



August 31, 2017

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

RE: **August 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 August 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 August 8, 2017 and sent to Geochemical Testing for analysis.
- Stream water quality samples were collected on August 8, 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 August 8, 2017 samples for NPDES-01 and NPDES-02.
- Attached are the analytical results as reported by Brooks Applied Laboratory for stream samples collected on July 18, 2017. Included are results from RR-01, Rambo Down, EC-02 and Ebaughs Down.
- The July 18, 2017 equipment blank sample had a trace detection of 0.78 ng/l for total Hg which is above the Method Reporting Limit of 0.40 ng/l. Analysis performed by Brooks Applied Laboratory.

- Stream discharge measurements were taken on August 8, 2017 in the area where stream samples are collected at RR-01 and EC-02. The following are the results.

- RR-01:

Measurement 1: 2.77 ft<sup>3</sup>/sec  
Measurement 2: 2.36 ft<sup>3</sup>/sec  
Measurement 3: 2.36 ft<sup>3</sup>/sec  
Average: 2.50 ft<sup>3</sup>/sec

- EC-02:

Measurement 1: 4.10 ft<sup>3</sup>/sec  
Measurement 2: 3.92 ft<sup>3</sup>/sec  
Average: 4.01 ft<sup>3</sup>/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, July 18, 2017  
Geochemical Testing analysis for NPDES-01, August 8, 2017  
Geochemical Testing analysis for NPDES-02, August 8, 2017  
Stream Discharge, August 8, 2017  
Field Data, August 8, 2017



## Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
RR-01	1729028-01	Water	Sample	07/18/2017	07/19/2017
RR-01	1729028-02	Water	Sample	07/18/2017	07/19/2017
Rambo Down	1729028-03	Water	Sample	07/18/2017	07/19/2017
Rambo Down	1729028-04	Water	Sample	07/18/2017	07/19/2017
EC-02	1729028-05	Water	Sample	07/18/2017	07/19/2017
EC-02	1729028-06	Water	Sample	07/18/2017	07/19/2017
Ebaughs Down	1729028-07	Water	Sample	07/18/2017	07/19/2017
Ebaughs Down	1729028-08	Water	Sample	07/18/2017	07/19/2017
Equipment Blank	1729028-09	Water	Equip. Blank	07/18/2017	07/19/2017
Equipment Blank	1729028-10	Water	Equip. Blank	07/18/2017	07/19/2017

## Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
Hg	Water	EPA 1631 E	07/24/2017	07/25/2017	B171781	1700882
MeHg	Water	EPA 1630	08/01/2017	08/02/2017	B171838	1700924



## Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
<b>Ebaughs Down</b>										
1729028-07	Hg	Water	TR	169		0.10	0.40	ng/L	B171781	1700882
1729028-08	MeHg	Water	D	≤ 0.020	U	0.020	0.049	ng/L	B171838	1700924
<b>EC-02</b>										
1729028-05	Hg	Water	TR	1.08		0.10	0.40	ng/L	B171781	1700882
1729028-06	MeHg	Water	D	≤ 0.020	U	0.020	0.049	ng/L	B171838	1700924
<b>Equipment Blank</b>										
1729028-09	Hg	Water	TR	0.78		0.10	0.40	ng/L	B171781	1700882
1729028-10	MeHg	Water	D	≤ 0.020	U	0.020	0.050	ng/L	B171838	1700924
<b>Rambo Down</b>										
1729028-03	Hg	Water	TR	162		0.51	2.02	ng/L	B171781	1700882
1729028-04	MeHg	Water	D	0.498		0.020	0.050	ng/L	B171838	1700924
<b>RR-01</b>										
1729028-01	Hg	Water	TR	0.97		0.10	0.40	ng/L	B171781	1700882
1729028-02	MeHg	Water	D	≤ 0.020	U	0.020	0.050	ng/L	B171838	1700924

# Laboratory Results

## Geochemical Testing

Date: 17-Aug-17

<b>CLIENT:</b>	YORK COUNTY SWRA	<b>Client Sample ID:</b>	NPDES-1
<b>Lab Order:</b>	G1708578		
<b>Project:</b>	York 600 M	<b>Sampled By:</b>	YCSWA
<b>Lab ID:</b>	G1708578-001	<b>Collection Date:</b>	8/8/2017 9:05:00 AM
<b>Matrix:</b>	SURFACE WATER	<b>Received Date:</b>	8/9/2017 10:35:09 AM

