74 St	RL01-0680 to RL01-0670	RL01-0680	106,500	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
AR0021750*

SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0160	3/13/2015	5:00:00 PM	3/14/2015	11:40:00 AM	1601 S 74 St	RL01-0680 to RL01-0670	RL01-0670	2,240	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0162	3/14/2015	2:00:00 PM	3/14/2015	3:00:00 PM	1401 N 50 St	S007-1290 to S007-1280		1,300	Cleanout		Grease		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0170	3/17/2015	1:30:00 PM	3/17/2015	2:17:00 PM	1447 N 52 St	S006-2000 to S006-0190	S006-2000	600	Manhole		Grease		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0179	3/27/2015	3:55:00 PM	3/27/2015	5:00:00 PM	1305 N 49 St	S007-1430 to S007-1410		47	Cleanout		Roots		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0180	3/27/2015	4:07:00 PM	3/27/2015	5:49:00 PM	2020 S 66 St	S001-1190 to S001-1185		0	Cleanout		Roots		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0182	4/2/2015	10:19:00 AM	4/2/2015	5:04:00 PM	1331 S 46 St	S003-0960 to S003-0950	S003-0960	316	Manhole		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0183	4/2/2015	11:01:00 AM	4/2/2015	2:50:00 PM	2311 Ingersol Cir	Z001-0820 to Z001-0810		14,500	Main Line		Debris		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0186	4/3/2015	1:09:00 PM	4/3/2015	3:50:00 PM	1821 S 73 Cir	RL01-3000 to RL01-0700		200	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0195	4/9/2015	5:10:00 PM	4/9/2015	6:59:59 PM	Hwy 45 S	M002-1320 to M002-1310		1,558,000	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0200	4/13/2015	5:23:00 PM	4/14/2015	10:20:00 AM	5600 Rogers Ave	S004-1140 to S004-1130	S004-1140	10,800	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0203	4/13/2015	6:44:00 PM	4/14/2015	3:05:00 PM	4019 Wirsing Ave	S009-1420 to S009-1410		6,105	Main Line		Line Break		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0204	4/13/2015	8:15:00 PM	4/14/2015	11:05:00 AM	1801 S 74 St	RL01-1060 to RL01-0690	RL01-1060	13,275	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0205	4/13/2015	7:50:00 PM	4/14/2015	10:50:00 PM	7400 Euper Ln	RL01-1080 to RL01-1070	RL01-1080	4,500	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0206	4/13/2015	8:40:00 PM	4/14/2015	11:10:00 AM	1601 S 74 St	RL01-0690 to RL01-0680	RL01-0680	8,700	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0211	4/14/2015	1:02:00 PM	4/15/2015	12:00:00 PM	5700 Rogers Ave	S004-1350 to S004-1340		60,000	Manhole		Construction		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0214	4/16/2015	12:59:59 PM	4/16/2015	2:40:00 PM	5705 Gordon Ln	S003-0210 to S003-0200	S003-0210	1,550	Manhole		Debris		Removed Debris	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0215	4/16/2015	2:29:59 PM	4/17/2015	12:00:00 PM	5704 Free Ferry Rd	S003-0200 to S003-0100		54,000	Manhole		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0220	4/24/2015	10:07:00 AM	4/24/2015	10:50:00 AM	2004 N 46 Ter	S007-3160 to S007-3150	S007-3160	200	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0225	4/30/2015	7:55:00 AM	4/30/2015	8:45:00 AM	2221 N 56 Ln	S005-1170 to S005-0230		225	Main Line		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0244	5/9/2015	12:00:01 AM	5/11/2015	3:14:59 PM	12920 Brittany Dr		FL02-1860	117,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0246	5/10/2015	2:00:00 AM	5/11/2015	3:35:00 PM	1601 S 74 St		RL01-0690	338,250	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0247	5/10/2015	2:05:00 AM	5/10/2015	3:37:00 PM	1601 S 74 St		RL01-0680	225,200	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0249	5/10/2015	6:00:00 AM	5/10/2015	8:00:00 PM	5600 Rogers Ave	S004-1140 to S004-1130	S004-1140	168,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0250	5/10/2015	6:04:00 AM	5/10/2015	7:59:00 AM	108 N 53 St	S003-0420 to S003-0410		119	Main Line		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0251	5/10/2015	7:36:59 AM	5/10/2015	8:24:00 AM	4115 Marshall Dr	S008-0760 to S008-0660		46	Main Line		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0252	5/10/2015	7:44:00 AM	5/10/2015	8:45:00 AM	1422 N 56 Ter	S002-1590 to S002-1580		60	Main Line		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
None	5/11/2015	12:00:00 AM	5/11/2015	12:00:00 AM	1609 9 - Barling St			1,000	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0262	5/11/2015	3:12:00 PM	5/14/2015	8:00:00 PM	5601 Jenny Lind Rd				Lift Station		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated

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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0267	5/12/2015	11:35:00 AM	5/12/2015	11:58:00 AM	2002 Hwy 71 S	RL01-1180 to RL01-1120	RL01-1120	1	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0271	5/13/2015	9:14:59 AM	5/13/2015	10:15:00 AM	2224 N 52 St	S005-0770 to S005-0760		300	Cleanout		Debris		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0272	5/13/2015	11:10:00 PM	5/13/2015	11:00:00 AM	4914 Armour Ave	S009-0785 to S009-0780		1	Service Line		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0275	5/13/2015	12:00:00 PM	5/13/2015	12:10:00 PM	1609 9 - Barling St			500	Manhole	Pump	Manhole Failure		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0281	5/20/2015	4:00:00 AM	5/20/2015	12:00:00 PM	5600 Rogers Ave		S004-1420	4,800	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0282	5/20/2015	5:00:00 AM	5/20/2015	3:14:59 PM	1801 S 74 St		RL01-1060	92,250	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0283	5/20/2015	5:45:00 AM	5/20/2015	5:55:00 PM	S 74 St		RL01-0680	73,000	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0285	5/20/2015	8:20:00 AM	5/20/2015	7:20:00 PM	1813 Craftwood Cir		S001-0880	16,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0286	5/20/2015	8:20:00 AM	5/20/2015	7:25:00 PM	2116 S 70 St	RL01-1280 to RL01-1260	RL01-1280	42,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0295	5/20/2015	10:57:00 AM	5/20/2015	1:43:00 PM	12920 Brittany Dr	FC02-0860 to FC02-0850	FC02-0860	37,350	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0297	5/20/2015	12:10:00 PM	5/20/2015	7:10:00 PM	2002 S 71 St	RL01-1180 to RL01-1120	RL01-1120	23,100	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0300	5/22/2015	8:25:00 AM	5/22/2015	8:00:00 PM	4623 Rogers Ave	S004-1010 to S004-1000		1,400	Main Line		Line Break		Repair	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0302	5/24/2015	11:29:59 AM	5/24/2015	11:29:59 PM	S 56 St		S004-1140	72,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0306	5/25/2015	12:00:00 PM	5/25/2015	12:30:00 PM	4607 Irene St	FL01-0800 to FL01-0820		30	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0313	5/24/2015	5:05:00 PM	5/25/2015	4:30:00 PM	1801 S 74 St		RL01-1060	278,000	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0315	5/24/2015	5:15:00 PM	5/25/2015	4:30:00 PM	S 74 St		RL01-0680	139,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0316	5/24/2015	5:29:59 PM	5/25/2015	4:30:00 PM	7400 Euper Ln		RL01-1080	138,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0318	5/24/2015	8:50:00 PM	5/25/2015	7:35:00 PM	5800 Boys Club Ln		Z001-0770	375,375	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0319	5/24/2015	8:29:59 PM	5/25/2015	7:35:00 PM	5800 Boys Club Ln		Z001-0754	380,875	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0320	5/24/2015	8:45:00 PM	5/25/2015	7:35:00 PM	5800 Boys Club Ln		Z001-0760	137,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0321	5/24/2015	8:45:00 PM	5/24/2015	9:14:59 PM	1307 S 17 St	P006-0380 to P006-0360		34,375	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0322	5/24/2015	9:40:00 PM	5/25/2015	7:55:00 PM	12920 Brittany Dr		FC02-0860	133,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0326	5/26/2015	10:55:00 PM	5/26/2015	1:00:00 AM	3201 S 93 Cir	M001-1380 to M003-1370		125	Building		Grease		Power Jet	Basement Backup	No	No	Yes	No	None Indicated
15-0327	5/26/2015	9:02:59 PM	5/26/2015	9:25:00 AM	2809 Brooken Hill Dr	Z005-0450 to Z005-0230		1	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0334	5/27/2015	5:45:00 PM	5/27/2015	5:55:00 PM	4914 Armour Ave	S009-0780 to S009-0770		1	Main Line		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0337	5/28/2015	9:30:00 AM	5/28/2015	10:25:00 AM	8900 Meandering Way	M002-0230 to M002-0220	M002-0230	1	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0340	6/1/2015	9:57:00 AM	6/1/2015	10:20:00 AM	1806 Zero St	Z001-0540 to Z001-0530		115	Main Line		Roots	Debris	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0343	6/5/2015	8:10:00 AM	6/5/2015	12:14:59 PM	4712 Wirsing Ave	S009-0240 to S009-0230		335	Service Line		Line Break		Repair	Private PPTY (Ground)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0361	7/1/2015	10:26:00 AM	7/2/2015	12:45:00 PM	5409 Hardscrabble Way	M007-2000 to M007-1990		0	Cleanout		Roots		Repair	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0362	7/1/2015	12:30:00 PM	7/2/2015	3:00:00 PM	1821 S 73 Cir	RL01-3010 to RL01-3000		150	Cleanout		Line Break		Repair	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0364	7/5/2015	6:40:00 PM	7/5/2015	9:25:00 PM	4109 Bradley Dr	S008-0690 to S008-0660		188	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0365	7/5/2015	6:59:59 PM	7/5/2015	9:26:00 PM	4115 Marshall Dr	S008-0690 to S008-0660		288	Cleanout		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0367	7/5/2015	8:05:00 PM	7/6/2015	8:55:00 AM	4512 N O St	S007-1130 to S007-1120	S007-1130	21,400	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0368	7/5/2015	8:15:00 PM	7/5/2015	8:50:00 PM	5000 Armour Ave	S009-0712 to S009-0710	S009-0712	75,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0378	7/18/2015	1:40:00 PM	7/18/2015	3:25:00 PM	8613 S 30 Ter	Z003-1370 to Z003-1360		75	Main Line		Line Break		Repair	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0384	7/21/2015	6:40:00 AM	7/21/2015	9:24:00 AM	1801 S 74 St	RL01-1070 to RL01-1060	RL01-1060	24,600	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0385	7/21/2015	6:40:00 AM	7/21/2015	9:24:00 AM	7400 Euper Ln		RL01-1072	8,200	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0386	7/21/2015	6:40:00 AM	7/21/2015	9:24:00 AM	2000 S 74 St	RL01-1080 to RL01-1070	RL01-1080	16,400	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	No	Yes	None Indicated
15-0387	7/21/2015	6:40:00 AM	7/21/2015	9:24:00 AM	7400 Euper Ln		RL01-1070	4,100	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0388	7/21/2015	9:16:00 AM	7/21/2015	12:20:00 PM	1601 S 74 St	RL01-0680 to RL01-0670	RL01-0670	69,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0389	7/21/2015	8:20:00 AM	7/21/2015	10:30:00 AM	5600 Rogers Ave		S004-1140	1,200	Manhole		Rainfall		None Required	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0400	8/17/2015	1:44:59 PM	8/17/2015	2:29:59 PM	4217 S 22 St	MC05-0710 to MC05-0690		350	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0407	8/28/2015	8:30:00 AM	8/28/2015	9:00:00 AM	5604 Gordon Ln		S003-0600	60	Manhole		Roots	Grease	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0415	9/9/2015	1:20:00 PM	9/9/2015	2:00:00 PM	3001 N Albert Pike Ave	S009-1500 to S009-1490	S009-1500	975	Manhole		Roots	Grease	Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0426	10/2/2015	11:15:00 AM	10/2/2015	4:30:00 PM	3317 Royal Scots Way	Z004-1170 to Z004-1160		600	Service Line		Line Break		Repair	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0429	10/13/2015	1:51:00 PM	10/13/2015	2:15:00 PM	1107 N 52 St	S006-0490 to S006-0480		15	Cleanout		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0430	10/14/2015	9:58:00 AM	10/14/2015	10:25:00 PM	9 Riverlyn Ter		RL01-0140		Manhole		Pump Station Failure		Removed Debris	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0431	10/14/2015	9:59:59 AM	10/14/2015	11:00:00 AM	3 Riverlyn Ter		RL01-0110		Manhole		Pump Station Failure		None Indicated	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0432	10/15/2015	8:34:00 AM	10/15/2015	9:14:59 AM	3922 Mary St	FL02-0720 to FL02-0690		450	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0437	10/28/2015	11:00:00 AM	10/28/2015	1:30:00 PM	5704 Free Ferry Rd	S003-0200 to S003-0100		75	Service Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0443	11/5/2015	4:34:00 PM	11/5/2015	5:00:00 PM	8815 Fresno St	M001-1090 to M001-1080		150	Service Line		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0444	11/5/2015	8:00:00 PM	11/5/2015	9:14:59 PM	5600 Rogers Ave	S004-1140 to S004-1130	S004-1140	1,800	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0445	11/5/2015	8:20:00 PM	11/6/2015	2:45:00 AM	1601 S 74 St	RL01-0680 to RL01-0670	RL01-0670	9,625	Manhole		Rainfall		None Required	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0450	11/10/2015	11:53:00 AM	11/10/2015	12:06:59 PM	2016 N 53 St	S005-0720 to S005-0710		1	Cleanout		Unknown	Line Break	Repair	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0451	11/13/2015	10:30:00 AM	11/13/2015	10:55:00 AM	1601 S 74 St	RL01-0682 to RL01-0680	RL01-0682	250	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0455	11/17/2015	9:20:00 AM	11/17/2015	5:20:00 PM	S 56 St	S004-1340 to S004-1140	S004-1140	120,000	Manhole		Rainfall		None Required	Public Land (Ground)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0456	11/17/2015	9:24:00 AM	11/17/2015	4:40:00 PM	2000 S 74 St	RL01-1080 to RL01-1070	RL01-1080	21,800	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0457	11/17/2015	9:30:00 AM	11/17/2015	4:50:00 PM	S 74 St	RL01-1070 to RL01-1060	RL01-1070	44,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0458	11/17/2015	9:36:00 AM	11/17/2015	4:55:00 PM	7400 Euper Ln	RL01-1072 to RL01-1070	RL01-1072	43,900	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0459	11/17/2015	9:44:00 AM	11/17/2015	4:44:59 PM	1801 S 74 St	RL01-1060 to RL01-0690	RL01-1060	63,150	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0460	11/17/2015	9:51:59 AM	11/18/2015	8:35:00 AM	1601 S 74 St	RL01-0670 to RL01-0660	RL01-0670	272,800	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0461	11/17/2015	9:57:00 AM	11/17/2015	6:59:59 PM	3100 Kelley Hwy	S008-2005 to S008-2000	S008-2000	14,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0462	11/17/2015	9:59:59 AM	11/18/2015	8:30:00 AM	9 Riverlyn Ter	RL01-0140 to RL01-0130	RL01-0140	270,000	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0464	11/17/2015	10:20:00 AM	11/17/2015	4:20:00 PM	S 66 St		S001-0015	99,000	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0466	11/17/2015	10:55:00 AM	11/17/2015	5:05:00 PM	2002 S 71 St	RL01-1120 to RL01-1110	RL01-1120	18,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0490	11/27/2015	6:59:59 PM	11/27/2015	9:05:00 PM	S 56 St	S004-1340 to S004-1140	S004-1140	600	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0491	11/27/2015	7:35:00 PM	11/28/2015	4:44:59 PM	12920 Brittany Dr	FC02-0870 to` fc02-0860	FC02-0870	32,750	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0493	11/27/2015	8:35:00 PM	11/28/2015	5:29:59 PM	Carol Ann Cross Park	RL01-0680 to RL01-0670	RL01-0670	25,200	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0494	11/27/2015	8:40:00 PM	11/28/2015	4:30:00 PM	1801 S 74 St	RL01-1060 to RL01-0690	RL01-1060	24,600	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0496	11/29/2015	3:30:00 PM	11/30/2015	9:20:00 AM	Carol Ann Cross Park	RL01-0680 to RL01-0670	RL01-0680	26,750	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0503	12/1/2015	9:00:00 AM	12/1/2015	9:39:00 AM	8824 Meandering Way	M002-0230 to M002-0220		1	Cleanout		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0505	12/1/2015	12:59:59 PM	12/8/2015	2:25:00 PM	7700 Rogers Ave	M005-1520 to M005-0445	M005-1520	1,200	Manhole		Roots	Grease	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0508	12/3/2015	3:55:00 PM	12/3/2015	9:16:00 PM	3100 S 105 St	HL01-0080 to HL01-0070	HL01-0070	324	Manhole		Roots		Jet Clean	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0513	12/6/2015	12:14:59 PM	12/6/2015	3:51:00 PM	2012 Massard Rd	RL01-2110 to RL01-2100	RL01-2110	216	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0518	12/11/2015	7:57:00 AM	12/11/2015	12:00:00 PM	6707 Woodland Cir		RF01-0170	320	Force Main		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0522	12/13/2015	11:00:00 AM	12/13/2015	8:00:00 PM	5600 Rogers Ave	S004-1420 to S004-1350	S004-1420	108,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0523	12/13/2015	1:10:00 PM	12/14/2015	9:08:00 AM	N 50 St	S009-0780 to S009-0712	S009-0780	6,290	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0532	12/13/2015	5:10:00 PM	12/14/2015	9:58:00 AM	1801 S 74 St	RL01-1060 to RL01-0690	RL01-1060	20,160	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0533	12/13/2015	5:20:00 PM	12/14/2015	9:55:59 AM	Carol Ann Cross Park		RL01-0670	19,920	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0535	12/14/2015	5:30:00 AM	12/14/2015	7:45:00 AM	912 S I St	MC01-1000 to MC01-0990		1,500	Building		Line Break		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0542	12/15/2015	8:21:59 AM	12/15/2015	9:10:00 AM	3124 Glen Flora Way	Z004-1420 to Z004-1400	Z004-1420	900	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0546	12/15/2015	9:27:00 AM	12/15/2015	11:00:00 AM	8425 Hwy 45 S	M003-0928 to M003-0924		550	Building		Roots	Grease	Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0550	12/17/2015	2:29:59 PM	12/17/2015	3:30:00 PM	5100 Birnie Ave	S005-1380 to S005-0560		30	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0553	12/24/2015	3:35:00 PM	12/24/2015	4:58:00 PM	2004 N 46 Ter	S007-3160 to S007-3150		246	Cleanout		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
AR0021750*

SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0554	12/27/2015	10:01:00 AM	12/29/2015	8:09:00 AM	S 56 St		S004-1140	100,950	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0558	12/27/2016	1:52:00 PM	12/28/2015	9:43:00 AM	N 50 St	S009-0785 to S009-0780	S009-0780	59,550	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0559	12/27/2015	1:55:00 PM	12/28/2015	9:32:00 AM	4831 Armour Ave	S009-0760 to S009-0712	S009-0712	117,700	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0578	12/27/2015	4:11:00 PM	12/28/2015	9:59:00 AM	3916 Morris Dr	S007-0720 to S007-0710	S007-0710	106,800	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0579	12/27/2015	4:14:00 PM	12/28/2015	1:32:59 PM	4512 N O St	S007-1140 to S007-1130	S007-1130	243,800	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0580	12/27/2015	4:19:00 PM	12/28/2015	1:35:00 PM	4905 N O St	S007-1280 to S007-1060	S007-1060	255,200	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0583	12/27/2015	4:36:59 PM	12/29/2015	11:20:00 PM		S002-1320 to S002-1310	S002-1310	704,825	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0584	12/27/2015	4:55:00 PM	12/28/2015	12:20:00 PM	2116 S 70 St	RL01-1280 to RL01-1260	RL01-1280	11,650	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0585	12/27/2015	4:58:00 PM	12/29/2015	8:45:00 AM	S 71 St	RL01-1120 to RL01-1110	RL01-1120	23,870	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0586	12/27/2015	5:00:00 PM	12/28/2015	11:44:00 AM	2000 S 74 St	RL01-1090 to RL01-1080	RL01-1080	7,120	Manhole		Rainfall		None Required	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0587	12/27/2015	5:00:00 PM	12/28/2015	11:48:00 AM	7400 Euper Ln	RL01-1740 to RL01-1072	RL01-1072	5,640	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0588	12/27/2015	5:00:00 PM	12/28/2015	11:46:00 AM	7400 Euper Ln	RL01-1072 to RL01-1070	RL01-1070	14,260	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0589	12/27/2015	5:09:00 PM	12/28/2015	11:55:00 AM	1801 S 74 St	RL01-1070 to RL01-1060	RL01-1060	11,260	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0590	12/27/2015	5:11:00 PM	12/28/2015	8:29:00 AM	1601 S 74 St	RL01-0680 to RL01-0670	RL01-0680	23,580	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0591	12/27/2015	5:14:00 PM	12/28/2015	12:10:00 PM	1601 S 74 St	RL01-0670 to RL01-0660	RL01-0670	13,760	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0592	12/27/2015	5:20:00 PM	12/29/2015	9:36:00 AM	3125 Edinburgh Dr		Z004-0740	54,320	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0593	12/27/2015	5:29:59 PM	12/28/2015	3:00:00 PM	9 Riverlyn Ter	RL01-0150 to RL01-0140	RL01-0140	18,300	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0600	12/28/2016	3:26:00 PM	12/28/2015	4:29:00 PM	212 N 49 St	S006-1390 to S006-1300	S006-1390	510	Manhole	Cleanout	Roots	Grease	Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0606	12/31/2015	5:00:00 PM	12/31/2015	6:25:00 AM	1728 N Albert Pike Ave	S007-0450 to S007-0440		150	Cleanout		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
						TOTAL OVERFLOWS	**158**	**8,801,236 Gallons**											

* Data in this report is based on the SSO field report and backup documentation and may differ from data reported on the ADEQ website.

