YORK COUNTY
SOLID WASTE and REFUSE AUTHORITY
2700 Blackbridge Road, York, PA 17406-7901 Phone (717) 845-1066 Fax (717) 843-1544

July 3, 2017

Maria Bebenek
Manager, Clean Water Program
DEP, SCRO
909 Elmerton Avenue
Harrisburg, Pa 17110

RE: **June 2017** Monthly Report, Site-Specific Study Plan

Dear Ms. Bebenek;
In accordance with Section 3.e of the August 21, 2015 Consent Order and Agreement, the following is the May 2017 monthly report for the Site-Specific Methylmercury Water Quality Criterion Stream Study Plan (the Plan).

Activities Accomplished:

- The NPDES-01 and NPDES-02 samples were collected on June 6, 2017 and sent to Geochemical Testing for analysis.
- Stream water quality samples were collected on June 6, 2017. Samples were collected at stream stations RR-01 (identified in figure 3-1 of the Plan), Rambo Down (located in the mixed zone below NPDES-01), EC-02 (identified in figure 3-2 of Plan) and Ebaughs Down (located in the mixed zone below NPDES-02). Stream samples RR-01, Rambo Down, EC-02 and Ebaughs Down were sent to Brooks Applied Laboratory for analysis.

Results:

- Attached are the analytical results as reported by Geochemical Testing from the June 6, 2017 samples for NPDES-01 and NPDES-02.
- Attached are the analytical results as reported by Brooks Applied Laboratory for stream samples collected on May 17, 2017. Included are results from RR-01, Rambo Down, EC-02 and Ebaughs Down.
- The April 18, 2017 equipment blank sample had a trace detection of 0.37 ng/l for total Hg which is between the Method Detection Limit of 0.10 ng/l and the Method Reporting Limit of 0.40 ng/l. Analysis performed by Brooks Applied Laboratory.
- Note that a different ID was used for Ebaughs Down and Rambo Down on the June 6, 2017 field data sheets. The field data sheets and the laboratory reports were edited by me to reflect the correct names for these sample ID's.

- Stream discharge measurements were taken on June 6, 2017 in the area where stream samples are collected at RR-01 and EC-02. The following are the results.

    - RR-01:
        Measurement 1: 2.4 ft^3/sec
        Measurement 2: 2.5 ft^3/sec
        Average: 2.4 ft^3/sec

    - EC-02:
        Measurement 1: 4.7 ft3/sec
        Measurement 2: 4.2 ft3/sec
        Measurement 3: 4.1 ft3/sec

        Average: 4.3 ft3/sec

Feel free to contact me if you have any questions or comments on the information provided in this monthly report.

Respectfully,

Richard A. Hazenstab, P.G.
Coordinator
Operations and Environmental Programs

cc: D. Vollero; D. Jasitt; J. Beuschlein; J. Collins

Attached: Brooks Applied Laboratory analysis for stream samples, May 17, 2017
Geochemical Testing analysis for NPDES-01, June 6, 2017
Geochemical Testing analysis for NPDES-02, June 6, 2017
Stream Discharge, June 6, 2017
Field Data, June 6, 2017

Project ID: AEC-CS1601
PM: Amanda Royal -

Client PM: Joshua Collins
Client Project: 60432741.5

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RR-01	1720026-01	Water	Sample	05/17/2017	05/18/2017
RR-01	1720026-02	Water	Sample	05/17/2017	05/18/2017
~~*RR-Outfall*~~ *Rambo Down*	1720026-03	Water	Sample	05/17/2017	05/18/2017
~~*RR-Outfall*~~ *Rambo Down*	1720026-04	Water	Sample	05/17/2017	05/18/2017
EC-02	1720026-05	Water	Sample	05/17/2017	05/18/2017
EC-02	1720026-06	Water	Sample	05/17/2017	05/18/2017
~~*EC-Outfall*~~ *Ebaughs Down*	1720026-07	Water	Sample	05/17/2017	05/18/2017
~~*EC-Outfall*~~ *Ebaughs Down*	1720026-08	Water	Sample	05/17/2017	05/18/2017
EQB-01	1720026-09	DIW	Equip. Blank	05/17/2017	05/18/2017
EQB-02	1720026-10	DIW	Equip. Blank	05/17/2017	05/18/2017

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
Hg	Water	EPA 1631 E	05/24/2017	05/26/2017	B171224	1700623
MeHg	Water	EPA 1630	05/22/2017	05/24/2017	B171150	1700606
MeHg	Water	EPA 1630	05/22/2017	05/25/2017	B171150	1700621

