

Outfall Evaluation Report, Former Hampshire Chemical Corp Facility, Waterloo, New York

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This technical memorandum report presents the results of the August 2010 outfall investigation conducted to provide data for Area of Concern (AOC) F for the former Hampshire Chemical Corp (HCC) facility in Waterloo, New York (site; Figure 1). HCC is a subsidiary of The Dow Chemical Company. AOC F consists of the active and inactive outfalls along the Seneca-Cayuga Canal on the southern limits of the site. The purpose of the investigation was to understand the active and inactive outfalls piping configuration and condition.

The site is regulated under 6 New York Code Rules and Regulations (NYCRR) Part 373 and the Resource Conservation and Recovery Act (RCRA) with the New York State Department of Environmental Conservation (NYSDEC) as the lead agency. RCRA facility investigation (RFI) efforts have been performed at the facility since 1993 to determine the nature and extent of releases to the environment. The RFI is being conducted pursuant to an Amended Administrative Consent Order executed between HCC and NYSDEC (Index Number 8-20000218-3281, June 1, 2004).

Portions of the investigation activities were performed on property owned by the New York State Thruway Authority, which is along the southern side of the site. The facility is now owned by Bruno Bock, a German manufacturing company, and operated by their wholly owned subsidiary Evans Chemetics.

During the August 2010 field activities, accessible piping associated with the eight active outfalls (Figure 2) were investigated by smoke testing, closed circuit television (CCTV) survey, and/or visual inspections. The inactive Outfalls 002 and 006 were visually inspected and CCTV surveyed in the accessible sections of the piping, and efforts to locate inactive Outfall 007 from a boat at the canal edge were performed.

Work was completed in accordance with the procedures outlined in the RFI outfall evaluation work plan (CH2M HILL 2010a) and CH2M HILL's health and safety plan (CH2M HILL 2010b).

Site Background

The outfalls are in the southern section of the facility property. They are bounded to the north by the facility chemical plant, to the south by Seneca-Cayuga Canal, to the west by East Water Street, and to the east by Gorham Street.

In December 2009, CH2M HILL conducted a visual pipe inspection at the site to determine the origin of water that is being discharged into the canal from the active outfalls, and to locate abandoned outfalls. The investigation also included a site walk to determine the construction materials and present condition of the sewer lines and outfalls. A technical memorandum of the results of this investigation and a work plan for additional investigation were submitted to NYSDEC in April 2010 (CH2M HILL 2010a). In a letter dated July 9, 2010, NYSDEC approved the draft outfall evaluation work plan (CH2M HILL 2010a).

Field Activities

Fieldwork was conducted in two mobilizations. CH2M HILL mobilized to the site on July 19, 2010, to conduct a preliminary CCTV survey and smoke testing of the outfall piping. The facility was operating and water discharging through the active outfall piping limited the CCTV survey and smoke testing activities. The second mobilization occurred on August 2, 2010, to conduct detailed smoke testing and CCTV survey of the outfall piping during the facility temporary shutdown. With the exception of Outfall 013, which discharged treated wastewater at set intervals, no water was discharged from the other outfall lines to the canal during the second mobilization.

The following sections describe the sequence of field activities that took place during the July - August 2010 field investigation.

Smoke Testing

Smoke testing was performed by injecting white smoke into an isolated line segment with high-capacity blowers. Blowers were placed over an isolated line segment, and 3-minute smoke bombs were inserted into the blower intake to inject smoke into the sewer. The blowers were Cherne Air-Loc Smoke Testing fans with Honda engines, equipped with 0.5-inch foam cell gaskets to minimize vibration and leaking. Smoke bombs were 3-minute, double-wick bombs producing safe, nontoxic zinc chloride smoke.

A public relations and notification program was implemented to minimize public concerns raised by smoke testing (Attachment 1). The notification program included distributing a letter and door-hanger notifications to properties adjacent to the site, and daily communication with the local fire and police departments. The smoke testing activities were performed in coordination with the site personnel, and the site smoke alarms were turned off prior to smoke testing. Upon completing the tests, the smoke alarms were turned on by the site personnel, and the local fire and police departments were notified.

Smoke testing was performed at Outfalls 001, 004, and 005 (Figure 3). The locations of these outfalls also are shown on Figure 4, and correspond to historical pipes 4, 14, and 9, respectively.

The smoke blower was placed on openings 001-001, 004-001, 005-000A, 007-001, and 007-001A. The piping corresponding to Outfalls 008, 012, and 013 was not smoke tested because a second pipe opening was not available to place the smoke blower.

CCTV Survey

CCTV inspection was performed using a color, pan-and-tilt camera mounted on a mobile platform designed for conduit inspections. For pipe sizes greater than 8 inches, the CUES Pipe Ranger wheeled transporter equipped with an OZ III zoom camera and steerable drive was used for the inspection. For pipes smaller than 8 inches and areas with difficult access issues, the CUES Mini-Push 20/20 camera was inserted manually into the pipe. The push camera was equipped with 100 feet of cable and the CUES PS2 mini/mainline camera.

Information was recorded digitally, with voice-over and visual display of the inspection information on the video. During the inspection, the technician included a description of the identified defects, appurtenances, general pipe conditions, flow levels, weather conditions, dates, and a running distance log in the video. Using the CUES Granite XP software approved by the National Association of Sewer Service Companies Pipeline Assessment and Certification Program (PACP), the technician identified and coded pipe defects for type and severity.

The CCTV survey was performed on the piping interior of Outfalls 001, 004, 005, 008, 009, 010, 012, and 013 (Figures 5 and 6); however, the survey was not completed at part of the upgradient sections of piping at Outfalls 001, 004, 005, 008, 009, and 010 because of access issues.

Sonar survey was proposed in the outfall evaluation work plan (CH2M HILL 2010a) to obtain a full circumference view through the opaque waters of the charged pipeline sections. However, this technology was not used during the investigation because the results of the first week of investigation indicated that the CCTV survey provided enough detail of the outfall piping interior to determine the piping integrity.

Manhole Inspections

Manholes were inspected by means of a two-person crew using digital photographs and paper field inspection forms to record observations and defects. All incoming and outgoing pipe segments were then inspected using a pole-mounted Pentax camera to take high-resolution still images. Under normal conditions, the pole-mounted camera was able to zoom in up to 15 feet down the pipe segment. Any observed defects in the manhole or in the pipes were noted on the field forms for subsequent electronic entry.

Manholes were identified in the areas adjacent to or connected to the active outfall piping. Since only three manholes were identified as connected to the outfalls, observations of floor openings also were documented on the field inspection forms and photographed.

Former Hot Wells Review

A site walk was conducted with site personnel to observe the locations of the former hot wells. Site personnel described a former hot well as “a tank that was used to collect contact cooling water from a steam jet vacuum system which is located at least 33 feet above the hot

well, so the hot well can provide a liquid seal to drain the water from the vacuum system, while still maintaining full vacuum.”

From 1975 to 2000, the hot wells received contact cooling water from the steam jet vacuum systems connected to the reactors and condensers, and this water drained to the canal through various outfalls.

In 2000, the hot wells were replaced by aboveground stainless steel tanks (located near the former hot wells), but the floor openings and underground piping were left intact.

Since 2000, the former hot well floor openings and underground piping have been used to transport noncontact cooling water from various aboveground stainless steel tanks to State Pollutant Discharge Elimination System (SPDES) permitted Outfalls 001, 004, 005, and 008 at the Seneca-Cayuga Canal. Site personnel indicated that the floor openings seem to be constructed of cast iron, fiberglass, and/or concrete. All other waste streams, including contact cooling water, are routed to the onsite biological treatment system before discharge at Outfall 013.

PCB Containing Materials Research

CH2M HILL was informed that the site files did not have any additional records on historical use and disposal of polychlorinated biphenyl (PCB) containing materials from transformers at the site, and that all information had been provided in prior site visits. The site personnel informed CH2M HILL that capacitors containing PCB materials had been used at the site, and a site walk was conducted with site personnel to document the historical locations of these capacitors.

Site Upgrade Activities

The current site personnel were in the process of performing facility upgrade work in the Building 4 area during the facility shutdown in August 2010, which included modifying Outfall 001 piping. Excavation work was conducted outside Building 4 in the vicinity of the Outfall 001 piping. The original clay piping south of Building 4 was located, cut, and a vertical 12-inch-diameter polyvinyl chloride (PVC) pipe section was added. Site personnel informed CH2M HILL that this vertical pipe will be connected to new equipment that will be installed in Building 4, and will serve to discharge noncontact cooling water from Building 4 to Outfall 001.

The concrete floor slab inside Building 4 also was cut in six locations for access to drive piles that would serve as the foundation for new equipment. Visual evidence of impacts in soil and water were observed at two of the floor openings, and accumulated shallow water was observed in a void trench-like space under the concrete floor slab.

CH2M HILL collected two soil and one aqueous grab sample outside Building 4 in the excavations near Outfall 001 piping. The aqueous sample was collected from water that accumulated at the groundwater table in the open excavation. Two soil samples were collected from inside Building 4 (one at each of the two floor openings with visually impacted soil).

Results

Smoke Testing

Smoke testing was performed on Outfalls 001, 004, and 005. No defects in the piping were observed during the smoke testing, and start to end points were consistent with information provided by site personnel (Figure 3, and Attachments 2 and 3).

Outfall 001

With the smoke blower placed on manhole opening 001-001, smoke was observed at 001-001A, at the newly installed 12-inch-diameter vertical PVC pipe downstream of 001-001C, at the vertical pipe in Outfall 001 shed adjacent to the southwest side of Building 4 upgradient of 001-001C, and downgradient at 001-000 (Attachment 3, Photographs 1 to 4). These observations were consistent with site drawings.

Smoke was observed from below a porch adjacent to Buildings 4 and 9. Site personnel indicated that a few small noncontact cooling water lines discharge into a drain that is connected to Outfall 001. No detailed site drawings were available to compare this observation with the existing underground piping.

South of Building 9 and west of Building 4, smoke also was observed from an unexpected area that was covered with ply board (Attachment 3, Photograph 2). Site personnel informed CH2M HILL that a below grade sump and tank was present in that area which received water from Building 9 floor drains. Site personnel had removed the tank, the underground piping was disconnected, and the sump has been out of service for 6 to 7 years. Since then, water from the Building 9 floor drains has been pumped directly from Building 9 to the onsite treatment plant. Site personnel explained that the underground piping may have been cut in the area under the porch, and may have served to transport smoke from the Outfall 001 drain to this sump; however, there is no underground pipe connection from this sump to Outfall 001.

Outfall 004

With the smoke blower placed on manhole opening 004-001, smoke was observed upgradient at two vertical pipes near 004-001A in Building 2-A, and at downgradient nodes 004-000A (Outfall 004 Shed) and 004-000 (Outfall 001 discharge point). These observations were consistent with site drawings (Attachment 3, Photographs 5 to 8).

Outfall 005

With the smoke blower placed on vertical pipe opening 005-000A, smoke was observed upgradient at nodes 005-001, 005-001A, and 005-001B, and downstream at 005-000. These observations were consistent with site drawings (Attachment 3, Photographs 9 to 14).

Outfall 007 (Outfall 007 piping that site personnel rerouted to discharge to Outfall 004)

With the smoke blower placed on manhole opening 007-001, smoke was observed at downgradient nodes 004-001 and 004-000. This observation was consistent with site drawings. No smoke was observed upgradient of 007-001.

With the smoke blower placed on metal plate opening 007-001A, smoke was observed at the stormwater catch basin east of 007-001A and the roof drain on the eastern side of the MPA

Process Area building. These observations were consistent with site drawings (Attachment 3, Photographs 15 to 17).

Outfalls 008, 012, and 013

As mentioned, smoke testing could not be performed at Outfalls 008, 012, and 013 because only one accessible opening was identified. This opening corresponded to the outfall discharge point.

Outfalls 009 and 010

Each of these outfalls is connected to a catch basin that receives stormwater from the surrounding areas. Site personnel test this accumulated stormwater before it discharges to the canal. These outfalls were not smoke tested because they only direct stormwater and historically were not used for production purposes.

Additional photographs were taken of Outfalls 001, 004, 005, 008, 009, 010, 012, and 013 discharge points from a boat in the canal (Attachment 3, Photographs 18 to 46). Abandoned Outfalls 002 and 007 were not located, and photographs were taken of abandoned Outfall 006. Three other discharge pipes were observed at the canal edge. These pipes appear to correspond to historical pipes 7, 8, and 10 as presented on Evans Chemetics Drainage Schematic dated August 11, 1975 (Figure 4, and Attachment 3, Photographs 20 to 22 and 41 to 44).

Box Culvert

Site personnel opened the manhole upgradient of Outfall 008, which facility personnel had welded shut. This manhole did not connect to Outfall 008, but to a parallel underground conduit. This conduit is west of Building 4, and site personnel informed CH2M HILL that it was connected to a conduit under Building 14 and was used for discharge of noncontact cooling water to the canal. However, its current conditions are unknown (Attachment 3, Photographs 45 to 46).

CCTV Survey

Video was taken of the length of each pipeline segment downstream to upstream. A reverse setup was used to complete the CCTV inspection from the opposite direction (upstream to downstream) when the conditions did not allow the CCTV camera to pass the full length of the pipeline. Completion of CCTV inspection was not possible at some locations because impedances such as debris or roots were encountered. However, major defects such as collapsed pipe, deformed pipe, and/or severe offset joints were not identified during the survey (Figures 5 and 6, and Attachment 3, Photographs 47 to 90). Attachment 4 presents the CCTV survey field forms, which include the project summary table, the PACP sewer reports, and the CCTV inspection with pipe run graphs. Attachment 5 presents the CCTV videos of the outfalls surveyed. Table 1 summarizes the results of the piping sections investigated.

Based on the results of the first week of investigation, it was determined that pipe cleaning was not required at Outfalls 001 and 004 because access with the CCTV equipment was not limited because of debris inside the piping.

Active Outfall Piping Interior

The following observations were made regarding the condition of the active outfall piping interior and are also summarized in Table 1.

Outfall 001

The piping interior between nodes 001-001 and 001-001B was found to be in good condition; no defects were documented. Water was observed flowing from 001D to 001C, then to 001-001 for discharge at 001-000. No water was observed flowing from 001B to 001D; however, accumulated water was seen in the piping interior at 001B. The node at 001B seems to correspond to abandoned Outfall 002 piping (Attachment 3, Photographs 47 to 49). Approximately 32 feet of piping was surveyed.

Outfall 004

The piping interior from node 004-001 to 004-001A was found with infiltration stains at 32 feet, 116 feet, and 119 feet; infiltration dripper at 109 feet and 143 feet; a longitudinal crack at 119 feet; attached deposits at 121 feet; gravel deposits at 181 to 194 feet; and an active tap factory active at 294 feet. All footages were measured upstream from 004-001.

The piping interior between nodes 004-001B and 004-001 was found to be in good condition; no defects were documented. A concrete plug was present in the south lateral at 004-001B and corresponds to Outfall 006 abandoned piping.

Approximately 6 feet of piping were surveyed from 004-001 to 004-000, 294 feet of piping from 004-001 to 004-001A, and 38 feet of piping from 004-001 to 004-001B. In addition, approximately 28 feet of piping were surveyed from 007-001 to 004-001B, and 8 feet of piping from 007-001 to 007-001A (Attachment 3, Photographs 50 to 65).

Outfall 005

The outfall piping at 005-000 was submerged by canal water. Gravel debris in the submerged pipe impeded CCTV and push camera access, and the small diameter of piping at former hot well in Building 4 (FHW4) impeded push camera access (Attachment 3, Photographs 66 and 74). The perforated metal plate at 005-001 did not have enough area to guide the push camera through the piping. Approximately 39 feet of piping were surveyed from 005-000 to 005-001, and 4 feet of piping from 005-001A to 005-001.

Outfall 008

The outfall piping at 008-000 was partially submerged by canal water. Roots and aquatic weeds were present in the joints, a crack was observed at 9 feet upstream of 008-000, and a break-in tap was present at 28 feet upstream of 008-000 (Attachment 3, Photographs 75 to 80). Approximately 28 feet of piping were surveyed from 008-000 to 008-001A.

Outfall 009

The outfall piping at 009-000 was above the water level in the canal and could not be accessed with the push camera because of the butterfly valve at the discharge point (Attachment 3, Photograph 81). Approximately 1 foot of piping was surveyed.

Outfall 010

The outfall piping at 010-000 was above the water level in the canal and could not be accessed with the push camera because of the butterfly valve at the discharge point (Attachment 3, Photographs 82 to 84). Approximately 1 foot of piping was surveyed.

Outfall 012

With the exception of a hole in pipe wall at approximately 21 feet from 012-000, the piping from 012-000 to 012-001 did not present any defects (Attachment 3, Photographs 85 to 87). Approximately 46 feet of piping were surveyed.

Outfall 013

The piping from 013-000 to 013-001 did not present any defects (Attachment 3, Photographs 88 to 90). Approximately 66 feet of piping were surveyed.

Inactive Outfall Piping Interior

The following observations were made regarding the condition of the inactive outfall piping interior:

Outfall 002

The outfall piping at 002-000 was identified without a plug at the discharge point. The upstream node 001-001B presented a concrete-like debris within the northern end of the piping and a concrete plug at the southern end. No defects were documented (Attachment 3, Photographs 48 and 49).

Outfall 006

The outfall piping at 006-000 was identified without a plug at the discharge point. The upstream node 004-001B presented a manhole structure that had been paved over. The piping interior was found active and in good condition at the northern end while a concrete plug was present at the southern end. The upstream section of piping 004-001B to 004-001C was not inspected because of the 90-degree angle and smaller piping diameter. Site personnel indicated the outfall piping was rerouted to discharge through Outfall 004 via node 004-001 (Attachment 3, Photographs 57 and 58).

Outfall 007

The discharge piping at 007-000 was not found. The area was heavily vegetated and riprap lined the canal bank area. Site personnel indicated the piping (007-000 to 007-001) could be submerged or may have been removed. Site personnel indicated the upstream section of Outfall 007 piping (007-001 to 007-001A) was rerouted to discharge through Outfall 004 via nodes 007-001 and 004-001. Approximately 8 feet of piping were surveyed because the CCTV equipment could not pass a gate valve structure located east of Building 1 (Attachment 3, Photographs 63 to 65).

Manhole Inspections

Three manholes were visually inspected: 001-001, which corresponds to Outfall 001; 004-001, which corresponds to Outfall 004; and 007-001, which corresponded to Outfall 007 and was rerouted to discharge through Outfall 004. The manholes at 001-001 and 007-001 were determined to be in good condition and did not present any defects. The manhole at 004-001 showed deterioration in the wall and frame to chimney seal. In addition, roots were observed inside the manhole between the clay piping and the concrete enclosure (Attachment 6).

A 4-foot-diameter manhole (004-008) with five approximately 4- to 8-inch-diameter clay pipes was located in Building 2-A. The manhole depth was approximately 7.75 feet, and it was lined with brick. Site personnel were unaware of the purpose of this manhole. The

chimney and frame to chimney seal were in fair condition. This manhole was smoke tested during the preliminary survey and determined to be connected to the sanitary sewer lines at the site, and not the underground outfall piping. Other non-manhole floor openings inside Buildings 1, MPA Process Area, and 2-A were documented.

Buildings 3 and 4 did not have any manholes, but had various floor openings. Site personnel indicated that manholes in Building 3 had been removed and paved over.

Figure 7 and Attachment 3 (Photographs 90 to 133) show the various manholes and floor openings observed in the areas near the underground piping that corresponds to the various active outfalls. Figure 7 also shows the sections of above and below grade pipes.

Former Hot Wells Review

During the site walk with site personnel, CH2M HILL was shown the area where the former hot wells were located. Some locations had been modified by concrete paving, and the historical floor opening could not be observed.

Figure 7 and Attachment 3 (Photographs 134 to 141) show the locations of the former hot wells.

PCB Containing Materials Research

Site personnel indicated that capacitors containing PCBs had been used at the site. Four locations were identified as follows:

- Building 1 – Boiler Room: Former PCB capacitor had been located on the north wall of Building 1. Site personnel indicated the screw holes on the wall where the capacitor had been located.
- Building 11 – Carpentry Shop: Former PCB capacitor had been located on the floor in the northeast section of Building 11.
- Building 13-A – Machine Shop: Former PCB capacitor had been located on the north wall of Building 13-A. Site personnel indicated the paint outline on the wall where the capacitor had been located.
- Building 13-A – Welding Shop: Former PCB capacitor had been located on the west wall of Building 1. Site personnel indicated the screw holes on the wall where the capacitor had been located.

Photographs were taken at each location and are shown on Figure 8.

Based on conversations with site personnel, equipment containing PCBs is no longer in use at the site. However, no records were available on the dates the equipment was used or disposed. At the end of the site walk, site personnel provided CH2M HILL with a photocopy of an equipment list (Attachment 7) that included the location and brief description of capacitors, but site personnel could not provide an explanation of the information described in the equipment list.

Sample Results at Locations Identified during Site Upgrade Activities

- Arsenic (18.5 milligrams per kilogram [mg/kg]) exceeded the applicable soil standard (16 mg/kg) in one soil sample. This sample was collected from an excavation area outside Building 4.
- Mercury (59.8 mg/kg) exceeded the applicable soil standard (5.7 mg/kg) in one soil sample from an excavation area inside Building 4.
- Methyl isobutyl ketone (MIBK) (2.62 mg/kg, 6.89 mg/kg, and 1.19 mg/kg) exceeded the applicable soil standard (1 mg/kg) in three of the four soil samples collected from excavation areas.
- MIBK was detected in water (409 micrograms per liter [$\mu\text{g/L}$]), which accumulated within an excavation area outside Building 4, above the applicable groundwater standard (50 $\mu\text{g/L}$).
- PCBs were detected in water (7.82 $\mu\text{g/L}$), which accumulated within an excavation area outside Building 4, above the applicable groundwater standard (0.09 $\mu\text{g/L}$).
- Phenol and benzene were detected in water, which accumulated within an excavation area outside Building 4, slightly above applicable groundwater standards.
- Mercury and other metals were detected in water, which accumulated within an excavation area outside Building 4, above applicable groundwater standards.

Tables 2 and 3 summarize the soil and excavation pit water analytical results of the samples collected during the site upgrade activities. Compounds and concentrations are consistent with past investigation activities in adjacent monitoring wells.

Conclusions

- Smoke testing of accessible outfall piping (Outfalls 001, 004, and 005) did not identify defects in the underground piping.
- CCTV survey results of accessible sections of Outfalls 001 and 013 underground piping indicate the piping is in good condition.
- CCTV survey results of accessible sections of Outfalls 004 and 008 underground piping indicate isolated defects are present in the piping.
- CCTV survey results of accessible sections of Outfall 005 underground piping indicate that accumulated debris is present.
- CCTV survey results of accessible sections of Outfall 012 underground piping identified one location with a defect in the piping.
- CCTV survey was not completed at Outfalls 009 and 010 piping because of access issues; however, these outfalls are used to discharge stormwater and historically were not used for production purposes.

- The manhole associated with Outfall 001 and upgradient of abandoned Outfall 007 was found in good condition, while the manhole associated with Outfall 004 presented defects in the wall and frame to the chimney seal.
- Capacitors containing PCBs were used at the site in Buildings 1, 11, and 13A.

Recommendations

Based on the results of the investigation of the active and abandoned outfalls, work plans will be developed for additional investigation and potential interim actions for the outfalls, which will include:

- Conducting test pitting and soil borings around active Outfalls 001, 004, 005, 008, and 013 to determine soil quality at pipe bedding
- Evaluating potential interim action for removing abandoned piping corresponding to Outfalls 002 and 006, and associated pipe bedding materials
- Performing excavation to determine if Outfall 007 piping and bedding material are present, and if so, conducting soil sampling at pipe bedding material and evaluating potential interim action for removing abandoned piping
- Performing additional soil and groundwater sampling surrounding and under Building 4 to determine extent of materials and hydrogeologic conditions under the building
- Using all data to develop a comprehensive corrective measures study for impacts in AOC A (Seneca-Cayuga Canal) and AOC B (Building 4 Pit)

References

CH2M HILL. 2010a. *RCRA Facility Investigation Outfall Evaluation Work Plan, Former Hampshire Chemical Corp Facility, Waterloo, New York*. April.

CH2M HILL. 2010b. *Health and Safety Plan (HASP), Outfall and Piping Investigation Project, Former Hampshire Chemical Corp Facility, Waterloo, New York*. July.

New York State Department of Environmental Conservation (NYSDEC). 2004. Amended Administrative Consent Order executed between HCC and the New York State Department of Environmental Conservation (Index Number 8-20000218-3281, June 1, 2004).

Tables

Table 1
 CCTV Review Summary
 Outfall Evaluation Technical Memorandum
 Former Hampshire Chemical Corp Facility, Waterloo, New York

Outfall	US Node	DS Node	Diameter (in)	Material	Inventory Pipe Length (ft)	CCTV Survey Length	CCTV Survey Date	CCTV Comments	Condition Grade	Location	Reviewed By	Uninspected Footage (ft)
001	001-001B	001-001	12	VCP	31.7	31.7	8/3/2010	Good pipe, no defects.	A	Southwest of Bldg 4	DB	0.0
004	004-001	004-000	24	VCP	6.0	6.0	7/20/2010	Good pipe, no defects.	A	Southwest of Bldg 1	DB	0.0
004	004-001A	004-001	24" at discharge point; 12" at segment	VCP	300.0	294.1	8/3/2010	Infiltration stains @ 32ft, 116ft, and 119ft; Infiltration dripper @ 109ft, 143ft; Crack longitudinal @ 119ft; Attached deposits @ 121ft; Gravel deposits @ 181-194ft; Tap factory active @ 294ft. All footages US from 004-001.	C	West of Bldg 2-A	DB	5.9
004	004-001B	004-001	12	VCP	37.9	37.9	7/20/2010	Good pipe, no defects. Concrete plugs/debris in laterals at 004-001B	A	Southwest of Bldg 1	DB	0.0
005	005-001	005-000	18	VCP	40.0	39.2	8/4/2010	Gravel debris in submerged pipe	B	Between Bldg 4-A and Bldg 3	DB	0.8
005	005-001A	005-001	< 6	VCP	120.0	3.7	8/4/2010	Submerged pipe, weeds at 005-001, unable to push camera through tight connections.	C	Former Hotwell 4	DB	116.3
004 (historic 007)	007-001	004-001B	12	VCP	60.0	28.3	7/20/2010	Submerged pipe, incomplete inspection	C	Southeast of Bldg 1	DB	31.7
004 (historic 007)	007-001A	007-001	18	VCP	80.0	8.2	8/3/2010	Unable to pass gate valve @ 13ft US of 007-001	C	East of Building 1 and MPA Process Area	DB	71.8
008	008-001A	008-000	24	VCP	30.0	27.8	8/3/2010	Roots and weeds in joints, crack @ 9ft US of 008-000, break-in tap @ 28ft US of 008-000	C	West of Bldg 7	DB	2.2
009	009-001	009-000	6	SP	20.0	1.0	8/4/2010	Unable to pass the butterfly valve at the discharge point	C	South of Truck Unloading Area	DB	19.0
010	010-001	010-000	6	SP	20.0	1.0	8/4/2010	Unable to pass the butterfly valve at the discharge point	C	South of Bldg 4-A	DB	19.0
012	012-001	012-000	18" cobble bedding	HDPE	46.4	46.4	8/4/2010	Hole in pipe @ 21ft US of 012-000	C	South of Equalization Tanks	DB	0.0
013	013-001	013-000	12	PVC	65.8	65.8	8/4/2010	Good pipe, no defects.	A	South of Equalization Tanks	DB	0.0

Notes:
 DS - downstream
 HDPE - high density polyethylene
 PVC - poly vinyl chloride
 SP - steel pipe
 US - upstream
 VCP - vitreous clay pipe
 The total pipe length was calculated as the sum of CCTV lengths from manhole to manhole. If the inspection was incomplete, the inventory pipe length was used.
 Where inspection was not structure-to-structure, segment length was scaled from the map and reported as inventory length pipe.
 Outfall 007 is inactive and its historical piping was rerouted to discharge through Outfall 004. Site personnel are not sure if it was abandoned or removed.

