

Twelfth Quarterly Report

United States Environmental Protection Agency
Administrative Order No. CWA-04-2010-4772

Period
July 1, 2013 –
September 30, 2013

October 2013

Submitted by:



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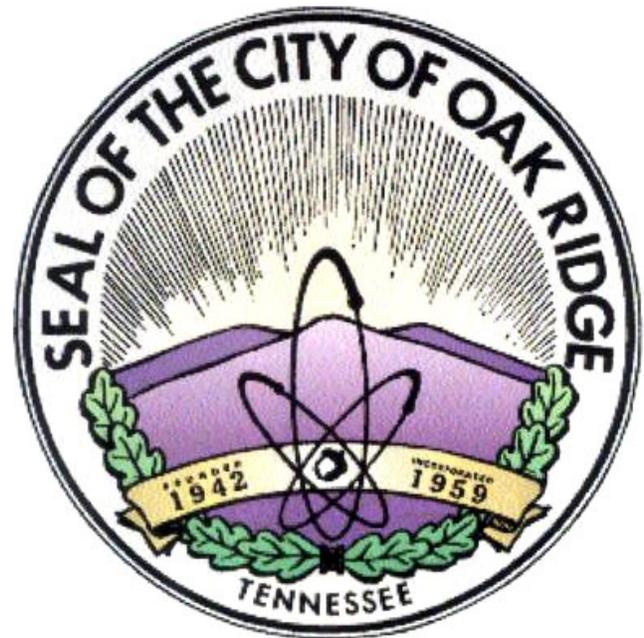
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SECTION I:

ACTIONS DURING THE TWELFTH QUARTER



SECTION I

ACTIONS DURING THE TENTH QUARTER

A. Introduction

Item 18 of the Administrative Order (AO) requires the City to submit quarterly reports. Those reports are due the 28th day of the month following the end of the quarter. They are to describe actions taken toward achieving compliance with the AO. This section of the report will deal with Management, Operation, Maintenance (MOM) matters, as well as remediation activities.

B. Funding

Oak Ridge City Council action during the tenth quarter included a resolution authorizing the application and acceptance of State Revolving Fund (SRF) loans of \$14.0 million and \$4.0 million at a favorable interest rate, with funds expected to be available during June 2013. Those funds were approved by the State of Tennessee on June 25, 2013. Due to the funding issues, the rehabilitation program became slightly behind schedule; but, with the SRF funds, the program is quickly getting back on the projected schedule. Several planned projects have been combined into larger ones to accelerate the pace of construction for a timely compliance.



C. System Evaluation and Rehabilitation Plans

The East Plant Sewer Shed continues to have the highest priority for rehabilitation. Construction continues for two (2) of the five (5) mini-basins. As mentioned in earlier quarterly reports, the City has a Program Manager under contract and five (5) design firms to assist with the execution of the rehabilitation plan. During the tenth quarter, three (3) mini-basins which had separate designs were combined into a single construction contract package using the funding approved by the SRF loan program in the eleventh quarter. The remainder of the East Plant Sewershed rehabilitation was designed during the eleventh quarter.

The Program Manager is working with the City to secure sites for the three equalization basins identified in the rehabilitation plan. Geotechnical investigations are underway. It is expected that the basin designs will be complete in the fourteenth quarter.

The Emory Valley construction projects are complete and post-construction investigation continues on lateral issues and identifying other defects to be addressed as routine maintenance.

Design authorizations have been issued for two sewer sheds with a third expected in early thirteenth quarter.



D. Management, Operations, and Maintenance Programs

1. Information Management System

The Information Management System, Infor, was successfully upgraded from version 8.5 to 10.2 utilizing City personnel during the week of August 19, 2013. A few issues still exist from the upgrade, but do not negatively affect the management of the sewer assets.

Pump Stations

- 512 weekly preventive maintenance work orders generated and completed.
- 73 monthly preventive maintenance work orders generated and completed.
- 45 quarterly preventive maintenance work orders generated and completed.
- 5 semi-annual preventive maintenance work orders generated and completed.
- 26 annual preventive maintenance work orders generated and completed.
 - 6 work orders generated by preventive maintenance (see listing)
- 7 pump station inspection work orders were generated for rain events.
- 94 work orders generated by the maintenance crew (not including PMs, Work from PMs and Rain Events)
- Total-to-date of 5,209 work orders generated in the Infor system for the WWTP maintenance crew.
- Successful addition of the buildings and facilities located at the Wastewater Treatment Plant.

Gravity Sewer

- As needed training continues.
- Preliminary work completed for the routing of FOG assets, with the routes scheduled to begin in October.
- Continue refining the process for documenting the SSOs in the Infor system with limited issues.



- 185 work orders generated by the gravity crews (not including Call Center, Routing and Rain Events)
 - 87 MOM work orders
- Total-to-date of 1,617 work orders generated in the Infor system for the gravity crews.

Call Center

- Total-to-date of 3,600 work orders generated in the Infor system by the Call Center.
- 697 work orders generated during this quarter in the Infor system by the Call Center.
 - 31 work orders called in for “Check Sewer Problem”

GIS

The City of Oak Ridge continues to add to and update the GIS mapping system. During this quarter the GIS Specialist finished adding the Wastewater Treatment Plant structures and buildings to the Infor system.

The GIS Specialist updated the mapping system and the Infor system with the FOG assets. The location information for the FOG assets was utilized to assist with the creation of optimal inspection routes.

Work continues on loading approximately 22,000 inspection pictures from 2010 and 2011 that will be linked to the GIS mapping system.

2. Engineering

By-Pass Pumping Connections

By-pass pumping connections will be installed at the remaining seven pump stations when they are replaced or updated.

- Castlewood Pump Station (completed)
- Westview Pump Station (completed)
- Peninsula (formerly Gregory’s) Pump Station (completed)
- Palisades #1 Pump Station
- Palisades #2 Pump Station
- Palisades #3 Pump Station
- Palisades #4 Pump Station



Supervisory Control and Data Acquisition (SCADA)

During this quarter, SCADA specifications along with a Request for Proposal was developed and made available in accordance with the City of Oak Ridge purchasing guidelines. Proposals were due October 10, 2013.

3. Operations

Fats, Oils, and Grease

Quick Stats

- 106 establishments in program (increased by two since the last report)
- Conducting food service establishments (FSE) Inspections (total complete 84)
- 12 establishments currently known noncompliant (re-inspections to be completed)
- 2 FSE required to completely replace their grease interceptor
- Public Works personnel continue to be instrumental in identifying potential FOG violations that has led to quicker and more routine compliance.
- Planned 100% FSE inspections to be completed by mid-November 2013, leaving all of December for any follow ups not completed.

City of Oak Ridge Program Coordination

- 2014 FSE inspections will follow closely with the Infor routing schedule conducted by Public Works
- Real time FOG data being compiled for heavy discharge FSEs
- Continued new building permits to the FOG program for FSE as a certificate of occupancy requirement
- Frequent FSE Manager change causing some problem with re-education and additional inspection follow ups



Collection

Emory Valley Sewer Shed

- City crews have completed the CCTV work in the Emory Valley Sewer Shed. City crews are going back and reinvestigating privately owned sewer laterals that are suspected of having I&I during heavy rain events. This information is being compiled and will be brought to the attention of the property owners with the assistance of the City Code Enforcement Division. The owners of the privately owned sewer laterals will be shown the problem and consulted in the need of the repair.

