

EAST GOSHEN MUNICIPAL AUTHORITY

January 12, 2015

**Monday 6:00 PM!!!**

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE/MOMENT OF SILENCE
  - a. Ask if anyone will be taping the meeting?
2. CHAIRMAN'S REPORT/OTHER MEMBERS REPORTS
3. SEWER REPORTS
  - a. Director of Public Works Report
  - b. Pennoni Engineer's Report
  - c. Big Fish Environmental Inc. Report with DMR's
  - d. East Goshen Township Flows
3. APPROVAL OF MINUTES
  - a. December 8, 2014
4. APPROVAL OF INVOICES
  - a. Pennoni Invoice #618400 \$ 137.50
  - b. Pennoni Invoice #618401 \$ 621.50
  - c. Gawthrop Invoice #126447 \$ 400.00 pd 12/12
5. LIAISON REPORTS
6. FINANCIAL REPORTS
  - a. December 2014 Report
7. OLD BUSINESS
8. GOALS
8. GOALS
  - a. Submit an article for each newsletter – Due date for newsletter  
Need by 2/13/15  
Need by 5/8/15  
Need by 8/14/15  
Need by 11/13/15

- b. Obtain construction permits for the Reservoir Road Pump Station – December 31, 2015
- c. Attend West Goshen Meetings quarterly – more often if needed.

- 1<sup>st</sup> Quarter
- 2<sup>nd</sup> Quarter
- 3<sup>rd</sup> Quarter
- 4<sup>th</sup> Quarter

- d. Respond to capacity requests in 45 days or less.
- e. Continue to implement I & I Plan
- f. Operate RCSTP in compliance with NPDES Permit

9. NEW BUSINESS

10. CAPACITY REQUESTS

11. ANY OTHER MATTER

- a. Semi-annual sewer system status report #12

12. CORRESPONDENCE AND REPORTS OF INTEREST

13. PUBLIC COMMENT

14. ADJOURNMENT

EAST GOSHEN MUNICIPAL AUTHORITY  
EAST GOSHEN TOWNSHIP  
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

January 7, 2015

To: Municipal Authority  
From: Mark Miller  
Re: December 2014 Monthly Report

**Meters:** Were read on a daily basis. The temporary meters were visited once a week. No problems to report.

**C.C. Collection:** The pump stations were visited on a daily basis, no problems to report. We were notified of three lateral backups. We responded to all three and cleared the blockage. Once we cleared the blockage we televised the line to make sure there were no tree roots in the line.

We were asked to repair 5 lateral caps that were sheared off by lawn mowers. We raised the cleanout pipes and installed new caps.

**R.C. Collection:** The Hunt Country Pump Station was visited on a daily basis with no problems to report.

**R.C. Plant:** No problems to report.

**Lateral Repairs:**

**Alarms:** We responded to 19 alarms for the month of December.

**PA One Calls:** We received 43 PA One calls in December.



**MEMORANDUM**

**TO:** East Goshen Municipal Authority Board  
Rick Smith, Township Manager

**FROM:** Michael Ellis, P.E.  
Authority Engineer

**DATE:** January 8, 2015

**SUBJECT:** Engineer's Report

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**Invoices**

- Invoices with summaries are provided under separate cover.

**Reservoir Road Pump Station**

- The Act 537 Plan Update was approved by PADEP on January 7, 2015.
- We are initiating work on the pump station concept design. We expect to have a draft concept design of the diversion, a sketch plan of the pump station site, and an outline of the controls concept completed by the Municipal Authority meeting on February 9. We would like to schedule a review meeting with all interested parties (Township staff, RCSTP operator, etc.) the following week.
- Geotechnical investigative drilling at the proposed pump station site is scheduled for Thursday, January 15, weather permitting.
- The existing conditions field survey work is expected to commence by mid-February.

**Semi-Annual I&I Report**

- We analyzed December 2014 portable meter data, and we finalized and submitted the semi-annual I&I report that had been originally drafted in October 2014. The full report was not completed in October due to numerous metering issues that needed to be resolved.

**Chapter 94 Reports**

- We will initiate work on the 2014 Chapter 94 Reports the week of January 12.



## Monthly Operations Report: December 2014

### Treatment Process Operation

During November 2014, there were no exceedances of the final effluent discharge limitations for outfall 001 and discharge from Outfall 002. The total phosphorus monthly average concentration of 0.21 mg/L as compared to the permitted limitation of 0.50 mg/L. Table 1 illustrates the final effluent composite sample data reported for the November 2014 eDMR. During the month, the final effluent total phosphorus concentration discharged ranged from 0.12 mg/L to 0.32 mg/L. A daily average of 74 gpd of aluminum sulfate solution was used as compared to the 70.5 gpd average for October.

**Table 1**

<b>November 2014 - Final Effluent - Out Fall 001</b>											
NPDES Permit Discharge Limitations	Flow	CBOD <sub>5</sub>		TSS		NH <sub>4</sub> -N		Phosphorus, Total , mg/L		Fecal Coliform	
	MGD Average	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	Geo Mean	Geo Mean
	0.75	20	125	21	131	7	44	0.5	3	200	1,000
	Instantaneous Maximum	40		42							
Sample Date											
November 4, 2014	0.277	2.0	4.6	4	9	0.200	0.46	0.12	0.28	1	0.0000
November 11, 2014	0.301	2.0	5.0	7	18	0.136	0.34	0.32	0.80	1	0.0000
November 18, 2014	0.335	2.0	5.6	3	8	0.120	0.34	0.21	0.59	1	0.0000
November 25, 2014	0.307	2.0	5.1	3	8	0.100	0.26	0.20	0.51	1	0.0000
<b>Average</b>	<b>0.305</b>	<b>2.0</b>	<b>5.1</b>	<b>4</b>	<b>11</b>	<b>0.139</b>	<b>0.35</b>	<b>0.21</b>	<b>0.54</b>	<b>1</b>	<b>0.0000</b>
<b>Minimum</b>	<b>0.277</b>	<b>2.0</b>	<b>4.6</b>	<b>3</b>	<b>8</b>	<b>0.100</b>	<b>0.26</b>	<b>0.12</b>	<b>0.28</b>	<b>1</b>	<b>0.0000</b>
<b>Maximum</b>	<b>0.335</b>	<b>2.0</b>	<b>5.6</b>	<b>7</b>	<b>18</b>	<b>0.200</b>	<b>0.46</b>	<b>0.32</b>	<b>0.80</b>	<b>1</b>	<b>0.0000</b>

There was no discharge from Outfall 002 to Applebrook during November 2014.



**Table 2**

<b>November 2014 - Influent Wastewater</b>											
Design Basis	Flow	BOD <sub>5</sub>		TSS		NH <sub>4</sub> -N		TKN, mg/L		Phosphorus, Total, mg/L	
		mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day
	MGD Average	335	2,098	320	2,001	32	200	48	301	9.1	57
Sample Date											
November 4, 2014	0.353	258	760	222	654	34.4	101	40.1	118	6.4	19
November 11, 2014	0.396	278	819	380	1,120	34.1	100	48	141	6.6	19
November 18, 2014	0.385	216	636	288	849	30.9	91	42.8	126	5.8	17
November 25, 2014	0.366	140	413	282	831	29.9	88	46.9	138	4.1	12
Average	0.375	223	657	293	863	32.3	95	44.5	131	5.7	17
Minimum	0.353	140	413	222	654	29.9	88	40.1	118	4.1	12
Maximum	0.396	278	819	380	1120	34.4	101	48.0	141	6.6	19

Table 2 illustrates the influent wastewater pollutant loadings for November 2014. The influent loadings remained within the treatment facility design loadings.

Table 3 presents the available Outfall 001 final effluent data for the month of December 2014. There are no anticipated exceedances of the permitted limitations for the month. Split sampling of the composite sample collected by Applied Laboratory Services (ALS) is ongoing for comparative analysis and daily results.

**Table 3**



December 2014 - Final Effluent - Out Fall 001											
NPDES Permit Discharge Limitations	Flow	CBOD <sub>5</sub>		TSS		NH <sub>4</sub> -N		Phosphorus, Total , mg/L		Fecal Coliform	
	MGD Average	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	Geo Mean	Geo Mean
	0.75	20	125	21	131	7	44	0.5	3	200	1,000
	Instantaneous Maximum	40		42							
Sample Date											
December 2, 2014	0.299	2.0	5.0	4	10	0.182	0.45	0.12	0.30	1	0.0000
December 9, 2014	0.311	3.9	10.1	3	8	0.114	0.30	0.14	0.36	1	0.0000
December 16, 2014	0.342	2.7	7.7	4	11	0.345	0.98	0.15	0.43	1	0.0000
December 23, 2014	0.319							0.24	0.64		
December 30, 2014	0.396							0.10	0.33		
Average	0.333	2.9	7.6	4	10	0.214	0.58	0.15	0.41	1	0.0000
Minimum	0.299	2.0	5.0	3	8	0.114	0.30	0.10	0.30	1	0.0000
Maximum	0.396	3.9	10.1	4	11	0.345	0.98	0.24	0.64	1	0.0000

During December 2014, there was no discharge of treated effluent to Applebrook. The pump has been placed in the off mode during the winter months.

The influent wastewater pollutant concentrations and loading entering the wastewater treatment facility remained within the design concentrations and loadings. Composite samples are collected at the influent doghouse manhole and influent wet well. The influent flow meter reading is collected from the influent flow meter located prior to the Screening Building, excluding the internal recycle flows.

Table 4 presents the available pollutant data for the influent wastewater collected at the doghouse manhole during December 2014.

**Table 4**

December 2014 - Influent Wastewater											
Design Basis	Flow	BOD <sub>5</sub>		TSS		NH <sub>4</sub> -N		TKN, mg/L		Phosphorus, Total, mg/L	
		mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day
	MGD Average	335	2,098	320	2,001	32	200	48	301	9.1	57
Sample Date											
December 2, 2014	0.404	258	869	186	626	31.8	107	51.5	173	5.3	18
December 9, 2014	0.371	295	993	190	640	27.9	94	39.1	132	4.1	14
December 16, 2014	0.423	136	458	74	249	33.7	113	41.9	141	4.1	14
December 23, 2014	0.410										
December 30, 2014	0.436										
Average	0.409	230	773	150	505	31.1	105	44.2	149	4.5	15
Minimum	0.371	136	458	74	249	27.9	94	39.1	132	4.1	14
Maximum	0.436	295	993	190	640	33.7	113	51.5	173	5.3	18

Sequencing batch reactors (SBRs) numbered 1, 3 and 4 were in service during November and December. SBR 2 was drained, cleaned and inspected on December 8<sup>th</sup>. Selected photographs are included.

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Figure 1 - SBR 2 Failed Decanter Valve (right side)





Figure 2 - Influent and Aeration Piping



Figure 3 - SBR 2 Motive Pump Impeller



Figure 4 - View of Sludge Waste Pump Guide Rails, Discharge pipe and Visible Concrete Aggregate



Figure 5 - Broken Aluminum Sulfate Solution Conveyance Pipe



Process monitoring of each SBR included ammonia as N, nitrite as N, Nitrate as N, COD, SSV, MLSS and total phosphorus. Foam concentrations increased slightly during November and December. The average coverage of the surface area was estimated at 50%. Increased sludge wasting rates were maintained to manage the MLSS concentrations and F:M ratio within the desired goals. Daily monitoring of the influent and final effluent 24-hour composites samples for total phosphorus is ongoing. Daily analysis of the final effluent flow equalization grab sample is total phosphorus is ongoing. Sample collection and analysis of the influent wastewater collected at the influent pump station wet well is ongoing.

Addition of aluminum sulfate solution to the SBRs to assist with phosphorus removal continued. The volume of aluminum sulfate solution to the SBRs slightly increased from a daily average of 70.5 gpd during October to 74 gpd during November. During November, the soda ash daily addition average increased slightly to 435 lbs. per day, as compared to 419 lbs. per day during October. Soda ash assists towards maintaining pH concentrations above 7.0 standard units continued during the month.

SBR No. 2 remains out of service as a treatment unit. Minor repairs will be scheduled as weather conditions permit.