TABLE 2
AOC B - Building 4 August 2010 Soil Sample Results
Former Hampshire Chemical Corp Facility, Waterloo, New York

Area of Concern					AOC B	AOC B	AOC B	AOC B
Field Sample ID					BLDG4001-S	BLDG4002-S	BLDG4003-S	BLDG4004-S
Location ID					BLDG4	BLDG4	BLDG4	BLDG4
Depth Interval					~4 ft	~3.5 ft	~4 ft	~4 ft
Sample Date					8/2/2010	8/4/2010	8/9/2010	8/9/2010
Sample Time					15:30	12:00	13:30	13:10
Matrix					Soil	Soil	Soil	Soil
Laboratory					Microbac	Microbac	Microbac	Microbac
Report Number					L10080032	L10080108	L10080213	L10080213
	CAS #	NYSDEC RUSCO Industrial*	Supplemental SCO Industrial**	TAGM 4046 RSCOs***				
<i>Metals (mg/Kg)</i>								
Aluminum	7429-90-5	--	--	--	2,960	4,390	4,720	5,690
Antimony	7440-36-0	--	--	--	0.985 J	ND	1.63 J	ND
Arsenic	7440-38-2	16	--	--	18.5	4.04	3.00	3.45
Barium	7440-39-3	10,000	--	--	61.1	45.3	29.8	16.8
Beryllium	7440-41-7	2,700	--	--	0.209 J	0.286 J	0.0738 J	0.125 J
Cadmium	7440-43-9	60	--	--	7.03	0.60	1.11	0.0775 J
Calcium	7440-70-2	--	--	--	60,200	67,900	45,900	12,300
Chromium	7440-47-3	6800	--	--	23.5	11.1	63.3	11.1
Cobalt	7440-48-4	--	--	--	6.49	11.6	3.52	5.41
Copper	7440-50-8	10,000	--	--	40.8	19.8	135.0	27.0
Iron	7439-89-6	--	--	--	10,700	9,730 B	25,000 B	24,600 B
Lead	7439-92-1	3,900	--	--	77.4	17.9	24.1	29.3
Magnesium	7439-95-4	--	--	--	18,900	22,100	11,300	6,830
Manganese	7439-96-5	10,000	--	--	297	306	203	98.2
Mercury	7439-97-6	5.7	--	--	1.72	0.0183 J	0.177	59.8
Nickel	7440-02-0	10,000	--	--	13.8	18.5	8.6	18.7
Potassium	7440-09-7	--	--	--	770	734	850	473
Selenium	7782-49-2	6,800	--	--	4.99	4.32	0.36	0.222 J
Silver	7440-22-4	6,800	--	--	0.311 J	ND	0.826	0.464 J
Sodium	7440-23-5	--	--	--	1,850	158	1,140	191
Vanadium	7440-62-2	--	--	--	8.18	10.6	17.2	8.25
Zinc	7440-66-6	10,000	--	--	914	367	343	42
<i>Volatile Organics (mg/Kg)</i>								
4-Methyl-2-Pentanone	108-10-1	--	--	1.0	2.62	ND	6.89	1.19
Acetone	67-64-1	1,000	--	--	ND	0.00642 J	0.968 J	0.597 J
Carbon Disulfide	75-15-0	--	1,000 ^a	--	ND	ND	2.66	0.83
Chloroform	67-66-3	700	--	--	ND	ND	0.0987 J	ND
Methyl acetate	79-20-9	--	--	--	0.386 J	ND	0.519 J	0.401 J
Tetrachloroethene	127-18-4	300	--	--	ND	ND	ND	0.0911 J
Toluene	108-88-3	1,000	--	--	ND	ND	0.219 J	0.0908 J
Trans-1,2-Dichloroethene	156-60-5	1,000	--	--	0.050 J	ND	ND	ND
Xylenes, Total	1330-20-7	1,000	--	--	ND	ND	0.095 J	ND
<i>Semi-Volatile Organics (mg/Kg)</i>								
Benzo (a) anthracene	56-55-3	11	--	--	ND	ND	ND	0.291
Benzo (a) pyrene	50-32-8	1.1	--	--	ND	ND	ND	0.259
Benzo (b) fluoranthene	205-99-2	11	--	--	ND	ND	0.753	0.496
Benzo (g,h,i) perylene	191-24-2	1,000	--	--	ND	ND	ND	0.169 J
Benzo(k)fluoranthene	207-08-9	110	--	--	ND	ND	ND	0.238
Bis (2-ethylhexyl) phthalate	117-81-7	--	--	--	ND	ND	ND	0.582
Chrysene	218-01-9	110	--	--	ND	ND	ND	0.33
Fluoranthene	206-44-0	1,000	--	--	ND	ND	0.28	0.776
Indeno (1,2,3-c,d) pyrene	193-39-5	11	--	--	ND	ND	ND	0.146 J
Phenanthrene	85-01-8	1,000	--	--	ND	ND	ND	0.553
Pyrene	129-00-0	1,000	--	--	ND	ND	ND	0.621
<i>SVOCs TICs (mg/Kg)</i>								
Butane, 2-methoxy-2-methyl-	994-05-8	--	--	--	1.31	1.25	1.5	0.932
Methyl Isobutyl Ketone	108-10-1	--	--	--	23.2	0.423	ND	ND
2-Hexanol	626-93-7	--	--	--	1.88	ND	ND	ND
2-Pentanethiol, 4-methyl-	1639-05-0	--	--	--	ND	ND	3	ND
Hexathiepane	17233-71-5	--	--	--	ND	ND	2.87	ND
Cyclic octaatomic sulfur	10544-50-0	--	--	--	ND	ND	99.5	3.99
1,3-Propoanediol	504-632	--	--	--	ND	ND	ND	0.837
Isooctanol	26952-21-6	--	--	--	ND	ND	ND	2.97
(s) - (+) -5-Methyl-1-heptanol	57803-73-3	--	--	--	ND	ND	ND	0.973
1-Octanethiol	111-88-6	--	--	--	ND	ND	ND	3.26
Cyclododecane	294-62-2	--	--	--	ND	ND	ND	0.887
Naptho [2,3-b] thiophene	268-77-9	--	--	--	ND	ND	ND	2.31
1-Heptadecanol	1454-85-9	--	--	--	ND	ND	ND	0.651
Diocetyl disulphide	822-27-5	--	--	--	ND	ND	ND	6.47
Pentafluoropropionic acid, tridecy	1000280-07-3	--	--	--	ND	ND	ND	0.505
Total Unknown TICs		--	--	--	0	0	18.1	9.1
Total Tics		--	--	--	26.39	1.673	124.9	32.9
<i>Polychlorinated Biphenyls (mg/Kg)</i>								
Aroclor-1254	11097-69-1	--	--	--	ND	ND	0.987	ND
Aroclor-1260	11096-82-5	--	--	--	ND	ND	ND	0.0658
Total PCBs	--	25	--	--	ND	ND	0.987	0.0658

Notes:
* - Restricted Use (Industrial) Soil Cleanup Objectives: Protection of Public Health (6 NYCRR Part 375-6.8(b))
** - Supplemental SCO = Table 1 - Supplemental Soil Cleanup Objectives (SCO) (Industrial) of the Departments Soil Cleanup Guidance DRAFT November 4, 2009.
*** - TAGM 4046 RSCOs: Recommended Soil Cleanup Objectives (NYSDEC, 1/94; as amended)
^a - SCO capped at 100 ppm for residential use, 500 ppm for commercial use, and 1000 ppm for industrial use
Only detection above the associated method detection limit are shown.
Shading in yellow indicates that the constituent was detected above the NYSDEC RUSCO Industrial Soil Cleanup Objectives
Shading in gray indicates that the constituent was detected above the TAGM 4046 RSCO Recommended Soil Cleanup Objectives
ND = The constituent was not detected above the associated method detection limit
J = The constituent concentration was estimated
B = The analyte present in method blank
-- indicates no criteria established
mg/kg = milligram per kilogram
ft = feet below grade
TIC - Tentatively Identified Compound

TABLE 3
AOC B - Building 4 August 2010 Groundwater Sampling Results
Former Hampshire Chemical Corp Facility, Waterloo, New York

Area of Concern			AOC B
Location ID			Building 4
Field Sample ID			BLDG4002-W
Sample Date			8/4/2010
Sample Depth			3.5-4.0 ft
Sample Time			11:30
Matrix			Water
Laboratory		NYSDEC Class GA	Microbac
Report Number	CAS #	Standards*	L10080108
Metals, Total (ug/L)			
Aluminum	7429-90-5	--	67,100
Antimony	7440-36-0	3	7.15
Arsenic	7440-38-2	25	297
Barium	7440-39-3	1,000	799
Beryllium	7440-41-7	3	6.48
Cadmium	7440-43-9	5	33.6
Calcium	7440-70-2	--	847,000
Chromium	7440-47-3	50	283
Cobalt	7440-48-4	--	111
Copper	7440-50-8	200	1,150
Iron	7439-89-6	300	137,000
Lead	7439-92-1	25	3,220
Magnesium	7439-95-4	35,000	127,000
Manganese	7439-96-5	300	3,770
Mercury	7439-97-6	0.7	13.4
Nickel	7440-02-0	100	237
Potassium	7440-09-7	--	32,400
Selenium	7782-49-2	10	32.1
Sodium	7440-23-5	20,000	1,390,000
Thallium	7440-28-0	0.5	6.06
Vanadium	7440-62-2	--	246
Zinc	7440-66-6	2,000	5,950
Volatile Organics (ug/L)			
4-Methyl-2-pentanone	108-10-1	50	409
2-Butanone	78-93-3	50	4.02 J
Acetone	67-64-1	50	63.6
Benzene	71-43-2	1	1.97
Carbon disulfide	75-15-0	60	6.63
Chloroform	67-66-3	7	3.44
Ethyl Benzene	100-41-4	5	0.611 J
Methylene chloride	75-09-2	5	2.94 J
Styrene	100-42-5	5	0.251 J
Tetrachloroethene	127-18-4	5	2.52 J
Toluene	108-88-3	5	3.71
Xylenes, Total	1330-20-7	5	3.67
Semi-Volatile Organics (ug/L)			
2-Methylphenol	95-48-7	--	9.1 J
4-Methylphenol	106-44-5	--	18.1
Benzyl Alcohol	100-51-6	--	6.52 J
Phenol	108-95-2	1	43.2
SVOCs TICs (ug/L)			
Butane, 2-methoxy-2-methyl-	994-05-8	--	111
Methyl Isobutyl Ketone	108-10-1	--	194
1,3,5-Trithiane	291-21-4	--	23.0
Polychlorinated Biphenyls (ug/L)			
Aroclor-1260	11096-82-5	0.09	7.82

Notes:
* - Technical & Operational Guidance Series (TOGS) 1.1.1, New York State Groundwater Effluent Limitation (Class GA), June 1998; as amended
Only detection above the associated method detection limit are shown.
Shading in yellow indicates that the constituent was detected above NYSDEC Class GA Standards above TOGS 1.1.1 Class GA standards or guidelines
The water sample was collected from groundwater that accumulated in the excavation pit at location BLDG4002.
J = The constituent concentration was estimated
-- indicates no established criteria
ug/L = microgram per liter
ft = feet below grade
TIC - Tentatively Identified Compound

Figures

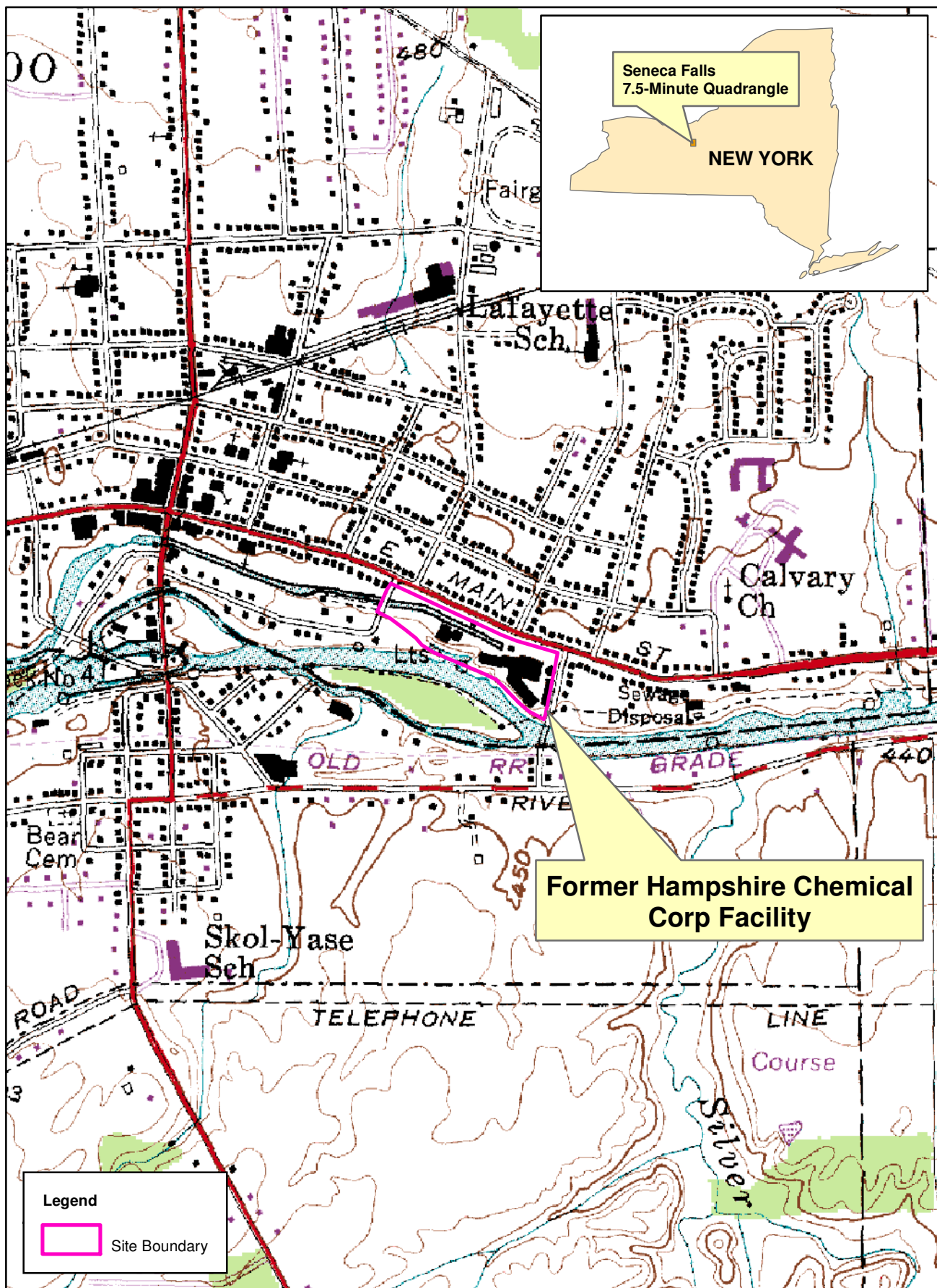
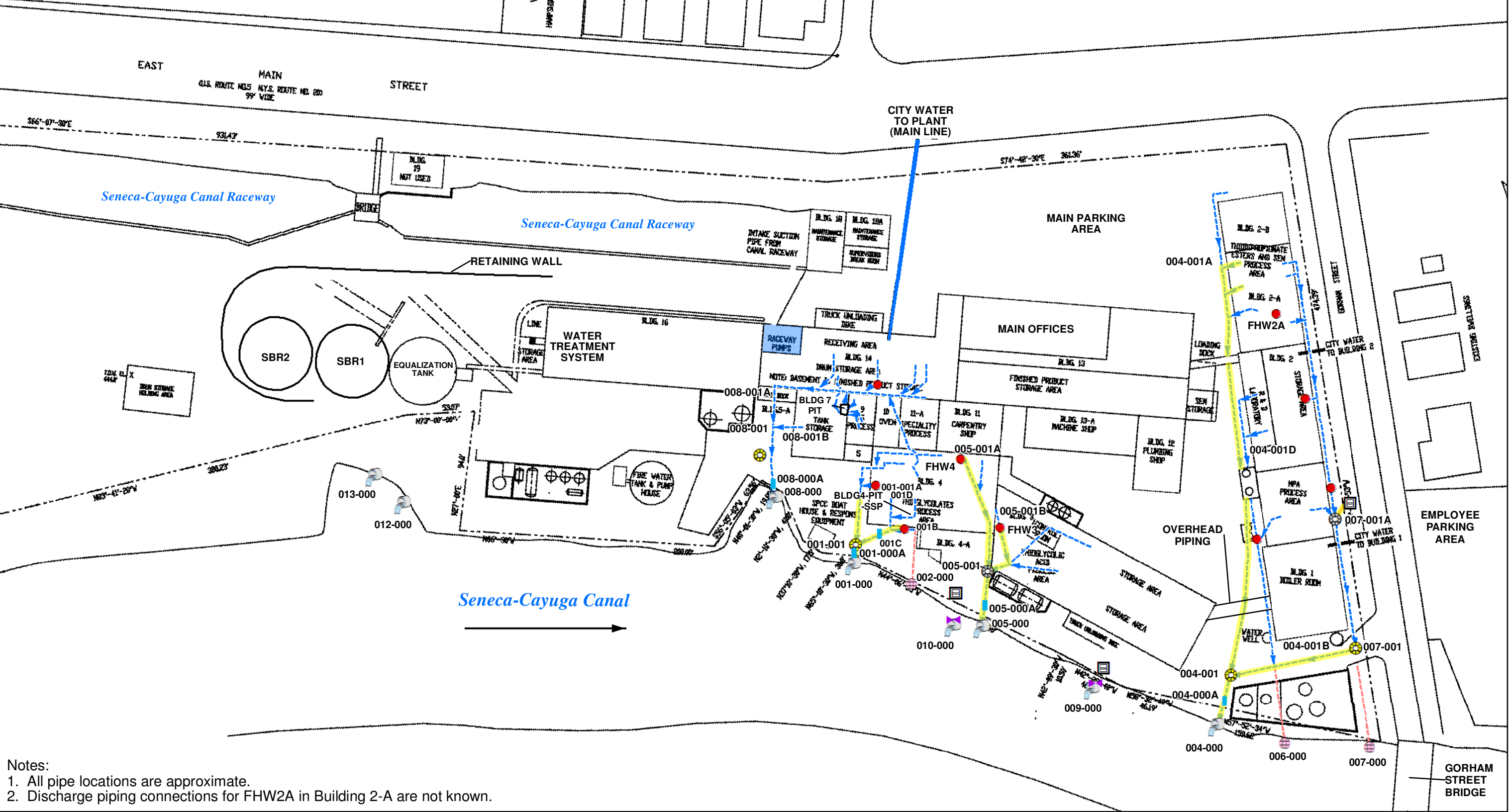
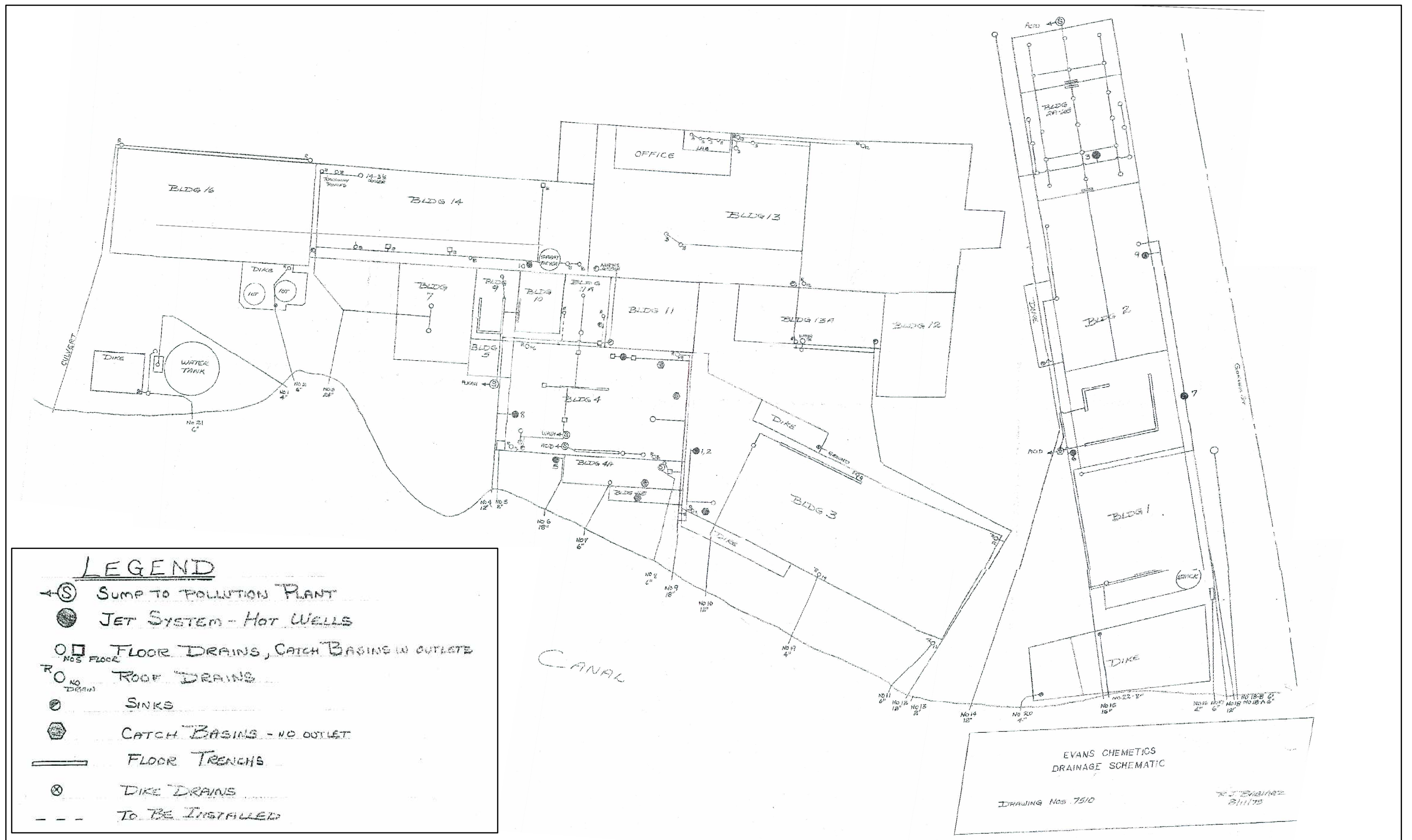


Figure 1
Facility Location Map
Former Hampshire Chemical Corp Facility
Waterloo, New York



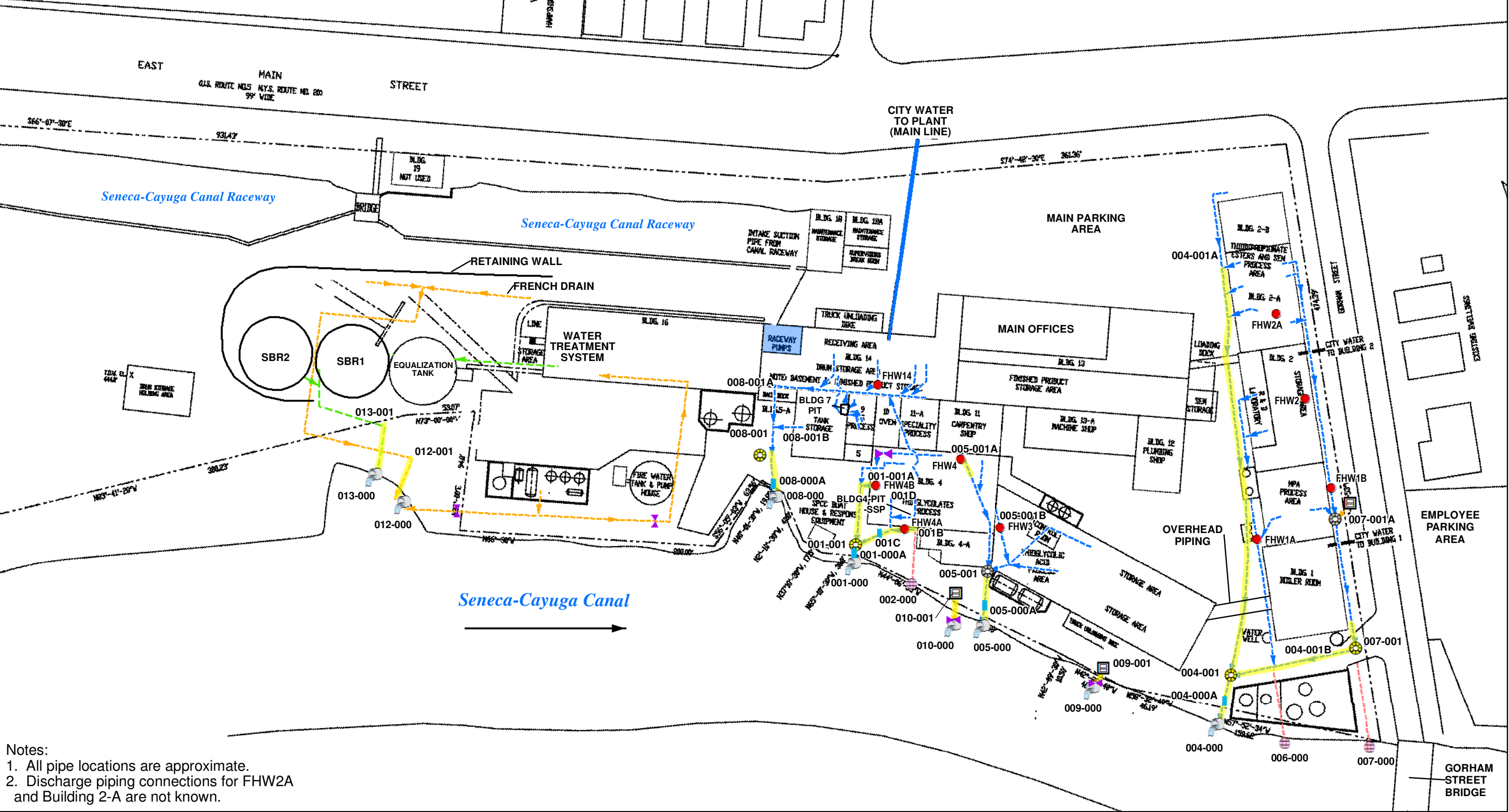
Figure 2
 Site Layout and Outfall Locations
 Former Hampshire Chemical Corp Facility
 Waterloo, New York





Source: CH2M Hill April 2010
RFI Outfall Investigation Work Plan,
Piping Investigation Technical Memorandum,
Figure 4.

Figure 4
Historic Piping based on 'Evans Chemetics
Drainage Schematic, 8/11/1975'
Outfall Evaluation Technical Memorandum
Former Hampshire Chemical Corp Facility
Waterloo, New York



Notes:
1. All pipe locations are approximate.
2. Discharge piping connections for FHW2A and Building 2-A are not known.

Legend

- | | | | |
|-------------------------|-----------------|-------------------------------|-------------------------|
| Vertical Pipe | Active Manhole | Treated Wastewater Line | Stormwater Line |
| Outfall Pipe | Metal Plate | Noncontact Cooling Water Line | Abandoned Water Line |
| Abandoned Outfall | Catch Basin | Canal Flow Direction | CCTV Surveyed Locations |
| Valve (normally closed) | Former Hot Well | | |

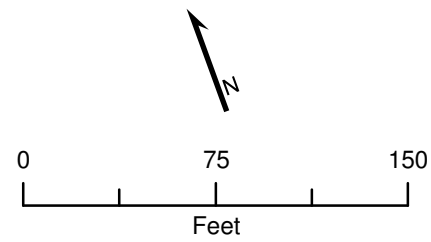
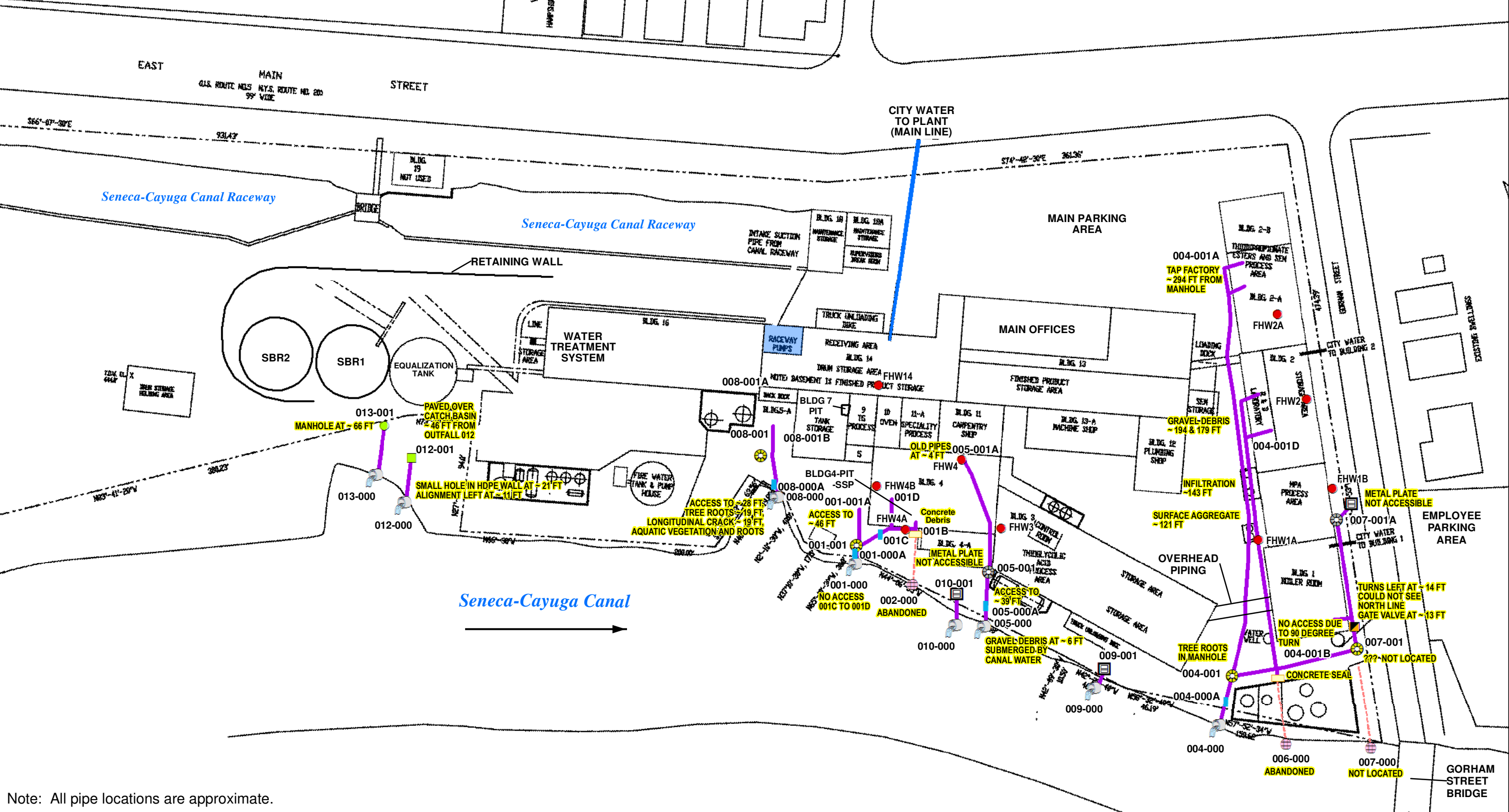


