2015 Illicit Discharge Detection and Elimination Program Annual Report

Northeast Ohio Regional Sewer District

Protecting Your Health and Environment

CONTENTS

Acronyms to know:

NEORSD- Northeast Ohio Regional Sewer District

WQIS- Water Quality and Industrial Surveillance

WPC- City of Cleveland, Water Pollution Control

CCBH- Cuyahoga County Board of Health

HSTS- Home Sanitary Treatment System

CCDPW- Cuyahoga County Department of Public Works

MPN- Most Probable Number

CFU- Colony Forming Units

NOACA - Northeast Ohio Areawide Coordinating Agency

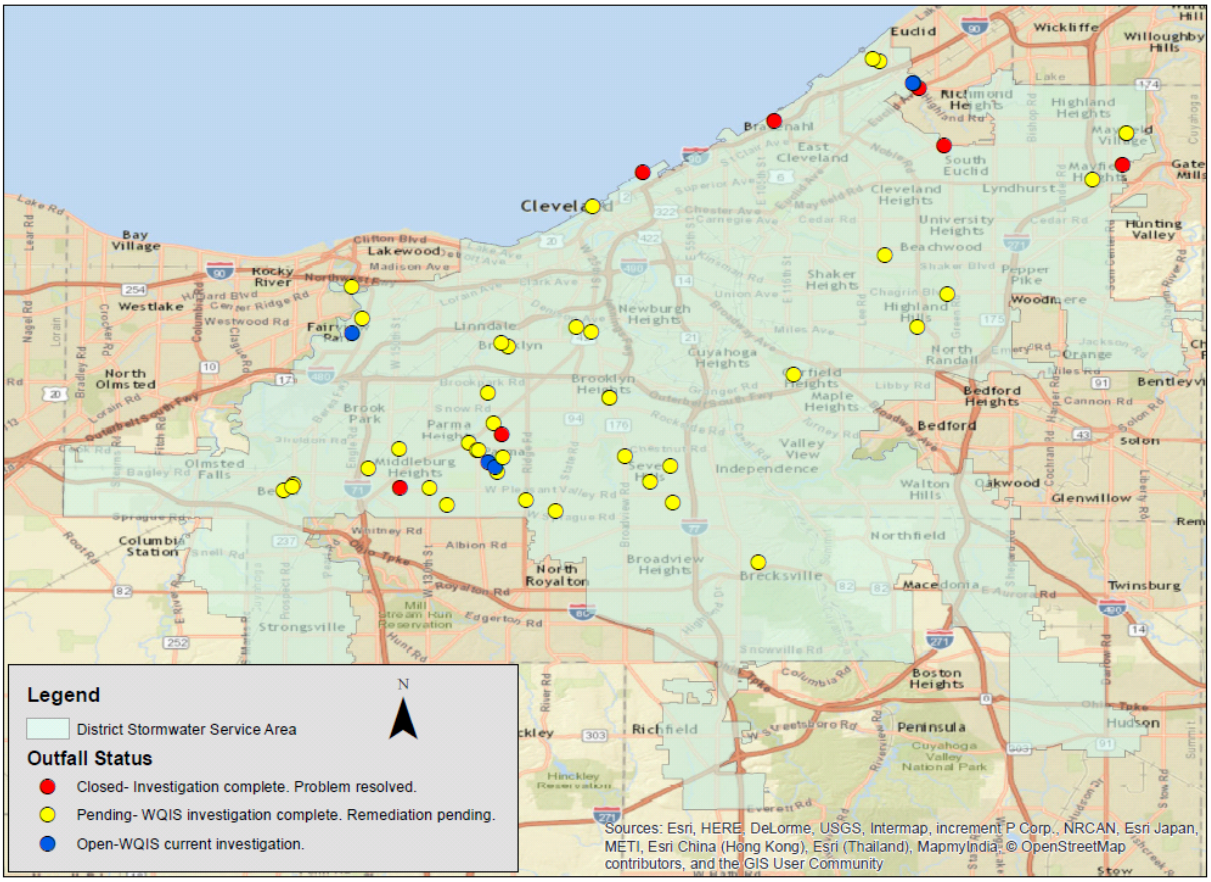
INTRODUCTION

During 2015, the Northeast Regional Sewer District (NEORSD) continued to work to identify and eliminate illicit discharges within its service area (Table 1). Pollutant loads from these discharges may be significantly degrading the water quality of the receiving stream or waterway and, therefore, elimination of them is critical in ensuring aquatic life, wildlife, and human health.

Work related to 51 different outfalls was completed by NEORSD personnel in 2015. Of these outfalls, a total of 19 investigations into all the sources of contamination contributing to discharges were completed in 2015. For six of the outfalls, initial sampling and source tracking investigations were started, but not finished. It is expected that most of these investigations will be completed in 2016.

Table 1. Summary of 2015 Program Activities	
Total Number of Outfalls Focused on in 2015	51
Number of Investigations Completed by WQIS in 2015	19
Number of Investigations in Progress by WQIS	6
Number of Problems Remediated	5
Reduction in Sanitary Sewage Entering Streams	>49,889 gallons/day, 18.2 million gallons/year
Reduction in Treated Water Entering Streams	>596,363 gallons/day, 217.7 million gallons/year

IDDE Investigations-2015 Report



For the rest of the outfalls, the investigations into what was causing the problems were completed in either 2013 or 2014. Activities in 2015, instead, focused on working with the communities to remediate those problems. In many cases, in-person meetings were held to discuss remediation steps and remaining problem-identification needs. Other related activities included following-up with the communities to determine the current status of problems and verifying remediation efforts to determine if they did indeed fix the problem. As a result of these efforts, the total reduction in sanitary sewage entering local waterways in 2015 from illicit discharges was about 49,000 gallons per day.

In addition to sanitary sewer discharges, several water leaks were discovered. These leaks contributed almost 600,000 gallons of water to the creeks around Cleveland. Treated water has chlorine levels that can have negative effects on a natural stream. Water leaks can also mask illicit discharges and make it more difficult to identify improper connections.

Water Quality and Industrial Surveillance (WQIS) Division personnel also responded to a number of spills that entered local streams in 2015. Activities related to these spills included, where possible, determining a volume of material spilled and working with other agencies to minimize impacts to the receiving streams through the use of spill containment equipment.

In the following pages, the outfalls that were investigated and the spills and other complaints that WQIS personnel responded to in 2015 are detailed. Included for each is a summary of issues and further actions that are needed to help remediate the problem, along with the current status for the investigation.

ABRAM CREEK

ACMB1354

Receiving Water: Abram Creek Main Branch

Community: Middleburg Heights

Location: Across from 7031 Fry Road

Outfall conditions as of most recent sampling:

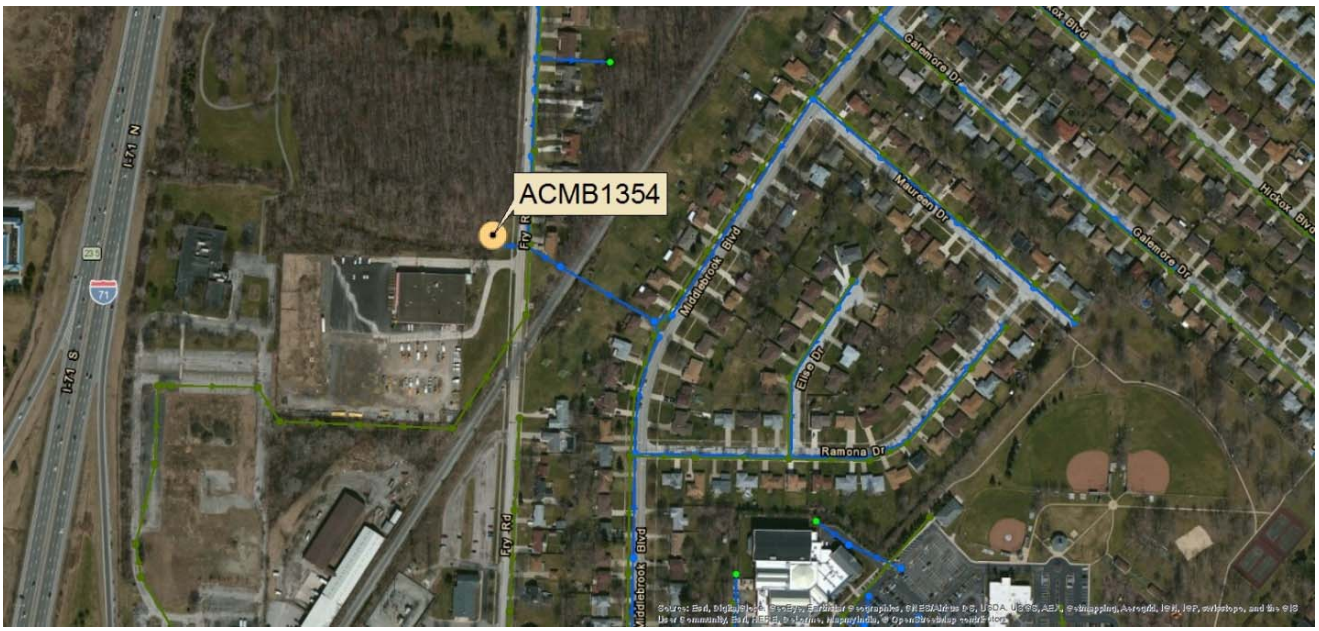
Date collected: 05/19/14

E. coli Density: 3,835 MPN/100mL

Problem Summary: Dry-weather flow was traced to between 7031 and 6975 Fry Road. Improper connections between homes and storm sewer may be present. Dye testing should be conducted to determine all sources of sanitary sewage to the storm sewer.

Community Notification: A letter was sent to the City of Middleburg Heights on October 11, 2013, detailing need to conduct dye testing of homes. A follow-up email to the community was sent on November 25, 2014. A meeting with the community was held on May 5, 2015; another meeting to be held in early 2016.

Status: WQIS investigation completed in 2013. Community notified. Remediation pending.



AMH10030

Receiving Water: Abrams Creek Middleburg Heights Tributary 1

Community: Middleburg Heights

Location: Behind 14400 Newton Road

Outfall conditions as of most recent sampling:

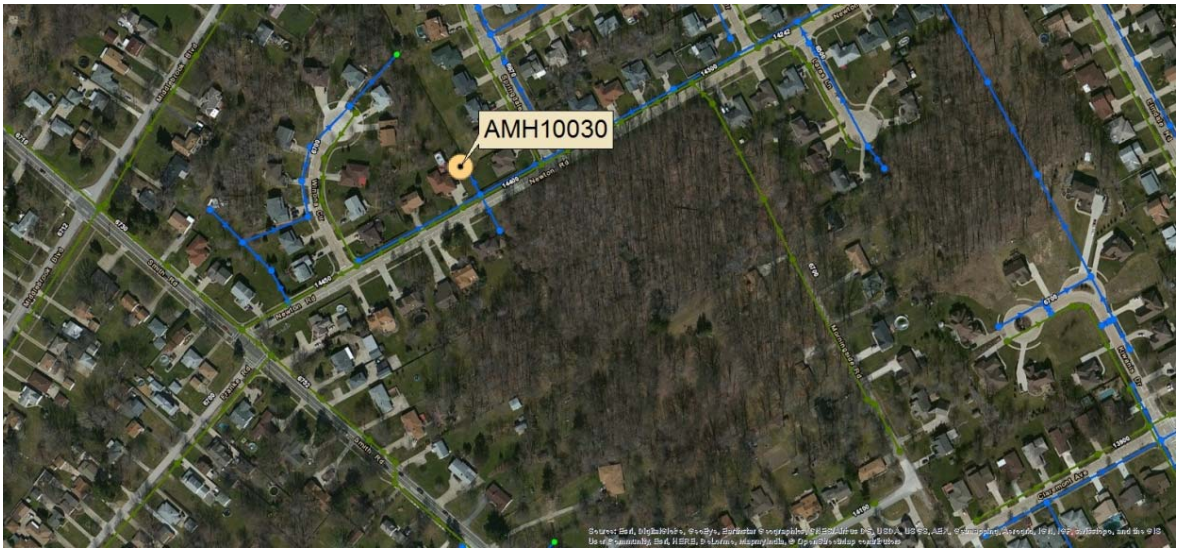
Date collected: 05/19/14

Flow: no data
E. coli Density: 1,018 MPN/100mL

Problem Summary: Problem is intermittent. Dry-weather flow was traced to between 14200 Newton Road and 14400 Newton Road. Improper connection between the home at 14223 Newton Road and the storm sewer has already been documented. Other possible improper connections may also be present in area; dye testing by the City of Middleburg Heights should be conducted to determine all sources of sanitary sewage to the storm sewer.

Community Notification: A letter was sent to the City of Middleburg Heights on February 6, 2014, detailing need to conduct dye testing of homes. A follow-up email to the community was sent on November 25, 2014. A meeting with the community was held on May 5, 2015; another meeting to be held in early 2016.

Status: WQIS investigation completed in 2013. Community notified. Remediation pending.



BALDWIN CREEK

BCMB0510

Receiving Water: Baldwin Creek Main Branch

Community: Middleburg Heights

Location: Under Bagley Road bridge

Outfall conditions as of most recent sampling:

Date collected: 4/21/14

Flow: 196,363 gallons/day
E. coli Density: <1 MPN/100mL

Problem Summary: Water leak located upstream of outfall near 7259 Pearl Road. The water leak was repaired on August 25, 2015.