Sanitary Sewer Overflow Summary Report
AR0033278*

SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0002	1/2/2015	11:01:00 AM	1/2/2015	11:45:00 AM	2914 Houston St	MC05-2700 to MC05-2690		220	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0003	1/2/2015	10:50:00 PM	1/3/2015	1:45:00 AM	3118 N 46 St	S009-0540 to S009-0510		1,750	Service Line	Building	Roots	Debris	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0005	1/3/2015	9:26:00 AM	1/3/2015	3:13:00 PM	1412 Phoenix Ave	MC06-0452 to MC06-0305	MC06-0305	3,600	Manhole		Rainfall		None Required	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0006	1/3/2015	9:26:00 AM	1/3/2015	3:13:00 PM	1412 Phoenix Ave		MC06-0542	3,470	Manhole		Rainfall		None Required	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0007	1/3/2015	9:59:59 AM	1/3/2015	2:50:00 PM	1701 Rogers Ave	P011-2450 to P011-2380	P011-2450	2,900	Manhole		Grease		Power Jet	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0009	1/5/2015	11:20:00 AM	1/5/2015	12:20:00 PM	4421 Park Ave	P007-2750 to P007-2740 P007-2740 to P007-2730		600	Service Line		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0011	1/6/2015	10:44:59 AM	1/6/2015	11:20:00 AM	S 34 St	Z001-2880 to Z001-2830	Z001-2880	70	Manhole		Debris		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0013	1/7/2015	8:48:00 PM	1/7/2015	9:40:00 AM	2613 Waco St	MC08-0400 to MC08-0390	MC08-0400	1,560	Manhole		Debris		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0014	1/8/2015	2:45:00 PM	1/8/2015	6:59:59 PM	S I St	P006-0192 to P006-0190	P006-0192	1,275	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	Arkansas River
15-0015	1/9/2015	5:00:00 PM	1/9/2015	6:45:00 PM	2700 Houston St	MC05-2550 to MC05-2540	MC05-2550	525	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0018	1/12/2015	8:15:00 PM	1/12/2015	9:22:59 PM	8723 S 30 Ter	Z003-1380 to Z003-1370	Z003-1380	340	Manhole		Grease		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0020	1/14/2015	4:04:00 PM	1/14/2015	5:05:00 PM	5300 Wilson Rd	S005-0730 to S005-0720		75	Cleanout		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0022	1/15/2015	8:32:00 AM	1/15/2015	8:40:00 AM	3421 Old Greenwood Rd	P009-2140 to P009-2135		180	Cleanout		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0023	1/15/2015	2:56:00 PM	1/15/2015	4:30:00 PM	2605 Dallas St	MC05-2100 to MC05-2090	MC05-2100 MC05-2090	1,425	Manhole		Roots		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0024	1/16/2015	10:25:00 AM	1/16/2015	10:40:00 AM	4601 N 33 St	FL01-0730 to FL01-0720	FL01-0730	65	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0025	1/16/2015	4:15:00 PM	1/16/2015	7:25:00 PM	4101 Wirsing Ave	S009-1420 to S009-1410		190	Cleanout		Roots	Line Break	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0027	1/17/2015	1:15:00 PM	1/17/2015	8:00:00 PM	3118 N 46 St	S009-0540 to S009-0510		420	Cleanout		Line Break		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0032	1/18/2015	5:57:00 PM	1/18/2015	7:25:00 PM	8300 Colony Ln	Z006-1210 to Z006-1200		169	Cleanout		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0035	1/20/2015	9:30:00 AM	1/20/2015	10:15:00 AM	2900 Boston St		P009-2880	65	Manhole		Roots	Grease	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0037	1/21/2015	1:44:59 PM	1/21/2015	2:15:00 PM	1905 Lexington Ave	MC02-0960 to MC02-0950		150	Cleanout		Debris		Jet Clean	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0042	1/26/2015	8:15:00 AM	1/26/2015	9:14:59 AM	3632 Northview Dr	FL01-1120 to FL01-1110	FL01-1130	60	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0045	1/27/2015	9:30:00 AM	1/27/2015	10:01:00 PM	7320 Cheryl Ln	CS01-0270 to CS01-0268	CS01-0270	200	Manhole		Roots	Grease	Power Jet	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0049	1/28/2015	8:42:00 AM	1/28/2015	9:00:00 AM	7320 Cheryl Ln	CS01-0270 to CS01-0268	CS01-0270	175	Manhole		Roots		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0053	1/30/2015	6:10:00 PM	4/30/2015	7:44:59 PM	8220 Hwy 271	Z006-1900 to Z006-1880		950	Building		Grease		Power Jet	Basement Backup	No	No	Yes	No	None Indicated
15-0054	1/30/2015	6:59:00 PM	1/30/2015	10:15:00 PM	600 Magnolia Dr	Z002-0170 to Z002-0140	Z002-0170	1,450	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0059	2/1/2015	7:58:00 AM	2/1/2015	9:59:59 AM	1600 Holly Cir	Z006-1530 to Z006-1470		2,600	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0060	2/1/2015	9:46:00 AM	2/1/2015	10:30:00 AM	8224 Cypress Ave	Z006-1530 to Z006-1470		500	Cleanout	Building	Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0061	2/1/2015	2:27:00 PM	2/1/2015	5:15:00 PM	7500 Cypress Ave	Z002-0290 to Z002-0280	Z002-0290	525	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
AR0033278*

SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0062	2/1/2015	5:12:00 PM	2/1/2015	6:14:59 PM	8828 S 28 St	Z005-0090 to Z005-0080	Z005-0090	450	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0064	2/2/2015	9:58:00 AM	2/2/2015	11:10:00 AM	900 S 16 St	P011-1940 to P011-1930	P011-1940	350	Manhole		Grease		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0070	2/5/2015	1:30:00 PM	2/5/2015	2:15:00 PM	7906 Hermitage Dr	Z006-1270 to Z006-1260		300	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0071	2/5/2015	3:34:00 PM	2/5/2015	4:14:00 PM	3201 N 28 St	P001-0510 to P001-0500	P001-0510	40	Manhole		Roots	Grease	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0073	2/6/2015	9:59:59 AM	2/6/2015	10:44:59 AM	4615 N 30 St	FL01-0900 to FL01-0880		225	Cleanout		Grease	Line Break	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0076	2/7/2015	8:16:00 AM	2/7/2015	9:41:00 AM	2720 S S St	P004-0380 to P004-0370		71	Manhole		Roots		Power Jet	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0077	2/8/2015	12:59:59 PM	2/8/2016	2:07:00 PM	4506 S 22 St	MC07-0220 to MC07-0210	MC07-0220	79	Manhole		Roots	Grease	Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0080	2/9/2015	11:07:00 AM	4/30/2015	8:00:00 AM	2309 Rogers Ave		P005-2290		Service Line		Storm Sewer		Refer to Engineer	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0081	2/9/2015	9:30:00 AM	5/7/2015	8:00:00 AM	2321 Rogers Ave		P005-2290		Service Line		Storm Sewer		Refer to Engineer	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0084	2/11/2015	11:00:00 AM	4/30/2015	8:00:00 AM	2207 Rogers Ave		P005-2290		Manhole		Unknown		Refer to Engineer	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0085	2/11/2015	11:03:00 PM	4/30/2015	8:00:00 AM	2225 Rogers Ave		P005-2290		Main Line		Line Break		Refer to Engineer	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0087	2/13/2015	12:40:00 PM	2/13/2015	12:51:59 PM	2404 Edwards St	P004-2180 to P004-2170		23	Cleanout		Grease		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0089	2/16/2015	4:28:00 PM	2/16/2015	5:56:00 PM	4110 S 34 St	MC07-1460 to MC07-1450	MC07-1450	440	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0090	2/17/2015	11:43:00 AM	2/17/2015	12:59:59 PM	8220 Hwy 271	Z006-1940 to Z006-1870		70	Service Line		Grease		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0093	2/19/2015	4:24:00 PM	2/19/2015	5:45:00 PM	200 Cornell Ave	Z006-0230 to Z006-0220	Z006-0230	60	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0096	2/21/2015	3:45:00 PM	2/21/2015	8:29:59 PM	4601 Irene St	FL01-0720 to FL01-0710	FL01-0720	285	Cleanout		Grease		Jet Clean	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0103	2/25/2015	1:49:00 PM	2/25/2015	2:20:00 PM	3820 Free Ferry Rd	P007-1180 to P007-1170	P007-1180	750	Manhole		Debris		Removed Debris	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0107	3/2/2015	10:03:00 AM	2/2/2015	1:15:00 PM	3830 Crystal Ln	FL02-0670 to FL02-0527	FL02-0670	975	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0108	3/2/2015	12:58:00 PM	3/2/2015	3:14:59 PM	3400 Gary St	P009-2270 to P009-2250	P009-2270	240	Manhole		Roots		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0110	3/4/2015	7:19:00 AM	3/4/2015	8:30:00 AM	100 Georgetown Ln	Z006-0930 to Z006-0920	Z006-0930	350	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0111	3/4/2015	11:03:00 AM	6/4/2015	12:14:59 PM	2414 Independence St	MC05-2315 to MC05-2310		375	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0113	3/4/2015	12:40:00 PM	3/5/2015	10:44:59 AM	1412 Phoenix Ave		MC06-0305	361,625	Manhole		Rainfall		None Indicated	Receving Water (Riv, Str)	No	No	No	No	None Indicated
15-0116	3/4/2015	3:25:00 PM	3/4/2015	4:44:59 PM	3811 Dallas St	P009-2390 to P009-2330		550	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0117	3/4/2015	5:44:00 PM	3/5/2015	11:14:00 AM	4131 Stanard St	P007-1990 to P007-1890	P007-1890	10,490	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0118	3/4/2016	6:30:59 PM	3/4/2015	6:59:59 PM	1417 S 17 St	P006-0390 to P006-0380		300	Service Line		Grease		Power Jet	Basement Backup	No	No	No	No	None Indicated
15-0120	3/5/2015	1:07:00 PM	3/5/2015	5:15:00 PM	1438 Belle Ave	P005-0230 to P005-0220		1,265	Service Line		Line Break		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0123	3/6/2015	10:17:00 AM	3/6/2015	11:56:00 AM	1319 S 17 St	P006-0380 to P006-0360		1,065	Cleanout		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0127	3/8/2015	3:02:59 PM	3/8/2015	4:25:00 PM	2701 Glen Flora Way	Z005-0340 to Z005-0330	Z005-0340	184	Manhole		Roots	Grease	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0131	3/10/2015	7:32:59 AM	3/10/2015	8:50:00 AM	1319 S 17 St	P006-0380 to P006-0360 P006-0360 to P006-0350 P006-0350 to P006-0345 P006-0345 to P006-0340		500	Cleanout		Grease		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0135	3/10/2015	9:00:00 AM	3/10/2015	9:30:00 AM	3226 Iola Ave	Z003-0800 to Z003-0790		37	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0138	3/10/2015	6:28:00 PM	3/10/2015	6:59:59 PM	2700 Houston St	MC05-2500 to MC05-2490	MC05-2500	1,100	Manhole		Roots		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0140	3/11/2015	11:13:00 AM	3/11/2015	12:20:00 PM	3611 Cliff Dr	MC07-1420 to MC07-1410	MC07-1420	50	Manhole		Roots		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0142	3/11/2015	4:50:00 PM	3/11/2015	5:00:00 PM	1322 N 8 St	P003-0270 to P003-0260	P003-0260	300	Manhole		Grease		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0144	3/13/2015	11:29:59 AM	3/14/2015	10:35:00 AM	1412 Phoenix Ave	MC06-0542 to MC06-0305	MC06-0305	138,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0146	3/13/2015	12:51:00 PM	3/14/2015	10:50:00 AM	5601 Jenny Lind Rd	MC06-1970 to MC06-1960	MC06-1970	0	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0151	3/13/2015	2:29:59 PM	3/13/2015	3:30:00 PM	2143 Churchill Rd	S008-1270 to S008-1260		6,000	Manhole		Grease	Roots	Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0152	3/13/2015	2:33:00 PM	3/13/2015	3:45:00 PM	1313 N 50 St	S007-1380 to S007-1370		10	Cleanout		Rainfall		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0153	3/13/2015	4:28:00 PM	3/14/2015	3:38:00 PM	4131 Stanard St	P007-1990 to P007-1890	P007-1990	69,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0156	3/13/2015	5:04:00 PM	3/14/2015	12:00:00 PM	3409 Gary St	P009-2250 to P009-2210		28,400	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0157	3/13/2015	11:55:00 AM	3/14/2015	5:40:00 PM	1823 S 31 St	P009-0200 to P009-0165	P009-0200	26,625	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0158	3/13/2015	5:58:00 PM	3/14/2015	10:35:00 AM	1413 Phoenix Ave	MC06-1120 to MC06-0280	MC06-1120	99,700	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0159	3/13/2015	9:30:00 PM	3/14/2015	12:00:00 PM	3403 Gary St		P009-2255	21,750	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0163	3/14/2015	8:16:00 PM	3/14/2015	9:20:00 PM	2903 Quincy St	Z001-1870 to Z001-1860		5,600	Cleanout		Grease		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0165	3/15/2015	10:40:00 AM	3/15/2015	10:40:00 PM	3409 Gary St	P009-2255 to P009-2250		60	Cleanout		Line Break		Refer to Engineer	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0171	3/17/2015	5:45:00 PM	3/17/2015	7:15:00 PM	1803 Phoenix Ave	MC06-0400 to MC06-0390		300	Main Line		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0175	3/23/2015	2:20:00 PM	3/23/2015	2:29:59 PM	3830 Crystal Ln	FL02-0670 to FL02-0527	FL02-0670	100	Manhole		Unknown		None Indicated	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0176	3/25/2015	6:26:59 PM	3/25/2015	7:20:00 PM	2822 S 14 St	MC03-0445 to MC03-0440		135	Cleanout		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0178	3/27/2015	2:23:00 PM	3/27/2015	4:25:00 PM	3320 N M St	P007-0011 to P007-0010	P007-0011	85	Manhole		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0185	4/3/2015	7:55:00 AM	4/3/2015	9:45:00 AM	4610 Arlington Ave	FL02-1010 to FL02-1000		525	Cleanout		Grease		Power Jet	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0189	4/6/2015	10:20:00 AM	4/6/2015	11:40:00 AM	2821 S 12 St	MC03-0445 to MC03-0440		90	Cleanout		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0190	4/7/2015	11:29:00 AM	4/7/2015	12:30:00 PM	3109 Willow St	FL01-2380 to FL01-0800		100	Cleanout		Line Break		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0192	4/8/2015	2:00:00 PM	4/8/2015	2:15:00 PM	8319 S 35 St	Z003-1730 to Z003-1720	Z003-1720	135	Manhole		Debris		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0194	4/9/2015	7:50:00 AM	4/9/2015	8:40:00 AM	4320 Presley St	P007-2220 to P007-2210		200	Cleanout		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0201	4/13/2015	3:47:59 PM	4/13/2015	5:00:00 PM	6221 S 10 St	CS01-1150 to CS01-1140	CS01-1150	200	Main Line		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0202	4/13/2015	7:50:00 PM	4/14/2015	10:50:00 AM	1412 Phoenix Ave	MC06-0542 to MC06-0305	MC06-0305	18,000	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0208	4/14/2016	12:47:00 PM	4/20/2015	1:50:00 PM	3115 Cliff Dr	MC07-1570 to MC07-1540	M007-1570	1,625	Manhole		Roots		Power Rod	Receving Water (Riv, Str)	No	No	No	No	None Indicated
15-0210	4/15/2015	1:02:00 PM	4/15/2015	3:00:00 PM	S 16 St	P011-1940 to P011-1930		900	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0218	4/23/2015	1:40:00 PM	4/23/2015	2:29:59 PM	4406 S 22 St	MC07-0230 to MC07-0220	MC07-0230	45	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0221	4/25/2015	10:04:00 AM	4/25/2015	11:25:00 AM	3804 Free Ferry Rd	P007-1180 to P007-1170	P007-1170	2,125	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0223	4/27/2015	5:17:59 PM	4/27/2015	6:20:00 PM	4000 Free Ferry Rd	P007-1140 to P007-1000	P007-1140	3,000	Manhole		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0229	5/1/2015	7:21:00 AM	5/1/2015	9:30:00 AM	1815 Garner Ln	P009-0270 to P009-0260		900			Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0233	5/5/2015	11:50:00 AM	5/23/2015	12:45:00 PM	5901 Fort Ln	FL01-0040 to FL01-0030	FL01-0040	4,000	Manhole		Roots		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0234	5/5/2015	4:13:00 PM	5/5/2015	8:15:00 PM	1305 Willowbrook Dr	Z008-0178 to Z008-0160		6,250	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0235	5/8/2015	6:25:00 AM	5/8/2015	7:45:00 AM	4611 Arlington Ave	FL02-0640 to FL02-0630		375	Main Line	Building	Grease		Power Jet	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0236	5/9/2015	2:17:00 AM	5/9/2016	8:30:00 AM	3200 N M St	P005-3030 to P005-3020	P005-3030	7,800	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0237	5/9/2015	1:15:00 PM	5/9/2015	4:44:59 PM	700 Belle Ave	P008-0690 to P008-0680			Main Line		Rainfall		Power Jet	Basement Backup	No	No	Yes	No	None Indicated
15-0238	5/9/2015	4:30:00 PM	5/9/2015	5:50:00 PM	4914 Armour Ave	S009-0710 to S009-0670		800	Main Line		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0239	5/5/2015	5:17:59 PM	5/11/2015	3:00:00 PM	1319 S 17 St	P006-0360 to P006-0350		269,000	Main Line		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0240	5/9/2015	9:50:00 PM	5/11/2015	10:22:00 AM	400 N 20 St	P005-1920 to P005-1860	P005-1920	328,800	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0241	5/9/2015	9:05:00 PM	5/11/2015	10:24:00 AM	N 20 St	P005-1920 to P005-1860	P005-1860	223,900	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0242	5/9/2015	2:17:00 AM	5/12/2015	8:00:00 AM	3200 N M St		P005-3030	492,000	Manhole		Rainfall		None Required	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0243	5/9/2015	10:44:59 PM	5/11/2015	10:58:00 AM	3700 Kinkead Ave	P007-0482 to P007-0480	P007-0482	217,300	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0245	5/9/2015	12:29:00 PM	5/11/2015	10:26:00 AM	N 20 St		P005-1750	99,800	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0248	5/10/2015	3:02:00 AM	5/11/2015	9:14:59 AM	2020 S R St	P006-0800 to P006-0790		178,000	Main Line		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0253	5/10/2015	9:51:00 PM	5/11/2015	3:39:00 PM	1013 N 18 St	P005-1495 to P005-1400	P005-1495	188,900	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0254	5/10/2015	11:20:00 AM	5/11/2015	10:40:00 AM	N 20 St		P005-1940	145,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0256	5/10/2015	1:49:00 PM	5/10/2015	5:29:59 PM	12 Haven Dr	P006-1480 to P006-1470		2,210	Building		Roots		Power Jet	Basement Backup	No	No	Yes	No	None Indicated
15-0257	5/10/2015	5:53:00 PM	5/10/2015	6:30:00 PM	3409 Gary St	P009-2250 to P009-2210		1	Cleanout		Line Break		Repair	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0258	5/11/2015	10:50:00 AM	5/12/2015	8:05:00 AM	3002 N L St	P008-0030 to P008-0020		6,100	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0259	5/11/2015	12:40:00 PM	5/11/2015	10:15:00 PM	3601 Wheeler Ave	MC04-0042 to MC04-0040		5,700	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0260	5/11/2015	1:35:00 PM	5/11/2015	2:29:59 PM	2720 S S St	P009-0360 to P009-0350		150	Manhole		Roots		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0261	5/11/2015	3:35:00 PM	5/11/2015	2:40:00 PM	901 Fresno St	MC03-0585 to MC03-0582	MC03-0582	1	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0263	5/11/2015	3:29:00 PM	5/11/2015	3:30:00 PM	2809 Brooken Hill Dr	Z005-0450 to Z005-0230	Z005-0450	1	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0264	5/11/2015	4:20:00 PM	5/12/2015	10:30:00 AM	2000 Zero St	Z001-0470 to Z001-0460	Z001-0460	103,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0266	5/12/2015	10:28:00 AM	5/12/2015	10:10:00 AM	3830 Crystal Ln	FL02-0680 to FL02-0670		1	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0268	5/12/2015	12:43:00 PM	5/12/2015	1:20:00 PM	815 N 35 St		P008-0290	500	Manhole		Roots	Grease	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0269	5/12/2015	2:15:00 PM	5/13/2015	1:00:00 AM	3409 Santa Fe St		FL01-0340	6,600	Manhole		Line Break		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0270	5/12/2015	3:05:00 PM	12/19/2015	4:15:00 PM	4000 Free Ferry Rd	P007-1140 to P007-1000	P007-1140	1,875	Manhole		Roots	Grease	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0273	5/13/2015	12:25:00 PM	5/13/2015	12:40:00 PM	1306 N R St	P004-0100 to P004-0040	P004-0040	400	Manhole		Roots	Grease	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0274	5/13/2015	2:10:00 PM	5/13/2015	2:50:00 PM	5901 Hwy 71 S		Z001-0280		Manhole		Grease		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0276	5/19/2015	8:15:00 AM	5/19/2015	9:00:00 AM	8313 S 35 Ter	Z003-1730 to Z003-1720	Z003-1730	225	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0278	5/20/2015	3:00:00 AM	5/20/2015	2:15:00 PM	400 N 20 St		P005-1920	101,100	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0279	5/20/2015	3:10:00 AM	5/20/2015	2:16:00 PM	420 N 20 St		P005-1860	50,700	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0280	5/20/2015	3:30:00 AM	5/20/2015	9:28:00 PM	3200 N M St		P005-3030	270,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0284	5/20/2015	7:40:00 AM	5/20/2015	8:45:00 AM	3100 Kelley Hwy		P004-2190		Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0287	5/20/2015	8:46:00 AM	5/20/2015	1:58:00 AM	2900 Brooken Hill Dr	Z005-0450 to Z005-0230	Z005-0450	7,800	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0288	5/20/2015	9:25:00 AM	5/20/2015	8:50:00 PM	614 N 41 St	P007-1760 to P007-1750	P007-1760	68,500	Manhole		Rainfall		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0289	5/20/2015	9:25:00 AM	5/21/2015	9:35:00 AM	4110 Kinkead Ave		P007-1750	76,250	Manhole		Rainfall		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0290	5/20/2015	9:32:00 AM	5/20/2015	9:00:00 PM	1319 S 17 St	P006-0380 to P006-0360		65,000	Cleanout		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0291	5/20/2015	10:16:00 AM	5/20/2015	2:10:00 PM	S P St	P009-0202 to P009-0200	P009-0200	11,700	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0292	5/20/2015	7:15:00 AM	5/20/2015	7:55:00 PM	1013 N 18 St	P005-1520 to P005-1510	P005-1520	64,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0293	5/20/2015	10:39:00 AM	5/20/2015	7:30:00 PM	3700 Kinkead Ave	P007-0482 to P007-0480	P007-0482	29,205	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0294	5/20/2015	10:40:00 AM	5/20/2015	2:15:00 PM	2312 Ingersol Cir	Z002-0860 to Z002-0850		11,100	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0296	5/20/2015	10:55:00 AM	5/20/2015	9:00:00 PM	1815 S 16 St	MC02-0950 to MC02-0910	MC02-0950	61,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0298	5/20/2015	12:14:59 PM	5/21/2015	8:16:00 AM	5100 S 29 St	Z001-2330 to Z001-2320		12,000	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0299	5/20/2015	3:30:00 PM	5/24/2015	5:05:00 PM	4510 N 6 St	FL02-0524 to FL02-0522		0	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0303	5/24/2015	12:00:00 PM	5/25/2015	11:15:00 AM	1806 Zero St	Z001-0550 to Z001-0551		13,950	Main Line		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0304	5/24/2015	12:30:00 PM	5/24/2015	7:46:00 PM	1600 S W St	MC02-1150 to MC02-1140		4,650	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0305	5/24/2015	12:59:59 PM	5/25/2015	1:30:00 AM	1010 S 19 St	P011-2690 to P011-2680		300	Main Line		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0307	5/24/2015	1:24:00 PM	5/25/2015	1:44:59 PM	4109 Bradley Dr	S008-0660 to S008-0650		14,250	Main Line		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0308	5/24/2015	12:30:00 PM	5/25/2015	11:29:59 AM	3100 Kelley Hwy	P004-2170 to P004-1015	P004-1015	66,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
AR0033278*

SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0309	5/24/2015	1:15:00 PM	5/25/2015	1:30:00 PM	2910 Midland Blvd	S008-2180 to S008-2170		6,900	Main Line		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0310	5/24/2015	2:50:00 PM	5/25/2015	2:00:00 PM	N 20 St		P005-1869	276,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0311	5/24/2015	3:14:59 PM	5/25/2015	2:05:00 PM	400 N 20 St		P005-1920	342,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0312	5/24/2015	3:30:00 PM	5/25/2015	2:10:00 PM	3200 N M St		P005-3030	340,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0314	5/24/2015	3:45:00 PM	5/25/2003	2:20:00 PM	3700 Kinkead Ave		P007-0482	271,000	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0317	5/24/2015	7:15:00 PM	5/25/2015	7:15:00 AM	722 N 20 St		P005-1840	144,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0323	5/24/2015	10:15:00 PM	5/25/2015	2:40:00 PM	1801 S Greenwood Ave		P009-0165 P009-0200	98,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0325	5/25/2015	3:14:59 PM	5/25/2015	3:45:00 PM	1918 S 23 St	P006-0930 to P006-0910		30	Cleanout		Rainfall		Power Jet	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0328	5/26/2015	9:14:59 AM	5/26/2015	6:30:00 PM	2000 Zero St		Z001-0758 Z001-0754	40,875	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0329	5/26/2015	10:39:00 PM	5/26/2015	12:00:00 PM	2700 S Y St	P009-0660 to P009-0650	P009-0660	2,835	Manhole		Roots		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0330	5/26/2015	12:14:59 PM	5/29/2015	8:15:00 AM	300 S U St		MC01-0106		Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0336	5/28/2015	9:30:00 AM	5/28/2015	11:45:00 AM	3633 Fischer St	FL01-1820 to FL01-1810		1,350	Main Line		Construction		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0338	5/28/2015	4:44:59 PM	5/28/2015	6:30:00 PM	8006 Hermitage Dr	Z006-1250 to Z006-1240	Z006-1250	105	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0344	6/5/2015	10:55:00 AM	6/5/2015	2:29:59 PM	1012 N 34 St	P008-0330 to P008-0320		30	Cleanout		Roots		Repair	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0348	6/11/2015	3:15:00 AM	6/13/2015	11:00:00 PM	1001 Ballman Rd			341,500	Force Main		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0349	6/13/2015	10:31:00 AM	6/13/2015	11:29:59 PM	1901 Wheeler Ave	MC03-0170 to MC03-0160		118,350	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0350	5/11/2015	4:30:00 PM	5/12/2015	8:25:00 PM	2000 Zero St	Z001-0780 to Z001-0776	Z001-0770	135,750	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0351	5/11/2015	4:20:00 PM	5/12/2015	8:25:00 AM	2000 Zero St	Z001-0756 to Z001-0754	Z001-0754	181,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0355	6/20/2015	1:15:00 PM	6/20/2015	2:45:00 PM	9500 Belhaven View	Z007-0320 to Z007-0300		375	Main Line		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0360	6/25/2015	2:10:00 PM	6/25/2015	12:50:00 PM	2414 Independence St	MC05-2315 to MC05-2310		350	Cleanout		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0363	7/2/2015	12:59:59 PM	7/2/2015	8:29:59 PM	1801 Zero St	MC06-1910 to MC06-1900		2,250	Main Line		Line Break		Repair	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0366	7/5/2015	7:10:00 PM	7/6/2015	8:35:00 AM	3100 Kelley Hwy	P004-2170 to P004-1015	P004-1015	120,750	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0369	7/5/2015	8:25:59 PM	7/5/2015	9:38:00 PM	4210 Clarendon Ave	FL02-1510 to FL02-1450	FL02-1450	14,200	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0370	7/7/2015	6:00:00 PM	7/8/2015	8:00:00 AM	3811 Crystal Ln	FL02-1510 to FL02-1450		4,200	Cleanout		Rainfall		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0371	7/8/2015	8:00:00 AM	7/8/2015	12:40:00 PM	3830 Crystal Ln	FL02-0670 to FL02-0527	FL02-0527	14,000	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0380	7/20/2015	10:14:00 AM	7/20/2015	9:45:00 PM	2905 Canongate Way	Z004-1570 to Z004-1550		1	Main Line		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0382	7/21/2015	4:20:00 PM	7/21/2015	5:00:00 PM	Navy Rd	MC01-0410 to MC01-0400		1	Main Line		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0391	7/22/2015	4:20:00 PM	7/22/2015	5:54:00 PM	2900 Osage St	MC07-0920 to MC07-0910	MC07-0920	470	Manhole		Grease		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0393	7/28/2015	8:29:00 PM	7/29/2015	12:21:00 PM	4601 Irene St	FL01-0800 to FL01-0760		1,160	Main Line		Roots	Grease	Power Jet	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0405	8/26/2015	12:37:00 PM	8/26/2015	2:00:00 PM	2312 Ingersol Cir	Z002-0860 to Z002-0850		415	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0408	8/31/2015	10:30:00 PM	8/31/2015	12:30:00 PM	7411 Holly Ave	Z002-0190 to Z002-0180	Z002-0190	1,500	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0409	9/2/2015	9:05:00 AM	9/2/2015	9:50:00 AM	4709 S 32 St		Z001-2550	45	Manhole		Grease		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0411	9/3/2015	7:52:59 PM	9/4/2015	9:59:59 AM	2823 Memphis St		MC07-1100	840	Manhole		Roots		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0412	9/5/2015	9:26:00 AM	9/5/2015	11:15:00 AM	3000 Irving St	W001-1140 to W001-1120		260	Service Line		Grease	Roots	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0417	9/11/2015	12:40:00 PM	9/11/2015	6:00:00 PM	3011 Blackburn St	P008-1855 to P008-1850		1,550	Service Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0418	9/14/2015	8:55:00 PM	9/14/2015	11:50:00 PM	9424 Belhaven View	Z005-1050 to Z005-0850	Z005-1070	4,375	Manhole		Roots		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0420	9/15/2015	3:36:00 PM	9/15/2015	5:21:00 AM	1305 Willowbrook Cir	Z008-0165 to Z008-0160	Z008-0165	850	Manhole		Construction		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0427	10/9/2015	9:06:00 AM	10/9/2015	9:59:59 PM	3830 Crystal Ln	FL02-0720 to FL02-0690		450	Manhole		Roots		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0428	10/6/2015	12:33:00 PM	10/6/2015	3:14:59 PM	3604 Northview Dr	FL01-1120 to FL01-1110		75	Service Line		Roots		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0434	10/17/2015	9:36:00 AM	10/17/2015	11:40:00 AM	4515 Free Ferry Rd	P007-2910 to P007-2900		550	Service Line		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0435	10/19/2015	8:54:00 PM	10/19/2015	11:45:00 PM	3005 Pendell Ln	P009-0250 to P009-0245		171	Building		Roots	Line Break	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0436	10/26/2015	10:22:00 AM	10/26/2015	10:25:00 AM	3529 S 34 St	P009-2290 to P009-2280	P009-2290	1	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0255	5/10/2015	12:00:00 PM	5/10/2015	12:00:00 PM	1305 Willowbrook Dr	Z008-0165 to Z008-0160		241,500	Main Line		Line Break		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0440	11/2/2015	11:41:00 AM	11/2/2015	12:59:59 PM	2001 Old Greenwood Rd	P008-0820 to P008-0810	P008-0825	5,000	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0442	11/3/2015	3:46:00 PM	11/3/2015	4:55:00 PM	1323 N 56 Ter	S002-1620 to S002-1610	S002-1620	650	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0447	11/6/2015	7:01:00 AM	11/6/2015	7:45:00 AM	1422 N 56 Ter	S002-1590 to S002-1580	S002-1590	550	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0452	11/16/2015	11:07:00 AM	11/16/2015	6:30:00 PM	2104 Garner Ln	P009-0490 to P009-0480		2,200	Main Line		Line Break		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0453	11/16/2015	9:18:00 PM	11/16/2015	11:00:00 PM	1901 S Greenwood St	P009-2890 to P009-0350		1,050	Building		Roots		Power Jet	Basement Backup	No	No	Yes	No	None Indicated
15-0454	11/17/2015	8:50:00 AM	11/17/2015	4:30:00 PM	1413 Phoenix Ave	MC06-1128 to MC06-1120	MC06-1120	46,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0463	11/17/2015	10:07:00 AM	11/17/2015	10:20:00 AM	5100 Towson Ave	MC04-0320 to MC04-0310	MC04-0320	125	Manhole		Rainfall	Grease	Power Jet	Public Land (Ground)	No	No	Yes	No	None Indicated
15-0467	11/17/2015	10:58:00 AM	11/17/2015	1:39:00 PM	1823 S 31 St		P009-0200	1,770	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0468	11/17/2015	10:03:00 PM	11/17/2015	2:20:00 PM	2223 S S St	P006-0930 to P006-0910		1,200	Building		Rainfall	Line Break	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0470	11/17/2015	9:30:00 AM	11/18/2015	8:00:00 AM	5283 N 31 St	P008-1300 to P008-1290		405,000	Main Line		Construction		Repair	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0469	11/17/2015	11:25:00 PM	11/18/2015	9:28:00 AM	3710 Kinkead Ave	P007-0482 to P007-0480	P007-0480	39,630	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0471	11/18/2015	11:25:00 AM	11/18/2015	8:15:00 AM	1415 N 32 St	P005-3000 to P005-0617	P005-3000	118,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0472	11/17/2015	11:38:00 AM	11/18/2015	9:33:00 AM	1425 N 34 St	P007-0065 to P007-0060	P007-0065	78,900	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0474	11/17/2015	11:55:00 AM	11/18/2015	9:25:00 AM	N 20 St	P005-1860 to P005-1850	P005-1860	129,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0473	11/17/2015	11:37:00 AM	11/18/2015	9:32:00 AM	1400 N 34 St	P007-0065 to P007-0060	P007-0060	52,600	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0475	11/17/2015	11:40:00 AM	11/17/2015	11:50:00 AM	501 N 11 St	P002-1140 to P002-1120		15	Building		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0476	11/17/2015	12:10:59 PM	11/18/2018	9:20:00 AM	N 20 St	P005-1920 to P005-1860	P005-1920	63,450	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0478	11/17/2015	12:59:59 PM	11/17/2015	2:35:00 PM	2100 Towson Ave	MC02-0230 to MC02-0220	MC02-0230	525	Manhole		Rainfall		Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	Mill Creek
15-0479	11/17/2015	1:22:00 PM	11/17/2015	3:00:00 PM	8617 S 31 Ter	Z003-1540 to Z003-1410		500	Building		Rainfall	Grease	Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0480	11/18/2015	9:53:00 AM	11/18/2015	11:00:59 PM	2104 Garner Ln	P009-0490 to P009-0480	P009-0490	285	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0481	11/18/2015	12:30:00 PM	11/18/2015	12:20:00 PM	4818 S 31 St	Z001-2510 to Z001-2500		1	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0483	11/18/2015	12:29:00 PM	11/18/2015	4:10:00 PM	N 25 St	W001-0580 to W001-0560	W001-0580	75	Manhole		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0489	11/27/2015	5:40:00 PM	11/28/2015	8:20:00 AM	3200 N M St		P005-3030	16,200	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0492	11/27/2015	8:10:00 PM	11/28/2015	8:30:00 AM	3700 Kinkead Ave		P007-0482	7,350	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0495	11/28/2015	11:25:00 PM	11/28/2015	1:25:00 PM	2200 Garner Ln	P009-0480 to P009-0470	P009-0480	600	Manhole		Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0498	11/29/2015	4:40:00 PM	11/30/2015	8:57:00 AM	3200 N M St		P005-3030	19,540	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0499	11/30/2015	10:40:00 AM	11/30/2015	11:15:00 AM	N 31 St	P004-0860 to P004-0850	P004-0860	525	Manhole		Rainfall		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0504	12/1/2015	8:10:00 AM	12/1/2015	10:30:00 AM	1820 S C St	P011-2600 to P011-2590		740	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0507	12/7/2015	3:43:00 PM	12/8/2015	1:07:00 PM	1514 Hendricks Blvd	P008-2840 to P008-2834		1,282	Cleanout		Line Break		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0509	12/3/1936	6:01:00 PM	12/3/2015	7:44:59 PM	127 Perth Ct	Z007-0440 to Z007-0430	Z007-0430	145	Manhole		Grease		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0510	12/4/2015	8:37:00 AM	12/4/2015	9:19:00 AM	2412 Towson Ave	MC03-0260 to MC03-0240		1,600	Main Line		Line Break		Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0511	12/4/2015	9:25:00 AM	12/4/2015	10:15:00 AM	1601 S 74 St	RL01-0682 to RL01-0680	RL01-0682	250	Manhole		Roots	Grease	Power Jet	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0512	12/4/2015	9:26:00 AM	12/4/2015	9:26:00 AM	1000 Carthage St	MC03-0580 to MC03-0510	MC03-0580	1			Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0514	12/5/2015	3:55:00 PM	12/5/2015	4:44:59 PM	1924 Zero St	Z001-0520 to Z001-0510		50	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0525	12/14/2015	1:33:00 AM	12/14/2015	9:13:00 AM	3200 S M St	P005-3030 to P005-3020	P005-3030	31,150	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0526	12/13/2015	11:41:00 PM	12/14/2015	9:14:59 AM	1412 N 34 St		P007-0060	30,850	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0527	12/13/2015	1:47:00 PM	12/14/2015	9:17:00 AM	1425 N 34 St	P007-0060 to P007-0050	P007-0050	6,145	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0530	12/13/2015	3:55:00 PM	12/14/2015	9:17:00 AM	3700 Kinkead Ave	P007-0482 to P007-0480	P007-0482	27,550	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0531	12/13/2015	4:09:00 PM	12/14/2015	9:20:00 AM	4221 Park Ave	P007-2040 to P007-2030	P007-2040	5,155	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0536	12/14/2015	12:30:00 PM	12/14/2015	12:45:00 PM	3400 S M St	P008-3100 to P008-3090		300			Roots		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0537	12/14/2015	12:10:00 PM	12/14/2015	1:05:00 PM	1806 Zero St	Z001-0540 to Z001-0530		68	Cleanout		Roots	Grease	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
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SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0538	12/14/2015	12:59:59 PM	12/14/2015	1:18:00 PM	1622 S 28 St	P006-2370 to P006-2350	P006-2350	36	Manhole		Roots	Grease	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0543	12/15/2015	8:21:59 AM	12/15/2015	1:00:00 AM	1501 May Ave	P005-0220 to P005-0210		1,800	Cleanout		Grease		Power Jet	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0552	12/22/2015	6:17:00 PM	12/22/2015	7:56:59 PM	3417 Santa Fe St	FL01-0350 to FL01-0340		208	Cleanout		Grease		Power Rod	Private PPTY (Ground)	No	No	No	No	None Indicated
15-0556	12/27/2015	10:59:00 AM	12/29/2015	10:16:00 AM	1307 S 17 St	P006-0370 to P006-0360		14,185	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0557	12/27/2015	1:09:00 PM	12/28/2015	9:59:59 AM	4608 S 25 St	MC07-0430 to MC07-0420		12,510	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0560	12/27/2015	1:05:00 PM	12/29/2015	10:29:00 AM	N 19 St		P005-1350	271,900	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0561	12/27/2015	2:16:00 PM	12/28/2015	9:14:59 AM	Kelley Hwy	P004-2200 to P004-2190	P004-2190	230,600	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0562	12/27/2015	2:54:00 PM	12/29/2015	10:49:00 AM	3200 N M St		P005-3030	732,325	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0563	12/27/2015	2:23:00 PM	12/29/2015	10:50:00 AM	1425 N 34 St	P007-0060 to P007-0050	P007-0050	533,400	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0564	12/27/2015	2:25:59 PM	12/29/2015	10:54:00 AM	1412 N 34 St	P007-0065 to P007-0060	P007-0060	400,200	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0565	12/27/2015	2:27:00 PM	12/29/2015	10:58:00 AM	1410 N 34 St	P007-0070 to P007-0065	P007-0065	734,525	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0566	12/27/2015	2:37:00 PM	12/28/2015	1:26:00 PM	N 37 St	P007-0316 to P007-0314	P007-0314	68,400	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0567	12/27/2015	2:40:00 PM	12/28/2015	1:08:00 PM	1201 N 37 St	P007-0370 to P007-0316	P007-0316	269,600	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0568	12/27/2015	2:45:00 PM	12/28/2015	1:15:00 PM	1124 N 40 St	P007-2260 to P007-1550	P007-1550	202,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0569	12/27/2016	2:29:59 PM	12/29/2015	10:04:00 AM	1319 S 17 St	P006-0380 to P006-0360		33,340	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0570	12/27/2015	3:08:00 PM	12/29/2015	10:35:00 AM	1013 N 18 St	P005-1520 to P005-1510	P005-1520	391,050	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0571	12/27/2015	3:10:00 PM	12/28/2015	10:40:00 AM	1018 N 18 St	P005-1440 to P005-1390	P005-1390	141,000	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0572	12/27/2015	2:03:00 PM	12/28/2015	1:40:00 PM	5410 S 17 St	MC06-1040 to MC06-0990		14,150	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0573	12/27/2015	2:32:00 PM	12/28/2015	10:30:00 AM	2004 N 13 St	P004-0380 to P004-0370		11,880	Cleanout		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0574	12/27/2015	3:26:00 PM	12/28/2015	12:40:00 PM	4221 Park Ave	P007-2080 to P007-2070	P007-2070	254,800	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0575	12/27/2015	3:37:00 PM	12/28/2015	12:55:59 PM	3700 Kinkead Ave	P007-0484 to P007-0482	P007-0482	345,400	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0576	12/27/2015	3:25:00 PM	12/28/2015	3:05:00 PM	722 N 20 St	P005-1750 to P005-1630	P005-1750	14,200	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0577	12/27/2015	3:09:00 PM	12/28/2015	3:00:00 PM	4110 Kinkead Ave	P007-1880 to P007-1870	P007-1880	35,750	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0581	12/27/2015	4:22:00 PM	12/28/2016	3:09:00 PM	1000 Carthage St	MC03-0585 to MC03-0582	MC03-0582	683,500	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0594	12/27/2015	5:40:00 PM	12/28/2015	2:53:00 PM	Old Greenwood Rd	P009-0235 to P009-0200	P009-0200	127,300	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0595	12/27/2015	5:53:00 PM	12/28/2015	2:57:00 PM	1801 Old Greenwood Rd	P009-0820 to P009-0810	P009-0820	18,960	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0596	12/27/2015	6:22:00 PM	12/28/2015	5:20:00 PM	301 S U St	MC01-0106 to MC01-0100	MC01-0100	138,200	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0597	12/27/2015	8:29:59 PM	12/28/2015	3:25:00 PM	Wheeler Ave	MC03-0630 to MC03-0600	MC03-0630	11,350	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated

Sanitary Sewer Overflow Summary Report
AR0033278*

SSO ID	Start Date	Start Time	End Date	End Time	Address	Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0599	12/28/2015	12:55:00 PM	12/28/2015	1:20:00 PM	1906 N K St	P005-1410 to P005-1400		500	Cleanout		Roots		Power Rod	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0601	12/30/2015	10:15:00 AM	12/30/2015	10:48:00 AM	127 Perth Ct	Z007-0430 to Z007-0420	Z004-0440	40	Manhole		Roots	Grease	Power Rod	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0604	12/30/2015	6:55:59 PM	12/30/2015	8:59:00 PM	3804 Free Ferry Rd	P007-1180 to P007-1170	P007-1180	1,100	Manhole		Roots		None Indicated	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0605	12/31/2015	8:47:00 AM	1/2/2016	3:59:59 PM	S U St	MC01-0100 to MC01-0080	MC01-0080	16,505	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
						TOTAL OVERFLOWS	**256**	**13,567,272**	**Gallons**										

* Data in this report is based on the SSO field report and backup documentation and may differ from data reported on the ADEQ website.

Sanitary Sewer Overflow Summary Report
AR0048801*

SSO ID	Start Date	Start Time	End Date	End Time	Address		Pipe Description	Structure	Estimated Gallons Spilled	Source 1	Source 2	Cause 1	Cause 2	Initial Action	SSO Impact	OEHC	OEEI	NEAH	EFK	Receiving Water
15-0477	11/17/2015	12:35:00 PM	11/18/2015	9:00:00 AM	12920	Brittany Dr	*FC02-0860 to FC02-0850*	FC02-0860	336,875	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0497	11/29/2015	3:30:00 PM	11/30/2015	9:55:00 AM	12920	Brittany Dr	*FC02-0860 to FC02-0850*	FC02-0860		Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
15-0534	12/13/2015	5:50:00 PM	12/14/2015	10:10:00 AM	12920	Brittany Dr	*FC02-0860 to FC02-0850*	FC02-0860	29,370	Manhole		Rainfall		None Required	Receving Water (Riv, Str)	No	No	Yes	No	None Indicated
15-0582	12/27/2015	4:20:00 PM	12/29/2015	9:10:00 AM	12920	Brittany Dr		FC02-0860	612,500	Manhole		Rainfall		None Required	Private PPTY (Ground)	No	No	Yes	No	None Indicated
							TOTAL OVERFLOWS	**4**	**978,745 Gallons**											

* Data in this report is based on the SSO field report and backup documentation and may differ from data reported on the ADEQ website.

Attachment 7

CMOM Sanitary Sewer Overflow Emergency Response Program Plan

CDM Smith

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December 22, 2015

Via Federal Express

Director, Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Mail Code (6EN)
Dallas, Texas 75202

Deputy Regional Counsel, Enforcement
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Dallas, Texas 75202

Director
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

Re: United States of America and State of Arkansas v. City of Fort Smith, Arkansas,
United States District Court, Western District of Arkansas – Case No. 2:14-cv-2266-PKH

Greetings:

Regarding the Sanitary Sewer Overflow Emergency Response component of CMOM (paragraph 48 of the Consent Decree), the City of Fort Smith hereby submits its Sanitary Sewer Overflow Emergency Response Plan for EPA review and approval. As a deliverable under paragraph 89 of

the Consent Decree, the Plan is also submitted to ADEQ. The submission is made in hard copy as well as in electronic and searchable text format.

Thank you for your attention to this matter.

Very truly yours,

Jerry L. Canfield
cmm

Enclosures
cc: Chief, Environmental Enforcement Section (Via Federal Express)
Environment and Natural Resources Division
U.S. Department of Justice
Box 7611 Ben Franklin Station
Washington, D.C. 20044-7611
Re: DOJ No. 90-5-1-1-08677

Lisa Cherup <Lisa.Cherup@usdoj.gov>
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CAPACITY, MANAGEMENT, OPERATIONS, AND MAINTENANCE (CMOM) PROGRAM AND IMPLEMENTATION PLAN

Sanitary Sewer Overflow Emergency Response Program Plan

December 2015

CITY OF FORT SMITH, ARKANSAS

Capacity, Management, Operation, and Maintenance Program

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 gather and evaluate 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 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 knowing violations.