Figure 5
Underground Piping Locations Surveyed
by Closed Circuit Television
Outfall Evaluation Technical Memorandum
Former Hampshire Chemical Corp Facility
Waterloo, New York



Legend

- | | | | |
|-------------------|-----------------|------------------------|--|
| Outfall Pipe | Metal Plate | Paved Over Manhole | Underground piping investigated; access issues at some locations |
| Abandoned Outfall | Catch Basin | Paved Over Catch Basin | Abandoned Water Line |
| Active Manhole | Former Hot Well | Concrete Plug | Canal Flow Direction |
| | Vertical Pipe | Gate Valve | |

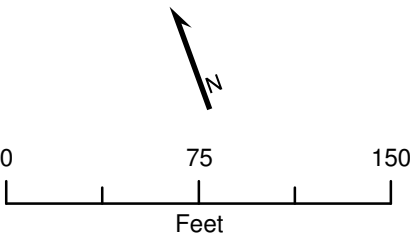
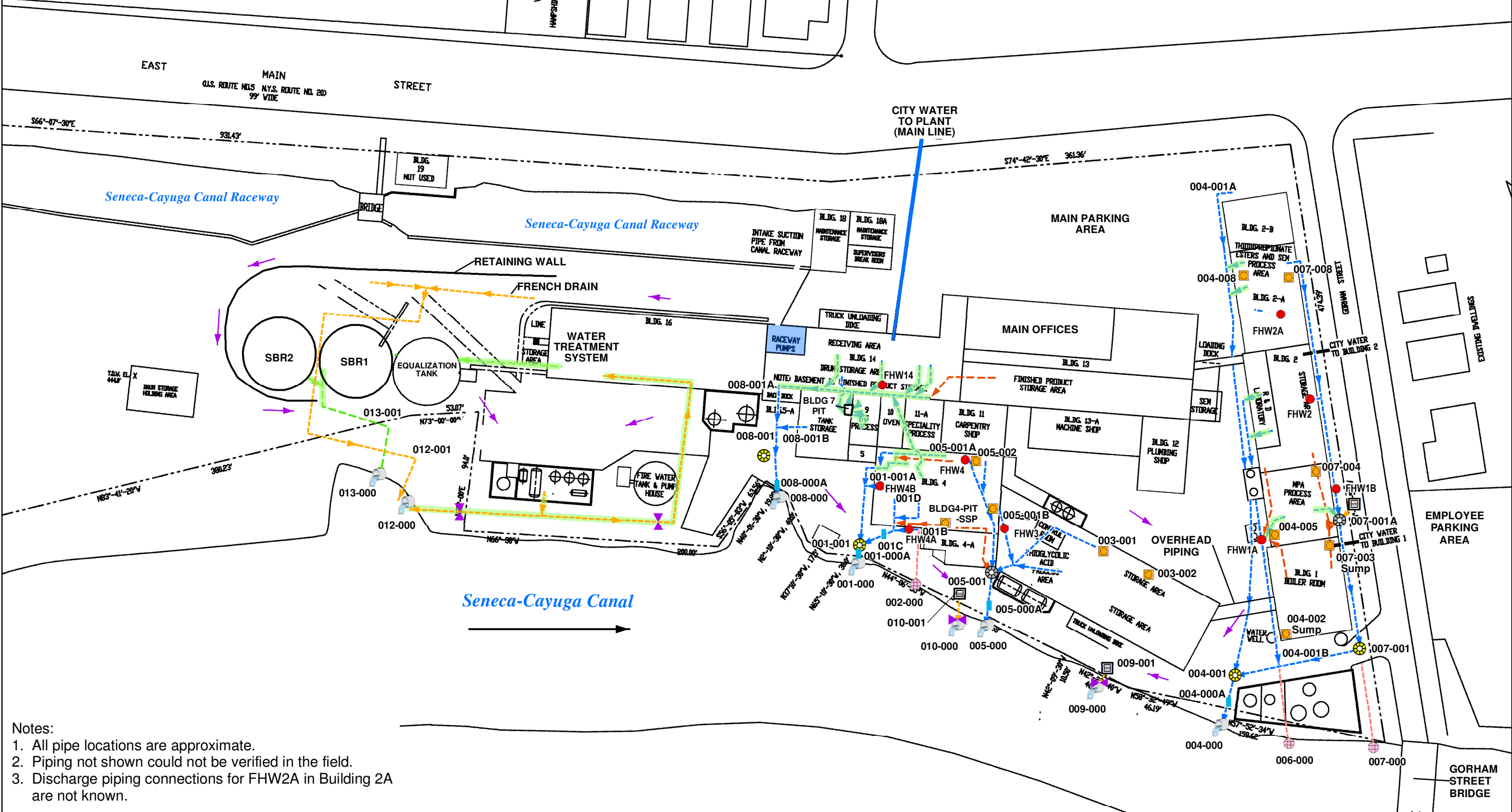


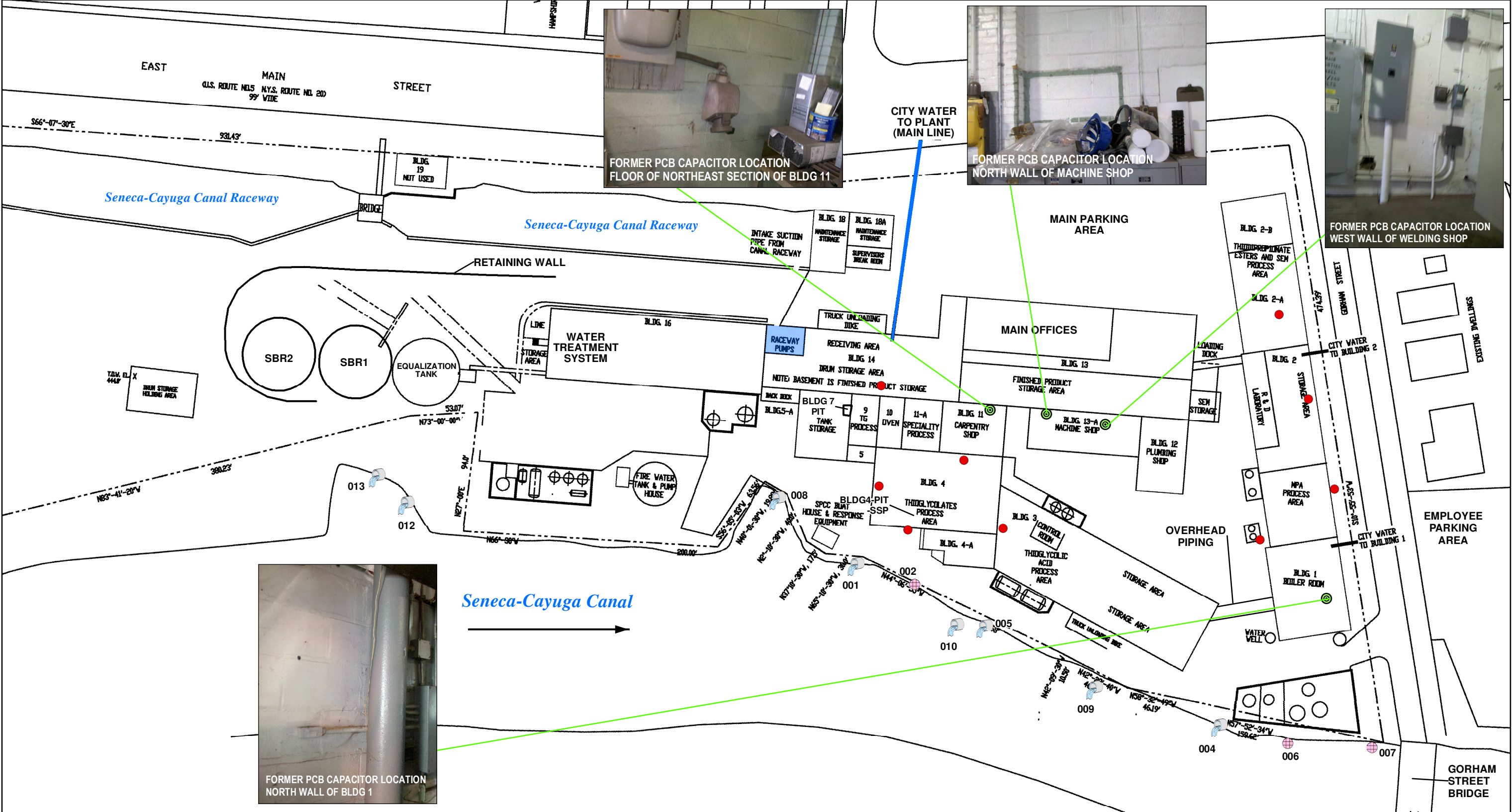
Figure 6
Summary of Observations at
CCTV Surveyed Piping
Outfall Evaluation Technical Memorandum
Former Hampshire Chemical Corp Facility
Waterloo, New York



- Notes:
1. All pipe locations are approximate.
 2. Piping not shown could not be verified in the field.
 3. Discharge piping connections for FHW2A in Building 2A are not known.

Legend			
	Outfall Pipe		Metal Plate
	Abandoned Outfall		Catch Basin
	Valve (normally closed)		Floor Opening
	Active Manhole		Former Hot Well
	Vertical Pipe		Surface Water Run Off
	Treated Wastewater Line		Stormwater Line
	Noncontact Cooling Water Line		Roof Drain
	Abandoned Water Line		Above Grade Pipe

Figure 7
Manhole and Floor Opening Locations and
Above/Below Grade Piping
Outfall Evaluation Technical Memorandum
Former Hampshire Chemical Corp Facility
Waterloo, New York



Attachment 1
Public Notification Plan

Dear Resident:

CH2M HILL, on behalf of the former owner of the Hampshire Chemical Corp facility, is an engineering firm that specializes in environmental studies, including sanitary sewer studies, design, construction, and remediation. As part of the ongoing environmental activities required by the New York State Department of Environmental Conservation (NYSDEC), CH2M HILL has been retained to verify the underground piping connections with pits, sumps, and catch basins at the former Hampshire Chemical Corp facility (currently owned by Evans Chemetics) and to verify any defects that may exist in the underground piping.

CH2M HILL will be conducting smoke testing activities beginning July 21st and ending the week of August 2nd, 2010, at the facility located at 228 East Main Street, Waterloo, NY. The purpose of the smoke testing is to locate obstructions and potential defects in the sewer system associated with the historical and current outfalls at the site. During the testing, smoke may be observed emanating from the vent stacks on the site buildings or holes in the ground at the site. This smoke is NON-TOXIC, HARMLESS, HAS NO ODOR, AND CREATES NO FIRE HAZARD.

The purpose of the smoke testing is to verify the integrity of the piping at the facility only; therefore, no smoke should enter your house. However, if in the unlikely event smoke enters your house, you should consult your licensed plumber. Should smoke enter your building, you may contact a member of CH2M HILL's management team.

Approximately 48 hours before smoke testing begins, door hangers will be distributed at each residence providing information regarding the procedure and names and phone numbers of personnel to contact for more information. During the smoke testing activities, CH2M HILL personnel will be identifying defects at the site that may be revealed if smoke escapes through them. Locations for defects may include roof downspouts, uncapped cleanouts, parking lot drains, stairwell drains, yard or area drains, window well drains, foundation-perimeter drains, and defective service pipes. With the information gathered from these inspection activities, CH2M HILL will be able to create a report for the former Hampshire Chemical Corp and NYSDEC to use in future remedial activities that will be performed at the facility.

While we have no reason to expect difficulties, we want to make you aware of the coming activities. Your patience and cooperation is very much appreciated.

Sincerely,

Steve Brusso/Evans Chemetics

Phone: 315-539-9221 x122

Dakon Brodmerkel/CH2M HILL

Phone 215-640-9007

David Newman/CH2M HILL

Phone 973-316-3538

Former Hampshire Chemical Corp

ATTENTION

CH2M HILL, consulting engineers on behalf of the former Hampshire Chemical Corp, will be smoke testing some of the underground piping at the Evans Chemetics facility located at 228 East Main Street, Waterloo, NY from July 21 to August 6, 2010.

The purpose of these tests is to verify the underground piping connections with pits, sumps, and catch basins at the facility and to identify any defects that may exist.

The smoke that you see coming from the vent stacks or holes in the ground at the facility is NON-TOXIC, HARMLESS, HAS NO ODOR, AND CREATES NO FIRE HAZARD. The smoke should not enter into your buildings or homes.

In the unlikely event that smoke should enter in your building, please contact the person listed below for assistance.

Homeowners do not need to be at home and **AT NO TIME WILL FIELD CREWS HAVE TO ENTER YOUR RESIDENCE OR BUSINESS.**

Should you have any further questions, please contact the representative at the number listed below.

Contact Information:

Steve Brusso/Evans Chemetics

Dakon Brodmerkel/CH2M HILL

David Newman/CH2M HILL

Phone: 315-539-9221 x122

Phone 215-640-9007

Phone 973-316-3538

Thank you for your cooperation as we work to successfully complete this important effort.

Former Hampshire Chemical Corp

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David Newman/CH2M HILL

Phone: 315-539-9221 x122

Phone 215-640-9007

Phone 973-316-3538

Thank you for your cooperation as we work to successfully complete this important effort.

Attachment 2
Smoke Test Field Forms

Date: 8/5/2010
Crew: LW, MC,
Crew No.

SMOKE TESTING

Former Hampshire Chemical Corp

Project No. 405368
Sub-Basin No.

Line Segment: (001-001A and 001-001B)
Upstream

To (001-001)
Downstream

Weather Conditions: 2
1 = 110-90°, 2 = 90-80°, 3 = 80-70°, 4 = 70°-below
Ground Conditions: 1
1 = dry, 2 = moist, 3 = wet, 4 = saturated
Precipitation: 1
1 = dry, 2 = drizzle, 3 = rain
Last Rain Event: 8/5/2010

Pipe Length (ft.): 60
Pipe Diameter (in.): 12
Status Code: 6
Measure Code: 1

Status Code:
1=C.N.L. 4=Line too long
2=D.N.E. 5=Diameter too large
3=Buried 6=Complete
Measure Code:
1=Scaled from Map 4=Total Station
2=Walking Wheel 5=Estimated
3=Tape Measure

PART A: PRIVATE SECTOR

Smoke Defect No.	Bldg. Defect No.	Address	Defect Type	Optional: Footage (0=DS MH)	Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID
A									
B									
C									
D									
E									
F									
G									
H									
I									
J									

Defect Type:
1 = Downspout
2 = Uncapped Cleanout
3 = Driveway Drain
4 = Stairwell Drain
5 = Foundation Drain
6 = Area Drain
7 = Service Laterals
8 = Window Well
9 = Plumbing Defect

Smoke Intensity:
1 = Light
2 = Medium
3 = Heavy

No Defects Observed

PART B: PUBLIC SECTOR

Defect No.	Defect Type	Footage (0=DS MH)	Optional: Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID	Comments
S								
T								
U								
V								
W								
X								
Y								
Z								

Defect Type:
1=Curb Inlet
2=Area Drain
3=Line Defect
4=Indirect Storm
5=Manhole Defect
6=Drainage Crossing
7=Water Valve
8=Direct Storm

Smoke Intensity:
1=Light
2=Medium
3=Heavy

Additional Comments: Smoke from porch on west side of Bldg. 4, from newly installed vertical PVC pipe south of Bldg 4 and from Outfall 001. See Photo Log. PID = 0 ppm, LEL = 0 ppm

Date: 8/5/2010
Crew: LW, MC,
Crew No.

SMOKE TESTING

Former Hampshire Chemical Corp

Project No. 405368
Sub-Basin No.

Line Segment: (004-001A, 004-001D, 007-001A)
Upstream

To (004-001) Blower
Downstream

Weather Conditions: 2
1 = 110-90°, 2 = 90-80°, 3 = 80-70°, 4 = 70°-below
Ground Conditions: 1
1 = dry, 2 = moist, 3 = wet, 4 = saturated
Precipitation: 1
1 = dry, 2 = drizzle, 3 = rain
Last Rain Event: 8/5/2010

Pipe Length (ft.): 295
Pipe Diameter (in.): 12
Status Code: 6
Measure Code: 1

Status Code:
1=C.N.L. 4=Line too long
2=D.N.E. 5=Diameter too large
3=Buried 6=Complete
Measure Code:
1=Scaled from Map 4=Total Station
2=Walking Wheel 5=Estimated
3=Tape Measure

PART A: PRIVATE SECTOR

Smoke Defect No.	Bldg. Defect No.	Address	Defect Type	Optional: Footage (0=DS MH)	Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID
A									
B									
C									
D									
E									
F									
G									
H									
I									
J									

No Defects Observed

Defect Type:
1 = Downspout
2 = Uncapped Cleanout
3 = Driveway Drain
4 = Stairwell Drain
5 = Foundation Drain
6 = Area Drain
7 = Service Lateral
8 = Window Well
9 = Plumbing Defect

Smoke Intensity:
1 = Light
2 = Medium
3 = Heavy

PART B: PUBLIC SECTOR

Defect No.	Defect Type	Footage (0=DS MH)	Optional: Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID	Comments
S								
T								
U								
V								
W								
X								
Y								
Z								

Defect Type:
1=Curb Inlet
2=Area Drain
3=Line Defect
4=Indirect Storm
5=Manhole Defect
6=Drainage Crossing
7=Water Valve
8=Direct Storm

Smoke Intensity:
1=Light
2=Medium
3=Heavy

Additional Comments: Smoke seen at Outfall 004, 004-000A, 004-001A and 004-00A. Smoke seen from Outfall 005. See Photo Log. PID = 0 ppm, LEL = 0 ppm

Date: 8/5/2010
Crew: LW, MC,
Crew No.

SMOKE TESTING

Former Hampshire Chemical Corp

Project No. 405368
Sub-Basin No.

Line Segment: (005-000A and 005-000B)
Upstream

To (005-000)
Downstream

Weather Conditions: 2
1 = 110-90°, 2 = 90-80°, 3 = 80-70°, 4 = 70°-below
Ground Conditions: 1
1 = dry, 2 = moist, 3 = wet, 4 = saturated
Precipitation: 1
1 = dry, 2 = drizzle, 3 = rain
Last Rain Event: 8/5/2010

Pipe Length (ft.): 100
Pipe Diameter (in.): 18
Status Code: 6
Measure Code: 1

Status Code:
1=C.N.L. 4=Line too long
2=D.N.E. 5=Diameter too large
3=Buried 6=Complete
Measure Code:
1=Scaled from Map 4=Total Station
2=Walking Wheel 5=Estimated
3=Tape Measure

PART A: PRIVATE SECTOR

Smoke Defect No.	Bldg. Defect No.	Address	Defect Type	Optional: Footage (0=DS MH)	Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID
A									
B									
C									
D									
E									
F									
G									
H									
I									
J									

Defect Type:
1 = Downspout 4 = Stairwell Drain 7 = Service Laterals
2 = Uncapped Cleanout 5 = Foundation Drain 8 = Window Well
3 = Driveway Drain 6 = Area Drain 9 = Plumbing Defect

Smoke Intensity:
1 = Light
2 = Medium
3 = Heavy

No Defects Observed

PART B: PUBLIC SECTOR

Defect No.	Defect Type	Footage (0=DS MH)	Optional: Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID	Comments
S								
T								
U								
V								
W								
X								
Y								
Z								

Defect Type:
1=Curb Inlet 5=Manhole Defect
2=Area Drain 6=Drainage Crossing
3=Line Defect 7=Water Valve
4=Indirect Storm 8=Direct Storm

Smoke Intensity:
1=Light
2=Medium
3=Heavy

Additional Comments: Smoke seen from former hot wells #3 and 4. Smoke seen from Outfall 005. See Photo Log. PID = 0 ppm, LEL = 0 ppm

Date: 8/5/2010
Crew: LW, MC,
Crew No.

SMOKE TESTING

Former Hampshire Chemical Corp

Project No. 405368
Sub-Basin No.

Line Segment: (007-001A)
Upstream

To (007-001) Blower
Downstream

Weather Conditions: 2
1 = 110-90°, 2 = 90-80°, 3 = 80-70°, 4 = 70°-below
Ground Conditions: 1
1 = dry, 2 = moist, 3 = wet, 4 = saturated
Precipitation: 1
1 = dry, 2 = drizzle, 3 = rain
Last Rain Event: / /

Pipe Length (ft.): 280
Pipe Diameter (in.): 12
Status Code: 6
Measure Code: 1

Status Code:
1=C.N.L. 4=Line too long
2=D.N.E. 5=Diameter too large
3=Buried 6=Complete
Measure Code:
1=Scaled from Map 4=Total Station
2=Walking Wheel 5=Estimated
3=Tape Measure

PART A: PRIVATE SECTOR

Smoke Defect No.	Bldg. Defect No.	Address	Defect Type	Optional: Footage (0=DS MH)	Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID
A									
B									
C									
D									
E									
F									
G									
H									
I									
J									

No Defects Observed

Defect Type:

1 = Downspout
2 = Uncapped Cleanout
3 = Driveway Drain
4 = Stairwell Drain
5 = Foundation Drain
6 = Area Drain

7 = Service Lateral
8 = Window Well
9 = Plumbing Defect

Smoke Intensity:

1 = Light
2 = Medium
3 = Heavy

PART B: PUBLIC SECTOR

Defect No.	Defect Type	Footage (0=DS MH)	Optional: Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID	Comments
S								
T								
U								
V								
W								
X								
Y								
Z								

Defect Type:

1=Curb Inlet
2=Area Drain
3=Line Defect
4=Indirect Storm
5=Manhole Defect
6=Drainage Crossing
7=Water Valve
8=Direct Storm

Smoke Intensity:

1=Light
2=Medium
3=Heavy

Additional Comments: Smoke seen at 004-001 and 004-000.
Blower at 007-001. See Photo Log. PID = 0 ppm, LEL = 0 ppm

Date: 8/5/2010
Crew: LW, MC,
Crew No.

SMOKE TESTING

Former Hampshire Chemical Corp

Project No. 405368
Sub-Basin No.

Line Segment: (007-001A) Blower
Upstream

To (007-001)
Downstream

Weather Conditions: 2
1 = 110-90°, 2 = 90-80°, 3 = 80-70°, 4 = 70°-below
Ground Conditions: 1
1 = dry, 2 = moist, 3 = wet, 4 = saturated
Precipitation: 1
1 = dry, 2 = drizzle, 3 = rain
Last Rain Event: / /

Pipe Length (ft.): 280
Pipe Diameter (in.): 12
Status Code: 6
Measure Code: 1

Status Code:
1=C.N.L. 4=Line too long
2=D.N.E. 5=Diameter too large
3=Buried 6=Complete

Measure Code:
1=Scaled from Map 4=Total Station
2=Walking Wheel 5=Estimated
3=Tape Measure

PART A: PRIVATE SECTOR

Smoke Defect No.	Bldg. Defect No.	Address	Defect Type	Optional: Footage (0=DS MH)	Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID
A									
B									
C									
D									
E									
F									
G									
H									
I									
J									

No Defects Observed

Defect Type:

1 = Downspout
2 = Uncapped Cleanout
3 = Driveway Drain
4 = Stairwell Drain
5 = Foundation Drain
6 = Area Drain

7 = Service Lateral
8 = Window Well
9 = Plumbing Defect

Smoke Intensity:

1 = Light
2 = Medium
3 = Heavy

PART B: PUBLIC SECTOR

Defect No.	Defect Type	Footage (0=DS MH)	Optional: Offset (L/R)	Offset Footage	Tributary Area (sq. ft.)	Smoke Intensity	Photo ID	Comments
S								
T								
U								
V								
W								
X								
Y								
Z								

Defect Type:

1=Curb Inlet
2=Area Drain
3=Line Defect
4=Indirect Storm
5=Manhole Defect
6=Drainage Crossing
7=Water Valve
8=Direct Storm

Smoke Intensity:

1=Light
2=Medium
3=Heavy

Additional Comments: Smoke observed at catch basin on Gorham Street. See Photo Log. PID = 0 ppm, LEL = 0 ppm

Attachment 3
Photograph Log

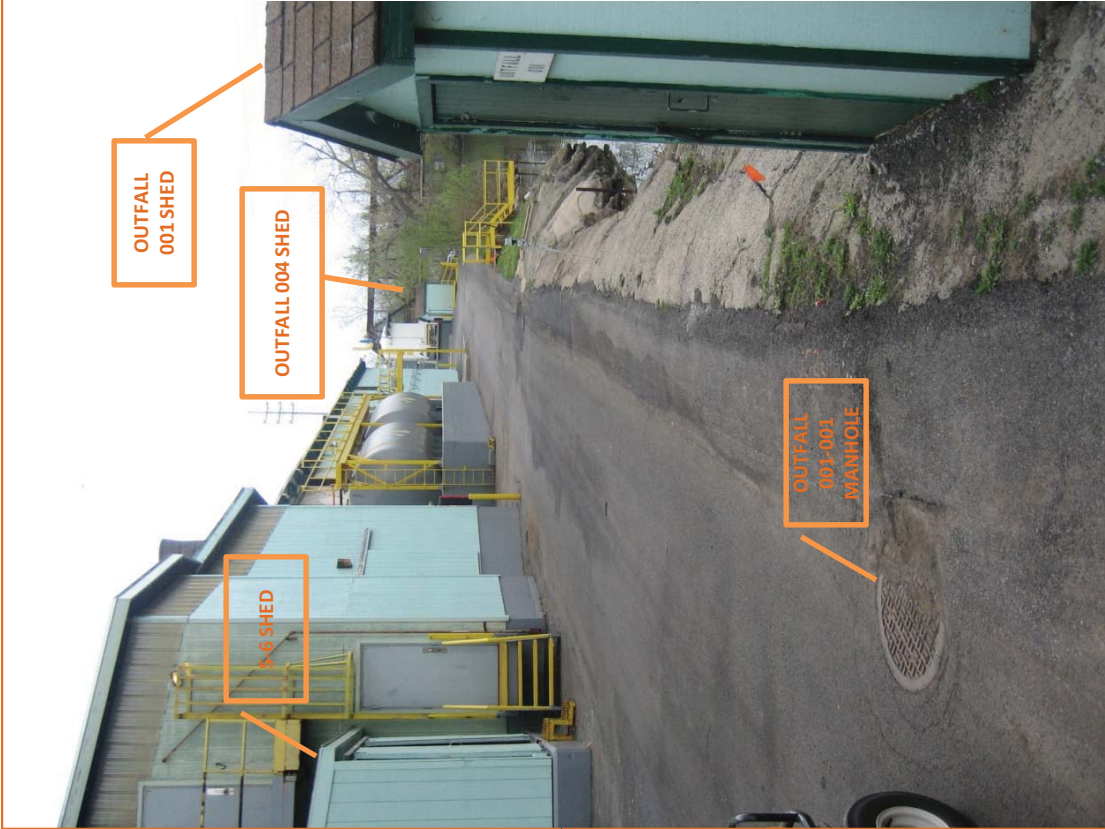


Photo 1. Outfall 001: Location for smoke blower at 001-001 manhole



Photo 2. Outfall 001: Smoke observed north of 001-001A , under porch from Buildings 4 and 9 noncontact cooling water discharge lines



Photo 3. Outfall 001: No smoke observed northeast of 001-001A



Photo 4. Outfall 001: Smoke observed at new vertical pipe between 001-001 and 001-001C



Photo 5. Outfall 004: Smoke observed at former Hotwell 4B on east side of Building 4



Photo 6. Outfall 004: Smoke observed at northernmost pipe in Building 2-A near 004-001A, north of Building 2-A entrance



Photo 7. Outfall 004: Smoke observed at tap factory near 004-001A, south of Building 2-A entrance



Photo 8. Outfall 004: Smoke observed from Outfall 004: Shed at 004-000A with smoke blower at 004-001



Photo 9. Outfall 005: Perforated metal plate at 005-001



Photo 10. Outfall 005: Location for smoke blower at 005-000A vertical pipe



Photo 11. Outfall 005: Smoke observed at perforated metal plate at 005-001



Photo 12. Outfall 005: Smoke observed at 005-001A near former Hotwell 4



Photo 13. Outfall 005: Smoke observed at 005-001A near former Hotwell 4



Photo 14. Outfall 005: Smoke observed at 005-001B near former Hotwell 3 overflow point



Photo 15 (Archive photo). Former Outfall 007 (Currently piped to Outfall 004): Perforated metal plate at 007-001A



Photo 17. Former Outfall 007 (Currently piped to Outfall 004): Location for smoke blower at 007-001



Photo 16. Former Outfall 007 (Currently piped to Outfall 004): Smoke observed at catch basin east of 007-001A



Photo 18. Outfall 001: Discharge point 001-000



Photo 19. Outfall 001: 12" Diameter discharge point 001-000

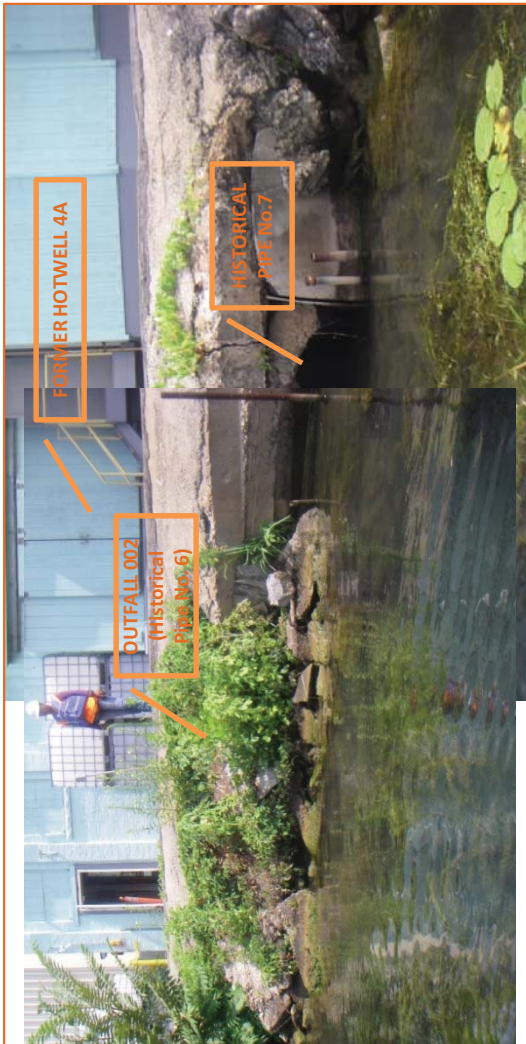


Photo 20. Outfall 002: Discharge point 002-000 may be covered under concrete rip rap, and possible historical pipe No. 7 located east of Outfall 002. See Figure 6.



