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September 12, 2019

Gerald Pratt, P.G.
NYSDEC
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway, Albany, New York 12233-7014

Subject: NYSEG - Penn Yan Water Street MGP Remediation Project (Site No. 862009)
Keuka Lake Outlet Sheen Investigation

Dear Mr. Pratt,

AECOM, on behalf of New York State Electric and Gas (NYSEG), has completed an investigation to determine the location(s) or area(s) where the sheen recently observed within the Keuka Lake Outlet adjacent to the NYSEG Penn Yan Water Street Remediation Project. The investigation was completed in accordance with the Work Plan outlined in a letter to NYSDEC dated July 31, 2019. NYSDEC approved the work plan on July 31, 2019.

Field Investigation Activities

AECOM performed the investigation from August 6, 2019 through August 9, 2019. The study area as proposed in the work plan is shown on Figure 1. Three distinct investigation areas were proposed:

- the downstream area,
- the former cell divider sheeting alignment, and
- the immediate surrounding of previously mapped outfalls adjacent to the site and downstream to the Keuka Lake Outlet Control Structure.

During the investigation the Outlet Control Structure had no more than one gate open halfway. The intent was to conduct probing only when the outlet flow is minimal such that any potential sheen did not travel long distances from the area of disturbance/source. Probing began at the Keuka Lake Outlet Control Structure (downstream end of the planned investigation area) and then proceed in an upstream direction, so that downstream flow of potential released sheen did not interfere with the investigation progression.

The originally proposed downstream area was extended upstream approximately 50 feet upstream due to visual observations of sheen coming into the area from further upstream during probing. This entire downstream area was probed with a maximum ten foot spacing. Upstream of the eastern end of the floating dock, the probing followed a “transect” along the alignment of the former dredging cell divider sheeting, with probes along the centerline of the former sheeting and five foot either side, with a maximum ten foot spacing. At each outfall that discharges to the Keuka Lake Outlet, the outfall was located and a ten by ten-foot area was probed immediately adjacent to it with the following exceptions. Three outfalls (Outfall #9, Outfall, #12, and Outfall #13) along the northern side of the outlet are no longer present. At the former locations of Outfall #9 and Outfall #13 a ten by ten-foot area was probed

in the approximate former area of the outfalls as determined by a GPS (Trimble Geo 7 Series). The area near former outfall #12 was not probed due to construction activities (removal of sheet pile) during the investigation.

AECOM accessed the study area using a suitably-sized and outfitted boat. AECOM used 3/4" threaded galvanized pipe to probe the sediment. At each location, the probe pipe was pushed/driven three feet (or less if refusal was met) at an angle into the sediment/soil beneath the channel bottom. At most locations the pipes advanced two or more feet into the sediment/soil. The probe pipe was then rotated in a revolving motion to disturb the shallow sediment. The outlet water surface was monitored at and downstream of each probe for evidence of sheen. Additional probing was conducted as necessary in areas were sheen was observed.

AECOM noted and photo documented sheen releases that were observed during the investigation. A photo log is included as Attachment 1. AECOM staked seven probed area(s) or probe points where the investigation released sheen so that they could be surveyed. Thirty-two points with sheen (mostly slight sheen) were surveyed during the investigation using a GPS unit (including the seven staked locations). Surveying of the staked locations was completed by the on-site remedial Contractor, Sevenson Environmental Services (SES). The investigation did not include the collection of any samples for laboratory analysis.

Summary of Field Investigation Observations

Observations during the investigation are summarized on Figure 2 and can be seen in the photos included in Attachment 1. The findings by area are summarized below.

Former Cell Divider Sheeting Alignment

Light wispy sheens were observed along nearly the entire centerline alignment of the former sheets. There were areas of ~20 feet long and ~30 feet long near the upstream end of the alignment where no sheens were observed. These sheens do not appear to be indicative of large amounts of contamination left behind during dredging, but rather trivial amounts likely resulting from conducting the work in the wet.