Community Notification: The City of Cleveland Water Department was notified of the problem through a phone call on 4/23/2014.

Status: Investigation completed in 2014. Problem remediated.

Reduction in treated water entering environment: 196,363 gallons per day

BCMB0400

Receiving Water: Baldwin Creek Main Branch

Community: Parma

Location: By W.130th and W. Pleasant Valley

Outfall conditions as of most recent sampling:

Date collected: 4/21/14

Flow: 4,000 gallons/day
E. coli Density: 42,750 MPN/100mL

Problem Summary: Some homes in area have home sewage treatment systems that may be failing. Parma confirmed no sanitary sewer projects are scheduled to begin design within the near term. CCBH provided City & NEORSD HSTS failure records for addresses listed on West Pleasant Valley Drive within the investigation area listed above. A meeting to discuss this matter will be scheduled with CCBH and NEORSD.

Community Notification: The City of Parma was notified of the investigation in February of 2015.

Status: WQIS investigation completed in 2015. Community and CCBH notified. Remediation pending.

BC2A0020

Receiving Water: Baldwin Creek Main Branch

Community: Parma

Location: Off of Linden Road

Outfall conditions as of most recent sampling:

Date Collected: 5/23/14

Flow: 2,633 gallons/day
E. coli Density: 120,980 MPN/100mL

Problem Summary: Samples collected with elevated bacteria. Investigators traced flow to Debby Drive in Parma. CCDPW is conducting dye tests in the area.

Community Notification: The City of Parma was notified of the problem in February of 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

BEECHERS BROOK

BBMB0025

Receiving Water: Beechers Brook Main Branch

Community: Mayfield Village

Location: Behind 6827 Thornapple Road

Outfall conditions as of most recent sampling:

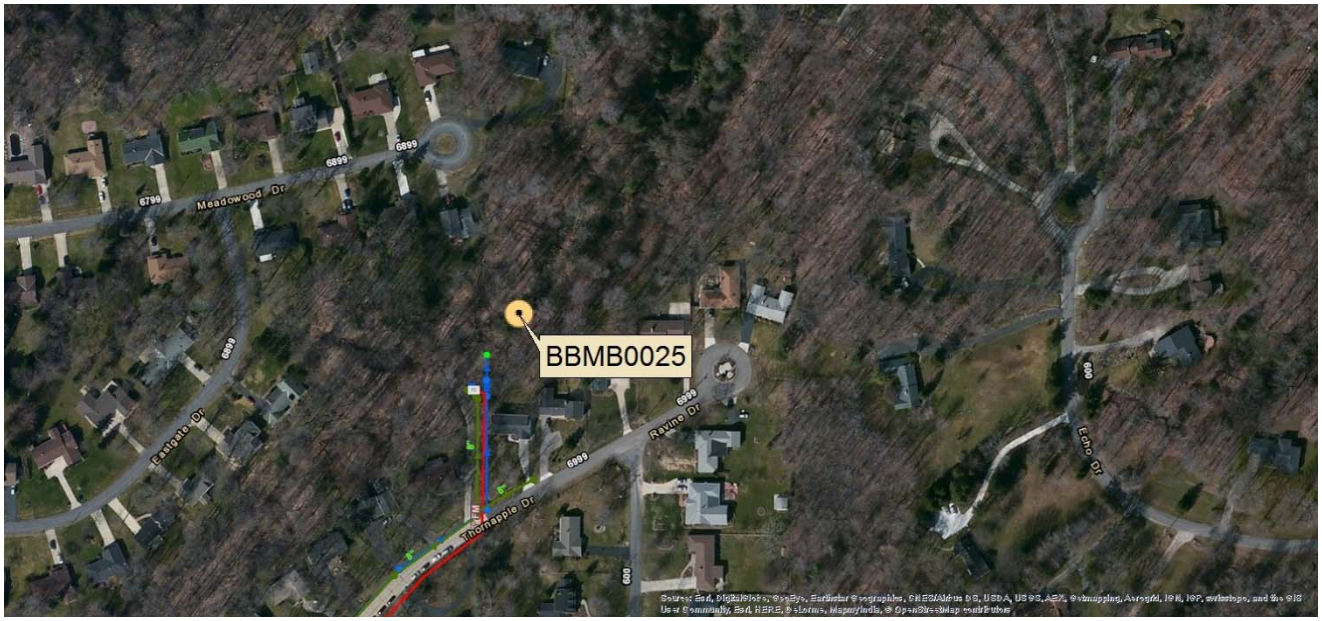
Date collected: 10/29/13

Flow: 22,982 gallons/day
E. coli Density: 100,800 CFU/100mL

Problem Summary: Some homes in area have home sewage treatment systems that may be failing. According to the Mayfield Village Service Director, these homes will be connected to the sanitary sewer within the next three to five years.

Community Notification: Mayfield Village was notified of problem via letter on July 31, 2014. Community stated that they intend to convert the area from septic to sanitary in the next three to five years in a letter to the District on December 8, 2014.

Status: WQIS investigation completed in 2013. Community notified. Remediation pending.



BBMB0026

Receiving Water: Beechers Brook Main Branch

Community: Mayfield Village

Location: Behind 6827 Thornapple Road

Outfall conditions as of most recent sampling:

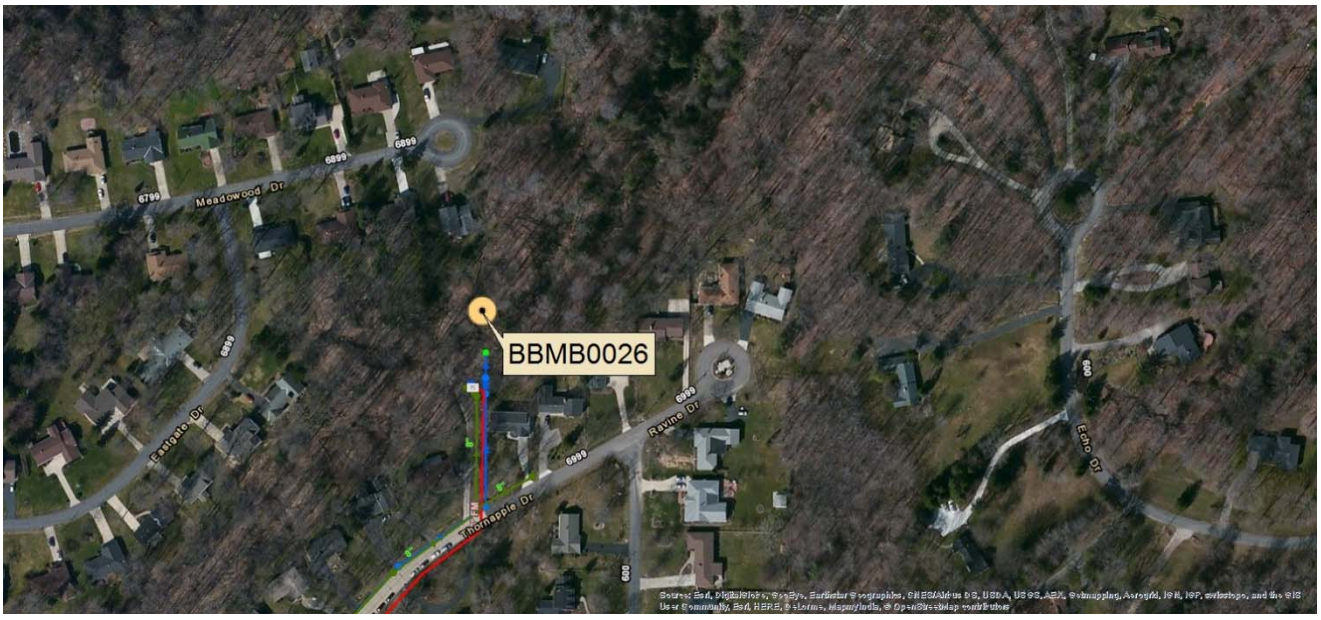
Date collected: 10/29/13

Flow: 20,377 gallons/day
E. coli Density: 6,800 CFU/100mL

Problem Summary: Some homes in area have home sewage treatment systems that may be failing. According to the Mayfield Village Service Director, these homes were to be connected to the sanitary sewer in 2015, but only some of them were

Community Notification: Mayfield Village was notified of problem via letter on July 31, 2014. Community stated that they intend to convert the area from septic to sanitary in a letter to the District on December 8, 2014. Sanitary sewer installation underway and to be completed in 2016.

Status: WQIS investigation completed in 2013. Community notified. Remediation pending.



BIG CREEK

BGMB0080

Receiving Water: Big Creek Main Branch

Community: Parma

Location: State Rd / Coral Gables Dr.

Outfall conditions as of most recent sampling:

Date collected: 6/12/14

Flow: 20,000 gallons/day
E. coli Density: 82,150 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities was traced to between the intersection of State Road and Coral Gables Drive and 4865 Coral Gables Drive and to between the intersection of State Road and Ocala Drive and 4419 Ocala Drive. Recommend dye testing homes in these areas to determine improper connections. Community is in the process of completing dye tests on Ocala Drive.

Community Notification: The City of Parma was notified of the issue in February of 2015.

Status: WQIS investigation completed in 2014. Community notified. Remediation pending.

BGMB0155

Receiving Water: Big Creek Main Branch

Community: Parma

Location: Ridge Road at Hidden Valley Lane

Outfall conditions as of most recent sampling:

Date collected: 4/21/14

Flow: 10,966 gallons/day
E. coli Density: 10,378 MPN/100mL

CCBH, date collected: 5/27/14

E. coli Density: 545 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities was traced to between 7580 and 7592 Ridge Road. Recommend dye testing homes in this area to determine improper connections. Community has sent notifications to residents for CCDPW dye testing.

Community Notification: The City of Parma was notified of the issue in February of 2015.

Status: WQIS investigation completed in 2014. Community notified. Remediation pending.

BGMB0340

Receiving Water: Big Creek Main Branch

Community: Parma Heights

Location: Between 7002 and 7008 Greenbriar Drive

Outfall conditions as of most recent sampling:

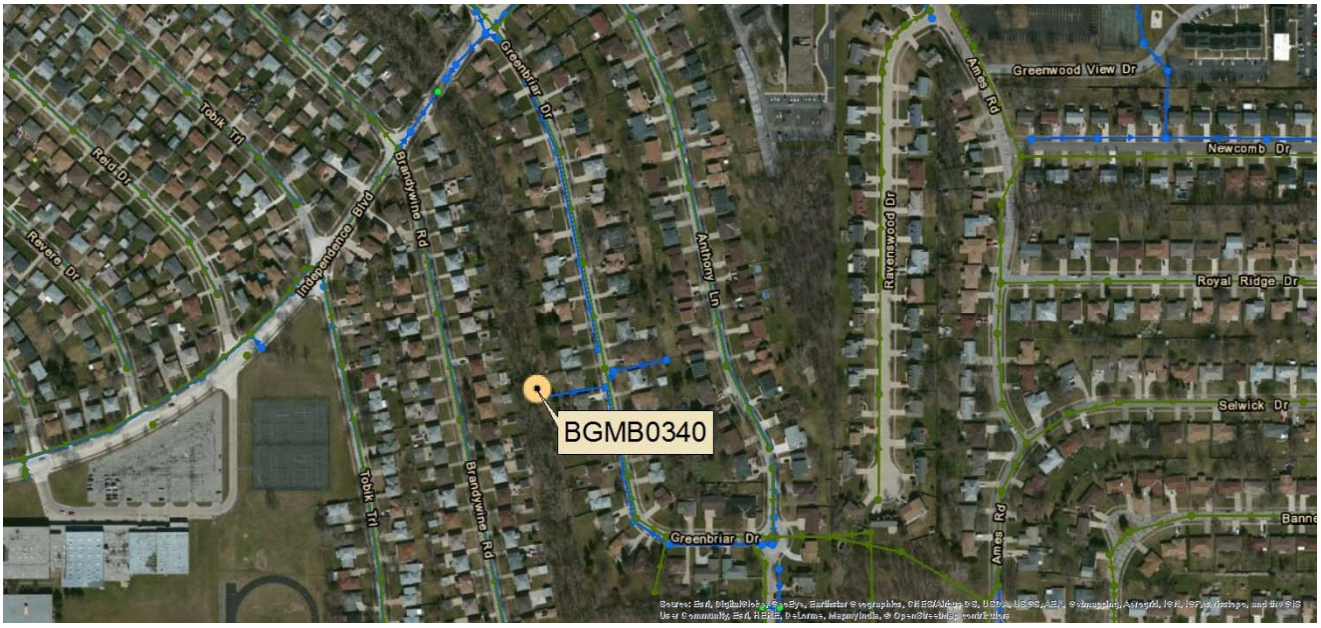
Date collected: 4/21/14

Flow: 4,818 gallons/day
E. coli Density: 1,214 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities was traced to between 7026 and 7041 Greenbriar Drive. Recommend dye testing homes in area to determine improper connections. Dye testing in process.

Community Notification: The City of Parma Heights was notified of the issue in February of 2015.

Status: WQIS investigation completed in 2014. Community notified. Remediation pending.