Steve Parke, Director of Utilities
City of Fort Smith, AR
Utility Department

12/22/2015
Date

Sanitary Sewer Overflow Emergency Response Program Plan

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List of Acronyms

ADEQ	Arkansas Department of Environmental Quality
CCA	Continuing Capacity Assurance
CCTV	Closed Circuit Television
CMOM	Capacity, Management, Operations, & Maintenance
CSSA	Continuing Sewer System Assessment
CTP	Comprehensive Training Plan
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	U.S. Environmental Protection Agency
FOG	Fats, Oil and Grease
GIS	Geographic Information System
I&I	Infiltration and Inflow
IMS	Information Management System
MACP	NASSCO's Manhole Assessment and Certification Program
MGD or mgd	Million Gallons per Day
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
OERP	Overflow Emergency Response Plan
PACP	NASSCO's Pipe Assessment and Certification Program
SOP	Standard Operation Procedure
SSA	Sewer System Assessment
SSO	Sanitary Sewer Overflow
U.S.	United States
WCTS	Wastewater Collection and Transmission System
WWTP	Wastewater Treatment Plant

Definitions

Unless otherwise defined herein, or expressly stated in the City of Fort Smith Sewer Use Ordinance, terms used in in the plans comprising the CMOM Program and Implementation Plan shall have the meanings given to those terms in the CWA and the EPA Consent Decree lodged for City of Fort Smith, Arkansas. The terms and acronyms are defined as follows:

ADEQ shall mean the Arkansas Department of Environmental Quality, and any successor departments or agencies of the State of Arkansas.

Annual Report shall mean the report to be submitted annually pursuant to Section X of the Consent Decree.

Article shall mean a portion of Section V ("Comprehensive Remedial Requirements" Section) of the Consent Decree.

Basin shall mean a section of a Sewershed that is a distinct wastewater collection area, and designated by Fort Smith as such.

Building/Private Property Backup shall mean a wastewater backup into a building and/or a wastewater overflow onto private property that is caused by blockages, flow conditions or other malfunctions in the WCTS. "Building/Private Property Backup'' does not include a wastewater backup into a building and/or a wastewater overflow onto private property that is caused solely by a blockage or other malfunction of a Private Service Lateral or other piping or conveyance system that Fort Smith does not own or operate.

Calendar Year shall mean the twelve (12) month period starting on January 1 and ending on December 31 of a given year.

Capacity Constraint shall mean those discrete components, or groups of components of the WCTS that are determined by the City, consistent with Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree to have capacity deficiency issues that have caused or significantly contributed to previous capacity-related SSOs; that are likely to cause or significantly contribute to future capacity-related SSOs; and/or that are identified as overflow locations for any storm event presented in Section V, Article Four, Paragraph 30.

City or **Fort Smith** shall mean the City of Fort Smith, Arkansas.

Clean Water Act or **CWA** shall mean the Federal Clean Water Act found at 33 U.S.C. §§ 1251- 1387.

CMOM or **Capacity, Management, Operations, and Maintenance** shall mean a program of accepted industry practices to properly manage, operate and maintain sanitary sewer collection, transmission and treatment systems, investigate capacity constrained areas of these systems, and respond to SSO events, including as identified by the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs (EPA, Jan. 2005).

Consent Decree or **Decree** shall mean the Decree (and all Appendices) lodged by the U.S. EPA against the City of Fort Smith.

Consultant shall mean a professional engineer licensed in the State of Arkansas or other recognized professional within a field of practice, with appropriate qualifications, experience and adequate staff and resources necessary to undertake any program plan, study, analysis, design or report required by the terms of the Consent Decree.

Contractor shall mean a person or entity who in pursuit of its business undertakes to perform a job or piece of work, retaining in himself control of means, method and manner of accomplishing the desired result.

Critical Response Time shall mean the time interval between activation of the high wet well level alarm at a Pump Station and the first SSO from the WCTS tributary to that Pump Station under peak dry-weather flow conditions or under peak wet-weather flow conditions (generated by the analysis rainfalls presented in Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree), whichever weather conditions prevail at the time of the SSO.

Cross-Connection shall mean any constructed connection, whether by pipe or any other means, between any part of the WCTS and any part of a storm water drainage system that is capable of conveying flow between the two systems.

Date of Lodging shall mean the date the United States filed a copy of the Consent Decree signed by all Parties with the District Court, along with the Complaint, prior to submitting the Consent Decree for publication in the Federal Register to provide an opportunity for public review and comment thereon. The Date of Lodging for the City's Consent Decree is January 02, 2015 (1/2/2015).

Day or **Days** shall mean a calendar day or calendar days unless expressly stated to be a business day or business days. In computing any period of time under the Consent Decree, where the last Day would fall on a Saturday, Sunday, or a Federal or State holiday, the period shall run until the close of the next business day.

Deliverable shall mean any written document required to be prepared and/or submitted by or on behalf of Fort Smith pursuant to the Consent Decree.

Direct Discharge shall mean a sewer pipe installed to convey wastewater from a sanitary sewer for release into the environment.

Environmental Protection Agency or **EPA** shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

Equalization Facilities or **EQ Facilities** shall mean those components of the WCTS designated, designed or intended for the temporary storage of wet-weather wastewater flows.

Fats, Oil and Grease or **FOG** shall mean fats, oil and grease, whether petroleum-based, mineral-oil-based, animal-based or vegetable-based.

FOG Control Device shall mean any grease interceptor, grease trap, or other mechanism, device, or process that attaches to or is applied to wastewater plumbing fixtures and/or Private Service Lines to collect, contain, or remove FOG from the wastewater stream of a FOG Generator prior to discharge into the WCTS.

FOG Control Program Plan or **Fats, Oil and Grease Control Program Plan** shall mean Fort Smith's program to control discharge of FOG into the WCTS as developed and approved under **Section V, Article Seven, Paragraph 37** of the Consent Decree.

FOG Generator shall mean any food service establishment or food-processing establishment that discharges FOG into the WCTS, provided, however, that those establishments covered by the City's industrial user program shall not be considered a FOG Generator for the purposes of the Consent Decree.

Force Main shall mean any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump. A Force Main is intended to convey wastewater under pressure.

Gravity Sewer Line shall mean a pipe that receives, contains and conveys wastewater not normally under pressure, but intended to flow unassisted under the influence of gravity.

Small-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are less than twenty-four (24) inches in diameter.

Large-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are twenty-four (24) inches or greater in diameter.

Infiltration as defined by 40 C.F.R. § 35.2005(b)(20) shall mean water other than wastewater that enters a WCTS (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes.

Inflow as defined by 40 C.F.R. § 35.2005(b) (21) shall mean water other than wastewater that enters a WCTS (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage.

Infiltration and Inflow or **I&I** shall mean the total quantity of water from Infiltration and Inflow without distinguishing the source.

Interest shall mean interest accruing on a sum calculated in the manner provided by 28 U.S.C. § 1961.

Manhole Assessment and Certification Program or **MACP** shall mean the **National Association of Sewer Service Companies (NASSCO)** Manhole Assessment and Certification Program.

Massard Permit shall mean NPDES Permit Number AR0021750 issued to City pursuant to Section 402 of the Clean Water Act, 33 U,S. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the Massard POTW and any future extended, modified or reissued permit.

Massard WWTP shall mean the publicly owned treatment works that is owned and operated by the City and that is located in Fort Smith with an address of **1609 North 9th Terrace, Barling, Arkansas**.

Month shall mean one calendar month running from a numbered day to the same numbered day of the following calendar month, regardless of whether the particular month has 28, 29, 30, or 31 days. If a triggering event would occur on a day of the month that does not exist (for example, February 30), then the event shall be due on the first day of the following month (for example March 1).

NASSCO shall mean the National Association of Sewer Service Companies.

P Street Permit shall mean NPDES Permit Number AR0033278 issued to City pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the P Street POTW and any future, extended, modified or reissued permit.

P Street WWTP shall mean the publicly owned treatment works that is owned and operated by City and that is located at **13 North P Street in Fort Smith, Arkansas**.

Pipe Assessment and Certification Program or **PACP** shall mean the NASSCO Pipe Assessment and Certification Program.

Pipe Segment shall mean the portion of a Gravity Sewer Line extending from manhole to manhole.

Private Service Line shall mean a sewer line which is not owned or operated by City, but which conveys wastewater from a building to a main line of the WCTS.

Private Service Line Release shall mean any spill, release, or diversion of sewage from a Private Service Line to any location other than the WCTS caused solely by a blockage or other malfunction in that Service Line, even if the release does not reach Waters of the State or waters of the United States.

Pump Station or **Pumping Station** shall mean facilities owned or operated by Fort Smith that contain pumps that lift wastewater from a lower to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary to the operation of that Pump Station within the WCTS.

Recurring Private Service Line Release shall mean a Private Service Line Release that has occurred within three (3) years of a prior Private Service Line Release at the same location.

Recurring SSO, Recurring Dry-Weather SSO, and **Recurring Wet-Weather SSO.** A “Recurring SSO” shall mean any SSO that has occurred within three (3) years of a prior SSO that occurred at the same location under any weather conditions (wet or dry). A "Recurring Dry-Weather SSO" shall mean an SSO that has occurred during dry weather within three (3) Years of a prior SSO at the same location that also occurred during dry weather. A "Recurring Wet-Weather SSO" shall mean an SSO that has occurred during wet weather within three (3) Years of a prior SSO at the same location that also occurred during wet weather.

Remedial Measures shall mean spot repairs, trenchless sewer rehabilitation, sewer replacement, repair or reconstruction, and any other appropriate WCTS improvement technique for resolving condition deficiencies and/or capacity deficiencies in a particular system asset or group of assets within the WCTS, in accordance with **Appendix D** of the Consent Decree ("Remedial Determination Process"), that have caused or significantly contributed to previous SSOs, and/or, that are likely to cause or significantly contribute to future occurrence of SSOs.

Sanitary Sewer Overflow or **SSO** shall mean any spill, release, or diversion of sewage from the WCTS, including: (1) an overflow that results in a discharge to Waters of the State or waters of the United States, and (2) an overflow of wastewater, including a wastewater backup into a building or wastewater overflow onto private property, such as a Building/Private Property Backup (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building

lateral (i.e. a "Private Service Line")), even if that overflow does not reach Waters of the State or waters of the United States.

Sewershed shall mean a section of City's WCTS that is a distinct drainage or wastewater collection area and designated as such by City for the P Street WWTP and the Massard WWTP.

State of Arkansas or **State** shall mean the State of Arkansas acting on behalf of ADEQ.

Sub-basin shall mean a section of a Basin that is a distinct wastewater collection area and designated by Fort Smith as such.

Tabulation shall mean a document in a format containing text searchable cells or fields that is also sortable by data category.

United States or U.S. shall mean the United States of America, acting on behalf of EPA.

Wastewater Treatment Plant or WWTP shall mean the Massard or P Street wastewater treatment plants and components thereof.

Wastewater Collection and Transmission System or WCTS shall mean the sanitary sewer collection, retention and transmission systems for both the Massard WWTP Sewershed and the P Street WWTP Sewershed, including all pipes, Force Mains, Gravity Sewer Lines, Pump Stations, EQ Basins, manholes and appurtenances thereto, that are owned or operated by City at any time from the Date of Lodging of the Consent Decree until its termination under Section XXIV.

Waters of the State shall mean all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies of accumulations of water, surface and underground, natural and artificial, public or private, which are contained within, flow through, or border upon the State of Arkansas, or any portion of the State of Arkansas, as defined in Ark. Code Ann. §84-102(10).

Year shall mean a twelve month period regardless of the beginning date. In the event a triggered event shall be due on a year ending date that does not exist (for example, February 29 in some years), then the event shall be due on the first day of the following month (for example, March 1).

Capacity, Management, Operation, and Maintenance (CMOM) Program Summary and Intent

On January 2, 2015, the City of Fort Smith, Arkansas (City) entered into a Consent Decree with the United States Environmental Protection Agency (EPA) and the State of Arkansas to address deficiencies within the City's wastewater collection and transmission system (WCTS). Per Section V, Article Seven of the Consent Decree, the City will prepare an effective WCTS Capacity, Management, Operation, and Maintenance Program ("CMOM Program") consistent with EPA's 2005 Guidance entitled "Guide for Evaluating Capacity, Management Operation and Maintenance Programs at Sanitary Sewer Collection Systems." All components of the CMOM Program, as set forth in Paragraphs 37-56, shall be submitted in report form to EPA for review and approval at a date no later than two (2) years from the Date of Lodging, with shorter submission dates for certain components. The Date of Lodging for the Consent Decree has been established as January 2, 2015.

The aggregate CMOM Program is comprised of 13 separate components that were developed to address deficiencies within specific elements of the City of Fort Smith's WCTS. Upon approval by EPA, each of the respective CMOM components is intended to be used by the City of Fort Smith as guidelines for the implementation of a defined set of procedures to satisfy the long-term requirements of EPA and promote compliance with the Clean Water Act (CWA).

Section 1
Consent Decree Requirements of the Sanitary Sewer Overflow Emergency Response Program Plan

The Sanitary Sewer Overflow Emergency Response Program (OERP) Plan described herein has been prepared to satisfy the requirements set forth in Article Seven, Paragraphs 48 and 49 of the Consent Decree and must be submitted to EPA for review no later than twelve (12) months from the Date of Lodging of the Consent Decree (i.e., by December 31, 2015). Following EPA's approval, the City will initiate the implementation of the plan. **Table 1-1** shows a list of the Consent Decree requirements for the OERP and the corresponding section of this document that addresses each requirement.

Table 1-1 Summary of Consent Decree Requirements for the OERP

Consent Decree Paragraph		Consent Decree Requirement	OERP Plan Section
48.a		The execution of the OERP shall, at a minimum, result in:	
48.a.	i.	All Sanitary Sewer Overflows (SSOs) being responded to and halted as rapidly as technically feasible, consistent with safety and other legal requirements	Section 3
	ii.	SSO mitigation measures being employed whenever appropriate to minimize human health and environmental risks	Section 3
	iii.	Appropriate steps being implemented to prevent SSO recurrence	3.3
	iv.	Timely and complete reporting of all SSOs in accordance with the SSO reporting requirements presented in Paragraph 47 of this Consent Decree	Section 4
48.b		Regarding the response procedures for SSOs the OERP shall include, at a minimum:	
48.b.	i.	An adequate methodology for estimating the volume of SSOs, including but not limited to, using the earliest start time when City learned of the SSO and using the known end time of the SSO;	Appendix A
	ii.	A description on the methods the City shall use, when required by a permit or applicable law, to notify the public (through local new media or other means, including signs or barricades to restrict access) or any applicable governmental authorities of the occurrence of an SSO;	3.2.5
	iii.	A detailed description of the steps to be taken to minimize the volume and/or duration of the SSO;	3.2
	iv.	A description of the City's follow-up process for SSO cleanup	3.2.2

Consent Decree Paragraph		Consent Decree Requirement	OERP Plan Section
	v.	A description of the WCTS investigation efforts that the City shall perform to determine the cause(s) of each SSO after its cessation. Investigations shall commence as soon as technically feasible, but not later than seven (7) days after cessation of the SSO. No WCTS investigations are required for Recurring Wet-Weather SSOs if the City believes they are caused solely by previously-documented Capacity Constraints in the Pipe Segments downstream from the SSO locations, and if no sewer system cleaning or other maintenance activities are required to stop the prior SSOs at that location.	3.3
	vi.	A description of response procedures for SSOs that occur at Pump Stations or Force Mains. In the event that a repair at a Pump Station or Force Main may cause or lengthen the time of an SSO, the OERP shall provide a procedure for determining when a wastewater pump-around is required	3.2 3.2.3
	vii.	A provision that the Information Management System (IMS) maintain records on SSOs for a minimum of ten (10) Years after their occurrence	4.1
	viii.	A detailed plan describing the procedures that the City shall follow in responding to a Building/Private Property Backup, including: The timeframe objectives for responding to calls reporting potential backups; The process used to determine whether a reported backup was caused by conditions in the Private Service Line or in the WCTS into which the Private Service Line connects; The methods for communicating with customers about how and where to report potential backups; A description of the methods for communicating with customers the results of City's investigation into whether the backup was caused by conditions in a Private Service Line or whether the backup was a Building/Private Property Backup; and A description of the methods for communicating with customers about how to obtain clean up support from City if City determines that a backup was a Building/Private Property Backup.	3.2.1, 3.2.4
49.		The City shall submit a Tabulation of the OERP activities performed in each Calendar Year as part of the Annual Report for that Calendar Year in accordance with Section X "Reporting" of the Consent Decree.	4.2

Section 2
Purpose and Goals of the OERP

The OERP is a component of the City's comprehensive CMOM Program and is intended to provide a standardized set of procedures for the City of Fort Smith staff to follow in the event of a sanitary sewer overflow (SSO). The OERP identifies the response measures to protect the public and the environment from SSO events.

The OERP is comprised of the following elements:

- Resources, including response personnel and equipment
- Overflow response procedures, including initial notification, confirmation of the SSO, correction, containment, and cleanup
- Public and applicable governmental agency notification process
- Post-SSO WCTS investigations

The OERP is coordinated with the SSO Documentation and Reporting Program which includes SSO reporting procedures for both EPA and the Arkansas Department of Environmental Quality (ADEQ); thereby, ensuring both regulatory agencies are informed of all SSOs and resulting response measures in a timely manner.

Section 3
OERP Resources and Procedures

The administration and implementation of an OERP requires adequate staff, equipment, software/hardware resources, and pre-planning. This section discusses the resources available and the general procedures associated with the SSO response.

3.1 Resources

The City of Fort Smith maintains resources, in terms of personnel, equipment, and access to outside contractors, to safely respond to and halt SSOs.

The City of Fort Smith maintains a staff of response personnel ready to respond to SSO events, 24 hours a day, 365 days per year. SSO response activities are primarily the responsibility of the Sewer System Program Manager and his/her staff; although support from other Utility Department divisions may be necessary depending upon the location and cause of the SSO. The primary roles and responsibilities for the procedures associated with the OERP are as follows:

- The System Control Operator is responsible for receiving notification calls and initiating the SSO response, including opening of a work order for the reported event and dispatching response personnel to the subject site.
- The response personnel arrive on-site and act as "first responders" to potential SSO occurrences. Response personnel are tasked with first evaluating the safety of the situation, then determining if a reported issue is indeed an SSO, and whether the response to the overflow is the responsibility of the City of Fort Smith. If the SSO is the responsibility of the City of Fort Smith, the response personnel will assess the apparent cause of the SSO, identify the impacted area, establish a control zone, determine whether additional resources are needed, and take actions to halt or contain the overflow, as necessary.
- The Supervisor is responsible for oversight and guidance of the response personnel. The Supervisor works with the response personnel to provide resources to halt and remediate the SSO. The Supervisor confirms the findings of the response personnel and provides information to the Sewer System Program Manager for reporting to ADEQ.
- The Sewer System Program Manager, or his/her supervisors, is responsible for submitting reports to ADEQ, providing general oversight to the Supervisor responding to the SSO, and identifying the necessary post-SSO WCTS investigations.

The City's response personnel have the necessary equipment available to respond to SSOs, including a jet-vacuum combination truck, a power rodder, and miscellaneous supporting equipment (sand bags, signage, public access restriction rope/tape, disinfectant, etc.). The response personnel may request assistance from other City personnel with the following equipment as needed:

- CCTV inspection truck
- Backhoe
- Dump truck
- By-pass pumping equipment
- Repair parts and materials

The Supervisor will identify the necessary resources and techniques based on site accessibility, location of the sewage spill, size of impacted area, the need to minimize impact on the environment, and the risk of hazards to the public.

In the event that a SSO occurrence cannot be halted by City personnel, the City will enlist services of a private contractor to assist in the cessation of the SSO.

3.2 Overflow Response Procedures

For each active SSO to which the City responds, the primary objective, first and foremost, is to halt the release of sewage. This objective is particularly applicable for SSOs with higher flow rates. There may be cases where a very quick containment action may prevent significant impacts; however, halting the actual SSO will typically result in the least overall impact. Field conditions, along with the experience and judgment of the response personnel, must drive the actions of the personnel to protect public health and minimize environmental impacts.

The City of Fort Smith's investigation of a possible SSO begins when a customer, a City employee, supervisory control and data acquisition (SCADA) system, or outside party reports a possible overflow. The response activities will continue, as needed, through assessment, cleanup, reporting, and additional investigations. The SSO response procedures apply whether the SSO is from a gravity sewer, pump station, or force main. Any special direction or conditions required for pump station and force main SSOs are noted within the text of each step.

3.2.1 Initial Notification

Notifications of possible SSOs may originate from multiple sources such as the City of Fort Smith personnel, SCADA, or the public. Any person with a potential SSO, including customers with potential Building/Private Property Backups, should call the System Control Operator phone line at (479)784-2342 to report the situation.

The steps associated with receipt of the initial notification are described as follows:

- **First Communication** – To ensure that the City is made aware of each SSO as expeditiously as possible, there are several methods by which a potential SSOs may be reported. City personnel or the public may detect an overflow or report suspicious circumstances which indicate the possibility of an overflow.

  During business hours, SSO-related calls are normally received and managed by the System Control Operators. Should an SSO-related call be received by the City by someone other than the System Control Operator during normal business hours, the call will be forwarded

to the appropriate System Control Operator. During non-business hours, calls are taken by the System Control Operator, who reports any potential SSOs to the response personnel.

System Control Operators create a work order documenting the caller identification, location of the problem, general nature of the problem, contact information, and, if acceptable to the caller, a callback number. Once notified, the City of Fort Smith will make reasonable efforts to respond quickly to SSOs.

- **SSO Classifications** – Based on the information available at the time of the first communication, the System Control Operator will make the initial determinations on the classification of the overflow. Initial factors in determining the classification of an event will include whether the overflow is influenced by a wet weather event and the appropriate personnel for dispatch (i.e. pump station or gravity main/force main response personnel). These determinations may be reevaluated later in the SSO response process if the initial information was deemed misleading or incorrect. In the case of potential SSOs associated with pump stations, pump station personnel will be dispatched to address the issue at the pump station while gravity main personnel may be required to conduct SSO remediation activities, such as containment and cleanup.

- **Response Personnel** – The System Control Operator will inform the appropriate Supervisor and response personnel of a possible SSO. The response personnel will investigate and determine the extent of the problem. The System Control Operator will also issue the SSO tracking number for record keeping purposes.

3.2.2 On-site Response Activities

Although the details of the SSO response activities may vary based upon the field conditions encountered, the following activities are typically conducted by personnel at the site of the potential SSO:

- **SSO Confirmation** – The response personnel are responsible for confirming that there is a release of wastewater at the site, as opposed to another issue such as a water main break. If release of wastewater is not confirmed, then the work order will be closed or re-classified, as required.