Cleaning and CCTV Inspection

- City crews are concentrating on cleaning and CCTV lines that have had previous issues. The goal is to keep these lines clear until the rehab contractor repairs or replaces them. The rehab work is now underway in the East Plant Sewer Shed. City crews have cleaned the problem lines in the East Plant Sewer Shed and will now be concentrating on the Y-12, Central City, Turtle Park and West End sewer sheds until the rehab work is complete in each sewer shed.

Manhole Inspections

- City crews will start manhole inspection in the East Plant Sewer Shed as contractors finish up with rehab work in designated mini systems.

Smoke Testing

- City crews began smoke testing the East Plant Sewer Shed as contractors finish rehab work in designated mini systems. City crews completed smoke testing the E11 and E12 mini systems for a total of 76,544 linear feet.

Flow Monitoring

- City personnel continue to monitor the sewer flows during rain and dry weather.



- There are currently twenty-one (21) flow meters strategically located throughout the city. The Emory Valley Sewer Shed has flow meters installed for post construction flow monitoring, and the East Plant Sewer Shed has flow meters installed for preconstruction flow monitoring.

Rain Gauges

- The three (3) rain gauges are recording rainfall data in the East, West and Center of the city. The central rain gauge being at the Water Treatment Plant is the primary used to call rain events of 0.5" or more.

Rain Events

- For this quarter the city of Oak Ridge has had a total of seven (7) rain events totaling .5" or more of rain.

Rainfall Data

- Monthly rainfall amounts for the City of Oak Ridge recorded at the Water Treatment Plant for this quarter.
 - July 8.36"
 - August 4.11"
 - September 3.25"

SSOs

- 25-SSOs during this quarter
 - 23- wet weather overflows
 - 2- dry weather overflows

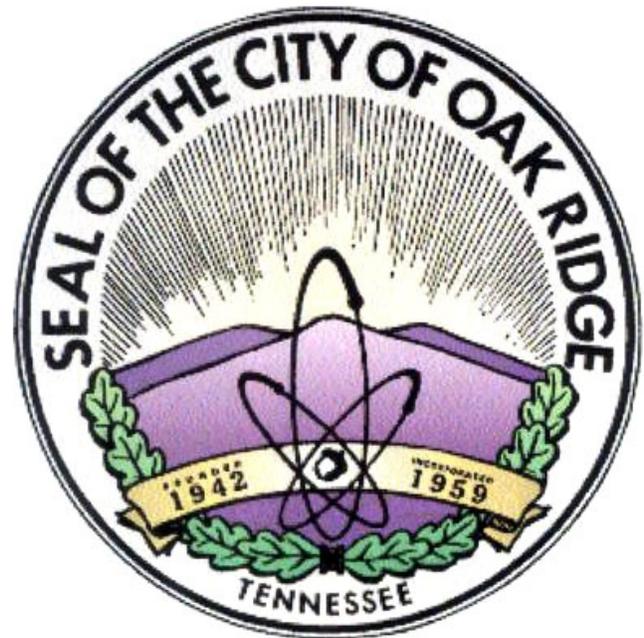
Safety Training

- All Public Works employees attend monthly safety meetings.
- This quarter topics were
 - July – Weather Hazards in the Work Place
 - August – Work Place Behaviors
 - September – ARC Flash Training and PPE
- All employees attended a two day Safety Fest TN during September for OSHA Construction Compliance and Safety.



SECTION II:

**OTHER GENERAL
COMMENTS**



SECTION II

OTHER GENERAL COMMENTS

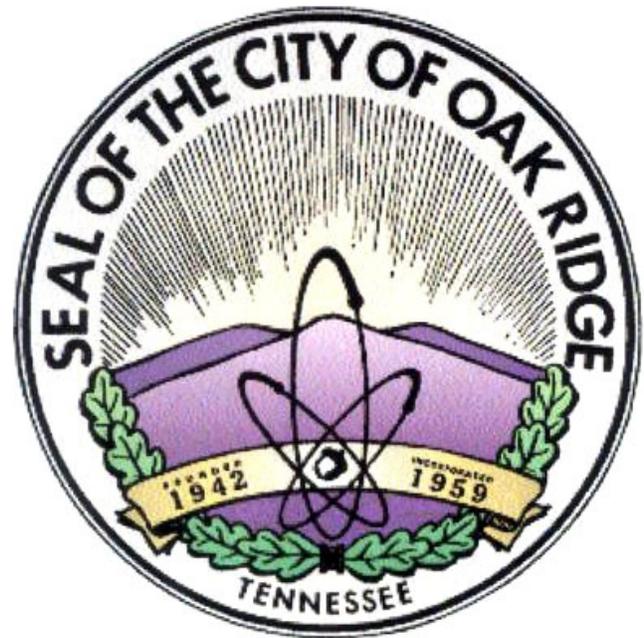
The City and EPA have had discussions concerning the National Nuclear Security Administration's (NNSA) Y-12 facility. The City recognizes they own the collection system and hold the NPDES permit. However, the Y-12 facility (an independent customer) operates at a level higher than city or state government. That facility, from a practical perspective, is not the same as any other industrial customer with a service lateral.

Attached as Appendix A is correspondence from the City Manager to the Department of Energy (DOE) relative to wet weather flows from the Y-12 facility. A letter from B&W Y-12 indicating no activity relative to I/I reduction occurred during the quarter is Appendix B.



SECTION III:

**SSO'S DURING
TWELFTH QUARTER**



EPA Sanitary Sewer Overflow Summary (See Attached SSO Reports for Details)

12th Quarterly Report - July 1, 2013 to September 30, 2013

Start Date	St Name	St #	Est Tot Flow (Gal)	Explain OF Cause	Other Measures	Flow in Surface	Name of Surface Water
7/1/2013	Woodland Terrace East	111	300	While excavating for the new Aldi's grocery store, the contractor hit an abandoned sewer lateral that entered MH:W2-K13-24. The damage caused sewer to exit through the abandoned tap at the manhole.	The city will seal off and abandon the sewer tap in the manhole	<input type="checkbox"/>	
7/6/2013	Bay Path Drive	108	3047500	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Emory Valley Creek
7/6/2013	Cairo Lane	151	4966500	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Ernie's Creek
7/6/2013	Dresden Road	100	500000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Ernie's Creek
7/6/2013	Illinois Avenue, South	216	4488000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	East Fork Poplar Creek
7/6/2013	Illinois Avenue, South	324	671250	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	East Fork Poplar Creek
7/6/2013	Melton Lake Drive	695	695000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Melton Hill Lake
7/6/2013	Oak Ridge Turnpike	1289	136500	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Tributary to East Fork Poplar Creek
7/6/2013	Oak Ridge Turnpike	1403	5181000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Tributary to East Fork Poplar Creek
7/6/2013	Oak Ridge Turnpike	1403	606000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Tributary to East Fork Poplar Creek
7/6/2013	Oak Ridge Turnpike	1403	378750	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Tributary to East Fork Poplar Creek
7/6/2013	Oak Ridge Turnpike	470	494000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Ernie's Creek
7/6/2013	Oak Ridge Turnpike	535	532800	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Ernie's Creek
7/6/2013	Purdue Avenue, North	117	7857000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Tributary to East Fork Poplar Creek