BGMB0350

Receiving Water: Big Creek Main Branch

Community: Parma Heights

Location: Independence Boulevard at Greenbriar Drive

Outfall conditions as of most recent sampling:

Date collected: 6/8/15

Flow: low flow
E. coli Density: 1,460 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities traced to Anthony Lane at Independence Boulevard.

Community Notification: The City of Parma Heights was notified of the issue in February of 2015.

Status: WQIS investigation not complete. Community notified.

BGMB0370

Receiving Water: Big Creek Main Branch

Community: Parma Heights

Location: Independence Boulevard at Greenbriar Drive

Outfall conditions as of most recent sampling:

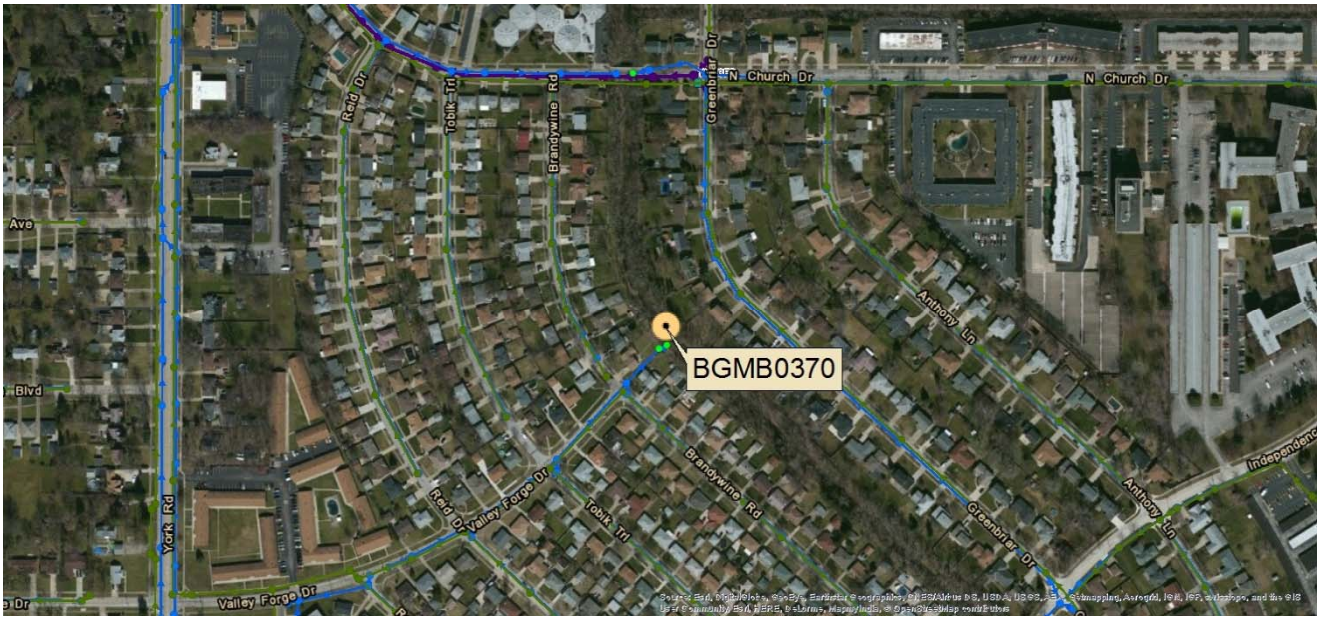
Date collected: 10/23/15

Flow: 1,630 gallons/day
E. coli Density: 3,443 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities traced to Brandywine Road, Lantern Lane and Valley York Apartments. Dye testing of these streets is in process. A blocked sewer at Valley York Apartments was corrected.

Community Notification: The City of Parma Heights was notified of the issue in February of 2015.

Status: WQIS investigation not complete. Community notified. Problem partially remediated.



BGMB0411

Receiving Water: Big Creek Main Branch

Community: Parma

Location: Corner of Ames Road & North Church Drive

Outfall conditions as of most recent sampling:

Date collected: 12/09/15

Flow: 7,000 gallons/day
E. coli Density: 87,040 MPN/100mL

Problem Summary: Flow tracing and source tracking in the system were started, but no causes for the elevated *E. coli* densities at the outfall have been found, yet. CCTV is being completed on Day Drive by the CCDPW to determine structural integrity of sewers.

Community Notification: The City of Parma was notified of the issue in February of 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

BGMB0480

Receiving Water: Big Creek Main Branch

Community: Parma Heights

Location: Ridgewood Dr., East of York Rd.

Outfall conditions as of most recent sampling:

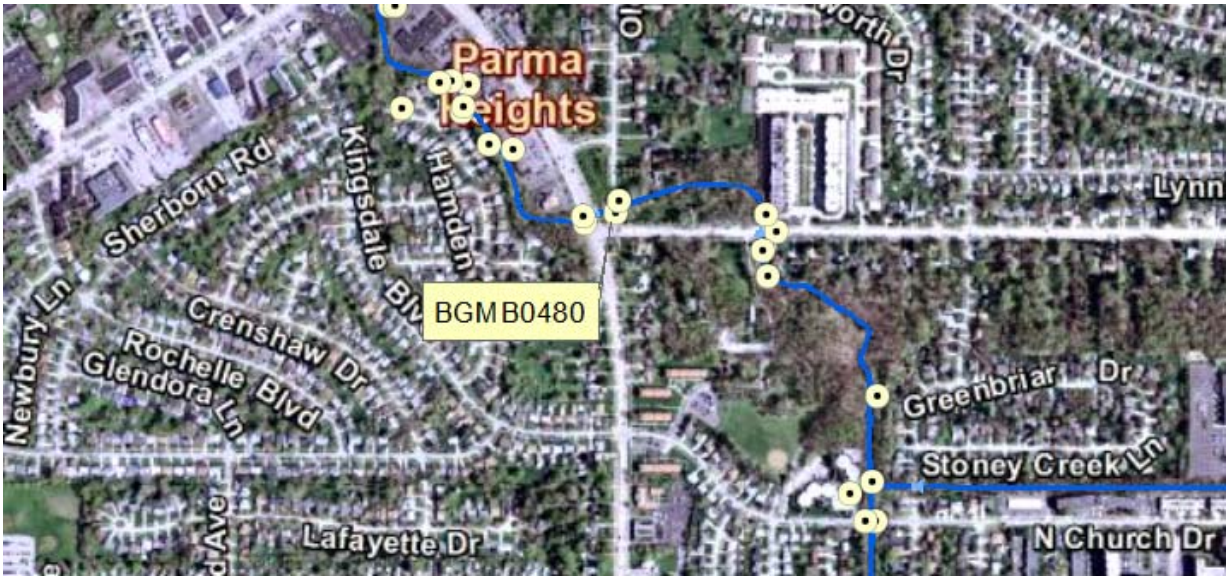
Date collected: 3/18/15

Flow: 19,600 gallons/day
E. coli Density: 39,696 MPN/100mL

Problem Summary: Flow tracing and source tracking in the system revealed a need for dye testing or CCTV to be completed on York Road between West Ridgewood Drive and 7155 York Road, on the east and west sides of the street. This is scheduled to be completed in early 2016.

Community Notification: The City of Parma Heights was notified of the issue in February of 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.



BGMB0490

Receiving Water: Big Creek Main Branch

Community: Parma Heights

Location: Ridgewood Dr., East of York Rd.

Outfall conditions as of most recent sampling:

Date collected: 3/18/15

Flow: 12,300 gallons/day
E. coli Density: 5,955 MPN/100mL

Problem Summary: This is an intermittent problem; this outfall and outfall BGMB0480 are tied together. Flow tracing and source tracking in the system revealed a need for dye testing or CCTV to be completed on York Road between West Ridgewood Drive and 7155 York Road, on the east and west sides of the street. This is scheduled to be completed in early 2016.

Community Notification: The City of Parma Heights was notified of the issue in February of 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

BGMB0600

Receiving Water: Big Creek Main Branch

Community: Parma Heights

Location: Under Pearl Road Bridge

Outfall conditions as of most recent sampling:

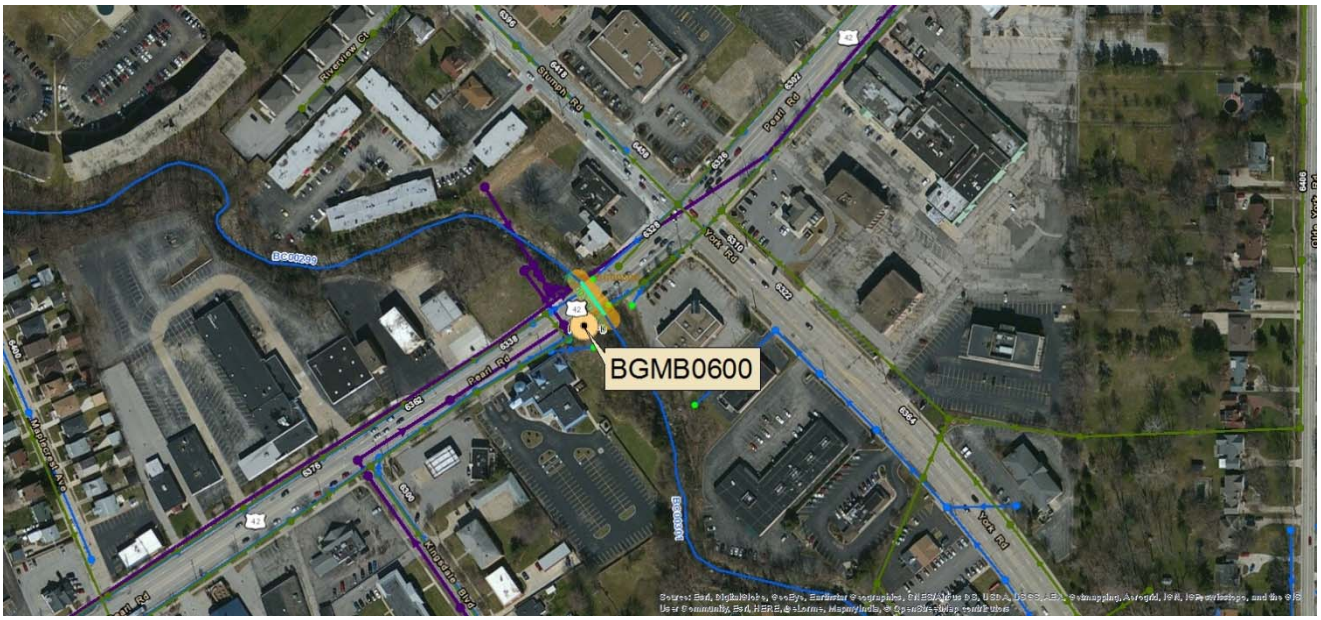
Date collected: 6/8/15

Flow: no data
E. coli Density: 17,850 MPN/100mL

Problem Summary: Dry weather flow was traced to Sherborn Drive between Glendora Lane and Appleton Drive. Recommend dye testing of homes between 11661 and 12067 Appleton Drive and on Sherborn Road between Appleton Drive and Glendora Avenue. Dye tests are completed and one improper connection was found. An NOV was issued and NEORSD will resample when repair is complete.

Community Notification: The City of Parma Heights was contacted via email on February 10, 2014, regarding status of the problem.

Status: WQIS investigation completed in 2013. Community notified. Remediation pending.



BGMB0885

Receiving Water: Big Creek Main Branch

Community: Parma

Location: Lower Fernhill Picnic Area

Outfall conditions as of most recent sampling:

Date collected: 4/2/15

Flow: >288,000 gallons/day
E. coli Density: 1 MPN/100mL

Problem Summary: Water leaks were found on Sharon Drive and Deborah Drive. Cleveland Water Department repaired leak on Deborah Drive and partially repaired leak on Sharon Drive. Additional source tracking to be completed once all water leaks are repaired.

Community Notification: The City of Cleveland was notified of the issue on April 6, 2015. The City of Parma was notified at a community meeting on May 13, 2015.

Status: WQIS investigation completed in 2015. Community and Cleveland Water Department notified. Problem partially remediated.

Reduction in treated water entering environment: >200,000 gallons/day

BGMB1550 (CSO-051)

Receiving Water: Big Creek Main Branch

Community: Cleveland

Location: By Cleveland Metropark Zoo

Outfall conditions as of most recent sampling:

Date collected: 6/24/13

E. coli Density: 193,650 MPN/100mL

Problem Summary: A CCTV investigation along Clybourne Avenue bracketed suspected improper connection to two residential addresses requiring dye-test to confirm: 4123 Clybourne Avenue (single family home) and 4129/4119 Clybourne Avenue (duplex). WPC dye-tested 4129 & 4119 Clybourne Avenue; both were negative for illicit connection. WPC to investigate further.

Additionally, due to sanitary/storm sewer configuration, three sanitary sewer overflows (SSOs) exist along Memphis Ave. b/w E.35th & E.38th Streets. OEPA requiring WPC to include SSO locations in MS4 annual report and show proof of budgeting on CIP for corrective measures.

Community Notification: WPC was notified of the problem in February of 2010 by letter.

Status: WQIS investigation complete. Community notified. Remediation pending.