An approximately 30-foot by 10-foot area that produced heavier sheen with occasional coal tar was delineated during the investigation. It is shown on Figure 2 in the approximate center of the Outlet. Sheens from this area expanded to approximately six inches in length and typically had a darker coal tar bleb in the middle. It is very likely the sheens observed floating down the Outlet are originating from this area. Probes were advanced approximately five feet away in all directions from the area shown on Figure 2 and either no sheen or only a slight wispy sheen was observed. Stakes were driven and surveyed at three locations in this area, Sheen #1 and Sheen #2, and Sheen #3. Heavier sheen was also noted at GPS location Sheen#3B, but its occurrence could not be replicated when driving the survey stakes and advancing probes around them, the point shown may be offset due to GPS float/precision and more likely it is closer to the staked and surveyed Sheen #3 location.

Downstream Area

No sheens were observed during sediment probing downstream of the floating dock east of the site with the following exceptions:

- Within the alignment of the former railroad bridge beginning approximately 30 feet west of the former downstream abutment and continuing to the former upstream abutment intermittent sheens were produced through probing. These sheens were light and wispy. Based on

observations during the dredging work these are likely the product of creosote residuals from the railroad bridge materials.

- Light wispy sheen was encountered at two locations near the former centerline alignment of the dredging cell divider sheeting. These sheens seemed isolated, probes five feet away in all directions from the two points did not indicate any sheen. Two stakes were driven in this area and shown on Figure 2 as Slight Wispy Sheen Area #1.
- A light wispy sheen was noted approximate 20 feet west of the former centerline sheet alignment. This was also isolated, probes five feet away in all directions did not indicate any sheen. Shown on Figure 2 as Slight Wispy Sheen Area #2.
- A probable petroleum sheen was encountered immediately adjacent to Outfall #14 (this was not staked or surveyed as it coincides with the location of the outfall).
- A rainbow sheen was encountered underneath the ramp to the floating dock and a slight sheen was observed approximately 20 feet east, these may or may not be connected multiple releases observed from Outfall #14 during remedial construction at the site. The rainbow sheen appeared to be from a light petroleum product. Shown on Figure 2 as Slight Wispy Sheen Area #3 and Rainbow Sheen Under Dock.

The Outfalls

No sheens were observed in the ten by ten-foot areas investigated adjacent to each outfall with the following exceptions:

- A slight sheen was noted within the area probed next to Outfall #6.
- As discussed in the Downstream Area above, an isolated probable petroleum sheen was encountered adjacent to Outfall #14. Note this may also be associated with the sheen observed near the dock ramp and between the dock and Outfall #14.

Alternatives/Recommendations

Most of the observed impacts do not appear to be attributable to the former MPG site or warrant follow-up actions. The one exception being the approximately 30-foot by 10-foot area that produced heavier sheen. This area is likely dredge residual which “windrowed” around the dredge bucket or from portions of the cell divider sheeting which could not be scraped during dredging. Alternatives for addressing this one area of potent residual contamination include:

- No action/monitor;
- Capping with Auquablok®;
- Vacuum dredge removal using a “Vac Truck” and vacuum boxes based onshore and conducted with a boat and crew in the outlet;
- Excavator-based dredging from a barge.

Assessment of Alternatives:

- No action, or simply continued monitoring, is not considered a viable option as it does not reduce the likelihood of sheens continuing to appear in the Outlet.
- Capping will result in a net change (restriction) of the Outlet channel which would require modification to the project permits and associated regulatory review and approval.
- Vacuum dredge removal would produce large volumes of potentially impacted water requiring treatment prior to discharge. This would require engineering design for water management and mobilization of additional storage/treatment infrastructure.
- Dredging using a barge-mounted excavator would be consistent with the existing Remedial Design and permits. While additional equipment would need to be mobilized to the site execution of this

alternative is possible this construction season and would require the least modification to existing permits.

Summary:

The source of continuing sheen in the Keuka Lake Outlet is most likely due only to one relatively small area. It is possible to address this area of concern through methods consistent with the existing Remedial Design and permits prior to completing the ongoing remedial construction.