Start Date	St Name	St #	Est Tot Flow (Gal)	Explain OF Cause	Other Measures	Flow in Surface	Name of Surface Water
7/6/2013	Thayer Lane	100	4000	Excessive rainfall 4.6" in 26 hrs and roots and rags.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Ernie's Creek
7/6/2013	Tusculum Drive	191	333750	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	East Fork Poplar Creek
7/7/2013	Belgrade Road		45000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Ernie's Creek
7/7/2013	California Avenue	106	135000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Ernie's Creek
7/7/2013	Grandcove Lane	114	255000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	East Fork Poplar Creek
7/7/2013	Iroquois Road		525000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	East Fork Poplar Creek
7/7/2013	Jefferson Avenue	215	26250	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	East Fork Poplar Creek
7/7/2013	Newkirk Lane, West	116	270000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Tributary to East Fork Poplar Creek
7/7/2013	Providence Road	110	26000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Tributary to East Fork Poplar Creek
7/7/2013	Providence Road	110	39000	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	Tributary to East Fork Poplar Creek
7/7/2013	Robertsville Road	270	262500	Excessive rainfall 4.6" in 26 hrs.	City continues work to correct I&I	<input checked="" type="checkbox"/>	East Fork Poplar Creek

CITY OF OAK RIDGE

REPORT DATE: 7/2/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 111 Woodland Terrace East

1st Occurrence at this location? Y N

If No, Date of Last Occurrence:

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # W2 Map Page # K13

Manhole # K13-24 Force Main:

FLOW DATA

Start Date: 7/1/2013 Time: 1:50 AM PM

End Date: 7/1/2013 Time: 2:00 AM PM

Duration 10 min. hours/minutes Est. Flow Rate: 10 gpm Estimated Total Flow: 300 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: While excavating for the new Aldi's grocery store the contractor hit an abandoned sewer lateral that entered MH:W2-K13-24. The damage caused sewer to exit through the abandoned tap at the manhole.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: The City will seal off and abandon the sewer tap in the manhole.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water:

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: Anthony Morris, David Patterson, Mark Maples, Pat Mrochek

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7-2-13

Reviewed by Pat Mrochek Title: Operations Maint. Manager Date: 7/2/13

Initial TDEC Notification By: David Patterson Date: 7/2/2013

After Review & N/A Notification to TDEC Title: Operations Manager Date: _____

Final Review [Signature] Title: Public Works Director Date: 7/2/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.3.13

LOCATION: 108 Bay Path Dr. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup Pump Station Name: None or None or None

If Manhole; Give Mini-system # E5B Map Page # L22 Manhole # L22-4 Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 7:55 AM PM End Date: 7/7/2013 Time: 6:00 AM PM

Duration 22 hrs. 5 min. hours/minutes Est. Flow Rate: 2300 gpm Estimated Total Flow: 3,047,500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Emory Valley Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Shwin Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/13

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review [Signature] Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 151 Cairo Ln.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 6/18/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # E13B Map Page # G22

Manhole # G22-14

Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 7:25 AM PM

End Date: 7/7/2013 Time: 8:30 AM PM

Duration 25 hrs. 5 min. hours/minutes

Est. Flow Rate: 3300 gpm

Estimated Total Flow: 4,966,500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: Ernies Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements

Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rich Brown Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification

By: David Patterson

Date: 7/7/2013

After Review & _____ Title: Operations Manager Date: _____
Notification to TDEC

Final Review Myra Cund Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: Craig Will Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 100 Dresden Rd.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # E13A Map Page # F20

Manhole # F20-36 Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 4:25 AM PM

End Date: 7/7/2013 Time: 1:15 AM PM

Duration 20 hrs. 50 min. hours/minutes Est. Flow Rate: 400 gpm Estimated Total Flow: 500,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Ernies Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Senior Maint. Specialist Date: 7/9/13

Reviewed by Rick Laurin Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/13

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review [Signature] Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

REPORT DATE: 7/9/2013

CITY OF OAK RIDGE
SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 216 S. Illinois Ave. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 6/18/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup Pump Station Name: None or None or None

If Manhole; Give Mini-system # W18A Map Page # J11 Manhole # J11-16 Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 6:20 AM PM End Date: 7/7/2013 Time: 5:00 AM PM

Duration 22 hrs. 40 min. hours/minutes Est. Flow Rate: 3300 gpm Estimated Total Flow: 4,488,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive Rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct l&l

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Lewis Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & _____ Title: Operations Manager Date: _____
Notification to TDEC

Final Review [Signature] Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

LOCATION: 324 S. Illinois Ave. LOCATION DATA 1st Occurrence at this location? Y [] N [x]

If No, Date of Last Occurrence: 6/18/2013

POINT OF OCCURENCE

Manhole [x] Clean Out [] In-House Backup [] Pump Station Name: None or None or None

If Manhole; Give Mini-system # W18A Map Page # J12 Manhole # J12-11 Force Main: []

FLOW DATA

Start Date: 7/6/2013 Time: 8:05 AM [] PM [x] End Date: 7/7/2013 Time: 11:00 AM [x] PM []

Duration 14 hrs. 55 min. hours/minutes Est. Flow Rate: 750 gpm Estimated Total Flow: 671,250 gallons

CAUSES

(Check all that apply)

Rainfall [x] [Estimated amount 4.6 in] Power Outage [] Equipment Failure []

Broken Sewer [] Blocked line from Roots [] Grease [] Collapse [] Other []

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded [] Nozzle [] Root Saw [] Lid Removed [] Lined [] Equipment Repair []

Line will be: cleaned and TV'd for needed repair: [] Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes [x] No [] Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil [] Ditch [] Storm Sewer [x]

Basement Back-up [] No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes [] No [x] How: City Web Site [] The Oak Ridger [] Signs Posted [] Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Lewis Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/13

After Review & Notification to TDEC Title: Operations Manager Date:

Final Review Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 1289 Oak Ridge Turnpike

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 1/16/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # W5 Map Page # G13

Manhole # G13-12 Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 5:45 AM PM

End Date: 7/7/2013 Time: 4:30 AM PM

Duration 22 hrs. 45 min. hours/minutes Est. Flow Rate: 100 gpm Estimated Total Flow: 136,500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Lavin Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/13

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review Greg Cund Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: Cindy Will Date: 7.11.13

LOCATION: 1403 Oak Ridge Turnpike LOCATION DATA 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 6/18/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup Pump Station Name: None or None or None

If Manhole; Give Mini-system # W5 Map Page # G11 Manhole # G11-8 Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 5:50 AM PM End Date: 7/7/2013 Time: 8:00 AM PM

Duration 26 hrs. 10 min. hours/minutes Est. Flow Rate: 3300 gpm Estimated Total Flow: 5,181,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Senior Maint. Specialist Date: 7/9/13

Reviewed by Rick Swain Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & Notification to TDEC Title: Operations Manager Date:

Final Review Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 470 Oak Ridge Turnpike

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 6/18/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # E10 Map Page # F20

Manhole # F20-16 Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 4:10 AM PM

End Date: 7/7/2013 Time: 12:45 AM PM

Duration 20 hrs. 35 min. hours/minutes Est. Flow Rate: 400 gpm Estimated Total Flow: 494,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Emies Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Senior Maint. Specialist Date: 7/9/13

Reviewed by Rick Lewis Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review [Signature] Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7/11/13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 117 N. Purdue Ave. 1st Occurrence at this location? Y [] N [x]

If No, Date of Last Occurrence: 6/18/2013

POINT OF OCCURENCE

Manhole [x] Clean Out [] In-House Backup [] Pump Station Name: None or None or None

If Manhole; Give Mini-system # W5 Map Page # G15 Manhole # G15-13 Force Main: []

FLOW DATA

Start Date: 7/6/2013 Time: 5:30 AM [] PM [x] End Date: 7/7/2013 Time: 8:30 AM [] PM [x]

Duration 27 hrs. hours/minutes Est. Flow Rate: 4850 gpm Estimated Total Flow: 7,857,000 gallons