**Solids Dewatering and Disposal: November 2014**

<b>Sludge Dewatering Summary</b>	
Gallons of sludge dewatered	300,310
Average Dewatered Total Solids, %	20.0%
Wet Tons	36.26
Dry Tons	7.231
Number of dumpsters	4

*\*Sixteen (16) days of centrifuge operation*

**Flow data:**

<b>December 2014</b>			
<b>Flow Meter Location</b>	<b>Total Volume for Month, MG</b>	<b>Average Daily Flow, gpd</b>	<b>Daily Maximum Flow, gpd</b>
Influent Wastewater to Screening Building*	13.558	437,366	634,410
Influent Wastewater to SBRs	13.843	446,563	586,944
Internal Recycle	0.571	23,792	53,974
Treated Effluent to Disc Filters	13.251	427,439	533,952
Final Effluent Discharge	11.029	355,774	445,000
Applebrook Golf Course	0	0	0

*\*The daily maximum flow of 634,410 is the result of an erroneous level meter reading as a result of a high water level due to flooding of the lower level of the Screening Room during an influent pump failure.*

**Chemical Usage:**

<b>December 2014</b>		
<b>Chemical</b>	<b>Daily Average</b>	<b>Total Monthly</b>
Soda Ash	435	13,500
Aluminum Sulfate solution	74	2,294
Polymer (centrifuge)	0.84	13.44

*\*Seventeen (17) days of centrifuge operation*



### **Solids Dewatering and Disposal: December 2014**

<b>Sludge Dewatering Summary</b>	
Gallons of sludge dewatered	317,099
Average Dewatered Total Solids, %	19.4%
Wet Tons	39.3
Dry Tons	7.60
Number of dumpsters	5

During December, sludge wasting to the sludge holding tanks and decanting of the sludge holding tanks was ongoing. Process monitoring included pH, total alkalinity and total solids.

Sludge holding tank No. 1 was in service. The level at the beginning of November was 6.53 feet and the level at the end of the month was 12.42 feet. The initial total solids concentration was 0.53% decreasing to 0.46% at the end of the month. The average pH concentration was 7.14 S.U. Zero gallons of supernatant were decanted during the month. A total of 100 pounds of soda ash were added.

Sludge holding tank No. 2 was in service. The level at the beginning of the month was 12.94 feet and the level at the end was 7.54. The initial total solids concentration was 0.64% total solids increasing to 0.87% at the end of the month. The average pH concentration was 7.18 S.U. and 100 pounds of soda ash was added. Zero gallons of supernatant were decanted.

### **Significant Storm/Hydraulic Loading Events**

There were no significant storm events during the months of December which resulting in solids carryover or deterioration of the final effluent quality. A total of 3.61 inches of precipitation was measured at the facility. The daily maximum precipitation was recorded as 0.77 inches.

### **Minor Repairs and Preventative Maintenance**

No unscheduled repairs preventative maintenance items were performed during December.



**2014 DECEMBER - CC COLLECTION - METERS FROM WEST GOSHEN**

DATE	HERSHEY'S MILL		ASHBRIDGE		HICKS METER		RESERVOIR		BARKWAY	
	READING	GPD	READING	GPD	READING	GPD	READING	GPD	READING	GPD
12/1/2014										
12/2/2014										
12/3/2014										
12/4/2014										
12/5/2014	24,692,308	637,289	2,018,432	60,182	17,063,218	296,748	61,246,525	747,524	3,432,375	11,713
12/6/2014										
12/7/2014										
12/8/2014	24,885,714	644,687	2,020,405	65,767	17,149,370	287,173	61,476,325	766,000	3,435,555	10,600
12/9/2014	24,948,894	631,800	2,020,996	59,100	17,182,474	331,040	61,555,330	790,050	3,436,624	10,690
12/10/2014	25,013,258	643,640	2,021,651	65,500	17,218,324	358,500	61,642,222	868,920	3,437,661	10,370
12/11/2014	25,079,836	665,780	2,022,249	59,800	17,252,570	342,460	61,723,690	814,680	3,438,676	10,150
12/12/2014	25,138,516	586,800	2,022,790	54,100	17,282,742	301,720	61,796,511	728,210	3,439,619	9,430
12/13/2014										
12/14/2014										
12/15/2014	25,335,772	657,520	2,024,604	60,467	17,363,386	268,813	62,001,128	682,057	3,443,132	11,710
12/16/2014	25,397,038	612,660	2,025,172	56,800	17,396,098	327,020	62,075,380	742,520	3,444,165	10,330
12/17/2014	25,458,690	616,520	2,025,740	56,800	17,428,858	327,700	62,148,435	730,550	3,445,147	9,820
12/18/2014	25,518,512	598,220	2,026,289	54,900	17,463,244	343,860	62,224,871	764,360	3,446,264	11,170
12/19/2014	25,580,728	622,160	2,026,851	56,200	17,494,772	315,280	62,295,487	706,160	3,447,215	9,510
12/20/2014										
12/21/2014										
12/22/2014	25,777,248	655,067	2,028,636	59,500	17,576,160	271,293	62,496,575	670,293	3,450,955	12,467
12/23/2014	25,841,640	643,920	2,029,207	57,100	17,605,028	288,680	62,565,745	691,700	3,452,097	11,420
12/24/2014	25,906,596	649,560	2,029,758	55,100	17,632,242	272,140	62,631,976	662,310	3,453,318	12,210
12/25/2014										
12/26/2014										
12/27/2014										
12/28/2014										
12/29/2014	26,273,032	732,872	2,032,855	61,940	17,752,990	241,496	62,975,891	687,830	3,460,007	13,378
12/30/2014	26,338,104	650,720	2,033,463	60,800	17,776,458	234,680	63,040,976	650,850	3,461,248	12,410
12/31/2014	26,400,890	627,860	2034048	58,500	17,800,178	237,200	63,105,522	645,460	3,462,406	11,580
	639,828		58,974		296,812		726,440			11,115
	10,877,074		1,002,555		5,045,804		12,349,474			188,957
		17		17				17		17