Photo 21. Possible historical pipe No. 7 east of Outfall 002



Photo 22. Interior of 21" diameter historical pipe No. 7 east of Outfall 002. See Figure 6.

Note: Locations of Outfall 002 (historical pipe No. 6) and historical pipe No. 7 are based on Evans Chemetics Drainage Schematic 8/11/1975 .



Photo 23. Outfall 004: Discharge point 004-000



Photo 24. Outfall 004: Discharge point 004-000



Photo 25. Outfall 004: Interior of 24" diameter discharge point 004-000 piping



Photo 26. Outfall 005: 28" Diameter discharge point 005-000 piping



Photo 27. Outfall 005: Discharge point 005-000



Photo 28. Outfall 005: Interior of discharge point 005-000 piping



Photo 29. Outfall 006: Abandoned discharge point 006-000



Photo 30. Outfall 006: 15" Diameter abandoned discharge point 006-000 which seems to correspond to historical pipe No. 15

Note: Location of Outfall 006 (historical pipe No. 15) is based on Evans Chemetics Drainage Schematic 8/11/1975 .



Photo 31. Outfall 007: Could not locate discharge point 007-000. It may underlie area with concrete blocks and vegetation.



Photo 32. Outfall 007 (Historical pipe No. 18): Could not locate discharge point 007-000. It may underlie area with vegetation.



Photo 33. Outfall 008: 24" Diameter discharge point 008-000



Photo 34. Outfall 009: 6" diameter discharge point 009-000. Pipe above canal water level.



Photo 35. Outfall 010: Discharge point 010-000 above canal water level



Photo 36. Outfall 010: 6" Diameter discharge point 010-000



Photo 37. Outfall 012: Discharge point 012-000 on 18" wide cobble stone bed



Photo 38. Outfall 013: Discharge point 013-000



Photo 39. Outfall 013: Discharge point 013-000



Photo 40. Outfall 013: Interior of 12" diameter discharge point 013-000



Photo 41. Abandoned historical outfall located approximately 20 ft east of Outfall 005. Seems to correspond to historical pipe No. 10. See Figure 6.



Photo 42. Abandoned historical outfall located approximately 20 ft east of Outfall 005. May correspond to historical pipe No. 10. See Figure 6.

Note: Location of historical pipe No. 10 is based on Evans Chemetics Drainage Schematic 8/11/1975.



Photo 43. Abandoned historical outfall located approximately 20 ft east of Outfall 005. May correspond to historical pipe No. 10. See Figure 6.



Photo 44. Abandoned 6" diameter historical outfall located between Outfalls 005 and 010. Plugged at discharge point. Seems to correspond to historical pipe No. 8.



Photo 45. South view of culvert wall west of Outfall 008



Photo 46. North view of culvert west of Outfall 008

Note: Location of historical pipe No. 8 is based on Evans Chemetics Drainage Schematic 8/1/1975 .



Photo 47. Outfall 001 (001-001B to 001-001): Noncontact cooling water discharged from active factory tap in Building 4 (001-001D to 001-001C)



Photo 49. Outfall 001 (001-001B to 001-001): Cement debris in lateral to west of 001-001B which seems to correspond to Outfall 002



Photo 48. Outfall 001 (001-001B to 001-001): Cement plugged lateral south of 001-001B which seems to correspond to Outfall 002



Photo 50. Outfall 004 (004-001 to 004-000): Looking downstream to Outfall 004-000



Photo 51. Outfall 004 (004-001A to 004-001): Factory tap to east of 004-001A, south of Building 2-A entrance



Photo 53. Outfall 004 (004-001A to 004-001): Attached deposits at 121 ft upstream of 004-001



Photo 52. Outfall 004 (004-001A to 004-001): Gravel debris at 194 ft upstream of 004-001



Photo 54. Outfall 004 (004-001A to 004-001): Longitudinal crack, 12 o'clock at 118 ft upstream of 004-001



Photo 55. Outfall 004 (004-001A to 004-001): Infiltration stains at 30ft upstream of 004-001



Photo 56. Outfall 004 (004-001 to 004-001A): Facing upstream from 004-001

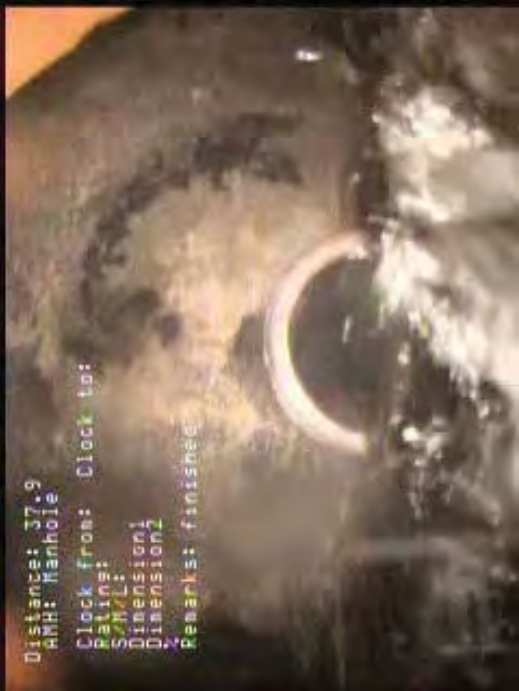


Photo 57. Outfall 004 (004-001B to 004-001): Manhole like chamber facing upstream (east) to 004-001B



Photo 58. Outfall 004 (004-001B to 004-001): Mid-pipe 004-001B to 004-001

Note: Location of 004-001B corresponds to paved over manhole which was rerouted by site personnel from Outfall 006 to Outfall 004 .

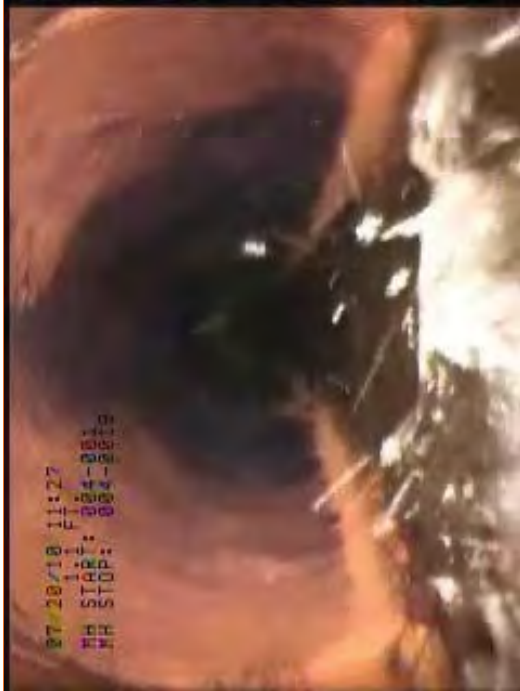


Photo 59. Outfall 004 (004-001B to 004-001): Facing upstream (east) from 004-001

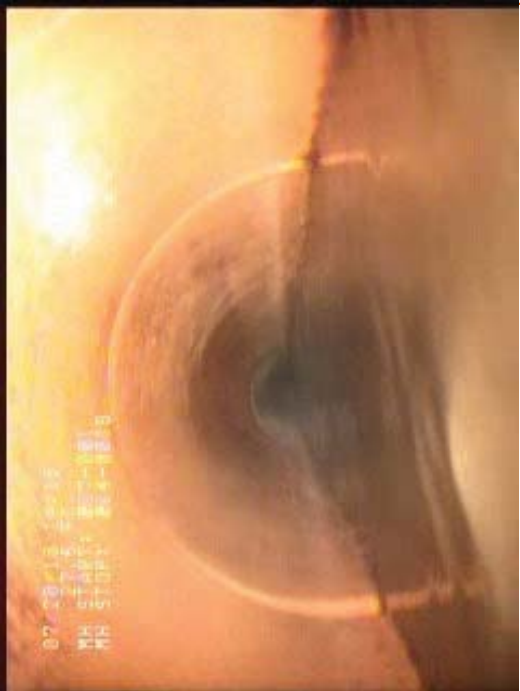


Photo 60. Outfall 004 (007-001 to 004-001B): Pipe half full of noncontact cooling water at 27ft downstream of 007-001

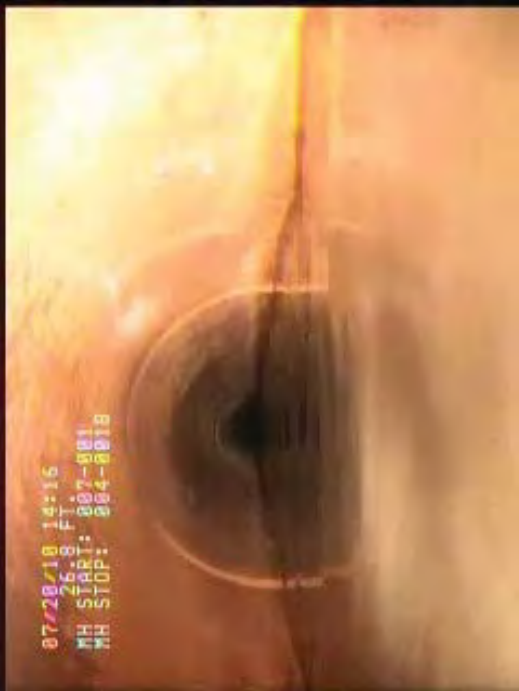


Photo 61. Outfall 004 (007-001 to 004-001B): Mid-pipe 007-001 to 004-001B



Photo 62. Outfall 004 (007-001 to 004-001B): Facing downstream (west) from 007-001

Note: Location of 004-001B corresponds to paved over manhole which was rerouted by site personnel from Outfall 006 to Outfall 004 and location identified as 007-001 previously discharged through Outfall 007 and was rerouted by site personnel to Outfall 004 by the site.



Photo 63. Outfall 004 (007-001A to 007-001): Gate valve at 7ft upstream , north of 007-001

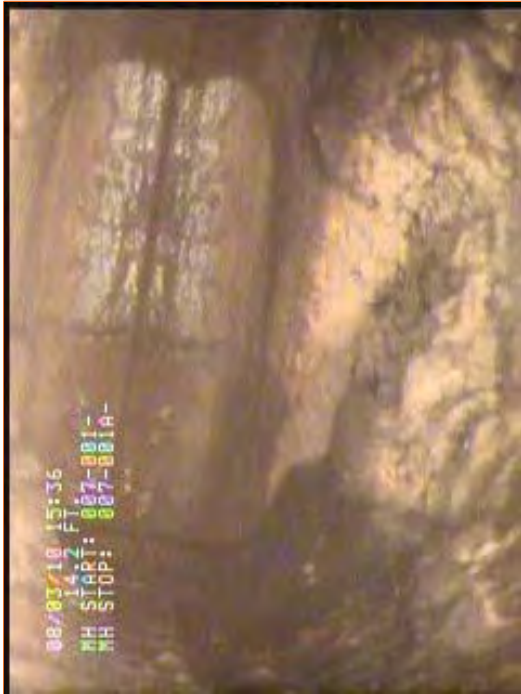


Photo 64. Outfall 004 (007-001A to 007-001): Pipe alignment to west at 14 ft upstream of 007-001

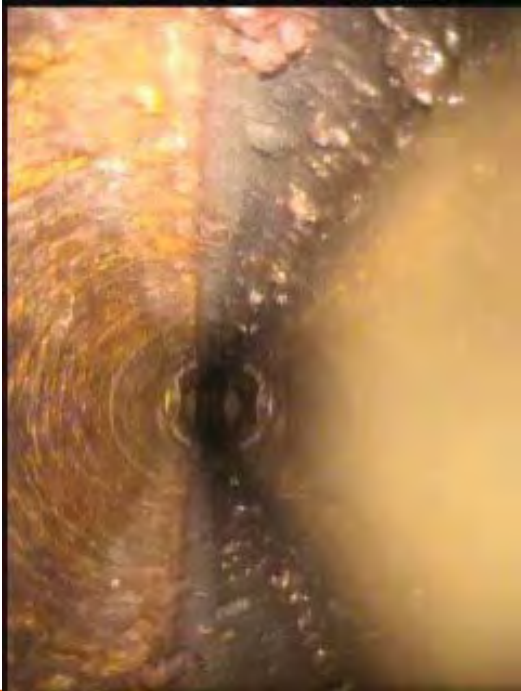


Photo 65. Outfall 004 (007-001A to 007-001): Facing north upstream from 007-001

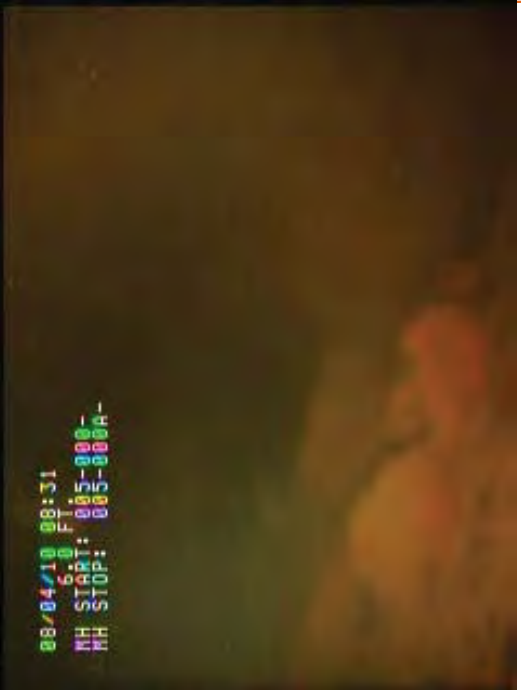


Photo 66. Outfall 005 (005-001 to 005-000): Pipe submerged in canal water at 005-001

Note: Locations identified as 007-001 and 007-001A previously discharged through Outfall 007 and has been rerouted to Outfall 004 by the site.

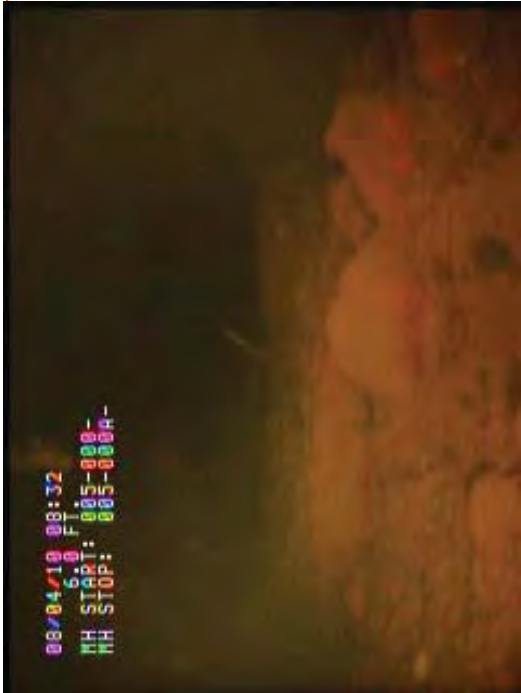


Photo 67. Outfall 005 (005-001 to 005-000): Gravel deposits inside piping downstream of 005-001



Photo 69. Outfall 005 (005-001A to 005-001): Pipe submerged in noncontact cooling water at 005-001A



Photo 68. Outfall 005 (005-001A to 005-001): Pipe submerged at 005-001A (former Hot well 4)

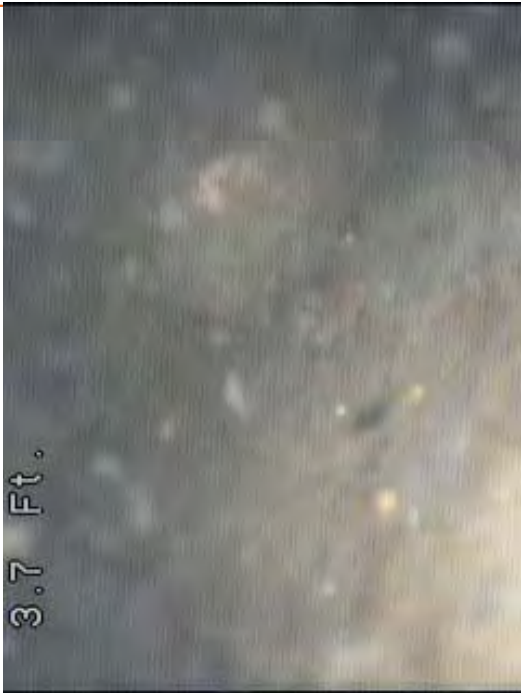


Photo 70. Outfall 005 (005-001A to 005-001): Pipe submerged in noncontact cooling water to 3ft downstream of 005-001A



Photo 71. Outfall 005 (005-001A to 005-001): Aquatic weeds at 005-001



Photo 72. Outfall 005 (005-001A to 005-001): Roots and weeds at 10ft upstream of 005-001

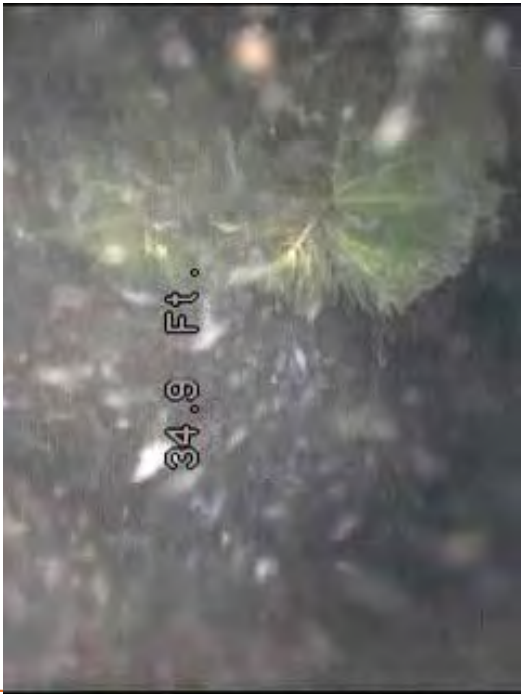


Photo 73. Outfall 005 (005-001 to 005-000): Pipe submerged at outfall discharge point up to 34 ft upstream of 005-000



Photo 74. Outfall 005 (005-001A to 005-001): Pipe partially submerged at 005-001



Photo 75. Outfall 008 (008-001 to 008-000): Break-in tap at 27 ft upstream of 008-000



Photo 76. Outfall 008 (008-001 to 008-000): Mid-pipe 008-001 to 008-000

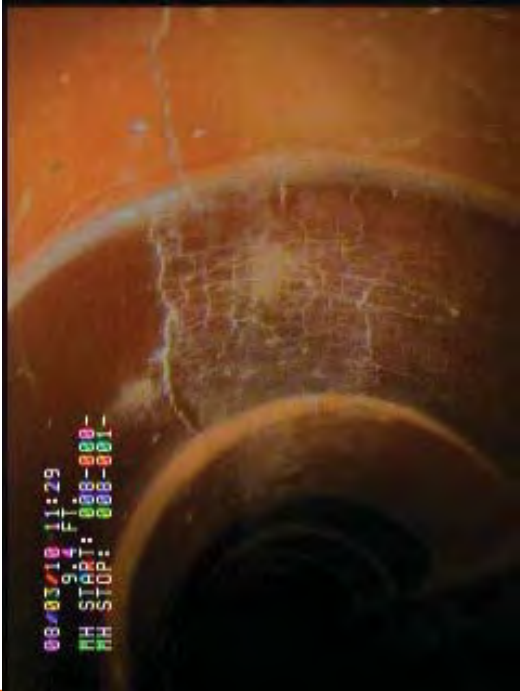


Photo 77. Outfall 008 (008-001 to 008-000): Longitudinal crack, 12 o'clock at 9 ft upstream of 008-000

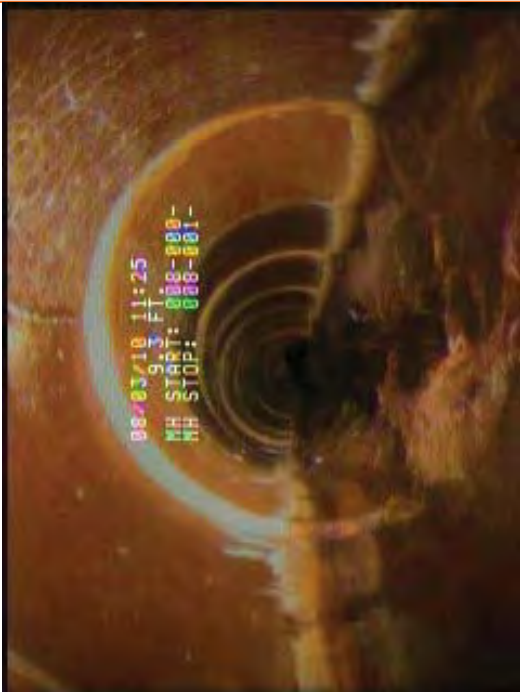


Photo 78. Outfall 008 (008-001 to 008-000): Roots and plants at 9 ft upstream of 008-000



Photo 79. Outfall 008 (008-001 to 008-000): Mid-pipe 008-001 to 008-000 (facing south)

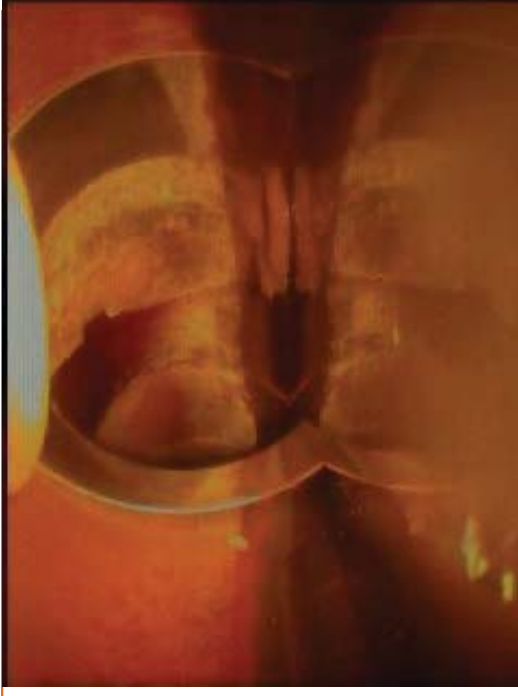


Photo 80. Outfall 008 (008-001 to 008-000): Facing north upstream from 008-000



Photo 81. Outfall 009 (009-001 to 009-000): Outfall 009-000 gate valve from land side chamber (facing south)



Photo 82. Outfall 010 (010-001 to 010-000): Facing south downstream from land side chamber



Photo 83. Outfall 010 (010-001 to 010-000): Facing north upstream from canal side chamber



Photo 84. Outfall 010 (010-001 to 010-000): Outfall 010-000 gate valve from canal side chamber



Photo 85. Outfall 012 (012-001 to 012-000): Facing north upstream to 012-001

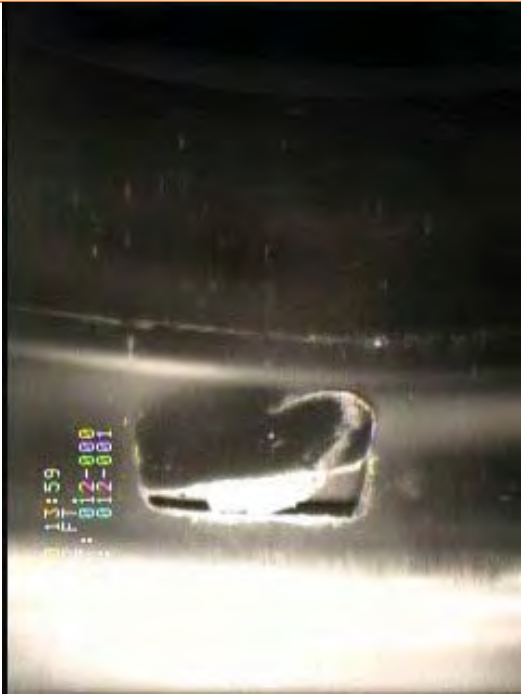


Photo 86. Outfall 012 (012-001 to 012-000): Hole in piping at 21 ft upstream from 012-000



Photo 87. Outfall 012 (012-001 to 012-000): Piping interior facing north, upstream from 012-000

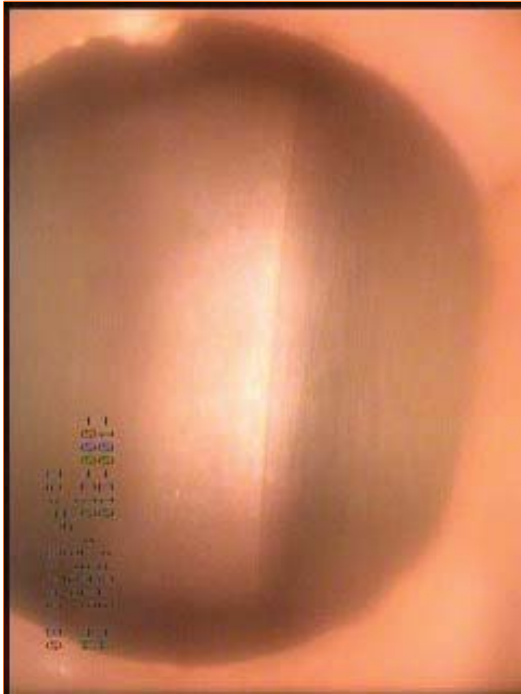


Photo 88. Outfall 013 (013-001 to 013-000): Manhole-like chamber facing north, upstream to 013-001

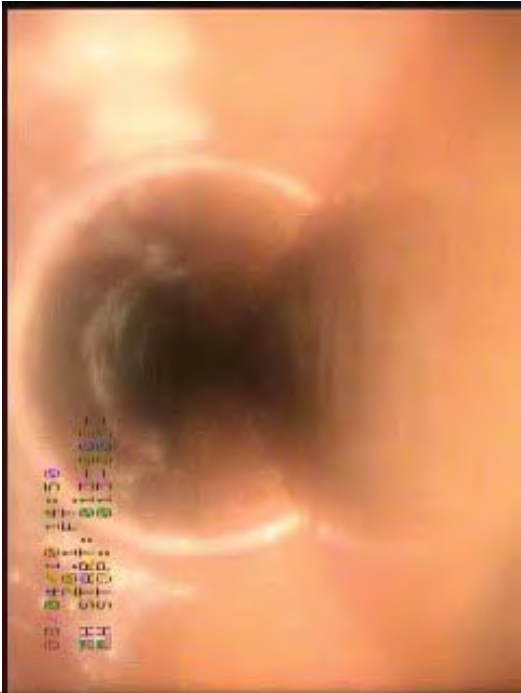


Photo 89. Outfall 013 (013-001 to 013-000): Mid-pipe facing north, upstream from 013-000



Photo 90. Outfall 013 (013-001 to 013-000): Facing north, upstream from 013-000



Photo 91. Outfall 001: 001-001 Manhole area



Photo 92. Outfall 001: 001-001 Manhole topside (north up). South and east pipes.



Photo 93. Outfall 001: 001-001 Manhole topside (north up). North and east pipes.

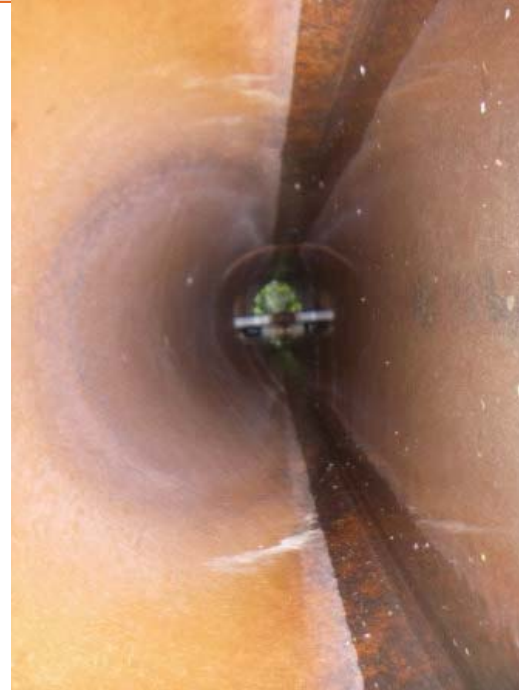


Photo 94. Outfall 001: 001-001 Pipe connections (south pipe)



Photo 95. Outfall 001: 001-001 Pipe connections (north pipe)



Photo 96. Outfall 001: 001-001 Pipe connections (north pipe)

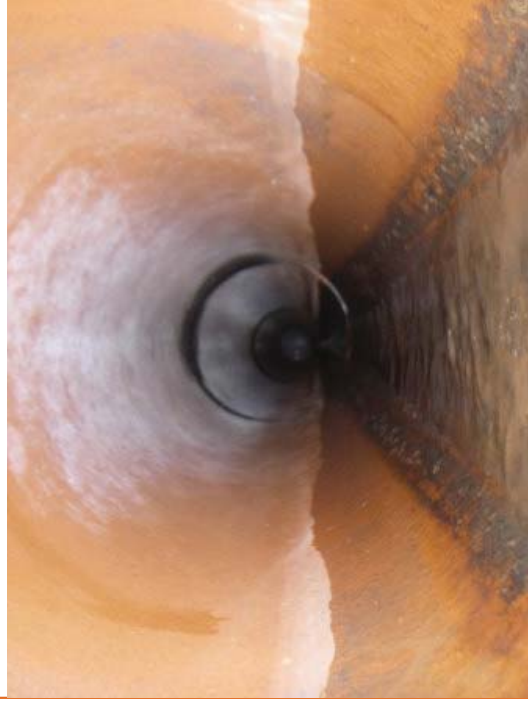


Photo 97. Outfall 001: 001-001 Pipe Connections (east pipe)



Photo 98. Outfall 004: 004-001 Manhole area



Photo 99. Outfall 004: 004-001 Manhole topside (north up)



Photo 100. Outfall 004: 004-001 Manhole defects; wall deterioration



Photo 101. Outfall 004: 004-001 Manhole defects; frame/chimney seal deterioration



Photo 102. Outfall 004: 004-001 Pipe connections (south pipe)



Photo 103. Outfall 004: 004-001 Pipe connections (north pipe)



Photo 104. Outfall 004: 004-001 Pipe connections (east pipe)



Photo 105. Building 1: 004-002 Floor drain



Photo 106. Outfall 004: 004-002 floor drain topside (north up)



Photo 107. Sanitary sewer: 004-008 Manhole area



Photo 108. Building 2-A sanitary sewer: 004-008 Manhole cover



Photo 109. Building 2-A Sanitary sewer: 004-008 Manhole topside (north up)



Photo 110. Building 2-A sanitary sewer: 004-008 Pipe connections (east)



Photo 111. Building 2-A sanitary sewer: 004-008 Pipe connections (south pipe)



Photo 112. Sanitary sewer: 004-008 Pipe connections (west pipe)



Photo 113. Outfall 007: 007-001 Manhole area



Photo 114. Outfall 007: 007-001 Manhole topside (north up)



Photo 115. Outfall 007: 007-001 Pipe connections (west pipe)



Photo 116. Outfall 007: 007-001 Pipe connections (north pipe)



Photo 117. Building 1: 007-003 Floor drain area



Photo 118. Building 1 : 007-003 floor drain topside. Note: 007-004 floor drain had a 8" x 14" grate with a 2" black PVC and a 1/4" diameter pipe

Note: Locations identified as 007-001 and 007-001A previously discharged through Outfall 007 and has been rerouted to Outfall 004 by the site.