CAUSES

(Check all that apply)

Rainfall [x] [Estimated amount 4.6 in] Power Outage [] Equipment Failure []

Broken Sewer [] Blocked line from Roots [] Grease [] Collapse [] Other []

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded [] Nozzle [] Root Saw [] Lid Removed [] Lined [x] Equipment Repair []

Line will be: cleaned and TV'd for needed repair: [] Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes [x] No [] Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil [] Ditch [x] Storm Sewer []

Basement Back-up [] No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes [] No [x] How: City Web Site [] The Oak Ridger [] Signs Posted [] Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Luvine Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & Notification to TDEC Title: Operations Manager Date:

Final Review Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: Clay Will Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 100 Thayer Ln.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 2/4/2008

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # E9

Map Page # E19

Manhole # E19-1 Old MH# D-717

Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 8:40 AM PM

End Date: 7/6/2013 Time: 9:00 AM PM

Duration 20 min. hours/minutes Est. Flow Rate: 200 gpm Estimated Total Flow: 4,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive Rainfall 4.6" in 26 hrs. and roots and rags.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Ernie's Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons, Doug Farmer, Gene Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Clavin Title: Operations/Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review Greg Corder Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: Craig Will Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 191 Tusculum Dr. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 5/6/13

POINT OF OCCURENCE

Manhole Clean Out In-House Backup Pump Station Name: None or None or None

If Manhole; Give Mini-system # W19 Map Page # H11 Manhole # H11-4 Force Main:

FLOW DATA

Start Date: 7/6/2013 Time: 6:25 AM PM End Date: 7/7/2013 Time: 4:40 AM PM

Duration 22 hrs. 15 min. hours/minutes Est. Flow Rate: 250 gpm Estimated Total Flow: 333,750 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Lewin Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/13

After Review & Notification to TDEC _____ Title: Operations Manager Date: _____

Final Review Greg Curb Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: Craig Wild Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: Belgrade Rd.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 11/28/2011

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # E13A Map Page # F21

Manhole # F21-1

Force Main:

FLOW DATA

Start Date: 7/7/2013 Time: 9:15 AM PM

End Date: 7/7/2013 Time: 1:00 AM PM

Duration 3 hrs. 45 min. hours/minutes

Est. Flow Rate: 200 gpm

Estimated Total Flow: 45,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: Emies Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements

Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Lewis Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review Myra C... Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: Erin Will Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 114 Grandcove Ln.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 5/6/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # W27 Map Page # E3W

Manhole # E3W-9

Force Main:

FLOW DATA

Start Date: 7/7/2013 Time: 10:35 AM PM

End Date: 7/7/2013 Time: 4:15 AM PM

Duration 5 hrs. 40 min. hours/minutes

Est. Flow Rate: 750 gpm

Estimated Total Flow: 255,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements

Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Kick Lewis Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification

By: David Patterson

Date: 7/7/13

After Review & Notification to TDEC

Title: Operations Manager

Date: _____

Final Review [Signature]

Title: Public Works Director

Date: 7/11/13

Final Report Transmitted to TDEC

By: [Signature]

Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: Iroquois Rd. @ Robertsville Rd.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 5/6/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # W18D Map Page # E10

Manhole # E10-19

Force Main:

FLOW DATA

Start Date: 7/7/2013 Time: 10:15 AM PM

End Date: 7/7/2013 Time: 4:05 AM PM

Duration 5 hrs. 50 min. hours/minutes

Est. Flow Rate: 1500 gpm

Estimated Total Flow: 525,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct l&l

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements

Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Lewis Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review [Signature] Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 215 Jefferson Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 1/30/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # W12 Map Page # D9 Manhole # D9-6

Force Main:

FLOW DATA

Start Date: 7/7/2013 Time: 10:20 AM PM

End Date: 7/7/2013 Time: 12:05 AM PM

Duration 1 hr. 45 min. hours/minutes

Est. Flow Rate: 250 gpm

Estimated Total Flow: 26,250 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements

Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Clavin Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification

By: David Patterson

Date: 7/7/13

After Review &

Notification to TDEC

Title: Operations Manager

Date: _____

Final Review

[Signature]

Title: Public Works Director

Date: 7/11/13

Final Report Transmitted to TDEC

By: [Signature]

Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 116 W. Newkirk Ln.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 1/16/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # W6 Map Page # E14

Manhole # E14-7

Force Main:

FLOW DATA

Start Date: 7/7/2013 Time: 9:40 AM PM

End Date: 7/7/2013 Time: 1:40 AM PM

Duration 4 hrs. hours/minutes Est. Flow Rate: 1125 gpm Estimated Total Flow: 270,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements

Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Brown Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification

By: David Patterson

Date: 7/7/13

After Review & Notification to TDEC

Title: Operations Manager

Date: _____

Final Review [Signature]

Title: Public Works Director

Date: 7/11/13

Final Report Transmitted to TDEC

By: [Signature]

Date: 7/11/13

REPORT DATE: 7/9/2013

CITY OF OAK RIDGE
SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 110 Providence Rd. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 11/28/2011

POINT OF OCCURENCE

Manhole Clean Out In-House Backup Pump Station Name: None or None or None

If Manhole; Give Mini-system # W6 Map Page # F13 Manhole # F13-9 Force Main:

FLOW DATA

Start Date: 7/7/2013 Time: 9:55 AM PM End Date: 7/7/2013 Time: 12:05 AM PM

Duration 2 hrs. 10 min. hours/minutes Est. Flow Rate: 200 gpm Estimated Total Flow: 26,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Senior Maint. Specialist Date: 7-9-13

Reviewed by Rick Lewin Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review [Signature] Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 110 Providence Rd. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 11/28/2011

POINT OF OCCURENCE

Manhole Clean Out In-House Backup Pump Station Name: None or None or None

If Manhole; Give Mini-system # W6 Map Page # F13 Manhole # F13-10 Force Main:

FLOW DATA

Start Date: 7/7/2013 Time: 9:50 AM PM End Date: 7/7/2013 Time: 12:00 AM PM

Duration 2 hrs. 10 min. hours/minutes Est. Flow Rate: 300 gpm Estimated Total Flow: 39,000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7-9-13

Reviewed by Rick Lewis Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/2013

After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review [Signature] Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

CITY OF OAK RIDGE

REPORT DATE: 7/9/2013

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 270 Robertsville Rd.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 5/6/2013

POINT OF OCCURENCE

Manhole Clean Out In-House Backup

Pump Station Name: None or None or None

If Manhole; Give Mini-system # W10 Map Page # E10

Manhole # E10-20 Force Main:

FLOW DATA

Start Date: 7/7/2013 Time: 10:10 AM PM

End Date: 7/7/2013 Time: 4:00 AM PM

Duration 5 hrs. 50 min. hours/minutes Est. Flow Rate: 750 gpm Estimated Total Flow: 262,500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 4.6 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 4.6" rain in 26 hrs.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Brian Simmons