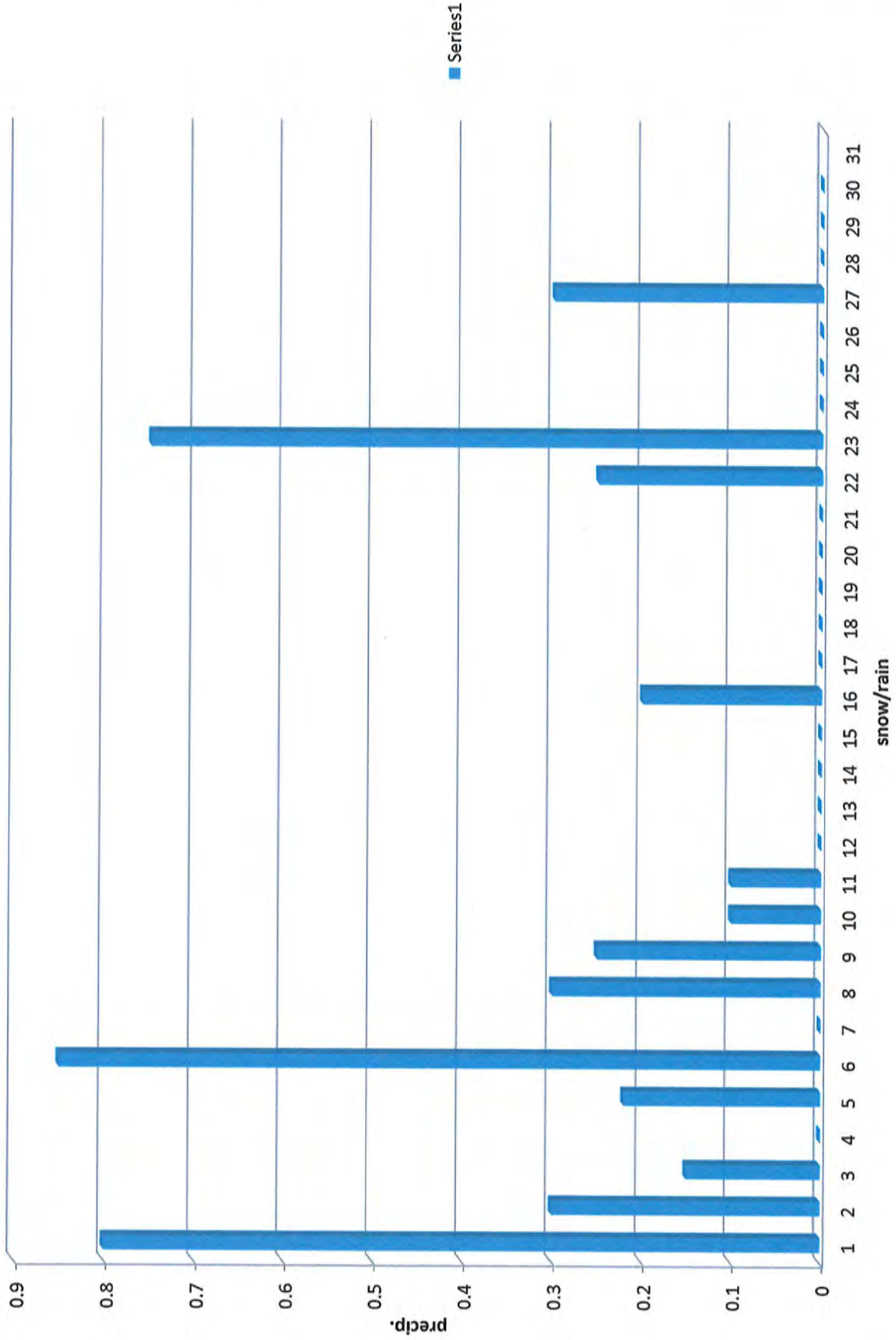


## 2014 SUMMARY OF METER READINGS

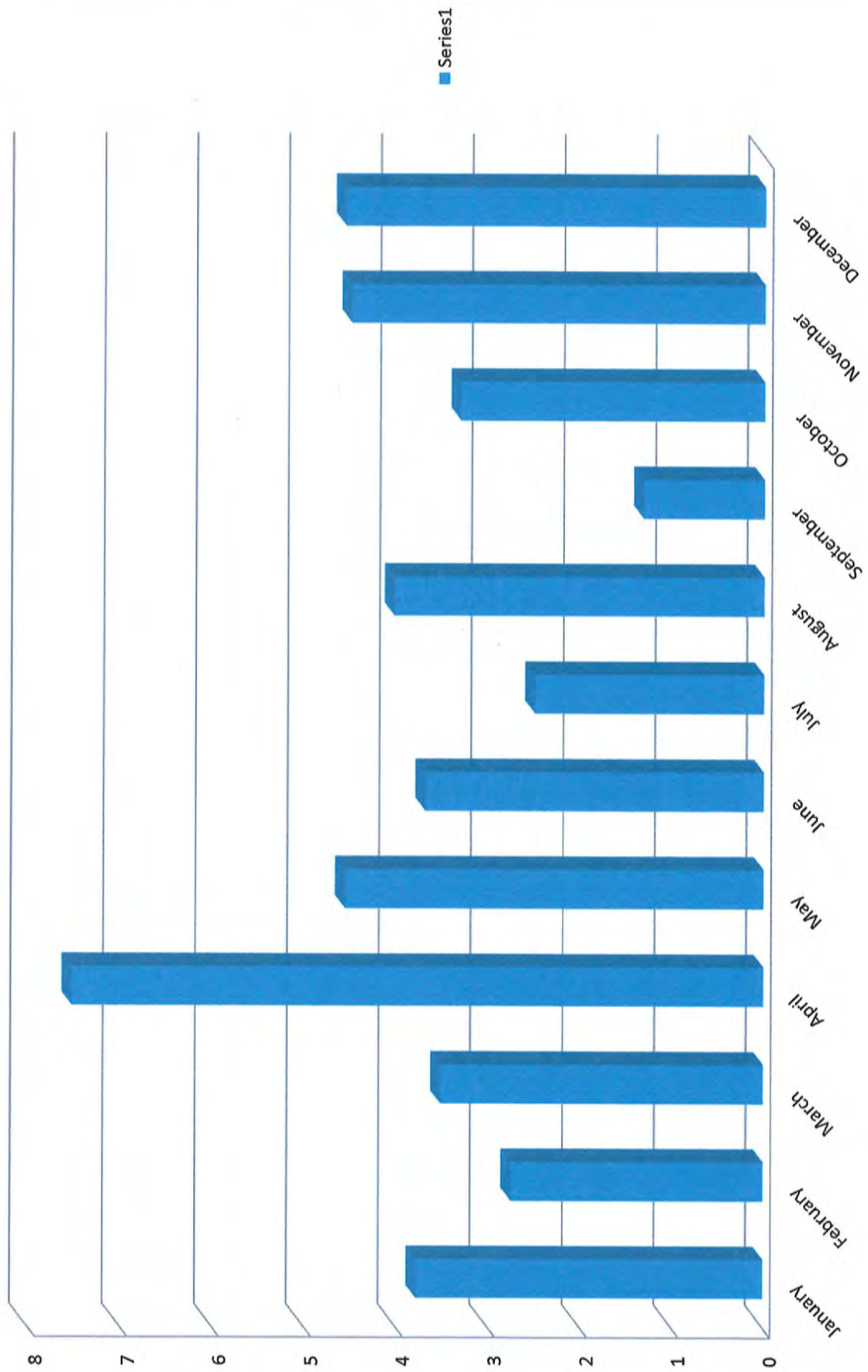
	WESTTOWN WAY	ELLIS LANE	PAOLI PIKE	WILSON DRIVE	SUMMIT	HERSHEY MILL	ASHBRIDGE	HICKS	RESERVOIR	BARKWAY
JANUARY	1,120,955	112,631	63,436	80,890	24,000			255,116	795,376	
FEBRUARY	1,249,173	138,449	68,472	88,803	24,000			287,831	881,433	
MARCH	1,182,533	126,933	67,479	84,197	24,000	860,074	75,186	291,520	827,109	28,696
APRIL	1,242,798	143,329	76,736	88,674	24,000	1,029,229	79,139	300,256	806,253	12,331
MAY	1,542,161	175,112	95,766	94,501	24,000	1,337,536	117,391	357,808	937,139	20,786
JUNE	1,117,632	118,019	66,596	96,366	24,000	718,059	68,339	287,327	744,579	11,081
JULY	965,691	100,935	55,946	86,968	24,000	613,087	57,604	261,340	676,846	9,610
AUGUST	901,782	84,377	54,933	67,878	24,000	546,913	54,394	242,828	616,910	9,213
SEPTEMBER	948,410	82,233	63,005	69,743	24,000	528,956	53,424	183,533	443,679	17,998
OCTOBER	914,111	77,792	61,149	76,199	24,000	519,162	56,103	263,386	608,616	9,877
NOVEMBER	965,665	74,445	57,890	111,895	24,000	535,385	56,614	271,447	654,880	10,303
DECEMBER	1,040,284	88,360	60,964	119,103	24,000	639,828	58,974	296,812	726,440	11,115
<b>Total Flows</b>										
<b>Monthly Ave</b>	<b>1,099,266</b>	<b>110,218</b>	<b>66,031</b>	<b>88,768</b>	<b>24,000</b>	<b>732,823</b>	<b>67,717</b>	<b>274,934</b>	<b>726,605</b>	<b>14,101</b>

To  
West Goshen                      834,249

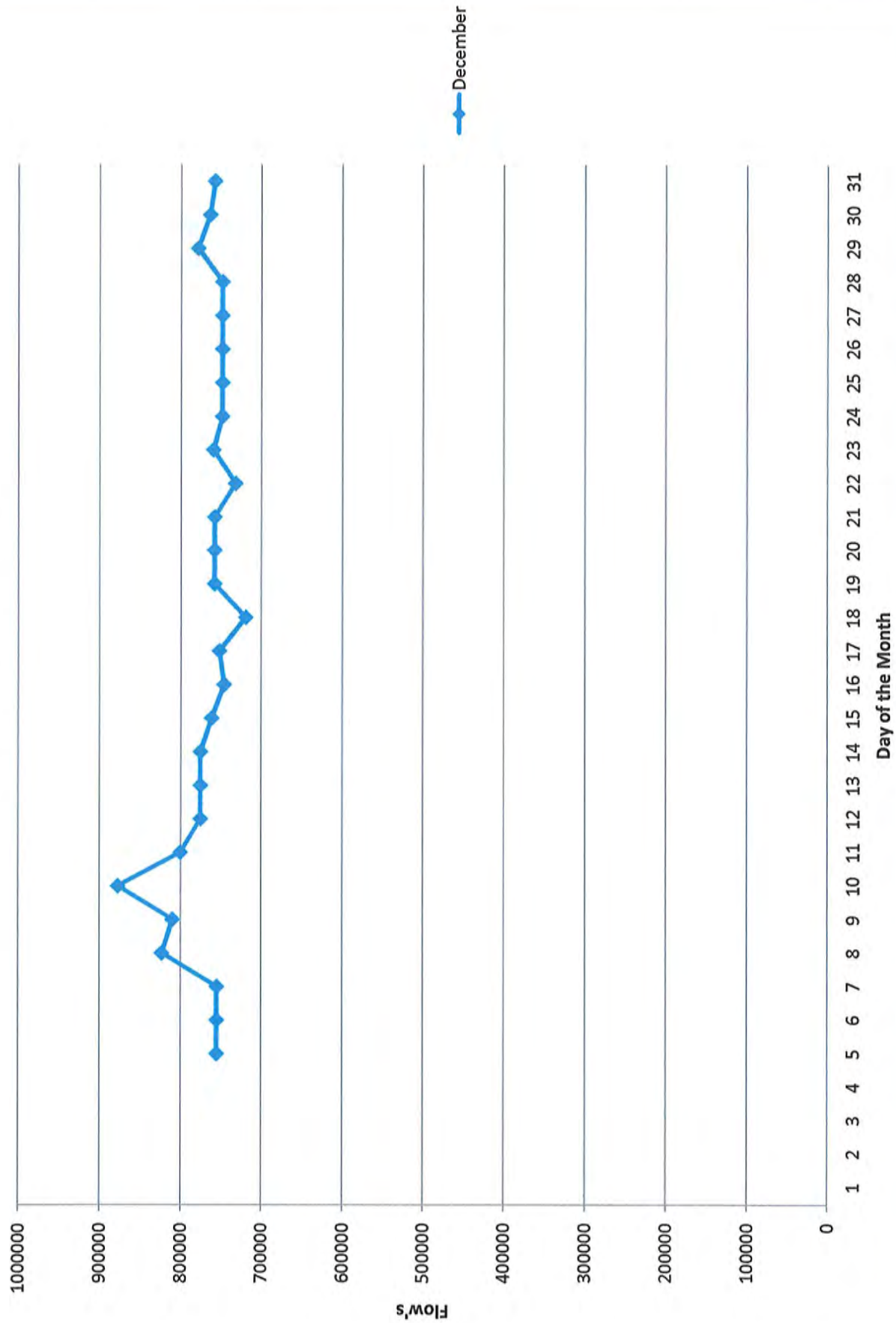
# December Precip. 4.57 - 2014



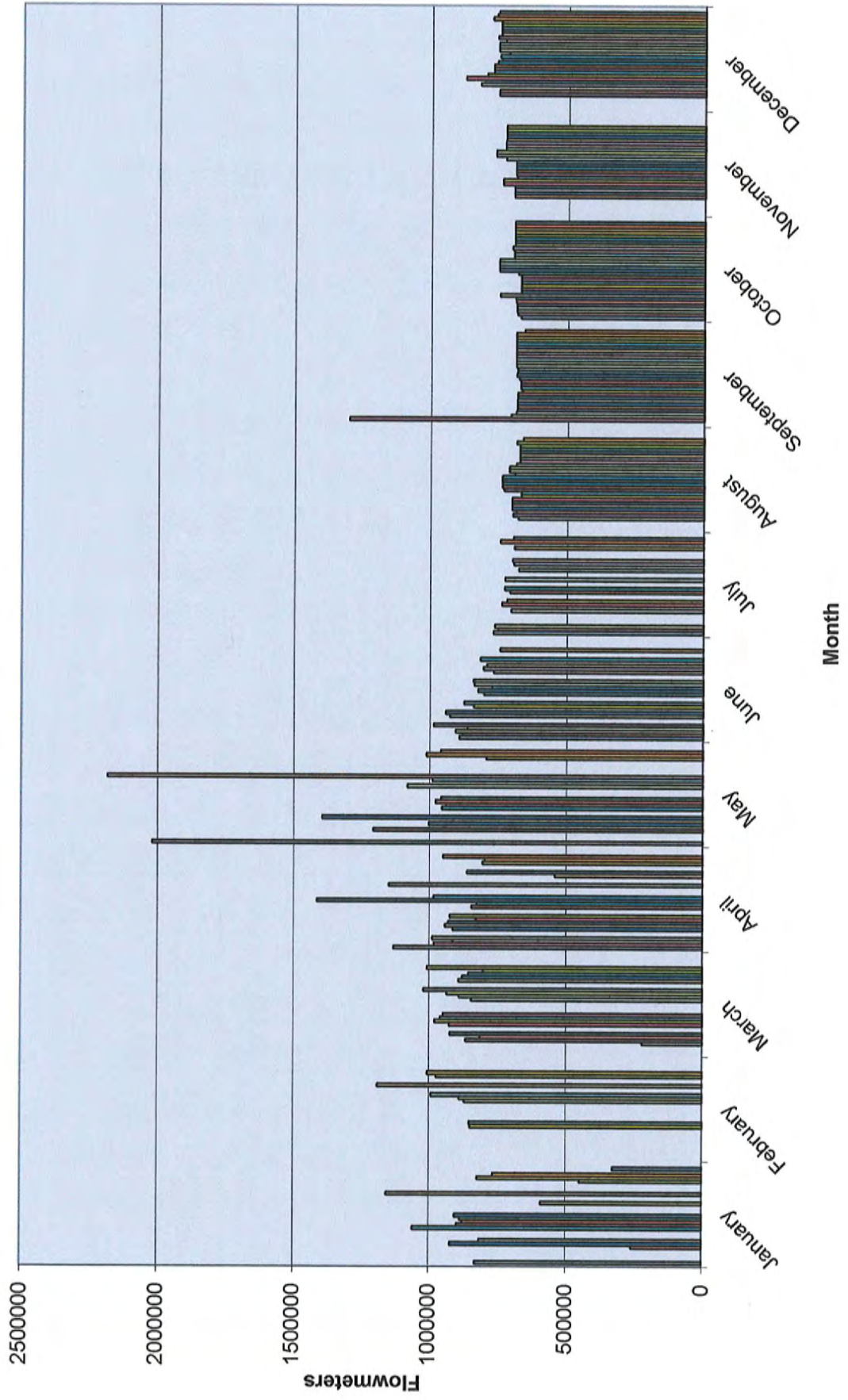
# 2014 Monthly Precipitation



# Flowmeters December 2014



# Monthly Totals 2012 Jan-Dec



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**draft**  
**EAST GOSHEN TOWNSHIP MUNICIPAL AUTHORITY**  
**MEETING MINUTES**  
**December 8, 2014**

The East Goshen Township Municipal Authority held their regular public meeting on Monday, December 8, 2014 at 7:00 pm at the East Goshen Township building. Members in attendance were: Vice Chairman Kevin Cummings, Dana Pizarro, Ed McAssey and Fran Beck. Also in attendance were: Rick Smith (Township Manager), Carmen Battavio (Township Supervisor), Mark Miller (Director of Public Works), Scott Towler (Big Fish), Mike Ellis (Pennoni), and Walter Wujik (Conservancy Board).

**COMMON ACRONYMS:**

<i>BFES – Big Fish Environmental Services</i>	<i>MA- Municipal Authority</i>
<i>BOS – Board of Supervisors</i>	<i>NPDES – National Pollutant Discharge Elimination System</i>
<i>CB – Conservancy Board</i>	<i>PC – Planning Commission</i>
<i>DEP – Department of Environmental Protection</i>	<i>PM – Prevention Maintenance</i>
<i>EPA – Environmental protection Agency</i>	<i>PR – Park &amp; Recreation Board</i>
<i>HC – Historical Commission</i>	<i>RCSTP – Ridley Creek Sewer Treatment Plant</i>
<i>I&amp;I – Inflow &amp; Infiltration</i>	<i>SBR – Sequencing Batch Reactor</i>
<i>LCSTP – Lockwood Chase Sewer Treatment Plant</i>	<i>SSO – Sanitary System Overflow</i>
	<i>WAS – Waste Activated Sludge</i>

**Call to Order & Pledge of Allegiance**

Kevin called the meeting to order at 7:00 pm and led those present in the Pledge of Allegiance. There was a moment of silence to remember the troops and all veterans. Kevin asked if anyone would be recording the meeting and there was no response.