BGMB1610 (CSO-050)

Receiving Water: Big Creek Main Branch

Community: Cleveland

Location: Henninger Road by Cleveland Metropark Zoo

Outfall conditions as of most recent sampling:

Date collected: 09/24/15

E. coli Density: 192,675 MPN/100mL

Problem Summary: A potential illicit discharge was found by NEORSD Engineering and Construction staff coming from the 12" storm sewer/SWO at Henninger Road on July 28, 2015. WQIS sampling on 7/30/15 confirmed 804 MPN/100ml *E. coli* level. WPC to assess need for sewer cleaning and further investigate possible residential improper connections on western portion of Henninger Road in November 2015.

Community Notification: WPC was notified of the problem on July 29, 2015.

Status: WQIS Investigation completed in 2015. Community notified. Remediation pending.

BCRC0080

Receiving Water: Big Creek Reservoir Creek

Community: Parma Heights

Location: Under Pearl Road

Outfall conditions as of most recent sampling:

Date collected: 6/8/15

Flow: no data

E. coli Density: 20,530 MPN/100mL

Problem Summary: NEORSD was notified of an improper connection to storm sewer by a resident. Dry-weather flow with elevated *E. coli* densities was traced to Pearl Road. A NOV was sent to the resident on Pearl Rd.

Community Notification: Parma Heights was notified in February of 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

BCRC0110

Receiving Water: Big Creek Reservoir Creek

Community: Parma Heights

Location: Under Ackley Blvd.

Outfall conditions as of most recent sampling:
Date collected: 7/17/2013
Flow: no data
E. coli Density: 120,980 MPN/100mL

Problem Summary: CCDPW provided email confirmation to M. Scharver that the sanitary manhole at Brookmere Drive & Roxbury Road has been repaired by CCDPW. This was the last remaining, known repair to be completed by the County in this sewershed.

Community Notification: Parma Heights was notified in February of 2015.

Status: WQIS investigation completed in 2015. Community notified. Problem remediated.

CHAGRIN RIVER

CT112080

Receiving Water: Chagrin River Mayfield Tributary 11

Community: Mayfield Heights

Location: West of I-271, east of Best Buy parking lot

Outfall conditions as of most recent sampling:

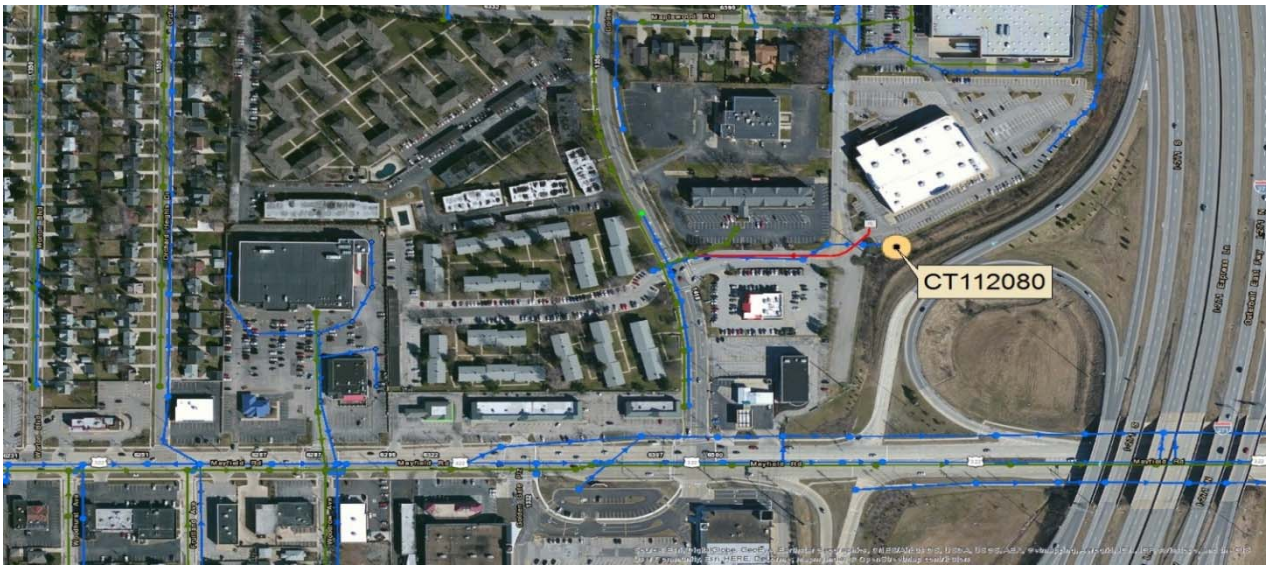
Date collected: 5/20/15

Flow: ~100 gallons/day
E. coli Density: 61,310 MPN/100mL

Problem Summary: Dry-weather flow traced to between the intersection of Golden Gate Boulevard and Maplewood Road. The City of Mayfield Heights is working with CCDPW to identify and remediate these problems. One improper connection fixed; the other improper connection to be fixed in January 2016.

Community Notification: A letter notifying the City of Mayfield Heights of the problem was sent on October 13, 2014.

Status: WQIS investigation completed in 2014. Community notified. Remediation verification pending.



CT161020

Receiving Water: Chagrin River Mayfield Tributary 16

Community: Mayfield Village

Location: Behind Middle School off of the track - Behind Hamilton House on City Line (even w/ Pepper Hollow)

Outfall conditions as of most recent sampling:

Date collected: 5/20/15
E. coli Density: 1 MPN/100mL

Problem Summary: The headwall of the outfall was cracked and had fallen partially northward into the tributary. Additionally, approximately five feet upstream of the outfall opening, the storm sewer pipe completely separated from the remainder of the pipe and flow was discharged into the ground through the crack and not through the opening of the outfall. The concrete headwall and exposed pipes fixed by the City of Mayfield Heights.

Community Notification: The community was notified of the problem on October 13, 2014. Work began in January 2015.

Status: Investigation completed in 2014. Problem remediated.

Reduction in sanitary sewage entering environment: 95 gallons/day

CUYAHOGA RIVER

CBT60030

Receiving Water: Cuyahoga River Brecksville Tributary 6

Community: Brecksville

Location: Left of east end of Amber Lane

Outfall conditions as of most recent sampling:

Date collected: 9/23/15

Flow: 4,000 gallons/day
E. coli Density: 7,808 MPN/100mL

Problem Summary: Failing home sewage treatment systems are located immediately upstream of the outfall. Dry-weather flow with elevated *E. coli* densities was also found upstream of 7395 Winding Way. The City of Brecksville is working to identify and remediate any improper connections to the storm sewer. NEORSD resampled in September 2015. CCDPW completed repair work after this sampling, and requested that NEORSD resample in early 2016.

Community Notification: The City of Brecksville was notified of the problem via a letter sent on July 31, 2014. City of City of Brecksville Building Commissioner notified NEORSD in December 2015 that CCDPW completed work upstream of outfall and requested verification sampling.

Status: WQIS investigation completed in 2014. Community notified. Remediation verification pending.

DOAN BROOK

DBMB2120

Receiving Water: Doan Brook Main Branch

Community: Shaker Heights

Location: South of Fairhill Road

Outfall conditions as of most recent sampling:

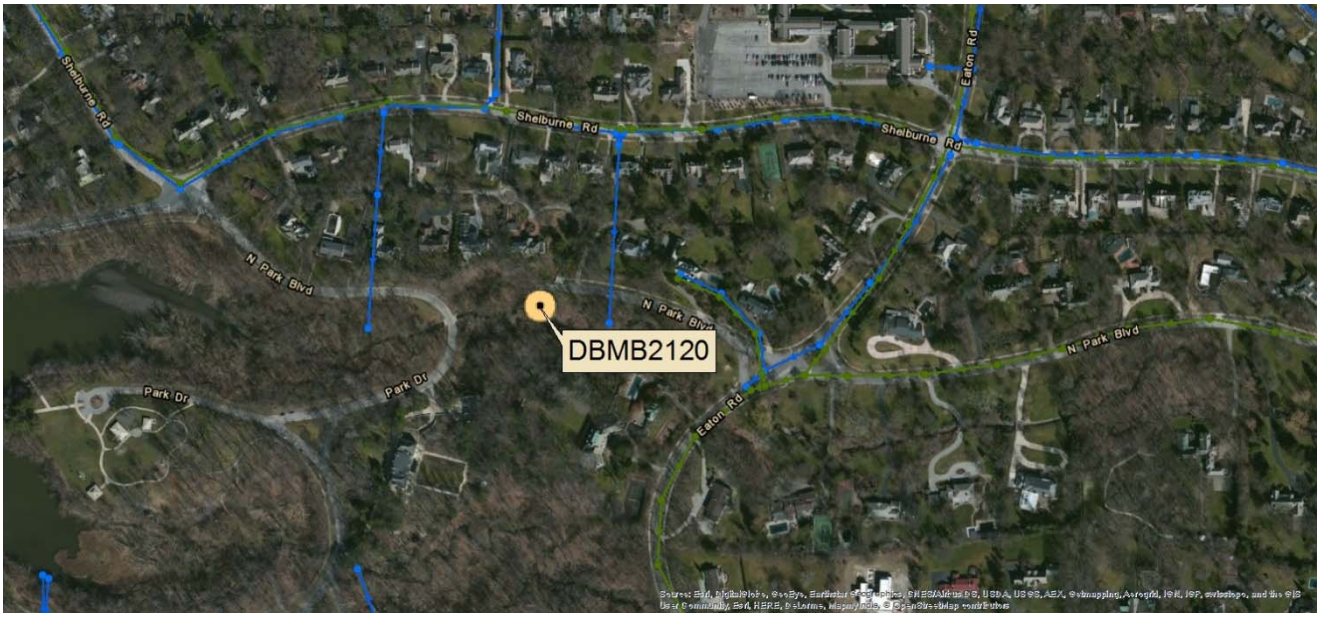
Date collected: 06/22/15

E. coli Density: 2,100 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities was traced to Shelburne Avenue. Recommend that City of Shaker Heights conduct dye testing to determine any improper connections on that street.

Community Notification: The City of Shaker Heights has not been notified yet.

Status: WQIS investigation completed in 2014. Community notification pending.



EUCLID CREEK

ECMB0050

Receiving Water: Euclid Creek Main Branch

Community: Cleveland

Location: Western end of Hoover Road

Outfall conditions as of most recent sampling:

Date collected: 4/13/15

E. coli Density: 2,751 CFU/100mL

Problem Summary: An improper connection was found between the basement of a home at 817 Hoover Avenue and the storm sewer. The problem was fixed on August 29, 2014.

Community Notification: The problem was discussed with the City of Cleveland Division of Water Pollution Control at in-person meetings on April 8, May 7, June 3, August 12, September 15 and October 31, 2014.

Status: Investigation completed in 2013. Remediation complete.

Reduction in sanitary sewage entering environment: 10 gallons per day

ECMB0060

Receiving Water: Euclid Creek Main Branch

Community: Cleveland

Location: Western end of Lakeport Avenue

Outfall conditions as of most recent sampling:

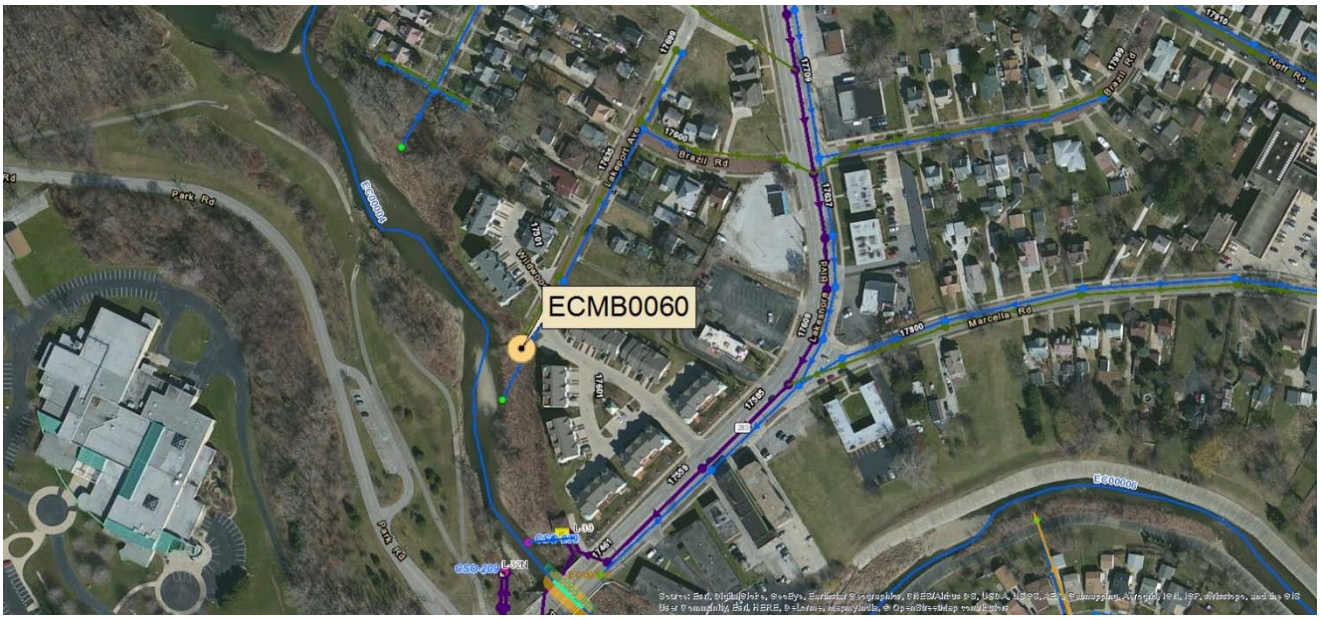
Date collected: 4/13/15

E. coli Density: 480 CFU/100mL

Problem Summary: An improper residential sanitary sewer lateral connection to the storm sewer exists at 17516 Lakeport Road. WPC issued NOV 11-25-15 to property owner. Note: WPC to dye-test 17651 Lakeport Road, which will be the final residential property to be dye-tested in Lakeport Rd - Brazil Road sewershed.