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
<b>PH BY SM 4500 H+B</b>							
		Analyst: AM			SM 4500-H+ B		
Lab pH	7.90		H	S.U.	1		08/09/17 2:50 PM
<b>TOTAL METALS</b>							
		Analyst: LNG			EPA 245.7		
Mercury	244	20.0		ng/L	10	08/10/17 11:00 AM	08/10/17 1:20 PM
<b>INORGANIC METALS</b>							
		Analyst: RLR			EPA 200.2		
Antimony	< 2.0	2.0		µg/L	1	08/10/17 10:35 AM	08/14/17 1:54 PM
Cadmium	< 0.2	0.2		µg/L	1	08/10/17 10:35 AM	08/14/17 1:54 PM
Copper	< 4.0	4.0		µg/L	1	08/10/17 10:35 AM	08/14/17 1:54 PM
Lead	< 1.0	1.0		µg/L	1	08/10/17 10:35 AM	08/14/17 1:54 PM
Silver	< 0.4	0.4		µg/L	1	08/10/17 10:35 AM	08/14/17 1:54 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>							
		Analyst: SJM			EPA 624		
1,1,1-Trichloroethane	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
1,1-Dichloroethane	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
1,1-Dichloroethene	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
Chloroethane	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
cis-1,2-Dichloroethene	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
Dichlorodifluoromethane	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
Methylene Chloride	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
Tetrachloroethene	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
Tetrahydrofuran	< 1.0	1.0		µg/L	1		08/09/17 6:18 PM
Trichloroethene	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
Trichlorofluoromethane	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
Vinyl Chloride	< 0.5	0.5		µg/L	1		08/09/17 6:18 PM
Surr: 1,2-Dichloroethane-d4	97.9	80-120		%REC	1		08/09/17 6:18 PM
Surr: 4-Bromofluorobenzene	97.5	80-120		%REC	1		08/09/17 6:18 PM
Surr: Toluene-d8	98.8	80-120		%REC	1		08/09/17 6:18 PM



# Laboratory Results

## Geochemical Testing

Date: 17-Aug-17

<b>CLIENT:</b>	YORK COUNTY SWRA	<b>Client Sample ID:</b>	NPDES-2
<b>Lab Order:</b>	G1708580	<b>Sampled By:</b>	YCSWA
<b>Project:</b>	York 600 M	<b>Collection Date:</b>	8/8/2017 10:15:00 AM
<b>Lab ID:</b>	G1708580-001	<b>Received Date:</b>	8/9/2017 10:41:00 AM
<b>Matrix:</b>	SURFACE WATER		

Analyses	Result	QL	Q	Units	DF	Date Prepared	Date Analyzed
<b>PH BY SM 4500 H+B</b>							
		Analyst: AM			SM 4500-H+ B		
Lab pH	7.60		H	S.U.	1		08/09/17 2:52 PM
<b>TOTAL METALS</b>							
		Analyst: LNG			EPA 245.7 EPA 245.7		
Mercury	155	4.0		ng/L	2	08/10/17 11:00 AM	08/10/17 1:23 PM
<b>INORGANIC METALS</b>							
		Analyst: RLR			EPA 200.2 EPA 200.8		
Antimony	< 2.0	2.0		µg/L	1	08/10/17 10:35 AM	08/14/17 1:56 PM
Cadmium	< 0.2	0.2		µg/L	1	08/10/17 10:35 AM	08/14/17 1:56 PM
Copper	< 4.0	4.0		µg/L	1	08/10/17 10:35 AM	08/14/17 1:56 PM
Lead	< 1.0	1.0		µg/L	1	08/10/17 10:35 AM	08/14/17 1:56 PM
Silver	< 0.4	0.4		µg/L	1	08/10/17 10:35 AM	08/14/17 1:56 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>							
		Analyst: SJM			EPA 624		
1,1,1-Trichloroethane	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
1,1-Dichloroethane	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
1,1-Dichloroethene	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
Chloroethane	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
cis-1,2-Dichloroethene	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
Dichlorodifluoromethane	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
Methylene Chloride	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
Tetrachloroethene	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
Tetrahydrofuran	< 1.0	1.0		µg/L	1		08/09/17 7:06 PM
Trichloroethene	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
Trichlorofluoromethane	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
Vinyl Chloride	< 0.5	0.5		µg/L	1		08/09/17 7:06 PM
Surr: 1,2-Dichloroethane-d4	97.8	80-120		%REC	1		08/09/17 7:06 PM
Surr: 4-Bromofluorobenzene	98.2	80-120		%REC	1		08/09/17 7:06 PM
Surr: Toluene-d8	99.1	80-120		%REC	1		08/09/17 7:06 PM