**Chairman’s Report/Other Members’ Reports**

Ed attended the West Goshen meeting. They continued testing on Goose Creek. They will open bids for methane burner construction on 12/23/14. The Sunoco pipeline was discussed.

**Sewer Reports**

**1. Director of Public Works**

Mark Miller reported for November 2014:

Meters: There were problems with meters including portable meters. Allied Control was called to make repairs. The meter on Wilson Dr. had meter flows that were climbing. We found that the transducer was failing. Allied installed a spare transducer that we had in stock. Two of the portable meters failed when the band holding the metering probe broke away and flowed down stream. Fortunately, we were able to retrieve the probe.

CC Collection: While reviewing PA One Calls, we saw that Battavio Plumbing was doing a lateral repair. I called Carmen to see what the problem was. He stated that when his employee was on site, they found sewage coming from the stand pipe at the street. We went out and ran the camera from the stand pipe to the main. We found that the pipe had dropped. We excavated the lateral and verified that the lateral did not have enough fall. After some discussion, we decided to abandon the existing lateral and install a new lateral about 20 feet further down the main. This required the removal of a large Ash tree and a hedge row of brush.

1 The pump stations were visited on a routine basis. The pumps that were pulled last month were  
2 repaired and picked up at Deckmen Electric.

3 RC Collection: The Hunt country Pump Station was visited on a daily basis with no  
4 problems to report.

5 RC Plant: On November 20, I received a call from the plant operator who reported that  
6 the generators came on to run as they do on a weekly basis. Then he heard a boom and the  
7 power went out. When I got to the plant and opened the transfer switch door, I saw that the  
8 switch had blown apart. I called our contractor who responded. Due to the age of the transfer  
9 switch which is no longer made, it was decided to purchase a new transfer switch out of Texas.  
10 Between Paul Siddell and Leni Electric they were able to put a piece of wood in the old transfer  
11 switch to allow street power and get the lift station and forward feed pumps operational. Due to  
12 the outage, we flooded out the screen with 9 feet of sewage. However, we never overflowed into  
13 the meadow. We were not able to get the transfer switch operational until Monday.

14 On November 28 the operator called to report that he heard a bang in the MCC#2 and lost power  
15 to the lift station pump #2 and the heat in the sludge room. I contacted Lenni who responded.  
16 However, it was decided that as long as the other two pumps were working, we would not touch  
17 anything until Monday.

18 Lateral repairs: 1631 Still Lane

19 Alarms: We responded to 28 alarms for the month of November.

20 PA One Calls: We received 120 PA One Calls in November.

## 21 22 **2. Pennoni Engineer's Report**

23 Mike Ellis gave the following report:

24 Invoices: Invoices with summaries are provided under separate cover.

25 Reservoir Rd Pump Station Act 537 Plan: The Act 537 Plan Update was submitted to PADEP  
26 on August 25, 2014. PADEP has reviewed the Plan Update and they provided two comments  
27 which we have addressed:

28 1. We submitted revised Plan Update pages to address a project scheduling comment on  
29 October 16.

30 2. U.S. Fish & Wildlife Service (USFWS) provided approval of the bog turtle habitat  
31 survey and proposed construction avoidance measures on November 14. The approval  
32 letter was forwarded to PADEP on November 17. The approval letter includes 12  
33 conditions for construction including a requirement that the pipe construction in the  
34 vicinity of the Chester Creek only be performed between April 1 and October 31.

35 We have requested feedback from PADEP to confirm all comments are satisfactorily addressed,  
36 but we have not received a response. Per PADEP guidelines, approval should be issued by  
37 December 23, 2014 (within 120 days of the original submission).

38 Mike added that in phase 2, we will need to have a bog turtle expert present while work is  
39 being done.

### 40 Sewer Ordinance Updates

41 We finalized proposed revisions to the "Building Sewer" and "Grinder Pump" sections of the  
42 Township's Sewer Ordinance and forwarded to the Township for consideration of enactment via  
43 ordinance amendment by the Board of Supervisors.

1 **3. Big Fish Environmental Services** – The full report for November is attached at the end of  
2 these minutes.

3 **Minor Repairs & Preventative Maintenance:**

4 November 10: Located broken wire for #1 post flow equalization tank.

5 November 11: Replaced the intake filters for the SBR blowers

6 November 12: Repaired wire for #1 post flow equalization basin. Level sensor functioning as  
7 intended.

8 November 14: Siemens panel alarm for alum pump MP-31 failure. Troubleshooting pump and  
9 controls indicated a potential issue with the control logic. Contacted ICI to provide drawing and  
10 assist with correcting the problem. Problem corrected on December 1<sup>st</sup>.

11 November 19: Initiated procurement of the Mpulse CMMS. Initiated procurement for  
12 replacement cloth media for disc filter #2.

13 November 20: Temporary electric service shut down to allow for electricians to finalize  
14 electrical connections for automatic transfer switch for emergency power generator.

15 November 24: Installation of the emergency generator automatic transfer switch is complete and  
16 returned to service.

17 November 26: Emergency generator routine exercise completed with no problems.

18 November 28: Influent pump #2 failed. Lenni Electric was on site on Monday, December 1.  
19 Replaced blown fuses in Flygt pump control panel.

20  
21 **Approval of Minutes**

22 Dana moved to accept the minutes of November 10, 2014 as corrected. Fran seconded the  
23 motion. The motion passed unanimously.

24  
25 **Approval of Invoices**

26 1. Ed moved to approve payment of the following Pennoni invoices:

27 a. Pennoni #615122 \$ 852.50

28 b. Pennoni #615123 \$ 536.75

29 c. Pennoni #615124 \$ 103.25

30 Dana seconded the motion. The motion passed unanimously.

31  
32 **Liaison Reports**

33 Board of Supervisors – Carmen reported that they reviewed the police merger study, need to  
34 finalize the police budget and discussed Sunoco.

35 Conservancy Board – Walter reported that, with assistance from Mark Miller, they planted a  
36 bald cypress tree on E. Boot Road. There will be a plaque in honor of Bryan DelMonte for his  
37 years of service. Keep East Goshen Beautiful Day will be the 2<sup>nd</sup> Saturday in April 2015.

38  
39 **Financial Reports**

40 Jon Altshul provided the following report:

41 The Municipal Authority recorded \$2,130 in revenues, including 1 tap-in fee, and \$4,813 in  
42 engineering and legal expenses in November, a difference of -\$2,683. The fund balance is now  
43 \$1,603,120.

44  
45 **Goals**

46 The goals for 2014 are complete. Need to set goals for 2015.



1 The Comprehensive Plan representative will be Dana. Alternate will be Jack.  
2

3 **New Business**

4 1. Reservoir Rd Pump Station Design & Permitting.

5 Pennoni Proposal & addendum – Mike explained this is for a concept design to submit to the  
6 DEP. After that another proposal will be presented. Rick explained that after 2 consecutive  
7 quarters at 950,000 gallons, this project will go out for bid. Mike explained the permits and how  
8 long they will be in effect. Dana moved to approve the proposal and addendum not to exceed  
9 the maximum without approval of the Municipal Authority. Fran seconded the motion. The  
10 motion passed unanimously.

11 2. Software for Maintenance of the Plant – Training was done today. It will track all  
12 equipment, work orders, and costs. Ed moved to approve the invoice of \$3,500.00 for this  
13 software. Fran seconded the motion. The motion passed unanimously.

14 3. Charter Chase – Rick reported that a vacant lot in Charter Chase was purchased by the  
15 township for \$4,000.00 to be available for a possible pump station.

16 4. January Meeting – Rick explained that the CPTF will have its first meeting at 7 PM on  
17 Monday January 12, the same night as the Municipal Authority meeting. He asked to have the  
18 MA meeting start at 6 pm. All agreed.

19  
20 **Adjournment**

21 There being no further business, Dana moved to adjourn the meeting. Ed seconded the motion.  
22 The motion passed unanimously. The meeting was adjourned at 8:00 pm.

23  
24 Respectfully submitted,

25  
26  
27 Ruth Kiefer  
28 Recording Secretary



# INVOICE

Newark, DE  
302-655-4451 Fax: 302-654-2895

Remit Payment To:  
Pennoni Associates Inc.  
P.O. Box 827328  
Philadelphia, PA 19182-7328

East Goshen Municipal Authority  
1580 Paoli Pike  
West Chester, PA 19380-6199  
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 618400  
Invoice Date : 12/16/2014  
Project : EGMA1307  
Project Name : Reservoir Rd PS Act 537 Planning

For Services Rendered through: 12/7/2014

Reviewed USFWS' bog turtle habitat survey approval letter and conditions, discussed conditions and construction time-of-year restrictions with Conestoga-Rovers, and submitted USFWS approval letter to PADEP.

Phase : 03 -- Act 537 Plan Update

Total Phase : 03 -- Act 537 Plan Update

Labor :	137.50
Expense :	0.00
Phase Total :	137.50

Amount Due This Invoice

\$137.50

Phase : 03 -- Act 537 Plan Update

Labor

<u>Class</u>	<u>Hours/ Units</u>	<u>Rate</u>	<u>Amount</u>
Authority Engineer	1.25	110.00	137.50
<b>Labor Total:</b>	<b>1.25</b>		<b>137.50</b>

Total Phase : 03 -- Act 537 Plan Update

Labor :	\$137.50
Expense :	\$0.00

Total Project : EGMA1307 -- Reservoir Rd PS Act 537 Planning

Labor :	\$137.50
Expense :	\$0.00

O/K PS  
1-9-15

East Goshen Municipal Authority  
EGMA1401 Invoice Summary  
Invoice Date 12/16/2014

<b>Project:</b>	EGMA1401		
<b>Pennoni Job No.:</b>	2014 General Services		
<b>Invoice No:</b>	<b>618401</b>		
<b>Invoice Period:</b>	11/10/2014	to	12/7/2014
<b>Initial Authorization:</b>	\$ 10,300.00	<b>Date:</b>	12/16/2014
<b>Contract Amount:</b>	\$ 10,300.00		
<b>Previously Invoiced:</b>	\$ 9,126.25		
<b>Current Invoice:</b>	\$ 621.50		
<b>Invoiced to Date (\$):</b>	\$ 9,747.75		
<b>Invoiced to Date (%):</b>	95%		
<b>Remaining Budget (\$):</b>	\$ 552.25		
<b>Remaining Budget (%):</b>	5%		

**Budget by Phase:**

<b>Phase Name:</b>	2014 General Services		
<b>Phase Budget:</b>	\$ 10,300.00		
<b>Previously Invoiced:</b>	\$ 9,126.25		
<b>Current Invoice:</b>	\$ 621.50		
<b>Invoiced to Date (\$):</b>	\$ 9,747.75		
<b>Invoiced to Date (%):</b>	95%		
<b>Remaining Budget (\$):</b>	\$ 552.25		
<b>Remaining Budget (%):</b>	5%		

**Comments:** Prepared for and attended November's MA meeting, prepared Engineer's Report for December's MA meeting, and evaluated controls concept alternatives for Reservoir Road Pump Station design and permitting proposal.



# INVOICE

Newark, DE  
302-655-4451 Fax: 302-654-2895

Remit Payment To:  
Pennoni Associates Inc.  
P.O. Box 827328  
Philadelphia, PA 19182-7328

East Goshen Municipal Authority  
1580 Paoli Pike  
West Chester, PA 19380-6199  
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 618401  
Invoice Date : 12/16/2014  
Project : EGMA1401  
Project Name : 2014 General Services

For Services Rendered through: 12/7/2014

Prepared for and attended November's MA meeting, prepared Engineer's Report for December's MA meeting, and evaluated controls concept alternatives for Reservoir Road Pump Station design and permitting proposal.