Community Notification: City of Cleveland and NEORSD have been meeting regularly since April 2014 through 2015.

Status: WQIS investigation completed in 2013. Community notified. Remediation pending.



ECMB0150

Receiving Water: Euclid Creek Main Branch

Community: Cleveland

Location: 17805 Brian Avenue

Outfall conditions as of most recent sampling:

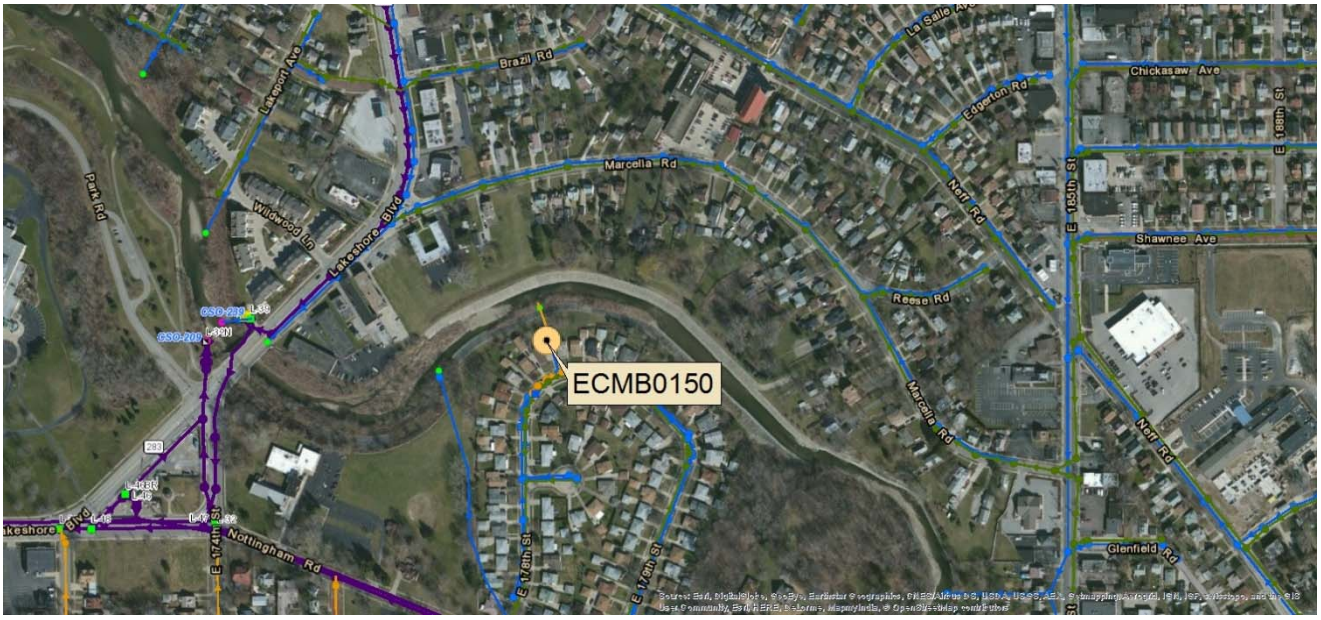
Date collected: 4/13/15

Flow: 5,000 gallons/day
E. coli Density: 16 MPN/100ml.

Problem Summary: A SSO located at 959 E. 178th Street has not been remediated. The City of Cleveland Division of Water Pollution Control monitored the SSO in 2014 to determine the frequency of activation; no events were found.

Community Notification: The problem was discussed with the City of Cleveland at in-person meetings on April 8, May 7, June 3, August 12, and September 15, 2014.

Status: WQIS investigation completed in 2013, but being monitored by NEORSD. Community notified.



ECMB0290

Receiving Water: Euclid Creek Main Branch

Community: Euclid

Location: 1464 Dille Road

Outfall conditions as of most recent sampling:

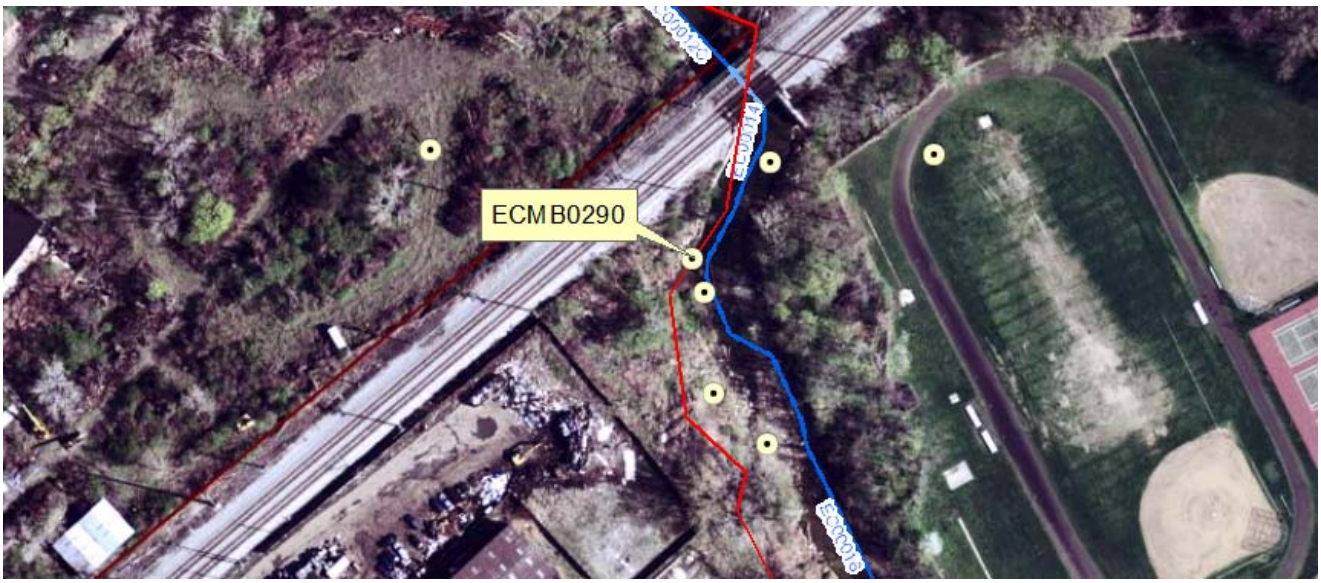
Date collected: 12/16/15

Flow: 7,600 gallons/day
E. coli Density: 166 MPN/100mL

Problem Summary: Low *E. coli* densities, but high iron in the water prompts further investigation.

Community Notification: The problem was discussed with the City of Euclid in December of 2015.

Status: WQIS investigation not complete. Community notified.



ECMB0300

Receiving Water: Euclid Creek Main Branch

Community: Euclid

Location: 1464 Dille Road

Outfall conditions as of most recent sampling:

Date collected: 12/16/15

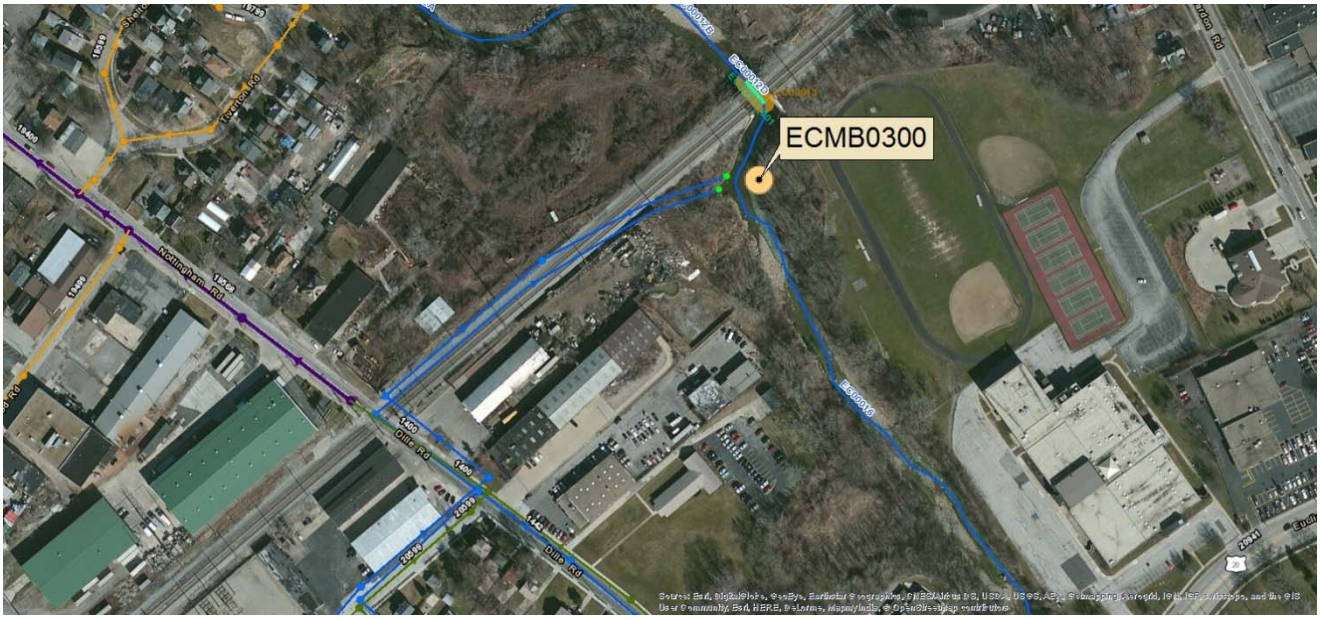
Flow: 13,585 gallons/day
E. coli Density: 15,650 MPN/100mL

Problem Summary: Improper connections were found between two of the buildings at Indian Hills Apartments and the storm sewer; these problems were remediated. Additional improper connections from one of the buildings were found on October 15, 2014.

Community Notification: Known problems with the Indian Hills Apartments have been remediated. Further investigation is being pursued.

Status: WQIS investigation not complete. Community notified. Problem partially remediated.

Reduction in sanitary sewage entering environment: 45,000 gallons per day



ECMB0350

Receiving Water: Euclid Creek Main Branch

Community: Euclid

Location: 20611 Euclid Avenue

Outfall conditions as of most recent sampling:

Date collected: 9/23/15

Flow: 900 gallons/day
E. coli Density: 698 CFU/100mL

Problem Summary: Flow with elevated *E. coli* densities was traced along Euclid Avenue to Grand Boulevard. A video inspection of the area indicated improper connections between the apartment buildings located at 20200 and 20240 Grand Boulevard and the storm sewer. Recommend that the City of Euclid conduct dye testing to verify improper connections.

Community Notification: The report detailing the problem was sent to the City of Euclid on October 29, 2014. Improper connections were remediated

Status: Investigation completed in 2013. Problem remediated.

Reduction in sanitary sewage entering environment: 4,300 gallons per day

ECWB3350

Receiving Water: Euclid Creek Main Branch

Community: Euclid

Location: Euclid Creek Parkway, under Monticello

Outfall conditions as of most recent sampling:

Date collected: 10/12/15

Flow: >200,000 gallons/day
E. coli Density: >1 CFU/100mL

Problem Summary: Resident of South Euclid voiced concern at NEORSD open house over a water leak near the resident's property. The leak had been reported, but no progress had been made. Investigation revealed a several water leaks which sourced the outfall.

Community Notification: The report detailing the problem was sent to the City of Cleveland on October 30, 2015. Two water leaks were fixed.

Status: WQIS Investigation completed in 2015. Problem remediated.