Sincerely yours,

Robert J. Murphy, P.G.
Senior Geologist

Matthew T. Thorpe, PE
Senior Project Engineer

cc: Walter Howard, P.G., AECOM
John Ruspantini, NYSEG

Attachments– Figure 1
Figure 2
Attachment 1 – Photo Log

File: \\usaby2fp001\data\Projects\60284725_NYSEG Penn Yan RD\7.2 CADD\500\Civil\Design\WORKING\SHEEN-INVEST-AREA_EH.dwg Layout: Figure 1 User: Erica.Hart Plotted: Jul 30, 2019 - 1:24pm Xref's:

GAS
W
S
UGE
OHU
PROPERTY LINE
EASEMENT LINE
LIMITS OF WORK ZONE
ADJOINERS DEED LINE
Sanitary Manhole
Rim Elevation 731.36
NYSEG
Water Street Station
Single Story Masonry
Concrete Stairs
5.0 '
Office and Storage Building
3 Story Masonry
2 Story
Masonry Building
Multi Story Masonry Buildings
Former MGP
Building
Multi-Story
Masonry
Asphalt Parking
Asphalt
Concrete Retaining Wall
Transformer
with Meter
Concrete
Wall
Air Conditioners
Transformer
Masonry Retaining Wall
Gabion Basket Retaining Wall
Edge of Gravel
Edge of Buried Gabion Basket Retaining Wall
Edge of Asphalt
Approximate Edge of Asphalt
Concrete Curb Stop
Seasonal Floating Dock
Dock
Concrete
Abutment
Sheet Pile Retaining
Wall
Water Control
Gates
Gravel
Flow
Keuka Lake Outlet Trail (Ashphalt)
Keuka Lake Outlet Trail (Asphalt)
Stone Retaining Wall
Barbed Wire Fence
Concrete Sidewalk
Sycamore
2" ORNAMENTAL
OUTFALL #5
OUTFALL #6
OUTFALL #7
OUTFALL #8
OUTFALL #9
OUTFALL #10
OUTFALL #11
OUTFALL #12
OUTFALL #13
OUTFALL #14
OUTFALL #15
OUTFALL #16
OUTFALL #17

25 0 50
GRAPHIC SCALE IN FEET

PROPOSED SHEEN INVESTIGATION AREAS

OUTFALL LOCATIONS

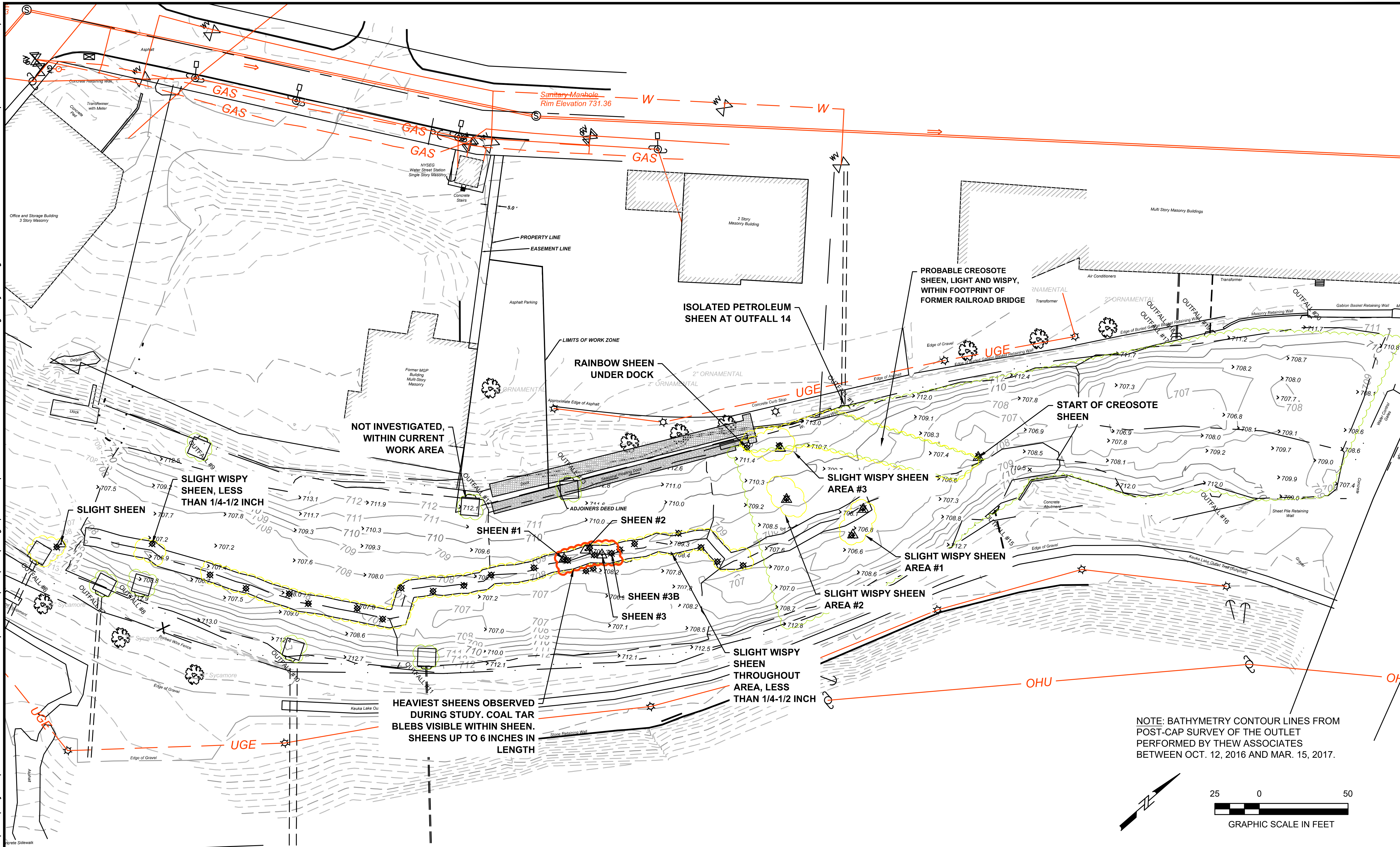
NOTE: OUTFALL LOCATIONS TO BE CONFIRMED IN THE FIELD.