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 7/9/13

Reviewed by Rick Brown Title: Operations & Maint. Manager Date: 7/10/13

Initial TDEC Notification By: David Patterson Date: 7/7/13

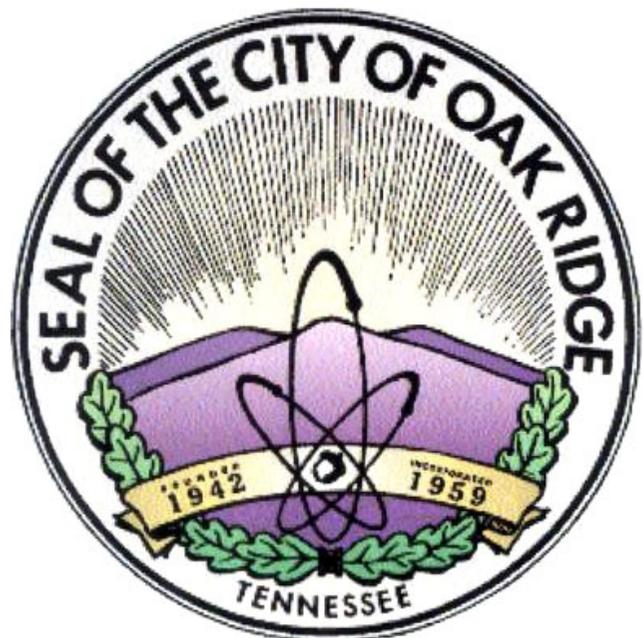
After Review & Notification to TDEC Title: Operations Manager Date: _____

Final Review [Signature] Title: Public Works Director Date: 7/11/13

Final Report Transmitted to TDEC By: [Signature] Date: 7.11.13

APPENDIX A:

**Y-12 RELATED
CORRESPONDENCE**



CITY OF OAK RIDGE



OFFICE OF THE CITY MANAGER

POST OFFICE BOX 1 • OAK RIDGE, TENNESSEE 37831-0001

October 17, 2013

Mr. Mark Whitney
Manager for Environmental Management
U. S. Department of Energy
P.O. Box 2001
Oak Ridge, TN 37831-2001

Dear Mr. Whitney:

Over the past three years, the City of Oak Ridge has been diligently working with the Wastewater Division of the Environmental Protection Agency to address stormwater intrusion into the City's sanitary sewer system and eliminate sanitary sewer overflows (SSOs). There is only one main trunk system to the City's wastewater plant which utilizes the East Fork of Poplar Creek watershed. Oak Ridge itself converges all sanitary sewer and accompanying stormwater flows to this basin. The Y-12 National Security Complex is a significant contributor to these flows as much unwanted stormwater exits the complex via the sanitary sewer system.

The City has now modeled the system and has identified the need for an equalization basin near the present site of the car wash at Illinois Avenue and Scarboro Road. This basin will attenuate wet weather flows and eliminate downstream overflows. Much of the basin capacity is associated with control of the flow from the Y-12 complex and some of the City's surrounding residential areas. I have attached a more detailed summary of the situation.

The City of Oak Ridge would like to approach the Department of Energy-Environmental Management Division about financial participation in this project. Details surrounding the drainage volumes found in this corridor indicate larger amounts that exceed our community and DOE capacity resulting in overflows. Due to an Administrative Order from the EPA, the City must complete these projects by September, 2015.

I will have my Executive Assistant LaVern Meyers schedule an appointment in the coming weeks to discuss this partnership further, which will have benefits for both the DOE and the City of Oak Ridge.

Regards,

A handwritten signature in black ink that reads "Mark S. Watson".

Mark S. Watson
City Manager

Attachment(s)

cc: Gary M. Cinder, Public Works Director



PUBLIC WORKS MEMORANDUM
13-28

DATE: October 14, 2013
TO: Mark S. Watson, City Manager
FROM: Gary M. Cinder, P.E., Director of Public Works *GM*
RE: Y-12 SEWER FLOW OVERVIEW

As you know, the United States Environmental Protection Agency (EPA) issued an Administrative Order (A.O.) for the City of Oak Ridge to control the sewer system overflows (SSO's) due to illicit water entering the sewer collection system. To satisfy the requirements of the A.O., the City did extensive investigations and modeling of the sewer system. A capacity report was prepared, submitted, and approved by the EPA. The A.O. required a rehabilitation plan to be developed, which described actions required to control SSO's along with a schedule for completion and an estimate of cost. All of the corrective action is to be completed by September 2015 to comply with the A.O.

The Rehabilitation Plan proposed three equalization (EQ) basins to be constructed to shave peak instantaneous flows which were predicted to cause SSO's. These predicted flows were after the rehabilitation of sewers was complete. The freeboard design storm used was a 24-hour event with a 5-year recurrence interval. It was determined that the EQ basins were the most cost-effective option for controlling SSO's.

The three proposed basins are located as follows:

- a) The site of the East Wastewater Treatment Plant originally providing service to the eastern portion of the Secret City (now a pumping station).
- b) A site along Emory Valley Road which receives flow from both the East Plant pumping station and the Emory Valley pumping station prior to entering the main trunk sewer which flows westward through the City to the treatment plant.
- c) The third EQ basin is proposed near the intersection of Illinois Avenue and Scarboro Road. This basin protects the downstream sewer from the Y-12 Complex and some City residents

Figure 1 is a diagram of alternative G recommended in the rehabilitation plan.

To size the EQ basins, it was imperative to have a model which predicted flows from various sections of the City. Figure 2 shows observed flows from the Y-12 Complex and the resultant predicted flows from various rainfall events. As can be seen in Figure 2, the predicted peak instantaneous flow rate from Y-12 is 2,030 gpm. Generally, the Y-

13-28

12 flows fit a curve; however, there are "outliers" which do not fit the curve. Since the City does not have access to the Y-12 system internally, it must rely on reported measured flows. Figure 3 shows the flow pattern for the storm of June 18, 2013, which exceeds the 2,030 gpm used to size the EQ basin (rounded up to 2,100 gpm).

It has been determined that the sewer immediately downstream of the Y-12 Complex can only accommodate an instantaneous flow of 1,000 gpm. Therefore, with predicted flows from each of the contributors (City and Y-12) in excess of 1,000 gpm, some method of flow rate reduction is required. Figure 4 shows the hydrograph of each of the flows and the combined flow. The EQ basin would be required to store the volume of excess flow until the flow rate diminishes to less than 1,000 gpm at which point stored water could be released at a controlled rate. The volume of the basin is calculated by determining the area under the curve (i.e., a short-term high spike in flow may require less volume than a longer duration lesser peak flow).