Project ID: AEC-CS1601
PM: Amanda Royal -

Client PM: Joshua Collins
Client Project: 60432741.5

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
EC-02										
1720026-05	Hg	Water	TR	1.13		0.10	0.40	ng/L	B171224	1700623
1720026-06	MeHg	Water	D	≤ 0.022	U	0.022	0.055	ng/L	B171150	1700621
~~***EC-Outfall***~~ ***Ebaughs Down***										
1720026-07	Hg	Water	TR	168		0.10	0.40	ng/L	B171224	1700623
1720026-08	MeHg	Water	D	≤ 0.021	U	0.021	0.053	ng/L	B171150	1700621
EQB-01										
1720026-09	Hg	DIW	TR	0.37	J	0.10	0.40	ng/L	B171224	1700623
EQB-02										
1720026-10	MeHg	DIW	D	≤ 0.022	U	0.022	0.054	ng/L	B171150	1700621
RR-01										
1720026-01	Hg	Water	TR	0.79		0.10	0.40	ng/L	B171224	1700623
1720026-02	MeHg	Water	D	≤ 0.020	U	0.020	0.049	ng/L	B171150	1700606
~~***RR-Outfall***~~ ***Rambo Down***										
1720026-03	Hg	Water	TR	165		0.10	0.40	ng/L	B171224	1700623
1720026-04	MeHg	Water	D	0.043	J	0.022	0.054	ng/L	B171150	1700621

Laboratory Results

Geochemical Testing

Date: *14-Jun-17*

CLIENT:	YORK COUNTY SWRA	**Client Sample ID:**	NPDES-1
Lab Order:	G1706392		
Project:	York 600 M	**Sampled By:**	YCSWA
Lab ID:	G1706392-001	**Collection Date:**	6/6/2017 11:10:00 AM
Matrix:	AQUEOUS	**Received Date:**	6/7/2017 11:58:28 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
PH BY SM 4500 H+B		Analyst: **AM**					**SM 4500-H+ B**
Lab pH	7.69		H	S.U.	1		06/08/17 1:48 PM
TOTAL METALS		Analyst: **LNG**				**EPA 245.7**	**EPA 245.7**
Mercury	385	20.0		ng/L	10	06/08/17 8:30 AM	06/08/17 11:43 AM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	06/09/17 10:25 AM	06/12/17 10:25 AM
Cadmium	< 0.2	0.2		µg/L	1	06/09/17 10:25 AM	06/12/17 10:25 AM
Copper	< 4.0	4.0		µg/L	1	06/09/17 10:25 AM	06/12/17 10:25 AM
Lead	< 1.0	1.0		µg/L	1	06/09/17 10:25 AM	06/12/17 10:25 AM
Silver	< 0.4	0.4		µg/L	1	06/09/17 10:25 AM	06/12/17 10:25 AM
VOLATILE ORGANIC COMPOUNDS		Analyst: **SJM**					**EPA 624**
1,1,1-Trichloroethane	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
1,1-Dichloroethane	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
1,1-Dichloroethene	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
Chloroethane	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
cis-1,2-Dichloroethene	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
Dichlorodifluoromethane	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
Methylene Chloride	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
Tetrachloroethene	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
Tetrahydrofuran	< 1.0	1.0		µg/L	1		06/08/17 3:28 PM
Trichloroethene	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
Trichlorofluoromethane	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
Vinyl Chloride	< 0.5	0.5		µg/L	1		06/08/17 3:28 PM
Surr: 1,2-Dichloroethane-d4	102	80-120		%REC	1		06/08/17 3:28 PM
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1		06/08/17 3:28 PM
Surr: Toluene-d8	99.8	80-120		%REC	1		06/08/17 3:28 PM

Laboratory Results

Geochemical Testing

Date: *14-Jun-17*

CLIENT:	YORK COUNTY SWRA	**Client Sample ID:**	NPDES-2
Lab Order:	G1706393		
Project:	York 600 M	**Sampled By:**	YCSWA
Lab ID:	G1706393-001	**Collection Date:**	6/6/2017 12:05:00 PM
Matrix:	AQUEOUS	**Received Date:**	6/7/2017 12:01:59 PM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
PH BY SM 4500 H+B		Analyst: **AM**					**SM 4500-H+ B**
Lab pH	7.52		H	S.U.	1		06/08/17 1:51 PM
TOTAL METALS		Analyst: **LNG**				**EPA 245.7**	**EPA 245.7**
Mercury	199	4.0		ng/L	2	06/08/17 8:30 AM	06/08/17 11:46 AM
INORGANIC METALS		Analyst: **RLR**				**EPA 200.2**	**EPA 200.8**
Antimony	< 2.0	2.0		µg/L	1	06/09/17 10:25 AM	06/12/17 10:34 AM
Cadmium	< 0.2	0.2		µg/L	1	06/09/17 10:25 AM	06/12/17 10:34 AM
Copper	< 4.0	4.0		µg/L	1	06/09/17 10:25 AM	06/12/17 10:34 AM
Lead	< 1.0	1.0		µg/L	1	06/09/17 10:25 AM	06/12/17 10:34 AM
Silver	< 0.4	0.4		µg/L	1	06/09/17 10:25 AM	06/12/17 10:34 AM
VOLATILE ORGANIC COMPOUNDS		Analyst: **SJM**					**EPA 624**
1,1,1-Trichloroethane	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
1,1-Dichloroethane	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
1,1-Dichloroethene	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
Chloroethane	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
cis-1,2-Dichloroethene	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
Dichlorodifluoromethane	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
Methylene Chloride	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
Tetrachloroethene	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
Tetrahydrofuran	< 1.0	1.0		µg/L	1		06/08/17 4:17 PM
Trichloroethene	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
Trichlorofluoromethane	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
Vinyl Chloride	< 0.5	0.5		µg/L	1		06/08/17 4:17 PM
Surr: 1,2-Dichloroethane-d4	97.3	80-120		%REC	1		06/08/17 4:17 PM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1		06/08/17 4:17 PM
Surr: Toluene-d8	94.7	80-120		%REC	1		06/08/17 4:17 PM