Phase : \*\*\*\* -- Professional Services

Total Phase : \*\*\*\* -- Professional Services

Labor :	621.50
Expense :	0.00
<b>Phase Total :</b>	<b>621.50</b>

**Amount Due This Invoice**

Fee :	10,300.00
Prior Billings :	9,126.25
Current Billings :	621.50
<b>Total Billings :</b>	<b>9,747.75</b>

**\$621.50**

Phase : \*\*\*\* -- Professional Services

Labor Class	Hours/ Units	Rate	Amount
Authority Engineer	5.50	113.00	621.50
<b>Labor Total:</b>	<b>5.50</b>		<b>621.50</b>

Total Phase : \*\*\*\* -- Professional Services

Labor :	\$621.50
Expense :	\$0.00

Total Project : EGMA1401 -- 2014 General Services

Labor :	\$621.50
Expense :	\$0.00

ok RS 1-9-15

East Goshen Municipal Authority  
EGMA1307 Invoice Summary  
Invoice Date 12/16/2014

**Project:** EGMA1307  
**Pennoni Job No.:** Reservoir Rd PS Act 537 Planning  
**Invoice No:** **618400**  
**Invoice Period:** 11/10/2014 to 12/7/2014  
**Initial Authorization:** \$ 77,400.00 **Date:** 12/16/2014  
**Contract Amount:** \$ 87,900.00  
**Previously Invoiced:** \$ 73,816.75  
**Current Invoice:** \$ 137.50  
**Invoiced to Date (\$):** \$ 73,954.25  
**Invoiced to Date (%):** 84%  
**Remaining Budget (\$):** \$ 13,945.75  
**Remaining Budget (%):** 16%

**Budget by Phase:**

**Phase Name:** Reservoir Rd PS Act  
537 Planning  
**Phase Budget:** \$ 87,900.00  
**Previously Invoiced:** \$ 73,816.75  
**Current Invoice:** \$ 137.50  
**Invoiced to Date (\$):** \$ 73,954.25  
**Invoiced to Date (%):** 84%  
**Remaining Budget (\$):** \$ 13,945.75  
**Remaining Budget (%):** 16%

**Comments:** Reviewed USFWS' bog turtle habitat survey approval letter and conditions, discussed conditions and construction time-of-year restrictions with Conestoga-Rovers, and submitted USFWS approval letter to PADEP.



Gawthrop Greenwood, PC  
Attorneys at Law

17 East Gay Street, Suite 100 | (p) 610-696-8225  
West Chester, PA 19381-0562 | (f) 610-344-0922  
gglaw@gawthrop.com | www.gawthrop.com

East Goshen Municipal Authority  
1580 Paoli Pike  
West Chester PA 19380

Page: 1  
11/30/2014  
Client No: 6604-001M  
Invoice No. 126447

General Authority Services

Fees

		Hours	
11/10/2014	PMM		
	Review and analyze meeting packet in preparation for meeting of Authority; attend Authority meeting.	2.00	
	For Current Services Rendered	2.00	400.00

		Recapitulation		
		<u>Hours</u>	<u>Hourly Rate</u>	<u>Total</u>
Timekeeper	Patrick M. McKenna	2.00	\$200.00	\$400.00

Previous Balance	\$540.00
Total Current Charges	400.00

11/18/2014	Payment	-540.00
	Balance Due	<u>\$400.00</u>

12/12

TO MA

THIS INVOICE HAS  
BEEN PAID  
RS

OKRS 12/12/14

To ensure proper credit, please write client number on your check when returning payment. Thank You.  
A finance charge of 1.25% per month (15% annually) may be charged on balances not paid 60 days after the invoice date.

# Memo

---

To: Municipal Authority  
From: Jon Altshul  
Re: MA December Financial Reports  
Date: January 8, 2015

---

In December, the Municipal Authority recorded \$21,734 in revenues, primarily from Goshen Meadows tapping fees, and \$35,678 in expenses, including \$8,043 for administrative overhead and \$27,235 for the Municipal Authority's 28% share of the debt service on the 1998 note.

For the year, the Municipal Authority recorded \$148,775 in revenues and \$157,869 in expenses. The fund balance was \$1,589,177 as of 12/31/14. Of this amount, \$1,521,706 is in the capital account, primarily from the proceeds of the 2013 note.

A complete list of all year-to-date expenses and revenues is provided.

EAST GOSHEN TOWNSHIP  
 1580 PAOLI PIKE  
 WEST CHESTER, PA  
 Municipal Authority  
 December 2014

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
<b>MUNICIPAL AUTHORITY BEGINNING FUND BALANCE</b>				
			1,603,120.19	
<b>RCSTP BUDGET</b>				
REVENUE				
INTEREST EARNED - RCSTP EXPANSION	07341 1020	2,000.00	132.24	1,577.23
GRANT REVENUE	07392 0800	0.00	0.00	0.00
TOTAL REVENUE		2,000.00	132.24	1,577.23
EXPENSES				
R.C.-CAP. PROJ.-ENGINEER	07424 7451	0.00	0.00	0.00
R.C. CAP EXPANSION GEN'L CONTRACTOR	07424 7452	0.00	0.00	0.00
R.C. CAP EXPANSION - ELECTRICAL	07424 7453	0.00	0.00	0.00
R.C. CAP EXP CONTINGENCY CAPITAL	07424 7454	0.00	0.00	0.00
R.C. CAP EXP CONTINGENCY ONGOING	07424 7455	0.00	0.00	0.00
R.C. CAP EXP ADDITIONAL CONTINGENCY	07424 7456	0.00	0.00	0.00
TRANSFER TO SEWER SINKING FUND	07492 0550	0.00	0.00	0.00
TRANSFER TO AUTHORITY CAP FUND	07492 0990	0.00	0.00	0.00
TOTAL EXPENSES		0.00	0.00	0.00
<b>RCSTP NET RESULT</b>		2,000.00	132.24	1,577.23



EAST GOSHEN TOWNSHIP  
 1580 PAOLI PIKE  
 WEST CHESTER, PA  
 Municipal Authority  
 December 2014

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
<b>OPERATING BUDGET</b>				
<b>REVENUE</b>				
INTEREST EARNINGS	07341 1000	27.00	1.97	16.96
C.C. TAPPING FEES	07364 1100	124,000.00	21,600.00	112,200.00
R.C.TAPPING FEES	07364 1110	21,444.00	0.00	12,288.80
CONNECTION FEES - SEWER	07364 1130	0.00	0.00	1,127.52
MISCELLANEOUS REVENUE	07380 1000	0.00	0.00	564.48
TRANSFER FROM SEWER OPERATING	07392 0500	0.00	0.00	21,000.00
<b>TOTAL REVENUE</b>		<b>145,471.00</b>	<b>21,601.97</b>	<b>147,197.76</b>
<b>EXPENSES</b>				
ADMINISTRATIVE WAGES	07424 1400	32,768.00	8,043.02	32,172.08
MISCELLANEOUS EXPENSE	07424 3000	4,000.00	0.00	1,450.00
MUNIC.AUTH.-AUDITING	07424 3110	10,800.00	0.00	10,800.00
ENGINEERING SERVICES	07424 3130	35,525.00	0.00	32,259.00
LEGAL SERVICES	07424 3140	7,000.00	400.00	7,460.00
M.C.-DVRFA-DEBT SERVICE	07471 1000	22,120.00	22,120.00	22,120.00
M.C.-DVRFA-INTEREST PAYMN	07472 1000	5,115.00	5,114.86	5,114.86
M.C.-DVRFA-INTEREST PAYMN	07472 1010	0.00	0.00	0.00
<b>TOTAL EXPENSES</b>		<b>117,328.00</b>	<b>35,677.88</b>	<b>111,375.94</b>
<b>OPERATING NET RESULT</b>		<b>28,143.00</b>	<b>(14,075.91)</b>	<b>35,821.82</b>

EAST GOSHEN TOWNSHIP  
 1580 PAOLI PIKE  
 WEST CHESTER, PA  
 Municipal Authority  
 December 2014

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
<b>CAPITAL BUDGET</b>				
REVENUE				
LOAN PROCEEDS-SEWER PROJECT	07393 1001	0.00	0.00	0.00
TRANSFER FROM SEWER CAP RESERVE	07392 0900	0.00	0.00	0.00
TOTAL REVENUE		0.00	0.00	0.00
<b>EXPENSES</b>				
MARYDELL PUMP STATION - ENGINEER	07425 1000	0.00	0.00	0.00
MARYDELL PUMP STATION - CONSTRUCTION	07425 2000	0.00	0.00	0.00
MANHOLE COVER REPLACEMENTS	07424.7405	0.00	0.00	0.00
C.C. CAPITAL - COLLECTION	07424.7420	0.00	0.00	0.00
LOCHWOOD ABANDONMENT ENGINEER	07424 7475	0.00	0.00	0.00
LOCHWOOD ABANDONMENT CONSTRUCTION	07424 7476	0.00	0.00	0.00
LOCHWOOD ELIMINATION PHASE 2	07424 7477	0.00	0.00	0.00
HERSHEY MILL STATION - ENGINEER	07426 1000	0.00	0.00	0.00
HERSHEY MILL STATION - CONSTRUCTION	07426 2000	0.00	0.00	0.00
RESERVE PUMP STATION - ENGINEER	07427 1000	0.00	0.00	1,883.50
RESERVE PUMP STATION - CONSTRUCTION	07427 2000	0.00	0.00	6,323.20
RESERVOIR PUMP STATION - ENGINEER	07428 1000	75,000.00	0.00	38,286.25
RESERVOIR PUMP STATION CONSTRUCTION	07428 2000	0.00	0.00	0.00
TOTAL EXPENSES		75,000.00	0.00	46,492.95
<b>CAPITAL NET RESULT</b>		<b>(75,000.00)</b>	0.00	<b>(46,492.95)</b>

**MUNICIPAL AUTHORITY ENDING FUND BALANCE** 1,589,176.52

MGRP18 run by BRIAN 10 : 39 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1000		INTEREST EARNINGS			0.00				
	1401	JE 41027		0.58		02/04/14	INTEREST		INTEREST EARNED JANUARY 2014 07 FUND
			0.00	0.58	-0.58				
	1402	41391		1.33		03/04/14	INTEREST		INTEREST EARNED FEBRUARY 2014 07100.1000
			0.00	1.33	-1.91				
	1403	41840		1.71		04/01/14	INTEREST		INTEREST EARNED MARCH 2014 07 FUND
			0.00	1.71	-3.62				
	1404	42321		1.21		05/02/14	INTEREST		INTEREST EARNED APRIL 2014 07100.1000
			0.00	1.21	-4.83				
	1405	42739		0.90		06/02/14	INTEREST		INTEREST EARNED MAY 2014 07100.1000
			0.00	0.90	-5.73				
	1406	43211		0.75		07/01/14	INTEREST		INTEREST EARNED JUNE 2014 07100.1000
			0.00	0.75	-6.48				
	1407	43716		1.11		08/04/14	INTEREST		INTEREST EARNED JULY 2014 07 FUND
			0.00	1.11	-7.59				
	1408	44102		1.62		09/03/14	INTEREST		INTEREST EARNED AUGUST 2014 07100.1000
			0.00	1.62	-9.21				
	1409	44521		1.53		10/01/14	INTEREST		INTEREST EARNED SEPTEMBER 2014 07100.1000
			0.00	1.53	-10.74				
	1410	45013		2.16		11/03/14	INTEREST		INTEREST EARNED OCTOBER 2014 07100.1000
			0.00	2.16	-12.90				
	1411	45392		2.09		12/03/14	INTEREST		INTEREST EARNED NOVEMBER 2014 07 FUND
			0.00	2.09	-14.99				
	1412	45799		1.97		01/05/15	INTEREST		INTEREST EARNED DECEMBER 2014 07 FUND
			0.00	1.97	-16.96				
			0.00	16.96	-16.96				