I.D. 56-00306 PA DEP



STREAM DISCHARGE MEASUREMENT  
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

Study Area: RR-01

Transect: \_\_\_\_\_

Date: 8/8/17

Operator: Bill Jones

**Weather (Circle)**

Air Temp (°F): \_\_\_\_\_

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Streambed uniform	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flow uniform	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reduced flow near edges	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Large woody debris present	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Aquatic vegetation present	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	& <input type="checkbox"/> %	

**NOTES:**

RR-Aug-1 - meter was set  
incorrectly (units)  
Had to adjust and redo

Approx. stream width

17'

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

Approx. number of verticals

18

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

**OTT MF Pro**

**Measurement 1**

Filename

RR-AUG-1

Start time

0737

End time

0801

Total stream discharge (Q)

—

**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 displayed 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-AUG-2

Start time

0805

End time

~~2:77:47~~ 0819

Total stream discharge (Q)

2.771 ft<sup>3</sup>/s

**Measurement 3**

Filename

RR-AUG-3

Start time

0822

End time

0831

Total stream discharge (Q)

2.365 ft<sup>3</sup>/s

**Notes:**

Measurement 4

Filename - RR-AUG-4

Start - 0835

Stop - 0846

Total - 2.365 ft<sup>3</sup>/s



STREAM DISCHARGE MEASUREMENT  
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

Study Area: EC-02

Transect: \_\_\_\_\_

Date: 8/8/17

Operator: Bill Jones

**Weather (Circle)**

Air Temp (°F): \_\_\_\_\_

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Streambed uniform	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Flow uniform	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reduced flow near edges	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Large woody debris present	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Aquatic vegetation present	<input checked="" type="checkbox"/> & <u>5%</u>	<input type="checkbox"/>

**NOTES:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Approx. stream width

17

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

Approx. number of verticals

18

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

**OTT MF Pro**

**Measurement 1**

Filename

EC-AUG-1

Start time

0919

End time

0933

Total stream discharge (Q)

4,104 ft<sup>3</sup>/s

**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 displayed 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-AUG-2

Start time

0937

End time

0951

Total stream discharge (Q)

3,920 ft<sup>3</sup>/s

**Measurement 3**

Filename

\_\_\_\_\_

Start time

\_\_\_\_\_

End time

\_\_\_\_\_

Total stream discharge (Q)

\_\_\_\_\_

Notes:



**SURFACE WATER SAMPLE CHARACTERIZATION  
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY**

<b>SAMPLE IDENTIFICATION:</b> <u>RR-01</u>	<b>NORTHING:</b>	<b>EASTING:</b>
<b>INVESTIGATORS:</b> <u>TG/FK/BJ</u>	<b>DATE:</b> <u>8/8/17</u> <b>TIME:</b> <u>0745</u>	<b>WATER DEPTH:</b> <u>11'</u>
<b>FORM COMPLETED BY:</b> <u>FK</u>		

<b>WEATHER CONDITIONS</b>	<b>Now</b> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<b>Past 24 hours</b> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<b>storm</b> <b>rain</b> <b>showers</b> <b>partly cloudy</b> <b>clear/sunny</b>	<b>Has there been a heavy rain in the last 7 days?</b> (Yes/No)  <b>Air Temperature</b> <u>64</u> °F <b>Other:</b> <u>NA</u>
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**WATER QUALITY PARAMETERS**

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	<u>16.2</u>	
DO (mg/L):		Color: <u>Clear</u>
DO (% Saturation):		
pH:	<u>6.39</u>	Odor: <u>NA</u>
Conductivity (µS/cm):	<u>170</u>	
ORP (mV):		Other: <u>NA</u>

**SURFACE WATER ANALYSES**

Parameter	Unfiltered	Filtered
Total Mercury (THg)	<input checked="" type="checkbox"/>	
Methylmercury (MeHg)		<input checked="" type="checkbox"/>

**Sample Depth (feet):**

**QA/QC:**

Duplicate Sample Station? (Y/N) (N)

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

**NOTES:** FK - Sampler



**SURFACE WATER SAMPLE CHARACTERIZATION  
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY**

<b>SAMPLE IDENTIFICATION:</b> <i>Rambo Down</i>	<b>NORTHING:</b>	<b>EASTING:</b>
<b>INVESTIGATORS:</b> <i>TG / FK / BJ</i>	<b>DATE:</b> <i>8/8/17</i> <b>TIME:</b> <i>0900</i>	<b>WATER DEPTH:</b> <i>6"</i>
<b>FORM COMPLETED BY:</b> <i>FK</i>		