ACCREDITED IN ACCORDANCE WITH nelac
I.D. 56-00306 PA DEP

AECOM

STREAM DISCHARGE MEASUREMENT
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

Study Area: RR-01 Rambo **Transect:** RR-01

Date: 6/6/17 **Operator:** B. Jones

Weather (Circle) **Air Temp (°F):** 65°

Current: Storm (heavy rain) Rain (steady rain) Showers (intermittent) Partly Cloudy Clear/Sunny

Past 24 Hours: Storm (heavy rain) Rain (steady rain) Showers (intermittent) Partly Cloudy Clear/Sunny

SITE DESCRIPTION

	Yes ✓	No ✓
Straight reach	✓	
Streambed uniform	✓	
Flow uniform	✓	
Reduced flow near edges	✓	
Large woody debris present		✓
Aquatic vegetation present	& 25%	

NOTES:

Approx. stream width	18'	*No subsection should contain >10% of total discharge, ideal <5%
Approx. number of verticals	19	*10-25 verticals recommended but adjust to conditions and objectives

OTT MF Pro

Measurement 1

Filename	RR-1 June
Start time	1020
End time	1035
Total stream discharge (Q)	2.359

IN CASE OF EMERGENCY:
1) Administer first aid if necessary
2) Call 911 and state your location in the following order of preference:
a) With a GPS-enabled phone if available
b) Use nearest road intersections as diaplyed on maps
c) Coordinates and coordinate system of nearest 'T' point as identified on the maps
d) With coordinates off of GPS

Measurement 2

Filename	RR-2 June
Start time	1036
End time	1054
Total stream discharge (Q)	2.533

Measurement 3

Filename	
Start time	
End time	
Total stream discharge (Q)	

Notes:

AECOM

STREAM DISCHARGE MEASUREMENT
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

Study Area: Ebaugh **Transect:** EC-01

Date: 6/6/17 **Operator:** B. Jones

Weather (Circle) **Air Temp (°F):** 68°

Current: Storm (heavy rain) Rain (steady rain) Showers (intermittent) Partly Cloudy Clear/Sunny

Past 24 Hours: Storm (heavy rain) Rain (steady rain) Showers (intermittent) Partly Cloudy Clear/Sunny

SITE DESCRIPTION

	Yes ✓	No ✓
Straight reach	✓	
Streambed uniform	✓	
Flow uniform	✓	
Reduced flow near edges	✓	
Large woody debris present		✓
Aquatic vegetation present	& <5%	

NOTES:

Approx. stream width 17' 19

Approx. number of verticals ~~20~~ 18 19

*No subsection should contain >10% of total discharge, ideal <5%

*10-25 verticals recommended but adjust to conditions and objectives

OTT MF Pro

Measurement 1

Filename	EC-1 June
Start time	1119
End time	1139
Total stream discharge (Q)	4.656

IN CASE OF EMERGENCY:
1) Administer first aid if necessary
2) Call 911 and state your location in the following order of preference:
a) With a GPS-enabled phone if available
b) Use nearest road intersections as diaplyed on maps
c) Coordinates and coordinate system of nearest 'T' point as identified on the maps
d) With coordinates off of GPS

Measurement 2

Filename	EC-2 June
Start time	1140
End time	1158
Total stream discharge (Q)	4.184

Measurement 3

Filename	EC-3 June
Start time	1159
End time	~~1214~~
Total stream discharge (Q)	4.125

Notes:

AECOM

SURFACE WATER SAMPLE CHARACTERIZATION
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

SAMPLE IDENTIFICATION:	NORTHING:	EASTING:
RR-01		
INVESTIGATORS: Godfrey / Kovacs	**DATE:** 6/6/17 **TIME:**	**WATER DEPTH:**
FORM COMPLETED BY: Kovacs		