MGRP18 run by BRIAN 10 : 39 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1020		INTEREST EARNED - RCSTP EXPANSION			0.00				
	1401	41028		137.33		02/04/14	INTEREST		INTEREST EARNED JANUARY 2014 07 CONSTRUCTION FUND
			0.00	137.33	-137.33				
	1402	41392		123.56		03/04/14	INTEREST		INTEREST EARNED FEBRUARY 2014 07 CONSTRUCTION FUND
			0.00	123.56	-260.89				
	1403	41841		136.07		04/01/14	INTEREST		INTEREST EARNED MARCH 2014 07 CONSTRUCTION FUND
			0.00	136.07	-396.96				
	1404	42322		131.45		05/02/14	INTEREST		INTEREST EARNED APRIL 2014 CONSTRUCT. FUNDS
			0.00	131.45	-528.41				
	1405	42740		134.59		06/02/14	INTEREST		INTEREST EARNED MAY 2014 07 FUND - CONSTRUCTION
			0.00	134.59	-663.00				
	1406	43212		129.00		07/01/14	INTEREST		INTEREST EARNED JUNE 2014 07 CONSTRUCTION FUNDS
			0.00	129.00	-792.00				
	1407	43718		132.61		08/04/14	INTEREST		INTEREST EARNED JULY 2014 07 CONTRUC.FUND
			0.00	132.61	-924.61				
	1408	44103		132.27		09/03/14	INTEREST		INTEREST EARNED AUGUST 2014 07 CONSTRUCTION FUND
			0.00	132.27	-1,056.88				
	1409	44522		128.30		10/01/14	INTEREST		INTEREST EARNED SEPTEMBER 2014 07 CONSTRUCTION FUND
			0.00	128.30	-1,185.18				
	1410	45014		132.20		11/03/14	INTEREST		INTEREST EARNED OCTOBER 2014 07 CONSTRUCTION FUND
			0.00	132.20	-1,317.38				
	1411	45392		127.61		12/03/14	INTEREST		INTEREST EARNED NOVEMBER 2014 07 FUND
			0.00	127.61	-1,444.99				
	1412	45799		132.24		01/05/15	INTEREST		INTEREST EARNED DECEMBER 2014 07 FUND
			0.00	132.24	-1,577.23				
			0.00	1,577.23	-1,577.23				

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07364-1100	C.C.	TAPPING FEES			0.00				
1401	CR	40976		12,600.00		01/31/14	3034	8069 1	GOSHEN MEADOWS INVESTORS L.P.
			0.00	12,600.00	-12,600.00				
1402		41258		5,400.00		02/24/14	3553	8069 1	GOSHEN MEADOWS INVESTORS L.P.
	RE	41263		2,000.00		02/24/14	41263 1		TAP IN FEE - 211 ELLIS LANE
			0.00	7,400.00	-20,000.00				
1405		42661		2,000.00		05/29/14	42661 1		TAP IN FEE FOR 195 WYLLPEN PL
			0.00	2,000.00	-22,000.00				
1407	CR	43276		21,600.00		07/03/14	21	8069 1	GOSHEN MEADOWS INVESTORS L.P.
		43434		21,600.00		07/21/14	26	8069 1	GOSHEN MEADOWS INVESTORS L.P.
	RE	43312		1,800.00		07/08/14	43312 1		TAP IN FEE FOR 1637 MANLEY RD
			0.00	45,000.00	-67,000.00				
1409	CR	44456		21,600.00		09/26/14	46	8069 1	GOSHEN MEADOWS INVESTORS L.P.
			0.00	21,600.00	-88,600.00				
1411	RE	45089		2,000.00		11/06/14	45089 1		TAP IN FEE FOR 610A RESERVOIR
			0.00	2,000.00	-90,600.00				
1412	CR	45529		21,600.00		12/12/14	85	8069 1	GOSHEN MEADOWS INVESTORS L.P.
			0.00	21,600.00	-112,200.00				
			0.00	112,200.00	-112,200.00				
07364-1110	R.C.	TAPPING FEES			0.00				
1402	RE	41280		2,000.00		02/25/14	41280 1		TAP IN FEE-903 SORELL HILL LT2
			0.00	2,000.00	-2,000.00				
1403		41553		2,000.00		03/13/14	41553 1		TAP IN FEE FOR 909 SORRELL LT4
		41608		2,000.00		03/17/14	41608 1		TAP IN FEE-905 SORRELL LOT 3
			0.00	4,000.00	-6,000.00				
1405	CR	42355		4,288.80		05/06/14	130	6499 1	BOWER, JUDITH
			0.00	4,288.80	-10,288.80				
1410	RE	44714		2,000.00		10/15/14	44714 1		TAP IN FEE FOR 1117 TAYLOR AVE
			0.00	2,000.00	-12,288.80				
			0.00	12,288.80	-12,288.80				
07364-1130	CONNECTION FEES - SEWER				0.00				
1402	CR	41044		423.00		02/04/14	350	8035 1	JACOBS, ROBERT & CHERYL
		41124		423.00		02/14/14	774	8033 1	GEORGE SMITH & CHRISTINA CONLE

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07364-1130	1402	JE	41045	141.12			02/04/14	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
			41125	141.12			02/14/14	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
				282.24	846.00	-563.76				
	1403	CR	41402		423.00		03/04/14	2307	8034	1 STOFFLET, MICHAEL
		JE	41407	141.12			03/04/14	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
				141.12	423.00	-845.64				
	1405	CR	42378		423.00		05/07/14	1021	8036	1 PAPPANO, JOSEPH & PATRICIA
		JE	42380	141.12			05/07/14	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
				141.12	423.00	-1,127.52				
				564.48	1,692.00	-1,127.52				
07380-1000	MISCELLANEOUS REVENUE					0.00				
	1402		41045		141.12		02/04/14	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
			41125		141.12		02/14/14	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
				0.00	282.24	-282.24				
	1403		41407		141.12		03/04/14	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
				0.00	141.12	-423.36				
	1405		42380		141.12		05/07/14	PINE ROCK		ANNUAL PINE ROCK INSTALLMENT
				0.00	141.12	-564.48				
				0.00	564.48	-564.48				
07392-0500	TRANSFER FROM SEWER OPERATING					0.00				
	1401		40674		1,000.00		01/08/14	DEPOSIT		DEPOSIT \$ INTO MA GENERAL FROM 05 FUND
			40747		20,000.00		01/14/14	XFER		XFER \$ FROM SEWER TO MA TO COVER EXPENSES
				0.00	21,000.00	-21,000.00				
				0.00	21,000.00	-21,000.00				
07424-1400	ADMINISTRATIVE WAGES					0.00				
	1403	CD	41815	8,043.02			03/31/14	2237		425 EAST GOSHEN TOWNSHIP - GENERAL 1ST QTR.2014 MUN.AUTH. REIMBURSM
				8,043.02	0.00	8,043.02				
	1406		43192	8,043.02			06/30/14	2243		425 EAST GOSHEN TOWNSHIP - GENERAL 2ND QTR.2014 MUN. AUTH. REIMBURSM
				8,043.02	0.00	16,086.04				

East Goshen Township General Ledger

Report Date 01/06/15

GL Transaction Details

PAGE 5

MGRP18 run by BRIAN 10 : 39 AM

Acct #	Per	Src	Trx #	Debits	Credits	Beq/End Bal	Date	Check/Ref #	ID #	Name/Description
07424-1400	1409	CD	44443	8,043.02			09/26/14	2252	425	EAST GOSHEN TOWNSHIP - GENERAL 3RD QTR.2014 MUN.AUTH. REIMBURSM
				8,043.02	0.00	24,129.06				
	1412		45735	8,043.02			12/30/14	2259	425	EAST GOSHEN TOWNSHIP - GENERAL 4TH QTR.2014 MUN.AUTH. REIMBURSM
				8,043.02	0.00	32,172.08				
				32,172.08	0.00	32,172.08				
07424-3000						0.00				
	1401		40597	500.00			01/06/14	2228	2737	DEP - COMMONWEALTH OF PA NPDES PERMITS - CHAPTER 92A 2014
				950.00			01/06/14	2229	2132	PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOC 2014 ACTIVE MEMBERSHIP DUES
			***	1,450.00	0.00	***				
				1,450.00	0.00	1,450.00				
	1412	JE	45383	1,000.00			12/03/14	CERT.CK.		CERTIFIED CK.-C.C.TAX CLAIM BUREAU - 1407 GREENHILL RD.
			45424		1,000.00		12/04/14	REVERSE		REVERSE TRX# 45383
				1,000.00	1,000.00	1,450.00				
				2,450.00	1,000.00	1,450.00				
07424-3110						0.00				
	1407	CD	43405	10,800.00			07/16/14	2246	808	MAILLIE FALCONIERO & CO. 2013 FINANCIAL STMTS. EXAMINATIO
				10,800.00	0.00	10,800.00				
				10,800.00	0.00	10,800.00				
07424-3130						0.00				
	1401		40653	-663.75			01/06/14	2224	1052	PENNONI ASSOCIATES INC. VOID CK. DUE TO PRINTER PROBLEM
			40743	663.75			01/14/14	2230	1052	PENNONI ASSOCIATES INC. SERVICES THRU 12/8/13 GENERAL S
	JE		40746		1,845.00		01/14/14	REFUND		PENNONI REFUND DUE TO DUPLICATE PAYMENT
				0.00	1,845.00	-1,845.00				
	1402	CD	41103	2,236.50			02/11/14	2233	1052	PENNONI ASSOCIATES INC. SERVICES THROUGH 1/12/14 GEN.SER
				2,236.50	0.00	391.50				

MGRP18 run by BRIAN 10 : 39 AM

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07424-3130	1403	CD	41540	6,887.25			03/12/14	2236	1052	PENNONI ASSOCIATES INC. SERVICES THRU 2/9/14 2013 CHAP.
				6,887.25	0.00	7,278.75				
1404			42153	8,808.25			04/23/14	2239	1052	PENNONI ASSOCIATES INC. SERVICES THRU 3/16/14 CHAP.94 RE
				8,808.25	0.00	16,087.00				
1405			42462	6,198.50			05/14/14	2241	1052	PENNONI ASSOCIATES INC. SERVICES THRU 4/13/14 2013 CHAP.
				6,198.50	0.00	22,285.50				
1406			42952	3,004.75			06/12/14	2242	1052	PENNONI ASSOCIATES INC. SERV.THURU 5/11/14 2014 SEMI-ANN
				3,004.75	0.00	25,290.25				
1407			43405	1,521.25			07/16/14	2247	1052	PENNONI ASSOCIATES INC. SERVICES THRU 6/15/14 GEN.SERVIC
				1,521.25	0.00	26,811.50				
1408			43811	169.50			08/12/14	2249	1052	PENNONI ASSOCIATES INC. SERV.THURU 7/13/14 2014 SEMI-ANN I&I
				169.50	0.00	26,981.00				
1409			44268	556.00			09/16/14	2250	1052	PENNONI ASSOCIATES INC. SERVICES THRU 8/10/14 2014 GEN.S
				556.00	0.00	27,537.00				
1410			44708	724.75			10/14/14	2253	1052	PENNONI ASSOCIATES INC. SERVICES THRU 9/14/14 SEMI ANN.
				724.75	0.00	28,261.75				
1411			45163	3,997.25			11/14/14	2256	1052	PENNONI ASSOCIATES INC. SERVICE THRU 10/12/14 GEN. SERV
				3,997.25	0.00	32,259.00				
				34,104.00	1,845.00	32,259.00				
07424-3140						0.00				
1402			41310	800.00			02/27/14	2234	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICES - NOV.2013 GEN.AU
				800.00	0.00	800.00				
1403			41540	700.00			03/12/14	2235	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICE - FEB.2014 GEN.AUT
				700.00	0.00	1,500.00				