<b>WEATHER CONDITIONS</b>	<b>Now</b>	<b>Past 24 hours</b>	<b>Has there been a heavy rain in the last 7 days?</b>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Yes</b> / No
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	Air Temperature <i>68</i> °F
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	Other:

**WATER QUALITY PARAMETERS**

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	<i>17.2</i>	
DO (mg/L):		Color: <i>clear</i>
DO (% Saturation):		
pH:	<i>7.01</i>	Odor: <i>NA</i>
Conductivity (µS/cm):	<i>224</i>	
ORP (mV):		Other:

**SURFACE WATER ANALYSES**

Parameter	Unfiltered	Filtered
Total Mercury (THg)	<input checked="" type="checkbox"/>	
Methylmercury (MeHg)		<input checked="" type="checkbox"/>

**QA/QC:**

Duplicate Sample Station? (Y/N) *(N)*

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

Sample Depth (feet):

**NOTES:** *FK - Sampler*



SURFACE WATER SAMPLE CHARACTERIZATION  
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY

SAMPLE IDENTIFICATION: <u>EL-02</u>	NORTHING:	EASTING:
INVESTIGATORS: <u>TG/FK / BJ</u>	DATE: <u>8/8/17</u> TIME: <u>0920</u>	WATER DEPTH: <u>8"</u>
FORM COMPLETED BY: <u>FK</u>		

WEATHER CONDITIONS	Now	Past 24 hours	Has there been a heavy rain in the last 7 days? <u>(Yes)</u> / No		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>		Air Temperature <u>68</u> °F	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>			Other:
	<input type="checkbox"/>	<input type="checkbox"/>			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>			

WATER QUALITY PARAMETERS

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	<u>17.0</u>	
DO (mg/L):		Color: <u>Clear</u>
DO (% Saturation):		
pH:	<u>7.90</u>	Odor: <u>NA</u>
Conductivity (µS/cm):	<u>215</u>	
ORP (mV):		Other:

SURFACE WATER ANALYSES

Parameter	Unfiltered	Filtered
Total Mercury (THg)	<input checked="" type="checkbox"/>	
Methylmercury (MeHg)		<input checked="" type="checkbox"/>

QA/QC:

Duplicate Sample Station? (Y (N))

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

Sample Depth (feet):

NOTES: FK - Sampled



**SURFACE WATER SAMPLE CHARACTERIZATION  
YORK COUNTY SOLID WASTE AND REFUSE AUTHORITY**

<b>SAMPLE IDENTIFICATION:</b> <i>Ebaughs Down</i>	<b>NORTHING:</b>	<b>EASTING:</b>
<b>INVESTIGATORS:</b>	<b>DATE:</b> <i>8/8/17</i> <b>TIME:</b> <i>1010</i>	<b>WATER DEPTH:</b> <i>6"</i>
<b>FORM COMPLETED BY:</b>		

<b>WEATHER CONDITIONS</b>	<b>Now</b>	<b>Past 24 hours</b>	<b>Has there been a heavy rain in the last 7 days?</b>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<b>Yes / No</b>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<b>storm</b>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>rain</b>
	<input type="checkbox"/>	<input type="checkbox"/>	<b>showers</b>
	<input type="checkbox"/>	<input type="checkbox"/>	<b>partly cloudy</b>
	<input type="checkbox"/>	<input type="checkbox"/>	<b>clear/sunny</b>
			<b>Air Temperature</b> <i>70</i> °F
			<b>Other:</b>

**WATER QUALITY PARAMETERS**

Parameter	Measurement	Surface Water Characteristics:
Temperature (°C):	<i>14.9</i>	
DO (mg/L):		Color: <i>clear</i>
DO (% Saturation):		
pH:	<i>7.68</i>	Odor: <i>NA</i>
Conductivity (µS/cm):	<i>191</i>	
ORP (mV):		Other:

**SURFACE WATER ANALYSES**

Parameter	Unfiltered	Filtered
Total Mercury (THg)	<input checked="" type="checkbox"/>	
Methylmercury (MeHg)		<input checked="" type="checkbox"/>

Sample Depth (feet):

**QA/QC:**

Duplicate Sample Station? (Y/N) *(N)*

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

**NOTES:**

*FL - Sampler*