AECOM

NYSEG Penn Yan
Water Street Manufactured Gas Plant
NYSDEC Site # 8-62-009

Proposed Sheen Investigation Area

DATE: 7/30/2019 | DRWN: | | | **FIGURE 1**


PROBABLE CREOSOTE SHEEN, LIGHT AND WISPY, WITHIN FOOTPRINT OF FORMER RAILROAD BRIDGE
ISOLATED PETROLEUM SHEEN AT OUTFALL 14
RAINBOW SHEEN UNDER DOCK
NOT INVESTIGATED, WITHIN CURRENT WORK AREA
START OF CREOSOTE SHEEN
SLIGHT WISPY SHEEN, LESS THAN 1/4-1/2 INCH
SLIGHT SHEEN
SLIGHT WISPY SHEEN AREA #3
SHEEN #1
SHEEN #2
SHEEN #3B
SHEEN #3
SLIGHT WISPY SHEEN AREA #1
SLIGHT WISPY SHEEN AREA #2
SLIGHT WISPY SHEEN THROUGHOUT AREA, LESS THAN 1/4-1/2 INCH
HEAVIEST SHEENS OBSERVED DURING STUDY. COAL TAR BLEBS VISIBLE WITHIN SHEEN. SHEENS UP TO 6 INCHES IN LENGTH
Sanitary Manhole Rim Elevation 731.36
NYSEG Water Street Station Single Story Masonry
2 Story Masonry Building
Multi Story Masonry Buildings
Office and Storage Building 3 Story Masonry
Former MGP Building Multi-Story Masonry
Asphalt Parking
PROPERTY LINE
EASEMENT LINE
LIMITS OF WORK ZONE
ADJOINERS DEED LINE
GAS
W
UGE
OHU
NOTE: BATHYMETRY CONTOUR LINES FROM POST-CAP SURVEY OF THE OUTLET PERFORMED BY THEW ASSOCIATES BETWEEN OCT. 12, 2016 AND MAR. 15, 2017.
25 0 50
GRAPHIC SCALE IN FEET

GPS SURVEY POINT
SEVENSON SURVEY POINT
HEAVY SHEEN OBSERVED
LIGHT SHEEN OBSERVED
NO SHEEN OBSERVED
OUTFALL LOCATION

AECOM

NYSEG Penn Yan
Water Street Manufactured Gas Plant
NYSDEC Site # 8-62-009

SHEEN INVESTIGATION

DATE: 09/12/19 | DRAWN BY: ELH | REVIEWED BY: MTT

FIGURE 2

File: \\usaby2fp001\data\Projects\60284725_NYSEG Penn Yan RD\7.2 CADD\500 Civil Design\WORKING\SHEEN-INVEST-AREA-RESULTS_EH.dwg Layout: Figure 2 User: Erica.Hart Plotted: Sep 12, 2019 - 2:55pm Xref's:

AECOM Imagine it. Delivered.