Reduction in treated water entering environment: >200,000 gallons per day

HEMLOCK CREEK

HEMB1050

Receiving Water: Hemlock Creek Tributary 1

Community: Seven Hills

Location: Under Donna Rae Dr., North of 6955 Donna Rae

Outfall conditions as of most recent sampling:

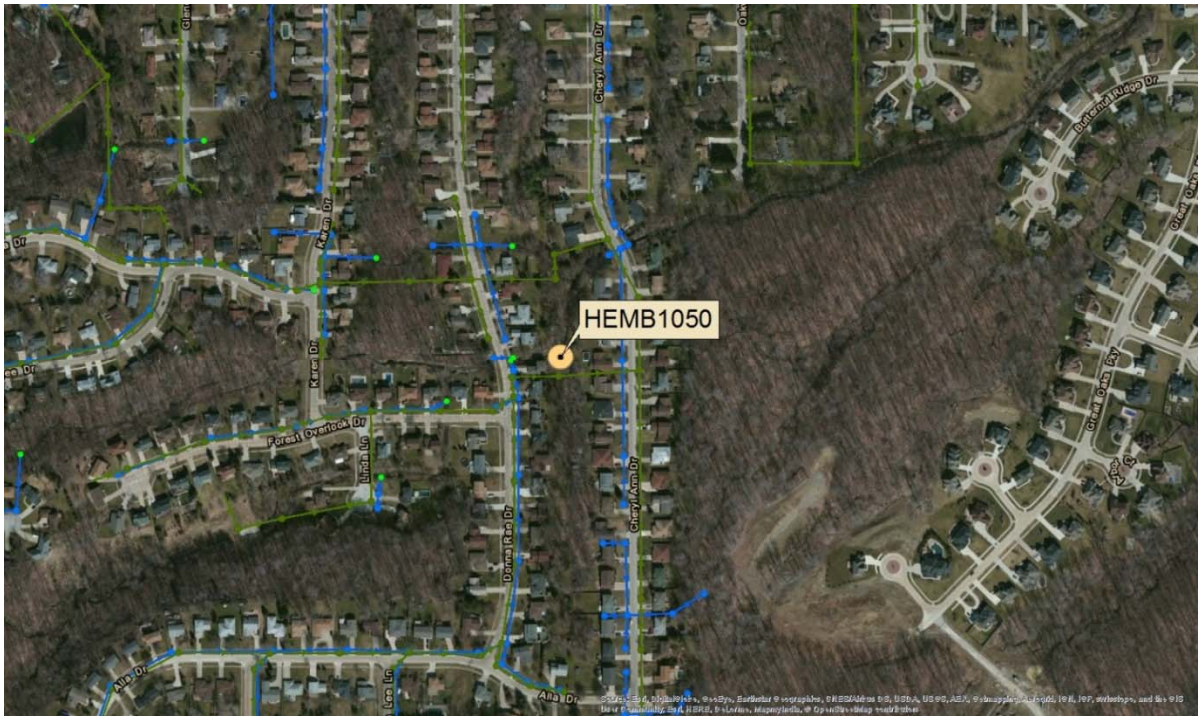
Date collected: 5/26/15

Flow: 3,000 gallons/day
E. coli Density: 20,980 MPN/100mL

Problem Summary: Problem traced to possible illicit discharges on Alla Drive. City to complete, via AECOM contract, 5 dye-tests of residences w/ positive smoke test results, both for possible improper connections and downspout connections to sanitary sewer (inflow) during December 2015

Community Notification: Seven Hills was notified in June of 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.



HEMB1180

Receiving Water: Hemlock Creek Main Branch

Community: Seven Hills

Location: 2190 Hillside Road

Outfall conditions as of most recent sampling:

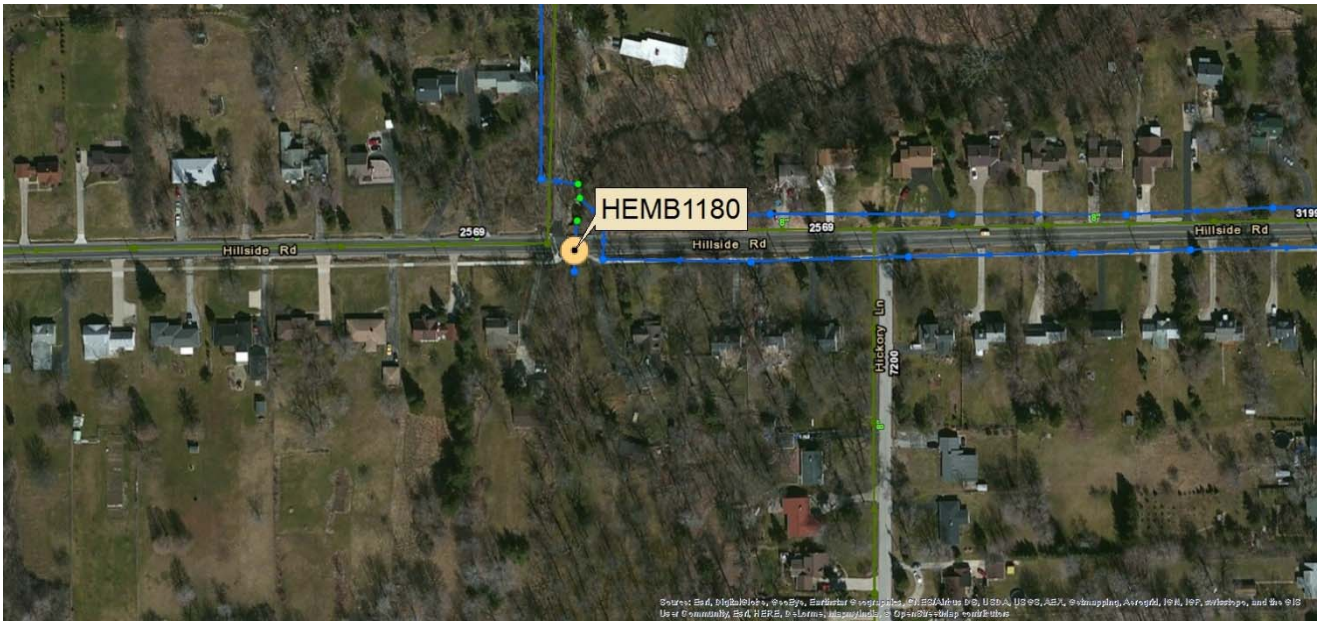
Date collected: 2/27/14

Flow: 713 gallons/day
E. coli Density: 3,900 MPN/100mL

Problem Summary: A home sewage treatment system is located upstream of property. Elevated *E. coli* densities could be due to a failing system. City, CCBH & District coordinated on procedural decommissioning of HSTSs by CCBH, notification to City and confirmation by City Bldg Dept. to review interior plumbing prior to sanitary lateral connection approval following completion of HCWSS Project.

Community Notification: Seven Hills was notified in April of 2015.

Status: WQIS investigation completed in 2014. Community notified. Remediation pending.



HET11020

Receiving Water: Hemlock Creek Tributary 1

Community: Seven Hills

Location: Behind 7631/7639 Edgewood Drive

Outfall conditions as of most recent sampling:

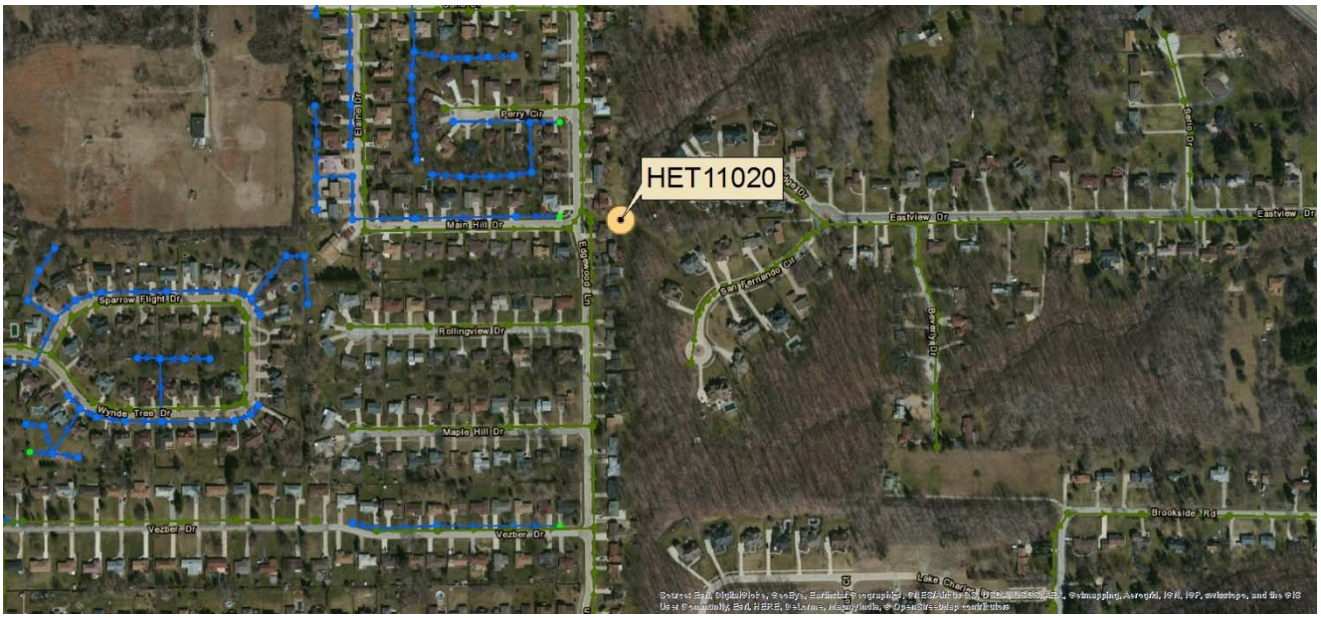
Date collected: 4/21/14

Flow: 3,261 gallons/day
E. coli Density: 52,310 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities traced to Vezber Drive. City to complete, via AECOM contract, 7 dye-tests of residences w/ positive smoke test results, both for possible improper connections and downspout connections to sanitary sewer (inflow) during December 2015. Next meeting scheduled for February 2016.

Community Notification: Seven Hills was notified in June of 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.



LAKE ERIE

CSO 093

Receiving Water: Lake Erie

Community: Cleveland

Location: West 3rd Street and Lakeside Road

Outfall conditions as of most recent sampling:

Date collected: 6/24/13

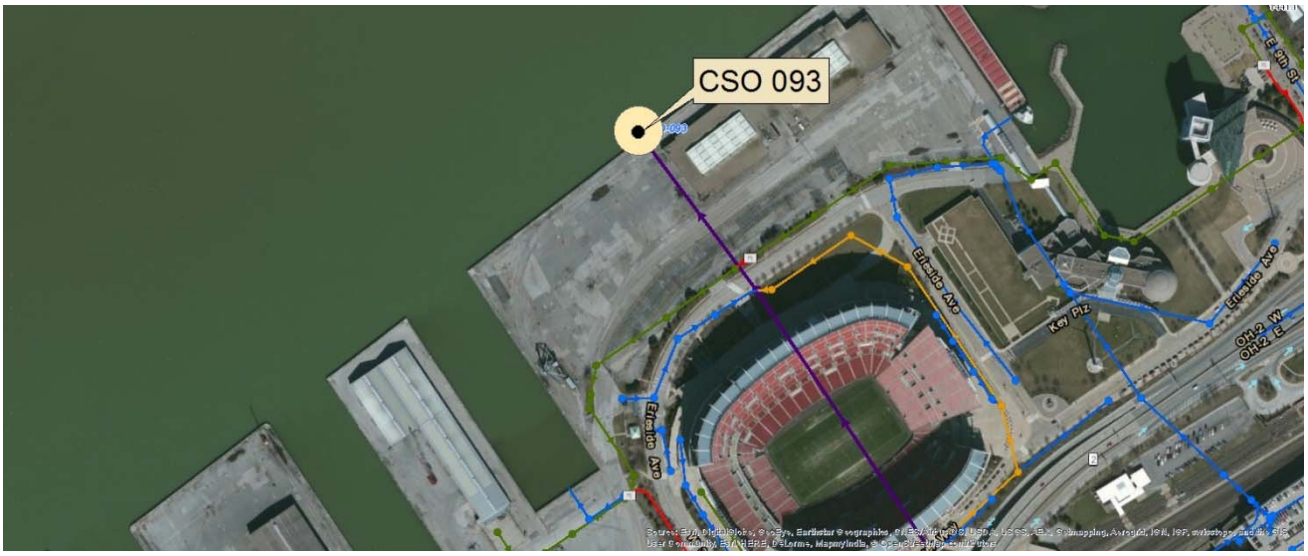
E. coli Density: 460,400 MPN/100mL

Problem Summary: Buildings at 1150 West 3rd Street and 310 Lakeside Avenue are improperly connected to the CSO 093 stormwater outlet. WPC issued NOVs to property owners requiring new, proper connections to be completed.

Community Notification: WPC notified NEORSD that the 1150 West 3rd Street – WorldCom (Verizon) Building sanitary sewer connection has been completed. The county-owned building replacement connection will be completed in 2016.

Status: WQIS investigation completed in 2013. Problem partially remediated.