East Goshen Township General Ledger

Report Date 01/06/15

GL Transaction Details

PAGE 7

MGRP18 run by BRIAN 10 : 39 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07424-3140	1404	CD 42074	960.00			04/16/14	2238	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE - MARCH 2014 GEN.A
			960.00	0.00	2,460.00				
1405		42462	1,300.00			05/14/14	2240	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE APRIL 2014 GEN.AUT
			1,300.00	0.00	3,760.00				
1407		43291	520.00			07/07/14	2244	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE MAY 2014 - GEN.AUT
		43405	1,480.00			07/16/14	2245	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE JUNE 2014 - GEN.AU
			2,000.00	0.00	5,760.00				
1408		43811	80.00			08/12/14	2248	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE 7/3-7/14/14 GEN.AU
			80.00	0.00	5,840.00				
1409		44372	400.00			09/22/14	2251	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE 8/11/14 GEN. AUTH.
			400.00	0.00	6,240.00				
1410		44899	280.00			10/23/14	2254	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE SEPT.2014 GEN.AUT
			280.00	0.00	6,520.00				
1411		45163	540.00			11/14/14	2255	528	GANTHROP GREENWOOD & HALSTED LEGAL SERV. 10/8-10/13/14 GEN.AU
			540.00	0.00	7,060.00				
1412		45633	400.00			12/19/14	2257	528	GANTHROP GREENWOOD & HALSTED LEGAL SERVICE - NOV.2014 GEN.AUT
			400.00	0.00	7,460.00				
			7,460.00	0.00	7,460.00				
07424-7460		LOCHWOOD - CAPITAL -STP			0.00				
	1401	40739	1,290.00			01/14/14	10012	2695	BRICKHOUSE ENVIRONMENTAL LOCHWOOD CHASE PROJECT - DEC.201
		40744	-1,290.00			01/14/14	10012	2695	BRICKHOUSE ENVIRONMENTAL VOID CK. - INCORRECT CASH ACCT.U
		40745	1,290.00			01/14/14	2231	2695	BRICKHOUSE ENVIRONMENTAL LOCHWOOD CHASE PROJECT - DEC. 20
	JE	40820		1,290.00		01/22/14	DEPOSIT		DEPOSIT TO REIMBURSE 07 MA FOR 05 EXPENSE
			1,290.00	1,290.00	0.00				
			1,290.00	1,290.00	0.00				

MGRP18 run by BRIAN 10 : 39 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07427-1000		RESERVE PUMP STATION - ENGINEER			0.00				
		1405 CD 42462	197.25			05/14/14	2241	1052	PENNONI ASSOCIATES INC. SERV.THRU 4/123/14 RESERVE PS
			197.25	0.00	197.25				
1406		42888	7,316.82			06/11/14	10019	3133	SMITH INC., RONALD APPLIC.# 3 RESERVE PS DIVERSION
		42952	619.75			06/12/14	2242	1052	PENNONI ASSOCIATES INC. SERVICE THRU 5/11/14 RESERVE PS
		43217	-7,316.82			06/30/14	10019	3133	SMITH INC., RONALD VOID CK.10019 PAYMENT AMT.TO BE REDUCED
			619.75	0.00	817.00				
1407		43229	3,658.41			07/02/14	10020	3133	SMITH INC., RONALD APPL.#3 RESERVE PS DIVERSION -FI
		43405	309.00			07/16/14	2247	1052	PENNONI ASSOCIATES INC. SERVICES THRU 6/15/14 RESERVE PS DIVERSION CONSTRUCTION
			3,967.41	0.00	4,784.41				
1408		43811	476.75			08/12/14	2249	1052	PENNONI ASSOCIATES INC. SERV.THRU 7/13/14 RESERVE PS DI CONSTRUCTION
			476.75	0.00	5,261.16				
1409		44268	111.25			09/16/14	2250	1052	PENNONI ASSOCIATES INC. SERVICES THRU 8/10/14 RESERVE PS
			111.25	0.00	5,372.41				
1410		44708	141.25			10/14/14	2253	1052	PENNONI ASSOCIATES INC. SERVICES THRU 9/14/14 RESERVE P
	JE	44565		3,658.41		10/03/14	RECLASS		RECLASS TRX.43229 - RON SMITH INC. CHECK # 10020
			141.25	3,658.41	1,855.25				
1411 CD		45163	28.25			11/14/14	2256	1052	PENNONI ASSOCIATES INC. SERV. THRU 10/12/14 RESERVE PS D
			28.25	0.00	1,883.50				
			5,541.91	3,658.41	1,883.50				
07427-2000		RESERVE PUMP STATION - CONSTRUCTION			0.00				
		1410 44656	2,664.79			10/09/14	10026	3133	SMITH INC., RONALD FINAL PAYMENT- RESERVE PUMP STAT
	JE	44565	3,658.41			10/03/14	RECLASS		RECLASS TRX.43229 - RON SMITH INC. CHECK # 10020
			6,323.20	0.00	6,323.20				

MGRP18 run by BRIAN 10 : 39 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
			6,323.20	0.00	6,323.20				
07428-1000					0.00				
		1402 CD 41107	10,687.50			02/11/14	10013	1052	PENNONI ASSOCIATES INC. SERV.THROUGH 1/12/14 RESERVE PS
			10,687.50	0.00	10,687.50				
		1403 41541	4,431.25			03/12/14	10014	1052	PENNONI ASSOCIATES INC. SERV.THRU 2/9/14 RESERV.RD. PS
			4,431.25	0.00	15,118.75				
		1404 42154	5,909.00			04/23/14	10015	1052	PENNONI ASSOCIATES INC. SERVICES THRU 3/16/14 RESERV.RD
			5,909.00	0.00	21,027.75				
		1405 42463	4,724.50			05/14/14	10016	1052	PENNONI ASSOCIATES INC. SERV. THRU 4/13/14 RESERVOIR RD.
		42514	3,150.00			05/16/14	10017	3312	CONESTOGA & ASSOCIATES PROF.SERVICE THRU 3/30/14 RESERV RD. PS - BOG TURTLE HABITAT
			7,874.50	0.00	28,902.25				
		1406 42888	5,761.25			06/11/14	10018	1052	PENNONI ASSOCIATES INC. SERV.THRU 5/11/14 RESERVOIR RD.
			5,761.25	0.00	34,663.50				
		1407 43406	430.00			07/16/14	10021	1052	PENNONI ASSOCIATES INC. SERV.THRU 6/15/14 RESERVOIR RD.
		43421	100.00			07/18/14	10022	3353	COMMONWEALTH FINANCING AUTHORITY GRANT APPLICATION FOR DCED SEWAG FACILITIES GRANT FOR ACT 537 PLANNING FOR RESERVOIR RD P/S
			530.00	0.00	35,193.50				
		1408 43810	1,208.75			08/12/14	10023	1052	PENNONI ASSOCIATES INC. SERV.THRU 7/13/14 RESERVOIR RD P ACT 537 PLANNING
			1,208.75	0.00	36,402.25				
		1409 44269	414.00			09/16/14	10024	3312	CONESTOGA-ROVERS & ASSOCIATES PROF.SERV.THRU 7/27/14 BOG TURL HABITAT ASSESSMENT
			781.25			09/16/14	10025	1052	PENNONI ASSOCIATES INC. SERV.THRU 8/10/14 RESERVOIR RD P
		***	1,195.25	0.00	***				
			1,195.25	0.00	37,597.50				
		1410 44709	441.25			10/14/14	10027	1052	PENNONI ASSOCIATES INC. SERV.THRU 9/14/14 RESERVOIR RD.

East Goshen Township General Ledger

Report Date 01/06/15

GL Transaction Details

PAGE 10

MGRP18 run by BRIAN 10 : 39 AM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
			441.25	0.00	38,038.75				
1411		45187	247.50			11/17/14	10028	1052	PENNONI ASSOCIATES INC. SERV.THRU 10/12/14 RESERVOIR RD
			247.50	0.00	38,286.25				
			38,286.25	0.00	38,286.25				
07471-1000	M.C.-DVRFA-DEBT SERVICE				0.00				
1412		45666	22,120.00			12/22/14	2258	430	EAST GOSHEN TWP - SEWER EOY XFER - M.C.DVRFA 28% DEBT SE
			22,120.00	0.00	22,120.00				
			22,120.00	0.00	22,120.00				
07472-1000	M.C.-DVRFA-INTEREST PAYMN				0.00				
			5,114.86			12/22/14	2258	430	EAST GOSHEN TWP - SEWER EOY XFER - M.C.DVRFA 28% DEBT SE
			5,114.86	0.00	5,114.86				
			5,114.86	0.00	5,114.86				
Beg Bal		0.00	166,226.78	157,132.88	9,093.90				



PENNONI ASSOCIATES INC.  
CONSULTING ENGINEERS

January 9, 2015

EGMA1402

Rick Smith, Township Manager  
East Goshen Township  
1580 Paoli Pike  
West Chester, PA 19380

Re: **Semi-Annual Sewer System Status Report #12**  
**East Goshen Municipal Authority**

Dear Mr. Smith:

The following Semi-Annual Sewer System Status Report is a continuation of the reports previously required under the Consent Order & Agreement (CO&A) executed between the Pennsylvania Department of Environmental Protection and the East Goshen Municipal Authority in December 2008. Mandatory reporting to the PaDEP ended on March 31, 2012, so this report will serve as an internal document for the Township. This report continues to describe the progress made towards achieving the milestone events listed in the Corrective Action section of the CO&A including all of the actions taken within the previous ten-month period and those which will be taken in the subsequent six-month period. The term "Corrective Action" is now replaced with "Action".

### **EXECUTIVE SUMMARY**

The portable metering investigation shifted focus to the Ridley Creek Service Area during the current period from March 2014 through December 2014. The meter data from the current period indicates inflow and infiltration (I/I) occurs in certain areas of the Ridley Creek Service Area, but we question the accuracy of much of the data. In the next six months, the Township should continue monitoring flows in the Ridley Creek Service Area to identify sources of I/I since no portable metering has been performed in the Ridley Creek Service Area since 2012 and significant inflow events are periodically recorded at the Ridley Creek Sewage Treatment Plant.

### **ACTIONS**

#### **1. Action #1: Metering**

Flow metering shall take place in the following subbasins for a minimum of four months out of the year, with metering conducted for a minimum of 60 days in the fall and 60 days in the spring.

Refer to the enclosed Figure #1 for a map of previous and future meter locations.

***Previous 6+ Months:***

The current period analyzes meter data from March 2014 through December 2014. Six of the temporary meters were relocated in early August 2014, and an additional meter was installed in late October 2014. Our conclusions are based on a limited amount of available data since there were several meter malfunctions during this period.

**Reservoir Road Interceptor C-036**

The Reservoir Road temporary meter captures flows from the Chester Creek Interceptor and is located on Reservoir Road in Manhole C-036, two manholes upstream of the Reservoir Road permanent meter. This portable meter was installed in late November 2012.

The portable meter appears to have malfunctioned in mid-late July 2014, so data during this period was excluded from our analysis. Additionally, no meter data for the majority of September 2014 was recorded. The portable meter data appears to be relatively consistent with previous periods excluding questionable data for several days in July 2014 and in December 2014 when the minimum flow was an unrealistic 0 gpm.

Flows at this location have decreased since it was originally installed in 2012. The average flow from March 2014 to early July 2014 was 356 gpm. Average flows from early October 2014 through late November 2014 decreased to 239 gpm. The base flow from the current period averaged 52% of the total flow which is lower than previous base flows recorded at this location. Previous base flows reached over 60% of the total flow. This comparison suggests that upstream I/I has decreased.

Data from the current period indicates peak flows occur during storm events, likely due to inflow. The 3.5-inch rainstorm on April 30, 2014 resulted in a daily volume of 1,640,952 gpd, which is the highest daily flow recorded at this location since the portable meter was installed in November 2012. Average flows in August 2014 through November 2014 were lower than previous periods which is likely due to decreased precipitation.

The questionable flow readings suggest the meter needs to be calibrated. Level data appears to be accurate, but velocity readings are problematic. The portable meter should remain at this location to continue to monitor flows in the Chester Creek Interceptor and for use in the Reservoir Road Pump Station design.

This portable meter's flows are significantly less than the immediate downstream Reservoir Road permanent meter, so another portable meter was installed in manhole C-032, two manholes downstream of the permanent meter, to evaluate inconsistencies.

Reservoir Road & Park Avenue C-032

A portable meter was installed to confirm flows along the Chester Creek Interceptor since there is inconsistent flow data between the upstream permanent and temporary Reservoir Road meters. The portable meter was installed at this location on October 24, 2014 and recorded flows through late December 2014.

Portable meter readings at this location were significantly lower than the upstream metered flows. Average flows were around 95 gpm in late October and steadily decreased to under 1 gpm in late December. There is an apparent malfunction or calibration issue with the level readings on this meter since negative levels are recorded daily since mid-November 2014. Therefore, the accuracy of the upstream interceptor meters cannot be evaluated yet.