  The response personnel are also responsible for determining if the release of wastewater is the responsibility of the City or if it is the result of a failure on the customer's private service line. If release of wastewater is not determined to be the responsibility of the City, then the work order is closed. Additional information regarding the process for this determination and resulting activities are presented in **Section 3.2.4.**

  When the response personnel confirms the SSO is the responsibility of the City of Fort Smith, they will contact the appropriate Supervisor (if not already at the scene), contact the System Control Operator to make note in the record, and proceed with the SSO response.

- **Safety Assessment** – The response personnel will assess the safety of the SSO location, including observations of an oily sheen, foaming, chemical smell, or other potential risks. If

any safety-averse conditions are noted, the response personnel will contact their Supervisor for guidance prior to proceeding with the response process.

- **Initial Diagnosis of SSO** – Once an SSO is confirmed and the situation is determined to be safe, the Supervisor and/or response personnel will begin to ascertain the source of the discharge or the flow's origin and determine the cause of the discharge. This determination may vary depending on the type of SSO. The Supervisor and response personnel will also determine if the overflow can be contained or controlled to minimize the amount of flow released. The cause of the overflow will determine the type of mitigation or remediation that is most appropriate. Additional resources or assistance will be requested as required.

- **More Resources Needed to Diagnose or Remedy** – The response personnel will initiate immediate response activities that should be applied if the SSO is active at the time the response personnel arrives on site. If active flow can be halted, then response personnel should proceed with the remedy; however, if additional resources are required, they should be requested. Additional resources may include additional personnel, a CCTV inspection truck, backhoe, bypass pumping equipment, etc. Additional information on the decision-making process to establish a wastewater pump-around is described in **Section 3.2.3**.

  Additional resources may be requested at any time during the SSO response. In particular, if the SSO is related to a pump station or force main, the response personnel will request assistance from the Operations Division to coordinate activities to minimize the impact of the SSO event, such as temporarily shutting down a pump station to address a break on the force main.

- **Identification of Impacted Area** – When evaluating the potential impact of an SSO on the public health and environment, the response personnel will identify any sensitive issues in the area. These issues will determine the level of public notification and cleanup activity required. These sensitive issues may include the proximity of the SSO location to a receiving water, a public area such as a park or school, or other factors which may necessitate additional response activities. Additional information on public notifications is provided in **Section 3.2.5**.

- **Establishment of a Control Zone** – Control zones are established to help prevent public access around the perimeter of the affected area by using signs and barricading practices, when deemed appropriate due to the nature of the SSO. After the response personnel identify the area impacted by the SSO, the next step is to develop and implement a control zone around the impacted area, as necessary. The control zone may utilize temporary flow diversions (sand bags, etc.), as appropriate, to restrict flow from spreading further, reaching waters of the United States, or causing additional damage.

  If the control zone includes roadways, then appropriate traffic control measures are taken to protect the public and the City personnel, as necessary. If the control zone includes areas that could be accessed by the public, then safety tape or other appropriate measures are used to warn the public to avoid entering these areas.

- **SSO Remediation** – Following establishment of a control zone, as needed, the response personnel will proceed with stopping the SSO and correcting its cause. Activities required to remedy the SSO are dependent upon the cause of the SSO, field conditions, etc. Appropriate activities will be selected by the response personnel with input from the Supervisor, as needed.

  Following remediation activities, the response personnel will confirm that the overflow has ceased. If overflow has not ceased, then personnel should revisit the assessment phase of the decision process.

- **Check Time verses SSO Start** and **Issue twenty-four (24) hour report if needed** – Initial reporting to ADEQ is required within twenty-four (24) hours of notification of a confirmed SSO. The response personnel and Supervisor should be aware of the reporting requirements; such that the appropriate information is provided to the Sewer System Program Manager prior to when the twenty-four (24) hour timeframe is reached. This initial documentation should not interfere with correcting the cause of the SSO but should occur concurrently. See SSO Documentation and Reporting Program Plan for detailed information on this process.

- **Site Cleanup and Disinfection** – After an SSO is stopped and contained, the response personnel will perform site cleanup to restore the impacted area, as necessary. The personnel should consider site specific remedies depending on location and public access to the affected area. In general, the response personnel will attempt to remove as much debris, as reasonably possible, from the site for proper disposal. Personnel will then apply disinfectant in areas where human contact may occur. If the overflow has entered, or has the potential to enter, receiving waters, the response personnel will consult with the Supervisor to collaboratively identify the scope of the cleanup.

- **Documentation and Reporting of SSO Activities** – The response personnel will work with the Supervisor to complete required documentation of the SSO. This documentation will include all information required for the final report to ADEQ, as discussed in detail in the SSO Documentation and Reporting Program Plan. Documentation activities will also capture pertinent information about the SSO response, including photographs before and after cleaning (if possible). The SSO volume will be estimated by response personnel in accordance with the guidelines presented in **Appendix A**.

- **Post-SSO WCTS Investigations** – The City shall perform investigations to determine the primary causes of each SSO after its cessation (See **Section 3.3**). Investigations shall commence as soon as technically feasible but will occur no later than seven days after the cessation of the SSO. No WCTS investigations are requiring for Recurring Wet-Weather SSOs if the City believes they are caused solely by previously-documented capacity constraints and if no sewer system cleaning or other maintenance activities were required to stop the prior SSOs at that location.

- **Close Work Order**- Following completion of SSO response activities, the Supervisor will notify the System Control Operator to close the active work order.

3.2.3 Wastewater Pump-Around Determination and Procedure

If an active SSO is caused by a gravity sewer main collapse, a broken force main, or the failure of a pump station, such as pump failure or loss of power to the station, the location will be evaluated for the need to establish a wastewater pump-around. Wet-weather SSOs that are caused by a lack of pump station capacity will typically not have a pump-around operation established, as these are expected to subside as flows return to normal, dry-weather flows.

When appropriate, portable bypass pumps can be used to collect overflow from the area and convey it back into the sanitary sewer system beyond the disruption of service. The overflow is typically directed to the next downstream manhole or force main connection point. The pump-around equipment can be used in conjunction with other containment measures or may be used independently.

The determination to deploy a wastewater pump-around will be made by the Supervisor (based on the information available). In general, the decision to deploy a pump-around operation will consider the following:

1. What is the anticipated duration for reinstating the pump station or force main's operation?
2. Can the total anticipated SSO volume be adequately contained?
3. Can a vacuum or pump truck be utilized to capture the SSO volume for discharge downstream and/or at the treatment plant?
4. Is the SSO located in a sensitive area, such as a receiving water or public area that requires special consideration?

3.2.4 Response to Releases on Private Property

In the event of a sewage release onto private property or one that causes a building backup, the City will make all reasonable efforts to respond quickly. The response personnel will evaluate the release of wastewater, i.e., a potential SSO, including whether the backup was caused by conditions in the Private Service Line or in the WCTS into which the Private Service Line connects. The process used to determine whether a release of wastewater was caused by conditions in the Private Service Line or within the WCTS system begins with the initial evaluation of the release's location and the location of the potential disruption. This evaluation is typically accomplished by first checking manholes upstream and downstream of the location of the potential SSO. If the potential SSO is active and both manholes appear to be flowing freely with no evidence of surcharging, the cause is likely the Private Service Line. If either manhole shows evidence of surcharging or restricted flow, the conditions causing the SSO are likely in the WCTS and the response personnel should proceed with their SSO response activities.

If the results of City's investigation indicate the release of wastewater was caused by conditions in a Private Service Line, the response personnel will notify the homeowner that the blockage or other defect is in their Private Service Line or building's plumbing. The City will not report these releases of wastewater to ADEQ but will follow up on these occurrences as part of the Private Service Line Defect Remediation Program.

If the results of City's investigation indicate the release of wastewater was caused by conditions in the WCTS, i.e., it is a Building/Private Property Backup, the response personnel will notify the homeowner of the results of the investigation and will provide information to the homeowner about available cleanup support from the City.

3.2.5 Public Notifications

Where applicable, the City will notify the public of the occurrence of an SSO via signs, door hangers, or press releases.

- **Signs** – Sign posting provides a warning of potential public health risks due to sewage contamination. Contamination warning signs will be posted at sewer overflow sites when the overflow is in a public area and/or enters a waterway until the site is determined to be clean. Access to the affected area will be restricted to authorized personnel only. The Supervisor will make final decision about posting signs.

- **Door Hangers** – Where warranted, the City may use a door hanger to notify customers that an SSO has occurred in their area. The door hanger includes contact information for the City of Fort Smith and blank fields where the date and location of the overflow can be filled in as needed. The Supervisor will decide if distributing door hangers is warranted.

- **Press Releases** – The City may issue a press release to notify the public or applicable governmental agencies of the occurrence of an SSO and its impacts in instances required by permit or law. This decision will be made by the Director of Utilities.

3.3 Post-SSO WCTS Investigations

The City shall perform investigations to determine the primary cause of each SSO after its cessation in order to implement appropriate measures to reduce the risk of reoccurrence. Post-SSO WCTS investigation activities are completed based on the SSO's reported cause using appropriate equipment, mapping, and observation techniques.

Each post-SSO investigation begins with a review of information collected during the SSO response, work order history, customer complaint history, available CCTV inspection data, and other applicable information. This information will be reviewed to further assess the primary cause of the SSO and determine what additional investigations are required. In limited scenarios, the review of available information may provide adequate information to determine the primary cause of the SSO and assess the need for additional corrective measures (implemented through other Consent Decree programs). For instance, an SSO resulting from a power outage at a pump station may not warrant additional field investigations.

The Sewer System Program Manager will determine the type(s) of field investigations that will be conducted based upon information available. For SSOs related to blockages, the sewer segment will typically undergo CCTV inspection in order to assess the cause of the blockage, e.g. roots, protruding service tap, etc. The additional information obtained via the field investigations will aid in the identification of corrective measures to reduce the risk of reoccurrence.

Post-SSO WCTS investigations will commence as soon as technically feasible, but no later than seven (7) days after the cessation of the SSO. No WCTS investigations are required for Recurring

Wet-Weather SSOs if the City believes they are caused solely by previously-documented capacity constraints in the pipe segments downstream of the SSO location and if no sewer system cleaning or other maintenance activities were required to stop the prior SSOs at that location.

Section 4
Record Keeping and Reporting

4.1 Record Keeping

As required by the Consent Decree, records associated with the OERP will be saved in the City's document management system and maintained as required under the records retention policy. This includes maintaining records of SSOs for a minimum of ten (10) years after the date that the SSO occurred.

The City is currently updating its strategy for managing its field and office information. The City's plan for modifying its Information Management System (IMS), as described in Article Seven, Paragraph 50 of the Consent Decree, will be submitted to EPA for approval within twenty-four (24) months of the Date of Lodging (i.e., by December 31, 2016).

4.2 Reporting

Per Article Seven, Paragraph 49 of the Consent Decree the City must submit a tabulation of the OERP activities performed in each Calendar Year in the Annual Report for that Calendar Year as described in Section X of the Consent Decree. Additional information on the immediate, monthly, and annual SSO reporting requirements are described in the SSO Documentation and Reporting Program Plan.

Section 5
Training and Standard Operating Procedures

5.1 Training

Per Article Seven, Paragraph 55 of the Consent Decree, the CMOM Program must include a Comprehensive Training Program (CTP) for technical and skills training for appropriate categories of the City's employees. The City's CTP plan will be submitted to EPA for approval within eighteen (18) months of the Date of Lodging (i.e., by July 1, 2016). The CTP will be directly related to the operation and maintenance of the WCTS for the purpose of responding to and preventing SSOs.

5.2 Standard Operating Procedures (SOPs)

The plan and schedule for developing Standard Operating Procedures (SOPs) for general operation and maintenance of all components of the WCTS will be detailed in a report submitted to EPA within eighteen (18) months of the Date of Lodging (i.e., by July 1, 2016) per the Consent Decree.

Appendix A
SSO Volume Estimation Method

The volume of sewage discharged from the system will be initially estimated by the response personnel. Final estimates will be used for reporting purposes. The individual preparing the estimate should determine the most appropriate estimation method from the following:

1. Duration and flow rate: By this method, the flow rate is determined by estimating the flow rate and multiplying that rate by the duration that the SSO occurred. Flow rate may be determined by flow meter data (if available) or estimated by correlating field observations to the photographs shown in **Example 1**. For instance, an SSO that occurs for 90 minutes at an estimated rate of 50 gallons per minute would have an estimated volume of 4,500 gallons. For SSOs observed to have variable flow rates, the response personnel should use their best effort to determine the average flow rate for a given duration of time, and make additional observations, as needed to estimate the SSO volume.

2. Measured Volume: This method is appropriate when the volume of an SSO is contained, and the shape and dimensions of the contained volume can be measured. The area can be obtained by estimating the length and width of the contained SSO volume (typically square feet, ft2). That area is then multiplied by the average depth of the SSO pool to obtain a volume (typically cubic feet, ft3). This number should then be converted to gallons by multiplying by a conversion factor of 7.48 (gal= ft3 * 7.48)

3. Visual Method: This method involves performing a visual estimate by mentally comparing the observed SSO volume to a known volume, such as a 5 gallon bucket or 50 gallon barrel. This method is typically only appropriate for relatively small SSO volumes (100 gallons or less).

4. Pump Station Estimates: When an SSO occurs because of a force main or pump station failure, available pump station operating data (when the station is operating normally) may be used to support the estimate of the SSO volume. This may include the rated capacity of the pump station, metered data, pump runtimes, etc.

Estimates shall use the earliest start time, when the City learned of the SSO, and the known end time.

Example 1 Calculation of SSO Flow Rate from Manhole

City of San Diego
Metropolitan Wastewater Department

Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)

5 gpm

25 gpm

50 gpm

100 gpm

150 gpm

200 gpm

225 gpm

250 gpm

275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4/99

Attachment 8

Supplemental Environmental Project (SEP) – Private Service Line Replacement Program Annual Report Year 2015

CDM Smith

Fort Smith Utility Department
Supplemental Environmental Project (SEP) – Private Service Line Replacement Program Annual Report for 2015
March 4, 2016

Table 1 includes the following information regarding the Supplemental Environmental Project (SEP) – Private Service Line Replacement Program as required in Section D, Subparagraph 3 of Appendix F ("Reporting Schedule") of the Consent Decree:

- Deposit of funds to the Escrow account by the City;
- Disbursement of funds from the Escrow account by the Escrow Agent and to whom disbursements are made to pay plumbers/contractors, or eligible property owners or to the City for services completed;
- The current balance of funds held in the Escrow account; and,
- List of locations (addresses) of residential property owners where services have been performed under the SEP program.

Table 1
Fort Smith Utility Department
Supplemental Environmental Project (SEP) Escrow Journal
Private Service Line Replacement Program
December 17, 2015 through December 31, 2015

Date	Description	Deposit	Disbursement	Balance
12/17/2015	Initial Contribution	$ 200,000.00		
12/31/2015	No disbursements were made during Year 2015 to pay plumbers/ contractors or property owners or to the City for services completed. There were no locations where residential property owners had services performed under the SEP program during Year 2015.		$ -	
12/31/2015	Balance in Escrow			$199,683.52*

* Net loss of $316.48 due to short-term market fluctuations.

The following describes other tasks required performed by Appendix F of the Consent Decree during Year 2015:

1. Drafted and submitted to EPA a proposed Escrow Agreement for EPA Review and Comment.
2. Established the Escrow; allowed the United States to review the Escrow Agreement; provided a copy of the signed Escrow Agreement to EPA; and provided documentation of the City's initial deposit to the Escrow account in accordance with the SEP Implementation schedule for payments into the SEP Escrow account.
3. Funded the Escrow account with a deposit of two hundred thousand dollars ($200,000) within one (1) year of the Date of Lodging.
4. Developed a list of qualified plumbers/contractors who can perform the services at agreed-upon costs for standard scopes of work and in accordance with current plumbing code requirements.
5. Developed scopes of work, fee schedule, forms, and contracts to be used in implementation of the SEP.
6. Developed a process to notify residential property owners of the program.
7. Developed financial hardship qualifications for eligibility for the SEP.
8. No residential property owner applicants were received during Year 2015.
9. Developed a system to maintain records of disbursement of funds from the Escrow and records of location data of residential property owners that have had services performed on their property as part of the SEP program.

The City is beginning the implementation of the SEP during Year 2016 as stated in Appendix F of the Consent Decree.

Attachment 9

Mitigation Program Quality Assurance Project Plan

DAILY & WOODS

A PROFESSIONAL LIMITED LIABILITY COMPANY
ATTORNEYS AT LAW

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December 22, 2015

Via Federal Express

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Re: United States of America and State of Arkansas v. City of Fort Smith, Arkansas,
United States District Court, Western District of Arkansas – Case No. 2:14-cv-2266-PKH

Greetings:

Regarding the Mitigation Program Requirement (paragraphs 66-70 of the Consent Decree), the City of Fort Smith hereby submits a Quality Assurance Project Plan for EPA review and comment (see paragraph 70a.). As a deliverable under paragraph 89 of the Consent Decree, the

proposed Quality Assurance Project Plan is also submitted to ADEQ. The submission is made in hard copy as well as in electronic and searchable text format.

Thank you for your attention to this matter.

Very truly yours,

Jerry L. Canfield
cmm

Enclosures
cc: Chief, Environmental Enforcement Section (via Federal Express)
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The City of Fort Smith ARKANSAS

MITIGATION PROGRAM PLAN

Mitigation Program Quality, Assurance Project Plan

December 2015

The City of Fort Smith ARKANSAS

Mitigation Program Quality Assurance Project Plan

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 gather and evaluate 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 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 knowing violations.

Steve Parke
Director of Utilities

12/22/2015
Date

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I. PROJECT MANAGEMENT (GROUP A)

A1 Title and Approval Sheet

Title: Fort Smith Consent Decree Mitigation Requirement

Completed By: Fort Smith Utility
Project Case 2: 14-cv-02266-PKH

QAPP Approved by:

Lance McAvoy
Deputy Director of Operations (Project Manager)
Fort Smith Utility

Signature
18 Dec 2015
Date

Don Clover
Project Quality Assurance Officer
Fort Smith Utility

Signature
12/18/15
Date

John Hancock
Environmental Monitoring Supervisor
Fort Smith Utility

Signature
12/18/15
Date

Effective Date: 30 Dec 2015

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APPENDICES

Appendix A – Fort Smith Environmental Quality SOP's for Sampling/Field Measurements

A3 Distribution List

The following list of individuals and their respective organizations will receive a finalized, signed, QAPP, and copies of subsequent revisions from Fort Smith Utility:

Table A3.1. QAPP Distribution List.

Individual	Associated Agency
Steve Parke	Fort Smith Utility
Lance McAvoy	Fort Smith Utility
Don Clover	Fort Smith Utility
John Hancock	Fort Smith Utility
Consent Decree Compliance Officer	USEPA Region VI

A4 Project/Task Organization

Consent Decree Compliance Officer USEPA Region VI	Responsible for QAPP review & comments, and final report review & comments.
Lance McAvoy Fort Smith Utility Deputy Director of Operations Project Manager	Responsible for QAPP review & approval, project management, and final report approval.
Don Clover Fort Smith Utility Project Quality Assurance Officer	Responsible for QAPP review & approval, and final report review & approval.
John Hancock Fort Smith Utility Environmental Coordinator	Responsible for field sampling and coordination with the lab.

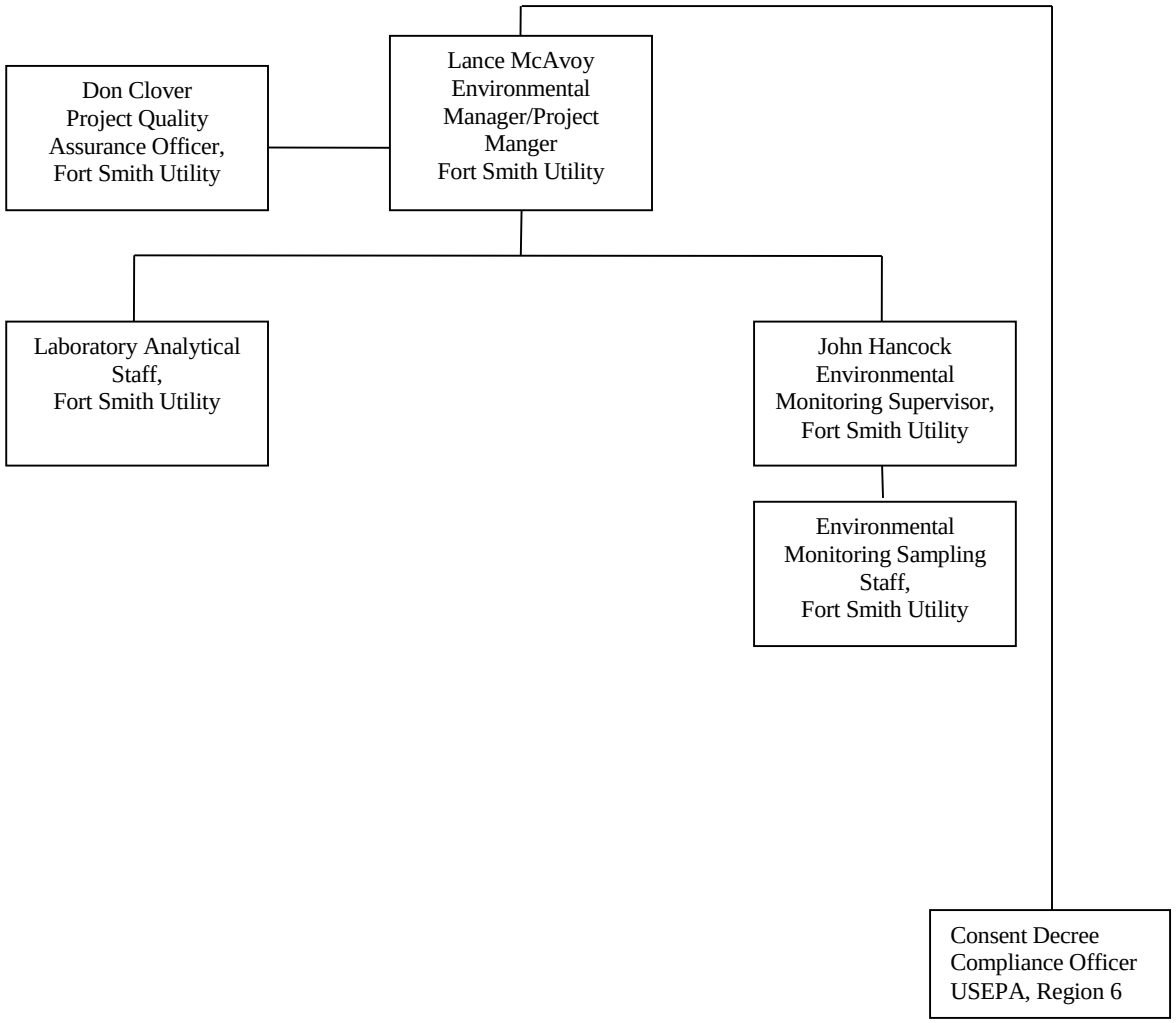

Figure 1. Organizational chart.