Photo 119. Outfall 004: 004-005 Floor drain in MPA Process Area



Photo 120. Building 2A : 007-008 Floor drain



Photo 121. Building 2A: 007-008 floor drain



Photo 122. Building 3 floor drain near northwest wall



Photo 123. Building 3 floor drain near northeast wall



Photo 124. Building 4 floor drain near south wall



Photo 125. Building 4 floor drain near east wall



Photo 126. Building 4 floor drain near northeast wall

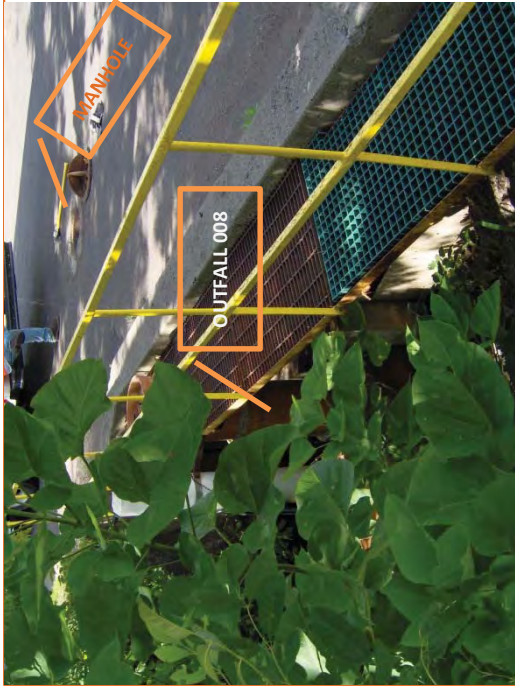


Photo 127. Manhole upgradient west of Outfall 008 which is not connected to the outfall



Photo 128. Manhole topside upgradient of Outfall 008 with discharge pipe from east wall



Photo 129. Manhole topside upgradient of Outfall 008 with discharge pipe from east wall; aquatic weeds



Photo 130. Location of newly installed vertical 12" diameter PVC pipe connected to Outfall 001 clay pipe

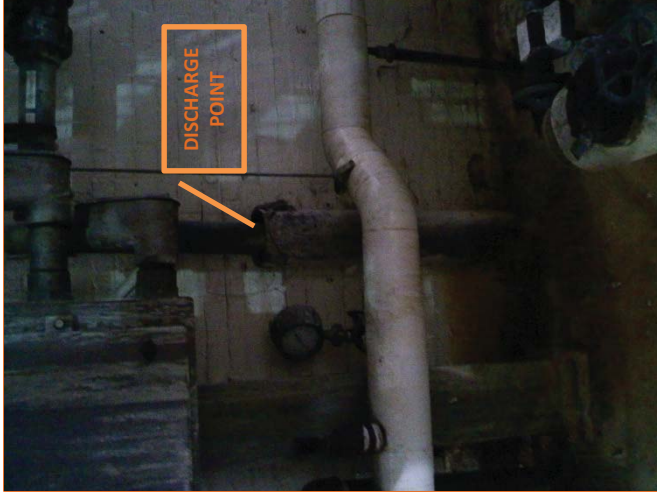


Photo 131. Building 2 noncontact cooling water discharge point to Outfall 004

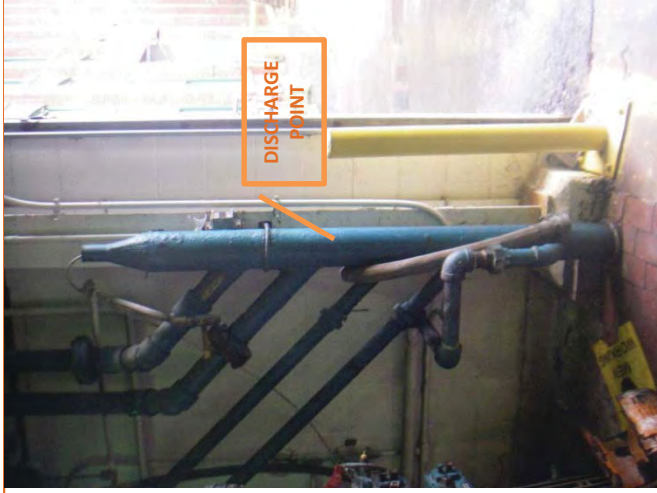


Photo 132. Building 2-A noncontact cooling water discharge point to Outfall 004 (south of Building 2 entrance)



Photo 133. Building 2-A noncontact cooling water discharge point to Outfall 004 and sanitary sewer 004-008



Photo 134. Former Hotwell 1A. Grate covered pit with AST and inlet piping



Photo 135. Location of former Hotwell 1B inside shed



Photo 136. Former Hotwell 2; concrete paved with AST and inlet piping



Photo 137. Former Hotwell 2A; concrete paved with AST and inlet piping



Photo 138. Former Hotwell 3; concrete paved with AST and inlet piping



Photo 139. Former Hotwell 4; open pit with various inlet piping

Note: All former hot wells have either been paved over or replaced by aboveground storage tanks, and are no longer operational. Noncontact cooling water may be discharged at these locations.



Photo 140. Former Hotwell 4A in S-6 shed outside south wall of Building 4; concrete paved with inlet piping



Photo 141. Former Hotwell 4B near west wall of Building 4; concrete paved with above ground storage tank and inlet piping

Note: All former hot wells have either been paved over or replaced by aboveground storage tanks, and are no longer operational. Noncontact cooling water may be discharged at these locations.

Attachment 4
CCTV Survey Field Forms

CH2M HILL
1201 Wakarusa Dr, Bldg. D
Lawrence, KS 66049
Phone: 785-841-1774
Fax: 785-841-5302



Project Summary

Former Hampshire Chemical Corp/Outfall Piping Investigation

Main ID	Date	Address	Start MH	Finish MH	Pipe	Asset length	Surveyed Length
004-001B_004-001	7/20/2010	228 E Main Street	004-001	004-001B	VCP	37.9	37.9
004-001_004-000	7/20/2010	228 E Main Street	004-001	004-000	VCP	6.0	6.0
007-001_004-001B	7/20/2010	228 E Main Street	007-001	004-001B	VCP	60.0	28.3
001-001B_001-001	7/20/2010	228 E Main Street	001-001	001-001B	VCP	31.7	31.7
008-001A_008-000	8/3/2010	228 E Main Street	008-000	008-001A	VCP	30.0	27.8
007-001A_007-001	8/3/2010	228 E Main Street	007-001	007-001A	VCP	80.0	8.2
004-001A_004-001	8/3/2010	228 E Main Street	004-001	004-001A	VCP	300.0	294.1
009-001_009-000	8/4/2010	228 E Main Street	009-001	009-000	SP	20.0	1.0
010-001_010-000	8/4/2010	228 E Main Street	010-001	010-000	SP	20.0	1.0

Main ID	Date	Address	Start MH	Finish MH	Pipe	Asset length	Surveyed Length
005-001A_005-001	8/4/2010	228 E Main Street	005-001	005-001A	VCP	120.0	1.0
005-001A_005-001	8/4/2010	228 E Main Street	005-001A	005-001	VCP	120.0	3.7
012-001_012-000	8/4/2010	228 E Main Street	012-000	012-001	PE	46.4	46.4
013-001_013-000	8/4/2010	228 E Main Street	013-000	013-001	PVC	65.8	65.8
005-001_005-000	8/4/2010	228 E Main Street	005-001	005-000	VCP	40.0	39.2
005-001_005-000	8/4/2010	228 E Main Street	005-000	005-001	VCP	40.0	6.0

Number of inspections: 15

Subtotal **1,017.8 ft** **598.1 ft**

Total **1,017.8 ft** **598.1 ft**

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1
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P/O No.	Pipeline Segment Reference 004-001B_004-001	Date 2010/07/20	Time 08:36	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY
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Further Location Details	Upstream Manhole Number 004-001B	Rim to Invert	Grade to Invert	Rim to Grade
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Downstream Manhole Number 004-001	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction U	Flow Control	Height 12
--------------------------------------	---------------	-----------------	--------------	--------------	----------------	--------------	--------------

Width	Shape C	Material VCP	Ln. Method	Pipe Joint Length	Total Length 37.9	Length Surveyed 37.9	Year Laid	Year Rehabilitated	Tape/Media Number
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Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information
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Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches	%	Joint	Circumferential Location	Image Ref.	Remarks
						1st	2nd		at	to	

0.0		AMH									MANHOLE 004-001
37.9		AMH									MANHOLE 004-001B PAVED OVER

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 004-001_004-000	Date 2010/07/20	Time 09:06	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 004-001	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 004-000	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction D	Flow Control	Height 12		
Width	Shape C	Material VCP	Ln. Method	Pipe Joint Length	Total Length 6.0	Length Surveyed 6.0	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			at	to		
0.0			AMH										MANHOLE 004-001
6.0			OBZ										GATE VALVE
6.0			ADP										OUTFALL 004-000

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PACP Sewer Report

Surveyors Name and Certificate Number System Owner Survey Customer Drainage Area Sheet No.
Larry Wagoner Former Hampshire Chemical Corp 1

P/O No. Pipeline Segment Reference Date Time Location (Street Name and Number) Locality
007-001_004-001B 2010/07/20 11:24 228 E Main Street Waterloo, NY

Further Location Details Upstream Manhole Number Rim to Invert Grade to Invert Rim to Grade
007-001

Downstream Manhole Number Rim to Invert Grade to Invert Rim to Grade Use of Sewer Direction Flow Control Height
004-001B 12

Width Shape Material Ln. Method Pipe Joint Length Total Length Length Surveyed Year Laid Year Rehabilitated Tape/Media Number
C VCP 60.0 28.3

Purpose Sewer Category Pre-Cleaning Cleaned Weather Location Code Additional Information
B G

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			at	to		

0.0		AMH											MANHOLE 007-001
28.3		MWL											WATER CURRENT TOO STRONG
28.3		MSA											UNABLE TO PROCEED THROUGH CURRENT

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PACP Sewer Report

Surveyors Name Larry Wagoner		and Certificate Number		System Owner		Survey Customer Former Hampshire Chemical Corp		Drainage Area		Sheet No. 1	
P/O No.		Pipeline Segment Reference 001-001B_001-001		Date 2010/07/20		Time 12:29		Location (Street Name and Number) 228 E Main Street		Locality Waterloo, NY	
Further Location Details						Upstream Manhole Number 001-001B		Rim to Invert		Grade to Invert	
Downstream Manhole Number 001-001		Rim to Invert		Grade to Invert		Rim to Grade		Use of Sewer		Direction U	
Flow Control		Height 12		Width		Shape C		Material VCP		Ln. Method	
Pipe Joint Length		Total Length 31.7		Length Surveyed 31.7		Year Laid		Year Rehabilitated		Tape/Media Number	
Purpose B		Sewer Category		Pre-Cleaning		Cleaned		Weather		Location Code G	
Additional Information											

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches	%	Joint	Circumferential Location	Image Ref.	Remarks
						1st	2nd		at	to	
0.0		AMH									MANHOLE 001-001
21.1		TFA							9		PIPE TO 001-001D
22.9		LU									PIPE INVERT ALIGNS 3-INCHES UP AFTER LATERAL
31.7		TFC							9		PLUGGED
31.7		TFC							3		CONCRETE PLUG
31.7		ATC									

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PACP Sewer Report

Surveyors Name Larry Wagoner		and Certificate Number		System Owner		Survey Customer Former Hampshire Chemical Corp		Drainage Area		Sheet No. 1	
P/O No.		Pipeline Segment Reference 008-001A_008-000		Date 2010/08/03		Time 08:32		Location (Street Name and Number) 228 E Main Street		Locality Waterloo, NY	
Further Location Details						Upstream Manhole Number 008-001A		Rim to Invert		Grade to Invert	
Downstream Manhole Number 008-000		Rim to Invert		Grade to Invert		Rim to Grade		Use of Sewer		Direction U	
Width		Shape C		Material VCP		Ln. Method		Pipe Joint Length		Total Length 30.0	
								Length Surveyed 27.8		Year Laid	
Purpose B		Sewer Category		Pre-Cleaning		Cleaned		Weather		Location Code G	
										Additional Information	

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches	%	Joint	Circumferential Location	Image Ref.	Remarks
						1st	2nd		at	to	
0.0		ADP									OUTFALL 008-000
3.8		RBB	S1						4	8	WATERWEEDS
9.4		CL	S2						12		
18.9		RMJ	S3						4	8	TREE ROOTS
22.3		RBB	F1						4	8	WATERWEEDS
27.8		TBI							12		PIPE DIAMETER ESTIMATED AT 6-INCHES
27.8		CL	F2						12		
46.8		RMJ	F3						4	8	TREE ROOTS

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 007-001A_007-001	Date 2010/08/03	Time 12:41	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 007-001A	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 007-001	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction U	Flow Control	Height 12		
Width	Shape C	Material VCP	Ln. Method	Pipe Joint Length	Total Length 80.0	Length Surveyed 8.2	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches	%	Joint	Circumferential Location	Image Ref.	Remarks
						1st	2nd		at	to	
0.0		AMH									MANHOLE 007-001
7.0		OBZ									OPEN GATE VALVE
8.2		LL									PIPING CURVES TO LEFT
8.2		MSA									UNABLE TO PASS BEND

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PACP Sewer Report

Surveyors Name Larry Wagoner		and Certificate Number		System Owner		Survey Customer Former Hampshire Chemical Corp		Drainage Area		Sheet No. 1	
P/O No.		Pipeline Segment Reference 004-001A_004-001		Date 2010/08/03		Time 13:35		Location (Street Name and Number) 228 E Main Street		Locality Waterloo, NY	
Further Location Details						Upstream Manhole Number 004-001A		Rim to Invert		Grade to Invert	
Downstream Manhole Number 004-001		Rim to Invert		Grade to Invert		Rim to Grade		Use of Sewer		Direction U	
Width		Shape C		Material VCP		Ln. Method		Pipe Joint Length		Total Length 300.0	
								Length Surveyed 294.1		Year Laid	
										Year Rehabilitated	
Purpose B		Sewer Category		Pre-Cleaning		Cleaned		Weather		Location Code G	
										Additional Information	

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			at	to		
0.0			AMH										MANHOLE 004-001
31.8			IS							7			
109.4			ID							9	9		
115.6			IS							1	6		
118.7			IS							3			
118.7			CL							3			
120.6			DAE							3	6		
143.1			ID							1	6		
180.9			DNGV							3	8		
193.7			DNGV							3	8		ROCKS
294.1			TFA							2			

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 009-001_009-000	Date 2010/08/04	Time 07:21	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 009-001	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 009-000	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction D	Flow Control	Height 6		
Width	Shape C	Material SP	Ln. Method	Pipe Joint Length	Total Length 20.0	Length Surveyed 1.0	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			at	to		
0.0			ACB										CATCH BASIN 009-001
1.0			OBZ										BUTTERFLY VALVE

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 010-001_010-000	Date 2010/08/04	Time 07:26	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 010-001	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 010-000	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction D	Flow Control	Height 6		
Width	Shape C	Material SP	Ln. Method	Pipe Joint Length	Total Length 20.0	Length Surveyed 1.0	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			at	to		
0.0		ACB											CATCH BASIN 010-001
1.0		OBZ											BUTTERFLY VALVE

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 005-001A_005-001	Date 2010/08/04	Time 10:02	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 005-001A	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 005-001	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction U	Flow Control	Height 18		
Width	Shape C	Material VCP	Ln. Method	Pipe Joint Length	Total Length 120.0	Length Surveyed 1.0	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			at	to		
0.0			AOC										STRUCTURE 005-001
0.0			RMC							4	8		AQUATIC WEEDS IN THE BASIN AND PIPE
1.0			RMC							4	8		AQUATIC WEEDS IN THE BASIN AND PIPE
1.0			MSA										UNABLE TO PUSH FUTHER

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 005-001A_005-001	Date 2010/08/04	Time 10:07	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 005-001A	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 005-001	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction D	Flow Control	Height 18		
Width	Shape C	Material VCP	Ln. Method	Pipe Joint Length	Total Length 120.0	Length Surveyed 3.7	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches	%	Joint	Circumferential Location	Image Ref.	Remarks
						1st	2nd		at	to	
0.0		AOC									FORMER HOTWELL 005-001A
0.0		MCU	S1								
3.7		MSA									
3.7		MCU	F1								

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PACP Sewer Report

Surveyors Name Larry Wagoner		and Certificate Number		System Owner		Survey Customer Former Hampshire Chemical Corp		Drainage Area		Sheet No. 1	
P/O No.		Pipeline Segment Reference 012-001_012-000		Date 2010/08/04		Time 11:02		Location (Street Name and Number) 228 E Main Street		Locality Waterloo, NY	
Further Location Details						Upstream Manhole Number 012-001		Rim to Invert		Grade to Invert	
Downstream Manhole Number 012-000		Rim to Invert		Grade to Invert		Rim to Grade		Use of Sewer		Direction U	
Flow Control		Height 18		Width		Shape C		Material PE		Ln. Method	
Pipe Joint Length		Total Length 46.4		Length Surveyed 46.4		Year Laid		Year Rehabilitated		Tape/Media Number	
Purpose B		Sewer Category		Pre-Cleaning		Cleaned		Weather		Location Code G	
Additional Information											

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches	%	Joint	Circumferential Location	Image Ref.	Remarks
						1st	2nd		at	to	
0.0		ADP									OUTFALL 012-000
11.3		LL									
21.2		HVV							3		
46.4		ACB									CATCH BASIN 012-001 PAVED OVER

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 013-001_013-000	Date 2010/08/04	Time 11:43	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 013-001	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 013-000	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction U	Flow Control	Height 12		
Width	Shape C	Material PVC	Ln. Method	Pipe Joint Length	Total Length 65.8	Length Surveyed 65.8	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches	%	Joint	Circumferential Location	Image Ref.	Remarks
						1st	2nd		at	to	
0.0		ADP									OUTFALL 013-000
65.8		AMH									MANHOLE 013-001

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 005-001_005-000	Date 2010/08/04	Time 15:42	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 005-001	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 005-000	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction D	Flow Control	Height 18		
Width	Shape C	Material VCP	Ln. Method	Pipe Joint Length	Total Length 40.0	Length Surveyed 39.2	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value Inches	%	Joint	Cumferential Location	Image Ref.	Remarks
						1st	2nd		at	to	
0.0		AOC									STRUCTURE 005-001, PERFORATED METAL PLATE COVER WITH VARIOUS DISCHARGE PIPES
0.0		MCU	S1								
39.2		MCU	F1								

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PACP Sewer Report

Surveyors Name Larry Wagoner	and Certificate Number	System Owner	Survey Customer Former Hampshire Chemical Corp	Drainage Area	Sheet No. 1				
P/O No.	Pipeline Segment Reference 005-001_005-000	Date 2010/08/04	Time 17:40	Location (Street Name and Number) 228 E Main Street	Locality Waterloo, NY				
Further Location Details			Upstream Manhole Number 005-001	Rim to Invert	Grade to Invert	Rim to Grade			
Downstream Manhole Number 005-000	Rim to Invert	Grade to Invert	Rim to Grade	Use of Sewer	Direction U	Flow Control	Height 18		
Width	Shape C	Material VCP	Ln. Method	Pipe Joint Length	Total Length 40.0	Length Surveyed 6.0	Year Laid	Year Rehabilitated	Tape/Media Number
Purpose B	Sewer Category	Pre-Cleaning	Cleaned	Weather	Location Code G	Additional Information			

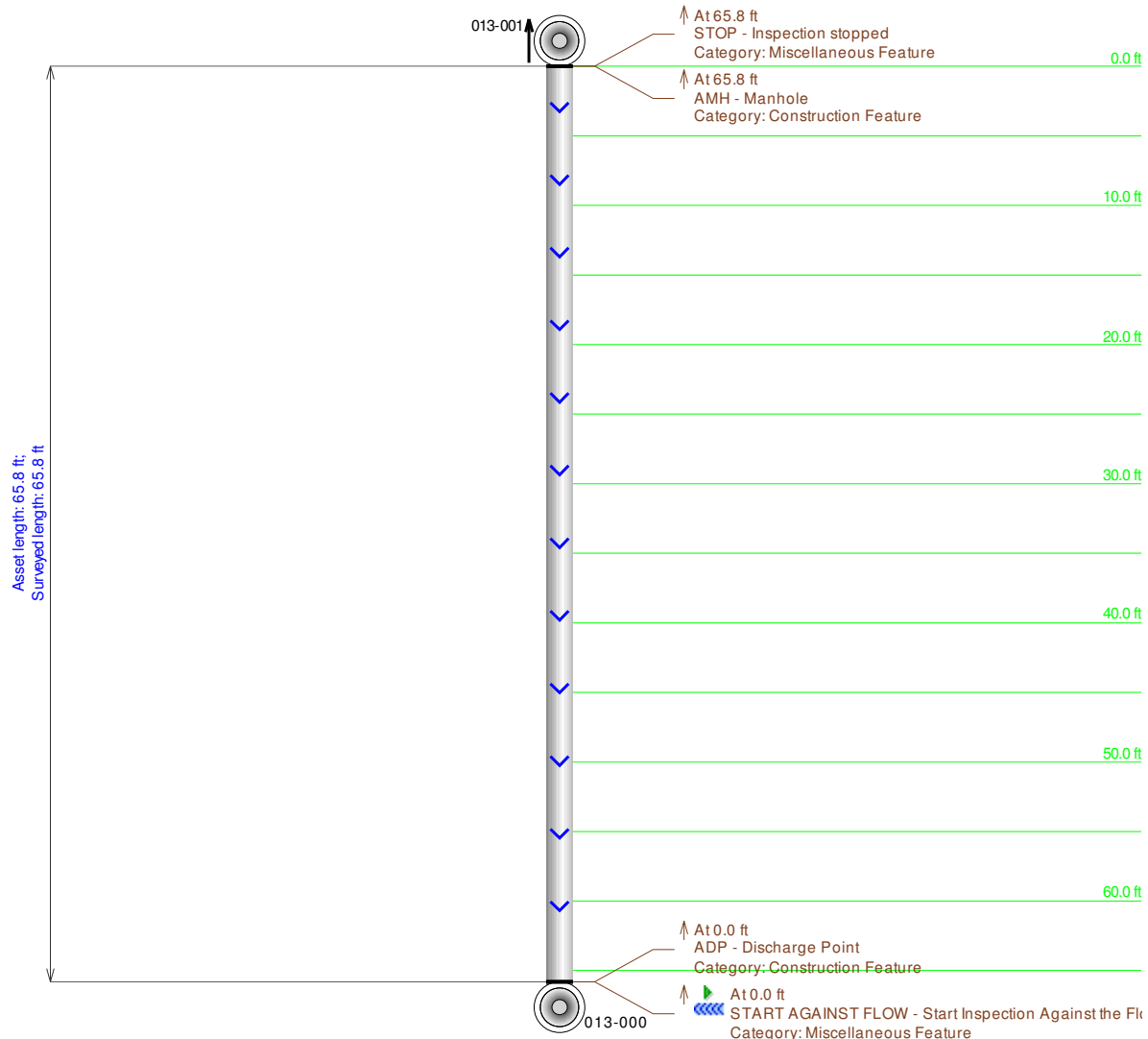
Distance (Feet)	Video Ref.	Group/ Descripto	Modifier/ Severity	Continuous Defect	S/M/L	Value		%	Joint	Circumferential Location		Image Ref.	Remarks
						1st	2nd			at	to		
0.0		ADP											OUTFALL 005-000
0.0		MCU	S1										
0.0		DSGV											HEAVY GRAVEL
6.0		MCU	F1										

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TV Inspection with Pipe-Run Graph

Project Name:	Mainline ID:	City:	Address:	
Former Hampshire Chemical Corp/Outfall Piping Investigation	013-001_013-000	Waterloo, NY	228 E Main Street	
Start date/time:	Pipe width:	Pipe height:	Pipe type:	Surface condition:
8/4/2010		12	PVC	G
Direction:	Surveyed footage:	Weather:	MediaLabel	
Upstream	65.8			

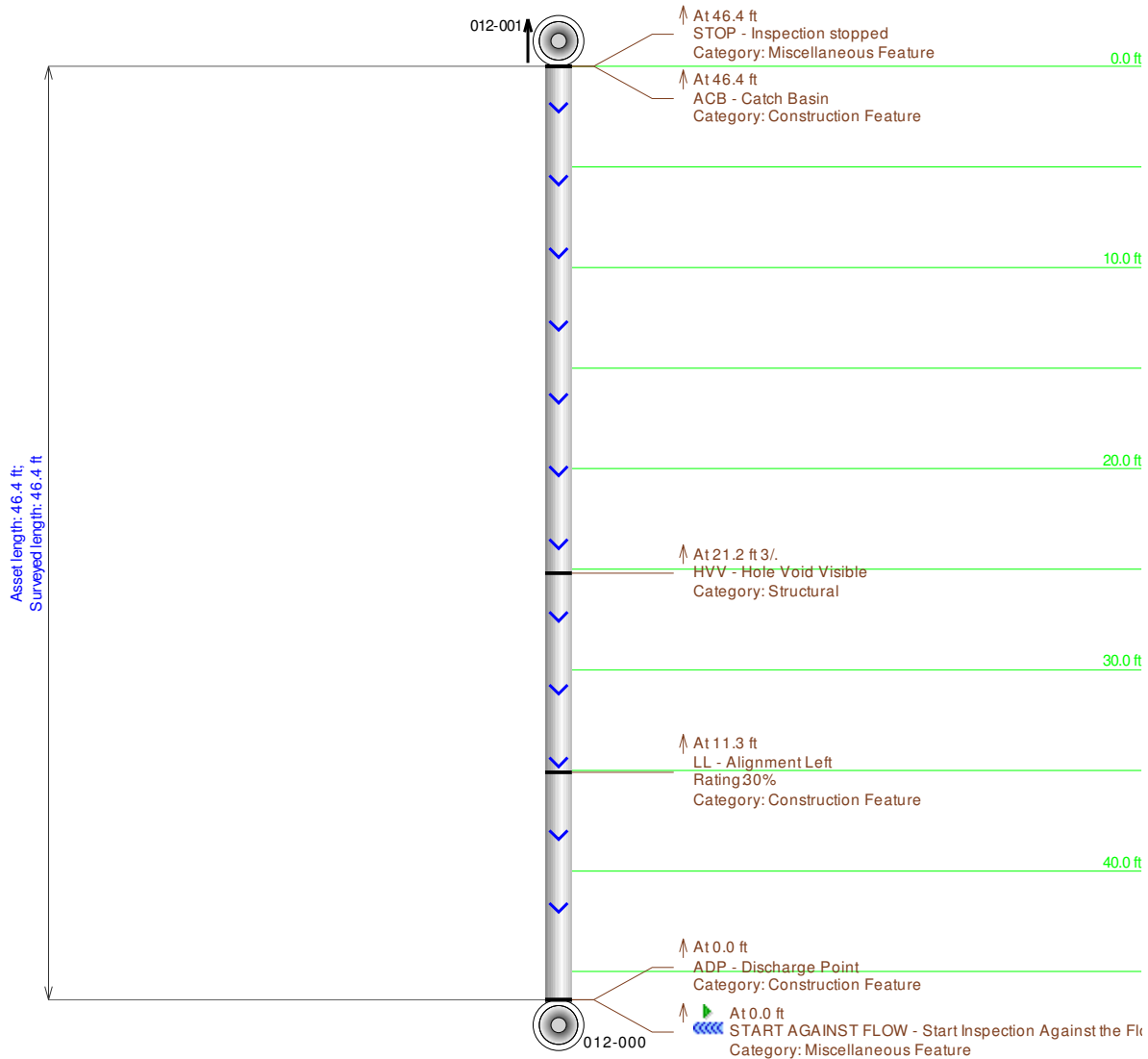


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TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 012-001_012-000	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/4/2010	Pipe width: 	Pipe height: 18	Pipe type: PE
Direction: Upstream	Surveyed footage: 46.4	Weather: 	Surface condition: G
MediaLabel 			