Reduction in sanitary sewage entering environment: 409 gallons/day



CSO 099

Receiving Water: Lake Erie

Community: Cleveland

Location: North of East 38th Street and King Avenue

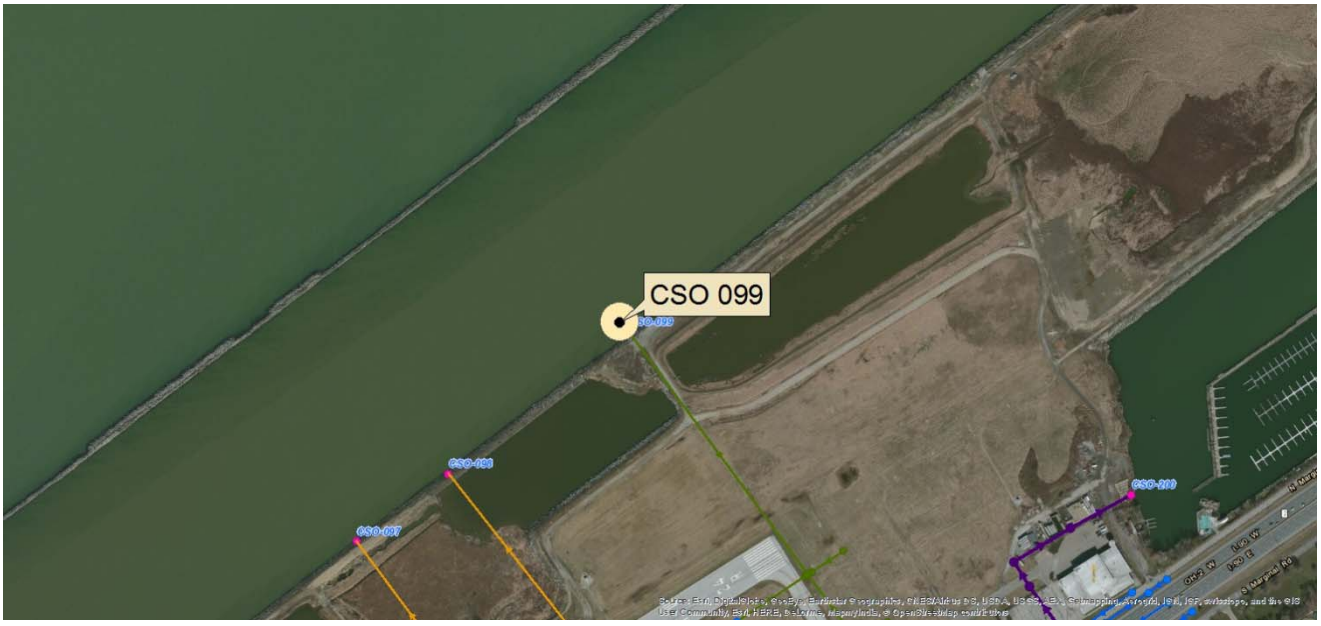
Outfall conditions as of most recent sampling: Outfall not sampled

Problem Summary: First report shows that the issue was identified in 2004. An improper commercial building connection existed at Par-One Golf Specialties, 3807 King Avenue, that was tributary to the CSO 099 stormwater outlet. WPC issued NOV to property owner 1-12-15; WPC confirmed via CCTV & dye-test new connection completed 12-22-15. The problem was remediated by Terrace Construction in December 2015.

Community Notification: City of Cleveland WPC was told of the improper connection on May 27, 2004.

Status: WQIS Investigation completed in 2013. Problem remediated.

Reduction in sanitary sewage entering environment: 75 gallons per day



MILL CREEK

MCMB2005

Receiving Water: Mill Creek Main Branch

Community: Warrensville Heights/Shaker Heights

Location: Under Warrensville Center Road

Outfall conditions as of most recent sampling:

Date collected: 10/2/15

Flow: 43,200 gallons/day
E. coli Density: 4 MPN/100mL

Problem Summary: A blocked sanitary sewer was found in Shaker Heights along Warrensville Center Road. This blockage was cleared on March 14, 2104. Dry-weather flow with elevated *E. coli* densities was still present in area afterwards. Two water leaks were found and remediated. An improper connection to the storm sewer was also found at 20207 Harvard Avenue.

Community Notification: The City of Shaker Heights and the Cuyahoga County Sanitation Engineers were contacted on March 10, 2014, regarding the sanitary sewer blockages. The Cleveland Water Department was notified of the water leaks in the area on April 10, 2014. All have been remediated. Waiting to have 20207 Harvard Avenue properly connected.

Status: WQIS investigation completed in 2015. Community notification pending

MCMB2200

Receiving Water: Mill Creek Main Branch

Community: Highland Hills

Location: South of Chagrin Boulevard

Outfall conditions as of most recent sampling:

Date Collected: 08/17/15

Flow: 14,400 gallons/day

E. coli Density: 209 MPN/100mL

Problem Summary: Flow tracing and source tracking in the system were started, improper connection found at a multiple occupancy building with Galaxy Payroll, The Gathering Place and Jay Berk, Ph.D. & Associates.

Community Notification: The City of Beachwood was notified in May of 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

ROCKY RIVER

RRMB0100 (CSO-068)

Receiving Water: Rocky River Main Branch

Community: Cleveland

Location: Hogsback Lane and Rocky River Drive

Outfall conditions as of most recent sampling:

Date collected: 03/23/15

Flow: 432,000 gallons/day
E. coli Density: 8,480MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities was traced to Montrose Avenue and upstream locations. Improper connections were found between St. Mark School and Rectory and the storm sewer. WPC is working with St. Mark to remediate the problems.

Community Notification: WPC issued NOV to St. Mark 12-11-14 upon notification by District. WPC CCTV'ed all building connections to confirm connections and integrity of laterals in addition to confirmed improper connections. St. Mark contracted Norhio Plumbing Co., and submitted corrective measure plan 11-17-15 for WPC approval.

Status: WQIS investigation not complete. Community notified. Remediation pending.

RRMB0340 (CSO-067)

Receiving Water: Rocky River Main Branch

Community: Cleveland

Location: 17504 Allien Avenue

Outfall conditions as of most recent sampling:

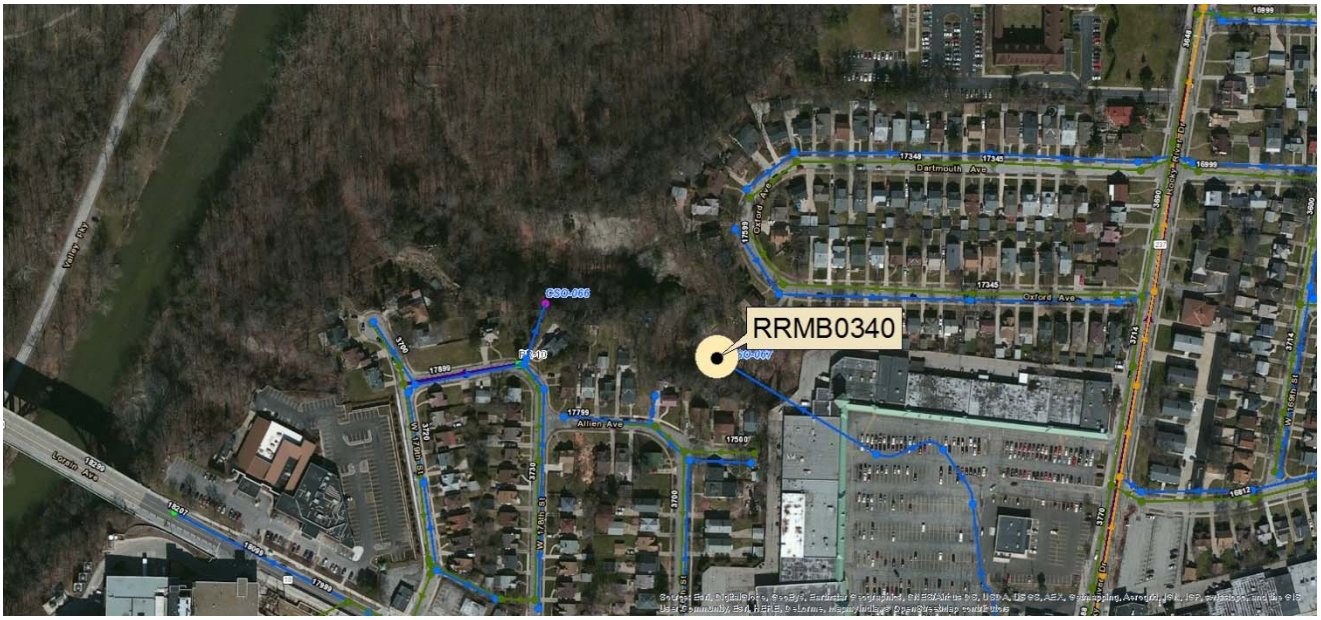
Date collected: 06/19/2013

Flow: 32,400 gallons/day
E. coli Density: 44,000 MPN/100mL

Problem Summary: Improper connections to the storm sewer were found at 4037 and 4049 Rocky River Drive.

Community Notification: After meeting with the WPC and discussing these matters with the property owners, it was decided that both of these connections will be included in the Rocky River Drive Capital Improvement Project by WPC. Therefore the illicit connections will be corrected. Currently the water is shut off at the one property.

Status: WQIS investigation completed in 2013. Community notified. Remediation pending.



RRMB0630 (CSO-064)

Receiving Water: Rocky River Main Branch

Community: Cleveland

Location: Valley Road

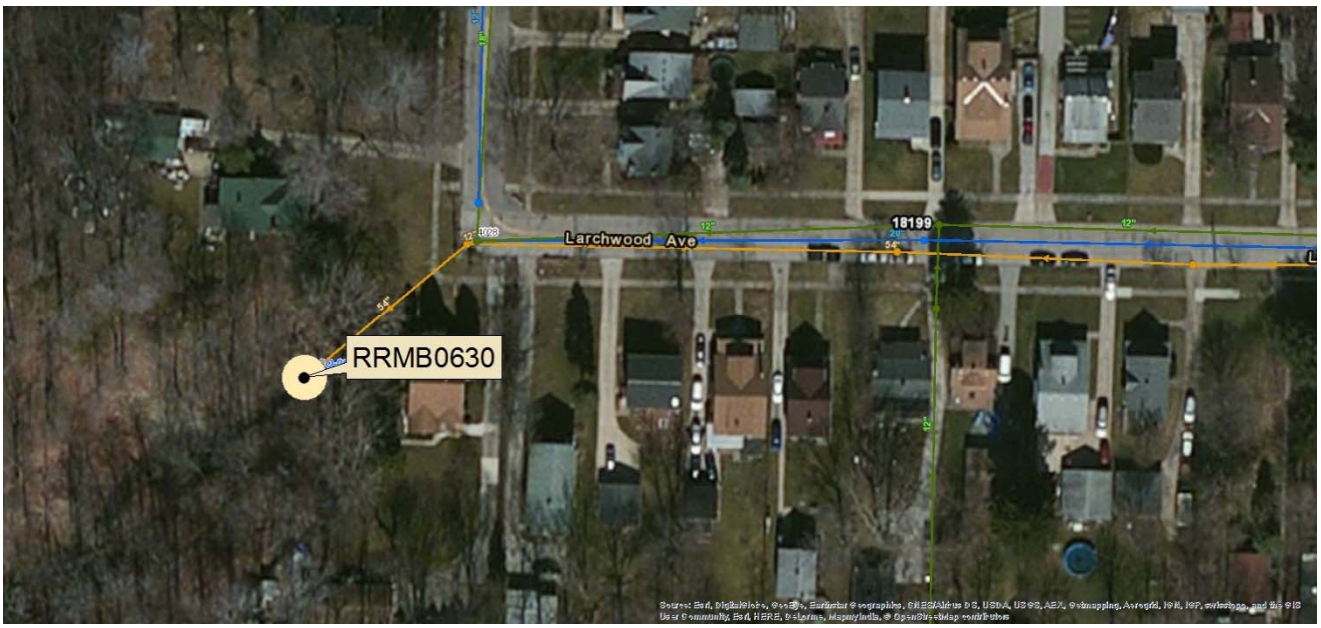
Outfall conditions as of most recent sampling:
Date collected: 12/15/14

Flow: 17,280 gallons/day
E. coli Density: 99,320 MPN/100mL

Problem Summary: Dry weather flow with elevated *E. coli* densities was traced to Westdale Avenue and to North Rocky River Drive.

Community Notification: City of Cleveland notified in 2000. Another meeting was held in 2013.

Status: WQIS investigation not complete. Community notified.



RREB0570

Receiving Water: Rocky River East Branch

Community: Berea

Location: 95 Prospect Road

Outfall conditions as of most recent sampling:

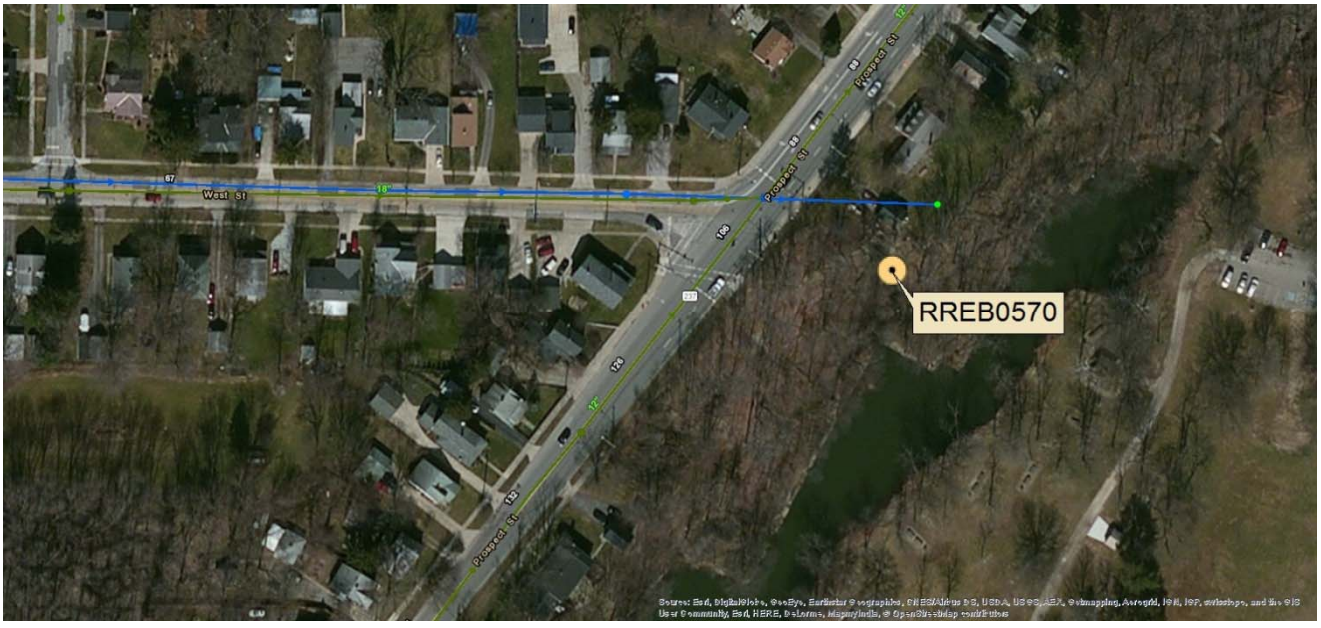
Date collected: 11/5/15

Flow: 10,000 gallons/day
E. coli Density: 3,990 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities traced to between 346 Edgewood Drive and the intersection of Edgewood Drive and West Street. Dye testing of homes in the area began on December 15, 2014.

