



Sanitation District No.1 of Northern Kentucky Force Main and ARV Condition Assessment

Project Highlights

- RA Consultants completed assessment, location mapping and inspection of over 120 miles of force mains.
- Inspected wastewater infrastructure, including Pump Stations, Gravity Sewers, Air Release Valves, and Force Mains.

Services Provided

- Condition Assessment
- Field Investigation
- NASSCO Coding
- Asset Location
- GIS Mapping
- Confined Space Entry
- Collection System

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Sanitation District No. 1 of Northern Kentucky retained a teaming partner and RA Consultants, LLC to perform professional engineering and field investigation to locate and map over 120 miles of force main, numerous pump stations and over 200 air release valve structures.

RA Consultants was responsible for obtaining and organizing design plans of existing wastewater infrastructure. Our PACP-certified staff is able to identify corrosion issues and other defects in sanitary sewers and structures. RA provided survey services to the project and oversaw field operations. Almost 300 manholes were surveyed and inspected and almost 70 miles of sewer were televised with RA providing QA/QC of quality and PACP coding for over 10% of the video. Sewers with dry weather flow water level above 25% were inspected with a combination CCTV/SONAR rig.

RA worked with PPIC to complete assessments of high-priority force mains. These assessments included mapping, leak detection, and air pocket detection. This project highlighted the importance of proper preparation, staging, and coordination prior to a condition assessment operation.

Special Environmental Issues:

- Force main location was a consent decree motivated program. SD1 took the opportunity to study the sewers one mile downstream of force main discharges to look for corrosion. The sewer data fed into their Continuous Sewer Assessment Program (CSAP), which was another consent decree program. The condition grading scores combined with criticality assessments drive SD1's sewer cleaning and sewer rehabilitation decisions.

Political Issues:

- Coordination required with the 30 communities in Northern Kentucky. Specifically, local fire and police services were contacted each day before confined space entries were made.

Technical Problems Resolved:

- Utilized Access databases to convert PACP sewer codes and manhole defect observations to the SCREAM defect coding system used by SD1.
- Prioritized investigations for sewers with elevated H₂S readings and/or high consequence of failure.