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TV Inspection with Pipe-Run Graph

Project Name:

Former Hampshire
Chemical Corp/Outfall
Piping Investigation

Mainline ID:

008-001A_008-000

City:

Waterloo, NY

Address:

228 E Main Street

Start date/time:

8/3/2010

Pipe width:

Pipe height:

24

Pipe type:

VCP

Surface condition:

G

Direction:

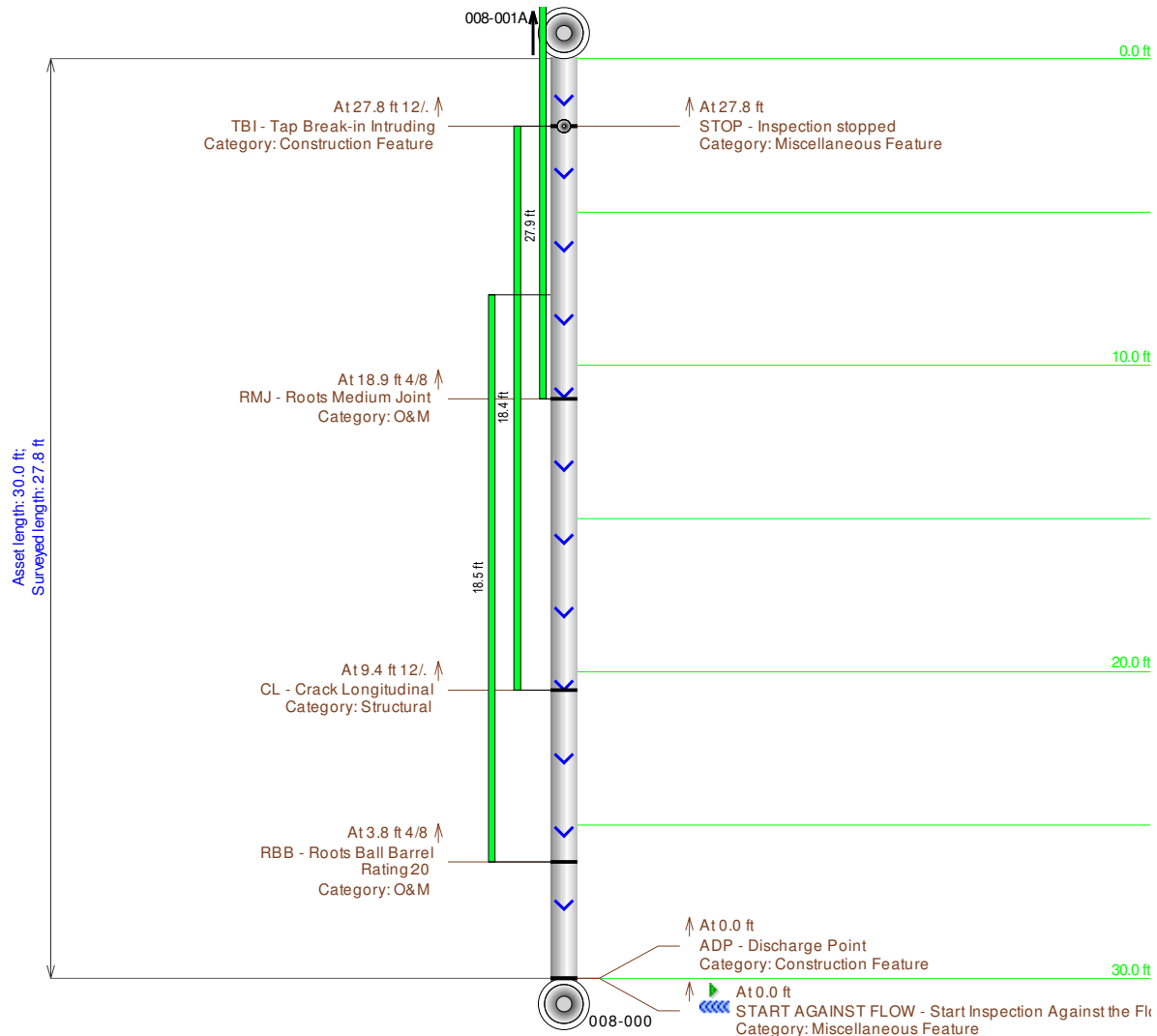
Upstream

Surveyed footage:

27.8

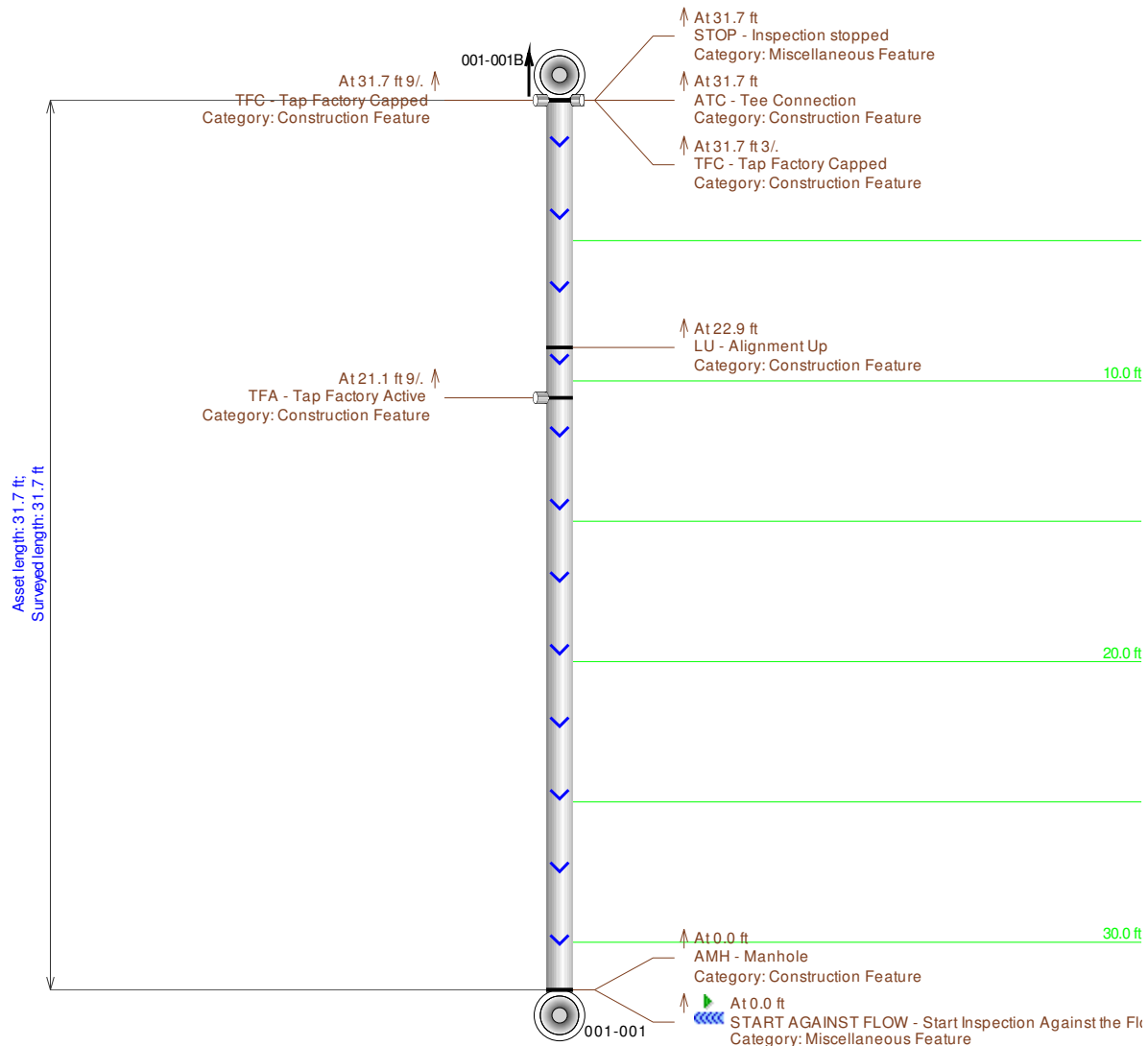
Weather:

MediaLabel



TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 001-001B_001-001	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 7/20/2010	Pipe width: 	Pipe height: 12	Pipe type: VCP
Direction: Upstream	Surveyed footage: 31.7	Weather: 	Surface condition: G
MediaLabel 			

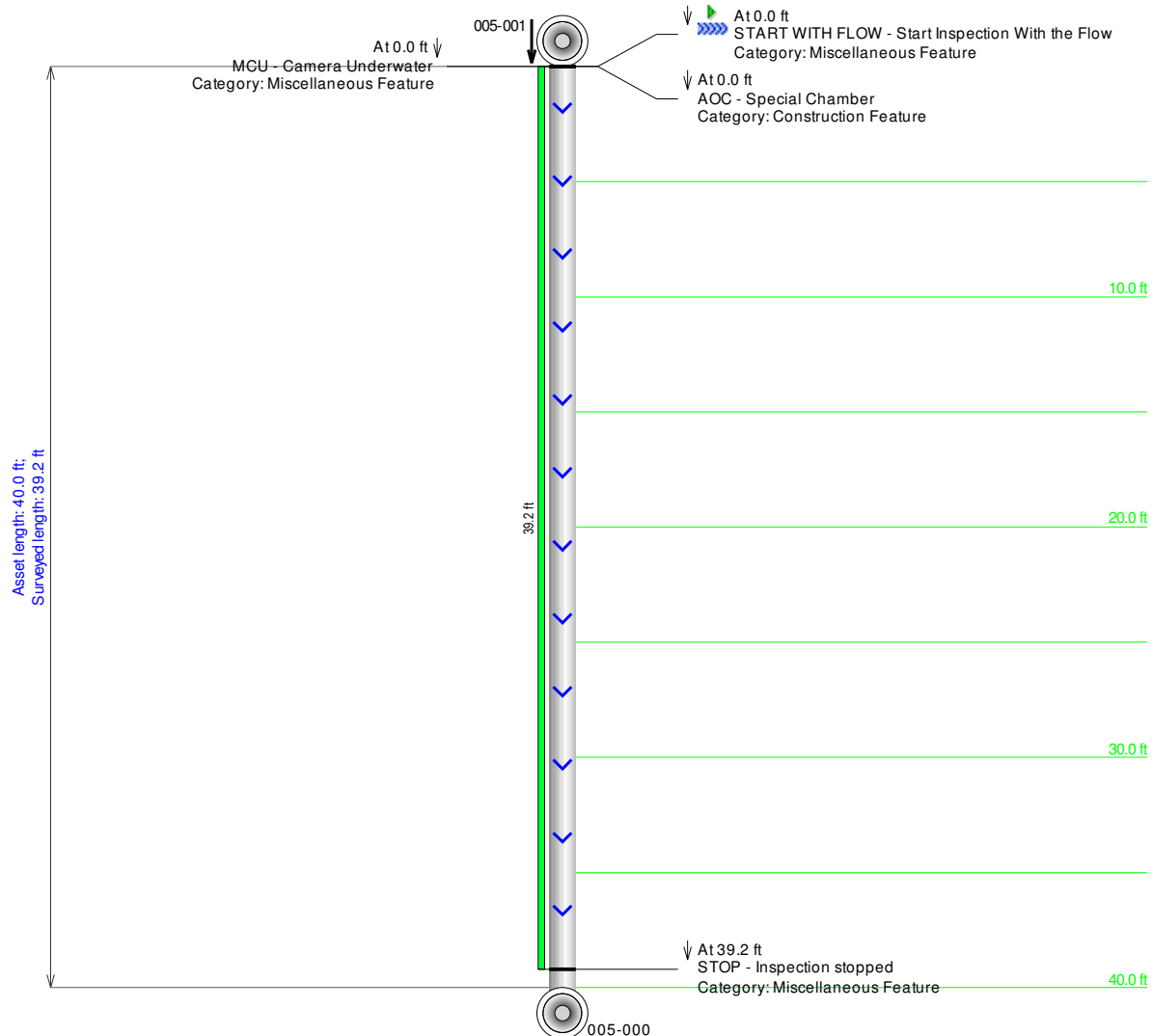


CH2M HILL
 1201 Wakarusa Dr, Bldg. D
 Lawrence, KS 66049
 Phone: 785-841-1774
 Fax: 785-841-5302



TV Inspection with Pipe-Run Graph

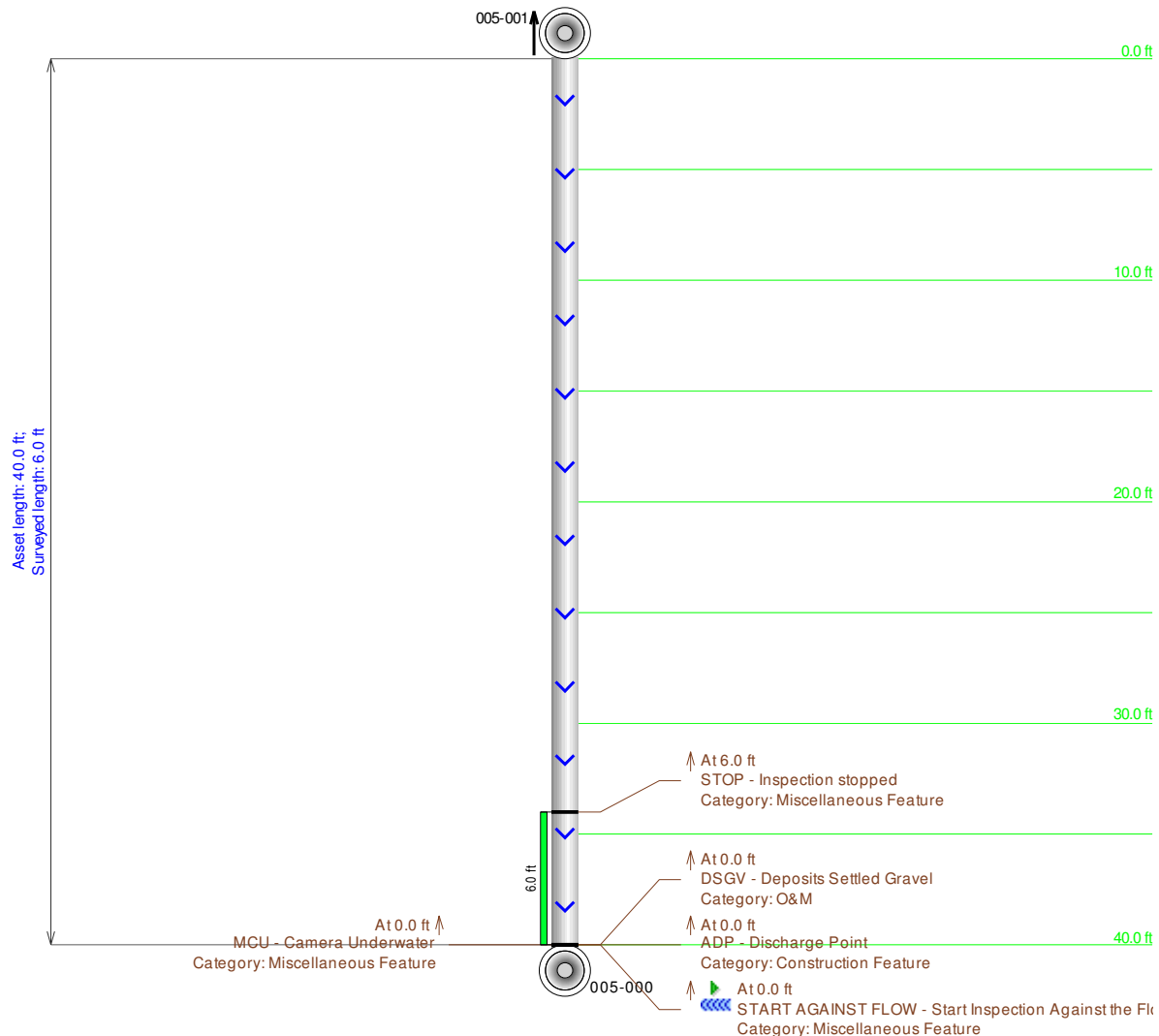
Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 005-001_005-000	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/4/2010	Pipe width: 	Pipe height: 18	Pipe type: VCP
Direction: Downstream	Surveyed footage: 39.2	Weather: 	Surface condition: G
		MediaLabel: 	





TV Inspection with Pipe-Run Graph

Project Name:		Mainline ID:		City:		Address:	
Former Hampshire Chemical Corp/Outfall Piping Investigation		005-001_005-000		Waterloo, NY		228 E Main Street	
Start date/time:		Pipe width:	Pipe height:	Pipe type:		Surface condition:	
8/4/2010			18	VCP		G	
Direction:		Surveyed footage:		Weather:		MediaLabel	
Upstream		6.0					

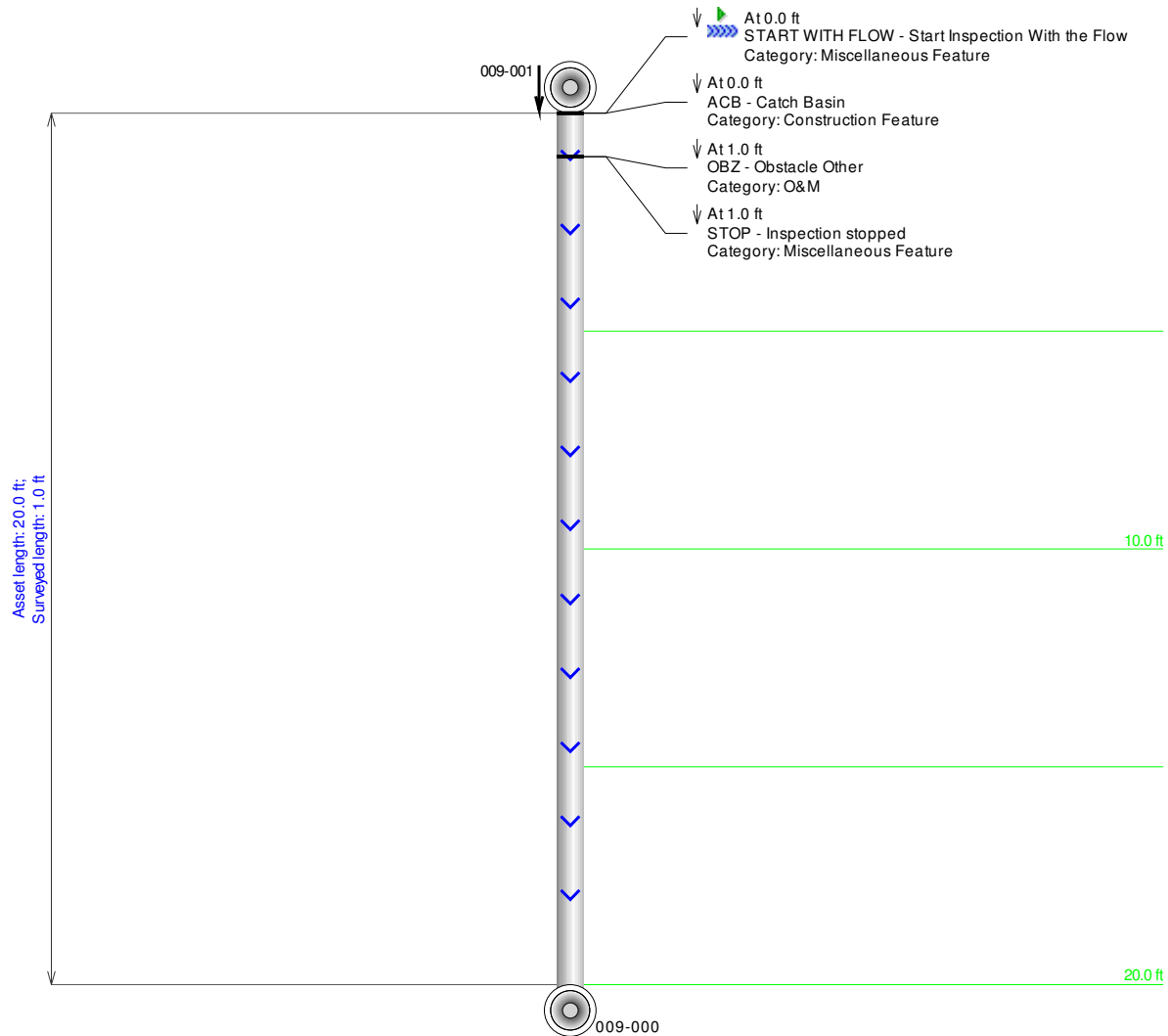


CH2M HILL
 1201 Wakarusa Dr, Bldg. D
 Lawrence, KS 66049
 Phone: 785-841-1774
 Fax: 785-841-5302



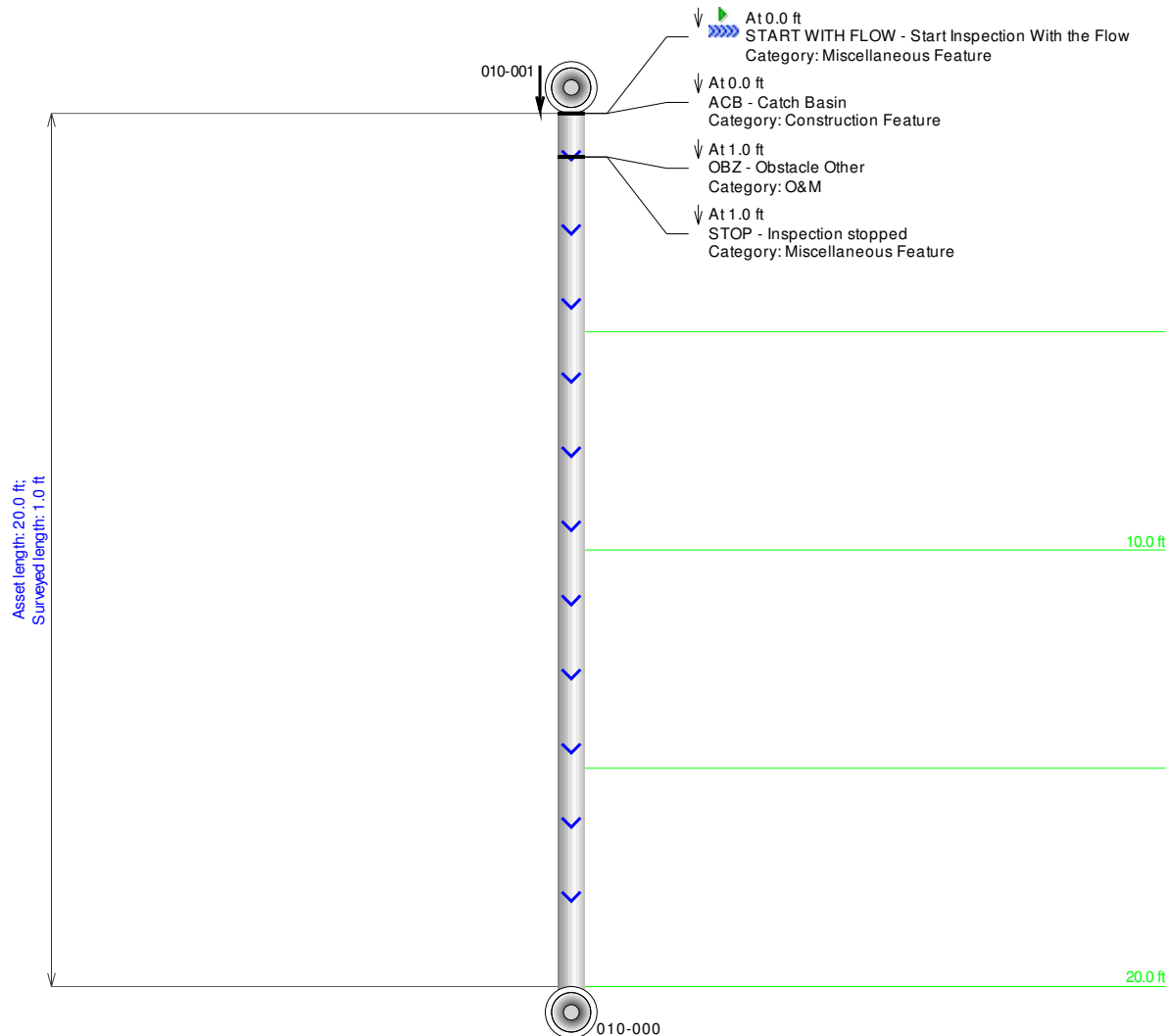
TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 009-001_009-000	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/4/2010	Pipe width: 	Pipe height: 6	Pipe type: SP
Direction: Downstream	Surveyed footage: 1.0	Weather: 	Surface condition: G
MediaLabel 			



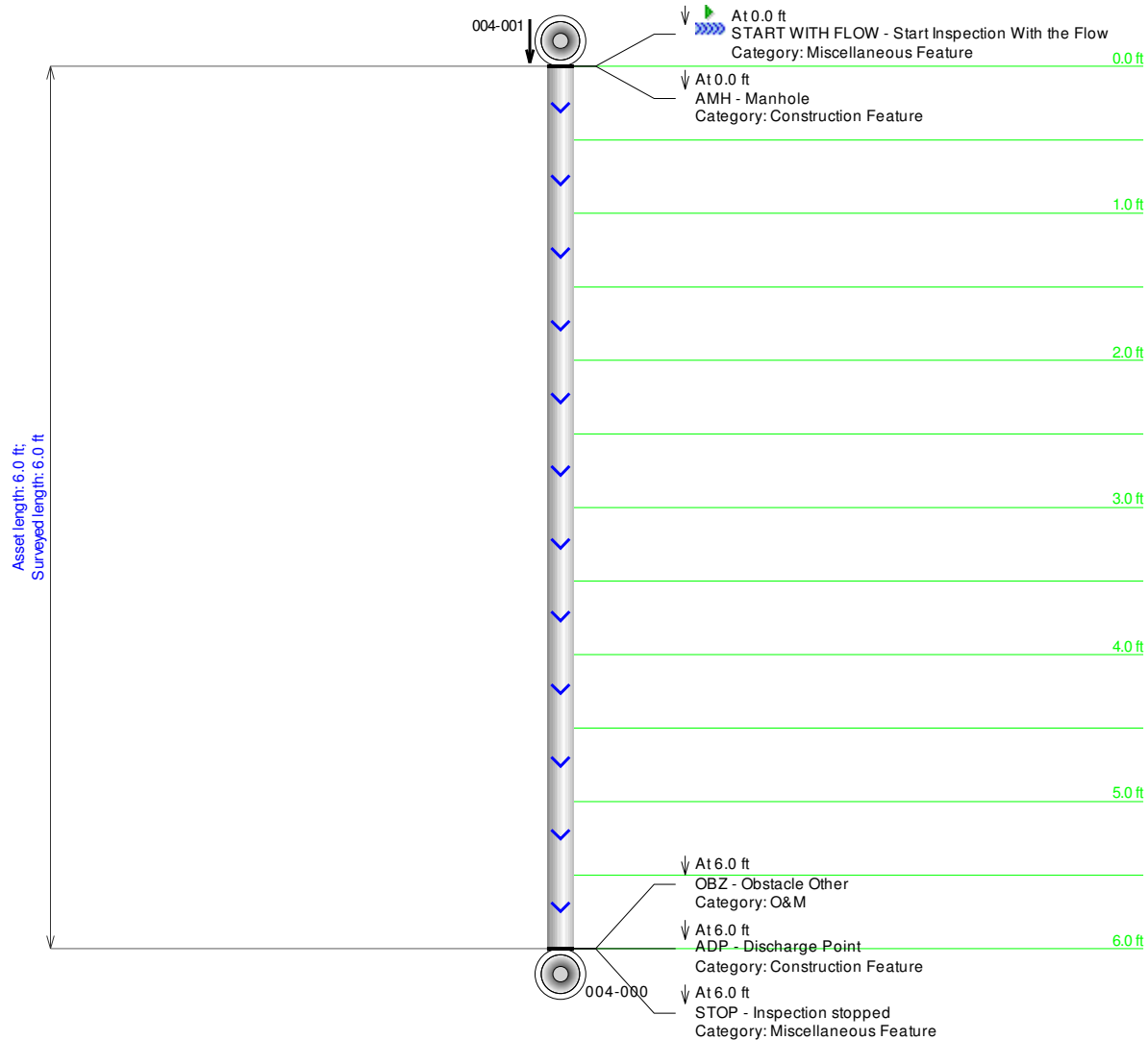
TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 010-001_010-000	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/4/2010	Pipe width: 	Pipe height: 6	Pipe type: SP
Direction: Downstream	Surveyed footage: 1.0	Weather: 	Surface condition: G
MediaLabel 			



TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 004-001_004-000	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 7/20/2010	Pipe width: 	Pipe height: 12	Pipe type: VCP
Direction: Downstream	Surveyed footage: 6.0	Weather: 	Surface condition: G
MediaLabel 			