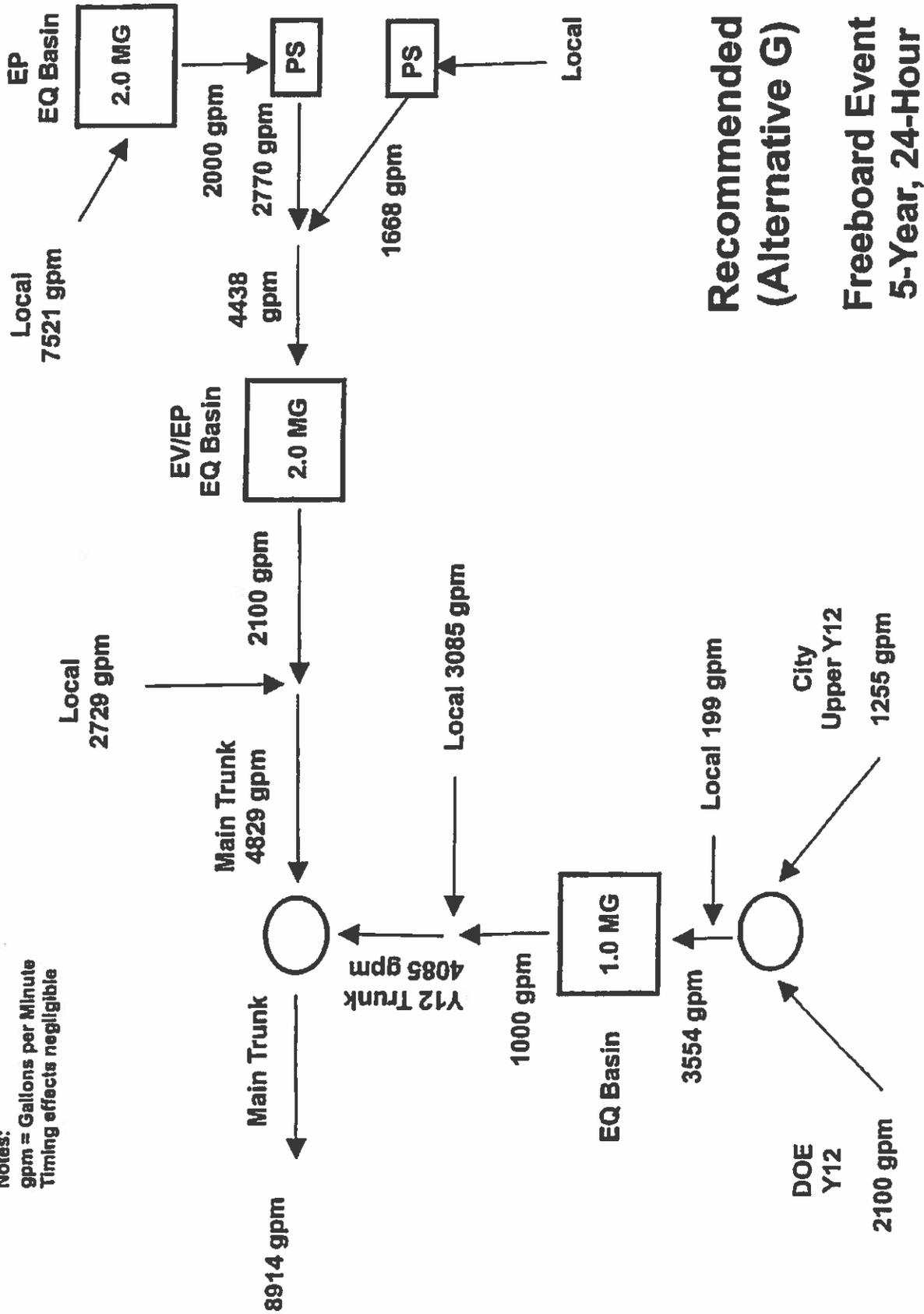
Figure 5 shows the schematic of how to effectively control the flow rate in the sewer to less than 1,000 gpm. A flow restrictor would be constructed in the sewer which would only allow 1,000 gpm to pass. This restrictor would cause a water level rise in the sewer. An overflow pipe would be installed to divert the excess flow into a pumping station which would transfer the extra flow to the EQ basin. When the flow rate diminishes in the sewer, stored water would be released at a controlled rate. Another by-pass arrangement would be available to handle flows with a storm greater than a 5-year event.

Each of the three EQ basin installations will be controlled from a central location at the wastewater treatment plant. Water levels in each EQ basin will be monitored, as well as the flow rates into and out of the basins. There will be permanent flow monitoring stations in the City's collection system to maximize the flow rates without SSO's occurring.

The A.O. requires that all proposed work be completed by September 2015, as previously stated. The City, by necessity, is moving forward with the execution of the Rehabilitation Plan. It is estimated that the construction cost of the Y-12 EQ basin facilities will be \$1,500,000. Other costs would include land and engineering, estimated to be \$100,000.00 and \$150,000.00 respectively. Since a major component of the flow to be stored is from Y-12, a portion of the capital cost should be borne by the federal facility. To reinforce this point, in the EPA assessment of civil penalties, a major number of past overflows were discounted because they attributed those to be directly caused by the high flows from the federal facility.

Staff and our engineers are proceeding with final design of this facility. It is my recommendation that we meet with the upper management of Y-12 soon to begin discussions concerning the opportunity for Y-12 to help the City defray some of its costs for this major capital project.

Notes:
 gpm = Gallons per Minute
 Timing effects negligible



**Recommended
 (Alternative G)**
**Freeboard Event
 5-Year, 24-Hour**

Figure 1

City of Oak Ridge, TN

DOE/Y12 Peak Flow vs. Rainfall Data as Reported by DOE

6.24.2013/m1g

Date	Peak (gpm)	Base (gpm)	P-B (gpm)	* Rainfall		Avg Return Interval (NOAA Atlas 14, Vol. 2)
				Duration (hrs)	Rainfall (ins)	
2.28.11	4000	400	3600	3	2.55	10-yr event, approx
3.10.11	1110	700	410	7	0.57	< annual event
6.22.11	1150	250	900	3	1.17	< annual event
11.16-17.11	3750	400	3350	3	1.86	2-5 yr event, approx
11.27-28.11	2150	200	1950	36	4.92	2-days; 1.66" + 3.26" = 4.92"; 10-yr event, approx
1.26-27.12	1030	220	810	12	1.28	< annual event
9.17-18.12	4000	250	3750	24	4.86	2-days; 2.49" + 2.37" = 4.86"; 5-10 yr event, approx
12.20-21.12	1300	280	1020	9	1.41	< annual event
1.15.13	1740	800	940	12	2.47	1-2 yr event, approx
1.30.13	1800	200	1600	9	2.86	5-yr event, approx
6.18.2013	4000	250	3750	6	2.09	1-2 yr event, approx

10.19.11 1400 300 1100 12 2.15 < annual event; used for model calibration
 5-yr, 24-hr 2030 400 1630 24 4.06 5-yr, 24-hr freeboard design event model result

* Duration indicated is the duration when most of the observed rainfall occurred.