PHOTOGRAPH LOG

Client Name:	**Site Location:**
New York State Electric & Gas	Penn Yan Water Street MGP Remediation Project Site No. 862009 Penn Yan, New York

Location:	**Date:**
Outlet	8/6/19

Description:

Slight sheen observed at Outfall #6

Location:	**Date:**
Outlet	8/7/19

Description:

Sheen observed floating downstream from upstream source

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PHOTOGRAPH LOG

Client Name:	**Site Location:**
New York State Electric & Gas	Penn Yan Water Street MGP Remediation Project Site No. 862009 Penn Yan, New York

Location:	**Date:**
Outlet	8/7/19

Description:

Sheen observed floating downstream from upstream source

Location:	**Date:**
Outlet	8/7/19

Description:

Slight wispy sheen observed while probing within footprint of former railroad bridge area.

AECOM Imagine it. Delivered.

PHOTOGRAPH LOG

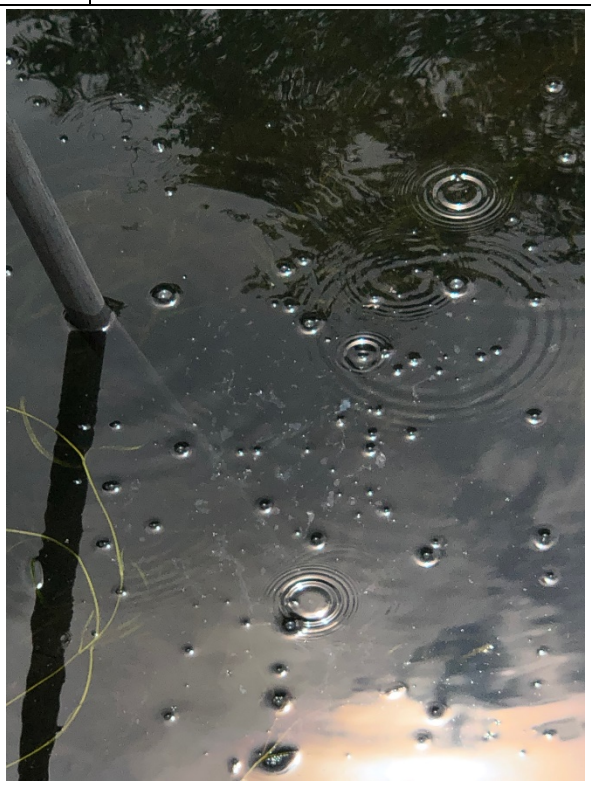
Client Name:
New York State Electric & Gas

Site Location:
Penn Yan Water Street MGP Remediation Project
Site No. 862009
Penn Yan, New York

Location:	**Date:**
Outlet	8/7/19

Description:

Slight wispy sheen observed while probing within footprint of former railroad bridge area.



Location:	**Date:**
Outlet	8/7/19

Description:

Sheen observed approximately 10 feet downstream of dock end, 10 feet from shore. Noted on Figure 2 as Light Wispy Sheen Area #3

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PHOTOGRAPH LOG

Client Name:
New York State Electric & Gas

Site Location:
Penn Yan Water Street MGP Remediation Project
Site No. 862009
Penn Yan, New York

Location:	**Date:**
Outlet	8/7/19

Description:

Rainbow sheen observed under dock ramp.

Location:	**Date:**
Outlet	8/8/19

Description:

Typical slight wispy sheen observed along centerline of sheets transect. Fine and discontinuous.

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PHOTOGRAPH LOG

Client Name:
New York State Electric & Gas

Site Location:
Penn Yan Water Street MGP Remediation Project
Site No. 862009
Penn Yan, New York

Location:	**Date:**
Outlet	8/8/19

Description:

Typical slight wispy sheen observed along centerline of sheets transect. Fine and discontinuous.

Location:	**Date:**
Outlet	8/8/19

Description:

Heavy sheen (Sheen #3B). Located along centerline of former sheeting alignment, near upstream end of floating docks.