Community Notification: The City of Berea was informed of the problem on August 19, 2014.

Status: WQIS investigation completed in 2014. Community notified. Remediation pending.



RREB0790, CSO-062

Receiving Water: Rocky River Main Branch

Community: Cleveland

Location: South of Puritas Road Hill

Outfall conditions as of most recent sampling:

Date collected: 04/16/15

Flow: 10,000 gallons/day
E. coli Density: 958 MPN/100mL

Problem Summary: WPC to schedule CCTV and dye-test confirmation of all facility connections at Clara E. Westropp School (19101 Puritas Avenue) to determine any other improper lateral connections; then oversee remediation by Cleveland Metropolitan School District for one known improper connection. WPC & WQIS performed joint dye-test 10-2-15 to confirm improper connection from custodian restroom facility.

Community Notification: City of Cleveland WPC was informed by May 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

RREB0880

Receiving Water: Rocky River East Branch

Community: Berea

Location: 67 Riverside Drive

Outfall conditions as of most recent sampling:

Date collected: 11/5/15

Flow: 9,000 gallons/day
E. coli Density: 23,820 MPN/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities was traced to Front Street between 31 Riverside Drive and 87 Front Street. A water main break was also found between 44 and 54 Front Street. The City of Berea is conducting dye tests and working to remediate any problems with improper connections and water leaks in the area.

Community Notification: The City of Berea was notified of the problem via a letter sent on July 31, 2014.

Status: WQIS investigation completed in 2014. Community notified. Remediation pending.

STICKNEY CREEK

SKMB0020

Receiving Water: Stickney Creek Main Branch

Community: Brooklyn

Location: Valley Road

Outfall conditions as of most recent sampling:

Date collected: 7/24/14

E. coli Density: 12,445 CFU/100mL

Problem Summary: Improper connections were found on several streets in the drainage area of SKMB0020.

Community Notification: A letter was sent to the City of Brooklyn on February 10, 2014, detailing the need to dye test homes. Four improper connections or I/I problems were found in this area for SKMB0020. The City of Brooklyn is working with CCDWP to get these issues fixed.

Status: WQIS investigation complete. Community notified. Remediation pending.

SKMB0040

Receiving Water: Stickney Creek Main Branch

Community: Brooklyn

Location: Valley Road

Outfall conditions as of most recent sampling:

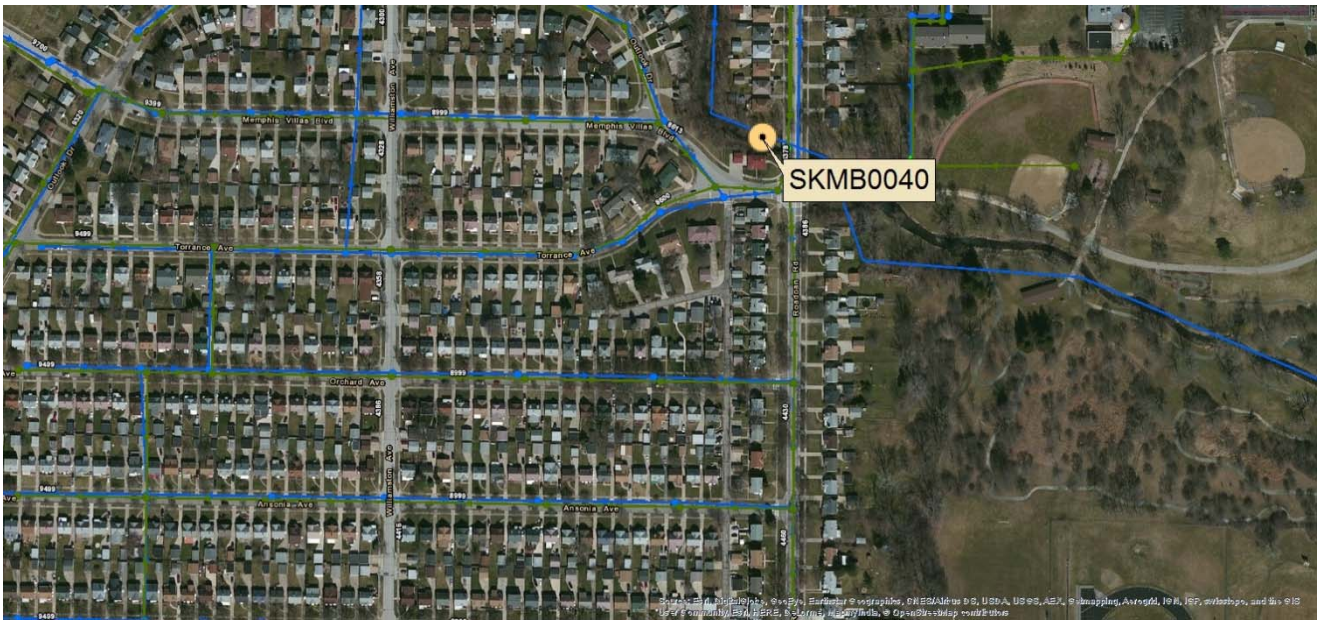
Date collected: 5/5/14

E. coli Density: 120,980 CFU/100mL

Problem Summary: Dry-weather flow with elevated *E. coli* densities was traced to Outlook Drive, Memphis Villas Boulevard and Roadoan Road. Dye tests and CCTV revealed several houses on Roadoan Road with improper connections. One confirmed and seven suspected improper connections (awaiting confirmation by CCDPW via dye testing) for SKMB0040.

Community Notification: A letter was sent to the City of Brooklyn on February 10, 2014, detailing the need to dye test homes.

Status: WQIS investigation complete. Community notified. Remediation pending.



WOLF CREEK

WMMB0080

Receiving Water: Wolf Creek tributary to Mill Creek

Community: Garfield Heights

Location: By Andover and McCracken

Outfall conditions as of most recent sampling:

Date collected: 6/4/15
E. coli Density: 47,640CFU/100mL

Problem Summary: Dry weather flow with elevated *E. coli* was traced to East 117th and East 119th Streets. Garfield Heights City Engineer to speak to CCDPW regarding request for historical CCTV videos of sewers in that area. If historical videos are not available, Garfield Heights has requested CCDPW to complete new CCTV of requested sewers for IDDE investigation.

Community Notification: Garfield Heights was notified on March 3, 2015.

Status: WQIS investigation completed in 2013. Community notified. Remediation pending.

WEST CREEK

WCMB0370

Receiving Water: West Creek Main Branch

Community: Parma

Location: 6750 Broadview Road

Outfall conditions as of most recent sampling:

Date collected: 3/17/15

Flow: 10,000 gallons/day
E. coli Density: 444 CFU/100mL

Problem Summary: NOACA has indicated that all of Parma is prescribed to be sewered; however, several areas remain without sanitary sewer access and planning for some unsewered areas within the City are pending. The District plans to meet with CCBH regarding known failing HSTS in the area.

Community Notification: An email was sent to the City of Parma detailing the problem on February 18, 2015.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

WCMB0690

Receiving Water: West Creek Main Branch

Community: Parma

Location: Broadview Road

Outfall conditions as of most recent sampling:

Date collected: 5/23/14

Flow: 500 gallons/day
E. coli Density: 21,750 CFU/100mL

Problem Summary: CCDPW confirmed 10/27/15 that the Broadview Road drill drop is complete, which will now provide sanitary sewer access/capacity for additional gravity sanitary sewers, under design and yet to be installed, to provide service to 13 residences located on Brookdale Avenue and 4 residences on Broadview Road that currently have HSTSs. CCDPW confirmed 10/27/15 that the Broadrock Road drill drop design is complete contingent on acquiring temporary easements. Once these are acquired, the design will be finalized, funding secured, and project bid for construction. This drill drop provides access/capacity for the HSTSs on Broadrock Court and Old Rockside Road to be provided sanitary sewer service.

Community Notification: A letter was sent to the City of Parma detailing the problem on July 28, 2014.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

WCMB0700

Receiving Water: West Creek Main Branch

Community: Parma

Location: Broadview Road

Outfall conditions as of most recent sampling:

Date collected: 7/22/14

Flow: 20,000 gallons/day
E. coli Density: 397,260 MPN/100mL

Problem Summary: A blockage within the sanitary sewer at Broadview Road and Broadrock Court was remediated; however, during the Sewer District's September 22, 2015, re-inspection following corrective action by the City/CCDPW, the Sewer District observed that the hole in the sanitary sewer was allowing sewage to exit the sanitary sewer during high flows/surcharging and enter the adjacent storm sewer.

Community Notification: During the 10/27/15 meeting, the City of Parma was informed of the new findings and CCDPW was made aware of the new work order to complete repairs.

Status: WQIS investigation completed in 2015. Community notified. Remediation pending.

MISCELLANEOUS INVESTIGATIONS

ILLICIT DISCHARGE TO BURKE BROOK

Receiving Water: Burke Brook tributary to Cuyahoga River

Community: Cleveland

Location: 4150 E. 56th Street

Volume Spilled: 2,500 gallons

Problem Summary: On April 9, 2015, Ferro Corp had two pumps fail which caused an overflow to Burke Brook. The pumps mixed the sanitary waste with the industrial waste. The pipe discharged to the brook for approximately 45 minutes. Enviroserve vacuumed out the overflow from the storage tank. New pump parts had been ordered and would be replaced once the situation was under control.

Status: Problem remediated.

CONTAMINATED RUNOFF FROM A TRUCK FIRE

Receiving Water: Euclid Creek East Branch

Community: Mayfield Village

Location: Wilson Mills Road and I-271

Volume Spilled: unknown, 96 MCF vacuumed from the creek

Problem Summary: A truck fire occurred on I-271 near Wilson Mills Road on September 22, 2015. The truck contained hazardous materials related to hair products and the Chagrin/Southeast Regional Hazardous Material Team was called out to assist. The contaminated runoff flowed out to Euclid Creek and, although there was a dam constructed to contain the flow, some traveled down the creek prior to the dam being built. A fish kill resulted, with approximately 500 fish dead of 8 species. The flow contained oil/grease, zinc and copper, all exceeding the Aquatic Life Tier 2 Outside Mixing Zone Maximum standard. Sunpro Inc. was in charge of the clean-up and they vacuumed the creek multiple times.

Status: Problem remediated.

BGMB1620 (OIL DISCHARGE)

Receiving Water: Big Creek Main Branch

Community: Cleveland

Location: 3965 Pearl Road

Volume Spilled: Maximum of 40 gallons based on machine's reservoir capacity

Problem Summary: Oil was leaking from several pieces of equipment owned by Terrace Construction at 3965 Pearl Road and Brookside Auto at 3979 Pearl Road. The oil was collecting in the storm system and then discharging from outfall BGMB1620 on Big Creek. Terrace Construction and Brookside Auto were issued notices of interest from the Ohio EPA and asked to clean up their sites and stop illicit discharges.

Status: Problem remediated.

CLEVELAND PUBLIC POWER OIL SPILL TO LAKE ERIE

Receiving Water: Lake Erie

Community: Cleveland

Location: 5241 North Marginal Road

Volume Released: 2,900 gallons of oil-water mixture

Problem Summary: An outflow pipe from Cleveland Public Power malfunctioned and released a large amount of oil-water mixture. Clean Harbors was called in to assist with the clean-up. NEORSD also responded along with the Coast Guard. Clean Harbors vacuumed out about 2,900 gallons and skimmed the surface of the lake as well.

Status: Problem remediated.

CONCLUSIONS

Over the past three years, more than 49,000 gallons per day of raw sewage discharging to the environment and over 500,000 gallons per day of treated water has been eliminated as a result of the illicit discharge source tracking and follow-up investigations that were completed as part of NEORSD's Illicit Discharge Detection and Elimination Program. While a significant volume, a great need still exists to continue to work on these problems, as a high percentage of storm sewer outfalls in the NEORSD's service area still discharge unacceptable levels of sanitary sewage and other pollutants to the environment. While we continue this work, the issues are not as individually impactful, but when looked at overall they still serve as a significant source of pollution to our waterways. As indicated in this report, illicit discharges can be due to a variety of issues such as improper connections to the storm sewer, water leaks, and blocked sanitary sewers, among others. Because of this, a collaborative effort between NEORSD and the affected community is often needed in order to remediate these problems in an effective and efficient manner. With focused efforts to identify and remove illicit discharges using this process, water quality conditions in area waterways, along with human and biological health, will continue to improve in upcoming years.