A5 Problem Definition/Background

Study Objective - The goal of the project is to comply with and fulfill the "Mitigation Program Requirement" as presented in the Consent Decree reached between the City of Fort Smith (City) and the United States Environmental Protection Agency (EPA) and Department of Justice (DOJ), and the Arkansas Department of Environmental Quality (ADEQ) and the State of Arkansas (Case 2: 14-cv-02266-PKH). This requirement is for Fort Smith to monitor five (5) streams or storm water conveyance systems that carry storm water flow within the City for pollutants that might result from both external and sewer sources.

Introduction to the Watersheds - The City of Fort Smith is the second-largest city in Arkansas and one of the two county seats of Sebastian County. As of the 2010 Census the population was 86,209. With an estimated population of 87,443 in 2012, it is the principal city of the Fort Smith, Arkansas-Oklahoma Metropolitan Statistical Area, a region of 298,592 residents which encompasses the Arkansas counties of Crawford, Franklin, and Sebastian, and the Oklahoma counties Le Flore and Sequoyah.

Fort Smith is located at 35°22′7″N 94°23′55″W (35.368691,−94.398737). According to the United States Census Bureau, the City has a total area of 64.6 square miles (167 km2), of which, 61.7 square miles (160 km2) of it is land and 3.9 square miles (10 km2) of it (6.3%) is water.

Fort Smith lies on the Arkansas-Oklahoma state border, situated at the junction of the Arkansas and Poteau Rivers, also known as Belle Point. As such, Fort Smith storm water drains into the Frog-Mulberry Watershed, Robert S. Kerr Reservoir Watershed and Poteau Watershed (HUC 11110201, 11110104 and 11110105 respectively); all of which are on or flow into the Arkansas River.

The land use in Fort Smith is urban. The soils in the watershed are dominated by Crevasse, Severn-Iberian-Norwood, Leadvale-Taft, Mountainburg-Linker and Wrightsville association. Slopes are generally steep and typically range from 1% - 30%. The slopes in the project area make it vulnerable to erosion in un-forested areas.

The City of Fort Smith's Utility Department operates two (2) wastewater treatment plants. The City of Fort Smith's Engineering Department is responsible for the City's storm water plan and Municipal Separate Storm Sewer System (MS4) permit and compliance.

Figure 2. Project Area Depicting Sample Station Site Locations.

A6 Project/Task Description

The following tasks support the process and procedures to collect data in order to comply with and fulfill the "Mitigation Program Requirement" as presented in the Consent Decree reached between the City and the EPA and DOJ, and the ADEQ and the State of Arkansas (Case 2: 14-cv-02266-PKH).

Task 1 – Sample Site Installation

Mitigation water samples collected by the Fort Smith Utility will be performed utilizing both grab sample techniques and automated samplers. Sample stations consisting of a concrete pad, ISCO automated sampler and actuating device, solar panel, and aluminum security box will be installed at each of the 5 sampling stations. The stations will be set on public land and located so sample collection is indicative of the runoff from the City and not effected by the rise of receiving streams or runoff from areas outside the City. Additionally, the sites will be located to allow the greatest feasibly possible drainage area. The installation of the stations will be performed by Fort Smith Utility Environmental Quality staff.

Task 2 – Baseline (Dry Weather) Monitoring

Baseline monitoring will be performed on a quarterly basis for one year, regardless of a quarter producing an acceptable storm flow event. The baseline monitoring will be conducted during dry weather defined as no less than ten (10) days after a rain event. In the event of no flow during a quarter, a sample will not be collected. The quarterly baseline samples will be a grab sample and will be analyzed for the following constituents: turbidity; conductivity; pH; total suspended solids (TSS); total phosphorous; nitrate+nitrite nitrogen; chloride; sulfate; total dissolved solids (TDS); chemical oxygen demand (COD); antimony, arsenic; barium; beryllium; cadmium; chromium; copper; nickel; lead; selenium; silver; zinc; bisphenol-A; estradiol; ibuprofen; naproxen; sucralose; and triclosan.

Task 3 – Storm Flow Event Monitoring - Autosampler Collection

Storm flow event samples (typically during active storm event run-off) will be collected utilizing an automated sampler with a rain or flow actuator to collect discrete samples. A minimum of five (5) discrete samples from each site for two (2) separate rain events (i.e., ten (10) samples for each site per quarter) will be analyzed for the following: turbidity; conductivity; pH; total suspended solids (TSS); total phosphorous; nitrate+nitrite nitrogen; chloride; sulfate; total dissolved solids (TDS); chemical oxygen demand (COD); antimony, arsenic; barium; beryllium; cadmium; chromium; copper; nickel; lead; selenium; silver; and zinc. If there is not a substantial rain event to cause runoff or increase flow, or there is not a rain event during the quarter, this program shall be continued until the minimum samples required under this Paragraph have been taken.

Task 4 – Storm Flow Event Monitoring - Grab

Storm flow event samples (typically during active storm event run-off) will be collected utilizing a quarterly rain event manual grab sample procedure and analyzed for the following: pH, bisphenol-A; estradiol; ibuprofen; naproxen; sucralose; and triclosan.

Task 5 – Study Report

Upon conclusion of the completed monitoring, a final report which includes all of the data collected will be submitted to EPA for their review. Any comments EPA may have will be addressed.

Project Schedule

The following table illustrates a timeline of tasks to be completed during the Project. This schedule may be amended, if necessary, due to field conditions; unforeseen natural occurrences; and the ultimate project completion date may be modified. Any additional modifications to the project schedule will be communicated as early in the process as practicable.

Table A6.1. Project Schedule.

Task No.	Task Description	Start Date	Completion Date
1	QAPP Submittal to EPA	January 2, 2015	December 31, 2015
2	Installation of Sampling Sites	January 1, 2016	March 30, 2016
3	Baseline (Dry Weather) Monitoring	March 31, 2016	March 30, 2017*
4	Monitoring Storm Flow Event Water Quality - Composite	March 31, 2016	March 30, 2017*
5	Monitoring Storm Flow Event Water Quality - Grab	March 31, 2016	March 30, 2017*
6	Study Report	March 31, 2017*	September 30, 2017*

*Dates listed are based on best case storm event sample collection and may be extended to meet the requirements of the Consent Decree.

A7 Data Quality Objectives for Measurement Data

The data quality objectives of the project is to comply with and fulfill the "Mitigation Program Requirement" as presented in the Consent Decree reached between the City and the EPA and DOJ, and ADEQ and the State of Arkansas (Case 2: 14-cv-02266-PKH). This requirement is for the City to monitor five (5) streams or storm water conveyance systems that carry storm water flow within the City for pollutants that might result from both external and sewer sources.

Mitigation Project Water Monitoring

Sample collection techniques are based on those recommended by EPA for specific media types in various guidance documents. Use of accepted methodology ensures that the results are comparable. The completeness criteria for this project are that 90% of the samples from each media provide usable results. That is, through the collection, handling and analysis process there is an allowance that 10% of the samples (maximum) could be lost, contaminated or rendered unusable due to field technician or laboratory error.

Sample handling bias will be assessed using field blanks. A field blank will be collected once during the study and all parameters will be analyzed. The data quality objectives for sample handling are as follows:

Table A7.1. Field Blank QC.

QC test	Frequency	Results	Objective
Field blanks	Once during study	Accuracy bias	< 120% MDL

Representativeness of samples collected is assured by collecting a grab field duplicate sample at a rate of 10% (minimum) of samples collected. One grab field duplicate sample (minimum) will be collected for each sampling event. Field duplicates within +/- 30% of each other are considered to prove the representativeness of collection techniques.

An overview of data quality objectives for the laboratory is provided in the table below. EPA approved methods will be utilized and the laboratory will be certified in the

State of Arkansas where applicable. For bisphenol-A; estradiol; ibuprofen; naproxen; sucralose; and triclosan a modified version of EPA method 1694 will be used due to no currently approved methods being published in 40 CFR 136. Specific laboratory quality assurance and quality control requirements are provided in detail in Section B5.

Table A7.2. Sample Analysis.

Parameter	Source/Method	Units	Report Limit (RL)
Turbidity	SM2130B-2011	NTU	0.05
Conductivity	SM2510B-2011	µS	1
pH	SM4500-H+ B-2011	SU	NA
Total Suspended Solids (TSS)	SM2540D-2011	mg/L	5.00
Total Phosphorus as P	SM4500-P BE-2011	mg/L	0.02
Nitrate+Nitrite as N	EPA 300.1	mg/L	0.05
Chloride	EPA 300.1	mg/L	0.05
Sulfate	EPA 300.1	mg/L	0.05
Total Dissolved Solids (TDS)	SM2540C-2011	mg/L	5.00
Chemical Oxygen Demand (COD)	SM5220D-2011	mg/L	10
Antimony (Sb)	EPA 200.8	µg/L	60
Arsenic (As)	EPA 200.8	µg/L	0.5
Barium (Ba)	EPA 200.8	µg/L	10
Beryllium (Be)	EPA 200.8	µg/L	0.5
Cadmium (Cd)	EPA 200.8	µg/L	0.5
Chromium (Cr)	EPA 200.8	µg/L	10
Copper (Cu)	EPA 200.8	µg/L	0.5
Nickel (Ni)	EPA 200.8	µg/L	0.5
Lead (Pb)	EPA 200.8	µg/L	0.5
Selenium (Se)	EPA 200.8	µg/L	5
Silver (Ag)	EPA 200.8	µg/L	0.5
Zinc (Zn)	EPA 200.8	µg/L	20
Bisphenol-A	EPA 1694 (Mod)	ng/L	10
Estradiol	EPA 1694 (Mod)	ng/L	10
Ibuprofen	EPA 1694 (Mod)	ng/L	10
Naproxen	EPA 1694 (Mod)	ng/L	10
Sucralose	EPA 1694 (Mod)	ng/L	100
Triclosan	EPA 1694 (Mod)	ng/L	10

A8 Special Training Requirements/Certification

All personnel participating in studies have been trained by experienced scientists/engineers to complete the necessary tasks or are in the process of being trained with appropriate oversight. Personnel participating in scientific studies shall be familiar with the SOPs appropriate to that particular study and the QAPP. Personnel participating in scientific studies conducted pursuant to specific procedures specified by a regulatory authority (e.g., a state or federal environmental agency) shall be familiar with those specific procedures.

Fort Smith Utility will oversee all sample collections. All field technicians will be trained for proper sample handling, preventative maintenance, calibration and sample custody procedures. Fort Smith Utility is responsible for assuring that all field technicians are properly trained.

The Fort Smith Utility Environmental Quality Analytical Laboratory (EQAL) is certified by the State of Arkansas and is responsible for related laboratory testing with the exceptions of bisphenol-A; estradiol; ibuprofen; naproxen; sucralose; and triclosan. Those constituents will be analyzed by Babcock Laboratories (Riverside, California). All technicians are trained in the appropriate techniques and familiar with the appropriate SOP's.

A9 Documentation and Records

A bound field logbook will be maintained documenting field activities during the study. Log book entries shall include, dates of field activities, type of activities completed, list of samples collected, and general observations pertinent to the study. Field data, including sample collection will be recorded in a bound field log book or on a field data sheet designed specifically for the field activity. Entries will include: date and time of sample collection, name of person collecting samples, problems encountered, and date and time of sample delivery. Bound logbooks and field data sheets will be kept at the Fort Smith Utility office except when in the field. Copies will be made of all entries at Fort Smith Utility office following completion of field activities.

All data collected during scientific studies should be checked by the team leader for completeness and accuracy. Field data forms should be complete and initialed by the completing scientist and the reviewing scientist.

Data entry to spreadsheets and databases along with spreadsheet calculations shall be checked for accuracy at a rate of 10% (minimum) of the entries and calculation cells. Copies of the checked data and spreadsheets should be initialed by the reviewer and retained in the records.

All calculations should be detailed in the body of written reports, or shown on Fort Smith Utility Calculation Pages. Good notes regarding calculations should be kept and filed in the project notebook.

All scientific reports shall be peer reviewed and/or reviewed by the Project Manager.

All laboratory data shall be reported in normal turnaround time. Data will be stored at Fort Smith Utility for a minimum of 5 years after the end date of the Consent Decree.

The QAPP will be updated as necessary following an adaptive management protocol. The Project Manager is responsible for providing updates to all of the parties listed in Element A3.

II. DATA GENERATION AND ACQUISITION (GROUP B)

B1 Sampling Process Design

A mitigation project study will be completed in the City of Fort Smith.

Table B1.1 provides the anticipated locations of the sampling sites that will be utilized during the study and describes the stations (Figure 2). Field assessments and all sample collection will be completed by Fort Smith Utility Environmental Quality staff.

Table B1.1. Description of Project Sample Stations.

Station I.D.	Station Description	GPS Location
PSt	"P" Street storm sewer before the pump station	35°24'13.8"N 94°25'02.6"W
JSt	"J" Street storm sewer before the pump station	35°23'54.6"N 94°25'23.3"W
MiC	Mill Creek upstream of the confluence with Poteau River	35°22'03.9"N 94°25'34.3"W
SC	Sunnymede Creek upstream of confluence with Arkansas River	35°23'06.0"N 94°21'35.5"W
MaC	Massard Creek upstream of confluence with Arkansas River backwater	35°20'02.6"N 94°20'28.9"W

Task 1 – Sample Site Installation

Mitigation water samples collected by the Fort Smith Utility will be performed utilizing both grab sample techniques and automated samplers. Sample stations consisting of a concrete pad, ISCO automated sampler and actuating device, solar panel, and aluminum security box will be installed at each of the 5 sampling stations. The stations will be set on public land and located so sample collection is indicative of the runoff from the City and not effected by the rise of receiving streams or runoff from areas outside the City. Additionally, the sites will be located to allow the greatest feasibly possible drainage area. The installation of the stations will be performed by Fort Smith Utility Environmental Quality staff.

Task 2 – Baseline (Dry Weather) Monitoring

Baseline monitoring will be performed on a quarterly basis for one year, regardless of a quarter producing an acceptable storm event. The baseline monitoring will be conducted during dry weather defined as no less than ten (10) days after a rain event. In the event of no flow during a quarter, a sample will not be collected. The quarterly baseline samples will be a grab sample and will be analyzed for the following constituents: turbidity; conductivity; pH; total suspended solids (TSS); total phosphorous; nitrate+nitrite nitrogen; chloride; sulfate; total dissolved solids (TDS); chemical oxygen demand (COD); antimony, arsenic; barium; beryllium; cadmium; chromium; copper; nickel; lead; selenium; silver; zinc; bisphenol-A; estradiol; ibuprofen; naproxen; sucralose; and triclosan. Water samples will be delivered to the laboratory for analysis. Water samples will be collected by Fort Smith Utility Environmental Quality staff.

During each sample event, an *in-situ* parameter measurement will be taken. The *in-situ* parameter shall consists of pH. The *in-situ* parameter will be measured by Fort Smith Utility Environmental Quality staff. A summary of the experimental design is included in Table B1.2.

Task 3 – Storm Flow Event Monitoring - Autosampler Collection

Storm flow event samples (typically during active storm event run-off) will be collected utilizing an automated sampler with a rain or flow actuator to collect discrete samples. A minimum of five (5) discrete samples from each site for two (2) separate rain events (i.e., ten (10) samples for each site per quarter) will be analyzed for the following: turbidity; conductivity; pH; total suspended solids (TSS); total phosphorous; nitrate+nitrite nitrogen; chloride; sulfate; total dissolved solids (TDS); chemical oxygen demand (COD); antimony, arsenic; barium; beryllium; cadmium; chromium; copper; nickel; lead; selenium; silver; and zinc. If there is not a substantial rain event to cause runoff or increased flow, or there is not a rain event during the quarter, this program shall be continued until the minimum samples required under this Paragraph have been taken. Water samples will be delivered to the laboratory for analysis. Water samples will be collected by Fort Smith Utility Environmental Quality staff. A summary of the experimental design is included in Table B1.2.

Task 4 – Storm Flow Event Monitoring - Grab

Storm flow event samples (typically during active storm event run-off) will be collected utilizing a quarterly rain event manual grab sample procedure and analyzed for the following: pH, bisphenol-A, estradiol, ibuprofen, naproxen, sucralose, and triclosan. Water samples will be delivered to the laboratory for analysis. Water samples will be collected by Fort Smith Utility Environmental Quality staff.

During each sample event, an *in-situ* parameter measurement will be taken. The *in-situ* parameter shall consists of pH. The *in-situ* parameter will be measured by Fort Smith Utility Environmental Quality staff. A summary of the experimental design is included in Table B1.2.

Table B1.2. Summary of Sample Design

Station ID	Baseline Parameters Analyzed	Number Samples Per Station	Storm Automated Parameters Analyzed	Number Samples Per Station	Storm Grab Parameters Analyzed	Number Samples Per Station
PSt JSt MiC SC MaC	Turbidity, Conductivity, pH, T. Phos, NO2+NO3-N, Cl, SO4, TDS, COD, Sb, As, Ba, Be, Cd, Cr, Cu, Ni, Pb, Se, Ag, Zn, Bisphenol-A, Estradiol, Ibuprofen, Naproxen, Sucralose, Triclosan	4	Turbidity, Conductivity, T. Phos, NO2+NO3-N, Cl, SO4, TDS, COD, Sb, As, Ba, Be, Cd, Cr, Cu, Ni, Pb, Se, Ag, Zn	40	pH, Bisphenol-A, Estradiol, Ibuprofen, Naproxen, Sucralose, Triclosan	4

B2 Sampling Methods Requirements

The following section provides details of the sampling methodology and procedures that will be utilized during the water quality monitoring study. Table B2.1 provides a summary of the water samples to be collected for analysis and Table B2.2 provides a summary of sampling methodologies to be used during the study. Standard Operating Procedures (SOP's) referenced in this section are provided in Appendix A.

Trained scientists will conduct the bound field sampling and other associated activities at each sample location. Notes will be kept in field notebooks and/or specific field data forms that record information collected during the study, unusual observations, and a log of each day's activities. All data forms, calibration logs, field notes, and other study documentation will be reviewed by the Project Manager or Senior Scientist for completeness and accuracy. Concerns over field data collection success or required deviations to SOP will be reported to the Project Quality Assurance Officer for review. Any deviations to the methodologies described in this QAPP will be recorded and presented, in detail (including an assessment of potential effect on data), in the final project report.

Mitigation Water Monitoring

Water samples will be collected by Fort Smith Utility Environmental Quality staff. Water samples delivered to the laboratory will be analyzed for turbidity; conductivity; pH; total suspended solids (TSS); total phosphorous; nitrate+nitrite nitrogen; chloride; sulfate; total dissolved solids (TDS); chemical oxygen demand (COD); antimony, arsenic; barium; beryllium; cadmium; chromium; copper; nickel; lead; selenium; silver; zinc; bisphenol-A; estradiol; ibuprofen; naproxen; sucralose; and triclosan. Grab and automated samples for each parameter will be collected following the standard operating procedures (SOPs) in Appendix A.

Samples will be analyzed in the laboratory according to the procedures outlined in the 40 CFR Part 136. Table B2.1 summarizes the samples taken, the analytical method, the preservative, and the holding time. A laboratory certified in the State of Arkansas shall

conduct all chemical analyses. The Fort Smith EQAL will serve as the laboratory of record for the analytical analyses.

During certain sample events an *in-situ* parameter will be analyzed. Samples will be collected for laboratory analysis from each sample station. The *in-situ* parameter shall consist of pH. The *in-situ* parameters will be measured at the time of sample collection using a portable field meter(s). Field meters will be calibrated following the internal SOPs in Appendix A which generally adheres to manufacturer's recommendations.

Table B2.1. Summary of Water Samples Taken for Analytical Analysis.

Parameter	Number Samples/Station[1]	Analytical Method	Preservative	Holding Time
Turbidity	56	SM2130B-2011	6°C	48-hours
Conductivity	56	SM2510B-2011	6°C	28 Days
pH	8	SM4500-H+ B-2011	NA	*In-situ*
Total Suspended Solids (TSS)	56	SM2540D-2011	6°C	7 Days
Total Phosphorus as P	56	SM4500-P BE-2011	6°C, H_2SO_4	28 Days
Nitrate+Nitrite as N	56	EPA 300.1	6°C	48-hours
Chloride	56	EPA 300.1	6°C	28 Days
Sulfate	56	EPA 300.1	6°C	28 Days
Total Dissolved Solids (TDS)	56	SM2540C-2011	6°C	7 Days
Chemical Oxygen Demand (COD)	56	SM5220D-2011	6°C, H_2SO_4	28 Days
Antimony (Sb)	56	EPA 200.8	6°C, HNO_3	6 Months
Arsenic (As)	56	EPA 200.8	6°C, HNO_3	6 Months
Barium (Ba)	56	EPA 200.8	6°C, HNO_3	6 Months
Beryllium (Be)	56	EPA 200.8	6°C, HNO_3	6 Months
Cadmium (Cd)	56	EPA 200.8	6°C, HNO_3	6 Months
Chromium (Cr)	56	EPA 200.8	6°C, HNO_3	6 Months
Copper (Cu)	56	EPA 200.8	6°C, HNO_3	6 Months
Nickel (Ni)	56	EPA 200.8	6°C, HNO_3	6 Months
Lead (Pb)	56	EPA 200.8	6°C, HNO_3	6 Months
Selenium (Se)	56	EPA 200.8	6°C, HNO_3	6 Months
Silver (Ag)	56	EPA 200.8	6°C, HNO_3	6 Months
Zinc (Zn)	56	EPA 200.8	6°C, HNO_3	6 Months
Bisphenol-A	9	EPA 1694 (Mod)[2]	6°C, Ascorbic Acid + Sodium Azide	14 Days
Estradiol	9	EPA 1694 (Mod)[2]	6°C, Ascorbic Acid + Sodium Azide	14 Days
Ibuprofen	9	EPA 1694 (Mod)[2]	6°C, Ascorbic Acid + Sodium Azide	14 Days
Naproxen	9	EPA 1694 (Mod)[2]	6°C, Ascorbic Acid + Sodium Azide	14 Days
Sucralose	9	EPA 1694 (Mod)[2]	6°C, Ascorbic Acid + Sodium Azide	14 Days
Triclosan	9	EPA 1694 (Mod)[2]	6°C, Ascorbic Acid + Sodium Azide	14 Days

[1]Total number of samples to be collected and analyzed at each station (field blank, baseline and storm flow sample events).
[2]EPA Method 1694 (Mod) is not listed in 40 CFR 136. There are currently no methods listed for these parameters in 40 CFR 136.
SM = Standard Methods for the Examination of Water and Wastewater.

Table B2.2. Summary of Sampling Methods

Sample Type	SOP Revision Number	Sampling Equipment	Field Processing Protocol	Storage Vessel	Preservative	Designated Record Sheet (Y / N)
Water	SOP 3.0, 4.0, 5.0	Autosampler, Sample Bottles	Label and Store in Ice Chest	Lab Provided Bottles	Various (see Table B2.1)	Y
In-situ	SOP 1.0, 2.0	Field Meters	Calibrate, Measure	n/a	n/a	Y

B3 Sample Handling and Custody Requirements

All samples will be placed in the appropriate clean containers supplied by the laboratory. Each sample container will be labeled with the sample I.D., date, time, and initials of collector(s). Samples will be placed in ice chests and maintained at ≤6º C for delivery to the laboratory in a timely manner conducive to maintenance of regulatory holding times. Chain of Custody (COC) forms that include information on each sample delivered to the laboratory for analysis will be completed. Each COC form will be signed by each person handling the samples from collection in the field to receipt in the laboratory. The COC form will include all required information and will be checked for completeness prior to submission of samples to the laboratory.

