## EAST HANOVER TOWNSHIP OUTFALL SCREENING AND DRY WEATHER FLOW SAMPLING PROTOCOL

## **Outfall Screening**

If dry weather flow is observed during the inspection, it will be traced up through the MS4 system to its origin. If the origin of the flow is unknown or is unable to be found, Herbert, Rowland, & Grubic Inc. (HRG) and Township staff will interview property owners or residents of the area to determine if the discharge is an illicit connection or discharge. If observation of the flow reveals any turbidity, floating or submerged solids, odor or adverse effects to plant or animal life in proximity to the outfall, samples of the discharge will be collected for field and/or lab testing. Field testing parameters will include: pH, conductivity, chlorine, coliform bacteria, ammonia-nitrogen, nitrate/nitrite, copper, iron and lead. All field test kits will be kept up to date and any expired kits will be replaced prior to outfall screening visits.

Field Sheet originals will be stored at HRG. An electronic copy will be produced from the original and saved in the appropriate Permit Year folder on the HRG network and at the Township office. The completed Field Sheets will be provided to Township residents upon request as well as included in the Annual MS4 Report.

### Dry Weather Flow Water Quality Field Testing Procedures

### <u>YSI DO 200 – Dissolved oxygen and temperature</u>

Press the power button. Allow the unit to warm up and perform the self-diagnostic test. After the temperature displays in the lower right of the display, the unit is ready for operation. Immerse the probe into the sample and allow the temperature and dissolved oxygen measurements to stabilize. Record data on field sheet and turn off unit. Maintenance and calibration of this unit should be performed according to the manufacturer's specifications prior to every use to allow for maximum accuracy.

### Oakton pHTestr 1 - pH

Remove cap from the electrode and press the on/off button to switch Testr on. Dip the electrode 1/2" to 1" into the sample to be tested. Stir once and let reading stabilize. Record the pH. Press on/off to turn off Testr. Calibration for the unit should occur according to the manufacturer's specifications prior to every use to allow for maximum accuracy.

### Oakton ECTestr – Electrical conductivity

Remove electrode cap and press the on/off button to switch the Testr on. Dip the electrode into the sample to be tested, make sure the electrode is fully covered. Wait for reading to stabilize and record reading. Press on/off button to turn testr off. Calibration for the unit should occur according to the manufacturer's specifications prior to every use to allow for maximum accuracy.

#### SenSafe Total Chlorine Check

Method A (0-10 PPM): Dip one test strip into water sample for 5 seconds with a constant, gentle back and forth motion. Remove the strip. Wait 30 seconds, and then match with Method A colors on bottle. Complete color matching within 15 seconds. Record the concentration on the Field Sheet.

Method B (0 to 1.0 PPM): Dip one test strip into water sample for 10 seconds with a constant, gentle back and forth motion. Remove the strip. Wait 30 seconds, and then match with Method B colors on bottle. Complete color matching within 15 seconds. Record the concentration on the Field Sheet.

#### SenSafe Free Chlorine

Method A (1 to 7 PPM): Dip one test strip into water sample for 10 seconds with a constant, gentle back and forth motion. Remove the test strip and match with Method A colors. Record the concentration on the Field Sheet.

Method B (0 to 1.20 PPM): Dip one test strip into water sample for 30 seconds with a constant, gentle back and forth motion. Remove the test strip and match with Method B colors. Record the concentration on the Field Sheet.

### SenSafe John's Copper Check (Free/Dissolved)

Dip one test strip into water sample for 15 seconds with constant, gentle back and forth motion. Remove test strip and shake once, briskly to remove excess water. Wait 30 seconds, then match to the color chart. Complete color matching within 60 seconds. Record the concentration on the Field Sheet.

### LaMotte Nitrite & Nitrate

Immerse strip in water sample for 2 seconds and then remove with pads face up. Do not shake off excess water. Wait 60 seconds and immediately compare to color chart. Record the concentration on the Field Sheet.

### Watersafe Lead Test

- 1. Open Watersafe foil pouch and take out all contents. The test kit contains one Lead Test Strip, one sample vial and one dropper pipette, as well as a desiccant packet (to be discarded).
- Using the dropper pipette, place water sample in the test vial. To pick up sample, tightly squeeze the bulb at the end of the pipette and place open end into water sample. Release the bulb to obtain sample, then squeeze again to expel sample into vial. Use only one pipette-full of water. Swirl vial gently for several seconds. Place vial on a flat surface.
- 3. Place the Watersafe test strip into test vial with arrows pointing down.
- 4. Wait 10 minutes. Do not disurb strip or vial during this time. Blue lines will appear on strip.
- 5. Take the strip out of the vial and read the results as indicated in the package.
- 6. Record the concentration on the Field Sheet.

### <u>SenSafe Iron Check</u>

Fill vial with water sample to the top line. Dip one test strip into vial (be sure all pads are in contact with the liquid) for 30 seconds with constant, gentle back and forth motion. Remove strip and wait 2 minutes. View through the aperture to match with the closest color on the color chart. Record the concentration on the Field Sheet.

#### LaMotte Ammonia-Nitrogen (0.1 – 4.0 ppm)

- 1. Fill test tube to 5mL line with sample water.
- 2. Add one Ammonia #1 Tablet and one Ammonia #2 Tablet. Cap the test tube and mix until tablets disintegrate. Wait 5 minutes.
- 3. Hold test tube flat against the white section of the Ammonia-Nitrogen Color Chart. Match sample color to a color standard. Record as ppm Ammonia-Nitrogen.
- 4. Record the concentration on the Field Sheet.

### LaMotte Coliform Bacteria

- 1. Fill the tube to the 10mL line.
- 2. Replace cap on tube.
- 3. Stand the tube upright with tablet flat on bottom of the tube.
- 4. Incubate the tube upright, at room temperature for 48 hours. Store out of direct sunlight.
- 5. Compare the contents of the tube to the Coliform Bacteria Color Chart.
- 6. Record the concentration on the Field Sheet.

# Laboratory Testing

If a suspected oily sheen or residue is noticed during the outfall screening, HRG's representative will procure a lab-provided 1 liter bottle of the sample, pack the sample on ice and deliver to Analytical Laboratory Services (ALS, 717-944-1430) in Middletown, PA. Request an Oil and Grease test be performed on the sample and fill out the chain of

East Hanover Township, Dauphin County, Pennsylvania Page 3 custody form as directed by ALS. If other contaminants are suspected, request the appropriate test be performed (fecal coliform, metals, diesel/gasoline range organics, etc.).