The portable meter should be calibrated and remain at this location to evaluate the accuracy of the upstream portable and permanent interceptor meters.

Line Road R-238

This meter is installed in Manhole R-238 which is located on the Ridley Creek Interceptor at the transition of the 8-inch to the 10-inch sewer. This manhole is southeast of the intersection of Paoli Pike and Line Road, and the portable meter was installed in August 2014.

Data from early August 2014 through late December 2014 was analyzed. Flows were relatively consistent and are believed to be accurate considering the number of upstream connections. The average flow at this location was 31 gpm. The continuous base flow averaged only 10 gpm which indicates there is limited infiltration in upstream sewers during dry weather periods.

The temporary meter should remain at this location through the next semi-annual sewer flow analysis in March 2015 to allow for continued strategic monitoring of Ridley Creek Interceptor flows and I/I.

Blacksmith Shop R-021

This temporary meter was installed along the 10-inch Ridley Creek Interceptor sewer in Manhole R-021 which is located by the historic blacksmith shop on the southeast corner of the intersection of N. Chester Road and E. Boot Road. The temporary meter was installed in August 2014.

The temporary meter recorded negative values for velocity from August 2014 to October 2014 which was due to the meter being installed backwards. Data from this period was excluded from our analysis. Additionally, no meter data was provided for late September 2014 or mid-October 2014. The meter was reinstalled correctly on October 1, 2014. The

average flow from October 2, 2014 through October 10, 2014 was 270 gpm. This average flow is consistent with 2010 metering.

The meter malfunctioned after October 10, 2014 with significantly reduced velocities and negative levels. The average base flow from October 2, 2014 through October 10, 2014 was 63 gpm which is approximately 23% of the total flow. The base flow suggests there is I/I in the upstream sewers, but I/I cannot be correlated with rainfall since significant rainfall event did not occur during this monitoring period. However, 2010 meter data indicated significant I/I exists in the upstream sewers and I/I increased during storm events.

Based on early October data, it appears accurate flow data can be obtained at this location despite observed turbulent flows, but frequent maintenance and monitoring is needed to keep it functioning properly. The portable meter can remain in this location with recalibration and weekly monitoring or can be relocated to manhole R-022 on the opposite side of N. Chester Road.

#### East Boot Road R-018

This portable meter was installed within Manhole R-018 which is located along Ridley Creek on the 10-inch interceptor sewer. The temporary meter was installed in August 2014.

The meter data is inconsistent between August 2014 and December 2014 with an obvious malfunction for 10 days in November 2014, so the accuracy of the data is questionable. The average flow from August 2014 through September 2014 was 29 gpm, which is low considering the number of upstream connections. The portable meter was calibrated on October 1, 2014 and flows appear to be accurate for the month of October, averaging approximately 75 gpm. The meter malfunctioned in early November 2014. Flows from mid-November 2014 through December steadily increased from 30 gpm to reach nearly 80 gpm by mid-December 2014, which is considered to be a malfunction due to inconsistent level readings.

The average base flow in October 2014 was 20 gpm which is approximately 27% of the total flow. This base flow indicates that there may be continuous infiltration in the upstream sewers. Since a significant rainfall event did not occur during this monitoring period, it cannot be determined if the continuous base flow is correlated with rainfall or if inflow occurs during storms.

The questionable flows suggest the meter needs to be calibrated. The meter should stay at this location.



### East Boot Road R-213

A field investigation on October 1, 2014 confirmed this portable meter is located in Manhole R-213, instead of Manhole R-013, and is located along Ridley Creek on the 10-inch interceptor sewer. The portable meter was installed in August 2014.

The meter malfunctioned from October 31, 2014 through November 18, 2014, so this data was excluded from our analysis. Flows at this location were relatively consistent from early August 2014 through late October averaging approximately 70 gpm with an average base flow of 24 gpm, which comprises approximately 35% of the total flow. Flows from late November 2014 through late December 2014, after the malfunction, were significantly higher averaging 108 gpm with an average base flow of 53 gpm, which comprises nearly 50% of the total flow. If meter data is accurate, there appears to be significant upstream infiltration. There was not a significant rainfall event during this period, so it cannot be determined if the continuous base flow is correlated with rainfall or if inflow occurs during storms.

The temporary meter should be calibrated and remain at this location.

### Ashcom R-638

This portable meter was installed in Manhole R-638 located within the Ridley Creek Service Area along the 8-inch sewer line behind Ashcom Drive. The meter captures flows from the Bow Tree development and was installed in early August 2014.

Flows were relatively consistent from August 2014 through early October 2014 averaging 6 gpm. However, this data appears to be erroneous since flows at this location are expected to be significantly higher given the number of upstream connections (approximately 150 EDUs). The average flow began to increase in October to early November 2014. The meter was offline from November 9, 2014 to November 18, 2014. Flows from late November 2014 through late December 2014 averaged 20 gpm, which appears to be accurate since it is consistent with the expected flows from upstream connections. The average base flow from late November 2014 through late December 2014 was only 0.7 gpm which indicates little to no infiltration in the upstream sewers during dry weather. There was not a significant rainfall event during this period, so it cannot be determined if the continuous base flow is correlated with rainfall or if inflow occurs during storms.

This meter should be considered for relocation following the March 2015 Semi-Annual Sewer System Status Report 13.

### Tegler R-003

This portable meter is located in Manhole R-003 which is on the 18-inch interceptor sewer within the Ridley Creek Service Area. The meter was installed in August 2014 and is located two manholes upstream from the Ridley Creek Sewage Treatment Plant.

The average flow from August 2014 through early October 2014 was consistent averaging approximately 115 gpm. However, this data is considered inaccurate since flows are much lower than the downstream RCSTP influent flows. The portable meter malfunctioned and was offline from October 10, 2014 through October 24, 2014. The average flow from late October 2014 through late December 2014 was significantly higher averaging 415 gpm which is consistent with typical RCSTP influent flows. The base flow from late October 2014 through late December 2014 varies from 0 gpm to 234 gpm and appears to be correlated with rainfall. We expect this location experiences I/I particularly inflow during storms, but data during larger storm events and a longer period of time is needed to confirm and quantify I/I. Therefore, the portable meter should remain at this location.

#### Permanent Chester Creek Service Area Meters

Flow data from the 10 permanent meters throughout the Chester Creek Service Area were analyzed; six of the meters are in gravity interceptor sewers and four of the meters are on pump station discharge pipes. Instantaneous or hourly meter data is not recorded on these meters; therefore only a rough flow analysis can be performed because inflow peaks and continuous base flows are unknown.

The Reservoir Road permanent meter data is highly inconsistent with the Reservoir Road temporary meter data. We estimate the Reservoir Road permanent meter is reading almost 300,000 gpd higher than the Reservoir Road temporary meter. It was only approximately 50,000 gpd higher in early 2014. The Reservoir Road permanent meter data will be re-evaluated in the next few months versus the new downstream portable meter.

Our conclusions for the current period, March 2014 through December 2014, maintain that I/I problems likely exist in the sanitary sewer system of the Chester Creek Service Area and Ridley Creek Service Area. Metered data from this period indicates that I/I is problematic along the Ridley Creek Interceptor.

#### *Next 3 Months:*

East Goshen Municipal Authority has found the temporary metering to be beneficial in identifying problems in their sewer system. Although not required by the CO&A, the Authority will continue temporary metering and flow analyses. Metering results and analyses will be utilized internally and for Chapter 94 Reporting but will no longer be reported semi-annually to DEP.

We recommend the following actions for the next three months:

- Clean and calibrate all portable meters.
- Continue portable metering at all current locations.

**2. Action #2: Televising**

Televising and visual inspections should take place on an ongoing, as-needed basis in order to discover areas of excessive I/I and to measure the effectiveness of I/I rehabilitation measures.

***Previous 6+ Months:***

**Ridley Creek Service Area**

- Cleaned and televised 12,800 feet of sewer pipe.

**Chester Creek Service Area**

- Cleaned and televised 2,000 feet of collection sewers in Supplee Valley.
- Cleaned and televised 1,000 feet of the interceptor on Reservoir Road.
- Cleaned and televised 11,200 feet of sewer pipe in July 2014.

***Next 3 Months:***

**Ridley Creek Service Area**

- Continue smoke testing within the Ridley Creek Interceptor

**Chester Creek Service Area**

- None

**3. Action #3: System Hydraulic Characterization**

The sanitary sewer collection system tributary to the Ridley Creek Sewage Treatment Plant should be modeled and hydraulically evaluated in order to determine if any physical constraints exist which would not allow for the conveyance of peak wet weather flow.

- The System Hydraulic Characterization was completed and submitted to DEP in November 2009 as required by the CO&A.

**4. Action #4: Rehabilitation**

Areas within the sewer systems which have been identified as needing rehabilitation, per the investigations mentioned above, should be rehabilitated.

***Current Period (March 2014-December 2014):***

**Ridley Creek Service Area**

- Raised and sealed manholes on the interceptor.
- Lateral cleanout replacements.

**Chester Creek Service Area**

- Replaced valve pit top at Ashbridge Pump Station.
- Grouted Barkway Pump Station wet well leaks.
- Cleared lateral blockages.
- Repaired force main break at Manley Road and Pheasant Run Road.
- Lateral cleanout replacements.
- Repaired broken lateral on Red Maple Lane.
- Replaced 180 feet of 8" pipe between Forrest Lane and Willow Pond due to several sags and two sections of crushed pipe.
- Replaced all manhole castings on Wilson Drive and Morstein Road.

***Next 3 Months:***

- Continue to conduct rehabilitation of sewers, manholes, and laterals as determined by ongoing investigations, including repair of leaks and replacement of cleanout caps and cleanout pipes that have pulled out of lateral piping.

**5. Action #5: Post-Rehabilitation Flow Metering**

Flow metering should take place in areas that have been rehabilitated in order to document the effectiveness of the rehabilitative work. The metering should take place during both the fall and spring of the year.

***Current Period (March 2014-December 2014):***

A few large leaks were repaired along the Chester Creek Interceptor prior to March 2014 which only resulted in a flow reduction of approximately 30,000 gpd per the Reservoir Road temporary meter data. The flow reduction was expected to be significantly greater (around 100,000 gpd) based on visual observation of the leaks.

***Next 3 Months:***

- Data from the Ridley Creek Influent STP meter will be reviewed to determine the effectiveness of any repairs in the Ridley Creek Service Area.

**6. Action #6: House Lateral Investigation Program**

The House Lateral Investigation Program ("HLIP") was implemented in conformance with the provisions of the HLIP contained in the February 28, 2008, letter from East Goshen.

***Previous 6+ Months:***

- Continued to replace cleanout caps at no charge to property owners in the Ridley Creek and Chester Creek Service Areas upon request by property owners or observation by Public Works or Codes Department staff.
- Continued to repair defective laterals and cleanouts for property owners to ensure that the work is done properly as indicated in Action #4.
- Re-occupancy inspections were performed at the sale of residences and commercial establishments throughout the Township looking for direct inflow from building sump pumps.

***Next 3 Months:***

- Continue to inspect sanitary sewer cleanouts/vents in conjunction with the televising efforts performed under Action #2.
- Continue Township policy regarding replacement of cleanouts, vent caps, and laterals.
- Continue re-occupancy inspections at the sale of properties including looking for direct inflow from building sump pumps.
- Repair of defective laterals and cleanouts by the Township for property owners to ensure that the work is done properly.

**7. Action #7: Reporting**

Semi-Annual Status Reports should be submitted to the East Goshen Municipal Authority to describe the progress made towards achieving the previous Corrective Action milestone events.

***Previous 6+ Months:***

- Submitted Semi-Annual Sewer System Status #11 to the Municipal Authority on April 16, 2014.

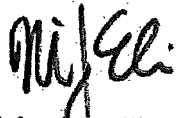
***Next 3 Months:***

- Prepare and submit the Semi-Annual Sewer System Status #13 to the Municipal Authority by April 30, 2015.

If you should have any questions, please do not hesitate to contact me.

Sincerely,

**PENNONI ASSOCIATES INC.**

  
Michael J. Ellis, P.E.  
Authority Engineer

ajd/

Enclosures: Figure 1

cc: Mark Miller, Public Works Director