B4 Analytical Methods Requirements

Chemical Analysis

All procedures used for analyzing chemical parameters of the mitigation water samples for reporting purposes will follow methods approved per 40 CFR Part 136. The only exceptions are bisphenol-A, estradiol, ibuprofen, naproxen, sucralose, and triclosan of which no method exists in 40 CFR Part 136 for these constituents. For these six (6) parameters, the samples will be analyzed using a modified EPA Method 1694 by Babcock Laboratories (Riverside, California).

Analytical methods are listed below, along with specific performance requirements. All analytical measurements will be completed by a laboratory certified in the State of Arkansas where applicable. All analytical methods will be conducted under the laboratories Quality Assurance Plan in which there is a specific SOP for each method. Analytical method SOP's will be made available upon request. All methods fall under the specific quality control requirements outlined in the Quality Assurance Plan. Any failure in the analytical systems will be the responsibility of the laboratory to apply necessary corrective action.

Failures in the QA system encountered by the laboratory shall be reported to the Project Quality Assurance Officer as soon as reasonably possible.

Table B4.1. Summary of Analytical Methods.

Parameter	Source/Method	Units	RL
Turbidity	SM2130B-2011	NTU	0.05
Conductivity	SM2510B-2011	µS	1
pH	SM4500-H+ B-2011	SU	NA
Total Suspended Solids (TSS)	SM2540D-2011	mg/L	5.00
Total Phosphorus as P	SM4500-P BE-2011	mg/L	0.02
Nitrate+Nitrite as N	EPA 300.1	mg/L	0.05
Chloride	EPA 300.1	mg/L	0.05
Sulfate	EPA 300.1	mg/L	0.05
Total Dissolved Solids (TDS)	SM2540C-2011	mg/L	5.00
Chemical Oxygen Demand (COD)	SM5220D-2011	mg/L	10
Antimony (Sb)	EPA 200.8	µg/L	60
Arsenic (As)	EPA 200.8	µg/L	0.5
Barium (Ba)	EPA 200.8	µg/L	10
Beryllium (Be)	EPA 200.8	µg/L	0.5
Cadmium (Cd)	EPA 200.8	µg/L	0.5
Chromium (Cr)	EPA 200.8	µg/L	10
Copper (Cu)	EPA 200.8	µg/L	0.5
Nickel (Ni)	EPA 200.8	µg/L	0.5
Lead (Pb)	EPA 200.8	µg/L	0.5
Selenium (Se)	EPA 200.8	µg/L	5
Silver (Ag)	EPA 200.8	µg/L	0.5
Zinc (Zn)	EPA 200.8	µg/L	20
Bisphenol-A	EPA 1694 (Mod)[1]	ng/L	10
Estradiol	EPA 1694 (Mod)[1]	ng/L	10
Ibuprofen	EPA 1694 (Mod)[1]	ng/L	10
Naproxen	EPA 1694 (Mod)[1]	ng/L	10
Sucralose	EPA 1694 (Mod)[1]	ng/L	100
Triclosan	EPA 1694 (Mod)[1]	ng/L	10

[1]EPA Method 1694 (Mod) is not listed in 40 CFR 136. There are currently no methods listed for these parameters in 40 CFR 136.
SM = Standard Methods for the Examination of Water and Wastewater.

B5 Quality Control Requirements

Field Sampling

Field duplicate samples shall be collected at a minimum frequency of 10% of the samples collected for the entire study. A minimum of one duplicate sample will be collected for each sampling event. Field duplicate samples shall vary by no more than 30% relative percent differences (RPD) or the sample results will be considered suspect. In the event an RPD exceeds 30%, the Project Quality Assurance Officer will investigate the incident to determine the cause of the exceedance and what action, if any, is necessary.

Sample handling bias will be assessed using field and trip blanks for each constituent. Field and trip blanks will be collected once during the study. The data quality objective for sample handling is as follows:

Table B5.1. Data Quality Objectives for Blanks.

QC test	Frequency	Results	Objective
Field blanks	Once during study	Accuracy bias	< 120% MDL
Trip Blank	Once during study	Accuracy bias	< 120% MDL

Exceedance beyond the 120% of MDL will require an investigation by the Project Quality Assurance Officer to determine the cause of the exceedance and what action, if any, is necessary.

Analytical Laboratory

The laboratory will validate analytical data by use of quality control (QC) samples such as blanks, laboratory controls, spikes, spike duplicates and sample duplicates. Laboratory blanks measure the amount of each respective analyte contributed from the analytical procedure. A laboratory blank is considered out of control for a specific analyte if the value exceeds the higher of either the minimum detection limit (MDL) or 5% of the measured concentration in the sample. A laboratory control measures the ability of the laboratory to recover an analyte from a blank matrix. The laboratory spike sample is used to evaluate the laboratory's ability to recover an analyte in the sample matrix. The QC exceedance criteria for laboratory controls and spikes is based on upper and lower

control limits derived from the laboratory's method specialized limits. The laboratory spike and sample duplicate is used to evaluate the laboratory's precision (ability to attain similar analytical results from duplicate samples). A RPD is calculated for the spike and/or sample duplicate. The RPD is compared to method specialized limits to determine QC exceedance. Any significant excursion from one of the QC parameters will result in repeat of the analysis in question. Should repeat analyses still fall outside the allowed control range an investigation by the laboratory as to the cause of the QC excursion and a report of the corrective actions taken will be reported to the Project Quality Assurance Officer.

Specific laboratory quality control requirements for each analytical method are listed for each parameter in the table below.

Table B5.2. Summary of Laboratory QA Requirements.

Parameter	Source/Method	LCS Recovery (%)	Matrix Spike Recovery (%)	Matrix Spike RPD (%)
Turbidity	SM2130B-2011	n/a	n/a	15[1]
Conductivity	SM2510B-2011	n/a	n/a	15[1]
pH	SM4500-H+ B-2011	n/a	n/a	15[1]
Total Suspended Solids (TSS)	SM2540D-2011	n/a	n/a	15[1]
Total Phosphorus as P	SM4500-P BE-2011	85-115	80-120	15
Nitrate+Nitrite as N	EPA 300.1	85-115	80-120	15
Chloride	EPA 300.1	85-115	80-120	15
Sulfate	EPA 300.1	85-115	80-120	15
Total Dissolved Solids (TDS)	SM2540C-2011	n/a	n/a	15[1]
Chemical Oxygen Demand (COD)	SM5220D-2011	85-115	80-120	15
Antimony (Sb)	EPA 200.8	85-115	80-120	15
Arsenic (As)	EPA 200.8	85-115	80-120	15
Barium (Ba)	EPA 200.8	85-115	80-120	15
Beryllium (Be)	EPA 200.8	85-115	80-120	15
Cadmium (Cd)	EPA 200.8	85-115	80-120	15
Chromium (Cr)	EPA 200.8	85-115	80-120	15
Copper (Cu)	EPA 200.8	85-115	80-120	15
Nickel (Ni)	EPA 200.8	85-115	80-120	15
Lead (Pb)	EPA 200.8	85-115	80-120	15
Selenium (Se)	EPA 200.8	85-115	80-120	15
Silver (Ag)	EPA 200.8	85-115	80-120	15
Zinc (Zn)	EPA 200.8	85-115	80-120	15
Bisphenol-A	EPA 1694 (Mod)	50-150	50-150	50
Estradiol	EPA 1694 (Mod)	50-150	50-150	50
Ibuprofen	EPA 1694 (Mod)	50-150	50-150	50
Naproxen	EPA 1694 (Mod)	50-150	50-150	50
Sucralose	EPA 1694 (Mod)	50-150	50-150	50
Triclosan	EPA 1694 (Mod)	50-150	50-150	50

[1] Sample duplicate RPD

B6 Instrument/Equipment Testing, Inspection, and Maintenance Requirements

Equipment cleaning and maintenance procedures will follow manufacturer recommendations. Records of maintenance of field sampling equipment will be kept in a bound record book listing name of technician, date and type of maintenance. Portable pH field meters should be calibrated in the lab calibrated prior to each sampling event and portable turbidity meters calibration should be checked prior to use and calibrated least quarterly to monitor readiness and ensure proper functionality. Each day during a field trip equipment will be inspected before use (during calibration, etc.) to ensure functionality. All equipment will be inspected and cleaned immediately following a field trip and stored in a safe place to allow its future readiness.

Where appropriate, calibration and performance tests are described in the SOP of the respective application. Generally, all equipment will be utilized per the manufacturer's directions. If during the course of the field activities, equipment fails to conform to known QA/QC requirements, the equipment will be repaired or replaced with similar equipment that will meet QA/QC requirements.

B7 Instrument Calibration and Frequency

Field pH meters will be calibrated prior to each sampling event. Calibration of pH probes will be completed following a three point calibration using a pH 4, pH 7, and pH 10 calibration solution. All meter calibrations will be completed following Fort Smith Utility Department's Environmental Quality Program SOPs which are provided in Appendix A of this document.

Field turbidity meters calibration will be checked prior to each sampling event. Calibration of the portable turbidimeter will be completed quarterly. All meter calibrations will be completed following Fort Smith Utility Department's Environmental Quality Program SOPs which are provided in Appendix A of this document.

B8 Inspection/Acceptance Requirements for Supplies And Consumables

Supplies and consumables used for this project will include sample bottles, preservative, laboratory reagents necessary for the tests performed and calibration standards. All sample bottles will be new clean bottles of a style and material consistent with analytical requirements. All consumables will be purchased new. All lab supplies and consumables will be approved by the Project Manager or the Project Quality Assurance Officer. All chemicals and reagents will be dated and inspected for proper expiration date when purchased and prior to use. All supplies will be inspected when purchased and any damaged or open containers or packaging will be refused.

B9 Data Management

Upon conclusion of all activities at a given study location, the QAPP/study plan should be reviewed to ensure all necessary data was collected. The field team should review all completed data forms and sample labels for accuracy, completeness, and legibility, and make a final inspection of samples. If information is missing from the forms or labels, the team leader should fill in the missing information prior to proceeding to the next study location. Any missing and/or compromised samples should be collected immediately. A bound field notebook should be maintained by the field team leader (at a minimum) to document field activities, data collected, deviations from method, and general observations and information related to the study. Every person should maintain individual field logs to document activities and observations during daily activities.

All data collected during scientific studies should be checked by the team leader for completeness and accuracy. Field data forms should be complete and initialed by the completing scientist and the reviewing scientist. All field data sheets and log books will be stored at Fort Smith Utility for a minimum of 5 years after the end date of the Consent Decree.

All field data will be entered into spreadsheets (or databases) or scanned into pdf files for electronic storage. Data will be stored electronically in project files on a secure network. The network is backed up daily. Data entry to spreadsheets and databases along with spreadsheet calculations shall be checked for accuracy at a rate of 10% (minimum) of the entries and calculation cells. Copies of the checked data and spreadsheets should be initialed by the reviewer and retained in the records. All calculations should be detailed in the body of written reports, or shown on Fort Smith Utility Department's Environmental Quality Program's calculation pages. Good notes regarding calculations will be kept and filed in the project notebook.

The City is responsible for the compilation of all data (*in-situ*, analytical, etc.) collected during the study. Analytical results as well as QA/QC results will be reported in electronic format to the Project Manager. This data will be stored on the Fort Smith Utility network for a minimum of 5 years after the end date of the Consent Decree.

All deliverables (scientific reports, QA/QC reports, etc.) developed as part of this study shall be peer reviewed and/or reviewed by the Project Manager.

III. ASSESSMENT AND OVERSIGHT

C1 Assessments and Response Actions

Data will be reviewed by the Project Quality Assurance Officer to evaluate the QAPP and its implementation. The review will include the following objectives:

a) collection of samples
b) corrective actions

Laboratory performance may be checked using external audit samples. The Project Quality Assurance Officer will be the internal individual responsible for detecting any errors or malfunctions and performing corrective actions. If errors are detected or anomalous data is suspected, the data will be traced back through the acquisition process until the error is found. In the event that no error is found, the data will be considered appropriate for reporting. If an error is found and cannot be resolved, then the effected data will be discarded.

C2 Reports to Management

Reports will be made to the Project Manager by the laboratory detailing significant occurrences related to the project including number of samples taken, surveys completed, operational problems, and corrective actions. Quality Assurance reports will be made to the Project Manager by the Field Coordinator and the laboratory detailing all QA problems and corrective actions. Copies of all reports will be maintained at Fort Smith Utility for a minimum of five (5) years after the end date of the Consent Decree.

IV. DATA VALIDATION AND USABILITY

D1 Data Review, Validation, and Verification Requirements

Chemical results will be rejected if they fall outside of the standard deviation for the respective parameter as outlined in Section A7. The review, validation and verification of the analytical data are the responsibility of Fort Smith Utility EQAL. The review, validation and verification of field data and lab results for reporting are the responsibility of Fort Smith Utility Environmental Quality staff.

D2 Validation and Verification Methods

The field and lab data will be combined in the spreadsheets and reported to the Project Manager. The Project Manager and Project Quality Assurance Officer will validate and verify the data in the reports to be correct by checking all entries against lab results and field notebook entries.

D3 Reconciliation with Data Quality Objectives

Laboratory data quality objectives and their fulfillment will be assessed immediately after the analyses are performed. Data found to be outside objectives will be reanalyzed immediately if possible and discarded if not meeting laboratory objectives and assessment in Element B5.

Sample handling data quality objectives will be assessed by adherence to SOP's and analysis of field duplicates and blanks. Sample handling quality objectives will be assessed annually and reported in the final report.

Sampling data quality objectives will be met by designing the sampling protocol so that the error involved in sampling is equal to or less than the prescribed objective. The objectives will be assessed by analysis of field duplicates. They should agree with each other within 30 percent.

Any deviations from the objectives will be reported to Project Manager and attempts will be made to determine and fix the causes of the data not meeting objectives.

References Cited

Fort Smith Environmental Quality Analytical Laboratory. 2013. *Laboratory Quality Assurance and Quality Control Plan*. Fort Smith Utility, Fort Smith, AR

APPENDICES

Appendix A: Fort Smith Environmental Quality SOP's for Sampling/Field Measurements

1.0 pH Meter Calibration/Measurement SOP

Purpose

This SOP describes the methods for calibration and use of portable pH meters (capable of 3 point calibration) such as the Scientific Instruments Model H160 pH/mV/Temperature Meter.

Calibration Procedures

The following calibration method is used to check and calibrate the Scientific Instruments Model H160 pH/mV/Temperature Meter.

Equipment

1. H160 Scientific Instruments pH/mV/Temperature Meter
2. 7.00 pH Buffer Solution
3. 10.01 pH Buffer Solution
4. 4.01 pH Buffer Solution
5. pH/Temperature Calibration Log Sheet
6. Type I Water

Calibration Procedures

1. Record the time and your initials on the pH/Temperature Calibration Log Sheet.
2. Remove the protective cap from the probe tip and set cap aside.
3. Place probe in 7.00 buffer solution. Stir briefly to dislodge any bubbles from the probe surface.
4. Press **ON/OFF** to turn the meter on. Make sure the **PROBE** icon is displayed.
5. If necessary, press **pH/mV** until pH is displayed.
6. Press **CAL**.
7. Meter will default to pH 7.00 buffer. If the display does not match the pH of the buffer, press **SELECT BUFFER** until display matches first buffer solution pH. The **1 PT** icon will be displayed.
8. Press **ENTER**. The pH buffer value will begin flashing to indicate calibration is underway. Wait until the large display stops flashing. **NOTE**: When calibration is complete, the meter will display the next buffer value for a three-point calibration.
9. Rinse probe in Type I Water and place in the 4.01 buffer solution. Stir briefly to dislodge any bubbles from the sensor surface.

10. Press **ENTER**. The pH buffer value will begin flashing to indicate calibration is underway. Wait until the large display stops flashing. **NOTE**: When calibration is complete, the meter will display the next buffer value for a three-point calibration
11. Rinse probe in Type I Water and place in the 10.01 buffer solution. Stir briefly to dislodge any bubbles from the sensor surface.
12. Press **ENTER**. The pH buffer value will begin flashing to indicate calibration is underway. Wait until the large display stops flashing. **NOTE**: When calibration is complete, the meter will display the slope and mV of the calibration.

    REMEMBER: The slope must be between 95% - 105%. If not within this range, clean the probe using the methods listed in this SOP. If the slope is still not within 95%-105% after cleaning, then a new probe is needed.
13. Press **Enter.** Record the sample pH and Temperature on the pH/Temperature Calibration Log Sheet.
14. Rinse probe in Type I Water and place in the 4.01 pH buffer sample. Read sample pH and record on the pH/Temperature Calibration Log Sheet.
15. Rinse probe in Type I Water and place in the 7.00 pH buffer sample. Read sample pH and record on the pH/Temperature Calibration Log Sheet.
16. Rinse probe in Type I Water place the pH probe cap back onto the probe tip. The pH calibration is now complete. Review pH/Temperature Calibration Log Sheet to ensure it is complete.

pH Measurements

Equipment

1. H160 Scientific Instruments pH/mV/Temperature Meter
2. pH Sample Container
3. Field Report or Field Notebook
4. Type I Water

Field Analysis Procedures

1. During composite sampling, the pH/Temperature sample is usually collected at the beginning, during, or end of the sampling event. Rinse the pH sample container with the effluent before collecting the sample.

   REMEMBER: The pH/Temperature must be analyzed within fifteen minutes of the collection time.
2. Record the date, time collected, time analyzed and your initials on the Field Report or Field Notebook.
3. Remove the protective cap from the probe tip and set cap aside.

4. Rinse the pH/Temperature probe with Type I Water and place in the sample solution. Stir briefly to dislodge any bubbles from the probe surface.
5. Press **ON/OFF** to turn the meter on. Make sure the **PROBE** icon is displayed.
6. When the pH has stabilized, record the pH & Temperature reading on the Field Report or Field Notebook.
7. After the pH and Temperature is recorded, press **ON/OFF** to turn the meter off. Rinse the probe with Type I Water and replace the protective cap back onto the probe tip.

Cleaning/Maintenance/Troubleshooting

Equipment

1. A few drops of dish detergent in a cup of warm water.
2. pH 7.00 buffer
3. Alcohol or methanol
4. A wooden toothpick tipped with a small amount of cotton wool
5. A 10:1 dilution of deionized water to household bleach (0.5% solution of sodium hypochlorite)

Cleaning with Detergent

1. Regularly clean the ISFET probe with detergent.
2. Rinse well with Type I Water.
3. ISFET probes can be cleaned with a soft bristle toothbrush and detergent if needed.

Cleaning with Alcohol or Methanol

1. The ISFET sensor (recessed shiny blue-green spot at the probe tip) can be gently cleaned using alcohol or methanol and a wooden toothpick tipped with a small amount of cotton wool.
2. Be sure that the cotton tip is small enough to actually make contact with the recessed sensor.

   CAUTION: Do not use metal objects such as pins or paper clips to clean the sensor. The sensor can be permanently damaged with aggressive abrasion of the sensor surface.

Cleaning with Sodium Hypochlorite (Bleach)

1. If the ISFET probe has been exposed to fat or protein, the response time may begin to slow.
2. Soak the probe for five minutes in a 10:1 dilution of deionized water to household bleach (0.5% solution of sodium hypochlorite).
3. Brush with a soft bristle brush or toothbrush to remove deposits.
4. The sensor is slightly recessed, be sure to make gentle contact with the sensor surface.
5. Rinse well with Type I Water.

   CAUTION: Do not soak the probe in sodium hypochlorite for more than 5 minutes. Extended immersion will permanently damage the probe.

Reconditioning with Warm Buffer

1. ISFET probes are designed to be stored dry and have a virtually unlimited shelf life; however extended period of dry storage can crystallize the KCI gel at the reference junction.
2. Heat pH 7.00 buffer to between 45^{o}C and 60^{o}C (115^{o}F and 140^{o}F).
3. Soak the probe for 2 minutes.
4. Place the probe in room temperature pH 7.00 buffer and allow to cool.

   CAUTION: Do not use the probe as a thermometer to determine if the buffer is above 60^{o}C. Sudden immersion in excessively hot water may permanently damage the probe.

Troubleshooting

1. Please refer to the H160 pH meter User Manual for maintenance and troubleshooting methods.

Quality Assurance/Quality Control

1. Meters are calibrated daily before use (at a minimum) to ensure proper function and accuracy.
2. The slope must be between 95% - 105%. If not within this range, clean the probe using the methods listed in this SOP. If the slope is still not within 95%-105% after cleaning, then a new probe is needed.
3. Duplicate measurements are to be taken at a rate of 10% (minimum) of samples analyzed.

2.0 Portable Turbidity Meter Calibration/Measurement SOP

Purpose

This SOP describes the methods for calibration and use of the portable HACH Model 2100Q Turbidimeter.

Calibration

Calibration of the 2100Q Turbidimeter should be completed quarterly or when the Gelex® standards fall outside the acceptable range >± 10%.

Equipment

1. HACH Model 2100Q Turbidimeter
2. Turbidity Sample Cells
3. Soft, Lint-free Cloth
4. Silicone Oil Impregnated Soft Cloth
5. StableCal Formazin Standard Kit for HACH Model 2100Q Turbidimeter
    a. 20 NTU Standard
    b. 100 NTU Standard
    c. 800 NTU Standard
    d. 10 NTU Standard (Calibration Verification)
6. Gelex Secondary Standards Kit for 2100 Series Portable Turbidimeters
7. Turbidimeter Calibration Log Sheet
8. Type I Water

Calibration Procedures

1. Rinse a clean sample cell with dilution water three times; then fill to the line with Type I water.
2. Clean the outside of the cuvette with a soft, lint-free cloth removing water spots and fingerprints.
3. Apply a thin film of silicone oil and spread the oil evenly over the outside surface with a soft cloth.
4. Place the instrument on a flat surface.

5. Then insert the sample cell into the cell compartment with the orientation mark on the cell aligned with the mark on the front of the compartment.
6. Close the lid and press I/O.
7. Turn the signal average off by pressing the Signal Average key until off is indicated.
8. Then press calibrate (CAL). CAL and S0 should be displayed on the screen along with the value for the S0 standard for the last calibration.
9. Press READ. After the countdown is completed, the blank value will be displayed, then the display will advance to the next standard. Remove the sample cell.
   (In case of error, refer to manual.)
10. S1 and 20 NTU will be displayed on the screen.
11. Clean the outside of the 20 NTU standard cell with a soft, lint-free cloth removing water spots and fingerprints.
12. Apply a thin film of silicone oil and spread the oil evenly over the outside surface with a soft cloth.
13. Insert the standard cell into the cell compartment with the orientation mark on the cell aligned with the mark on the front of the compartment.
14. Close the lid and press READ.
15. After the countdown is completed, the standard value will be displayed, then the display will advance to the next standard. Remove the standard cell.
16. Repeat steps 11 through 15 for the S2 and S3 standards (100 and 800 NTU, respectively.)
17. After S3 has been read, the display will show S0. Remove the sample cuvette.
18. Press CAL to accept the calibration.
19. Once the calibration has been accepted, the instrument will automatically proceed to measurement mode.
    (If any errors occur during calibration, revert to manual for explanation.)