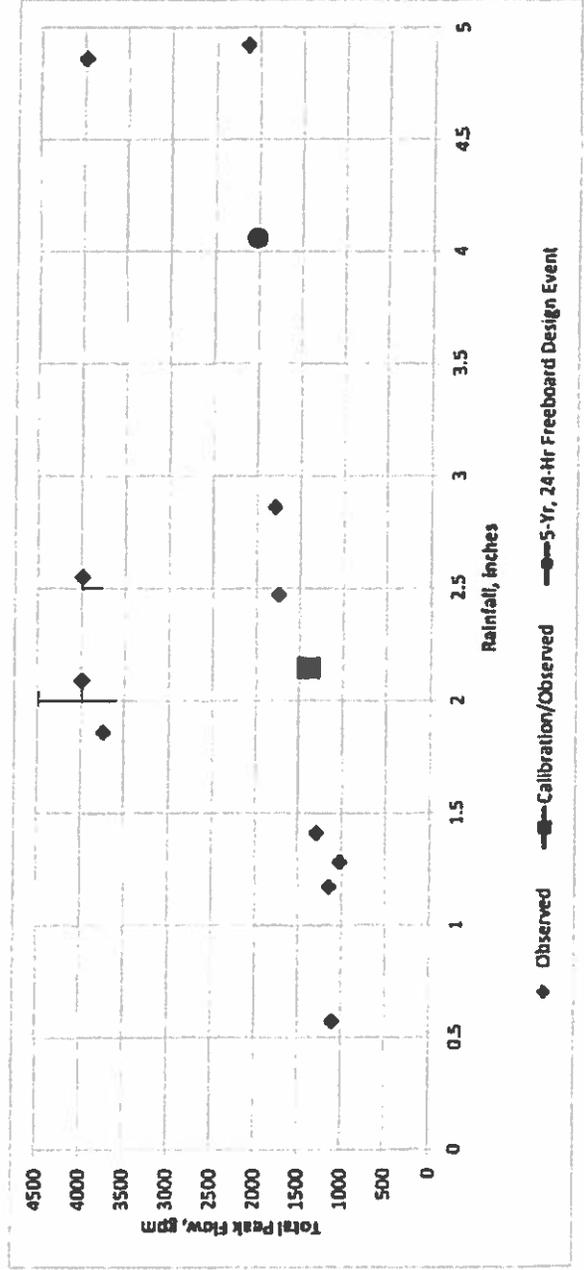


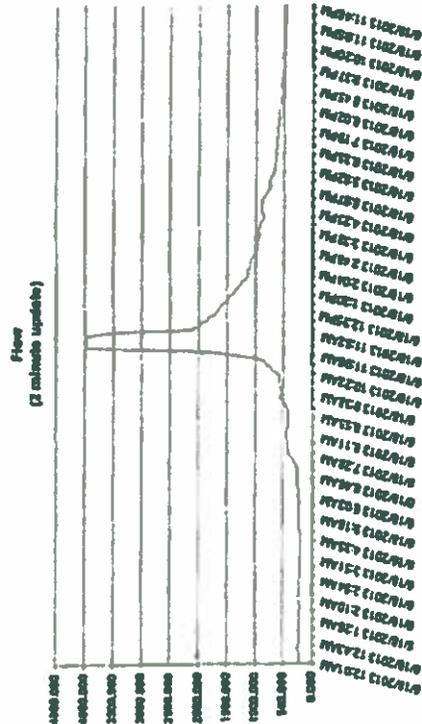
Figure 2

Y12 6-18-2013 Flowa.xls
 K Line Query

Project: COR, Y12 Discharge
 Feature: Event of 6-18-2013: 2.057 Rubid
 Version:
 Analyst:
 Notes:
 Quality:
 Revision: 1

Step	Scaled Time	Flow (gpm)	Time (min)	avg Flow (gpm)	601 Time (mins) and Vol (gallons)
1	0	0	0	0	0
2	1208	219	180	218.00	38,370
3	3721	230	158	178.59	40,828
4	5241	253	158	227.50	40,828
5	3487	457	427	64.48	16,744
6	3783	464	457	26.76	10,016
7	4204	429	500	42.83	16,792
8	4380	563	554	44.13	23,888
9	4788	578	577	48.00	11,497
10	4888	647	626	67.00	28,275
11	5033	657	658	713.00	22,818
12	5142	674	677	1,062.00	11,638
13	5188	680	680	1,466.00	7,771
14	5482	3043	684	2,136.00	3.46
15	5505	4333	685	2,840.00	6,791
16	5416	4000	712	3,671.00	3.42
17	5489	3564	712	4,000.00	2.24
18	5418	3482	770	3,782.00	26.47
19	5518	2169	777	3,363.00	7.64
20	5719	1835	777	2,684.00	3.29
21	6423	1140	840	2,010.00	8.37
22	6848	1090	878	1,487.00	28.47
23	7043	940	878	1,195.00	92.72
24	7216	821	826	1,019.00	29.76
25	7289	872	851	808.00	51.69
26	7476	814	970	601.00	23.18
27	7637	689	965	683.00	18.78
28	7639	763	1006	683.00	14.26
29	8285	655	1029	628.00	20.84
30	8642	638	1089	708.00	33.19
31	8687	613	1135	648.00	49.52
32	8421	621	1187	623.00	49.65
33	10234	467	1248	587.00	58.61
34	10833	467	1429	487.00	107.07
					53,964
					504.00
					81.52
					38,701
					1,013,506

Total Gallons = 1,013,506
 O > gpm
 Time (mins) 1429
 Base (gallons)
 Volume above O (gallons) 1,013,506

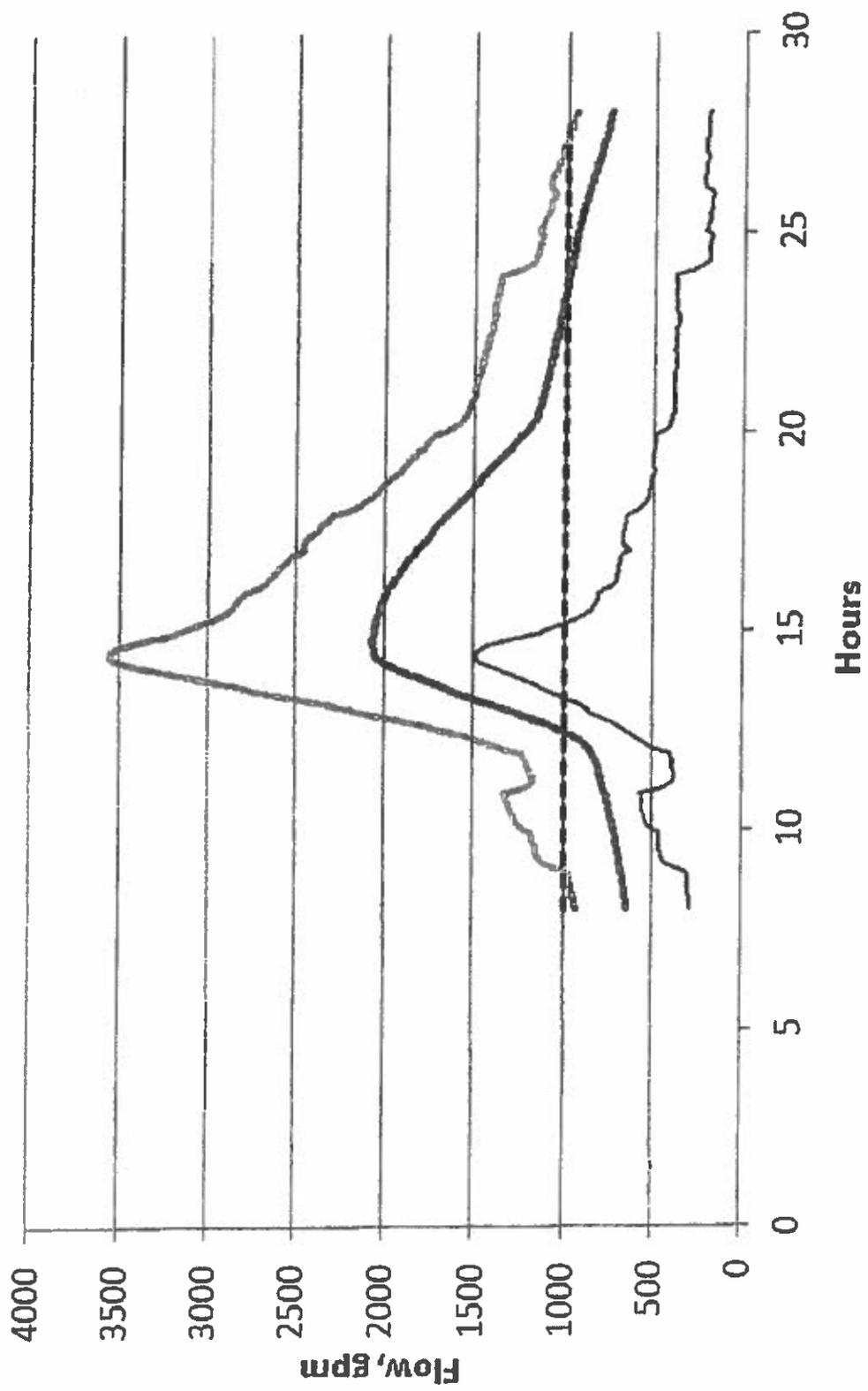


Check by Area (see CAD drawing):
 Vol > 500 gpm = 8.1317 * 3.179 MG = 0.42 MG ... OK
 Vol > 1000 gpm = 8.1317 * 1.574 MG = 0.21 MG ... OK