WEATHER CONDITIONS

Now	Past 24 hours		
☐	☐	storm	Has there been a heavy rain in the last 7 days?
☐	☐	rain	(Yes) / No
☐	☑	showers	Air Temperature 62 °F
☐	☐	partly cloudy	
☑	☐	clear/sunny	Other:

WATER QUALITY PARAMETERS

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	14.9	Clear Flow
DO (mg/L):		Color:
DO (% Saturation):		
pH:	6.08	Odor:
Conductivity (µS/cm):	170	
ORP (mV):		Other:

SURFACE WATER ANALYSES

Parameter	Unfiltered	Filtered
Total Mercury (THg)	☑	
Methylmercury (MeHg)		☑

Sample Depth (feet):

QA/QC:

Duplicate Sample Station? (Y (N))

MS/MSD Sample Station? (Y / (N))

NOTES: Sampler - RH

AECOM

SURFACE WATER SAMPLE CHARACTERIZATION
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

SAMPLE IDENTIFICATION:	NORTHING:	EASTING:
~~RR – Outfall~~ **Rambo Down** (edit by RAH)		
INVESTIGATORS: Godfrey / Kovacs	**DATE:** 6/6/17 **TIME:**	**WATER DEPTH:**
FORM COMPLETED BY: Kovacs		

WEATHER CONDITIONS	Now	Past 24 hours		Has there been a heavy rain in the last 7 days?
	☐	☐	storm	(Yes) / No
	☐	☐	rain	
	☐	☑	showers	Air Temperature 62 °F
	☐	☐	partly cloudy	
	☑	☐	clear/sunny	Other:

WATER QUALITY PARAMETERS

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	17.0	Clear, large amount of organics
DO (mg/L):		Color:
DO (% Saturation):		
pH:	6.59	Odor:
Conductivity (µS/cm):	243	
ORP (mV):		Other:

SURFACE WATER ANALYSES

Parameter	Unfiltered	Filtered
Total Mercury (THg)	☑	
Methylmercury (MeHg)		☑

Sample Depth (feet):

QA/QC:

Duplicate Sample Station? (Y / (N))

MS/MSD Sample Station? (Y / (N))

NOTES: Sampler – RH

AECOM

SURFACE WATER SAMPLE CHARACTERIZATION
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

SAMPLE IDENTIFICATION:	NORTHING:	EASTING:
EC-02		
INVESTIGATORS: Godfrey / Kovacs	**DATE:** 6/16/17 **TIME:**	**WATER DEPTH:**
FORM COMPLETED BY: Kovacs		

WEATHER CONDITIONS	Now	Past 24 hours		Has there been a heavy rain in the last 7 days?
	☐	☐	storm	(Yes / No)
	☐	☐	rain	
	☐	☑	showers	Air Temperature 62 °F
	☐	☐	partly cloudy	
	☑	☐	clear/sunny	Other:

WATER QUALITY PARAMETERS

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	16.4	Slight Cloudiness in Trees
DO (mg/L):		Color:
DO (% Saturation):		
pH:	7.22	Odor:
Conductivity (µS/cm):	218	
ORP (mV):		Other:

SURFACE WATER ANALYSES

Parameter	Unfiltered	Filtered
Total Mercury (THg)	☑	
Methylmercury (MeHg)		☑

Sample Depth (feet):

QA/QC:

Duplicate Sample Station? (Y / (N))

MS/MSD Sample Station? (Y / (N))

NOTES: Sampler RH

AECOM

SURFACE WATER SAMPLE CHARACTERIZATION
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

SAMPLE IDENTIFICATION:	NORTHING:	EASTING:
~~EC-Outfall~~ Ebaughs Down (edit by RAH)		
INVESTIGATORS: Godfrey / Kovacs	**DATE:** 6/6/17 **TIME:** 1200	**WATER DEPTH:**
FORM COMPLETED BY: Kovacs		

WEATHER CONDITIONS	Now	Past 24 hours		Has there been a heavy rain in the last 7 days?
	☐	☐	storm	(Yes) / No
	☐	☐	rain	
	☐	☑	showers	Air Temperature 62 °F
	☐	☐	partly cloudy	
	☑	☐	clear/sunny	Other:

WATER QUALITY PARAMETERS

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	13,6	
DO (mg/L):		Color:
DO (% Saturation):		
pH:	7,45	Odor:
Conductivity (µS/cm):	200	
ORP (mV):		Other:

SURFACE WATER ANALYSES

Parameter	Unfiltered	Filtered
Total Mercury (THg)	☑	
Methylmercury (MeHg)		☑

Sample Depth (feet):

QA/QC:

Duplicate Sample Station? (Y / (N))

MS/MSD Sample Station? (Y / (N))

NOTES: Sampler RH