Assigning values to the Gelex® standards

1. Calibrate the meter as described above.
2. Select the automatic range mode using the RANGE key.
3. Turn the signal average off by pressing the SIGNAL AVERAGE key until SIG AVG is not displayed on the screen.
4. Clean the outside of the Gelex® vile with a soft, lint-free cloth removing water spots and fingerprints.
5. Apply a thin film of silicone oil and spread the oil evenly over the outside surface with a soft cloth.

6. Insert the 0-10 NTU Gelex® standard into the cell compartment with the orientation mark on the vile aligned with the mark on the front of the compartment.
7. Close the compartment lid.
8. Press READ and record the displayed value after the lamp signal is no longer displayed on the screen.
9. Remove the vile and record the value on the calibration log sheet.
10. Repeat steps 4 through 9 for the other Gelex® standards.
11. The values for each Gelex® standard must be reassigned each time a new calibration is performed.

Calibration Verification

The 2100Q Turbidimeter does not require calibration before every measurement. Gelex® Standards are used for routine calibration checks. Routine calibration checks should be performed daily before the turbidimeter is used. If the Gelex® standards read more than 5% from their recorded value, the meter should be recalibrated.

Equipment

1. HACH Model 2100Q Turbidimeter
2. Soft, Lint-free Cloth
3. Silicone Oil Impregnated Soft Cloth
4. Calibrated Gelex® standards
5. Calibration Verification Log

Checking Meter Calibration Procedure

1. The Gelex® standards should be used as a routine check for instrument calibration daily before use. If the standards do not read within 10% of the assigned value, the instrument should be recalibrated before use, and new values assigned to the Gelex® standards.
2. Place the instrument on a flat surface.
3. After turning the instrument on, select the automatic range mode using the RANGE key.
4. Turn the signal average off by pressing the SIGNAL AVERAGE key until SIG AVG is not displayed on the screen.
5. Clean the outside of the Gelex® vile with a soft, lint-free cloth removing water spots and fingerprints.

6. Then apply a thin film of silicone oil and spread the oil evenly over the outside surface with a soft cloth.
7. Insert the 0-10 NTU Gelex® standard into the cuvette compartment with the orientation mark on the vile aligned with the mark on the front of the compartment.
8. Close the compartment lid.
9. Press READ and record the displayed value after the lamp signal is no longer displayed on the screen.
6. Remove the vile and record the value on the Calibration Verification Log
10. Compare the value with the recorded value.
11. If the recorded value is within 10% of the value marked on the vile, continue to step 12. Otherwise recalibrate the instrument.
12. Repeat steps 5 through 11 for the other Gelex® standards.

Turbidity Measurements

Equipment

1. HACH Model 2100Q Turbidimeter
2. Turbidity Sample Cells
3. Soft, Lint-free Cloth
4. Silicone Oil Impregnated Soft Cloth
5. Field Report or Field Notebook
6. Type I Water

Field Analysis Procedures

1. Collect a representative sample of the liquid to be analyzed in a clean container.
2. Rinse the clean sample cell three times with the sample water and fill to the line with sample, taking care to prevent the formation of air bubbles and not leave fingerprints on the sides of the cuvette.
3. Clean the outside of the cuvette with a soft, lint-free cloth removing water spots and fingerprints.
4. Apply a thin film of silicone oil and spread the oil evenly over the outside surface with a soft cloth.
5. Place the instrument on a flat surface and turn it on by pressing I/O.
6. Insert the sample cell into the cell compartment with the orientation mark on the cell aligned with the mark on the front of the compartment and close the lid.

7. Select automatic range by pressing the RANGE key until AUTO RNG is displayed.
8. Turn the signal average off by pressing the SIGNAL AVERAGE key until SIG AVG is not displayed on the screen.
9. Press READ and record the turbidity value after the lamp symbol is no longer displayed on the screen.
10. Record the turbidity reading on the Field Report or Field Notebook.
11. Empty the sample cell and rinse the sample cell with Type I Water.

Maintenance and Storage

1. Store the meter in the designated portable carrying case.
2. The meter should not be stored or left in a "dirty" condition.
3. The sample cuvette, silicone oil, and Gelex® standards should be stored in clean state in the proper boxes in the portable carrying case.
4. If an error occurs during calibration or use, refer to the 2100Q User Manual for maintenance and troubleshooting methods.

Quality Assurance/Quality Control

1. Meters are calibrated quarterly (at a minimum) to ensure proper function and accuracy.
2. Meter calibration is checked daily before each use with calibrated Gelex® standards. If the reading differs by more than 10% of the calibrated value, the meter is recalibrated prior to use.

3.0 Installation/Programming of ISCO Autosampler SOP

Purpose

This SOP describes the methods for installing and programing automated samplers for collection of storm (high flow) events for the Mitigation Project as required by the Fort Smith Consent Decree (Case 2: 14-cv-02266-PKH).

Installation of Sampler

The following includes the procedure of installation of the automated samplers at the sample site.

Equipment

1. ISCO 6712 Sampler
2. 12 Volt Deep Cycle Battery
3. ½ Inch and 1 ½ Inch Flex Conduit
4. MSX10 Solar Panel or Larger
5. Shotkey Diode or Voltage Regulator
6. Weather Proof Electrical Box
7. PVC Pipe
8. Coaxial Cable
9. 12 Foot Street Signpost (3)
10. 1-Load Junction Box
11. 1-Tube of Silicon Gasket Material
12. 1-Copper Ground Rod
13. 30 Feet of Copper Wire
14. 1-Six Foot “T” Post
15. 1-All-weather Rain Gauge (Forestry Suppliers)
16. 10-30 Feet of 16 Gauge 2-Wire Cable
17. 1-Lock
18. Various Lengths of ½ Inch Rebar
19. Tygon Tubing (25-30 feet)
20. Electrical Tape and Electrical Wire Nuts

21. Hose Clamps and Compression Cuplings
22. 1½ Inch x ⅜ Inch Stainless Steel Bolts
23. Tools Needed:
    a. 3-lb Hammer
    b. Wire Cutters
    c. Post Driver
    d. 100 Feet of Electrical Fish Tape
    e. Amp Meter
    f. Compass or GPS Unit
    g. Surveyors Level and Transit
    h. Electrical Power Generator and Power Cords
    i. Electric Drill and Drill Bits
    j. Hack Saw or Sawzall
    k. Chain-Saw and Appropriate Safety Gear
24. Protective Boxes: While deployed in the field the ISCO 6712 sampler is housed in a protective box measuring approximately thirty-two by thirty-two inches (32" x 32") to guard against damage and/or theft. The prefabricated box is constructed of aluminum with two (2) access holes. The flexible conduit is attached to a one and one-half inch (1 ½") adaptor and houses the Tygon tubing and coaxial cable. A one-half inch (½") hole is drilled for the conduit housing the solar panel wires.
25. 1640 Level Actuator: The Liquid Level Sampler Actuator is a device used in conjunction with an ISCO water sampler to begin a sampling routine when the liquid level reaches a predetermined height. The Model 1640 consists of a control box assembly connected to the end of a twenty-two (22) foot coaxial cable. For use in the field the Model 1640 is more efficient when the probe assembly is removed and exposed coaxial cable is left to serve as the trigger that begins the sampling routine.

Installation Procedures

1. Setup of the 1640 Level Actuator:
    a. Make sure the sampler is OFF. Secure the Model 1640 control box behind the control section of the sampling unit using Velcro strips. Then connect the SAMPLER connector of the Model 1640 to the FLOW METER socket on the sampler.
    b. Thread the coaxial cable out the back of the box and through the one and one-half inch (1 ½") flex conduit.
    NOTE: Tape the coaxial cable and Tygon tubing together using electrical tape.

c. Position the rain deflector so that it covers the end of the coaxial cable (the probe) and secure it to the coaxial cable using electrical tape.

d. Attach the probe clamp to one of the stakes in the streambed so that the probe will be at approximately one and one-half inch (1 ½") from the water surface.

e. Place the probe in the probe clamp with the exposed coaxial cable pointing down towards the water.

2. Setup of the Solar Panel:

a. Choose a site with sufficient light from a southerly direction, trimming or removal of some trees may be required.

b. Using a compass or GPS unit, locate due south. Drive a 3-5 foot section of signpost into the ground leaving approximately one foot above ground level so that the solar panel will face due south.

c. Attach solar panel mounting bracket (supplied by solar panel manufacturer) to a twelve foot section of signpost using the appropriate mounting hardware.

d. Using hose clamps and ¼ inch bolts attach an 11.5 foot section of ½ inch flex conduit to the twelve foot section of signpost with six (6) inches of the conduit overlapping the top of the signpost.

e. Pull the electrical wires from the solar panel through the flex conduit using electrical fish tape.

f. Feed the wire through the weatherproof electrical load box and attach load box to the signpost.

g. Loosely attach solar panel to mounting bracket.
NOTE: Solar panel must be covered with a box or dark cloth until ready to deploy. Failure to keep solar panel covered could result in electrical injury.

h. Adjust the tilt angle of the solar panel to approximately forty-five degrees (45°) for deployment at this latitude and tighten the bracket nuts to a torque of twelve foot-pounds.

i. Waterproof the conduit by filling the top with silicone and placing silicone around the top edge of the junction box.

j. Attach twelve foot signpost (with solar panel attached) to section of signpost that was driven in the ground using 1½ inch x ⅜ inch stainless steel bolts and appropriately sized washers and nuts.

k. Stabilize the signpost by staking rebar 12 feet from the signpost and attaching copper wire (for grounding) to signpost and rebar stakes.

l. Cut a piece of flex conduit at least three (3) feet longer than the distance between the solar panel and load junction box.

m. Using electrical fish tape, thread insulated 16 gauge hard drawn copper wire through the length of the flex conduit.

n. Using wire nuts, wire the solar panel to the voltage regulator (black wire to black wire and red wire to red wire).

o. Attach the shotkey diode to the positive wire (red) with the small gray band towards the source side (the solar panel). Connect the shotkey diode to the positive post of the battery using a small piece of copper wire. If using the voltage regulator supplied by the solar panel manufacturer follow the supplied installation instructions. Finally, attach the ground wire (black) to the negative post of the battery.

p. Uncover the solar panel.

q. Wait 10 minutes then remove wires from the battery and check the amp output of the solar panel using an amp meter. 15-18 milli-amps indicates the battery is charging correctly, if amp output is zero (0) then change direction of shotkey diode.

r. Place cover on load junction box.

3. Setup of ISCO 6712 sampler:

a. Place model 6712 sampler in protective box.

b. Drill one-half inch (½") hole in the sampler's protective box.

c. Cut one-half inch (½") flex conduit to fit in between the solar panel and the sampler's protective box.

d. Use compression couplings to connect the flex conduit to the boxes.

e. Using electrical fish tape, run 16 gauge insulated hard drawn copper wire through the flex conduit.

f. Connect the battery to the power source.

g. Cut and appropriate length of one and one-half inch (1 ½") flex conduit to reach from the protective box to the water's edge.

h. Feed ½ inch Tygon tubing and coaxial cable through the one and one-half inch (1 ½") flex conduit.
NOTE: Tape the coaxial cable and Tygon tubing together and feed at the same time.

i. Attach the strainer to the end of the Tygon tubing.

j. Attach the strainer to one of the stakes in the stream using 16 gage wire.

k. Cut Tygon tubing from spool so that 2-3 extra feet of tubing remains in protective box (for future repairs).

l. Attach end of Tygon tubing to the pump tube (on the 6712 unit) and secure with a suitable clamp and turn sampler on.

m. Set the actuator:

i. Remove the probe from the clamp. Clean the end of the coaxial cable and make sure it is dry. Sometimes it is necessary to use a knife to remove a small section of the wet cable.

ii. Move the clamp up or down on the rebar so that the probe will be approximately one and one-half inches (1 ½") above the water level.

iii. Make sure the rain deflector is clean and properly fastened to the probe and replace the probe in the clamp.

iv. Reset the switch by moving the actuator switch from LATCH to TOGGLE/RESET.

n. Use the keypad to select run program and press enter. Watch unit until the display *Program Disabled* appears. Move the actuator switch back to latch.

o. Close and lock all boxes.

Programming the ISCO 6712

1. Highlight *Program* from the main menu. Press enter.
2. Highlight *Yes* to change program name. Press enter.
3. Enter the word "HYDROLOGY" then highlight *Done*. Press enter.
4. Highlight *Yes* to change the site description. Press enter.
5. Enter the appropriate site name then highlight *Done*. Press enter.
6. Highlight *ft* to select feet for units of length. Press enter.
7. Highlight *5* to select a five-minute data storage interval. Press enter.
8. Highlight *24* to select the number of bottles. Press enter.
9. Enter *1000* to select the volume of each bottle. Press enter.
10. Enter the length of the suction hose for suction line length (in feet). Press enter.
11. Highlight *Auto Suction Head*. Press enter.
12. Enter *0* for the number of rinse cycles. Press enter.
13. Enter *1* for the number of retries. Press enter.
14. Highlight *One Part Program*. Press enter.
15. Highlight *Nonuniform Time*. Press enter.
16. Highlight *Intervals in Minutes*. Press enter.
17. A screen will appear that states *First sample at start time, then….*Press enter.

18. The next screen is titled *Quantity at Interval*. Enter the following values.

1	At	15	Minutes
1	At	15	Minutes
1	At	15	Minutes
1	At	15	Minutes
1	At	15	Minutes
1	At	30	Minutes
1	At	30	Minutes
1	At	30	Minutes
1	At	30	Minutes
1	At	30	Minutes
1	At	60	Minutes
1	At	60	Minutes
1	At	60	Minutes
1	At	60	Minutes
1	At	60	Minutes
1	At	60	Minutes
1	At	60	Minutes
1	At	60	Minutes
1	At	60	Minutes
1	At	60	Minutes
2	At	60	Minutes

Note: only 22 values are entered because sample number 1 is taken at startup. The last sample is duplicated for quality control purposes.

19. Enter *1* for bottles per sample event. Press enter.
20. Highlight *Number of Samples* to select when the sampler switches bottles. Press enter.
21. Enter *1* to select how often the sampler switches bottles. Press enter.
22. Highlight *No* to disable the run continuously feature. Press enter.
23. Enter *1000* for the sample volume. Press enter.
24. The next screen allows for ISCO 700 series modules to be enabled. None of these modules are used, therefore highlight *None* and press enter.
25. Highlight *Yes* for the option once enabled stay enabled. Press enter.

26. Highlight *Yes* to sample at enable. Press enter.
27. Highlight *Done* without entering any pauses and resumes. Press enter.
28. Highlight *Delayed Start*. Press enter.
29. Enter *1* minute for the delayed start.
30. The programming is now complete. Highlight *Yes* if you are ready to run the program now or highlight *No* if you are not ready.

Troubleshooting

Troubleshooting

1. Please refer to the ISCO 6712 sampler and 1640 Level Actuator User Manuals for maintenance and troubleshooting methods.

Quality Assurance/Quality Control

1. As no analysis is performed and no samples are actually collected in this SOP, no QA/QC is performed. The method includes programming the sampler to collect a QC sample.

4.0 Grab Sample Collection and Custody SOP

Purpose

This SOP describes the materials and methods necessary for the grab sample collection of water for the analysis of various pollutants. It also gives guidance for the completion of the chain of custody (COC) forms necessary for each set of samples collected for laboratory analysis. This SOP is to be used for the Mitigation Project as required by the Fort Smith Consent Decree (Case 2: 14-cv-02266-PKH).

Collection of the Grab Sample

The following includes the procedure for collecting a grab sample at the sample site.

Equipment

1. Field Data Sheet
2. Ink Pen
3. Sharpie®
4. Prelabeled and Preserved Sample Bottles
5. Chain of Custody
6. Nitrile Gloves
7. Ice Pack Filled Ice Chest

Sampling Procedures

1. Clean sample bottles should be supplied by the laboratory or a reputable scientific supply company. Be sure to have an extra set of sample bottles on hand for each field trip.
2. Check all bottles prepared by the lab to ensure the proper analyses are covered with the correct type of preservation.
3. A duplicate sample for a given analyte shall be taken, 1 for every 10 samples collected. That is, a duplicate sample will be collected 10% of the time. A duplicate sample is simply a second sample taken from the same location immediately following the original sample. The duplicate sample serves as a quality control check for the sample sources (stream water, etc.) variability, and the sampling methodology repeatability.
4. Use appropriate safety precautions while collecting the samples (i.e., wear nitrile gloves, etc.) as necessary.
5. Prior to collecting the samples, record the following information on the label using (i.e. a Sharpie®):

a. sample identification,
b. date of collection,
c. time of collection, and
d. initials of collectors.

6. Fill each bottle per site completely, and place the cap securely onto each bottle. Each sample site will have multiple bottles to fill. When filling sample bottles be sure to choose a representative sample location which is accessible in a manner as to prevent bottom and/or attached solid materials from entering the sample bottle. Samples should be taken in flowing water as close as possible to where the autosampler strainer collects water. Samples should be taken from below the water surface if depth allows. If need arises, the autosampler pump may be used to draw a water sample from the site to fill the sample bottle.
7. Place the bottle in an ice pack filled ice chest to keep the sample cool (4°C±2).
8. Record sample information on the Field Data Sheet or in a bound field notebook, along with any pertinent observations.
9. Measure any necessary in-situ parameters (pH) and record it on the appropriate field form or in a field notebook.
10. When sampling is complete a COC form must be completed.
11. Return samples to lab as soon as possible.

Chain of Custody (COC)

1. A COC form must be filled out for all samples submitted to the laboratory for analysis.
2. The COC form must be filled out with a black ink ballpoint pen, and signed in the appropriate locations by each individual relinquishing and receiving the sample(s).
3. The following information must be completed on each COC form:
    a. sample id,
    b. date (from sample bottle),
    c. time (from sample bottle),
    d. number of containers,
    e. preservative,
    f. matrix of the sample,
    g. sample type (grab or composite),
    h. parameters to analyze at lab,
    i. sampler(s), and
    j. relinquished by.

k. received by.

4. Upon delivery to the laboratory, each completed COC form shall be photocopied and the copy filed.
5. At the lab the COC form will be received and signed. A copy of the COC form should be returned by the lab, along with the analysis results, when completed.

Troubleshooting

Troubleshooting

1. Please refer to other SOPs for troubleshooting if issues with equipment arise.

Quality Assurance/Quality Control

1. A duplicate sample for a given analyte shall be taken, one (1) for every ten (10) samples collected. That is, a duplicate sample will be collected ten percent (10%) of the time. A duplicate sample is simply a second sample taken from the same location immediately following the original sample. The duplicate sample serves as a quality control check for the sample sources (stream water, etc.) variability, and the sampling methodology repeatability.
2. A field blank shall be collected once during the duration of the study. A field blank is simply a sample bottle filled with deionized water (blank water) on-site at the study location to represent any potential contamination present at the site or in the sampling techniques.
3. A trip blank shall be collected once during the duration of the study. A trip blank is a bottle filled in the lab with deionized water to verify blank water and sample bottle purity.

5.0 Retrieving Automated Storm Event Samples SOP

Purpose

This SOP describes the methods for retrieving the automated storm events for the Mitigation Project as required by the Fort Smith Consent Decree (Case 2: 14-cv-02266-PKH).

Retrieval of Automated Storm Event Samples

The following includes the procedure of retrieving samples from the automated sampler at the sample site.

Equipment

1. ISCO 6712 Base with Full Set of Bottles and Lids (24).
2. 581 Rapid Transfer Device (RTD)
3. Electrical Tape
4. Pliers
5. Dry Paper Towels
6. Sampling Sheet
7. 2100Q Portable Turbidimeter
8. Prelabeled and Preserved Sample Bottles
9. Ink Pen
10. Sharpie®
11. Nitrile Gloves
12. Ice Pack Filled Ice Chest
13. Chain of Custody

Retrieval Procedures

1. Check to see if sampler has been activated and if any errors have occurred. If sampler has been activated note the next bottle number and the time until the next sample on the sampling sheet.
2. Press the stop key to end the program and then use the arrow keys to select view report. Select *View Data* from the next menu and finally select *Sampling Report*.
3. Record the date and times of each sampling event on the sampling sheet.

4. Attach the 581 Rapid Transfer Device (RTD) to the Interrogator connector located on the back of the sampling unit. The Interrogator connector is a sealed 6-pin female connector identified by the symbol of the laptop computer. Leave the RTD connected until the green light stops blinking.
5. After the RTD has completed the data transfer, remove the power cable from the back of the sampling unit and remove the top unit from the base. Place a lid on each bottle and replace with an empty base.
6. Replace the top unit and reattach the power cable to the back of the sampling unit.
7. Reset the actuator:
    a. Remove the probe from the clamp. Clean the end of the coaxial cable and make sure it is dry. Sometimes it is necessary to use a knife to remove a small section of the wet cable.
    b. Move the clamp up or down on the rebar so that the probe will be approximately one (1) inch above the water level.
    c. Make sure the rain deflector is clean and properly fastened to the probe and replace the probe in the clamp.
    d. Reset the switch by moving the actuator switch from LATCH to TOGGLE/RESET.
8. Use the keypad to select run program and press enter. Watch unit until the display *Program Disabled* appears. Move the actuator switch back to latch.
9. Record rainfall data and empty rain gauge.
10. After returning to the lab determine turbidity of each sample using the HACH 2100Q turbidity unit. Record these values on the sampling sheet.
11. Five samples are then are then chosen for further analysis. These samples are the first sample, most turbid sample, a sample taken halfway between the first sample and the most turbid sample, a sample taken halfway between the most turbid sample and the last sample, and the last sample.
12. Prior to filling one of the three (3) sample bottles, record the following information on the label using a Sharpie®):
    a. sample identification,
    b. date of collection,
    c. time of collection, and
    d. initials of collectors.
13. Fill each sample bottle completely, and place the cap securely each bottle.
14. Place the filled bottles in an ice pack filled ice chest to keep the sample cool (4°C±2).

Chain of Custody (COC)

1. A COC form must be filled out for all samples submitted to the laboratory for analysis.
2. The COC form must be filled out with a black ink ballpoint pen, and signed in the appropriate locations by each individual receiving the sample(s).
3. The following information must be completed on each COC form:
    a. sample id,
    b. date (from sample bottle),
    c. time (from sample bottle),
    d. number of containers,
    e. preservative,
    f. matrix of the sample,
    g. sample type (grab or composite),
    h. parameters to analyze at lab,
    i. sampler(s), and
    j. relinquished by.
4. Upon delivery to the laboratory, each completed COC form shall be photocopied and the copy filed.
5. At the lab the COC form will be received and signed. A copy of the COC form should be returned by the lab, along with the analysis results, when completed.

Troubleshooting

Troubleshooting

1. Please refer to other SOPs for troubleshooting if issues with equipment arise.

Quality Assurance/Quality Control

1. The last two (2) sample bottles for each series is a duplicate. Submit one duplicate sample set per ten (10) samples collected each day. The results must agree within thirty percent (30 %) of each other.