933,508	821,287	480,327	382,826	233,090
255	500	1000	1500	2000
1,070,390	794.15	268.19	178.48	73.99
267746.1	397075.5	269194.8	264717	161981.8
665,782	427,311	211,133	117,989	81,186

Figure 3

DOE and City of Oak Ridge Flows into EQ Basin (5-Year, 24-Hour Event)



— COR
— DOE
— COR+DOE
- - - Limit

Figure 4

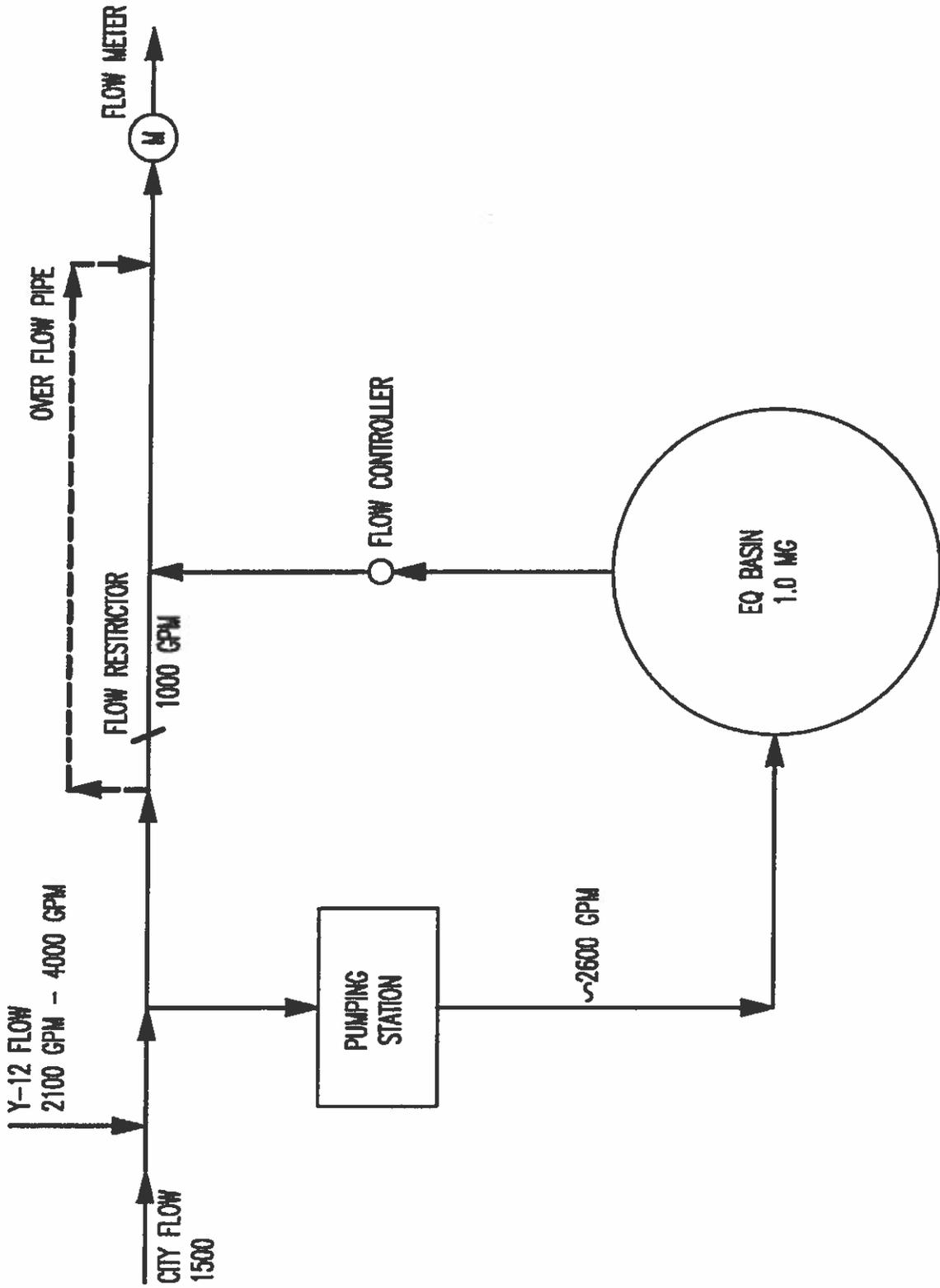


Figure 5

APPENDIX B:

B&W Y-12

CORRESPONDENCE



3rd Q 2013

NV ✓

CCN201371153



► bear creek road ► p.o. box 2009 ► oak ridge, tn 37831-8111
► phone 865.241.8349 ► fax 865.241.4533 ► www.y12.doe.gov

October 15, 2013

Mr. Ken Glass, Environmental/Regulatory Compliance Coordinator
Public Works Department
City of Oak Ridge
Post Office Box 1
Oak Ridge, Tennessee 37831

Dear Mr. Glass:

Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2013

As required by the Industrial and Commercial User Waste Water Discharge Permit 1-91, samples were obtained at the East End Sanitary Sewer Monitoring Station at the Y-12 National Security Complex throughout the third calendar quarter of 2013. The East End Sanitary Sewer Monitoring Station samples were analyzed and the resulting data are reported in Enclosure 1 for the months of July, August and September 2013. Enclosure 2 contains the signed Industrial Self-Analysis Form. Data for soluble versus insoluble uranium concentrations are summarized in Enclosure 3. Enclosure 4 contains the quality assurance data generated during this period. Enclosure 5 contains analytical data for the Industrial Landfill V leachate sample for the third quarter, as submitted by the operating contractor for Industrial Landfill V. Monthly uranium loading values are calculated and presented in Enclosure 6.

There was **one exceedance** of the permitted daily flow limit of 1,400,000 gallons per day during this reporting period. A total flow of **1,648,000 gallons** occurred on July 7, 2013. This was in response to a **4.12" rain event** which began on July 6, 2013. The maximum flow rate which occurred during this period was 2,150 gallons per minute.

There are **no updates** to provide for this quarter regarding actions taken to reduce storm water **inflow and infiltration** into the sanitary sewer system.

As previously communicated to you, the operating contractor for the Y-12 landfills may begin introducing waste into the portion of Landfill IV which has a leachate collection system and is piped to discharge to the Y-12 sanitary sewer system. Preliminary discussions with the contractor indicate this may happen during the fourth quarter of this calendar year. Our plans are to require the same sampling protocol currently in place for Landfill V and the data will be reported accordingly. Leachate discharges from Landfill IV are addressed in the most recent Application for Discharge Permit, dated January 2010.

Mr. Ken Glass
Page 2
October 15, 2013

I certify under penalty of law that this document and all enclosures 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 submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact S. E. McNamara, 576-9657, or L. O. Vaughan, 576-8108, of my staff.

Sincerely yours,



Yvonne M. Bishop
Senior Director and Deputy Manager
Environment, Safety and Health

YMB:ris

Enclosures: As stated

cc/enc: J. M. Barrows, NPO PX
J. P. Donnelly, NPO Y-12
J. A. Owsley, TDEC/DOE-ORO
J. Zanger, NPO PX
NPO-Correspondence@npo.doe.gov

cc: K. A. Hoar, NPO PX
S. D. Morris, NPO Y-12