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PHOTOGRAPH LOG

Client Name:
New York State Electric & Gas

Site Location:
Penn Yan Water Street MGP Remediation Project
Site No. 862009
Penn Yan, New York

Location:	**Date:**
Outlet	8/8/19

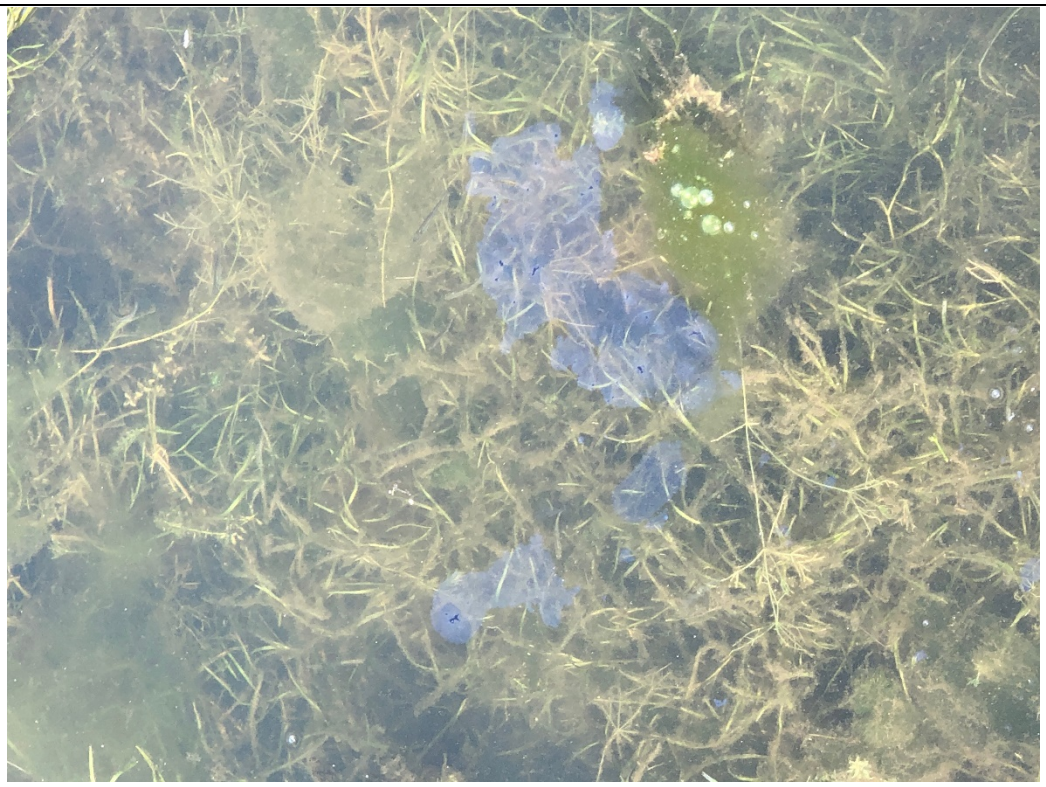
Description:

Heavy sheen (Sheen #1). Located along centerline of former sheeting alignment, near upstream end of floating docks.

Location:	**Date:**
Outlet	8/9/19

Description:

Heavy sheen (Sheen #3). Located along centerline of former sheeting alignment, near upstream end of floating docks.



AECOM Imagine it. Delivered.

PHOTOGRAPH LOG

Client Name:	Site Location:
New York State Electric & Gas	Penn Yan Water Street MGP Remediation Project Site No. 862009 Penn Yan, New York

Location:	Date:
Outlet	8/9/19

Description:

Heavy sheen (Sheen #1). Coal Tar bleb noted while driving stake to mark location.

Location:	Date:
Outlet	8/9/19

Description:

Driving stake to mark heavy sheen location.

AECOM Imagine it. Delivered.

PHOTOGRAPH LOG

Client Name:	**Site Location:**
New York State Electric & Gas	Penn Yan Water Street MGP Remediation Project Site No. 862009 Penn Yan, New York

Location:	**Date:**
Outlet	8/9/19

Description:

Stakes for heavy sheen locations. Sheens # 1, 2, and 3 (From left to right).

Location:	**Date:**
Outlet	8/9/19

Description:

Stakes for heavy sheen locations. Sheens # 3, 2, and 1 (From left to right). Stake not driven at Sheen #3B location from day prior as no sheen was observed on this day. Due to GPS accuracy, point may actually be closer to Staked point #3.