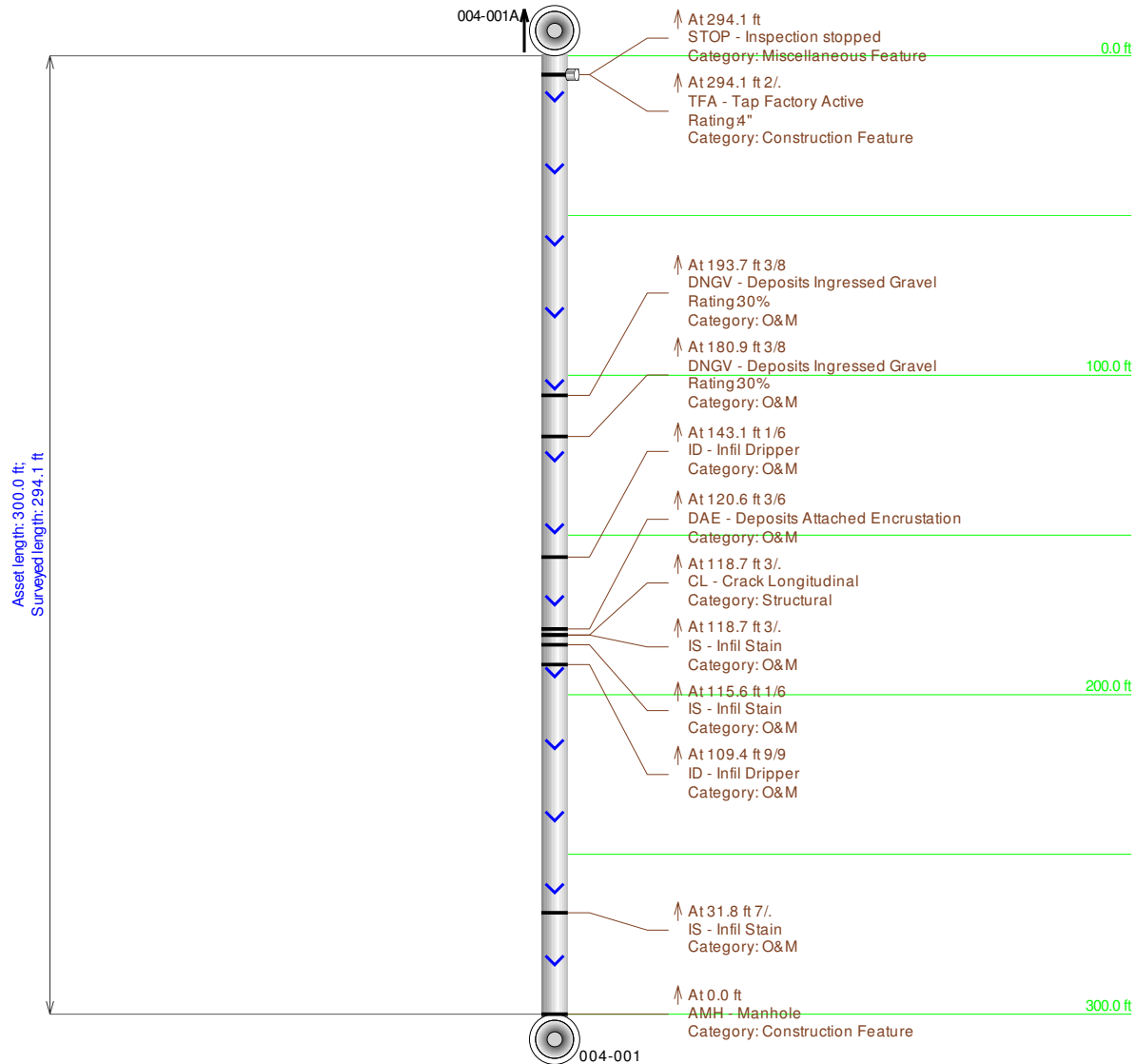


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 Lawrence, KS 66049
 Phone: 785-841-1774
 Fax: 785-841-5302

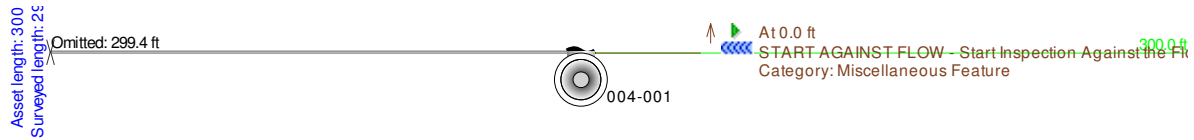


TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 004-001A_004-001	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/3/2010	Pipe width: 12	Pipe type: VCP	Surface condition: G
Direction: Upstream	Surveyed footage: 294.1	Weather:	MediaLabel



Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation		Mainline ID: 004-001A_004-001		City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/3/2010	Pipe width: 	Pipe height: 12	Pipe type: VCP	Surface condition: G	
Direction: Upstream	Surveyed footage: 294.1		Weather: 	MediaLabel 	

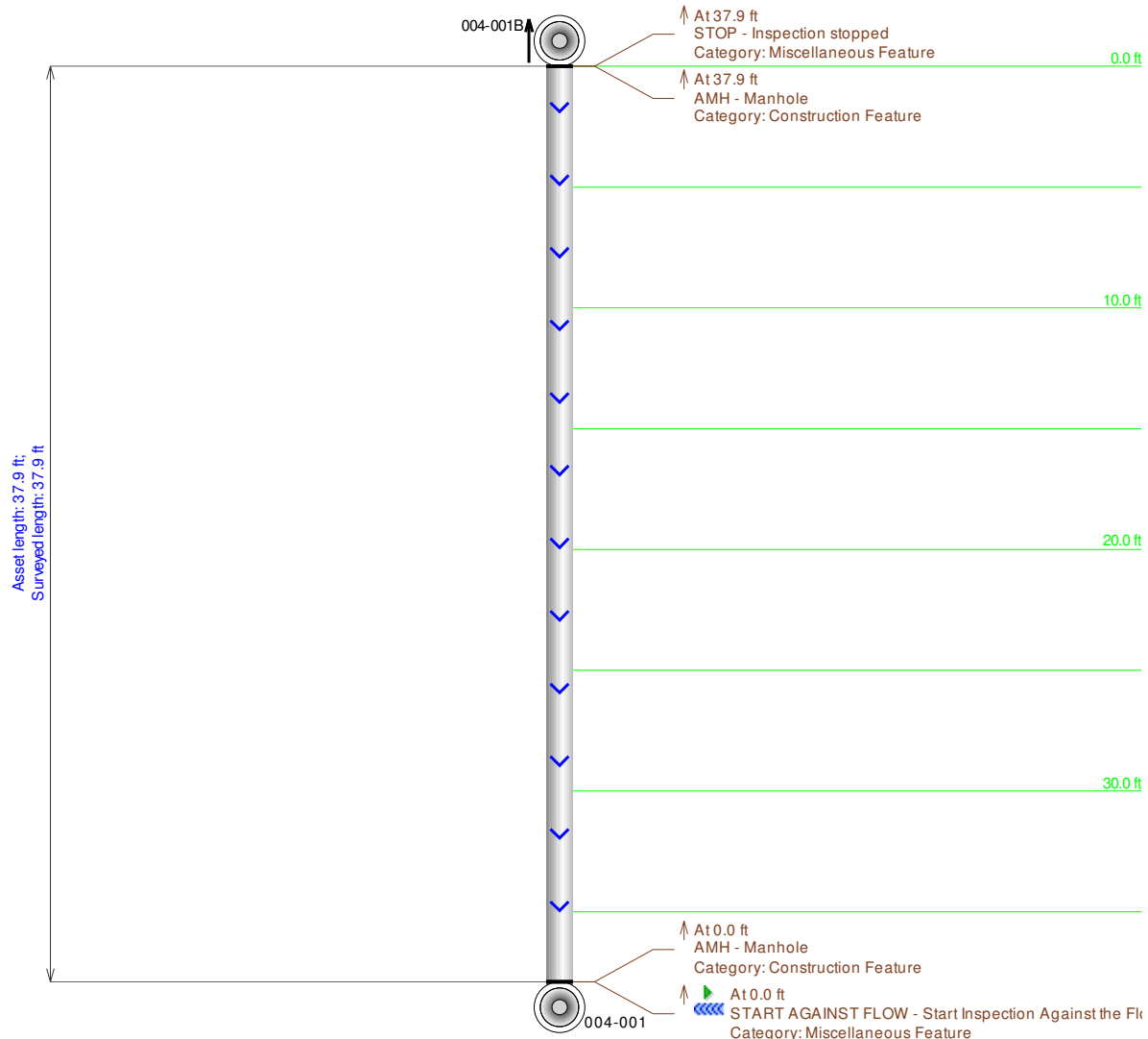


CH2M HILL
1201 Wakarusa Dr, Bldg. D
Lawrence, KS 66049
Phone: 785-841-1774
Fax: 785-841-5302



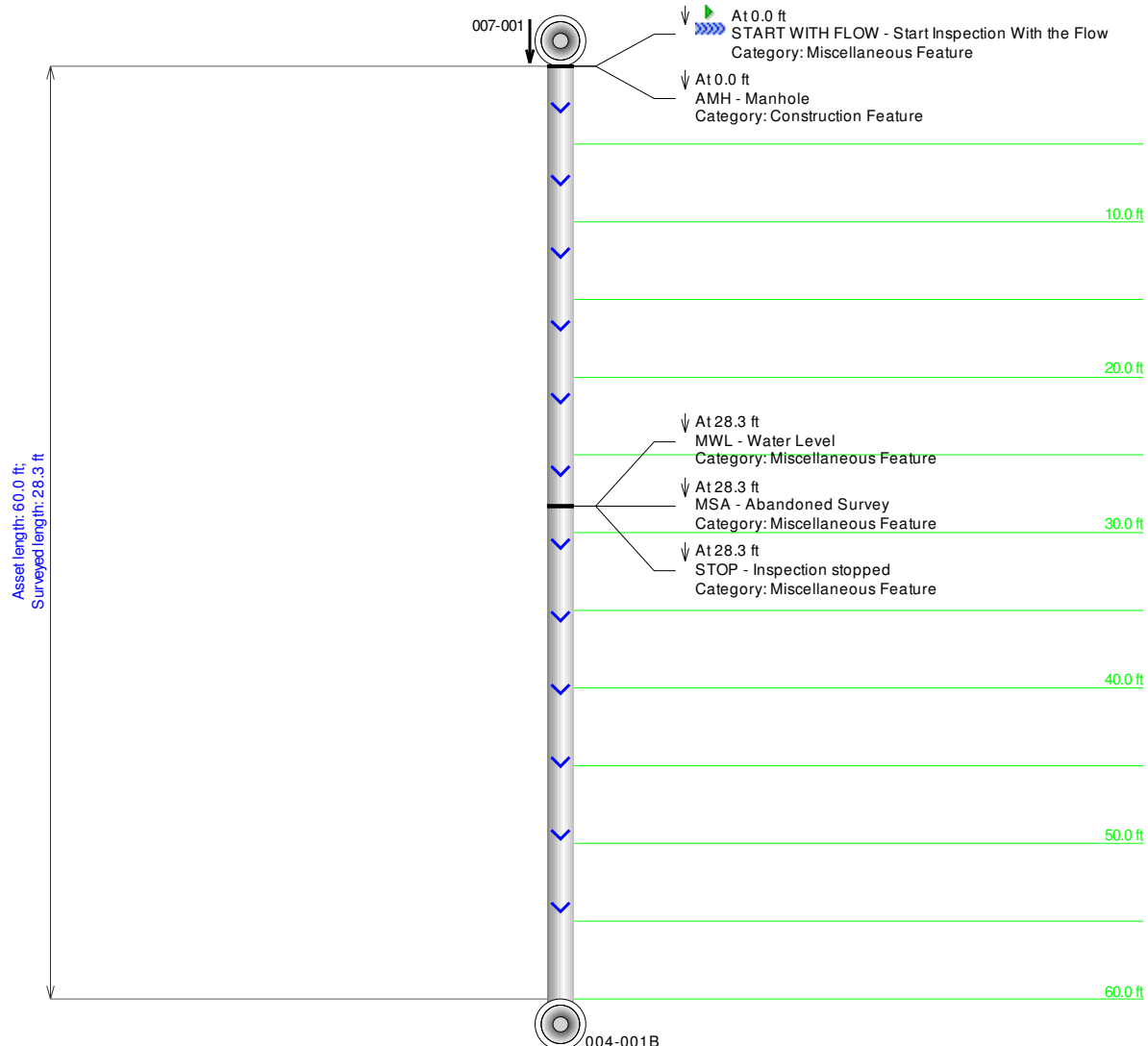
TV Inspection with Pipe-Run Graph

Project Name:	Mainline ID:	City:	Address:	
Former Hampshire Chemical Corp/Outfall Piping Investigation	004-001B_004-001	Waterloo, NY	228 E Main Street	
Start date/time:	Pipe width:	Pipe height:	Pipe type:	Surface condition:
7/20/2010		12	VCP	G
Direction:	Surveyed footage:	Weather:	MediaLabel	
Upstream	37.9			



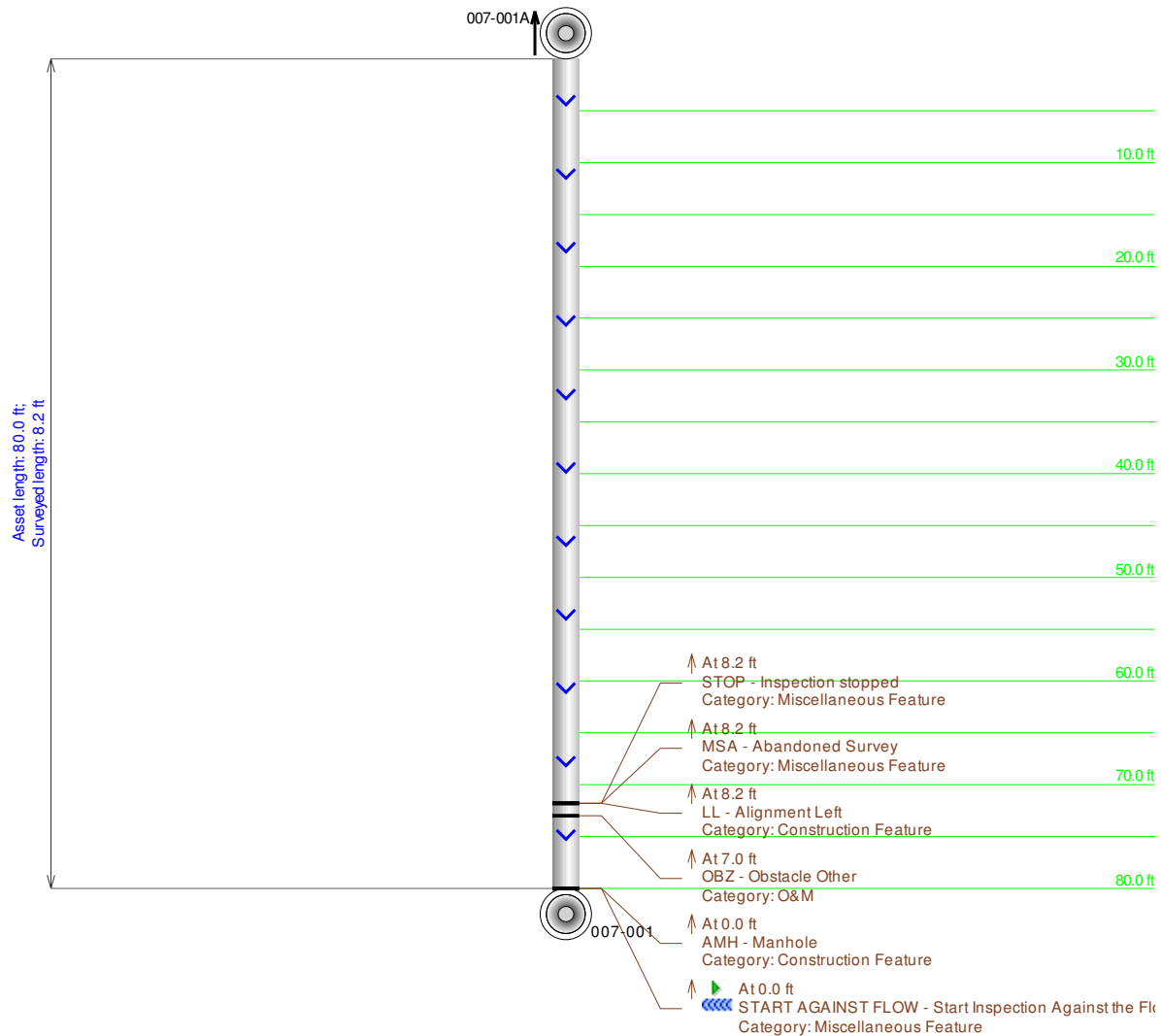
TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 007-001_004-001B	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 7/20/2010	Pipe width: 	Pipe height: 12	Pipe type: VCP
Direction: Downstream	Surveyed footage: 28.3	Weather: 	Surface condition: G
			MediaLabel



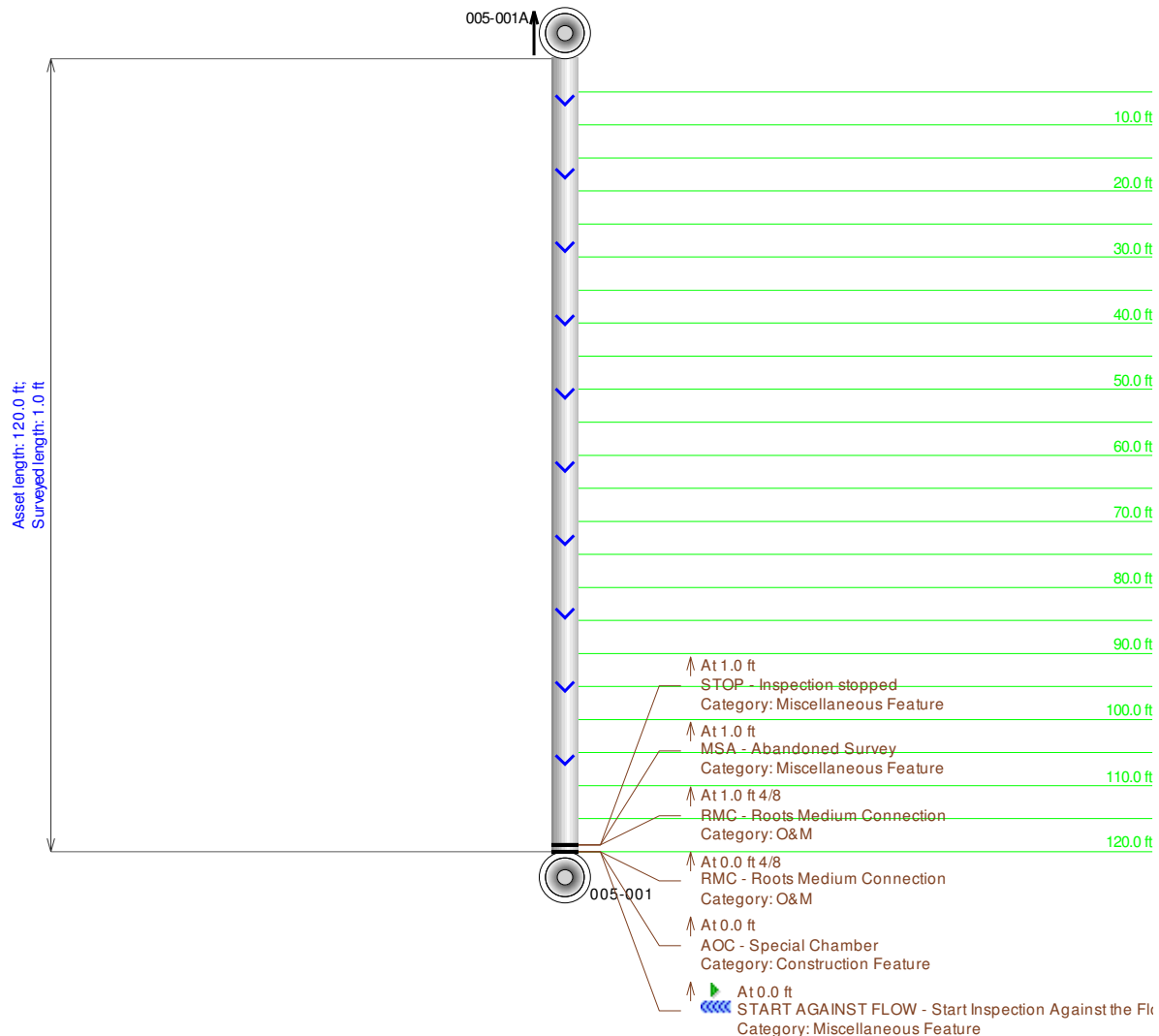
TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 007-001A_007-001	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/3/2010	Pipe width: 	Pipe height: 12	Pipe type: VCP
Direction: Upstream	Surveyed footage: 8.2	Weather: 	Surface condition: G
			MediaLabel



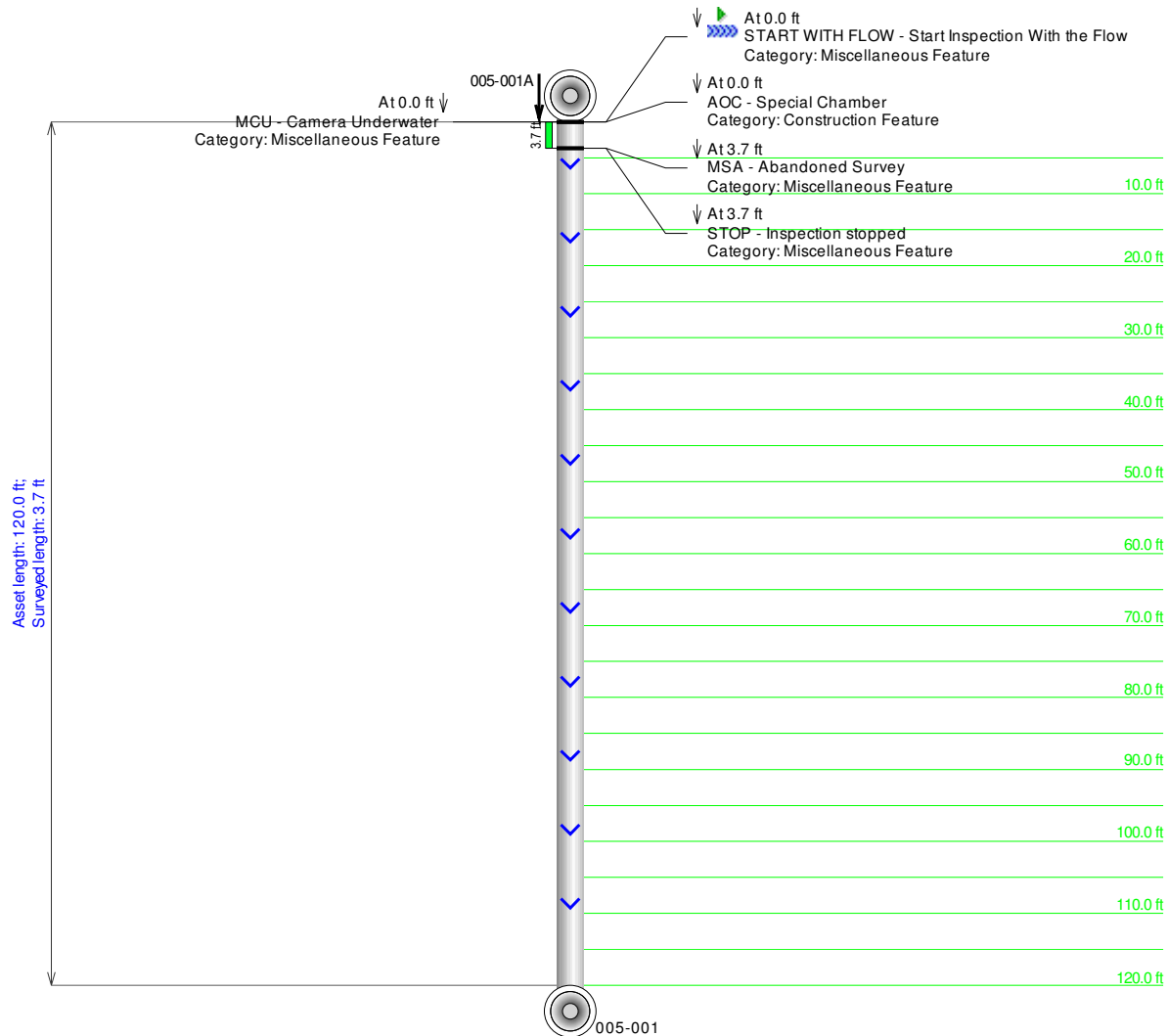
TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 005-001A_005-001	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/4/2010	Pipe width: 	Pipe height: 18	Pipe type: VCP
Direction: Upstream	Surveyed footage: 1.0	Weather: 	Surface condition: G
			MediaLabel



TV Inspection with Pipe-Run Graph

Project Name: Former Hampshire Chemical Corp/Outfall Piping Investigation	Mainline ID: 005-001A_005-001	City: Waterloo, NY	Address: 228 E Main Street
Start date/time: 8/4/2010	Pipe width: 	Pipe height: 18	Pipe type: VCP
Direction: Downstream	Surveyed footage: 3.7	Weather: 	Surface condition: G
MediaLabel			



Attachment 5
CCTV Videos
Provided on CD

Attachment 6
Manhole Inspection Field Forms

Date: 8 / 5 / 10

Crew: LW, MC,

MANHOLE INSPECTION

Former Hampshire Chemical Corp

Project No. 405368

Manhole No. (001-002)

Address: House No.

Street:

Locality:

Map No.:

Precipitation: 1

1 = None, 2 = Light Rain, 3 = Heavy Rain, 4 = Snow

Ground Conditions: 1

1 = Dry, 2 = Damp, 3 = Wet, 4 = Standing Water

Downstream Pipe Length: N/A (ft.)

☒ **Inspected**

Reason Not Inspected:

1 = C.N.L. 6 = Sealed Lid
2 = D.N.E. 7 = Traffic
3 = Buried 8 = Dog
4 = Haz/Atmos. 9 = Other
5 = Unsafe

Location Code: 1

1 = Paved Street 6 = Sidewalk
2 = Unpaved Street 7 = Parking Lot
3 = Paved 8 = Backyard
Intersection 9 = Ditch
4 = Unpaved 10 = Curb/Gutter
Intersection 11 = Easement
5 = Alley 12 = Private
Residence

Manhole Diameter: 4.0(ft.)

Manhole Depth: 4.5(ft.)

☐ **Subject to Ponding**

Ponding Depth: N/A(ft.)

Tributary Area: N/A(sq. ft.)

Grade Elevation Code: 1

1 = Even
2 = Above (in.) no decimal
3 = Below (in.) no decimal

Structure Type Codes:

1 = Brick 9 = PVC
2 = Precast 10 = PVC-coated
3 = Block 11 = Rebar
4 = Clay Pipe 12 = None
5 = Concrete Pipe 13 = Bitumastic
6 = Poured 14 = Grout
7 = Rehab Coating 15 = Other
8 = Cast Iron

See Attachment "A" for General
Observation Codes.

Type Condition I/I (gpm) General Obs. Comments

Cover: F , , ,

a. Diameter: 24.0 (in.)

b. Thickness: 1.5 (in.)

c. Type Code: 2

1=Light Duty, 2=Heavy Duty
3=Bolt Down, 4=Locking

d. ☐ Vented Cover

e. No. of Vents:

f. Vent Dia.: (in.)

#91
MH Area Photo

#92, 93
MH Photo Topside (N)

MH Defect Photo

MH Defect Photo

MH Defect Photo

MH Defect Photo

Type Condition I/I (gpm) General Obs. Comments

Insert: ☐

, , ,

Cover-to-Frame Fit: G , , ,

Frame: G , , ,

a. Inside Dia.: 24.0(in.)

b. Outside Dia.: 25.0(in.)

c. Dwell: 1.0 (in.)

d. Height: 4.25 (in.)

Frame-to-Chimney Seal: 14 G , , ,

Chimney: 2 G , , ,

a. Height: 16.0 (in.)

Corbel: 55, , ,

Wall: 2 G , , ,

Bench: 6 G , , ,

Invert: 6 G , , ,

Steps: 9 G , , , 1 step

a. No. Missing:

Pipe Seal: Condition I/I (gpm)

Seal #1. G

Seal #2. G

Seal #3. G

Seal #4.

Seal #5.

Seal #6.

☐ **Evidence of Surcharge**

Surcharge Depth: (ft.)

Comments:

Photos #95, 96

Photo #97

Photo #94

Date: 8 / 5 / 10

MANHOLE INSPECTION

Crew: LW, MC,

Former Hampshire Chemical Corp

Project No. 405368

Manhole No. (004-001)

Address: House No.

Street:

Locality:

Map No.:

Precipitation: 1

1 = None, 2 = Light Rain, 3 = Heavy Rain, 4 = Snow

Ground Conditions: 2

1 = Dry, 2 = Damp, 3 = Wet, 4 = Standing Water

Downstream Pipe Length: N/A (ft.)

☒ **Inspected**

Reason Not Inspected:

1 = C.N.L. 6 = Sealed Lid
2 = D.N.E. 7 = Traffic
3 = Buried 8 = Dog
4 = Haz/Atmos. 9 = Other
5 = Unsafe

Location Code: 1

1 = Paved Street 6 = Sidewalk
2 = Unpaved Street 7 = Parking Lot
3 = Paved 8 = Backyard
Intersection 9 = Ditch
4 = Unpaved 10 = Curb/Gutter
Intersection 11 = Easement
5 = Alley 12 = Private
Residence

Manhole Diameter: 4.0(ft.)

Manhole Depth: 6.1(ft.)

☐ **Subject to Ponding**

Ponding Depth: N/A(ft.)

Tributary Area: N/A(sq. ft.)

Grade Elevation Code: 1

1 = Even
2 = Above (in.) no decimal
3 = Below (in.) no decimal

Structure Type Codes:

1 = Brick 9 = PVC
2 = Precast 10 = PVC-coated
3 = Block 11 = Rebar
4 = Clay Pipe 12 = None
5 = Concrete Pipe 13 = Bitumastic
6 = Poured 14 = Grout
7 = Rehab Coating 15 = Other
8 = Cast Iron

See Attachment "A" for General
Observation Codes.

Type Condition I/I (gpm) General Obs. Comments

Cover: G 08, , ,

a. Diameter: 24.0 (in.)

b. Thickness: 1.5 (in.)

c. Type Code: 2

1=Light Duty, 2=Heavy Duty
3=Bolt Down, 4=Locking

d. ☐ Vented Cover

e. No. of Vents:

f. Vent Dia.: (in.)

#98

MH Area Photo

#99

MH Photo Topside (N)

#100 wall defect

MH Defect Photo

#101 frame/chim seal

MH Defect Photo

MH Defect Photo

MH Defect Photo

Type Condition I/I (gpm) General Obs. Comments

Insert: ☐

, , ,

Cover-to-Frame Fit: G

, , ,

Frame: G

, , ,

a. Inside Dia.: 23.75(in.)

b. Outside Dia.: 25.5(in.)

c. Dwell: 1.0 (in.)

d. Height: 8.0 (in.)

Frame-to-Chimney Seal: 5 P , , ,

Chimney: 2 F , , ,

a. Height: 19.5 (in.)

Corbel: 2 F , , ,

Wall: 2 F , , ,

Bench: 6 F , , ,

Invert: 14 G , , ,

Steps: 9 G , , ,

a. No. Missing:

Pipe Seal: Condition I/I (gpm)

Seal #1. G

Seal #2. G

Seal #3.

Seal #4.

Seal #5.

Seal #6.

☐ **Evidence of Surcharge**

Surcharge Depth: (ft.)

Comments:

Photo #103

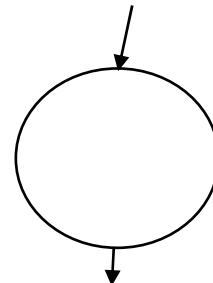


Photo #104

Photo #102

Date: 8 / 5 / 10

MANHOLE INSPECTION

Crew: LW, MC,

Former Hampshire Chemical Corp

Project No. 405368

Manhole No. (004-002)

Address: House No. BLDG 1

Street:

Locality:

Map No.:

Precipitation: 2

1 = None, 2 = Light Rain, 3 = Heavy Rain, 4 = Snow

Ground Conditions: 2

1 = Dry, 2 = Damp, 3 = Wet, 4 = Standing Water

Downstream Pipe Length: 35 (ft.)

☒ **Inspected**

Reason Not Inspected:

1 = C.N.L. 6 = Sealed Lid
2 = D.N.E. 7 = Traffic
3 = Buried 8 = Dog
4 = Haz/Atmos. 9 = Other
5 = Unsafe

Location Code: 7

1 = Paved Street 6 = Sidewalk
2 = Unpaved Street 7 = Parking Lot
3 = Paved Intersection 8 = Backyard
4 = Unpaved Intersection 9 = Ditch
5 = Alley 10 = Curb/Gutter
11 = Easement
12 = Private Residence

Manhole Diameter: N/A(ft.)

Manhole Depth: N/A(ft.)

☒ **Subject to Ponding**

Ponding Depth: 0.75(ft.)

Tributary Area: N/A(sq. ft.)

Grade Elevation Code: 1

1 = Even
2 = Above (in.) no decimal
3 = Below (in.) no decimal

Structure Type Codes:

1 = Brick 9 = PVC
2 = Precast 10 = PVC-coated
3 = Block 11 = Rebar
4 = Clay Pipe 12 = None
5 = Concrete Pipe 13 = Bitumastic
6 = Poured 14 = Grout
7 = Rehab Coating 15 = Other
8 = Cast Iron

See Attachment "A" for General Observation Codes.

Type Condition I/I (gpm) General Obs. Comments

Cover:

a. Diameter: 30x24 (in.)

b. Thickness: 1.5 (in.)

c. Type Code: 1

1=Light Duty, 2=Heavy Duty
3=Bolt Down, 4=Locking

d. ☒ Vented Cover

e. No. of Vents:

f. Vent Dia.: 1.25(in.)

#105

MH Area Photo

#106

MH Photo Topside (N)

MH Defect Photo

MH Defect Photo

MH Defect Photo

MH Defect Photo

Type Condition I/I (gpm) General Obs. Comments

Insert: ☐

Cover-to-Frame Fit: G

Frame: G

a. Inside Dia.: (in.)

b. Outside Dia.: (in.)

c. Dwell: 1.5 (in.)

d. Height: (in.)

Frame-to-Chimney Seal: 15

Chimney:

a. Height: (in.)

Corbel:

Wall: 5

Bench:

Invert:

Steps:

a. No. Missing:

Pipe Seal: Condition I/I (gpm)

Seal #1.

Seal #2.

Seal #3.

Seal #4.

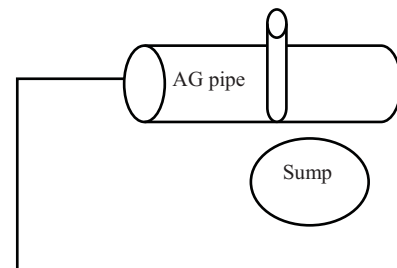
Seal #5.

Seal #6.

☐ **Evidence of Surcharge**

Surcharge Depth: (ft.)

Comments:



Date: 8 / 5 / 10

MANHOLE INSPECTION

Crew: LW, MC,

Former Hampshire Chemical Corp

Project No. 405368.

Manhole No. (004-008)

Address: House No. Bldg 2A

Street:

Locality:

Map No.:

Precipitation: 2

1 = None, 2 = Light Rain, 3 = Heavy Rain, 4 = Snow

Ground Conditions: 2

1 = Dry, 2 = Damp, 3 = Wet, 4 = Standing Water

Downstream Pipe Length: N/A (ft.)

☒ **Inspected**

Reason Not Inspected:

1 = C.N.L. 6 = Sealed Lid
2 = D.N.E. 7 = Traffic
3 = Buried 8 = Dog
4 = Haz/Atmos. 9 = Other
5 = Unsafe

Location Code: 7

1 = Paved Street 6 = Sidewalk
2 = Unpaved Street 7 = Parking Lot
3 = Paved 8 = Backyard
Intersection 9 = Ditch
4 = Unpaved 10 = Curb/Gutter
Intersection 11 = Easement
5 = Alley 12 = Private
Residence

Manhole Diameter: 4.0(ft.)

Manhole Depth: 7.75(ft.)

☐ **Subject to Ponding**

Ponding Depth: N/A(ft.)

Tributary Area: N/A(sq. ft.)

Grade Elevation Code: 1

1 = Even
2 = Above (in.) no decimal
3 = Below (in.) no decimal

Structure Type Codes:

1 = Brick 9 = PVC
2 = Precast 10 = PVC-coated
3 = Block 11 = Rebar
4 = Clay Pipe 12 = None
5 = Concrete Pipe 13 = Bitumastic
6 = Poured 14 = Grout
7 = Rehab Coating 15 = Other
8 = Cast Iron

See Attachment "A" for General
Observation Codes.

Type Condition I/I (gpm) General Obs. Comments

Cover: G 08, , ,

a. Diameter: 24.0 (in.)

b. Thickness: 1.5 (in.)

c. Type Code: 2

1=Light Duty, 2=Heavy Duty
3=Bolt Down, 4=Locking

d. ☐ Vented Cover

e. No. of Vents:

f. Vent Dia.: (in.)

#107
MH Area Photo

#108, #109
MH Photo Topside (N)

MH Defect Photo

MH Defect Photo

MH Defect Photo

MH Defect Photo

Type Condition I/I (gpm) General Obs. Comments

Insert: ☐

, , ,

Cover-to-Frame Fit: G , , ,

Frame: G , , ,

a. Inside Dia.: 23.75(in.)

b. Outside Dia.: 25.5(in.)

c. Dwell: 1.0 (in.)

d. Height: 9.5 (in.)

Frame-to-Chimney Seal: 1 F , , ,

Chimney: 5 F , , ,

a. Height: 23.0 (in.)

Corbel: 1 G , , ,

Wall: 1 G , , ,

Bench: 6 G , , ,

Invert: 6 G , , ,

Steps: 11 G 04, , ,

a. No. Missing:

Pipe Seal: Condition I/I (gpm)

Seal #1. G

Seal #2. G

Seal #3. G

Seal #4.

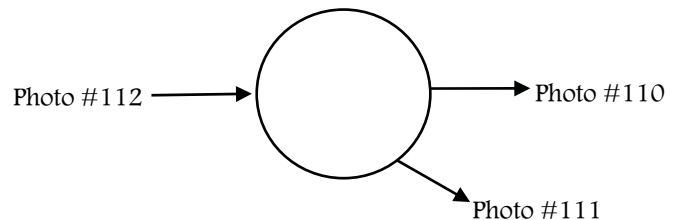
Seal #5.

Seal #6.

☐ **Evidence of Surcharge**

Surcharge Depth: (ft.)

Comments:



Date: 8 / 5 / 10

Crew: LW, MC,

MANHOLE INSPECTION

Former Hampshire Chemical Corp

Project No. 405368

Manhole No. (007-001)

Address: House No.

Street:

Locality:

Map No.:

Precipitation: 1

1 = None, 2 = Light Rain, 3 = Heavy Rain, 4 = Snow

Ground Conditions: 2

1 = Dry, 2 = Damp, 3 = Wet, 4 = Standing Water

Downstream Pipe Length: N/A (ft.)

☒ **Inspected**

Reason Not Inspected:

1 = C.N.L. 6 = Sealed Lid
2 = D.N.E. 7 = Traffic
3 = Buried 8 = Dog
4 = Haz/Atmos. 9 = Other
5 = Unsafe

Location Code: 1

1 = Paved Street 6 = Sidewalk
2 = Unpaved Street 7 = Parking Lot
3 = Paved Intersection 8 = Backyard
4 = Unpaved Intersection 9 = Ditch
5 = Alley 10 = Curb/Gutter
11 = Easement
12 = Private Residence

Manhole Diameter: 4.0(ft.)

Manhole Depth: 6.9(ft.)

☐ **Subject to Ponding**

Ponding Depth: N/A(ft.)

Tributary Area: N/A(sq. ft.)

Grade Elevation Code: 1

1 = Even
2 = Above (in.) no decimal
3 = Below (in.) no decimal

Structure Type Codes:

1 = Brick 9 = PVC
2 = Precast 10 = PVC-coated
3 = Block 11 = Rebar
4 = Clay Pipe 12 = None
5 = Concrete Pipe 13 = Bitumastic
6 = Poured 14 = Grout
7 = Rehab Coating 15 = Other
8 = Cast Iron

See Attachment "A" for General Observation Codes.

Type Condition I/I (gpm) General Obs. Comments

Cover: G , , ,

a. Diameter: 24.0 (in.)

b. Thickness: 1.5 (in.)

c. Type Code: 2

1=Light Duty, 2=Heavy Duty
3=Bolt Down, 4=Locking

d. ☒ Vented Cover

e. No. of Vents: 4

f. Vent Dia.: 1.0(in.)

#113
MH Area Photo

#114
MH Photo Topside (N)

MH Defect Photo

MH Defect Photo

MH Defect Photo

MH Defect Photo

Type Condition I/I (gpm) General Obs. Comments

Insert: ☐ , , ,

Cover-to-Frame Fit: G , , ,

Frame: G , , ,

a. Inside Dia.: 23.75(in.)

b. Outside Dia.: 25.25(in.)

c. Dwell: 1.0 (in.)

d. Height: 8.0 (in.)

Frame-to-Chimney Seal: 14 G , , ,

Chimney: 2 G 16, , , Offset 3"

a. Height: 12.5 (in.)

Corbel: 2 G , , ,

Wall: 2 G , , ,

Bench: 2 G , , ,

Invert: 6 G , , ,

Steps: 9 G , , ,

a. No. Missing:

Pipe Seal: Condition I/I (gpm)

Seal #1. G

Seal #2. G

Seal #3.

Seal #4.

Seal #5.

Seal #6.

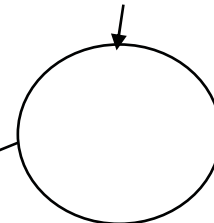
☐ **Evidence of Surcharge**

Surcharge Depth: (ft.)

Comments:

Photo #116

Photo #115



Date: 8 / 5 / 10

Crew: LW, MC,

MANHOLE INSPECTION

Former Hampshire Chemical Corp

Project No. 405368

Manhole No. (007-003) Sump

Address: House No. BLDG 1

Street:

Locality:

Map No.:

Precipitation: 2

1 = None, 2 = Light Rain, 3 = Heavy Rain, 4 = Snow

Ground Conditions: 2

1 = Dry, 2 = Damp, 3 = Wet, 4 = Standing Water

Downstream Pipe Length: N/A (ft.)

☒ **Inspected**

Reason Not Inspected:

1 = C.N.L. 6 = Sealed Lid
2 = D.N.E. 7 = Traffic
3 = Buried 8 = Dog
4 = Haz/Atmos. 9 = Other
5 = Unsafe

Location Code: 7

1 = Paved Street 6 = Sidewalk
2 = Unpaved Street 7 = Parking Lot
3 = Paved 8 = Backyard
Intersection 9 = Ditch
4 = Unpaved 10 = Curb/Gutter
Intersection 11 = Easement
5 = Alley 12 = Private
Residence

Manhole Diameter: N/A(ft.)

Manhole Depth: N/A(ft.)

☒ **Subject to Ponding**

Ponding Depth: 1.5(ft.)

Tributary Area: N/A(sq. ft.)

Grade Elevation Code: 1

1 = Even
2 = Above (in.) no decimal
3 = Below (in.) no decimal

Structure Type Codes:

1 = Brick 9 = PVC
2 = Precast 10 = PVC-coated
3 = Block 11 = Rebar
4 = Clay Pipe 12 = None
5 = Concrete Pipe 13 = Bitumastic
6 = Poured 14 = Grout
7 = Rehab Coating 15 = Other
8 = Cast Iron

See Attachment "A" for General Observation Codes.

Type Condition I/I (gpm) General Obs. Comments

Cover: G , , ,

a. Diameter: 17.0 (in.)

b. Thickness: 0.5 (in.)

c. Type Code: 1

1=Light Duty, 2=Heavy Duty
3=Bolt Down, 4=Locking

d. ☒ Vented Cover

e. No. of Vents: 1

f. Vent Dia.: 5.0(in.)

#117
MH Area Photo

#118
MH Photo Topside (N)

MH Defect Photo

MH Defect Photo

MH Defect Photo

MH Defect Photo

Type Condition I/I (gpm) General Obs. Comments

Insert: ☐ , , ,

Cover-to-Frame Fit: , , ,

Frame: F , , ,

a. Inside Dia.: N/A(in.)

b. Outside Dia.: 17.0(in.)

c. Dwell: N/A (in.)

d. Height: 0.5 (in.)

Frame-to-Chimney Seal: , , ,

Chimney: , , ,

a. Height: (in.)

Corbel: , , ,

Wall: , , ,

Bench: , , ,

Invert: , , ,

Steps: , , ,

a. No. Missing:

Pipe Seal: Condition I/I (gpm)
Seal #1.

Seal #2.

Seal #3.

Seal #4.

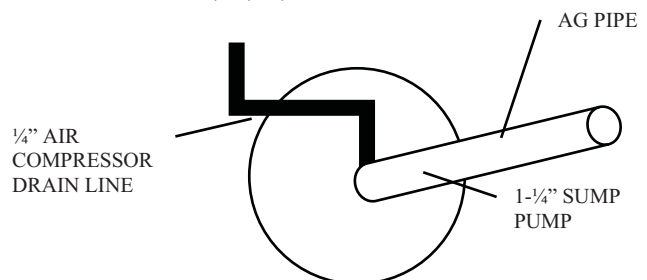
Seal #5.

Seal #6.

☐ **Evidence of Surcharge**

Surcharge Depth: (ft.)

Comments:



Date: 8 / 5 / 10

Crew: LW, MC,

MANHOLE INSPECTION

Former Hampshire Chemical Corp

Project No. 405368

Manhole No. (007-008)

Address: House No. Bldg 2A

Street:

Locality:

Map No.:

Precipitation: 2

1 = None, 2 = Light Rain, 3 = Heavy Rain, 4 = Snow

Ground Conditions: 2

1 = Dry, 2 = Damp, 3 = Wet, 4 = Standing Water

Downstream Pipe Length: N/A (ft.)

☒ **Inspected**

Reason Not Inspected:

1 = C.N.L. 6 = Sealed Lid
2 = D.N.E. 7 = Traffic
3 = Buried 8 = Dog
4 = Haz/Atmos. 9 = Other
5 = Unsafe

Location Code: 7

1 = Paved Street 6 = Sidewalk
2 = Unpaved Street 7 = Parking Lot
3 = Paved 8 = Backyard
Intersection 9 = Ditch
4 = Unpaved 10 = Curb/Gutter
Intersection 11 = Easement
5 = Alley 12 = Private
Residence

Manhole Diameter: N/A(ft.)

Manhole Depth: N/A(ft.)

☐ **Subject to Ponding**

Ponding Depth: N/A(ft.)

Tributary Area: N/A(sq. ft.)

Grade Elevation Code: 1

1 = Even
2 = Above (in.) no decimal
3 = Below (in.) no decimal

Structure Type Codes:

1 = Brick 9 = PVC
2 = Precast 10 = PVC-coated
3 = Block 11 = Rebar
4 = Clay Pipe 12 = None
5 = Concrete Pipe 13 = Bitumastic
6 = Poured 14 = Grout
7 = Rehab Coating 15 = Other
8 = Cast Iron

See Attachment "A" for General
Observation Codes.

Type Condition I/I (gpm) General Obs. Comments

Cover:

a. Diameter: 24x14 (in.)

b. Thickness: 1.5 (in.)

c. Type Code: 1

1=Light Duty, 2=Heavy Duty
3=Bolt Down, 4=Locking

d. ☒ Vented Cover

e. No. of Vents: Grate

f. Vent Dia.: 1.5(in.)

#119
MH Area Photo

#120
MH Photo Topside (N)

MH Defect Photo

MH Defect Photo

MH Defect Photo

MH Defect Photo

Type Condition I/I (gpm) General Obs. Comments

Insert: ☐

Cover-to-Frame Fit: G

Frame: G

a. Inside Dia.: 14.0(in.)

b. Outside Dia.: 14.25(in.)

c. Dwell: 1.5 (in.)

d. Height: N/A (in.)

Frame-to-Chimney Seal:

Chimney:

a. Height: (in.)

Corbel:

Wall: 1 G

Bench:

Invert:

Steps:

a. No. Missing:

Pipe Seal: Condition I/I (gpm)

Seal #1.

Seal #2.

Seal #3.

Seal #4.

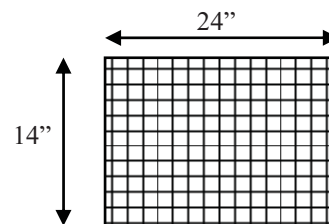
Seal #5.

Seal #6.

☐ **Evidence of Surcharge**

Surcharge Depth: (ft.)

Comments: Oily black residue.



Attachment 7
Capacitors Equipment List

EQUIPMENT LISTELECTRICAL

<u>BLDG./CODE #</u>	<u>DEPT.</u>	<u>ECI.#</u>	<u>SER.#</u>	<u>MODEL</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
13-A	81	1470	W38528	GE-H1100 5KVAR	EDT	230V indoor dust proof capacitor, weld shop, PO W-2795, 5/9/62, Gould-Farmer, Inc.
13-A	81	1469	W38524	GE-H1100 5KVAR	EDT	230V indoor dust proof capacitor, machine shop
11-	68	1500	W56390	GE-H1100 10KVAR	EDT	230V indoor dust proof capacitor Bldg. 11 main line Dept. 68. PO 3224, 7/13/62 Gould-Farmer Inc.
14-	68 69	1462	W-16045	10KVAR GE-H1100	EDT	230V indoor dust proof capacitor #1 race pump. PO #2649, 4/18/62. Gould-Farmer w/14-P-1.
14-	68 69	1463	W-21127	10KVAR GE-H1100	EDT	230V indoor dust proof capacitor #2 race pump PO 2649 4/18/62 Gould-Farmer w/14-P-2.

HOLD FAST

"NEEDLE"

HOLD FAST

"NEEDLE"

EQUIPMENT LIST

Page -2-

ELECTRICAL

<u>BLDG./CODE #</u>	<u>DEPT.</u>	<u>ECI.#</u>	<u>SER.#</u>	<u>MODEL</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1-	88	1485		5KVAR C-D		230V indoor dust-proof capacitor. PO 2881, 5/22/62 Federal Pacific, w/1-HPB-3 boiler.
1-	88	1484		5KVAR C-D		230V indoor dust-proof capacitor. PO 2881, 5/22/62 Federal Pacific, w/1-HPB-2 boiler.
1-	88	1483		5KVAR C-D		230V indoor dust proof capacitor. PO 2881, 5/22/62 Federal Pacific, w/1-HPB-1 boiler.
1-	88	1472		H-1100 5KVAR	EDT	230V indoor dust-proof capacitor. PO 2795 5/9/62 Gould-Farmer, Inc. GE, w/1-P w/1-HBP-2
1-	88	1486		5KVAR		230V indoor dust-proof capacitor. PO 2881, 5/22/62 Federal Pacific w/1-P, w/1-HPB-1

EQUIPMENT LISTELECTRICAL

<u>BLDG./CODE #</u>	<u>DEPT.</u>	<u>ECI.#</u>	<u>SER.#</u>	<u>MODEL</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
1	69-2	1499	W56386	H-1100 10KVAR	EDT	230V indoor dust-proof capacitor. PO 3224, 7/13/62 Gould Farmer, GE, main line to Bldg. 2
13 yard 2		1801		50KVAR		Capacitor. PO 3367 1/3/67 New York State Gas & Elec. Co.
13 yard 2		1802		50KVAR		Capacitor. PO 3367
13 yard 2		1803		50KVAR		Capacitor. PO 3367
13-5	88	1464	W-24746	GE-H1100 5 KVAR	EDT	230V indoor dust-proof capacitor, PO 2649 4/18/62 Gould Farmer, w/elevator
11-B	88	1498	W-58724	GE-H1100 5KVAR	EDT	230V indoor dust-proof capacitor. PO 3224, 7/13/62 Gould Farmer #2 air compressor.

EQUIPMENT LISTELECTRICAL

<u>BLDG./CODE #</u>	<u>DEPT.</u>	<u>ECI #</u>	<u>SER. #</u>	<u>MODEL</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
11-B	88	1465	W-24742	GE-H1100 5KVAR	EDT	220V indoor dust-proof capacitor. PO 2649, 4/18/62 Gould Farmer, #1 air compressor.
4	68	1471	W-38529	GE-H1100 5 KVAR	EDT	230V indoor dust-proof capacitor. PO 2795, 5/9/62 Gould Farmer, with 4-P-51.
13-3	58	1482		5KVAR C-D		230V indoor dust-proof capacitor. PO 2881, 5/22/62 Federal Pacific-powder room.

TRANSFORMERS

EQUIPMENT LIST

BLDG./CODE #	DEPT.	ECI #	SERIAL #	MODEL	TYPE	DESCRIPTION
TF-2	70	1806	G86329066Y	12470Y 100 KVA oil	HS	Outdoor single phase pole, 4800-7200, 120-240v, transformer, General Electric PO W2918, 10/14/66 Gould Farmer, Lighting, w/bldgs. 2A & 2B
TF-3	88	1603	97918663P	167KVA	HS	Outdoor single phase, 60C, 4800-120-24 General Electric, center transformer bank of PO 5550, 7/5/63, Gould Farmer Lighting Bldgs. 1 & 2
TF-6	68 outside carpenter shop	3130	T&R 02830 (4437M)	500 KVA	3 phase	T&R Elec Supply Co., Coleman, SD 5701 PO 7707 12/21/87 \$5595 Replacement for 2127 now a spare
TF-7 Outside Bldg. 2A	70	2868	N1125773YGSA			Secondary transformer, GE single phase pole type, oil type OA, 60 Hz, 100 KVA 4800/8320Y x 7200/12470Y, 120/240. General Electric Supply Co., E. Syracuse NY 13057, PO 1769 3/27/80 \$1554 RE: RCA 0-80-8 for Bldg. 2A/2B 3 phas power
TF-7 Outside Bldg. 2A	70	2869	N1125774YGSA			Same as above
TF-7 Outside Bldg. 2A	70	2870	N1125775YGSA			Same as above
TF-7	90	2880	L444312773AA	Oil		Transformer- HB41K99CK654AA, 750 KVA, 3 PH, 306-3674830 class OA60 HC, 65° re 17 pk. pad mounted. General Electric Supply Co., Syracuse, NY PO W5696, 7/5/73 (8320GRDY/4800x12470GRDY/7200 480Y/277 - rating)

HOLD FAST

"NOTAR" (R)

EQUI

LIST

HOLD FAST

"NOTAR" (R)

Transformer

DESCRIPTION

TYPE

MODEL

SER.#

ECI.#

DEPT.

BLDG./CODE #

Outdoor single phase pole,
4800-8320, 240-480V, trans-
former, PO W-7105, 4/28/71
Goulds Farmer, W/2B dept.
70 WBC-1

HS

Pole
25KVA

JL47903
Y69

1977

70

TF - 1

GE Gould Farmer Oil, 60C,
W-7105, 4/25/69, 295

HS

Pole

JL47904-
Y69

1978

69

TF - 1

Outdoor single phase pole,
4800-8320, 240-480V trans-
former. PO W-7105, 4/28/71,
Gould Farmer W/2B, Dept. 70
WBC-1

HS

Pole
25KVA

JL47904-
Y69

1978

70

TF - 1

Outdoor single phase, pole
type 4800-8320, 240-480V,
transformer. PO W-7105,
4/28/71. Gould Farmer
Bldg. 2B, Dept. 70

HS

Pole
Oil
25KVA

JL47905-
Y69

1979

70

TF - 1

~~Outdoor single phase, pole,
4800-7200-120-240V trans-
former. General Electric.
PO W-2918, 10/14/66, Gould
Farmer, w/Bldg. 2A & 2B.~~

HS

~~12470V
50KVA-
oil~~

~~6880267-
67Y~~

~~1804~~

~~75~~

TF - 2

EQUIPMENT LIST

TRANSFORMERS

<u>BLDG./CODE #</u>	<u>DEPT.</u>	<u>ECI.#</u>	<u>SER.#</u>	<u>MODEL</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
TF - 4	88	1598	E-450269-63P		HT	Outdoor, 3 phase, 60C, 4800 to 220-440V General Electric transformer, PO 4810, 3/26/63 Gould Farmer, Wel pump.
TF - 5	88	947	6814622-KVA-100	Form W2S 8320Y	HS	Outdoor single phase, 60C, 2400-480V, to 120-240V, General Electric spirahore transformer, North. PO 6542 3/20/51. NYS Gas & Elec. Bldg.s 13, 13A, 11, 12.
TF - 5	88	948	6814616	Form W2S	HS	Outdoor single phase, 60C, 2400-480V to 120-240V, General Electric Spirahore transformer, South. PO 6542, 3/20/51. NYS Gas & Electric.
TF - 5	88	949	6814615	Form W2S 8320Y	HS	Single phase, outdoor, 60C 2400-4800V to 120V-240V General Electric, spirahore transformer, Middle. PO 6542, 3/20/51, N.Y.S. Gas and Electric.

TRANSFORMERSEQUIPMENT LIST

<u>BLDG./CODE #</u>	<u>DEPT.</u>	<u>ECI #</u>	<u>SERIAL #</u>	<u>MODEL</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
TF 2A & 16	88	1832				Inst. of 6 poles - 3 primary conductors - 3 transformers - 3 lightning arresters & 3 fuses
TF-8	88	2368	L457508T74AA			Transformer, pad mounted, 3 ph., 60 Hz, 4800/8320Y x 7200/12470Y, 240 gage, drain valve & sampling device, General Electric PO W6658 1/4/74
TF-16	90	2473	108282-15	208Y/120		Transformer Mfg. Sorgel Elec. Corp. supplied by MA Bongiovanni/Edw. Joy Main lighting panel

EQUIPMENT LIST

SPARE TRANSFORMERS

<u>BLDG./CODE #</u>	<u>DEPT.</u>	<u>ECI #</u>	<u>SERIAL #</u>	<u>MODEL</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
TF-6	68	2127	H318011-P70A	10-CA oil 170 gal. 225 KVA	Class OA	Outdoor 3 phase, 4800-12470, 240-480v 60C, General Electric Transformer. PO 9650, 7/24/70 w/Bldg. 9 expansion.

SPARE TRANSFORMERSEQUIPMENT LIST

<u>BLDG./CODE #</u>	<u>DEPT.</u>	<u>ECI #</u>	<u>SERIAL #</u>	<u>MODEL</u>	<u>TYPE</u>	<u>DESCRIPTION</u>
	75	1804	G88026767Y	12470Y 50 KVA oil	HS	Outdoor single phase, pole, 4800-7 120-240v transformer. General Ele PO W-2918, 10/14/66, Gould Farmer, f formerly for Bldg. 2A & 2B
	70	1805	G88026867Y	12470 Y 50KVA Oil	HS	Outdoor single phase, pole, 4800-7 120-240v, transformer, General Ele PO 2918, 10/14/66, Gould Farmer, f merly for Bldg. 2A & 2B.
	69		7516412	75KVA	HS	Transformer. North transformer ba of 3. 2400/4800/8320Y-120/240 55°C rise. General Electric singl phase. Form W2 60 cycles additiv polarity. Weight 1240#. 2.9% appr impedance at rated volts 75 C 59 gals. No. 10C oil
	69		7516418	75KVA	HS	Same as above except South transfo
	88	1833	B-18558	37.5		Outdoor 3 phase, 4800-8320Y to 240 transformer PO W2765, 1967 Hyers
	88	1834	B-18559	37.5		Outdoor 3 phase, 4800-8320Y to 240 transformer, PO W2765, 1967 Hyers
	88	1835	B-18560	37.5		Outdoor 3 phase, 4800-8320Y to 240 transformer PO W2765, 1967 Hyers
						(Above three transformers former w/16-FP-1 & 2